

Coolselector2

Project information

Project name:
 Comments:
 Created by: Bojana Vezmar Eko Elektrofrigo doo
 Coolselector2 version: 5.0.1. Database: 88
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 Preferences used: My preferences

Condensing units 1

Operating conditions

Refrigerant: R404A
 Evaporating dew point temperature: -10.0 °C Ambient temperature: 32.0 °C
 Evaporating pressure: 4.342 bar Subcooling: 0 K
 Evaporating mid-point temperature: -10.2 °C Additional subcooling: 0 K
 Useful superheat: 8.0 K Altitude: 0 m
 Additional superheat: 0 K
 Return gas temperature: -2.0 °C
Rating conditions: *Custom*
Required cooling capacity: 6.000 kW

Selection: OP-MPPM028VVLP01, R404A - 6000 rpm

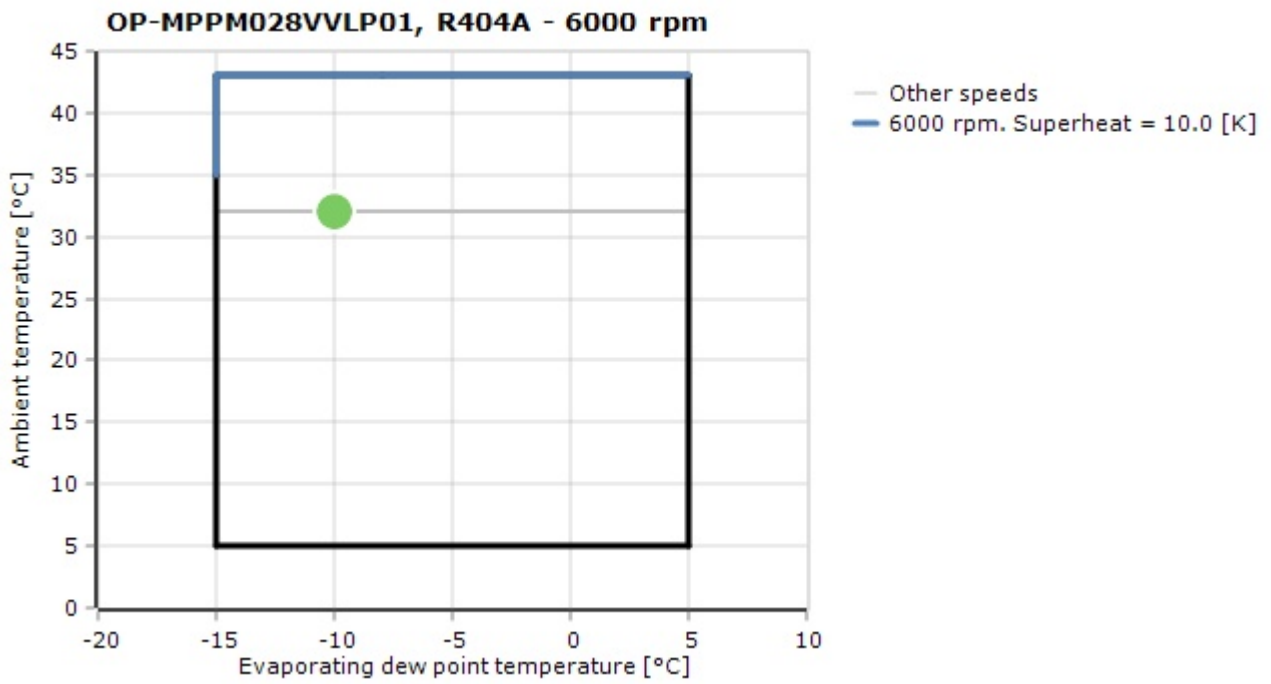
Model	OP-MPPM028VVLP01	OP-MPPM035VVLP01	OP-MPPM044VVLP01
Code number	114X4302	114X4316	114X4334
Compressor model	VLZ028TGA	VLZ035TGA	VLZ044TGA
Product range	Optyma™ Plus INVERTER	Optyma™ Plus INVERTER	Optyma™ Plus INVERTER
Product version	P01	P01	P01
Refrigerant	R404A	R404A	R404A
Cooling [kW]	5.921	6.000	6.000
COP cooling [W/W]	1.79	1.96	2.07
Total power [kW]	3.310	3.066	2.902
Total current [A]	4.394	4.258	3.962
Frequency [Hz]	50	50	50
Power supply	380 - 400 V 3 ph	380 - 400 V 3 ph	380 - 400 V 3 ph
Tc [°C]	38.7	38.6	38.5

