



Selection: Open-Type Reciprocating Compressors

Input Values

Compressor model	4P.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

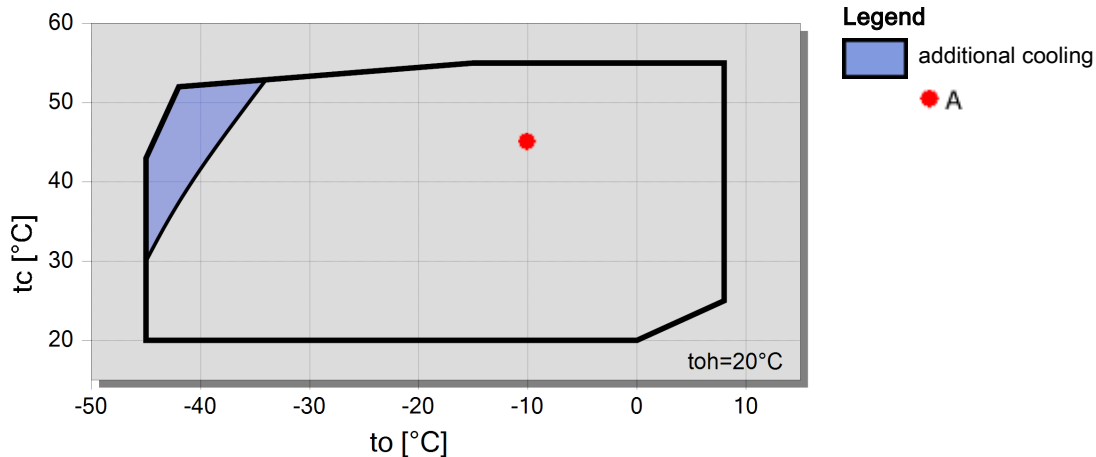
Q [W]	Cooling capacity	COP [-]	COP/EER
Q* [W]	Cooling capacity *	COP* [-]	COP/EER *
P [kW]	Power input	m [kg/h]	Mass flow
Qc [W]	Condenser capacity	n [/min]	Compr. speed

tc	to	15°C	5°C	-5°C	-15°C	-25°C	-35°C	-45°C	-55°C
30°C	Q [W]	--	54311	38070	25885	16863	10330	5746	--
	Q* [W]	--	54311	38070	25885	16863	10330	5746	--
	P [kW]	--	10,07	9,58	8,47	7,03	5,55	4,32	--
	Qc [W]	--	64380	47649	34355	23893	15880	10064	--
	COP [-]	--	5,39	3,97	3,06	2,40	1,86	1,33	--
	COP* [-]	--	5,39	3,97	3,06	2,40	1,86	1,33	--
	m [kg/h]	--	1400	956	639	411	249	137,8	--
	n [/min]	--	1450	1450	1450	1450	1450	1450	--
40°C	Q [W]	--	47099	32991	22313	14342	8519	4385	--
	Q* [W]	--	47099	32991	22313	14342	8519	4385	--
	P [kW]	--	11,58	10,57	9,10	7,46	5,96	4,87	--
	Qc [W]	--	58676	43558	31412	21806	14476	9253	--
	COP [-]	--	4,07	3,12	2,45	1,92	1,43	0,90	--
	COP* [-]	--	4,07	3,12	2,45	1,92	1,43	0,90	--
	m [kg/h]	--	1373	934	619	392	230	117,8	--
	n [/min]	--	1450	1450	1450	1450	1450	1450	--
50°C	Q [W]	--	39550	27688	18600	11743	6672	--	--
	Q* [W]	--	39550	27688	18600	11743	6672	--	--
	P [kW]	--	13,05	11,63	9,93	8,22	6,79	--	--
	Qc [W]	--	52596	39322	28527	19959	13467	--	--
	COP [-]	--	3,03	2,38	1,87	1,43	0,98	--	--
	COP* [-]	--	3,03	2,38	1,87	1,43	0,98	--	--
	m [kg/h]	--	1342	908	596	370	208	--	--
	n [/min]	--	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 4P.2





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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.