

Product designation	5.0	7.2
	<b>Technical data</b>	
Rated output - electrical <sup>(1)</sup> [kW <sub>el</sub> ]	5,0	7,2
Rated output - thermal <sup>(2)</sup> [kW <sub>th</sub> ]	12,0	18,1
Power modulation - electrical [kW <sub>el</sub> ]	2,9 - 5,0	3,9 - 7,2
Power modulation - thermal [kW <sub>th</sub> ]	9,2 - 12,0	12,7 - 18,1
Energy input [kWh <sub>Hi</sub> ]	15,82	23,08
Liquefied Petroleum gas input [kg/h]	1,23	1,79
Liquefied Petroleum gas input [l/h]	2,28	3,32
CHP coefficient	0,42	0,40
f Primary energy factor <sup>(7)</sup>	0,286	0,290
PES [%]	34,0	34,8
ErP energy efficiency label <sup>(6)</sup>	A++	A++
Noise emissions <sup>(3)</sup> [dB(A)]	52	53
Sound power level L <sub>w</sub> [dB]	67	68
Maintenance interval [op. hrs]	15.000	13.000
Oil interval [op. hrs]	7.500	6.500
	<b>Efficiency ratios</b>	
Electrical efficiency ratio $\eta_{el}$ [%]	31,6	31,2
Thermal efficiency ratio $\eta_{th}$ [%]	75,7	78,3
Total efficiency ratio $\eta_{total}$ [%]	107,3	109,5
	<b>Heat extraction</b>	
Flow temperature $\pm 5$ [°C]	80	80
Return flow temperature $\pm 5$ [°C]	25-65	25-65
min./max. ambient temperature [°C]	5/30 °C	5/30 °C
Pressure rating - water side [PN]	3	3
	<b>Electrical energy generation</b>	
Nominal voltage [V]	400	400
Frequency [Hz]	50	50
Nominal effective power P <sub>nG</sub> [kW]	5,0	7,2
Apparent power S <sub>E</sub> max [kVA]	6,4	9,2
Nominal voltage UnG [V]	400	400
Frequency [Hz]	50	50
Cos $\phi$ uncompensated	0,78	0,78
Reactive power compensation [kVar] <sup>(8)</sup>	2,87	3,47
Number of steps	1	1
Degree of choking or resonance frequency	-	-
Cos $\phi$ acc. to VDE-AR-N 4105 quadrants II, III <sup>(8)</sup>	0,95	0,95
Rated alternating current I <sub>r</sub> [A]	9,3	13,3
Rated alternating current I <sub>r</sub> cos $\phi$ 1 [A]	7,2	10,4
Rated apparent power S <sub>rE</sub> [kVA]	5,3	7,6
Short-circuit alternating current Alternator I <sub>k</sub> [A]	72,5	72,5
Grid short circuit power with UnG S <sub>k</sub> [kVA]	76,9	76,9
Start-up current I <sub>k</sub> [A] approx.	45	45
	<b>Motor</b>	
Motor manufacturer	Toyota	Toyota
Number of cylinders	3	3
Displacement [l]	1,0	1,0
Air-fuel ratio $\lambda$	1,6	1,0
Engine oil	RMB/Engine Oil	
Engine oil [litres]	25	25

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<b>Generators</b>		
Generator manufacturer	EMOD	EMOD
Generator type	asynchronous	asynchronous
Motor start-up	provided	provided
Speed [rpm]	1.550	1.550
<b>Supply and exhaust air</b>		
Combustion air requirement [m³/h]	32,34	29,48
Module ventilation flow rate [m³/h]	100,00	100,00
Total air requirement of module [m³/h]	132,34	129,48
Permissible counter-pressure of exhaust air system max. <sup>(4)</sup> [Pa]	150,00	150,00
min./max. intake air temperature [°C]	5-30 °C	5-30 °C
Min. cross section without hydraulic resistance [cm²]	250	250
<b>Flue gas</b>		
Flue gas temperature max. [°C]	< 110	< 110
Flue gas temperature <sup>(5)</sup> [°C]	50	50
Flue gas mass flow rate - damp [kg/h]	34	31
Flue gas volume flow - dry [Nm³/h]	28	25
Flue gas counter pressure max. [Pa]	500	500
Flue gas counter pressure max. for flue gas cascades [Pa]	500	500
Flue gas counter pressure max. for flue gas and exhaust air combination [Pa]	150	150
Emissions Nox	<240 mg/kWh	<240 mg/kWh
<b>Dimensions &amp; weight</b>		
Dimensions of module L x W x H [mm]	1.207x620x1.100	1.207x620x1.100
Weight approx. [kg]	490	490
<b>Installation location</b>		
Installation location	The manufacturer's manual, the technical drawings as well as the applicable fireplaces regulations to be taken in consideration	
<b>ErP label</b>		
ErP energy efficiency label <sup>(6)</sup>	A++	A++
ErP energy input <sup>(6)</sup> [kWh <sub>HS</sub> ]	17,56	25,62
ErP efficiency ratio - electrical $\eta_{el,HS}$ <sup>(6)</sup> [%]	28,5	28,1
ErP efficiency ratio - thermal $\eta_{th,HS}$ <sup>(6)</sup> [%]	68,2	70,5
ErP efficiency ratio - total $\eta_{total,HS}$ <sup>(6)</sup> [%]	96,7	98,6
Room controller category <sup>(6)</sup>	2	2
P <sub>designh</sub> <sup>(6)</sup> [kW]	4,6	7,0
Q <sub>HE</sub> <sup>(6)</sup> [kWh]	6.814	10.454
P <sub>SB</sub> electrical power requirement - standby <sup>(6)</sup> [kW]	0,03	0,03
Electrical power requirement - partial load <sup>(6)</sup> [kW]	0,20	0,19
P <sub>el,max</sub> Electrical power requirement - full load <sup>(6)</sup> [kW]	0,20	0,19
P <sub>stby_CHP</sub> Thermal standing losses <sup>(6)</sup> [kW]	0,24	0,24
Electrical power requirement - standby <sup>(6)</sup> [kW]	0,03	0,03
$\eta_{S=\eta_{son-\Sigma(F1-F5)}}$ <sup>(6)</sup>	140,3	138,5
Net output - electrical [kW <sub>el</sub> ]	4,80	7,01

