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A BEIJER REF Company

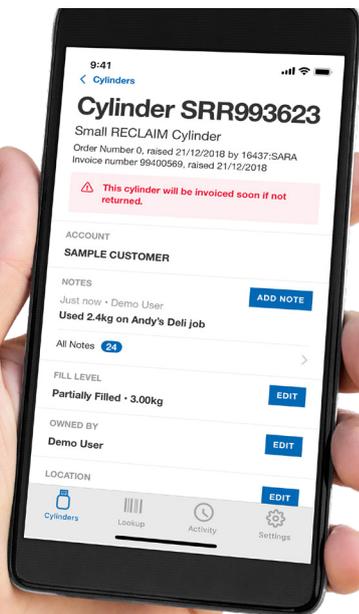
# Refrigeration and HVAC Equipment

PRODUCT **CATALOGUE**

# 2021



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# Refrigeration Equipment

Kirby Equipment and Refrigerants Catalogue 2021

# Condensing Units and Packaged Systems



**KIRBY®**

**KIRBY® NULLARBOR**

Developed for harsh Australian conditions, our Nullarbor Hi-Ambient condensing units are rated for operation up to 45°C ambient. With improved performance due to the inclusion of large condensers, the Kirby® Nullarbor range delivers high output and efficiency. And because they're from Kirby®, they're robust and reliable – guaranteed.

### Key Features

- Incorporating the latest Kirby® BA, WJ and AW series compressors delivers reliability and proven performance
- KN Series units include liquid line dryer, sight glass and HP/LP control
- High ambient condenser optimises efficiency and airflow for continuous operation at temperatures up to 45°C ambient temperatures
- Select units available in single phase or three phase
- Durable painted galvanised bases maximise service life (non-condensate waste base models only)
- Lower noise and vibration levels through clever compressor design
- Compact footprint for ease of installation
- Premium quality inclusions and controls

Low / Medium / High Temperature Application													
Performance Data - R134a													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
BA9MHYAC1	35	-	-	-	-	-	230	295	370	465	590	755	960
	45	-	-	-	-	-	195	260	325	410	520	665	855
BA9MHYBC1	35	-	-	-	-	-	230	295	370	465	590	755	960
	45	-	-	-	-	-	195	260	325	410	520	665	855
BA12LMYA2	35	-	-	-	-	-	305	400	505	635	795	995	-
	45	-	-	-	-	-	265	350	445	560	705	880	-
BA12LMYB2	35	-	-	-	-	-	305	400	505	635	795	995	-
	45	-	-	-	-	-	265	350	445	560	705	880	-
BA14LMYA2	35	-	-	-	-	-	345	455	580	725	915	1,150	-
	45	-	-	-	-	-	300	400	505	640	805	1,020	-
BA14LMYB2	35	-	-	-	-	-	345	455	580	725	915	1,150	-
	45	-	-	-	-	-	300	400	505	640	805	1,020	-
BA16LMYB2	35	-	-	-	-	-	490	635	815	1,030	1,300	1,620	-
	45	-	-	-	-	-	425	555	715	910	1,150	1,430	-
BA18LZB2	35	-	-	-	-	-	585	745	920	1,140	1,410	1,760	2,190
	45	-	-	-	-	-	510	650	810	1,000	1,250	1,560	1,950
KN014MH1	35	-	-	-	-	-	565	780	1,030	1,340	1,710	2,140	2,660
	45	-	-	-	-	-	490	680	905	1,180	1,510	1,900	2,360
KN017MH1	35	-	-	-	-	-	705	965	1,270	1,630	2,050	2,540	3,120
	45	-	-	-	-	-	610	845	1,120	1,430	1,810	2,250	2,780
KN022MH1	35	-	-	-	-	-	870	1,160	1,490	1,880	2,340	2,880	3,530
	45	-	-	-	-	-	755	1,010	1,310	1,650	2,060	2,550	3,140
KN023MH1	35	-	-	-	-	-	1,020	1,340	1,710	2,150	2,670	3,300	-
	45	-	-	-	-	-	890	1,170	1,500	1,890	2,360	2,920	-

Low / Medium / High Temperature Application (Cont'd)													
Performance Data - R134a													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
KN029MH1	35	-	-	-	-	-	1,230	1,640	2,100	2,670	3,380	4,280	-
	45	-	-	-	-	-	1,070	1,430	1,840	2,340	2,980	3,790	-
KN031MH1	35	-	-	-	-	-	1,400	1,810	2,300	2,900	3,660	4,630	5,840
	45	-	-	-	-	-	1,210	1,580	2,020	2,550	3,230	4,100	5,200
Technical Data													
Part Number	Connections		Height			Width			Depth			Weight Net (kg)	
	Liquid	Suction											
	(mm)		(mm)			(mm)							
BA9MHYAC1	9.52	6.35	280			330			470			16.0	
BA9MHYBC1	9.52	6.35	280			330			470			18.0	
BA12LMYA2	9.52	6.35	279			330			470			19.0	
BA12LMYB2	9.52	6.35	279			330			470			21.0	
BA14LMYA2	9.52	6.35	279			330			470			20.0	
BA14LMYB2	9.52	6.35	279			330			470			22.0	
BA16LMYB2	9.52	6.35	338			435			500			32.0	
BA18LZB2	9.52	9.52	338			435			550			34.0	
KN014MH1	12.70	9.52	338			435			550			37.0	
KN017MH1	12.70	9.52	338			435			550			38.0	
KN022MH1	15.88	9.52	448			520			620			42.0	
KN023MH1	15.88	9.52	448			520			620			60.0	
KN029MH1	15.88	9.52	345			860			550			61.0	
KN031MH1	15.88	9.52	421			860			550			70.0	

Medium / High Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
BA6MHGB1	35	-	-	-	-	-	220	280	350	425	515	600	695
	45	-	-	-	-	-	175	230	295	360	430	505	580
BA6MHGBC1	35	-	-	-	-	-	220	280	350	425	515	600	695
	45	-	-	-	-	-	175	230	295	360	430	505	580
BA8MGB1	35	-	-	-	-	-	385	460	545	635	730	835	-
	45	-	-	-	-	-	325	390	460	535	620	710	-
BA8MGBC1	35	-	-	-	-	-	385	460	545	635	730	835	-
	45	-	-	-	-	-	325	390	460	535	620	710	-
BA9MGB1	35	-	-	-	-	-	445	520	630	760	900	1,030	-
	45	-	-	-	-	-	375	435	525	630	755	865	-
BA9MGBC1	35	-	-	-	-	-	445	520	630	760	900	1,030	-
	45	-	-	-	-	-	375	435	525	630	755	865	-
BA12MGB1	35	-	-	-	-	-	510	645	805	975	1,150	1,330	-
	45	-	-	-	-	-	415	535	670	815	970	1,110	-
BA12MGBC1	35	-	-	-	-	-	510	645	805	975	1,150	1,330	-
	45	-	-	-	-	-	415	535	670	815	970	1,110	-

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**
**KIRBY® NULLARBOR (CONT'D)**

Medium / High Temperature Application

Performance Data - R404A

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
BA14MGB2	35	-	-	-	-	-	630	780	950	1,150	1,360	1,560	-
	45	-	-	-	-	-	520	645	800	960	1,140	1,310	-
BA16MGB2	35	-	-	-	-	-	760	965	1,190	1,430	1,690	1,980	-
	45	-	-	-	-	-	615	805	1,000	1,200	1,430	1,670	-
BA18MGB2	35	-	-	-	-	-	985	1,210	1,460	1,750	2,050	2,360	-
	45	-	-	-	-	-	815	1,000	1,220	1,460	1,720	1,980	-
KN024MH1	35	-	-	-	-	-	1,220	1,500	1,820	2,170	2,550	2,980	3,440
	45	-	-	-	-	-	950	1,190	1,450	1,730	2,050	2,390	-
KN028MH1	35	-	-	-	-	-	1,440	1,770	2,150	2,560	3,020	3,530	4,070
	45	-	-	-	-	-	1,200	1,510	1,830	2,170	2,530	2,900	3,290
KN036MH1	35	-	-	-	-	-	1,810	2,280	2,790	3,360	3,980	4,650	5,380
	45	-	-	-	-	-	1,430	1,850	2,300	2,780	3,280	3,810	4,370
KN035MH1	35	-	-	-	-	-	1,910	2,260	2,720	3,290	3,890	4,490	-
	45	-	-	-	-	-	1,580	1,880	2,280	2,740	3,260	-	-
KN044MH1-1	35	-	-	-	-	-	2,130	2,650	3,280	4,020	4,820	5,660	6,510
	45	-	-	-	-	-	1,640	2,100	2,670	3,330	4,040	4,790	-
KN044MH1-2	35	-	-	-	-	-	2,130	2,650	3,280	4,020	4,820	5,660	6,510
	45	-	-	-	-	-	1,640	2,100	2,670	3,330	4,040	4,790	-
KN048MH1-1	35	-	-	-	-	-	2,160	2,820	3,570	4,410	5,350	6,370	7,490
	45	-	-	-	-	-	1,700	2,260	2,900	3,640	4,460	5,370	-
KN048MH1-2	35	-	-	-	-	-	2,160	2,820	3,570	4,410	5,350	6,370	7,490
	45	-	-	-	-	-	1,700	2,260	2,900	3,640	4,460	5,370	-
KN051MH1-1	35	-	-	-	-	-	2,300	3,050	3,860	4,730	5,620	6,570	-
	45	-	-	-	-	-	1,870	2,530	3,240	3,940	4,730	-	-
KN051MH1-2	35	-	-	-	-	-	2,300	3,050	3,860	4,730	5,620	6,570	-
	45	-	-	-	-	-	1,870	2,530	3,240	3,940	4,730	-	-

**Technical Data**

Part Number	Connections		Dimensions			Weight Net (kg)
	Liquid	Suction	Height	Width	Depth	
	(mm)		(mm)			
BA6MHGB1	9.52	6.35	235	330	470	17.0
BA6MHGBC1	9.52	6.35	276	330	470	17.0
BA8MGB1	9.52	6.35	235	330	470	17.0
BA8MGBC1	9.52	6.35	276	330	470	17.0
BA9MGB1	9.52	6.35	279	330	470	21.0
BA9MGBC1	9.52	6.35	276	330	470	21.0
BA12MGB1	9.52	6.35	338	435	500	32.0
BA12MGBC1	9.52	6.35	276	330	470	22.0
BA14MGB2	9.52	6.35	338	435	500	34.0
BA16MGB2	9.52	6.35	338	435	500	35.0

Technical Data (Cont'd)						
Part Number	Connections		Dimensions			Weight Net (kg)
	Liquid	Suction	Height	Width	Depth	
	(mm)		(mm)			
BA18MGB2	9.52	9.52	395	435	550	35.0
KN024MH1	12.70	9.52	398	520	620	41.0
KN028MH1	12.70	9.52	448	520	620	42.0
KN036MH1	15.88	9.52	446	520	620	43.0
KN035MH1	15.88	9.52	422	860	550	63.0
KN044MH1-1	15.88	9.52	421	860	550	69.0
KN044MH1-2	15.88	9.52	421	860	550	69.0
KN048MH1-1	15.88	9.52	421	860	550	71.0
KN048MH1-2	15.88	9.52	421	860	550	71.0
KN051MH1-1	15.88	9.52	421	860	550	71.0
KN051MH1-2	15.88	9.52	421	860	550	71.0

Low / Medium / High Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
BA8MGB1	35	-	135	190	250	315	385	460	545	-	-	-	-
	45	-	105	155	205	260	325	390	460	-	-	-	-
BA8MGB1	35	-	135	190	250	315	385	460	545	-	-	-	-
	45	-	105	155	205	260	325	390	460	-	-	-	-
BA12LMYA2	35	-	210	285	365	455	555	665	-	-	-	-	-
	45	-	160	230	300	380	465	560	-	-	-	-	-
BA12LMYB2	35	-	210	285	365	455	555	665	-	-	-	-	-
	45	-	160	230	300	380	465	560	-	-	-	-	-
BA14LMYA2	35	-	250	340	435	545	665	800	-	-	-	-	-
	45	-	195	275	360	455	560	675	-	-	-	-	-
BA14LMYB2	35	-	250	340	435	545	665	800	-	-	-	-	-
	45	-	195	275	360	455	560	675	-	-	-	-	-
BA16LMYB2	35	-	290	385	495	615	755	910	-	-	-	-	-
	45	-	220	310	405	515	635	770	-	-	-	-	-
BA18LZB2	35	-	330	470	630	810	1,010	1,230	1,450	-	-	-	-
	45	-	255	375	520	680	850	1,040	1,230	-	-	-	-
KN014MH1	35	-	320	480	665	870	1,100	1,350	1,630	-	-	-	-
	45	-	195	335	495	675	870	1,090	1,320	-	-	-	-
KN017MH1	35	-	415	600	830	1,090	1,380	1,690	2,020	-	-	-	-
	45	-	230	395	595	825	1,080	1,350	1,640	-	-	-	-
KN017MH1	35	-	505	740	1,020	1,330	1,660	2,020	2,390	-	-	-	-
	45	-	325	535	785	1,060	1,360	1,680	2,000	-	-	-	-
KN022MH1	35	-	510	795	1,090	1,400	1,740	2,120	2,550	-	-	-	-
	45	-	400	655	915	1,190	1,490	1,820	2,200	-	-	-	-
KN015L1	35	-	505	785	1,070	1,370	1,680	1,990	2,310	-	-	-	-
	45	-	385	630	880	1,140	1,410	1,680	1,960	-	-	-	-

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**
**KIRBY® NULLARBOR (CONT'D)**

Low / Medium / High Temperature Application (Cont'd)

Performance Data - R404A (Cont'd)

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
KN023MH1	35	-	515	795	1,090	1,400	1,740	2,110	2,510	-	-	-	-
	45	-	395	640	900	1,170	1,460	1,780	2,130	-	-	-	-
KN029MH1	35	-	750	1,090	1,460	1,860	2,300	2,810	-	-	-	-	-
	45	-	575	880	1,200	1,550	1,940	2,380	-	-	-	-	-
KN024L1	35	-	865	1,260	1,690	2,180	2,740	3,390	-	-	-	-	-
	45	-	660	1,010	1,390	1,820	2,310	2,870	-	-	-	-	-

**Technical Data**

Part Number	Connections		Dimensions			Weight Net (kg)
	Liquid	Suction	Height	Width	Depth	
	(mm)		(mm)			
BA8MGB1	9.52	6.35	235	330	470	17.0
BA8MGBC1	9.52	6.35	276	330	470	17.0
BA12LMYA2	9.52	6.35	279	330	470	19.0
BA12LMYB2	9.52	6.35	279	330	470	21.0
BA14LMYA2	9.52	6.35	279	330	470	20.0
BA14LMYB2	9.52	6.35	279	330	470	22.0
BA16LMYB2	9.52	6.35	338	435	500	32.0
BA18LZB2	9.52	9.52	338	435	550	34.0
KN014MH1	12.70	9.52	338	435	550	37.0
KN017MH1	12.70	9.52	338	435	550	38.0
KN022MH1	15.88	9.52	448	520	620	42.0
KN015L1	15.88	9.52	340	635	550	61.0
KN023MH1	15.88	9.52	448	520	620	60.0
KN029MH1	15.88	9.52	345	860	550	61.0
KN024L1	15.88	9.52	421	860	550	68.0

**KIRBY® COMMANDER BLUE**

The Kirby Commander Blue Condensing Unit offers a tough, compact design that will handle the extremes of our climate. Ideal for coolrooms and food service, the Commander Blue builds on the reputable Aussie Blue Unit that served these industries for over 20 years.

**Key Features**

- High efficiency Maneurop compressors offer reduced operating noise levels and are optimised for R404A and R134a
- Proven quality external rotor fan motors for long life and increased efficiency
- Powder coated Galvabond base and condenser casing



Medium / High Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCH046MHA1-2	32	-	-	-	-	1,960	2,510	3,150	3,850	4,610	5,410	6,220	7,030	8.2
	38	-	-	-	-	1,670	2,190	2,780	3,430	4,120	4,830	5,530	-	
PCH051MHA1-2	32	-	-	-	-	2,060	2,690	3,410	4,220	5,080	5,950	6,820	7,630	8.2
	38	-	-	-	-	1,720	2,330	3,020	3,740	4,500	5,260	6,020	-	
PCH059MHA1-2	32	-	-	-	-	2,610	3,300	4,080	4,960	5,910	6,920	7,940	8,950	8.2
	38	-	-	-	-	2,270	2,900	3,630	4,430	5,280	6,160	7,030	-	
PCH064MHA1-2	32	-	-	-	-	2,700	3,510	4,430	5,410	6,440	7,480	8,490	9,440	8.2
	38	-	-	-	-	2,340	3,120	3,690	4,850	5,740	6,630	7,500	-	
PCH072MHA1-2	32	-	-	-	-	2,890	3,790	4,820	5,960	7,180	8,450	9,730	10,980	10.9
	38	-	-	-	-	2,310	2,160	4,140	5,230	6,360	7,500	8,590	-	
PCH087MHA1-2	32	-	-	-	-	3,620	4,730	5,960	7,300	8,690	10,110	11,510	12,850	10.9
	38	-	-	-	-	2,960	4,030	5,180	6,370	7,590	8,810	10,000	-	
PCH096MHA1-2	32	-	-	-	-	4,190	5,320	6,630	8,070	9,630	11,250	12,880	14,450	10.9
	38	-	-	-	-	3,660	4,700	5,890	7,200	8,580	9,980	11,360	-	
PCH112MHA1-2	32	-	-	-	-	5,180	6,450	7,910	9,510	11,230	13,020	14,840	16,610	10.9
	38	-	-	-	-	4,480	5,670	7,010	8,470	10,000	11,570	13,110	-	
PCH131MHA1-2	32	-	-	-	-	6,090	7,480	9,150	11,040	13,120	15,340	17,640	19,910	14.5
	38	-	-	-	-	5,210	6,540	8,090	9,820	11,690	13,670	15,710	-	
PCH144MHA1-2	32	-	-	-	-	6,550	8,160	10,040	12,140	14,390	16,700	19,000	21,210	14.5
	38	-	-	-	-	5,590	7,130	8,880	10,790	12,800	14,870	16,920	-	
PCH168MHA1-2	32	-	-	-	-	6,910	8,930	11,280	13,910	16,770	19,740	22,740	25,620	14.5
	38	-	-	-	-	6,000	7,870	10,040	12,450	15,040	17,720	20,360	-	
PCH209MHA1-2	32	-	-	-	-	9,110	11,560	14,390	17,520	20,860	24,310	27,740	31,050	14.5
	38	-	-	-	-	7,920	10,269	12,880	15,700	18,650	21,680	24,680	-	
PCH246MHA1-2	32	-	-	-	-	10,830	13,680	16,960	20,620	24,570	28,700	32,880	36,940	14.5
	38	-	-	-	-	9,350	12,120	15,200	18,530	22,060	25,750	29,470	-	
PCH271MHA1-2	32	-	-	-	-	12,150	15,290	18,890	22,860	27,080	31,410	35,720	39,880	14.5
	38	-	-	-	-	10,680	13,610	16,950	20,590	24,440	28,350	32,140	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® COMMANDER BLUE (CONT'D)**

Medium / High Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors (Cont'd)

Performance Data - R134a

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PCH046MHA1-2	32	-	-	-	-	-	1,150	1,560	2,080	2,700	3,420	4,230	5,120	8.2
	38	-	-	-	-	-	980	1,360	1,820	2,380	3,020	3,740	4,540	
PCH051MHA1-2	32	-	-	-	-	-	1,300	1,810	2,410	3,120	3,930	4,830	5,800	8.2
	38	-	-	-	-	-	1,080	1,550	2,100	2,740	3,460	4,260	-	
PCH059MHA1-2	32	-	-	-	-	-	1,900	2,500	3,200	3,990	4,880	5,850	6,890	8.2
	38	-	-	-	-	-	1,650	2,210	2,850	3,570	4,370	5,240	6,180	
PCH064MHA1-2	32	-	-	-	-	-	2,280	2,910	3,610	4,390	5,250	6,160	7,130	8.2
	38	-	-	-	-	-	2,030	2,620	3,270	3,990	4,760	5,590	-	
PCH072MHA1-2	32	-	-	-	-	-	1,920	2,680	3,550	4,530	5,610	6,770	8,020	10.9
	38	-	-	-	-	-	1,420	2,130	2,950	3,870	4,860	5,910	7,040	
PCH087MHA1-2	32	-	-	-	-	-	2,280	3,210	4,260	5,420	6,670	8,000	9,430	10.9
	38	-	-	-	-	-	1,820	2,670	3,640	4,700	5,830	7,030	8,300	
PCH096MHA1-2	32	-	-	-	-	-	2,730	3,630	4,710	5,960	7,390	8,980	10,720	10.9
	38	-	-	-	-	-	2,300	3,120	4,080	5,210	6,480	7,890	9,450	
PCH112MHA1-2	32	-	-	-	-	-	3,550	4,490	5,640	6,990	8,530	10,250	12,130	10.9
	38	-	-	-	-	-	3,060	3,900	4,920	6,120	7,510	9,050	10,740	
PCH131MHA1-2	32	-	-	-	-	-	3,890	5,100	6,560	8,250	10,180	12,330	14,710	14.5
	38	-	-	-	-	-	3,080	4,210	5,560	7,130	8,910	10,890	13,060	
PCH144MHA1-2	32	-	-	-	-	-	4,550	5,860	7,440	9,280	11,360	13,680	16,230	14.5
	38	-	-	-	-	-	3,730	4,950	6,400	8,100	10,010	12,140	-	
PCH168MHA1-2	32	-	-	-	-	-	4,320	5,960	7,900	10,160	12,720	15,540	18,600	14.5
	38	-	-	-	-	-	3,570	5,110	6,900	8,970	11,290	13,860	16,650	
PCH209MHA1-2	32	-	-	-	-	-	5,460	7,480	9,830	12,510	15,500	18,790	22,360	14.5
	38	-	-	-	-	-	4,410	6,300	8,480	10,950	13,690	16,690	19,960	
PCH246MHA1-2	32	-	-	-	-	-	7,370	9,800	12,630	15,850	19,430	23,350	27,590	14.5
	38	-	-	-	-	-	6,250	8,530	11,140	14,090	17,370	20,940	24,790	
PCH271MHA1-2	32	-	-	-	-	-	8,150	10,790	13,890	17,390	21,260	25,500	30,100	14.5
	38	-	-	-	-	-	7,020	9,480	12,320	15,500	18,990	22,790	26,930	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCH046MHA1-2	415 / 3	23.60	5.1	2,700	15.88	12.70	555	790	710	60
PCH051MHA1-2	415 / 3	25.60	5.6	3,130	19.05	12.70	555	790	710	61
PCH059MHA1-2	415 / 3	30.60	6.4	3,520	19.05	12.70	555	790	710	72
PCH064MHA1-2	415 / 3	38.60	7.1	4,000	19.05	12.70	555	790	710	73
PCH072MHA1-2	415 / 3	50.10	8.4	3,970	34.93	12.70	655	980	770	94
PCH087MHA1-2	415 / 3	50.10	9.4	4,360	34.93	12.70	655	980	770	96
PCH096MHA1-2	415 / 3	65.60	10.8	4,890	34.93	12.70	655	980	770	105
PCH112MHA1-2	415 / 3	65.20	10.0	5,530	34.93	15.88	655	980	770	113
PCH131MHA1-2	415 / 3	83.10	13.1	6,680	34.93	15.88	670	1,270	870	117
PCH144MHA1-2	415 / 3	83.10	14.4	7,640	34.93	15.88	670	1,270	870	117

Technical Data (Cont'd)										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCH168MHA1-2	415 / 3	81.60	17.7	8,680	34.93	15.88	825	1,270	870	151
PCH209MHA1-2	415 / 3	109.00	21.4	11,940	34.93	15.88	925	1,270	870	164
PCH246MHA1-2	415 / 3	119.00	26.8	13,230	34.93	15.88	925	1,270	870	192
PCH271MHA1-2	415 / 3	134.00	26.2	12,670	34.93	15.88	925	1,270	870	199

Medium / High Temperature Application - Danfoss Maneurop Hermetic Scroll Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PCH30ZMHA1-2	32	-	-	-	-	-	22,110	26,290	30,840	35,670	40,670	45,640	-	14.5
	38	-	-	-	-	-	-	-	28,040	32,290	36,680	40,960	-	
Technical Data														
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)				
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth					
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)							
PCZ308MHA1-2	415 / 3	180.60	28.8	13,840	15.88	34.93	925	1,610	910	265				

**KIRBY® COMMANDER BLUE HIGH AMBIENT**

Ideal of cool rooms, food service or food and beverage retail installations, the Kirby® Commander Blue condensing unit range offers a tough, compact design that will handle harsh ambient conditions. The Kirby® Commander Blue range has been built on the reliability and experience of the Aussie Blue Star condensing unit series that have served the industry for many years. The new Commander Blue range offers the same performance you have come to know and trust and in addition, includes standard features to help you get your job done quicker and easier. Furthermore, the Kirby® Commander Blue range is suitable for operation in ambient conditions up to 46°C.

**Key Features**

- Large condensers rated for 46°C ambient temperatures
- High efficiency condenser fans with low noise external rotor motors
- Internationally proven Maneurop compressors
- Internal line break protection to ensure long life compressor motor operation
- Oil sight glasses, oil equalisation and crankcase heater as standard
- Danfoss universal dual pressure control with flexible hose lines
- MP15D phase and motor protector
- Fully pre-wired for quick installation
- Condenser fan speed control as standard
- Pressure vessels conform to internationally recognised standards
- Powder coated exterior for long wearing durability
- Liquid line drier and moisture indicator as standard
- Suction accumulator as standard (low temperature models)
- High efficiency internal float oil separator as standard



**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® COMMANDER BLUE HIGH AMBIENT (CONT'D)**

Medium / High Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors

Performance Data - R404A

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PCH078MHA1-2	35	-	-	-	-	2,870	3,800	4,890	6,110	7,450	8,890	10,410	11,990	6.7
	46	-	-	-	-	-	2,840	3,760	4,820	5,960	7,150	8,350	9,550	
PCH093MHA1-2	35	-	-	-	2,490	3,390	4,510	5,790	7,200	8,740	10,280	11,860	13,480	6.7
	46	-	-	-	-	2,460	3,340	4,370	5,500	6,720	7,950	9,160	-	
PCH103MHA1-2	35	-	-	-	2,600	3,570	4,800	6,250	7,910	9,760	11,590	13,530	15,540	8.9
	46	-	-	-	-	2,640	3,600	4,770	6,140	7,650	9,100	10,570	12,010	
PCH120MHA1-2	35	-	-	-	3,230	4,340	5,750	7,390	9,270	11,360	13,380	15,520	17,730	8.9
	46	-	-	-	-	3,190	4,280	5,630	7,200	8,930	10,550	12,210	13,850	
PCH140MHA1-2	35	-	-	-	3,740	5,000	6,650	8,580	10,780	13,230	15,650	18,210	20,800	8.9
	46	-	-	-	-	3,760	5,010	6,560	8,360	10,370	12,350	14,390	16,370	
PCH156MHA1-2	35	-	-	-	4,520	5,960	7,790	9,860	12,170	14,710	17,400	20,280	23,290	8.9
	46	-	-	-	-	4,520	5,950	7,620	9,510	11,540	13,640	15,760	-	
PCH175MHA1-2	35	-	-	-	4,950	6,590	8,590	10,940	13,600	16,540	19,740	23,180	26,810	8.9
	46	-	-	-	-	4,730	6,360	8,340	10,580	12,990	15,480	18,000	-	
PCH221MHA1-2	35	-	-	-	6,830	8,900	11,390	14,250	17,450	20,930	24,660	28,580	32,570	8.9
	46	-	-	-	-	6,510	8,610	11,050	13,730	16,530	19,350	22,070	-	
PCH256MHA1-2	35	-	-	-	8,000	10,370	13,210	16,480	20,150	24,170	28,500	33,070	37,750	11.9
	46	-	-	-	-	7,580	9,970	12,740	15,800	19,050	22,380	25,690	-	
PCH282MHA1-2	35	-	-	-	9,030	11,650	14,770	18,370	22,370	26,690	31,270	36,030	40,920	11.9
	46	-	-	-	6,440	8,630	11,310	14,370	17,660	21,050	24,460	27,790	-	
PCH078MHA1-2	35	-	-	-	-	2,870	3,800	4,890	6,110	7,450	8,890	10,410	11,990	6.7
	46	-	-	-	-	-	2,840	3,760	4,820	5,960	7,150	8,350	9,550	
PCH093MHA1-2	35	-	-	-	2,490	3,390	4,510	5,790	7,200	8,740	10,280	11,860	13,480	6.7
	46	-	-	-	-	2,460	3,340	4,370	5,500	6,720	7,950	9,160	-	
PCH103MHA1-2	35	-	-	-	2,600	3,570	4,800	6,250	7,910	9,760	11,590	13,530	15,540	8.9
	46	-	-	-	-	2,640	3,600	4,770	6,140	7,650	9,100	10,570	12,010	
PCH120MHA1-2	35	-	-	-	3,230	4,340	5,750	7,390	9,270	11,360	13,380	15,520	17,730	8.9
	46	-	-	-	-	3,190	4,280	5,630	7,200	8,930	10,550	12,210	13,850	
PCH140MHA1-2	35	-	-	-	3,740	5,000	6,650	8,580	10,780	13,230	15,650	18,210	20,800	8.9
	46	-	-	-	-	3,760	5,010	6,560	8,360	10,370	12,350	14,390	16,370	
PCH156MHA1-2	35	-	-	-	4,520	5,960	7,790	9,860	12,170	14,710	17,400	20,280	23,290	8.9
	46	-	-	-	-	4,520	5,950	7,620	9,510	11,540	13,640	15,760	-	
PCH175MHA1-2	35	-	-	-	4,950	6,590	8,590	10,940	13,600	16,540	19,740	23,180	26,810	8.9
	46	-	-	-	-	4,730	6,360	8,340	10,580	12,990	15,480	18,000	-	
PCH221MHA1-2	35	-	-	-	6,830	8,900	11,390	14,250	17,450	20,930	24,660	28,580	32,570	8.9
	46	-	-	-	-	6,510	8,610	11,050	13,730	16,530	19,350	22,070	-	
PCH256MHA1-2	35	-	-	-	8,000	10,370	13,210	16,480	20,150	24,170	28,500	33,070	37,750	11.9
	46	-	-	-	-	7,580	9,970	12,740	15,800	19,050	22,380	25,690	-	
PCH282MHA1-2	35	-	-	-	9,030	11,650	14,770	18,370	22,370	26,690	31,270	36,030	40,920	11.9
	46	-	-	-	6,440	8,630	11,310	14,370	17,660	21,050	24,460	27,790	-	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCH078MHA1-2	420 / 3	50.05	8.4	3,970	12.70	34.92	655	770	980	108.0
PCH093MHA1-2	420 / 3	49.66	9.0	4,320	12.70	34.92	655	770	980	111.0
PCH103MHA1-2	420 / 3	67.10	12.3	5,240	12.70	34.92	670	870	1,270	115.0
PCH120MHA1-2	420 / 3	67.10	11.9	5,930	12.70	34.92	670	870	1,270	121.0
PCH140MHA1-2	420 / 3	83.10	13.1	6,680	12.70	34.92	825	870	1,270	132.0
PCH156MHA1-2	420 / 3	84.00	15.3	8,220	12.70	34.92	925	870	1,270	141.0
PCH175MHA1-2	420 / 3	82.50	18.6	9,260	12.70	34.92	925	870	1,270	172.0
PCH221MHA1-2	420 / 3	109.00	21.4	11,940	12.70	34.92	925	870	1,270	194.0
PCH256MHA1-2	420 / 3	119.00	26.8	13,230	15.88	34.92	975	910	1,610	250.0
PCH282MHA1-2	420 / 3	134.00	26.2	12,670	15.88	34.92	975	910	1,610	269.0

**Low Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors**  
**Performance Data - R404a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCH032LA1-2	35	-	1,300	1,820	2,410	3,050	3,750	4,530	-	-	-	-	-	3.6
	46	-	-	1,360	1,860	2,420	3,040	3,710	-	-	-	-	-	
PCH040LA1-2	35	-	-	2,100	2,880	3,770	4,790	5,980	-	-	-	-	-	6.7
	46	-	-	1,440	2,020	2,710	3,610	4,820	-	-	-	-	-	
PCH061LA1-2	35	-	2,420	3,370	4,510	5,800	7,230	8,860	-	-	-	-	-	8.9
	46	-	-	2,450	3,370	4,490	5,790	7,300	-	-	-	-	-	
PCH094LA1-2	35	-	3,640	5,140	6,930	8,900	11,070	3,520	-	-	-	-	-	8.9
	46	-	-	3,670	5,140	6,890	8,920	1,280	-	-	-	-	-	
PCH128LA1-2	35	-	5,190	7,210	9,550	2,150	15,010	8,210	-	-	-	-	-	8.9
	46	-	-	5,350	7,250	9,520	2,090	14,940	-	-	-	-	-	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCH032LA1-2	420 / 3	53.60	9.8	1,790	9.52	15.88	555	710	790	65.0
PCH040LA1-2	420 / 3	33.60	4.8	2,084	12.70	22.22	655	770	980	94.0
PCH061LA1-2	420 / 3	54.10	9.2	3,596	12.70	22.22	670	870	1,270	111.0
PCH094LA1-2	420 / 3	77.10	10.6	4,849	12.70	28.57	925	870	1,270	153.0
PCH128LA1-2	420 / 3	100.00	13.6	6,903	12.70	28.57	925	870	1,270	176.0

## CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)

### KIRBY® COMMANDER

Built smart, compact and tough the Kirby® Commander range offers leading performance and efficiency without making a lot of noise. External rotor fan motors and Dorin® H series compressors set the standard for smooth quiet operation across a wide application range. Ultimate reliability comes standard when you combine Kirby® and Dorin® – trusted to handle the extremes of our climate.

#### Key Features

- Wide operational envelope at high ambient conditions
- Reduced operating noise levels set a new standard
- 50% capacity control available as an option on all models
- Suitable for inverter operation from 25 to 65Hz
- Optimised Coil Design incorporating Inner Grooved Tube for enhanced heat transfer
- Proven external rotor fan motors for long life and increased efficiency
- Fan speed control as standard
- Powder coated Galvabond base and condenser casing
- High efficiency oil separator with Internal float
- Dual pressure control
- Liquid line drier and sight glass
- Separate electrical box



Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS022LMHA1-4	35	-	-	685	885	1,110	1,360	1,640	1,945	2,275	2,615	2,955	-	3.6
	43	-	-	545	720	920	1,140	1,390	1,655	1,935	2,220	2,475	-	
PCS031LMHA1-4	35	-	-	865	1,140	1,455	1,815	2,220	2,675	3,165	3,690	4,235	-	3.6
	43	-	-	-	935	1,210	1,525	1,885	2,280	2,710	3,160	3,615	-	
PCS039LMHA1-4	35	-	-	1,075	1,400	1,770	2,190	2,665	3,185	3,750	4,345	4,955	-	3.6
	43	-	-	-	1,150	1,470	1,840	2,255	2,715	3,205	3,710	-	-	
PCS044LMHA1-4	35	-	-	1,220	1,585	2,010	2,505	3,065	3,695	4,395	5,165	5,990	-	3.6
	43	-	-	-	1,290	1,665	2,095	2,590	3,145	3,760	4,435	5,145	-	
PCS057LMHA1-4	35	-	-	1,565	2,045	2,585	3,200	3,890	4,660	5,490	6,375	7,280	-	3.6
	43	-	-	1,250	1,670	2,145	2,680	3,285	3,960	4,680	5,435	-	-	
PCS071LMHA1-4	35	-	-	1,875	2,470	3,145	3,920	4,800	5,780	6,855	8,005	9,205	-	6.6
	43	-	-	-	2,030	2,630	3,310	4,085	4,950	5,890	6,885	7,895	-	
PCS084LMHA1-2	35	-	-	2,420	3,155	4,010	4,990	6,100	7,340	8,700	10,170	11,710	-	6.6
	43	-	-	-	2,625	3,365	4,220	5,190	6,275	7,460	8,725	10,020	-	
PCS101LMHA1-2	35	-	-	3,090	3,935	4,900	6,005	7,255	8,635	10,130	11,720	13,350	-	6.6
	43	-	-	2,585	3,325	4,175	5,140	6,230	7,435	8,735	10,085	-	-	
PCS126LMHA1-4	35	-	-	3,055	4,025	5,185	6,555	8,135	9,940	11,960	14,180	16,560	-	11.6
	43	-	-	-	3,365	4,365	5,555	6,945	8,540	10,310	12,215	14,185	-	
PCS146LMHA1-6	35	-	-	3,610	4,745	6,090	7,670	9,490	11,545	13,805	16,235	18,785	-	8.9
	43	-	-	2,990	3,980	5,160	6,550	8,155	9,950	11,925	14,025	16,205	-	
PCS149LMHA1-8	35	-	-	3,635	4,795	6,175	7,800	9,675	11,795	14,130	16,640	19,265	-	8.9
	43	-	-	-	3,980	5,195	6,630	8,285	10,145	12,185	14,360	16,600	-	
PCS174LMHA1-6	35	-	-	4,310	5,665	7,270	9,150	11,305	13,725	16,375	19,200	22,135	-	8.9
	43	-	-	-	4,755	6,160	7,815	9,715	11,840	14,155	16,595	19,085	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors (Cont'd)														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS174LMHA1-8	35	-	-	4,370	5,745	7,375	9,280	11,470	13,920	16,595	19,445	22,395	-	8.9
	43	-	-	-	4,805	6,230	7,905	9,830	11,980	14,310	16,770	19,265	-	
PCS200LMHA1-6	35	-	-	4,950	6,505	8,350	10,520	13,030	15,865	18,995	22,365	25,895	-	11.9
	43	-	-	-	5,470	7,075	8,975	11,185	13,695	16,445	19,355	22,350	-	
PCS205LMHA1-8	35	-	-	5,170	6,780	8,690	10,925	13,490	16,375	19,540	22,935	26,490	-	11.9
	43	-	-	-	5,700	7,360	9,315	11,560	14,080	16,835	19,765	22,785	-	
PCS284LMHA1-6	35	-	-	7,370	9,595	12,170	15,145	18,540	22,355	26,545	31,045	35,765	-	20.0
	43	-	-	-	8,080	10,350	12,975	15,970	19,330	23,000	26,905	30,940	-	
PCS361LMHA2-6	35	-	-	10,000	12,835	16,090	19,825	24,065	28,770	33,840	39,150	44,530	-	20.0
	40	-	-	8,940	11,575	14,590	18,050	21,970	26,310	30,975	35,825	40,650	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors (Cont'd)														
Performance Data - R134a														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS022LMHA1-4	35	-	-	-	-	490	680	910	1,170	1,470	1,800	2,170	2,570	4.3
	43	-	-	-	-	-	570	770	1,010	1,280	1,590	1,920	-	
PCS031LMHA1-4	35	-	-	-	-	-	870	1,160	1,500	1,890	2,330	2,830	3,370	4.3
	43	-	-	-	-	-	730	990	1,300	1,650	2,050	2,500	2,990	
PCS039LMHA1-4	35	-	-	-	-	-	1,100	1,460	1,880	2,350	2,890	3,490	4,150	4.3
	43	-	-	-	-	-	930	1,250	1,630	2,070	2,560	3,100	3,700	
PCS044LMHA1-4	35	-	-	-	-	-	1,280	1,700	2,200	2,770	3,430	4,170	4,990	4.3
	43	-	-	-	-	-	-	1,460	1,910	2,430	3,030	3,710	4,460	
PCS057LMHA1-4	35	-	-	-	-	1,310	1,780	2,320	2,950	3,660	4,480	5,380	6,370	4.3
	43	-	-	-	-	-	1,540	2,030	2,610	3,260	4,000	4,830	5,750	
PCS071LMHA1-4	35	-	-	-	-	-	2,190	2,830	3,570	4,430	5,410	6,510	7,710	7.9
	43	-	-	-	-	-	1,910	2,500	3,180	3,970	4,870	5,870	6,980	
PCS084LMHA1-2	35	-	-	-	-	-	2,770	3,570	4,510	5,600	6,840	8,240	9,800	7.9
	43	-	-	-	-	-	2,390	3,130	3,990	4,990	6,130	7,420	8,860	
PCS101LMHA1-2	35	-	-	-	-	2,410	3,230	4,170	5,260	6,510	7,940	9,550	11,320	13.8
	43	-	-	-	-	-	2,790	3,650	4,660	5,810	7,120	8,600	10,220	
PCS126LMHA1-4	35	-	-	-	-	2,630	3,575	4,670	5,955	7,460	9,200	11,180	13,395	13.8
	43	-	-	-	-	2,240	3,110	4,125	5,310	6,700	8,305	10,135	12,190	
PCS146LMHA1-6	35	-	-	-	-	-	4,360	5,650	7,150	8,890	10,870	13,090	15,560	10.4
	46	-	-	-	-	-	3,590	4,740	6,070	7,610	9,370	11,340	-	
PCS149LMHA1-8	35	-	-	-	-	-	4,315	5,625	7,160	8,940	10,980	13,280	15,835	10.4
	46	-	-	-	-	-	3,525	4,685	6,045	7,630	9,440	11,485	13,765	
PCS174LMHA1-6	35	-	-	-	-	-	5,040	6,510	8,230	10,220	12,500	15,050	17,890	10.4
	46	-	-	-	-	-	4,180	5,490	7,010	8,780	10,800	13,070	-	
PCS174LMHA1-8	35	-	-	-	-	-	4,975	6,490	8,270	10,350	12,745	15,465	18,500	10.4
	46	-	-	-	-	-	4,085	5,415	6,990	8,845	10,985	13,415	-	
PCS200LMHA1-6	35	-	-	-	-	-	6,120	7,860	9,870	12,170	14,800	17,770	21,040	13.8
	46	-	-	-	-	-	5,040	6,610	8,410	10,480	12,820	15,450	18,370	
PCS205LMHA1-8	35	-	-	-	-	-	6,040	7,830	9,925	12,365	15,165	18,345	21,890	13.8
	46	-	-	-	-	-	4,935	6,530	8,405	10,590	13,105	15,945	19,120	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® COMMANDER (CONT'D)**

**Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors (Cont'd)**

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS284LMHA1-6	35	-	-	-	-	-	7,640	10,010	12,770	15,980	19,670	23,830	28,460	23.3
	46	-	-	-	-	-	-	8,330	10,780	13,630	16,900	20,580	24,660	
PCS361LMHA2-6	35	-	-	-	-	-	9,960	13,000	16,530	20,610	25,230	30,420	36,120	23.3
	46	-	-	-	-	-	8,120	10,810	13,940	17,550	21,660	26,250	-	
PCS273MHA2-4	35	-	-	-	-	-	11,300	14,710	18,660	23,200	28,340	34,090	40,380	23.3
	46	-	-	-	-	-	9,240	12,300	15,840	19,890	24,470	-	-	

**Performance Data - R448A/449A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS022LMHA1-4	35	-	-	570	755	970	1,220	1,500	1,820	2,170	2,555	2,955	-	3.3
	43	-	-	465	630	820	1,045	1,300	1,585	1,905	2,235	2,570	-	
PCS031LMHA1-4	35	-	-	725	975	1,275	1,625	2,030	2,495	3,020	3,605	4,235	-	3.3
	43	-	-	590	815	1,080	1,395	1,765	2,185	2,665	3,190	3,750	-	
PCS039LMHA1-4	35	-	-	895	1,195	1,550	1,960	2,435	2,975	3,580	4,240	4,955	-	3.3
	43	-	-	735	1,000	1,315	1,680	2,110	2,600	3,145	3,740	4,375	-	
PCS044LMHA1-4	35	-	-	1,020	1,355	1,760	2,240	2,800	3,450	4,195	5,040	5,995	-	3.3
	43	-	-	825	1,125	1,485	1,915	2,425	3,015	3,695	4,470	5,335	-	
PCS057LMHA1-4	35	-	-	1,305	1,745	2,265	2,865	3,560	4,350	5,240	6,220	7,285	-	3.3
	43	-	-	1,065	1,455	1,915	2,450	3,075	3,795	4,600	5,480	6,415	-	
PCS071LMHA1-4	35	-	-	1,565	2,110	2,755	3,510	4,390	5,395	6,540	7,810	9,210	-	6.2
	43	-	-	1,280	1,770	2,345	3,025	3,825	4,745	5,785	6,940	8,195	-	
PCS084LMHA1-2	35	-	-	2,015	2,700	3,510	4,465	5,575	6,855	8,305	9,925	11,715	-	6.2
	43	-	-	1,685	2,290	3,005	3,855	4,855	6,015	7,330	8,795	10,400	-	
PCS101LMHA1-2	35	-	-	2,575	3,365	4,290	5,375	6,630	8,060	9,665	11,435	13,355	-	6.2
	43	-	-	2,205	2,900	3,725	4,695	5,830	7,125	8,580	10,165	11,860	-	
PCS126LMHA1-4	35	-	-	2,550	3,440	4,540	5,865	7,440	9,280	11,410	13,840	16,570	-	11.0
	43	-	-	2,150	2,930	3,895	5,075	6,500	8,185	10,125	12,315	14,720	-	
PCS146LMHA1-6	35	-	-	-	4,010	5,275	6,805	8,625	10,735	13,135	15,820	18,765	-	8.3
	43	-	-	-	-	4,540	5,915	7,570	9,495	11,680	14,095	16,730	-	
PCS149LMHA1-8	35	-	-	-	4,205	5,495	7,030	8,835	10,915	13,275	15,895	18,770	-	8.3
	43	-	-	-	-	4,785	6,175	7,825	9,730	11,885	14,280	16,885	-	
PCS174LMHA1-6	35	-	-	-	4,785	6,300	8,125	10,290	12,800	15,650	18,830	22,300	-	8.3
	43	-	-	-	-	5,420	7,050	9,005	11,280	13,875	16,765	19,910	-	
PCS174LMHA1-8	35	-	-	-	5,005	6,545	8,380	10,540	13,020	15,825	18,935	22,325	-	8.3
	43	-	-	-	-	5,715	7,385	9,360	11,635	14,210	17,055	20,140	-	
PCS200LMHA1-6	35	-	-	-	5,490	7,230	9,330	11,825	14,725	18,040	21,750	25,835	-	11.0
	43	-	-	-	-	6,215	8,090	10,340	12,970	15,985	19,355	23,050	-	
PCS205LMHA1-8	35	-	-	-	5,845	7,645	9,795	12,325	15,240	18,545	22,225	26,260	-	11.0
	43	-	-	-	-	6,680	8,630	10,945	13,620	16,650	20,015	23,685	-	

Performance Data - R448A/449A (Cont'd)														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS284LMHA1-6	35	-	-	-	8,105	10,560	13,480	16,895	20,830	25,290	30,260	35,710	-	18.7
	43	-	-	-	-	9,100	11,730	14,825	18,410	22,475	26,995	31,935	-	
PCS361LMHA2-6	35	-	-	-	9,340	12,090	15,340	19,125	23,455	28,335	33,735	39,620	-	18.7
	40	-	-	-	8,460	11,025	14,060	17,610	21,690	26,280	31,370	36,910	-	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCS022LMHA1-4	380-420 / 3	14.35	2.80	1,300	9.52	15.88 - 15.88	451	903	602	55.0
PCS031LMHA1-4	380-420 / 3	21.10	3.90	1,750	12.70	15.88 - 15.88	496	947	784	65.0
PCS039LMHA1-4	380-420 / 3	25.60	4.30	2,000	12.70	15.88 - 15.88	496	947	784	68.0
PCS044LMHA1-4	380-420 / 3	25.66	4.80	2,310	12.70	15.88 - 15.88	496	953	784	88.0
PCS057LMHA1-4	380-420 / 3	25.66	5.90	2,930	12.70	19.05 - 15.88	496	953	784	94.0
PCS071LMHA1-4	380-420 / 3	44.66	7.40	3,600	12.70	19.05 - 15.88	556	955	784	110.0
PCS084LMHA1-2	380-420 / 3	44.76	8.40	4,100	12.70	22.22 - 19.05	658	973	798	112.0
PCS101LMHA1-2	380-420 / 3	44.76	9.80	5,160	12.70	28.57 - 19.05	658	973	798	154.0
PCS126LMHA1-4	380-420 / 3	68.70	14.60	6,420	15.88	22.22 - 28.57	808	1,262	921	197.0
PCS146LMHA1-6	380-420 / 3	66.20	12.70	6,260	28.57	15.88	845	1,400	900	195.0
PCS149LMHA1-8	380-420 / 3	66.10	13.50	6,790	28.57	15.88	845	1,400	900	195.0
PCS174LMHA1-6	380-420 / 3	89.10	15.40	7,340	34.90	15.88	882	1,400	900	205.0
PCS174LMHA1-8	380-420 / 3	89.10	15.90	7,780	34.90	15.88	882	1,400	900	205.0
PCS200LMHA1-6	380-420 / 3	91.60	19.10	8,870	34.90	15.88	981	1,400	900	235.0
PCS205LMHA1-8	380-420 / 3	91.60	19.80	9,380	34.90	15.88	981	1,400	900	235.0
PCS284LMHA1-6	380-420 / 3	140.30	24.30	11,950	34.90	22.22	1,033	1,650	900	365.0
PCS361LMHA2-6	380-420 / 3	182.60	32.20	16,010	34.90	22.22	1,033	1,650	900	370.0
PCS273MHA2-6	380-420 / 3	208.60	37.10	17,860	34.90	22.22	1,033	1,650	900	370.0

Low / Medium Temperature Application - Dorin Semi-Hermetic Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS194LMA1-6	35	-	3,670	5,010	6,565	8,350	10,380	12,645	15,110	17,745	-	-	-	8.9
	43	-	-	4,190	5,545	7,105	8,890	10,885	13,050	15,325	-	-	-	
PCS193LMA1-8	35	-	3,860	5,190	6,760	8,590	10,690	13,050	15,635	18,410	-	-	-	8.9
	43	-	-	4,350	5,740	7,365	9,225	11,310	13,580	15,995	-	-	-	
PCS228LMA1-6	35	-	4,370	5,960	7,795	9,900	12,275	14,915	17,785	20,835	-	-	-	11.9
	43	-	3,560	4,965	6,590	8,445	10,535	12,840	15,335	17,960	-	-	-	
PCS318LMA1-6	35	-	6,410	8,570	11,060	13,920	17,170	20,800	24,770	29,030	-	-	-	20.0
	43	-	-	7,065	9,285	11,830	14,715	17,910	21,385	25,070	-	-	-	
PCS360LMA1-6	35	-	7,400	9,915	12,785	16,060	19,765	23,890	28,380	33,165	-	-	-	20.0
	43	-	-	8,235	10,790	13,700	16,985	20,620	24,555	28,695	-	-	-	
PCS391LMA2-6	35	-	8,305	11,055	14,195	17,790	21,880	26,440	31,400	36,650	-	-	-	20.0
	40	-	7,310	9,870	12,785	16,125	19,915	24,130	28,700	33,500	-	-	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® COMMANDER (CONT'D)**

**Performance Data - R134A (Cont'd)**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS194LMA1-6	35	-	-	-	-	4,590	6,040	7,730	9,700	11,960	14,510	17,350	20,460	10.4
	46	-	-	-	-	-	5,010	6,540	8,320	10,360	12,670	-	-	
PCS193LMA1-8	35	-	-	-	-	4,520	6,015	7,765	9,810	12,175	14,845	17,825	21,115	10.4
	46	-	-	-	-	3,635	4,960	6,530	8,365	10,480	12,880	-	-	
PCS228LMA1-6	35	-	-	-	-	5,210	6,910	8,900	11,210	13,850	16,840	20,160	23,800	13.8
	46	-	-	-	-	4,170	5,660	7,430	9,470	11,810	14,460	-	-	
PCS318LMA1-6	35	-	-	-	-	6,870	9,180	11,860	14,970	18,520	22,510	26,940	31,790	23.3
	46	-	-	-	-	-	7,500	9,900	12,700	15,880	19,450	-	-	
PCS360LMA1-6	35	-	-	-	-	8,020	10,620	13,640	17,120	21,100	25,580	30,540	35,950	23.3
	46	-	-	-	-	6,390	8,720	11,430	14,550	18,110	22,110	-	-	
PCS391LMA2-6	35	-	-	-	-	8,850	11,720	15,060	18,930	23,350	28,330	33,860	39,870	23.3
	46	-	-	-	-	7,030	9,600	12,610	16,090	20,050	24,510	-	-	

**Low / Medium Temperature Application - Dorin Semi-Hermetic Compressors**

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PCS194LMA1-6	380-420 / 3	66.20	15.50	8,110	34.90	15.90	882	1,400	900	205.0
PCS193LMA1-8	380-420 / 3	66.10	16.30	8,690	34.90	15.90	882	1,400	900	205.0
PCS228LMA1-6	380-420 / 3	91.60	21.00	10,240	34.90	15.90	981	1,400	900	125.0
PCS318LMA1-6	380-420 / 3	114.30	26.60	13,980	34.90	22.20	1,033	1,650	900	325.0
PCS360LMA1-6	380-420 / 3	140.30	26.60	13,980	34.90	22.20	1,033	1,650	900	350.0
PCS391LMA2-6	380-420 / 3	176.10	35.70	18,140	34.90	22.20	1,033	1,650	900	370.0

**KIRBY® POLAR PACK**

Compact and robust, our Polar Pack Series III commercial refrigeration unit is specially designed for harsh ambient conditions. Pre-wired and constructed around a small base, Polar Pack is easy to install. And because it's from Kirby®, Polar Pack is tough and reliable – guaranteed. Kirby®'s outdoor condensing units have always been renowned for their durability and clever design. The Polar Pack is no exception. Being a fully enclosed system, it can be installed indoors or outside.



**Key Features**

- Wide model range between 1.6kW and 11.0kW
- True high ambient condenser design, with operating capacity up to 45 °C
- Removable panels for ease of servicing
- Factory pre-wired for quicker, easier installation and commissioning
- Phase failure protection module and universal HP/LP control
- Coil protection as standard on all models
- Powder coated exterior for long wearing durability
- Suction accumulator as standard on all low temperature models

Medium Temperature Application - Kulthorn Kirby Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH016MA1-1	35	-	-	-	-	-	900	1,095	1,310	1,545	1,795	2,070	-	2.0
	45	-	-	-	-	-	735	905	1,090	1,285	1,495	1,720	-	
PPH018MA1-1	35	-	-	-	-	-	1,005	1,230	1,475	1,730	2,005	2,300	-	2.0
	45	-	-	-	-	-	820	1,010	1,210	1,425	1,645	1,885	-	
PPH022MA1-1	35	-	-	-	-	-	-	1,435	1,745	2,090	2,465	2,875	-	2.0
	45	-	-	-	-	-	-	1,130	1,420	1,735	2,075	2,435	-	
PPH027MA1-1	35	-	-	-	-	-	-	1,765	2,170	2,580	2,995	3,415	-	2.0
	45	-	-	-	-	-	-	1,440	1,805	2,165	2,515	2,860	-	
PPH030MA1-1	35	-	-	-	-	-	-	2,145	2,615	3,125	3,670	4,250	-	2.0
	45	-	-	-	-	-	-	1,745	2,160	2,595	3,040	3,495	-	
PPH040MA1-1	35	-	-	-	-	-	-	2,520	3,145	3,810	4,525	5,285	-	3.6
	45	-	-	-	-	-	-	1,910	2,485	3,075	3,675	4,280	-	
PPH040MA1-2	35	-	-	-	-	-	-	2,520	3,145	3,810	4,525	5,285	-	3.6
	45	-	-	-	-	-	-	1,910	2,485	3,075	3,675	4,280	-	
PPH046MA1-1	35	-	-	-	-	-	-	2,830	3,640	4,505	5,430	6,415	-	3.6
	45	-	-	-	-	-	-	2,290	3,045	3,815	4,595	5,400	-	
PPH046MA1-2	35	-	-	-	-	-	-	2,830	3,640	4,505	5,430	6,415	-	3.6
	45	-	-	-	-	-	-	2,290	3,045	3,815	4,595	5,400	-	
PPH052MA1-1	35	-	-	-	-	-	-	3,120	4,015	4,955	5,940	6,970	-	3.6
	45	-	-	-	-	-	-	2,520	3,365	4,195	5,010	5,805	-	
PPH052MA1-2	35	-	-	-	-	-	-	3,120	4,015	4,955	5,940	6,970	-	3.6
	45	-	-	-	-	-	-	2,520	3,365	4,195	5,010	5,805	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® POLAR PACK (CONT'D)**

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPH016MA1-1	220-240 / 1	14.92	3.8	885	9.52	12.70	730	750	660	55.0
PPH018MA1-1	220-240 / 1	18.32	4.1	975	9.52	12.70	730	750	660	55.0
PPH022MA1-1	220-240 / 1	25.32	5.6	1,295	9.52	12.70	730	750	660	70.0
PPH027MA1-1	220-240 / 1	31.32	7.0	1,655	9.52	12.70	730	750	660	70.0
PPH030MA1-1	220-240 / 1	40.32	6.8	1,915	9.52	12.70	730	750	660	70.0
PPH040MA1-1	220-240 / 1	46.32	9.9	2,175	12.70	15.88	730	750	660	80.0
PPH040MA1-2	380-420 / 3	25.32	3.7	2,225	12.70	15.88	730	750	660	80.0
PPH046MA1-1	220-240 / 1	55.58	12.1	2,570	12.70	15.88	730	750	660	80.0
PPH046MA1-2	380-420 / 3	36.58	4.7	2,630	12.70	15.88	730	750	660	80.0
PPH052MA1-1	220-240 / 1	82.58	13.4	2,900	12.70	15.88	730	750	660	80.0
PPH052MA1-2	380-420 / 3	36.58	4.7	2,900	12.70	15.88	730	750	660	80.0

**Low Temperature Application - Kulthorn Kirby Hermetic Reciprocating Compressors**

**Performance Data - R404A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH010LA1-1	35	-	-	520	700	915	1,160	1,440	-	-	-	-	-	2.0
	45	-	-		540	700	905	1,165	-	-	-	-	-	
PPH012LA1-1	35	-	-	625	845	1,105	1,405	1,745	-	-	-	-	-	2.0
	45	-	-		630	835	1,090	1,390	-	-	-	-	-	
PPH014LA1-1	35	-	-	705	975	1,280	1,620	2,000	-	-	-	-	-	2.0
	45	-	-		740	1,005	1,300	1,640	-	-	-	-	-	
PPH020LA1-1	35	-	-	1,085	1,445	1,855	2,310	2,815	-	-	-	-	-	3.6
	45	-	-		1,020	1,405	1,825	2,285	-	-	-	-	-	
PPH024LA1-1	35	-	-	-	1,750	2,200	2,785	3,495	-	-	-	-	-	3.6
	45	-	-	-	1,190	1,665	2,230	2,890	-	-	-	-	-	
PPH010LA1-1	35	-	-	-	-	-	-	900	1,160	1,450	1,780	2,150	2,560	2.3
	45	-	-	-	-	-	-	730	970	1,240	1,540	1,880	2,240	
PPH012LA1-1	35	-	-	-	-	-	-	1,100	1,410	1,760	2,160	2,590	3,060	2.3
	45	-	-	-	-	-	-	900	1,180	1,500	1,860	2,260	2,680	
PPH014LA1-1	35	-	-	-	-	-	-	1,250	1,610	2,010	2,460	2,960	3,510	2.3
	45	-	-	-	-	-	-	1,030	1,350	1,720	2,130	2,590	3,070	
PPH020LA1-1	35	-	-	-	-	-	-	1,530	2,020	2,580	3,210	3,900	4,660	4.2
	45	-	-	-	-	-	-	1,180	1,630	2,150	2,720	3,350	4,040	
PPH024LA1-1	35	-	-	-	-	-	-	2,050	2,670	3,390	4,180	5,060	6,020	4.2
	45	-	-	-	-	-	-	1,640	2,210	2,860	3,590	4,390	5,260	
PPH010LA1-1	35	-	-	-	-	-	-	900	1,160	1,450	1,780	2,150	2,560	2.3
	45	-	-	-	-	-	-	730	970	1,240	1,540	1,880	2,240	
PPH012LA1-1	35	-	-	-	-	-	-	1,100	1,410	1,760	2,160	2,590	3,060	2.3
	45	-	-	-	-	-	-	900	1,180	1,500	1,860	2,260	2,680	

Low Temperature Application - Kulthorn Kirby Hermetic Reciprocating Compressors (Cont'd)														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH014LA1-1	35	-	-	-	-	-	-	1,250	1,610	2,010	2,460	2,960	3,510	2.3
	45	-	-	-	-	-	-	1,030	1,350	1,720	2,130	2,590	3,070	
PPH020LA1-1	35	-	-	-	-	-	-	1,530	2,020	2,580	3,210	3,900	4,660	4.2
	45	-	-	-	-	-	-	1,180	1,630	2,150	2,720	3,350	4,040	
PPH024LA1-1	35	-	-	-	-	-	-	2,050	2,670	3,390	4,180	5,060	6,020	4.2
	45	-	-	-	-	-	-	1,640	2,210	2,860	3,590	4,390	5,260	

Technical Data											
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)	
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth		
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)				
PPH010LA1-1	220-240 / 1	30.30	3.0	855	9.52	12.70	730	750	660	70.0	
PPH012LA1-1	220-240 / 1	30.30	4.5	995	9.52	12.70	730	750	660	70.0	
PPH014LA1-1	220-240 / 1	37.30	4.5	1,125	9.52	12.70	730	750	660	70.0	
PPH020LA1-1	220-240 / 1	43.30	7.2	1,273	9.52	15.88	730	750	660	75.0	
PPH024LA1-1	220-240 / 1	43.60	8.5	1,795	9.52	15.88	730	750	660	80.0	

Medium Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH062MA1-1	35	-	-	-	1,970	2,545	3,230	4,035	4,945	5,950	7,035	8,175	-	6.7
	45	-	-	-	-	1,980	2,570	3,245	4,000	4,815	5,685	6,580	-	
PPH062MA1-2	35	-	-	-	1,970	2,545	3,230	4,035	4,945	5,950	7,035	8,175	-	6.7
	45	-	-	-	-	1,980	2,570	3,245	4,000	4,815	5,685	6,580	-	
PPH068MA1-2	35	-	-	-	1,920	2,615	3,450	4,395	5,425	6,515	7,645	8,790	-	6.7
	45	-	-	-	-	2,010	2,765	3,590	4,450	5,320	6,205	7,100	-	
PPH075MA1-2	35	-	-	-	2,120	2,815	3,670	4,685	5,845	7,135	8,525	9,995	-	6.7
	45	-	-	-	-	2,080	2,810	3,670	4,645	5,710	6,845	8,000	-	
PPH089MA1-2	35	-	-	-	2,605	3,395	4,375	5,535	6,855	8,310	9,850	11,415	-	6.7
	45	-	-	-	-	2,510	3,380	4,375	5,475	6,670	7,925	9,185	-	
PPH100MA1-2	35	-	-	-	2,665	3,690	4,915	6,325	7,870	9,505	11,190	12,895	-	6.7
	45	-	-	-	-	2,770	3,840	5,055	6,370	7,725	9,060	10,355	-	
PPH113MA1-2	35	-	-	-	3,245	4,365	5,705	7,230	8,900	10,670	12,490	14,310	-	6.7
	45	-	-	-	-	3,315	4,525	5,845	7,235	8,655	10,100	11,520	-	

Medium Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors (Cont'd)														
Performance Data - R134A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH062MA1-1	35	-	-	-	-	-	1,780	2,380	3,105	3,935	4,875	5,920	7,065	7.8
	45	-	-	-	-	-	-	2,015	2,665	3,405	4,235	5,155	6,160	
PPH062MA1-2	35	-	-	-	-	-	1,780	2,380	3,105	3,935	4,875	5,920	7,065	7.8
	45	-	-	-	-	-	-	2,015	2,665	3,405	4,235	5,155	6,160	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® POLAR PACK (CONT'D)**

**Medium Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors (Cont'd)**

**Performance Data - R134A (Cont'd)**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPH068MA1-2	35	-	-	-	-	-	1,985	2,580	3,290	4,125	5,085	6,175	7,390	7.8
	45	-	-	-	-	-	-	2,170	2,805	3,550	4,405	5,380	6,475	
PPH075MA1-2	35	-	-	-	-	-	-	2,585	3,415	4,395	5,535	6,835	8,295	7.8
	45	-	-	-	-	-	-	2,065	2,790	3,650	4,645	5,790	7,080	
PPH089MA1-2	35	-	-	-	-	-	-	2,955	3,940	5,075	6,380	7,855	9,525	7.8
	45	-	-	-	-	-	-	2,380	3,245	4,240	5,380	6,685	8,195	
PPH100MA1-2	35	-	-	-	-	-	2,295	3,120	4,115	5,320	6,735	8,370	10,225	7.8
	45	-	-	-	-	-	-	2,495	3,380	4,465	5,770	7,295	9,045	
PPH113MA1-2	35	-	-	-	-	-	-	3,640	4,840	6,265	7,920	9,800	11,900	7.8
	45	-	-	-	-	-	-	2,940	4,005	5,270	6,735	8,410	10,290	

**Performance Data - R448A / R449A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPH062MA1-1	35	-	-	-	-	1,975	2,660	3,465	4,400	5,465	6,665	8,000	-	6.2
	45	-	-	-	-	1,575	2,180	2,890	3,710	4,645	5,695	6,855	-	
PPH062MA1-2	35	-	-	-	-	1,975	2,660	3,465	4,400	5,465	6,665	8,000	-	6.2
	45	-	-	-	-	1,575	2,180	2,890	3,710	4,645	5,695	6,855	-	
PPH068MA1-2	35	-	-	-	-	2,240	3,020	3,930	4,975	6,160	7,485	8,950	-	6.2
	45	-	-	-	-	1,815	2,485	3,280	4,200	5,235	6,390	7,665	-	
PPH075MA1-2	35	-	-	-	-	-	3,045	4,060	5,220	6,520	7,980	9,630	-	6.2
	45	-	-	-	-	-	2,460	3,365	4,350	5,450	6,695	8,130	-	
PPH089MA1-2	35	-	-	-	-	2,405	3,405	4,575	5,910	7,425	9,130	11,055	-	6.2
	45	-	-	-	-	-	2,775	3,810	4,965	6,270	7,750	9,440	-	
PPH100MA1-2	35	-	-	-	-	-	3,810	5,125	6,630	8,325	10,230	12,380	-	6.2
	45	-	-	-	-	-	3,115	4,300	5,595	7,035	8,670	10,550	-	
PPH113MA1-2	35	-	-	-	-	3,250	4,510	5,990	7,690	9,610	11,755	14,140	-	6.2
	45	-	-	-	-	-	3,875	5,340	7,020	8,910	11,005	13,330	-	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPH062MA1-1	220-240 / 1	70.64	15.1	3,515	15.88	19.05	730	1,220	660	100.0
PPH062MA1-2	380-420 / 3	30.64	6.4	3,515	15.88	19.05	730	1,220	660	100.0
PPH068MA1-2	380-420 / 3	38.64	7.1	3,995	15.88	22.22	730	1,220	660	100.0
PPH075MA1-2	380-420 / 3	49.14	7.5	3,765	15.88	22.22	730	1,220	660	115.0
PPH089MA1-2	380-420 / 3	49.66	9.0	4,270	15.88	22.22	730	1,220	660	110.0
PPH100MA1-2	380-420 / 3	65.16	10.4	4,800	15.88	22.22	730	1,220	660	115.0
PPH113MA1-2	380-420 / 3	65.16	10.0	5,490	15.88	22.22	730	1,220	660	120.0

Low Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH028LA1-2	35	-	1,315	1,840	2,440	3,100	3,825	4,620	5,495	-	-	-	-	3.6
	45	-	-	1,450	1,965	2,535	3,155	3,830	4,580	-	-	-	-	
PPH043LA1-2	35	-	-	2,190	2,990	3,905	4,985	6,245	7,705	-	-	-	-	6.7
	45	-	-	-	2,280	3,070	4,005	5,100	6,375	-	-	-	-	
PPH050LA1-2	35	-	-	2,665	3,635	4,720	5,935	7,290	8,820	-	-	-	-	6.7
	45	-	-	-	2,825	3,765	4,800	5,950	7,245	-	-	-	-	
PPH061LA1-2	35	-	-	3,405	4,520	5,795	7,225	8,815	10,600	-	-	-	-	6.7
	45	-	-	2,625	3,600	4,710	5,940	7,305	8,845	-	-	-	-	
Technical Data														
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)				
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth					
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)							
PPH028LA1-2	380-420 / 3	25.58	4.0	1,646	9.52	15.88	730	750	660	75.0				
PPH043LA1-2	380-420 / 3	33.16	4.4	1,994	15.88	22.22	730	1,220	660	110.0				
PPH050LA1-2	380-420 / 3	46.16	5.7	2,339	15.88	22.22	730	1,220	660	115.0				
PPH061LA1-2	380-420 / 3	52.16	7.3	3,156	15.88	22.22	730	1,220	660	115.0				

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS026LMHA1-6	35	-	510	695	905	1,140	1,405	1,710	2,050	2,425	2,830	3,260	-	2.0
	45	-	-	515	695	895	1,120	1,375	1,660	1,970	2,305	2,650	-	
PPS031LMHA1-6	35	-	-	860	1,130	1,445	1,805	2,210	2,655	3,140	3,655	4,180	-	2.0
	45	-	-	640	875	1,145	1,450	1,795	2,170	2,570	2,985	-	-	
PPS039LMHA1-6	35	-	-	1,080	1,410	1,790	2,225	2,715	3,260	3,850	4,475	5,130	-	3.6
	45	-	-	-	1,090	1,415	1,780	2,195	2,650	3,140	3,655	-	-	
PPS046LMHA1-6	35	-	-	1,230	1,600	2,035	2,535	3,115	3,770	4,495	5,280	6,115	-	3.6
	45	-	-	-	1,235	1,605	2,035	2,530	3,085	3,695	4,355	5,035	-	
PPS056LMHA1-6	35	-	-	1,510	1,990	2,520	3,105	3,760	4,485	5,275	6,115	7,000	-	3.6
	45	-	-	-	1,535	2,000	2,510	3,065	3,675	4,325	5,010	5,700	-	
PPS057LMHA1-6	35	-	-	1,580	2,070	2,630	3,265	3,980	4,765	5,620	6,515	7,435	-	3.6
	45	-	-	-	1,605	2,080	2,620	3,220	3,885	4,590	5,315	6,030	-	
PPS074LMHA1-6	35	-	-	1,890	2,490	3,190	3,990	4,895	5,905	7,010	8,200	9,455	-	6.8
	45	-	-	-	1,950	2,545	3,230	4,005	4,870	5,810	6,800	7,815	-	
PPS084LMA1-4	35	-	-	2,400	3,125	3,960	4,920	6,010	7,225	8,545	9,935	11,340	-	6.8
	45	-	-	-	2,455	3,170	3,985	4,910	5,935	7,045	8,200	-	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® POLAR PACK (CONT'D)**

**Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (Cont'd)**

**Performance Data - R404A (Cont'd)**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS094LMA1-4	35	-	-	2,750	3,535	4,450	5,500	6,690	8,020	9,465	11,005	12,595	-	6.8
	45	-	-	-	2,835	3,605	4,500	5,520	6,660	7,875	9,120	-	-	
PPS103LMA1-4	35	-	-	3,105	3,955	4,930	6,055	7,330	8,750	10,300	11,940	13,630	-	6.8
	45	-	-	2,450	3,175	4,025	4,990	6,075	7,260	8,540	9,880	-	-	

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS026LMHA1-6	35	-	-	-	-	-	710	940	1,220	1,540	1,905	2,315	2,765	2.3
	45	-	-	-	-	-	555	760	1,005	1,290	1,610	1,970	2,370	
PPS031LMHA1-6	35	-	-	-	-	-	880	1,160	1,495	1,885	2,330	2,820	3,365	2.3
	45	-	-	-	-	-	690	945	1,240	1,585	1,980	2,415	2,890	
PPS039LMHA1-6	35	-	-	-	-	-	1,125	1,485	1,910	2,405	2,965	3,590	4,285	4.2
	45	-	-	-	-	-	890	1,210	1,590	2,025	2,520	3,075	3,690	
PPS046LMHA1-6	35	-	-	-	-	-	1,295	1,725	2,230	2,810	3,480	4,235	5,080	4.2
	45	-	-	-	-	-	-	1,405	1,850	2,365	2,960	3,635	4,385	
PPS056LMHA1-6	35	-	-	-	-	-	1,605	2,120	2,715	3,405	4,195	5,080	6,060	4.2
	45	-	-	-	-	-	1,285	1,740	2,270	2,890	3,595	4,385	5,265	
PPS057LMHA1-6	35	-	-	-	-	1,330	1,805	2,350	2,985	3,715	4,545	5,470	6,495	4.2
	45	-	-	-	-	-	1,480	1,965	2,530	3,180	3,925	4,755	5,670	
PPS074LMHA1-6	35	-	-	-	-	-	2,225	2,880	3,635	4,515	5,510	6,635	7,885	7.8
	45	-	-	-	-	-	-	2,440	3,120	3,900	4,795	5,800	6,920	
PPS084LMA1-4	35	-	-	-	-	-	2,785	3,590	4,520	5,595	6,815	8,185	9,695	7.8
	45	-	-	-	-	-	2,295	3,010	3,845	4,810	5,915	7,160	8,555	
PPS094LMA1-4	35	-	-	-	-	-	3,005	3,880	4,900	6,085	7,445	8,965	10,650	7.8
	45	-	-	-	-	-	-	3,250	4,160	5,220	6,440	7,810	9,330	
PPS103LMA1-4	35	-	-	-	-	-	3,285	4,245	5,355	6,640	8,100	9,745	11,560	7.8
	45	-	-	-	-	-	2,695	3,555	4,550	5,700	7,015	8,495	10,135	

**Performance Data - R448A / R449A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS026LMHA1-6	35	-	-	-	765	1,005	1,290	1,620	2,000	2,430	2,905	3,430	-	1.8
	45	-	-	-	-	795	1,050	1,345	1,685	2,065	2,495	-	-	
PPS031LMHA1-6	35	-	-	-	945	1,250	1,605	2,030	2,510	3,060	3,665	4,330	-	1.8
	45	-	-	-	725	990	1,310	1,690	2,125	2,615	3,155	-	-	
PPS039LMHA1-6	35	-	-	-	1,185	1,550	1,980	2,485	3,065	3,720	4,450	5,255	-	3.3
	45	-	-	-	-	1,235	1,620	2,065	2,580	3,160	3,805	-	-	
PPS046LMHA1-6	35	-	-	-	-	1,745	2,245	2,830	3,515	4,295	5,175	6,140	-	3.3
	45	-	-	-	-	1,370	1,805	2,330	2,950	3,655	4,445	-	-	
PPS056LMHA1-6	35	-	-	-	1,650	2,160	2,760	3,445	4,230	5,110	6,080	7,135	-	3.3
	45	-	-	-	-	1,715	2,245	2,865	3,565	4,350	5,215	-	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (Cont'd)

Performance Data - R448A / R449A (Cont'd)

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS057LMHA1-6	35	-	-	-	1,730	2,270	2,910	3,655	4,505	5,455	6,510	7,655	-	3.3
	45	-	-	-	-	1,805	2,370	3,035	3,795	4,645	5,580	-	-	
PPS074LMHA1-6	35	-	-	-	2,085	2,755	3,550	4,480	5,555	6,770	8,125	9,610	-	6.7
	45	-	-	-	-	2,215	2,925	3,760	4,725	5,815	7,020	-	-	
PPS084LMA1-4	35	-	-	-	2,625	3,440	4,405	5,540	6,845	8,315	9,945	11,735	-	6.7
	45	-	-	-	-	2,775	3,630	4,635	5,795	7,105	8,555	-	-	
PPS094LMA1-4	35	-	-	-	2,990	3,865	4,910	6,140	7,560	9,165	10,955	12,910	-	6.7
	45	-	-	-	-	3,165	4,090	5,185	6,450	7,885	9,475	-	-	
PPS103LMA1-4	35	-	-	-	3,340	4,300	5,440	6,775	8,310	10,050	11,985	14,110	-	6.7
	45	-	-	-	-	3,540	4,560	5,755	7,130	8,680	10,400	-	-	

Technical Data

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPS026LMHA1-6	380-420 / 3	14.12	3.1	1,645	9.52	12.70	730	750	660	80.0
PPS031LMHA1-6	380-420 / 3	20.32	3.9	2,125	9.52	15.88	730	750	660	80.0
PPS039LMHA1-6	380-420 / 3	24.82	4.7	2,565	12.70	15.88	730	750	660	85.0
PPS046LMHA1-6	380-420 / 3	25.08	5.0	2,620	12.70	15.88	730	750	660	90.0
PPS056LMHA1-6	380-420 / 3	25.08	5.0	2,620	12.70	15.88	730	750	660	90.0
PPS057LMHA1-6	380-420 / 3	25.08	5.0	2,620	12.70	15.88	730	750	660	90.0
PPS074LMHA1-6	380-420 / 3	44.14	7.4	5,045	15.88	19.05	730	1,220	660	120.0
PPS084LMA1-4	380-420 / 3	44.76	8.1	5,420	15.88	19.05	730	1,220	660	130.0
PPS094LMA1-4	380-420 / 3	44.76	8.4	5,590	15.88	22.22	730	1,220	660	130.0
PPS103LMA1-4	380-420 / 3	44.76	9.3	5,670	15.88	22.22	730	1,220	660	135.0



**KIRBY® TITAN**

A tough, compact and robust commercial condensing unit, the Kirby® Titan offers impressive performance and capacity within a small footprint. Pre-wired for convenient installation, Kirby® Titan range thrives in harsh ambient conditions and under heavy loads. Being a fully enclosed system, it can be installed indoors or outside. And because it's from Kirby®, Titan has an enviable reputation for toughness, efficiency and reliability.

