



## Selection: Open-Type Reciprocating Compressors

### Input Values

Compressor model	6G.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		

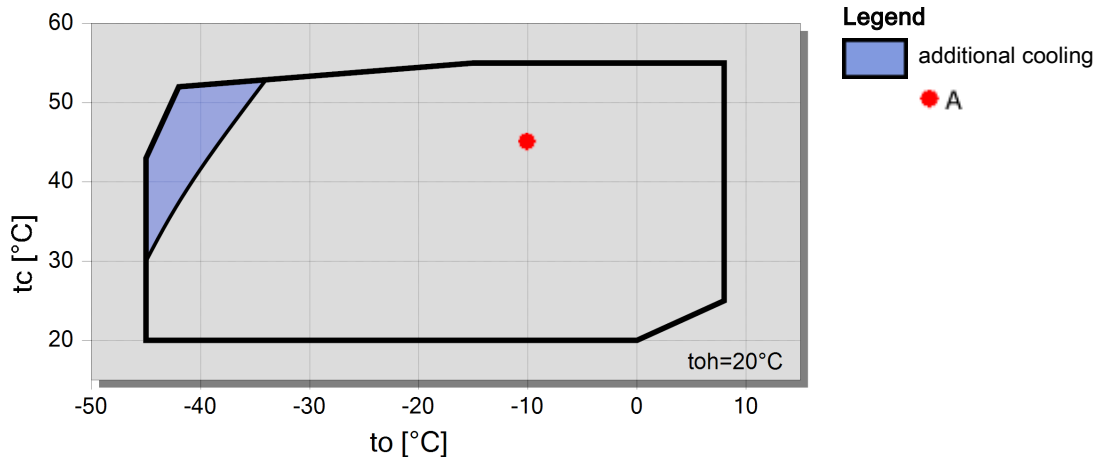
### Result

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	0°C	-5°C	-10°C	-15°C	-20°C	-25°C	-30°C	-35°C
30°C	Q [W]	123227	102309	84219	68625	55243	43825	34150	26020
	Q* [W]	123227	102309	84219	68625	55243	43825	34150	26020
	P [kW]	26,4	25,4	24,0	22,4	20,5	18,46	16,30	14,08
	Qc [W]	149650	127709	108254	91009	75749	62283	50448	40103
	COP [ - ]	4,66	4,03	3,50	3,07	2,69	2,37	2,10	1,85
	COP* [ - ]	4,66	4,03	3,50	3,07	2,69	2,37	2,10	1,85
	m [kg/h]	3132	2570	2095	1693	1353	1067	827	628
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
40°C	Q [W]	106260	88018	72199	58534	46787	36754	28247	21098
	Q* [W]	106260	88018	72199	58534	46787	36754	28247	21098
	P [kW]	29,9	28,2	26,3	24,2	21,9	19,57	17,12	14,65
	Qc [W]	136158	116255	98528	82751	68736	56322	45367	35747
	COP [ - ]	3,55	3,12	2,74	2,42	2,13	1,88	1,65	1,44
	COP* [ - ]	3,55	3,12	2,74	2,42	2,13	1,88	1,65	1,44
	m [kg/h]	3048	2492	2021	1623	1287	1005	768	571
	n [/min]	1450	1450	1450	1450	1450	1450	1450	1450
50°C	Q [W]	88606	73199	59788	48171	38167	29612	22356	16260
	Q* [W]	88606	73199	59788	48171	38167	29612	22356	16260
	P [kW]	33,5	31,3	28,9	26,3	23,7	21,0	18,15	15,31
	Qc [W]	122086	104459	88659	74510	61857	50563	40504	31567
	COP [ - ]	2,65	2,34	2,07	1,83	1,61	1,41	1,23	1,06
	COP* [ - ]	2,65	2,34	2,07	1,83	1,61	1,41	1,23	1,06
	m [kg/h]	2951	2401	1936	1543	1211	933	700	506
	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







## Open-Type Reciprocating Compressors

### 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 <sub>3</sub>	+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 NH<sub>3</sub> 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.