

clausius

STRONG PROPANE 20 - 190



Ground source heat pump, for heating, cooling and DHW production.

The new range of **CLAUSIUS propane** heat pumps uses propane as a refrigerant, incorporates pressure and temperature sensors in the heating and brine circuits, and is ready for the addition of ultrasonic flow and energy meters. They are manufactured using the latest generation of Danfoss compressors, the new generation of Alfa Laval asymmetric heat exchangers that minimise the propane charge, electronic expansion valve and controller from Carel, additional Danfoss refrigeration components and the CLAUSIUS control system adapted for use in propane heat pumps. In addition all CLAUSIUS propane heat pumps incorporate all the safety measures required in accordance with the European Standards EN IEC 60335-2-40 and EN 378.

UniversidadeVigo



Bundesamt
für Wirtschaft und
Ausfuhrkontrolle



Netherlands Enterprise Agency



WE MANUFACTURE WITH THE BEST COMPONENTS ON THE MARKET



Danfoss SIEMENS

MODELS

H	Heating
HC	Heating and active cooling
H DS	Heating and desuperheater
HC DS	Heating, active and desuperheater

TECHNICAL SPECIFICATIONS

Applications	H 20-190	H 20-190 DS	HC 20-190	HC 20-190 DS
Heating and DHW	•	•	•	•
Active cooling			•	•
Hight temperature DHW with desuperheater		•		•

Optimal conditions	B0W35	B0W45	B0W55	B0W65	B5W35	B5W45	B5W55	B5W65
COP	4.8	3.7	2.9	2.3	5.8	4.4	3.3	2.7
Heating power	79.7	76.4	73.2	71.1	94.2	88.8	83.6	80.2

Maximum heating power	B0W35	B0W45	B0W55	B0W65	B5W35	B5W45	B5W55	B5W65
Heating power	177.6	173	164.5	137	205.9	200	188.3	155.3
COP	3.8	3.2	2.6	2.2	4.3	3.6	2.9	2.5
Cooling power	130.2	118.1	100.7	75.5	158	144.5	123.7	93.2

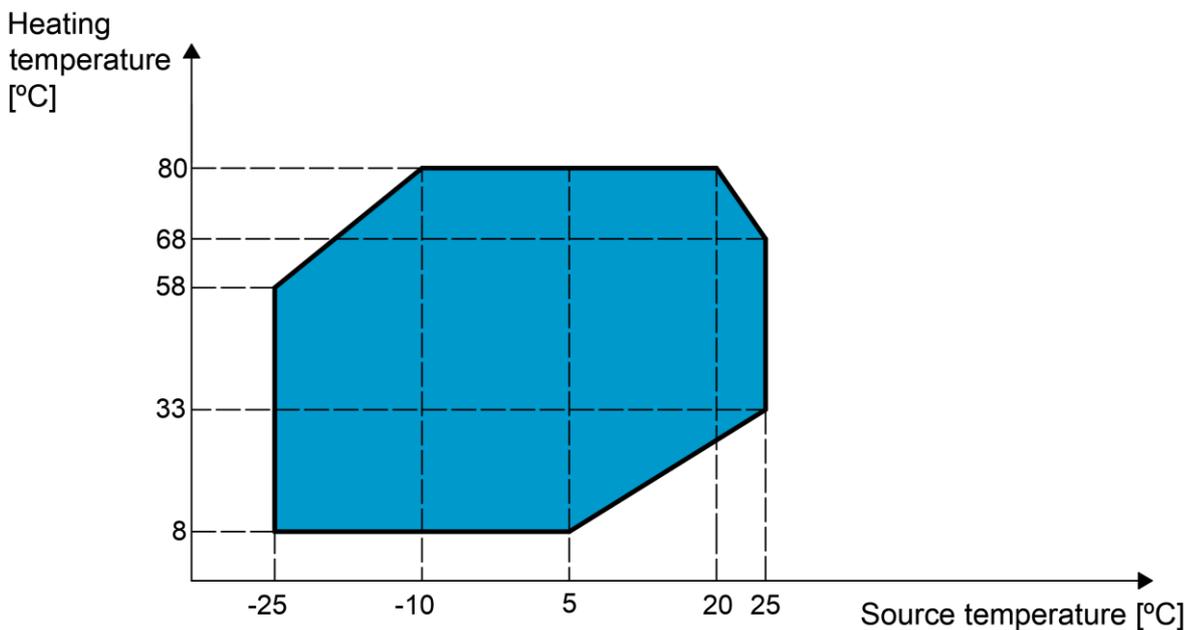
ACTIVE COOLING	W7/10 - B30/35	W15/18 - B30/35
Cooling power	188.2	255.7
EER	3.9	5.2

Performance	P design / SCOP 35 EN14825 with average climate control	190 / 5.1
	Energy label / ηs with average climate control	A+++ / 204
	P design / SCOP 55 EN14825 with average climate control	190 / 4.2
	Energy label / ηs with average climate control	A+++ / 164
Power supply	Type	400 V 3/N/PE
	Electrical consumption Min. - Max.	7.8 – 66.0 kW
	Recommended external protection	125 A

Operating limits	Heating temperature range	25 °C / 70 °C			
	Brine temperature range	-15 °C / +20 °C			
	Minimum / maximum pressure refrigeration circuit	1,5 bar / 32 bar			
	Minimum / maximum pressure heating and cooling circuits	1,5 bar / 6 bar			
Refrigerant	Propane (R290) charge	2 x 3.00 kg			
	Type / Compressor oil charge by volume / mass	POE / 3.3 l / 3.75 kg			
Flow	Brine Min. / Max.	4800 / 46000 l/h			
	Heating Min. / Max.	3400 / 32700 l/h			
Pressure Drop	Maximum Brine / Heating	55 / 30 kPa			
Dimensions	Height x Width x Depth	1441 x 1640 x 796 mm			
Connections	Brine and heating	3"			
	Desuperheater	1 1/4"			
Weight		H: 524 kg	H PC: 529 kg	HC: 540 kg	HC PC: 545 kg
Sound level		68 dB			

