



Technical data

1500 kWel; 400 V, 50 Hz; Natural gas, MN = 80

Design conditions

Comb. air temperature / rel. Humidity:	[°C] / [%]	35 / 80
Altitude:	[m]	50
Exhaust temp. after heat exchanger:	[°C]	120
NO _x Emission (tolerance - 8%):	[mg/Nm ³ @5%O ₂]	500

Fuel gas data: 2)

Methane number:	[-]	80
Lower calorific value:	[kWh/Nm ³]	10,17
Gas density:	[kg/Nm ³]	0,79
Standard gas:	Natural gas, MN = 80	

Genset:

Engine:	CG170-16	
Speed:	[1/min]	1500
Configuration / number of cylinders:	[-]	V / 16
Bore / Stroke / Displacement:	[mm]/[mm]/[dm ³]	170 / 195 / 71
Compression ratio:	[-]	12,0
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 500 LA4	
Voltage / voltage range / cos Phi:	[V] / [%] / [-]	400 / ±10 / 1
Speed / frequency:	[1/min] / [Hz]	1500 / 50

Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	1500	1125	750
Engine jacket water heat:	[kW ±8%]	738	573	417
Intercooler LT heat:	[kW ±8%]	163	109	63
Lube oil heat:	[kW ±8%]			
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	976	802	591
Exhaust temperature:	[°C ±25°C]	493	520	547
Exhaust mass flow, wet:	[kg/h]	8651	6599	4535
Combustion mass air flow:	[kg/h]	8363	6376	4378
Radiation heat engine / generator:	[kW ±8%]	54 / 45	52 / 36	49 / 29
Fuel consumption:	[kW+5%]	3684	2856	2009
Electrical / thermal efficiency:	[%]	40,7 / 46,5	39,4 / 48,1	37,3 / 50,2
Total efficiency:	[%]	87,2	87,5	87,5

System parameters 1)

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	40800
Combustion air temperature minimum / design:	[°C]	27 / 35
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 / 200
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 / 24,0
Lube oil content engine / base frame:	[dm ³]	265 / 685
Dry weight engine / genset:	[kg]	6090 / 13370

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	35 / 35
Water volume engine jacket / intercooler:	[dm ³]	151 / 20
KVS / Cv value engine jacket water / intercooler:	[m ³ /h]	46 / 30
Jacket water coolant temperature in / out:	[°C]	82 / 93
Intercooler coolant temperature in / out:	[°C]	40 / 45
Engine jacket water flow rate from / to:	[m ³ /h]	50 / 65
Water flow rate engine jacket water / intercooler:	[m ³ /h]	62 / 30
Water pressure loss engine jacket water / intercooler:	[bar]	1,8 / 1,0

1) See also "Layout of power plants".

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

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Frequency band f [Hz]	25	31,5	40	50	63	80	100	125	160	200	250	315	400	500	630	800	1k	1.25k	1.6k	2k	2.5k	3.15k	4k	5k	6.3k	8k	10k	12.5k	16k	L _{WA} [dB(A)]	S [m ²]		
Air-borne noise 3)																																	
L _{W, Tarz} [dB(lin)]	92,6	97	99,7	100,3	105,4	111,8	110,1	111,8	109,8	113,4	114,9	112,5	111,5	113,8	113	111,4	113	111,1	111,3	111,7	109,7	114	110,4	115,7	107,6	107,6	110,8	102,9	101,1	123,8	123		
Exhaust noise 4)																																	
L _{W, Octave} [dB(lin)]					131			140			132			129			128			127				124			119			134	15,5		

3) EN ISO 9614-1 (C₁₀₀=±4 dB)

4) DIN 45635-11 Appendix A (±3 dB)

Subject to technical changes

S: Area of measurement surface (S₀=1m²)

z900331, 05.05.2016