TEDOM
Combined Heat & Power

Flexi 530

OPEN MODULE | SOUND ENCLOSURE | CONTAINER

BIO | 50Hz

Basic technical data

Electrical output	**528**	**kW**	**Voltage**	**400**	**V**
Heat output nominal/max.[1)]	**639/639**	**kW**	**Frequency**	**50**	**Hz**
electrical efficiency	40,2	%	**Service weight**		
heat efficiency nominal/max.[1)]	48,7/48,7	%	- open module (OM)	9	t
total efficiency nominal/max. [1)]	88,9/88,9	%	- sound enclosure (SE)	10	t
fuel input	1313	kW	- container (C)	17,5	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 + oxidation catalyst	lean mixture + 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	80/20	mg/Nm^3

Noise parameters		standard	silent [1)]	
OM	- CHPU at 1m	94		dB(A)
	- exhaust gas outlet at 1m from silencer flange [2)]	65		dB(A)
SE	- CHPU at 1m	78	65	dB(A)
	- ventilation inlet/outlet at 1m	94	65	dB(A)
	- exhaust gas outlet at 1m from silencer flange [2)]	65	65	dB(A)
C	- CHPU at 10m	60		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	528	396	264	kW
heat output [1)]	639	505	371	kW
gas consumption	220	171	121	m^3/h
fuel input	1313	1022	721	kW
electrical efficiency	40,2	38,7	36,6	%
heat efficiency	48,7	49,4	51,5	%
total efficiency	88,9	88,1	88,1	%

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
frequency	50	Hz
nominal current	900	A
nominal power factor (GCB settings)		0,85

operational current at cos φ=0,9	847	A
short circuit resistance of the switchboard	35	kA
contribution of the actual source to the short-circuit current	< 10	kA
cos φ regulation range (underexcited/overexcited) [1)]		0,9÷1÷0,9

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

Engine / Generator

Engine	E3262 LE212	
producer	MAN	
oil consumption normal/max.	0,15/0,33	g/kWh
quantity of oil in the engine	90	dm^3
volume of oil tank for refilling	220	dm^3

Generator	LSA 49.3 M8
producer	LEROY SOMER

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Heat system

Secondary circuit

heat carrier: water		
heat output	603	kW
inlet/outlet temperature	70/90	°C
min./max. inlet temperature	50/70	°C
nominal flow	7,2	kg/s
max. allowed pressure in circuit	1600	kPa
volume	56	dm^3
pressure drop at nominal flow	15	kPa

Aftercooler circuit

heat carrier: antifreeze		
ethylene glycol concentration	40	%
heat output	35,0	kW
max. inlet temperature	42	°C
nominal flow	1,8	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

Primary circuit

heat carrier: antifreeze		
ethylene glycol concentration	40	%
heat output	603	kW
max. allowed pressure in circuit	350	kPa
volume	315	dm^3

Exhaust gas

amount	2811	kg/h
temperature at the engine outet	426	°C
temperature at the CHPU outlet nominal/max.	180/210	°C
max. allowed back-pressure	1	kPa

Fuel

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

Combustion and ventilation air

Combustion air

ambient temperature min./max. (OM, SE)	10/35	°C
ambient temperature min./max. (C)	-20/35	°C
amount	2544	kg/h

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Ventilation	OM	SE	C	
unused heat removed by the ventilation	59	59	59	kW
max. amount of ventilation air at the outlet flange		15000		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	R2256
dimensional drawing SE	R2530
dimensional drawing C	R2270