

Product designation	50.0 Standard	50.0 High Temperature	50.0 Caloric Value
Technical data			
Rated output - electrical ⁽¹⁾ [kW _{el}]	50,0	50,0	50,0
Rated output - thermal ⁽²⁾ [kW _{th}]	85,0	80,0	100,0
Power modulation - electrical [kW _{el}]	25,0 - 50,0	25,0 - 50,0	25,0 - 50,0
Power modulation - thermal [kW _{th}]	52,6 - 85,0	49,5 - 80,0	60,2 - 100,0
Energy input [kWh _{Hi}]	143,00	143,00	143,00
Liquefied Petroleum gas input [kg/h]		n.a.	
Liquefied Petroleum gas input [l/h]		n.a.	
CHP coefficient	0,59	0,63	0,50
f Primary energy factor ⁽⁷⁾	0,203	0,216	0,172
PES [%]	29,2	27,2	34,5
ErP energy efficiency label ⁽⁶⁾		n.a.	
Sound pressure level L _{pA} ⁽³⁾ [dB(A)]	65	65	65
Sound power level L _{wA} [dB(A)]	83	83	83
Maintenance interval [op. hrs]	3.000	3.000	3.000
Efficiency ratios			
Electrical efficiency ratio η_{el} [%]	35,0	35,0	35,0
Thermal efficiency ratio η_{th} [%]	59,4	55,9	69,9
Total efficiency ratio η_{total} [%]	94,4	90,9	104,9
Heat extraction			
Flow temperature ± 5 [°C]	80	93	80
Return flow temperature ± 5 [°C]	25-65	83	25-65
min./max. ambient temperature [°C]	5/30 °C	5/30 °C	5/30 °C
Pressure rating - water side [PN]	6	6	6
Electrical energy generation			
Nominal voltage [V]	400	400	400
Frequency [Hz]	50	50	50
Nominal effective power P _{nG} [kW]	50,0	50,0	50,0
Apparent power S _{E max} [kVA]	62,5	62,5	62,5
Nominal voltage UnG [V]	400	400	400
Frequency [Hz]	50	50	50
Cos ϕ uncompensated		synchronous	
Reactive power compensation [kVar] ⁽⁸⁾		synchronous	
Number of steps		synchronous	
Degree of choking or resonance frequency		synchronous	
Cos ϕ acc. to VDE-AR-N 4105 quadrants II, III ⁽⁸⁾	0,80 - 1,00	0,80 - 1,00	0,80 - 1,00
Rated alternating current I _r [A]	90,2	90,2	90,2
Rated alternating current I _{r cos ϕ 1} [A]	72,2	72,2	72,2
Rated apparent power S _{rE} [kVA]	55,6	55,6	55,6
Short-circuit alternating current Alternator I _{k''} [A]	1.170,0	1.170,0	1.170,0
Grid short circuit power with UnG S _{k''} [kVA]	1.060	1.060	1.060
Start-up current I _k [A] approx.	no start-up-current: Battery starter system		
Motor			
Motor manufacturer	MAN	MAN	MAN
Number of cylinders	4	4	4
Displacement [l]	4,6	4,6	4,6
Air-fuel ratio λ	1,0	1,0	1,0
Engine oil	RMB/Engine Oil		
Engine oil [litres]	175	175	175

Technical datasheet neoTower® 50 [S; HT; CV]

