

reference data sheet



Technical data

4300 kWel; 10500 V, 50 Hz; Natural gas, MN = 70

Design conditions

Inlet air temperature / rel. Humidity:	[°C] / [%]	25 / 60
Altitude:	[m]	100
Exhaust temp. after heat exchanger:	[°C]	120
NO _x Emission (tolerance - 8%):	[mg/Nm ³ @5%O ₂]	250

Fuel gas data: ²⁾

Methane number:	[-]	70
Lower calorific value:	[kWh/Nm ³]	10,95
Gas density:	[kg/Nm ³]	0,83
Standard gas:	Natural gas, MN = 70	

Genset:

Engine:	CG260-16	
Speed:	[1/min]	1000
Configuration / number of cylinders:	[-]	V / 16
Bore / Stroke / Displacement:	[mm]/[mm]/[dm ³]	260 / 320 / 272
Compression ratio:	[-]	12,0
Mean piston speed:	[m/s]	10,7
Mean lube oil consumption at full load:	[g/kWh]	0,2
Engine-management-system:	[-]	TEM EVO

Generator:	Marelli MJH 800 MC6	
Voltage / voltage range / cos Phi:	[V] / [%] / [-]	10500 / ±10 / 1
Speed / frequency:	[1/min] / [Hz]	1000 / 50

Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	4300	3225	2150
Engine jacket water heat:	[kW ±8%]	1461	1083	748
Intercooler LT heat:	[kW ±8%]	372	265	172
Lube oil heat:	[kW ±8%]	488	407	351
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	2435	2011	1540
Exhaust temperature:	[°C ±25°C]	460	487	517
Exhaust mass flow, wet:	[kg/h]	23399	17823	12562
Combustion mass air flow:	[kg/h]	22639	17232	12138
Radiation heat engine / generator:	[kW ±8%]	215 / 95	209 / 81	206 / 72
Fuel consumption:	[kW+5%]	10007	7769	5583
Electrical / thermal efficiency:	[%]	43,0 / 43,8	41,5 / 45,1	38,5 / 47,3
Total efficiency:	[%]	86,8	86,6	85,8

System parameters ¹⁾

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	118900
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
Air bottle, volume / pressure	[dm ³] / [bar]	2000 / 30
Starter motor:	[dm ³ /s] / [bar]	800 / 16
Lube oil content engine / base frame:	[dm ³]	1850 / -
Dry weight engine / genset:	[kg]	24890 / 51200

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	35 / 35
Water volume engine jacket / intercooler:	[dm ³]	570 / 51
KVS / Cv value engine jacket water / intercooler:	[m ³ /h]	90 / 62
Jacket water coolant temperature in / out:	[°C]	78 / 90
Intercooler coolant temperature in / out:	[°C]	40 / 45
Engine jacket water flow rate from / to:	[m ³ /h]	100 / 120
Water flow rate engine jacket water / intercooler:	[m ³ /h]	112 / 65
Water pressure loss engine jacket water / intercooler:	[bar]	1,6 / 1,1
Lube oil temp. engine inlet max. / lube oil flow rate:	[°C] / [m ³ /h]	80 / 125

1) See also "Layout of power plants":

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

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⁾	102,1	100,6	104,0	106,4	109,4	113,0	117,0	115,8	121,3	119,9	116,2	114,2	114,2	110,4	109,8	111,1	109,6	109,5	111,8	115,3	111,0	112,4	116,6	116,8	111,4	105,6	104,6	107,0	102,9	125	215
L _{W, Terz} [dB(lin)]																															
Exhaust noise ⁴⁾	118,4	125,5	141,4	124,6	143,0	128,6	130,1	133,0	131,5	128,0	127,7	128,3	127,2	127,7	127,3	126,1	125,5	124,1	124,2	124,5	123,1	123,0	124,8	122,4	120,5	118,5	118,5	120,6	116,6	137,1	16,9 ⁵⁾
L _{W, Terz} [dB(lin)]																															

3) DIN EN ISO 3746 (σ₉₀±4 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