Selected code number and spare parts

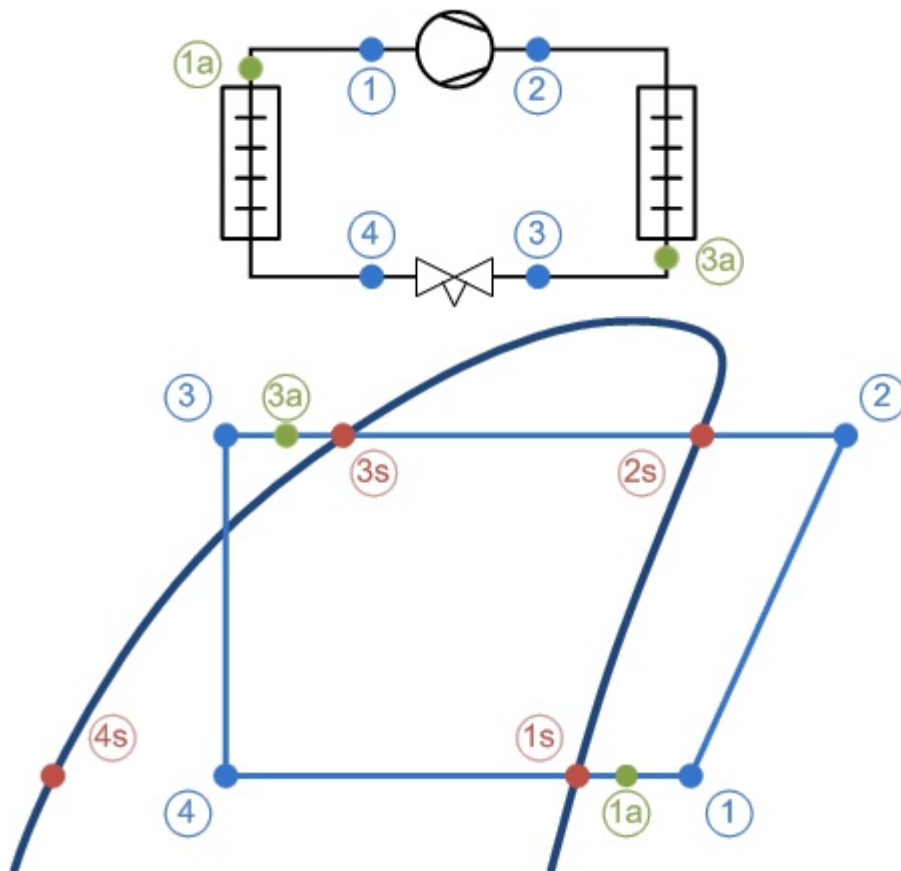
Code number: 114X4302. OP-MPPM028VVLP01

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Envelope



System diagrams



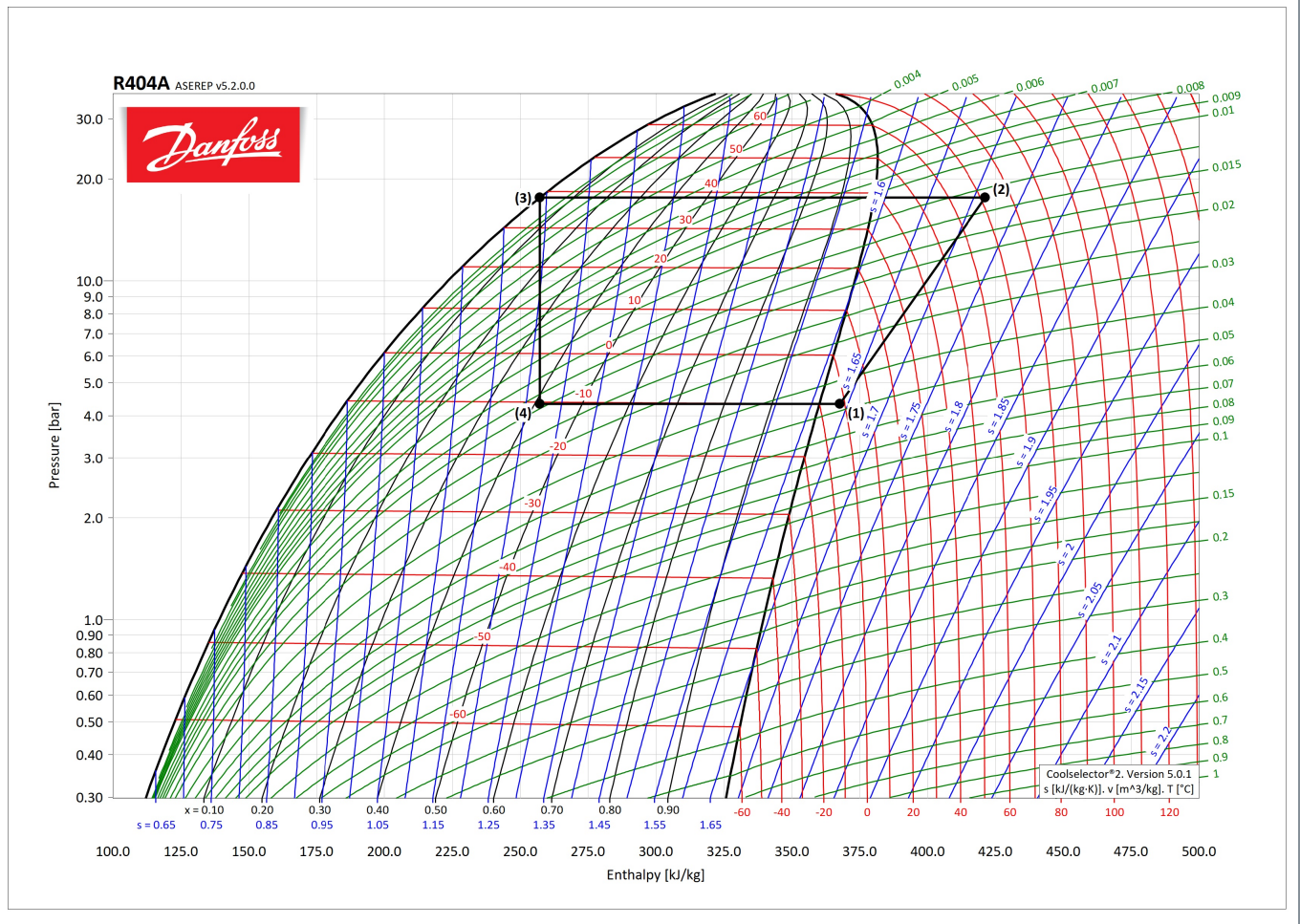
Mass flows

Mass flow in evaporator: 195.7 kg/h Mass flow in compressor: 195.7 kg/h

State points

		Temperature	Pressure (a)	Density	Enthalpy	Entropy
Point	Description	[°C]	[bar]	[kg/m ³]	[kJ/kg]	[kJ/(kg·K)]
1	Compressor suction	-2.0	4.342	21.06	367.6	1.639
2	Compressor discharge (estimated)	71.5	17.61	74.46	421.2	1.712
2s	Condensation dew point	38.7	17.61	97.29	380.2	1.587
3s	Condensation bubble point	38.3	17.61	975.8	257.3	1.192
3a	Condenser out	38.3	17.61	975.9	257.2	1.192
3	Including additional subcooling	38.3	17.61	975.9	257.2	1.192
4	After expansion valve	-10.3	4.342	52.33	257.2	1.219
4s	Evaporation bubble point	-10.6	4.342	1190	185.6	0.9468
1s	Evaporation dew point	-10.0	4.342	22.05	360.1	1.611
1a	Evaporator out	-2.0	4.342	21.06	367.6	1.639

Detailed log(p)-h diagram



Technical Data

Version	P01
Applications	MBP
Capacity control	INVERTER
Number of fans	1
Fan cowl/grill type	H3
Condenser type	G7
Air flow @ 50Hz [m³/h]	5200 m³/h
Receiver volume [L]	6.2 L
Sound power @ 50Hz [db(A)]	74 dbA
Sound pressure level 50Hz (@1 m distance) [db(A)]	63 dbA
Sound pressure level 50Hz (@10 m distance) [db(A)]	43 dbA
Approval standard	EAC;Ukranian UA TR mark;CE;Morocco C _p mark
