LENNOX
EMEA

CEILING UNIT COOLER

COMMERCIAL RANGE

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

ABS
7

HFC CO2* W GLYCOL

380 > **2620** W

MR / MRE

- The 28 models in the MR range meet the requirements of small storage cold rooms.
- Low depth of only 209 mm enabling optimum use of storage space in the cold room.
- Sturdy and corrosion-resistant unit, coils totally anti-corrosion treated as standard, ABS casing and stainless steel screws.

** Operating pressure 60 bar*

www.lennoxemea.com

FRIGA-BOHN

HK® REFRIGERATION

MR / MRE - Commercial ceiling unit cooler

DESCRIPTION

Casing

- The ABS recyclable casing guarantees a high quality with regard to:
- **Sturdyness**: high thermal (at low and high temperatures) and mechanical shock resistance.
- **Aesthetics**: the design, finish and granulated white casing enable perfect integration of the unit into the surrounding environment.
- **Hygiene**: no condensate retention zones favouring the development of harmful germs thanks to the casing with rounded corners and no corrosive elements (for example: stainless steel fastening screws).
- **Safety**: no sharp or cutting edges.

Ventilation

- The MR and MRE models are equipped with a 50-60 Hz, Ø 200 mm fan with an enclosed motor, class B, impedance protected, permanently lubricated, connected in a junction box (except for MR 75/65) (photo n°1).
- Fan guards compliant with safety standards.

Coil

- The highly efficient and compact MR range finned coils are designed with corrugated surface aluminium fins (fin spacing 4.23 or 6.35 mm) and internally grooved copper tubes.
- The coils are supplied via Venturi distributors for models MR 160/140 to MR 270/250 and MRE 135/120 to MRE 270/250.
- The entire MR coil has a polyester paint protection coating, particularly important for corrosive environments (photo n°2).

Defrost

- The electric heating element is fitted in slots under the coil. This layout considerably simplifies maintenance and guarantees homogenous dispersion of heat over the entire coil. This enables perfect defrosting.
- Condensate is collected in an intermediate drain pan then drained through a large condensation drain fitting (Ø 1" G).

DESIGNATION

MRE(1) **210**(2) **E**(3)

(1) **MR** = chill temp. models without defrost
MRE = low temp. models with defrost
(2) Model
(3) Fin spacing: **R / E** = 4.23 mm - **L / C** = 6.35 mm

1.

2.

3.

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 MR range has been designed for easy commissioning, maintenance and cleaning.
Casing fitted with polyamide hinges (photo n°3) to provide total access to all unit cooler elements (coil, electric fan, defrost heater, connections,...).
These hinges also enable removal of the casing.

The electric heating elements are fitted in slots under the coil offering unimpeded front access which considerably simplify maintenance (MRE).

CERTIFICATIONS

OPTIONS

Kit	Factory	
		Coil
	WCO	Glycol water, coolant (please contact us for details).
	CO2	R744 optimization (please contact us for details).
		Defrost
E1K	E1U	Light electric defrost: MR...R and MR...L.
	THD (MRE)	For low temperature cold storage rooms with end of defrost thermostat with single-pole, reversing switch at +12□ (±3 K) and delayed fan start up +2□ (±3 K), supplied with a sensor and fastening bracket.
		Fully equipped unit coolers
	DMP	Expansion valve fitted.
	EEC	Fully equipped unit cooler: - Expansion valve fitted. - Solenoid valve fitted. - Piping pre-fitted with a ball valve (siphoning function provided by the collector).

MR / MRE

4,23 mm

Capacity	SC2	MR ... R	75	110	135	160	180	210	270
R404A (1)	DT1 = 8K	W	680	1070	1270	1550	1860	2060	2620
R134a	DTM = 8K	W	620	970	1160	1410	1690	1870	2380
R449A	DTM = 8K	W	630	980	1170	1430	1710	1900	2410
R452A	DTM = 8K	W	620	980	1170	1420	1710	1890	2410
CO2 (4)	DT1 = 8K	W	600	930	1240	1740	1740	1970	2630
Connections	Inlet	Ø ODF *	3/8"-10mm**	3/8"-10mm**	3/8"-10mm**	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***
R404A	Outlet	Ø ODF *	3/8"-10mm	3/8"-10mm	3/8"-10mm	1/2"-12mm	1/2"-12mm	1/2"-12mm	1/2"-12mm

