

Technical data

1200 kWel; 400 V, 50 Hz; Natural gas, MN = 80

Design conditions

Inlet air temperature / rel. Humidity:	[°C] / [%]	25 / 60
Altitude:	[m]	200
Exhaust temp. after heat exchanger:	[°C]	120
NO _x Emission (tolerance - 8%):	[mg/Nm ³ @5%O ₂]	500

Datasheet specification considers the grid codes EU 631/2016 (NC-RfG)

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:	TCG 2020 V12	
Configuration code:	[-]	
Speed:	[1/min]	1500
Configuration / number of cylinders:	[-]	V / 12
Bore / Stroke / Displacement:	[mm]/[mm]/[dm ³]	170 / 195 / 53
Compression ratio:	[-]	13
Mean piston speed:	[m/s]	9,8
Mean lube oil consumption at full load:	[g/kWh]	0,15
Generator:	Marelli MJB 500 MB4	
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]	1200	900	600
Engine jacket water heat:	[kW ±8%]	610	470	337
Intercooler LT heat:	[kW ±8%]	107	71	41
Lube oil heat:	[kW ±8%]			
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	581	480	363
Exhaust temperature:	[°C ±25°C]	414	440	469
Exhaust mass flow, wet:	[kg/h]	6493	4913	3390
Combustion mass air flow:	[kg/h]	6278	4747	3273
Radiation heat engine / generator:	[kW ±8%]	41 / 34	40 / 27	36 / 22
Fuel consumption:	[kW+5%]	2751	2124	1493
Electrical / thermal efficiency:	[%]	43,6 / 43,3	42,4 / 44,7	40,2 / 46,9
Total efficiency:	[%]	86,9	87,1	87,1

System parameters ¹⁾

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	30300
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 / 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]	18 / 24
Lube oil content engine / base frame*:	[dm ³]	205 / 510*
Dry weight engine / genset:	[kg]	5080 / 11580

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	33 / 33
Water volume engine jacket / intercooler:	[dm ³]	111 / 14
KVS / Cv value engine jacket water / intercooler:	[m ³ /h]	38 / 30
Jacket water coolant temperature in / out:	[°C]	80 / 93
Intercooler coolant temperature in / out:	[°C]	47 / 50
Engine jacket water flow rate from / to:	[m ³ /h]	36 / 56
Water flow rate engine jacket water / intercooler:	[m ³ /h]	43 / 35
Water pressure loss engine jacket water / intercooler:	[bar]	1,3 / 1,4

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¹⁾ See also "Layout of power plants"; ²⁾ See also Techn. Circular 0199-99-3017; ^{*)} optional

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
Air-borne noise ³⁾ L _{W,Teiz} [dB(lin)]	94,0	94,7	98,0	100,5	106,1	108,9	107,6	108,5	106,0	115,3	115,0	114,8	108,6	110,2	109,5	108,8	109,2	108,2	108,1	107,6	107,0	108,5	103,5	102,3	114,1	107,0	101,4	103,8	98,1	120,7	114
Exhaust noise ⁴⁾ L _{W,Teiz} [dB(lin)]	114,2	116,0	124,6	115,9	120,0	129,0	125,3	134,1	125,3	130,0	128,4	128,2	126,4	125,8	125,0	119,0	117,8	116,6	117,7	117,6	116,3	115,5	114,6	113,7	114,9	113,9	113,4	112,9	111,1	132,1	15,5 ⁵⁾

3) DIN EN ISO 3746 (σ_{iso}=24 dB) 4) Measured in exhaust pipe (f ≤ 250Hz: ±5dB; f > 250Hz: ±3dB) L_W: Sound power level S: Area of measurement surface (S₀=1m²) 5) DIN 45635-11, Appendix A