

Basic Technical Data

nominal electrical output	210	kW
maximum heat output ¹⁾	241	kW

load	60	75	100	%
heat output	179	199	241	kW
fuel input	350	410	519	kW
electrical efficiency	35,9	38,4	40,4	%
heat efficiency	51,0	48,6	46,5	%
total efficiency (fuel utilization)	86,9	87,0	86,9	%
gas consumption	54	63	80	Nm ³ /hr

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 60 % of the nominal output.

Gas consumption is mentioned for biogas with methane content 60%, 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 and aftercooler circuit

Observance of Emission Limits

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

Generator

used type	LSA 46.3 L10
producer	LEROY SOMER
cos φ	1,0
efficiency in the working point	95,7 %
voltage	400 V
frequency	50 Hz

Engine

type	E2676LE212
producer	MAN
number of cylinders	6
arrangement of cylinders	In line
bore × stroke	126/166 mm
displacement	12,42 dm ³
compression ratio	12,6 : 1
speed	1500 rpm
oil consumption	0,2/0,3 g/kWh
max. engine output	220 kW

E2676 LE212;BIO;07.09.2017

Thermal System

Secondary Circuit

heat carrier	water
circuit's heat output	222 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	2,7 kg/s
max. working pressure	600 kPa
water volume in CHP unit circuit	25 dm ³
pressure loss at the nominal flow rate	15 kPa

Primary Circuit ¹⁾

circuit's heat output	222 kW
max. working pressure	200 kPa
water volume in CHP unit circuit	146 dm ³

1) Parameters are valid if the dry cooler (optional) is part of delivery

Aftercooler Circuit ¹⁾

heat carrier	water + ethylene glycol
ethylene glycol's concentration	35 %
circuit's heat output	19 kW
max coolant temperature at the input	40 °C
nominal flow rate	1 kg/s
max. working pressure	250 kPa
water volume in CHP unit circuit	25 dm ³

1) Parameters are valid if the dry cooler (optional) is part of delivery



Fuel, Gas Inlet

methane content	60	%
low heat value	21,6	MJ/m ³
gas pressure	5 ÷ 10	kPa
max. pressure change under varying consumption	10	%
max. gas temperature	35	°C

Combustion and Ventilation Air

unused heat removed by the ventilation air	20	kW
amount of combustion air	902	Nm ³ /hr
outdoor air temperature, min / max	-20/35	°C

Exhaust Gas and Condensate Outlet

amount of exhaust gases	932	Nm ³ /hr
exhaust gas temperature, nominal / max	150/180	°C
max. back-pressure of exhaust gases downstream the CHP unit flange ¹⁾	20	mbar
speed of exhaust gases at the outlet (DN 150)	23	m/s

1) Valid for standard version (without economizer)

Lubricant Charges

amount of lubrication oil in the engine	70	dm ³
replenishment oil tank volume	125	dm ³

Noise Parameters

CHP unit in 10 m from container	57	dB(A)
---------------------------------	----	-------

Electrical Parameters

nominal voltage	230/400	V
nominal frequency	50	Hz
power factor ¹⁾	0,8	
nominal current at cos φ=0.8	378	A
generator circuit breaker	NSX400F 3P	
short-circuit resistance of switchboard	25	kA
contribution of the actual source to the short-circuit current	< 3	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	315	A
recommended connection cable ²⁾ (l < 50m, at t < 35°C)	NYYY-J 3×150+70	

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

engine, generator	RAL 7035 (grey)
container	RAL 5013 (blue)

Unit Dimensions and Weights¹⁾

total length	5 550	mm
width total	3 000	mm
height total	6 500	mm
service weight of the entire CHP unit	9 300	kg

1) Approximate values

Caution

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

