



KIRBY® GUARDIAN READY CONNECT Evaporators

The first line of defence
just got stronger



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KIRBY® GUARDIAN READY CONNECT

Evaporators

Introduction and Overview

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:

Features & Benefits

The Kirby® Guardian Ready Connect offers:

- Simple and fast installation and commissioning
- Extremely short pull-down times
- Precise refrigerant flow
- Enhanced durability rated to IP65
- Operating conditions between -30°C to 40°C
- Comes standard with UltraCap fitted

EVD ice is also designed to be compatible with third party regulation and control solutions, using standard communication protocols, or can work as a standalone solution for refrigeration cells and other applications in which compactness and versatility are key.

Kirby® Guardian Ready Connect delivers 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.



Kirby Guardian Ready Connect – Nomenclature

K	MS	H	A			A	3	-RC
			Fan Size		Additional Functionality			
			A	300mm (AC)	C	300mm (EC)	`-RC	Factory Fitted
			B	350mm (AC)	D	350mm (EC)	`-E	Factory Fitted
					Defrost Heater			
		Fluid Type		Nominal Capacity				
		H	HFC & HFC Blends		HFC Models - R448A			
		C	CO ₂		CO ₂ Models - R744			
		Usage Application		Number of Fans				
		LU	Low Temperature – Low Frost		1	1 Fan	4	4 Fans
		LS	Low Temperature – Standard		2	2 Fans	5	5 Fans
		MU	Medium Temperature – Low Frost		3	3 Fans		
		MS	Medium Temperature – Standard					
		Manufacturer Brand						
K	Kirby							

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Features and Benefits

Advanced Coil Design for Greater Efficiency

SERIES 9

ADVANCED COIL DESIGN FOR GREATER EFFICIENCY

The secret of Kirby Guardian's performance lies in our Series9 coil, which thanks to its innovative design and use of sine wave technology produces a larger heat exchange surface area.

Series9 significantly improves the efficiency of the unit, reducing overall energy consumption and lowering greenhouse emissions, as well as making a valuable contribution to the bottom line through a lower cost of ownership.

Here Today, Ready for Tomorrow

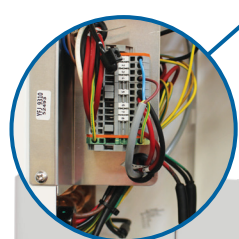


All models within the Kirby Guardian range are specifically designed for next-generation, low Global Warming Potential (GWP) refrigerants, including R407F, R450A, R448A, R449A and R513A.

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 Guardian family combine innovative features to deliver substantial benefits.



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

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



Pre-wired fans simplifies installation and speeds up commissioning.



Fully reversible drain pan provides flexibility when selecting installation locations while making maintenance quick and easy.



Ziehl-Abegg FE2owlet fans feature bionic blade technology to optimise air volumes and flow properties, and improved noise ratings, whilst offering maintenance free use.

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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 = 10 K	
R404A (reference)	1	1	1	1	1	0.5
R134a	0.93	0.91	0.85	-	0.96	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	-	0.95	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 = 10 K	
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

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Medium Temperature Performance Data

MODEL	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						EXPANSION VALVE
	240V / 50HZ / 1 PHASE										
	R134a	R448A	R134a	R448A	NUMBER OF FANS	AIR MOVEMENT		MOTORS (TOTAL)		SOUND POWER DB(A)	CAREL E2V MODEL
				FLOW (L/S)		THROW (M)	WATTS	AMPS			
300mm FAN DIAMETER											
KMSHA1015-R1	1423	1501	1665	1757	1	364	7.1	85	0.42	68	E2V09
KMSHA1017-R2	1589	1676	1859	1962	1	322	6.4	85	0.42	69	E2V11
KMSHA2026-R2	2473	2608	2894	3053	2	778	10.6	170	0.84	71	E2V11
KMSHA2034-R4	3227	3404	3777	3984	2	683	9.6	170	0.84	71	E2V18
KMSHA3047-R5	4423	4667	5178	5462	3	1092	12.5	255	1.26	72	E2V24
KMSHA4062-R5	5924	6249	6934	7315	4	1456	14	340	1.68	74	E2V24
KMSHA4069-R6	6559	6919	7677	8099	4	1289	12.7	340	1.68	75	E2V30
350mm FAN DIAMETER											
KMSHB1025-R2	2383	2514	2789	2942	1	672	8.7	215	1.05	72	E2V11
KMSHB2047-R5	4427	4671	5182	5467	2	1450	13.0	430	2.10	77	E2V24
KMSHB2060-R5	5683	5996	6652	7018	2	1261	11.9	430	2.10	77	E2V24
KMSHB2065-R5	6186	6526	7241	7638	2	1189	11.2	430	2.10	77	E2V24
KMSHB3091-R5	8664	9140	10141	10699	3	1892	14.5	645	3.15	79	E2V24
KMSHB3098-R5	9314	9826	10902	11501	3	1783	13.8	645	3.15	79	E2V24
KMSHB4124-R7	11775	12422	13782	14540	4	2522	16.3	860	4.20	81	E2V35
KMSHB5162-R7	15379	16224	18001	18990	5	2972	17.5	1075	5.25	82	E2V35

