



Air-Sourced Scroll Multi-pipe Units

CMAF 110 SE SN

Manufactured in: Charnes, France

Fully customized (non-standard) product

General Information

Refrigerant Type	R410A	Pdesign, h	387.5 kW
Ecodesign - $\eta_{s,c}$ (SEER)	183.2% (4.65)	Ecodesign - $\eta_{s,h}$ (SCOP)	146.0% (3.72)
Operation Temperature	Standard Cooling	Unit Application	Low Ambient
Fan Type	AC	Fan Speed Cooling/HP (RPM)	900/900
Number of Condenser Fans	8	Number of Refrigerant Ckts	2
Nr of Compressors Ckt1/Ckt2	2 / 2	Charge Ckt1/Ckt2	45 kg / 46 kg
Chilled Loop Hydraulic Module	Signal On/Off Pump	Hot Loop Pump Hydraulic Module	Signal On/Off Pump
Evaporator Buffer Tank	No Tank		

Cooling Only Performance

Gross Cooling Capacity	386.9 kW	Gross EER	2.99 kW/kW
Net Cooling Capacity	386.5 kW	Net EER	2.96 kW/kW
Evap Entering Temp	12.0 °C	Air Temperature	35.0°C
Evap Leaving Temp	7.0 °C	Evap Fouling Factor	0 m².K/W
Evap Flow Rate	18.4 L/s	Evap Fluid Type	Water
Evap Pressure Drop	40.4 kPa	Evap Fluid Concentration	0

Heat Pump Only Performance

Gross Heating Capacity	297.5 kW	Gross COP	2.55 kW/kW
Net Heating Capacity	297.8 kW	Net COP	2.54 kW/kW
Cond Entering Temp	40.0°C	Air Temperature (Dry / Wet)	-5.0°C / -6.0°C
Cond Leaving Temp	45.0 °C	Cond Fouling Factor	0 m².K/W
Cond Flow Rate	14.4 L/s	Cond Fluid Type	Water
Cond Pressure Drop	16.7 kPa	Cond Fluid Concentration	0

Heat Recovery Performance

Gross Cooling Capacity	399.0 kW	Gross Heating Capacity	504.0 kW
Net Cooling Capacity	398.5 kW	Net Heating Capacity	505.3 kW
Project TER	7.68 kW/kW	Eurovent TER	7.88 kW/kW
Evap Entering Temp	12.0 °C	HR Entering Temp	40.0 °C
Evap Leaving Temp	7.0 °C	HR Leaving Temp	45.0 °C
Evap Fluid Type	Water	HR Fluid Type	Water
Evap Fluid Concentration	0	HR Fluid Concentration	0
Evap Fouling Factor	0 m².K/W	HR Fouling Factor	0 m².K/W
Evap Flow Rate	19.0 L/s	HR Flow Rate	24.3 L/s
Evap Pressure Drop	42.6 kPa	Cond Pressure Drop	58.9 kPa

Electrical Information

Unit Voltage	400/50/3	Max. Unit Power Input	173 kW
Gross Unit Power - Cooling	129.4 kW	Max. Current	299 A
Gross Unit Power - Heating	116.7 kW	Max. Starting Current,	631 A
Gross Unit Power - HR	114.1 kW	Direct Start	

Physical Information

Length	4520 mm
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Width	2200 mm
Height	2530 mm
Cooling Sound Power	94 dB(A)
Cooling Sound Pressure @ 10m	62 dB(A)
Shipping Weight	3105 kg
Operating Weight	3295 kg



Disclaimer Notes:

The data provided is preliminary and subject to change.

Unit performances are without considering hydraulic modules/accessories.

Sound data is according ISO 9614:2009. Eurovent conditions, with 1pW reference sound power.

Project TER: Calculated at the project specific water temperature conditions.

Eurovent TER: Calculated at standard Eurovent conditions, being +/-7°C (chilled LWT) and +/-45°C (hot LWT) with water flow rates as determined at the standard rating conditions of EN14511-2.

Units operating with ambient air temperatures below +7°C, and high relative humidity, may be subject to ice formation and defrosting.

General Note:

During operation there is always a constant water flow on the hot water and chilled water loops.

The delta T varies based upon the heat transfer (return water temperature) of each operating mode with a fixed leaving water set point.

The CMAF controls on fixed leaving chilled/hot water temperature set points.