

Only for reference

Technical data

2000 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 _x Emission (tolerance - 8%):	[mg/Nm ³]	500

Genset:

Engine:	CG170-20	
Speed:	[1/min]	1500
Configuration / number of cylinders:	[-]	V / 20
Bore / Stroke / Displacement:	[mm]/[mm]/[dm ³]	170 / 195 / 89
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:	Marelli MJB 560 LA4	
Voltage / voltage range / cos Phi:	[V] / [%] / [-]	400 / ±5 / 1
Speed / frequency:	[1/min] / [Hz]	1500 / 50

Fuel gas data: ²⁾

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

Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	2000	1500	1000
Engine jacket water heat:	[kW ±8%]	1047	808	585
Intercooler LT heat:	[kW ±8%]	132	88	52
Lube oil heat:	[kW ±8%]			
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	974	799	599
Exhaust temperature:	[°C]	447	469	493
Exhaust mass flow, wet:	[kg/h]	10639	8084	5604
Combustion mass air flow - ISO 3046/1:	[kg/h]	9534	7231	5003
Radiation heat engine / generator:	[kW ±8%]	72 / 55	68 / 43	61 / 35
Fuel consumption:	[kW +5%]	4667	3601	2536
Electrical / thermal efficiency:	[%]	42,9 / 43,3	41,7 / 44,7	39,4 / 46,7
Total efficiency:	[%]	86,2	86,3	86,1

System parameters ¹⁾

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	50400
Combustion air temperature minimum / design:	[°C]	5 / 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: ²⁾	[mbar]	20 / 300
Pre-pressure gas control unit selectable from / to: ²⁾	[bar]	0,5 / 10
Starter battery 24V, capacity required:	[Ah]	430
Starter motor:	[kWel.] / [VDC]	15 / 24
Lube oil content engine / base frame:	[dm ³]	300 / 685
Dry weight engine / genset:	[kg]	8070 / 18050

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	0 / 35
Water volume engine jacket / intercooler:	[dm ³]	210 / 25
KVS / Cv value engine jacket water / intercooler:	[m ³ /h]	58 / 52
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 ³ /h]	60 / 85
Water flow rate engine jacket water / intercooler:	[m ³ /h]	71 / 40
Water pressure loss engine jacket water / intercooler:	[bar]	1,5 / 0,6

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)]	120	129	122	119	118	117	114	108	124 dB(A) (±2,5 dB(A))
Air-borne noise [dB(lin)]	95	109	104	104	104	102	106	107	112 dB(A) (±1,0 dB(A))