

marstair

HLR high capacity evaporators



HIGH CAPACITY EVAPORATOR

THE HLR HIGH CAPACITY EVAPORATOR IS DESIGNED TO GIVE MANY YEARS OF ROBUST SERVICE IN INDUSTRIAL SURROUNDINGS, PROCESS AND MATERIAL COOLING APPLICATIONS AT LOW TEMPERATURES. DESIGNED AND MANUFACTURED IN THE UK WITH A WIRED REMOTE CONTROL FOR HARD WIRING.



SPECIFICATION

- High or low level wall mounting with front or top air discharge or ceiling mounting
- Fresh air inlet facility
- Wired remote control (for hard wiring)
- Suitable for use with a R407C, R404A, R410A and R134A for cooling only applications
- Suitable for heat pump applications with R407C
- Can be matched with Marstair R407C MCU+ cooling only condensers and MHPUL(E) heat pumps
- Cooling down to 10°C at -2.5°C evaporating temperature

OPTIONS

- Ceiling or floor mounting kits
- De-Ice thermostat
- Air deflectors
- LPHW coil
- Return air sensor including electronic thermostat
- Condensate pump (5m head with overflow protection)

For further information please contact our Technical Department on **01484 405666**

Technical Information

R407C

Performances with thermal expansion valve set at 5°C superheat

	MODEL	AIR ON °C	HUMIDITY % RH	EVAPORATING TEMPERATURE °C											
				-2.5		0		2.5		5		7.5		10	
				TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS
LOW FAN SPEED	HLR460	10	70	5.14	3.71	3.91	3.00	2.66	2.32	1.62	1.62	0.82	0.82	-	-
		12.7	70	6.62	4.39	5.40	3.70	4.15	3.04	2.82	2.37	1.70	1.70	0.89	0.89
		15	70	7.98	4.94	6.76	4.28	5.51	3.63	4.18	2.98	2.74	2.31	1.63	1.63
		18	60	8.97	5.81	7.77	5.16	6.52	4.52	5.18	3.88	3.75	3.23	2.59	2.59
		21	50	9.80	6.68	8.57	6.04	7.34	5.43	6.02	4.80	4.58	4.16	3.54	3.54
	HLR540	10	70	6.10	4.40	4.65	3.55	3.17	2.74	1.92	1.92	0.97	0.97	-	-
		12.7	70	7.85	5.20	6.41	4.38	4.93	3.60	3.34	2.80	2.00	2.00	1.05	1.05
		15	70	9.46	5.86	8.00	5.05	6.54	4.30	4.95	3.52	3.26	2.74	1.93	1.93
		18	60	10.64	6.88	9.20	6.09	7.73	5.35	6.15	4.59	4.46	3.82	3.06	3.06
		21	50	11.62	7.92	10.17	7.14	8.68	6.39	7.14	5.68	5.44	4.92	4.18	4.18
MEDIUM FAN SPEED	HLR460	10	70	5.97	4.36	4.54	3.56	3.10	2.78	1.96	1.96	0.98	0.98	-	-
		12.7	70	7.71	5.14	6.27	4.37	4.82	3.61	3.27	2.84	2.04	2.04	1.07	1.07
		15	70	9.30	5.78	7.86	5.02	6.40	4.29	4.84	3.54	3.18	2.78	1.97	1.97
		18	60	10.47	6.83	9.04	6.07	7.58	5.37	6.02	4.64	4.35	3.90	3.14	3.14
		21	50	11.44	7.90	10.00	7.17	8.54	6.49	6.98	5.77	5.32	5.03	4.29	4.29
	HLR540	10	70	7.10	5.17	5.40	4.22	3.67	3.28	2.31	2.31	1.17	1.17	-	-
		12.7	70	9.15	6.10	7.44	5.16	5.72	4.27	3.88	3.36	2.42	2.42	1.26	1.26
		15	70	11.03	6.86	9.32	5.95	7.60	5.08	5.74	4.19	3.78	3.30	2.33	2.33
		18	60	12.43	8.09	10.72	7.20	8.97	6.33	7.14	5.49	5.17	4.61	3.70	3.70
		21	50	13.57	9.36	11.86	8.49	10.12	7.63	8.30	6.82	6.32	5.95	5.06	5.06
HIGH FAN SPEED	HLR460	10	70	6.74	5.00	5.14	4.10	3.49	3.23	2.28	2.28	1.15	1.15	-	-
		12.7	70	8.73	5.88	7.09	5.02	5.44	4.18	3.69	3.32	2.39	2.39	1.26	1.26
		15	70	10.53	6.60	8.89	5.75	7.22	4.94	5.46	4.11	3.58	3.27	2.31	2.31
		18	60	11.87	7.82	10.23	7.00	8.56	6.22	6.79	5.41	4.90	4.58	3.68	3.68
		21	50	12.97	9.11	11.33	8.30	9.65	7.51	7.89	6.75	6.12	6.12	5.04	5.04
	HLR540	10	70	8.07	5.96	6.13	4.90	4.17	3.85	2.72	2.72	1.38	1.38	-	-
		12.7	70	10.41	7.01	8.47	5.96	6.50	4.97	4.40	3.94	2.85	2.85	1.49	1.49
		15	70	12.56	7.86	10.61	6.85	8.62	5.87	6.52	4.90	4.27	3.89	2.75	2.75
		18	60	14.16	9.32	12.20	8.34	10.21	7.37	8.10	6.44	5.86	5.45	4.38	4.38
		21	50	15.48	10.85	13.52	9.88	11.52	8.94	9.38	7.98	7.28	7.28	5.99	5.99

