

## CO<sub>2</sub> + Hotgas Evaporators

### 4-PIPE CO<sub>2</sub> CASSETTE EVAPORATORS WITH CO<sub>2</sub> HOT GAS HEATING CIRCUIT

AN INNOVATIVE RANGE OF  
CASSETTES FITTED WITH A CO<sub>2</sub>  
EVAPORATOR COOLING CIRCUIT  
AND AN CO<sub>2</sub> HOT GAS HEATING  
CIRCUIT SPECIFICALLY DESIGNED  
FOR COMFORT COOLING

CO<sub>2</sub> evaporator circuit max working pressure = 90 BAR  
CO<sub>2</sub> Hot gas heating circuit max working pressure = 120 BAR



For further information please contact our Technical Department on **01484 405666** or email us at [sales@marstair.com](mailto:sales@marstair.com)



These simple to install and quiet evaporators offer the ability to deliver comfort cooling and heating at the higher pressures required for CO<sub>2</sub> refrigerant. The hot gas heating circuit is for recycling the waste heat produced from the CO<sub>2</sub> pack. This allows all your refrigeration and air conditioning needs to be supplied through the one CO<sub>2</sub> pack, creating a more efficient system and eradicating the need for separate split systems for space cooling and heating.

Units are available with a range of cooling duties from 2.9 to 8.2kW for comfort cooling and a range of heating duties. The lightweight, one-piece, removable chassis allows total access to all mechanical and electrical connections. The units deliver long air throws and low sound levels

### Applications

- CO<sub>2</sub> only for low temperature food preparation areas
- CO<sub>2</sub> only for cooling only comfort cooling
- Hotgas only for heating using recovered heat from the CO<sub>2</sub> pack
- Combined CO<sub>2</sub> and Hotgas for comfort cooling and heating

# Specification

- Cooling Circuit -  
Coils tested to 120 barg  
Maximum operating pressure = 90 barg
- Heating Circuit -  
Coils tested to 170 barg  
Maximum operating pressure = 120barg
- Units supplied with coil thermostat for passive defrosting
- Electric heating of up to 4kW available
- Units fitted with 0.5m lift condensate pump
- 4 way discharge cassette
- Low sound levels
- Long Air throws
- Removable 1 piece lightweight chassis
- Integral easy to clean chassis
- Easy access filters
- All services accessible from 1 corner
- Provision for fresh air inlet or branch duct outlet
- AC and EC fan options available

## Technical Information

### Performance Figures Cooling

#### CC 600 - 1 row

FAN SPEED	Air On °C	Humidity 75% RH	Evaporating Temperature °C											
			-2.5		0		2.5		5		7		7.5	
			Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens
Low	5	75	0.86	0.66	0.33	0.33	-	-	-	-	-	-	-	-
	10	75	1.7	1.1	1.3	0.9	0.86	0.66	-	-	-	-	-	-
	15	75	2.7	1.6	2.3	1.4	1.8	1.1	1.4	0.9	0.5	0.5	0.5	0.5
	20	50	3.1	2.1	2.7	1.9	2.2	1.6	1.8	1.4	1.2	1.2	1.2	1.2
	23	50	3.7	2.3	3.3	2.1	2.9	1.9	2.4	1.7	2	1.5	1.8	1.4
Medium	5	75	0.94	0.73	0.51	0.51	-	-	-	-	-	-	-	-
	10	75	1.8	1.2	1.4	1	0.94	0.73	-	-	-	-	-	-
	15	75	2.9	1.7	2.5	1.5	2	1.2	1.5	1	1	0.7	0.5	0.5
	20	50	3.4	2.3	3	2.1	2.5	1.8	2	1.6	1.2	1.2	1.2	1.2
	23	50	4.1	2.6	3.7	2.3	3.1	2.1	2.7	1.8	2.2	1.6	2	1.6
High	5	75	1	0.8	0.57	0.57	-	-	-	-	-	-	-	-
	10	75	2	1.3	1.6	1.1	1	0.8	-	-	-	-	-	-
	15	75	3.2	1.9	2.8	1.6	2.2	1.3	1.7	1.1	1.2	0.8	1	0.8
	20	50	3.8	2.5	3.3	2.3	2.7	2	2.2	1.7	1.5	1.5	1.5	1.5
	23	50	4.5	2.8	4	2.6	3.4	2.3	2.9	2	2.4	1.8	2.2	1.7

