

MWVC / MRC



Water cooled chillers & heat pumps / Condenserless liquid chillers



R410A



WATER COOLED

 **180 - 380 kW**
 **200 - 450 kW**

LENNOX participates in the ECP
programme for LCP-HP.
Check ongoing validity of certificate :
www.eurovent-certification.com

- # **Compact units** with limited footprint that saves space in technical rooms.
- # Optimal access to all components **simplifying service and maintenance operations.**
- # **Versatile units** that allow integration with dry coolers or remote condensers.

CONTROL

- # Climatic electronic controller and intelligent control parameters optimising part-load efficiency.
- # Integrated communication solutions offering flexibility (master/slave, Modbus, BACnet or LonWorks®).
- # DC Advanced display, equipped with a graphic screen providing access to the main user parameters, with two optional displays:
 - Remote Display
 - Service Display

eCLIMATIC



DC Advanced



HIGH SEASONAL EFFICIENCY

- # Very high seasonal efficiency in comfort cooling, exceeding 2021 ErP target ($\eta_{s,c}$ above 200 %)
- # Very high seasonal efficiency in comfort heating ($\eta_{s,h}$ above 200 %, A+++ class)

CASING & DESIGN

- # Chassis made of galvanised steel, painted with a powdered polyester paint.
- # Optional casing with removable panels made of galvanised steel, painted with a powdered polyester paint.



THERMODYNAMIC SYSTEM

- # High efficiency scroll compressors.
- # High efficiency brazed plate heat exchangers.
- # Insulated brazed plate heat exchangers made with stainless steel.
- # Two independent circuits, each equipped with electronic expansion valves.



M_(A) W_(B) C_(C) 200_(D) D_(E) N_(F) M_(G) 2_(H) M_(I)

- (A) **M** = Medium
- (B) **W** = Water cooled - **R** = Remote condenser
- (C) **C** = Cooling mode
- (D) Cooling capacity in kW
- (E) Number of circuits - **D** = circuits
- (F) **N** = Non ducted
- (G) **M** = R410A refrigerant
- (H) **2** = Revision number
- (I) **M** = 400V/3/50Hz



Water cooled version

Cooling only units & Heat pump units

MWC		180	230	280	330	380	450	510	570	650	720		
Nominal thermal performances - Cooling mode													
Cooling capacity ⁽¹⁾		kW	179,9	232,1	279,7	332,7	379,1	432,7	482,2	551,3	620,5	691,9	
Total absorbed power ⁽¹⁾		kW	40,9	51,6	61,6	73,4	83,9	98,3	112,8	127,2	145,3	166,1	
EER ⁽¹⁾			4,40	4,50	4,54	4,53	4,52	4,40	4,27	4,33	4,27	4,17	
Comfort Application	Seasonal Energy Efficiency Ratio ⁽²⁾ SEER		5,64	5,80	5,89	5,85	5,96	-	-	-	-	-	
	Seasonal energy efficiency ⁽³⁾ η_{s,c}		%	218	224	227	226	231	-	-	-	-	
Process Application	Seasonal Energy Performance Ratio ⁽⁴⁾ SEPR - High temperature (7°C)		-	-	-	-	-	-	-	-	-	-	
	Seasonal Energy Performance Ratio ⁽⁵⁾ SEPR - Medium temperature (-8°C)		4,53	4,55	4,51	4,54	4,49	4,28	4,31	4,43	4,46	4,45	
Nominal thermal performances - Heating mode													
Heating capacity ⁽¹⁾		kW	198,8	254,9	307,1	364,0	415,6	477,0	536,4	609,6	689,0	758,6	
Total absorbed power ⁽¹⁾		kW	49,9	63,0	74,9	89,0	101,7	119,2	136,7	154,0	174,0	196,9	
COP ⁽¹⁾			3,98	4,05	4,10	4,09	4,09	4,00	3,92	3,96	3,96	3,85	
Comfort Application	Seasonal Coefficient of Performance ⁽⁶⁾ SCOP		5,49	5,69	5,57	5,60	5,65	5,70	5,52	5,62	5,43	5,26	
	Seasonal energy efficiency ⁽⁷⁾ η_{s,h}		%	212	220	215	216	218	220	213	217	209	203
	Seasonal efficiency class ⁽⁸⁾			A+++									
Acoustic data													
Global sound power level - Standard unit		dB(A)	81,6	87,1	89,4	90,9	92,0	92,8	93,3	93,8	96,1	97,7	
Electrical data													
Maximum power		kW	69,0	88,0	107,0	126,0	145,0	166,0	192,0	217,0	244	271,0	
Maximum current		A	129,0	158,0	184,0	212,0	240,0	272,0	314,0	358,0	402,0	445,0	
Starting current		A	272,0	408,0	435,0	463,0	490,0	499,0	565,0	609,0	736,0	779,0	
Short circuit current		kA	10	10	10	10	35	35	35	35	35	35	
Refrigeration circuit													
Number of circuits			2	2	2	2	2	2	2	2	2	2	
Number of compressors			4	4	4	4	4	6	6	6	6	6	
Total refrigerant load - R410a		kg	16,0	24,0	28,0	28,0	44,0	54,0	58,0	62,0	60,0	60,0	
Condenser													
Nominal water flow rate		m ³ /h	37,70	48,50	58,40	69,40	79,10	90,70	101,60	115,80	130,90	146,60	
Nominal pressure drop		kPa	46	40	32	44	43	39	43	52	28	33	
Evaporator													
Nominal water flow rate ⁽⁹⁾		m ³ /h	31,00	39,90	48,20	57,20	65,30	74,50	83,10	94,90	106,90	99,20	
Nominal pressure drop ⁽⁹⁾		kPa	33	29	40	31	40	39	47	43	54	47	
Hydraulic connection													
Type			Victaulic										
Diameter			4"	4"	4"	4"	4"	5"	5"	5"	5"	5"	