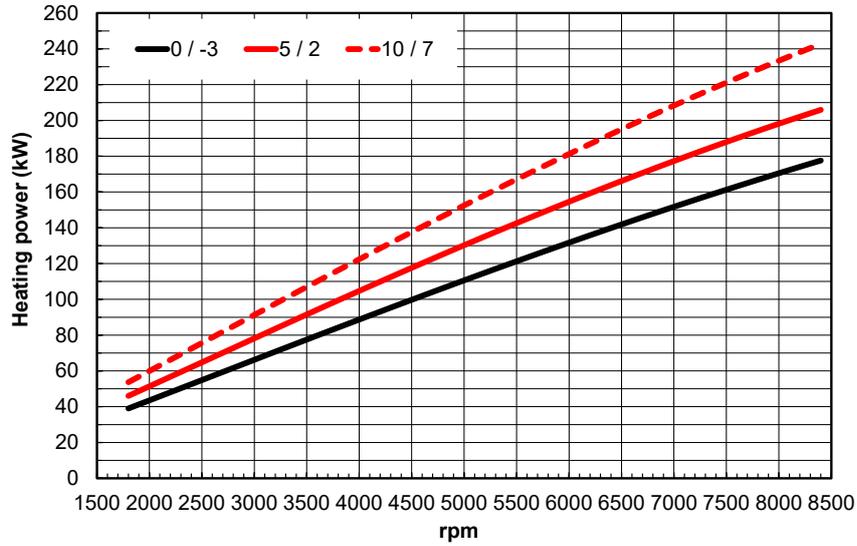
OPERATING MAP

Heat pump operating map showing the heating flow temperature as a function of the brine temperature.

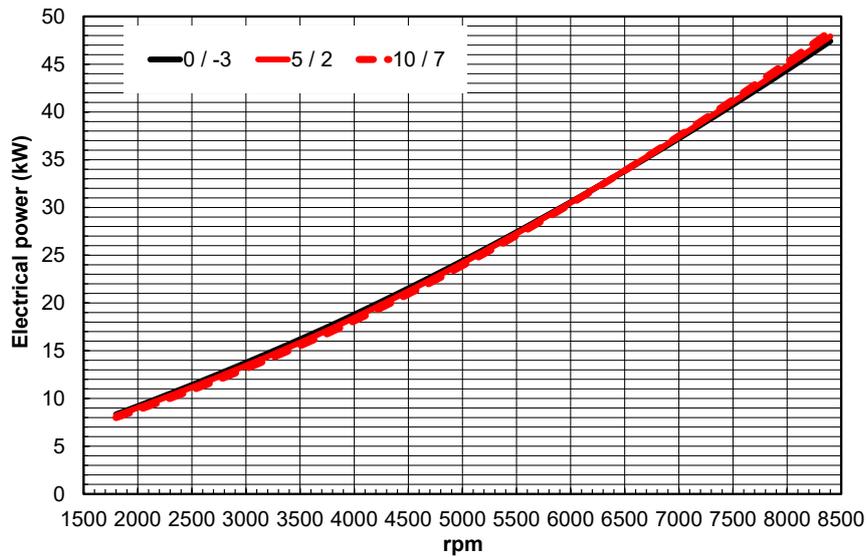


HEATING CHARACTERISTIC CURVES

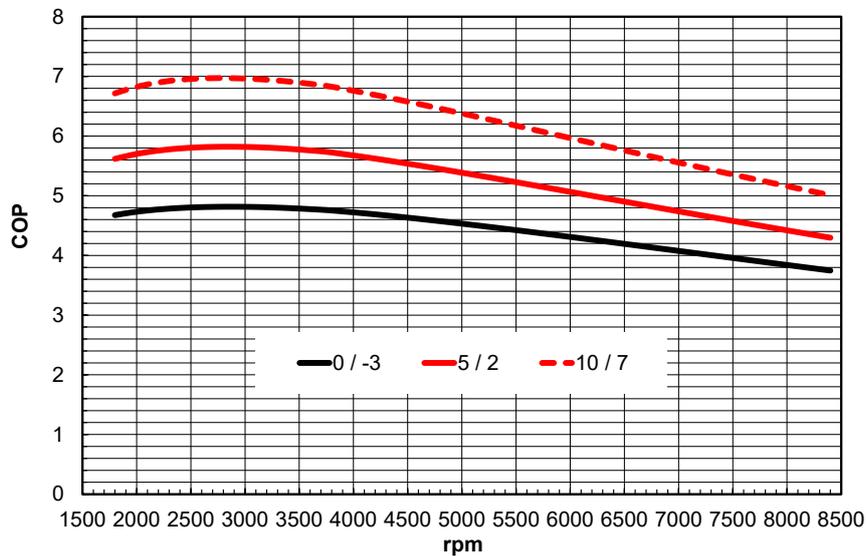
HEATING POWER, HEATING 30/35 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C



ELECTRICAL POWER, HEATING 30/35 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