#### CC 875 - 1 row

FAN SPEED	Air On °C	Humidity 75% RH	Evaporating Temperature °C											
			-2.5		0		2.5		5		7		7.5	
			Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens
Low	5	75	1.2	0.9	0.8	0.8	-	-	-	-	-	-	-	-
	10	75	2.2	1.4	1.8	1.2	1.2	0.9	0.7	0.7	-	-	-	-
	15	75	3.9	2.3	3.3	2.0	2.5	1.6	1.8	1.2	0.6	0.6	-	-
	20	50	4.5	3.0	3.9	2.7	3.1	2.2	2.2	1.8	1.5	1.5	-	-
	23	50	5.4	3.3	4.7	3.0	4.1	2.7	3.0	2.1	2.5	1.9	2.2	1.8
Medium	5	75	1.5	1.2	1.0	1.0	-	-	-	-	-	-	-	-
	10	75	2.5	1.7	1.8	1.3	1.4	1.2	0.8	0.8	-	-	-	-
	15	75	4.5	2.6	3.7	2.2	2.9	1.8	2.1	1.4	1.4	1.0	-	-
	20	50	5.3	3.6	4.5	3.2	3.7	2.6	2.8	2.2	1.7	1.7	-	-
	23	50	6.4	4.0	5.6	3.5	4.5	3.1	3.7	2.5	3.0	2.2	2.8	2.2
High	5	75	1.6	1.3	1.1	1.1	-	-	-	-	-	-	-	-
	10	75	2.9	1.8	2.3	1.6	1.6	1.3	1.0	1.0	-	-	-	-
	15	75	4.9	2.9	4.3	2.5	3.2	1.9	2.4	1.5	1.7	1.2	-	-
	20	50	5.9	3.9	5.1	3.5	4.0	2.9	3.0	2.4	2.1	2.1	-	-
	23	50	7.0	4.3	6.2	4.0	5.0	3.4	4.0	2.8	3.3	2.5	3.0	2.4

### CC 875 - 2 row

FAN SPEED	Air On °C	Humidity 75% RH	Evaporating Temperature °C											
			-2.5		0		2.5		5		7		7.5	
			Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens
Low	5	75	2.1	1.6	1.4	1.4	-	-	-	-	-	-	-	-
	10	75	3.8	2.5	3.1	2.1	2.1	1.6	1.2	1.2	-	-	-	-
	15	75	6.8	4	5.7	3.5	4.4	2.7	3.1	2	1.1	1.1	-	-
	20	50	7.8	5.3	6.7	4.7	5.4	3.9	3.9	3.1	2.6	2.6	-	-
	23	50	9.4	5.8	8.2	5.2	7.1	4.7	5.3	3.7	4.3	3.3	3.9	3.1
Medium	5	75	2.6	2	1.7	1.7	-	-	-	-	-	-	-	-
	10	75	4.4	3	3.2	2.3	2.5	2	1.4	1.4	-	-	-	-
	15	75	7.8	4.6	6.5	3.9	5.1	3.1	3.6	2.4	2.4	1.7	-	-
	20	50	9.2	6.2	7.8	5.5	6.4	4.6	4.8	3.8	2.9	2.9	-	-
	23	50	11.1	7	9.7	6	7.9	5.4	6.5	4.3	5.3	3.8	4.8	3.8
High	5	75	2.8	2.2	1.9	1.9	-	-	-	-	-	-	-	-
	10	75	5	3.2	4	2.7	2.8	2.2	1.8	1.8	-	-	-	-
	15	75	8.6	5.1	7.5	4.3	5.6	3.3	4.1	2.6	2.9	2	-	-
	20	50	10.2	6.7	8.8	6.1	6.9	5.1	5.3	4.1	3.6	3.6	-	-
	23	50	12.1	7.5	10.7	7	8.7	5.9	7	4.8	5.8	4.3	5.3	4.1

