



DEFENDER

EVAPORATORS



KIRBY DEFENDER®

Evaporators

Built tough and reliable
for Australia's
harsh conditions



Exclusively distributed by

KIRBY
A BEIJER REF Company

Features and Benefits

Here Today, Ready for Tomorrow



All models within the Kirby Defender® range are specifically designed for next-generator, low Global Warming Potential (GWP) refrigerants, including R448A, R449A and R513A.

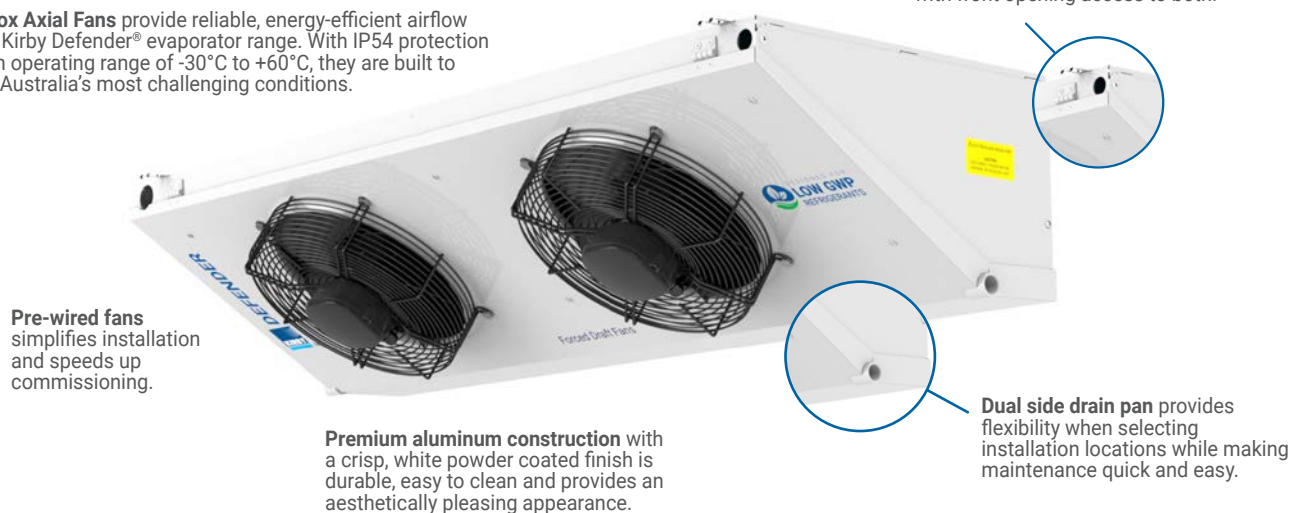
Not only does this provide tremendous flexibility for installation and system performance options, but your investment is future proofed for years to come through the global HFC phase-down.

Innovative Features, Real Benefits

All models within the Kirby Defender® range are designed to address modern refrigeration challenges like never before. With rising energy costs, the need to prevent food loss and wastage, evolving refrigerant technologies, and increasing demands for cool room efficiency, sustainable solutions have become an urgent priority. The Kirby Defender® series delivers reliable, future-ready performance to meet these critical industry needs.

Freddox Axial Fans provide reliable, energy-efficient airflow to the Kirby Defender® evaporator range. With IP54 protection and an operating range of -30°C to +60°C, they are built to resist Australia's most challenging conditions.

User friendly access panels are designed for ease of commissioning and service, with front opening access to both.



Pre-wired fans
simplifies installation
and speeds up
commissioning.

Premium aluminum construction with a crisp, white powder coated finish is durable, easy to clean and provides an aesthetically pleasing appearance.

- **Dual side drain pan** provides flexibility when selecting installation locations while making maintenance quick and easy.

Kirby Defender® Evaporators - Nomenclature

KD	MS	H	A	1	017	-RC
Fan Type & Size A 300mm (AC) B 300mm (EC)				Additional Functionality -RC Ready Connect -E Defrost Heater (medium temperature only)		
Fluid Type H HFC&HFC Blends						
Usage Application LS Low Temperature – Standard LU Low Temperature – Low Frost MS Medium Temperature – Standard MU Medium Temperature – Low Frost				Nominal Capacity - Watts/100 (rounded up or down) 017 = 1700W CO ₂ Models - R744 HFC Models - R448A		
Product Brand KD Kirby Defender®				Number of Fans 1 - 4 Fans		

KIRBY DEFENDER® EVAPORATORS

Rating and Performance Data

Selection of Heat Exchange Equipment on High Glide Refrigerants

As the refrigeration industry moves towards high glide alternatives to the commonly used refrigerants R134a, R404A and R507A, it is becoming increasingly common to rate capacities for suitable heat exchange equipment and condensing units.