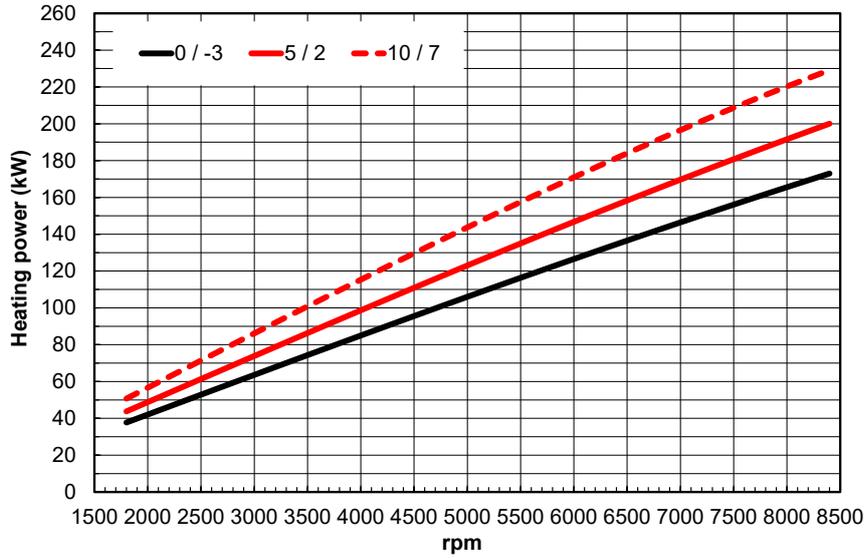


COP, HEATING 30/35 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

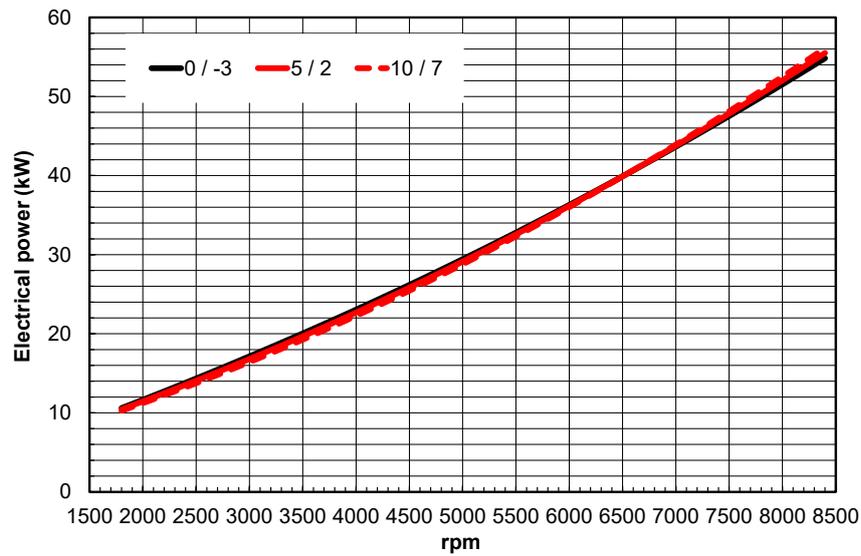


HEATING CHARACTERISTIC CURVES

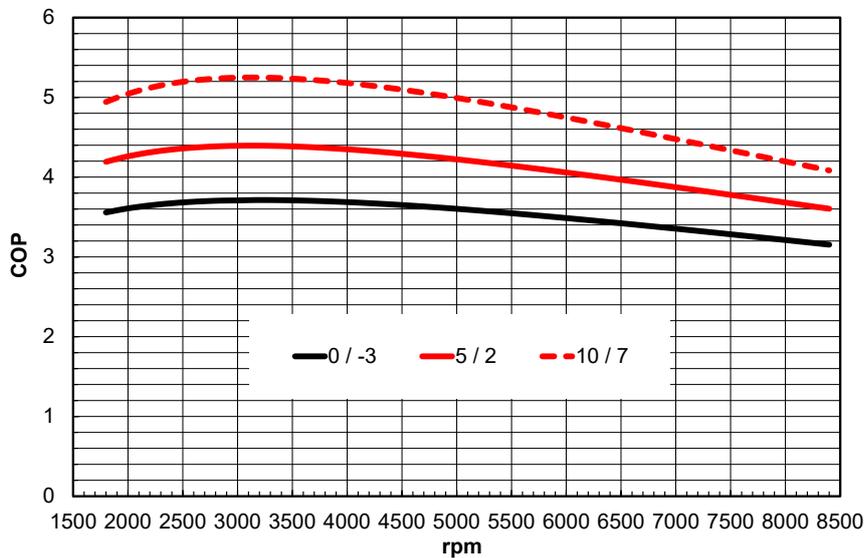
HEATING POWER, HEATING 40/45 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C



ELECTRICAL POWER, HEATING 40/45 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