### CC 875 - 4 row

FAN SPEED	Air On °C	Humidity 75% RH	Evaporating Temperature °C											
			-2.5		0		2.5		5		7		7.5	
			Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens	Total	Sens
Low	5	75	2.5	1.9	1.6	1.6	-	-	-	-	-	-	-	-
	10	75	4.5	2.9	3.6	2.5	2.5	1.9	1.4	-	-	-	-	-
	15	75	8.0	4.7	6.7	4.1	5.2	3.2	3.6	2.3	1.3	1.3	1.3	1.3
	20	50	9.2	6.2	7.9	5.5	6.4	4.6	4.6	3.6	3.1	3.1	3.1	3.1
	23	50	11.0	6.8	9.6	6.1	8.4	5.5	6.2	4.4	5.1	3.9	4.6	3.6
Medium	5	75	3.0	2.3	2.0	2.0	-	-	-	-	-	-	-	-
	10	75	5.2	3.5	3.8	2.7	2.9	2.3	1.6	-	-	-	-	-
	15	75	9.2	5.4	7.7	4.6	6.0	3.6	4.2	2.8	2.8	2.0	1.4	1.4
	20	50	10.8	7.3	9.2	6.5	7.5	5.4	5.6	4.5	3.4	3.4	3.4	3.4
	23	50	13.0	8.2	11.4	7.1	9.3	6.3	7.6	5.0	6.2	4.5	5.6	4.5
High	5	75	3.3	2.6	2.2	2.2	-	-	-	-	-	-	-	-
	10	75	5.9	3.8	4.7	3.2	3.3	2.6	2.1	-	-	-	-	-
	15	75	10.1	6.0	8.8	5.0	6.6	3.9	4.8	3.1	3.4	2.3	2.8	2.3
	20	50	12.0	7.9	10.4	7.2	8.1	6.0	6.2	4.8	4.2	4.2	4.2	4.2
	23	50	14.2	8.8	12.6	8.2	10.2	6.9	8.2	5.6	6.8	5.1	6.2	4.8

### Performance Figures Heating

Fan Speed	CC 875 - Coil Rows				CC 600 - Coil Rows
	1	2	3	4	1
Low	2.0	5.0	6.5	7.5	1.8
Medium	3.0	7.5	9.8	11.3	2.2
High	4.0	10.0	13.0	15.0	2.7

Maximun coil rows available for 600 - 2 rows ie. 1 row of cooling + 1 row of heating  
 Maximun coil rows available for 875 - 4 rows ie. 2 row of cooling + 2 row of heating

