

Basic Technical Data

nominal electrical output	83	kW		
maximum heat output ¹⁾	121	kW		
load	50	75	100	%
maximum heat output	87	104	121	kW
fuel input	149	194	237	kW
electrical efficiency	27,8	32,1	35,0	%
heat efficiency	58,2	53,8	50,9	%
total efficiency (fuel utilization)	86,0	85,9	85,9	%
gas consumption	22,9	29,8	36,5	Nm ³ /h

The Basic Technical Data are applicable for the standard conditions pursuant to the "Technical instructions" document.

The minimum permanent electrical output must not drop below 50 % of the nominal output.

Gas consumption is mentioned for biogas with methane content 65%, at normal conditions (0°C, 101,325 kPa)

Gas consumption tolerance, or fuel input tolerance, at 100% load is +5%.

Tolerances of other parameters are mentioned in "Technical Instructions-Validity of Technical Data" document.

1) Maximum heat output is a sum of heat outputs of secondary circuit with exhaust gas cooled to 150°C

Observance of Emission Limits

emissions	NOx	CO
with 5% of O ₂ in exhaust gases	500	650 mg/Nm ³

Generator

used type	LSA 44.3 L10	
producer	LEROY SOMER	
cos φ	1,0	
efficiency in the working point	94,7 %	
voltage	400 V	
frequency	50 Hz	

Engine

type	TB 90 G5V NX 86	
producer	TEDOM	
number of cylinders	6	
arrangement of cylinders	in series	
bore × stroke	130/150	mm
displacement	11946	cm ³
compression ratio	12 : 1	
speed	1500	rpm
oil consumption, normal / max.	0,3 / 0,5	g/kWh
max. engine output	88,2	kW

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Thermal System

Secondary circuit

heat carrier	water	
circuit's heat output	121	kW
nominal water temperature, input / output	70/90	°C
nominal temperature drop	20	°C
return water temperature, min / max	40/70	°C
nominal flow rate	1,5	kg/s
max. working pressure	600	kPa
water volume in CHP unit circuit	10	dm ³
pressure loss at the nominal flow rate	15	kPa

Utilization of exhaust gas output for other purposes

heat output of exhaust gases (cooling to 150°C)	58	kW
exhaust gas temperature	580	°C

Primary circuit

circuit's heat output	121	kW
max. working pressure	250	kPa
water volume in CHP unit circuit	110	dm ³



Fuel, Gas Inlet

methane content	65	%
low heat value	23,4	MJ/Nm ³
gas pressure	5 ÷ 10	kPa
max. pressure change under varying consumption	10	%
max. gas temperature	35	°C

Electrical Parameters

nominal voltage	230/400	V
nominal frequency	50	Hz
power factor ¹⁾	0,8	
nominal current at cos φ=0,8	150	A
generator circuit breaker	NSX160B 3P	
short-circuit resistance of switchboard	20	kA
contribution of the actual source to the short-circuit current	< 1,5	kA
protection of switchboard's power part closed/open	IP 31/00	
protection of switchboard's control part closed/open	IP 31/00	
recommended superior protection	200	A
recommended connection cable ²⁾ (length < 50m, at t<35°C)	NYY-J 3x95 +50	

1) Power factor adjustable from 0,8C ÷ 1 ÷ 0,8L (range from 0,8C ÷ 1 must be verified according to the various types of generators).
 L = inductive load - overexcited
 C = capacitive load - underexcited
 Operation of the generator with a power factor of less than 0.95 causes a power limitation sets the following table:

power factor [-]	1	0,95	0,8
output [% Pnom]	100	100	98

2) The stated cables are for information only. A check calculation for temperature rise and voltage drop must be made according to the actual length, placement and type of the cable (maximum allowed voltage drop is 10 V)

Colour Version

base frame, engine, and generator	RAL 5015 (blue)
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Unit Dimensions and Weights¹⁾

length total / transport	4 420 / 3350	mm
width	1 500	mm
total height	2 225	mm
service weight of the entire CHP unit	4 060	kg

1) approximate values

Caution

Manufacturer reserves the right to alter this document and the linked source materials.

