

BITZER Output data

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BITZER Software v6.16.0 rev2516 01.12.2020 / All data subject to change.

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Selection: Semi-hermetic Reciprocating Compressors

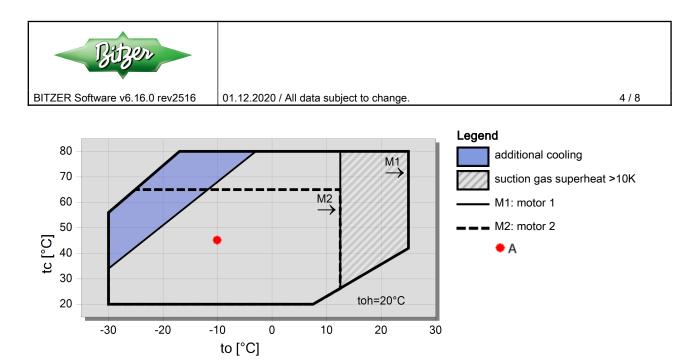
Input Values

Compressor model Mode		(4T-12.2Y) Refrigeration and Air conditioning	Suction gas temperature Operating mode		20,00 °C Auto
Refrigerant Reference temperature Liq. subc. (in condenser) Result		R134a Dew point temp. 0 K	Power supply Capacity control Useful superheat		400V-3-50Hz 100% 100%
Q [W] Qu* [W] P [kW] I [A] Qc [W]	Cooling capacity Evaporator capacity Power input Current Condenser capacity		COP [-] m [kg/h] Op. th [°C]	COP/EER Mass flow Operating mode Discharge gas temp.	w/o cooling

tc	to	10°C	5°C	0°C	-5°C	-10°C	-15°C	-20°C	-25°C
30°C	Q [W]	34190	28112	22906	18463	14688	11500	8829	6609
	Qu* [W]	34190	28112	22906	18463	14688	11500	8829	6609
	P [kW]	5,48	5,37	5,19	4,93	4,62	4,26	3,85	3,42
	I [A]	11,03	10,91	10,69	10,40	10,05	9,66	9,25	8,83
	Qc [W]	39667	33482	28092	23396	19308	15759	12684	10029
	COP [-]	6,24	5,24	4,42	3,74	3,18	2,70	2,29	1,93
	m [kg/h]	717	585	473	379	300	234	178,9	133,6
	Op.	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
	th [°C]	55,1	61,9	69,3	77,5	86,7	97,1	109,2	123,4
40°C	Q [W]	29908	24564	19980	16063	12732	9917	7557	5595
	Qu* [W]	29908	24564	19980	16063	12732	9917	7557	5595
	P [kW]	6,34	6,00	5,62	5,21	4,77	4,31	3,83	3,33
	I [A]	12,11	11,67	11,20	10,72	10,22	9,72	9,22	8,74
	Qc [W]	36252	30559	25596	21270	17505	14232	11391	8928
	COP [-]	4,71	4,10	3,56	3,08	2,67	2,30	1,97	1,68
	m [kg/h]	687	559	451	360	284	220	167,1	123,4
	Op.	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
	th [°C]	64,6	70,9	77,9	85,6	94,4	104,4	116,2	130,2
50°C	Q [W] Qu* [W]	25930 25930	21263 21263	17254 17254	13824 13824	10907 10907	8442 8442	6375 6375	4660 4660
	P [kW]	7,13	6,61	6,07	5,53	4,97	4,41	3,84	3,26
	I [A]	13,14	12,45	11,77	11,10	10,44	9,82	9,23	8,68
	Qc [W]	33057	27870	23327	19352	15879	12850	10213	7923
	COP [-]	3,64	3,22	2,84	2,50	2,19	1,92	1,66	1,43
	m [kg/h]	660	536	431	343	269	207	155,7	113,4
	Op.	Standard	Standard	Standard	Standard	Standard	Standard	Standard	Standard
	th [°C]	74,2	80,4	87,2	94,8	103,3	113,1	124,5	138,3