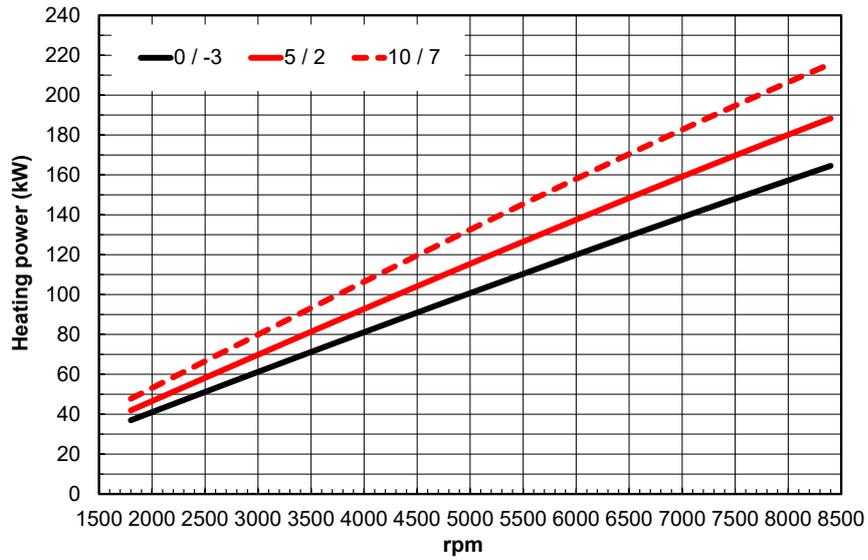


COP, HEATING 40/45 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

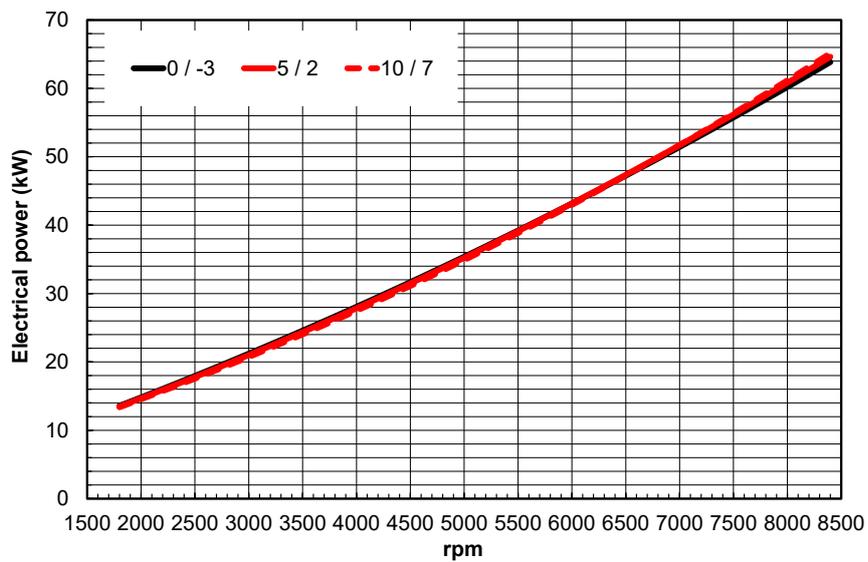


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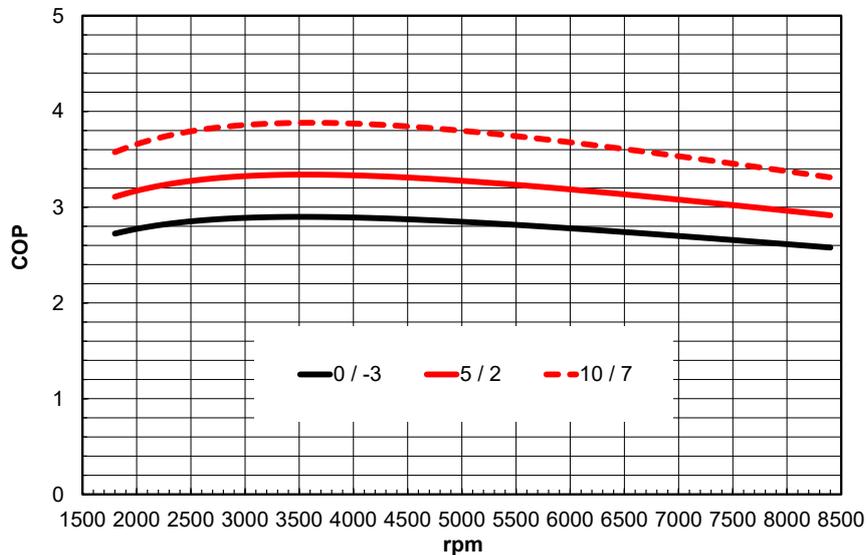
HEATING POWER, HEATING 50/55 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C



ELECTRICAL POWER, HEATING 50/55 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