Net weight	124 kg
Condenser Coil Internal Volume	1.62 mm³

Dimensions

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Length [mm]	481 mm
Width [mm]	1406 mm
Total height [mm]	965 mm
Fan diameter [mm]	500 mm
Fan blade size [mm]	500 mm

Electrical Specifications

Electrical code	E
Compressor power supply [V/Ph/Hz]	400/3/50
Fan power supply [V/Ph/Hz]	230/1/50
Fan power consumption @ 50Hz [W]	220 W
Fan power output @ 50Hz [W]	130 W
Fan voltage @ 50Hz (max) [V] [Min]	230 V
Fan current @ 50Hz [A]	0.96 A
No. of phases (fan)	1
No. of phases (compressor)	3
Voltage 50Hz [V] [Max]	440 V
Voltage 50Hz [V]	360 V
MCC	8.1 A
RLA	7 A

Mechanical Connections

Connection type	Solder
Liquid line connection [in]	5/8 in
Suction connection size [in]	3/4 in

Spare parts

Type	Description	Code number
Access Panel	Sheet Metal Access H3	118U5135
Acoustic hood 1	Acoustic hood	120Z5083
Compressor	VLZ028TGA	120G0162
Compressor contactor	A 16-30-01-80, DILM15-01	118U3847
Condenser	MCHX condenser G7 for B3/H3	118U5219
Controller	OP+ controller	118U3465
Crankcase heater	Belt type crankcase heater, 70 W, 240 V, CE mark, UL	120Z5040
Discharge pressure sensor	Sensor DST P110 (0 to 32 bar)	118U4021
Discharge temperature sensor		084N2007
Door handle	Door handle (OHB2AJM,MSMN,OXS5X131)	118U3858
EMC filter (Controller)	EMC filter (Controller)	118U3974
EMC filter (Drive)	EMC/RFI Filter FN8288	118U4079