1) Performance data in accordance with ISO 3046/1-2002, tolerance 5%

2) Thermal performance data tolerance 8%

3) Test bench measurement at 1 m interval in front of the CHP

4) Exhaust air (without flue gas) does not have to be extracted "via the roof"

5) At a return temperature of 35 ° C and optimum operating conditions, tolerance 5%

6) In accordance with EU Regulation 811/2013; 813/2013

7) fpe-current = 2.8 displacement mix per DIN V 1859, DIN V 4701-10, EnEV 2014 valid from 01/01/2016

8) Only when using the optional compensation (integrated in neoTower® 2.0, 3.3 and 4.0 / not required for neoTower® 50.0)

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<b>Control cabinet</b>	Fully equipped for seamless CHP unit operation with all necessary measurement and control equipment in bivalent operation. Dimensions control cabinet 600x600x200 mm Connection cable CHP control cabinet standard 3m	
<b>Electrical connections</b>	Supply line to control cabinet: 5x4mm <sup>2</sup> Cu up to max. 50m (fuse 25 A slow blow) max. terminal area 16mm <sup>2</sup>	
	Temperature sensor cable: min. 2-08 JY(ST)Y up to 15 m length (2x1,5 mm <sup>2</sup> up to 40 m length)	
	Control cables pump: 3x1,5 mm <sup>2</sup> ; RJ45 Patch cable in CHP connector	
<b>Reactive current compensation</b>	Fixed compensation without reactors (detuned)	
	Operating voltage: 230 / 400 Volt, 50 Hz	
	Integrated capacitor contactor	
	Discharging of approx 40 seconds must be considered	
	Limiting temperature -10°C up to +35°C (average 24 h) +40°C (short-term max.)	
	Steel housing 400x300x210mm (HxWxL)	
<b>Gas pressure [mbar]</b>	Gas resting pressure before gas regulator: 20 - 50 (for NG and LPG)	
	Flow pressure ≥ 18 (for NG and LNG)	
<b>Regulations and standards</b>	Complies with the pertinent EU Directives for CE certification	
<b>Connections</b>	Gas: 1/2" internal thread	
	Heating supply line: 1" ball valve / PN 3.0	
	Heating return line: 1" ball valve / PN 3.0	
	Flue gas: DN80	
	Exhaust air: DN100; accepted back pressure to be considered!	
	Note: It is important to ensure that all terminals are connected via a flexible connection, in order to ensure vibration isolation.	
<b>Method of operation</b>	Residual pressure head secondary pump 0,7m	
	Mains parallel without emergency power, heat operated	
	Use of electricity: Own requirement and infeed into the grid of the energy supply company, optional electricity-optimised modulation	
<b>Indicators and switches/buttons</b>	Heat usage automatically regulated in monovalent or bivalent operation with buffer tank; optionally heat-optimised modulation	
	Operation of the internal control and monitoring programs via central control unit (touchscreen for quick access to important functions)	
	Back-lit graphical colour display with visualised system diagram and indicators for: temperature memory, motor, return line, hot water, interior, oil, flue gas, indicator for current power, water pressure, operation hours, generated energy, maintenance instructions and error notifications	
	Switches/buttons: master switch, Emergency stop, Electric vehicle (Efz) charging data button, maintenance button	

Product designation	5.0	7.2
<b>RMB/Report</b>	Global live data tracking visualised in installation diagram, individual password protection, data logging with daily, weekly, monthly and annual report in graphical format, remote maintenance, remote monitoring, evaluation and reporting	
<b>Water quality</b>	Motor circuit: 40% glycol, 60% water per VDI Regulation 2035. Operational pressure warm: 2.0 bar. Operational pressure cold: 1.8 bar. Primary pressure expansion vessel cold: 1.0 bar. Heating circuit ("secondary circuit"): free from mechanical impurities and as a minimum in accordance with the Group 2 quality requirements of VDI Regulation 2035 Conductivity < 100µS/cm Water hardness < 1° dH 8.2 > pH-Wert < 9 Deviations cause severe damages!	

**Deviating values depending on environmental and operating conditions.**

**Technical modification, design deviation and errors excepted.**