



Unit overview

Unit model	Sintesis™ Balance	
Model	CMAF 190 HE XLN EC R454B	
Unit application	Low ambient air temperatures	
Compressor type	Scroll	
Refrigerant	Full refrigerant charge R454B	
Eta s,c / SEER	200 % / 5.07	Compliance not applicable
Eta s,h / SCOP	146 % / 3.72	Compliance not applicable
SEPR HT	6.05	Compliance not applicable
Heat recovery	Heat recovery included	
Free cooling	No option	
Chilled loop hydraulic module	Signal On/Off pump	
Hot loop hydraulic module	Signal On/Off pump	
Unit power supply	400V 50Hz 3Ph	



Project conditions

	Cooling	Heating
Outdoor air dry bulb temperature	35.0 C	-5.0 C
Relative humidity		90 %
Fluid entering temperature	12.0 C	26.0 C
Fluid leaving temperature	7.0 C	31.0 C
Fluid type and concentration	Water	Water
Fouling factor	0.017615 m2-deg K/kW	0.017615 m2-deg K/kW
Elevation	0.0 m	0.0 m

Unit performance data

	Cooling	(2)	Heating	(2)
Gross capacity	627.32 kW		484.15 kW	
Net capacity	626.80 kW		484.49 kW	
Gross total absorbed power	212.26 kW		142.07 kW	
Total absorbed power	214.20 kW		143.00 kW	
Gross EER/COP	2.96 EER (kW/kW)		3.410 kW/kW	
Net EER/COP	2.93 EER (kW/kW)		3.390 kW/kW	
Design flow rate	29.90 L/s		23.23 L/s	
Waterside Heat Exchanger Pressure drop	39.5 kPa		20.8 kPa	
Waterside heat exchanger min flow	15.20 L/s		9.80 L/s	
Waterside heat exchanger max flow	45.90 L/s		48.90 L/s	
Maximum flow variation allowed	2.99 L/s		2.32 L/s	

Heat recovery mode

	Cooling	Heating	Total
Gross capacity	743.19 kW	875.03 kW	1618.22 kW
Net capacity	742.67 kW	875.37 kW	1618.04 kW
Gross total absorbed power			141.36 kW
Total absorbed power			144.21 kW
Gross TER			11.450 kW/kW
Total Efficiency Ratio (TER)			11.220 kW/kW
Design Flow rate	29.90 L/s	23.23 L/s	
Waterside heat exchanger pressure drop	39.2 kPa	20.5 kPa	
Waterside heat exchanger min flow	15.20 L/s	9.80 L/s	
Waterside heat exchanger max flow	45.90 L/s	48.90 L/s	
Inlet water temperature	12.9 C	26.0 C	
Outlet chilled water temperature	7.0 C	35.0 C	



Acoustic data

Outdoor sound power level					92 dBA			(4)
Outdoor sound pressure level					59 dBA			(3)
Outdoor Sound spectrum (Lw)	125 Hz	250 Hz	500 Hz	1 kHz	2 kHz	4 kHz	8 kHz	
	96 dB	90 dB	91 dB	87 dB	80 dB	79 dB	72 dB	

Note: Acoustic data for unit at full load in cooling mode, excluding hydraulic module

General data - refrigerant circuit

Refrigerant	Full refrigerant charge R454B		
Number of circuits	2		
Number of compressors (circuit 1 / 2...n)	3 / 3		
Compressor type	Scroll		
Refrigerant charge per circuit	60 / 60		
Oil charge per circuit	10 kg		

General data - fan section

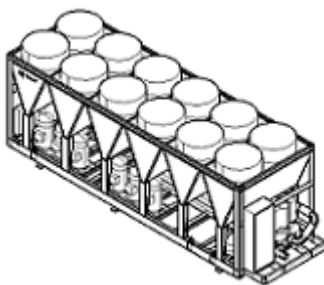
Number of outdoor fans	12
Fan type	EC fans
Total nominal airflow at conditions	68.26 m3/s

Electrical data

Unit power supply	400V 50Hz 3Ph
Start-up current	653.38 A
Maximum running current	480.27 A
Maximum power at maximum current	290.07 kW
Displacement power factor (cos-phi)	0.872

Dimension and weight

Length	6770 mm
Width	2200 mm
Height	2530 mm
Shipping weight	5033 kg
Operating weight	5341 kg



Note: Dimensions and weight include sound attenuation, hydraulic module, heat recovery and/or free cooling - if selected. Image is for illustration purposes only, options may not be shown.

Applicable standards

- (1) According to EN14825:2018, considering average climate
- (2) According to EN14511:2018
- (3) Average sound pressure at 10 meter distance, unit in a free field on a reflective surface; non-binding value calculated from the sound power level
- (4) Sound power measurements in accordance with ISO 9614:2009 (part 1)
- (5) Performance rating out of scope of Eurovent certification program



More information

CMAF Litweb documentation	https://www.trane.com/litweb/Litweb.aspx?#/category/bd13efa5-a5bf-4f0a-afb4-9eab178d9081/range/8300e494-e27f-4c7d-86ff-50808f1ace99/model/59b07358-1f5b-4394-b038-3cb7f65948da/section/0565b9d8-ab9e-4f93-9f0c-ddca408ed710
Model Number	CMAF190DE**HCXELWWNBNEXXB1EBA11ALXXXXXXXX1EXBAXXX XXXXBA2XXXXXXXXXX