Some models subject to minimum order quantities and special order lead times. Speak to your Kirby representative for further information

GUARDIAN READY CONNECT EVAPORATORS

Low Temperature Performance Data

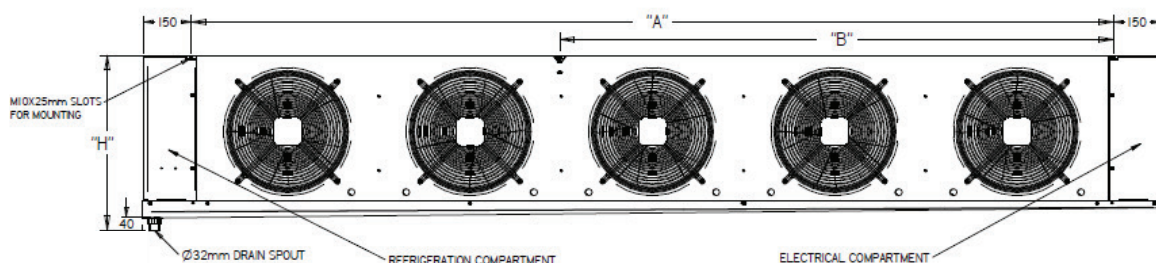
MODEL	CAPACITY WATTS @ -24°C SST. & 6KTD, 90% RH (AUST. WET COIL RATING)		CAPACITY WATTS @ -25°C SST. & 7KTD, 95% RH (EN328 SC3 WET COIL RATING)		FAN MOTOR DATA						EXPANSION VALVE
	240V / 50HZ / 1 PHASE										
	R448A	R404A	R448A	R404A	NUMBER OF FANS	AIR MOVEMENT		MOTORS (TOTAL)		SOUND POWER DB(A)	CAREL E2V MODEL
					FLOW (L/S)	THROW (M)	WATTS	AMPS			
300mm FAN DIAMETER											
KLSHA1013-R1	1339	1410	1492	1570	1	342	6.3	85	0.42	68	E2V09
KLSHA2023-R2	2346	2470	2613	2751	2	728	9.4	170	0.84	71	E2V11
KLSHA2028-R3	2755	2900	3068	3230	2	644	8.5	170	0.84	72	E2V14
KLSHA3035-R3	3541	3727	3943	4151	3	1092	11.5	255	1.26	72	E2V14
KLSHA3039-R3	3924	4131	4370	4600	3	1025	10.9	255	1.26	72	E2V14
KLSHA4055-R4	5451	5738	6070	6390	4	1289	11.7	340	1.68	75	E2V18
350mm FAN DIAMETER											
KLSHB1021-R2	2057	2165	2291	2411	1	631	7.6	215	1.05	73	E2V11
KLSHB2042-R3	4201	4422	4679	4925	2	1344	11.4	430	2.10	77	E2V14
KLSHB2050-R4	4974	5236	5539	5831	2	1189	10.4	430	2.10	77	E2V18
KLSHB3067-R6	6666	7017	7424	7814	3	1892	13.5	645	3.15	79	E2V30
KLSHB3075-R5	7517	7912	8371	8811	3	1783	12.8	645	3.15	79	E2V24
KLSHB4099-R5	9887	10407	11010	11590	4	2378	14.3	860	4.20	81	E2V24
KLSHB5119-R7	11909	12536	13263	13961	5	2972	16	1075	5.25	82	E2V35

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GUARDIAN READY CONNECT EVAPORATORS