**Key Features**

- Impressive capacity ranging from 12kW to 41kW
- Enhanced compressor technology
- Designed for harsh conditions up to 45°C
- Quiet and efficient operations
- Easy to service
- Fast installation
- Fully pre-wired
- Fan speed control
- Coil protection as standard



Medium / High Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH131MHA1-2	35	-	-	-	-	5,235	6,700	8,400	10,300	12,355	14,520	16,755	-	11.9
	45	-	-	-	-	3,985	5,275	6,730	8,320	9,985	11,685	13,375	-	
PPH153MHA1-2	35	-	-	-	-	5,895	7,650	9,655	11,875	14,265	16,770	19,345	-	11.9
	45	-	-	-	-	4,435	5,980	7,720	9,600	11,580	13,595	15,590	-	
PPH170MHA1-2	35	-	-	-	-	6,460	8,440	10,725	13,270	16,025	18,920	21,895	-	11.9
	45	-	-	-	-	4,835	6,630	8,615	10,690	12,830	15,040	17,280	-	
PPH217MHA1-2	35	-	-	-	-	8,835	11,295	14,115	17,225	20,555	24,025	27,520	-	11.9
	45	-	-	-	-	6,795	8,990	11,395	13,930	16,545	19,195	21,750	-	
PPH251MHA1-2	35	-	-	-	-	10,300	13,085	16,285	19,860	23,735	27,820	31,995	-	20.0
	45	-	-	-	-	8,000	10,395	13,095	16,045	19,180	22,385	25,500	-	
PPH283MHA1-2	35	-	-	-	-	11,675	14,780	18,360	22,365	26,735	31,410	36,320	-	20.0
	45	-	-	-	-	9,150	11,825	14,830	18,110	21,615	25,255	28,950	-	

Performance Data - R134a														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPH131MHA1-2	35	-	-	-	-	-	-	4,250	5,610	7,235	9,150	11,355	13,850	13.8
	45	-	-	-	-	-	-	3,500	4,715	6,160	7,850	9,790	11,985	
PPH153MHA1-2	35	-	-	-	-	-	-	5,190	6,735	8,570	10,710	13,165	15,940	13.8
	45	-	-	-	-	-	-	4,305	5,685	7,310	9,195	11,360	13,810	
PPH170MHA1-2	35	-	-	-	-	-	-	5,705	7,585	9,785	12,300	15,135	18,295	13.8
	45	-	-	-	-	-	-	4,665	6,315	8,230	10,420	12,895	15,665	
PPH217MHA1-2	35	-	-	-	-	-	5,330	7,265	9,570	12,255	15,315	18,750	22,550	13.8
	45	-	-	-	-	-	-	5,855	7,885	10,235	12,910	15,910	19,245	
PPH251MHA1-2	35	-	-	-	-	-	6,970	9,335	12,110	15,290	18,885	22,885	27,295	23.3
	45	-	-	-	-	-	-	7,740	10,210	13,020	16,180	19,710	23,615	
PPH283MHA1-2	35	-	-	-	-	-	7,785	10,400	13,480	17,035	21,065	25,560	30,500	23.3
	45	-	-	-	-	-	-	8,620	11,340	14,450	17,945	21,810	26,030	

Medium / High Temperature Application - Danfoss Maneurop Hermetic Reciprocating Compressors (Cont'd)														
Performance Data - R448A / R449A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPH131MHA1-2	35	-	-	-	-	3,715	5,090	6,710	8,580	10,695	13,045	15,635	-	11.0
	45	-	-	-	-	2,865	4,045	5,460	7,100	8,935	10,920	13,035	-	
PPH153MHA1-2	35	-	-	-	-	4,775	6,320	8,120	10,190	12,560	15,235	18,210	-	11.0
	45	-	-	-	-	3,845	5,185	6,755	8,560	10,615	12,900	15,400	-	
PPH170MHA1-2	35	-	-	-	-	4,925	6,715	8,825	11,270	14,040	17,120	20,450	-	11.0
	45	-	-	-	-	3,840	5,360	7,155	9,230	11,570	14,130	16,815	-	
PPH217MHA1-2	35	-	-	-	-	6,990	9,280	11,915	14,900	18,235	21,890	25,790	-	11.0
	45	-	-	-	-	5,560	7,525	9,790	12,355	15,180	18,205	21,285	-	
PPH251MHA1-2	35	-	-	-	-	8,450	11,090	14,110	17,515	21,315	25,515	30,055	-	18.7
	45	-	-	-	-	6,720	9,045	11,680	14,625	17,885	21,430	25,155	-	
PPH283MHA1-2	35	-	-	-	-	9,745	12,805	16,340	20,370	24,890	29,905	35,445	-	18.7
	45	-	-	-	-	7,705	10,410	13,480	16,915	20,710	24,865	29,365	-	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPH131MHA1-2	380-420 / 3	81.30	10.8	5,415	15.88	34.90	1,060	1,846	840	225.0
PPH153MHA1-2	380-420 / 3	83.10	13.4	6,810	15.88	34.90	1,094	1,846	840	229.0
PPH170MHA1-2	380-420 / 3	93.10	15.9	7,965	15.88	34.90	1,094	1,846	840	235.0
PPH217MHA1-2	380-420 / 3	108.10	17.9	9,860	15.88	34.90	1,094	1,846	840	255.0
PPH251MHA1-2	380-420 / 3	119.70	22.0	11,650	22.22	34.90	1,094	2,413	840	320.0
PPH283MHA1-2	380-420 / 3	144.70	24.2	13,100	22.22	34.90	1,094	2,413	840	335.0

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS126LMHA1-4	35	-	-	3,065	4,050	5,200	6,565	8,160	9,980	12,005	14,185	16,465	-	11.9
	45	-	-	-	3,185	4,150	5,300	6,650	8,180	9,855	11,615	-	-	
PPS152LMHA1-6	35	-	-	3,685	4,875	6,260	7,900	9,805	11,980	14,400	17,005	19,730	-	11.9
	45	-	-	-	3,840	5,005	6,380	7,990	9,825	11,845	13,975	-	-	
PPS178LMHA1-4	35	-	-	4,365	5,755	7,365	9,245	11,430	13,915	16,675	19,640	22,735	-	11.9
	45	-	-	-	4,590	5,945	7,530	9,360	11,430	13,705	16,125	-	-	
PPS178LMHA1-6	35	-	-	4,425	5,835	7,465	9,380	11,595	14,115	16,905	19,900	23,010	-	11.9
	45	-	-	-	4,630	6,000	7,605	9,455	11,550	13,850	16,285	-	-	
PPS205LMHA1-4	35	-	-	4,990	6,570	8,435	10,605	13,110	15,940	19,075	22,465	26,035	-	11.9
	45	-	-	-	5,255	6,815	8,635	10,735	13,105	15,710	18,485	-	-	
PPS207LMHA1-6	35	-	-	5,220	6,855	8,775	11,005	13,565	16,450	19,625	23,050	26,630	-	11.9
	45	-	-	-	5,490	7,080	8,935	11,070	13,465	16,090	18,860	-	-	
PPS289LMHA1-4	35	-	-	7,440	9,710	12,320	15,330	18,775	22,660	26,960	31,625	36,570	-	20.0
	45	-	-	-	7,765	9,985	12,545	15,460	18,725	22,295	26,095	-	-	
PPS338LMHA1-4	35	-	-	-	11,320	14,315	17,765	21,705	26,135	31,050	36,405	42,105	-	20.0
	45	-	-	-	9,035	11,570	14,485	17,805	21,535	25,640	30,045	-	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® TITAN (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (Cont'd)

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS126LMHA1-4	35	-	-	-	-	-	3,575	4,670	5,960	7,460	9,200	11,185	13,415	13.8
	45	-	-	-	-	-	-	3,985	5,145	6,500	8,065	9,845	11,830	
PPS152LMHA1-6	35	-	-	-	-	-	4,360	5,695	7,265	9,090	11,185	13,570	16,235	13.8
	45	-	-	-	-	-	-	4,820	6,225	7,860	9,740	11,880	14,280	
PPS178LMHA1-4	35	-	-	-	-	-	5,080	6,580	8,340	10,380	12,730	15,390	18,360	13.8
	45	-	-	-	-	-	-	5,620	7,190	9,010	11,110	13,470	16,110	
PPS178LMHA1-6	35	-	-	-	-	-	5,020	6,560	8,380	10,515	12,990	15,810	18,985	13.8
	45	-	-	-	-	-	-	5,560	7,185	9,095	11,315	13,850	16,710	
PPS205LMHA1-4	35	-	-	-	-	-	6,160	7,920	9,950	12,290	14,970	18,000	21,370	13.8
	45	-	-	-	-	-	5,160	6,750	8,590	10,710	13,110	15,820	18,810	
PPS207LMHA1-6	35	-	-	-	-	-	6,075	7,885	10,010	12,485	15,340	18,585	22,225	13.8
	45	-	-	-	-	-	5,060	6,685	8,600	10,835	13,410	16,335	19,600	
PPS289LMHA1-4	35	-	-	-	-	-	7,700	10,100	12,910	16,190	19,950	24,230	29,020	23.3
	45	-	-	-	-	-	-	8,540	11,050	13,990	17,350	21,170	25,420	
PPS338LMHA1-4	35	-	-	-	-	-	-	11,840	15,120	18,950	23,370	28,400	34,030	23.3
	45	-	-	-	-	-	-	10,060	13,040	16,500	20,490	25,010	30,050	

**Performance Data - R448A / R449A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS126LMHA1-4	35	-	-	2,555	3,460	4,555	5,875	7,460	9,320	11,455	13,845	16,475	-	11.0
	45	-	-	-	-	3,705	4,845	6,220	7,840	9,680	11,710	13,905	-	
PPS152LMHA1-6	35	-	-	3,070	4,165	5,480	7,070	8,965	11,190	13,740	16,600	19,740	-	11.0
	45	-	-	-	-	4,465	5,830	7,480	9,415	11,635	14,085	16,730	-	
PPS178LMHA1-4	35	-	-	3,640	4,920	6,445	8,275	10,450	12,995	15,905	19,170	22,745	-	11.0
	45	-	-	-	-	5,305	6,885	8,760	10,955	13,460	16,255	19,280	-	
PPS178LMHA1-6	35	-	-	3,690	4,985	6,535	8,395	10,605	13,180	16,130	19,425	23,025	-	11.0
	45	-	-	-	-	5,350	6,950	8,850	11,070	13,600	16,420	19,455	-	
PPS205LMHA1-4	35	-	-	4,160	5,615	7,380	9,495	11,990	14,885	18,195	21,930	26,050	-	11.0
	45	-	-	-	-	6,080	7,895	10,050	12,560	15,430	18,635	22,105	-	
PPS207LMHA1-6	35	-	-	4,350	5,860	7,680	9,850	12,405	15,360	18,725	22,500	26,640	-	11.0
	45	-	-	-	-	6,320	8,170	10,360	12,905	15,800	19,015	22,470	-	
PPS289LMHA1-4	35	-	-	6,200	8,300	10,785	13,725	17,170	21,160	25,720	30,870	36,590	-	18.7
	45	-	-	-	-	8,910	11,465	14,470	17,945	21,895	26,305	31,135	-	
PPS338LMHA1-4	35	-	-	7,270	9,675	12,530	15,900	19,845	24,405	29,625	35,530	42,130	-	18.7
	45	-	-	-	-	10,325	13,240	16,665	20,640	25,180	30,290	35,940	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (Cont'd)

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPS126LMHA1-4	380-420 / 3	64.40	10.3	5,440	12.70	28.57	1,060	1,846	840	260
PPS152LMHA1-6	380-420 / 3	66.10	13.5	6,790	15.88	28.57	1,094	1,846	840	279
PPS178LMHA1-4	380-420 / 3	89.10	15.4	7,340	15.88	34.90	1,094	1,846	840	287
PPS178LMHA1-6	380-420 / 3	89.10	15.9	7,780	15.88	34.90	1,094	1,846	840	287
PPS205LMHA1-4	380-420 / 3	89.10	16.6	8,290	15.88	34.90	1,094	1,846	840	304
PPS207LMHA1-6	380-420 / 3	89.10	17.3	8,800	15.88	34.90	1,094	1,846	840	304
PPS289LMHA1-4	380-420 / 3	139.40	23.4	11,720	22.22	34.90	1,094	2,413	840	405
PPS338LMHA1-4	380-420 / 3	174.10	28.1	14,700	22.22	34.90	1,094	2,413	840	425

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors

Performance Data - R404A

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS242LMA1-4	35	-	-	6,155	8,065	10,265	12,775	15,600	18,725	22,125	-	-	-	20.0
	45	-	-	-	6,490	8,340	10,440	12,795	15,395	18,195	-	-	-	
PPS328LMA1-4	35	-	-	8,755	11,310	14,240	17,585	21,360	25,550	30,120	-	-	-	20.0
	45	-	-	-	9,010	11,505	14,345	17,520	21,015	24,760	-	-	-	
PPS370LMA1-4	35	-	-	10,120	13,045	16,390	20,210	24,490	29,195	34,225	-	-	-	20.0
	45	-	-	-	10,470	13,350	16,590	20,185	24,085	28,200	-	-	-	
PPS411LMA1-4	35	-	-	11,355	14,660	18,455	22,780	27,645	33,020	38,855	-	-	-	20.0
	45	-	-	-	11,725	14,960	18,635	22,750	27,260	32,065	-	-	-	

Performance Data - R134a

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS242LMA1-4	35	-	-	-	-	-	7,100	9,190	11,640	14,480	17,720	21,350	25,370	23.3
	45	-	-	-	-	-	5,930	7,790	9,980	12,530	15,430	18,690	22,290	
PPS328LMA1-4	35	-	-	-	-	-	9,330	12,090	15,300	18,990	23,190	27,890	33,070	23.3
	45	-	-	-	-	-	7,750	10,260	13,160	16,500	20,280	24,500	29,120	
PPS370LMA1-4	35	-	-	-	-	-	10,770	13,850	17,440	21,550	26,200	31,400	37,110	23.3
	45	-	-	-	-	-	9,010	11,800	15,040	18,750	22,940	27,600	32,690	
PPS411LMA1-4	35	-	-	-	-	-	11,980	15,440	19,480	24,130	29,420	35,340	41,880	23.3
	45	-	-	-	-	-	10,000	13,140	16,800	21,010	25,790	31,140	37,030	

Performance Data - R448A / R449A

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS242LMA1-4	35	-	-	5,105	6,850	8,935	11,405	14,300	17,655	21,505	-	-	-	22.0
	45	-	-	-	5,585	7,360	9,470	11,965	14,860	18,180	-	-	-	
PPS328LMA1-4	35	-	-	7,260	9,605	12,390	15,695	19,580	24,095	29,270	-	-	-	22.0
	45	-	-	-	7,755	10,150	13,010	16,380	20,285	24,735	-	-	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**
**KIRBY® TITAN (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (Cont'd)

Performance Data - R448A / R449A (Cont'd)

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPS370LMA1-4	35	-	-	8,390	11,075	14,265	18,035	22,450	27,530	33,260	-	-	-	22.0
	45	-	-	-	9,010	11,775	15,050	18,870	23,250	28,170	-	-	-	
PPS411LMA1-4	35	-	-	9,415	12,450	16,060	20,330	25,340	31,140	37,755	-	-	-	22.0
	45	-	-	-	10,085	13,200	16,905	21,270	26,315	32,035	-	-	-	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPS242LMA1-4	380-420 / 3	90.70	20.1	10,010	22.22	34.90	1,094	2,413	840	365.0
PPS328LMA1-4	380-420 / 3	113.40	25.7	13,750	22.22	34.90	1,094	2,413	840	405.0
PPS370LMA1-4	380-420 / 3	139.40	29.2	15,700	22.22	34.90	1,094	2,413	840	425.0
PPS411LMA1-4	380-420 / 3	174.10	33.7	18,870	22.22	34.90	1,094	2,413	840	425.0

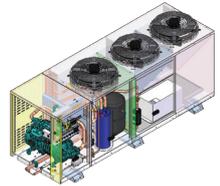
**KIRBY® TITAN VARIABLE SPEED**



With the increased demand for higher efficiency and improved capacity control, Kirby now offer a range of Titan Outdoor Semi Hermetic Condensing Units configured with an optional Variable Speed Compressor Drive kit. The VSD option ensures excellent load matching to the conditions and stable storage temperatures with less start and stop cycles of the compressor.

**Key Features**

- Reduced power consumption by up to 18%
- Wide capacity range from 6.3kW to 34.0kW
- High quality, industry recognised variable speed drive
- Compressor speed envelope from 30Hz to 65Hz using standard compressors
- Pre-installed Trax Oil management system
- Auto tuning feature ensures optimum smooth constant suction pressure control that maintains a stable storage temperature with less starts and stops of the compressor
- Factory pre-configured VSD minimises on-site programming and ensures ease of installation and commissioning.
- Soft-start feature of VSD reduces compressor starting current by up to 40%
- Fail safe fixed speed 50Hz mechanical control backup changeover in the event of failed VSD and / or electrical power supply issue



**Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC)**

**Performance Data - R404A**

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature						Medium Temperature			High Temperature			
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS126BLMHA1-4	65	35	-	-	3,910	5,125	6,560	8,245	10,185	12,370	14,750	17,220	19,620	-	12.0
		45	-	-	3,035	4,040	5,240	6,650	8,275	10,085	12,015	-	-	-	
	50	35	-	-	3,065	4,050	5,200	6,565	8,160	9,980	12,005	14,185	16,465	-	
		45	-	-	-	3,185	4,150	5,300	6,650	8,180	9,855	11,615	-	-	
	30	35	-	-	-	-	3,245	4,130	5,180	6,390	7,770	9,305	10,990	-	
		45	-	-	-	-	-	3,340	4,220	5,245	6,415	7,715	9,120	-	
PPVS152BLMHA1-4	65	35	-	-	4,665	6,110	7,805	9,780	12,050	14,585	17,340	20,225	23,125	-	12.0
		45	-	-	3,655	4,865	6,305	7,985	9,885	11,980	14,230	-	-	-	
	50	35	-	-	3,655	4,820	6,175	7,770	9,615	11,720	14,065	16,590	19,240	-	
		45	-	-	-	3,850	4,985	6,320	7,875	9,645	11,590	13,655	15,750	-	
	30	35	-	-	-	-	3,855	4,890	6,090	7,485	9,070	10,825	12,730	-	
		45	-	-	-	-	-	3,975	4,985	6,150	7,480	8,965	10,585	-	
PPVS126BLMHA1-4	65	35	-	-	3,910	5,125	6,560	8,245	10,185	12,370	14,750	17,220	19,620	-	12.0
		45	-	-	3,035	4,040	5,240	6,650	8,275	10,085	12,015	-	-	-	
	50	35	-	-	3,065	4,050	5,200	6,565	8,160	9,980	12,005	14,185	16,465	-	
		45	-	-	-	3,185	4,150	5,300	6,650	8,180	9,855	11,615	-	-	
	30	35	-	-	-	-	3,245	4,130	5,180	6,390	7,770	9,305	10,990	-	
		45	-	-	-	-	-	3,340	4,220	5,245	6,415	7,715	9,120	-	
PPVS152BLMHA1-4	65	35	-	-	4,665	6,110	7,805	9,780	12,050	14,585	17,340	20,225	23,125	-	12.0
		45	-	-	3,655	4,865	6,305	7,985	9,885	11,980	14,230	-	-	-	
	50	35	-	-	3,655	4,820	6,175	7,770	9,615	11,720	14,065	16,590	19,240	-	
		45	-	-	-	3,850	4,985	6,320	7,875	9,645	11,590	13,655	15,750	-	
	30	35	-	-	-	-	3,855	4,890	6,090	7,485	9,070	10,825	12,730	-	
		45	-	-	-	-	-	3,975	4,985	6,150	7,480	8,965	10,585	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® TITAN VARIABLE SPEED (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC) (Cont'd)

Performance Data - R404A (Cont'd)

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature						Medium Temperature			High Temperature			
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS152BLMHA1-6	65	35	-	-	4,705	6,170	7,900	9,930	12,270	14,890	17,725	20,680	23,620	-	12.0
		45	-	-	3,650	4,870	6,315	8,020	9,985	12,175	14,485	-	-	-	
	50	35	-	-	3,685	4,875	6,260	7,900	9,805	11,980	14,400	17,005	19,730	-	
		45	-	-	-	3,840	5,005	6,380	7,990	9,825	11,845	13,975	-	-	
	30	35	-	-	-	-	3,910	4,975	6,220	7,660	9,290	11,115	13,115	-	
		45	-	-	-	-	-	4,025	5,070	6,285	7,670	9,215	10,900	-	
PPVS178BLMHA1-4	65	35	-	-	5,575	7,290	9,285	11,620	14,295	17,285	20,510	23,845	27,130	-	12.0
		45	-	-	4,390	5,830	7,515	9,465	11,695	14,160	16,785	-	-	-	
	50	35	-	-	4,365	5,755	7,365	9,245	11,430	13,915	16,675	19,640	22,735	-	
		45	-	-	-	4,590	5,945	7,530	9,360	11,430	13,705	16,125	-	-	
	30	35	-	-	-	-	4,595	5,825	7,260	8,920	10,790	12,860	15,110	-	
		45	-	-	-	-	-	4,740	5,945	7,330	8,910	10,660	12,555	-	
PPVS178BLMHA1-6	65	35	-	-	5,650	7,385	9,415	11,780	14,490	17,510	20,770	24,135	27,430	-	12.0
		45	-	-	4,435	5,875	7,570	9,540	11,785	14,275	16,915	-	-	-	
	50	35	-	-	4,425	5,835	7,465	9,380	11,595	14,115	16,905	19,900	23,010	-	
		45	-	-	-	4,630	6,000	7,605	9,455	11,550	13,850	16,285	-	-	
	30	35	-	-	-	-	4,665	5,915	7,375	9,050	10,945	13,055	15,355	-	
		45	-	-	-	-	-	4,800	6,020	7,430	9,030	10,805	12,725	-	
PPVS205BLMHA1-4	65	35	-	-	6,375	8,350	10,655	13,325	16,370	19,775	23,465	27,335	31,205	-	12.0
		45	-	-	-	6,690	8,615	10,855	13,405	16,235	19,245	-	-	-	
	50	35	-	-	4,990	6,570	8,435	10,605	13,110	15,940	19,075	22,465	26,035	-	
		45	-	-	-	5,255	6,815	8,635	10,735	13,105	15,710	18,485	-	-	
	30	35	-	-	-	-	5,260	6,670	8,320	10,220	12,370	14,750	17,335	-	
		45	-	-	-	-	-	5,430	6,810	8,405	10,215	12,220	14,395	-	
PPVS207BLMHA1-6	65	35	-	-	6,670	8,705	11,070	13,810	16,920	20,370	24,075	27,920	31,715	-	12.0
		45	-	-	5,295	6,975	8,935	11,205	13,780	16,620	19,620	-	-	-	
	50	35	-	-	5,220	6,855	8,775	11,005	13,565	16,450	19,625	23,050	26,630	-	
		45	-	-	-	5,490	7,080	8,935	11,070	13,465	16,090	18,860	-	-	
	30	35	-	-	-	-	5,480	6,930	8,625	10,570	12,760	15,180	17,820	-	
		45	-	-	-	-	-	5,635	7,050	8,675	10,505	12,525	14,710	-	
PPVS289BLMHA1-4	65	35	-	-	9,475	12,305	15,560	19,290	23,510	28,210	33,315	38,720	44,225	-	20.2
		45	-	-	7,375	9,810	12,625	15,810	19,355	23,220	27,350	-	-	-	
	50	35	-	-	7,440	9,710	12,320	15,330	18,775	22,660	26,960	31,625	36,570	-	
		45	-	-	-	7,765	9,985	12,545	15,460	18,725	22,295	26,095	-	-	
	30	35	-	-	-	-	7,685	9,635	11,890	14,475	17,385	20,600	24,085	-	
		45	-	-	-	-	-	7,900	9,805	11,990	14,455	17,180	20,125	-	
PPVS338BLMHA1-4	65	35	-	-	11,135	14,385	18,110	22,375	27,205	32,590	38,455	44,675	51,065	-	20.2
		45	-	-	8,680	11,455	14,630	18,245	22,305	26,785	31,600	-	-	-	
	50	35	-	-	-	11,320	14,315	17,765	21,705	26,135	31,050	36,405	42,105	-	
		45	-	-	-	9,035	11,570	14,485	17,805	21,535	25,640	30,045	-	-	
	30	35	-	-	-	-	-	11,130	13,700	16,640	19,965	23,650	27,660	-	
		45	-	-	-	-	-	-	11,265	13,740	16,535	19,640	23,020	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC) (Cont'd)

Performance Data - R448A

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature						Medium Temperature			High Temperature			
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS126BLMHA1-4	65	35	-	-	3,910	5,125	6,560	8,245	10,185	12,370	14,750	17,220	19,620	-	12.0
		45	-	-	3,035	4,040	5,240	6,650	8,275	10,085	12,015	-	-	-	
	50	35	-	-	3,065	4,050	5,200	6,565	8,160	9,980	12,005	14,185	16,465	-	
		45	-	-	-	3,185	4,150	5,300	6,650	8,180	9,855	11,615	-	-	
	30	35	-	-	-	-	3,245	4,130	5,180	6,390	7,770	9,305	10,990	-	
		45	-	-	-	-	-	3,340	4,220	5,245	6,415	7,715	9,120	-	
PPVS152BLMHA1-4	65	35	-	-	4,665	6,110	7,805	9,780	12,050	14,585	17,340	20,225	23,125	-	12.0
		45	-	-	3,655	4,865	6,305	7,985	9,885	11,980	14,230	-	-	-	
	50	35	-	-	3,655	4,820	6,175	7,770	9,615	11,720	14,065	16,590	19,240	-	
		45	-	-	-	3,850	4,985	6,320	7,875	9,645	11,590	13,655	15,750	-	
	30	35	-	-	-	-	3,855	4,890	6,090	7,485	9,070	10,825	12,730	-	
		45	-	-	-	-	-	3,975	4,985	6,150	7,480	8,965	10,585	-	
PPVS152BLMHA1-6	65	35	-	-	4,705	6,170	7,900	9,930	12,270	14,890	17,725	20,680	23,620	-	12.0
		45	-	-	3,650	4,870	6,315	8,020	9,985	12,175	14,485	-	-	-	
	50	35	-	-	3,685	4,875	6,260	7,900	9,805	11,980	14,400	17,005	19,730	-	
		45	-	-	-	3,840	5,005	6,380	7,990	9,825	11,845	13,975	-	-	
	30	35	-	-	-	-	3,910	4,975	6,220	7,660	9,290	11,115	13,115	-	
		45	-	-	-	-	-	4,025	5,070	6,285	7,670	9,215	10,900	-	
PPVS178BLMHA1-4	65	35	-	-	5,575	7,290	9,285	11,620	14,295	17,285	20,510	23,845	27,130	-	12.0
		45	-	-	4,390	5,830	7,515	9,465	11,695	14,160	16,785	-	-	-	
	50	35	-	-	4,365	5,755	7,365	9,245	11,430	13,915	16,675	19,640	22,735	-	
		45	-	-	-	4,590	5,945	7,530	9,360	11,430	13,705	16,125	-	-	
	30	35	-	-	-	-	4,595	5,825	7,260	8,920	10,790	12,860	15,110	-	
		45	-	-	-	-	-	4,740	5,945	7,330	8,910	10,660	12,555	-	
PPVS178BLMHA1-6	65	35	-	-	5,650	7,385	9,415	11,780	14,490	17,510	20,770	24,135	27,430	-	12.0
		45	-	-	4,435	5,875	7,570	9,540	11,785	14,275	16,915	-	-	-	
	50	35	-	-	4,425	5,835	7,465	9,380	11,595	14,115	16,905	19,900	23,010	-	
		45	-	-	-	4,630	6,000	7,605	9,455	11,550	13,850	16,285	-	-	
	30	35	-	-	-	-	4,665	5,915	7,375	9,050	10,945	13,055	15,355	-	
		45	-	-	-	-	-	4,800	6,020	7,430	9,030	10,805	12,725	-	
PPVS205BLMHA1-4	65	35	-	-	6,375	8,350	10,655	13,325	16,370	19,775	23,465	27,335	31,205	-	12.0
		45	-	-	-	6,690	8,615	10,855	13,405	16,235	19,245	-	-	-	
	50	35	-	-	4,990	6,570	8,435	10,605	13,110	15,940	19,075	22,465	26,035	-	
		45	-	-	-	5,255	6,815	8,635	10,735	13,105	15,710	18,485	-	-	
	30	35	-	-	-	-	5,260	6,670	8,320	10,220	12,370	14,750	17,335	-	
		45	-	-	-	-	-	5,430	6,810	8,405	10,215	12,220	14,395	-	
PPVS207BLMHA1-6	65	35	-	-	6,670	8,705	11,070	13,810	16,920	20,370	24,075	27,920	31,715	-	12.0
		45	-	-	5,295	6,975	8,935	11,205	13,780	16,620	19,620	-	-	-	
	50	35	-	-	5,220	6,855	8,775	11,005	13,565	16,450	19,625	23,050	26,630	-	
		45	-	-	-	5,490	7,080	8,935	11,070	13,465	16,090	18,860	-	-	
	30	35	-	-	-	-	5,480	6,930	8,625	10,570	12,760	15,180	17,820	-	
		45	-	-	-	-	-	5,635	7,050	8,675	10,505	12,525	14,710	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® TITAN VARIABLE SPEED (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC) (Cont'd)

**Performance Data - R448A (Cont'd)**

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature						Medium Temperature			High Temperature			
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS289BLMHA1-4	65	35	-	-	9,475	12,305	15,560	19,290	23,510	28,210	33,315	38,720	44,225	-	20.2
		45	-	-	7,375	9,810	12,625	15,810	19,355	23,220	27,350	-	-	-	
	50	35	-	-	7,440	9,710	12,320	15,330	18,775	22,660	26,960	31,625	36,570	-	
		45	-	-	-	7,765	9,985	12,545	15,460	18,725	22,295	26,095	-	-	
	30	35	-	-	-	-	7,685	9,635	11,890	14,475	17,385	20,600	24,085	-	
		45	-	-	-	-	-	7,900	9,805	11,990	14,455	17,180	20,125	-	
PPVS338BLMHA1-4	65	35	-	-	11,135	14,385	18,110	22,375	27,205	32,590	38,455	44,675	51,065	-	20.2
		45	-	-	8,680	11,455	14,630	18,245	22,305	26,785	31,600	-	-	-	
	50	35	-	-	-	11,320	14,315	17,765	21,705	26,135	31,050	36,405	42,105	-	
		45	-	-	-	9,035	11,570	14,485	17,805	21,535	25,640	30,045	-	-	
	30	35	-	-	-	-	-	11,130	13,700	16,640	19,965	23,650	27,660	-	
		45	-	-	-	-	-	-	11,265	13,740	16,535	19,640	23,020	-	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPVS126BLMHA1-4	380-420 / 3	64.4	10.3	5,440.0	12.7	28.6	1,060	1,846	840	260
PPVS152BLMHA1-4	380-420 / 3	66.2	12.7	6,260.0	15.9	28.6	1,094	1,846	840	279
PPVS152BLMHA1-6	380-420 / 3	66.1	13.5	6,790.0	15.9	28.6	1,094	1,846	840	279
PPVS178BLMHA1-4	380-420 / 3	89.1	15.4	7,340.0	15.9	34.9	1,094	1,846	840	287
PPVS178BLMHA1-6	380-420 / 3	89.1	15.9	7,780.0	15.9	34.9	1,094	1,846	840	287
PPVS205BLMHA1-4	380-420 / 3	89.1	16.6	8,290.0	15.9	34.9	1,094	1,846	840	304
PPVS207BLMHA1-6	380-420 / 3	89.1	17.3	8,800.0	15.9	34.9	1,094	1,846	840	304
PPVS289BLMHA1-4	380-420 / 3	139.4	23.4	11,720.0	22.2	34.9	1,094	2,413	840	405
PPVS338BLMHA1-4	380-420 / 3	174.1	28.1	14,700.0	22.2	34.9	1,094	2,413	840	425

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CS)															
Performance Data - R404A															
Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
			Low Temperature					Medium Temperature			High Temperature				
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPVS242BLMA1-4	65	35	-	-	7,835	10,220	12,950	16,035	19,465	23,200	27,170	-	-	-	20.2
		45	-	-	6,195	8,220	10,530	13,115	15,965	19,030	22,215	-	-	-	
	50	35	-	-	6,155	8,065	10,265	12,775	15,600	18,725	22,125	-	-	-	
		45	-	-	-	6,490	8,340	10,440	12,795	15,395	18,195	-	-	-	
	30	35	-	-	-	-	6,430	8,060	9,925	12,035	14,375	-	-	-	
		45	-	-	-	-	-	6,590	8,145	9,900	11,860	-	-	-	
PPVS328BLMA1-4	65	35	-	-	11,100	14,280	17,915	22,030	26,610	31,605	36,930	-	-	-	20.2
		45	-	-	8,615	11,370	14,495	17,965	21,760	25,825	30,060	-	-	-	
	50	35	-	-	8,755	11,310	14,240	17,585	21,360	25,550	30,120	-	-	-	
		45	-	-	-	9,010	11,505	14,345	17,520	21,015	24,760	-	-	-	
	30	35	-	-	-	-	8,945	11,130	13,635	16,460	19,595	-	-	-	
		45	-	-	-	-	7,245	9,095	11,210	13,605	16,265	-	-	-	
PPVS370BLMA1-4	65	35	-	-	10,535	13,825	17,720	22,315	27,670	33,790	40,635	-	-	-	22.0
		45	-	-	-	11,275	14,680	18,660	23,255	28,485	34,350	-	-	-	
	50	35	-	-	-	11,075	14,265	18,035	22,450	27,530	33,260	-	-	-	
		45	-	-	-	-	11,775	15,050	18,870	23,250	28,170	-	-	-	
	30	35	-	-	-	-	8,245	10,475	13,140	16,260	19,840	-	-	-	
		45	-	-	-	-	-	8,700	10,955	13,600	16,665	-	-	-	
PPVS411BLMA1-4	65	35	-	-	11,820	15,540	19,950	25,155	31,230	38,220	46,135	-	-	-	22.0
		45	-	-	-	12,620	16,455	20,960	26,210	32,240	39,060	-	-	-	
	50	35	-	-	-	12,450	16,060	20,330	25,340	31,140	37,755	-	-	-	
		45	-	-	-	-	13,200	16,905	21,270	26,315	32,035	-	-	-	
	30	35	-	-	-	7,195	9,280	11,810	14,830	18,390	22,525	-	-	-	
		45	-	-	-	-	-	9,775	12,345	15,390	18,950	-	-	-	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® TITAN VARIABLE SPEED (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CS)

**Performance Data - R448A**

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature						Medium Temperature			High Temperature			
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS242BLMA1-4	65	35	-	-	6,405	8,550	11,100	14,110	17,625	21,675	26,275	-	-	-	22.0
		45	-	-	-	6,990	9,170	11,745	14,740	18,210	22,165	-	-	-	
	50	35	-	-	-	6,850	8,935	11,405	14,300	17,655	21,505	-	-	-	
		45	-	-	-	-	7,360	9,470	11,965	14,860	18,180	-	-	-	
	30	35	-	-	-	-	5,165	6,625	8,370	10,430	12,830	-	-	-	
		45	-	-	-	-	-	5,475	6,945	8,695	10,750	-	-	-	
PPVS328BLMA1-4	65	35	-	-	9,115	11,985	15,395	19,420	24,135	29,575	35,765	-	-	-	22.0
		45	-	-	-	9,700	12,655	16,135	20,185	24,855	30,160	-	-	-	
	50	35	-	-	-	9,605	12,390	15,695	19,580	24,095	29,270	-	-	-	
		45	-	-	-	-	10,150	13,010	16,380	20,285	24,735	-	-	-	
	30	35	-	-	-	-	7,160	9,120	11,460	14,230	17,460	-	-	-	
		45	-	-	-	-	-	7,525	9,510	11,865	14,630	-	-	-	
PPVS370BLMA1-4	65	35	-	-	10,535	13,825	17,720	22,315	27,670	33,790	40,635	-	-	-	22.0
		45	-	-	-	11,275	14,680	18,660	23,255	28,485	34,350	-	-	-	
	50	35	-	-	-	11,075	14,265	18,035	22,450	27,530	33,260	-	-	-	
		45	-	-	-	-	11,775	15,050	18,870	23,250	28,170	-	-	-	
	30	35	-	-	-	-	8,245	10,475	13,140	16,260	19,840	-	-	-	
		45	-	-	-	-	-	8,700	10,955	13,600	16,665	-	-	-	
PPVS411BLMA1-4	65	35	-	-	11,820	15,540	19,950	25,155	31,230	38,220	46,135	-	-	-	22.0
		45	-	-	-	12,620	16,455	20,960	26,210	32,240	39,060	-	-	-	
	50	35	-	-	-	12,450	16,060	20,330	25,340	31,140	37,755	-	-	-	
		45	-	-	-	-	13,200	16,905	21,270	26,315	32,035	-	-	-	
	30	35	-	-	-	7,195	9,280	11,810	14,830	18,390	22,525	-	-	-	
		45	-	-	-	-	-	9,775	12,345	15,390	18,950	-	-	-	

**Technical Data (Cont'd)**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPVS242BLMA1-4	380-420 / 3	90.7	20.1	10,010	22.2	34.9	1,094	2,413	840	365
PPVS328BLMA1-4	380-420 / 3	113.4	25.7	13,750	22.2	34.9	1,094	2,413	840	405
PPVS370BLMA1-4	380-420 / 3	139.4	29.2	15,700	22.2	34.9	1,094	2,413	840	425
PPVS411BLMA1-4	380-420 / 3	174.1	33.7	18,870	22.2	34.9	1,094	2,413	840	425

Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC)															
Performance Data - R134a															
Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature					Medium Temperature			High Temperature				
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS126LAMHA1-4	65	35	-	-	-	-	-	4,580	5,965	7,575	9,450	11,595	14,020	16,710	13.8
		45	-	-	-	-	-	3,840	5,090	6,545	8,230	10,155	12,320	14,725	
	50	35	-	-	-	-	-	3,575	4,670	5,960	7,460	9,200	11,185	13,415	
		45	-	-	-	-	-	3,000	3,985	5,145	6,500	8,065	9,845	11,830	
	30	35	-	-	-	-	-	-	-	3,680	4,635	5,755	7,050	8,535	
		45	-	-	-	-	-	-	-	-	4,040	5,045	6,210	7,540	
PPVS152AMHA1-4	65	35	-	-	-	-	-	5,630	7,290	9,210	11,410	13,920	16,740	19,870	13.8
		45	-	-	-	-	-	4,720	6,210	7,920	9,890	12,140	14,670		
	50	35	-	-	-	-	-	4,400	5,720	7,260	9,030	11,070	13,390	15,960	
		45	-	-	-	-	-	3,690	4,870	6,240	7,840	9,660	11,720	14,000	
	30	35	-	-	-	-	-	-	-	4,490	5,630	6,950	8,470	10,190	
		45	-	-	-	-	-	-	-	-	4,870	6,060	7,410	8,950	
PPVS152AMHA1-6	65	35	-	-	-	-	-	5,575	7,260	9,220	11,480	14,060	16,980	20,230	13.8
		45	-	-	-	-	-	4,645	6,150	7,900	9,925	12,250	14,880	17,805	
	50	35	-	-	-	-	-	4,360	5,695	7,265	9,090	11,185	13,570	16,235	
		45	-	-	-	-	-	-	4,820	6,225	7,860	9,740	11,880	14,280	
	30	35	-	-	-	-	-	-	-	4,495	5,660	7,020	8,585	10,360	
		45	-	-	-	-	-	-	-	-	4,895	6,120	7,525	9,120	
PPVS178AMHA1-4	65	35	-	-	-	-	-	6,500	8,390	10,590	13,120	16,000	19,240	22,830	13.8
		45	-	-	-	-	-	5,500	7,180	9,130	11,390	13,970	16,870	-	
	50	35	-	-	-	-	-	5,080	6,580	8,340	10,380	12,730	15,390	18,360	
		45	-	-	-	-	-	-	5,620	7,190	9,010	11,110	13,470	16,110	
	30	35	-	-	-	-	-	-	-	5,160	6,470	7,990	9,750	11,730	
		45	-	-	-	-	-	-	-	4,440	5,600	6,960	8,520	10,290	
PPVS178AMHA1-6	65	35	-	-	-	-	-	6,420	8,360	10,635	13,280	16,315	19,770	23,625	13.8
		45	-	-	-	-	-	5,380	7,100	9,125	11,495	14,230	17,340	20,815	
	50	35	-	-	-	-	-	5,020	6,560	8,380	10,515	12,990	15,810	18,985	
		45	-	-	-	-	-	-	5,560	7,185	9,095	11,315	13,850	16,710	
	30	35	-	-	-	-	-	-	-	5,190	6,555	8,160	10,015	12,130	
		45	-	-	-	-	-	-	-	-	5,665	7,105	8,775	10,675	
PPVS205AMHA1-4	65	35	-	-	-	-	-	7,880	10,090	12,630	15,540	18,840	22,520	26,570	13.8
		45	-	-	-	-	-	6,600	8,610	10,910	13,530	16,490	19,780	-	
	50	35	-	-	-	-	-	6,160	7,920	9,950	12,290	14,970	18,000	21,370	
		45	-	-	-	-	-	5,160	6,750	8,590	10,710	13,110	15,820	18,810	
	30	35	-	-	-	-	-	-	-	6,150	7,650	9,380	11,370	13,620	
		45	-	-	-	-	-	-	-	5,320	6,670	8,220	10,000	12,010	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® TITAN VARIABLE SPEED (CONT'D)**

**Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC)**

**Performance Data - R134a**

Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature					Medium Temperature			High Temperature				
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS207AMHA1-6	65	35	-	-	-	-	-	7,775	10,050	12,700	15,775	19,295	23,250	27,635	13.8
		45	-	-	-	-	-	6,470	8,520	10,910	13,675	16,840	20,400	24,345	
	50	35	-	-	-	-	-	6,075	7,885	10,010	12,485	15,340	18,585	22,225	
		45	-	-	-	-	-	5,060	6,685	8,600	10,835	13,410	16,335	19,600	
	30	35	-	-	-	-	-	-	-	6,195	7,770	9,615	11,745	14,160	
		45	-	-	-	-	-	-	-	-	6,755	8,425	10,350	12,535	
PPVS289AMHA1-4	65	35	-	-	-	-	-	9,860	12,880	16,410	20,480	25,130	30,350	36,150	23.3
		45	-	-	-	-	-	8,180	10,900	14,060	17,710	21,860	26,520	-	
	50	35	-	-	-	-	-	7,700	10,100	12,910	16,190	19,950	24,230	29,020	
		45	-	-	-	-	-	-	8,540	11,050	13,990	17,350	21,170	25,420	
	30	35	-	-	-	-	-	-	-	7,980	10,070	12,500	15,300	18,490	
		45	-	-	-	-	-	-	-	-	8,680	10,860	13,360	16,200	
PPVS338AMHA1-4	65	35	-	-	-	-	-	11,570	15,130	19,260	24,040	29,500	35,670	42,520	23.3
		45	-	-	-	-	-	9,630	12,860	16,610	20,930	25,850	31,400	37,560	
	50	35	-	-	-	-	-	-	11,840	15,120	18,950	23,370	28,400	34,030	
		45	-	-	-	-	-	-	10,060	13,040	16,500	20,490	25,010	30,050	
	30	35	-	-	-	-	-	-	-	9,330	11,750	14,570	17,840	21,560	
		45	-	-	-	-	-	-	-	-	10,220	12,770	15,710	19,050	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPVS126LAMHA1-4	380-420 / 3	63.1	6.0	2,590	12.7	28.6	1,060	1,846	840	260
PPVS152AMHA1-4	380-420 / 3	63.1	6.5	3,100	15.9	28.6	1,094	1,846	840	279
PPVS152AMHA1-6	380-420 / 3	63.0	6.6	3,180	15.9	28.6	1,094	1,846	840	279
PPVS178AMHA1-4	380-420 / 3	86.0	9.0	3,600	15.9	34.9	1,094	1,846	840	287
PPVS178AMHA1-6	380-420 / 3	86.0	9.1	3,780	15.9	34.9	1,094	1,846	840	287
PPVS205AMHA1-4	380-420 / 3	86.0	9.8	4,430	15.9	34.9	1,094	1,846	840	304
PPVS207AMHA1-6	380-420 / 3	86.0	9.8	4,440	15.9	34.9	1,094	1,846	840	304
PPVS289AMHA1-4	380-420 / 3	134.7	11.8	5,450	22.2	34.9	1,094	2,413	840	405
PPVS338AMHA1-4	380-420 / 3	170.5	17.6	6,350	22.2	34.9	1,094	2,413	840	425

Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors (CC)															
Performance Data - R134a															
Part Number	Operating Frequency (Hz)	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
			Low Temperature					Medium Temperature			High Temperature				
			-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PPVS242AMHA1-4	65	35	-	-	-	-	-	9,060	11,680	14,730	18,220	22,180	26,610	31,450	23.3
		45	-	-	-	-	-	7,580	9,920	12,630	15,760	19,330	23,330	-	
	50	35	-	-	-	-	-	7,100	9,190	11,640	14,480	17,720	21,350	25,370	
		45	-	-	-	-	-	5,930	7,790	9,980	12,530	15,430	18,690	22,290	
	30	35	-	-	-	-	-	-	-	7,240	9,070	11,180	13,600	16,310	
		45	-	-	-	-	-	-	-	6,200	7,840	9,740	11,900	14,330	
PPVS328AMHA1-4	65	35	-	-	-	-	-	11,900	15,370	19,380	23,950	29,100	34,810	41,080	23.3
		45	-	-	-	-	-	9,870	13,050	16,690	20,810	25,410	-	-	
	50	35	-	-	-	-	-	9,330	12,090	15,300	18,990	23,190	27,890	33,070	
		45	-	-	-	-	-	7,750	10,260	13,160	16,500	20,280	24,500	29,120	
	30	35	-	-	-	-	-	-	-	9,500	11,870	14,600	17,700	21,180	
		45	-	-	-	-	-	-	-	8,170	10,320	12,780	15,570	18,690	
PPVS370AMHA1-4	65	35	-	-	-	-	-	13,720	17,590	22,030	27,100	32,780	39,070	45,940	23.3
		45	-	-	-	-	-	11,470	14,990	19,010	23,560	28,660	-	-	
	50	35	-	-	-	-	-	10,770	13,850	17,440	21,550	26,200	31,400	37,110	
		45	-	-	-	-	-	9,010	11,800	15,040	18,750	22,940	27,600	-	
	30	35	-	-	-	-	-	-	-	10,860	13,510	16,560	20,020	23,890	
		45	-	-	-	-	-	-	-	9,370	11,770	14,520	17,630	21,090	
PPVS411AMHA1-4	65	35	-	-	-	-	-	15,270	19,610	24,630	30,380	36,850	44,060	51,950	23.3
		45	-	-	-	-	-	12,760	16,690	21,240	26,440	32,310	-	-	
	50	35	-	-	-	-	-	11,980	15,440	19,480	24,130	29,420	35,340	41,880	
		45	-	-	-	-	-	10,000	13,140	16,800	21,010	25,790	31,140	37,030	
	30	35	-	-	-	-	-	-	-	12,120	15,110	18,560	22,480	26,880	
		45	-	-	-	-	-	-	-	10,440	13,160	16,280	19,830	23,790	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPVS242AMHA1-4	380-420 / 3	86.0	10.6	5,200	22.2	34.9	1,094	2,413	840	365
PPVS328AMHA1-4	380-420 / 3	108.7	11.8	6,470	22.2	34.9	1,094	2,413	840	405
PPVS370AMHA1-4	380-420 / 3	134.7	14.2	7,390	22.2	34.9	1,094	2,413	840	425
PPVS411AMHA1-4	380-420 / 3	170.5	19.3	8,150	22.2	34.9	1,094	2,413	840	425



## CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)

### KIRBY® CENTURION

Kirby® Centurion condensing units provide an all-in-one solution for the commercial refrigeration and air conditioning sectors that require larger capacity systems. This innovative design offers the benefits of faster installation time and energy efficiencies gained from advanced technology within the compressor and air cooled condenser. Suitable for retail, convenience, cold storage and industrial storage, the Kirby® Centurion range is built on a compact and highly flexible platform; showcasing Kirby's expertise in providing efficiency, environmentally friendly and reliable cooling solutions for a variety of applications.

#### Key Features

- High COP Dorin® H-Series Semi-Hermetic compressors.
- High efficiency remote condenser with optimised coil design and Kirby Blue Koted fins.
- Factory pre-wired for faster installation and assured performance
- Factory fitted accumulator and TraxOil
- Ease of serviceability made possible by multiple removable access panels
- Compact footprint ensures suitability for most installations in an outdoor environment especially where floor space is at a minimum.



Low / Medium Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS421LMA1-4	35	-	-	11,470	14,860	18,765	23,225	28,260	33,875	40,045	-	-	-	37.6
	45	-	-	-	11,885	15,195	18,980	23,255	27,990	33,115	-	-	-	
PPS477LMA1-4	35	-	-	12,395	16,315	20,785	25,865	31,570	37,875	44,710	-	-	-	37.6
	45	-	-	-	13,040	16,830	21,125	25,925	31,175	36,750	-	-	-	
PPS543LMA1-2	35	-	-	13,790	18,270	23,460	29,400	36,110	43,590	51,800	-	-	-	64.7
	45	-	-	-	14,640	18,990	24,000	29,700	36,010	42,790	-	-	-	
PPS740LMA1-2	35	-	-	-	24,490	31,260	39,030	47,860	57,720	68,560	-	-	-	64.7
	45	-	-	-	-	25,220	31,840	39,360	47,810	57,050	-	-	-	
PPS803LMA1-2	35	-	-	20,340	26,730	34,150	42,670	52,330	63,130	75,030	-	-	-	64.7
	45	-	-	-	21,180	27,470	34,700	42,950	52,160	62,140	-	-	-	
PPS950LMA1-2	35	-	-	25,250	32,620	41,070	50,710	61,580	73,650	86,810	-	-	-	64.7
	45	-	-	-	26,360	33,560	41,740	50,930	61,030	71,830	-	-	-	

Low / Medium Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R134a														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS421LMA1-4	35	-	-	-	-	-	12,100	15,630	19,760	24,550	30,040	36,220	43,060	43.7
	45	-	-	-	-	-	-	13,290	17,020	21,360	26,300	31,850	37,980	
PPS477LMA1-4	35	-	-	-	-	-	15,790	20,355	25,610	31,590	38,275	45,625	53,580	43.7
	45	-	-	-	-	-	13,335	17,470	22,225	27,610	33,615	40,200	47,360	
PPS543LMA1-2	35	-	-	-	-	-	17,020	22,010	27,810	34,500	42,120	50,670	60,110	75.3
	45	-	-	-	-	-	14,320	18,860	24,120	30,160	37,020	44,690	53,110	
PPS803LMA1-2	35	-	-	-	-	-	25,160	32,610	41,300	51,320	62,750	75,580	89,710	75.3
	45	-	-	-	-	-	21,060	27,830	35,690	44,760	55,040	66,540	79,210	
PPS950LMA1-2	35	-	-	-	-	22,380	29,860	38,580	48,710	60,390	73,640	88,410	104,540	75.3
	45	-	-	-	-	-	24,880	32,820	42,050	52,650	64,650	78,020	-	

Low / Medium Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R448A / R449A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS543LMA1-2	35	-	-	-	15,520	20,410	26,240	33,100	41,100	50,330	-	-	-	60.3
	45	-	-	-	-	16,750	21,780	27,760	34,760	42,750	-	-	-	
PPS740LMA1-2	35	-	-	-	20,800	27,200	34,840	43,870	54,420	66,630	-	-	-	60.3
	45	-	-	-	-	22,250	28,880	36,800	46,150	57,000	-	-	-	
PPS803LMA1-2	35	-	-	-	22,700	29,710	38,080	47,970	59,530	72,910	-	-	-	60.3
	45	-	-	-	-	24,230	31,480	40,150	50,350	62,080	-	-	-	
PPS950LMA1-2	35	-	-	-	27,700	35,740	45,260	56,450	69,450	84,360	-	-	-	60.3
	45	-	-	-	-	29,610	37,870	47,620	58,910	71,760	-	-	-	
Technical Data														
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)				
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth					
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)							
PPS421LMA1-4	380-420 / 3	170.50	38.1	18,690	41.28	22.22	1,090	1,005	3,300	560.0				
PPS477LMA1-4	380-420 / 3	177.00	41.1	21,070	41.28	22.22	1,090	1,005	3,300	570.0				
PPS543LMA1-2	380-420 / 3	213.60	48.4	21,640	53.00	28.00	1,270	2,230	2,500	920.0				
PPS740LMA1-2	380-420 / 3	239.90	64.2	27,460	53.00	28.00	1,270	2,230	3,240	1,070.0				
PPS803LMA1-2	380-420 / 3	239.90	68.0	27,460	53.00	28.00	1,270	2,230	3,240	1,070.0				
PPS950LMA1-2	380-420 / 3	305.90	79.0	34,360	53.00	28.00	1,270	2,230	3,240	1,090.0				

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS332LMHA1-4	35	-	-	8,660	11,225	14,160	17,535	21,405	25,775	30,630	35,915	41,520	-	37.6
	45	-	-	6,755	8,930	11,410	14,260	17,520	21,185	25,205	29,495	33,900	-	
PPS491LMHA1-2	35	-	-	-	16,110	20,810	26,210	32,360	39,270	46,950	55,350	64,390	-	64.7
	45	-	-	-	-	16,770	21,350	26,550	32,400	38,830	45,750	52,970	-	
PPS551LMHA1-2	35	-	-	13,290	17,760	22,900	28,830	35,600	43,230	51,690	60,880	70,630	-	64.7
	45	-	-	-	14,010	18,380	23,420	29,160	35,590	42,630	50,120	57,790	-	
PPS747LMHA1-2	35	-	-	-	24,310	30,930	38,600	47,400	57,360	68,460	80,650	93,810	-	64.7
	45	-	-	-	-	25,080	31,600	39,090	47,560	56,940	67,070	77,690	-	
PPS825LMHA1-2	35	-	-	20,860	27,210	34,530	42,950	52,550	63,360	75,370	88,480	102,490	-	64.7
	45	-	-	-	21,760	28,010	35,200	43,390	52,580	62,660	73,400	84,450	-	

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors														
Performance Data - R134a														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS332LMHA1-4	35	-	-	-	-	-	8,990	11,780	15,050	18,850	23,240	28,220	33,790	43.7
	45	-	-	-	-	-	-	10,010	12,960	16,390	20,330	24,780	29,750	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® CENTURION (CONT'D)**

**Low / Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors**

**Performance Data - R448A / R449A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS491LMHA1-2	35	-	-	-	-	18,220	23,460	29,590	36,670	44,790	54,020	64,420	-	60.3
	45	-	-	-	-	14,960	19,510	24,850	31,050	38,140	46,120	54,960	-	
PPS551LMHA1-2	35	-	-	-	15,180	20,050	25,800	32,550	40,370	49,310	59,420	70,670	-	60.3
	45	-	-	-	-	16,400	21,400	27,290	34,110	41,870	50,530	59,970	-	
PPS747LMHA1-2	35	-	-	-	-	27,070	34,550	43,350	53,560	65,320	78,720	93,860	-	60.3
	45	-	-	-	-	22,380	28,880	36,580	45,580	55,920	67,610	80,620	-	
PPS825LMHA1-2	35	-	-	-	23,260	30,230	38,450	48,050	59,170	71,910	86,360	102,550	-	60.3
	45	-	-	-	-	25,000	32,170	40,610	50,390	61,540	74,000	87,630	-	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPS332LMHA1-4	380-420 / 3	170.50	32.5	14,520	41.28	22.22	1,090	1,005	3,300	500.0
PPS491LMHA1-2	380-420 / 3	216.60	44.3	22,840	53.00	28.00	1,270	2,230	2,500	920.0
PPS551LMHA1-2	380-420 / 3	234.60	48.4	26,240	53.00	28.00	1,270	2,230	2,500	920.0
PPS747LMHA1-2	380-420 / 3	275.90	64.2	29,160	53.00	28.00	1,270	2,230	3,240	1,070.0
PPS825LMHA1-2	380-420 / 3	305.90	70.0	34,360	53.00	28.00	1,270	2,230	3,240	1,080.0

**Medium / High Temperature Application - Dorin Semi-Hermetic Reciprocating Compressors**

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											Receiver Capacity (kg)	
		Low Temperature					Medium Temperature			High Temperature				
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5		10
PPS373MHA1-4	35	-	-	-	-	-	16,710	21,560	27,130	33,470	40,610	48,590	57,390	43.7
	45	-	-	-	-	-	14,070	18,470	23,530	29,270	35,720	42,880	-	
PPS492MHA1-2	35	-	-	-	-	16,440	21,800	28,030	35,240	43,490	52,810	63,190	74,660	75.3
	45	-	-	-	-	13,370	18,230	23,860	30,360	37,790	46,150	55,410	-	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
PPS373MHA1-4	380-420 / 3	203.00	25.6	11,510	41.28	22.22	1,090	1,005	3,300	570.0
PPS492MHA1-2	380-420 / 3	255.60	42.1	17,810	53.00	28.00	1,270	2,230	2,500	920.0



**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**



**EMERSON ZX NEXT GENERATION**

The new Emerson ZX Next Generation series of outdoor refrigeration units are specifically designed to cater for a wide range of refrigeration applications covering medium and low evaporating temperatures. Typical applications include convenience stores, fast food chains and restaurants, and beverage coolers.

**Key Features**

- Simplified refrigeration system integration
- Building integration with maximum space saving
- Simple installation
- Multiple refrigerant compatibility
- Urban environment integration through noise attenuation
- High reliability through diagnostic protection capabilities
- Reduced lifecycle cost
- Premium quality inclusions and controls



Single Phase Power Supply Range													
Medium Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZX-020E-PFJ	32	-	-	-	-	-	285	339	392	448	508	-	-
	43	-	-	-	-	-	194	243	289	334	381	-	-
ZX-030E-PFJ	32	-	-	-	-	-	375	452	539	635	740	-	-
	43	-	-	-	-	-	306	369	439	517	603	-	-
ZX-040E-PFJ	32	-	-	-	-	-	510	610	713	824	947	-	-
	43	-	-	-	-	-	398	500	595	689	783	-	-

Medium Temperature Application													
Performance Data - R407F													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZX-020E-PFJ	32	-	-	-	-	-	-	336	398	469	539	607	690
	43	-	-	-	-	-	-	221	274	340	414	491	-
ZX-030E-PFJ	32	-	-	-	-	-	-	464	565	675	794	931	1,079
	43	-	-	-	-	-	-	306	388	489	609	753	-
ZX-040E-PFJ	32	-	-	-	-	-	-	631	757	891	1,033	1,191	1,370
	43	-	-	-	-	-	-	416	520	646	792	964	-

Technical Data						
Part Number	Connections		Dimensions			Weight
	Liquid	Suction	Height	Width	Depth	Net
	(mm)		(mm)			(kg)
ZX-020E-PFJ	12.70	19.05	840	1,029	424	76.0
ZX-030E-PFJ	12.70	19.05	840	1,029	424	79.0
ZX-040E-PFJ	12.70	19.05	840	1,029	424	100.0

Three Phase Power Supply Range													
Medium Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZX-020BE-TFD	32	-	-	-	-	-	285	339	392	448	508	-	-
	43	-	-	-	-	-	194	243	289	334	381	-	-
ZX-030BE-TFD	32	-	-	-	-	-	375	452	539	635	740	-	-
	43	-	-	-	-	-	306	369	439	517	603	-	-
ZX-040BE-TFD	32	-	-	-	-	-	510	610	713	824	947	-	-
	43	-	-	-	-	-	398	500	595	689	783	-	-
ZX-050BE-TFD	32	-	-	-	-	-	656	812	976	1,143	1,310	-	-
	43	-	-	-	-	-	488	628	779	937	1,098	-	-
ZX-060BE-TFD	32	-	-	-	-	-	753	906	1,072	1,258	1,472	-	-
	43	-	-	-	-	-	590	748	907	1,074	1,257	-	-
ZX-076BE-TFD	32	-	-	-	-	-	850	1,021	1,206	1,414	1,653	-	-
	43	-	-	-	-	-	639	809	980	1,161	1,359	-	-

Medium Temperature Application													
Performance Data - R407F													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZX-020BE-TFD	32	-	-	-	-	-	-	336	398	469	539	607	690
	43	-	-	-	-	-	-	221	274	340	414	491	-
ZX-030BE-TFD	32	-	-	-	-	-	-	464	565	675	794	931	1,079
	43	-	-	-	-	-	-	306	388	489	609	753	-
ZX-040BE-TFD	32	-	-	-	-	-	-	631	757	891	1,033	1,191	1,370
	43	-	-	-	-	-	-	416	520	646	792	964	-
ZX-050BE-TFD	32	-	-	-	-	-	-	742	944	1,119	1,296	1,504	1,774
	43	-	-	-	-	-	-	532	753	933	1,101	1,287	-
ZX-060BE-TFD	32	-	-	-	-	-	-	846	1,057	1,242	1,451	1,745	2,057
	43	-	-	-	-	-	-	607	844	1,036	1,233	1,493	-
ZX-076BE-TFD	32	-	-	-	-	-	-	941	1,175	1,380	1,614	1,923	2,266
	43	-	-	-	-	-	-	675	938	1,152	1,371	1,644	-

Technical Data						
Part Number	Connections		Dimensions			Weight
	Liquid	Suction	Height	Width	Depth	Net
	(mm)		(mm)			(kg)
ZX-020BE-TFD	12.70	19.05	840	1,029	424	76.0
ZX-030BE-TFD	12.70	19.05	840	1,029	424	79.0
ZX-040BE-TFD	12.70	19.05	840	1,029	424	100.0
ZX-050BE-TFD	12.70	19.05	1,242	1,029	424	108.0
ZX-060BE-TFD	12.70	19.05	1,242	1,029	424	112.0
ZX-076BE-TFD	12.70	19.05	1,242	1,029	424	121.0

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**EMERSON ZX DIGITAL NEXT GENERATION (CONT'D)**



Emerson ZX Digital Refrigeration Units represent the top level of the ZX product platform. The advantages of the standard models compactness, silence and efficiency are further extended by the capability of continuous capacity modulation. This makes Emerson ZX Digital refrigeration units the perfect fit for applications with wide load variations.

