

# reference data sheet



## Technical data

**3203 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 <sub>x</sub> Emission (tolerance - 8%):	[mg/Nm <sup>3</sup> @5%O <sub>2</sub> ]	250

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

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

### Genset:

Engine:	<b>CG260-12</b>	
Speed:	[1/min]	1000
Configuration / number of cylinders:	[-]	V / 12
Bore / Stroke / Displacement:	[mm]/[mm]/[dm <sup>3</sup> ]	260 / 320 / 204
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:	<b>Marelli MJH 800 MB6</b>	
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]	<b>3203</b>	<b>2402</b>	<b>1601</b>
Engine jacket water heat:	[kW ±8%]	1143	836	584
Intercooler LT heat:	[kW ±8%]	290	207	150
Lube oil heat:	[kW ±8%]	377	323	286
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	1813	1515	1161
Exhaust temperature:	[°C ±25°C]	456	485	509
Exhaust mass flow, wet:	[kg/h]	17626	13524	9670
Combustion mass air flow:	[kg/h]	17052	13077	9345
Radiation heat engine / generator:	[kW ±8%]	172 / 74	167 / 64	166 / 59
Fuel consumption:	[kW+5%]	7553	5883	4271
Electrical / thermal efficiency:	[%]	42,4 / 44,1	40,8 / 45,4	37,5 / 47,5
Total efficiency:	[%]	86,5	86,2	85,0

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

Ventilation air flow (comb. air incl.) with ΔT = 15K	[kg/h]	92800
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: <sup>2)</sup>	[mbar]	20 / 200
Pre-pressure gas control unit selectable from / to: <sup>2)</sup>	[bar]	0,5 / 10
Air bottle, volume / pressure	[dm <sup>3</sup> ] / [bar]	2000 / 30
Starter motor:	[dm <sup>3</sup> /s] / [bar]	800 / 16
Lube oil content engine / base frame:	[dm <sup>3</sup> ]	1450 / -
Dry weight engine / genset:	[kg]	18667 / 43100

### Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	35 / 35
Water volume engine jacket / intercooler:	[dm <sup>3</sup> ]	430 / 51
KVS / Cv value engine jacket water / intercooler:	[m <sup>3</sup> /h]	86 / 57
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 <sup>3</sup> /h]	80 / 95
Water flow rate engine jacket water / intercooler:	[m <sup>3</sup> /h]	88 / 55
Water pressure loss engine jacket water / intercooler:	[bar]	1,0 / 1,0
Lube oil temp. engine inlet max. / lube oil flow rate:	[°C] / [m <sup>3</sup> /h]	80 / 110

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 <sub>WA</sub> [dB(A)]	S [m <sup>2</sup> ]
<b>Air-borne noise <sup>3)</sup></b>	102,5	110,8	111,0	113,4	115,1	110,6	118,8	117,1	120,5	115,3	114,8	113,7	112,5	109,7	109,7	111,2	111,2	110,8	112,1	115,7	111,0	112,1	115,8	112,9	117,2	107,2	105,0	112,9	102,2	125	201
L <sub>W, Terz</sub> [dB(lin)]																															
<b>Exhaust noise <sup>4)</sup></b>	119,6	118,3	121,3	138,1	124,2	129,1	132,8	137,7	131,2	133,4	130,6	131,0	129,8	129,5	130,2	125,7	125,2	124,6	122,3	124,0	122,8	122,4	122,6	120,1	118,7	118,6	116,8	115,9	113,3	136,8	16,9 <sup>5)</sup>
L <sub>W, Terz</sub> [dB(lin)]																															

3) DIN EN ISO 3746 (σ<sub>RD</sub>±4 dB)

4) Measured in exhaust pipe (f ≤ 250Hz: ±5dB; f > 250Hz: ±3dB)

L<sub>W</sub>: Sound power level

S: Area of measurement surface (S<sub>r</sub>=1m<sup>2</sup>)

5) DIN 45635-11, Appendix A