

Product designation	9.5
	<b>Technical data</b>
Rated output - electrical <sup>(1)</sup> [kW <sub>el</sub> ]	9,5
Rated output - thermal <sup>(2)</sup> [kW <sub>th</sub> ]	22,7
Power modulation - electrical [kW <sub>el</sub> ]	5,0 - 9,5
Power modulation - thermal [kW <sub>th</sub> ]	12,0 - 22,7
Energy input [kWh <sub>Hi</sub> ]	30,00
Liquefied Petroleum gas input [kg/h]	n.a.
Liquefied Petroleum gas input [l/h]	n.a.
CHP coefficient	0,42
f Primary energy factor <sup>(7)</sup>	0,282
PES [%]	34,0
ErP energy efficiency label <sup>(6)</sup>	A++
Sound pressure level L <sub>pA</sub> <sup>(3)</sup> [dB(A)]	55
Sound power level L <sub>wA</sub> [dB(A)]	71
Maintenance interval [op. hrs]	13.000
Oil interval [op. hrs]	6.500
	<b>Efficiency ratios</b>
Electrical efficiency ratio $\eta_{el}$ [%]	31,7
Thermal efficiency ratio $\eta_{th}$ [%]	75,6
Total efficiency ratio $\eta_{total}$ [%]	107,3
	<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]	9,5
Apparent power S <sub>E</sub> max [kVA]	12,2
Nominal voltage UnG [V]	400
Frequency [Hz]	50
Cos $\phi$ uncompensated	0,78
Reactive power compensation [kVar] <sup>(8)</sup>	4,07
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]	17,6
Rated alternating current I <sub>r</sub> cos $\phi$ 1 [A]	13,7
Rated apparent power S <sub>rE</sub> [kVA]	10,0
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

**Technical datasheet neoTower® 9.5**

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	<b>Generator</b>
Generator manufacturer	Weier
Generator type	asynchronous
Motor start-up	provided
Speed [rpm]	1.540
	<b>Supply and exhaust air</b>
Combustion air requirement [m <sup>3</sup> /h]	32,50
Module ventilation flow rate [m <sup>3</sup> /h]	100,00
Total air requirement of module [m <sup>3</sup> /h]	132,50
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]	37
Flue gas volume flow - dry [Nm <sup>3</sup> /h]	30
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> ]	33,30
ErP efficiency ratio - electrical $\eta_{el,HS}$ <sup>(6)</sup> [%]	28,6
ErP efficiency ratio - thermal $\eta_{th,HS}$ <sup>(6)</sup> [%]	68,1
ErP efficiency ratio - total $\eta_{total,HS}$ <sup>(6)</sup> [%]	96,7
Room controller category <sup>(6)</sup>	2
$P_{designh}$ <sup>(6)</sup> [kW]	8,8
$Q_{HE}$ <sup>(6)</sup> [kWh]	12.904
$P_{SB}$ electrical power requirement - standby <sup>(6)</sup> [kW]	0,1
Electrical power requirement - partial load <sup>(6)</sup> [kW]	0,5
$P_{el,max}$ Electrical power requirement - full load <sup>(6)</sup> [kW]	0,5
$P_{stby\_CHP}$ Thermal standing losses <sup>(6)</sup> [kW]	0,4
Electrical power requirement - standby <sup>(6)</sup> [kW]	0,1
$\eta S = \eta_{son} - \Sigma(F1-F5)$ <sup>(6)</sup>	140,7
Net output - electrical [kW <sub>el</sub> ]	9,0

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)  $f_{pe-current} = 2.8$  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

Product designation	9.5
RMB/Report	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
Water quality	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.**