**Key Features**

- Simplified capacity modulation
- Reduced installation effort
- Energy savings thanks to digital scroll technology
- Reduced system downtime and lifecycle costs



Three Phase Power Supply Range													
Medium Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXD-030BE-TFD	32	-	-	-	-	-	372	437	520	618	728	847	-
	43	-	-	-	-	-	298	359	429	506	586	667	-
ZXD-040BE-TFD	32	-	-	-	-	-	553	669	787	911	1,040	1,175	-
	43	-	-	-	-	-	423	528	633	740	848	959	-
ZXD-050BE-TFD	32	-	-	-	-	-	656	812	976	1,143	1,310	1,474	-
	43	-	-	-	-	-	488	628	779	937	1,098	1,258	-
ZXD-060BE-TFD	32	-	-	-	-	-	758	906	1,072	1,258	1,472	1,720	-
	43	-	-	-	-	-	590	748	907	1,074	1,257	1,463	-
ZXD-076BE-TFD	32	-	-	-	-	-	850	1,021	1,206	1,414	1,653	1,930	-
	43	-	-	-	-	-	639	809	980	1,161	1,359	1,581	-
ZXD-090BE-TFD	32	-	-	-	-	-	1,070	1,250	1,450	1,620	1,700	-	-
	43	-	-	-	-	-	990	1,190	1,320	1,450	1,520	-	-
ZXD-120BE-TFD	32	-	-	-	-	-	1,482	1,847	2,212	2,563	2,907	-	-
	43	-	-	-	-	-	1,174	1,504	1,870	2,257	2,652	-	-
ZXD-160BE-TFD	32	-	-	-	-	-	2,035	2,384	2,753	3,133	3,518	-	-
	43	-	-	-	-	-	1,851	2,215	2,588	2,984	3,397	-	-
ZXD-200BE-TFD	32	-	-	-	-	-	2,359	2,901	3,448	4,012	-	-	-
	43	-	-	-	-	-	2,126	2,612	3,153	3,707	-	-	-
Medium Temperature Application													
Performance Data - R407F													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXD-030BE-TFD	32	-	-	-	-	-	-	-	531	635	724	840	1,025
	43	-	-	-	-	-	-	-	-	545	635	-	-
ZXD-040BE-TFD	32	-	-	-	-	-	-	-	730	893	1,073	1,269	1,477
	43	-	-	-	-	-	-	-	606	764	930	1,103	1,281
ZXD-050BE-TFD	32	-	-	-	-	-	-	-	905	1,121	1,352	1,573	1,847
	43	-	-	-	-	-	-	-	745	947	1,172	1,390	1,640

Medium Temperature Application (Cont'd)													
Performance Data - R407F													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXD-060BE-TFD	32	-	-	-	-	-	-	-	985	1,220	1,523	1,791	2,139
	43	-	-	-	-	-	-	-	841	1,059	1,299	1,541	1,834
ZXD-076BE-TFD	32	-	-	-	-	-	-	-	1,259	1,478	1,721	1,996	2,307
	43	-	-	-	-	-	-	-	1,067	1,255	1,457	1,677	1,923

Technical Data						
Part Number	Connections		Dimensions			Weight
	Liquid	Suction	Height	Width	Depth	Net
	(mm)		(mm)			(kg)
ZXD-030BE-TFD	12.70	19.05	840	1,029	424	85.0
ZXD-040BE-TFD	12.70	22.22	1,242	1,029	424	104.0
ZXD-050BE-TFD	12.70	22.22	1,242	1,029	424	112.0
ZXD-060BE-TFD	12.70	22.22	1,242	1,029	424	114.0
ZXD-076BE-TFD	12.70	22.22	1,242	1,029	424	122.0
ZXD-090BE-TFD	12.70	22.22	1,242	1,029	424	138.0
ZXD-120BE-TFD	19.05	34.90	1,124	1,619	1,010	357.0
ZXD-160BE-TFD	19.05	34.90	1,124	1,619	1,010	362.0
ZXD-200BE-TFD	19.05	34.90	1,913	2,033	857	470.0

**EMERSON ZX NEXT GENERATION (LOW TEMPERATURE)**

The new Emerson ZX Next Generation series of outdoor refrigeration units are specifically designed to cater for a wide range of refrigeration applications covering medium and low evaporating temperatures. Typical applications include convenience stores, fast food chains and restaurants, and beverage coolers.



**Key Features**

- Simplified refrigeration system integration
- Building integration with maximum space saving
- Simple installation
- Multiple refrigerant compatibility
- Urban environment integration through noise attenuation
- High reliability through diagnostic protection capabilities
- Reduced lifecycle cost Premium quality inclusions and controls



Single Phase Power Supply Range													
Low Temperature Application													
Performance Data - R404A													
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXL-020BE-PFJ	32	-	145	182	224	270	319	373	431	492	558	-	-
	43	-	110	123	158	207	260	318	379	444	513	-	-
ZXL-030BE-PFJ	32	-	208	249	300	360	427	500	577	735	838	-	-
	43	-	173	203	244	295	354	419	489	655	752	-	-

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**EMERSON ZX DIGITAL NEXT GENERATION (CONT'D)**

**Low Temperature Application (Cont'd)**

**Performance Data - R407F**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXL-020BE-PFJ	32	-	125	159	204	259	322	391	467	547	629	-	-
	43	-	106	138	181	233	292	357	427	501	578	-	-
ZXL-030BE-PFJ	32	-	175	224	284	354	435	532	647	784	931	-	-
	43	-	148	194	252	319	395	486	593	719	855	-	-

**Technical Data**

Part Number	Connections		Dimensions			Weight
	Liquid	Suction	Height	Width	Depth	Net
	(mm)		(mm)			(kg)
ZXL-030BE-PFJ	12.70	19.05	840	1,029	424	79.0
ZXL-040BE-PFJ	12.70	19.05	840	1,029	424	81.0

**Three Phase Power Supply Range**

**Medium Temperature Application**

**Performance Data - R404A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXL-020BE-TFD	32	-	145	182	224	270	319	373	431	492	558	-	-
	43	-	110	123	158	207	260	318	379	444	513	-	-
ZXL-030BE-TFD	32	-	208	249	300	360	427	500	577	735	838	-	-
	43	-	173	203	244	295	354	419	489	655	752	-	-
ZXL-040BE-TFD	32	-	302	377	463	558	663	775	893	1,016	1,143	-	-
	43	-	267	334	410	493	583	677	775	876	978	-	-
ZXL-050BE-TFD	32	-	352	431	529	643	769	904	1,042	1,181	1,317	-	-
	43	-	299	377	469	571	678	787	895	997	1,089	-	-
ZXL-060BE-TFD	32	-	430	532	648	777	917	1,067	1,226	1,391	1,560	-	-
	43	-	381	467	567	679	800	930	1,067	1,209	1,354	-	-
ZXL-075BE-TFD	32	-	475	590	714	850	999	1,161	1,339	1,533	1,745	-	-
	43	-	421	530	643	763	890	1,025	1,171	1,328	1,497	-	-



Copeland™ ZX Refrigeration Condensing Units. The intelligent choice for small retail and food service applications, combining energy savings with user-friendly electronic features.



The Copeland ZX platform has been designed based on the factors demanded by industry users;

- ➔ **Energy Efficiency** Copeland scroll compressor technology, variable speed fan motor, large capacity condenser coil and advanced control algorithms work together to significantly reduce energy consumption.
- ➔ **Reliability** With advanced electronics controller and diagnostics, including fault code alerts, equipment reliability is greatly enhanced.
- ➔ **Intelligent Store™** Integrates hardware and services to provide retailers a single view into their entire network of facilities for better decision making.
- ➔ **Multi-refrigerant Units** Low GWP, wide range of refrigerant choice to suit the application required.

\* Larger capacity Units, Variable Speed, A2L options available on request.

COPELAND™



Suitable for:  
Med Temp (ZX-MT), Low Temp (ZXL-LT)  
and Digital modulated variable capacity  
Med Temp (ZXD-MT) refrigeration.

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**
**EMERSON ZX DIGITAL NEXT GENERATION (CONT'D)**

## Low Temperature Application

## Performance Data - R407F

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)											
		Low Temperature						Medium Temperature			High Temperature		
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10
ZXL-020BE-TFD	32	-	125	159	204	259	322	391	467	547	629	-	-
	43	-	106	138	181	233	292	357	427	501	578	-	-
ZXL-030BE-TFD	32	-	175	224	284	354	435	532	647	784	931	-	-
	43	-	148	194	252	319	395	486	593	719	855	-	-
ZXL-040BE-TFD	32	-	293	372	460	559	670	794	933	1,086	1,256	-	-
	43	-	256	326	404	490	586	694	814	947	1,095	-	-
ZXL-050BE-TFD	32	-	323	397	504	636	787	951	1,115	1,274	1,420	-	-
	43	-	269	338	442	568	708	855	1,000	1,134	1,247	-	-
ZXL-060BE-TFD	32	-	394	490	617	768	938	1,122	1,312	1,501	1,682	-	-
	43	-	333	418	534	675	836	1,011	1,193	1,375	1,551	-	-
ZXL-075BE-TFD	32	-	436	544	680	841	1,022	1,221	1,433	1,654	1,882	-	-
	43	-	368	475	606	759	930	1,114	1,309	1,510	1,714	-	-

## Technical Data

Part Number	Connections		Dimensions			Weight
	Liquid	Suction	Height	Width	Depth	Net
	(mm)		(mm)			(kg)
ZXL-020BE-TFD	12.70	19.05	840	1,029	424	79.0
ZXL-030BE-TFD	12.70	19.05	840	1,029	424	81.0
ZXL-040BE-TFD	12.70	22.22	840	1,029	424	93.0
ZXL-050BE-TFD	12.70	22.22	1,242	1,029	424	106.0
ZXL-060BE-TFD	12.70	22.22	1,242	1,029	424	116.0
ZXL-075BE-TFD	12.70	22.22	1,242	1,029	424	121.0

**KIRBY® FRIDGEBOX**



The Kirby® Fridgebox range of condensing units builds on Kirby®'s reputation of extremely durable, low maintenance refrigeration products. Built on a compact and highly flexible platform, the Kirby® Fridgebox range includes features such as indoor or outdoor installation, side discharge fans and dual pressure controls. Kirby® Fridgebox Series IV includes Copeland's latest generation of scroll compressors, lowering noise and vibration while delivering optimum performance across a wide range of ambient conditions. Additionally, Kirby® Digital Scroll Fridgebox™ units include Copeland Scroll Digital compressors matched which achieve best in class capacity and close temperature modulation, excellent COP's and system efficiency.

**Key Features**

- Latest generation Copeland ZB compressors offer reduced noise, increased durability and reliability.
- High efficiency Hypercore™ microchannel condenser coil technology boosts efficiency and reduces refrigerant charge requirements, lessening environmental impact.
- Pre-wired MP15 protection saves time and simplifies commissioning.
- Engineered for harsh Australian conditions, with guaranteed operation up to 45°C ambient temperature
- Removable panels offer each access for service and maintenance.
- Compact footprint and light weight provides flexibility in selecting installation location, while also making installation easy.
- Dixell XC controller ensures optimal performance of digital scroll compressors\*

\* Kirby Digital Scroll Fridgebox models only

Medium / High Temperature Application - Emerson Copeland Scroll Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
FBH043MHZ1-2	35	-	-	-	1,450	1,860	2,340	2,870	3,440	4,050	4,710	5,420	6,180	6.8
	43	-	-	-	1,160	1,530	1,950	2,410	2,910	3,450	4,030	4,640	5,280	
FBH051MHZ1-2	35	-	-	-	2,000	2,430	2,940	3,500	4,130	4,820	5,580	6,420	7,330	6.8
	43	-	-	-	-	2,110	2,550	3,040	3,590	4,200	4,870	5,610	6,400	
FBH066MHZ1-2	35	-	-	-	2,480	3,050	3,720	4,490	5,360	6,330	7,400	8,580	9,880	8.9
	43	-	-	-	2,160	2,660	3,250	3,920	4,670	5,510	6,440	7,470	8,590	
FBH075MHZ1-2	35	-	-	-	2,880	3,520	4,270	5,130	6,090	7,180	8,380	9,710	11,180	8.9
	43	-	-	-	2,500	3,060	3,720	4,470	5,310	6,260	7,320	8,490	9,790	
FBH086MHZ1-2	35	-	-	-	3,300	4,040	4,910	5,890	7,000	8,230	9,580	11,060	12,680	8.9
	40	-	-	-	3,020	3,700	4,500	5,400	6,410	7,550	8,810	10,200	11,700	
FBH103MHZ1-2	35	-	-	-	4,050	4,940	5,950	7,110	8,390	9,800	11,340	12,990	14,750	8.9
	40	-	-	-	3,730	4,540	5,470	6,520	7,700	9,000	10,420	11,950	13,570	
FBH116MHZ1-2	35	-	-	-	4,650	5,680	6,850	8,160	9,580	11,110	12,750	14,510	16,390	8.9
	43	-	-	-	-	4,870	5,930	7,100	8,350	9,700	11,110	12,600	-	

Performance Data - R134a														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
FBH043MHZ1-2	35	-	-	-	-	-	1,490	1,870	2,310	2,820	3,400	4,030	4,710	7.8
	46	-	-	-	-	-	-	-	2,040	2,500	3,020	3,590	4,210	
FBH051MHZ1-2	35	-	-	-	-	-	1,570	2,010	2,530	3,150	3,840	4,600	5,370	7.8
	46	-	-	-	-	-	-	-	2,290	2,840	3,480	4,160	4,860	
FBH066MHZ1-2	35	-	-	-	-	-	2,190	2,740	3,400	4,170	5,040	6,020	7,100	10.4
	46	-	-	-	-	-	-	2,480	3,080	3,790	4,590	5,480	6,450	
FBH075MHZ1-2	35	-	-	-	-	-	2,180	2,820	3,570	4,440	5,420	6,480	7,600	10.4
	46	-	-	-	-	-	-	2,460	3,170	3,980	4,890	5,880	6,930	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® FRIDGEBOX (CONT'D)**

**Medium / High Temperature Application - Emerson Copeland Scroll Compressors (Cont'd)**

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
FBH086MHZ1-2	35	-	-	-	-	-	2,900	3,660	4,550	5,570	6,710	7,960	9,300	10.4
	46	-	-	-	-	-	-	-	4,090	5,020	6,060	7,200	8,420	
FBH103MHZ1-2	35	-	-	-	-	-	3,480	4,430	5,530	6,760	8,110	9,580	11,170	11.4
	46	-	-	-	-	-	-	-	5,020	6,140	7,360	8,690	10,120	
FBH116MHZ1-2	35	-	-	-	-	-	4,220	5,250	6,460	7,850	9,380	11,040	12,820	10.4
	46	-	-	-	-	-	-	-	5,760	7,000	8,380	9,890	11,500	

**Technical Data**

Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
FBH043MHZ1-2	380-420 / 3	27.60	4.8	2,120	12.70	19.00	569	1,414	560	84.0
FBH051MHZ1-2	380-420 / 3	33.60	5.8	2,440	12.70	19.00	569	1,414	560	86.0
FBH066MHZ1-2	380-420 / 3	42.00	7.0	2,970	12.70	19.00	729	1,491	575	83.0
FBH075MHZ1-2	380-420 / 3	48.00	7.8	3,400	12.70	19.00	729	1,491	575	84.0
FBH086MHZ1-2	380-420 / 3	51.30	9.4	3,790	12.70	22.20	729	1,491	575	93.0
FBH103MHZ1-2	380-420 / 3	67.50	11.3	4,670	12.70	22.20	729	1,491	575	94.0
FBH116MHZ1-2	380-420 / 3	76.00	11.5	5,260	12.70	22.20	729	1,491	575	96.0

**Medium / High Temperature Application - Emerson Copeland Scroll Digital Compressors**

**Performance Data - R404A**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
FBDH066MHZ1-2	35	-	-	-	-	-	3,760	4,500	5,390	6,390	7,470	8,600	9,760	8.9
	45	-	-	-	-	-	-	4,000	4,780	5,580	6,400	7,250	8,160	
FBDH088MHZ1-2	35	-	-	-	-	-	5,040	5,970	7,030	8,220	9,530	10,930	12,380	8.9
	45	-	-	-	-	-	-	5,110	5,980	6,930	7,950	9,040	10,170	
FBDH116MHZ1-2	35	-	-	-	-	-	7,160	8,380	9,790	11,390	13,110	14,860	16,540	8.9
	45	-	-	-	-	-	-	7,230	8,410	9,750	11,210	12,680	-	
FBDH125MHZ1-2	35	-	-	-	-	-	7,680	8,930	10,370	11,970	13,670	15,340	16,870	8.9
	45	-	-	-	-	-	-	-	8,790	10,080	11,450	-	-	

**Performance Data - R134a**

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
FBDH066MHZ1-2	35	-	-	-	-	-	2,150	2,700	3,320	4,020	4,820	5,740	6,790	10.4
	46	-	-	-	-	-	1,970	2,480	3,030	3,640	4,340	5,150	6,070	
FBDH088MHZ1-2	35	-	-	-	-	-	2,650	3,350	4,180	5,150	6,250	7,490	8,860	10.4
	46	-	-	-	-	-	2,350	2,970	3,720	4,590	5,580	6,690	7,920	
FBDH116MHZ1-2	35	-	-	-	-	-	4,000	5,000	6,150	7,460	8,940	10,600	12,430	10.4
	46	-	-	-	-	-	-	4,450	5,470	6,640	7,970	9,450	11,090	
FBDH125MHZ1-2	35	-	-	-	-	-	4,460	5,520	6,770	8,200	9,800	11,560	13,480	10.4
	46	-	-	-	-	-	-	-	6,040	7,300	8,700	10,240	11,930	

Technical Data										
Part Number	Electrical Data				Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Input Power	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)			
FBDH066MHZ1-2	380-420 / 3	42.00	6.4	2,800	12.70	19.00	729	1,491	575	83.0
FBDH088MHZ1-2	380-420 / 3	50.00	7.6	3,620	12.70	19.00	729	1,491	575	93.0
FBDH116MHZ1-2	380-420 / 3	76.00	10.8	5,400	12.70	22.20	729	1,491	575	96.0
FBDH125MHZ1-2	380-420 / 3	102.00	12.4	5,880	12.70	22.20	729	1,491	575	97.0

**KIRBY® BASIC UNITS**

Built smart, compact and tough the Kirby® Semi Hermetic 2 Cylinder Basic Unit range offers leading performance, efficiency, high durability and a quiet operation. Powered by Dorin H Series compressors, Kirby® Semi Hermetic 2 Cylinder Basic Units achieve high C.O.P values and high motor efficiency is made possible through smart design principals. With ultimate reliability and ease of installation the Kirby® Basic Unit design is tailored for the most difficult projects, and is easily connected to remote aircooled condenser such as the Kirby® KRC.

**Key Features**

- Compact with reduced operational weight
- High performance Dorin® H series compressors
- Thermik internal motor protection
- Crankcase heater
- Single phase 240V units are supplied with a relay and capacitor box fitted
- Powder coated finish
- One piece copper tube design adapted for reliability
- Oil separator
- Dual auto HP/LP control and flexible lines
- Liquid line drier and moisture indicator
- Wooden skid part crate packing



Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors														
Performance Data - R404A														
Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS016LMHB-1	35	-	350	480	630	820	1,040	1,300	1,600	1,940	2,340	2,780	3,290	4.4
	45	-	260	370	500	660	840	1,050	1,300	1,580	1,910	2,290	2,720	
PCS016LMHB-2	35	-	350	480	630	820	1,040	1,300	1,600	1,940	2,340	2,780	3,290	4.4
	45	-	260	370	500	660	840	1,050	1,300	1,580	1,910	2,290	2,720	
PCS032LMHB-1	35	-	720	980	1,290	1,660	2,090	2,590	3,180	3,860	4,640	5,540	6,560	4.4
	45	-	460	720	1,010	1,330	1,700	2,120	2,610	3,170	3,820	-	-	
PCS032LMHB-2	35	-	720	980	1,290	1,660	2,090	2,590	3,180	3,860	4,640	5,540	6,560	4.4
	45	-	460	720	1,010	1,330	1,700	2,120	2,610	3,170	3,820	-	-	
PCS039LMHB-1	35	-	830	1,170	1,560	2,020	2,550	3,160	3,880	4,710	5,670	6,760	8,000	4.4
	45	-	490	830	1,200	1,610	2,070	2,590	3,190	3,870	4,660	-	-	
PCS039LMHB-2	35	-	830	1,170	1,560	2,020	2,550	3,160	3,880	4,710	5,670	6,760	8,000	4.4
	45	-	490	830	1,200	1,610	2,070	2,590	3,190	3,870	4,660	-	-	
PCS044LMHB-2	35	-	930	1,320	1,770	2,290	2,890	3,600	4,420	5,380	6,470	7,730	9,150	4.4
	45	-	550	940	1,360	1,830	2,350	2,950	3,630	4,420	5,320	6,360	-	
PCS050LMHB-2	35	-	1,060	1,500	2,000	2,580	3,260	4,050	4,970	6,030	7,260	8,660	10,250	4.4
	45	-	630	1,060	1,540	2,060	2,640	3,310	4,080	4,960	5,970	7,130	8,440	

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® BASIC UNITS (CONT'D)**

Low / Medium / High Temperature Application - Dorin Semi-Hermetic Compressors

Performance Data - R404A

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS058LMHB-2	35	-	1,240	1,750	2,330	3,010	3,790	4,710	5,780	7,020	8,450	10,080	11,930	4.4
	45	-	730	1,240	1,790	2,390	3,080	3,860	4,750	5,770	6,950	8,290	9,830	
PCS073LMHB-2	35	-	1,490	2,130	2,860	3,710	4,700	5,850	7,190	8,740	10,530	12,570	14,890	8.2
	45	-	850	1,490	2,190	2,960	3,830	4,820	5,950	7,260	8,750	10,460	12,410	
PCS084LMHB-2	35	-	1,870	2,560	3,400	4,420	5,620	7,030	8,670	10,570	12,720	15,170	17,930	8.2
	45	-	1,370	1,980	2,700	3,560	4,570	5,760	7,130	8,730	10,550	12,630	14,980	
PCS092LMHB-2	35	-	2,160	2,930	3,840	4,920	6,180	7,660	9,380	11,370	13,640	16,220	19,130	8.2
	45	-	1,640	2,310	3,080	3,990	5,060	6,310	7,770	9,450	11,400	13,620	16,150	
PCS103LMHB-2	35	-	2,460	3,290	4,290	5,470	6,860	8,490	10,370	12,540	15,010	17,820	20,990	8.2
	45	-	1,910	2,650	3,500	4,500	5,680	7,040	8,630	10,470	12,570	-	-	
PCS114LMHB-2	35	-	-	-	-	-	7,230	9,020	11,150	13,630	16,510	19,820	23,620	8.2
	45	-	-	-	-	-	5,910	7,450	9,270	11,400	13,880	16,760	20,070	
PCS139LMHB-2	35	-	2,840	4,010	5,400	7,040	8,960	11,200	13,760	16,700	20,020	23,770	27,970	8.2
	45	-	2,100	3,110	4,300	5,690	7,320	9,200	11,380	13,870	16,710	19,920	23,530	

Performance Data - R134a

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS016LMHB-1	35	-	-	-	-	-	530	710	910	1,160	1,450	1,790	2,180	4.4
	45	-	-	-	-	-	440	600	790	1,010	1,270	1,570	1,920	
PCS016LMHB-2	35	-	-	-	-	-	530	710	910	1,160	1,450	1,790	2,180	4.4
	45	-	-	-	-	-	440	600	790	1,010	1,270	1,570	1,920	
PCS032LMHB-1	35	-	-	-	-	-	1,120	1,460	1,860	2,340	2,900	3,540	4,290	4.4
	45	-	-	-	-	-	940	1,250	1,610	2,030	2,520	3,100	3,760	
PCS032LMHB-2	35	-	-	-	-	-	1,120	1,460	1,860	2,340	2,900	3,540	4,290	4.4
	45	-	-	-	-	-	940	1,250	1,610	2,030	2,520	3,100	3,760	
PCS039LMHB-1	35	-	-	-	-	-	1,310	1,680	2,120	2,640	3,240	3,950	4,770	4.4
	45	-	-	-	-	-	1,170	1,520	1,940	2,420	2,990	3,660	4,430	
PCS039LMHB-2	35	-	-	-	-	-	1,310	1,680	2,120	2,640	3,240	3,950	4,770	4.4
	45	-	-	-	-	-	1,170	1,520	1,940	2,420	2,990	3,660	4,430	
PCS044LMHB-2	35	-	-	-	-	-	1,550	2,000	2,550	3,190	3,940	4,810	5,820	4.4
	45	-	-	-	-	-	1,350	1,770	2,270	2,850	3,530	4,320	5,240	
PCS050LMHB-2	35	-	-	-	-	-	1,690	2,190	2,790	3,500	4,330	5,300	6,410	4.4
	45	-	-	-	-	-	1,470	1,930	2,490	3,140	3,900	4,790	5,810	
PCS058LMHB-2	35	-	-	-	-	-	1,990	2,590	3,290	4,120	5,100	6,230	7,540	4.4
	45	-	-	-	-	-	1,720	2,260	2,910	3,670	4,560	5,590	6,790	
PCS073LMHB-2	35	-	-	-	-	-	2,650	3,440	4,380	5,490	6,790	8,300	10,050	8.2
	45	-	-	-	-	-	2,230	2,940	3,770	4,750	5,900	7,230	8,790	
PCS084LMHB-2	35	-	-	-	-	-	2,720	3,620	4,690	5,950	7,430	9,140	11,110	8.2
	45	-	-	-	-	-	2,240	3,020	3,960	5,060	6,360	7,860	9,590	

Performance Data - R134a (Cont'd)

Part Number	Ambient Temperature (°C)	Capacity Watts @ SST (°C)												Receiver Capacity (kg)
		Low Temperature						Medium Temperature			High Temperature			
		-45	-40	-35	-30	-25	-20	-15	-10	-5	0	5	10	
PCS092LMHB-2	35	-	-	-	-	-	2,990	3,980	5,170	6,560	8,200	10,090	12,270	8.2
	45	-	-	-	-	-	2,460	3,330	4,370	5,600	7,030	8,700	10,620	
PCS103LMHB-2	35	-	-	-	-	-	3,430	4,480	5,730	7,210	8,940	10,950	13,250	8.2
	45	-	-	-	-	-	2,900	3,820	4,910	6,200	7,710	9,460	11,490	
PCS114LMHB-2	35	-	-	-	-	-	3,900	5,100	6,520	8,200	10,160	12,450	15,100	8.2
	45	-	-	-	-	-	3,320	4,420	5,720	7,250	9,040	11,130	13,550	
PCS139LMHB-2	35	-	-	-	-	-	4,590	6,020	7,710	9,700	12,040	14,760	17,910	8.2
	45	-	-	-	-	-	3,900	5,200	6,730	8,530	10,640	13,110	15,960	

Technical Data

Part Number	Electrical Data			Connections		Dimensions			Weight Net (kg)
	Supply	LRA	RLA	Liquid	Suction	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(mm)		(mm)			
PCS016LMHB-1	220-240 / 1	11.10	1.60	12.70	12.70	567	963	400	83.0
PCS016LMHB-2	380-420 / 3	30.00	4.40	12.70	12.70	567	963	400	83.0
PCS022LMHB-1	220-240 / 1	13.80	2.10	12.70	15.88	567	963	400	85.0
PCS022LMHB-2	380-420 / 3	44.00	6.60	12.70	15.88	567	963	400	85.0
PCS032LMHB-1	220-240 / 1	20.00	2.70	12.70	15.88	567	963	400	87.0
PCS032LMHB-2	380-420 / 3	62.00	6.80	12.70	15.88	567	963	400	87.0
PCS039LMHB-1	220-240 / 1	24.40	3.10	12.70	15.88	567	963	400	88.0
PCS039LMHB-2	380-420 / 3	69.00	7.50	12.70	15.88	567	963	400	88.0
PCS044LMHB-2	380-420 / 3	24.40	3.80	12.70	15.88	567	963	400	90.0
PCS050LMHB-2	380-420 / 3	24.40	3.80	12.70	15.88	567	963	400	91.0
PCS058LMHB-2	380-420 / 3	24.40	4.50	12.70	15.88	567	963	400	92.0
PCS073LMHB-2	380-420 / 3	43.60	6.20	15.88	19.05	567	963	400	95.0
PCS084LMHB-2	380-420 / 3	43.60	6.90	15.88	22.22	631	1,086	500	121.0
PCS092LMHB-2	380-420 / 3	43.60	7.30	15.88	28.57	631	1,086	500	121.0
PCS103LMHB-2	380-420 / 3	43.60	8.10	15.88	28.57	631	1,086	500	123.0
PCS114LMHB-2	380-420 / 3	63.10	8.50	15.88	28.57	631	1,086	500	147.0
PCS139LMHB-2	380-420 / 3	86.00	11.10	15.88	28.57	631	1,086	500	150.0

**CONDENSING UNITS AND PACKAGED SYSTEMS (CONT'D)**

**KIRBY® eCOMPACT**



The Kirby® eCompact Condensing Unit is our latest innovation in CO2 refrigeration systems for low temperature applications. An adaptable plug and play solution that is designed for maximum reliability, efficiency and operating performance. With a significantly lower global warming potential than primary HFC systems it makes CO2 applications possible in more places. The eCompact Condensing Unit has been designed with the needs of contractors and environmentally conscious end users in mind. The system comes as a complete condensing unit that requires connection to field fixtures and a high stage for heat rejection requirements. Efficiency and enhanced performance is made available by the use of variable capacity (freezer rooms, freezer cabinets) control via the digital Copeland Scroll™ or Dorin® semi-hermetic compressor, coupled with a factory programmed VSD.

**Key Features**

- Variable system capacity can be modified using High Stage system selection / operating conditions
- Plug and play control / wiring assembly including a pre-programmed Dixell control for faster installation and assured performance
- Copeland Scroll™ digital compressor technology or Dorin® Semi Hermetic compressor with factory programmed variable speed drive
- Compact footprint ensures suitability for installation in tight spaces

Performance Data													
Part Number	R744 Capacity (Maximum)					Minimum Capacity to Select High Stage Condensing Unit					Approximate Capacity to Select Optional Backup Condensing Unit		Receiver Capacity (kg)
	SCT (R744)	SST (R744)				SCT (R134a)	SST (R744)				SST (R134a)		
		-35	-30	-25	-20		-35	-30	-25	-20			
ECS703LP1-2	0	5,390	6,790	8,350	10,100	-4	7,655	9,135	10,690	12,370	-10	700	4.5
	-2	5,600	7,030	8,630	10,420	-6	7,790	9,280	10,855	12,560	-10	700	
	-4	5,820	7,270	8,910	10,750	-8	7,940	9,430	11,025	12,760	-10	700	
ECS890LP1-2	0	6,870	8,600	10,530	12,680	-4	9,745	11,550	13,470	15,520	-10	875	4.5
	-2	7,130	8,900	10,870	13,080	-6	9,900	11,730	13,660	15,750	-10	875	
	-4	7,400	9,190	11,210	13,470	-8	10,070	11,895	13,850	15,970	-10	875	
ECZ872LP1-2	0	6,910	8,470	10,250	-	-4	9,670	11,265	13,060	-	-10	850	4.5
	-2	7,120	8,720	10,550	-	-6	9,765	11,400	13,240	-	-10	850	
	-4	7,330	8,960	10,850	-	-8	9,870	11,530	13,440	-	-10	850	

Technical Data													
Part Number	Electrical Data				Connections (R744)		Connections (R134a)		Dimensions			Weight Net (kg)	
	Supply	LRA	RLA	Input Power	Liquid	Suction	Liquid	Suction	Height	Width	Depth		
	(V / Ph)	(A / Ph)	(A / Ph)	(W)	(mm)		(mm)		(mm)				
ECS703LP1-2	380-420 / 3	20.00	3.6	1,870	12.70	15.88	12.70	28.58	850	980	810	370.0	
ECS890LP1-2	380-420 / 3	24.50	4.5	2,330	12.70	15.88	12.70	28.58	850	980	810	375.0	
ECZ872LP1-2	380-420 / 3	26.00	4.0	2,200	12.70	15.88	12.70	28.58	850	980	810	350.0	

**KIRBY® DROP-IN PACKAGED UNITS**



The Kirby® Drop-In unit range are 'plug and play', feature packed systems that are supplied complete - ready to run and easy to install. All units include a Dixell control installed as standard, plus the medium temperature application units come with an extended cable for remote mounting of the digital thermostat.

**Key Features**

- All units are ready to install straight from the box.
- Dixell electronic thermostat control installed on all models.
- Evaporator coil corrosion protection and pressure safety control.
- All units designed for reduced refrigerant charge.
- Medium Temperature Units feature off cycle defrost.
- Low Temperature Units feature real time electric defrost with temperature switch termination and a low-pressure safety switch.



Medium Temperature Application - Low Profile										
Performance Data - R134a										
Part Number	Ambient Temperature (°C)	Capacity (W)						Refrigerant Charge (gm)	Air Flow (l/s)	Horsepower
		Air On Temperature								
		0	2	4	6	8	10			
KPC800-6	35	690	750	810	870	940	1,010	910	165	1/3
	45	570	630	680	740	800	870			
KPC1000-6	35	920	990	1,080	1,160	1,260	1,360	1,000	235	3/8
	45	760	840	920	1,000	1,090	1,180			
KPC1400-6	35	1,270	1,370	1,480	1,590	1,710	1,830	1,190	270	5/8
	45	1,090	1,180	1,280	1,380	1,490	1,600			
KPC1700-6	35	1,470	1,570	1,690	1,810	1,950	2,090	1,190	270	3/4
	45	1,260	1,360	1,460	1,570	1,700	1,820			
Technical Data										
Part Number	Electrical Data				Dimensions			Weight (kg)		
	Supply	LRA	RLA	MCC	Height	Width	Depth			
	(V / Ph)	(A / Ph)	(A / Ph)	(A/Ph)	(mm)					
KPC800-6	240 / 1	13.9	3.9	4.9	500	890	500	35		
KPC1000-6	240 / 1	14.4	4.4	5.4	577	1,117	507	50		
KPC1400-6	240 / 1	31.9	4.6	5.5	577	1,117	507	65		
KPC1700-6	240 / 1	35.9	6.4	8.0	577	1,117	507	65		

Medium Temperature Application - Standard										
Performance Data - R134a										
Part Number	Ambient Temperature (°C)	Capacity (W)						Refrigerant Charge (gm)	Air Flow (l/s)	Horsepower
		Air On Temperature								
		0	2	4	6	8	10			
KSC2000-6	35	1,870	2,010	2,170	2,310	2,500	2,690	1,710	388	1
	45	1,600	1,740	1,890	2,050	2,210	2,380			
KSC2700-6	35	2,380	2,580	2,800	3,030	3,260	3,510	1,990	750	1-1/4
	45	1,980	2,170	2,380	2,590	2,810	3,040			
KSC3500-6	35	3,030	3,290	3,550	3,830	4,120	4,420	2,420	760	1-1/2
	45	2,570	2,800	3,040	3,300	3,580	3,860			



**CONDENSING UNITS AND PACKAGING SYSTEMS (CONT'D)**

**KIRBY® DROP-IN PACKAGED UNITS (CONT'D)**

**Medium Temperature Application - Standard (Cont'd)**

**Performance Data - R134a**

**Technical Data**

Part Number	Electrical Data				Dimensions			Weight (kg)
	Supply	LRA	RLA	MCC	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(A/Ph)	(mm)			
KSC2000-6	240 / 1	35.8	5.8	7.5	950	705	595	112
KSC2700-6	240 / 1	44.8	8.7	11.2	996	1,150	730	145
KSC3500-6	240 / 1	44.8	9.7	12.5	1,057	1,150	730	177



**Low Temperature Application - Low Profile**

**Performance Data - R404A**

Part Number	Ambient Temperature (°C)	Capacity (W)				Refrigerant Charge (gm)	Air Flow (l/s)	Horsepower
		Air On Temperature						
		-25	-20	-15	-10			
KPF1000-4	35	455	645	870	1,060	975	235	3/4
	43	290	460	680	905			
KPF1200-4	35	555	790	1,065	1,295	820	235	1
	43	355	565	830	1,110			

**Technical Data**

Part Number	Electrical Data				Dimensions			Weight (kg)
	Supply	LRA	RLA	MCC	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(A/Ph)	(mm)			
KPF1000-4	240 / 1	30.0	4.2	7.7	577	1,117	507	48
KPF1200-4	240 / 1	36.0	6.7	8.9	577	1,117	507	60



**Low Temperature Application - Low Profile**

**Performance Data - R404A**

Part Number	Ambient Temperature (°C)	Capacity (W)				Refrigerant Charge (gm)	Air Flow (l/s)	Horsepower
		Air On Temperature						
		-25	-20	-15	-10			
KSF1500-4	35	735	1,050	1,410	1,720	1,450	530	1-1/4
	43	470	745	1,100	1,470			
KSF2000-4	35	950	1,355	1,820	2,220	1,500	750	1-1/2
	43	610	965	1,420	1,900			

**Technical Data**

Part Number	Electrical Data				Dimensions			Weight (kg)
	Supply	LRA	RLA	MCC	Height	Width	Depth	
	(V / Ph)	(A / Ph)	(A / Ph)	(A/Ph)	(mm)			
KSF1500-4	240 / 1	43.0	7.9	10.9	964	705	595	108
KSF2000-4	240 / 1	43.0	10.6	14.1	996	1,150	730	155



# Evaporators

KIRBY®

## KIRBY® CABINET COOLERS

With a smart and aesthetically pleasing design, Kirby® Cabinet Coolers deliver the perfect combination of additional storage space and greater refrigerated storage capability. Offering long life and superior reliability that just keeps going, medium temperature models also feature E-Kote coil protection on all essential components including the copper, to safeguard against corrosion from airborne food acids. For larger medium temperature applications, twin air blowers deliver consistent and even air flow around the inside of the cabinet.

### Key Features

- Compact, low profile design which gives more shelf space
- Removable, discreet drain tray which is easily removed for cleaning and service
- Heat exchanger with rifled bore tubing for high performance and exceptional oil return
- Fan motors which can be easily removed for servicing
- Suitable for high and medium temperature applications where a defrost heater is not required



Medium Temperature																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	Net
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			(kg)
KC301	320	346	72	-	1	30	0.26	-	-	-	9.52	9.52	420	390	125	3.9
KC401	420	470	77	-	1	33	0.26	-	-	-	9.52	9.52	420	390	125	4.2
KC550	520	605	110	-	2	50	0.43	-	-	-	9.52	9.52	526	410	130	5.9
KC651	600	701	105	-	2	56	0.47	-	-	-	9.52	9.52	526	410	130	6.5
KC750	700	816	120	-	2	60	0.43	-	-	-	9.52	9.52	526	410	130	6.7
KC1001	970	1,133	165	-	3	81	0.72	-	-	-	9.52	9.52	796	410	130	7.9
KC1201	1,140	1,229	175	-	3	90	0.65	-	-	-	9.52	9.52	796	410	130	8.5
KC1350	1,220	1,517	265	-	3	100	0.82	-	-	-	12.70	15.90	1,010	400	185	14.0
KC1700	1,460	1,805	380	-	3	102	0.67	-	-	-	12.70	15.90	1,245	474	217	15.0
KC2100	1,810	2,256	350	-	3	102	0.67	-	-	-	12.70	15.90	1,245	474	217	18.0

Medium Temperature - Twin Blow																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	Net
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			(kg)
KCT400	420	490	210	-	1	40	0.32	-	-	-	9.52	9.52	613	388	175	6.7
KCT600	550	701	210	-	1	40	0.32	-	-	-	9.52	9.52	613	388	175	7.9
KCT800	650	778	190	-	1	40	0.32	-	-	-	9.52	9.52	613	388	175	8.5
KCT1000	820	1,046	210	-	1	60	0.40	-	-	-	12.70	15.90	613	388	205	15.0
KCT1200	1,070	1,306	230	-	1	60	0.40	-	-	-	12.70	15.90	1,000	468	205	15.0
KCT1600	1,340	1,709	280	-	1	70	0.30	-	-	-	12.70	15.90	1,000	468	205	18.0

Low Temperature																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	Net
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			(kg)
KF450	447	470	120	-	2	30	0.43	240 / 1	460	1.9	9.52	9.52	526	410	135	6.7
KF600	589	620	160	-	3	27	0.72	240 / 1	720	3.0	9.52	9.52	796	410	135	7.9
KF750	751	790	175	-	3	30	0.65	240 / 1	720	3.0	9.52	9.52	796	410	135	8.5
KF1000	1,112	1,170	270	-	3	101	0.82	240 / 1	1,225	5.1	12.70	15.90	1,010	400	185	15.0
KF1380	1,397	1,470	380	-	3	102	0.67	240 / 1	1,700	7.1	12.70	15.90	1,245	474	217	15.0
KF1650	1,625	1,710	350	-	3	102	0.67	240 / 1	2,200	9.2	12.70	15.90	1,245	474	217	18.0

**EVAPORATORS (CONT'D)**

**KIRBY® GUARDIAN**



Like never before, increasing energy costs, avoiding food loss and waste, changes in refrigerant technology and additional requirements for cool room efficiency are making the need for sustainable solutions an urgent priority for all. Designed in Australia, the Kirby® Guardian range represents our next-generation in evaporators, incorporating advanced engineering and innovative features, like our Series 9 coil and Ziehl-Abegg owlet fans to meet the future requirements of the refrigeration industry for installers, specifiers and asset owners alike.

**Key Features**

- Premium aluminium construction with a crisp, white powder coated finish is durable, easy to clean and provides an aesthetically pleasing appearance.
- User friendly access panels are designed for ease of commissioning and service, with front opening access to both electrical and refrigeration components.
- Ziehl-Abegg FE2owlet fans feature bionic blade technology to deliver larger air volumes, optimal flow properties and improved noise ratings, whilst offering maintenance free use.
- Fully reversible drain pan provides flexibility when selecting installation locations while making maintenance quick and easy.
- Future proofed and specifically designed for next-generation, low GWP refrigerants, including R448A, R449A and R507A.
- Advanced Series 9 coil design produces additional capacity, more stable room conditions, slower frost build up and more efficient air defrost; resulting in greater efficiencies and lower cost of ownership.



Medium Temperature - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMSHA19P1-1	1,423	1,501	364	7.1	1	85	0.42	-	-	-	9.52	9.52	750	470	494	13.0
KMSHA19Z1-1	1,589	1,676	322	6.4	1	85	0.42	-	-	-	12.70	12.70	750	470	494	15.0
KMSHA29E1-1	2,473	2,608	778	10.6	2	170	0.84	-	-	-	12.70	12.70	1,155	470	494	21.0
KMSHA29S1-1	3,227	3,404	683	9.6	2	170	0.84	-	-	-	12.70	15.88	1,155	470	494	24.0
KMSHA39P1-1	4,423	4,667	1,092	12.5	3	255	1.26	-	-	-	12.70	19.05	1,560	470	494	31.0
KMSHA49P1-1	5,924	6,249	1,456	14.0	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	40.0
KMSHA49Z1-1	6,559	6,919	1,289	12.7	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	47.0

Medium Temperature - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMSHB19P1-1	2,383	2,514	672	8.7	1	215	1.05	-	-	-	12.70	12.70	850	470	545	18.0
KMSHB29E1-1	4,427	4,671	1,450	13.0	2	430	2.10	-	-	-	12.70	19.05	1,485	470	545	29.0
KMSHB29S1-1	5,683	5,996	1,261	11.9	2	430	2.10	-	-	-	12.70	22.22	1,485	470	545	35.0
KMSHB29Z1-1	6,186	6,526	1,189	11.2	2	430	2.10	-	-	-	12.70	22.22	1,485	470	545	38.0
KMSHB39S1-1	8,664	9,140	1,892	14.5	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	49.0
KMSHB39Z1-1	9,314	9,826	1,783	13.8	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	54.0
KMSHB49S1-1	11,775	12,422	2,522	16.3	4	860	4.20	-	-	-	15.88	25.40	2,630	470	545	65.0
KMSHB59Z1-1	15,379	16,224	2,972	17.5	5	1,075	5.25	-	-	-	15.88	31.75	3,200	470	545	86.0

Medium Temperature with Defrost Heaters - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMSHA19P1-1-E	1,423	1,501	364	7.1	1	85	0.42	240 / 1	1,000	4.2	9.52	9.52	750	470	494	13.0
KMSHA19Z1-1-E	1,589	1,676	322	6.4	1	85	0.42	240 / 1	1,000	4.2	12.70	12.70	750	470	494	15.0
KMSHA29E1-1-E	2,473	2,608	778	10.6	2	170	0.84	240 / 1	2,000	8.3	12.70	12.70	1,155	470	494	21.0
KMSHA29S1-1-E	3,227	3,404	683	9.6	2	170	0.84	240 / 1	2,000	8.3	12.70	15.88	1,155	470	494	24.0
KMSHA39P1-1-E	4,423	4,667	1,092	12.5	3	255	1.26	415 / 3	3,000	4.4	12.70	19.05	1,560	470	494	31.0
KMSHA49P1-1-E	5,924	6,249	1,456	14.0	4	340	1.68	415 / 3	4,000	5.8	12.70	22.22	1,970	470	494	40.0
KMSHA49Z1-1-E	6,559	6,919	1,289	12.7	4	340	1.68	415 / 3	4,000	5.8	12.70	22.22	1,970	470	494	47.0

Medium Temperature with Defrost Heaters - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMSHB19P1-1-E	2,383	2,514	672	8.7	1	215	1.05	240 / 1	1,750	7.3	12.70	12.70	850	470	545	18.0
KMSHB29E1-1-E	4,427	4,671	1,450	13.0	2	430	2.10	415 / 3	3,500	7.0	12.70	19.05	1,485	470	545	29.0
KMSHB29S1-1-E	5,683	5,996	1,261	11.9	2	430	2.10	415 / 3	3,500	7.0	12.70	22.22	1,485	470	545	35.0
KMSHB29Z1-1-E	6,186	6,526	1,189	11.2	2	430	2.10	415 / 3	3,500	7.0	12.70	22.22	1,485	470	545	38.0
KMSHB39S1-1-E	8,664	9,140	1,892	14.5	3	645	3.15	415 / 3	5,250	10.6	12.70	25.40	2,060	470	545	49.0
KMSHB39Z1-1-E	9,314	9,826	1,783	13.8	3	645	3.15	415 / 3	5,250	10.6	12.70	25.40	2,060	470	545	54.0
KMSHB49S1-1-E	11,775	12,422	2,522	16.3	4	860	4.20	415 / 3	7,000	14.2	15.88	25.40	2,630	470	545	65.0
KMSHB59Z1-1-E	15,379	16,224	2,972	17.5	5	1,075	5.25	415 / 3	8,750	17.7	15.88	31.75	3,200	470	545	86.0

Low Temperature - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KLSHA19Z1-1	1,339	1,410	342	6.3	1	85	0.42	240 / 1	1,000	4.2	12.70	15.88	750	470	494	16.0
KLSHA29P1-1	2,346	2,470	728	9.4	2	170	0.84	240 / 1	2,000	8.3	12.70	19.05	1,155	470	494	23.0
KLSHA29Z1-1	2,755	2,900	644	8.5	2	170	0.84	240 / 1	2,000	8.3	12.70	22.22	1,155	470	494	27.0
KLSHA39P1-2	3,541	3,727	1,092	11.5	3	255	1.26	415 / 3	3,000	4.4	12.70	22.22	1,560	470	494	32.0
KLSHA39S1-2	3,924	4,131	1,025	10.9	3	255	1.26	415 / 3	3,000	4.4	12.70	25.40	1,560	470	494	34.0
KLSHA49Z1-2	5,451	5,738	1,289	11.7	4	340	1.68	415 / 3	4,000	5.8	12.70	25.40	1,970	470	494	47.0

Low Temperature - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KLSHB19S1-1	2,057	2,165	631	7.6	1	215	1.05	240 / 1	1,750	7.3	9.52	19.05	850	470	545	19.0
KLSHB29P1-2	4,201	4,422	1,344	11.4	2	430	2.10	415 / 3	3,500	7.0	9.52	25.40	1,485	470	545	32.0
KLSHB29Z1-2	4,974	5,236	1,189	10.4	2	430	2.10	415 / 3	3,500	7.0	9.52	25.40	1,485	470	545	39.0
KLSHB39S1-2	6,666	7,017	1,892	13.5	3	645	3.15	415 / 3	5,250	10.6	9.52	28.58	2,030	470	545	50.0
KLSHB39Z1-2	7,517	7,912	1,783	12.8	3	645	3.15	415 / 3	5,250	10.6	12.70	31.75	2,060	470	545	55.0
KLSHB49Z1-2	9,887	10,407	2,378	14.3	4	860	4.20	415 / 3	7,000	14.2	12.70	41.28	2,630	470	545	72.0
KLSHB59Z1-2	11,909	12,536	2,972	16.0	5	1,075	5.25	415 / 3	8,750	17.7	12.70	41.28	3,200	470	545	87.0

**EVAPORATORS (CONT'D)**

**KIRBY® GUARDIAN ULTRA**



Built on the same platform as our next-generation Kirby® Guardian evaporators; yet specifically designed for tropical locations with high humidity, Kirby® Guardian Ultra features optimized fin spacing and circuiting which reduces the amount of moisture that is removed while cooling the air, further improving resistance to ice formation.



**Key Features**

- Premium aluminium construction with a crisp, white powder coated finish is durable, easy to clean and provides an aesthetically pleasing appearance.
- User friendly access panels are designed for ease of commissioning and service, with front opening access to both electrical and refrigeration components.
- Ziehl-Abegg FE2owlet fans feature bionic blade technology to deliver larger air volumes, optimal flow properties and improved noise ratings, whilst offering maintenance free use.
- Fully reversible drain pan provides flexibility when selecting installation locations while making maintenance quick and easy.
- Future proofed and specifically designed for next-generation, low GWP refrigerants, including R450A, R448A, R449A and R507A.
- Advanced Series 9 coil design produces additional capacity, more stable room conditions, slower frost build up and more efficient air defrost; resulting in greater efficiencies and lower cost of ownership.



Medium Temperature - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMUHA29V1-1	2,904	3,063	740	9.6	2	170	0.84	-	-	-	12.70	15.88	1,155	470	494	23.0
KMUHA39X1-1	4,566	4,817	1,050	11.3	3	255	1.26	-	-	-	12.70	19.05	1,560	470	494	37.0
KMUHA49X1-1	5,903	6,227	1,400	12.6	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	46.0

Medium Temperature - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMUHB19V1-1	2,171	2,291	675	8.6	1	215	1.05	-	-	-	12.70	12.70	850	470	545	18.0
KMUHB29X1-1	5,569	5,875	1,278	11.7	2	430	2.10	-	-	-	12.70	22.22	1,485	470	545	37.0
KMUHB39V1-1	7,798	8,226	2,025	15.2	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	48.0
KMUHB39X1-1	8,382	8,843	1,917	14.0	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	53.0
KMUHB49X1-1	11,239	11,856	2,556	16.1	4	860	4.20	-	-	-	15.88	28.60	2,630	470	545	70.0
KMUHB59X1-1	13,843	14,603	3,194	17.9	5	1,075	5.25	-	-	-	15.88	31.75	3,200	470	545	85.0

Medium Temperature with Defrost Heaters - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMUHA29V1-1-E	2,904	3,063	740	9.6	2	170	0.84	240 / 1	2,000	8.3	12.70	15.88	1,155	470	494	23.0
KMUHA39X1-1-E	4,566	4,817	1,050	11.3	3	255	1.26	415 / 3	3,000	4.4	12.70	19.05	1,560	470	494	37.0
KMUHA49X1-1-E	5,903	6,227	1,400	12.6	4	340	1.68	415 / 3	4,000	5.8	12.70	22.22	1,970	470	494	46.0

Medium Temperature with Defrost Heaters - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KMUHB19V1-1-E	2,171	2,291	675	8.6	1	215	1.05	240 / 1	1,750	7.3	12.70	12,70	850	470	545	18.0
KMUHB29X1-1-E	5,569	5,875	1,278	11.7	2	430	2.10	415 / 3	3,500	7.0	12.70	22,22	1,485	470	545	37.0
KMUHB39V1-1-E	7,798	8,226	2,025	15.2	3	645	3.15	415 / 3	5,250	10.6	12.70	25,40	2,060	470	545	48.0
KMUHB39X1-1-E	8,382	8,843	1,917	14.0	3	645	3.15	415 / 3	5,250	10.6	12.70	25,40	2,060	470	545	53.0
KMUHB49X1-1-E	11,239	11,856	2,556	16.1	4	860	4.20	415 / 3	7,000	14.2	15.88	28,60	2,630	470	545	70.0
KMUHB59X1-1-E	13,843	14,603	3,194	17.9	5	1,075	5.25	415 / 3	8,750	17.7	15.88	31,75	3,200	470	545	85.0

Low Temperature - 300mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KLUHA29V1-1	2,311	2,433	740	8.9	2	170	0.84	240 / 1	2,000	8.3	12.70	22,22	1,155	470	494	24
KLUHA39X1-2	3,753	3,951	1,050	10.4	3	255	1.26	415 / 3	3,000	4.4	12.70	25,40	1,560	470	494	38
KLUHA49X1-2	5,026	5,291	1,400	11.7	4	340	1.68	415 / 3	4,000	5.8	12.70	25,40	1,970	470	494	47

Low Temperature - 350mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KLUHB19V1-1	1,852	1,950	675	8,0	1	215	1.05	240 / 1	1,750	7.3	9.52	19.05	850	470	545	18
KLUHB29X1-2	4,529	4,768	1,278	10,8	2	430	2.10	415 / 3	3,500	7.0	9.52	25,40	1,485	470	545	38
KLUHB39V1-2	6,000	6,315	2,025	14,1	3	645	3.15	415 / 3	5,250	10.6	9.52	28,60	2,060	470	545	49
KLUHB39X1-2	6,605	6,952	1,917	13,1	3	645	3.15	415 / 3	5,250	10.6	12.70	31,75	2,060	470	545	54
KLUHB49X1-2	8,747	9,207	2,556	14,9	4	860	4.20	415 / 3	7,000	14.2	12.70	41,28	2,630	470	545	71
KLUHB59X1-2	10,800	11,368	3,194	16,3	5	1,075	5.25	415 / 3	8,750	17.7	12.70	41,28	3,200	470	545	86

**EVAPORATORS (CONT'D)**

**KIRBY® GUARDIAN READY CONNECT**

Kirby® Guardian Ready Connect range of evaporators are factory fitted with EVD ice, the new control solution for Carel ExV proportional electronic expansion valves directly installed on the evaporator, with a revolutionary design intended specifically for low temperature conditions. The range delivers considerable benefits for contractors and asset owners alike in delivering a more efficient refrigeration system with reduced energy consumption. Kirby® Guardian Ready Connect offers all the performance benefits available without the need for cabling, welding or complex configuration. The range also offers the quality and reliability of a factory tested and installed solution, backed by the combined knowledge and strength of both Kirby® and Carel.

**Key Features**

- Simple and fast installation and commissioning
- Improved pull-down times
- Precise refrigerant flow
- Enhanced durability rated to IP65
- Operating conditions between -30°C to 40°C



**Medium Temperature - 300mm Fan**

Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)	EEV Carel E2V (Model)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height		
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V/Ph)	(W)	(A)	(mm)		(mm)				
KMSHA19 P1-1-R1	1,423	1,501	364	7.1	1	85	0.42	-	-	-	9.52	9.52	750	470	494	13.0	E2V09
KMSHA19 Z1-1-R1	-	1,676	322	6.4	1	85	0.42	-	-	-	12.70	12.70	750	470	494	15.0	E2V09
KMSHA19 Z1-1-R2	1,589	-	322	6.4	1	85	0.42	-	-	-	12.70	12.70	750	470	494	15.0	E2V11
KMSHA29 E1-1-R2	2,473	2,608	778	10.6	2	170	0.84	-	-	-	12.70	12.70	1,155	470	494	21.0	E2V11
KMSHA29 S1-1-R2	-	3,404	683	9.6	2	170	0.84	-	-	-	12.70	15.88	1,155	470	494	24.0	E2V11
KMSHA29 S1-1-R3	3,227	-	683	9.6	2	170	0.84	-	-	-	12.70	15.88	1,155	470	494	24.0	E2V14
KMSHA39 P1-1-R3	4,423	4,667	1,092	12.5	3	255	1.26	-	-	-	12.70	19.05	1,560	470	494	31.0	E2V14
KMSHA49 P1-1-R4	5,924	6,249	1,456	14.0	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	40.0	E2V18
KMSHA49 Z1-1-R4	-	6,919	1,289	12.7	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	47.0	E2V18
KMSHA49 Z1-1-R5	6,559	-	1,289	12.7	4	340	1.68	-	-	-	12.70	22.22	1,970	470	494	47.0	E2V24

**Medium Temperature - 350mm Fan**

Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)	EEV Carel E2V (Model)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height		
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V/Ph)	(W)	(A)	(mm)		(mm)				
KMSHB19 P1-1-R2	2,383	-	672	8.7	1	215	1.05	-	-	-	12.70	12.70	850	470	545	18.0	E2V11
KMSHB29 E1-1-R3	4,427	-	1,450	13.0	2	430	2.10	-	-	-	12.70	19.05	1,485	470	545	29.0	E2V14
KMSHB29 S1-1-R5	5,683	-	1,261	11.9	2	430	2.10	-	-	-	12.70	22.22	1,485	470	545	35.0	E2V24
KMSHB29 Z1-1-R4	6,186	-	1,189	11.2	2	430	2.10	-	-	-	12.70	22.22	1,485	470	545	38.0	E2V18
KMSHB39 S1-1-R5	8,664	-	1,892	14.5	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	49.0	E2V24

Medium Temperature - 350mm Fan (Cont'd)																	
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)	EEV Carel E2V (Model)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height		
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V/Ph)	(W)	(A)	(mm)		(mm)				
KMSHB39 Z1-1-R5	9,314	-	1,783	13.8	3	645	3.15	-	-	-	12.70	25.40	2,060	470	545	54.0	E2V24
KMSHB49 S1-1-R5	11,775	-	2,522	16.3	4	860	4.20	-	-	-	15.88	25.40	2,630	470	545	65.0	E2V24
KMSHB59 Z1-1-R6	15,379	-	2,972	17.5	5	1,075	5.25	-	-	-	15.88	31.75	3,200	470	545	86.0	E2V30

Low Temperature - 300mm Fan																	
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)	EEV Carel E2V (Model)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height		
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V/Ph)	(W)	(A)	(mm)		(mm)				
KLSHA19 Z1-1-R1	-	1,410	342	6.3	1	85	0.42	240 / 1	1,000	4.2	12.70	15.88	750	470	494	16.0	E2V09
KLSHA29 P1-1-R2	-	2,470	728	9.4	2	170	0.84	240 / 1	2,000	8.3	12.70	19.05	1,155	470	494	23.0	E2V11
KLSHA29 Z1-1-R3	-	2,900	644	8.5	2	170	0.84	240 / 1	2,000	8.3	12.70	22.22	1,155	470	494	27.0	E2V14
KLSHA39 P1-2-R3	-	3,727	1,092	11.5	3	255	1.26	415 / 3	3,000	4.4	12.70	22.22	1,560	470	494	32.0	E2V14
KLSHA39 S1-2-R3	-	4,131	1,025	10.9	3	255	1.26	415 / 3	3,000	4.4	12.70	25.40	1,560	470	494	34.0	E2V14
KLSHA49 Z1-2-R4	-	5,738	1,289	11.7	4	340	1.68	415 / 3	4,000	5.8	12.70	25.40	1,970	470	494	47.0	E2V18

Low Temperature - 350mm Fan																	
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)	EEV Carel E2V (Model)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height		
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V/Ph)	(W)	(A)	(mm)		(mm)				
KLSHB19 S1-1-R2	2,057	2,165	631	7.6	1	215	1.05	240 / 1	1,750	7.3	9.52	19.05	850	470	545	19.0	E2V11
KLSHB29 P1-2-R3	4,201	4,422	1,344	11.4	2	430	2.10	415 / 3	3,500	7	9.52	25.40	1,485	470	545	32.0	E2V14
KLSHB29 Z1-2-R4	4,974	5,236	1,189	10.4	2	430	2.10	415 / 3	3,500	7	9.52	25.40	1,485	470	545	39.0	E2V18
KLSHB39 S1-2-R4	6,666	7,017	1,892	13.5	3	645	3.15	415 / 3	5,250	10.6	9.52	28.58	2,030	470	545	50.0	E2V18
KLSHB39 S1-2-R5	-	7,017	1,892	13.5	3	645	3.15	415 / 3	5,250	10.6	9.52	28.58	2,030	470	545	50.0	E2V24
KLSHB39 Z1-2-R5	7,517	7,912	1,783	12.8	3	645	3.15	415 / 3	5,250	10.6	12.70	31.75	2,060	470	545	55.0	E2V24
KLSHB49 Z1-2-R5	9,887	10,407	2,378	14.3	4	860	4.20	415 / 3	7,000	14.2	12.70	41.28	2,630	470	545	72.0	E2V24
KLSHB59 Z1-2-R5	11,909	12,536	2,972	16.0	5	1,075	5.25	415 / 3	8,750	17.7	12.70	41.28	3,200	470	545	87.0	E2V24
KLSHB59 Z1-2-R6	-	12,536	2,972	16.0	5	1,075	5.25	415 / 3	8,750	17.7	12.70	41.28	3,200	470	545	87.0	E2V30

**EVAPORATORS (CONT'D)**

**KIRBY® GUARDIAN ECOCOOL**

The Kirby Guardian Ecocool range is specifically designed for use with R744 (CO<sub>2</sub>). With a very low global warming potential (GWP) base value of 1, R744 is an environmentally friendly alternative to synthetic refrigerants. Naturally occurring, it is non-toxic (within a ventilated space), non-flammable and non-ozone depleting. Furthermore, not only does it provide exceptional performance, your investment is future proof for years to come. All models within the Kirby Guardian Ecocool range are rated for a maximum working pressure up to 80 Bar, making them suitable for both transcritical and subcritical applications.

**Key Features**

- Premium aluminium construction with a crisp, white powder coated finish is durable, easy to clean and provides an aesthetically pleasing appearance.
- User friendly access panels are designed for ease of commissioning and service, with front opening access to both electrical and refrigeration components.
- Ziehl-Abegg FE2owlet fans feature bionic blade technology to deliver larger air volumes, optimal flow properties and improved noise ratings, whilst offering maintenance free use.
- Fully reversible drain pan provides flexibility when selecting installation locations while making maintenance quick and easy.
- Pre-wired fans simplifies installation and speeds up commissioning.
- Advanced Series 9 coil design produces additional capacity, more stable room conditions, slower frost build up and more efficient air defrost; resulting in greater efficiencies and lower cost of ownership.



Medium Temperature - 300mm Fan												
Part Number	Capacity	Air Movement		Fan Motors			Connections		Dimensions			Weight Net (kg)
	R774	Air Flow	Air Throw	Fans	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)	(l/s)	(m)	(#)	(W)	(A)	(mm)		(mm)			
KMSCA1014	1,420	364	7.1	1	85	0.42	9.52	9.52	750	470	494	15
KMSCA1017	1,694	322	6.4	1	85	0.42	9.52	9.52	750	470	494	17
KMSCA2025	2,499	778	10.6	2	170	0.84	9.52	12.70	1155	470	494	23
KMSCA2032	3,180	683	9.6	2	170	0.84	9.52	12.70	1155	470	494	26
KMSCA3044	4,396	1091	12.5	3	255	1.26	12.70	15.88	1560	470	494	TBA
KMSCA4059	5,853	1455	14.0	4	340	1.68	12.70	15.88	1970	470	494	TBA

Medium Temperature - 350mm Fan												
Part Number	Capacity	Air Movement		Fan Motors			Connections		Dimensions			Weight Net (kg)
	R774	Air Flow	Air Throw	Fans	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)	(l/s)	(m)	(#)	(W)	(A)	(mm)		(mm)			
KMSCB1020	1,976	725	8.9	1	215	1.05	9.52	12.70	850	470	545	18
KMSCB2044	4,400	1450	13.0	2	430	2.10	12.70	15.88	1485	470	545	32
KMSCB2061	6,086	1189	11.7	2	430	2.10	12.70	15.88	1485	470	545	42
KMSCB3077	7,705	2017	14.8	3	645	3.15	12.70	15.88	2060	470	545	49
KMSCB4104	10,395	2689	16.5	4	860	4.20	15.88	19.05	2630	470	545	65
KMSCB4136	12,238	2378	15.7	4	1075	5.25	15.88	19.05	2630	470	545	78

Low Temperature - 300mm Fan												
Part Number	Capacity	Air Movement		Fan Motors			Connections		Dimensions			Weight Net (kg)
	R774	Air Flow	Air Throw	Fans	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)	(l/s)	(m)	(#)	(W)	(A)	(mm)		(mm)			
KLUCA1013	1,270	386	6.1	1	85	0.42	9.52	9.52	750	470	494	15
KLUCA2025	2,470	772	9.5	2	170	0.84	9.52	12.70	1155	470	494	24
KLUCA3033	3,308	1233	11.2	3	255	1.26	9.52	12.70	1560	470	494	32

Low Temperature - 350mm Fan												
Part Number	Capacity	Air Movement		Fan Motors			Connections		Dimensions			Weight Net (kg)
	R774	Air Flow	Air Throw	Fans	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)	(l/s)	(m)	(#)	(W)	(A)	(mm)		(mm)			
KLUCB1018	1,976	767	8.3	1	215	1.05	9.52	9.52	850	470	545	18
KLUCB2039	4,400	1533	12.1	2	430	2.10	9.52	12.70	1485	470	545	32
KLUCB2050	6,086	1350	11.0	2	430	2.10	9.52	12.70	1485	470	545	38
KLUCB3068	7,705	2158	14.3	3	645	3.15	12.70	15.88	2060	470	545	49
KLUCB4090	10,395	2878	15.6	4	860	4.20	15.88	19.05	2630	470	545	65
KLUCB4100	12,238	2700	15.3	4	860	4.20	15.88	19.05	2630	470	545	73

**EVAPORATORS (CONT'D)**

**KIRBY® HEAVY DUTY EVAPORATORS**



Designed specifically for semi-industrial and large commercial applications where optimum cold air flow is paramount, the enhanced Kirby® Heavy Duty Evaporator range delivers economical choice, ease of installation, quality, reliability and powerful performance. Kirby®'s legendary toughness and dependability in critical applications means that you can be confident in achieving desired operating conditions through varied applications. All models are now wired ex-factory for express installation.



**Key Features**

- Simplified installation including factory wiring on all models for fans and heaters (excludes controls)
- High airflow from robust fan assemblies ensures efficient pull down and air throw
- Positive electric defrost standard inclusion for all models (includes medium temperature units)
- Reversible drain tray
- HFC and Glycol options available

Medium Temperature																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KHDCE103	9,482	10,762	1,920	20.0	1	600	1.15	415 / 3	5,250	8.5	12.70	28.60	1,265	539	905	90.0
KHDCE136	12,627	13,517	3,960	22.0	2	1,200	2.30	415 / 3	8,700	14.6	12.70	34.93	2,215	539	905	130.0
KHDCE161	15,030	16,579	3,920	22.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	34.93	2,215	539	905	140.0
KHDCE188	17,502	19,296	3,880	22.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	34.93	2,215	539	905	155.0
KHDCE214	19,944	22,118	3,840	22.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	41.28	2,215	539	905	165.0
KHDCE263	25,769	28,666	5,820	24.0	3	1,800	3.45	415 / 3	13,600	23.3	15.88	41.28	3,165	539	905	215.0
KHDCE316	28,867	32,909	5,770	24.0	3	1,800	3.45	415 / 3	13,600	23.3	19.05	41.28	3,165	539	905	240.0
KHDCE366	34,005	37,344	7,770	25.0	4	2,400	4.60	415 / 3	15,320	28.2	22.22	50.80	3,315	539	1,035	285.0
KHDCE430	37,794	42,029	7,690	25.0	4	2,400	4.60	415 / 3	15,320	28.2	22.22	50.80	3,315	539	1,035	305.0
KHDCE538	46,862	51,821	9,610	26.0	5	3,000	5.75	415 / 3	18,280	33.6	22.22	50.80	4,065	539	1,035	370.0

Low Temperature																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448A	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(mm)		(mm)			
KHDFE086	8,702	9,160	1,920	18.0	1	600	1.15	415 / 3	5,250	8.5	12.70	28.60	1,265	539	905	90.0
KHDFE088	9,491	9,990	3,960	20.0	2	1,200	2.30	415 / 3	8,700	14.6	12.70	34.93	2,215	539	905	130.0
KHDFE117	12,664	13,330	3,920	20.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	34.93	2,215	539	905	140.0
KHDFE151	15,295	16,100	3,880	20.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	34.93	2,215	539	905	155.0
KHDFE173	17,423	18,340	3,840	20.0	2	1,200	2.30	415 / 3	8,700	14.6	15.88	41.28	2,215	539	905	165.0
KHDFE212	22,259	23,430	5,820	22.0	3	1,800	3.45	415 / 3	13,600	23.3	15.88	41.28	3,165	539	905	215.0
KHDFE252	25,422	26,760	5,770	22.0	3	1,800	3.45	415 / 3	13,600	23.3	19.05	41.28	3,165	539	905	240.0
KHDFE286	27,930	29,400	7,770	23.0	4	2,400	4.60	415 / 3	15,320	28.2	22.22	50.80	3,315	539	1,035	285.0
KHDFE320	32,139	33,830	7,690	23.0	4	2,400	4.60	415 / 3	15,320	28.2	22.22	50.80	3,315	539	1,035	305.0
KHDFE380	36,604	38,530	9,610	24.0	5	3,000	5.75	415 / 3	18,280	33.6	22.22	50.80	4,065	539	1,035	370.0

**KIRBY® NK HEAVY COMMERCIAL EVAPORATORS**

Kirby®'s range of NK Heavy Commercial evaporators are designed for industrial refrigeration, cold storage or deep freezing applications.

