



# Ceiling unit cooler



## MH/MHE commercial range

- The 24 models in the MH range meet the requirements of small storage cold rooms.
- Sturdy casing made of sheet steel with a low depth (228 to 260 mm) enabling optimum use of space in the cold room.
- Excellent air throw up to 17 m.

Heatcraft reserves itself the right to make changes at any time without preliminary notice - Photos non-contractual



Natural fluids:  
Glycol water  
CO<sub>2</sub> (R744)\*

\* Operating pressure 60 bar



1500  7700 W

FRIGA-BOHN 

**HK**<sup>®</sup> REFRIGERATION

# MH / MHE - Commercial ceiling unit cooler

## Market segments



- Bars - Restaurants - Corner shops - Mini-markets
- Hard Discount - Supermarkets - Hypermarkets

## Description

### Casing

- Sturdy and sober casing made of white pre-painted sheet steel.
- Its low depth enables optimum use of storage space in the cold room.

### Ventilation

- The MH range is fitted with factory wired axial fans: Ø 300 mm: 230V 50-60 Hz, single-phase, IP42, class B.
- The fan guards are compliant with safety standards (photo n°1).
- 2 to 4 fans are necessary to cover the requirements of the entire range of capacities.

### Coil

- The highly efficient and compact MH range finned coils are designed with corrugated aluminium fins (fin spacing 4.23 or 6.35 mm) and internally grooved copper tubes.
- The coils are supplied via a Venturi distributor.

### Defrost

- Shielded electric heating elements are inserted in slots both on the front and rear coil faces.
- One of these shielded heating elements is also fastened in slots under the coil. This slot assembly guarantees homogenous dispersion of heat over the entire coil.
- The defrost heating elements are factory connected to a terminal block (MHE range only).
  - 230V/1 power supply for all models MHE 320E, 380E and 250C, 310C.
  - 400V/3 power supply for models MHE 460E, 550E, 640E, 770E and 370C, 450C, 510C, 630C.

## Certifications



## Advantages

### Installation

The expansion valve may be supplied factory pre-fitted (option DMP), as well as fully equipped (option EEC) to help reduce installation time.

### Servicing / Maintenance

The MH range has been designed for easy commissioning, maintenance and cleaning. The casing is fitted with hinges offering total access to all elements of the ceiling unit cooler (coil, fan, defrost heater, connections,...).

The electric heating elements are fitted in slots under the coil offering unimpeded front access which considerably simplified maintenance.

## Designation

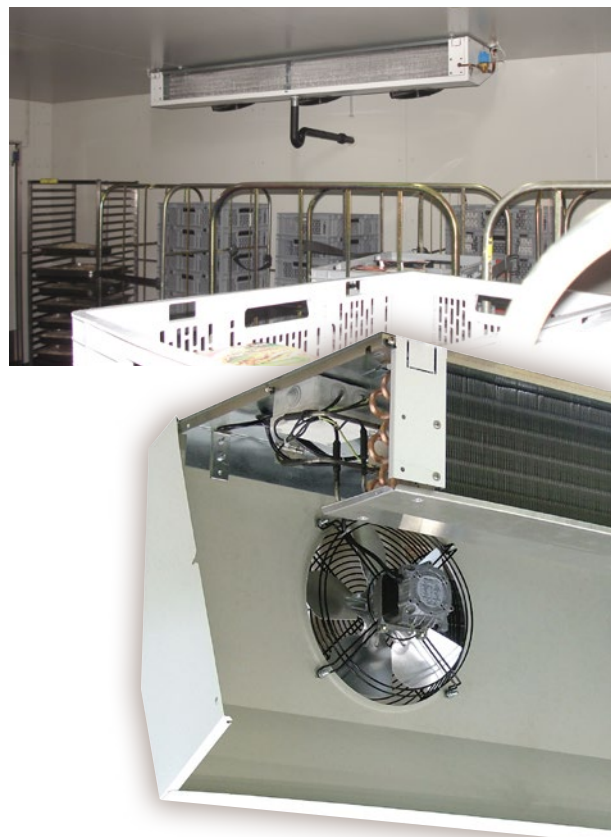
# MHE<sup>(1)</sup> 250<sup>(2)</sup> C<sup>(3)</sup>

(1) **MH** = chill temp. models without defrost

**MHE** = low temp. models with defrost

(2) Model

(3) Fin spacing: **R / E** = 4.23 mm - **L / C** = 6.35 mm



Kit	Factory
	<b>MM6</b>
	<b>BAE</b>
	<b>WCO</b>
	<b>CO2</b>
<b>E1K</b>	<b>E1U</b>
	<b>THD</b>
	<b>(MHE)</b>
	<b>DMP</b>
	<b>EEC</b>

## Options

### Ventilation

Fan 230 V/1/60 (contact us for details).

### Coil

Paint coil protection.

Glycol water, coolant (please contact us for details).

R744 optimization (please contact us for details).