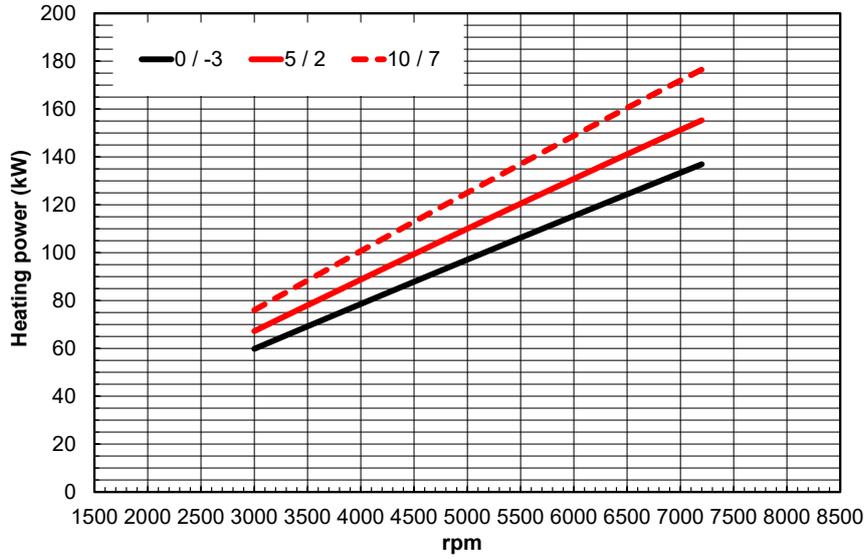


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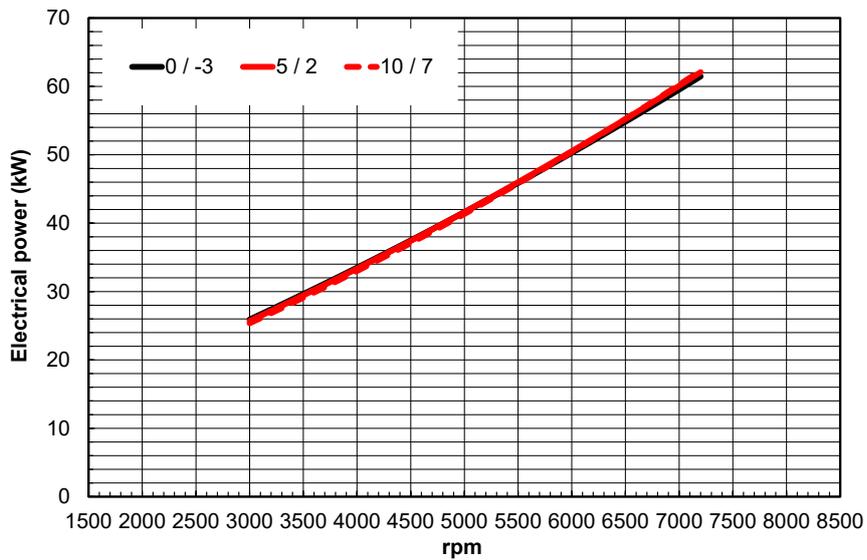


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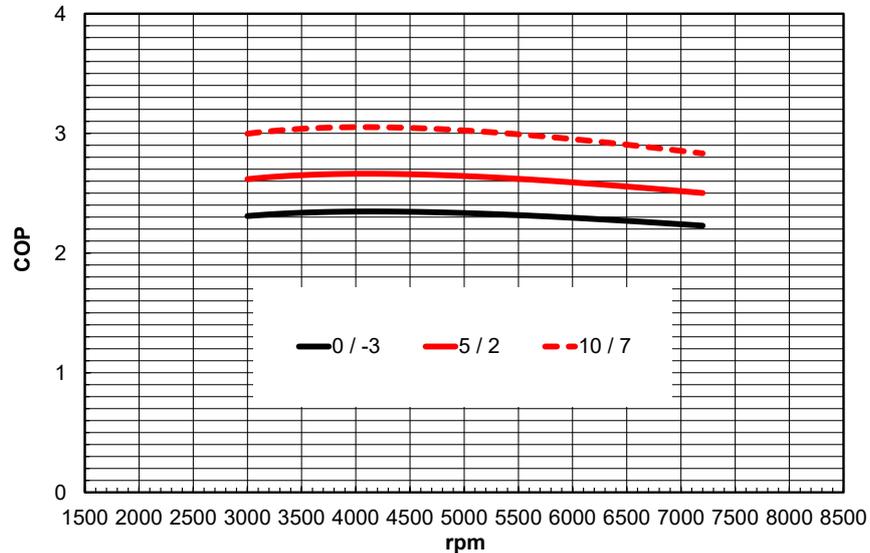
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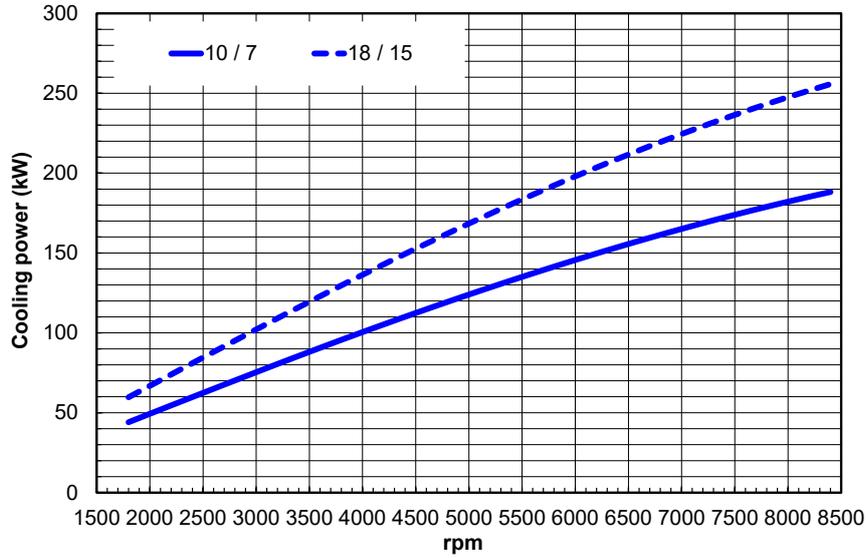