Technical Information

R134A

Performances with thermal expansion valve set at 5°C superheat

	MODEL	AIR ON °C	HUMIDITY % RH	EVAPORATING TEMPERATURE °C											
				-2.5		0		2.5		5		7.5		10	
				TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS
LOW FAN SPEED	HLR460	10	70	5.18	3.74	3.94	3.02	2.69	2.33	1.63	1.63	0.82	0.82	-	-
		12.7	70	6.69	4.42	5.45	3.73	4.18	3.05	2.83	2.37	1.70	1.70	0.89	0.89
		15	70	8.06	4.99	6.82	4.31	5.54	3.65	4.19	2.98	2.74	2.31	1.63	1.63
		18	60	9.06	5.86	7.83	5.19	6.56	4.54	5.21	3.89	3.76	3.23	2.59	2.59
		21	50	9.90	6.75	8.66	6.10	7.39	5.46	6.04	4.81	4.59	4.16	3.54	3.54
	HLR540	10	70	6.15	4.43	4.68	3.58	3.18	2.75	1.93	1.93	0.97	0.97	-	-
		12.7	70	7.93	5.25	6.46	4.42	4.96	3.62	3.36	2.81	2.00	2.00	1.05	1.05
		15	70	9.55	5.92	8.08	5.10	6.58	4.32	4.97	3.53	3.26	2.74	1.93	1.93
		18	60	10.75	6.95	9.29	6.15	7.78	5.38	6.18	4.60	4.46	3.82	3.06	3.06
		21	50	11.74	8.00	10.27	7.22	8.77	6.46	7.16	5.69	5.45	4.92	4.18	4.18
MEDIUM FAN SPEED	HLR460	10	70	6.04	4.40	4.59	3.58	3.12	2.78	1.96	1.96	0.99	0.99	-	-
		12.7	70	7.78	5.19	6.34	4.40	4.86	3.62	3.29	2.85	2.05	2.05	1.07	1.07
		15	70	9.39	5.84	7.94	5.06	6.45	4.31	4.86	3.55	3.18	2.78	1.97	1.97
		18	60	10.58	6.90	9.13	6.14	7.64	5.40	6.05	4.66	4.36	3.90	3.14	3.14
		21	50	11.55	7.98	10.10	7.24	8.62	6.51	7.02	5.78	5.33	5.04	4.28	4.28
	HLR540	10	70	7.17	5.22	5.45	4.24	3.70	3.30	2.32	2.32	1.17	1.17	-	-
		12.7	70	9.24	6.16	7.52	5.21	5.77	4.30	3.90	3.37	2.42	2.42	1.26	1.26
		15	70	11.14	6.93	9.42	6.01	7.66	5.11	5.78	4.21	3.78	3.30	2.33	2.33
		18	60	12.55	8.17	10.83	7.27	9.06	6.39	7.18	5.50	5.18	4.61	3.70	3.70
		21	50	13.70	9.46	11.98	8.58	10.22	7.71	8.34	6.84	6.33	5.96	5.06	5.06
HIGH FAN SPEED	HLR460	10	70	6.83	5.06	5.19	4.14	3.52	3.25	2.29	2.29	1.16	1.16	-	-
		12.7	70	8.82	5.94	7.18	5.06	5.49	4.20	3.70	3.33	2.39	2.39	1.26	1.26
		15	70	10.64	6.66	8.98	5.81	7.30	4.98	5.50	4.13	3.59	3.27	2.31	2.31
		18	60	11.99	7.90	10.34	7.07	8.64	6.26	6.83	5.42	4.92	4.58	3.68	3.68
		21	50	13.10	9.20	11.45	8.38	9.75	7.58	7.94	6.78	6.13	6.13	5.03	5.03
	HLR540	10	70	8.15	6.02	6.19	4.93	4.20	3.87	2.73	2.73	1.38	1.38	-	-
		12.7	70	10.52	7.08	8.56	6.02	6.55	5.00	4.42	3.96	2.85	2.85	1.49	1.49
		15	70	12.69	7.94	10.72	6.92	8.70	5.93	6.55	4.91	4.28	3.89	2.75	2.75
		18	60	14.30	9.42	12.33	8.42	10.31	7.45	8.15	6.46	5.87	5.46	4.38	4.38
		21	50	15.63	10.96	13.66	9.98	11.63	9.03	9.47	8.06	7.29	7.29	5.98	5.98

