

Flexi 350

BIO | 50Hz

OPEN MODULE | SOUND ENCLOSURE | CONTAINER

Basic technical data

Electrical output	354 kW	Voltage	400 V
Heat output nominal/max. ¹⁾	398/398 kW	Frequency	50 Hz
electrical efficiency	40,1 %	Service weight	
heat efficiency nominal/max. ¹⁾	45,1/45,1 %	- open module (OM)	8 t
total efficiency nominal/max. ¹⁾	85,2/85,2 %	- sound enclosure (SE)	9 t
fuel input	882 kW	- container (C)	17 t
secondary circuit temperature inlet/outlet	70/90 °C		

1) Heat output is a sum of secondary and aftercooler circuit heat outputs. Max. heat output (max. efficiency) of CHPU using NG or LPG is valid if the economiser is used and return water temperature is 35°C. For biogas fuels the usage of an economiser is not permitted.

Emission		lean mixture +	lean mixture +	
		oxidation catalyst	oxidation catalyst + SCR	
NOx emission at 5% O2 in exhaust gas standard/option		500/-	95/-	mg/Nm ³
CO emission at 5% O2 in exhaust gas standard/option		650/500	500/-	mg/Nm ³
HCHO emission at 5% O2 in exhaust gas standard/option		80/20	75/20	mg/Nm ³
Noise parameters		standard	silent ¹⁾	
OM	- CHPU at 1m	92		dB(A)
	- exhaust gas outlet at 1m from silencer flange ²⁾	65		dB(A)
SE	- CHPU at 1m	76	65	dB(A)
	- ventilation inlet/outlet at 1m	92	65	dB(A)
C	- exhaust gas outlet at 1m from silencer flange ²⁾	65	65	dB(A)
	- CHPU at 10m	59		dB(A)

1) Option.

2) Noise parameters can be further optimized according to the specific requests (option).

Notes

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 expressed under the normal conditions (0°C, 101.325 kPa) and gas LHV according to the section Fuel. 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.

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Extended technical data

Standard design	100%	75%	50%	
electrical output	354	266	177	kW
heat output ¹⁾	398	316	235	kW
gas consumption	148	115	82	m ³ /h
fuel input	882	684	487	kW
electrical efficiency	40,1	38,8	36,3	%
heat efficiency	45,1	46,2	48,3	%
total efficiency	85,2	85,0	84,6	%

1) Heat output is a sum of secondary and aftercooler circuit heat outputs with exhaust gas cooled to 180°C.

Electrical parameters

voltage	400 V	operational current at $\cos \varphi=0,9$	568 A
frequency	50 Hz	short circuit resistance of the switchboard	25 kA
nominal current	630 A	contribution of the actual source to the short-circuit current	< 6,5 kA
nominal power factor (GCB settings)	0,8	$\cos \varphi$ regulation range (underexcited/overexcited) ¹⁾	0,9÷1÷0,9

1) Operation of generator with power factor lower than 0,98 decreases generator efficiency, what can cause reduction of the CHPU active power.

Engine / Generator

Engine	E3268 LE222	Generator	LSA 47.2 M7
producer	MAN	producer	LEROY SOMER
oil consumption normal/max.	0,19/0,38 g/kWh		
quantity of oil in the engine	90 dm ³		
volume of oil tank for refilling	220 dm ³		

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Heat system

Secondary circuit

heat carrier: water	
heat output	376 kW
inlet/outlet temperature	70/90 °C
min./max. inlet temperature	50/70 °C
nominal flow	4,5 kg/s
max. allowed pressure in circuit	1600 kPa
volume	56 dm ³
pressure drop at nominal flow	15 kPa

Primary circuit

heat carrier: antifreeze	
ethylene glycol concentration	40 %
heat output	376 kW
max. allowed pressure in circuit	350 kPa
volume	315 dm ³

Aftercooler circuit

heat carrier: antifreeze	
ethylene glycol concentration	40 %
heat output	21,0 kW
max. inlet temperature	42 °C
nominal flow	1,1 kg/s
pressure reserve at nominal flow (OM/SE/C)	30/30/0 kPa
min. inlet pressure	100 kPa
max. allowed pressure in circuit	250 kPa
volume (OM/SE/C)	10/10/10 dm ³

Exhaust gas

amount	1953 kg/h	temperature at the CHPU outlet nominal/max.	180/210 °C
temperature at the engine outlet	436 °C	max. allowed back-pressure	1 kPa

Fuel

biogas		pressure (OM, SE)	3-10 kPa
low heat value	21,5 MJ/m ³	pressure (C)	5-10 kPa
min. methane content	45 %	max. temperature	35 °C
nominal methane content	60 %		

Combustion and ventilation air

Combustion air

ambient temperature min./max. (OM, SE)	10/35 °C
ambient temperature min./max. (C)	-20/35 °C
amount	1773 kg/h

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Ventilation	OM	SE	C	
unused heat removed by the ventilation	31	31	31	kW
max. amount of ventilation air at the outlet flange		8000		m ³ /h
max. air temperature at the outlet flange		50		°C
max. back-pressure at the ventilation air inlet flange		50		Pa
max. back-pressure at the ventilation air outlet flange		50		Pa

Related documents

dimensional drawing OM	R2291
dimensional drawing SE	R2530
dimensional drawing C	R2270