COP, HEATING 60/65 °C, BRINE 0/-3 °C, 5/2 °C, 10/7 °C

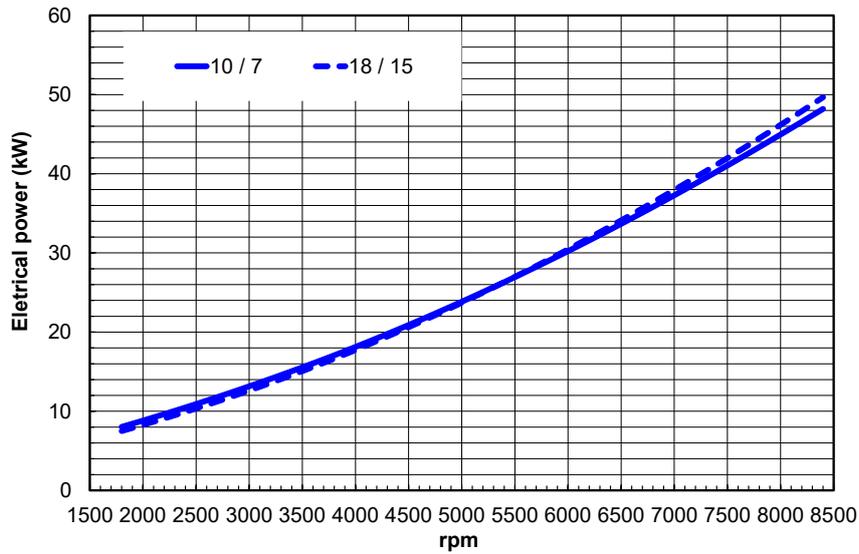


COOLING CHARACTERISTIC CURVES

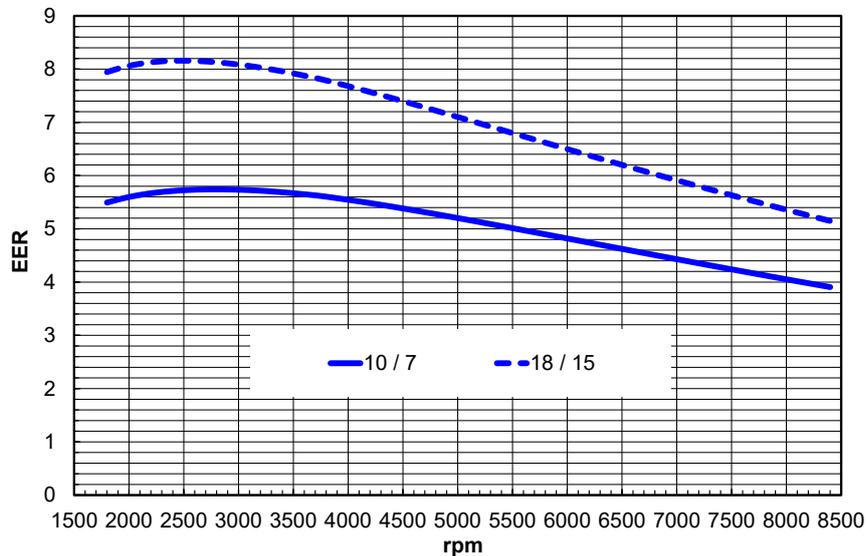
COOLING POWER, COOLING 10/7 °C, 18/15 °C, BRINE 35/30 °C



