

Basic Technical Data

nominal electrical output	80	kW		
heat output ¹⁾	124	kW		
load	60	75	100	%
heat output	108	112	124	kW
fuel input	175	189	229	kW
electrical efficiency	27,5	31,7	35,0	%
heat efficiency	61,9	57,6	54,3	%
total efficiency (fuel utilization)	89,4	89,3	89,3	%
gas consumption	18,5	20,1	24,2	m ³ /h

Option

EKO - Technical data for additional exhaust gas exchanger

	EKO ²⁾	
electric output	80	kW
heat output	127	kW
fuel input	229	kW
electrical efficiency	35,0	%
heat efficiency	55,6	%
total efficiency (fuel utilization)	90,6	%
gas consumption at 100% output	24,2	m 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 60 % of the nominal output.

Gas consumption is expressed under the invoicing conditions (15°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) Heat output is heat output of secondary circuit with exhaust gas cooled to 120°C.

2) Heat output indicated is based on inlet water temperature 70°C into additional exhaust gas exchanger and with exhaust gas cooled to 85°C.

Observance of Emission Limits

emissions with 5% of O ₂ in exhaust gas	NO _x	CO	
standard	95	300	mg/Nm ³
option ¹⁾	50	150	mg/Nm ³

1) In the factory, the NO_x emission values are set below 20 mg/Nm³

Generator

used type	LSA 44.3 M6
producer	LEROY SOMER
cos φ	1,0
efficiency in the working point	94,9 %
voltage	400 V
frequency	50 Hz

Engine

type	LG 85 G5V NX 88
producer	TEDOM
combustion	stoichiometric
number of cylinders	6
arrangement of cylinders	in line
bore × stroke	130/150 mm
displacement	11946 cm ³
compression ratio	13 : 1
speed	1500 rpm
oil consumption, normal / max.	0,3 / 0,5 g/kWh
max. engine output	84,0 kW

LG 85 G5V NX 88_12.5.2017_99

Thermal System

Secondary circuit

heat carrier	water
circuit's heat output	124 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 120°C)	46 kW
exhaust gas temperature	635 °C

Primary circuit

circuit's heat output	124 kW
max. working pressure	200 kPa
water volume in CHP unit circuit	110 dm ³

Fuel, Gas Inlet

low heat value	34	MJ/m ³
min. methane number	80	
gas pressure	2 ÷ 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	15	kW
aspirated air temperature, min / max	10/35	°C
amount of combustion air	214	Nm ³ /h

Exhaust Gas and Condensate Outlet

amount of exhaust gases	193	Nm ³ /h
exhaust gas temperature, nominal / max	120/150	°C
max. back-pressure of exhaust gases downstream the CHP unit flange ¹⁾	20	mbar
pressure loss of the freely delivered silencer	10	mbar
permissible pressure loss of the interconnecting exhaust piping	10	mbar

1) Valid for standard version (without economizer)

Lubricant Charges

amount of lubrication oil in the engine	24	dm ³
replenishment oil tank volume	80	dm ³

Noise Parameters

CHP unit at 1m	93	dB(A)
exhaust gas outlet at 1m from the silencer flange ¹⁾	65	dB(A)

1) The noise parameter can be reduced by optimizing the exhaust silencer to the required acoustic pressure level or by applying the exhaust silencer beyond the standard range designed for 60 dB(A) at 1 m.

Electrical Parameters

nominal voltage	230/400	V
nominal frequency	50	Hz
power factor ¹⁾	0,8	
nominal current at cos φ=0.8	135	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)	NY-Y-J 3×95 +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 [% P _{nom}]	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	RAL 5015 (blue)
engine and generator	RAL 7035 (gray)

Unit Dimensions and Weights ¹⁾

length, total/transport	4420 / 4065	mm
width	1500	mm
total height	2220	mm
service weight of the entire CHP unit	3965	kg

1) Approximate values

Caution

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