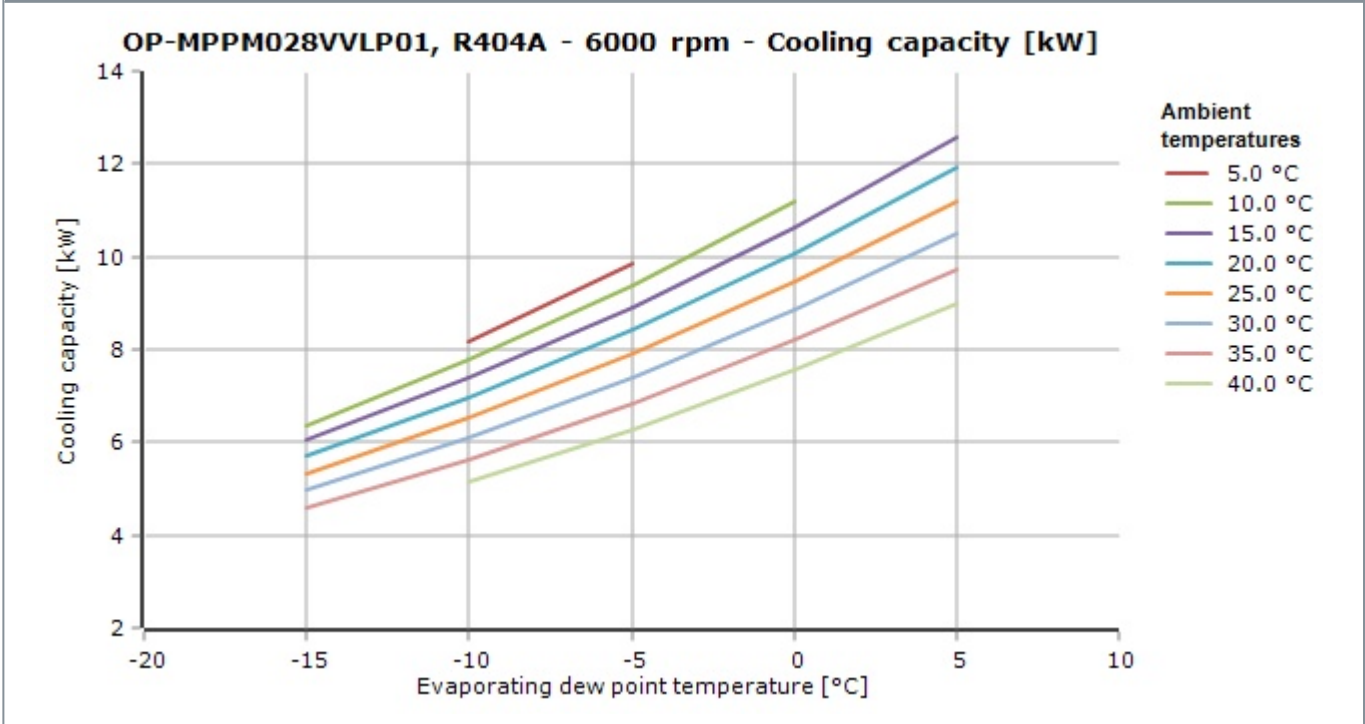
Fan assembly	Fan assembly	118U3829
Fan cowl/grill	Fan Cowl ø 609 mm	118U3485
Filter drier		023Z5045
Frequency converter	Drive CDS803 7,5kW Optyma Inverter	118U3973
Front Panel	Sheet Metal Front H3	118U5134
High-pressure switch	ACB High pressure switch (2UB463W)	118U3718
High-pressure transmitter	AKS 32R 0...32 bar	118U3722
Liquid valve		009G7053
Low-pressure switch	ACB Low pressure switch (2UA418W)	118U3720
Low-pressure transmitter	AKS 32R -1...12 bar	118U3721
Main switch kit	MS132 - 20+HK1-12	118U3854
Oil 1	POE lubricant, 215PZ, 1-litre can	120Z0648
Oil separator	Oil separator SO/ER-31	118U3981
Receiver	Liquid receiver 6,2L	118U3476
Sheet metal back	Sheet Metal Back H3	118U5133
Sheet metal fan	Sheet Metal Fan H3	118U5132
Sheet metal left	Sheet Metal Left Side H3	118U5165
Sheet metal top	Sheet Metal Top H3	118U5131
Sight glass		014F0174
Suction and ambient temp sensor		084N0003
Suction pressure sensor	Sensor DST 110 (-1 to 12bar)	118U4025
Suction valve		009G7054

Ecodesign

Model: OP-MPPM028VVL01. Compliant with Ecodesign 2018		
Refrigerant: R404A		
Item	Value	Unit
Evaporating mean temperature	-10.0	°C
Return gas temperature	20.0	°C
Seasonal Energy Performance Ratio	3.51	
Annual electricity consumption	11,042	kWh
Parameters at full load and ambient temperature 32.0 °C		
Rated cooling capacity	6.309	kW
Rated power input	3.323	kW
Rated COP	1.90	
Parameters at part load and ambient temperature 25.0 °C		
Declared cooling capacity	5.655	kW
Declared power input	2.323	kW
Declared COP	2.43	
Parameters at part load and ambient temperature 15.0 °C		
Declared cooling capacity	4.720	kW
Declared power input	1.398	kW
Declared COP	3.38	
Parameters at part load and ambient temperature 5.0 °C		
Declared cooling capacity	3.785	kW
Declared power input	0.836	kW
Declared COP	4.53	
Parameters at full load and ambient temperature 43.0 °C		
Cooling capacity	5.340	kW
Power input	3.826	kW
COP	1.40	