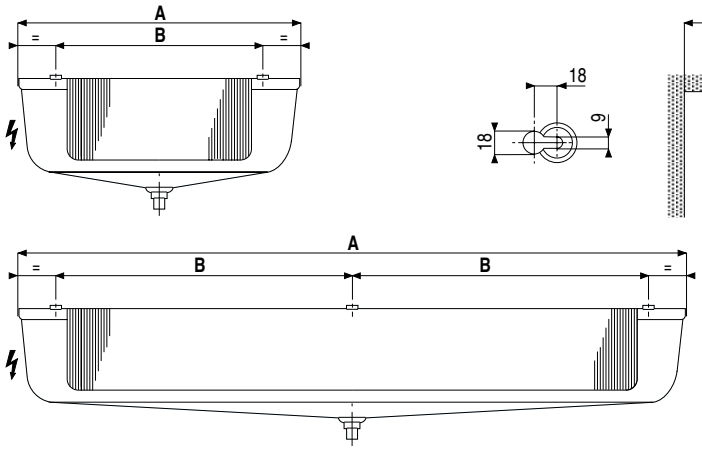
Capacity	SC3	MRE ... E	75	110	135	160	180	210	270
R404A (1)	DT1 = 7K	W	530	820	1070	1210	1440	1660	2230
R449A	DTM = 7K	W	460	720	940	1060	1260	1450	1950
R452A	DTM = 7K	W	480	740	960	1090	1300	1500	2010
CO2 (4)	DT1 = 7K	W	520	800	1060	1470	1470	1650	2200
Capacity	**SC4**	**MRE ... E**	**75**	**110**	**135**	**160**	**180**	**210**	**270**
R404A (1)	DT1 = 6K	W	420	640	840	960	1140	1320	1780
R449A	DTM = 6K	W	350	530	700	800	950	1100	1490
R452A	DTM = 6K	W	370	570	750	850	1010	1170	1580
CO2 (4)	DT1 = 6K	W	410	640	860	1200	1200	1350	1790
Connections	Inlet	Ø ODF *	3/8"-10mm**	3/8"-10mm**	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***
R404A	Outlet	Ø ODF *	3/8"-10mm	3/8"-10mm	1/2"-12mm	1/2"-12mm	1/2"-12mm	5/8"-16mm	3/4"-18mm

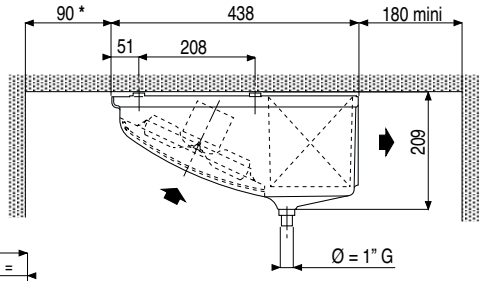
			75	110	135	160	180	210	270
Surface		m^2	3,35	3,66	6,10	8,04	8,04	10,05	13,40
Circuit volume		dm^3	0,58	0,63	1,05	1,10	1,38	1,73	2,30
Air flow		m^3/h	290	650	580	880	880	870	1160
Fan 230 V/1/50-60 Hz 1,500 rpm.	Air throw (2)	m	3,0	3,7	3,5	4,1	4,1	4,0	4,5
	Ø 200 mm	Nb	1	2	2	3	3	3	4
	230 V/1/50 Hz	W max	1 x 38	2 x 38	2 x 38	3 x 38	3 x 38	3 x 38	4 x 38
		A max (3)	1 x 0,24	2 x 0,24	2 x 0,24	3 x 0,24	3 x 0,24	3 x 0,24	4 x 0,24
Electric defrost MR > E1K option MRE > standard	230 V/1/50 Hz	Nb	1	1	1	1	1	1	1
		W	400	440	730	960	960	1200	1600
		A	1,8	2,0	3,3	4,4	4,4	5,5	7,3
Dimensions	A	mm	514	784	784	1174	1174	1174	1504
	B	mm	326	596	596	493	493	493	658
Net weight		kg	3	8	10	15	15	15	20

(1) Standard conditions : SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K
SC3 / -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K
SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K

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

* ODF: Female to receive a tube of the same diameter.
** Unions provided for expansion valve to be brazed Ø 1/2" or Ø 12 mm.
*** Distributor: Ø 1/2" male to be brazed.





* 90 mini: Casing opening
160 mini: Casing removal

	WCO	CO2	E1K	E1U	THD	DMP	EEC
MR	+👤	+👤	O	O	-	O	O
MRE	-	+👤	-	-	O	O	O

MR / MRE

6,35 mm

Capacity	SC2	MR ... L	65	100	120	140	170	190	250
R404A (1)	DT1 = 8K	W	620	890	1180	1370	1680	1890	2440
R134a	DTM = 8K	W	560	810	1070	1250	1530	1720	2220
R449A	DTM = 8K	W	570	820	1090	1260	1550	1740	2250
R452A	DTM = 8K	W	570	820	1080	1260	1540	1740	2240
CO2 (4)	DT1 = 8K	W	541	782	1127	1564	1564	1783	2392
W (5)	DT1 = 8K	W	-	-	1220	1150	-	1790	2380
Connections	Inlet	Ø ODF *	3/8"-10mm**	3/8"-10mm**	3/8"-10mm**	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***
R404A	Outlet	Ø ODF *	3/8"-10mm	3/8"-10mm	3/8"-10mm	1/2"-12mm	1/2"-12mm	1/2"-12mm	1/2"-12mm

