

## Only for reference

### Technical data

1200 kWel; 400 V, 50 Hz; Acc. to gas analysis

#### Design conditions

Comb. air temperature / rel. Humidity:	[°C] / [%]	25 / 60
Altitude:	[m]	100
Exhaust temp. after heat exchanger:	[°C]	150
NO <sub>x</sub> Emission (tolerance - 8%):	[mg/Nm <sup>3</sup> ]	500

#### Genset:

Engine:	<b>CG170-12</b>	
Speed:	[1/min]	1500
Configuration / number of cylinders:	[-]	V / 12
Bore / Stroke / Displacement:	[mm]/[mm]/[dm <sup>3</sup> ]	170 / 195 / 53
Compression ratio:	[-]	13,5
Mean piston speed:	[m/s]	9,8
Mean lube oil consumption at full load:	[g/kWh]	0,2
Engine-management-system:	[-]	TEM EVO

Generator:	<b>Marelli MJB 450 LB4</b>	
Voltage / voltage range / cos Phi:	[V] / [%] / [-]	400 / ±5 / 1
Speed / frequency:	[1/min] / [Hz]	1500 / 50

#### Fuel gas data: <sup>2)</sup>

Methane number:	[-]	134
Lower calorific value:	[kWh/m <sup>3</sup> ]	4,98
Gas density:	[kg/Nm <sup>3</sup> ]	1,18
Acc. to gas analysis		
Analysis: CO <sub>2</sub>	[Vol%]	27
N <sub>2</sub>	[Vol%]	23
O <sub>2</sub>	[Vol%]	0
H <sub>2</sub>	[Vol%]	0
CO	[Vol%]	0
CH <sub>4</sub>	[Vol%]	50
C <sub>2</sub> H <sub>6</sub>	[Vol%]	0
C <sub>3</sub> H <sub>8</sub>	[Vol%]	0
C <sub>4</sub> H <sub>10</sub>	[Vol%]	0
C <sub>x</sub> H <sub>y</sub>	[Vol%]	0
H <sub>2</sub> S	[Vol%]	0

#### Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	<b>1200</b>	<b>900</b>	<b>600</b>
Engine jacket water heat:	[kW ±8%]	626	466	332
Intercooler LT heat:	[kW ±8%]	93	68	43
Lube oil heat:	[kW ±8%]			
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	623	507	377
Exhaust temperature:	[°C]	459	482	506
Exhaust mass flow, wet:	[kg/h]	6524	4919	3395
Combustion mass air flow - ISO 3046/1:	[kg/h]	5848	4401	3031
Radiation heat engine / generator:	[kW ±8%]	41 / 32	39 / 25	38 / 20
Fuel consumption:	[kW +5%]	2852	2184	1534
Electrical / thermal efficiency:	[%]	42,1 / 43,8	41,2 / 44,6	39,1 / 46,2
Total efficiency:	[%]	85,9	85,8	85,3

#### System parameters <sup>1)</sup>

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	29900
Combustion air temperature minimum / design:	[°C]	20 / 25
Exhaust back pressure from / to:	[mbar]	30 / 50
Maximum pressure loss in front of air cleaner:	[mbar]	5
Zero-pressure gas control unit selectable from / to: <sup>2)</sup>	[mbar]	20 / 300
Pre-pressure gas control unit selectable from / to: <sup>2)</sup>	[bar]	0,5 / 10
Starter battery 24V, capacity required:	[Ah]	430
Starter motor:	[kWel.] / [VDC]	15 / 24
Lube oil content engine / base frame:	[dm <sup>3</sup> ]	205 / 510
Dry weight engine / genset:	[kg]	5080 / 10700

#### Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	0 / 35
Water volume engine jacket / intercooler:	[dm <sup>3</sup> ]	111 / 20
KVS / Cv value engine jacket water / intercooler:	[m <sup>3</sup> /h]	42 / 30
Jacket water coolant temperature in / out:	[°C]	80 / 93
Intercooler coolant temperature in / out:	[°C]	50 / 53
Engine jacket water flow rate from / to:	[m <sup>3</sup> /h]	36 / 56
Water flow rate engine jacket water / intercooler:	[m <sup>3</sup> /h]	43 / 35
Water pressure loss engine jacket water / intercooler:	[bar]	1,0 / 1,4

1) See also "Layout of power plants":

2) See also Techn. Circular 0199-99-3017

Engine noise level	Octave band centre frequency								Sum level (distance 1 meter)
	63	125	250	500	1000	2000	4000	8000	
Exhaust noise [dB(lin)]	116	123	122	119	111	110	108	107	120 dB(A) (±2,5 dB(A))
Air-borne noise [dB(lin)]	92	104	104	100	99	96	99	99	106 dB(A) (±1,0 dB(A))