Currently, it is possible to rate heat exchange equipment via two methods, dew point and mid point. These methods offer significantly different results depending on the application and glide of the refrigerant to be used.

Kirby recommends using the dew point factor for condensing unit selections, and the mid point factor for heat exchange equipment selections. This position has been taken to ensure the correct humidity control in coolrooms and condensing units are adequately sized for the use of high glide refrigerants.

Correction factors, listed in Tables 1 and 2 below, are based on European Standards EN327 and EN328.

Table 1: Refrigerant correction factors (Dew Point Factor)

PRODUCT TYPE CONDITION	DX AIR COOLERS				AIR COOLED CONDENSERS	GLIDE @40°C (information only)
	SC 1	SC 2	SC 3	SC 4	DTI=15 K or DTI=10K	
R404A (reference)	1	1	1	1	1	0.5
R134a	0.93	0.91	0.85	-	-	0
R507A [REFPROP 9.1]	0.97	0.97	0.97	0.97	1	0
R407A	1.19	1.24	1.28	1.32	0.89	4.5
R407C	1.21	1.26	1.31	1.36	0.87	5.06
R407F	1.19	1.24	1.29	1.35	0.89	4.52
R448A	1.23	1.26	1.28	1.31	0.89	4.82
R449A	1.21	1.23	1.24	1.26	0.89	4.65
R450A	0.92	0.91	0.84	-	0.93	0.63
R452A	1.1	1.12	1.13	1.15	0.93	3.43
R513A	0.91	0.91	0.85	-	0.93	0.17

Table 2: Refrigerant correction factors (Mid Points Factor)

PRODUCT TYPE CONDITION	DX AIR COOLERS				AIR COOLED CONDENSERS	GLIDE @40°C (information only)
	SC 1	SC 2	SC 3	SC 4	DTI=15 K or DTI=10K	
R404A (reference in dew point)	1	1	1	1	1	0.5
R448A	0.97	0.96	0.95	0.94	1.08	4.82
R449A	0.96	0.95	0.94	0.93	1.07	4.65
R452A	0.96	0.94	0.94	0.93	1.04	3.43
R450A	0.93	0.89	0.83	0.79	0.92	0.63
R513A	0.92	0.9	0.86	0.83	0.93	0

KIRBY DEFENDER® EVAPORATORS

Medium Temperature Performance Data

PRODUCT NUMBER	CAPACITY WATTS @ -4°C SST. & 6KTD, 85% RH (AUST. WET COIL RATING)		CAPACITY WATTS @ -8°C SST. & 8KTD, 85% RH (EN 328 SC2 WET COIL RATING)		FAN MOTOR DATA - YWF4E-300B-92/35-G						DEFROST HEATER DATA				
					220-240V / 50HZ / 1 PHASE						FACTORY FITTED				
	R134a	R448A	R134a	R448A	No. OF FANS	AIR MOVEMENT		MOTORS (TOTAL)		SOUND POWER dB(A)	FACTORY FITTED MODEL NUMBER	VOLTS	TOTAL WATTS	TOTAL AMPS/ PHASE	PHASE
						FLOW (l/s)	THROW (m)	WATTS	AMPS						
KIRBY DEFENDER EVAPORATORS® - MEDIUM TEMPERATURE (300mm FAN DIAMETER)															
KDMSHA1015	1470	1570	1910	2040	1	300	5.0	85	0.42	68	KDMSHA1015-E	220	1160	5.3	Single Phase
KDMSHA2022	2110	2250	2700	2880	2	630	8.0	170	0.84	71	KDMSHA2022-E	220	2120	9.6	Single Phase
KDMSHA2033	3040	3240	3840	4090	2	600	7.5	170	0.84	71	KDMSHA2033-E	220	2120	9.6	Single Phase
KDMSHA3044	4130	4410	5210	5550	3	920	8.0	255	1.26	73	KDMSHA3044-E	380	3080	7.2	Three Phase (Star)
KDMSHA3050	4590	4890	5780	6160	3	900	8.0	255	1.26	73	KDMSHA3050-E	380	3080	7.2	Three Phase (Star)
KDMSHA4066	6130	6540	7720	8230	4	1200	9.5	340	1.68	74	KDMSHA4066-E	380	4040	9.4	Three Phase (Star)