ELECTRICAL POWER, COOLING 10/7 °C, 18/15 °C, BRINE 35/30 °C

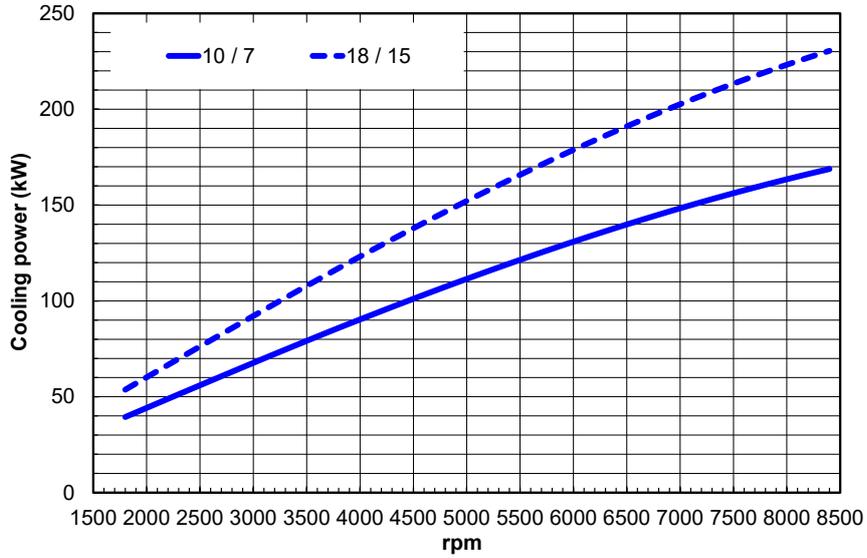


EER, COOLING 10/7 °C, 18/15 °C, BRINE 35/30 °C

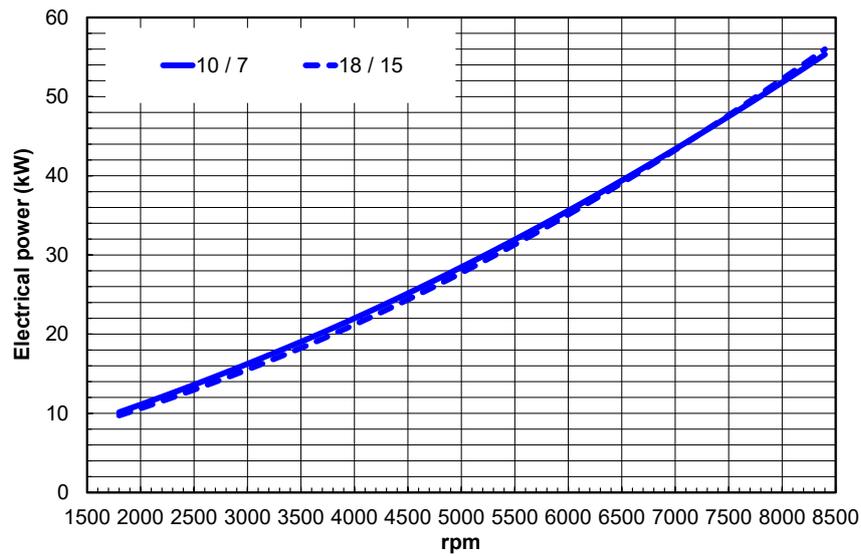


COOLING CHARACTERISTIC CURVES

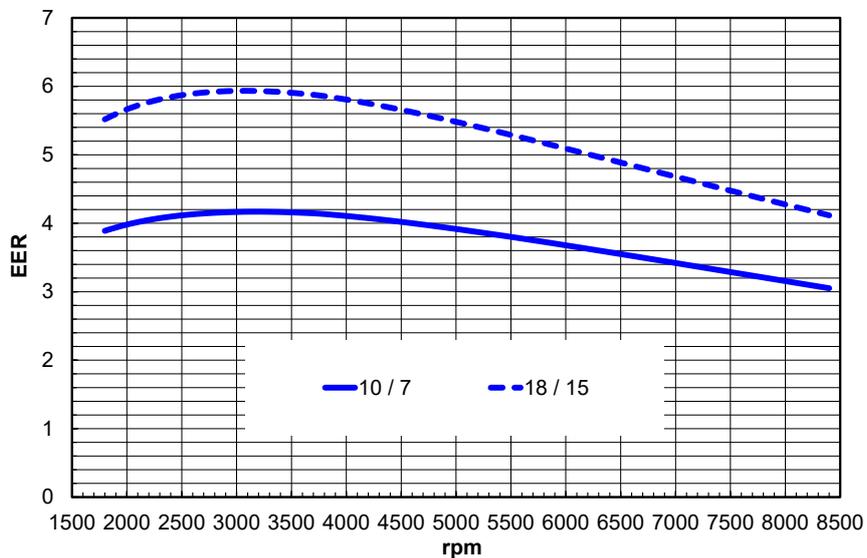
COOLING POWER, COOLING 10/7 °C, 18/15 °C, BRINE 45/40 °C



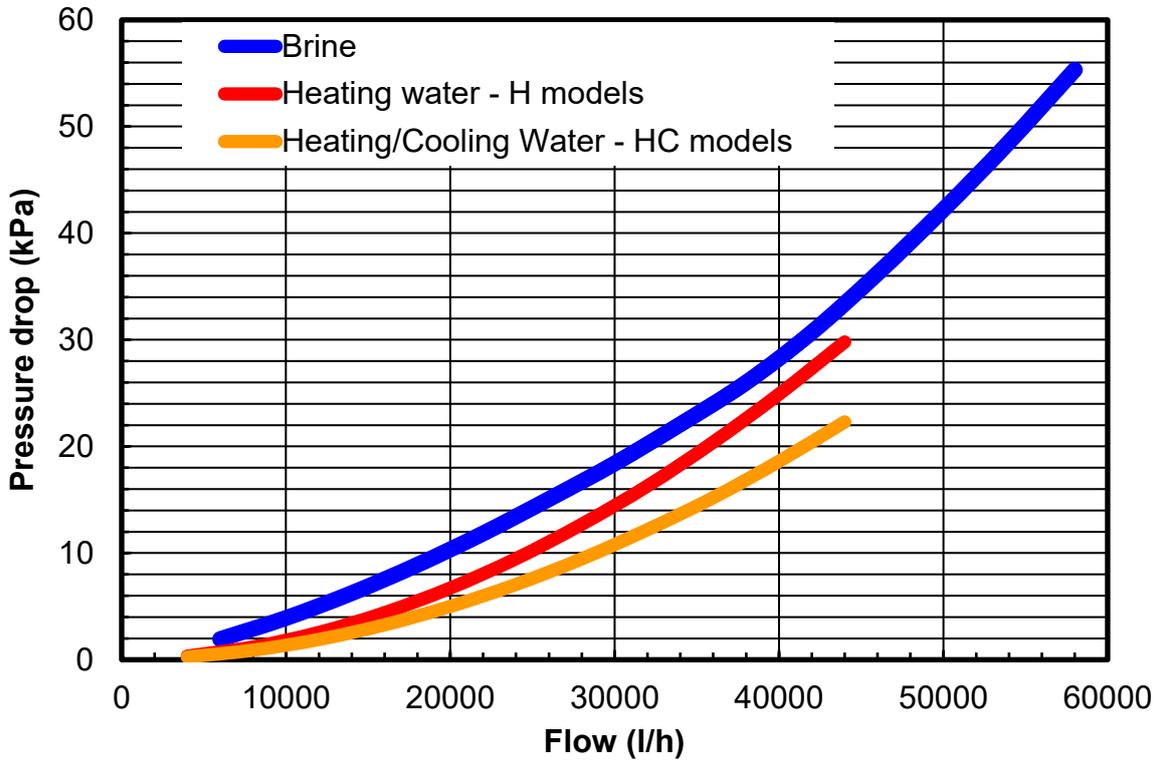
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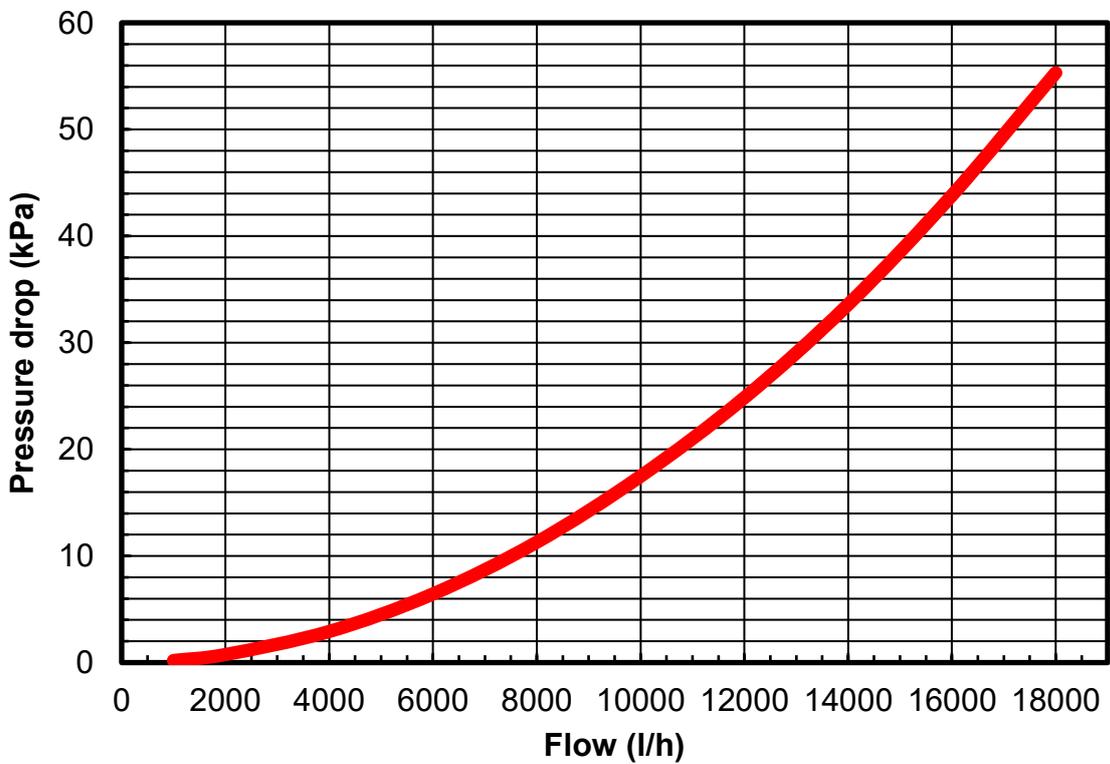
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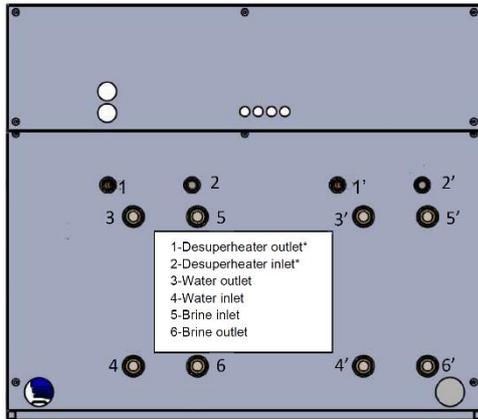
PRESSURE DROP
INTERNAL PRESSURE DROP