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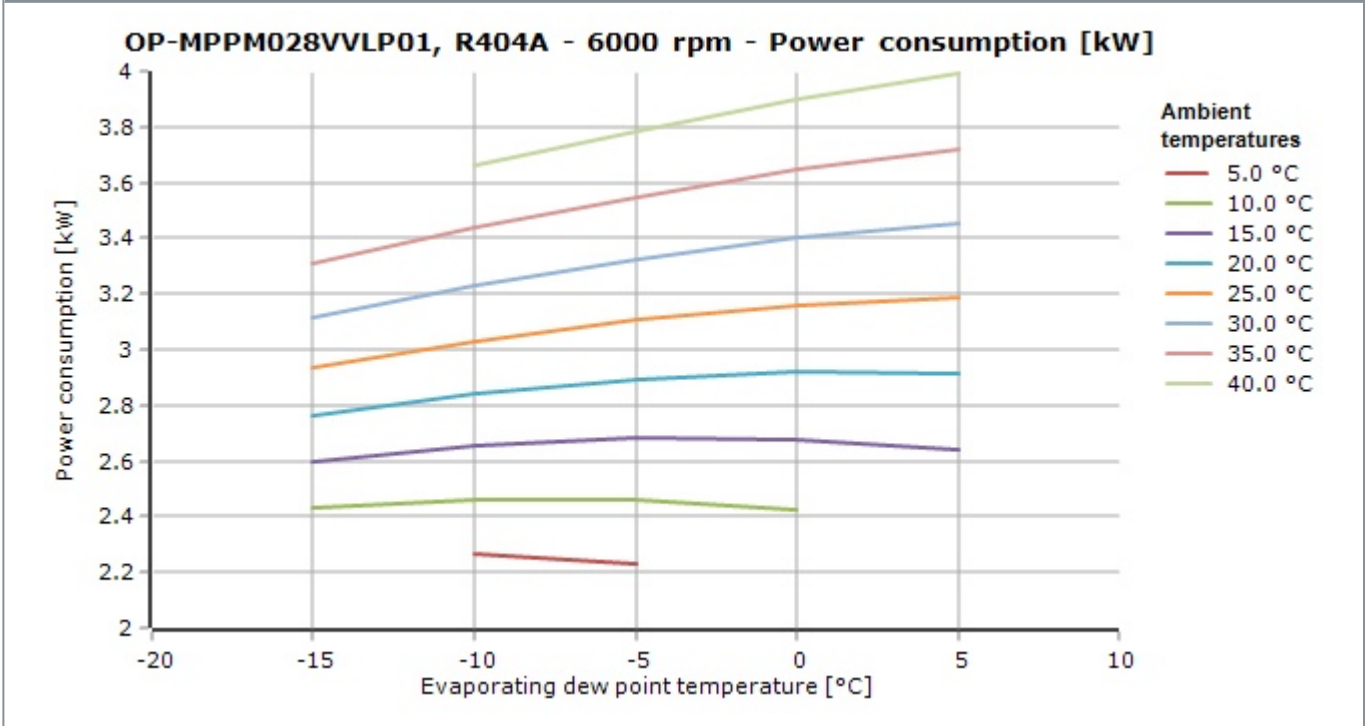
OP-MPPM028VVLP01, R404A - 6000 rpm - Cooling capacity [kW]



OP-MPPM028VVLP01, R404A - 6000 rpm - Cooling capacity [kW]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	8.166	9.843	-	-
10.0	6.374	7.775	9.381	11.20	-
15.0	6.037	7.375	8.906	10.64	12.59
20.0	5.691	6.964	8.418	10.06	11.91
25.0	5.336	6.540	7.914	9.466	11.21
30.0	4.968	6.101	7.392	8.851	10.49
35.0	4.588	5.646	6.851	8.214	9.744
40.0	-	5.172	6.290	7.554	8.977

OP-MPPM028VVLP01, R404A - 6000 rpm - Power consumption [kW]