**Key Features**

- Wide range of options for specific heavy duty industrial applications, included various fin spacing profiles.
- Pre-painted, galvanized steel casing offering high resistance to corrosion and external damage.
- High efficiency fins deliver improved efficiency, with reduced heat exchanger size enabling fast defrost times, particularly suitable for packaged products.
- Shielded electric heating elements, inserted in sleeves located under the finned coil, produces homogenous heat distribution for fast and efficient defrost.
- Hinge mounted side panels and drain pan allow ease access for maintenance, cleaning and commissioning.



Medium Temperature - 630mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(inches)		(mm)			
NKH1X6DB3R	18,427	20,333	3,236	38.0	1	1,900	3.20	415 / 3	10,350	14.9	1 1/8"	1 5/8"	1,665	900	1,115	200.0
NKH2X6DB2R	33,269	36,710	7,000	42.0	2	3,800	6.40	415 / 3	13,200	19.1	1 3/8"	2 1/8"	2,865	900	1,115	300.0
NKH3X6DB1R	41,508	45,802	11,375	50.0	3	5,700	9.60	415 / 3	19,500	28.1	1 5/8"	2 1/8"	4,065	900	1,158	370.0
NKH3X6DB2R	51,904	57,274	10,500	47.0	3	5,700	9.60	415 / 3	19,500	28.1	2x 1 3/8"	2x 2 1/8"	4,065	900	1,158	430.0
NKH4X6DB1R	55,628	61,382	15,167	55.0	4	7,600	12.80	415 / 3	25,800	37.2	2x 1 5/8"	2x 2 1/8"	5,265	900	1,158	480.0
NKH4X6DB2R	66,468	73,344	14,000	52.0	4	7,600	12.80	415 / 3	25,800	37.2	2x 1 3/8"	2x 2 1/8"	5,265	900	1,158	550.0
NKH4X6DB3R	74,559	82,272	12,944	49.0	4	7,600	12.80	415 / 3	38,700	55.9	2x 1 5/8"	2x 2 1/8"	5,265	900	1,158	630.0
NKH1X6DB3L	17,731	19,565	3,500	40.0	1	1,900	3.20	415 / 3	10,350	14.9	1 1/8"	1 5/8"	1,665	900	1,115	190.0
NKH2X6DB1L	24,604	27,149	7,944	46.0	2	3,800	6.40	415 / 3	13,200	19.1	1 3/8"	2 1/8"	2,865	900	1,115	260.0
NKH2X6DB3L	35,583	39,264	7,000	42.0	2	3,800	6.40	415 / 3	19,800	28.6	1 5/8"	2 1/8"	2,865	900	1,115	330.0
NKH3X6DB2L	47,720	52,656	11,167	49.0	3	5,700	9.60	415 / 3	19,500	28.1	2x 1 3/8"	2x 2 1/8"	4,065	900	1,158	410.0
NKH3X6DB3L	52,879	58,349	10,500	47.0	3	5,700	9.60	415 / 3	29,250	42.2	1 5/8"	2 5/8"	4,065	900	1,158	460.0
NKH4X6DB2L	61,840	68,237	14,889	55.0	4	7,600	12.80	415 / 3	25,800	37.2	2x 1 3/8"	2x 2 1/8"	5,265	900	1,158	530.0
NKH4X6DB3L	71,453	78,845	14,000	52.0	4	7,600	12.80	415 / 3	38,700	55.9	2x 1 5/8"	2x 2 1/8"	5,265	900	1,158	600.0

Medium Temperature - 800mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(inches)		(mm)			
NKH1X8DC2R	25,752	28,416	4,958	40.0	1	2,000	4.00	415 / 3	9,000	13.0	1 3/8"	2 1/8"	2,115	1,060	1,375	270.0
NKH2X8DC1R	42,813	47,242	10,833	44.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 5/8"	3,715	1,060	1,375	420.0
NKH2X8DC2R	50,695	55,939	9,917	41.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 5/8"	3,715	1,060	1,375	480.0
NKH3X8DC1R	56,915	62,803	16,250	50.0	3	6,000	12.00	415 / 3	25,800	37.2	1 5/8"	2 5/8"	5,315	1,060	1,375	570.0
NKH3X8DC2R	74,994	82,752	14,875	47.0	3	6,000	12.00	415 / 3	25,800	37.2	2x 1 5/8"	2x 2 1/8"	5,315	1,060	1,375	670.0
NKH4X8DC2R	88,757	97,939	19,833	52.0	4	8,000	16.00	415 / 3	34,200	49.4	2x 1 5/8"	2x 2 5/8"	6,915	1,060	1,375	840.0

**EVAPORATORS (CONT'D)**

**KIRBY® NK HEAVY COMMERCIAL EVAPORATORS (CONT'D)**

Medium Temperature - 800mm Fan (Cont'd)																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R134a	R448A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-4°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(inches)		(mm)			
NKH1X8DC2L	24,003	26,486	5,333	43.0	1	2,000	4.00	415 / 3	9,000	13.0	1 3/8"	2 1/8"	2,115	1,060	1,375	260.0
NKH2X8DC1L	38,132	42,077	11,472	46.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 1/8"	3,715	1,060	1,375	400.0
NKH2X8DC2L	47,537	52,454	10,667	43.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 5/8"	3,715	1,060	1,375	460.0
NKH3X8DC2L	70,261	77,530	16,000	50.0	3	6,000	12.00	415 / 3	25,800	37.2	2x 1 5/8"	2x 2 1/8"	5,315	1,060	1,375	650.0
NKH4X8DC2L	83,511	92,150	21,333	55.0	4	8,000	16.00	415 / 3	34,200	49.4	2x 1 5/8"	2x 2 1/8"	6,915	1,060	1,375	800.0

Low Temperature - 630mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448Aa	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(inches)		(mm)			
NKH1X6DB3C	16,169	17,020	3,500	40.0	1	1,900	3.20	415 / 3	13,800	19.9	1 1/8"	2 1/8"	1,665	900	1,115	210.0
NKH2X6DB1C	21,423	22,550	7,944	46.0	2	3,800	6.40	415 / 3	13,200	19.1	1 3/8"	2 1/8"	2,865	900	1,115	290.0
NKH2X6DB2C	28,092	29,570	7,444	44.0	2	3,800	6.40	415 / 3	19,800	28.6	1 5/8"	2 5/8"	2,865	900	1,115	320.0
NKH2X6DB3C	32,756	34,480	7,000	42.0	2	3,800	6.40	415 / 3	26,400	38.1	1 5/8"	2 5/8"	2,865	900	1,115	360.0
NKH3X6DB2C	42,304	44,530	11,167	49.0	3	5,700	9.60	415 / 3	29,250	42.2	2x 1 3/8"	2x 2 1/8"	4,065	900	1,158	460.0
NKH3X6DB3C	49,267	51,860	10,500	47.0	3	5,700	9.60	415 / 3	39,000	56.3	2x 1 5/8"	2x 2 1/8"	4,065	900	1,158	520.0
NKH4X6DB3C	57,181	60,190	14,000	52.0	4	7,600	12.80	415 / 3	51,600	74.5	2x 1 5/8"	2x 2 5/8"	5,265	900	1,158	670.0
NKH1X6DB3S	14,526	15,290	3,722	42.0	1	1,900	3.20	415 / 3	13,800	19.9	1 1/8"	2 1/8"	1,665	900	1,115	210.0
NKH2X6DB1S	18,269	19,230	8,222	47.0	2	3,800	6.40	415 / 3	13,200	19.1	1 3/8"	2 1/8"	2,865	900	1,115	280.0
NKH2X6DB3S	29,384	30,930	7,444	44.0	2	3,800	6.40	415 / 3	26,400	38.1	1 3/8"	2 5/8"	2,865	900	1,115	360.0
NKH3X6DB2S	37,022	38,970	11,708	51.0	3	5,700	9.60	415 / 3	29,250	42.2	2x 1 1/8"	2x 2 1/8"	4,065	900	1,158	450.0
NKH3X6DB3S	44,261	46,590	11,167	49.0	3	5,700	9.60	415 / 3	39,000	56.3	2x 1 3/8"	2x 2 1/8"	4,065	900	1,158	510.0
NKH4X6DB3S	51,918	54,650	14,889	55.0	4	7,600	12.80	415 / 3	51,600	74.5	2x 1 5/8"	2x 2 5/8"	5,265	900	1,158	640.0

Low Temperature - 800mm Fan																
Part Number	Capacity		Air Movement		Fan Motors			Heaters			Connections		Dimensions			Weight Net (kg)
	R448Aa	R404A	Air Flow	Air Throw	Fans	Watts	Amps	Supply	Watts	Amps	Liquid	Suction	Width	Depth	Height	
	(-24°C SST @ 6KTD)		(l/s)	(m)	(#)	(W)	(A)	(V / Ph)	(W)	(A)	(inches)		(mm)			
NKH1X8DC2C	21,185	22,300	5,333	43.0	1	2,000	4.00	415 / 3	13,500	19.5	1 3/8"	2 1/8"	2,115	1,060	1,375	280
NKH2X8DC1C	33,934	35,720	11,472	46.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 5/8"	3,715	1,060	1,375	440
NKH3X8DC2C	55,775	58,710	16,000	50.0	3	6,000	12.00	415 / 3	38,700	55.9	2x 1 5/8"	2x 2 5/8"	5,315	1,060	1,375	700
NKH1X8DC2S	18,668	19,650	5,597	44.0	1	2,000	4.00	415 / 3	13,500	19.5	1 3/8"	2 1/8"	2,115	1,060	1,375	280
NKH2X8DC1S	28,719	30,230	11,889	48.0	2	4,000	8.00	415 / 3	17,400	25.1	1 5/8"	2 5/8"	3,715	1,060	1,375	430
NKH2X8DC2S	33,260	35,010	11,194	45.0	2	4,000	8.00	415 / 3	26,100	37.7	1 3/8"	2 5/8"	3,715	1,060	1,375	480
NKH3X8DC1S	37,297	39,260	17,833	55.0	3	6,000	12.00	415 / 3	25,800	37.2	1 5/8"	2 5/8"	5,315	1,060	1,375	590
NKH3X8DC2S	49,362	51,960	16,792	52.0	3	6,000	12.00	415 / 3	38,700	55.9	2x 1 5/8"	2x 2 1/8"	5,315	1,060	1,375	670
NKH4X8DC2S	62,045	65,310	22,389	48.0	4	8,000	16.00	415 / 3	51,300	74.0	2x 1 5/8"	2x 2 5/8"	6,915	1,060	1,375	860

## KIRBY® TA EVAPORATORS

The Kirby® twin airflow TA evaporators with direct expansion or glycol water coils are designed for installation in cold rooms, air locks, laboratories, meat cutting, packing rooms and prep rooms.

### Key Features

- High efficiency coil includes corrugated aluminium fins and grooved internal copper tubes, low velocity air discharge
- Intelligent housing design offers superior drainage and hygienic performance
- Hinged drain pan delivers improved accessibility to all components and the housing is designed to accommodate installation of a condensate pump
- Casing with integrated fan guards provides improved aesthetics, perfect for open food preparation areas
- Glycol applicable also available



Medium Temperature										
Part Number	Capacity		Air Movement		Fan Motors		Dimensions			Weight Net (kg)
	R404A	R134a	Air Flow	Air Throw	Fans	Amps	Width	Depth	Height	
	(@ 10KTD)		(l/s)	(m)	(#)	(A)	(mm)			
TA1R6P-C	3,930	3,654	340	3.5	1	0.45	866	800	361	22.6
TA2R6P-C	6,090	5,664	779	3.5	2	0.90	1,366	800	361	24.5
TA3R6P-C	7,460	6,938	727	3.5	2	0.90	1,366	800	361	27.6
TA4R6P-C	8,060	7,496	683	3.5	2	0.90	1,366	800	361	32.9
TA5R6P-C	11,260	10,472	1,090	3.5	3	1.35	1,866	800	379	36.4
TA6R6P-C	13,210	12,285	972	3.2	3	1.35	1,866	800	379	45.3
TA7R6P-C	16,320	15,178	1,366	3.7	4	1.80	2,366	800	379	54.7

## FRIGA-BOHN

### FRIGA-BOHN MH EVAPORATORS

Friga-Bohn MH evaporators meet the requirements of small storage cold rooms, freezer rooms and reach-in coolers. Their sturdy casing made of sheet metal with a low depth enables optimum use of space in the cold room and are specifically designed for high performance in display cool-rooms for maximum retail space.

### Key Features

- Low depth enables optimum use of storage space in the cold space and the visible display area
- Highly efficient and compact finned coils are designed with corrugated aluminium fins and internally grooved copper tubes
- Designed for easy commissioning, maintenance and cleaning, the casing is fitted with hinges offering easy access to all elements of the ceiling unit cooler (coil, fan, defrost heater, connections).
- Electric heating elements are fitted in slots under the coil offering unimpeded front access which considerably simplifies maintenance.

## FRIGA-BOHN



Medium Temperature										
Part Number	Capacity		Air Movement		Fan Motors		Dimensions			Weight Net (kg)
	R404A	R134a	Air Flow	Air Throw	Fans	Amps	Width	Depth	Height	
	(@ 6KTD)		(l/s)	(m)	(#)	(A)	(mm)			
MH380RA-BAE	2,703	2,514	575	16.0	2	2 x 0.77	1,531	607	228	35.0
MH460RA-BAE	3,465	3,223	952	16.0	3	3 x 0.77	2,197	607	228	46.0
MH550RA-BAE	4,010	3,729	863	16.0	3	3 x 0.77	2,197	607	228	48.0
MH770RA-BAE	5,515	5,129	1,155	16.0	4	4 x 0.77	2,499	607	260	57.0

**EVAPORATORS (CONT'D)**

**FRIGA-BOHN MH EVAPORATORS (CONT'D)**

Low Temperature										
Part Number	Capacity		Air Movement		Fan Motors		Dimensions			Weight Net (kg)
	R404A	R134a	Air Flow	Air Throw	Fans	Amps	Width	Depth	Height	
	(@ 6KTD)		(l/s)	(m)	(#)	(A)	(mm)			
MH380EA	2,018	N/A	575	16.0	2	2 x 0.77	1,531	607	228	35.0
MH460EA	2,427		952	16.0	3	3 x 0.77	2,197	607	228	46.0
MH550EA	3,045		863	16.0	3	3 x 0.77	2,197	607	228	48.0
MH770EA	4,063		1,155	16.0	4	4 x 0.77	2,499	607	260	57.0

# Remote Condensers

KIRBY®

## KIRBY® KRC REMOTE CONDENSERS

The Kirby® KRC Remote Condenser range includes the latest refrigeration technologies for upgraded performance such as 9000 series fin coils for greater efficiency and pre coated fin for optimal corrosion protection. Furthermore, these units can be installed vertically or horizontally for maximum flexibility. Standard inclusions include powder coated panels and quality external rotor motor fans for long life and serviceability. For variable capacity and noise sensitive applications, Kirby® also offers easy to adapt solutions.



### Key Features

- Optimised air flow and coil design for enhanced heat transfer performance and high pressure applications
- 240 volt, single phase fan motor assemblies
- Kirby® Blue Kote aluminium fins for optimal ultraviolet and corrosion resistance
- Header clearance holes to ensure the end and divider plates remain a leak free zone, and positive air seal between all fans

Single Coil Models - 350mm (1Ph / 4P) @ 1,380 RPM

Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R134a	R410A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(32°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
KRC80-4PH	803	746	819	1,260	2	260	1.2	12.70	15.90	927	470	705	29.0
KRC107-4PH	1,076	1,001	1,097	1,295	2	260	1.2	12.70	15.90	927	570	705	34.0
KRC134-4PH	1,338	1,245	1,365	1,210	2	260	1.2	15.90	19.00	927	670	725	46.0

Single Coil Models - 500mm (1Ph / 6P) @ 935 RPM

Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R134a	R410A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(32°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
KRC137-6PH	1,366	1,271	1,394	1,095	1	360	1.8	15.90	19.00	927	670	745	51.0
KRC181-6PH	1,807	1,681	1,843	2,435	2	720	3.6	19.00	22.20	1,241	849	1,020	68.0
KRC254-6PH	2,544	2,366	2,595	2,170	2	720	3.6	22.20	25.40	1,241	954	1,020	93.0

Single Coil Models - 500mm (1Ph / 4P) @ 1,340 RPM

Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R134a	R410A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(32°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
KRC164-4PH	1,635	1,520	1,667	1,530	1	640	2.8	15.90	19.00	927	670	745	51.0
KRC213-4PH	2,135	1,986	2,178	3,290	2	1,280	5.6	19.00	22.20	1,241	849	1,020	68.0
KRC317-4PH	3,171	2,949	3,234	2,910	2	1,280	5.6	22.20	25.40	1,241	954	1,020	93.0

## REMOTE CONDENSERS

### KIRBY® KRC REMOTE CONDENSERS (CONT'D)

Single Coil Models - HYBLADE 630mm (1Ph / 6P) @ 860 RPM													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R134a	R410A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(32°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
KRC389-6PH	3,885	3,613	3,963	3,745	2	1,220	5.4	28.60	31.80	1,581	954	1,050	129.0
KRC457-6PH	4,572	4,252	4,663	6,475	3	1,830	8.1	31.80	34.90	2,316	954	1,050	158.0
KRC574-6PH	5,738	5,337	5,853	5,620	3	1,830	8.1	31.80	34.90	2,316	954	1,050	186.0
KRC693-6PH	6,927	6,442	7,065	8,755	4	2,440	10.8	38.10	38.10	3,091	954	1,050	208.0
KRC861-6PH	8,611	8,008	8,783	7,755	4	2,440	10.8	38.10	38.10	3,091	1,107	1,050	263.0

Twin Coil Models - HYBLADE 630mm (1Ph / 6P) @ 860 RPM													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R134a	R410A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(32°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
KRC778-6PH	7,770	7,226	7,926	7,490	4	2,440	10.8	2x 28.6	2x 31.8	1,581	1,929	1,145	271.0
KRC914-6PH	9,143	8,503	9,326	12,950	6	3,660	16.2	2x 31.8	2x 34.9	2,316	1,929	1,145	309.0
KRC1386-6PH	13,853	12,883	14,130	17,510	8	4,880	21.6	2x 38.1	2x 38.1	3,091	2,135	1,145	501.0
KRC1722-6PH	17,221	16,016	17,566	15,510	8	4,880	21.6	2x 38.1	2x 38.1	3,091	2,135	1,145	612.0

### KIRBY® WRC REMOTE CONDENSERS

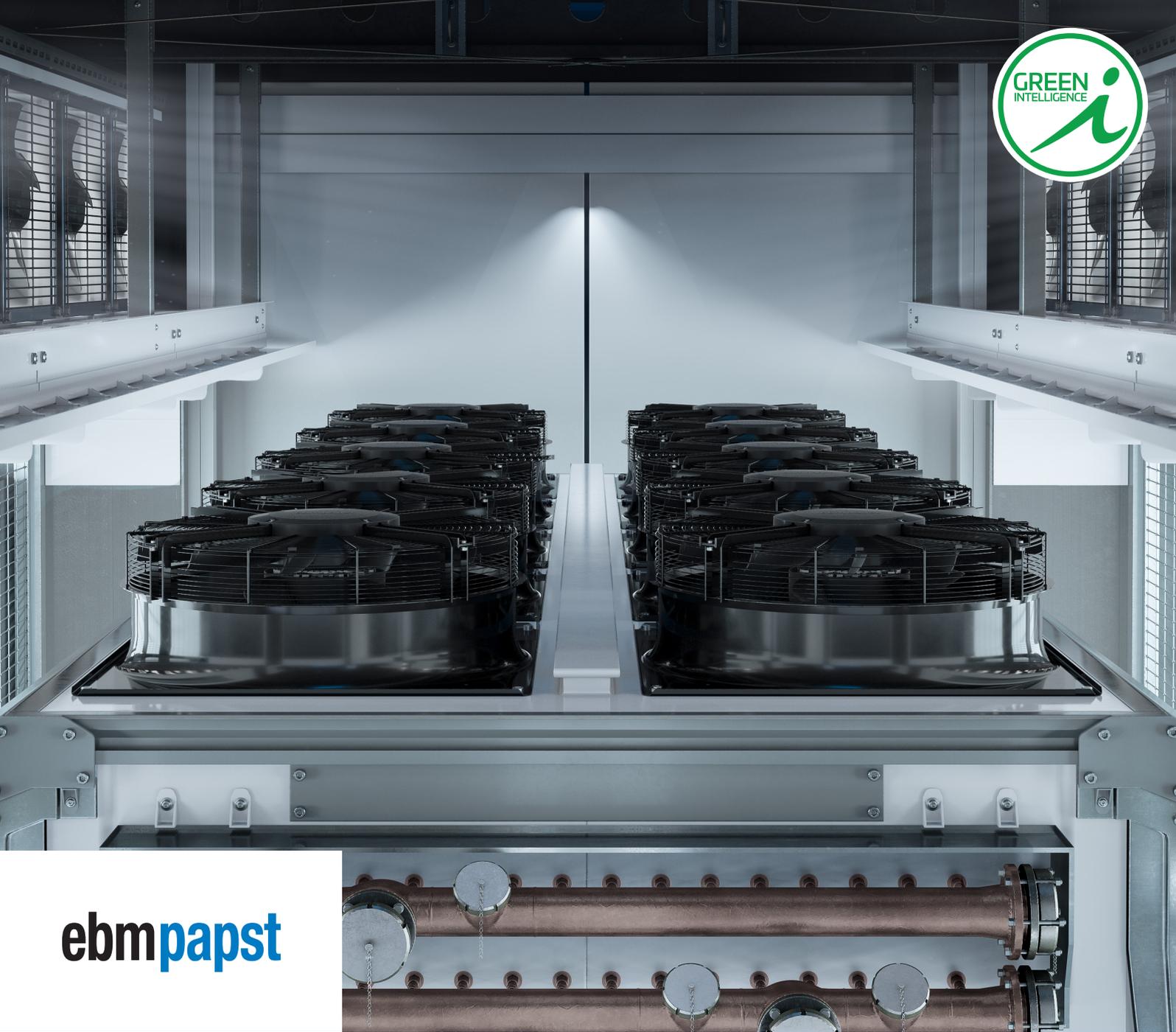
The Kirby® WRC Remote Condenser range is ideal for commercial central plant refrigeration and air conditioning installations requiring low noise and improved energy savings. Kirby® WRC Remote Condensers have achieved certification under the Eurovent Certified Performance scheme. Kirby® WRC remote condensers feature a specially optimised coil surface to fan ratio. This ensures even air distribution at reduced pressure drop across a wide fan speed range, which in turn reduces electricity consumption and overarching operating costs.

#### Key Features

- All fan motors are factory pre-wired back to junction box for ease of installation
- Single and double coil variations available
- Floating coil technology and rifle bore tube for improved reliability and performance
- Kirby Blue Kote fin protection supplied as standard, with heavy duty coil coating available
- Crisp painted steel casing and end plates to enhance durability and extend service life
- Vertical or horizontal air discharge available



Single Coil Models @ 1,100 RPM													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R448A	R134A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(25°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
WRC124DECB	10,056	8,950	9,654	12,980	2	5,800	8.8	54.40	54.40	1,136	1,250	3,260	430.0
WRC126DECB	11,660	10,377	11,194	11,772	2	5,800	8.8	54.40	54.40	1,136	1,250	3,260	500.0
WRC134DECB	15,084	13,425	14,481	19,470	3	8,700	13.2	66.70	66.70	1,136	1,250	4,660	610.0
WRC136DECB	17,490	15,566	16,790	17,658	3	8,700	13.2	66.70	66.70	1,136	1,250	4,660	710.0
WRC144DECB	20,112	17,900	19,308	25,960	4	11,600	17.6	66.70	66.70	1,136	1,250	6,068	820.0
WRC146DECB	23,320	20,755	22,387	23,544	4	11,600	17.6	66.70	66.70	1,136	1,250	6,068	960.0
WRC154DECB	25,140	22,375	24,134	32,450	5	14,500	22.0	66.70	66.70	1,136	1,250	7,469	1,035.0
WRC156DECB	29,150	25,944	27,984	29,430	5	14,500	22.0	66.70	66.70	1,136	1,250	7,469	1,210.0



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the engineer's choice

# Very efficient, very quiet, *proven in harsh Australian conditions.*

AxiBlade axial fans, with AC and EC motors, have been operating in harsh Australian conditions and delivered fantastic energy savings. AxiBlade is the benchmark in air-conditioning and refrigeration technology.

- Four standard sizes from 630 to 910, enabling like-for-like replacement
- The new AxiBlade can reduce the fan power input by up to 38% compared to existing axial fans
- Increased airflow at the same noise and power levels can drastically reduce compressor load or provide more cooling capacity

Find out more at [www.ebmpapst.com.au](http://www.ebmpapst.com.au)

**REMOTE CONDENSERS**

**KIRBY® WRC REMOTE CONDENSERS (CONT'D)**



Double Coil Models @ 1,100 RPM													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R448A	R134A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(25°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
WRC224DECB	20,112	17,900	19,308	25,960	4	11,920	18.0	2 x 54.40	2 x 54.40	1,136	2,406	3,260	810.0
WRC226DECB	23,320	20,755	22,387	23,544	4	11,920	18.0	2 x 54.40	2 x 54.40	1,136	2,406	3,260	950.0
WRC234DECB	30,168	26,850	28,961	38,940	6	17,880	27.0	2 x 66.70	2 x 66.70	1,136	2,406	4,660	1,170.0
WRC236DECB	34,980	31,132	33,581	35,316	6	17,880	27.0	2 x 66.70	2 x 66.70	1,136	2,406	4,660	1,370.0
WRC244DECB	40,224	35,799	38,615	51,920	8	23,840	36.0	2 x 66.70	2 x 66.70	1,136	2,406	6,068	1,570.0
WRC246DECB	46,640	41,510	44,774	47,088	8	23,840	36.0	2 x 66.70	2 x 66.70	1,136	2,406	6,068	1830.0
WRC254DECB	50,280	44,749	48,269	64,900	10	29,800	45.0	2 x 66.70	2 x 66.70	1,136	2,406	7,469	1,975.0
WRC256DECB	58,300	51,887	55,968	58,860	10	29,800	45.0	2 x 66.70	2 x 66.70	1,136	2,406	7,469	2,300.0

Double Coil Models @ 1,100 RPM - Vertical Airflow													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R448A	R134A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(25°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(mm)		(mm)			
WRCV224DECB	20,112	17,900	19,308	25,960	4	11,920	18.0	2 x 54.40	2 x 54.40	2,406	3,260	1,615	810.0
WRCV226DECB	23,320	20,755	22,387	23,544	4	11,920	18.0	2 x 54.40	2 x 54.40	2,406	3,260	1,615	950.0
WRCV234DECB	30,168	26,850	28,961	38,940	6	17,880	27.0	2 x 66.70	2 x 66.70	2,406	4,660	1,615	1,170.0
WRCV236DECB	34,980	31,132	33,581	35,316	6	17,880	27.0	2 x 66.70	2 x 66.70	2,406	4,660	1,615	1,370.0
WRCV244DECB	40,224	35,799	38,615	51,920	8	23,840	36.0	2 x 66.70	2 x 66.70	2,406	6,068	1,615	1,570.0
WRCV246DECB	46,640	41,510	44,774	47,088	8	23,840	36.0	2 x 66.70	2 x 66.70	2,406	6,068	1,615	1,830.0
WRCV254DECB	50,280	44,749	48,269	64,900	10	29,800	45.0	2 x 66.70	2 x 66.70	2,406	7,469	1,615	1,975.0
WRCV256DECB	58,300	51,887	55,968	58,860	10	29,800	45.0	2 x 66.70	2 x 66.70	2,406	7,469	1,615	2,300.0

## KIRBY® CXW REMOTE CONDENSERS

Intersecting original design and innovation technology, Kirby® CXW is the latest range of Kirby® air cooled remote condensers delivering a compact footprint and impressive all-round performance. Thanks to its modular design and construction, Kirby® CXW is the perfect remote condenser choice for all direct expansion application projects.



### Key Features

- Optimised footprint and various ventilation solutions for enhanced suitability in urban environments.
- Modular V-shape copper / aluminium coil construction for ease of installation and commissioning in confined spaces, even with different refrigerants.
- Unique sound wall and EC fan motors delivering up to 1- db(A) sound reduction in the horizontal plane.
- Premium construction featuring galvanised steel, with crisp white powdered polyester finish panels; and lateral anti-intrusive grilles to protect against external impacts.
- Superior fin coils, producing increased efficiency and charge reduction as a result of 3/8 rifle bore copper tube coils; while blue coated aluminium fins offer high corrosion resistance.
- User friendly removable coils allowing ease of access for maintenance or replacement.
- Split configuration options available upon request.

Standard Models @ 1,100 RPM													
Part Number	Capacity			Air Movement	Fan Motors			Connections		Dimensions			Weight Net (kg)
	R404A	R407F	R134A	Airflow	Fans Qty	Watts	Amps	Liquid	Gas	Width	Depth	Height	
	(25°C Ambient @ 0°C Subcooling)			(l/s)	(#)	(W)	(A)	(inches)		(mm)			
CXW-1V-3R	10,180	9,060	9,773	15,222	2	5,800	8.8	2-1/8"	2-1/8"	1,360	2,280	2,020	580.0
CXW-1V-4R	11,875	10,569	11,400	14,888	2	5,800	8.8	2-1/8"	2-1/8"	1,430	2,280	2,020	650.0
CXW-2V-3R	20,360	18,120	19,546	30,444	4	11,600	17.6	2-1/8"	2-1/8"	2,460	2,280	2,020	860.0
CXW-2V-4R	24,384	21,702	23,409	29,776	4	11,600	17.6	2-1/8"	2-1/8"	2,460	2,280	2,020	970.0
CXW-3V-3R	30,540	27,181	29,318	45,666	6	17,400	26.4	2-1/8"	2-1/8"	3,490	2,280	2,020	1,140.0
CXW-3V-4R	36,576	32,553	35,113	44,664	6	17,400	26.4	2-1/8"	2-1/8"	3,490	2,280	2,020	1,290.0
CXW-4V-3R	40,720	36,241	39,091	60,888	8	23,200	35.2	2-5/8"	2-5/8"	4,520	2,280	2,020	1,420.0
CXW-4V-4R	48,768	43,404	46,817	59,552	8	23,200	35.2	2-5/8"	2-5/8"	4,520	2,280	2,020	1,610.0
CXW-5V-4R	50,900	45,301	48,864	76,110	10	29,000	44.0	2-5/8"	2-5/8"	5,550	2,280	2,020	1,700.0
CXW-5V-4R	60,960	54,254	58,522	74,440	10	29,000	44.0	2-5/8"	2-5/8"	5,550	2,280	2,020	1,930.0
CXW-6V-3R	61,080	54,361	58,637	91,332	12	34,800	52.8	2-5/8"	2-5/8"	6,580	2,280	2,020	1,980.0
CXW-6V-4R	73,152	65,105	70,226	89,328	12	34,800	52.8	2-5/8"	2-5/8"	6,580	2,280	2,020	2,250.0
CXW-7V-3R	71,260	63,421	68,410	106,554	14	40,600	61.6	2-5/8"	2-5/8"	7,610	2,280	2,020	2,260.0
CXW-7V-4R	85,344	75,956	81,930	104,216	14	40,600	61.6	2-5/8"	2-5/8"	7,610	2,280	2,020	2,570.0





# HVAC Equipment

# Split System Air Conditioners



## GREE

### GREE BORA (REVERSE CYCLE)

Quiet and energy efficient, the Gree Bora range is the perfect entry-level choice for a variety of applications. The Bora range comes with Wi-Fi control and mini photocatalytic filters as standard, and is backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

#### Key features

- Anti-corrosive coating on all printed circuit boards to help protect the electronics.
- Dry connection for gate card or remote on/off operation, great for schools and hotels.
- Blue fin coils for corrosion protection.
- Mono / multi compatible.
- Intelligent Auto Reset, with power off memory function.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
AC4200	2.5	3.0	220-240 / 1	289x849x215	540x782x320	10.5	29.0	6.35	9.52
AC4202	3.4	3.7	220-240 / 1	289x849x215	596x848x320	10.5	33.0	6.35	9.52
AC4204	5.2	5.6	220-240 / 1	300x970x225	646x912x373	13.5	42.0	6.35	12.70
AC4206	7.1	7.1	220-240 / 1	329x1122x247	646x912x373	16.0	43.5	6.35	15.88



### GREE LOMO (REVERSE CYCLE)

Gree Lomo features intelligent functions to produce improved efficiency and greater energy savings – ultimately delivering faster heating and cooling all year round! Ideal for a range of residential applications, the Lomo range also includes Wi-Fi controls as standard, making it even more convenient. Furthermore, the Lomo range is backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

#### Key features

- Seven fan modes with noise reducing technology delivers perfect airflow with quiet operation.
- Enjoy greater spread of air thanks to 3D airflow.
- Intelligent defrosting reduces the number of defrost cycles and reduces energy waste.
- Soft start software limits compressor start up current, while low voltage start up provides protection against brown outs and poor power supplies.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
AC7311	2.0	2.7	220-240 / 1	289x845x209	540x782x320	10.0	29.0	6.35	9.52
AC7312	2.5	3.0	220-240 / 1	289x845x209	540x782x320	10.0	30.0	6.35	9.52
AC7313	3.4	4.0	220-240 / 1	289x845x209	596x848x320	10.5	33.0	6.35	9.52
AC7315	5.3	5.6	220-240 / 1	300x970x224	700x965x396	13.5	45.0	6.35	12.70
AC7316	6.2	7.1	220-240 / 1	325x1078x246	700x965x396	15.5	53.5	6.35	12.70
AC7317	7.1	8.0	220-240 / 1	325x1078x246	700x965x396	16.0	53.5	6.35	15.88
AC7318	8.5	9.0	220-240 / 1	325x1078x246	790x980x427	16.0	65.0	6.35	15.88

### GREE HYPER (REVERSE CYCLE)



With a modern, sleek finish; Wi-Fi controls as standard and some of the highest energy efficiency ratings on the market, the Gree Hyper range not only looks great, but it also costs significantly less to run. Gree Hyper utilises Gree's next generation G10 inverter, utilising a cutting edge, high speed, DSP computer chip for precise inverter control leading to extremely efficient and unceasing operation. Furthermore, the Hyper range is backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

**Key features**

- The inverter PCB in the outdoor unit can work safely up to 85°C for greater reliability. The PCB is also coated to protect it from the ingress of moisture, dirt and dust.
- Outdoor units feature Gold Fin coating, improving efficiency by accelerating the defrost process and offers greater resistance to corrosive elements.
- High density filters oxidise and degrade organic contaminants eliminating bacteria, viruses and unpleasant smells.
- Intelligent defrosting is designed to minimise the defrost time and reduce the number of defrost cycles; therefore, reducing energy waste.
- iFeel remote controller delivers customised comfort.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
AC7202	2.5	3.2	220-240 / 1	295x798x222	596x899x378	10.0	38.0	6.35	9.52
AC7203	3.5	3.8	220-240 / 1	295x798x222	596x899x378	10.5	38.0	6.35	9.52
AC7204	4.6	4.7	220-240 / 1	300x970x224	700x955x396	13.5	46.0	6.35	12.70
AC7205	5.2	5.8	220-240 / 1	325x1078x246	700x955x396	15.5	46.0	6.35	15.88
AC7206	6.1	7.3	220-240 / 1	325x1078x246	700x955x396	15.5	52.0	6.35	15.88
AC7207	7.0	8.0	220-240 / 1	325x1078x246	790x980x427	16.5	64.0	6.35	15.88
AC7208	8.0	9.0	220-240 / 1	325x1078x246	790x980x427	16.5	64.0	6.35	15.88
AC7209	9.4	10.3	220-240 / 1	326x1350x253	790x980x427	19.5	65.5	6.35	15.88

### LENNOX®



### LENNOX® SERIES 4 (REVERSE CYCLE)

Small, efficient and extremely quiet, the new range of Lennox® split system air conditioners offer a practical and energy-saving solution that can enhance the comfort of any area in your home.

**Key features**

- 3D airflow combines horizontal and vertical swings to effectively circulate air across larger areas.
- Inverter technology delivers consistent efficiency, offering energy savings of up to 20% compared to fixed speed units.
- Photocatalytic filters oxidise and degrade organic contaminants, effectively eliminating 99.9% of bacteria.
- Seven fan modes and noise reduction technology provides perfect airflow with whisper quiet operation.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
LNINV025V4	2.5	3.2	220-240 / 1	289x845x209	540x782x320	10.0	30.0	6.35	9.52
LNINV035V4	3.5	4.0	220-240 / 1	289x845x209	596x848x320	10.5	33.0	6.35	9.52
LNINV052V4	5.2	5.6	220-240 / 1	300x970x224	700x965x396	13.5	45.0	6.35	12.70
LNINV071V4	7.1	8.0	220-240 / 1	325x1078x246	700x955x396	16.0	53.5	6.35	15.88
LNINV085V4	8.5	9.0	220-240 / 1	325x1078x246	790x980x427	16.0	65.0	6.35	15.88

Quiet &  
Energy  
Efficient

 **GREE**  
AIR CONDITIONER



*Lomo  
Hi-wall Inverter  
Air Conditioner*



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## MITSUBISHI HEAVY INDUSTRIES

### MITSUBISHI HEAVY INDUSTRIES SRK-ZMP-S SERIES (REVERSE CYCLE)

With a 2.0kW heating capacity, a 1.7kW cooling capacity and a huge range of features and functions within a sleek and compact design, the SRK17ZMP reverse cycle split system air-conditioner from Mitsubishi Heavy Industries is the perfect heating and cooling solution for smaller spaces.



#### Key features

- Reverse Cycle model.
- Rapid room cooling/heating with Hi Power mode.
- Energy saving with Economy mode.
- Dehumidification with Dry Operation mode.
- Optional Wi-Fi control.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRK17ZMP-SET	1.7	2.0	240 / 1	262x769x210	540x645x275	6.9	25.0	6.35	9.52

### MITSUBISHI HEAVY INDUSTRIES AVANTI® SERIES (REVERSE CYCLE)

Mitsubishi Heavy Industries' AVANTI® Series of wall mounted split system air conditioners seamlessly combines European design with superior Japanese engineering. Developed by award winning Italian designers TENSA, the AVANTI® series features a sleek and stylish design and incorporates a range of convenient features and functions. It's also compatible with Mitsubishi Heavy Industries' new Wi-Fi solution and can be easily controlled with the IntesisHome app via your iPhone, iPad or Android device.



#### Key features

- Modern and stylish design.
- 3D Auto airflow for effective and even air distribution.
- Allergen clear system to capture and eliminate allergens.
- Energy efficient R32 refrigerant.
- Optional Wi-Fi control.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
DXK06ZSA-W-SET	2.0	2.7	240 / 1	290x870x230	540x780x290	9.5	33.0	6.35	9.52
DXK09ZSA-W-SET	2.5	3.2	240 / 1	290x870x230	540x780x290	10.0	36.0	6.35	9.52
DXK12ZSA-W-SET	3.5	3.7	240 / 1	290x870x230	540x780x290	10.0	36.0	6.35	9.52
DXK18ZSA-W-SET	5.0	5.8	240 / 1	290x870x230	640x800x290	10.0	43.5	6.35	12.70



AIR CONDITIONING

## MITSUBISHI HEAVY INDUSTRIES (CONT'D)

### MITSUBISHI HEAVY INDUSTRIES BRONTE® SERIES (REVERSE CYCLE)



Recommended by CHOICE®, the BRONTE® series is the ideal solution for heating and cooling of larger spaces within your home. Incorporating the same advanced fan blade technology used in the development of jet engines, the BRONTE® series features a market leading long reach airflow allowing it to efficiently deliver a powerful yet quiet and evenly distributed airflow. Packed with a range of convenient features including the Allergen Clear System, 3D Auto Mode and a range of timer functions, the BRONTE® series is the ideal addition to any modern home.

#### Key features

- Advanced jet air technology delivering long reach airflow.
- Allergen clear system to capture and eliminate allergens.
- Wide range of convenient timer functions.
- Energy efficient R32 refrigerant.
- Optional Wi-Fi control.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V, / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
DXK21ZRA-W-SET	6.3	7.1	240 / 1	339x1197x262	640x800x290	15.5	45.0	6.35	12.70
DXK24ZRA-W-SET	7.1	8.0	240 / 1	339x1197x262	750x880x340	15.5	58.0	6.35	15.88
DXK28ZRA-W-SET	8.0	9.0	240 / 1	339x1197x262	750x880x340	15.5	58.0	6.35	15.88
DXK33ZRA-W-SET	9.5	10.3	240 / 1	339x1197x262	845x970x370	15.5	58.0	9.52	15.88

### MITSUBISHI HEAVY INDUSTRIES AVANTI PLUS® SERIES (REVERSE CYCLE)



With industry leading energy ratings the Avanti PLUS® is Mitsubishi Heavy Industries' Platinum Series and is considered one of the most efficient split systems on the market. Whisper quiet and incorporating a range of energy saving and convenient features and functions such as motion sensor, eco-operation and adjustable LED display, the Avanti PLUS® split system range is perfect for a variety of spaces.

#### Key features

- Extremely high efficiency energy ratings.
- Whisper quiet operation.
- Energy saving motion sensor and eco operation.
- Clean Air Technology to capture smoke particles and deliver allergen and odour free air.
- Improved auto mode allowing for precise temperature control.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V, / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRK20ZSXA-W-SET	2.0	2.7	240 / 1	305x920x220	640x800x290	13.0	43.0	6.35	9.52
SRK25ZSXA-W-SET	2.5	3.2	240 / 1	305x920x220	640x800x290	13.0	43.0	6.35	9.52
SRK35ZSXA-W-SET	3.5	4.3	240 / 1	305x920x220	640x800x290	13.0	43.0	6.35	9.52
SRK50ZSXA-W-SET	5.0	6.0	240 / 1	305x920x220	640x800x290	13.0	45.0	6.35	12.70
SRK60ZSXA-W-SET	6.0	6.8	240 / 1	305x920x220	640x800x290	13.0	45.0	6.35	12.70

### MITSUBISHI HEAVY INDUSTRIES AVANTI® SERIES (COOLING ONLY)



Mitsubishi Heavy Industries' AVANTI® Series of wall mounted split system air conditioners seamlessly combines European design with superior Japanese engineering. Developed by award winning Italian designers TENSA, the AVANTI® series features a sleek and stylish design and incorporates a range of convenient features and functions. It's also compatible with Mitsubishi Heavy Industries' new Wi-Fi solution and can be easily controlled with the IntesisHome app via your iPhone, iPad or Android device.

**Key features**

- Modern and stylish design.
- 3D Auto airflow for effective and even air distribution.
- Allergen clear system to capture and eliminate allergens.
- Energy efficient R32 refrigerant.
- Optional Wi-Fi control.



Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRK10YSA-W-SET	2.5	-	240 / 1	290x870x230	540x780x290	10.0	33.5	6.35	9.52
SRK13YSA-W-SET	3.5	-	240 / 1	290x870x230	540x780x290	10.0	33.5	6.35	9.52
SRK18YSA-W-SET	5.0	-	240 / 1	290x870x230	640x800x290	10.0	40.0	6.35	12.70

### MITSUBISHI HEAVY INDUSTRIES BRONTE® SERIES (COOLING ONLY)

Recommended by CHOICE®, the BRONTE® series is the ideal solution for heating and cooling of larger spaces within your home. Incorporating the same advanced fan blade technology used in the development of jet engines, the BRONTE® series features a market leading long reach airflow allowing it to efficiently deliver a powerful yet quiet and evenly distributed airflow. Packed with a range of convenient features including the Allergen Clear System, 3D Auto Mode and a range of timer functions, the BRONTE® series is the ideal addition to any modern home.

**Key features**

- Advanced jet air technology delivering long reach airflow.
- Allergen clear system to capture and eliminate allergens.
- Wide range of convenient timer functions.
- Energy efficient R32 refrigerant.
- Optional Wi-Fi control.



Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRK24YRA-W-SET	7.1	-	240 / 1	339x1197x262	750x880x340	15.5	58.0	6.35	15.88



Australia's best air conditioner brand with  
Australia's most satisfied customers



MHIAA is proud to have been recognised by CHOICE® as Australia's best brand of air conditioners for the third year in a row. Alongside our 2019-2020 Most Satisfied Customer Award from Canstar Blue, we continue to strive to be one of the country's most trusted brands and deliver reliable products that outlast and outperform.

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Mitsubishi Heavy Industries Air-Conditioners Australia, Pty. Ltd.



AIR CONDITIONING

# Multi Split System Air Conditioners

**GREE**



## GREE FREE MATCH (REVERSE CYCLE)

The Gree Free Match System provides the flexibility of heating or cooling an entire home or office with up to five indoor units with just one outdoor unit, resulting in less noise and less space taken up by large outdoor units all powering multiple indoor units. With four different types of indoor units encompassing seventeen different models, each indoor unit has its own controller, allowing occupants to perfectly customise the temperature in each room without affecting the other rooms.

### Key features

- Greater energy savings thanks to Gree's G10 inverter technology, saving up to 30% versus traditional fixed speed systems.
- Wide voltage range operation protects against damage in voltage variations.
- Auto restart technology allows indoor units to restart in the same mode after a power outage.
- State-of-the-art photocatalytic filtration system purifies air quality by eliminating 99.9% of bacteria and contaminants.

### GREE FREE MATCH - COMPATIBLE INDOOR UNITS

Outdoor Unit	Indoor Units		Wall Mounted Lomo					Floor Standing				Ducted					Cassette					
	Min	Max	Capacity																			
			2.5	3.5	5.2	6.2	7.1	2.5	3.5	5.0	7.1	2.5	3.5	4.5	6.0	7.0	3.5	4.5	7.1			
AC5601	2	2	■	■					■	■				■	■					■		
AC5602	2	3	■	■	■				■	■	■			■	■	■				■	■	
AC5603	2	4	■	■	■				■	■	■			■	■	■				■	■	
AC4604	2	4	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■
AC5605	2	5	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■

### OUTDOOR UNITS

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)		Ports	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas	Min	Max
AC5601	5.4	5.7	220-240 / 1	700x955x396	47.0	6.35	9.52	2	2
AC5602	7.3	8.8	220-240 / 1	790x980x427	59.0	6.35	9.52	2	3
AC5603	8.2	9.3	220-240 / 1	790x980x427	65.0	6.35	9.52	2	4
AC5604	10.3	11.2	220-240 / 1	1103x1087x440	89.0	6.35	9.52	2	4
AC5605	11.3	11.5	220-240 / 1	1103x1087x440	90.0	6.35	9.52	2	5



### INDOOR UNITS - WALL MOUNTED - LOMO

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
AC7340	2.5	3.0	220-240 / 1	289x845x209	10.0	6.35	9.52
AC7342	3.4	4.0	220-240 / 1	289x845x209	10.5	6.35	9.52
AC7344	5.2	5.6	220-240 / 1	300x970x224	13.5	6.35	12.70
AC7346	6.2	7.1	220-240 / 1	325x1078x246	15.5	6.35	12.70
AC7348	7.1	8.0	220-240 / 1	325x1078x246	16.0	6.35	15.88





**GREE (CONT'D)**

**INDOOR UNITS - FLOOR STANDING**



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
GTH09BA-K3DNA1A/I	2.5	2.8	220-240 / 1	225x700x1220	40.0	6.35	9.52
GTH12BA-K3DNA1A/I	3.5	3.9	220-240 / 1	225x700x1220	40.0	6.35	9.52
GTH18BA-K3DNA1A/I	5.0	5.5	220-240 / 1	225x700x1220	40.0	6.35	12.70
GTH24BA-K3DNA1A/I	7.1	8.0	220-240 / 1	225x700x1220	45.0	9.52	15.88

**INDOOR UNITS - DUCTED**



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
AC5629	2.5	2.8	220-240 / 1	200x700x615	22.0	6.35	9.52
AC5631	3.5	3.8	220-240 / 1	200x700x615	23.0	6.35	9.52
AC5632	4.5	5.5	220-240 / 1	200x900x615	27.0	6.35	12.70
AC5633	6.0	6.6	220-240 / 1	200x1100x615	31.0	9.52	15.88
AC5634	7.0	8.0	220-240 / 1	200x1100x615	31.0	9.52	15.88

**INDOOR UNITS - CASSETTE**



Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Panel	Indoor	Panel	Liquid	Gas
AC5640	3.5	4.0	220-240 / 1	230x570x570	60x650x650	18.0	6.5	6.35	9.52
AC5641	4.5	5.0	220-240 / 1	230x570x570	60x650x650	18.0	6.5	6.35	12.70
AC5644	7.1	8.0	220-240 / 1	240x840x840	60x950x950	28.0	6.5	9.52	15.88



**LENNOX®**

**LENNOX® SERIES 4 (REVERSE CYCLE)**

With the ability to individually heat or cool multiple rooms and a wide variety of indoor units, Lennox® Multi Split System air conditioners offer an effective solution for the entire home.

**Key features**

- Inverter technology delivers consistent efficiency, offering energy savings of up to 20% compared to fixed speed units.
- Connect one outdoor unit to up to five indoor units to configure your ideal heating and cooling solution.
- A wide variety of indoor unit styles makes it easy to select the ideal option to suit your home decor.
- Ensure comfort for all by individually controlling, scheduling and setting each room to the desired temperature.



**LENNOX® SERIES 4 - COMPATIBLE INDOOR UNITS**

Outdoor Unit	Indoor Units		Wall Mounted				Ducted			Cassette			
	Min	Max	Capacity										
			2.5	3.5	5.2	7.1	3.5	5.0	7.1	3.5	5.0	7.1	
LNMT054V4	2	2	■	■			■				■		
LNMT075V4	2	3	■	■	■		■	■			■	■	
LNMT082V4	2	4	■	■	■		■	■			■	■	
LNMT100V4	2	4	■	■	■	■	■	■	■		■	■	■
LNMT114V4	2	5	■	■	■	■	■	■	■	■	■	■	■

**OUTDOOR UNITS**

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)		Ports	
	Cooling	Heating				Liquid	Gas	Min	Max
LNMT054V4	5.4	5.7	220-240 / 1	700x955x396	47.0	6.35	9.52	2	2
LNMT075V4	7.3	8.8	220-240 / 1	790x980x427	59.0	6.35	9.52	2	3
LNMT082V4	8.2	9.3	220-240 / 1	790x980x427	65.0	6.35	9.52	2	4
LNMT100V4	10.3	11.2	220-240 / 1	1103x1087x440	89.0	6.35	9.52	2	4
LNMT114V4	11.3	11.5	220-240 / 1	1103x1087x440	90.0	6.35	9.52	2	5



**INDOOR UNITS - WALL MOUNTED**

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	
	Cooling	Heating				Liquid	Gas
LNINVE025V4	2.5	3.0	220-240 / 1	289x845x209	10.0	6.35	9.52
LNINVE035V4	3.4	4.0	220-240 / 1	289x845x209	10.5	6.35	9.52
LNINVE052V4	5.2	5.6	220-240 / 1	300x970x224	13.5	6.35	12.70
LNINVE071V4	7.1	8.0	220-240 / 1	325x1078x246	16.0	6.35	15.88



**INDOOR UNITS - DUCTED**

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	
	Cooling	Heating				Liquid	Gas
LNMTDSS035V4	3.5	3.9	220-240 / 1	200x700x615	23.0	6.35	9.52
LNMTDSS050V4	5.0	5.5	220-240 / 1	200x900x615	27.0	6.35	12.70
LNMTDSS071V4	7.1	8.0	220-240 / 1	200x1100x615	31.0	6.35	15.88





AIR CONDITIONING

## MITSUBISHI HEAVY INDUSTRIES

### MITSUBISHI HEAVY INDUSTRIES SCM-ZS-W SERIES (REVERSE CYCLE)



The SCM-ZS series of multi split systems is compact and efficient and with the ability to connect up to five indoor units to one outdoor unit, is a versatile solution for heating and cooling multiple small to mid-sized rooms. The SCM-ZS series' compact design allows for installation in small spaces such as balconies and verandas while the highly efficient DC twin rotary compressor means the unit is super quiet, ensuring no disruptions. With each indoor unit having independent control options allowing for individual temperature, air flow, timers and other functions the SCM-ZS series of multi-splits ensures everyone's comfort all year round.

#### Key features

- 17 models of indoor units to choose from.
- Efficient and quiet operation.
- Smart energy use option.
- Individual indoor unit control for maximum occupant comfort.

### MITSUBISHI HEAVY INDUSTRIES SCM-ZS-W SERIES - COMPATIBLE INDOOR UNITS

Outdoor Unit	Indoor Units		Connection Capacity		Wall Mounted								Bulkhead		Cassette		
	Min	Max	Min	Max	Avanti® Series				Avanti Plus® Series				SRR-ZS-W Series		FDTC Series		
					Capacity								2.5	3.5	2.5	3.5	
	2.0	2.5	3.5	5.0	2.0	2.5	3.5	5.0	6.0								
SCM40ZS-W	2	2	4.0	6.0	■	■	■		■	■	■			■	■	■	■
SCM45ZS-W	2	2	4.5	7.0	■	■	■		■	■	■			■	■	■	■
SCM50ZS-W	2	3	4.0	8.5	■	■	■	■	■	■	■	■		■	■	■	■
SCM60ZS-W	2	3	4.0	11.0	■	■	■	■	■	■	■	■	■	■	■	■	■
SCM71ZS-W	2	4	7.0	12.5	■	■	■	■	■	■	■	■	■	■	■	■	■
SCM80ZS-W	2	4	8.0	13.5	■	■	■	■	■	■	■	■	■	■	■	■	■

### OUTDOOR UNITS



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)		Ports	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas	Min	Max
SCM40ZS-W	4.0	4.5	220-240 / 1	596x780x290	40.0	6.35	9.52	2	2
SCM45ZS-W	4.5	5.3	220-240 / 1	596x780x290	40.0	6.35	9.52	2	2
SCM50ZS-W	5.0	6.0	220-240 / 1	640x850x290	48.5	6.35	9.52	2	3
SCM60ZS-W	6.0	6.8	220-240 / 1	640x850x290	48.5	6.35	9.52	2	3
SCM71ZS-W	7.1	8.6	220-240 / 1	750x880x340	61.0	6.35	9.52	2	4
SCM80ZS-W	8.0	9.3	220-240 / 1	750x880x340	61.0	6.35	9.52	2	4

### INDOOR UNITS - WALL MOUNTED - AVANTI® SERIES



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRK20ZSA-W	2.0	3.0	220-240 / 1	290x870x230	10.0	6.35	9.52
SRK25ZSA-W	2.5	3.4	220-240 / 1	290x870x230	10.0	6.35	9.52
SRK35ZSA-W	3.5	4.5	220-240 / 1	290x870x230	10.0	6.35	9.52
SRK50ZSA-W	5.0	5.8	220-240 / 1	290x870x230	10.0	6.35	12.70

**INDOOR UNITS - WALL MOUNTED - AVANTI PLUS® SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRK20ZSXA-W	2.0	3.0	220-240 / 1	305x920x220	13.0	6.35	9.52
SRK25ZSXA-W	2.5	3.4	220-240 / 1	305x920x220	13.0	6.35	9.52
SRK35ZSXA-W	3.5	4.5	220-240 / 1	305x920x220	13.0	6.35	9.52
SRK50ZSXA-W	5.0	5.8	220-240 / 1	305x920x220	13.0	6.35	12.70
SRK60ZSXA-W	6.0	6.8	220-240 / 1	305x920x220	13.0	6.35	12.70



**INDOOR UNITS - BULKHEAD - SRR-ZS-W SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRR25ZS-W	2.5	2.9	220-240 / 1	200x750x500	20.5	6.35	9.52
SRR35ZS-W	3.5	4.5	220-240 / 1	200x750x500	20.5	6.35	9.52
SRR50ZS-W	5.0	5.8	220-240 / 1	200x950x500	24.0	6.35	12.70
SRR60ZS-W	6.0	6.8	220-240 / 1	200x950x500	24.0	6.35	12.70



**INDOOR UNITS - CASSETTE - FDTC SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Panel	Indoor	Panel	Liquid	Gas
FDTC25VH	2.5	3.4	220-240 / 1	248x570x570	10x620x620	14.0	3.5	6.35	12.70
FDTC35VH	3.5	4.5	220-240 / 1	248x570x570	10x620x620	14.0	3.5	6.35	12.70





AIR CONDITIONING

### MITSUBISHI HEAVY INDUSTRIES SCM-ZM/ZS-S SERIES (REVERSE CYCLE)

This powerful and quiet range of outdoor units offers seven capacity options and the ability to connect up to five indoor units, making it the perfect option to cool and heat an entire home or small commercial space; choose from five different types of indoor units in a wide range of capacities that allows for hundreds of heating and cooling solutions. The DC twin rotary compressor makes this unit highly efficient at the same time as limiting noise levels, minimizing the impact on occupant comfort. With each unit having independent control options, energy efficiency is maximised.

#### Key features

- Efficient and quiet operation.
- Smart energy use option.
- Individual indoor unit control for maximum occupant comfort.
- Long pipe runs available for flexible installation

### MITSUBISHI HEAVY INDUSTRIES SCM-ZM/ZS-S SERIES - COMPATIBLE INDOOR UNITS

Outdoor Unit	Indoor Units		Connection Capacity		Wall Mounted					Floor Standing			Bulkhead				Cassette				Ducted
	Min	Max	Min	Max	SRK-ZMXA-S Series					SRF-ZMXA-S Series			SRR-ZM-S Series				FDTC Series				FDUM Series
					2	2.5	3.5	5	6	2.5	3.5	5	2.5	3.5	5	6	2.5	3.5	5	6	5
	Capacity																				
SCM40ZS-S	2	2	4	6	■	■	■				■	■					■	■			
SCM45ZS-S	2	2	4.5	7	■	■	■				■	■	■	■	■			■	■		
SCM50ZS-S	2	3	4	8.5	■	■	■	■			■	■	■	■	■	■	■	■	■	■	
SCM60ZM-S1	2	3	4	11	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SCM71ZM-S1	2	4	7	12.5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SCM80ZM-S1	2	4	8	13.5	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
SCM100ZM-S	2	5	10	16	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■

### OUTDOOR UNITS



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)		Ports	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas	Min	Max
SCM40ZS-S	4.0	4.5	220-240 / 1	596x780x290	42.0	6.35	9.52	2	2
SCM45ZS-S	4.5	5.3	220-240 / 1	596x780x290	42.0	6.35	9.52	2	2
SCM50ZS-S	5.0	6.0	220-240 / 1	640x850x290	48.5	6.35	9.52	2	3
SCM60ZM-S1	6.0	6.8	220-240 / 1	640x850x290	49.0	6.35	9.52	2	3
SCM71ZM-S1	7.1	8.6	220-240 / 1	750x880x340	62.0	6.35	9.52	2	4
SCM80ZM-S1	8	9.3	220-240 / 1	750x880x340	62.0	6.35	9.52	2	4
SCM100ZM-S	10	12	220-240 / 1	945x970x370	92.0	6.35	9.52	2	5

### INDOOR UNITS - WALL MOUNTED - SRK-ZMXA-S SERIES



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRK20ZMXA-S	2.0	2.5	220-240 / 1	309x890x220	13.5	6.35	9.52
SRK25ZMXA-S	2.5	3.1	220-240 / 1	309x890x220	13.5	6.35	9.52
SRK35ZMXA-S	3.5	4.3	220-240 / 1	309x890x220	13.5	6.35	9.52
SRK50ZMXA-S	5.0	6.0	220-240 / 1	309x890x220	13.5	6.35	12.70
SRK60ZMXA-S	6.0	6.8	220-240 / 1	309x890x220	13.5	6.35	12.70



**INDOOR UNITS - FLOOR STANDING - SRF-ZMXA-S SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRF25ZMXA-S	2.5	3.4	220-240 / 1	600x860x238	18.0	6.35	9.52
SRF35ZMXA-S	3.5	4.5	220-240 / 1	600x860x238	19.0	6.35	9.52
SRF50ZMXA-S	5.0	6.0	220-240 / 1	600x860x238	19.0	6.35	12.70



**INDOOR UNITS - BULKHEAD - SRR-ZM-S SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
SRR25ZM-S	2.5	3.4	220-240 / 1	200x750x500	20.5	6.35	9.52
SRR35ZM-S	3.5	4.5	220-240 / 1	200x750x500	20.5	6.35	9.52
SRR50ZM-S	5.0	5.8	220-240 / 1	200x950x500	24.0	6.35	12.70
SRR60ZM-S	6.0	6.8	220-240 / 1	200x950x500	24.0	6.35	12.70



**INDOOR UNITS - CASSETTE - FDTC SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Panel	Indoor	Panel	Liquid	Gas
FDTC25VF	2.5	3.4	220-240 / 1	248x570x570	35x700x700	15.0	3.5	6.35	9.52
FDTC35VF	3.5	4.5	220-240 / 1	248x570x570	35x700x700	15.0	3.5	6.35	9.52
FDTC50VF	5.0	5.8	220-240 / 1	248x570x570	35x700x700	15.0	3.5	6.35	12.70
FDTC60VF	6.0	6.8	220-240 / 1	248x570x570	35x700x700	15.0	3.5	6.35	12.70



**INDOOR UNITS - DUCTED - FDUM SERIES**

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections (mm)	
	Cooling	Heating	(V / Ph)	(mm)	(kg)	Liquid	Gas
FDUM50VF	5.0	5.4	220-240 / 1	280x750x635	29.0	6.35	12.70



# Bulkhead System Air Conditioners

## MITSUBISHI HEAVY INDUSTRIES

### MITSUBISHI HEAVY INDUSTRIES SRR-ZS-W SERIES (REVERSE CYCLE)



The SRR-ZS range of low profile bulkhead systems are designed to sit within the ceiling space and distribute air via discreet grilles. These compact units require no ducting and are perfect for renovated spaces and applications such as apartments where space is at a premium as they can be factored in to the finished design to provide a quiet, efficient and integrated heating and cooling solution.

#### Key features

- Super slim, low profile design.
- Super quiet operation.
- Built-in drain pump.
- Eco mode for accurate selection of ideal operating mode.
- Optional Wi-Fi control.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRR25ZS-W-SET	2.5	3.4	240 / 1	200x750x500	595x780x290	20.5	35.0	6.35	9.52
SRR35ZS-W-SET	3.5	4.2	240 / 1	200x750x500	595x780x290	20.5	35.0	6.35	9.52

### MITSUBISHI HEAVY INDUSTRIES SRR-ZM-S SERIES (REVERSE CYCLE)



The SRR-ZM series of bulkhead systems are designed to sit entirely within the ceiling space and distribute air via grilles. Their slim, low-profile design, measuring only 200mm in height, makes them the perfect choice for apartments with limited ceiling space. As well as incorporating a range of convenient features and functions, the SRR-ZM series is extremely quiet, making it perfect for bedrooms.

#### Key features

- Slim, low profile design.
- Super quiet operation.
- Hi Power mode for rapid heating and cooling.
- Dry Operation for dehumidification.
- Optional Wi-Fi control.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRR25ZMXA-SET	2.5	3.4	240 / 1	200x750x500	595x780x290	20.5	35.0	6.35	9.52
SRR35ZMXA-SET	3.5	4.2	240 / 1	200x750x500	595x780x290	20.5	35.0	6.35	9.52

# Ducted System Air Conditioners

**GREE**



## GREE DUCTED SYSTEM (REVERSE CYCLE)

Compact and powerful, Gree ducted system air conditioners offer discreet heating and cooling for the entire home or work place. By adding zone controls, it also offers a higher level of control compared to traditional air conditioning units, which means a greater level of comfort and increased energy efficiency. This arrangement provides immense flexibility, in terms of both the distribution of conditioned air and the type of grille or diffuser that best complements the room's styling. Furthermore, each unit is backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

### Key features

- Greater energy savings thanks to Gree's G10 inverter technology.
- Wide voltage range operation.
- Condensate pump and safety float switch.
- Adjustable external static pressure.
- Non polarity communication wire.
- Optional gate card function and ModBus integration.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
AC5701	7.0	8.0	220-240 / 1	290x1226x775	790x980x427	46.0	67.0	9.52	15.88
AC5702	10.0	12.0	220-240 / 1	350x1340x750	1100x1107x440	56.0	92.0	9.52	15.88
AC5703	12.0	14.0	220-240 / 1	350x1340x750	1349x958x412	56.0	105.0	9.52	15.88
AC5704	14.0	16.0	220-240 / 1	350x1340x750	1349x958x412	56.0	105.0	9.52	15.88
AC5705	16.0	18.0	220-240 / 1	389x1463x799	1365x1085x427	87.0	126.0	9.52	15.88
AC5720	20.0	22.4	380-415 / 3	440x1690x870	1615x940x460	110.0	155.0	9.52	19.05
AC5724	24.0	26.0	380-415 / 3	440x1690x870	1615x940x460	113.0	175.0	9.52	22.22





**LENNOX®**

**LENNOX® SERIES 7 (REVERSE CYCLE)**

Whether installed in a new home or tailored to suit an existing one, a Lennox® Ducted System air conditioner delivers the ultimate comfort in solution in every room discretely and efficiently.

**Key features**

- Inverter technology delivers consistent efficiency, offering energy savings of up to 20% compared to fixed speed units.
- Programmable daily, weekly and fortnightly timers, as well as sleep mode, allows for personalised comfort scenarios.
- I Feel functionality and multiple control options accommodate flexibility whilst delivering precision output.
- Low voltage standby and soft-start compressors facilitate consistent reliability and protect your investment.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
LED072V7/ LCD072V7	7.2	8.2	220-240 / 1	290x1225x775	790x1005x425	47.0	69.0	9.52	15.88
LED100V7/ LCD100V7	10.0	12.0	220-240 / 1	350x1340x750	1105x1105x440	56.0	91.0	9.52	15.88
LED115V7/ LCD115V7	11.5	13.8	220-240 / 1	350x1340x750	1105x1105x440	59.0	101.0	9.52	15.88
LED140V7/ LCD140V7	14.0	16.0	220-240 / 1	350x1340x750	1365x1085x425	59.0	117.0	9.52	15.88
LED160V7/ LCD160V7	16.0	18.0	220-240 / 1	390x1500x800	1365x1085x425	79.0	121.0	9.52	19.05
LED200V7/ LCD200V7	20.0	22.4	380-415 / 3	450x1520x840	1615x940x460	110.0	155.0	9.52	19.05
LED240V7/ LCD240V7	24.0	26.0	380-415 / 3	450x1520x840	1615x940x460	113.0	175.0	9.52	22.23



**MITSUBISHI HEAVY INDUSTRIES**

**MITSUBISHI HEAVY INDUSTRIES FDU SERIES (REVERSE CYCLE)**

Mitsubishi Heavy Industries' new FDU series of slimline ducted systems are a quiet and discreet solution for multiple rooms. Coming in a range of capacities ranging from 7.1kW up to 14kW and incorporating a range of convenient features and functions, the FDU series is the perfect heating and cooling solution for any size Aussie home.

**Key features**

- Increased energy efficiency thanks to an improved heat exchanger and DC fan motor.
- Slim, low profile design, only 280mm in height.
- Quiet operation, including a market leading low of 25 db(A) on selected units.
- Balanced airflow and adjustable static pressure during installation.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
FDU71AVNXWVH	7.1	8.0	240 / 1	280x950x635	750x880x340	34.0	60.0	9.52	15.88
FDU100AVNVH	10.0	11.2	240 / 1	280x1370x740	845x970x370	54.0	82.0	9.52	15.88
FDU100AVNAWVH	10.0	11.2	240 / 1	280x1370x740	845x970x370	54.0	77.0	9.52	15.88
FDU100VNP1VH	10.0	11.2	240 / 1	280x1370x740	845x970x370	54.0	70.0	9.52	15.88
FDU100VNPWVH	10.0	10.0	240 / 1	280x1370x740	750x880x340	54.0	57.0	9.52	15.88
FDU125AVNXVH	12.5	14.0	240 / 1	280x1370x740	1300x970x370	54.0	106.0	9.52	15.88
FDU140AVNXVH	14.0	16.0	240 / 1	280x1370x740	1300x970x370	54.0	106.0	9.52	15.88
FDU100AVSAWVH	10.0	11.2	380-415 / 3	280x1370x740	845x970x370	54.0	78.0	9.52	15.88
FDU125VSVXVH	12.5	14.0	380-415 / 3	280x1370x740	1300x970x370	54.0	106.0	9.52	15.88
FDU140AVSVXVH	14.0	16.0	380-415 / 3	280x1370x740	1300x970x370	54.0	106.0	9.52	15.88



**mitsubishi heavy industries fdua series (reverse cycle)**



Mitsubishi Heavy Industries' FDUA series of reverse cycle, ducted systems are quiet, compact and come in a variety of capacities, ranging from 7.1kW to 20kW. The FDUA series comes in both single and three phase options and offer up to 100m pipe run making them versatile and flexible. Incorporating a wide range of functions and features such as Automatic Mode which automatically selects cooling or heating mode based on the room's conditions, Hi Power Mode which provides an extra boost of power to help you reach your set temperature quickly and Silent Mode which reduces operation noise even further, the FDUA series is the perfect ducted air conditioning solution for any commercial application.