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Generators			
Generator manufacturer	MARELLI	MARELLI	MARELLI
Generator type	synchronous	synchronous	synchronous
Motor start-up	not provided	not provided	not provided
Speed [rpm]	1.500	1.500	1.500
Supply and exhaust air			
Combustion air requirement [m³/h]	183,00	183,00	183,00
Module ventilation flow rate [m³/h]	1.100,00	1.100,00	1.100,00
Total air requirement of module [m³/h]	1.283,00	1.283,00	1.283,00
Permissible counter-pressure of exhaust air system max. ⁽⁴⁾ [Pa]	150,00	150,00	150,00
min./max. intake air temperature [°C]	5-30 °C	5-30 °C	5-30 °C
Min. cross section without hydraulic resistance [cm²]	2000	2000	2000
Flue gas			
Flue gas temperature max. [°C]	< 150	< 150	< 110
Flue gas temperature ⁽⁵⁾ [°C]	95	95	60
Flue gas mass flow rate - damp [kg/h]	193	193	193
Flue gas volume flow - dry [Nm³/h]	156	156	156
Flue gas counter pressure max. [Pa]	500	500	500
Flue gas counter pressure max. for flue gas cascades [Pa]	500	500	500
Emissions Nox	<240 mg/kWh	<240 mg/kWh	<240 mg/kWh
Dimensions & weight (50.0 Caloric Value without condensing module)			
Dimensions of module L x W x H [mm]	2.523x804x1.964	2.523x804x1.964	2.523x804x1.964
Weight approx. [kg]	2250	2250	2250
Installation location			
Installation location	The manufacturer's manual, the technical drawings as well as the applicable fireplaces regulations to be taken in consideration		
ErP Label			
ErP energy efficiency label ⁽⁶⁾	n/a	n/a	n/a
ErP energy input ⁽⁶⁾ [kWh _{HS}]	158,7	158,7	158,7
ErP efficiency ratio - electrical $\eta_{el,HS}$ ⁽⁶⁾ [%]	31,5	31,5	31,5
ErP efficiency ratio - thermal $\eta_{th,HS}$ ⁽⁶⁾ [%]	53,6	50,4	63,0
ErP efficiency ratio - total $\eta_{total,HS}$ ⁽⁶⁾ [%]	85,1	81,9	94,5
Room controller category ⁽⁶⁾	2	2	2
P _{designh} ⁽⁶⁾ [kW]	32,9	31,0	38,7
Q _{HE} ⁽⁶⁾ [kWh]	43.738	41.165	51.454
P _{SB} electrical power requirement - standby ⁽⁶⁾ [kW]	0,07	0,07	0,07
Electrical power requirement - partial load ⁽⁶⁾ [kW]	0,66	0,66	0,66
P _{el,max} Electrical power requirement - full load ⁽⁶⁾ [kW]	0,96	0,96	0,96
P _{stby_CHP} Thermal standing losses ⁽⁶⁾ [kW]	0,87	0,87	0,87
Electrical power requirement - standby ⁽⁶⁾ [kW]	0,07	0,07	0,07
$\eta_S = \eta_{son} - \Sigma(F1-F5)$ ⁽⁶⁾	155,5	155,5	155,5
Net output - electrical [kW _e]	49,04	49,04	49,04

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, 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)

Product designation	50.0 Standard	50.0 High Temperature	50.0 Caloric Value
Product designation	Fully equipped for seamless CHP unit operation with all necessary measurement and control equipment in bivalent operation. Dimensions control cabinet 800x800x300 mm Connection cable CHP control cabinet standard 3m		
Electrical connections	Supply line to control cabinet: 5x35mm ² Cu up to max. 50m (fuse 100 A slow blow) max. terminal area 50mm ²		
	Temperature sensor cable: min. 2-08 JY(ST)Y up to 15 m length (2x1,5 mm ² up to 40 m length)		
	Control cables pump: 3x1,5 mm ² ; RJ45 Patch cable in CHP connector		
Reactive current compensation	synchronous		
Gas pressure [mbar / hPa]	Gas resting pressure before gas regulator: 20 - 50 (for NG and LPG)		
	Flow pressure ≥ 18 (for NG and LNG)		
Regulations and standards	Complies with the pertinent EU Directives for CE certification		
Connections	Gas: 1" internal thread		
	Heating supply line: 2" male thread / PN 6.0		
	Heating return line: 2" male thread / PN 6.0		
	Flue gas: DN80 PN10, DN100 after silencer		
	Exhaust air: DN200; accepted back pressure to be considered!		
	Supply air: DN150		
	Note: It is important to ensure that all terminals are connected via a flexible connection, in order to ensure vibration isolation.		
Method of operation	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		
Indicators and switches/buttons	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	50.0 Standard	50.0 High Temperature	50.0 Caloric Value
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: 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.