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

Application Limits 100% 4T-12.2



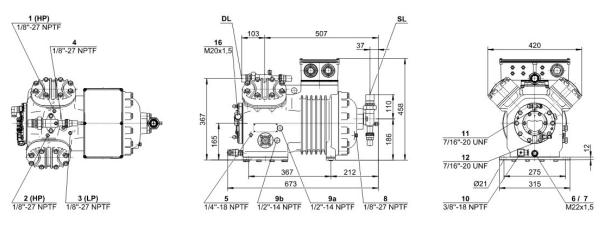


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Technical Data: (4T-12.2Y)

Dimensions and Connections



Technical Data

Displacement (1450 RPM 50Hz) 39,36 m³/h Displacement (1750 RPM 60Hz) 47,50 m³/h No. of cylinder x bore x stroke 4 x 60 mm x 40 mm Weight 146 kg Max. pressure (LP/HP) 19 / 28 bar Connection suction line 35 mm - 1 3/8" Connection cooling water R 1/2" Connection cooling water R 1/2" Connection cooling water R 1/2" Oil type R134/R407C/R404A/R507A/R407A/R407F tc>55°C: BSE32 tc>55°C: BSE55 (Option) Oil type R290/R1270 B5.2 (Standard) Oil type R290/R1270 B5.2 (Standard) Motor data	Technical Data	
No. of cylinder x bore x stroke4 x 60 mm x 40 mmWeight146 kgMax. pressure (LP/HP)19 / 28 barConnection suction line35 mm - 1 3/8"Connection discharge line28 mm - 1 1/8"Connection gwaterR 1/2"Oil type R134a/R407C/R404A/R507A/R407A/R407Ftc>55°C: BSE35 (C) BSE55 (Option)Oil type R22 (R12/R502)B5.2 (Standard)Oil type R290/R1270B5.2 (Standard)Motor data V Motor voltage (more on request)380-420V PW-3-50HzMax operating current24.0 AVinding ratio50/50Starting current (Rotor locked)69.0 A Y / 113.0 A YYMax. Power input13,8 kWExtend of delivery (Standard)Wotor protectionSE-B2Enclosure classIP54 (Standard), IP66 (Option)Vibration dampersStandardOil charge3,00 dm³Available OptionsOptionStart unloadingOptionStart unloadingOptionOptionOptionStart unloadingOptionOptionOptionOli charge se temperature sensorOptionOptionOptionOli pervice valveOptionOil service valveOptionOil service valveOptionOil service valveOptionOil service valveOptionOil charge so temperature sensorOptionOil charge so temperature sensorOptionOil service valveOptionOil service valveOption	Displacement (1450 RPM 50Hz)	
Weight 146 kg Max. pressure (LP/HP) 19 / 28 bar Connection suction line 35 mm - 1 3/8" Connection cooling water 26 mm - 1 1/8" Connection cooling water R 1/2" Oil type R134a/R407C/R404A/R507A/R407A/R407F tcs55°C: BSE32 tc>55°C: BSE55 (Option) Oil type R290/R1270 B5.2 (Standard) Oil type R290/R1270 SHC226E (Standard) Motor voltage (more on request) 380-420V PW-3-50Hz Max operating current 24.0 A Winding ratio 50/50 Starting current (Rotor locked) 69.0 X Y / 113.0 A YY Max. Power input 13,8 kW Extent of delivery (Standard) Extend of delivery (Standard) Vibration dampers Standard Oil charge 30.00 dm³ Available Option Standard Discharge stamperature sensor Option Discharge stamperature sensor Option Cannection suction line Option Discharge stemperature sensor Option Cannection section line Option Discharge stemperature sensor Opti	Displacement (1750 RPM 60Hz)	47,50 m³/h
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Connection suction line 35 mm - 1 3/8" Connection discharge line 28 mm - 1 1/8" Connection cooling water R 1/2" Oil type R134a/R407C/IR404A/R507A/R407A/R407F tc<55°C: BSE32 tc>55°C: BSE55 (Option) Oil type R22 (R12/R502) B5.2 (Standard) Oil type R290/R1270 SHC22EE (Standard) Motor data	Weight	146 kg
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Motor dataMotor voltage (more on request)380-420V PW-3-50HzMax operating current24.0 AWinding ratio50/50Starting current (Rotor locked)69.0 A Y / 113.0 A YYMax. Power input13,8 kWExtent of delivery (Standard)WExtent of delivery (Standard)SE-B2Enclosure classIP54 (Standard), IP66 (Option)Vibration dampersStandardOil charge3,00 dm³Available OptionsVConnection suction lineOptionDischarge gas temperature sensorOptionStart unloadingOptionCapacity control100-50% (Option)Aditional fanOptionWater-cooled cylinder headsOptionOil service valveOptionOil pressure monitoringMP54 (Option)Water-cooled cylinder headsOptionOil pressure monitoringMP54 (Option)Obtion PotionSecond measurementSound power level (+5° C / 50°C)76,5 dB(A) @ 50HzSound power level (-10°C / 45°C)77,5 dB(A) @ 50HzSound power level (-10°C / 40°C)(83,5) dB(A) @ 50Hz	Oil type R22 (R12/R502)	B5.2 (Standard)
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Sound power level (+5°C / 50°C) 76,5 dB(A) @ 50Hz Sound power level (-10°C / 45°C) 77,5 dB(A) @ 50Hz Sound power level (-35°C / 40°C) (83,5) dB(A) @ 50Hz		MP54 (Option), Delta-PII (Option, not for R290/R1270)
Sound power level (-10°C / 45°C) 77,5 dB(A) @ 50Hz Sound power level (-35°C / 40°C) (83,5) dB(A) @ 50Hz		
Sound power level (-35°C / 40°C) (83,5) dB(A) @ 50Hz		
Sound pressure level @ 1m (+5°C / 50°C) 68,5 dB(A) @ 50Hz	,	
	Sound pressure level @ 1m (+5°C / 50°C)	68,5 dB(A) @ 50Hz