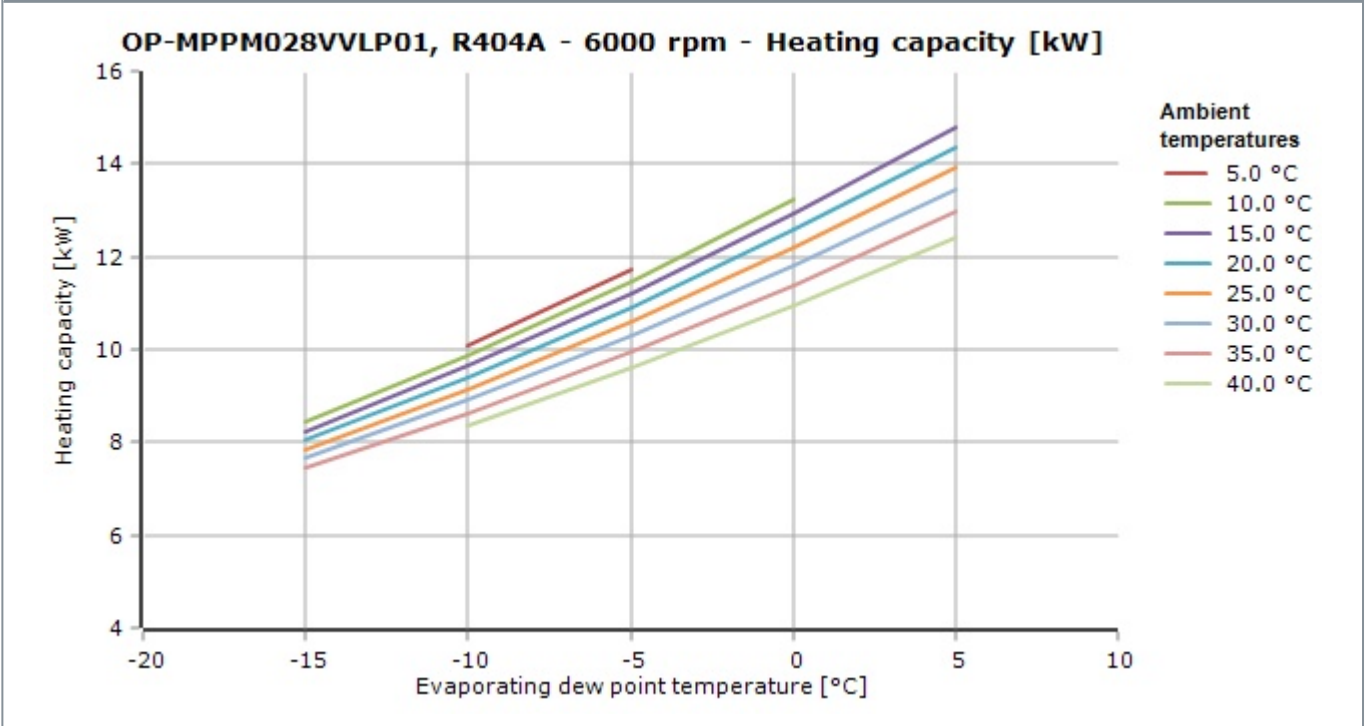


OP-MPPM028VVLP01, R404A - 6000 rpm - Power consumption [kW]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	2.267	2.233	-	-
10.0	2.431	2.463	2.462	2.427	-
15.0	2.595	2.652	2.681	2.679	2.641
20.0	2.760	2.840	2.895	2.922	2.917
25.0	2.932	3.030	3.108	3.162	3.186
30.0	3.114	3.228	3.325	3.401	3.452
35.0	3.313	3.437	3.549	3.645	3.719
40.0	-	3.663	3.787	3.897	3.990

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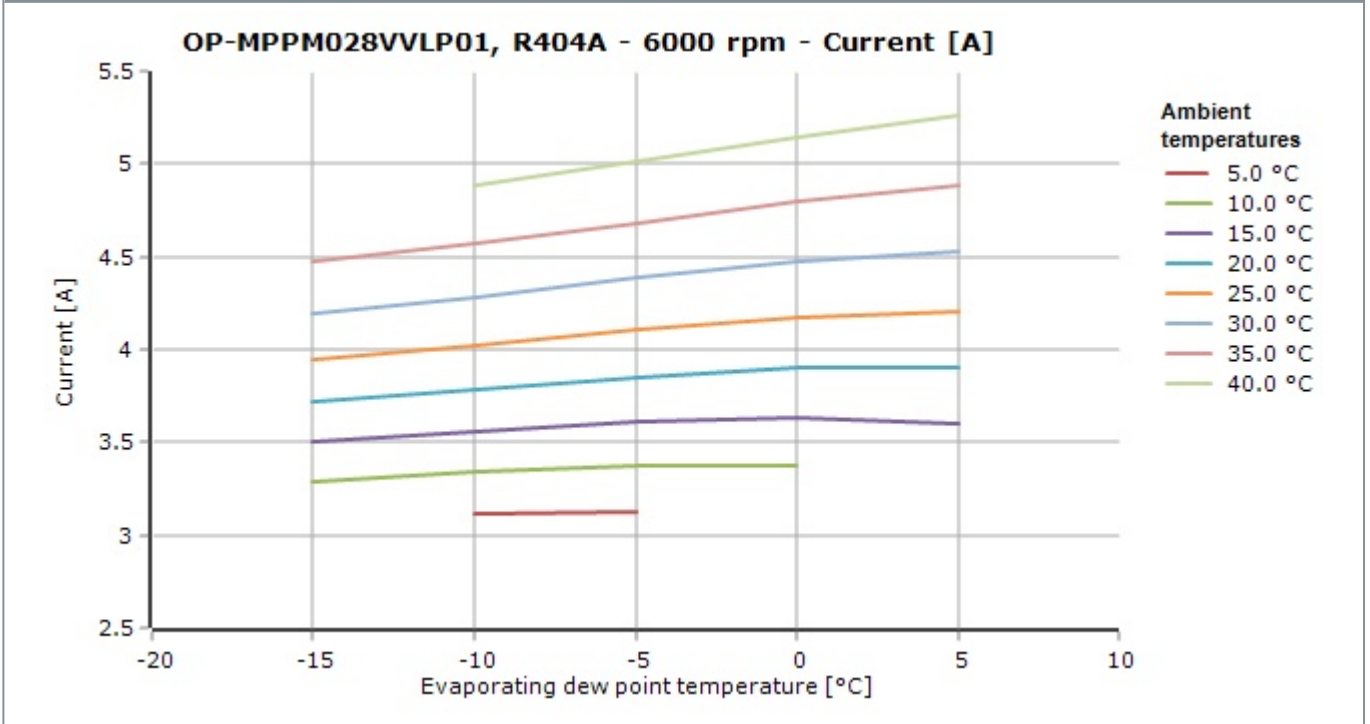
OP-MPPM028VVLP01, R404A - 6000 rpm - Heating capacity [kW]