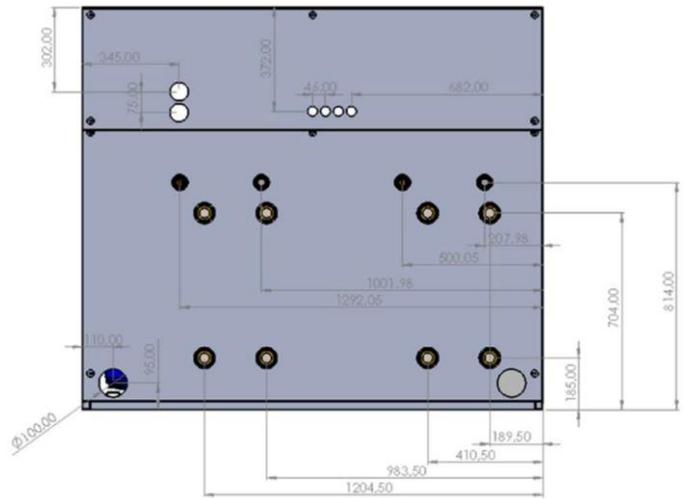
DESUPERHEATER PRESSURE DROP



HYDRAULIC PARAMETERS

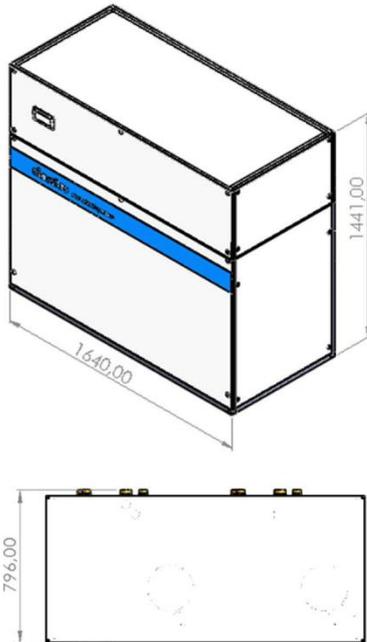


Heat pump hydraulic connections

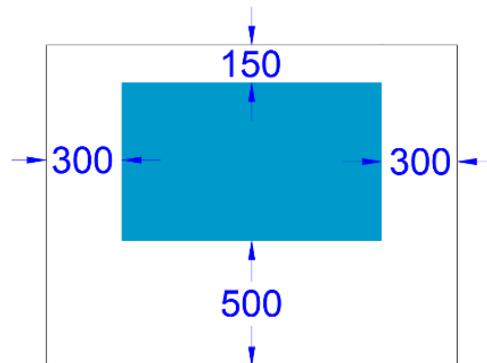


Position of hydraulic connections (mm)

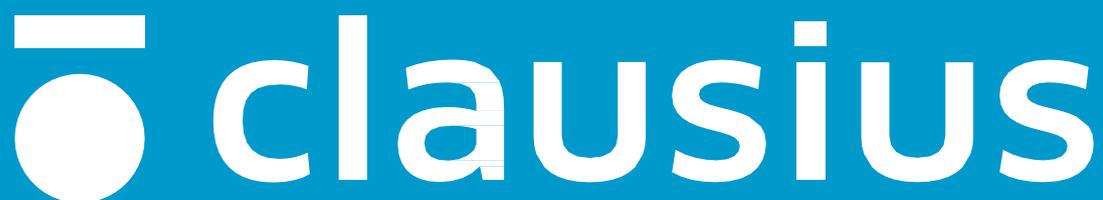
DIMENSIONS



Dimensions (mm)
 Clausius Strong 20-190



Minimum space required (mm)



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