KIRBY DEFENDER® EVAPORATORS

Low Temperature Performance Data

PRODUCT NUMBER	CAPACITY WATTS @ -24°C SST. & 6KTD, 90% RH (AUST. WET COIL RATING)		CAPACITY WATTS @ -25°C SST. & 8KTD, 95% RH (EN 328 SC3 WET COIL RATING)		FAN MOTOR DATA - YWF4E-300B-92/35-G									
					220-240V / 50HZ / 1 PHASE									
	No. OF FANS	AIR MOVEMENT		MOTORS (TOTAL)		SOUND POWER dB(A)	VOLTS	TOTAL WATTS	TOTAL AMPS/ PHASE	PHASE				
		Flow (l/s)	THROW (m)	WATTS	AMPS									
	R134a	R448A	R134a	R448A										
KIRBY DEFENDER EVAPORATORS® - LOW TEMPERATURE (300mm FAN DIAMETER)														
KDLSHA1013	1190	1360	1390	1590	1	300	5.0	85	0.42	68	220	1690	7.7	Single Phase
KDLSHA2022	1860	2130	2170	2480	2	630	8.0	170	0.84	71	220	3130	14.2	Single Phase
KDLSHA2027	2380	2710	2750	3140	2	600	7.5	170	0.84	71	220	3130	14.2	Single Phase
KDLSHA3032	2830	3240	3300	3770	3	940	8.5	255	1.26	73	380	4570	7.2	Three Phase (Star)
KDLSHA3036	3190	3650	3680	4210	3	920	8.0	255	1.26	73	380	4570	7.2	Three Phase (Star)
KDLSHA3040	3560	4070	4110	4700	3	900	8.0	255	1.26	73	380	4570	7.2	Three Phase (Star)
KDLSHA4054	4750	5430	5490	6270	4	1200	9.5	340	1.68	74	380	6010	9.4	Three Phase (Star)

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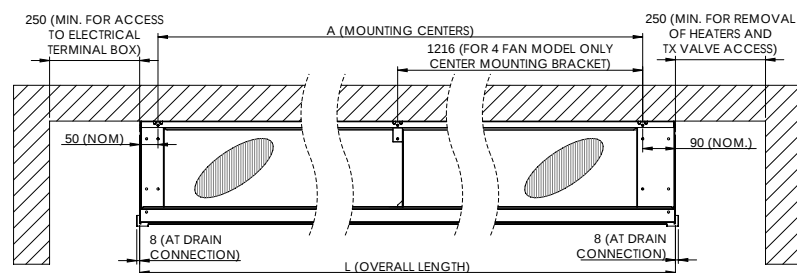
Medium Temperature Performance Data

PRODUCT NUMBER	DIMENSIONS (mm)				CONNECTIONS (mm)		WEIGHT (kg)	
	LENGTH	DEPTH	HEIGHT	A	LIQUID	SUCTION	UNPACKED	PACKED
KIRBY DEFENDER EVAPORATORS® - MEDIUM TEMPERATURE (300mm FAN DIAMETER)								
KDMSHA1015	774	567	283	632	12.7	12.7	15	17
KDMSHA2022	1374	567	283	1232	12.7	15.9	25	28
KDMSHA2033	1374	567	283	1232	12.7	15.9	28	31
KDMSHA3044	1974	567	283	1832	12.7	19.0	35	39
KDMSHA3050	1974	567	283	1832	12.7	19.0	37	41
KDMSHA4066	2574	567	283	2432	12.7	22.2	49	54

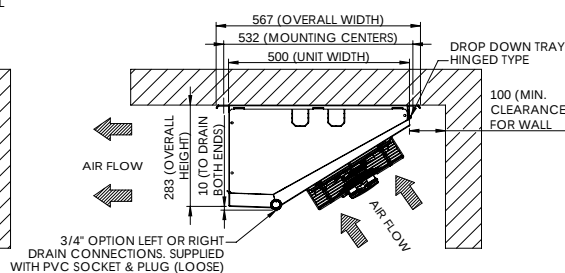
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Low Temperature Performance Data

PRODUCT NUMBER	DIMENSIONS (mm)				CONNECTIONS (mm)		WEIGHT (kg)	
	LENGTH	DEPTH	HEIGHT	A	LIQUID	SUCTION	UNPACKED	PACKED
KIRBY DEFENDER EVAPORATORS® - LOW TEMPERATURE (300mm FAN DIAMETER)								
KDLSHA1013	774	567	283	632	12.7	12.7	17	19
KDLSHA2022	1374	567	283	1232	12.7	15.9	27	30
KDLSHA2027	1374	567	283	1232	12.7	15.9	30	33
KDLSHA3032	1974	567	283	1832	12.7	19.0	35	39
KDLSHA3036	1974	567	283	1832	12.7	19.0	37	41
KDLSHA3040	1974	567	283	1832	12.7	19.0	39	43
KDLSHA4054	2574	567	283	2432	12.7	22.2	51	56



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SIDE ELEVATION



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