OP-MPPM028VVLP01, R404A - 6000 rpm - Heating capacity [kW]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	10.09	11.73	-	-
10.0	8.425	9.866	11.47	13.24	-
15.0	8.236	9.638	11.20	12.92	14.77
20.0	8.045	9.402	10.91	12.57	14.37
25.0	7.853	9.157	10.61	12.20	13.94
30.0	7.657	8.903	10.28	11.81	13.47
35.0	7.457	8.639	9.946	11.39	12.96
40.0	-	8.364	9.590	10.94	12.42

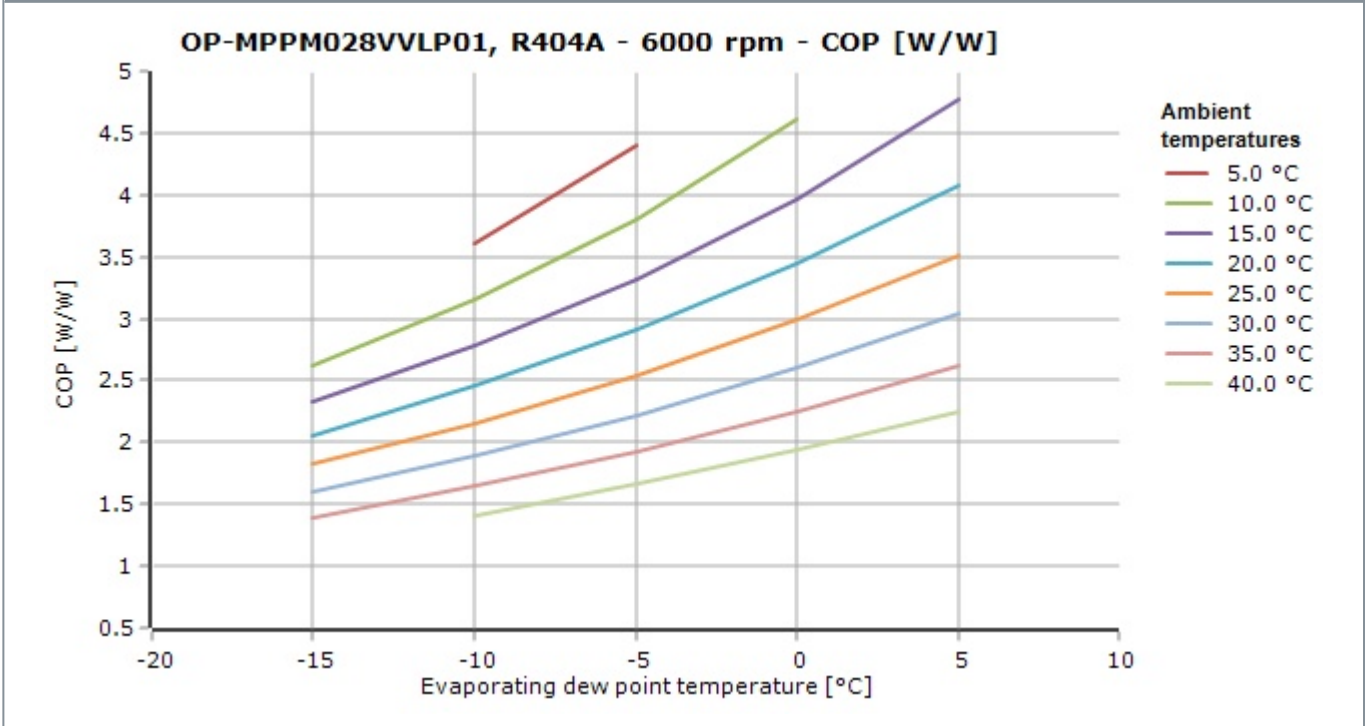
OP-MPPM028VVLP01, R404A - 6000 rpm - Current [A]