Physical Data

MODEL	FIELD SERVICES CONNECTIONS (mm)				OPERATING REFRIGERANT CHARGE (kg)			DIMENSIONS (mm)						DRY WEIGHT (kg)	
	SUCTION	LIQUID	EXT. EQUALISER STUB	CONDENSATE DRAIN	R134a	R448A	R404A	L LENGTH	D DEPTH	H HEIGHT	A	B	C	UNPACKED	PACKED
KIRBY GUARDIAN READY CONNECT – MEDIUM TEMPERATURE (300mm FAN DIAMETER)															
KMSHA1015-R1	9.52	9.52	9.52	32	1.26	1.13	1.12	750	470	494	440	-	375	13	16
KMSHA1017-R2	12.70	12.70	9.52	32	1.89	1.70	1.69	750	470	494	440	-	375	15	18
KMSHA2026-R2	12.70	12.70	9.52	32	1.89	1.70	1.69	1155	470	494	845	-	375	21	26
KMSHA2034-R4	15.88	12.70	9.52	32	3.25	2.92	2.91	1155	470	494	845	-	375	24	29
KMSHA3047-R5	19.05	12.70	9.52	32	3.88	3.49	3.47	1560	470	494	1250	-	375	31	47
KMSHA4062-R5	22.22	12.70	9.52	32	5.14	4.62	4.59	1970	470	494	1660	-	375	40	60
KMSHA4069-R6	22.22	12.70	9.52	32	7.76	6.97	7.76	1970	470	494	1660	-	375	47	56
KIRBY GUARDIAN READY CONNECT – MEDIUM TEMPERATURE (350mm FAN DIAMETER)															
KMSHB1025-R2	12.70	12.70	9.52	32	1.89	1.70	1.69	850	470	545	540	-	420	18	22
KMSHB2047-R5	19.05	12.70	9.52	32	3.15	2.83	2.81	1485	470	545	1175	-	420	29	37
KMSHB2060-R5	22.22	12.70	9.52	32	5.24	4.71	4.69	1485	470	545	1175	-	420	35	43
KMSHB2065-R5	22.22	12.70	9.52	32	6.40	5.75	5.72	1485	470	545	1175	-	420	38	46
KMSHB3091-R5	25.40	12.70	9.52	32	7.97	7.16	7.12	2060	470	545	1745	-	420	49	74
KMSHB3098-R5	25.40	12.70	9.52	32	9.55	8.58	8.53	2060	470	545	1745	-	420	54	81
KMSHB4124-R7	25.40	15.88	9.52	32	10.59	9.52	9.47	2630	470	545	2320	1165	420	65	98
KMSHB5162-R7	31.75	15.88	9.52	32	15.84	14.23	14.15	3200	470	545	2890	1735	420	86	128
KIRBY GUARDIAN READY CONNECT – LOW TEMPERATURE (300mm FAN DIAMETER)															
KLSHA1013-R1	15.88	12.70	9.52	32	-	1.70	1.69	750	470	494	440	-	375	16	19
KLSHA2023-R2	19.05	12.70	9.52	32	-	2.36	2.34	1155	470	494	845	-	375	23	28
KLSHA2028-R3	22.22	12.70	9.52	32	-	3.49	3.47	1155	470	494	845	-	375	27	32
KLSHA3035-R3	22.22	12.70	9.52	32	-	3.49	3.47	1560	470	494	1250	-	375	32	48
KLSHA3039-R3	25.40	12.70	9.52	32	-	4.34	4.31	1560	470	494	1250	-	375	34	50
KLSHA4055-R4	25.40	12.70	9.52	32	-	4.34	6.94	1970	470	494	1660	-	375	47	67
KIRBY GUARDIAN READY CONNECT – LOW TEMPERATURE (350mm FAN DIAMETER)															
KLSHB1021-R2	19.05	9.52	9.52	32	-	2.07	2.06	850	470	545	540	-	420	19	23
KLSHB2042-R3	25.40	9.52	9.52	32	-	3.77	3.75	1485	470	545	1175	-	420	32	40
KLSHB2050-R4	25.40	9.52	9.52	32	-	5.75	5.72	1485	470	545	1175	-	420	39	48
KLSHB3067-R6	28.58	9.52	9.52	32	-	7.16	7.12	2030	470	545	1745	-	420	50	75
KLSHB3075-R5	31.75	12.70	9.52	32	-	8.58	8.53	2060	470	545	1745	-	420	55	83
KLSHB4099-R5	41.28	12.70	9.52	32	-	11.40	11.34	2630	470	545	2320	1165	420	72	108
KLSHB5119-R7	41.28	12.70	9.52	32	-	14.23	14.15	3200	470	545	2890	1735	420	87	129





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