**Key features**

- External Static Pressure control
- Self-diagnostics function
- Weekly / sleep timer
- 600mm built-in drain pump

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
FDUA100VNP1VH	10.0	11.2	240 / 1	398x1150x650	845x970x370	52.0	70.0	9.52	15.88
FDUA100VNPWWH	10.0	10.0	240 / 1	398x1150x650	750x880x340	52.0	57.0	9.52	15.88
FDUA100AVNVH	10.0	11.2	240 / 1	398x1150x650	845x970x370	52.0	81.0	9.52	15.88
FDUA100AVNAVWH	10.0	11.2	240 / 1	398x1150x650	845x970x370	52.0	77.0	9.52	15.88
FDUA100AVNXVF2	10.0	11.2	240 / 1	398x1150x650	1300x970x370	52.0	106.0	9.52	15.88
FDUA125AVNXVF	12.5	14.0	240 / 1	398x1150x650	1300x970x370	52.0	106.0	9.52	15.88
FDUA140AVNXVG	14.0	16.0	240 / 1	398x1460x930	1300x970x370	66.0	106.0	9.52	15.88
FDUA100AVSAVWH	10.0	11.2	380-415 / 3	398x1150x650	845x970x370	54.0	78.0	9.52	15.88
FDUA125VSVXF	12.5	14.0	380-415 / 3	398x1150x650	1300x970x370	52.0	106.0	9.52	15.88
FDUA140AVSXVG	14.0	16.0	380-415 / 3	398x1450x930	1300x970x370	66.0	106.0	9.52	15.88
FDUA160AVSAVG	16.0	18.0	380-415 / 3	398x1450x930	1505x970x370	66.0	143.0	12.70	22.22
FDUA200AVSAVG	20.0	22.4	380-415 / 3	379x1600x893	1505x970x370	89.0	143.0	12.70	22.22



**mitsubishi heavy industries fdum series (reverse cycle)**

Mitsubishi Heavy Industries' FDUM series of medium static, reverse cycle, ducted systems are quiet, compact and come in both single and three phase options as well as a variety of capacities, ranging from 5.0kW to 14kW. Incorporating a range of convenient functions and features such as Automatic Mode which automatically selects cooling or heating mode based on the room's conditions, Hi Power Mode which provides an extra boost of power to help you reach set temperature quickly and Silent Mode which reduces operation noise even further, the FDUM series is the perfect ducted air conditioning solution for any commercial application. All FDUM ducted systems also come with a 600mm built-in drain pump allowing greater flexibility with installation and easy maintenance.

**Key features**

- Automatic External Static Pressure control
- Weekly / Sleep timer
- Self-diagnostics function
- 600mm built-in drain pump

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
FDUM50ZMXAVH	5.0	5.4	240 / 1	280x750x635	640x800x290	29.0	45.0	6.35	12.70
FDUM50ZSXAVWH	5.0	5.4	240 / 1	280x750x635	640x800x290	29.0	45.0	6.35	12.70
FDUM60ZMXAVH	5.6	6.7	240 / 1	280x950x635	640x800x290	34.0	45.0	6.35	12.70
FDUM60ZSXAVWH	5.6	6.7	240 / 1	280x950x635	640x800x290	34.0	45.0	6.35	12.70



# Floor Standing System Air Conditioners



## GREE

### GREE FLOOR STANDING SYSTEM (REVERSE CYCLE)

Attractive, yet discreet, Gree floor standing system air conditioners offer an alternative option for heating and cooling where room design is non-traditional or wall space may be limited. Delivering all the benefits of a standard split system air conditioner, these units can even be recessed into wall space and act as an ideal replacement for a home fireplace. Furthermore, all units are backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

#### Key features

- Sine-Wave DC Inverter technology allows a room to reach the required temperature more rapidly than fixed speed units, leading to power savings of up to 30%.
- Gree Humanised Sleep mode gently raises or lowers the temperature automatically to maintain a comfortable room temperature and save energy.
- Built in, independent dehumidification system.
- Wi-Fi control available as standard.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
AC7413	5.2	5.3	220-240 / 1	600x700x215	700x995x396	15.5	46.0	6.35	12.70



## MITSUBISHI HEAVY INDUSTRIES

### MITSUBISHI HEAVY INDUSTRIES SRF-ZMXA-S SERIES (REVERSE CYCLE)

Discreet and versatile, the SRF-ZMXA range is perfect for rooms where wall space is limited but you still want the benefit of a well-engineered air conditioner to maintain a comfortable indoor climate. With the ability to select air outlet and louvre position you are in complete control of your air flow direction ensuring that every centimetre of your room is kept at the optimum temperature. Featuring a range of convenient functions such as Hi Power, for rapid cooling and heating, and dry operation for hot and humid spaces, this series is the ultimate option for keeping small, limited spaces comfortable in all seasons.

#### Key features

- Air Outlet selection for ultimate airflow control.
- Clean air with Allergen Clear Filter.
- Hi Power mode for rapid heating and cooling.
- Optional Wi-Fi control.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
SRF25ZMXA-SET	2.5	3.4	240 / 1	600x860x238	595x780x290	18.0	38.0	6.35	9.52
SRF35ZMXA-SET	3.5	4.5	240 / 1	600x860x238	595x780x290	19.0	38.0	6.35	9.52
SRF50ZMXA-SET	5.0	6.0	240 / 1	600x860x238	640x800x290	19.0	45.0	6.35	12.70

# Ceiling Cassette System Air Conditioners

## GREE



### GREE CEILING CASSETTE SYSTEM (REVERSE CYCLE)

Gree's Ceiling Cassette System provides the ideal solution for acclimatising commercial spaces, conveniently disappearing above the surface of any ceiling. Each Cassette System is powered by Gree's energy efficient G10 inverter and variable speed compressor, saving energy, reducing noise and keeping room temperatures steady; and is backed by Gree's industry leading 6 year warranty in both residential and commercial applications.

#### Key features

- Subtle appearance fits a variety of spaces.
- Four way air discharge delivers even climate control across the room.
- Multi speed fan for ultimate flexibility.
- Swing louver ensures consistent spread and avoids cold or hot pockets.
- Cleanable air filter.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)			Weight (kg)			Connections (mm)	
	Cooling	Heating		Indoor	Panel	Outdoor	Indoor	Panel	Outdoor	Liquid	Gas
AC5801A	7.2	8.2	230 / 1	240x840x840	60x952x952	790x1005x425	29.0	7.0	69.0	9.52	15.88
AC5802	10.0	12.0	230 / 1	290x840x840	60x952x952	1105x1105x440	33.0	7.0	91.0	9.52	15.88
AC5803	11.5	13.8	230 / 1	290x840x840	60x952x952	1105x1105x440	34.0	7.0	101.0	9.52	15.88
AC5804A	14.0	16.0	230 / 1	290x910x910	65x1040x1040	1365x1085x425	43.0	8.0	117.0	9.52	15.88



## LENNOX®

### LENNOX® SERIES 7 (REVERSE CYCLE)

Powerful, efficient and discreet, Lennox® Ceiling Cassette System air conditioners provide the perfect solution for applications where performance and aesthetics are imperative.

#### Key features

- 3D airflow improves air circulation, delivering even temperature distribution across large areas.
- Inverter technology delivers consistent efficiency, offering energy savings of up to 20% compared to fixed speed units.
- Visually appealing, non-intrusive grille design seamlessly blends indoor units into the surrounding environment.
- Programmable daily, weekly and fortnightly timers, as well as sleep mode, deliver convenient energy management.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)			Weight (kg)			Connections (mm)	
	Cooling	Heating		Indoor	Panel	Outdoor	Indoor	Panel	Outdoor	Liquid	Gas
LEC072V7/ LCD072V7	7.2	8.2	230 / 1	240x840x840	60x952x952	790x1005x425	29.0	7.0	69.0	9.52	15.88
LEC100V7/ LCD072V7	10.0	12.0	230 / 1	290x840x840	60x952x952	1105x1105x440	33.0	7.0	91.0	9.52	15.88
LEC115V7/ LCD115V7	11.5	13.8	230 / 1	290x840x840	60x952x952	1105x1105x440	34.0	7.0	101.0	9.52	15.88
LEC140V7/ LCD140V7	14.0	16.0	230 / 1	290x910x910	65x1040x1040	1365x1085x425	43.0	8.0	117.0	9.52	15.88





AIR CONDITIONING

**MITSUBISHI HEAVY INDUSTRIES**

**MITSUBISHI HEAVY INDUSTRIES FDT C SERIES (REVERSE CYCLE)**

At only 270mm in height and weighing just 16.5kg, the FDT C series offers one of the most compact ceiling cassette designs on the market. Combined with the built-in 600mm drain pump, this allows for a convenient and flexible installation. The Clean Air Function, which traps and removes air borne dust and allergens, and the ability to set the direction of each individual louvre provides users with a personalised experience and healthy indoor air quality.

**Key features**

- Compact design.
- Individual louvre control.
- Clean Air technology.
- Automatic operation mode control.
- Sleep timer.
- 600mm built-in drain pump.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)			Weight (kg)			Connections (mm)	
	Cooling	Heating		Indoor	Panel	Outdoor	In-door	Panel	Out-door	Liquid	Gas
FDT C25ZSAVH1	2.5	3.4	240 / 1	248x570x570	10x620x620	540x780x290	14.0	2.5	34.5	6.35	9.52
FDT C35ZSAVH1	3.5	4.3	240 / 1	248x570x570	10x620x620	540x780x290	14.0	2.5	34.5	6.35	9.52
FDT C50ZSXA VWH	5.0	5.4	240 / 1	248x570x570	10x620x620	640x800x290	14.0	2.5	45.0	6.35	12.70
FDT C60ZSXA VWH	5.6	6.7	240 / 1	248x570x570	10x620x620	640x800x290	14.0	2.5	45.0	6.35	12.70



AIR CONDITIONING

**MITSUBISHI HEAVY INDUSTRIES (CONT'D)**

**MITSUBISHI HEAVY INDUSTRIES FDT SERIES (REVERSE CYCLE)**

FDT ceiling cassettes are available in single or three phase options with a range of capacities from 5.6kW to 14.0kW. With new Draught Control Technology and optional new Motion Sensor feature, the FDT series provides comfortable air flow that doesn't create warm or cold draughts and detects the amount of human activity in the room, automatically switching to energy-saving mode at times of low activity. The 800mm built-in drain pump and up to 100m pipe run makes this range suitable for a variety of residential and commercial spaces.

**Key features**

- Draught Control Technology.
- Optional Motion Sensor for increased energy saving.
- Clean Air function.
- Sleep timer.
- 800mm built-in drain pump.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)			Weight (kg)			Connections (mm)	
	Cooling	Heating		Indoor	Panel	Outdoor	In-door	Panel	Out-door	Liquid	Gas
FDT60ZSXA VWH	5.6	6.7	240 / 1	236x840x840	35x950x950	640x800x290	21.0	5.0	45.0	6.35	12.70
FDT71AVNXVWH	7.1	8.0	240 / 1	236x840x840	35x950x950	750x880x340	21.0	5.0	60.0	9.52	15.88
FDT100AVNA VWH	10.0	11.2	240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	77.0	9.52	15.88
FDT100VNPVWH	10.0	10.0	240 / 1	298x840x840	35x950x950	750x880x340	25.0	5.0	57.0	9.52	15.88
FDT125AVNXVWH	12.5	14.0	240 / 1	298x840x840	35x950x950	1300x970x370	25.0	5.0	97.0	9.52	15.88
FDT140AVNXVH	14.0	16.0	240 / 1	298x840x840	35x950x950	1300x970x370	25.0	5.0	97.0	9.52	15.88
FDT100AVSA VWH	10.0	11.2	380-415 / 3	298x840x840	35x950x950	845x970x370	25.0	5.0	78.0	9.52	15.88
FDT125VSXVWH	12.5	14.0	380-415 / 3	298x840x840	35x950x950	1300x970x370	25.0	5.0	99.0	9.52	15.88
FDT140AVSXVWH	14.0	16.0	380-415 / 3	298x840x840	35x950x950	1300x970x370	25.0	5.0	99.0	9.52	15.88

# Ceiling Suspended System Air Conditioners

## MITSUBISHI HEAVY INDUSTRIES



AIR CONDITIONING

### MITSUBISHI HEAVY INDUSTRIES FDE SERIES (REVERSE CYCLE)

Mitsubishi Heavy Industries' ceiling suspended units have a compact design which are only 250mm in height and include a new and improved flap control technology that allows the user to select from six flap positions for a perfect airflow angle. The system is operated conveniently from a wired control panel. With a wide capacity range of 7.1 – 14kW and availability in single or three phase models, these units are ideal for use in cafes, retail shops and smaller offices. They offer improved installation workability with multiple refrigerant piping layouts, making this a flexible option for more complex designs.

#### Key features

- Flexible air direction control.
- Clean air function.
- Hi Power mode for rapid cooling/heating (with RC-EX3 control).
- Home leave operation for energy saving (with RC-EX3 control).

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)	
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas
FDE71AVNXWVH	7.1	8.0	240 / 1	210x1320x690	750x880x340	33.0	60.0	9.52	15.88
FDE100AVNAWVH	10.0	11.2	240 / 1	250x1620x690	845x970x370	43.0	77.0	9.52	15.88
FDE100VNPWVH	10.0	10.0	240 / 1	250x1620x690	750x880x340	43.0	57.0	9.52	15.88
FDE125AVNXWVH	12.5	14.0	240 / 1	250x1620x690	1300x970x370	43.0	97.0	9.52	15.88
FDE140AVNXWVH	14.0	16.0	240 / 1	250x1620x690	1300x970x370	43.0	97.0	9.52	15.88
FDE100AVSAWVH	10.0	11.2	380-415 / 3	250x1620x690	845x970x370	43.0	78.0	9.52	15.88
FDE125AVSNWVH	12.5	14.0	380-415 / 3	250x1620x690	1300x970x370	43.0	99.0	9.52	15.88
FDE140AVSXWVH	14.0	16.0	380-415 / 3	250x1620x690	1300x970x370	43.0	99.0	9.52	15.88

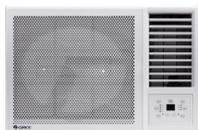
# Window Unit Air Conditioners



**GREE**

## GREE AOKY (REVERSE CYCLE)

Gree has cleverly designed this compact sleek Aoky window unit air conditioner with R32 eco-friendly refrigerant. Reverse cycle for both heating and cooling, the Aoky range is ideal for apartments, small offices, garages and pre-fab buildings. Furthermore, not only does the range have a number of great features as standard, Aoky is also backed by a 6 year warranty for residential applications.



### Key features

- 3-Speed Fan, with auto mode, automatically adjusts as the room temperature changes.
- Fresh air ventilation slider to ventilate to expel smoke and odours from the room.
- Hydrophilic blue fin coils, as well as a galvanised and painted slide out chassis protects against corrosion.
- Check filter indicator reminds users to clean the filter for more efficient operation.
- Swing function rotates louvres automatically.
- In the unlikely event of a malfunction, self-diagnostics will display the malfunction code aiding a speedy repair.
- Sleep function changes the set point temperature after one and then two hours. This follows a more natural sleep pattern.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)
	Cooling	Heating			
AC5056	2.7	2.5	240 / 1	375x560x668	40.0
AC5057	3.9	3.6	240 / 1	428x660x700	51.0
AC5058	5.3	4.8	240 / 1	428x660x700	64.0
AC5059	6.0	5.5	240 / 1	428x660x700	65.0

# Gas Furnaces

## KIRBYAIR™

## KIRBYAIR

### KIRBYAIR™ COMPACT (INTERNAL)

Offering a 4.6 – 4.8 star rating, the KirbyAir™ Compact High-Efficiency Gas Furnace is constructed to a high standard of design, engineering and quality to withstand indoor and outdoor installations. The furnace has been specifically designed as a compact unit to fit in tight installation applications and is serviced from a front entry position. This means a faster, simpler installation and easier service of the unit during its working life. The KirbyAir™ Compact High-Efficiency Gas Furnace can be split into two units for internal applications, facilitating the easy installation of the internal unit through roof manholes without need to damage ceiling linings.

#### Key features

- High-efficiency 4.6 – 4.8 Star rating.
- Compact size enabling installation in smaller roof spaces.
- Can be serviced easily from front of unit.
- Robust design with 5 year parts and labour warranty.

Part Number	Capacity	Input	Airflow	Star Rating	Static	Power Supply	Dimensions	Weight	Connections (mm)	
	Heating (kW)	(Mj/h)	(L/Sec)	(AGA)	(Pa)	(V / Ph)	(mm)	(kg)	Flue	Gas
KG4-165I	16.5	64.0	470	4.6	75	240 / 1	450x360x1165	42.0	100.00	19.05
KG4-200I	19.5	80.0	630	4.7	75	240 / 1	450x432x1180	54.0	100.00	19.05
KG4-265I	26.5	102.0	770	4.7	75	240 / 1	450x585x1180	62.0	100.00	19.05
KG4-315I	31.5	120.0	940	4.8	75	240 / 1	450x585x1180	68.0	100.00	19.05



### KIRBYAIR™ COMPACT (EXTERNAL)

Offering a 4.7 – 4.8 star rating, the KirbyAir™ Compact High-Efficiency Gas Furnace is constructed to a high standard of design, engineering and quality to withstand indoor and outdoor installations. The furnace has been specifically designed as a compact unit to fit in tight installation applications and is serviced from a front entry position. This means a faster, simpler installation and easier service of the unit during its working life.

#### Key features

- High-efficiency 4.6 – 4.8 Star rating
- Compact size enabling installation in smaller roof spaces
- Can be serviced easily from front of unit
- Robust design with 5 year parts and labour warranty

Part Number	Capacity	Input	Airflow	Star Rating	Static	Power Supply	Dimensions	Weight	Connections (mm)	
	Heating (kW)	(Mj/h)	(L/Sec)	(AGA)	(Pa)	(V / Ph)	(mm)	(kg)	Flue	Gas
KG4-200E	19.5	80.0	630	4.7	75	240 / 1	450x432x1180	52.0	Factory Fitted	19.05
KG4-265E	26.5	102.0	770	4.7	75	240 / 1	450x585x1180	62.0	Factory Fitted	19.05
KG4-315E	31.5	120.0	940	4.8	75	240 / 1	450x585x1180	68.0	Factory Fitted	19.05





**LENNOX®**

**LENNOX MERIT® SERIES ML180 (INTERNAL)**

Designed to feel the warmth without feeling the pinch of high energy bills, the Lennox Merit® Series ML180 gas furnace delivers an average 3.8 star efficiency rating for internal applications making it a reliable and economic solution. Its versatile design also makes it extremely installer friendly.

**Key features**

- DURALOCK™ heat exchanger made out of patented ArmourTuff™ aluminised steel construction ensures superior resistance to corrosion and oxidation.
- Induced draft combustion blower exceeds industry standard airflow for even temperatures and improved comfort.
- Blower compartment minimises losses and maximises efficiency and comfort.
- Solid-state electronic direct spark ignition control provides positive and safe main burner ignition insuring reliable start every time the heater fires up.
- SureLight integrated furnace control manages all furnace operations and provides direct readout diagnostics for quick troubleshooting.
- Cabinet constructed of heavy gauge, cold rolled steel with a primed and pre-painted topcoat, delivers low cabinet surface temperatures due to foil faced fibreglass insulation on the side and back panels of the heat section.
- Manual reset switch is furnished as standard and is factory installed on the burner box, preventing unit operation in the event combustion products' passage through the flueway is reduced or blocked.
- 24 volt (40VA) control transformer is furnished as standard equipment and is factory installed on control panel.



Part Number	Capacity	Input	Airflow	Star Rating	Static	Power Supply	Dimensions	Weight	Connections (mm)	
	Heating (kW)	(Mj/h)	(L/Sec)	(AGA)	(Pa)	(V / Ph)	(mm)	(kg)	Flue	Gas
ML180UH070AP36A	15.5	69.6	282	3.8	250	240 / 1	838x368x724	54.0	102.00	12.70
ML180UH090AP48B	20.6	92.8	229	3.7	250	240 / 1	838x445x724	63.0	102.00	12.70
ML180UH110AP60C	25.8	116.1	665	3.8	250	240 / 1	838x533x724	71.0	102.00	12.70
ML180UH135AP60D	31.0	139.3	627	3.9	250	240 / 1	838x622x724	79.0	102.00	12.70

**LENNOX MERIT® SERIES ML180 (EXTERNAL)**

Designed to feel the warmth without feeling the pinch of high energy bills, the Lennox Merit® Series ML180 gas furnace delivers an average 2.8 star efficiency rating for external applications, making it a reliable and economic solution. Its versatile design also makes it extremely installer friendly.

**Key features**

- DURALOCK™ heat exchanger made out of patented ArmourTuff™ aluminised steel construction ensures superior resistance to corrosion and oxidation.
- Induced draft combustion blower exceeds industry standard airflow for even temperatures and improved comfort.
- Blower compartment minimises losses and maximises efficiency and comfort.
- Solid-state electronic direct spark ignition control provides positive and safe main burner ignition insuring reliable start every time the heater fires up.
- SureLight integrated furnace control manages all furnace operations and provides direct readout diagnostics for quick troubleshooting.
- Cabinet constructed of heavy gauge, cold rolled steel with a primed and pre-painted topcoat, delivers low cabinet surface temperatures due to foil faced fibreglass insulation on the side and back panels of the heat section.
- Manual reset switch is furnished as standard and is factory installed on the burner box, preventing unit operation in the event combustion products' passage through the flueway is reduced or blocked.
- 24 volt (40VA) control transformer is furnished as standard equipment and is factory installed on control panel.



Part Number	Capacity	Input	Airflow	Star Rating	Static	Power Supply	Dimensions	Weight	Connections (mm)	
	Heating (kW)	(Mj/h)	(L/Sec)	(AGA)	(Pa)	(V / Ph)	(mm)	(kg)	Flue	Gas
ML18009048B-E	17.3	92.8	229	2.8	250	240 / 1	1027x456x1415	80.0	102.00	12.70
ML18011060C-E	21.7	116.1	665	2.8	250	240 / 1	1027x544x1415	100.0	102.00	12.70
ML18013560D-E	26.0	139.3	627	2.8	250	240 / 1	1027x633x1415	110.0	102.00	12.70

# Add-on Cooling Air Conditioners

**LENNOX®**

**LENNOX® TSA SERIES**



Lennox® TSA Series add on cooling air conditioners are the perfect complement to a gas furnace and provide year round cooling from the same ducts as the heating system. Precision engineered and manufactured in the USA utilising scroll compressors that deliver high efficiency and quiet operation, the Lennox® TSA Series delivers exceptional comfort without the worry of high energy costs.

**Key features**

- Highly efficient, quiet operation.
- Pre-charged with non-chlorine, ozone friendly, R410A.
- Supplied with a field installed liquid line drier that offers the benefit of trapping any moisture or dirt that could contaminate the refrigerant system.
- Direct drive fan moves large air volumes through the entire condenser coil providing high refrigerant cooling capacities.
- Vertical air discharge design minimises operating sounds and allows it to be used in narrow constrained spaces (unlike side discharge systems), eliminating damage to lawn and shrubs.
- Available in single or three phase power options to suit most homes.

Part Number	Capacity	Power Supply	Dimensions	Weight	Connections (mm)		Indoor Coil
	Cooling (kW)	(V / Ph)	(mm)	(kg)	Liquid	Gas	Model
TSA036S41-1	9.7	240 / 1	743x616x616	81.0	9.52	19.05	CH33-36B-2F
TSA048S41-1	12.0	240 / 1	946x718x718	88.0	9.52	22.00	CH33-44/48B-2F
TSA060S41-1	14.3	240 / 1	845x718x718	99.0	9.52	22.00	CH33-50/60C-2F
TSA048S41-3	13.5	240 / 1	946x718x718	88.0	9.52	22.00	CH33-44/48B-2F
TSA060S41-3	16.7	240 / 1	845x718x718	99.0	9.52	22.00	CH33-62D-2F



# VRF Systems



## MITSUBISHI HEAVY INDUSTRIES

### MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - WALL MOUNTED (REVERSE CYCLE)

Mitsubishi Heavy Industries KX High Performance Systems utilise a range of KX VRF indoor and outdoor units in a one-to-one application to deliver an excellent combination of performance, value and simplicity.

#### Key features

- Developed by award winning Italian designers TENSA, the FDK series features a sleek and stylish design that allows it to effortlessly integrate into any residential or commercial interior.
- CFD (computational fluid dynamics), used by jet engine manufacturers, has been applied to the fan blade design in our split systems, allowing them to deliver the most powerful and even air distribution whilst remaining economical to run.
- Louvre control allows louvres to swing between the maximum upper and lower louvre positions or to be set at a fixed position.
- Blue fin coated coils ensure long life and enhanced durability against the elements.
- DC inverter compressors deliver high efficiency cooling COPs up to 4.0.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)		Controller Model
	Cooling	Heating		Indoor	Outdoor	Indoor	Outdoor	Liquid	Gas	
FDC112NFDK90Z	9.0	10.0	220-240 / 1	339x1197x262	845x970x370	17.0	85.0	9.52	15.88	RC-EX3A

### MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - DUCTED (REVERSE CYCLE)

Mitsubishi Heavy Industries KX High Performance Systems utilise a range of KX VRF indoor and outdoor units in a one-to-one application to deliver an excellent combination of performance, value and simplicity.

#### Key features

- Through using the manually set external static pressure during installation, the indoor unit will control the fan-speed to ensure rated air flow volume at each fan speed setting. Using the set air flow rate and pressure loss of the ducts connected you can set the required E.S.P. using the wired remote control.
- Transparent window allows for the drain pan to be checked for dirt without removing it from the unit.
- Blue fin coated coils ensure long life and enhanced durability against the elements.
- DC inverter compressors deliver high efficiency cooling COPs up to 4.0.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)		Weight (kg)		Connections (mm)		Static Pressure (Pa) Maximum	Controller Model
	Cooling	Heating		Indoor	Outdoor	In-door	Out-door	Liquid	Gas		
FDC112NFDU90E	9.0	10.0	220-240 / 1	280x950x635	845x970x370	34.0	85.0	9.52	15.88	200	RC-EX3A
FDC112NFDM90E	9.0	10.0	220-240 / 1	280x950x635	845x970x370	34.0	85.0	9.52	15.88	100	RC-EX3A
FDC112NFDU112E	11.2	12.5	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	200	RC-EX3A
FDC112NFDM112E	11.2	12.5	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	100	RC-EX3A
FDC140NFDU140E	14.0	16.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	200	RC-EX3A
FDC140NFDM140E	14.0	16.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	100	RC-EX3A
FDC140SFDU140E	14.0	16.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	200	RC-EX3A
FDC140SFDM140E	14.0	16.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	100	RC-EX3A



**mitsubishi heavy industries high performance 1:1 kx systems - ducted (reverse cycle) (CONT'D)**

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)		Static Pressure (Pa)	Controller
	Cooling	Heating	(V / Ph)	Indoor	Outdoor	In-door	Out-door	Liquid	Gas	Maximum	Model
FDC140NFDU160E	16.0	18.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	200	RC-EX3A
FDC140NFDUM160E	16.0	18.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	100	RC-EX3A
FDC140SFDU160E	16.0	18.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	200	RC-EX3A
FDC140SFDUM160E	16.0	18.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	100	RC-EX3A
FDC155NFDU160E	16.0	18.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	200	RC-EX3A
FDC155NFDUM160E	16.0	18.0	220-240 / 1	280x1370x740	845x970x370	54.0	85.0	9.52	15.88	100	RC-EX3A
FDC155SFDU160E	16.0	18.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	200	RC-EX3A
FDC155SFDUM160E	16.0	18.0	380-415 / 3	280x1370x740	845x970x370	54.0	87.0	9.52	15.88	100	RC-EX3A
FDC224EFDU224Z	22.4	25.0	380-415 / 3	379x1600x893	1675x1080x480	89.0	221.0	9.52	15.88	200	RC-EX3A
FDC224ZPFDU224Z	22.4	25.0	380-415 / 3	379x1600x893	1505x970x370	89.0	165.0	9.52	15.88	200	RC-EX3A
FDC280EFDU280Z	28.0	31.5	380-415 / 3	379x1600x893	1675x1080x480	89.0	221.0	9.52	15.88	200	RC-EX3A
FDC280ZEFDU280Z	28.0	31.5	380-415 / 3	379x1600x893	1690x1350x720	89.0	272.0	9.52	15.88	200	RC-EX3A
FDC280ZPFDU280Z	28.0	31.5	380-415 / 3	379x1600x893	1505x970x370	89.0	165.0	9.52	15.88	200	RC-EX3A





## MITSUBISHI HEAVY INDUSTRIES (CONT'D)

### MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - CEILING SUSPENDED (REVERSE CYCLE)

Mitsubishi Heavy Industries KX High Performance Systems utilise a range of KX VRF indoor and outdoor units in a one-to-one application to deliver an excellent combination of performance, value and simplicity.

#### Key features

- Individual Louvre Control allows the louvres to be set in a number of fixed positions for effective air distribution.
- New slim design developed by reducing the number of fan motors, also resulting in weight reduction.
- Reduced operating noise achieved by decreasing air-flow volume, decreasing pressure by using one fan motor, optimizing casing and distributor shape.
- Blue fin coated coils ensure long life and enhanced durability against the elements.
- DC inverter compressors deliver high efficiency cooling COPs up to 4.0.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)		Weight (kg)		Connections (mm)		Control-ler
	Cool-ing	Heat-ing	(V / Ph)	Indoor	Outdoor	In-door	Out-door	Liq-uid	Gas	Model
FDC112NFDE112Z	11.2	12.5	220-240 / 1	250x1620x690	845x970x370	43.0	85.0	9.52	15.88	RC-EX3A
FDC140NFDE140Z	14.0	16.0	220-240 / 1	250x1620x690	845x970x370	43.0	85.0	9.52	15.88	RC-EX3A
FDC140SFDE140Z	14.0	16.0	380-415 / 3	250x1620x690	845x970x370	43.0	87.0	9.52	15.88	RC-EX3A
FDC155NFDE140Z	14.0	16.0	220-240 / 1	250x1620x690	845x970x370	43.0	85.0	9.52	15.88	RC-EX3A
FDC155SFDE140Z	14.0	16.0	380-415 / 3	250x1620x690	845x970x370	43.0	87.0	9.52	15.88	RC-EX3A

### MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - TWO WAY CASSETTE (REVERSE CYCLE)

Mitsubishi Heavy Industries KX High Performance Systems utilise a range of KX VRF indoor and outdoor units in a one-to-one application to deliver an excellent combination of performance, value and simplicity.

#### Key features

- With the ability to individually control each louvre's position and with an improved outlet design, occupants can deliver powerful airflow in four different directions, allowing for even air distribution.
- Louvre swing system allows the louvre to swing within the range of upper and lower position selected with wired remote control.
- Drainage flow test can be done easily by use of the drainage spout; dirt condition of the bottom of a drain pan can be checked through transparent access hole without removing drain pan.
- Drain can be discharged upward by 750mm from the ceiling surface close to the indoor unit, allowing a piping layout with a high degree of freedom depending on the installation location.
- Blue fin coated coils ensure long life and enhanced durability against the elements.
- DC inverter compressors deliver high efficiency cooling COPs up to 4.0.



**MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - TWO WAY CASSETTE (REVERSE CYCLE) (CONT'D)**

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)			Weight (kg)			Connections (mm)		Con-troller
	Cool-ing	Heat-ing	(V / Ph)	Indoor	Panel	Outdoor	In-door	Panel	Out-door	Liq-uid	Gas	Model
FDC112NFDTW90E	9.0	10.0	220-240 / 1	325x1535x620	20x1835x680	845x970x370	35.0	13.0	85.0	9.52	15.88	RC-EX3A
FDC112NFDTW112E	11.2	12.5	220-240 / 1	325x1535x620	20x1835x680	845x970x370	35.0	13.0	85.0	9.52	15.88	RC-EX3A
FDC140NFDTW140E	14.0	16.0	220-240 / 1	325x1535x620	20x1835x680	845x970x370	35.0	13.0	85.0	9.52	15.88	RC-EX3A
FDC140SFDTW140E	14.0	16.0	380-415 / 3	325x1535x620	20x1835x680	845x970x370	35.0	13.0	87.0	9.52	15.88	RC-EX3A
FDC155NFDTW140E	14.0	16.0	220-240 / 1	325x1535x620	20x1835x680	845x970x370	35.0	13.0	85.0	9.52	15.88	RC-EX3A
FDC155SFDTW140E	14.0	16.0	380-415 / 3	325x1535x620	20x1835x680	845x970x370	35.0	13.0	87.0	9.52	15.88	RC-EX3A



**MITSUBISHI HEAVY INDUSTRIES HIGH PERFORMANCE 1:1 KX SYSTEMS - FOUR WAY CASSETTE (REVERSE CYCLE)**

Mitsubishi Heavy Industries KX High Performance Systems utilise a range of KX VRF indoor and outdoor units in a one-to-one application to deliver an excellent combination of performance, value and simplicity.



**Key features**

- Draft Prevention Panel utilises 4 specially designed louvres to direct airflow horizontally along the ceiling, allowing it to evenly disperse. This eliminates uncomfortable and annoying draughts.
- CFD (computational fluid dynamics), used by jet engine manufacturers, has been applied to the fan blade design in our split systems, allowing them to deliver the most powerful and even air distribution whilst remaining economical to run.
- Newly designed turbo fan and fan guard delivers improved aerodynamic performance and achieve lower noise
- According to room conditions, four directions of airflow can be controlled individually by utilizing the louvre control system
- Drain can be discharged upwards by 850mm from the ceiling surface, allowing a piping layout with a high degree of freedom
- Easily check the drain pan by simply removing the corner panel
- Blue fin coated coils ensure long life and enhanced durability against the elements
- DC inverter compressors deliver high efficiency cooling COPs up to 4.0. DC inverter compressors deliver high efficiency cooling COPs up to 4.0.

Part Number	Capacity (kW)		Power Supply	Dimensions (mm)			Weight (kg)			Connections (mm)		Con-troller
	Cool-ing	Heat-ing	(V / Ph)	Indoor	Panel	Outdoor	In-door	Panel	Out-door	Liq-uid	Gas	Model
FDC112NFDT90Z	9.0	10.0	220-240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	85.0	9.52	15.88	RC-EX3A
FDC112NFDT112Z	11.2	12.5	220-240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	85.0	9.52	15.88	RC-EX3A
FDC140NFDT140Z	14.0	16.0	220-240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	85.0	9.52	15.88	RC-EX3A
FDC140SFDT140Z	14.0	16.0	380-415 / 3	298x840x840	35x950x950	845x970x370	25.0	5.0	87.0	9.52	15.88	RC-EX3A
FDC155NFDT140Z	14.0	16.0	220-240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	85.0	9.52	15.88	RC-EX3A
FDC155SFDT140Z	14.0	16.0	380-415 / 3	298x840x840	35x950x950	845x970x370	25.0	5.0	87.0	9.52	15.88	RC-EX3A
FDC155NFDT160Z	16.0	18.0	220-240 / 1	298x840x840	35x950x950	845x970x370	25.0	5.0	85.0	9.52	15.88	RC-EX3A
FDC155SFDT160Z	16.0	18.0	380-415 / 3	298x840x840	35x950x950	845x970x370	25.0	5.0	87.0	9.52	15.88	RC-EX3A

# Chillers



**GREE**

## GREE A SERIES (REVERSE CYCLE)

The all new Modular A-Series Inverter Heat Pump Water Chillers are capable of performing cooling all year round with high energy efficiency. They do not require cooling towers and are quite applicable to water deficient areas. These chillers can be widely used in new or retrofitted buildings of various sizes such as hotels, apartments, restaurants, office buildings, shopping malls, theatres, gyms, workshops and hospitals. Gree have also created the new A-Series Inverter chillers so that they can chill a glycol mix to -5°C for use in cold stores, food processing areas, dairy processing, breweries and wineries.

### Key features

- Inverter technology can quickly respond to load changes and lead to decreased water temperature fluctuations and better comfort. This also leads to better energy usage.
- Compressor operation balance technology ensures that each compressor operates in turn. This reduces the number of stop/start cycles on an individual compressor to maximise their lifespan.
- Internal baffles ensure the water mixes thoroughly in the heat exchanger to achieve a higher rate of heat transfer.
- The high efficiency and low noise fan blades and motors as well as the optimized air passage can greatly lower the operation noise of the unit
- Gree's proprietary 'gold fin' hydrophobic coating offers greater resistance to corrosive elements, performing 20 times better under salt spray testing than standard fin coil coating, improving overall efficiency by accelerating the defrost process.
- Gree Intelligent Management System allows users to remotely monitor up to 255 A-Series inverter chillers, including turning on /off the units, setting parameters and monitoring alarms.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	Refrigerant		
	Cooling	Heating					Type	Circuits	Charge (kg)
LSQWRF35VM/NAAM	32.0	36.0	380-415 / 3	1605x845x1340	416.9	42.16	R410A	1	7.80
LSQWRF65VM/NAAM	65.0	70.0	380-415 / 3	1607x965x2200	719.4	60.33	R410A	2	7.80

## GREE B SERIES (REVERSE CYCLE)

Gree's all new B-Series inverter modular air cooled chillers are ideal for performing heating and cooling all year round with high energy efficiency. Suitable for both new buildings or retrofit applications, their versatility make them the perfect solution for hotels, apartments, restaurants, office buildings, shopping malls, theatres, gyms, workshops, hospitals and any other place where cooling or heating is required.

### Key features

- Wide ambient temperature operating range in both cooling (-15°C to 48°C) and heating (-20°C to 40°C) modes.
- Compressor operation balance technology ensures that each compressor operates in turn. This reduces the number of stop/start cycles on an individual compressor to maximise their lifespan.
- High efficiency, low noise fan blades and motor, as well as optimised air passage significantly lowers operating noise.
- Smart controller allows any unit to act as the master when connected. If one unit faults, the others will continue to run to ensure operation is not interrupted.
- Modularisation allows combination of up to 16 different units to deliver from 65kW to a massive 1,040kW of cooling capacity.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	Refrigerant		
	Cooling	Heating					Type	Circuits	Charge (kg)
LSQWRF130VM/NAB-X	130.0	140.0	380-415 / 3	2190x2305x1980	1,568.0	88.90	R410A	4	7.00

### GREE D SERIES (REVERSE CYCLE)



Gree D-Series Modular Air Cooled Scroll Chillers are suitable for a wide range of applications; and with the additional advantage of being reverse cycle, can be used for cooling in summer and heating in winter. Gree chillers can be installed in new builds or retrofitted to existing buildings such as hotels, apartments, restaurants, office buildings, shopping malls, theatres, gyms, workshops, hospitals and any other place where cooling or heating is required.

**Key features**

- High efficiency, low noise fan blades designed and manufactured by Gree specifically for these units using Computational Fluid Dynamics simulation deliver lower operating noise.
- Internal baffles ensure the water mixes thoroughly in the heat exchanger to achieve a higher rate of heat transfer.
- Compressor operation balance technology ensures that each compressor operates in turn. This reduces the number of stop/start cycles on an individual compressor to maximise their lifespan.
- Any unit can act as the master when connected to the wired controller. If one unit faults, the others will continue to run to ensure operation is not interrupted.
- Gree's proprietary 'gold fin' hydrophobic coating offers greater resistance to corrosive elements, performing 20 times better under salt spray testing than standard fin coil coating, improving overall efficiency by accelerating the defrost process.
- With Gree D-Series chillers you can combine different capacity units to achieve your required cooling or heating duty. Combine up to 16 of the 65kW and 80kW models, or 8 of the 130kW, 160kW and 249kW models to achieve a massive 1,990kW of cooling capacity.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	Refrigerant		
	Cooling	Heating					Type	Circuits	Charge (kg)
LSQWRF65M/ NAD-M	60.0	65.0	380-415 / 3	2230x2040x1000	770.0	73.02	R410A	2	6.10
LSQWRF80M/ NAD-M	71.0	80.0	380-415 / 3	2230x2040x1000	825.0	73.02	R410A	2	7.40
LSQWRF130M/ NADM	120.0	130.0	380-415 / 3	2230x2226x1650	1,364.0	88.90	R410A	4	6.10
LSQWRF160M/ NADM	147.0	160.0	380-415 / 3	2230x2226x1650	1,474.0	88.90	R410A	4	7.40
LSQWRF249M/ NADM	249.0	275.0	380-415 / 3	2450x3980x2260	3,284.0	114.30	R410A	4	12.85



### LENNOX®



### LENNOX® ECOMFORT (COOLING ONLY)

Suitable for a wide range of applications, including data centres, hospitals, hotels, office buildings, shopping malls, non-food retail and process cooling; the Lennox® eComfort range of chillers offers best in class efficiency, delivering lower overall energy consumption.

**Key features**

- Full hydraulic module integrated with single or dual pump with low or high external static pressure.
- High content water tank, up to 400 litres.
- Low ambient operation in heating mode down to -15°C.
- Modulating immersion heater for full capacity in heating mode down to -15°C.
- Energy cost saving thanks to high efficiencies all year round, high SEER and SCOP (A+ Class).
- eDrive reduces operating cost thanks to inverter on water pump.
- Free hot sanitary water up to 70°C, thanks to partial heat recovery.
- Low and adjustable noise level thanks to Active Acoustic Attenuation system.

Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)	Connections (mm)	Refrigerant		
	Cooling	Heating					Type	Circuits	Charge (kg)
GAC040SM2M	40.0	-	380-415 / 3	1540x1125x1320	371.0	48.30	R410A	1	4.80
GAC070SM2M	70.0	-	380-415 / 3	1540x1320x2250	657.0	60.30	R410A	1	8.50
GAC110DM2M	107.0	-	380-415 / 3	1815x1320x2250	892.0	76.10	R410A	1	12.50
GAC160DM2M	162.0	-	380-415 / 3	1815x2250x2650	1,508.0	88.90	R410A	2	16.60





**LENNOX® (CONT'D)**

**LENNOX® ECOMFORT (REVERSE CYCLE)**

Suitable for a wide range of applications, including data centres, hospitals, hotels, office buildings, shopping malls, non-food retail and process cooling; the Lennox® eComfort range of chillers offers best in class efficiency, delivering lower overall energy consumption.

**Key features**

- Full hydraulic module integrated with single or dual pump with low or high external static pressure.
- High content water tank, up to 400 litres.
- Low ambient operation in heating mode down to -15°C.
- Modulating immersion heater for full capacity in heating mode down to -15°C.
- Energy cost saving thanks to high efficiencies all year round, high SEER and SCOP (A+ Class).
- eDrive reduces operating cost thanks to inverter on water pump.
- Free hot sanitary water up to 70°C, thanks to partial heat recovery.
- Low and adjustable noise level thanks to Active Acoustic Attenuation system.



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections	Refrigerant		
	Cooling	Heating	(V / Ph)	(mm)	(kg)	(mm)	Type	Circuits	Charge (kg)
GAH070SM2M	68.0	67.3	380-415 / 3	1540x1320x2250	715.0	60.30	R410A	1	18.40
GAH160DM2M	159.0	157.2	380-415 / 3	1815x2250x2650	1,592.0	88.90	R410A	2	37.00

**LENNOX® ECOLEAN (COOLING ONLY)**

Suitable for small office buildings, residential buildings, hotels and hospitals; Lennox® Ecolean Chillers utilise R410A multi scroll compressors, Owllet™ variable speed fans and variable water flow which optimise performance, reduce noise and minimise carbon footprint.

**Key features**

- 7 day programming via the Climatic™ control which manages power consumption according to use.
- Plug and play integrated hydraulic module.
- Small footprint allows for compact indoor or outdoor installation.
- Best in class acoustic performance producing -7 dB(A) average noise level reduction compared to traditional units.
- eDrive delivers cost savings of up to 75% on pump energy consumption.



Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections	Refrigerant		
	Cooling	Heating	(V / Ph)	(mm)	(kg)	(mm)	Type	Circuits	Charge (kg)
EAC472SM4HY	44.1	-	380-415 / 3	1635x1960x1195	480.0	50.80	R410A	1	11.00
EAC552SM4HY	50.7	-	380-415 / 3	1635x1960x1195	492.0	50.80	R410A	1	12.20
EAC672SM4HY	63.4	-	380-415 / 3	1635x1960x1195	534.0	50.80	R410A	1	15.50
EAC812SM4HY	75.4	-	380-415 / 3	1635x1960x1195	578.0	50.80	R410A	1	19.50
EAC1003SM4HY	88.2	-	380-415 / 3	2155x2250x1420	663.0	63.50	R410A	2	23.50
EAC1103SM4HY	102.0	-	380-415 / 3	2155x2250x1420	831.0	63.50	R410A	2	26.00
EAC1203SM4HY	112.0	-	380-415 / 3	2155x2250x1420	964.0	63.50	R410A	2	27.00
EAC1303SM4HY	126.0	-	380-415 / 3	2155x2250x1420	1,016.0	63.50	R410A	2	30.00
EAC1403SM4HY	139.0	-	380-415 / 3	2155x2250x1420	1,045.0	63.50	R410A	2	33.70
EAC1604SM4HY	149.0	-	380-415 / 3	2250x2250x2300	1,347.0	76.20	R410A	2	36.20
EAC1804SM4HY	174.0	-	380-415 / 3	2250x2250x2300	1,703.0	76.20	R410A	2	45.00
EAC2104SM4HY	199.0	-	380-415 / 3	2250x2250x2300	1,723.0	76.20	R410A	2	47.00

**LENNOX® NEOSYS (COOLING ONLY)**



Suitable for medium and large office buildings, hotels, hospitals and industrial applications; Lennox® Neosys Chillers offer excellent architectural integration, easy installation and maintenance, as well as high performance energy saving.

**Key features**

- State of the art design for perfect architectural integration.
- Flat top, very low unit height (< 2m) for discrete installation.
- Aesthetic side anti-intrusion grilles as standard.
- Hydraulic module mounted in a soundproofed technical cabinet.
- Compact hydraulic equipment with pump providing 150 or 250 kPa external static pressure.
- Active Acoustic Attenuation System, adjustable sound level during day and night to satisfy local environmental constraints.
- eDrive, variable speed pump, electronically adjusted water flow rate.

Part Number	Capacity (kW)		Power Supply	Dimensions	Weight	Connections	Refrigerant		
	Cooling	Heating	(V / Ph)	(mm)	(kg)	(mm)	Type	Circuits	Charge (kg)
NAC200DNM6M	208.2	-	400 / 3	2025x2280x3590	1,983.0	101.60	R410A	2	12.40
NAC230DNM6M	235.7	-	400 / 3	2025x2280x3590	2,011.0	101.60	R410A	2	12.30
NAC270DNM6M	272.8	-	400 / 3	2025x2280x3590	2,278.0	101.60	R410A	2	14.10
NAC300DNM6M	307.6	-	400 / 3	2025x2280x4620	2,676.0	101.60	R410A	2	18.20



# Water Cooled Packaged Air Conditioners



**LENNOX®**

**LENNOX® AQUALEAN**

Lennox® Aqualean is a water source heat pump packaged unit designed to provide high efficiency air conditioning and ventilation for open-plan areas or cellular offices, with each individual unit having the ability to deliver the heating or cooling load of the zone. Generally connected to a closed water loop (boiler/cooling tower or geothermal application) or to an open ground water loop, it ensures an excellent comfort level for occupants, better control of energy consumption and lower seasonal operating costs.

**Key features**

- High efficiency system thanks to scroll/rotary compressor operating with R410A.
- Compact self-supporting casing with very short height to lower dropped ceilings dimension.
- Variable speed direct transmission ventilation system to save energy and lower operational costs.
- Lennox's advanced Climatic controller designed to improve energy efficiency and reliability. Accurate operation is managed by electronic expansion valves, pressure transducers and temperature sensors. This controller integrates master slave capability and a wide choice of communication interfaces.
- Different air configurations are available as option.



Part Number	Capacity (kW)		Flow (l/s)		Power Supply	Dimensions	Weight	Connections	Refrigerant		
	Cooling	Heating	Airside	Water-side	(V / Ph)	(mm)	(kg)	(mm)	Type	Circuits	Charge (kg)
AWH002SNM1T	2.0	2.6	122.00	0.14	230 / 1	230x500 x1000	53.0	12.70	R410A	1	0.60
AWH003SNM1T	2.7	3.5	143.00	0.16	230 / 1	230x500 x1000	56.0	12.70	R410A	1	0.65
AWH007SNM1T	6.8	8.0	347.00	0.40	230 / 1	441x492 x886	71.0	25.40	R410A	1	1.30
AWH008SNM1T	8.0	9.5	417.00	0.48	230 / 1	441x492 x886	72.0	25.40	R410A	1	1.30
AWH010SNM1T	10.2	12.2	528.00	0.61	230 / 1	491x623 x1180	111.0	25.40	R410A	1	1.85
AWH012SNM1T	11.2	13.4	556.00	0.67	230 / 1	491x623 x1180	113.0	25.40	R410A	1	1.95
AWH012SNM1M	11.2	13.4	556.00	0.67	400 / 3	491x623 x1180	113.0	25.40	R410A	1	1.95
AWH015SNM1M	14.5	16.9	681.00	0.85	400 / 3	491x623 x1180	116.0	25.40	R410A	1	2.40
AWH018SNM1M	17.0	19.4	778.00	1.01	400 / 3	531x703 x1600	151.0	25.40	R410A	1	2.90
AWH020SNM1M	19.0	21.8	861.00	1.14	400 / 3	531x703 x1600	151.0	25.40	R410A	1	2.90

# Air Curtains

## COLDSHIELD



### COLDSHIELD COMMERCIAL SERIES

Coldshield air curtains create an invisible curtain of high velocity air over your doorways, forming an effective barrier without inhibiting access for staff or customers. With 3-speed fans, airflow can be selected to provide maximum reduction of insects, dust and odours from entering your clean zone; whilst also reducing energy costs by reducing the transfer of air through door openings. Furthermore, by providing a welcoming flow of air over entrances building owners can create a greater impression of a clean controlled environment for staff and customers.

#### Key features

- Prewired for remote door switching.
- Powder coated aluminium casing for easy cleaning and corrosion resistance.
- Full size mounting plate provides easy, secure installation onto any surface.
- Industrial duty centrifugal fans give high air flows with low noise levels.
- Remote control and soft touch buttons.

Part Number	Velocity	Power Supply	Dimensions	Weight	Sound Power (dBA)	
	(m/s)	(V / Ph)	(mm)	(kg)	Low	High
ACF09	15	240 / 1	906x215x226	14.5	53	58
ACF12	15	240 / 1	1206x215x226	17.0	55	60
ACF15	15	240 / 1	1506x215x226	22.8	57	63
ACF18	15	240 / 1	1806x215x226	30.0	65	70



## GREE



### GREE FM SERIES

Gree air curtains help sustain a healthy working environment whether cooling, heating or ambient conditions for a comfortable climate for customers and employees. An air curtain allows for open door trading in retail outlets offering uninterrupted access to the public. Easy to install and easy to maintain, air curtains offer a simple and cost effective solution to maintain an inviting climate in any working or retail space.

#### Key features

- Optimised cross flow fan with a high performance motor.
- Anti-corrosion protection thanks to a two sided electro galvanised metal case.
- Integrated electric components for easy maintenance.
- Microprocessor control with greater reliability and a long service life.
- High performance cross flow fan blade with 3D optimised streamlining.
- Remote controlled operation.

Part Number	Velocity	Power Supply	Dimensions	Weight	Sound Power (dBA)	
	(m/s)	(V / Ph)	(mm)	(kg)	Low	High
AC7509	8	220-230 / 1	900x215x193	16.0	56	59.0
AC7501	8	220-230 / 1	1200x215x193	20.0	56	61.0



# Portable Air Conditioners



**GREE**

## GREE SHINY (REVERSE CYCLE)

An elegant, portable solution to your heating and cooling needs, the Gree Shiny portable air conditioner heats and cools a room up to 37 square metre using a 3-speed fan and 4-way adjustable louvers that let you control output and circulation. These units are also perfect as a temporary heating and cooling solution for areas where retrofit is taking place, but occupants are still present, such as office buildings or convenience stores.

### Key features

- Built-in evaporative dehumidifier with a capacity of 60.9 pints pulls moisture out of the air to reduce humidity.
- Fully portable with 4 casters and a single hose exhaust system.
- Includes an LCD remote control as well as a programmable digital thermostat and timer.
- Safe and simple sleep mode slightly increases the temperature during night time use, helping to conserve energy.



Part Number	Capacity (kW)		Power Supply (V / Ph)	Dimensions (mm)	Weight (kg)
	Cooling	Heating			
GPH13AL-K6NNA1B	3.8	3.7	220-240 / 1	820x390x450	36.0



# HVAC Installation

# Mini Condensate Pumps



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)	Series
FP2212	Piston	Mini Condensate Pump	Aspen	12	6	10	2	≤ 16 kW	Mini Orange
FP3313	Piston	Mini Condensate Pump	Aspen	12	6	10	2	≤ 16kW	Silent Mini Orange
FP2210	Piston	Mini Condensate Pump	Aspen	35	10	15	2	≤ 46 kW	Maxi Orange



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)	Series
FP3312	Piston	Mini Condensate Pump	Aspen	12	6	10	N/A	≤ 16 kW	Mini Lime
FP2213	Piston	Mini Condensate Pump	Aspen	35	10	15	N/A	≤ 46 kW	Maxi Lime



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)	Series
FP2406	Piston	Mini Condensate Pump	Aspen	12	6	10	2	≤ 16 kW	Mini Aqua
FP3326	Piston	Mini Condensate Pump	Aspen	12	10	10	2	≤ 16kW	Mini Aqua Silent



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Tank Capacity (L)	Application (A/C Units kW)	Series
FP1080	Piston	Under Unit Mini Condensate Pump- Gloss White Finish	Aspen	12	4	10	0.24	≤ 16 kW	Mini Blanc

≤ = less than or equal to



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)
DELTAPACK	Piston	Mini Condensate Pump & Duct Kit (inc Si10 Pump)	Sauerermann	20	4	10	N/A	≤ 20 kW
Si10	Piston	Mini Condensate Pump	Sauerermann	20	4	10	N/A	≤ 20 kW



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units)
OMEGAPACK	Piston	Mini Condensate Pump Kit- Under Unit, Matt White Finish (inc Si20 Pump)	Sauerermann	20	4	10	3	≤ 20 kW
Si20	Piston	Mini Condensate Pump	Sauerermann	20	4	10	3	≤ 20 kW



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)
Si30	Piston	Mini Condensate Pump	Sauerermann	20	4	10	3	≤ 20 kW
Si33	Piston	Mini Condensate Pump	Sauerermann	30	8	13	4	20 to 30 kW



**ASPEN  
PUMPS**  
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As engineers, we understand the complexity of installations and so create market leading products that are designed to best suit the application and environment. We pride ourselves on providing professionals with everything they need for the perfect installation; from pumps to unit frame support we have it all.

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**MINI CONDENSATE PUMPS (CONT'D)**

**sauermann**



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 200ml Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)
Si2052	Centrifugal	Cassette Lift Pump	Sauerermann	100	24	0.9	-	≤ 20 kW

**BlueDiamond**  
condensate removal pumps



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Series
X87-504	Rotary Diaphragm	Mini Condensate Pump	Blue Diamond	8	5.5	8	5	Mini Blue
X87-701	Rotary Diaphragm	Mini Condensate Pump	Blue Diamond	14	8	8	8	Maxi Blue
X87-813	Rotary Diaphragm	Mini Condensate Pump	Blue Diamond	50	18	20	7	Mega Blue

≤ = less than or equal to

## Peristaltic Pumps

**sauermann**



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)
PE5100	Rotary Diaphragm	Condensate Pump Temp Differential Sensor	Sauerermann	6	6	12	2	≤ 8 kW
PE5200	Rotary Diaphragm	Condensate Pump Remote Sensor	Sauerermann	6	6	12	2	≤ 8 kW
PE5002	Rotary Diaphragm	Peristaltic Replacement Tube	Sauerermann	Replacement tube for Sauerermann Peristaltic pumps				

**ASPEN**  
PUMPS



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Max. Suction Head (m)	Application (A/C Units kW)
FP2081	Rotary Diaphragm	Hard Wired Condensate Pump - Cooling Signal	Aspen	6.5	6.5	12	3	≤ 8.5 kW
FP2082	Rotary Diaphragm	Condensate Pump - Temperature Sensor	Aspen	6.5	6.5	12	3	≤ 8.5 kW
FP2079	Rotary Diaphragm	Condensate Pump - Remote Reservoir (Float Switch)	Aspen	6.25	6.5	12	3	≤ 8.5 kW
FP1282	Rotary Diaphragm	Peristaltic Replacement Tube Kit	Aspen	Replacement tube for Aspen Peristaltic pumps				

≤ = less than or equal to



AIR CONDITIONING / REFRIGERATION PUMPS



MEASURING INSTRUMENTS



# Tank Pumps



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Tank Capacity (L)	Application (A/C Units kW)
Si60	Piston	Condensate Pump	Sauermann	20	4	10	0.37	≤ 20 kW
Si83	Centrifugal	Condensate Pump	Sauermann	700	30	5.4	2	
Si1830	Centrifugal	Centrifugal Tank Pump	Sauermann	400	50	3.7	0.5	



Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Tank Capacity (L)	Application (A/C Units kW)
FP3349	Centrifugal	MAX Hi-Flow (Low Profile) Condensate Pump	Aspen	550	55	5	1.7	≤ 733 kW
FP1056	Piston	Mini Tank Condensate Pump	Aspen	35	10	15	0.24	≤ 46 Kw
FP2071	Rotary Diaphragm Type	Hi-Lift Peristaltic Condensate Pump	Aspen	11	11	12	2	≤ 14 kW
FP2099	Rotary Diaphragm Type	Hi-Lift Peristaltic Condensate Pump	Aspen	11	11	12	1	≤ 14 kW

≤ = less than or equal to



SUPERMARKET PUMPS								
Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Tank Capacity (L)	
FP2318	Economical Retail Refrigeration Pump	Condensate Pump Top Inlet	Aspen	225	10	35	11	
FP2597	Economical Retail Refrigeration Pump	Condensate Pump Top Inlet Low Profile	Aspen	190	10	21	3.5	
FP2805	Economical Retail Refrigeration Pump	Condensate Pump Side Inlet Low Profile	Aspen	190	10	21	3.5	



SUPERMARKET PUMPS								
Part Number	Type	Description	Brand	Nominal Litres / Hr @ 0 Head	Litres / Hr @ Max Head	Max. Discharge Head (m)	Tank Capacity (L)	
Si1931	Centrifugal	Pump Condensate Membrane Up To 4 Cabinets	Sauermann	700	35	24.6	6.5	

# Evaporative Cooler Pumps

Part Number	Description	Brand	Nominal Litres / min @ 1m Head	Max. Discharge Head (m)	Outlet (mm)
E/P19/S	Evaporative Cooler Pump	JRM	14	1.6	20
E/P28/S	Evaporative Cooler Pump	Fasco	21	1.6	20
E/P38/S	Evaporative Cooler Pump	Fasco	27	1.6	20
E/P50/S	Evaporative Cooler Pump	Fasco	34	1.6	20
J-BASKET	Basket & Strainer	Fasco			

**sauerermann**



Part Number	Description	Brand	Nominal Litres / Hr @ 600mm Head	Max. Discharge Head (m)	Outlet (mm)
EBM40JB	Evaporative Cooler Pump	ebm-papst	35	1.5	15

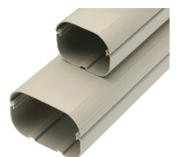
**ebmpapst**



# PVC Pipe Ducting and Fittings

SLIM DUCT							
Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SD77	PVC	77 Series	75	63	2,000	Slimduct	Ivory
SD100	PVC	100 Series	100	70	2,000	Slimduct	Ivory
NSD77	PVC	77 Series	75	63	2,000	Slimduct	Ivory
NSD100	PVC	100 Series	100	70	2,000	Slimduct	Ivory
SD77W	PVC	77 Series	75	63	2,000	Slimduct	White(PTO)
SD100W	PVC	100 Series	100	70	2,000	Slimduct	White(PTO)
SD77B	PVC	77 Series	75	63	2,000	Slimduct	Brown(PTO)
SD100B	PVC	100 Series	100	70	2,000	Slimduct	Brown(PTO)
SD77G	PVC	77 Series	75	63	2,000	Slimduct	Grey(PTO)
SD100G	PVC	100 Series	100	70	2,000	Slimduct	Grey(PTO)
SD77K	PVC	77 Series	75	63	2,000	Slimduct	Black(PTO)
SD100K	PVC	100 Series	100	70	2,000	Slimduct	Black(PTO)

**INABA DENKO**



WALL INLETS / OULETS							
Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SW77	PVC	77 Series	83	77	205	Wall Inlet / Outlet	Ivory
SW100	PVC	100 Series	110	86	223	Wall Inlet / Outlet	Ivory
SW77W	PVC	77 Series	83	77	205	Wall Inlet / Outlet	White(PTO)
SW100W	PVC	100 Series	110	86	223	Wall Inlet / Outlet	White(PTO)
SW77B	PVC	77 Series	83	77	205	Wall Inlet / Outlet	Brown(PTO)
SW100B	PVC	100 Series	110	86	223	Wall Inlet / Outlet	Brown(PTO)
SW77G	PVC	77 Series	83	77	205	Wall Inlet / Outlet	Grey(PTO)
SW100G	PVC	100 Series	110	86	223	Wall Inlet / Outlet	Grey(PTO)
SW77K	PVC	77 Series	83	77	205	Wall Inlet / Outlet	Black(PTO)
SW100K	PVC	100 Series	110	86	223	Wall Inlet / Outlet	Black(PTO)



**PVC PIPE DUCTING AND FITTINGS (CONT'D)**
**CEILING PLATES**
**INABA DENKO**


Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SP77	PVC	77 Series	81	70	130	Ceiling Plate	Ivory
SP100	PVC	100 Series	106	70	137	Ceiling Plate	Ivory
SP77W	PVC	77 Series	81	70	130	Ceiling Plate	White(PTO)
SP100W	PVC	100 Series	106	70	137	Ceiling Plate	White(PTO)
SP77B	PVC	77 Series	81	70	130	Ceiling Plate	Brown(PTO)
SP100B	PVC	100 Series	106	70	137	Ceiling Plate	Brown(PTO)
SP77G	PVC	77 Series	81	70	130	Ceiling Plate	Grey(PTO)
SP100G	PVC	100 Series	106	70	137	Ceiling Plate	Grey(PTO)
SP77K	PVC	77 Series	81	70	130	Ceiling Plate	Black(PTO)
SP100K	PVC	100 Series	106	70	137	Ceiling Plate	Black(PTO)

**90° FLAT ELBOWS - LONG RADIUS**


Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SK77	PVC	77 Series	83	66	128	90° Flat Elbow - Long Radius	Ivory
SK100	PVC	100 Series	109	74	151	90° Flat Elbow - Long Radius	Ivory
SK77W	PVC	77 Series	83	66	128	90° Flat Elbow - Long Radius	White(PTO)
SK100W	PVC	100 Series	109	74	151	90° Flat Elbow - Long Radius	White(PTO)
SK77B	PVC	77 Series	83	66	128	90° Flat Elbow - Long Radius	Brown(PTO)
SK100B	PVC	100 Series	109	74	151	90° Flat Elbow - Long Radius	Brown(PTO)
SK77G	PVC	77 Series	83	66	128	90° Flat Elbow - Long Radius	Grey(PTO)
SK100G	PVC	100 Series	109	74	151	90° Flat Elbow - Long Radius	Grey(PTO)
SK77K	PVC	77 Series	83	66	128	90° Flat Elbow - Long Radius	Black(PTO)
SK100K	PVC	100 Series	109	74	151	90° Flat Elbow - Long Radius	Black(PTO)

**90° FLAT ELBOW - SHORT RADIUS**


Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SKM77	PVC	77 Series	82	68	97	90° Flat Elbow - Short Radius	Ivory

**90° CORNER ELBOWS - LONG RADIUS**

Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SC77	PVC	77 Series	81	67	100	90° Corner Elbows - Long Radius	Ivory
SC100	PVC	100 Series	106	75	117	90° Corner Elbows - Long Radius	Ivory
SC77W	PVC	77 Series	81	67	100	90° Corner Elbows - Long Radius	White(PTO)
SC100W	PVC	100 Series	106	75	117	90° Corner Elbows - Long Radius	White(PTO)
SC77B	PVC	77 Series	81	67	100	90° Corner Elbows - Long Radius	Brown(PTO)
SC100B	PVC	100 Series	106	75	117	90° Corner Elbows - Long Radius	Brown(PTO)
SC77G	PVC	77 Series	81	67	100	90° Corner Elbows - Long Radius	Grey(PTO)
SC100G	PVC	100 Series	106	75	117	90° Corner Elbows - Long Radius	Grey(PTO)
SC77K	PVC	77 Series	81	67	100	90° Corner Elbows - Long Radius	Black(PTO)
SC100K	PVC	100 Series	106	75	117	90° Corner Elbows - Long Radius	Black(PTO)



**90° CORNER ELBOWS - SHORT RADIUS**

Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SCM77	PVC	77 Series	82	68	82	90° Corner Elbows - Short Radius	Ivory



**45° FLAT ELBOWS - SHORT RADIUS**

Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SKF77	PVC	77 Series	82	68	65	45° Elbows - Flat Surface	Ivory
SKF100	PVC	100 Series	107	75	75	45° Elbows - Flat Surface	Ivory



**45° ELBOWS**

Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SCF77	PVC	77 Series	82	68	61	45° Elbows	Ivory
SCF100	PVC	100 Series	107	75	64	45° Elbows	Ivory



**PVC PIPE DUCTING AND FITTINGS (CONT'D)**

**FLEXIBLE JOINTS**

**INABA DENKO**



Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SF77500	PVC	77 Series	74	62	495	Flexible Joints	Ivory
SF771000	PVC	77 Series	74	62	1,033	Flexible Joints	Ivory
SF100800	PVC	100 Series	100	70	800	Flexible Joints	Ivory
SF77500W	PVC	77 Series	74	62	495	Flexible Joints	White(PTO)
SF771000W	PVC	77 Series	74	62	1,033	Flexible Joints	White(PTO)
SF100800W	PVC	100 Series	100	70	800	Flexible Joints	White(PTO)
SF77500B	PVC	77 Series	74	62	495	Flexible Joints	Brown(PTO)
SF771000B	PVC	77 Series	74	62	1,033	Flexible Joints	Brown(PTO)
SF100800B	PVC	100 Series	100	70	800	Flexible Joints	Brown(PTO)
SF77500G	PVC	77 Series	74	62	495	Flexible Joints	Grey(PTO)
SF771000G	PVC	77 Series	74	62	1,033	Flexible Joints	Grey(PTO)
SF100800G	PVC	100 Series	100	70	800	Flexible Joints	Grey(PTO)
SF77500K	PVC	77 Series	74	62	495	Flexible Joints	Black(PTO)
SF771000K	PVC	77 Series	74	62	1,033	Flexible Joints	Black(PTO)
SF100800K	PVC	100 Series	100	70	800	Flexible Joints	Black(PTO)

**END COVERS**



Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SEN77	PVC	77 Series	53	67	95	End Fitting	Ivory
SEN100	PVC	100 Series	56	76	112	End Fitting	Ivory
SE77W	PVC	77 Series	53	67	95	End Fitting	White(PTO)
SEN100W	PVC	100 Series	56	76	112	End Fitting	White(PTO)
SE77B	PVC	77 Series	53	67	95	End Fitting	Brown(PTO)
SEN100B	PVC	100 Series	56	76	112	End Fitting	Brown(PTO)
SE77G	PVC	77 Series	53	67	95	End Fitting	Grey(PTO)
SEN100G	PVC	100 Series	56	76	112	End Fitting	Grey(PTO)
SE77K	PVC	77 Series	53	67	95	End Fitting	Black(PTO)
SEN100K	PVC	100 Series	56	76	112	End Fitting	Black(PTO)

**WALL FLANGE**



Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SWC77	PVC	77 Series	127	40	115	Wall Flange	Ivory
SWC100	PVC	100 Series	174	40	144	Wall Flange	Ivory

**JOINERS**



Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SJ77	PVC	77 Series	85	67	50	Joiners	Ivory
SJ100	PVC	100 Series	109	75	66	Joiners	Ivory
SJ77W	PVC	77 Series	85	67	50	Joiners	White(PTO)
SJ100W	PVC	100 Series	109	75	66	Joiners	White(PTO)
SJ77B	PVC	77 Series	85	67	50	Joiners	Brown(PTO)
SJ100B	PVC	100 Series	109	75	66	Joiners	Brown(PTO)
SJ77G	PVC	77 Series	85	67	50	Joiners	Grey(PTO)
SJ100G	PVC	100 Series	109	75	66	Joiners	Grey(PTO)
SJ77K	PVC	77 Series	85	67	50	Joiners	Black(PTO)
SJ100K	PVC	100 Series	109	75	66	Joiners	Black(PTO)

TEES							
Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
ST77	PVC	77 Series	85	68	124	Tee	Ivory
ST100	PVC	100 Series	109	78	154	Tee	Ivory

**INABA DENKO**



REDUCER							
Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SDR10077	PVC	100 / 77 Series	107	75	66	Reducers	Ivory