(1) EUROVENT certified data, in accordance with standard EN 14511.

Cooling mode: Evaporator water temperature = 12/7°C | Only for MWC 720: 13/7°C evaporator water temperature. Condenser water temperature = 30/35°C / **Heating mode:** Condenser water temperature = 40/45°C | Evaporator water inlet temperature = 10°C. | Evaporator water outlet temperature calculated with the same water flow as in cooling mode.

(2) SEER in accordance with standard EN 14825. | (3) Following ecodesign regulation EU 2016/2281 on space cooling, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (4) Following ecodesign regulation EU 2016/2281 on process cooling units, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (5) Following ecodesign regulation EU 2015/1095 on process cooling chillers, normalized leaving water temperature at -8°C, in accordance with standard EN 14825 |

(6) SCOP in accordance with standard EN 14825. Heating mode performance is defined for average climate conditions. | (7) Following ecodesign regulation EU 813/2013 on space heaters, normalized leaving water temperature at 7°C, in accordance with standard EN 14825, average climate conditions. | (8) Following energy labelling regulation EU 811/2013 on space heaters.

M^(A) W^(B) C^(C) 200^(D) D^(E) N^(F) M^(G) 2^(H) M^(I)

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 (C) **C** = Cooling mode
 (D) Cooling capacity in kW
 (E) Number of circuits - **D** = circuits
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 (G) **M** = R410A refrigerant
 (H) **2** = Revision number
 (I) **M** = 400V/3/50Hz



