

Product designation	12.5
	<b>Technical data</b>
Rated output - electrical <sup>(1)</sup> [kW <sub>el</sub> ]	12,5
Rated output - thermal <sup>(2)</sup> [kW <sub>th</sub> ]	27,6
Power modulation - electrical [kW <sub>el</sub> ]	6,0 - 12,5
Power modulation - thermal [kW <sub>th</sub> ]	13,3 - 27,6
Energy input [kWh <sub>Hi</sub> ]	37,30
Liquefied Petroleum gas input [kg/h]	n.a.
Liquefied Petroleum gas input [l/h]	n.a.
CHP coefficient	0,45
f Primary energy factor <sup>(7)</sup>	0,220
PES [%]	34,9
ErP energy efficiency label <sup>(6)</sup>	A++
Sound pressure level L <sub>pA</sub> <sup>(3)</sup> [dB(A)]	57
Sound power level L <sub>wA</sub> [dB(A)]	73
Maintenance interval [op. hrs]	13.000
Oil interval [op. hrs]	6.500
	<b>Efficiency ratios</b>
Electrical efficiency ratio $\eta_{el}$ [%]	33,5
Thermal efficiency ratio $\eta_{th}$ [%]	73,9
Total efficiency ratio $\eta_{total}$ [%]	107,4
	<b>Heat extraction</b>
Flow temperature $\pm 5$ [°C]	80
Return flow temperature $\pm 5$ [°C]	25-65
min./max. ambient temperature [°C]	5/30 °C
Pressure rating - water side [PN]	3
	<b>Electrical energy generation</b>
Nominal voltage [V]	400
Frequency [Hz]	50
Nominal effective power P <sub>nG</sub> [kW]	12,5
Apparent power S <sub>E max</sub> [kVA]	16,0
Nominal voltage UnG [V]	400
Frequency [Hz]	50
Cos $\phi$ uncompensated	0,78
Reactive power compensation [kVar] <sup>(8)</sup>	5,73
Number of steps	1
Degree of choking or resonance frequency	-
Cos $\phi$ acc. to VDE-AR-N 4105 quadrants II, III <sup>(8)</sup>	0,95
Rated alternating current I <sub>r</sub> [A]	23,1
Rated alternating current I <sub>r</sub> cos $\phi$ 1 [A]	18,0
Rated apparent power S <sub>rE</sub> [kVA]	13,2
Short-circuit alternating current Alternator I <sub>k''</sub> [A]	191
Grid short circuit power with UnG S <sub>k''</sub> [kVA]	117,6
Start-up current I <sub>k</sub> [A] approx.	59
	<b>Motor</b>
Motor manufacturer	YANMAR
Number of cylinders	3
Displacement [l]	1,7
Air-fuel ratio $\lambda$	1,00
Engine oil	RMB/Engine Oil
Engine oil [litres]	45

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	<b>Generators</b>
Generator manufacturer	Weier
Generator type	asynchronous
Motor start-up	provided
Speed [rpm]	1.540
	<b>Supply and exhaust air</b>
Combustion air requirement [m³/h]	39,60
Module ventilation flow rate [m³/h]	100,00
Total air requirement of module [m³/h]	139,60
Permissible counter-pressure of exhaust air system max. <sup>(4)</sup> [Pa]	150,00
min./max. intake air temperature [°C]	5-30 °C
Min. cross section without hydraulic resistance [cm <sup>2</sup> ]	300
	<b>Flue gas</b>
Flue gas temperature max. [°C]	< 110
Flue gas temperature <sup>(5)</sup> [°C]	50
Flue gas mass flow rate - damp [kg/h]	45
Flue gas volume flow - dry [Nm³/h]	37
Flue gas counter pressure max. [Pa]	500
Flue gas counter pressure max. for flue gas cascades [Pa]	500
Flue gas counter pressure max. for flue gas and exhaust air combination [Pa]	150
Emissions Nox	<240 mg/kWh
	<b>Dimensions &amp; weight</b>
Dimensions of module L x W x H [mm]	1.566x687x1.386
Weight approx. [kg]	652
	<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++
ErP energy input <sup>(6)</sup> [kWh <sub>HS</sub> ]	41,40
ErP efficiency ratio - electrical $\eta_{el,HS}$ <sup>(6)</sup> [%]	30,2
ErP efficiency ratio - thermal $\eta_{th,HS}$ <sup>(6)</sup> [%]	66,6
ErP efficiency ratio - total $\eta_{total,HS}$ <sup>(6)</sup> [%]	96,8
Room controller category <sup>(6)</sup>	2
P <sub>designh</sub> <sup>(6)</sup> [kW]	10,7
Q <sub>HE</sub> <sup>(6)</sup> [kWh]	14.833
P <sub>SB</sub> electrical power requirement - standby <sup>(6)</sup> [kW]	0,05
Electrical power requirement - partial load <sup>(6)</sup> [kW]	0,40
P <sub>el,max</sub> Electrical power requirement - full load <sup>(6)</sup> [kW]	0,40
P <sub>stby_CHP</sub> Thermal standing losses <sup>(6)</sup> [kW]	0,36
Electrical power requirement - standby <sup>(6)</sup> [kW]	0,05
$\eta_{S=\eta_{son}} - \Sigma(F1-F5)$ <sup>(6)</sup>	148,9
Net output - electrical [kW <sub>el</sub> ]	12,10

1) Performance data in accordance with ISO 3046/I-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, GEG (attachment 4 to § 22 section 1) valid from 11.2020

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>	<p>Fully equipped for seamless CHP unit operation with all necessary measurement and control equipment in bivalent operation.</p> <p>Dimensions control cabinet 600x600x200 mm Connection cable CHP control cabinet standard 3m</p>
<b>Electrical connections</b>	Supply line to control cabinet: 5x6mm <sup>2</sup> Cu up to max. 50m (fuse 32 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 / hPa]</b>	Gas resting pressure before gas regulator: 20 - 50 (for NG)
	Flow pressure ≥ 18 (for NG)
<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.
	Residual pressure head secondary pump 0,7m
<b>Method of operation</b>	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
	Heat usage automatically regulated in monovalent or bivalent operation with buffer tank; optionally heat-optimised modulation
<b>Indicators and switches/buttons</b>	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

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<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: 0,3 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.**