STRAP KIT							
Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
SL300	PVC		17	2	300	Strap Kit PE(SL band), POM (SL saddle) (10 Pack)	White



## Sheetmetal Capping

Part Number	Material	Series	Dimensions			Description	Colour
			Width (mm)	Depth (mm)	Length (mm)		
TOPHAT	Sheetmetal				3,000	Tophat Sheetmetal Capping	
BOXLID	Sheetmetal				3,000	Boxlid Sheetmetal	
TOPHAT2.4	Sheetmetal				2,400	Tophat Sheetmetal Capping	
BOXLID2.4	Sheetmetal				2,400	Boxlid Sheetmetal	



## Drain Hose

CORRUGATED FLEXIBLE CONDENSATE DRAIN HOSE							
Part Number	Material	Dimensions		Description	Colour		
		Length (m)	Diameter (mm)				
DRH016	Polyethylene	50	16	Corrugated flexible condensate drain hose	Ivory		

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**INSULATED DRAIN PIPE: PREMIUM QUALITY**  
Application: Air conditioning drain pipe where sweating is a problem. i.e. Tropical zones, High Humidity zones

Part Number	Material	Dimensions		Description	Colour
		Length (m)	Diameter (mm)		
FDP119	Insulated	20	19	Insulated Drain Pipe: Premium Quality	Ivory

**PR PIPE**



## PVC Drainage Systems

CLEAR TUBE							
Part Number	Material	Dimensions		Description	Colour		
		Length (m)	Diameter (mm)				
4MMTUBE	PVC	30	4	Tube	Clear		
6MMTUBE	PVC	30	6	Tube	Clear		
8MMTUBE	PVC	30	8	Tube	Clear		

**PR PIPE**



## PVC DRAINAGE SYSTEMS (CONT'D)

### CLEAR TUBE (CONT'D)

Part Number	Material	Dimensions		Description	Colour
		Length (m)	Diameter (mm)		
10MMTUBE	PVC	30	10	Tube	Clear
19MMTUBE	PVC	30	19	Tube	Clear
25MMTUBE	PVC	30	25	Tube	Clear

### HOSE CLAMPS

Part Number	Size (mm)	Description	Pk Qty
HS012C	14-32	Tridon Hose Clamp	2
HS016C	17-38	Tridon Hose Clamp	2

## Dektites



Part Number	Description	Size
SPFRTMINI	Pipe Flashing Square mini	0 to 35 mm
SPFRT1	Pipe Flashing Square No.1	0 to 55 mm
SPFRT2	Pipe Flashing Square No.2	3 to 100 mm
SPFRT3	Pipe Flashing Square No.3	80 to 175 mm
SPF660	Pipe Flashing Round No.1	6 to 60 mm
SPF5080	Pipe Flashing Round No.2	50 to 80 mm
SPF60110	Pipe Flashing Round No.3	60 to 110 mm
SPF75150	Pipe Flashing Round No.4	75 to 150 mm
SPFZ2070	Zipseal Pipe Flashing No.1 C/W 4 Clips	20 to 70 mm
SPFZ50190	Zipseal Pipe Flashing No.2 C/W 6 Clips	50 to 190 mm

## PVC Pressure Pipe and Fittings



### PRESSURE PIPE

Part Number	Material	Dimensions		Description	Colour
		Diameter (mm)	Length (m)		
15XCE	PVC	15	3.9	PVC Drain Pipe	White
20XCE	PVC	20	3.9	PVC Drain Pipe	White
25XCE	PVC	25	3.9	PVC Drain Pipe	White
32XCE	PVC	32	3.9	PVC Drain Pipe	White

### 90° ELBOW



Part Number	Material	Dimensions	Description	Colour
		Diameter (mm)		
2103015	PVC	15	90° Pressure Pipe Elbow	White
2103020	PVC	20	90° Pressure Pipe Elbow	White
2103025	PVC	25	90° Pressure Pipe Elbow	White

### 45° ELBOW



Part Number	Material	Dimensions	Description	Colour
		Diameter (mm)		
2117015	PVC	15	45° Pressure Pipe Elbow	White
2117020	PVC	20	45° Pressure Pipe Elbow	White
2117025	PVC	25	45° Pressure Pipe Elbow	White

**TEES**

Part Number	Material	Dimensions	Description	Colour
		Diameter (mm)		
2106015	PVC	15	Pressure Pipe Tee	White
2106020	PVC	20	Pressure Pipe Tee	White
2106025	PVC	25	Pressure Pipe Tee	White



**DOUBLE END SOCKET**

Part Number	Material	Dimensions	Description	Colour
		Diameter (mm)		
2108015	PVC	15	Pressure Pipe Double End Socket	White
2108020	PVC	20	Pressure Pipe Double End Socket	White
2108025	PVC	25	Pressure Pipe Double End Socket	White



**REDUCING BUSH**

Part Number	Material	Dimensions	Description	Colour
		Diameter (mm)		
2110020015	PVC	15 x 20	Pressure Pipe Reducing Bush	White
2110025015	PVC	15 x 25	Pressure Pipe Reducing Bush	White
2110025020	PVC	20 x 25	Pressure Pipe Reducing Bush	White



**MALE VALVE SOCKET**

Part Number	Material	Dimensions Diameter (mm)	Description	Colour
2112015	PVC	15	Pressure Pipe Male Valve Socket	White
2112020	PVC	20	Pressure Pipe Male Valve Socket	White
2112025	PVC	25	Pressure Pipe Male Valve Socket	White



**FEMALE FAUCET SOCKET**

Part Number	Material	Dimensions Diameter (mm)	Description	Colour
2111015	PVC	15	Pressure Pipe Female Faucet Socket	White
2111020	PVC	20	Pressure Pipe Female Faucet Socket	White
2111025	PVC	25	Pressure Pipe Female Faucet Socket	White



**BARREL UNION**

Part Number	Material	Dimensions Diameter (mm)	Description	Colour
2122015	PVC	15	Barrel Union	White
2122020	PVC	20	Barrel Union	White
2122025	PVC	25	Barrel Union	White



**PIPE SADDLE (FULL)**

Part Number	Material	Dimensions Diameter (mm)	Description	Colour
PPS084	PVC	15	Pipe Saddle (Full)	White
PPS106	PVC	20	Pipe Saddle (Full)	White
PPS143	PVC	25	Pipe Saddle (Full)	White



**PIPE SADDLE SINGLE SIDED**

Part Number	Material	Dimensions Diameter (mm)	Description	Colour
ZPC075	Zinc	15	Single Side Pipe Saddle	Grey
ZPC100	Zinc	20	Single Side Pipe Saddle	Grey

## PVC PRESSURE PIPE AND FITTINGS (CONT'D)

### STAND OFF BRACKET



Part Number	Material	Dimensions Diameter (mm)	Description	Colour
PPSB075	PVC	15	Stand off Bracket	White
PPSB100	PVC	20	Stand off Bracket	White
PPSB125	PVC	25	Stand off Bracket	White

### REDUCING SOCKET



Part Number	Material	Dimensions Diameter (mm)	Description	Colour
2109020015	PVC	15 x 20	Pressure Pipe Reducing Socket	White
2109025015	PVC	15 x 25	Pressure Pipe Reducing Socket	White
2109025020	PVC	20 x 25	Pressure Pipe Reducing Socket	White

## Sewer Waste Vent Pipe and Fittings



Part Number	Material	Dimensions		Description	Colour
		Diameter (mm)	Length (m)		
40XSWV	PVC	40	4	Sewer Waste Vent Pipe	White
2201040	PVC	40		Sewer Waste Vent Pipe Equal 90° Elbow	White
2210040	PVC	40		Sewer Waste Vent Pipe Equal 45° Elbow	White
2211040	PVC	40		Sewer Waste Vent Pipe Equal Tee	White
2225040	PVC	40		Sewer Waste Vent Pipe Double End Socket	White

## PVC Solvent Cement



Part Number	Volume (g)	Description	Colour
N070100	100	PVC Solvent Cement for Rigid PVC Pipes and Fittings	Clear
N070500	500	PVC Solvent Cement for Rigid PVC Pipes and Fittings	Clear

## Condensate Traps



Part Number	Diameter (mm)	Description
EZT113B	20	Cleanable Condensate Trap with brush
EZT180	14 & 16	Mini Trap To Suit Flexible Drain Pipe (Fits both 14 & 16 mm Flexible drain pipe)
JTRAP	20	Clear J Trap
REDCAP	20	Redcap suits 20 mm PVC Drain Fittings
EZT406		Flexible Cleaning Brush to suit EZ Traps

# Mounting Brackets

## WALL MOUNTING BRACKETS SPLIT SYSTEM OUTDOOR UNIT

Part Number	Material	Dimensions (mm)			Capacity (kg)
		A	B	C	
L450K-2	Galvanised Steel with Ivory Powder Coat	350	450	335	120
L550K-2	Galvanised Steel with Ivory Powder Coat	450	550	390	150
L450STSTK-2	Stainless Steel SUS 304	350	450	335	120
L550STSTK-2	Stainless Steel SUS 304	450	550	390	150



## WALL MOUNTING BRACKETS SPLIT SYSTEM OUTDOOR UNIT - ADJUSTABLE BAR

Part Number	Material	Dimensions (mm)				Capacity (kg)
		A	B	C	D	
L450ADJBARK-2	Galvanised Steel with Ivory Powder Coat	350	450	335	700	120
L550ADJBARK-2	Galvanised Steel with Ivory Powder Coat	450	550	390	1,000	150
L450ADJBARSTSTK-2	Stainless Steel SUS 304	350	450	335	700	120
L550ADJBARSTSTK-2	Stainless Steel SUS 304	450	550	390	850	150



## WALL MOUNTING BRACKETS SPLIT SYSTEM OUTDOOR UNIT - ADJUSTABLE BAR

Part Number	Material	Dimensions (mm)				Capacity (kg)
		A	B	C	D	
C-KG-L	Galvanised Steel with Ivory Powder Coat	513	481	500	1,000	60
C-KZG-L	Hot Dip Galvanised	513	481	500	1,000	80



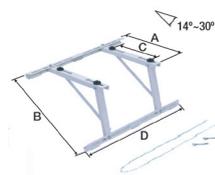
## WALL MOUNTING BRACKETS SPLIT SYSTEM OUTDOOR UNIT - FIXED ARM

Part Number	Material	Dimensions (mm)				Capacity (kg)
		A	B	C	D	
SH01517	2 Piece - Fixed Arm HD Galvanised	345	560		100	



## ROOF MOUNTING BRACKETS SPLIT SYSTEM OUTDOOR UNIT - ADJUSTABLE BAR

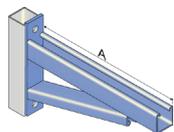
Part Number	Material	Dimensions (mm)				Capacity (kg)
		A	B	C	D	
C-YUG	Galvanised Steel with Ivory Powder Coat	434	555-660	340	760	60
C-YUG-L	Galvanised Steel with Ivory Powder Coat	479	555-660	400	760	80
C-YUZG-L	Galvanised	479	555-660	400	760	80
PC-YG30	Galvanised	522	546-594	380	1,015	100
PC-YG60	Galvanised	572	600-662	430	1,100	150
RB560	Galvanised Steel with Ivory Powder Coat					150



## MOUNTING BRACKETS (CONT'D)

### CANTILEVER BRACKETS

Part Number	Material
FM158-500	Cantilever Bracket 500mm
FM158-650	Cantilever Bracket 650mm
FM158-780	Cantilever Bracket 780mm
FM158SP-450	Cantilever Bracket 450mm heavy duty
FM158SP-600	Cantilever Bracket 600mm
FM158SP-780	Cantilever Bracket 780mm
CDBK	Cantilever Bracket Mount Kit



## Mounting Blocks and Feet

### MOUNTING BLOCKS

Part Number	Description	Dimensions (mm)			Capacity (kg)
		A	B	C	
PR351NI	Setting Block 350 mm Ivory	360	100	95	140
PR351NM	Setting Block 450 mm Ivory	450	100	95	180
PR351NL	Inaba Denko Plarock 1 m Ivory	1,000	100	95	400
PR350N	Inaba Denko Plarock 350 mm Black	360	100	95	140
PR350NM	Inaba Denko Plarock 450 mm Black	450	100	95	180
PR350NL	Inaba Denko Plarock 1m Black	1,000	100	95	400
IMB420	Euro Mounting Block Set Pk.2	420	72	90	240
CB450	A/C Setting Block Ivory With End Caps.Pk.2	450	100	95	180
VF50X100X500	Recycled Rubber Mount with 2 Mount Screws	500	100	50	
VF75X100X1000	Recycled Rubber Mount	1,000	100	75	

### RUBBER MOUNTING FEET

Part Number	Description	Dimensions (mm)			Capacity (kg)
		A	B	C	
VM3	Vibration rubber mounts 4pc pkt.	110	50	75	400
CP35X100X140	Condensor pads pk.4	140	100	35	
ACS	Round Adjust height - Mount Stand - Stainless Pk.4	63	63	27	
NR2-WHITE	Neoprene Mount with M10 screws & washers	98	60	32	70
NR-2-RED	Neoprene Mount with M10 screws & washers	98	60	32	100
NR-3-RED	Neoprene Mount with M12 screws & washers	140	85	44	200
NMA-WHITE	Neoprene Mount with M8 screws & washers	76	76	41	20
NMA-RED	Neoprene Mount with M8 screws & washers	76	76	41	40
NMA-GREEN	Neoprene Mount with M8 screws & washers	76	76	41	60
NMA-BLUE	Neoprene Mount with M8 screws & washers	76	76	41	100
NMB-RED	Neoprene Mount with M10 screws & washers	76	76	50	70
NMB-GREEN	Neoprene Mount with M10 screws & washers	76	76	50	100
NMB-BLUE	Neoprene Mount with M10 screws & washers	76	76	50	160
WMB-RED	Neoprene Mount with M8 screws & washers	88	45	37	30
WMB-GREEN	Neoprene Mount with M8 screws & washers	88	45	37	50
WMB-BLUE	Neoprene Mount with M8 screws & washers	88	45	37	80





**MOUNTS**

Part Number	Description	Dimensions (mm)			Capacity (kg)
		A	B	C	
AUS1	Adjustable Support Mounts	120	180	10	150
VM400A	Adjustable Unit Mounts		100	10	120
VM400HDG	Adjustable Unit Mounts HD Gal		100	10	120
B9368SET	Big Foot Fix It	500 L	130 W	50 H	134
RHDE-1	Rubber Mount Isolation Hanger	45 L	25 W	34 H	17-1300

**EVAPORATOR MOUNTING**

Part Number	Description
PS	Perf Strap 15 m x 23 mm wide (roll)

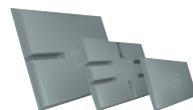
**ACCESSORIES**

Part Number	Description	Size	Colour	Pack Size
PRC351N	Plarock End Cover Set		Ivory	2
PRC350N	Plarock End Cover Set		Black	2
PRBZ	Plarock Mounting Bolt Pack			
BT250	Big Tie	250 mm		20
BT300	Big Tie	300 mm		20
BT350	Big Tie	350 mm		
BHC1	Big Tie Holder	Small		
BHC2	Big Tie Holder	Medium		



**FLOOR MOUNT - SLABS & RUBBER MOUNTS**

Part Number	Description	Dimensions (mm)			Capacity (kg)
		A	B	C	
PSAC0	Polyslab small 339 x 639 - 120 kg	640	340	51	120
PSAC1	Polyslab medium 885 x 465 x 51 - 114 kg	885	465	51	160
PSAC3	Polyslab large 1130 x 650 - 160 kg	1,130	650	51	160
LITECON945	Lightweight concrete slab	900	450	50	250
ECRETE-900	Ecrete slab 450 X 900 X 50mm	900	450	50	250



Part Number	Description	Dimensions (mm)			Capacity (kg)
		A	B	C	
T49M164	Vibration Waffle Pad - Black	457	457	8	
GP10010	Vibration Pad Strip - Black	1,000	10	8	
TV611-42	Vibration Waffle Pad - Red	450	450	10.5	
CRP-100	Pad Vibration 100 mm <sup>2</sup>	100	100	25	



# Condenser Security and Safety



CONDENSER CAGES						
Part Number	Description	Dimensions				Material
		Height (mm)	Width (mm)	Depth (mm)	Mesh Size (mm)	
ACG9	Condenser Cage	900	1,000	600	25	Hot dipped galvanised
ACG10	Condenser Cage	1,000	1,200	600	25	Hot dipped galvanised
ACG12	Condenser Cage	1,200	1,200	600	25	Hot dipped galvanised
ACG14	Condenser Cage	1,400	1,200	600	25	Hot dipped galvanised
ACG16	Condenser Cage	1,600	1,200	600	25	Hot dipped galvanised
ACG20	Condenser Cage	2,000	1,400	900	25	Hot dipped galvanised



# Pipe Support System



STRUT PIPING (CHANNEL)					
Part Number	Dimensions			Description	Material
	Width (mm)	Depth (mm)	Length (m)		
FM1000HDG-3M	41	41	3	Standard Channel	Hot Dip Galvanised
FM1000HDG	41	41	6	Standard Channel	Hot Dip Galvanised
FM1000THDG-3M	41	41	3	Slotted Channel	Hot Dip Galvanised
FM1000THDG	41	41	6	Slotted Channel	Hot Dip Galvanised
FM2000TGBD-3M	41	41	3	Slotted Channel	Galvabond
FM2000TGBD	41	41	6	Slotted Channel	Galvabond
FM3300HDG-3M	41	21	3	Standard Channel	Hot Dip Galvanised
EM3300HDG	41	21	6	Standard Channel	Hot Dip Galvanised
FM4000GBD-3M	41	21	3	Standard Channel	Galvabond
FM4000GBD	41	21	6	Standard Channel	Galvabond
FM4000TGBD-3M	41	21	3	Slotted Channel	Galvabond
FM4000TGBD	41	21	6	Slotted Channel	Galvabond



STRUT PIPING (SUPER CHANNEL)					
Part Number	Dimensions			Description	Material
	Width (mm)	Depth (mm)	Length (m)		
CH1Y	40	20	2.5	Superchannel - Slotted Channel with holes	Aluminium

THREADED ROD				
Part Number	Description		Description	Material
	Diameter	Length (mm)		
FM150-38BRS	Threaded Rod Brass 3/8" X 3'	900	Threaded Rod	Brass
FM150-M10	Threaded Rod ZP 10mm X 3mt	3,000	Threaded Rod	Zinc

<b>SUPERLOCK CLIPS</b>			
Part Number	Description	Insulation Thickness (mm)	Copper Pipe Size
SRV24N	Superlock Oneside Body & Clip	10 x 10	6.35 x 9.52 to 6.35 x 12.70
SRV35N	Superlock Oneside Body & Clip	10 x 10	6.35 x 15.88 to 9.52 x 15.88
SRV46N	Superlock Main Body & Clip	10 x 10	9.52 x 19.05 to 12.70 x 19.05
SRV58N	Superlock Main Body & Clip	10 x 10	12.70 x 22.22 to 15.88 x 25.40
SRV69N	Superlock Main Body & Clip	10 x 10	19.05 x 25.40 to 19.05 x 28.58
SRV710N	Superlock Oneside Body & Clip	10 x 10	22.22 x 28.58 to 22.22 x 31.75



<b>CHANNEL PIPE CLAMPS</b>		
Part Number	Description	Size
FM132-21	Channel Pipe Clamp	22mm
FM132-25	Channel Pipe Clamp	25mm
FM132-32	Channel Pipe Clamp	32mm
FM132-34	Channel Pipe Clamp	35mm
FM132-38	Channel Pipe Clamp	38mm
FM132-043	Channel Pipe Clamp	43mm
FM132-48	Channel Pipe Clamp	49mm
FM132-51	Channel Pipe Clamp	51mm
FM132-54	Channel Pipe Clamp	54mm
FM132-57	Channel Pipe Clamp	57mm
FM132-060	Channel Pipe Clamp	60mm
FM132-64	Channel Pipe Clamp	64mm
FM132-67	Channel Pipe Clamp	67mm
FM132-70	Channel Pipe Clamp	70mm
FM132-073	Channel Pipe Clamp	73mm
FM132-076	Channel Pipe Clamp	76mm
FM132-79	Channel Pipe Clamp	79mm
FM132-83	Channel Pipe Clamp	83mm
FM132-86	Channel Pipe Clamp	86mm
FM132-089	Channel Pipe Clamp	90mm
FM132-92	Channel Pipe Clamp	92mm
FM132-95	Channel Pipe Clamp	95mm
FM132-98	Channel Pipe Clamp	98mm
FM132-102	Channel Pipe Clamp	102mm
FM132-105	Channel Pipe Clamp	105mm
FM132-110	Channel Pipe Clamp	111mm
FM132-115	Channel Pipe Clamp	114mm
FM132-117	Channel Pipe Clamp	117mm
FM132-121	Channel Pipe Clamp	121mm
FM132-127	Channel Pipe Clamp	127mm
FM132-146	Channel Pipe Clamp	146mm
FM132-152	Channel Pipe Clamp	152mm
FM132-160	Channel Pipe Clamp	160mm
FM132-165	Channel Pipe Clamp	165mm



## PIPE SUPPORT SYSTEM (CONT'D)

### UNICLAMPS



Part Number	Description	Size
Vastclamp	Vast Clamp	3/8" - 5 "
V-Bat	V-Bat	3/8" - 5 "
Wallbracket		

### INSULCLIPS



Part Number	Description	Size
B6268	Insulclip	1/4
B6267	Insulclip	1/2
B6278	Insulclip	1"
B6264	Insulclip	1-1/8
B6265	Insulclip	1-3/8
B6266	Insulclip	1-5/8
B6269	Insulclip	2-1/8
B6270	Insulclip	2-5/8
B6273	Insulclip	3/4
B6274	Insulclip	3/8
B6276	Insulclip	5/8
B6277	Insulclip	7/8
B6263	Insulclip	1 1/4
B6271	Insulclip	3-1/8

### RAPID POSITIONING CLIPS - 40MM CHANNEL



Part Number	Description	Size
B6447	Rapid Positioning Clip	3/8
B6444	Rapid Positioning Clip	1/2
B6448	Rapid Positioning Clip	5/8
B6446	Rapid Positioning Clip	3/4
B6449	Rapid Positioning Clip	7/8
B6442	Rapid Positioning Clip	1 1/8
B6443	Rapid Positioning Clip	1 3/8
B6538	Rapid Positioning Clip	1 5/8

### RAPID CHANNEL CLIPS - 40 MM CHANNEL



Part Number	Description	Size
B6845	Rapid Channel Clips - 40 mm Channel	5/8
B6846	Rapid Channel Clips - 40 mm Channel	3/4
B6847	Rapid Channel Clips - 40 mm Channel	7/8
B6848	Rapid Channel Clips - 40 mm Channel	1
B6849	Rapid Channel Clips - 40 mm Channel	1-1/8
B6850	Rapid Channel Clips - 40 mm Channel	1-1/4
B6851	Rapid Channel Clips - 40 mm Channel	1-3/8
B6852	Rapid Channel Clips - 40 mm Channel	1-1/2
B6853	Rapid Channel Clips - 40 mm Channel	1-5/8
B6854	Rapid Channel Clips - 40 mm Channel	2"
B6855	Rapid Channel Clips - 40 mm Channel	2 1/8

**RAPID STUDDING CLIPS - M10 THREADED ROD**

Part Number	Description	Size
B6818	Rapid Stud Clip for M10 Threaded Rod	3/4
B6819	Rapid Stud Clip for M10 Threaded Rod	7/8
B6820	Rapid Stud Clip for M10 Threaded Rod	1
B6821	Rapid Stud Clip for M10 Threaded Rod	1-1/8
B6822	Rapid Stud Clip for M10 Threaded Rod	1-1/4
B6823	Rapid Stud Clip for M10 Threaded Rod	1-3/8
B6824	Rapid Stud Clip for M10 Threaded Rod	1-1/2
B6825	Rapid Stud Clip for M10 Threaded Rod	1-5/8
B6826	Rapid Stud Clip for M10 Threaded Rod	2"
B6827	Rapid Stud Clip for M10 Threaded Rod	2 1/8


**NUTS, BOLTS AND WASHERS**

Part Number	Description
RC-M10	Threaded Rod Coupler 10Mm
HN38BRS	Brass Nuts 3/9
FW38BRS	Brass Washer 3/9
HEXNUT-M10	Hex Nut Zinc Plate 10Mm
HEXNUT-M08	Hex Nut Zinc Plate 8Mm
FW-M08	Washer Zinc Plate 8Mm
HHSSM08X25	Hex Bolt Zp 8Mm X 25Mm
HHSSM10X25	Hex Bolt Zp 10Mm X 25Mm
HHSSM10X40	Hex Bolt Zp 10Mm X 40Mm
HHSSM12X30	Hex Bolt Zp 12Mm X 30Mm
FM1007	Channel Spring Nut 8Mm
FM1008	Channel Spring Nut 10Mm
FM1010	Channel Spring Nut 12Mm
FM1026	Channel 90Deg Angle Fitting
FM2600B	Isolation Barrier Black Rubber
EF1200A-M10	Type A M10 Mounting Plate
EF1200B-M10	Type B M10 Mounting Plate
EF1600-M10	M1 Beam Clamp
EF2000-M10	Purling Clamp 10Mm Zp
EF1200A-M10	Type A M10 Mounting Plate
EF1200B-M10	Type B M10 Mounting Plate
FM2240	Plastic End Caps For Brackets
FM4240	Channel End Caps


**BRONCO SADDLES**

Part Number	Description
HZSB225	Bronco Saddle 12X2-1/4 (57) ID
HZSB325	Bronco Saddle 12X3-1/4 (82) ID
HZSB425	Bronco Saddle 12X4-1/4 (108)ID
HZSB525	Bronco Saddle 12X5-1/4 (133)ID
HZSB625	Bronco Saddle 12X6-1/4 (159)ID
HZSB825	Bronco Saddle 12X8-1/4 (209)ID



**PIPE SUPPORT SYSTEM (CONT'D)**

**INSULATION PIPE SUPPORTS**



Part Number	Pipe O.D. (mm)	Insulation Diameter (mm)
KPHT13010	10	13
KPHT13012	12	13
KPHT13015	15	13
KPHT13020	19	13
KPHT13022	22	13
KPHT13028	28	13
KPHT13035	35	13
KPHT13042	42	13
KPHT13048	48	13
KPTH13054	54	13
KPHT19010	10	19
KPHT19012	12	19
KPHT19015	15	19
KPHT19020	19	19
KPHT19022	22	19
KPHT19028	28	19
KPHT19035	35	19
KPHT19042	42	19
KPHT19048	48	19
KPHT19054	54	19
KPHT25010	10	25
KPHT25012	12	25
KPHT25015	15	25
KPHT25020	19	25
KPHT25022	22	25
KPHT25028	28	25
KPHT25035	35	25
KPHT25042	42	25
KPHT25048	48	25
KPHT25054	54	25

## Wire Support Systems

Part Number	Description
21RQLLP24010	Wire Support 2.4 mm X 1.0 m loop
21RQLLP24020	Wire Support 2.4 mm X 2.0 m loop
21RQLLP24040	Wire Support 2.4 mm X 4.0 m loop

# Fasteners

## TEK SCREW

Part Number	Description	Pk Qty
FT281820LW	Button Head Tek Screw	50
FT3101616H	Hex Head Tek Screw	50
FT3101616W	Wafer Head Tek Screw	50
FT3121430H	Hex Head Tek Screw	50
R-467553	Hex Head Tek Screw	100
R-467959	Wafer Tek Screw 10-16 x 30	100
R-467973	Wafer Tek Screw 10-16 x 16	100

## DYNA BOLTS

Part Number	Description
DP10050	Dynabolt 50 mm
DP10055H	Flush Head Dynabolt
DP10075	Dynabolt 75 mm
DP10080H	Flush Head Dynabolt
DP12070	Dynabolt Hex Nut 12 x 70 mm
DP12100	Dynabolt Nex Nut 12 x 100 mm
DSM10	Dynaset Anchor 10 mm
DYNAH10-40	Hex Head Dynabolt 10 x 40 mm
DYNAH8-65	Hex Head Dynabolt 8 x 65 mm

## WALL ANCHORS

Part Number	Description
TNM450	Nylon Anchor-Mush HD M6.5 x 50 mm
TNR325	Nylon Anchor Round HD M5 x 25 mm
WP25G	Green wall plug PK 100
DUP10080H	U/Long Ramplug 10 x 80 mm
DUP10100H	U/Long Ramplug 10 x 100 mm
ED05033	Easy Drive Anchor
ED05050	Easy Drive Anchor
ED06042	Easy Drive Anchor
HW13M4	Hollow wall anchor
WM	Wall mates steel per ea
WMNY	Wall mate nylon

## GRAB KITS

Part Number	Description
GKA380	Grab kit - Metric O-Rings
GKA460	Grab kit - Self-drilling screws
GKA470	Grab kit - Metric screws and nuts
GKA605	Grab kit - Aluminium rivets
GKA740	Grab kit - Flat washers

# Air Filtration

## FILTER MEDIA

Washable & Disposable filter media with low air flow resistance and high dust, dirt and lint retaining ability. Suitable for use in air conditioning and ventilation systems. Available per meter, per sq. meter or in rolls.

Part Number	Description
AP110-5	Filter media G2 5 mm white
220300	Filter media F5 18 mm white
220240	Filter media G4 15 mm white
220150	Filter media G3 12 mm blk-grey
220100	Filter media G2 10 mm white
233240	Filter media G4 20 mm blue/white

## AIREPURE CARDBOARD FILTERS

Cardboard disposable filters from Airepure feature a filtering medium that is more efficient and ecologically friendly. Made entirely from recycled materials, this medium achieves MERV 8 (G4) efficiency with low resistance to airflow. The overall design of this product makes these filters the accepted choice in applications requiring high performance and extended service.

Part Number (HC)	Description	Dimensions (mm)	Dimensions (in.)
<b>25 mm</b>			
DF25-254508	Disposable Cardboard Filter	254 x 508 x 25 mm	01 x 10 x 20
DF25-305610	Disposable Cardboard Filter	305 x 610 x 25 mm	01 x 12 x 24
DF25-406508	Disposable Cardboard Filter	406 x 508 x 25 mm	01 x 16 x 20
DF25-406635	Disposable Cardboard Filter	406 x 635 x 25 mm	01 x 16 x 25
DF25-508508	Disposable Cardboard Filter	508 x 508 x 25 mm	01 x 20 x 20
DF25-508635	Disposable Cardboard Filter	508 x 635 x 25 mm	01 x 20 x 25
DF25-610610	Disposable Cardboard Filter	610 x 610 x 25 mm	01 x 24 x 24
<b>50 mm</b>			
DF50-254508	Disposable Cardboard Filter	254 x 508 x 50 mm	02 x 10 x 20
DF50-305305	Disposable Cardboard Filter	305 x 305 x 50 mm	02 x 12 x 12
DF50-305508	Disposable Cardboard Filter	305 x 508 x 50 mm	02 x 12 x 20
DF50-305610	Disposable Cardboard Filter	305 x 610 x 50 mm	02 x 12 x 24
DF50-355508	Disposable Cardboard Filter	355 x 508 x 50 mm	02 x 14 x 20
DF50-355610	Disposable Cardboard Filter	355 x 610 x 50 mm	02 x 14 x 24
DF50-355635	Disposable Cardboard Filter	355 x 635 x 50 mm	02 x 14 x 25
DF50-381508	Disposable Cardboard Filter	381 x 508 x 50 mm	02 x 15 x 20
DF50-406406	Disposable Cardboard Filter	406 x 406 x 50 mm	02 x 16 x 16
DF50-406508	Disposable Cardboard Filter	406 x 508 x 50 mm	02 x 16 x 20
DF50-406610	Disposable Cardboard Filter	406 x 610 x 50 mm	02 x 16 x 24
DF50-406635	Disposable Cardboard Filter	406 x 635 x 50 mm	02 x 16 x 25
DF50-457508	Disposable Cardboard Filter	457 x 508 x 50 mm	02 x 18 x 20
DF50-457610	Disposable Cardboard Filter	457 x 610 x 50 mm	02 x 18 x 24
DF50-457635	Disposable Cardboard Filter	457 x 635 x 50 mm	02 x 18 x 25
DF50-508508	Disposable Cardboard Filter	508 x 508 x 50 mm	02 x 20 x 20
DF50-508610	Disposable Cardboard Filter	508 x 610 x 50 mm	02 x 20 x 24
DF50-508635	Disposable Cardboard Filter	508 x 635 x 50 mm	02 x 20 x 25
DF50-508762	Disposable Cardboard Filter	508 x 762 x 50 mm	02 x 20 x 30
DF50-610610	Disposable Cardboard Filter	610 x 610 x 50 mm	02 x 24 x 24
DF50-635635	Disposable Cardboard Filter	635 x 635 x 50 mm	02 x 25 x 25

Part Number (HC)	Description	Dimensions (mm)	Dimensions (in.)
<b>100 mm</b>			
DF100-305305	Disposable Cardboard Filter	305 x 305 x 100 mm	04 x 12 x 12
DF100-305610	Disposable Cardboard Filter	305 x 610 x 100 mm	04 x 12 x 24
DF100-406508	Disposable Cardboard Filter	406 x 508 x 100 mm	04 x 16 x 20
DF100-406610	Disposable Cardboard Filter	406 x 610 x 100 mm	04 x 16 x 24
DF100-406635	Disposable Cardboard Filter	406 x 635 x 100 mm	04 x 16 x 25
DF100-457610	Disposable Cardboard Filter	457 x 610 x 100 mm	04 x 18 x 24
DF100-508508	Disposable Cardboard Filter	508 x 508 x 100 mm	04 x 20 x 20
DF100-508610	Disposable Cardboard Filter	508 x 610 x 100 mm	04 x 20 x 24
DF100-508635	Disposable Cardboard Filter	508 x 635 x 100 mm	04 x 20 x 25
DF100-610610	Disposable Cardboard Filter	610 x 610 x 100 mm	04 x 24 x 24
DF100-635737	Disposable Cardboard Filter	635 x 737 x 100 mm	04 x 25 x 29

**PLEATED SERVICE FILTERS**

Part Number	Description
SPF4.021620	Filter serv. pleat EU5 16 x 20 x 2"
SPF4.022020	Filter serv. pleat EU5 20 x 20 x 2"
SPF4.021224	Filter serv. pleat EU5 12 x 24 x 2"
SPF4.022424	Filter serv. pleat EU5 24 x 24 x 2"
SPF4.021625	Filter serv. pleat EU5 16 x 25 x 2"
SPF4.022024	Filter serv. pleat EU5 20 x 24 x 2"
SPF4.021520	Filter serv. pleat EU5 15 x 20 x 2"
SPF4.021616	Filter serv. pleat EU5 16 x 16 x 2"
SPF4.021624	Filter serv. pleat EU5 16 x 24 x 2"
SPF4.022016	Filter serv. pleat EU5 20 x 16 x 2"
SPF4.022025	Filter serv. pleat EU5 20 x 25 x 2"
SPF4.022416	Filter serv. pleat EU5 24 x 16 x 2"
SPF4.022420	Filter serv. pleat EU5 24 x 20 x 2"
SPF4.022425	Filter serv. pleat EU5 24 x 25 x 2"
SPF4.022516	Filter serv. pleat EU5 25 x 16 x 2"

**FLAT WASHABLE PANEL FILTERS**

Panel filters are used in light commercial applications. They are available in 22 mm thickness and are usually installed in a slide track in the return air plenum. Panel filters are manufactured to specific size - please advise dimensions when ordering.

Part Number	Description
PAN404022NS	Filter panel 22 mm up to 0.16 m <sup>2</sup>
PAN505022NS	Filter panel 22 mm up to 0.25 m <sup>2</sup>
PAN606022NS	Filter panel 22 mm up to 0.36 m <sup>2</sup>
PAN707022NS	Filter panel 22 mm up to 0.49 m <sup>2</sup>
PAN808022NS	Filter panel 22 mm up to 0.64 m <sup>2</sup>
PAN909022NS	Filter panel 22 mm up to 0.81 m <sup>2</sup>
PAN1001002NS	Filter panel 22 mm up to 1.0 m <sup>2</sup>



## AIR FILTRATION (CONT'D)

### PERIFRAME FILTERS

Periframe filters are used in domestic and light commercial applications. They are available in either 8 mm or 11 mm thickness and are suitable for eggcrate return air grills. Periframes are manufactured to specific size - please advise dimensions when ordering.

Part Number	Description
PF404011NS	Filter Periframe up to .16 SQM
PF505011NS	Filter Periframe up to .25 SQM
PF606011NS	Filter Periframe up to .36 SQM
PF707011NS	Filter Periframe up to .49 SQM
PF808011NS	Filter Periframe up to .64 SQM
PF909011NS	Filter Periframe up to .81 SQM

### VEE MESH FILTERS

Vee Mesh filters are used in commercial applications. They are available in either 50 mm or 100 mm and are usually installed in a slide track in the duct work or return air plenum. Vee Mesh filters are manufactured to specific size - please advise dimensions when ordering

Part Number	Description
VM404005NS	Filter V mesh 47 mm up to .16 M <sup>2</sup>
VM505005NS	Filter V mesh 47 mm up to .25 M <sup>2</sup>
VM606005NS	Filter V mesh 47 mm up to .36 M <sup>2</sup>
VM707005NS	Filter V mesh 47 mm up to .49 M <sup>2</sup>
VM808005NS	Filter V mesh 47 mm up to .64 M <sup>2</sup>
VM909005NS	Filter V mesh 47 mm up to .81 M <sup>2</sup>
VM10010005NS	Filter V mesh 47 mm up to 1.0 M <sup>2</sup>
VM404010NS	Filter V mesh 97 mm up to .16 M <sup>2</sup>
VM505010NS	Filter V mesh 97 mm up to .25 M <sup>2</sup>
VM606010NS	Filter V mesh 97 mm up to .36 M <sup>2</sup>
VM707010NS	Filter V mesh 97 mm up to .49 M <sup>2</sup>
VM808010NS	Filter V mesh 97 mm up to .64 M <sup>2</sup>
VM909010NS	Filter V mesh 97 mm up to .81 M <sup>2</sup>
VM10010010NS	Filter V mesh 97 mm up to 1.0 M <sup>2</sup>

### PURE V FILTERS

Pure V filters are used in commercial applications as an alternative to Vee Mesh. They are available in either 50 mm or 100 mm and are usually installed in a slide track in the duct work or return air plenum. Pure V filters have a solid aluminium frame, rigid self supporting media with a 100% hot melt seal to eliminate air and contaminate bypass.

Part Number	Description
43311212	Filter Pure V 305 x 305 x 50
43311224	Filter Pure V 305 x 610 x 50
43311620	Filter Pure V 406 x 508 x 50
43311624	Filter Pure V 406 x 610 x 50
43311625	Filter Pure V 406 x 635 x 50
43311820	Filter Pure V 457 x 508 x 50
43311824	Filter Pure V 457 x 610 x 50
43312020	Filter Pure V 508 x 508 x 50
43312024	Filter Pure V 508 x 610 x 50
43312025	Filter Pure V 508 x 635 x 50
43312030	Filter Pure V 508 x 762 x 50



**PURE V FILTERS**

Part Number	Description
43312424	Filter Pure V 610 x 610 x 50
42311224	Filter Pure V 305 x 610 x 100
42311620	Filter Pure V 406 x 508 x 100
42311624	Filter Pure V 406 x 610 x 100
42311625	Filter Pure V 406 x 635 x 100
42311820	Filter Pure V 457 x 508 x 100
42311824	Filter Pure V 457 x 610 x 100
42312020	Filter Pure V 508 x 508 x 100
42312024	Filter Pure V 508 x 610 x 100
42312025	Filter Pure V 508 x 635 x 100
42312030	Filter Pure V 508 x 762 x 100
42312424	Filter Pure V 610 x 610 x 100

**POCKET FILTERS**

Pocket Filters are designed for use in most commercial applications where high efficiency filtration is required, such as hospitals, food processing and pharmaceutical. Scandfilter pocket bags, exclusive to Heatcraft Australia, are made from non woven synthetic media. They come in both Carmpac media with efficiency ranging from EU3-EU6 , and Synsafe media (Electrostatically charged) with efficiency ranging from EU6-EU8

Part Number	Description
PAP665S4415	Filter 6 pocket EU6 610 x 160 x 380 mm
PAP385S2422	Filter 3 pocket EU6 305 x 610 x 560 mm
PAP685S4422	Filter 6 pocket EU8 610 x 610 x 560 mm



**BAG FILTERS**

Bag Filters and Extended Surface Filters are designed for use in most commercial or industrial HVAC systems where medium to high efficiency filtration is required. The most common bag filters are Multi-Peak, Pyracone, Pyracube, Duovee & Wedge Filters.

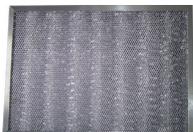
Part Number	Description
<b>4 Peak Type Replacements</b>	
60053061	4 Peak bag only half size
60056161	4 Peak bag only
<b>Multi Peak Replacements</b>	
70056161	3 Peak bag only
70053061	2 Peak bag only half size
<b>Pyracube Type Replacements</b>	
20056161	Filter Pyracone bag only
20053061	Filter Pyracone half bag only
30056161	Filter Pyracone bag only
30053061	Filter Pyracone half bag only
<b>Duovee Type Replacements</b>	
90576161	Duovee EU4 610 x 610 x 380 mm
90596161	Duovee EU4 610 x 610 x 570 mm
<b>Mini-Maxi Wedge Type Replacement</b>	
40056161	Filter MAX/WDG EU4 610 x 610 x 600
40053061	Filter MAX/WDG EU4 305 x 610 x 600
80053061	Filter MAX/WDG EU4 305 x 610 x 380



## AIR FILTRATION (CONT'D)

### GREASE FILTERS

Honeycomb grease filters offer a simple, low cost filter ideal for the hospitality industry. Commonly used in kitchen exhaust canopies, they are extremely durable and fully washable, which provides a long service life.



Part Number	Description
BF01	Grease Filter 495 x 394 x 50 mm
BF02	Grease Filter 495 x 495 x 50 mm
BF05	Grease Filter 749 x 495 x 50 mm

### FILTER TURN CLIPS

Part Number	Description
PCA-2	Filter Turn 'P' Clip 2

### MISC AIR FILTRATION PRODUCTS

Part Number	Description
AGDTS5	Small Drip Tray Tablets 5 Pack
AGDTL5	Large Drip Tray Tablets 5 Pack
AGDTX10	Drip Tray Tablets
STA400GM	Safe-T-Air 400 gram
STA1KG	Safe-T-Air 1 KG
STA2KG	Safe-T-Air 2 KG



### MAGNEHELIC DIFFERENTIAL PRESSURE GAUGES & KITS

Part Number	Description
2000-250PA	Gauge Magnehelic® for Air
2000-500PA	Gauge Magnehelic® for Air

# Coldroom & Cabinet Hardware & Accessories

## EVAPORATOR MOUNTING KIT

Part Number	Description	Material	Weight Capacity (kg)	Pack Inclusions	Application
IEMK	Evaporator Mounting Kit	6.6 Nylon	320 (80 kg ea)	4 x Mushroom Bolts 8 x Nuts 4 x Washers	<ul style="list-style-type: none"> <li>Suitable mounting solution with low thermal conductivity to minimise heat transfer from inside to outside.</li> <li>Suited for 50 mm to 200 mm cool room panel</li> </ul>



## CABINET HINGES

Part Number	Type	Description	Finish	Offset	Pack Size
CRH40X	Medium Duty	Cabinet Hinge	Chrome Plated	19 to 25 mm	
P11ZLHMSPINK	Self Closing - Left Hand	Cabinet Hinge	Chrome Plated		2
P11ZRHMSPINK	Self Closing - Right Hand	Cabinet Hinge	Chrome Plated		2
HP		Hinge Packer			
R1080		Hinge Coolroom Rota Cam			



## LOCKS, LATCHES & STRIKES

Part Number	Description
R5622CP	Strike Efco Adjustable
CRH1961X	Latch And Strike Spring Loaded
CRH5710X	Latch Standard Suit Cabinet
CRH5722X	Strike 19-25 mm 60 Degree
CRH5723X	Strike 19-25 mm 90 Degree
CRH6188NX	Latch & Strike Edge mount
AH-1178	Latch Set Lockable Offset 44-60
AH-1178C	Inside Release Nylon
K481	Inside Release Kason 56
AH-838	Door Safety Latch
H&S	Hasp And Staple
RC01	Latch Roller Catch Coolroom
L02	Magnet Assy.
K109304	Door Closer Hydraulic Kason



## ROLLER ASSEMBLIES & GUIDES

Part Number	Description
A113X	Wheel Delrin 55 mm
A127X	Wheel Derlin 75 mm
A129	Wheel Derlin 75 mm & Axle Assy
SC4-050	Roller Door Hanging Assy
SC4-051	Roller Wheel 50 mm Axle & Nut
A242A	Door Stop Rubber
A240	Door Stop Large
A250-2	Door Stop Set Small
A220LH	Door Stop Track Mounted Lh
A220RH	Door Stop Track Mounted Rh
A260	Door guide Square
A280	Door guide H Type
G04	Door guide Nylon - Small



**COLDROOM & CABINET HARDWARE & ACCESSORIES (CONT'D)**
**SHELVING STRIPS**

Part Number	Description
SS4	Shelving Strip S/Steel 1,220 mm
SS5	Shelving Strip S/Steel 1,525 mm
SCL	Shelving Clips Large C/W Lug
SS6	Shelving Strip S/Steel 1,830 mm
SC	Clip Stainless Steel (1615)

**DOOR GASKET MATERIAL**

Part Number	Description
NXB604	Door Gasket Black Innerseal
CRS13B25	Cool Room Gasket, 25 m Per Roll

**THERMOMETERS**

Part Number	Description
CPF83-50MM-1.5M	Dial Therm 50 mm -40/+40 °C 1.5 m
F84-60-FP	Dial Therm 60 mm -40/+40 °C 1.5 m
F84-80-FP	Dial Therm 80 mm -40/+40 °C 1.5 m
F84-100-FP	Dial Therm 100 mm -40/+40 °C 1.5 m
FP8760	Arthermo Dial T/Meter 60 mm
FP8780	Arthermo Dial T/Meter 80 mm
FP87100	Arthermo Dial T/Meter 100 mm
DT1001C	Thermometer S/Power -40 To 70 °C
RTM3030	Therm Sst Hang/Stand -30 To +30°

**MISCELLANEOUS**

Part Number	Description
ANM-001	Coolroom Door Bell 95 Db Rated
F2220TN	Pressure Relief Vent 220V, 75 -150mm
D03	Door Bell Recess
A210	Coolroom Door Locator

**NIGHTBLINDS**

Part Number	Description
CAU1200B	Nightblind 1.2 m wide X 2 m drop
CAU1800B	Nightblind 1.8 m wide X 2 m drop
CAUC-A-M	Cassette Canopy - Alum 3.75 m
CAUC-B	Cassette Canopy - Black 3.75 m
CAUCEC	Cassette End Caps
CAUCMB	Cassette Mounting Bracket
CAUC-W	Cassette Canopy - White 3.75 m
CAUGC-PK	Gazzelle Clip (10 pack)
CAUH&H	Handle & Hold Down Anchor
CAUHMT	Loop Handle For Magnetic Rail
CAUPB	Plastic Block
CAS1.4	Nightblind Retraction Spring

# Gauges

**FLOYD GAUGES: SERIES SBSR - SURFACE MOUNT - REAR FLANGE**

Part Number	Description	Scale kPa
<b>Compound</b>		
SM60L	Gauge Floyd 60 mm All Gas Comp	-100 to 1600
SM60R22L	Pressure Gauge 60 mm R22 Low	-100 to 1600
SM60R404AL	Pressure Gauge 60 mm R404A Low	-100 to 1600
SM60R134AL	Pressure Gauge 60 mm R134A Low	-100 to 1000
SM100L	Gauge Floyd 100 mm All Gas Comp	-100 to 1600
SM100R22L	Pressure Gauge 100 mm R22 Low	-100 to 1600
SM100R134AL	Pressure Gauge 100 mm R134A Low	-100 to 1000
<b>Pressure</b>		
SM60H	Gauge Floyd 60 mm All Gas Pres	0 to 3000
SM60R22H	Pressure Gauge 60 mm R22 High	0 to 3000
SM60R404AH	Pressure Gauge 60 mm R404A High	0 to 3000
SM60R134AH	Pressure Gauge 60 mm R134A High	0 to 2000
SM100H	Gauge Floyd 100 mm All Gas Pres	0 to 3000
SM100R22H	Pressure Gauge 100 mm R22 High	0 to 3000
SM100R134AH	Pressure Gauge 100 mm R134A High	0 to 2000
<b>Oil Pressure</b>		
SM60-OIL	Gauge Floyd 60 mm Oil	0 to 1600
SM100-OIL	Gauge Floyd 100 mm Oil	0 to 1600


**SERIES FRR - FLUSH MOUNT - FRONT FLANGE**

Part Number	Description	Scale kPa
<b>Compound</b>		
FM60L	Gauge Floyd 60 mm All Gas Comp	-100 to 1600
FM60R22L	Pressure Gauge 60 mm R22 Low	-100 to 1600
FM60R404AL	Pressure Gauge 60 mm R404A Low	-100 to 1600
FM60R134AL	Pressure Gauge 60 mm R134A Low	-100 to 1000
FM100L	Gauge Floyd 100 mm All Gas Comp	-100 to 1600
FM100R22L	Pressure Gauge 100 mm R22 Low	-100 to 1600
FM100R404AL	Pressure Gauge 100 mm R404A Low	-100 to 1600
FM100R134AL	Pressure Gauge 100 mm R134A Low	-100 to 1000
<b>Pressure</b>		
FM60H	Gauge Floyd 60 mm All Gas Pres	0 to 3000
FM60R22H	Pressure Gauge 60 mm R22 High	0 to 2500
FM60R404AH	Pressure Gauge 60 mm R404A High	0 to 3000
FM60R134AH	Pressure Gauge 60 mm R134A High	0 to 2000
FM100H	Gauge Floyd 100 mm All Gas Pres	0 to 3000
FM100R22H	Pressure Gauge 100 mm R22 High	0 to 2500
FM100R404AH	Pressure Gauge 100 mm R404A High	0 to 3000
FM100R134AH	Pressure Gauge 100 mm R134A High	0 to 2000
<b>Oil Pressure</b>		
FM60-OIL	Gauge Floyd 60 mm Oil	0 to 1600
FM100-OIL	Gauge Floyd 100 mm Oil	0 to 1600



Tailored configurations including glycerine filled and refrigerant temp. scale are available on request.





# Refrigerant and Lubricants

# Refrigerants

## THE GAS2GO® TOTAL GAS MANAGEMENT SYSTEM OFFERS:

- A wide range of refrigerants to cover all of your needs
- Quality assured products via AHRI 700 International refrigerant standards
- Fully leak tested, fully automated filling process
- Cylinders compliant to AS2030.1–1999, and 5.2MPa minimum pressure rating
- Clearly labelled cylinders that allow quick and easy recognition and processing
- Serial numbers on each cylinder for a total tracking solution
- Non-return check valves fitted to all refrigerant cylinders
- Shrink wrapped cylinder valves on all cylinders
- Guaranteed fill-weights
- Dedicated Reclaim and Pump Down cylinders to meet your refrigerant requirements
- ARctick compliance report for refrigerant purchasing and reclaim return reporting
- Comprehensive activity statements to manage your purchases
- Delivery to your front door or site, or the option to pick up from any Kirby branch



## KIRBY GAS2GO® CLUB

If you want flexibility in your cylinder usage without daily cylinder rental charges, then join the Kirby Gas2Go® Club.

As part of the Gas2Go® Club you can nominate the maximum number of cylinders that you would like to have available at any one time to meet your refrigerant usage requirements. For an annual membership fee, you can return empty cylinders and exchange them for full cylinders of any size (large, medium, small, pump down, reclaim) and only pay for the refrigerant. Transact as many times as you require without worrying about cylinder rental charges.

As a Kirby Gas2Go® Club member you also have access to Kirby Gas2Go® Gas Credit. Gas credit refers to the amount of money you are refunded for unused refrigerant gas returned to Kirby as part of the Gas2Go® cylinder exchange program (subject to quantity, conditions and handling charges).

## smart@ccess

The Kirby Online Customer Portal, smart@ccess is linked in with the Kirby Gas2Go® Gas Management System to help you run your business and support your ARctick reporting. All activity and reporting relating to your gas purchases (including the account details, cylinder number, date of issue and return, and the individual who picked it up) are updated daily and can be conveniently and reliably viewed.

- Track your Gas2Go® cylinders
- Print Gas2Go® statements
- Report lost cylinders

## GAS2GO® RECLAIM ENSURES SAFE DISPOSAL OF UNUSED REFRIGERANT – EVERYTIME

To comply with legislation regarding gas disposal, it's important to make sure that refrigerant is disposed of in a legal and environmentally friendly manner.

- Cylinders clearly identified for Reclaim to avoid mixing with other cylinders
- Cylinders ex stock from any Kirby branch outlet, with the option of delivery to site
- Available in small (HSRR32F), medium (HMRR) and large (HLRR)
- All cylinders comply with AS2030.1-1999
- No monthly rental on all reclaim cylinders for all Gas2Go® Club members\*
- Return of reclaimed refrigerant attracts a payment as directed by Refrigerants Reclaim Australia (RRA), a credit is raised via Recipient Created Tax Invoice (RCTI) and paid into your account monthly

## GAS2GO® PUMP DOWN GIVES YOU ACCESS TO CYLINDERS WHEN YOU NEED TO PUMP A SYSTEM DOWN

Gas2Go® Pump Down cylinders are guaranteed to be 100% clean and reliable and are available in 22 kg (HMPD) and 65 kg (HLPD) sizes.

- Cylinders clearly identified for Pump Down to avoid mixing with other cylinders
- Cylinders ex stock from any Kirby branch outlet, with the option of delivery to site
- All cylinders comply with AS2030.1-1999
- No monthly rental on all Pump Down cylinders for all Gas2Go® Club members\*
- A cylinder cleaning charge applies. This ensures 100% clean cylinders are available for your customer's refrigerant

\* Reclaim and Pump Down cylinders with the customer are accounted for as part of the total available cylinder pool which is subject to the annual membership fee

	Part Number	Description
<b>HCFC</b>	<b>R22</b>	
	H220012	R22, 12KG CYL, UN1018
	H220022	R22, 22KG CYL, UN1018
	H220065	R22, 65KG CYL, UN1018
	H220490	R22, 490KG CYL, UN1018
	<b>R123</b>	
	1230100	R123, packed in 100kg drum
1230200	R123 packed in 200kg drum	

<b>HFC/HFO's</b>	<b>R438A</b>	
	H438012	R438A 12KG CYL UN1078
	H438022	R438A 22KG CYL UN1078
	H438060	R438A 60KG CYL UN1078
	<b>R422D</b>	
	H422D12	R422D 12KG CYL UN1078
	H422D60	R422D 60KG CYL UN1078
	<b>R1234</b>	
	H1234 ZE050	R1234e 50KG CYL UN3163
	<b>R404A</b>	
	H404010	R404A, 10KG CYL, UN3337
	H404018	R404A, 18KG CYL, UN3337
	H404050	R404A, 50KG CYL, UN3337
	H404400	R404A, 400KG CYL, UN3337
	<b>R507</b>	
	H507010	R507, 10KG CYL, UN3163
	H507055	R507, 55KG CYL, UN3163
	H507400	R507, 400KG CYL, UN3163
	<b>R448A</b>	
	H448055	R448A 55KG CYL, UN3163
	H448010	R448A 10KG CYL, UN3161
	<b>R452A</b>	
	H452010	R452A 10KG CYL UN1078
	<b>R410A</b>	
	H410010	R410A, 10KG CYL, UN3163
	H410018	R410A, 18KG CYL, UN3163
	H410060	R410A, 60KG CYL, UN3163

	Part Number	Description
HFC/HFO's	<b>R32</b>	
	H320005	R32 5KG CYL UN3252
	H320009	R32 9KG CYL UN3252
	<b>R134a</b>	
	H134012	R134a, 12KG CYL, UN3159
	H134022	R134a, 22KG CYL, UN3159
	H134065	R134a, 65KG CYL, UN3159
	H134450	R134a 450KG CYL UN3159
	<b>134a UV</b>	
	H134012UV	DETECTOR GAS R134A 12KG CYL
	<b>R450A</b>	
	H450012	R450A 12KG CYL UN3163
	H450060	R450A 60KG CYL, UN3163
	<b>R1234ZE</b>	
	H1234ZE050	R1234ZE 50KG CYL UN3163
	<b>R407C</b>	
	H407C11	R407C, 11KG CYL, UN3340
	H407C18	R407C 18KG CYL UN3340
	H407C60	R407C, 60KG CYL, UN3340
	<b>R407F</b>	
	H407F10	R407F, 10KG CYL, UN3163
	H407F50	R407F, 50KG CYL, UN3163
	<b>R23</b>	
2300009	R23, 9KG CYL UN1984	
<b>R1233ZD</b>		
H123312	R1233ZD 12KG CYL UN3163	
H123365	R1233ZD 65KG CYL UN3163	
<b>H34</b>		
H340012	H34 12KG CYL UN1956	
AMMONIA	<b>R717 (AMMONIA)</b>	
	0717034	R717, AMMONIA, 34KG CYL
	0717056	R717, AMMONIA, 56KG CYL

	Part Number	Description
<b>INDUSTRIAL GAS</b>	<b>R744 (CO2)</b>	
	R744014	CO2 Refrigerant 13.5KG NT
	R744030	CO2 Refrigerant 30KG NT
	R744030V	CO2 Refrigerant 30KG NT Vapour
	R744384	CO2 Refrigerant Manifold pack (12 x 32) 384KG
	<b>NITROGEN</b>	
	H728015	NITROGEN-HIGH PURITY 1.5M <sup>3</sup> "D"
	H728035	NITROGEN-HIGH PURITY 3.5M <sup>3</sup> "E"
	H728091	NITROGEN - HIGH PURITY 9.1MT3 "G"
	H728153	NITROGEN 99.9% PURITY 12 PK "G"
<b>GLYCOL</b>	<b>Glycol</b>	
	MPC0020	GLYCOL MONOPROPYLENE 20kg
	MCP2015	GLYCOL MONOPROPYLENE 216kg

# Lubricants



Part Number	Description
<b>SUNISO</b>	
3GS-4L	OIL SUNISO 3GS (4 LITRE)
3GS-20L	OIL SUNISO 3GS (20 LITRE)
3GS-205L	OIL SUNISO 3GS (205 LITRE)
4GS-4L	OIL SUNISO 4GS (4 LITRE)
4GS-20L	OIL SUNISO 4GS (20 LITRE)
5GS-4L	OIL SUNISO 5GS (4 LITRE)
4SA-20L	OIL SUNISO 4SA (20 LITRE)
<b>SOLEST</b>	
S32-1	OIL SOLEST 32 1 LITRE DRUM
S32-5	OIL SOLEST 32 5 LITRE DRUM
S32-20	OIL SOLEST 32 20 LITRE DRUM
S46-5	OIL SOLEST 46 5 LITRE DRUM
S46-20	OIL SOLEST 46 20 LITRE DRUM
S68-1	OIL SOLEST 68 1 LITRE
S68-5	OIL SOLEST 68 5 LITRE DRUM
S68-20	OIL SOLEST 68 20 LITRE DRUM
<b>MANEUROP COMPRESSOR OIL</b>	
120Z0571	MANEUROP POE OIL 2.5L 160SZ (SZ)
120Z0573	MANEUROP POE OIL 2.5L 160PZ (MTZ)
<b>BITZER COMPRESSOR OIL</b>	
AB5-4CPI	CPI AB5 REFRIG OIL 4L
AB5-20CPI	CPI AB5 REFRIG OIL 20L
<b>CENTRIFUGAL COMPRESSOR OIL</b>	
CLAVIS68	OIL SHELL CLAVIS 68 18 LITRE
<b>VACUUM PUMP OIL</b>	
VPOP	PREMIUM VAC PUMP OIL 470ML
VPOQ	PREMIUM VAC PUMP OIL 946ML
VPOG	PREMIUM VAC PUMP OIL 3.78L
<b>EMKARATE</b>	
1529212	EMKARATE OIL RL32H 1 LITRE
1529245	EMKARATE OIL RL32H 5 LITRE
1529220	EMKARATE OIL RL32H 20 LITRE
RL68H-1LTR	POE HFC/HCFC REFRIGERANTS 1 LITRE
RL68H-5LTR	POE HFC/HCFC REFRIGERANTS 5 LITRE
RL68HB-5LTR	SCROLL CO2 OIL L/T 5 LITRE
RL170H-5L	EMKARATE OIL 5 LITRE
RL170H-20L	EMKARATE OIL 20 LITRE
RL32-3MAF 1LTR	EMKARATE OIL RL32-3MAF 1 LITRE
RL32-3MAF 5LTR	EMKARATE OIL RL32-3MAF 5 LITRE

Part Number	Description
<b>ALKYL BENZENE</b>	
CP-4700-32	ALKYL BENZENE OIL 32 4 LITRE
CP4700-46	ALKYL BENZENE OIL 46 4 LITRE
<b>POLYALKYLENE OIL (PAG)</b>	
RFL46-EP-1L	BREOX OIL CO2 RFL 46 EP L/T 1 LITRE
<b>OTHER</b>	
981	SUPER CHANGE R22 RETROFIT
OILCHECKRA	REFRIGERANT OIL TEST KIT
G1M	Bottlechock Bracket 2 X Single, Suit Cylinder D & E
G2M	Bottlechock Bracket 2 X Double, Suit Cylinder D & E
G1L	Bottlechock Bracket 2 X Single, Suit Refrigcyl S, M & L
G2L	Bottlechock Bracket 2 X Double, Suit Refrigcyl S, M & L
SJ-16692	Gas Bottle Safety Plug - Acetylene
SJ-16693	Gas Bottle Safety Plug - Oxygen

\*Refer to consumables for Solder, MappGas, Oxy etc.

## SUNISO APPLICATION GUIDE

Suniso GS naphthenic-based mineral oils offer a highest commitment to quality that all the Suniso brand lubricants have been known for. This lubricant is excellent for use on CFC, HCFC and some non-fluorocarbon refrigerants including ammonia. Under low temperature applications, this lubricant retains much of its flow characteristics, and has an extremely low wax content to minimize separation. Suniso GS oil has a very low moisture content and will not contribute to the two major causes of compressor damage; sludge and acid. Suniso GS refrigeration oil is available in 3 different viscosities to meet virtually any system requirements. Always use viscosity grade recommended by manufacturer. If no recommendation is available, selection can usually be based on the following:

Suniso Oil Grade	Application
3GS	General use with CFC, and HCFC's but not limited to Low to Medium Temperature applications
4GS	General use with CFC, and HCFC's but not limited to Medium to Low Temperature applications
5GS	General use with CFC, and HCFC's but not limited to High to Medium Temperature applications, or when a heavy duty higher viscosity oil is required.
4SA	SUNISO 4SA is a specially selected naphthenic refrigeration oil formulated for use with R717(Ammonia) refrigeration systems

## SOLEST APPLICATION GUIDE

Oil Type	Refrigerants	Application
SOLEST 32	HFC	Copeland approved oil for new systems or retrofitting using R404A, R507 & R134a refrigerants.
SOLEST 46	HFC	Retrofitting and new installations with R404A, R507 & R134a refrigerants. Medium and Low Temperature
SOLEST 68	HFC	Retrofitting and new installations with R134a High Temperature
MANEUROP 160P	HFC	Approved for use in all Maneurop MT compressors using R22
EMKARATE	HFC	New installations using all of the current new generation refrigerants, including R134a, R404A & R507.

**OEM APPROVALS FOR EMKARATE RL PRODUCT LINE**

Manufacturer	Compressor Type	Approved Product
BITZER	Reciprocating	RL32H & 68H
	Screw	RL170H
BLISSFIELD	Reciprocating	RL68H
BOCK	Reciprocating	RL22H, 32H, 46H, 68H & 100H
CARRIER	Centrifugal chillers (17DA & 17EA).	RL32H
	Externally geared centrifugal chillers (17EX, 17FA & 17MPS)	RL68H
CARRIER CARLYLE	Reciprocating	RL68H
CARRIER TRANSICOLD	Reciprocating (Marine Containers)	RL22H
DAIKIN MCQUAY	Centrifugal	RL32H
	Screw	RL68H, 68HB, 100H & 220H
DALIAN BINGSHAN	Reciprocating	RL32H
	Screw	RL170H
DANFOSS COMMERCIAL (MANEUROP)	Scroll (SZ, MFZ & LFZ) Reciprocating (LTZ & NTZ)	RL32H
	Reciprocating (LTZ & NTZ)	
DORIN	Reciprocating	RL22H, 32H, 46H & 68H
DUNHAM BUSH	Reciprocating	RL32H & 68H
	Screw	RL68H
EMERSON COPELAND	Reciprocating & Scroll	RL32-3MAF, 32CF & 22CF
	Scroll R744 ZO	RL68HB
FRASCOLD	Reciprocating	RL32H & 68H
	Screw	RL170H
FRIGOPOL	Reciprocating (60-DLB-13 to 80-DLB-30)	RL32H
GRASSO (GEA)	Reciprocating	RL68H & 100H
HARTFORD	Reciprocating	RL32H & 68H
HANBELL	Screw compressors (RA, RB & V Series)	RL170H & 220H
HISPACOLD	Reciprocating	RL68H
J & E HALL	Centrifugal	RL32H
	Screw	RL68H, 68HB, 100H & 220H
JIANGSU XUEMEI	Reciprocating	RL22H & 32H
LOCKHEED MARTIN Oil	Can be used to service Lockheed owned compressors	RL68H
	NSN6850P4314-H	RL32H
	NSN9150-99-870-1432	RL32HB
	NSN9150-01-443-9390 &	RL46H
NATO MILITARY NSN	NSN9150-01-443-9396	RL68H
	NSN9150-01-435-1899,	
	NSN9150-01-410-8972 &	
	NSN9150-01-387-4469	
PRESTCOLD	Reciprocating	RL32-3MAF
REFCOMP	Reciprocating (SRC-F, SRC-M, SRC-L & SRC-P)	RL32H & 68H
ROLTEC	Screw	RL46H & 170H
ROYCE	Reciprocating	RL32H
SABROE	Reciprocating	RL32H, 46H & 68H
	Screw	RL68H, 100H, 170H & 220H
TECUMSEH	Reciprocating	RL22H
THERMOKING	Reciprocating	RL32H
TRANE	Screw	RL68H
	Scroll	RL32HB
VATANU-COOL	Orbital Vane Rotary (OVR)	RL220H
YANTAI MOON	Reciprocating	RL32H

Industrial and Commercial Compressor Manufacturers - HFC/HCFC Systems - unless otherwise stated

The approvals list should be used as a guide only. CPI Engineering Services recommends that users confirm with the original equipment manufacturer (OEM)

which EMKARATE RL grade is qualified for use with a particular combination of compressor model, refrigerant and application. OEM's advice should always be taken.

Only use approved lubricants.

