



BITZER Output data

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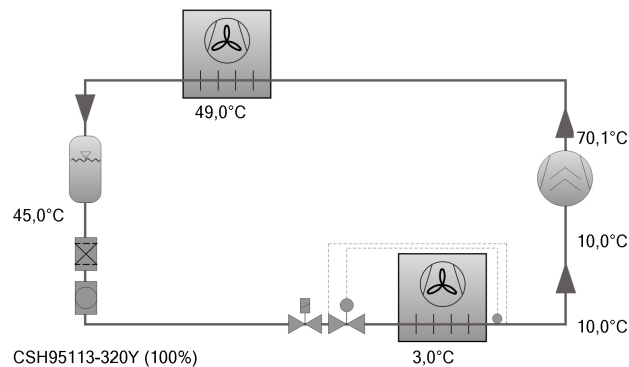
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## Compressor Selection: Compact Screw Compressors CS

### Input Values

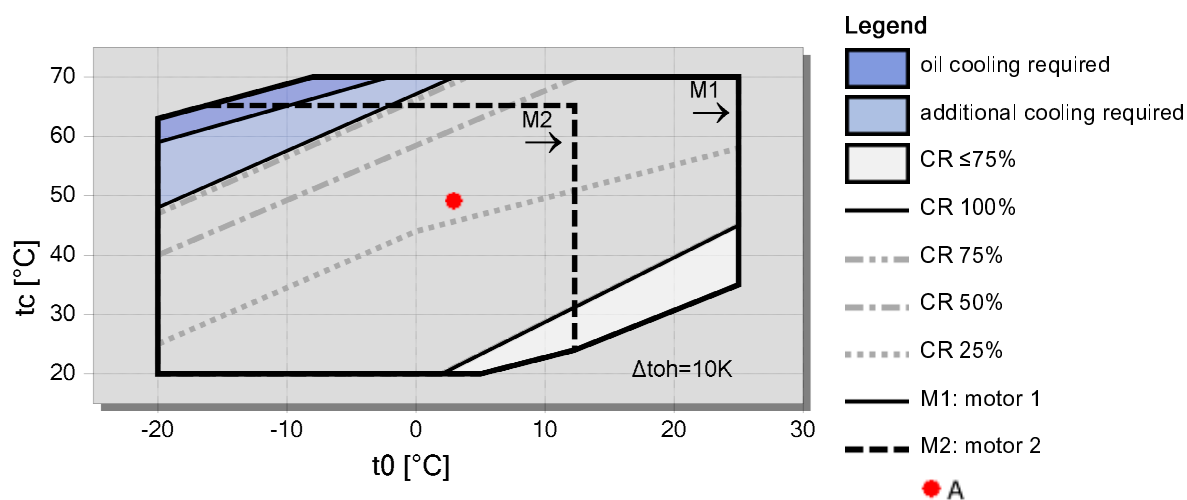
Compressor model	CSH95113-320Y
Refrigerant	R134a
Reference temperature	Dew point temp.
Evaporating SST	3,00 °C
Condensing SDT	49,0 °C
Liquid subcooling	4,00 K
Suct. gas superheat	7,00 K
Operating mode	Standard
Power supply	400V-3-50Hz
Capacity Control	100%
Useful superheat	7,00 K



### Result

Compressor	CSH95113-320Y-40D
Capacity steps	100%
Cooling capacity	618 kW
Cooling capacity *	594 kW
Evaporator capacity	618 kW
Power input	182,2 kW
Current (400V)	306 A
Voltage range	380-415V
COP/EER	3,39
COP/EER *	3,26
Mass flow	15658 kg/h
Operating mode	Standard
Liquid temp.	45,0 °C
Oil volume flow	1,42 m³/h
Discharge gas temp. w/o cooling	70,1 °C

\*According to EN12900 (10K suction gas superheat, 0K liquid subcooling, see T.Data/ Notes)



## Dimensions and Connections



Displacement (2900 RPM 50 Hz)	1120 m3/h
Displacement (3500 RPM 60 Hz)	1351 m3/h
Weight	1500kg
Max. pressure (LP/HP)	19 / 28 bar
Connection suction line	DN 125
Connection discharge line	DN 100
Oil type R134a/R407C/R404A/R507A/R407A	BSE170 (Standard)

Motor voltage (more on request)	380-415V D-3-50Hz
Max operating current	447,0 A
Starting current (Rotor locked)	917,0 A Y / 2870,0 A YY

Enclosure class	IP54
Oil heater	300 W (Standard)
Oil separator	Standard
Oil filter	Standard
Discharge gas temperature sensor	Standard
Start unloading	Standard
Capacity Control - 4-step	100-75-50-25% (Standard)
Capacity Control - infinite	100-25% (Standard)
Built-in check valve	Standard
Motor protection	SE-E1 (Standard), INT69VSY-II(Standard for 660-690V)
Oil charge	32,0 dm3

Oil level switch	min / max OLC-D1-S (Option)
Discharge shut-off valve	Option
Suction shut-off valve	Option
Shut-off valve for ECO with muffler	Option
Liquid injection with integrated nozzle	Option
Bridges for DOL start	Option
Vibration dampers	Option



## Compact Screw Compressors CS

Reference points for evaporating and condensing pressures:

Connection positions 1 (HP) and 3 (LP) on the compressor (see dimensions). The pressure drop for shut-off valves and check valves has not been taken into consideration. This is the worldwide state of the art for compact screws, as in factory-produced chillers shut-off valves are often omitted and the check valve can also be arranged as an external component in the discharge line. For the sake of the international comparability of performance data, this standard has been adopted for the screw compressors of the CSH/CSW/CSVH series.

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 compressors are certified up to 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 ([www.ASERCOM.org](http://www.ASERCOM.org)).

Legend of connection positions according to "Dimensions":

- 1 High pressure connection (HP)
- 2 Additional high pressure connection
- 3 Low pressure connection (LP)
- 4 Oil sight glass
- 5 Oil service valve (standard) / connection for oil equalisation (parallel operation)
- 6 Oil drain plug (motor housing)
- 7 CSH only, except CSH6583, CSH6593, CSH95103 and CSH95113: Connection for electro-mechanical oil level switch in case of replacing a CSH.1 by a CSH.3
- 8 Connection for opto-electronical oil level switch (OLC-D1-S) CSVH: integrated into FI control
- 9 Oil heater with sleeve (standard) CSVH: integrated into FI control
- 10 Oil pressure connection
- 11 External oil cooler connections (adaptor optional)
- 11a outlet to oil cooler
- 11b inlet / return from oil cooler
- 12 Oil temperature sensor (PTC) CSVH: integrated into FI control
- 13 Economiser connection (ECO) (shut-off valve optional CSH: with pulsation muffler)
- 14 Threaded hole for pipe support (line for ECO, LI or for FI cooling)
- 15 Liquid injection connection (LI) (CSH: shut-off valve optional)
- 16 Earth screw for housing
- 17 Connection for oil and gas return (for systems with flooded evaporator adaptor optional)
- 18 Oil filter (service connection)
- 19 FI cooling (liquid refrigerant)
- 20 Frequency inverter (FI)

SL Suction gas line

DL Discharge gas line

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