OP-MPPM028VVLP01, R404A - 6000 rpm - Current [A]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	3.113	3.130	-	-
10.0	3.290	3.338	3.372	3.370	-
15.0	3.501	3.560	3.611	3.632	3.604
20.0	3.718	3.786	3.854	3.899	3.900
25.0	3.947	4.025	4.109	4.177	4.208
30.0	4.196	4.283	4.383	4.473	4.532
35.0	4.472	4.568	4.683	4.795	4.881
40.0	-	4.887	5.015	5.147	5.260

OP-MPPM028VVLP01, R404A - 6000 rpm - COP [W/W]

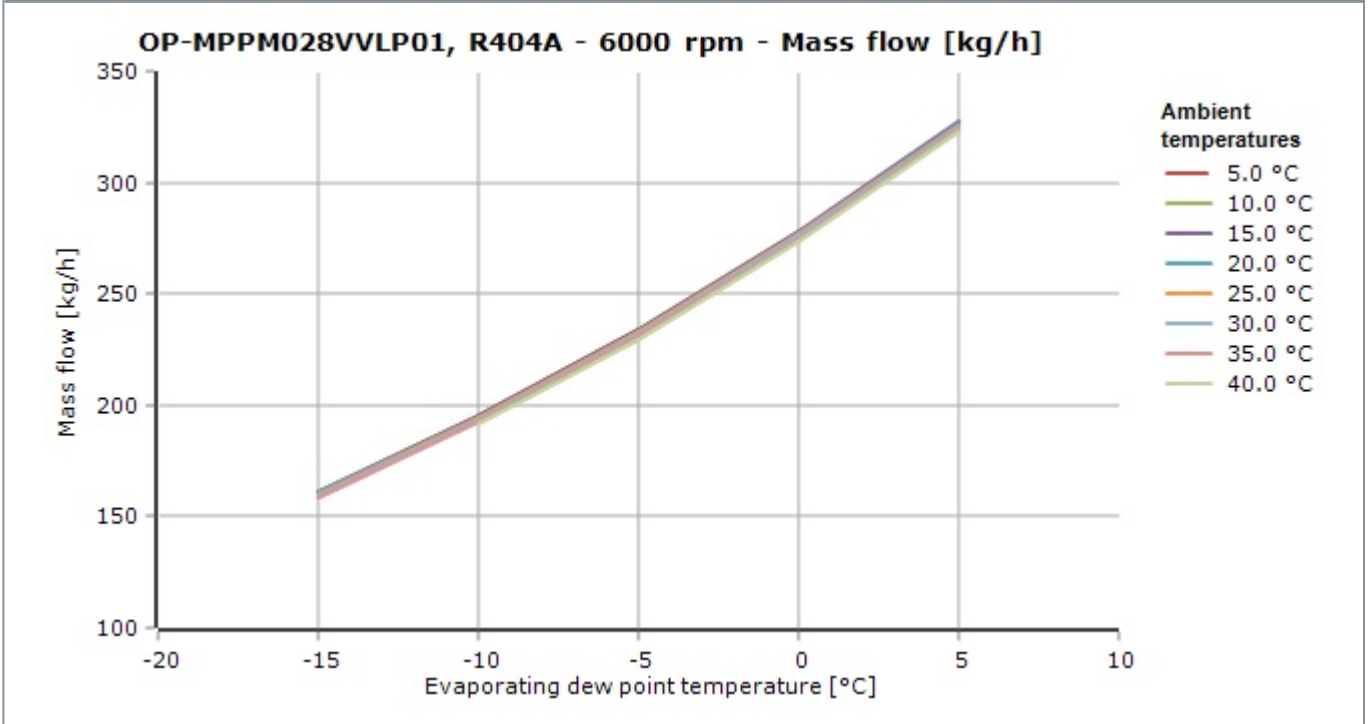


OP-MPPM028VVLP01, R404A - 6000 rpm - COP [W/W]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	3.60	4.41	-	-
10.0	2.62	3.16	3.81	4.62	-
15.0	2.33	2.78	3.32	3.97	4.77
20.0	2.06	2.45	2.91	3.44	4.08
25.0	1.82	2.16	2.55	2.99	3.52
30.0	1.59	1.89	2.22	2.60	3.04
35.0	1.39	1.64	1.93	2.25	2.62
40.0	-	1.41	1.66	1.94	2.25

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OP-MPPM028VVLP01, R404A - 6000 rpm - Mass flow [kg/h]



OP-MPPM028VVLP01, R404A - 6000 rpm - Mass flow [kg/h]

Tamb\Te dew	-15.0	-10.0	-5.0	0	5.0
5.0	-	195.5	234.0	-	-
10.0	161.6	195.3	234.0	277.9	-
15.0	161.2	195.1	233.8	277.7	327.2
20.0	160.8	194.7	233.4	277.3	326.8
25.0	160.2	194.2	232.9	276.7	326.1
30.0	159.5	193.5	232.2	275.9	325.2
35.0	158.6	192.6	231.1	274.8	324.1
40.0	-	191.4	229.9	273.5	322.9