Notes :

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## PRESSURE TEMPERATURE CHART

PRESSURE kPa GAUGE (# Unless otherwise indicated, all pressures shown are saturated vapour pressures)

°C	H34	R134a	XP10 / R513A	M13 R450A		R1324yf	R1324ze	R22	M099 R438A		R422D		R407C	
				Bub-ble	Dew				Bub-ble	Dew	Bub-ble	Dew	Bub-ble	Dew
-44				-65	-66	-50	-72	-13	-8	-33	-4	-25	-2	-32
-42				-61	-62	-45	-68	-5	1	-26	6	-17	8	-25
-40	-52	-47	-41	-56	-57	-39	-65	5	12	-17	16	-8	19	-16
-38	-46	-41	-34	-51	-53	-33	-61	15	22	-9	27	2	30	-7
-36	-41	-35	-27	-46	-47	-26	-56	26	34	1	39	12	43	3
-34	-34	-28	-20	-40	-42	-19	-51	38	47	11	52	23	56	14
-32	-27	-21	-12	-34	-36	-11	-46	50	60	22	66	35	71	25
-30	-20	-14	-3	-27	-29	-2	-40	63	75	34	81	48	86	37
-28	-12	-5	6	-19	-22	7	-34	78	90	47	96	62	102	51
-26	-3	3	16	-11	-14	17	-27	93	106	60	113	77	119	65
-24	6	14	26	-3	-6	27	-20	109	124	75	130	93	138	80
-22	16	26	37	6	4	38	-13	126	142	91	149	110	158	96
-20	27	39	50	16	13	50	-4	145	162	107	169	128	179	113
-18	38	49	62	27	23	62	4	164	183	125	190	147	201	132
-16	50	59	76	38	34	76	14	185	205	144	213	168	224	152
-14	63	72	91	50	46	90	24	207	228	165	236	189	249	172
-12	77	86	106	63	59	105	35	230	253	186	261	212	276	195
-10	92	101	123	76	72	121	46	254	279	209	288	237	303	218
-8	108	118	140	91	86	137	58	280	307	233	315	262	333	244
-6	124	135	159	106	101	155	71	307	337	258	345	290	364	270
-4	142	153	178	123	117	174	85	336	366	285	376	318	396	298
-2	161	172	199	140	134	194	100	366	398	314	408	349	430	328
0	181	192	221	158	152	215	115	397	432	344	442	381	467	359
2	202	211	244	178	171	237	132	431	468	376	478	414	504	392
4	224	229	268	198	191	260	149	466	505	409	515	450	544	427
6	247	253	293	220	213	284	167	502	544	445	554	487	586	464
8	272	283	320	242	235	310	187	540	585	482	595	526	629	503
10	298	313	348	266	258	336	207	581	628	521	638	567	675	544
12	325	342	378	291	283	364	229	622	673	562	683	610	723	586
14	354	372	409	318	309	394	251	666	719	604	730	655	773	631
16	384	403	442	346	337	425	275	712	768	649	779	702	825	678
18	415	436	476	375	365	457	300	760	819	696	830	751	879	727
20	449	469	512	406	396	490	326	810	873	746	883	802	936	779
22	484	507	549	438	427	526	354	862	928	797	939	856	995	833
24	520	544	588	471	460	562	382	916	986	851	997	912	1057	889
26	558	584	629	507	495	601	413	972	1046	907	1057	971	1121	949
28	598	626	671	543	531	641	444	1031	1109	966	1120	1032	1188	1010
30	639	668	716	582	569	682	477	1092	1174	1027	1185	1095	1258	1075
32	683	715	762	622	609	726	512	1155	1242	1091	1252	1161	1330	1142
34	729	761	810	664	650	771	548	1221	1312	1158	1323	1230	1405	1212
36	776	811	861	708	693	818	585	1289	1385	1227	1396	1302	1483	1285
38	825	863	913	753	738	866	624	1360	1461	1299	1471	1376	1564	1361
40	877	915	967	800	785	917	665	1433	1539	1374	1550	1454	1648	1440
42	930	972	1024	850	834	970	708	1509	1620	1452	1631	1534	1735	1522
44	985	1029	1083	901	885	1024	752	1588	1705	1534	1716	1618	1825	1608
46	1043	1090	1144	955	938	1081	798	1670	1792	1619	1803	1705	1918	1697
48	1104	1153	1207	1010	993	1140	846	1754	1883	1706	1894	1795	2015	1790
50	1166	1217	1273	1068	1050	1201	896	1842	1976	1798	1988	1888	2115	1886
52	1233	1287	1341	1128	1109	1264	948	1932	2073	1892	2085	1985	2218	1987
54	1300	1356	1412	1190	1171	1330	1002	2026	2174	1991	2185	2086	2325	2091
56	1370	1429	1485	1254	1235	1398	1057	2123	2277	2093	2289	2190	2436	2199
58	1443	1505	1561	1321	1301	1468	1115	2223	2384	2199	2397	2298	2550	2311
60	1516	1581	1640	1390	1370	1541	1175	2326	2495	2309	2508	2411	2668	2427
62		1662	1721	1462	1441	1616	1238	2422	2609	2424	2623	2527	2790	2548
64		1746	1805	1537	1515	1694	1302	2532	2727	2543	2742	2648	2916	2674

### CONVERSION FACTORS

**Heat Flow**

Btu/hr x 0.252 = kcal/hr  
 Btu/hr x 0.293 = watts  
 Watts x 0.86 = kcal/hr  
 Watts x 3.4129 = Btu/hr  
 Watts x 0.000284 = ton (refr)

Watts x 0.00133 = HP  
 kcal/hr x 1.163 = watts  
 kcal/hr x 3.97 = Btu/hr  
 HP x 746 = watts  
 ton (refr) x 3517 = watts

**Pressure**

kPa x 0.145 = PSI  
 PSI x 6.89 = kPa  
 Bar x 100 = kPa  
 kPa x 0.01 = Bar

inch Hg x 3.39 = kPa  
 inch H2O x 0.249 = kPa  
 mm Hg (1 torr) x 0.133 = kPa

## PRESSURE TEMPERATURE CHART

PRESSURE kPa GAUGE (# Unless otherwise indicated, all pressures shown are saturated vapour pressures)

°C	R407F		R410A	R32	R404A	R507	XP40 R449A		M40 R448A		CO2 / R744	Ammonia / R717
	Bub- ble	Dew					Bub- ble	Dew	Bub- ble	Dew		
-44	11	-20	46	46	4	17	10	-19	10	-19	764	-43
-42	22	-11	61	60	15	28	21	-10	21	-11	832	-38
-40	34	-2	76	76	26	40	33	0	33	-1	904	-29
-38	47	9	93	92	39	53	46	10	45	9	980	-20
-36	60	20	111	110	52	67	59	21	59	20	1060	-13
-34	75	32	130	129	66	82	74	33	73	32	1145	-2
-32	91	45	150	150	81	98	89	46	89	45	1234	7
-30	108	59	172	172	97	114	106	59	106	58	1327	19
-28	126	74	195	195	114	132	123	74	123	73	1426	32
-26	145	90	219	220	133	151	142	90	142	89	1529	43
-24	166	107	245	246	152	171	162	107	162	105	1637	59
-22	188	125	273	274	173	193	184	125	183	123	1750	71
-20	211	145	303	304	195	216	206	144	206	142	1869	89
-18	235	166	334	336	219	240	230	164	230	163	1993	109
-16	261	188	367	369	243	265	255	186	255	184	2123	124
-14	289	211	402	404	270	292	282	209	282	207	2259	147
-12	318	237	438	442	297	320	310	233	310	231	2401	164
-10	348	263	477	481	326	350	340	259	340	257	2548	190
-8	381	291	518	523	357	382	372	286	372	284	2702	217
-6	415	321	561	566	390	415	405	315	405	313	2862	239
-4	450	353	607	613	424	450	440	346	440	344	3029	269
-2	488	386	654	661	460	486	476	378	476	376	3203	294
0	528	421	704	712	498	525	515	412	515	410	3384	328
2	569	458	757	765	537	565	555	447	555	445	3572	365
4	613	497	812	821	579	608	597	485	597	483	3767	395
6	659	538	869	880	623	652	641	524	642	522	3970	435
8	706	581	930	942	669	698	688	566	688	564	4181	468
10	757	626	993	1006	716	747	736	609	736	607	4399	514
12	809	674	1059	1073	766	798	787	655	787	653	4627	562
14	864	723	1128	1144	819	851	840	703	840	700	4863	603
16	921	776	1200	1217	873	906	895	753	895	750	5107	655
18	980	830	1275	1294	929	964	953	805	953	803	5361	697
20	1043	888	1353	1374	989	1024	1013	860	1013	858	5625	756
22	1107	947	1435	1457	1049	1087	1075	918	1076	915	5899	819
24	1175	1010	1520	1544	1119	1152	1140	977	1141	975	6184	868
26	1245	1075	1608	1635	1179	1221	1208	1040	1208	1037	6479	937
28	1318	1143	1701	1729	1249	1291	1278	1105	1279	1103	6787	990
30	1394	1215	1797	1827	1329	1365	1351	1173	1352	1171	7106	1066
32	1473	1289	1896	1929	1399	1442	1427	1244	1428	1242		1144
34	1555	1366	2000	2035	1479	1521	1506	1318	1507	1316		1206
36	1640	1447	2108	2145	1559	1604	1587	1395	1589	1393		1292
38	1729	1531	2220	2259	1639	1689	1672	1475	1674	1473		1360
40	1820	1618	2336	2377	1729	1778	1760	1558	1762	1556		1453
42	1915	1709	2456	2500	1819	1870	1851	1645	1853	1643		1552
44	2013	1803	2581	2628	1909	1966	1945	1735	1947	1733		1628
46	2115	1902	2710	2760	2009	2064	2043	1828	2045	1827		1734
48	2221	2004	2844	2897	2109	2167	2144	1926	2146	1924		1817
50	2330	2110	2983	3040	2209	2273	2248	2027	2251	2026		1932
52	2442	2220	3126	3187	2319	2382	2356	2132	2359	2131		
54	2559	2335	3274	3340	2429	2496	2467	2241	2470	2240		
56	2680	2454	3428	3498	2549	2613	2583	2354	2586	2354		
58	2804	2577	3586	3661	2659	2734	2701	2472	2705	2472		
60	2933	2706	3749	3831	2789	2859	2824	2594	2828	2594		
62	3066	2839	3917	4007	2901	2978	2951	2721	2955	2722		
64	3203	2977	4090	4189	3032	3114	3082	2854	3086	2854		

### CONVERSION FACTORS (CONT'D)

**Velocity**

ft/sec (fps) x 0.3048 = m/s  
ft/min (fpm) x 0.00508 = m/s

**Volume Flow**

L/s x 3.6 = m3/hr  
CFM x 0.472 = L/s  
PM (Imp) x 0.0757 = L/s  
GPM (U.S) x 0.0631 = L/s

**Temperature**

°C = (°F - 32) ÷ 1.8  
°F = (°C x 1.8) + 32

**Dew Point**

(Saturated vapour), used to determine superheat

**Bubble Point**

(Saturated liquid), used to determine subcooling





# Coils

# Product Range

Fully customizable coils for commercial & industrial applications.

## Typical Application:

- Fluid Coils: Water, Glycol, Heating
- DX (Direct Expansion) Coils
- Condenser / Heat Reclaim
- Steam Coils
- CO<sub>2</sub> Coils
- Stainless Steel Coils
- Crossfin Coils
- Marine
- Epoxy Supercoat options:
  - 15,000 hours neutral salt spray test (AS 2331.32-1980)
  - Food grade
- Tube - Smooth bore, rifle bore
- Fin - Copper, aluminium, stainless steel
- Casing - Galvanised steel, aluminium, stainless steel, brass



THAN Super Coat



THAN Standard Coat

# Coil Types

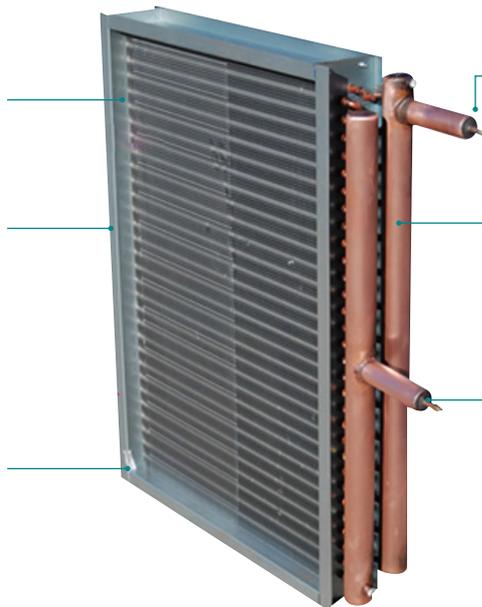
Available in: 5mm, 7mm, 3/8, 1/2, 5/8 tube

## 1. FLUID COILS

Fin densities from 8 to 16 fins per inch to optimise performance and air side pressure drop.

Standard coils are completely encased for structured integrity but can be manufactured without casing for specific application.

Manifolds include drain plug, vent plug, and schrader valves to allow verification of positive pressure and leak free coils.



Up to 12 rows circuited to optimise coil performance and water side pressure drop.

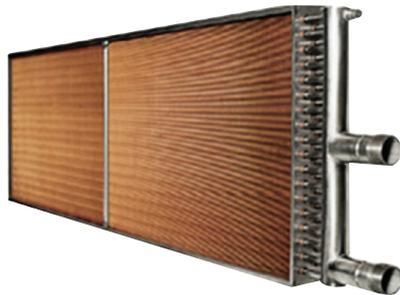
Manifold designed to minimise water side pressure drop for a range of flow rates.

Coil inlet and outlet available with either sat (as shown) or threaded connections (MPT or FPT)

## 2. STEAM COILS

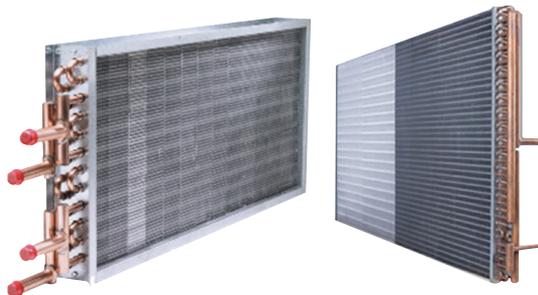


Standard or steam distributing construction is available for both high and low pressure applications. Same or opposite end connections can be specified.



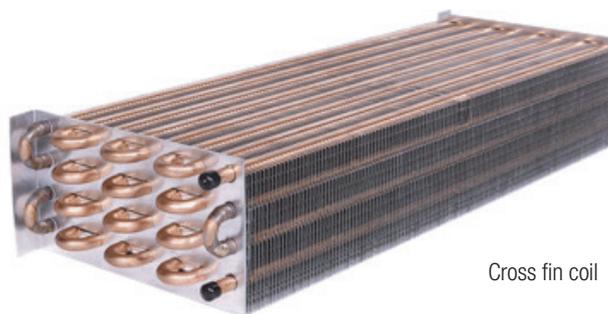
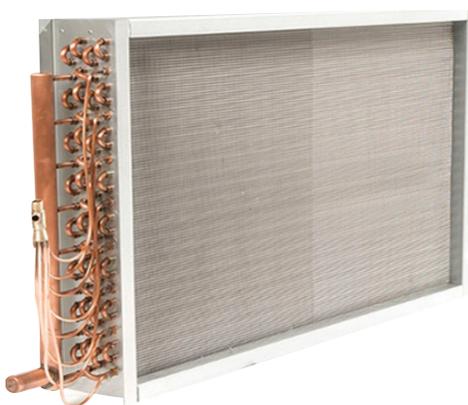
## 3. CONDENSER / HEAT RECLAIM

Condenser coils individually engineered to meet your specific requirements. Rows, circuiting, fin spacing, header requirements can all be designed and altered to ensure that the air and tube side pressure drops are limited to specific requirements



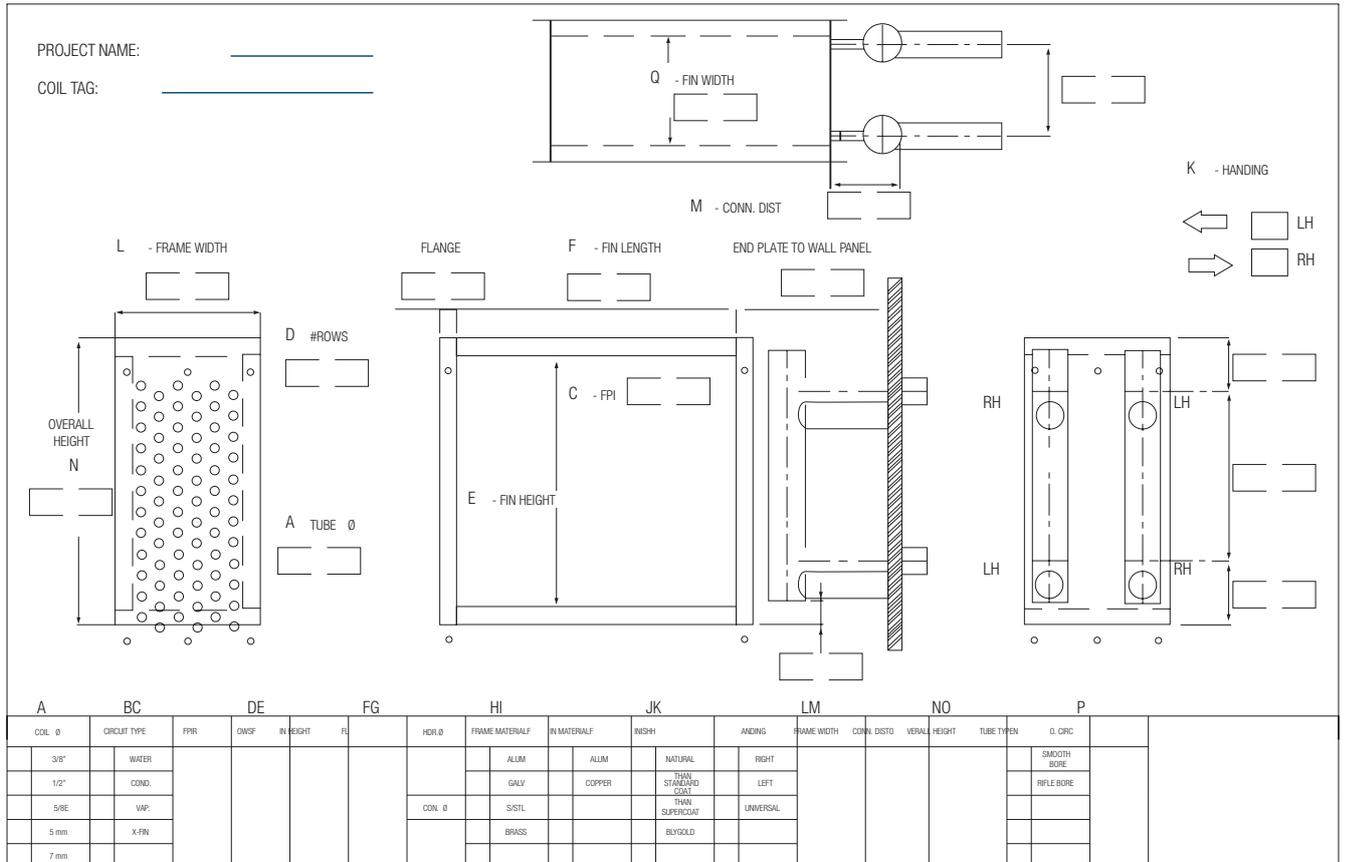
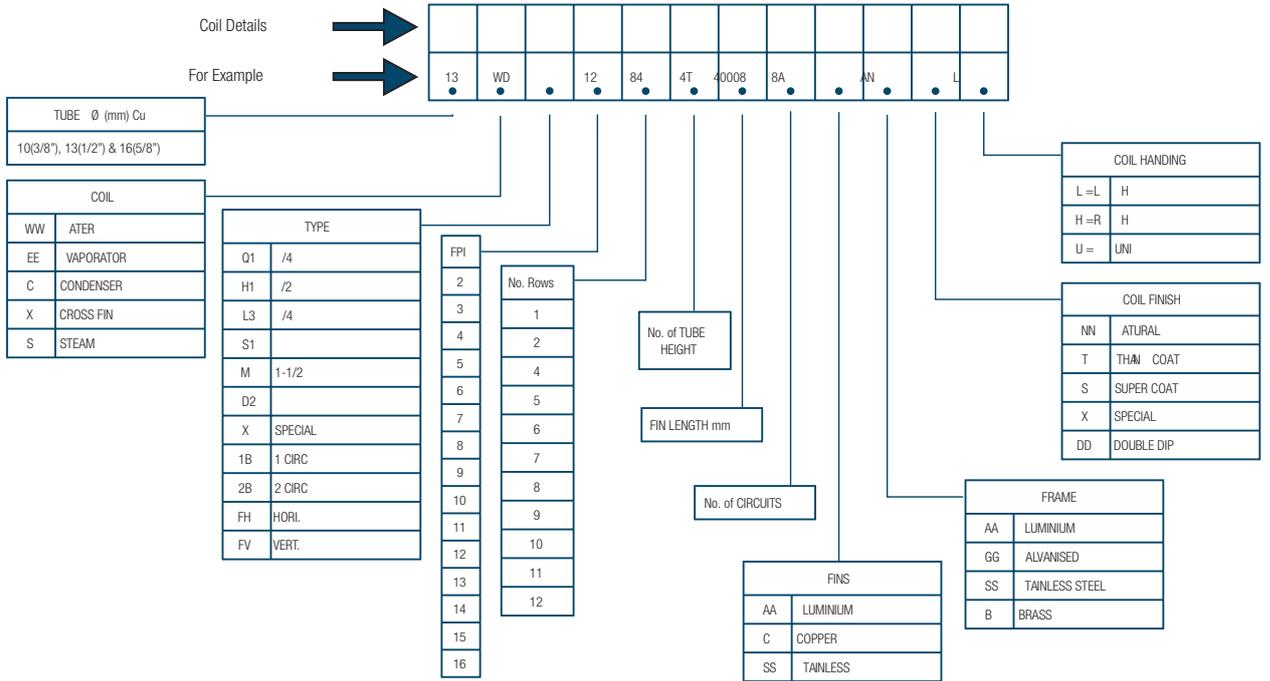
## 4. DX (DIRECT EXPANSION)

Unique requirements such as single or twin interlaced, split face circuiting, loop back circuits can be engineered to allow precise capacity control and increased efficiency. The interlaced circuiting ensures uniform refrigerant distribution over the entire face area of the coil. Variable fin spacing ensures that no frost is built up on low temperature applications.



Cross fin coil

# Coil Nomenclature



# Coil Quotation Form

Quote no : \_\_\_\_\_

Customer name : \_\_\_\_\_

Phone number: \_\_\_\_\_

Branch: \_\_\_\_\_

## Selection Data

New Coil  Replacement Coil

Chilled Water  Evaporator  Condensing  Heating

Total Capacity : \_\_\_\_\_ Fin Material : \_\_\_\_\_

Fin Length : \_\_\_\_\_ End Plate Material : \_\_\_\_\_

Fin Height : \_\_\_\_\_ Header Size : \_\_\_\_\_

No. of Rows : \_\_\_\_\_ Connector Size : \_\_\_\_\_

FPI : \_\_\_\_\_ No. of Circuits : \_\_\_\_\_

Tube Height : \_\_\_\_\_ Smooth Bore Rifle Bore

## Handling

Left Hand  Right Hand

## Coating

Natural Finish  Supercoat  Than Coat

Special  Double Dip

## Notes:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

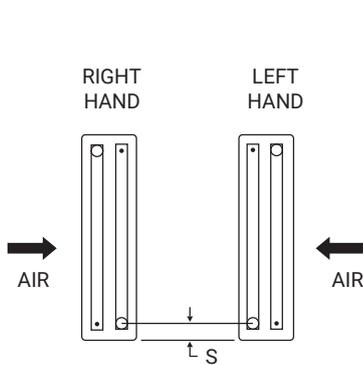


Fig 1

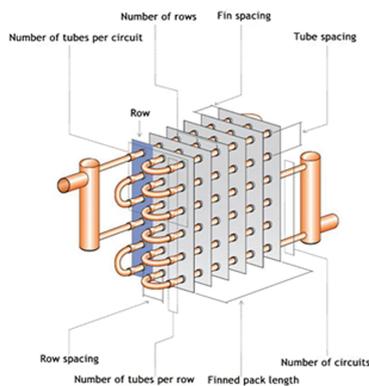


Fig 2

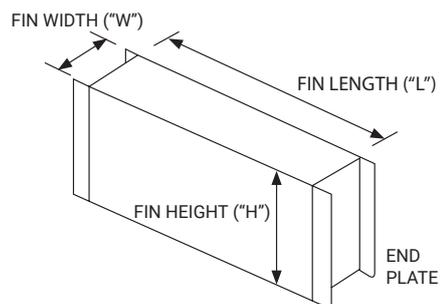


Fig 3

Notes :

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# Engineering



# CONVERSION FACTORS

## COMMON CONVERSION FACTORS

Multiply Column A by Factor to obtain Column B • Divide Column B by Factor to obtain Column A.

A	B	Factor	A	B	Factor	A	B	Factor
<b>Length</b>			<b>Volume Flow Rate - Air</b>			<b>Pressure</b>		
inches	mm	25.4	CFM	Ltr/s	0.4719	psi	kPa	6.8948
<b>Area</b>			CFM	m <sup>3</sup> /hr	1.699	psi	bar	0.068 95
inch <sup>2</sup>	mm <sup>2</sup>	645.16	Ltr/s	m <sup>3</sup> /s	0.001	in.WG	kPa	0.2486
ft <sup>2</sup>	m <sup>2</sup>	0.0929	<b>Velocity</b>			in.Hg	kPa	3.3864
<b>Volume</b>			m/s	fpm	196.85	in.Hg	bar	0.033 86
inch <sup>3</sup>	mm <sup>3</sup>	16 387	km/hr	mile/hr	0.6214	kg/cm <sup>2</sup>	psi	14.2233
ft <sup>3</sup>	m <sup>3</sup>	0.028 32	<b>Power - Heat Flow - Capacity</b>			kg/cm <sup>2</sup>	kPa	98.07
<b>Volume - Liquid</b>			HP	Watts	746	<b>Density</b>		
Gal (Imp.)	Gal (US)	1.200 95	HP (Metric)	Watts	735.5	kg/m <sup>3</sup>	lb/ft <sup>3</sup>	0.062 43
Gal (Imp.)	Ltr	4.5461	BTU/hr	Watts	0.2931	<b>Fouling Factor</b>		
Gal (US)	Ltr	3.7854	BTU/hr	Tons (Refrig)	0.000 083	ft <sup>2</sup> hr. °F/BTU	m <sup>2</sup> K/kW	176.1
<b>Volume Flow Rate - Liquid</b>			Tons (Refrig)	BTU/hr	12 000	m <sup>2</sup> hr. °C/kcal	m <sup>3</sup> K/kW	0.204 815
Gal/hr (Imp.)	Ltr/h	4.5456	Tons (Refrig)	Watts	3517	<b>Weight (Mass)</b>		
Gal/hr (US)	Ltr/h	3.785	kcal/hr	Watts	1.163	oz	g	28.3495
m <sup>3</sup> /hr	Gal/min (Imp.)	3.6662	kcal/hr	Tons (Refrig)	0.000 331	lb	kg	0.4536

**Using the following Conversion Tables:**

The degree of rounding of the conversion factors has been adjusted to an extent considered to be of value to a practical engineer.

Note: Where space does not permit the use of zeros before or after the decimal point, **subscript** numerals indicate the number of zeros.  
e.g. 0.<sub>4</sub>8333 = 0.000 083 33

Length							
mm	cm	m	inch	feet	yard	km	mile
<b>1</b>	0.1	0.001	0.0394	0.0033	0.0011	0.000 001	0.000006214
10	<b>1</b>	0.01	0.3937	0.0328	0.0109	0.000 01	0.00006214
1000	100	<b>1</b>	39.3701	3.2808	1.0936	0.001	0.0006214
25.4	2.54	0.0254	<b>1</b>	0.0833	0.0278	0.0000254	0.00001578
304.8	30.48	0.3048	12	<b>1</b>	0.3333	0.000305	0.0001893
914.4	9644	0.9144	36	3	<b>1</b>	0.000914	0.0005682
1 000 000	100 000	1000	39 370	3280.8	1093.6	<b>1</b>	0.6214
1 609 350	160 935	1609.35	63 360	5280	1760	1.6094	<b>1</b>

AREA					
mm <sup>2</sup>	cm <sup>2</sup>	m <sup>2</sup>	in <sup>2</sup>	ft <sup>2</sup>	yard <sup>2</sup>
<b>1</b>	0.01	0.000 001	00.001 55	0.00001076	0.000001196
100	<b>1</b>	0.0001	0.155	0.001076	0.0001196
1 000 000	10 000	<b>1</b>	1549.91	10.7639	1.196
645.16	6.4516	0.000 645	<b>1</b>	0.006944	0.0007716
92 903	929.03	0.0929	144	<b>1</b>	0.1111
836 127	8361.27	0.8361	1296	9	<b>1</b>

AREA			
km <sup>2</sup>	mile <sup>2</sup>	acre	hectare
<b>1</b>	0.3861	247.105	100
2.5899	<b>1</b>	640	259
0.004047	0.001562	<b>1</b>	0.4047
0.01	0.003861	2.471	<b>1</b>

VELOCITY					
m/s	m/min	ft/s	ft/min	km/hr	mile/hr
<b>1</b>	60	3.2808	196.85	3.6	2.2369
0.1667	<b>1</b>	0.054 68	3.2808	0.06	0.037 28
0.3048	18.288	<b>1</b>	60	1.0973	0.6818
0.005 08	0.3048	0.016 67	<b>1</b>	0.018 29	0.011 36
0.2778	16.6667	0.9113	54.6807	<b>1</b>	0.6214
0.4470	26.8224	1.4667	88	1.6093	<b>1</b>

TRANSPORT FACTORS		
mile/gall to km/100L	$\frac{282.480\ 94}{\text{mile/gall}}$	= km/100L
km/100L to mile/gall	$\frac{282.480\ 94}{\text{km/100L}}$	= mile/gall
mile/gall x 0.354 006 19 = km/L		
km/L x 2.824 809 4 = mile/gall		
gall/mile x 2.824 809 4 = L/km		
L/km x 0.354 006 19 = gall/mile		

**CONVERSION FACTORS (cont'd)**

VOLUME					
mm <sup>3</sup>	cm <sup>3</sup>	m <sup>3</sup>	in <sup>3</sup>	ft <sup>3</sup>	yard <sup>3</sup>
<b>1</b>	0.001	0.000 00001	0.00006102	0.00000003531	0.00000001308
1000	<b>1</b>	0.000 01	0.061 02	0.00003531	0.000001308
1 000 000 000	1 000 000	<b>1</b>	61 023.74	35.3147	1.308
16 387.06	16.3871	0.00001639	<b>1</b>	0.0005787	0.00002143
28 316 846.6	28 316.85	0.028 32	1728	<b>1</b>	0.037 04
764 554 858	764 554.9	0.7646	46 656	27	<b>1</b>

VOLUME – FLOW RATE										
L/s	L/min	L/hr	m <sup>3</sup> /s	m <sup>3</sup> /min	m <sup>3</sup> /hr	ft <sup>3</sup> /s	ft <sup>3</sup> /min	ft <sup>3</sup> /h	Gall./min. Imp	Gall./min. US
<b>1</b>	60	3600	0.001	0.06	3.6	0.03 531	2.1189	127.133	13.1982	15.8502
0.016 67	<b>1</b>	60	0.00001667	0.001	0.06	0.0005886	0.03 531	2.1189	0.2200	0.2642
0.0002778	0.016 67	<b>1</b>	0.000002778	0.00001677	0.001	0.000009809	0.0005885	0.03 531	0.23666	0.24403
1000	60 000	3 600 000	<b>1</b>	60	3600	35.3147	2118.88	127.132.9	13 198.2	15 850.2
16.6667	1000	60 000	0.01 667	<b>1</b>	60	0.5886	35.3147	2118.88	219.969	264.170
0.2778	16.6667	1000	0.0002778	0.016 67	<b>1</b>	0.009810	0.5886	35.3147	2.6662	4.4028
28.3168	1699.01	101 940.6	0.028 32	1.6990	101.941	<b>1</b>	60	3600	373.730	448.827
0.4719	28.3168	1699.01	0.0004719	0.028 32	1.6990	0.016 67	<b>1</b>	60	6.2288	7.4805
0.007866	0.4719	28.3168	0.00007865	0.0004719	0.028 31	0.0002778	0.016 67	<b>1</b>	0.1038	0.1247
0.075 77	4.5461	272.765	0.00007556	0.004533	0.2720	0.002676	0.1605	9.6326	<b>1</b>	1.2009
0.063 27	3.7960	227.762	0.00006309	0.003786	0.2271	0.002228	0.1337	8.0208	0.8327	<b>1</b>

VOLUME – CAPACITY									
L	m <sup>3</sup>	ml	ft <sup>3</sup>	fl. oz Imp.	fl. oz US	Pint Imp.	Pint US	Gall Imp.	Gall US
<b>1</b>	0.0001	1000	0.035 31	35.1951	33.814	1.7598	2.1134	0.22	0.2642
1000	<b>1</b>	1 000 000	35.3147	35 195.1	33 814	1759.75	2113.38	219.97	264.17
0.001	0.000 001	<b>1</b>	0.00003531	0.0352	0.033 81	0.00176	0.002113	0.00022	0.0002642
28.3168	0.028 32	28 316.85	<b>1</b>	996.633	957.525	49.8317	59.8448	6.229	7.4807
0.028 41	0.00002841	28.4131	0.001003	<b>1</b>	0.9608	0.05	0.060 05	0.00625	0.007506
0.029 57	0.00002957	29.5735	0.001044	1.040 84	<b>1</b>	0.052 04	0.0625	0.006505	0.007813
0.5683	0.0005683	568.261	0.020 07	20	19.2152	<b>1</b>	1.201	0.125	0.1501
0.4732	0.0004732	473.176	0.016 71	16.6534	16	0.8327	<b>1</b>	0.1041	0.125
4.5461	0.004546	4546.1	0.1605	160	153.721	8	9.6075	<b>1</b>	1.201
3.7854	0.003785	3785.4	0.1337	133.228	128	6.6614	8	0.8327	<b>1</b>

MASS (WEIGHT)							
g	kg	oz	lb	cwt	tonne	ton	sh. ton
<b>1</b>	0.001	0.352 74	0.0022	0.00001968	0.000001	0.0000009842	0.000001102
1000	<b>1</b>	35.273 92	2.204 62	0.019 684	0.001	0.0009842	0.001102
28.3495	0.028 35	<b>1</b>	0.0625	0.0005580	0.00002835	0.0000279	0.00003125
453.5924	0.453 59	16	<b>1</b>	0.008929	0.0004536	0.0004464	0.0005
50 802.345	50.8023	1792	112	<b>1</b>	0.0508	0.05	0.056
1 000 000	1000	35 273.92	2204.62	19.6841	<b>1</b>	0.984 21	1.102 31
1 016 050	1016.047	35.840	2240	20	1.016 05	<b>1</b>	1.12
907 186	907.1857	32 000	2000	17.8571	0.907 18	0.892 85	<b>1</b>

MISCELLANEOUS		
<b>Compressor Displacement</b>	kilogram-force is also called the kilopond (kp)	
L/s x 3.6 = m <sup>3</sup> /hr	1 Watt = 1 joule/sec = 1 newton metre/sec	
m <sup>3</sup> /hr x 0.278 = L/s	1mm Hg is also known by the name "Torr".	
	<b>Thermal Conductivity</b>	
	Btu.in/ft <sup>2</sup> hr°F x 0.1442 = W/m.K	
	W/m.K x 6.933 = Btu.in/ft <sup>2</sup> hr°F	

## CONVERSION FACTORS (cont'd)

Pressure													
Pa	kPa	MPa	mbar	bar	kg/cm <sup>2</sup>	psi	mm Water	m Water	in Water	ft Water	mm Hg	in Hg	Atmos.
<b>1</b>	0.001	0.000001	0.01	0.0001	0.0000102	0.000145	0.1022	0.0001022	0.004022	0.0003352	0.007501	0.000293	0.9869
1000	<b>1</b>	0.001	10	0.01	0.010	0.145 04	102.155	0.102 16	4.0218	0.3352	7.5006	0.2953	0.9869
1 000 000	1000	<b>1</b>	10 000	10	10.1972	145.0377	102 155.1	102.1551	4021.85	335.154	7500.63	295.3	9.869
100	0.1	0.0001	<b>1</b>	0.001	0.00102	0.0145	10.2155	0.010 22	0.4022	0.0335	0.7501	0.0295	0.9869
100 000	100	0.01	1000	<b>1</b>	1.0197	14.5038	10 215.51	10.2155	402.185	33.5154	750.063	29.53	9.869
98 006.5	98.0665	0.0981	980.665	0.9807	<b>1</b>	14.2233	10 017.99	10.018	394.409	32.8674	735.56	28.959	0.9678
6894.76	6.8948	0.006895	68.9476	0.068 95	0.070 31	<b>1</b>	704.334	0.7043	27.7297	2.3108	51.715	2.036	0.068 04
9.789	0.009789	0.000009789	0.0979	0.00009789	0.00009982	0.00142	<b>1</b>	0.001	0.0394	0.003281	0.0734	0.002891	0.9661
9789.04	9.789	0.009789	97.8904	0.097 89	0.0998	1.4198	1000	<b>1</b>	39.37	3.2808	73.4239	2.8907	0.096 61
248.642	0.2486	0.0002486	2.4864	0.002486	0.002535	0.036 06	25.4	0.0254	<b>1</b>	0.0833	1.864 97	0.0734	0.002454
2983.7	2.9837	0.009837	29.837	0.029 84	0.030 43	0.4327	304.8	0.3048	12	<b>1</b>	22.3796	0.8811	0.029 45
133.322	0.1333	0.0001333	1.3332	0.001333	0.001359	0.019 34	13.6195	0.013 62	0.5362	0.0447	<b>1</b>	0.0394	0.1316
3386.38	3.3864	0.3386	33.8638	0.33 86	0.034 53	0.4912	345.936	0.3459	13.6195	1.134 96	25.4	<b>1</b>	0.0334
101 325	101.325	0.1013	1013.25	1.013 25	1.033 25	14.6963	10 351.1	10.3511	407.524	33.9603	760	29.922	<b>1</b>

POWER – HEAT FLOW – CAPACITY									
W	kW	BTU/min	BTU/hr	Ton Refrig.	kcal/hr	kgm/s	HP	HP Metric	ft.lb/s
<b>1</b>	0.001	0.056 87	3.4121	0.0002843	0.8598	0.102	0.001341	0.00136	0.7376
1000	<b>1</b>	56.869	3412.14	0.2843	859.845	101.972	1.341	1.3596	737.563
17.5843	0.017 58	<b>1</b>	60	0.005	15.1197	1.7931	0.023 58	0.023 91	12.9695
0.2931	0.0002931	0.016 67	<b>1</b>	0.00008333	0.252	0.022 88	0.000393	0.0003985	0.2162
3516.86	3.3517	200	12 000	<b>1</b>	3023.95	358.619	4.7162	4.7816	2593.9
1.163	0.001163	0.066 14	3.9683	0.0003307	<b>1</b>	0.1186	0.00156	0.001581	0.8578
9.807	0.009807	0.5577	33.4617	0.002788	8.4322	<b>1</b>	0.013 15	0.013 33	7.233
745.7	0.7457	42.407	2544.43	0.212	641.187	76.0402	<b>1</b>	1.013 87	550
735.5	0.7355	41.827	2509.63	0.2091	632.416	75	0.9863	<b>1</b>	542.477
1.3558	0.001356	0.0771	4.6262	0.0003855	1.1658	0.1383	0.001818	0.001843	<b>1</b>

ENERGY – WORK – HEAT									
J	kJ	MJ	m.kgf.	kcal	BTU	therm	kWhr	HP hr	ft.lb
<b>1</b>	0.001	0.000 005	0.102	0.0002388	0.0009478	0.9478	0.2778	0.3724	0.7375
1000	<b>1</b>	0.001	101.968	0.2388	0.9478	0.00009478	0.0002778	0.0003724	737.463
1 000 000	1000	<b>1</b>	101 967.9	238.846	947.817	0.009478	0.2778	0.3724	737 463.1
9.807	0.009807	0.000009807	<b>1</b>	0.002342	0.009295	0.9295	0.2724	0.3652	7.2323
4186.8	4.1868	0.004187	426.919	<b>1</b>	3.9683	0.00003968	0.001163	0.001559	3087.61
1055.06	1.0551	0.001055	107.582	0.252	<b>1</b>	0.00001	0.0002931	0.0003929	778.064
105 505 585	105 505.6	105.506	10 758 192	25 199.6	100 000	<b>1</b>	29.3071	39.2944	77 806 480
3 600 000	3600	3.6	367 084.7	859.845	3412.14	0.034 12	<b>1</b>	0.3408	2 654 867
2.685 000	2685	2.685	273 784	641.301	2544.89	0.025 45	0.7458	<b>1</b>	1 980 088
1.3558	0.001356	0.000001356	0.1383	0.0003239	0.001285	0.1285	0.3766	0.505	<b>1</b>

SPECIFIC ENTHALPY (AND SPECIFIC ENERGY)						
J/kg	kJ/kg	kcal/kg	BTU/lb	kgf.m/kg	ft.lb/lb	kWh/kg
<b>1</b>	0.001	0.0002388	0.0004299	0.102	0.3346	0.000002777
1000	<b>1</b>	0.2388	0.4299	101.972	334.553	0.0002777
4186.8	4.1868	<b>1</b>	1.8	426.935	1400.71	0.001163
2326	2.326	0.5556	<b>1</b>	237.186	778.17	0.0006459
9.8067	0.009807	0.002342	0.004216	<b>1</b>	3.2808	0.00002723
2.9891	0.002989	0.0007139	0.001285	0.3048	<b>1</b>	0.00000083
3 600 000	3600	859.845	1547.72	367 098.4	1 204 391	<b>1</b>

**CONVERSION FACTORS (cont'd)**

“SI” - denotes the INTERNATIONAL SYSTEM of Metric Units adopted in Australia

THIS TABLE MAY BE USED IN TWO WAYS:

MULTIPLY COLUMN “A” BY COLUMN “B” TO OBTAIN COLUMN “C”  
ALTERNATIVELY  
DIVIDE COLUMN “C” BY COLUMN “B” TO OBTAIN COLUMN “A”

REMARKS	A MULTIPLY	B BY	C TO OBTAIN	REMARKS	A MULTIPLY	B BY	C TO OBTAIN
<b>AREA: Symbol m<sup>2</sup></b> The SI unit of AREA is the SQUARE METRE	square inches square feet square yards acre hectare (ha)	645.16 0.929 0.836 4047 10,000	mm <sup>2</sup> m <sup>2</sup> m <sup>2</sup> m <sup>2</sup> m <sup>2</sup>	<b>VELOCITY: Symbol m/s</b> The SI unit of VELOCITY is the METRE PER SECOND	ft. per second (ft/s) ft. per minute (ft/min) miles per hour miles per hour	0.3048 0.00508 0.4470 1.609	m/s m/s m/s km/h
<b>LENGTH: Symbol m</b> The SI unit of LENGTH is the METRE	inches feet yards mile mile	25.4 0.3048 0.9144 1609 1.609	millimetres (mm) metres (m) metres (m) metres (m) kilometres (km)	<b>POWER: Symbol W</b> The SI unit of POWER is the WATT	Btu per hour (Btu/hr) horsepower (hp) ton of refrigeration	0.2931 0.7457 3.517	W kW kW
<b>MASS: Symbol kg</b> The SI unit of MASS is the KILOGRAM	ounce pound ton (2240 lb) short ton (2000 lb) ton (2240 lb)	28.35 0.436 1016.05 907.2 1.016	grams (g) kilograms (kg) kg kg tonne (t)	<b>ENERGY: Symbol J</b> The SI unit of ENERGY is the JOULE 1 J = 1 N.m  A joule is the energy expended or the work done when a force of one newton moves the point of application a distance of one metre in the direction of that force.	1. ELECTRICAL ENERGY kilowatt hour (kW.h)	3.6	MJ
	pounds per foot (lb/ft)	1.488	kg/m		2. HEAT ENERGY British thermal unit (Btu) Btu/ft <sup>3</sup>		
<b>VOLUME: CAPACITY: Symbol m<sup>3</sup></b> The SI unit of VOLUME is the CUBIC METRE	<b>DRY:</b> cubic inch (in <sup>3</sup> ) cubic foot (ft <sup>3</sup> ) cubic yard (yd <sup>3</sup> ) litre (L) litre (L) gallons (Imp)	16.387 0.02832 0.7646 1,000,000 0.001 0.004546	mm <sup>3</sup> m <sup>3</sup> m <sup>3</sup> mm <sup>3</sup> m <sup>3</sup> m <sup>3</sup>	<b>FORCE: Symbol N (NEWTON)</b> The SI unit of FORCE (kg.m/s <sup>2</sup> ) has been given the special name - NEWTON.  The newton is the force which when applied to a body having a mass of one kilogram, causes an acceleration of one metre per second per second in the direction of application of the force.	3. MECHANICAL ENERGY foot poundal (ft.pdl) inch pound-force (in.lbf) foot pound-force (ft.lbf) foot ton force (ft.tonf) metre kilogram force (m.kgf)	0.4214 0.1130 1.356 3.037 9.807	J J J kJ J
	<b>IMPERIAL LIQUID</b> fluid ounce pint (20 fl.oz) quart (2 pints) gallon (Imp) gallon (US) litre (water 4°C) Imp. gallons (water 20°C)	28.41 568.3 1.137 4.546 3.785 1.000 4.536	millilitre (ml) millilitre (ml) litre (L) litre (L) litre (L) kilogram (kg) kilograms (kg)		Poundal (pdl) Pound-force (lbf) ton-force (tonf) *kilogram-force (kgf)	0.1383 4.448 9.964 9.807	N N kN N
<b>VOLUME: RATE OF FLOW. Symbol m<sup>3</sup>/s</b> The SI unit of VOLUME RATE OF FLOW is the CUBIC METRE PER SECOND	Imp. gal. per min (gal/min) Imp. gal. per min Imp. gal. per min	0.000758 0.272765 0.758	m <sup>3</sup> /s m <sup>3</sup> /hr. litre per second (L/s)	<b>FORCE PER UNIT LENGTH:</b> The SI unit is NEWTON/PER METRE Symbol N/m	pounds-force per inch (lbf/in) pounds-force per foot (lbf/ft) ton-force per foot (ton/ft)	175.1 14.59 32.69	N/m N/m kN/m
	cubic ft. per min cubic ft. per min	0.000472 0.472	m <sup>3</sup> /s litre per second (L/s) 1m <sup>3</sup> = 1kL		<b>TORQUE: Symbol N.m (Moment of force)</b> The SI unit of TORQUE is the NEWTON METRE.  The NEWTON METRE is the work done when a force of one newton moves the point of application a distance of one metre in the direction of that force. 1 N.m = 1 J	Poundal-foot (pdl.ft) pound-force inch (lbf.inch) pound-force inch (lbf.inch) pound-force feet (lbf.ft.) pound-force feet (lbf.ft.) ton-force feet (tonf.ft) kilogram-force (kgf.m) kilogram-force (kgf.cm)	0.04214 0.113 1.152 1.356 13.83 3.037 9.807 0.09807
<b>PRESSURE: Symbol Pa</b> The SI unit of PRESSURE or stress is the NEWTON PER SQUARE METRE which has been given the name PASCAL. 1 N/m <sup>2</sup> = 1 Pa = 0.000145 lbf/in <sup>2</sup>  A pascal is the pressure or stress which arises when a force of one newton is applied uniformly over an area of one square metre.	lbf/in <sup>2</sup> kip/in <sup>2</sup> (1000 psi)	6.895 6.895	kPa MPa	<b>DENSITY: Symbol kg/m<sup>3</sup></b> The SI unit of DENSITY is the KILOGRAM PER CUBIC METRE	Vertical column (head) of water. (H <sub>2</sub> O at 20°C) metres of water feet of water	9.79 2.984	kPa kPa
	lbf/ft <sup>2</sup> kgf/cm <sup>2</sup> bar	47.88 98.07 100	Pa kPa kPa		torr (vacuum) 1mm Hg. (mercury) 1mm Hg. (mercury) atmosphere (atm) microns	0.133 0.133 3.386 101.325 0.133	kPa kPa kPa kPa Pa

## TEMPERATURE - CONVERSION TABLES

### DEGREES FAHRENHEIT TO DEGREES CELSIUS AND VICE VERSA

-459.4 to -68			-67 to -1			0 to 69			70 to 139			140 to 209			210 to 279		
°C	↔	°F	°C	↔	°F	°C	↔	°F	°C	↔	°F	°C	↔	°F	°C	↔	°F
-273	-459.4	-	-55.0	-67	-88.6	-17.8	0	32.0	21.1	70	158.0	60.0	140	284.0	98.9	210	410.0
-268	-450	-	-54.4	-66	-86.8	-17.2	1	33.8	21.7	71	159.8	60.6	141	285.8	99.1	211	411.8
-262	-440	-	-53.9	-65	-85.0	-16.7	2	35.6	22.2	72	161.6	61.1	142	287.6	100.0	212	413.6
-257	-430	-	-53.3	-64	-83.2	-16.1	3	37.4	22.8	73	163.4	61.7	143	289.4	100.6	213	415.4
-251	-420	-	-52.8	-63	-81.4	-15.6	4	39.2	23.3	74	165.2	62.2	144	291.2	101.1	214	417.2
-246	-410	-	-52.2	-62	-79.6	-15.0	5	41.0	23.9	75	167.0	62.8	145	293.0	101.7	215	419.0
-240	-400	-	-51.7	-61	-77.8	-14.4	6	42.8	24.4	76	168.8	63.3	146	294.8	102.2	216	420.8
-234	-390	-	-51.1	-60	-76.0	-13.9	7	44.6	25.0	77	170.6	63.9	147	296.6	102.8	217	422.6
-229	-380	-	-50.6	-59	-74.2	-13.3	8	46.4	25.6	78	172.4	64.4	148	298.4	103.3	218	424.4
-223	-370	-	-50.0	-58	-72.4	-12.8	9	48.2	26.1	79	174.2	65.0	149	300.2	103.9	219	426.2
-218	-360	-	-49.4	-57	-70.6	-12.2	10	50.0	26.7	80	176.0	65.6	150	302.0	104.4	220	428.0
-212	-350	-	-48.9	-56	-68.8	-11.7	11	51.8	27.2	81	177.8	66.1	151	303.8	105.0	221	429.8
-207	-340	-	-48.3	-55	-67.0	-11.1	12	53.6	27.8	82	179.6	66.7	152	305.6	105.6	222	431.6
-201	-330	-	-47.8	-54	-65.2	-10.6	13	55.4	28.3	83	181.4	67.2	153	307.4	106.1	223	433.4
-196	-320	-	-47.2	-53	-63.4	-10.0	14	57.2	28.9	84	183.2	67.8	154	309.2	106.7	224	435.2
-190	-310	-	-46.7	-52	-61.6	-9.4	15	59.0	29.4	85	185.0	68.3	155	311.0	107.2	225	437.0
-184	-300	-	-46.1	-51	-59.8	-8.9	16	60.8	30.0	86	186.8	68.9	156	312.8	107.8	226	438.8
-179	-290	-	-45.6	-50	-58.0	-8.3	17	62.6	30.6	87	188.6	69.4	157	314.6	108.3	227	440.6
-173	-280	-	-45.0	-49	-56.2	-7.8	18	64.4	31.1	88	190.4	70.0	158	316.4	108.9	228	442.4
-169	-273	-459.4	-44.4	-48	-54.4	-7.2	19	66.2	31.7	89	192.2	70.6	159	318.2	109.4	229	444.2
-168	-270	-454	-43.9	-47	-52.6	-6.7	20	68.0	32.2	90	194.0	71.1	160	320.0	110.0	230	446.0
-162	-260	-436	-43.3	-46	-50.8	-6.1	21	69.8	32.8	91	195.8	71.7	161	321.8	110.6	231	447.8
-157	-250	-418	-42.8	-45	-49.0	-5.6	22	71.6	33.3	92	197.6	72.2	162	323.6	111.1	232	449.6
-151	-240	-400	-42.2	-44	-47.2	-5.0	23	73.4	33.9	93	199.4	72.8	163	325.4	111.7	233	451.4
-146	-230	-382	-41.7	-43	-45.4	-4.4	24	75.2	34.4	94	201.2	73.3	164	327.2	112.2	234	453.2
-140	-220	-364	-41.1	-42	-43.6	-3.9	25	77.0	35.0	95	203.0	73.9	165	329.0	112.8	235	445.0
-134	-210	-346	-40.6	-41	-41.8	-3.3	26	78.8	35.6	96	204.8	74.4	166	330.8	113.3	236	456.8
-129	-200	-328	-40.0	-40	-40.0	-2.8	27	80.6	36.1	97	206.6	75.0	167	332.6	113.9	237	458.6
-123	-190	-310	-39.4	-39	-38.2	-2.2	28	82.4	36.7	98	208.4	75.6	168	334.4	114.4	238	460.4
-118	-180	-292	-38.9	-38	-36.4	-1.7	29	84.2	37.2	99	210.2	76.1	169	336.2	115.0	239	462.2
-112	-170	-274	-38.3	-37	-34.6	-1.1	30	86.0	37.8	100	212.0	76.7	170	338.0	115.6	240	464.0
-107	-160	-256	-37.8	-36	-32.8	-0.6	31	87.8	38.3	101	213.8	77.2	171	339.8	116.1	241	465.8
-101	-150	-238	-37.2	-35	-31.0	0.0	32	89.6	38.9	102	215.6	77.8	172	341.6	116.7	242	467.6
-96	-140	-220	-36.7	-34	-29.2	0.6	33	91.4	39.4	103	217.4	78.3	173	343.4	117.2	243	469.4
-90	-130	-202	-36.1	-33	-27.4	1.1	34	93.2	40.0	104	219.2	78.9	174	345.2	117.8	244	471.2
-84	-120	-184	-35.6	-32	-25.6	1.7	35	95.0	40.6	105	221.0	79.4	175	347.0	118.3	245	473.0
-79	-110	-166	-35.0	-31	-23.8	2.2	36	96.8	41.1	106	222.8	80.0	176	348.8	118.9	246	474.8
-73.3	-100	-148	-34.4	-30	-22.0	2.8	37	98.6	41.7	107	224.6	80.6	177	350.6	119.4	247	476.6
-72.8	-99	-146.2	-33.9	-29	-20.2	3.3	38	100.4	42.2	108	226.4	81.1	178	352.4	120.0	248	478.4
-72.2	-98	-144.4	-33.3	-28	-18.4	3.9	39	102.2	42.8	109	228.2	81.7	179	354.2	120.6	249	480.2
-71.7	-97	-142.6	-32.8	-27	-16.6	4.4	40	104.0	43.3	110	230.0	82.2	180	356.0	121.1	250	482.0
-71.1	-96	-140.8	-32.2	-26	-14.8	5.0	41	105.8	43.9	111	231.8	82.9	181	357.8	121.7	251	483.8
-70.6	-95	-139.0	-31.7	-25	-13.0	5.6	42	107.6	44.4	112	233.6	83.3	182	359.6	122.2	252	485.6
-70	-94	-137.2	-31.1	-24	-11.2	6.1	43	109.4	45.0	113	235.4	83.9	183	361.4	122.8	253	487.4
-69.4	-93	-135.4	-30.6	-23	-9.4	6.7	44	111.2	45.6	114	237.2	84.4	184	363.2	123.3	254	489.2
-68.9	-92	-133.6	-30.0	-22	-7.6	7.2	45	113.0	46.1	115	239.0	85.0	185	365.0	123.9	255	491.0
-68.3	-91	-131.8	-29.4	-21	-5.8	7.8	46	114.8	46.7	116	240.8	85.6	186	366.8	124.4	256	492.8
-67.8	-90	-130.0	-28.9	-20	-4.0	8.3	47	116.6	47.2	117	242.6	86.1	187	368.6	125.0	257	494.6
-67.2	-89	-128.2	-28.3	-19	-2.2	8.9	48	118.4	47.8	118	244.4	86.7	188	370.4	125.6	258	496.4
-66.7	-88	-126.4	-27.8	-18	-0.4	9.4	49	120.2	48.3	119	246.2	87.2	189	372.2	126.1	259	498.2
-66.1	-87	-124.6	-27.2	-17	10.4	10.0	50	122.0	48.9	120	248.0	87.8	190	374.0	126.7	260	500.0
-65.6	-86	-122.8	-26.7	-16	3.2	10.6	51	123.8	49.4	121	249.8	88.3	191	375.8	127.2	261	501.8
-65	-85	-121.0	-26.1	-15	5.0	11.1	52	125.6	50.0	122	251.6	88.9	192	377.6	127.8	262	503.6
-64.4	-84	-119.2	-25.6	-14	6.8	11.7	53	127.4	50.6	123	253.4	89.4	193	379.4	128.3	263	505.4
-63.9	-83	-117.4	-25.0	-13	8.6	12.2	54	129.2	51.1	124	255.2	90.0	194	381.2	128.9	264	507.2
-63.3	-82	-115.6	-24.4	-12	10.4	12.8	55	131.0	51.7	125	257.0	90.6	195	383.0	129.4	265	509.0
-62.8	-81	-113.8	-23.9	-11	12.2	13.3	56	132.8	52.2	126	258.8	91.1	196	384.8	130.0	266	510.8
-62.2	-80	-112.0	-23.3	-10	14.0	13.9	57	134.6	52.8	127	260.6	91.7	197	386.6	130.6	267	512.6
-61.7	-79	-110.2	-22.8	-9	15.8	14.4	58	136.4	53.3	128	262.4	92.2	198	388.4	131.1	268	514.4
-61.1	-78	-108.4	-22.2	-8	17.6	15.0	59	138.2	53.9	129	264.2	92.8	199	390.2	131.7	269	516.2
-60.6	-77	-106.6	-21.7	-7	19.4	15.6	60	140.0	54.5	130	266.0	93.3	200	392.0	132.2	270	518.0
-60	-76	-104.8	-21.1	-6	21.2	16.1	61	141.8	55.0	131	267.8	93.9	201	393.8	132.8	271	519.8
-59.4	-75	-103.0	-20.6	-5	23.0	16.7	62	143.6	55.6	132	269.6	94.4	202	395.6	133.3	272	521.6
-58.9	-74	-101.2	-20.0	-4	24.8	17.2	63	145.4	56.1	133	271.4	95.0	203	397.4	133.9	273	523.4
-58.3	-73	-99.4	-19.4	-3	26.6	17.8	64	147.2	56.7	134	273.2	95.6	204	399.2	134.4	274	525.2
-57.8	-72	-97.6	-18.9	-2	28.4	18.3	65	149.0	57.2	135	275.0	96.1	205	401.0	135.0	275	527.0
-57.2	-71	-95.8	-18.3	-1	30.2	18.9	66	150.8	57.8	136	276.8	96.7	206	402.8	135.6	276	528.8
-56.7	-70	-94.0	-17.8	0	32.0	19.4	67	152.6	58.3	137	278.6	97.2	207	404.6	136.1	277	530.6
-56.1	-69	-92.2	-17.3	1	33.8	20.0	68	154.4	58.9	138	280.4	97.8	208	406.4	136.7	278	532.4
-55.6	-68	-90.4	-16.8	2	35.6	20.6	69	156.2	59.4	139	282.2	98.3	209	408.2	137.2	279	534.2

TO USE: Locate central value to be converted. Read left column for equivalent temperature in °C.  
 Read right column for equivalent temperature in °F. Basis: °C = (°F - 32) x 5/9 °F = (°C x 9/5) + 32

**PRESSURE - VACUUM CONVERSION TABLES**

VACUUM "Hg : -bar : -kPa						PRESSURE psi : bar : kPa								
"Hg to -bar to -kPa			-bar to "Hg to -kPa			psi to bar & kPa			bar to psi & kPa			kPa to bar & psi		
"Hg	-bar	-kPa	-bar	"Hg	-kPa	psi	bar	kPa	bar	psi	kPa	kPa	bar	psi
0.0	0.000	0.00	0.000	0.000	0.0	0.0	0.00	0.00	0.0	0.0	0	0	0.00	0.00
1.0	-0.034	-3.39	-0.01	0.295	-1.0	1.0	0.07	6.89	0.1	1.5	10	1	0.01	0.15
1.5	-0.051	-5.08	-0.02	0.591	-2.0	1.5	0.10	10.34	0.2	2.9	20	2	0.02	0.29
2.0	-0.068	-6.77	-0.03	0.886	-3.0	2.0	0.14	13.79	0.3	4.4	30	3	0.03	0.44
2.5	-0.085	-8.47	-0.04	1.18	-4.0	2.5	0.17	17.24	0.4	5.8	40	4	0.04	0.58
3.0	-0.102	-10.16	-0.05	1.48	-5.0	3.0	0.21	20.68	0.5	7.3	50	5	0.05	0.73
3.5	-0.119	-11.85	-0.06	1.77	-6.0	3.5	0.24	24.13	0.6	8.7	60	6	0.06	0.87
4.0	-0.135	-13.55	-0.07	2.07	-7.0	4.0	0.28	27.58	0.7	10.2	70	7	0.07	1.02
4.5	-0.152	-15.24	-0.08	2.36	-8.0	4.5	0.31	31.03	0.8	11.6	80	8	0.08	1.16
5.0	-0.169	-16.93	-0.09	2.66	-9.0	5.0	0.35	34.47	0.9	13.1	90	9	0.09	1.31
5.5	-0.186	-18.63	-0.10	2.95	-10.0	5.5	0.38	37.92	1.0	14.5	100	10	0.10	1.45
6.0	-0.203	-20.32	-0.12	3.54	-12.0	6.0	0.41	41.37	1.1	16.0	110	15	0.15	2.18
6.5	-0.220	-22.01	-0.14	4.13	-14.0	6.5	0.45	44.82	1.2	17.4	120	20	0.20	2.90
7.0	-0.237	-23.70	-0.16	4.72	-16.0	7.0	0.48	48.26	1.3	18.9	130	25	0.25	3.63
7.5	-0.254	-25.40	-0.18	5.32	-18.0	7.5	0.52	51.71	1.4	20.3	140	30	0.30	4.35
8.0	-0.271	-27.09	-0.20	5.91	-20.0	8.0	0.55	55.16	1.5	21.8	150	35	0.35	5.08
8.5	-0.288	-28.78	-0.22	6.50	-22.0	8.5	0.59	58.61	1.6	23.2	160	40	0.40	5.80
9.0	-0.305	-30.48	-0.24	7.09	-24.0	9.0	0.62	62.05	1.7	24.7	170	45	0.45	6.53
9.5	-0.322	-32.17	-0.26	7.68	-26.0	9.5	0.66	65.50	1.8	26.1	180	50	0.50	7.25
10.0	-0.339	-33.86	-0.28	8.27	-28.0	10.0	0.69	68.95	1.9	27.6	190	55	0.55	7.98
10.5	-0.356	-35.56	-0.30	8.86	-30.0	14.5	1.00	100.0	2.0	29.0	200	60	0.60	8.70
11.0	-0.373	-37.25	-0.32	9.45	-32.0	15.0	1.03	103.4	2.1	30.5	210	65	0.65	9.43
11.5	-0.389	-38.94	-0.34	10.04	-34.0	20.0	1.38	137.9	2.2	31.9	220	70	0.70	10.15
12.0	-0.406	-40.64	-0.36	10.63	-36.0	25.0	1.72	172.4	2.3	33.4	230	75	0.75	10.88
12.5	-0.423	-42.33	-0.38	11.22	-38.0	30.0	2.07	206.8	2.4	34.8	240	80	0.80	11.60
13.0	-0.440	-44.02	-0.400	11.81	-40.0	35.0	2.41	241.3	2.5	36.3	250	85	0.85	12.33
13.5	-0.457	-45.72	-0.425	12.55	-42.5	40.0	2.76	275.8	2.6	37.7	260	90	0.90	13.05
14.0	-0.474	-47.41	-0.450	13.29	-45.0	45.0	3.10	310.3	2.7	39.2	270	95	0.95	13.78
14.5	-0.491	-49.10	-0.475	14.03	-47.5	50.0	3.45	344.7	2.8	40.6	280	100	1.00	14.50
15.0	-0.508	-50.80	-0.500	14.77	-50.0	55.0	3.79	379.2	2.9	42.1	290	125	1.25	18.13
15.5	-0.525	-52.49	-0.525	15.50	-52.5	60.0	4.14	413.7	3.0	43.5	300	150	1.50	21.76
16.0	-0.542	-54.18	-0.550	16.24	-55.0	65.0	4.48	448.2	3.5	50.8	350	175	1.75	25.38
16.5	-0.559	-55.88	-0.575	16.98	-57.5	70.0	4.83	482.6	4.0	58.0	400	200	2.00	29.00
17.0	-0.576	-57.57	-0.600	17.72	-60.0	75.0	5.17	517.1	4.5	65.3	450	225	2.25	32.63
17.5	-0.593	-59.26	-0.625	18.46	-62.5	80.0	5.52	551.6	5.0	72.5	500	250	2.50	36.26
18.0	-0.610	-60.95	-0.650	19.19	-65.0	85.0	5.86	586.1	5.5	79.8	550	275	2.75	39.89
18.5	-0.626	-62.65	-0.675	19.93	-67.5	90.0	6.21	620.5	6.0	87.0	600	300	3.0	43.51
19.0	-0.643	-64.34	-0.700	20.67	-70.0	95.0	6.55	655.0	7.0	101.5	700	350	3.5	50.76
19.5	-0.660	-66.03	-0.725	21.41	-72.5	100.0	6.89	689.5	8.0	116.0	800	400	4.0	58.02
20.0	-0.677	-67.73	-0.750	22.15	-75.0	110.0	7.58	758.4	9.0	130.5	900	450	4.5	65.27
20.5	-0.694	-69.42	-0.775	22.89	-77.5	120.0	8.27	827.4	10.0	145.0	1000	500	5.0	72.52
21.0	-0.711	-71.11	-0.800	23.62	-80.0	130.0	8.96	896.3	11.0	159.5	1100	550	5.5	79.77
21.5	-0.728	-72.81	-0.825	24.36	-82.5	140.0	9.65	965.3	12.0	174.0	1200	600	6.0	87.02
22.0	-0.745	-74.50	-0.850	25.10	-85.0	150.0	10.34	1034.2	13.0	188.5	1300	650	6.5	94.27
22.5	-0.762	-76.19	-0.875	25.84	-87.5	160.0	11.03	1103.2	14.0	203.1	1400	700	7.0	101.5
23.0	-0.779	-77.89	-0.900	26.58	-90.0	170.0	11.72	1172.1	15.0	217.6	1500	750	7.5	108.8
23.5	-0.796	-79.58	-0.925	27.32	-92.5	180.0	12.41	1241.1	16.0	232.1	1600	800	8.0	116.0
24.0	-0.813	-81.27	-0.950	28.05	-95.0	190.0	13.10	1310.0	17.0	246.6	1700	850	8.5	123.3
24.5	-0.83	-82.97	-0.975	28.79	-97.5	200.0	13.79	1379.0	18.0	261.1	1800	900	9.0	130.5
25.0	-0.947	-84.66	-1.000	29.53	-100.0	225.0	15.51	1551.3	19.0	275.6	1900	950	9.5	137.8
25.5	-0.864	-86.35				250.0	17.24	1723.7	20.0	290.1	2000	1000	10.0	145.0
26.0	-0.880	-88.05				275.0	18.96	1896.1	21.0	304.6	2100	1250	12.5	181.3
26.5	-0.897	-89.74				300.0	20.68	2068.4	22.0	319.1	2200	1500	15.0	217.6
27.0	-0.914	-91.43				325.0	22.41	2240.8	23.0	333.6	2300	1750	17.5	253.8
27.5	-0.931	-93.13				350.0	24.13	2413.2	24.0	348.1	2400	2000	20.0	290.1
28.0	-0.948	-94.82				375.0	25.85	2585.5	25.0	362.6	2500	2250	22.5	326.3
28.5	-0.965	-96.51				400.0	27.58	2757.9	26.0	377.1	2600	2500	25.0	362.6
29.0	-0.982	-98.21				425.0	29.30	2930.3	27.0	391.6	2700	2750	27.5	398.8
29.5	-0.999	-99.90				450.0	31.03	3102.6	28.0	406.1	2800	3000	30.0	435.1
29.53	-1.000	-100.00				475.0	32.75	3275.0	29.0	420.6	2900	3250	32.5	471.4
						500.0	34.47	3447.4	30.0	435.1	3000	3500	35.0	507.6

Vacuum Conversions based on the following Formulae	
1" Hg = 3,386,383,7 kPa	
1" Hg = 0,33,863,837 bar	
1 bar = 100 kPa	
1 bar = 29,530,026,38" Hg	
1 kPa = .01 bar	
1 kPa = 0.295,300,263,8 " Hg	

1 psi = .06895	1 bar = 14.5038 psi	1 kPa = .14504 psi
1 psi = 6.8948kPa	1 bar = 100kPa	1 kPa = .01 bar

## HEAT FLOW CAPACITY TABLES

### WATTS : BTU/HR : TONS (REFRIG.) : KCAL/HR

Watts to: BTU/hr, Tons, kcal/hr				BTU/hr to: Watts, Tons, kcal/hr				Tons to: Watts, BTU/hr, kcal/hr				kcal/hr to: Watts, BTU/hr, Tons			
Watts	BTU/hr	Tons	kcal/hr	BTU/hr	Watts	Tons	kcal/hr	Tons	Watts	BTU/hr	kcal/hr	kcal/hr	Watts	BTU/hr	Tons
300	1024	0.085	258	1000	293	0.083	252	0.10	352	1200	302	300	349	1190	0.099
400	1365	0.114	344	2000	586	0.167	504	0.20	703	2400	605	400	465	1587	0.132
500	1706	0.142	430	3000	879	0.250	756	0.25	879	3000	756	500	582	1984	0.165
600	2047	0.171	516	4000	1172	0.333	1008	0.30	1055	3600	907	600	698	2381	0.198
700	2388	0.199	602	5000	1465	0.417	1260	0.40	1407	4800	1210	700	814	2778	0.231
800	2730	0.227	688	6000	1758	0.500	1512	0.50	1758	6000	1512	800	930	3175	0.265
900	3071	0.256	774	7000	2051	0.583	1764	0.60	2110	7200	1814	900	1047	3571	0.298
1000	3412	0.284	860	8000	2345	0.667	2016	0.70	2462	8400	2117	1000	1163	3968	0.331
1500	5118	0.427	1290	9000	2638	0.750	2268	0.75	2638	9000	2268	1500	1745	5952	0.496
2000	6824	0.569	1720	10000	2931	0.833	2520	0.80	2813	9600	2417	2000	2326	7937	0.661
2500	8530	0.711	2150	11000	3224	0.917	2772	0.90	3165	10800	2722	2500	2908	9921	0.830
3000	10236	0.853	2580	12000	3517	1.00	3024	1.00	3517	12000	3024	3000	3489	11905	0.992
3500	11942	0.995	3009	13000	3810	1.08	3276	1.25	4396	15000	3780	3500	4071	13889	1.16
4000	13649	1.14	3439	14000	4103	1.17	3528	1.50	5275	18000	4536	4000	4652	15873	1.32
4500	15355	1.28	3869	15000	4396	1.25	3780	1.75	6154	21000	5292	4500	5234	17857	1.49
5000	17061	1.42	4299	16000	4689	1.33	4032	2.0	7034	24000	6048	5000	5815	19842	1.65
5500	18767	1.56	4729	17000	4982	1.42	4284	2.5	8792	30000	7560	5500	6397	21826	1.82
6000	20473	1.71	5159	18000	5275	1.50	4536	3	10551	36000	9072	6000	6978	23810	1.98
6500	22179	1.85	5589	19000	5568	1.58	4788	4	14067	48000	12096	6500	7560	25794	2.15
7000	23885	1.99	6019	20000	5861	1.67	5040	5	17584	60000	15120	7000	8141	27778	2.31
7500	25591	2.13	6449	30000	8792	2.50	7560	6	21101	72000	18144	7500	8723	29762	2.48
8000	27297	2.27	6879	40000	11723	3.33	10080	7	24618	84000	21168	8000	9304	31747	2.65
8500	29003	2.42	7309	50000	14654	4.17	12600	8	28135	96000	24192	8500	9886	33731	2.81
9000	30709	2.56	7739	60000	17584	5.00	15120	9	31652	108000	27216	9000	10467	35715	2.98
9500	32415	2.7	8169	70000	20515	5.83	17640	10	35169	120000	30239	9500	11049	37699	3.14
10000	34121	2.84	8598	80000	23446	6.67	20160	11	38685	132000	33263	10000	11630	39683	3.31
15000	51182	4.27	12898	90000	26376	7.50	22680	12	42202	144000	36287	15000	17445	59525	4.96
20000	68243	5.69	17197	100000	29307	8.33	25200	13	45719	156000	39311	20000	23260	79366	6.61
25000	85304	7.11	21496	110000	32238	9.17	27720	14	49236	168000	42335	25000	29075	99207	8.27
30000	102364	8.53	25795	120000	35169	10.0	30239	15	52752	180000	45359	30000	34890	119050	9.92
35000	119425	9.95	30095	130000	38099	10.8	32759	16	56270	192000	48383	35000	40705	138891	11.6
40000	136486	11.4	34394	140000	41030	11.7	35279	17	59786	204000	51407	40000	46520	158733	13.2
45000	153546	12.8	38693	150000	43961	12.5	37799	18	63303	216000	54431	45000	52335	178574	14.9
50000	170607	14.2	42992	160000	46891	13.3	40319	19	66820	228000	57455	50000	58150	198416	16.5
55000	187668	15.6	47291	170000	49822	14.2	42839	20	70337	240000	60479	55000	63965	218258	18.2
60000	204728	17.1	51591	180000	52753	15.0	45359	21	73854	252000	63503	60000	69780	238099	19.8
65000	221789	18.5	55890	190000	55684	15.8	47879	22	77371	264000	66527	65000	75595	257941	21.5
70000	238850	19.9	60189	200000	58614	16.7	50399	23	80888	276000	69551	70000	81410	277782	23.1
75000	255911	21.3	64488	210000	61545	17.5	52919	24	84404	288000	72575	75000	87225	297624	24.8
80000	272971	22.7	68788	220000	64476	18.3	55439	25	87921	300000	75599	80000	93040	317466	26.5
85000	290032	24.2	73087	230000	67406	19.2	57959	26	91438	312000	78623	85000	98855	337307	28.1
90000	307093	25.6	77386	240000	70337	20.0	60479	27	94955	324000	81647	90000	104670	357149	29.8
95000	324153	27	81685	250000	73268	20.8	62999	28	98472	336000	84671	95000	110485	376990	31.4
100000	341214	28.4	85985	260000	76198	21.7	65519	29	101989	348000	87695	100000	116300	396832	33.1
105000	358275	29.9	90284	270000	79129	22.5	68039	30	105506	360000	90718	105000	122115	416674	34.7
110000	375336	31.3	94583	280000	82060	23.3	70559	31	109022	372000	93742	110000	127930	436515	36.4
115000	392396	32.7	98882	290000	84991	24.2	73079	32	112539	384000	96766	115000	133745	456357	38.0
120000	409457	34.1	103181	300000	87921	25.0	75599	33	116056	396000	99790	120000	139560	476198	39.7
125000	426518	35.5	107481	325000	95248	27.1	81899	34	119573	408000	102814	125000	145375	496040	41.3
130000	443578	37	111780	350000	102575	29.2	88199	35	123090	420000	105838	130000	151190	515882	43.0
135000	460639	38.4	116079	375000	109902	31.2	94498	36	126607	432000	108862	135000	157005	535723	44.6
140000	477700	39.8	120378	400000	117228	33.3	100798	37	130124	444000	111886	140000	162820	555655	46.3
145000	494761	41.2	124678	425000	124555	35.4	107098	38	133640	456000	114910	145000	168635	575406	48.0
150000	511821	42.7	128977	450000	131882	37.5	113398	39	137157	468000	117934	150000	174450	595248	49.6
155000	528882	44.1	133276	475000	139209	39.6	119698	40	140674	480000	120958	155000	180265	615090	51.3
160000	545943	45.5	137575	500000	146536	41.7	125998	41	144191	492000	123982	160000	186080	634931	52.9
165000	563003	46.9	141874	525000	153862	43.7	132298	42	147708	504000	127006	165000	191895	654773	54.6
170000	580064	48.3	146174	550000	161189	45.8	138598	43	151225	516000	130030	170000	197710	674615	56.2
175000	597125	49.8	150473	575000	168516	47.9	144898	44	154742	528000	133054	175000	203525	694456	57.9
180000	614185	51.2	154772	600000	175843	50.0	151197	45	158258	540000	136078	180000	209340	714298	59.5
185000	631246	52.6	159071	650000	190496	54.2	163797	46	161775	552000	139102	185000	215155	734139	61.2
190000	648307	54	163371	700000	205150	58.3	176397	47	165292	564000	142126	190000	220970	753981	62.8
195000	665368	55.4	167670	750000	219803	62.5	188997	48	168809	576000	145150	195000	226785	773823	64.5
200000	682428	56.9	171969	800000	234457	66.7	201597	49	172326	588000	148174	200000	232600	793664	66.1
225000	767732	64	193465	850000	249110	70.8	214196	50	175843	600000	151197	225000	261675	892872	74.4
250000	853035	71.1	214961	900000	263764	75.0	226796	60	211011	720000	181437	250000	290750	992080	82.7
275000	938339	78.2	236457	950000	278418	79.2	239396	70	246180	840000	211676	275000	319825	1091288	90.9
300000	1023642	85.3	257954	1000000	293071	83.3	251996	80	281348	960000	241916	300000	348900	1190496	99.2
325000	1108946	92.4	279450	1100000	322378	91.7	277195	90	316517	1080000	272155	325000	377975	1289704	107.5
350000	1194250	99.5	300946	1200000	351685	100.0	302395	100	351685	1200000	302395	350000	407050	1388912	115.7

Watts x 3.412 141 6 = Btu/hr  
 Watts x 0.000 284 345 14 = Tons  
 Watts x 0.859 845 23 = kcal/hr

Btu/hr x 0.293 071 07 = Watts  
 Btu/hr x 0.000 083 333 = Tons  
 Btu/hr x 0.251 995

Tons x 3516.852 8 Watts  
 Tons x 12000 = Btu/hr

kcal/hr x 1.163 = Watts  
 kcal/hr x 3.968 320 68 = Btu/hr

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**PRODUCT STORAGE DATA**

**SI UNITS**

**Product Load**

The product load is composed of any heat gain occurring due to the product in the refrigerated space. The load may arise from a product placed in the refrigerated space at a temperature higher than the storage temperature, from a chilling or freezing process, or from the heat of respiration of perishable products. The total product load is the sum of the various types of product load which may apply to the particular application.