### Airflows

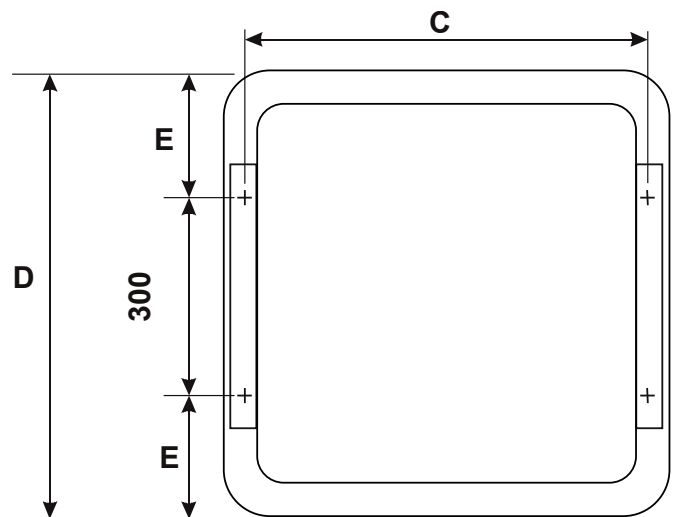
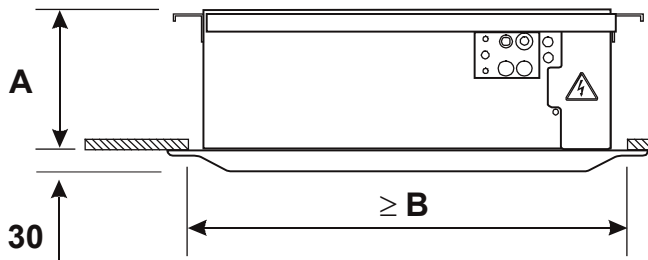
RANGE	LOW SPEED	MEDIUM SPEED	HIGH SPEED
600 (ALL) M <sup>3</sup> /S			
1 ROW	0.173	0.209	0.256
2 ROW	0.173	0.209	0.256
875 (ALL) M <sup>3</sup> /S			
2 ROW	0.37	0.45	0.54
3 ROW	0.36	0.45	0.53
4 ROW	0.35	0.43	0.50

## Sound Power & Sound Pressure (Speed 1 = Lowest, Speed 5 = Highest)

	MODEL	SPEED	SOUND POWER LEVELS							SOUND PRESSURE LEVELS	
			FREQUENCY Hz							dBA	NC
			125	250	500	1K	2K	4K			
600	1 ROW	3	61.6	57.8	55.6	53.8	48.5	44.4	58	37	31
		4	62.9	60.1	57.6	56.3	51.3	46.8	61	40	34
		5	67.0	65.6	62.9	61.3	57.6	53.0	66	45	39
	2 ROW	3	61.9	59.0	56.2	54.2	48.9	44.2	59	38	32
		4	63.1	62.0	58.3	56.6	51.6	46.7	61	40	34
		5	68.0	67.3	63.5	61.9	57.5	52.8	67	46	40
800	2 ROW	2	59.1	58.7	56.0	57.0	49.5	39.2	60	42	38
		3	63.4	62.4	59.3	59.5	54.2	45.6	63	45	40
		4	66.1	65.5	62.9	62.5	57.8	50.8	66	48	43
	3 ROW	2	63.1	60.5	57.8	58.4	50.6	40.3	61	43	38
		3	66.3	63.7	60.8	60.8	55.2	46.4	64	46	40
		4	68.8	67.1	64.5	63.9	59.1	52.6	68	50	43
	4 ROW	2	67.1	62.3	59.5	59.7	51.7	41.4	63	45	40
		3	69.2	64.9	62.2	62.0	56.2	47.1	65	47	43
		4	71.5	68.6	66.1	65.2	60.3	54.4	69	51	46

Sound Power Levels are obtained in conformance with BS4196:Part 5: 1981. Values are shown in dB with a standard reference of 1pW.  
 Sound Pressure Levels are dB relative to  $2 \times 10^{-5}$  N/m and are calculated from results measured in anechoic conditions.  
 Values relate to a position of 3m away from the centre line of the unit, 1m down.

## Unit Dimensions & Weight (Unpacked with fascia fitted)



DIMENSIONS AND WEIGHTS					
	CC 600		CC 875		
MODEL	1 ROW	2 ROW	2 ROW	3 ROW	4 ROW
DIM 'A' (mm)	306	306	314	314	314
DIM 'B' (mm)	580	580	900	900	900
DIM 'C' (mm)	610	610	913	913	913
DIM 'D' (mm)	675	675	966	966	966
DIM 'E' (mm)	187.5	187.5	333	333	333
WEIGHT (kg)	21	23	36	40	44

T: 01484 405 666  
 E: sales@marstair.com

TEV has earned management system accreditations – BSI 14001: 2015 Environmental Management and BSI 9001: 2015 Quality Management.



Part No: 06617721-04