Technical Information

R404A

Performances with thermal expansion valve set at 5°C superheat

	MODEL	AIR ON °C	HUMIDITY % RH	EVAPORATING TEMPERATURE °C											
				-2.5		0		2.5		5		7.5		10	
				TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS
LOW FAN SPEED	HLR460	10	70	5.06	3.66	3.86	2.97	2.62	2.30	1.62	1.62	0.82	0.82	-	-
		12.7	70	6.53	4.34	5.32	3.66	4.09	3.01	2.78	2.34	1.68	1.68	0.88	0.88
		15	70	7.86	4.89	6.66	4.22	5.43	3.59	4.11	2.94	2.70	2.30	1.62	1.62
		18	60	8.86	5.74	7.66	5.10	6.42	4.47	5.10	3.84	3.70	3.20	2.58	2.58
		21	50	9.66	6.63	8.47	6.00	7.24	5.38	5.93	4.76	4.52	4.13	3.52	3.52
	HLR540	10	70	6.01	4.34	4.58	3.52	3.12	2.72	1.91	1.91	0.96	0.96	-	-
		12.7	70	7.74	5.14	6.32	4.34	4.86	3.56	3.30	2.78	1.99	1.99	1.04	1.04
		15	70	9.33	5.79	7.90	5.02	6.44	4.26	4.88	3.49	3.21	2.71	1.91	1.91
		18	60	10.50	6.82	9.08	6.05	7.62	5.30	6.06	4.55	4.39	3.79	3.05	3.05
		21	50	11.46	7.86	10.05	7.10	8.59	6.37	7.03	5.63	5.36	4.88	4.16	4.16
MEDIUM FAN SPEED	HLR460	10	70	5.86	4.30	4.46	3.51	3.04	2.74	1.94	1.94	0.98	0.98	-	-
		12.7	70	7.57	5.07	6.17	4.30	4.74	3.56	3.21	2.81	2.02	2.02	1.06	1.06
		15	70	9.12	5.70	7.72	4.96	6.29	4.23	4.75	3.50	3.12	2.76	1.95	1.95
		18	60	10.28	6.74	8.88	6.02	7.45	5.30	5.91	4.59	4.27	3.86	3.11	3.11
		21	50	11.23	7.82	9.83	7.10	8.40	6.42	6.86	5.71	5.18	5.18	4.26	4.26
	HLR540	10	70	6.97	5.10	5.30	4.16	3.61	3.25	2.30	2.30	1.16	1.16	-	-
		12.7	70	8.98	6.02	7.32	5.10	5.62	4.22	3.82	3.33	2.39	2.39	1.26	1.26
		15	70	10.83	6.76	9.17	5.88	7.46	5.02	5.65	4.14	3.70	3.26	2.31	2.31
		18	60	12.21	7.98	10.54	7.13	8.84	6.29	7.02	5.43	5.08	4.57	3.68	3.68
		21	50	13.33	9.26	11.67	8.42	9.98	7.59	8.15	6.75	6.12	6.12	5.02	5.02
HIGH FAN SPEED	HLR460	10	70	6.61	4.93	5.03	4.06	3.42	3.20	2.26	2.26	1.14	1.14	-	-
		12.7	70	8.53	5.78	6.95	4.94	5.33	4.12	3.61	3.28	2.37	2.37	1.24	1.24
		15	70	10.29	6.48	8.70	5.67	7.08	4.87	5.35	4.06	3.50	3.23	2.29	2.29
		18	60	11.60	7.70	10.02	6.91	8.39	6.14	6.66	5.34	4.81	4.54	3.65	3.65
		21	50	12.68	8.99	11.10	8.22	9.47	7.46	7.74	6.68	6.06	6.06	4.98	4.98
	HLR540	10	70	7.89	5.87	6.00	4.82	4.08	3.81	2.69	2.69	1.36	1.36	-	-
		12.7	70	10.18	6.89	8.30	5.89	6.36	4.90	4.31	3.90	2.82	2.82	1.48	1.48
		15	70	12.28	7.73	10.39	6.76	8.45	5.81	6.38	4.83	4.18	3.85	2.73	2.73
		18	60	13.85	9.10	11.95	8.24	10.02	7.31	7.94	6.36	5.74	5.40	4.34	4.34
		21	50	15.13	10.71	13.25	9.78	11.30	8.88	9.23	7.95	7.21	7.21	5.94	5.94