Air cooled version

Cooling only units

MRC - Remote Condenser		180	230	280	330	380	450	510	570	650	720
Nominal thermal performances - Cooling mode											
Cooling capacity ⁽¹⁾	kW	161,1	202,0	241,9	288,7	328,5	382,0	432,8	494,3	554,8	615,4
Total absorbed power ⁽¹⁾	kW	49,7	63,0	76,2	89,4	102,5	120,3	137,0	153,8	176,2	198,6
EER ⁽¹⁾		3,24	3,21	3,18	3,23	3,20	3,18	3,16	3,21	3,15	3,10
Comfort Application	Seasonal Energy Efficiency Ratio ⁽²⁾ SEER	-	-	-	-	-	-	-	-	-	-
	Seasonal energy efficiency ⁽³⁾ η_{s,c}	%	-	-	-	-	-	-	-	-	-
Process Application	Seasonal Energy Performance Ratio ⁽⁴⁾ SEPR - High temperature (7°C)	-	-	-	-	-	-	-	-	-	-
	Seasonal Energy Performance Ratio ⁽⁵⁾ SEPR - Medium temperature (-8°C)	-	-	-	-	-	-	-	-	-	-
Nominal thermal performances - Heating mode											
Heating capacity ⁽¹⁾	kW	-	-	-	-	-	-	-	-	-	-
Total absorbed power ⁽¹⁾	kW	-	-	-	-	-	-	-	-	-	-
COP ⁽¹⁾		-	-	-	-	-	-	-	-	-	-
Comfort Application	Seasonal Coefficient of Performance ⁽⁶⁾ SCOP	-	-	-	-	-	-	-	-	-	-
	Seasonal energy efficiency ⁽⁷⁾ η_{s,h}	%	-	-	-	-	-	-	-	-	-
	Seasonal efficiency class ⁽⁸⁾		-	-	-	-	-	-	-	-	-
Acoustic data											
Global sound power level - Standard unit	dB(A)	81,0	87,0	89,0	90,0	92,0	92,8	93,3	93,8	96,1	97,7
Electrical data											
Maximum power	kW	69,0	88,0	107,0	126,0	145,0	166,0	192,0	217,0	244	271,0
Maximum current	A	129,0	158,0	184,0	212,0	240,0	272,0	314,0	358,0	402,0	445,0
Starting current	A	272,0	408,0	435,0	463,0	490,0	499,0	565,0	609,0	736,0	779,0
Short circuit current	kA	10	10	10	10	35	35	35	35	35	35
Refrigeration circuit											
Number of circuits		2	2	2	2	2	2	2	2	2	2
Number of compressors		4	4	4	4	4	6	6	6	6	6
Total refrigerant load - R410a	kg	Nitrogen charge									
Condenser											
Nominal water flow rate	m ³ /h	-	-	-	-	-	-	-	-	-	-
Nominal pressure drop	kPa	-	-	-	-	-	-	-	-	-	-
Evaporator											
Nominal water flow rate ⁽⁹⁾	m ³ /h	27,70	34,80	41,60	49,70	56,50	65,70	74,50	85,00	95,50	105,90
Nominal pressure drop ⁽⁹⁾	kPa	27	22	31	24	31	31	39	35	44	52
Hydraulic connection											
Type		Victaulic									
Diameter		4"	4"	4"	4"	4"	5"	5"	5"	5"	5"

(1) EUROVENT certified data, in accordance with standard EN 14511.

Cooling mode: Gross cooling capacity with 12/7°C water temperature. | Only for MWC 720: 13/7°C evaporator water temperature. (2) SEER in accordance with standard EN 14825. | (3) Following ecodesign regulation EU 2016/2281 on space cooling, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (4) Following ecodesign regulation EU 2016/2281 on process cooling units, normalized leaving water temperature at 7°C, in accordance with standard EN 14825. | (5) Following ecodesign regulation EU 2015/1095 on process cooling chillers, normalized leaving water temperature at -8°C, in accordance with standard EN 14825. | (6) SCOP in accordance with standard EN 14825. Heating mode performance is defined for average climate conditions. | (7) Following ecodesign regulation EU 813/2013 on space heaters, normalized leaving water temperature at 7°C, in accordance with standard EN 14825, average climate conditions. | (8) Following energy labelling regulation EU 811/2013 on space heaters. | (9) MRC values calculated for 50°C condensing temperature.



Water cooled version

Cooling only units & Heat pump units

MWC		180	230	280	330	380	450	510	570	650	650
A	mm	2150					2200				
B		820					1200				
C		1645					1870				
Weight of standard units											
Basic unit	kg	756	974	1158	1328	1534	1984	2100	2240	2440	2480



Air cooled version

Cooling only units

MRC - Remote Condenser		180	230	280	330	380	450	510	570	650	720
A	mm	2200									
B		1200									
C		1870									
Weight of standard units											
Basic unit	kg	650	810	950	1120	1290	1660	1740	1870	1980	2020