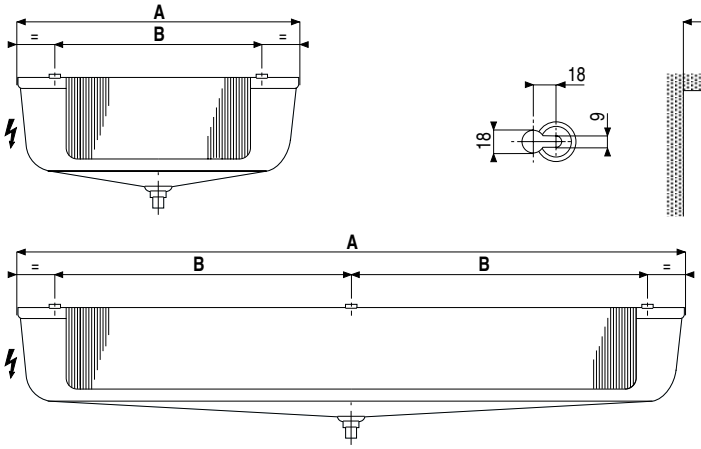
Capacity	SC3	MRE ... C	65	100	120	140	170	190	250
R404A (1)	DT1 = 7K	W	480	670	950	1080	1310	1510	2030
R449A	DTM = 7K	W	420	590	830	940	1150	1320	1770
R452A	DTM = 7K	W	430	600	860	970	1180	1360	1830
CO2 (4)	DT1 = 7K	W	462	672	956	1323	1323	1502	1995
Capacity	**SC4**	**MRE ... C**	**65**	**100**	**120**	**140**	**170**	**190**	**250**
R404A (1)	DT1 = 6K	W	380	540	760	850	1040	1210	1630
R449A	DTM = 6K	W	320	450	640	710	870	1010	1360
R452A	DTM = 6K	W	340	480	680	760	920	1080	1450
CO2 (4)	DT1 = 6K	W	462	672	956	1323	1323	1502	1995
Connections	Inlet	Ø ODF *	3/8"-10mm**	3/8"-10mm**	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***	D 1/2" ***
R404A	Outlet	Ø ODF *	3/8"-10mm	3/8"-10mm	1/2"-12mm	1/2"-12mm	1/2"-12mm	5/8"-16mm	3/4"-18mm

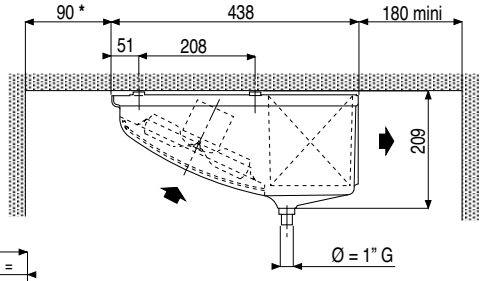
			65	100	120	140	170	190	250
Surface		m^2	2,32	2,53	4,22	5,56	5,56	6,96	9,27
Circuit volume		dm^3	0,58	0,63	1,05	1,10	1,38	1,73	2,30
Air flow		m^3/h	310	660	620	960	960	930	1240
Fan 230 V/1/50-60 Hz 1,500 rpm.	Air throw (2)	m	3,0	3,7	3,5	4,1	4,1	4,0	4,5
	Ø 200 mm	Nb	1	2	2	3	3	3	4
	230 V/1/50 Hz	W max	1 x 38	2 x 38	2 x 38	3 x 38	3 x 38	3 x 38	4 x 38
		A max (3)	1 x 0,24	2 x 0,24	2 x 0,24	3 x 0,24	3 x 0,24	3 x 0,24	4 x 0,24
Electric defrost MR > E1K option MRE > standard	230 V/1/50 Hz	Nb	1	1	1	1	1	1	1
		W	400	440	730	960	960	1200	1600
		A	1,8	2,0	3,3	4,4	4,4	5,5	7,3
Dimensions	A	mm	514	784	784	1174	1174	1174	1504
	B	mm	326	596	596	493	493	493	658
Net weight		kg	3	8	10	15	15	15	20

(1) Standard conditions : SC2 / 0°C (air inlet temp.) / -8°C (evaporating temp.) / DT1 = 8K
SC3 / -18°C (air inlet temp.) / -25°C (evaporating temp.) / DT1 = 7K
SC4 / -25°C (air inlet temp.) / -31°C (evaporating temp.) / DT1 = 6K

(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) Operating pressure 60 bar - Tube diameter to define the order.
(5) Glycol water: Percentage of glycol = 30% - Fluid inlet temp. = -8°C - Fluid outlet temp. = -4°C - Inlet dry temp. = +2°C - Relative humidity = 85%

* ODF: Female to receive a tube of the same diameter.
** Unions provided for expansion valve to be brazed Ø 1/2" or Ø 12 mm.
*** Distributor: Ø 1/2" male to be brazed.





* 90 mini: Casing opening
160 mini: Casing removal

	WCO	CO2	E1K	E1U	THD	DMP	EEC
MR	+👤	+👤	O	O	-	O	O
MRE	-	+👤	-	-	O	O	O