

Technical data

4300 kWel; 11000 V, 50 Hz; Natural gas, MWM MN = 80

Design conditions

Comb. air temperature / rel. Humidity:	[°C / %]	35 / 60
Altitude:	[m]	850
Exhaust temp. after heat exchanger:	[°C]	120
NO _x Emission (tolerance - 8%):	[mg/m ³ n]	500

Fuel gas data:

MWM Methane number:	[-]	80
Lower calorific value:	[kWh/m ³]	10,2
Gas density:	[kg/m ³ n]	0,80
Standard gas:	Natural gas, MWM MN = 80	

Genset:

Engine:	TCG2032V16.	
Speed:	[1/min]	1000
Configuration / number of cylinders:	[-]	V / 16
Bore / Stroke / Displacement:	[mm / mm / dm ³]	260 / 320 / 272
Compression ratio:	[-]	12
Mean piston speed:	[m/s]	11
Mean lube oil consumption at full load:	[g/kWh]	0,3
Engine-management-system:	[-]	TEM EVO

Generator:

	AvK DiG 156 m6	
Voltage / voltage range / frequency:	[V / % / Hz]	11000 / ±10 / 50
Speed:	[1/min]	1000

Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	4300	3225	2150
Generator efficiency with cos Phi = 1 / ind	[%]	97,9	97,7	96,8
Engine power acc. ISO 3046-1:	[kW]	4390	3300	2220
Engine jacket water heat:	[kW ±8%]	1620	1167	812
Intercooler LT heat:	[kW ±8%]	404	290	188
Lube oil heat:	[kW ±8%]	507	414	357
Exhaust heat with temp. after heat exchanger:	[kW ±8%]	2329	1958	1497
Exhaust temperature:	[°C]	453	483	510
Exhaust mass flow, wet:	[kg/h]	23077	17680	12536
Combustion mass air flow - ISO 3046/1:	[kg/h]	22293	17073	12099
Radiation heat engine / generator:	[kW ±8%]	220 / 90	212 / 75	208 / 70
Fuel consumption:	[kW +5%]	10031	7771	5587
electrical / mechanical / thermal efficiency:	[%]	42,9 / 43,8 / 44,4	41,5 / 42,5 / 45,5	38,5 / 39,7 / 47,7
Total efficiency:	[%]	87,3	87,1	86,2

System parameters ¹⁾

Ventilation air flow (comb. air incl.) with ΔT = 15 K	[kg/h]	119600
Combustion air temperature minimum / design:	[°C]	25 / 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 / 300
Pre-pressure gas control unit selectable from / to: ²⁾	[bar]	0,5 / 10
Air bottle, volume / pressure	[dm ³ /s] / [bar]	2000 / 30
Starter motor:	[dm ³ / bar]	800 / 16
Lube oil content engine / base frame:	[dm ³]	1850 / -
Dry weight engine / genset:	[kg]	24890 / 51370

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	0 / 15
Water volume engine jacket / intercooler:	[dm ³]	570 / 51
KVS / Cv value engine jacket water / intercooler:	[m ³ /h]	93 / 62
Jacket water coolant temperature in / out:	[°C]	78 / 90
Intercooler coolant temperature in / out:	[°C]	40 / 46
Engine jacket water flow rate from / to:	[m ³ /h]	105 / 130
Water flow rate engine jacket water / intercooler:	[m ³ /h]	119 / 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 MWM "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)]	131	124	122	121	117	115	113	109	123 dB (A) (±2,5 dB(A))
Air-borne noise [dB(lin)]	99	109	104	101	99	99	104	101	109 dB (A) (±1,0 dB(A))