Technical Information

R410A

Performances with thermal expansion valve set at 5°C superheat

	MODEL	AIR ON °C	HUMIDITY % RH	EVAPORATING TEMPERATURE °C											
				-2.5		0		2.5		5		7.5		10	
				TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS	TOTAL	SENS
LOW FAN SPEED	HLR460	10	70	5.61	3.95	4.28	3.21	2.92	2.46	1.70	1.70	0.86	0.81	-	-
		12.7	70	7.22	4.74	5.90	3.98	4.54	3.24	3.10	2.50	1.77	1.77	0.92	0.92
		15	70	8.70	5.37	7.38	4.62	6.02	3.90	4.58	3.17	3.02	2.43	1.70	1.70
		18	60	9.79	6.27	8.47	5.54	7.13	4.83	5.68	4.11	4.12	3.39	2.70	2.70
		21	50	10.68	7.19	9.37	6.47	8.02	5.77	6.58	5.06	5.03	4.35	3.68	3.68
	HLR540	10	70	6.65	4.68	5.07	3.80	3.46	2.90	2.01	2.01	1.01	1.01	-	-
		12.7	70	8.56	5.62	6.99	4.71	5.38	3.83	3.66	2.95	2.08	2.08	1.09	1.09
		15	70	10.30	6.35	8.74	5.46	7.14	4.61	5.42	3.74	3.57	2.88	2.00	2.00
		18	60	11.59	7.43	10.03	6.55	8.44	5.71	6.72	4.86	4.88	4.01	3.18	3.18
		21	50	12.64	8.51	11.09	7.66	9.50	6.82	7.79	5.98	5.96	5.14	4.34	4.34
MEDIUM FAN SPEED	HLR460	10	70	6.66	4.77	5.07	3.86	3.46	2.97	2.07	2.07	1.04	1.04	-	-
		12.7	70	8.58	5.64	7.00	4.76	5.39	3.90	3.66	3.03	2.15	2.15	1.13	1.13
		15	70	10.34	6.37	8.76	5.50	7.15	4.66	5.42	3.82	3.57	2.96	2.07	2.07
		18	60	11.63	7.47	10.06	6.62	8.46	5.80	6.74	4.97	4.88	4.13	3.30	3.30
		21	50	12.70	8.60	11.14	7.77	9.54	6.96	7.82	6.14	5.97	5.31	4.50	4.50
	HLR540	10	70	7.88	5.64	6.02	4.56	4.10	3.51	2.45	2.45	1.23	1.23	-	-
		12.7	70	10.16	6.68	8.30	5.63	6.38	4.61	4.34	3.58	2.54	2.54	1.33	1.33
		15	70	12.24	7.54	10.38	6.51	8.47	5.52	6.42	4.51	4.23	3.50	2.45	2.45
		18	60	13.78	8.84	11.93	7.84	10.02	6.86	7.98	5.87	5.78	4.88	3.90	3.90
		21	50	15.04	10.18	13.19	9.19	11.30	8.23	9.26	7.26	7.06	6.27	5.32	5.32
HIGH FAN SPEED	HLR460	10	70	7.66	5.53	5.84	4.50	3.98	3.49	2.45	2.45	1.23	1.23	-	-
		12.7	70	9.88	6.53	8.06	5.53	6.20	4.56	4.21	3.57	2.55	2.55	1.34	1.34
		15	70	11.91	7.34	10.10	6.38	8.23	5.43	6.24	4.47	4.10	3.50	2.46	2.46
		18	60	13.42	8.65	11.61	7.70	9.74	6.78	7.75	5.84	5.62	4.89	3.92	3.92
		21	50	14.66	10.00	12.85	9.07	10.99	8.17	9.00	7.25	6.86	6.31	5.36	5.36
	HLR540	10	70	9.13	6.58	6.96	5.35	4.74	4.15	2.91	2.91	1.47	1.47	-	-
		12.7	70	11.78	7.78	9.61	6.58	7.39	5.42	5.02	4.25	3.04	3.04	1.59	1.59
		15	70	14.19	8.75	12.02	7.59	9.81	6.46	7.43	5.32	4.89	4.16	2.93	2.93
		18	60	15.99	10.30	13.83	9.18	11.62	8.07	9.24	6.95	6.70	5.81	4.66	4.66
		21	50	17.46	11.90	15.31	10.80	13.10	9.71	10.72	8.62	8.18	7.50	6.37	6.37