### Defrost

Light electric defrost

For low temperature cold storage rooms with end of defrost thermostat with single-pole, reversing switch at +12°C (±3 K) and delayed fan start up +2°C (±3 K), supplied with a sensor and fastening bracket.

### Fully equipped unit coolers

Expansion valve fitted.

Fully equipped unit cooler:

- Expansion valve fitted.
- Solenoid valve fitted.
- Piping pre-fitted with a ball valve (siphoning function provided by the collector).

## MH ...

4,23 mm

		MH ... R	320	380	460	550	640	770
Capacity R404A (1)	DT1 = 8K - SC 2	W	2882	3397	4365	5047	6016	6937
Capacity CO <sub>2</sub> (5)	DT1 = 8K - SC 2	W	3209	3669	4773	5302	6130	7395
Surface		m <sup>2</sup>	9,73	12,98	14,60	19,47	19,61	26,15
Circuit volume		dm <sup>3</sup>	1,67	2,23	2,51	3,34	3,37	4,49
Air flow		m <sup>3</sup> /h	2290	2070	3430	3110	4600	4160
Fan 230 V/1/50-60 Hz 1,500 rpm.	Air throw (2)	m	16	16	16	16	16	16
	Ø 300 mm	Nb	2	2	3	3	4	4
	230 V/1/50 Hz	W max	2x 117	2x 117	3x 117	3x 117	4x 117	4x 117
		A max (3)	2x 0.77	2x 0.77	3x 0.77	3x 0.77	4x 0.77	4x 0.77
Net weight		kg	34	35	46	48	54	57
Dimensions	A	mm	1531	1531	2197	2197	2499	2499
	B	mm	1372	1372	2038	2038	2340	2340
	C	mm	228	228	228	228	260	260
Connections R404A	Inlet	Ø ODF (4)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 5/8"	D 5/8"
	Outlet	Ø ODF (4)	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"
Connections (5) CO <sub>2</sub>	Inlet	Ø ODF (4)	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"
	Outlet	Ø ODF (4)	3/8"	3/8"	3/8"	3/8"	3/8"	1/2"

## MH ...

6,35 mm

		MH ... L	250	310	370	450	510	630
Capacity R404A (1)	DT1 = 8K - SC 2	W	2344	2846	3540	4270	4748	5175
Capacity CO <sub>2</sub> (5)	DT1 = 8K - SC 2	W	2783	3324	4186	4865	5440	6693
Capacity W (6)	DT1 = 8K	W	-	2660	-	3990	-	4810
Surface		m <sup>2</sup>	6,74	8,98	10,10	13,47	13,57	18,09
Circuit volume		dm <sup>3</sup>	1,67	2,23	2,51	3,34	3,37	4,49
Air flow		m <sup>3</sup> /h	2450	2290	3680	3430	4920	4590
Fan 230 V/1/50-60 Hz 1,500 rpm.	Air throw (2)	m	17	17	17	17	17	17
	Ø 300 mm	Nb	2	2	3	3	4	4
	230 V/1/50 Hz	W max	2x 117	2x 117	3x 117	3x 117	4x 117	4x 117
		A max (3)	2x 0.77	2x 0.77	3x 0.77	3x 0.77	4x 0.77	4x 0.77
Net weight		kg	34	35	46	48	54	57
Dimensions	A	mm	1531	1531	2197	2197	2499	2499
	B	mm	1372	1372	2038	2038	2340	2340
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Connections R404A	Inlet	Ø ODF (4)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 5/8"	D 5/8"
	Outlet	Ø ODF (4)	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"
Electric defrost E1K	Coil / Drain pan	Nb	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1	2 / 1
		W total	1800	1800	2700	2700	3600	3600
	230 V/1/50Hz	A total	7,83	7,83	11,70	11,70	15,70	15,70
	400 V/3/50Hz	A total	-	-	3,90	3,90	5,20	5,20

(1) See page 12.

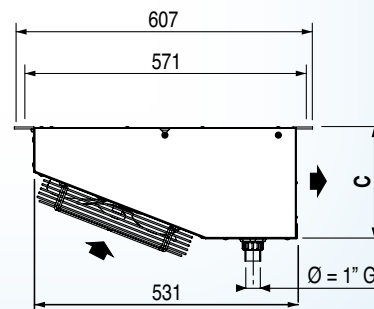
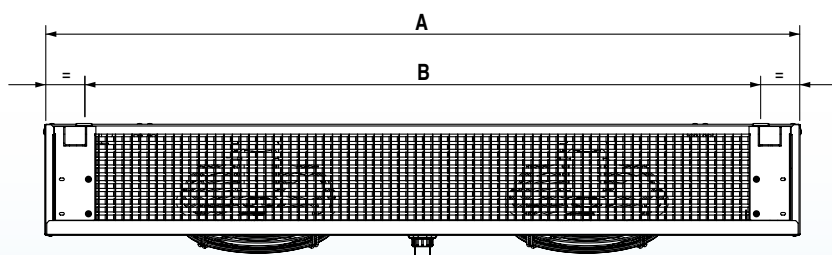
(2) Residual air speed: 0.25 m/s.