**Types of Product Load**

Specific Heat (kJ/kg°C)

Specific Heat of any substance is the quantity of energy in kilojoules required to change the temperature of a 1 kg mass 1°C.

**Latent Heat of Fusion (kJ/kg)**

Latent Heat of Fusion is the amount of heat removal required to freeze (i.e. change its state) 1 kg of product.

**Heat of Respiration (W/kg)**

Fruits and vegetables, even though they have been removed from the vine or tree on which they grew, are still living organisms. Their life processes continue for some time after being harvested, and as a result they give off heat. Certain other food products also undergo continuing chemical reactions which produce heat. Meats and fish have no further life processes and do not generate any further heat. The amount of heat given off is dependent on the specific product and its storage temperature. Note that the heat of respiration varies with the storage temperature.

The following Table lists various food products with pertinent Heat of Respiration rates.

HEAT OF RESPIRATION - Watts/kg									
PRODUCT	STORAGE TEMPERATURE				PRODUCT	STORAGE TEMPERATURE			
	0°C	5°C	10°C	15°C		0°C	5°C	10°C	15°C
APPLES	0.012	0.28	0.46	0.64	LEMONS	0.009	0.015	32	0.047
APRICOTS	.016/.017	.019/.027	.033/.056	.063/.102	LETTUCE	.027/.050	.040/.059	.081/.119	.114/.121
ARTICHOKES - Globe	.067/.133	.095/.178	.162/.292	.229/.430	MELONS	–	.026/.030	.046/.060	.100/.114
ASPARAGUS	.081/.238	.162/.405	.318/.904	.472/.971	MUSHROOMS	0.13	0.211	0.297	0.4
AVOCADOS	–	–	.120/.380	.183/.466	ONIONS	0.009	0.01	0.021	0.033
BANANAS	–	–	0.095	0.165	ORANGES	0.009	0.019	0.036	0.062
BEANS - Green	–	.101/.104	.162/.173	.252/.276	PARSLEY	.098/.137	.196/.252	.389/.487	.427/.662
BEANS - Lima	.052/.104	.086/.181	.250/.320	.420/.530	PARSNIPS	.034/.046	.042/.052	.061/.078	.096/.127
BETROOT	.016/.021	.027/.028	.035/.040	.050/.069	PEACHES	0.011	0.019	0.047	0.102
BLACKBERRIES	.047/.068	.085/.136	.155/.281	.209/.432	PEARS	0.014	0.031	0.048	0.103
BROCCOLI	.055/.064	.102/.475	.300/.705	.515/1.01	PEAS - Fresh	.090/.139	.163/.227	.330/.400	.530/600
BRUSSEL SPROUTS	.047/.071	.096/.144	.187/.251	.283/.317	PINEAPPLES - Ripe	–	–	0.022	0.054
CABBAGE	.028/.040	.052/.064	.086/.098	.159/.170	PLUMS	.006/.009	.012/.027	.027/.034	.035/.037
CANTALOUPE	–	.026/.030	.046/.060	.100/.114	POTATOES	–	.018/.020	.020/.030	.020/.035
CARROTS	0.046	0.058	0.093	0.117	POTATOES - Sweet	–	–	0.065	0.1
CAULIFLOWER	0.053	0.061	0.100	0.137	PUMPKIN	–	0.045	0.106	0.237
CELERY	0.021	0.033	0.06	0.111	QUINCES	0.012	0.019	0.04	0.07
CHEESE	–	0.035	–	–	RADISH	.043/.051	.057/.062	.092/.109	.208/.231
CHERRIES	.012/.016	.028/.042	.051/.085	.074/.133	RASPBERRIES	0.06	0.1	0.14	0.281
CORN - Sweet	0.126	0.23	0.332	0.483	RHUBARB	.024/.039	.033/.054	.060/.095	.092/.135
CUCUMBERS	–	–	.060/.086	.071/.098	SPINACH-SILVERBEET	–	0.136	0.328	0.531
GRAPES	0.008	0.016	0.027	0.047	STRAWBERRIES	.036/.052	.049/.098	.146/.281	.211/.274
HONEY	–	0.012	–	–	TOMATOES - Ripe	–	–	0.055	0.079

Where two values are shown -

Use lower value for products already at or near the storage temperature. Use higher value for fruits subject to ripening at storage temperatures of 10°C or higher, and for other products where cooling down to storage temperature is required.

Product Load Calculations - SI Units

- (1) Sensible Heat Removed Above Freezing Point =  
Product Mass (kg) x Specific Heat Above Freezing Point (kJ/kg°C) x  
Temperature Reduction Above Freezing Point (°C) = kJ
- (2) Heat of Respiration =  
Product Mass (kg) x Respiration Rate (Watts/kg) = Watts
- (3) Latent Heat of Freezing =  
Product Mass (kg) x Latent Heat of Product (kJ/kg) = kJ
- (4) Sensible Heat Removed Below Freezing Point =  
Product Mass (kg) x Specific Heat Below Freezing Point (kJ/kg°C) x  
Temperature Reduction Below Freezing Point (°C) = kJ

- (5) Total Product Load (Watts)
  - (a) To Cool (i.e. Above Freezing Point)
 
$$(1) = \frac{\text{kJ} \times 1000}{\text{Hrs} \times 3600 \text{ (secs)}} + (2) = \text{Watts}$$
  - (b) To Freeze
 
$$(1) + (3) + (4) = \frac{\text{kJ} \times 1000}{\text{Hrs} \times 3600 \text{ (secs)}} = \text{Watts}$$

**PRODUCT STORAGE DATA (cont'd)**

PRODUCT	Recommended Storage Temperature °C	Average Storage Period	Relative Humidity %	Specific Heat kJ/kg°C		Latent Heat kJ/kg	Maximum Air Velocity m/s	Average Freezing Temp. °C	Water Content %
				Above Freezing	Below Freezing				
APPLES – Fresh	-1 to 0	2 to 6 Mths.	85 to 88	3.78	1.9	281	0.45	-1.5	84
APRICOTS	-5 to +1.5	1 to 2 Wks.	80 to 85	3.8	1.91	285	0.45	-1.5	85
ARTICHOKES – Globe	-5 to +1	1 to 2 Wks.	90 to 95	3.78	1.9	281	0.45	-1.4	84
– Jerusalem	-5 to +1	2 to 5 Mths.	90 to 95	3.68	1.85	268	0.45	-2.6	80
ASPARAGUS	0 to +2	2 to 3 Wks.	85 to 90	4	2.01	312	0.45	-1.2	93
AVOCADOS	+8 to +10	2 to 4 Wks.	85 to 90	3.3	1.66	218	0.45	-1.2	65
BACON – Fresh	-1 to -2	1 to 2 Wks.	80 to 90	2.15	1.08	64	0.45	-3.1	19
– Frozen	-23 to -15	4 to 6 Mths.	90 to 95	2.15	1.08	64	0.45	-1.7	19
BANANAS	+13 to +15.5	1 to 2 Wks.	85 to 95	3.55	1.79	251	0.45	-1.5	75
BEANS – Green	+4 to +7	7 to 10 Days	85 to 90	3.9	1.96	298	0.45	-1	67
– Lima	+1 to +7	7 Days	85 to 90	3.35	1.68	224	0.45	-1	67
BEEF – Fresh Cut	-1 to 0	1 to 6 Wks.	85 to 90	3.14	1.67	228	0.3	-1.8	72
– Fresh Sides	-1 to 0	1 to 6 Wks.	85 to 88	3.14	1.67	228	0.5	-1.7	72
– Frozen	-23 to -18	9 to 12 Mths.	90 to 95	3.14	1.67	228	0.35	-1.7	72
BEER	0 to +5	Up to 6 Mths.	65 to 70	3.8	1.9	300	0.75	-2	91
BEETROOT – Bunched	0 to +2	10 to 14 Days	85 to 95	3.88	1.95	295	0.45	-0.7	88
BLACKBERRIES	-6 to 0	7 Days	85 to 90	3.8	1.91	285	0.45	-0.8	85
BREAD – Frozen Packaged	-20 to -10	Up to 3 Mths.	85	2.93	1.43	114	0.45	-6	32 to 37
BROCCOLI	0 to 1.75	7 to 10 Days	90 to 95	3.93	1.97	302	0.35	-1.2	90
BRUSSELS SPROUTS	0 to 1.75	3 to 4 Wks.	90 to 95	3.8	1.91	285	0.4	-0.9	85
BUTTER	+1 to +4	1 to 2 Wks.	75 to 85	2.07	1.04	54	0.75	-1.2	16
CABBAGE	0 to +3	Up to 6 Wks.	90 to 95	3.98	2	308	0.4	-0.6	92
CANTALOUPE	+4 to +10	2 to 4 Wks.	85 to 90	3.98	2	308	0.75	-1.2	92
CARROTS – Bunched	0 to +4	1 to 2 Wks.	85 to 90	3.6	1.88	293	0.4	-1.1	88
CAULIFLOWER	0 to +3	Up to 3 Wks.	85 to 90	3.98	2	308	0.35	-0.9	92
CELERY	-5 to 0	2 to 4 Mths.	90 to 95	4.03	2.02	315	0.45	-1.1	94
CHEESE – Cheddar	0 to +4.5	Up to 4 Mths.	75 to 85	2.7	1.5	184	0.45	-8	65
– Cream	0 to +5	Up to 2 Wks.	80 to 85	2.7	1.6	265	0.45	-8.5	79
– Swiss	0 to +5	Up to 10 Wks.	75 to 80	2.7	1.6	265	0.45	-8.5	79
CHERRIES	-5 to 0	10 to 14 Days	80 to 85	3.68	1.85	268	0.45	-3.3	80
CORN – Sweet	0	4 to 8 Days	85 to 90	3.53	1.77	248	0.4	-1	74
CREAM	+4 to +10	2 to 4 Wks.	85 to 90	3.98	2	308	0.75	-1.4	93
CUCUMBER	+7 to +10	10 to 14 Days	80 to 85	4.08	2.05	322	0.45	-0.5	96
EGGS – Fresh	0 to +3	Up to 6 Wks.	80 to 85	3.53	1.77	247	0.4	-2	74
– Frozen	-20 to -18	1 Year +	60 to 70	3.18	1.88	232	1.25	-2.2	74
EGG PLANTS	+5 to +10	Up to 10 Days	85 to 90	3.8	2	308	0.45	-1.1	93
FISH – Fresh	-4 to -1	5 to 15 Days	90 to 95	3.3	1.8	245	0.45	-1.8	62 to 85
– Frozen	-29 to -15	6 to 12 Mths.	90 to 95	3.3	1.8	245	1.25	-2.1	62 to 85
FLOWERS – General	+5 to +4.5	3 to 14 Days	85 to 90	3.85	–	–	0.3	0	–
GRAPES	0 to +5	Up to 4 Wks.	85 to 90	3.73	1.87	275	0.45	-3	82
HAM – Fresh	0 to +4	Up to 12 Days	85 to 90	2.51	1.46	167	0.4	-2.2	50
– Smoked	+5 to +15	Up to 12 Mths.	55 to 65	2.26	1.38	134	0.45	–	40
– Frozen	-23 to -15	6 to 8 Mths.	90 to 95	2.51	1.46	167	0.45	-2.2	50
HONEY	+1 to +5	Up to 6 Mths.	75	2.1	1.68	57	0.45	–	17
ICE CREAM	-30 to -20	2 to 10 Wks.	85	3.25	1.88	224	0.45	–	67
LAMB – Fresh	0 to -3	5 to 10 Days	85 to 90	3.2	1.61	218	0.4	-2	60 to 65
– Frozen	-23 to -15	Up to 10 Mths.	80 to 90	3.2	1.61	218	0.45	-2	60 to 65
LEMONS	0	1 to 6 Mths.	85 to 90	3.9	1.96	298	0.45	-2	89
LETTUCE	0 to 1.1	2 to 3 Wks.	90 to 95	4.06	2.04	318	0.4	-0.3	95
LOBSTER – Fresh	0 to +2	Up to 6 Days	90 to 95	3.65	1.84	265	0.4	-2.2	85
MARGARINE – Vegetable	+5 to +10	Up to 3 Mths.	75 to 80	2.01	1.1	50	0.75	–	15
MELONS	+4 to +10	2 to 4 Wks.	80 to 90	4	2.01	312	0.45	-1.4	93
MILK – Pasteurised	0 to +4	Up to 7 Days	80 to 85	3.77	2.05	288	1.25	-1	87
– Condensed	+2 to +10	Up to 6 Mths.	–	2.35	1.18	90	–	-15	27
– Powdered	+5 to +15	Up to 6 Mths.	60 to 65	1.75	0.88	10	–	–	3
MUSHROOMS	0	3 to 4 Days	85 to 90	3.95	1.99	305	0.4	-1	91
ONIONS	0 to +2.25	Up to 6 Mths.	65 to 75	3.88	1.95	295	0.5	-1	89
ORANGES	0 to +1	8 to 10 Wks.	85 to 90	3.85	1.94	292	0.45	-2	87
OYSTERS – Shell	0 to +2	Up to 2 Wks.	90 to 95	3.68	1.85	268	0.4	-2.8	80
PARSLEY	+2 to +5	Up to 2 Wks.	80 to 85	3.8	1.91	285	0.4	-0.9	85
PARSNIPS	0 to 2.25	2 to 4 Mths.	90 to 95	3.65	1.84	265	0.35	-1.4	79
PEACHES – Fresh	-5 to 0	2 to 4 Wks.	80 to 85	3.9	1.96	298	0.4	-1	89
– Fresh	+1 to +4	Up to 3 Mths.	85 to 90	3.75	1.89	278	0.4	-2	84
PEAS – Fresh	0	1 to 3 Wks.	85 to 90	3.53	1.77	248	0.45	-1.1	74
– Frozen Packaged	-25 to -15	Up to 6 Mths.	90	3.53	1.77	248	0.45	-1.1	74
PINEAPPLES – Ripe	+5 to +7	2 to 4 Wks.	85 to 90	3.8	1.91	285	0.5	-1	85
PLUMS	-5 to +1	3 to 6 Wks.	80 to 85	3.83	1.92	288	0.45	-1.75	86
PORK – Fresh	0 to +4	Up to 10 Days	85 to 90	2.6	1.31	124	0.45	-2.2	37
– Frozen	-23 to -15	Up to 4 Mths.	85 to 95	2.6	1.31	124	0.45	-2.2	37
POTATOES	+2 to +10	Up to 6 Mths.	85 to 90	3.83	1.82	261	0.5	-1.4	78

**PRODUCT STORAGE DATA (cont'd)**

PRODUCT	Recommended Storage Temperature °C	Average Storage Period	Relative Humidity %	Specific Heat kJ/kg°C		Latent Heat kJ/kg	Maximum Air Velocity m/s	Average Freezing Temp. °C	Water Content %
				Above Freezing	Below Freezing				
POTATOES – Sweet	+10 to +15	4 to 6 Mths.	80 to 85	3.4	1.71	231	0.5	-1.7	69
POULTRY – Fresh Dressed	0	1 Week	85 to 90	3.53	1.77	248	0.4	-2.5	74
– Frozen Dressed	-30 to -10	Up to 10 Mths.	80 to 90	3.53	1.88	248	0.45	-2.5	74
PUMPKINS	+1 to +6	Up to 6 Mths.	80 to 85	3.95	1.99	305	0.45	-0.9	91
QUINCES	-.5 to 0	2 to 3 Mths.	80 to 85	3.8	1.91	285	0.45	-2	85
RADISHES	0	3 to 4 Wks.	95	4.06	2.04	318	0.45	-1.1	95
RASPBERRIES	-.5 to 0	1 Week	85 to 90	3.7	1.86	271	0.45	-1	82
RHUBARB	0	2 to 4 Wks.	95	4.06	2.04	318	0.45	-1.5	95
SAUSAGE – Fresh	0 to +3	1 Week	85 to 90	3.3	2.3	242	0.45	-2	72
SPINACH-SILVERBEET	0	10 to 14 Days	90 to 95	4	2.01	312	0.45	-1	90
STRAWBERRIES	-.5 to +2	5 to 7 Days	75 to 85	3.93	1.97	302	0.45	-1.1	90
TOMATOES – Ripe	+4 to +10	7 to 10 Days	85 to 90	4.03	2.02	315	0.45	-0.8	94
TURKEY – Fresh Dressed	-2 to -1	10 Days	85 to 90	3.28	1.68	214	0.4	-2.5	74
– Frozen Dressed	-25 to -15	Up to 6 Mths.	90 to 95	3.28	1.65	214	0.5	-2.5	74
VEAL – Fresh	0 to 1.1	Up to 10 Days	85 to 90	3.33	1.67	221	0.40	-1.7	66

**REFRIGERANT - PIPING SELECTION**

**LINE PRESSURE DROP CHARTS FOR REFRIGERANTS R404A, R22, R13a & R410A**

**LINE VELOCITY CHARTS FOR REFRIGERANTS R404A & R134a**

**INTRODUCTION**

Refrigeration piping involves extremely complex relationships in the flow of refrigerant and oil. The flow of any fluid, whether it be gas or liquid involves inter-relationship of velocity, pressure, temperature, friction, density, viscosity and the work required to cause the flow.

Because of its changing nature, such flow is just too complex to be governed by a single mathematical equation, and practically the entire working knowledge of refrigeration piping is based on practical experience and test data. In general, pressure drop in refrigerant lines tends to decrease capacity and increase power requirements, and excessive pressure drops should be avoided. It should be realised that pressure drop is not the only criterion that must be considered in sizing refrigerant lines, and that often refrigerant velocities for oil return and noise suppression, rather than pressure drop are the determining factor in system design.

A small amount of oil is always circulating with the refrigerant. Refrigeration oils are soluble in liquid refrigerant but oil and refrigerant vapour, however, DO NOT mix readily and the oil can only be circulated properly if the mass velocity of the refrigerant vapour is great enough to sweep the oil along.

**PRESSURE DROP CHARTS**

Figures 1, 2, 3 and 4 detail Pressure Drops for refrigerants R404A, R22, R134a and R410A. Pressure Drops in the discharge line, suction line and liquid line can be determined for a range of condensing temperatures.

**VELOCITY CHARTS**

Figures 5 and 6 detail Line Velocities for refrigerants R404A and R134a.

**EQUIVALENT LENGTH OF PIPE – Table 1**

Each valve, fitting and bend in a refrigerant line contributes to the friction pressure drop because of its interruption or restriction to smooth flow.

Normal practice is to establish an equivalent length of straight tubing for each fitting. This allows the consideration of the entire length, including fittings, as an equivalent length of straight pipe. Table 1 provides equivalent length in metres of straight pipe for valves and fittings.

Items such as solenoid valves and pressure regulating valves, where the pressure drop is relatively large, should be considered independently, using manufacturers' data.

**Table 1. EQUIVALENT LENGTH OF STRAIGHT PIPE FOR VALVES AND FITTINGS - METRES**

O.D. LINE SIZE	GLOBE VALVE	ANGLE VALVE	90° ELBOW	45° ELBOW	TEE LINE	TEE BRANCH
1/2"	2.7	1.5	0.3	0.1	0.2	0.6
5/8"	3.7	1.8	0.3	0.2	0.2	0.8
7/8"	4.6	2.4	0.5	0.2	0.3	1.1
1-1/8"	6.7	3.7	0.6	0.3	0.5	1.4
1-3/8"	8.5	4.6	0.7	0.4	0.6	1.8
1-5/8"	10.7	5.2	0.9	0.4	0.6	2.1
2-1/8"	13.7	6.7	1.2	0.6	0.9	3.0
2-5/8"	15.5	7.9	1.4	0.7	1.1	3.7
3-1/8"	19.8	10.4	1.7	0.8	1.4	4.6
3-5/8"	24.4	12.2	2.0	0.9	1.5	5.2



# Locations, Terms and Conditions

# Locations

## Head Office

Beijer Ref Support Centre  
2 Kirby Place, Bankstown Aerodrome NSW 2200  
Locked Bag 63, Wetherill Park NSW 1851  
P: 02 9774 7155 E: info@kirbyhvacr.com.au

## NSW METROPOLITAN

**Artarmon** 02 9906 7674  
2/22 Waltham Street, Artarmon NSW 2064

**Bankstown Flagship Store** 02 9774 7380  
2 Kirby Place, Bankstown Aerodrome NSW 2200

**Brookvale** 02 9939 5153  
8A/42-46 Wattle Road, Brookvale NSW 2100

**Caringbah** 02 9567 7011  
33 Cawarra Road, Caringbah NSW 2229

**Castle Hill** 02 8850 3055  
1/8 Gladstone Road, Castle Hill NSW 2154

**Narellan** 02 4648 1533  
3/14-16 Exchange Parade, Narellan NSW 2567

**Padstow** 02 9709 4822  
36 Gibson Avenue, Padstow NSW 2211

**Penrith** 02 4722 3780  
5/12 Robertson Place, Jamisontown NSW 2750

**Pemulwuy** 02 9896 2700  
26/2-4 Picrite Close, Pemulwuy NSW 2145

**Silverwater** 02 8737 7400  
1/106-110 Beaconsfield St, Silverwater NSW 2128

**Waterloo** 02 9667 4711  
6/207-229 Young Street, Waterloo NSW 2017

## NSW REGIONAL

**Albury** 02 6040 0143  
2/23A Catherine Crescent, Lavington NSW 2641

**Canberra** 02 6239 1570  
6/19 Tennant Street, Fyshwick ACT 2609

**Coffs Harbour** 02 6651 3390  
5/84-90 Industrial Drive, North Boambee, NSW 2450

**Dubbo** 02 6837 1150  
2/5 Douglas Mawson Road, Dubbo NSW 2830

**Lismore** 02 6622 2272  
2/36-38 Wyrallah Road, Lismore NSW 2480

**Newcastle** 02 4956 2722  
14 Kings Road, New Lambton NSW 2305

**Orange** 02 6362 8849  
2-3/243 McLachlan Street, Orange NSW 2800

**Port Macquarie** 02 6581 4040  
1/50 Jindalee Road, Port Macquarie NSW 2444

**Tamworth** 02 6765 2566  
1 Avro Street, Tamworth NSW 2340

**Tuggerah** 02 4353 3218  
4/22 Reliance Drive, Tuggerah NSW 2259

**Wagga Wagga** 02 6921 1259  
3/91 Copland St, East Wagga Wagga NSW 2650

**Wollongong** 02 4229 1313  
4/103-107 Auburn Street, Wollongong NSW 2500

## QLD METRO, GOLD COAST & SUNSHINE COAST

**Bowen Hills** 07 3256 2120  
2/276 Abbotsford Road, Bowen Hills QLD 4006

**Brendale** 07 3881 0070  
118/193 South Pine Road, Brendale QLD 4500

**Burleigh Heads** 07 5593 6027  
1/22 Hutchinson Street, Burleigh Heads QLD 4220

**Gold Coast** 07 5591 8188  
1/2 Olympic Circuit, Southport Qld 4215

**Maroochydore** 07 5479 4599  
10A Kelly Court, Maroochydore QLD 4558

**Moorooka** 07 3848 0641  
11/115 Muriel Avenue, Moorooka QLD 4105

**Morningside** 07 3902 9400  
373 Thynne Road, Morningside QLD 4170

**North Lakes** 07 3480 5367  
2-3/4 Wills Street, North Lakes QLD 4509

**Underwood** 07 3808 0300  
3/74 Perrin Drive, Underwood QLD 4119

## QLD REGIONAL

**Bundaberg** 07 4335 6680  
4 Mary Street, Bundaberg QLD 4670

**Cairns** 07 4035 4300  
88-90 Buchan Street, Cairns QLD 4870

**Emerald** 07 4910 7710  
2/13 Cottonview Road, Emerald QLD 4720

**Mackay** 07 4957 7772  
2/Lawson Street, Mackay QLD 4740

**Rockhampton** 07 4922 9066  
147 Kent Street, Rockhampton QLD 4700

**Toowoomba** 07 4639 7900  
3/2 Prescott Street, Toowoomba QLD 4350

**Townsville** 07 4775 1800  
7/25 Keane Street, Currajong QLD 4812

## NT

**Alice Springs (A)** 08 8953 4277  
1/8 Fogarty Street, Alice Springs NT 0870

**Darwin** 08 8984 3840  
19 Albatross Street, Winnellie NT 0820

## TAS

**Hobart** 03 6272 0055  
2 Linear Court, Derwent Park TAS 7009

**Launceston** 03 6334 6969  
2/225 Wellington Street, Launceston TAS 7250

## VIC METROPOLITAN

**Bayswater** 03 9720 1906  
21/49 Corporate Boulevard, Bayswater VIC 3153

**Dandenong** 03 9799 5900  
2/355-365 South Gippsland Highway, Dandenong South VIC 3175

**Keilor Park** 03 9336 1205  
7/1-9 Thomsons Road, Keilor Park VIC 3042

**Moorabbin** 03 9532 2284  
24 Kilpa Road, Moorabbin VIC 3189

**Preston** 03 9480 0321  
18 Ovando Street, Preston VIC 3072

**Sunshine West** 03 8353 2140  
573 Somerville Road, Sunshine West, VIC 3020

**West Melbourne** 03 9328 3044  
60-80 Adderley Street, West Melbourne VIC 3003

## VIC REGIONAL

**Geelong West** 03 5248 4533  
2&3, 38 Autumn Street, Geelong West VIC 3218

**Mildura (A)** 03 5021 1855  
337 Ettiwanda Avenue, Mildura VIC 3500

**Shepparton (A)** 03 5821 3669  
15 Campbell Street, Shepparton VIC 3630

**Traralgon** 03 5174 6403  
4/13 Standing Drive, Traralgon VIC 3844

## SA

**Brompton** 08 8354 0100  
23 Chief Street, Brompton SA 5007

**Lonsdale** 08 8326 4726  
2/41-47 O'Sullivan Beach Road, Lonsdale SA 5160

**Mt. Gambier (A)** 08 8723 0922  
5 Scott Court, Mt Gambier SA 5290

**Port Lincoln (A)** 08 8683 0707  
1 Thomas Court, Port Lincoln SA 5606

**Wingfield** 08 8260 2255  
159-161 Cormack Road, Wingfield SA 5013

## WA

**Gnangara** 08 6401 6331  
4/28 Supreme Loop, Gnangara WA 6077

**Jandakot** 08 9478 5033  
1/45 Biscayne Way, Jandakot WA 6164

**Osborne Park** 08 9244 5033  
19 Howe Street, Osborne Park WA 6017

## KIRBY – TERMS AND CONDITIONS OF SALE

Thank you for choosing Kirby. These Conditions set out the terms applying to your purchases of goods and services from Kirby, and credit terms where applicable.

### 1 Application of these Conditions of Sale

- 1.1 These Conditions form a binding contract for the sale and/or hire of goods and associated services by Kirby HVAC&R Pty Ltd (ABN 42 624 910 041) (Kirby, us) or another Kirby group company to you as the Customer.
- 1.2 The Conditions incorporate other documents we provide or make available on our website, such as warranties, order forms, quotes, brochures, product descriptions and price lists.
- 1.3 Kirby may amend or vary these Conditions and any other part of the Agreement by updating them on the Kirby website. If you reasonably believe, and we reasonably accept, that a variation has a material adverse effect on you, you may cancel any current or prospective orders or services, without penalty.
- 1.4 These Conditions apply to all goods and services ordered by you and provided by Kirby whether through a printed or online order, a quotation, oral acceptance by Kirby of repeat or future orders, or another format made available by Kirby.

### 2 Price & Payment

- 2.1 The price payable by you for goods and services and associated items such as freight, delivery and installation shall be as notified from time to time by Kirby, including (without limitation) on our website, in our price lists or as quoted or advised by Kirby upon receipt of an order for goods or services from the Customer. In the absence of specific prices, the prices published on the Kirby Smart@ccess Website at the time of delivery shall apply.
- 2.2 Quotations are usually valid for 30 days unless stated otherwise, after which they may be subject to change without notice. Kirby may at any time alter its price in respect of future orders.
- 2.3 Kirby can change pricing without further notification (excluding quotes). We will endeavour to notify our customers of pricing changes. Notification may occur after prices have changed.
- 2.4 If during a validity period or between the date of the Order from the Customer and delivery of the Goods, there is an increase in the cost of supplying the goods due to reasons beyond Kirby's control, then Kirby will be entitled to increase the price of the goods accordingly.
- 2.5 You must pay the full price (plus GST) for goods and services, without deduction, set-off or counterclaim immediately on receipt of a valid tax invoice at the time of delivery of the goods and services, except when you complete and Kirby has approved the Commercial Credit Application section of the Kirby Customer Application Form, in which case you shall have 30 days from the invoice date to pay.
- 2.6 If you do not use your Kirby credit account for more than 12 months, or Kirby reviews your credit status for any reason, the credit account may be deactivated.
- 2.7 In the event that the Customer fails to pay amounts owing in full by the due date:
  - (a) Kirby may at its option require cash on delivery and/or stop the supply of any further goods or services to the Customer, for a period or ongoing; and
  - (b) the Customer shall pay to Kirby interest calculated daily at a rate 3% higher than the National Australia Bank's overdraft rate for amounts exceeding \$100,000, from time to time, from the date the payment is due until such monies are paid in full.
- 2.8 The Customer agrees that a tax invoice from Kirby is binding and conclusive, except in the event of manifest error.
- 2.9 Kirby makes discounts and rebates available from time to time. Kirby may cancel or suspend credit availability, discounts or rebates, in the event that the Customer fails to comply with any of these Conditions.

### 3 Application for Credit

- 3.1 In the process of becoming a Customer of Kirby or at any time thereafter, you may apply to have Kirby supply goods and services to you on credit, by completing the Commercial Credit Application section of the application form, or otherwise as advised by Kirby.
- 3.2 Kirby may accept or reject the credit application, for the amount applied for or a different amount, in its absolute discretion and will advise you of its decision.
- 3.3 Kirby may approve the credit application, or at any time the continuing availability of credit, subject to conditions advised to the Customer, which may include the provision of a guarantee in favour of Kirby from a third party on terms acceptable to Kirby. A supply by Kirby of goods or services on credit is not a representation that such conditions do not apply or will not apply at a later date.
- 3.4 You acknowledge and agree that Kirby may exchange information about you (including personal information) that relates to credit provision or these Conditions, with credit reporting agencies such as Equifax or Creditor Watch, which have their own privacy policies.

## 4 Orders

- 4.1 Kirby shall have no obligation to accept any order that you submit.
- 4.2 Each order is a representation that you are solvent and able to pay for the order when payment is due;
- 4.3 Orders are binding on the Customer. From the time of placing the order, you are obliged to accept and pay for the goods and services ordered, and cancellation of an order is not effective unless with Kirby's express consent;
- 4.4 Kirby shall use its reasonable endeavours to ensure that advertised goods and services are available and provided to you when requested, but shall not be liable for any loss or damage caused by any unavailability or delay. You are not entitled to reject the goods or services due to any delay.
- 4.5 The Customer shall indemnify Kirby for any loss, damage, or expense incurred by Kirby should the Customer cancel or refuse to accept or pay for any order or part of any order.
- 4.6 The Customer acknowledges that if the Customer places an order for goods or services that are not offered by Kirby as standard, Kirby may require the Customer to pay a non-refundable deposit of up to 50%.

## 5 Delivery

- 5.1 If Kirby accepts an order including delivery of goods, it will arrange delivery at its discretion, at the Customer's cost and risk in all things, and use reasonable endeavours to meet any target delivery date, but has no liability for any delay, failure, or inability to deliver, or for any direct or consequential loss, claim, cost or damage to any property of the Customer or third parties including in particular any food or product loss.
- 5.2 Where Kirby is unable to complete a delivery due to an act or omission of the Customer, Kirby may impose an additional charge for frustrated delivery to cover Kirby's reasonable additional costs.
- 5.3 Kirby may make part deliveries of any order, and this shall not invalidate or vary the Customer's order. If Kirby only delivers part of the goods which are ordered by the Customer, Kirby may invoice the Customer for those goods delivered.
- 5.4 The Customer shall notify Kirby in writing of any defect or shortages in quantity of any goods within seven (7) days of delivery or taking possession, and after that time the Customer will not be entitled to make any claim on Kirby relating to defects or shortages.
- 5.5 If the Customer requests Proof of Delivery ("POD") in writing to Kirby:
  - (a) within 120 days of the despatch date of the goods, the POD will be supplied by Kirby free of charge; and
  - (b) beyond 120 days of the despatch date of the goods, Kirby will charge a reasonable administration fee.
- 5.6 In the event that Kirby agrees to accept return of any goods for credit, other than where the return is due to Kirby's breach of these Conditions or of an applicable warranty, Kirby will not be responsible for transport costs and will at its discretion, charge a re-stocking fee not greater than 25% of the price.

## 6 Retention Of Title and Security

- 6.1 Title and risk in the goods shall pass to the Customer on the Customer taking possession or delivery but the equitable title in the goods shall not pass to the Customer until full payment is received by Kirby for the goods and any associated services.
- 6.2 The Customer shall in all cases be responsible for the payment of any insurance in respect of the goods from the time of taking possession or delivery. In the event that Kirby contracts for any such insurance the Customer shall reimburse the associated costs to Kirby.
- 6.3 Whilst Kirby retains the equitable title in the goods:
  - (a) the Customer may sell or deal in the ordinary course of business with the goods and with the interest of Kirby in the goods and may for those purposes part with possession of the goods, but always subject to the equitable title (and in the case of goods not purchased by the Customer, the full legal title) of Kirby. The proceeds of any such sale or dealing must be held by the Customer separately on trust for Kirby and appropriated solely for the payment of all sums owing to Kirby;
  - (b) the Customer shall ensure that the goods are clearly identifiable as the property of Kirby wherever the goods are located; and
  - (c) other than as permitted by clause (a), the Customer must not charge the goods in any way nor grant nor otherwise give any interest in the goods.
- 6.4 The Customer hereby irrevocably gives to Kirby, its agents and servants, leave and licence without the necessity of giving any notice, to enter on and into any premises occupied by the Customer to search for and remove any of the goods to exercise Kirby's rights and title under these Conditions and at law, without in any way being liable to the Customer or any person or company claiming through the Customer, and if the goods or any of them are wholly or partially attached to or incorporated in premises or any other goods, Kirby may sever the attachment in any way whatsoever as may be necessary to remove the goods. If the Customer parts with possession of the goods as permitted by clause 6.3(a), the Customer must procure the same rights for Kirby in respect of the premises at which the goods are located.
- 6.5 The Customer will be responsible for Kirby's costs and expenses in exercising its rights under clause 6.4.
- 6.6 The Customer agrees that where the goods have been retaken into the possession of Kirby, Kirby has the absolute right to sell or deal with the goods, and if necessary sell the goods with the trademark or name of the Customer on those goods, and the Customer grants an irrevocable licence to Kirby to do so and do all things necessary to sell the goods bearing the name of trademark of the Customer.

- 6.7 Kirby may suspend or terminate the availability of credit in the event of any breach of these Conditions by Customer. Until full payment is received by Kirby the Customer shall be deemed to be a bailee of the goods for and on behalf of Kirby and Kirby shall be entitled to all the rights and remedies of a bailor.

## **7 Interaction With Gas2Go Club Membership Conditions**

- 7.1 Kirby may offer a Customer membership of its Gas2Go Club, which entitles members to participate in Kirby's Gas2Go gas management system. Where the Customer is a member of the Gas2Go Club the Customer acknowledges that it is also bound by the Gas2Go Membership Conditions. To the extent of any inconsistency between the Gas2Go Membership Conditions and these Conditions, the Gas2Go Membership Conditions shall prevail.

## **8 PPSA**

- 8.1 In this clause, PPSA means the Personal Property Securities Act 2009 (Cth); PPSR means the Personal Property Securities Register established pursuant to the PPSA; and Security Interest means an interest in personal property, and includes any interest of Kirby which the PPSA treats as a security interest whether or not the transaction concerned, in substance, secures payment or performance of an obligation.
- 8.2 The Customer grants to Kirby a Security Interest in goods supplied by Kirby to the Customer in which Kirby has a legal or equitable interest under these Conditions, and the proceeds of sale of such goods, for the purposes of the PPSA. If the Customer parts with possession of the goods as permitted by clause 5.3(a), the Customer must procure for Kirby the same rights in respect of the goods.
- 8.3 The Customer consents to Kirby registering any Security Interest on the PPSR and agrees to provide all assistance required by Kirby to facilitate this.
- 8.4 The Customer agrees that in relation to goods that are inventory, the Customer will not allow any Security Interest other than Kirby's to arise unless Kirby has perfected its Security Interest prior to the Customer's possession of the goods.
- 8.5 If Chapter 4 of the PPSA applies to the enforcement of the Security Interest arising under or in connection with these Conditions, the Customer agrees:
- (a) to the extent that section 115(1) of the PPSA allows this, the following provisions of the PPSA will not apply to the enforcement of that Security Interest: section 95 to the extent that it requires Kirby to give a notice to the Customer, section 96, section 121(4), section 125 (obligation to dispose of or retain collateral), section 130 to the extent that it requires the Secured Party to give notice to the Customer, paragraph 132(3)(d), subsection 132(4), section 142 and section 143 (reinstatement of security agreement); and
  - (b) to the extent that section 115(7) of the PPSA allows this, the following provisions of the PPSA will not apply to the enforcement of that Security Interest: section 127, section 129(2) and (3), section 132, section 134(2), section 135, section 136(3), (4) and (5) and section 137.
- 8.6 If the Customer makes payment to Kirby at any time whether in connection with these Conditions or otherwise, Kirby may, at its absolute discretion, apply that payment in any manner it sees fit.
- 8.7 The Customer agrees to immediately notify Kirby of any changes to its name or address (as specified in these Conditions).
- 8.8 The Customer agrees to do anything Kirby requests the Customer to do (such as obtaining consents, signing and producing documents, producing receipts and getting documents completed and signed):
- (a) to provide more effective security over the Secured Property;
  - (b) to register in respect of a Security Interest constituted by these Conditions at anytime;
  - (c) to enable Kirby to exercise its rights in connection with the Secured Property; and
  - (d) to show Kirby whether the Customer has complied with these Conditions.
- 8.9 The Customer shall pay on demand by Kirby any losses arising from, and any costs and expenses incurred in connection with, any action taken by Kirby under or in relation to the PPSA, including any registration, or any response to an amendment, demand or a request under section 275 of the PPSA.
- 8.10 The Customer waives the right to receive any notice under the PPSA (including notice of a verification statement) unless the notice is required by the PPSA and cannot be excluded.
- 8.11 Other than as required by law, each party agrees not to disclose information of the kind mentioned in section 275(1) of the PPSA, except in the circumstances required by sections 275(7)(b) to (e) of the PPSA. The Customer agrees that it will only authorise the disclosure of information under section 275(7)(c) or request information under section 275(7)(d), if Kirby approves.

## **9 Customer's Warranty**

- 9.1 The Customer warrants and agrees that the Customer is acquiring the goods for other than personal, domestic, household use or consumption and is therefore not a "consumer" for the purposes of the Competition and Consumer Act 2010(Cth).
- 9.2 The Customer warrants and agrees that in deciding to purchase goods or services from Kirby, it has not relied on any representation from Kirby, as to their fitness for the Customer's purpose or otherwise, nor on any description or illustration or specification contained in any document produced by Kirby.

**10 Exclusion Of Liability, Indemnity And Warranty**

- 10.1 Except as provided by the Competition and Consumer Act 2010 (Cth) or as expressly set out in these Conditions, Kirby makes no warranties or other representations concerning goods or services supplied.
- 10.2 To the extent Kirby incurs liability under the Competition and Consumer Act 2010 (Cth) that cannot be excluded, the liability is limited to, as the Customer's exclusive remedy, at Kirby's discretion:
- (a) the replacement of the goods or the supply of equivalent goods; or
  - (b) the repair of the goods; or
  - (c) the payment of the cost of replacing the goods or of acquiring equivalent goods; or
  - (d) the payment of the cost of having the goods repaired.
- 10.3 Subject to this clause 10 and to the extent permitted by law, Kirby shall not be liable for any loss or damage to the Customer (including any consequential loss or damage, third party claims, loss of profits and loss of revenue) of any kind whatsoever even if due to the negligence of Kirby, its employees and/or agents.
- 10.4 The Customer shall indemnify Kirby against any action, suit, demand, proceeding, loss, damage, cost and/or expense directly or indirectly incurred or suffered by Kirby that is caused by or contributed to by any of the following:
- (a) any defect, malfunction or stoppage of the goods caused or contributed to by the Customer;
  - (b) Kirby complying with any instruction of the Customer about the goods;
  - (c) any act or omission of the Customer or a third party occurring after the goods have left the control of Kirby;
  - (d) failure by the Customer, or any third party associated with the Customer, to:
    - (i) adequately provide or display safety markings or safety information on or with the goods;
    - (ii) comply with any law about the goods or their use (for example, their sale, marketing, labelling or marking);
    - (iii) take any reasonable precaution to bring to the attention of any potential users of the goods any dangers associated with goods;
    - (iv) take any reasonable precaution to detect any matters in relation to which Kirby may become liable in any way (for example, under the CCA);
    - (v) provide correct information to Kirby; or
    - (vi) immediately advise Kirby (in writing) of any changes to the information provided to Kirby.
  - (e) the Customer making any statement about the goods (for example, about their performance or characteristics) without Kirby's approval;
  - (f) the use (or misuse) or operation of the goods by the Customer or any third party; and
  - (g) any negligence or breach of duty by the Customer or any third party or any breach by the Customer of these Conditions.
- 10.5 If during a period of 12 months from the date of invoice of goods any goods manufactured or supplied by Kirby are found upon inspection by Kirby to be defective in design, material or workmanship under normal use and service and when properly installed, connected and commissioned, Kirby will supply exchange replacement goods or part(s) free of charge to the Customer.
- 10.6 Any warranty given by Kirby in these Conditions may vary depending on the goods supplied, with such variation to be notified in writing by Kirby, on the relevant brochure, or in Kirby's general warranty conditions available on the website [www.kirbyhvacr.com.au](http://www.kirbyhvacr.com.au).

**11 Cylinder Hire**

- 11.1 In this clause, Cylinder means the gas cylinder which may be supplied to the Customer upon purchase of any Gas2Go® or other goods and includes Stillages and other cylinder transportation devices; and Stillage means the stillage or metal pallet which may be supplied to the Customer upon purchase of any Gas2Go® or other goods.
- 11.2 Unless otherwise agreed in writing, the Customer must pay a periodic charge and associated charges, including for refill protection devices or cylinder valve cap replacement, for the hire of a Cylinder as set out in the Cylinder Service Rate Charge Schedule, available upon request from any Kirby branch or by contacting Kirby via its website.
- 11.3 The period of hire shall commence on the date of delivery or collection and cease on the date upon which the Cylinder(s) are returned to Kirby.
- 11.4 The Cylinder service charge covers the provision by Kirby of services associated with the Cylinders, including but not limited to, cost of tracking, inspecting the Cylinder prior to filling, periodic testing and routine maintenance of the Cylinder (painting and labelling).
- 11.5 The Customer must, at its own cost, return all Cylinders to Kirby or its authorised agent at their premises as soon as they are empty. Cylinders are not deemed 'returned' until received by Kirby (or its authorised agent) and Kirby provides to the Customer a written receipt in Kirby's printed format, acknowledging the Cylinder's return.
- 11.6 On receipt of each invoice including Cylinder charges, the Customer is required to verify the total number of Cylinders held that is shown on the face of the invoice. Where there is any discrepancy written notification must be forwarded to Kirby within 14 days of receipt of the invoice, failing which the

number of Cylinders stated as being held by the Customer on the invoice shall be conclusive and the Customer will be liable to Kirby for the amount shown on the invoice.

- 11.7 Kirby may charge a deposit upon supply of the Cylinder to the Customer on terms satisfactory to Kirby having regard to the nature of the transaction with the Customer. Once the Cylinder(s) are returned to Kirby in a clean, safe and serviceable condition, Kirby will refund the deposit (or appropriate part thereof) to the Customer.
- 11.8 The Customer may hire out or deal in the ordinary course of business with a Cylinder and may part with possession of the Cylinder, but always subject to the full title of Kirby. Kirby will have the right to charge reasonable fees for transport and administration associated with the collection of any Cylinders from the Customer.
- 11.9 Cylinders remain the property of Kirby (or its supplier) and the Customer shall be a bailee of any Cylinders and shall not sell, offer for sale, mortgage, charge, or create any lien or encumbrance over the Cylinders.
- 11.10 The Customer shall not repair, modify, tamper with, or contaminate Cylinders and shall not permit the Cylinders to be filled by anyone other than Kirby or Kirby's representatives or agents.
- 11.11 Customer shall be responsible for the safe use and storage of all Cylinders and Stillages and shall not use the Cylinders and Stillages for any other purpose other than as a container for gas sold or transportation of a container for gas sold by Kirby.
- 11.12 The Customer shall be responsible for any loss or damage to the Cylinder.  
Compensation shall be at Kirby's current replacement cost for a Cylinder as set out in the Cylinder Service Rate Charge Schedule and as varied from time to time by Kirby to reflect the current Cylinder replacement value with such revision notified on an invoice.
- 11.13 A Cylinder will be deemed lost if the Customer reports that a Cylinder is lost to Kirby or the Cylinder has not been returned within 12 months after the Cylinder was supplied to the Customer, whichever is earlier.
- 11.14 Kirby will invoice the Customer for the replacement cost of a lost Cylinder. If the cylinder is returned in good order within 6 months after the loss, the replacement cost amount paid by the Customer will be refunded less the applicable charges for the Cylinder for the extended period. If the Cylinder is returned 6 months or more after the date of the loss no refund of the replacement cost charged will be issued.

## 12 Proper Law And Compliance

- 12.1 These Conditions shall be governed by the laws of the State of New South Wales and the parties submit to the non-exclusive jurisdiction of the Courts of that State.
- 12.2 The Customer shall comply with all applicable laws and regulations, such as the US Foreign Corrupt Practices Act, the Criminal Code Act 1995 (Cth) and Criminal Code Amendment (Theft, Fraud, Bribery and related Offences) Act 200 (Cth) and all export control laws of Australia, New Zealand, the United States and any other applicable destination and hereby indemnifies and hold harmless Kirby, its directors, officers, servants and agents from any liability arising from the Customer's failure to comply with such laws. The Customer must obtain and maintain all applicable licenses during the term of these Conditions.

## 13 Additional Costs, Taxes, Etc.

- 13.1 If any duties, taxes, rates or other impost shall be levied in respect of any purchase of goods or hire of the Cylinders, the Customer shall pay such amount in addition to the price (plus GST).
- 13.2 In the event that the Customer shall specifically order Kirby to acquire goods or components from any foreign source the price (plus GST) payable by the Customer may be increased by Kirby at any time whether before or after delivery and despite any quotation that may have been given by Kirby to the Customer to compensate Kirby for any exchange loss which may have occurred as a result of the fall in value of Australian currency as against the relevant foreign currency during the period from the date of the order to the date of the payment.

## 14 Default

- 14.1 The Customer shall be in default under these Conditions, where:
- (a) the Customer fails for any reason to pay any moneys due to Kirby as and when they fall due; or
  - (b) the Customer fails to perform or observe any of its obligations under these Conditions; or
  - (c) the Customer exceeds the limit of any credit account with Kirby; or
  - (d) the Customer suspends payment of its debts or is presumed to be insolvent within the meaning of the Corporations Act 2001 (Cth) or enters or proposes to enter into any arrangement scheme or composition with its creditors or ceases or threatens to cease carrying on business or is wound up or suffers the appointment of any external administration.
- 14.2 In the event of default by the Customer, the Customer must indemnify Kirby's legal costs, fees, charges, expenses and outgoings on a solicitor and own client basis flowing from the default.

**15 Capacity**

- 15.1 If the Customer enters into these Conditions as the trustee of a trust, the Customer must inform Kirby of this and provide any further information on request, and the Customer warrants to Kirby that the Customer:
- (a) enters into this agreement in both its capacity as trustee and in its personal capacity;
  - (b) has the right to be indemnified out of trust assets; and
  - (c) will not retire as trustee of the trust or appoint any new or additional trustee without advising Kirby.
- 15.2 If the Customer consists of more than one legal person, including if the Customer enters into these Conditions as a partner, the Customer warrants that each Customer agrees to the entry into these Conditions and that all Customers are jointly and severally bound by these Conditions, and remain so until the Customer requests that a Customer be no longer bound, and Kirby so agrees, such agreement not to be unreasonably withheld.
- 15.3 If the Customer enters into these Conditions as a corporation, the Customer warrants that it is duly registered as an Australian corporate entity, it is compliant and up to date with its notification obligations under the Corporations Act 2001, and there is nothing in its documents of incorporation or otherwise that prevents it entering into and carrying out its obligations under these Conditions.

**16 Privacy**

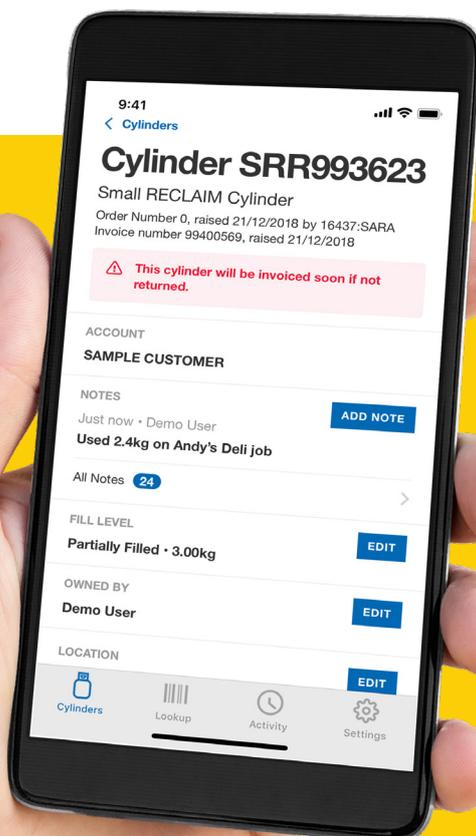
- 16.1 The Customer agrees to Kirby collecting, using and disclosing personal information of the Customer and persons associated with the Customer for the purposes set out in these Conditions and in Kirby's Privacy Policy and Privacy Collection Notice, available on the Kirby website. Kirby agrees to comply with the Privacy Act 1988 (Cth) and our Privacy Policy and Privacy Collection Notice.

**17 General Provisions**

- 17.1 Customer restructure - The Customer must notify Kirby in writing of any change in its structure or management including any change in director(s), shareholder, or change of management within 4 business days of the date of such change.
- 17.2 Severability - Any part of these Conditions being a whole or part of a clause shall be capable of severance without affecting any other part of these Conditions.
- 17.3 Waiver - A single or partial exercise or waiver of a right relating to these Conditions will not prevent any other exercise of that right or any other right.
- 17.4 SmartAccess Service – Kirby offers the Customer access to the Kirby Smart@ccess Website, on the basis of the information you provided in the completed Application Form, and subject to compliance with the Kirby Online Customer Service Facility Terms of Use available on the Kirby website as amended from time to time, which form part of these Conditions.
- 17.5 Intellectual Property - No right or licence is granted to the Customer under any patent, copyright, register design, know-how or other intellectual property rights except the right to use or resell the goods. If the goods incorporate any design or specification of the Customer, Kirby shall not be liable for any infringement of any intellectual property rights caused by the goods or their use or sale by the Customer.
- 17.6 Unless otherwise agreed in writing, Kirby shall manufacture and/or supply the goods in accordance with its own specification and standards and using parts and manufacturing processes and techniques solely at its own discretion.

It's never been easier to register and start enjoying the benefits of smart@ccess.

- ➔ Scan the code with your phone's camera
- ➔ Fill in your details and register your business



Enjoy the benefits ...

- Convenient online ordering
- Order ahead and pick-up from a branch
- View your net pricing
- Detailed product information
- Check stock availability
- Gas2Go® cylinder management
- Cylinder management visibility & reports
- Manage your Coolcard™ users
- Heat load calculator
- Project quoting tools
- View and access your invoices
- View and access your statements
- Make secure payments online

**KIRBY ONLINE CUSTOMER SERVICE FACILITY  
TERMS OF USE****1. Your agreement with us**

**1.1** By using or accessing the Kirby Online Customer Service Facility, including ordering goods ("Service") provided on the website [www.kirbyhvacr.com.au](http://www.kirbyhvacr.com.au) ("Website"), you agree to be bound by the terms and conditions set out below ("Terms of Use").

**1.2** In these Terms of Use, a reference to "we", "us", "our" and "Kirby" means Kirby HVAC&R Pty Ltd. (ABN 42 624 910 041).

**1.3** In these Terms of Use, supply of the Service to:

**(a)** Australian customers will be described as the "Australian Service".

**1.4** A reference to "you" or "your" in these Terms of Use is a reference to Kirby customers who have been provided with secure login details (in the form of an account number and password) to access, review or use the Service.

**1.5** Except to the extent that these Terms of Use apply or as required by law, your use of this Service and receipt of any information from us does not create any legal relationship between you and us.

**2. What the Service does**

**2.1** The purpose of our Service is to provide an online customer self-service portal, enabling you, as a Kirby customer, to login to the Service and:

**(a)** place an order for goods offered by Kirby ("Product") for collection by you from the selected branch;

**(b)** view your net pricing of Products;

**(c)** check Product availability;

**(d)** view the Kirby online Product catalogue;

**(e)** produce heatload calculations and Product selections;

**(f)** view your account information;

**(g)** view your invoices (for up to 120 days);

**(h)** view your statements (for up to 12 months);

**(i)** view your gas statements (for up to 12 months);

**(j)** pay your invoices online;

**(k)** track and manage your refrigerant cylinders;

**(l)** access pricing; and

**(m)** as the Primary Account Holder, to create multiple user accounts (User Accounts), by adding additional users to your account with their own unique password and defined level of access.

For further information regarding the Primary Account Holder please refer to clause 4.

**3. Use of this Website and Access**

**3.1** You may access our Website and our Service at any time, unless we have restricted access in order to perform necessary maintenance, updates or upgrades. Your ability to access our Website and our Service will otherwise depend on factors out of our control and we do not take or share any responsibility for those factors such as the quality of your internet connection and the state of your hardware.

**3.2** Through our Website, you may view, cache, browse, display, print or download a copy of any content featured on our Website to your computer, provided that you:

**(a)** use it for personal use only and not for any purposes that are commercial, unlawful or may prejudice the reputation or interests of Kirby;

**(b)** keep your account username and password secure. You must not share your password with any person. You may only use your own account, and must not use or access any other person's account, except where you have been authorised by the initial account holder as an additional user;

**(c)** do not hide, deface, alter or delete any copyright symbol, trade mark or other proprietary rights notice;

**(d)** do not use or access our Website in a manner or for a purpose contrary to the law;

**(e)** do not hack into, change or otherwise knowingly transmit a virus or otherwise damage our Website or any information contained within it;

**(f)** do not link it to another website; and

**(g)** do not breach any other terms of these Terms of Use, or our terms and conditions of sale and hire ("Sale Terms", a copy of which is available at <http://www.kirbyhvacr.com.au/terms-and-conditions>, or our Privacy Policy which both appear on our Website.

**4. Placing an Order**

**a.** You may place an order for a Product through the Website. Each order placed by you and accepted by Kirby is a binding agreement between you and Kirby for the supply of the Products specified in that order on these terms of use and the Sale Terms.

**b.** To the extent that there is any inconsistency existing between:

**i.** the Sale Terms; and

**ii.** these Terms of Use, then the document listed earlier in this clause 4(b) prevails to the extent of the inconsistency. Your placing of an order for Products constitutes an acceptance by you of the supply by Kirby of such Products solely on these Terms of Use and the Sale Terms.

**c.** The Terms of Use that apply at the time you place an order will apply to an existing order that has been accepted by us. Kirby may vary these Terms of Use for future orders.

**d.** Except as set out in these Terms of Use, you will be required to pay Kirby for the Products ordered in accordance with the Sale Terms.

**5. Cancellation of Orders**

**a.** Kirby may cancel an order (including any orders that Kirby has accepted) or any part of an order without any liability to you for that cancellation at any time if:

**i.** the Products that you order are not available;

**ii.** there is an error in the price or Product description posted on the Website for that Product in that order; or

**iii.** Kirby reasonably believes your order has been placed in breach of these Terms of Use, the Sale Terms or the Agreement.

**c.** If an order has been canceled pursuant to clauses 5(a)(i) or 5(a)(ii), Kirby will not charge you any fees and charges for the canceled order.

**6. Responsibilities of the Primary Account Holder**

**6.1** The Primary Account Holder must apply manually for use of our Service and will be the signatory on all applications. The Primary Account Holder is a person authorised by their company to grant access to other staff members within their company to their account information. The Primary Account Holder may create multiple User Accounts for these staff members with separate login details and restricted access to only some areas of the portal.

**6.2** The Primary Account Holder is responsible for the deletion of any User Accounts created, and must delete the User Account if the staff member leaves the company. Kirby takes no responsibility for the level of access granted to the staff members, or for the deletion of these User Accounts.

**6.3 a.** You must ensure that your login identification details and password that are used to access the Website and the details of your account are kept in a safe and secure manner.

**b.** You must notify Kirby if you are or become aware that there is or has been an unauthorised use of your login identification details and password or account, or any other security breach relating to your account.

**c.** You must promptly advise Kirby of any changes to your information provided to Kirby as part of the customer registration process.

**d.** You are responsible for any costs associated with your access to or use of the Website, including internet access fees.

**e.** You are responsible and liable for any person that uses your login identification details and password or account including without limitation to order Product(s) through the Website.

**f.** You agree that, subject to clause 6.3(b), Kirby may charge you for all Products that Kirby agrees to supply to you that have been ordered using your login identification details or account and password through the Website.

**7. Technical Information and Security**

**7.1** The transmission of data over the internet is not always secure. Although we endeavour to secure our Website, we are not liable for any breaches of security and you use our Website entirely at your own risk.

**7.2** We do not warrant that the functions available on our Website will be uninterrupted or error free, or free of viruses or programming bugs or interferences due to factors outside our control.

**7.3** Your ability to access our Website will depend on factors out of our control and we do not take any responsibility or provide any warranties that this Website will be accessible through all web browsers or that it will be accessible at all times.

**7.4** You acknowledge that it is your responsibility to implement sufficient procedures and virus checks (including anti-virus and other security checks) to satisfy your particular requirements for the accuracy of data input and output.

**8. Payment**

**8.1** The accepted methods of payment on our Website are Visa and MasterCard only. Payment made by either of these methods will incur a surcharge to the customer of 1.65% plus GST.

**8.2** For further details regarding payment or our refunds policies, please refer to our Sale Terms which may be accessed from the following link: <http://www.kirbyhvacr.com.au/terms-and-conditions>.

**9. Intellectual Property**

**9.1** Our Website contains intellectual property including trademarks, confidential information and copyright, together with any goodwill or reputation and intellectual property rights subsisting in those things.

**9.2** You should assume that all intellectual property on our Website is owned by Kirby or third parties and unless permitted by law, you must not copy, reproduce, transmit, display or otherwise distribute any of that intellectual property in whole or in part without our prior written consent.

**10. Suspension or Termination of Access**

**10.1** We reserve the right to suspend or terminate your account or access to our Website or our Service at our sole discretion if we believe that you have breached any of these Terms of Use.

**10.2** When that happens, we will endeavour to notify you of the breach and ways in which you can remedy it.

**11. Disclaimers**

**11.1** While we endeavour to ensure the accuracy and completeness of the information contained on our Website, that information may contain errors and omissions and is liable to change. We make no warranties and accept no responsibility for any loss or damage you may suffer as a result of your reliance on any of the material on our Website (including any as to the quality, accuracy, completeness or fitness for any particular purpose of such material).

**11.2** Except to the extent required by law, the contents of our Website are provided without any express or implied representations or warranties. We exclude all implied conditions and warranties relating to the content of our Website to the extent permitted by law.

**11.3** In the case of the Australian Service, where liability cannot be excluded any liability incurred by us in relation to the use of our Website or its contents is limited as provided under the Competition and Consumer Act 2010 (Cth).

**11.4** To the maximum extent permitted by law:

**(a)** you agree that Kirby and its committee of management, officers, employees, agents, contractors, service providers, successors or assigns will not be liable for any direct or indirect loss or damage, whatsoever (including through negligence) arising out of, or in any way related to, the use of our Website;

**(b)** subject to clause 11.1, under no circumstances will we be liable for any incidental, direct, indirect, consequential, special, punitive or other losses, damages, liabilities, claims or expenses you or others may suffer including damages for loss of profits, loss of opportunity, business interruption or loss or corruption of data or information from the use of our Website;

**(c)** we are not responsible to you or anyone else for any loss suffered in connection with the use of our Website, any of its contents, for any loss incurred as a result of damage to your or another person's computer system or the transmission of any computer viruses; and

**(d)** you indemnify and agree to keep us indemnified against any loss or damage or costs incurred by us in connection with your breach of these Terms of Use or of any other legal obligation by you or your use of or conduct on our Website or our Service.

**12. Privacy Policy**

**12.1** Our compliance with privacy legislation is set out in our separate Privacy Policy which may be accessed from the following link: <http://www.kirbyhvacr.com.au/kirby-privacy-policy>

**13. General**

**13.1** These Terms of Use are in addition to, and not in derogation of, any other terms or conditions that appear elsewhere on our Website, including our Sale Terms which may be accessed from the following link: <http://www.kirbyhvacr.com.au/kirby-privacy-policy> and must be interpreted accordingly.

**13.2** These Terms of Use may be varied from time to time, and this may occur without notice to you. When these Terms of Use are updated, we will endeavour to provide notice to you on our Website, prior to you logging in to access our Service. Please ensure that you review these Terms of Use regularly as you will be deemed to have accepted a variation if you continue to use our Website or our Service after a variation to the Terms of Use has been posted.

**13.3** If any part of these Terms of Use is determined to be illegal, invalid or otherwise unenforceable or void, that part shall be severed to the extent necessary and the remainder of these Terms of Use shall continue in full force and effect.

**13.4** No waiver of any breach of these Terms of Use will be construed as a waiver of any other breach of these Terms of Use.

**13.5** In the case of the Australian Service:

**(a)** the information on this Website is provided for Australian users (accessing the Website both in Australia and outside of Australia) and visitors to Australia (foreign person's accessing the Website whilst within Australia but only to the extent that they remain in Australia) only; and **(b)** the Terms of Use shall be governed by the laws of the State of New South Wales and the parties submit to the non-exclusive jurisdiction of the Courts of that State.



# Customer Satisfaction is Our Priority

Kirby has a dedicated team in place to deliver results for our customers in every region of Australia.

Our access to global brands is unrivalled, being supported by our parent company Beijer Ref AB. From our Australian support centre and global manufacturing facilities to our local distribution centres and wholesale branch network, every employee is committed to the long-term success of Kirby.

Customer satisfaction is what drives us.

Our employees operate in a cohesive team environment with a sense of integrity, pride and accountability. Our organisation takes pride in honouring our commitments and delivering on the promises we make to our customers delivered in line with our company values.

Committed, Engaged, Straightforward, United



**13 23 50**  
**[kirbyhvacr.com.au](http://kirbyhvacr.com.au)**

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