Technical Information

Unit Dimensions & Weight



DIMENSIONS AND WEIGHTS		
MODEL	460	540
HEIGHT (mm)	786	786
WIDTH (mm)	1320	1520
DEPTH (mm)	288	288
WEIGHT (kg)	62	69

Sound Power & Sound Pressure

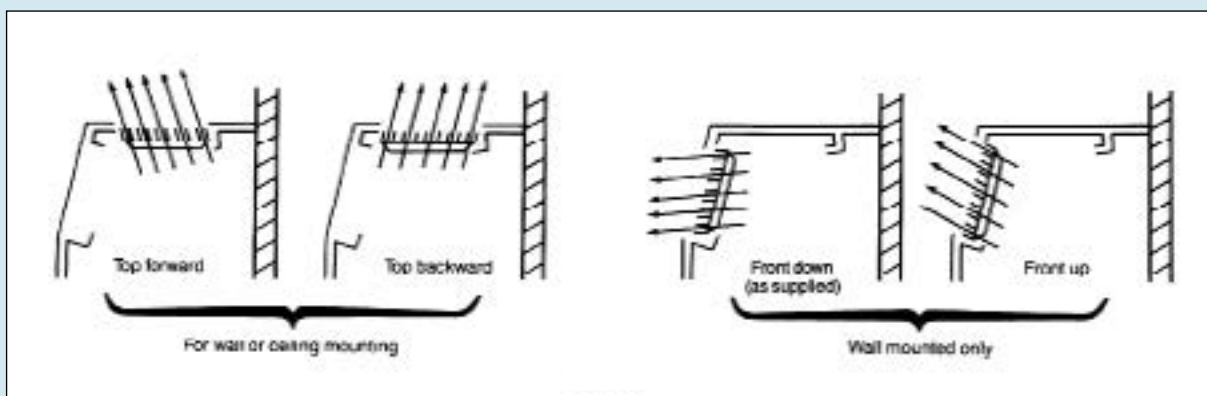
SOUND PRESSURE LEVELS			
MODEL	SPEED	dBA	NC
460	MIN	47	41
	MED	53	47
	MAX	59	53
540	MIN	48	42
	MED	53	48
	MAX	59	53

Sound Pressure Levels are dB relative to $2 \times 10^{-5} \text{N/m}^2$ and are calculated from the results under anechoic conditions and are quoted as an average of all points on a hemisphere of a radius of 3m away from the centre of the unit.

Air Flows

	MINIMUM	MEDIUM	MAXIMUM
MODEL	m ³ /s	m ³ /s	m ³ /s
460	0.40	0.52	0.66
540	0.47	0.61	0.78

Discharge Grille Position Options



Special Engineering

BESPOKE

AT MARSTAIR WE HAVE BEEN MANUFACTURING AIR CONDITIONING AND REFRIGERATION EQUIPMENT AT OUR BRIGHOUSE FACTORY FOR OVER 30 YEARS. WE PRIDE OURSELVES AT BEING EXPERTS IN OUR FIELD OF ENGINEERING AND HAVE HELPED MANY CUSTOMERS WITH THEIR SPECIFIC COOLING AND HEATING REQUIREMENTS OVER THE YEARS. EXAMPLES INCLUDE:-

- Experience of various refrigerants including hydrocarbons and CO2
- Designing and building special OEM equipment
- Offering variations of our own standard products to suit customer requirements
- 60hz power options
- Motors with rating of up to IP65 and wide fin pitched heat exchangers for extreme dusty environments
- EC/DC motors for saving energy and increased control through 0-10V DC inputs
- Volt free relays to suit modern BMS control
- Special heat exchangers i.e. coated, special fin pitches or copper/copper for the harsh coastal environments
- Heat recovery by diverting heat normally rejected through external condensers into usable heat in to either air or water



FM 00671

EMS 91502



TEV Ltd, Marstair Division, Armytage Road, Brighouse, West Yorkshire, HD6 1QF, England.

Tel: **+44 (0) 1484 405666** Fax: +44 (0) 870 606 4850 E: sales@marstair.com

www.marstair.com

A division of TEV Limited

Part No: 06617487-07

For full design information, reference should be made to the technical manual.
We reserve the right to alter designs and specifications at any time without notification.
To view our Terms and Conditions visit www.tevlimited.com/terms.html

Process/Material Cooling • Close Control • Refrigeration