(3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained.

(4) ODF: Female to receive a tube of the same diameter.

(5) Operating pressure 60 bar - Tube diameter to define the order.

(6) Glycol water: Percent. glycol = 30% - Fluid inlet temp. = -8°C - Fluid outlet temp. = -4°C - Inlet dry temp. = +2°C - relative humidity = 85%.



ECF	MM6	BAE	WCO	CO <sub>2</sub>	E1K	E1U	THD	DMP	EEC
0	☺+☺	0	☺+☺	☺+☺	0	0	-	0	0

## MHE ...

4,23 mm

		MHE ... E	320	380	460	550	640	770
Capacity R404A (1)	DT1 = 7K - SC 3	W	2228	2588	3123	3909	4444	5220
	DT1 = 6K - SC 4	W	1765	2069	2426	3130	3508	4160
Capacity CO <sub>2</sub> (5)	DT1 = 7K - SC 3	W	2667	3003	3843	4158	5366	6069
	DT1 = 6K - SC 4	W	2151	2434	3081	3313	4343	4919
Surface		m <sup>2</sup>	9,73	12,98	14,60	19,47	19,61	26,15
Circuit volume		dm <sup>3</sup>	1,67	2,23	2,51	3,34	3,37	4,49
Air flow		m <sup>3</sup> /h	2290	2070	3430	3110	4600	4160
Fan 230 V/1/50-60 Hz 1,500 rpm.	Air throw (2)	m	16	16	16	16	16	16
	Ø 300 mm	Nb	2	2	3	3	4	4
	230 V/1/50 Hz	W max	2x 117	2x 117	3x 117	3x 117	4x 117	4x 117
		A max (3)	2x 0.77	2x 0.77	3x 0.77	3x 0.77	4x 0.77	4x 0.77
Electric defrost	Coil	Nb	2	2	2	2	2	2
	Drain pan	Nb	1	1	1	1	1	1
		W total	1800	1800	2700	2700	3600	3600
	230 V/1/50Hz	A total	7,83 *	7,83 *	11,70	11,70	15,70	15,70
	400 V/3/50Hz	A total	-	-	3,90 *	3,90 *	5,20 *	5,20 *
Net weight		kg	34	35	46	48	54	57
	A	mm	1531	1531	2197	2197	2499	2499
Dimensions	B	mm	1372	1372	2038	2038	2340	2340
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	Connections	Inlet	Ø ODF (4)	D 1/2"	D 1/2"	D 1/2"	D 1/2"	D 5/8"
R404A	Outlet	Ø ODF (4)	5/8"	5/8"	3/4"	3/4"	7/8"	7/8"

## MHE ...

6,35 mm

		MHE ... C	250	310	370	450	510	630
Capacity R404A (1)	DT1 = 7K - SC 3	W	1791	2140	2610	3178	3615	4401
	DT1 = 6K - SC 4	W	1439	1702	2059	2637	2889	3529
Capacity CO <sub>2</sub> (5)	DT1 = 7K - SC 3	W	2321	2741	3402	3854	4683	5523
	DT1 = 6K - SC 4	W	1879	2232	2747	3081	3798	4495
Surface		m <sup>2</sup>	6,74	8,98	10,10	13,47	13,57	18,09
Circuit volume		dm <sup>3</sup>	1,67	2,23	2,51	3,34	3,37	4,49
Air flow		m <sup>3</sup> /h	2450	2290	3680	3430	4920	4590
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	Ø 300 mm	Nb	2	2	3	3	4	4
	230 V/1/50 Hz	W max	2x 117	2x 117	3x 117	3x 117	4x 117	4x 117
		A max (3)	2x 0.77	2x 0.77	3x 0.77	3x 0.77	4x 0.77	4x 0.77
Electric defrost	Coil	Nb	2	2	2	2	2	2
	Drain pan	Nb	1	1	1	1	1	1
		W total	1800	1800	2700	2700	3600	3600
	230 V/1/50Hz	A total	7,83 *	7,83 *	11,70	11,70	15,70	15,70
	400 V/3/50Hz	A total	-	-	3,90 *	3,90 *	5,20 *	5,20 *
Net weight		kg	34	35	46	48	54	57
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(3) Setting of overload protection levels. For air temperatures "ti" other than +20 °C, multiply the currents in relation to 293/(273 + "ti") in order to obtain an approximate current value after the chamber temperature is attained.

(4) ODF: Female to receive a tube of the same diameter.

(5) Operating pressure 60 bar - Tube diameter to define the order.

\* Factory mounted.

ECF	MM6	BAE	WCO	CO <sub>2</sub>	E1K	E1U	THD	DMP	EEC
0		-	-		-	-	0	0	0