



Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	6H.2Y-K	Useful superheat	100%
Refrigerant	R404A	Motor speed	1450 /min
Reference temperature	Dew point temp.	Drive	Coupling (1:1)
Liq. subc. (in condenser)	0 K	Capacity control	100%
Suction gas temperature	20,00 °C		

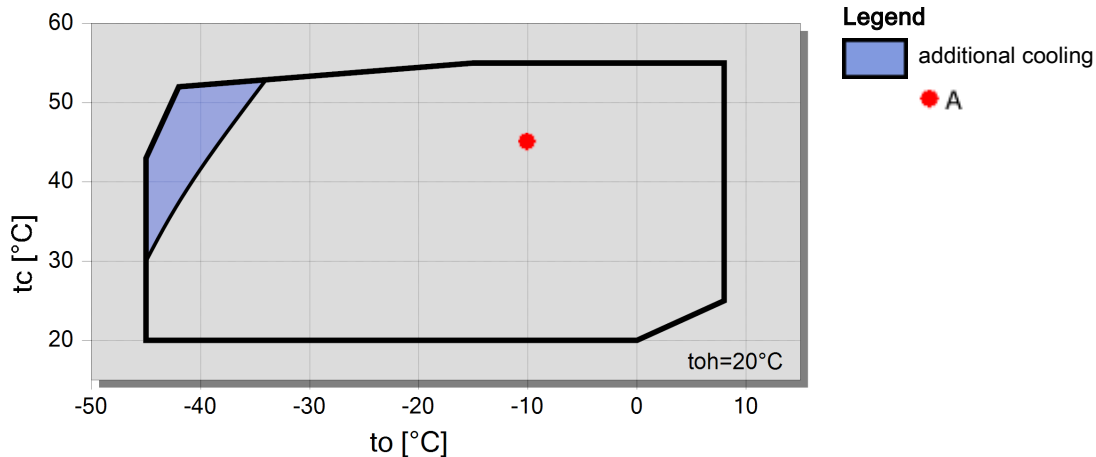
Result

Q [W]	Cooling capacity	COP [-]	COP/EER
Q* [W]	Cooling capacity *	COP* [-]	COP/EER *
P [kW]	Power input	m [kg/h]	Mass flow
Qc [W]	Condenser capacity	n [/min]	Compr. speed

tc	to	5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C	-30°C
30°C	Q [W]	124016	104066	86763	71773	58821	47677	38138	30023
	Q* [W]	124016	104066	86763	71773	58821	47677	38138	30023
	P [kW]	22,8	22,4	21,6	20,5	19,05	17,44	15,68	13,86
	Qc [W]	146822	126475	108369	92236	77873	65113	53822	43887
	COP [-]	5,44	4,64	4,02	3,51	3,09	2,73	2,43	2,17
	COP* [-]	5,44	4,64	4,02	3,51	3,09	2,73	2,43	2,17
	m [kg/h]	3197	2645	2180	1785	1451	1168	929	727
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
40°C	Q [W]	107254	89984	74935	61843	50489	40684	32260	25067
	Q* [W]	107254	89984	74935	61843	50489	40684	32260	25067
	P [kW]	26,6	25,7	24,4	22,8	20,9	18,86	16,74	14,61
	Qc [W]	133898	115704	99338	84612	71386	59545	49000	39675
	COP [-]	4,03	3,50	3,07	2,72	2,42	2,16	1,93	1,72
	COP* [-]	4,03	3,50	3,07	2,72	2,42	2,16	1,93	1,72
	m [kg/h]	3126	2581	2121	1731	1400	1119	882	681
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
50°C	Q [W]	89906	75446	62762	51664	41988	33591	26340	20115
	Q* [W]	89906	75446	62762	51664	41988	33591	26340	20115
	P [kW]	30,7	29,2	27,4	25,3	23,1	20,7	18,20	15,81
	Qc [W]	120565	104679	90197	77013	65048	54241	44545	35922
	COP [-]	2,93	2,58	2,29	2,04	1,82	1,63	1,45	1,27
	COP* [-]	2,93	2,58	2,29	2,04	1,82	1,63	1,45	1,27
	m [kg/h]	3050	2513	2058	1673	1345	1066	830	629
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450

-- No calculation possible (see message in single point selection)
 *According to EN12900 (20°C suction gas temp., 0K liquid subcooling)

Application Limits Standard





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Motor Selection

The required driving motor is selected for starting conditions at direct start as well as at star-delta- or PW-start with start unloading (bypass + check valve). The starting conditions refer to the following defined operation points resp. to the maximum application limit of the compressor. Should the evaporation- or the condensing temperature of the plant be higher at the start, an individual motor selection is necessary.

Evaporation temperature for motor selection				
	HH	H	M	L
R134a	+20 °C	+12,5 °C	-5 °C	-20 °C
R404A / R507A		+7,5 °C	-5 °C	-20 °C
R407F / R407A				
R22		+12,5 °C	-5 °C	-20 °C
NH ₃	+15 °C	+10 °C	-5 °C	

The stated motor data refer to IEC motors at which the pull-up torque does not fall below 90% of the max. torque. In addition the following starting torques (referring to direct starting torque) must be reached:

- * 2-cylinder compressors 220 %
- * 4-cylinder compressors 180 %
- * 6-cylinder compressors 160 %

Should the motor not fulfil these criteria, an individual selection is also necessary.

Condenser capacity

The condenser capacity can be calculated with or without heat rejection. This option can be set in the menu Program Options. The heat rejection is constantly 5% of the power consumption. The condensing capacity is to be found in the line cond.cap. (with HR) resp. cond.cap.

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
- 2 Connection for discharge gas temperature sensor (HP) (for 4VE(S)-6Y .. 4NE(S)-20(Y) connection for CIC sensor as alternative)
- 3 Low pressure connection (LP)
- 4 CIC system: injection nozzle (LP)
- 4b Connection for CIC sensor
- 4c Connection for CIC sensor (MP / operation with liquid subcooler)
- 5 Oil fill plug
- 6 Oil drain
- 7 Oil filter (magnetic screw)
- 8 Oil return (oil separator)
- 8* Oil return with NH₃ and insoluble oil
- 9 Connection for oil and gas equalization (parallel operation)
- 9a Connection for gas equalization (parallel operation)
- 9b Connection for oil equalization (parallel operation)
- 10 Oil heater connection
- 11 Oil pressure connection +
- 12 Oil pressure connection -
- 13 Cooling water connection
- 14 Intermediate pressure connection (MP)
- 15 Liquid injection (operation without liquid subcooler and with thermostatic expansion valve)
- 16 Connection for oil monitoring (opto-electrical oil monitoring "OLC-K1" or differential oil pressure switch "Delta-PII")
- 17 Refrigerant inlet at liquid subcooler
- 18 Refrigerant outlet at liquid subcooler
- 19 Clamp space
- 20 Terminal plate
- 21 Maintenance connection for oil valve
- 22 Pressure relief valve to the atmosphere (discharge side)
- 23 Pressure relief valve to the atmosphere (suction side)
- SL Suction gas line



DL Discharge gas line

Dimensions can show tolerances according to EN ISO 13920-B.