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Sound pressure level @ 1m (-10°C / 45°C) Sound pressure level @ 1m (-35°C / 40°C)

69,5 dB(A) @ 50Hz (75,5) dB(A) @ 50Hz



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Motor 1 = e.g. 4TES-12 with 12"HP", primary for air-conditioning (e.g. R22,R407C) and air-conditioning with R134a at high ambient temperatures.

Motor 2 = e.g. 4TES-9 with 8"HP", universal Motor for medium and low temperature application (e.g. R404A, R507A, R407A, R407F) and air-conditioning with R134a

Motor 3 = e.g. 4TES-8, for medium temperature applications and R134a

For more information concerning the application range use the "Limits" button.

Operation modes 4VES-7 to 6FE-44 and 44JE-30 to 66FE-88 with R407F/R407A/R22

CIC = liquid injection with low temperature application, suction gas cooled motor.

ASERCOM certified performance data

The Association of European Refrigeration Component Manufacturers has implemented a procedure of certifying performance data. The high standard of these certifications is assured by:

* plausibility tests of the data performed by experts.

* regular measurements at independent institutes.

These high efforts result in the fact that only a limited number of compressors can be submitted. Due to this not all BITZER compresors are certified until now. Performance data of compressors which fulfil the strict requirements may carry the label "ASERCOM certified". In this software you will find the label at the respective compressors on the right side below the field "result" or in the print out of the performance data. All certified compressors and further information are listed on the homepage of ASERCOM.

Condensing capacity

The condensing 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 Condensing cap. (with HR) resp. Condensing capacity.

Data for sound emission

Data based on 50 HZ apllication (IP-units 60 Hz) and R404A if not declared. Sound pressure level: values based on free field area conditions with hemisperhical sound emission in 1 meter distance.

General remarks regarding sound data

Listed sound data were measured under testing conditions in our laboratory. For this purpose the free-standing test sample is mounted on a solid foundation plate and the pipework is connected vibration-free to the largest extend possible. Suction and discharge lines are fixed in a flexible configuration, such that a transmission of vibrations to the environment can be largely excluded. In real installations considerable differences might be observed, compared to the measurements in the laboratory. The airborne sound emitted by the compressor can be reflected from surfaces of the system and this may increase the airborne sound level measured close to the compressor. Vibrations caused by the compressor are also transferred to the system by the compressor feet and piping depending on the damping ratio of the fixings. Thus, the vibrations can induce other components to such an extent that these components contribute to an increase in airborne sound emission. If required, the transfer of vibrations to the system can be minimized by suitable fixing and damping elements.

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)



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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 Referigerant 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)
- 24 IQ MODULE
- SL Suction gas line
- DL Discharge gas line

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