

Reference data sheet



Technical data

3000 kWel; 4160 V, 60 Hz; Natural gas, MN = 80

Design conditions

Comb. air temperature / rel. Humidity:	[°F] / [%]	77 / 60
Altitude:	[ft]	328
Exhaust temp. after heat exchanger:	[°F]	248
NO _x Emission (tolerance - 8%):	[g/bhph]	0,94

Fuel gas data: 2)

Methane number:	[-]	80
Lower calorific value:	[BTU/ft ³]	983,74
Gas density:	[lb/ft ³]	0,05
Standard gas:	Natural gas, MN = 80	

Genset:

Engine:	CG260-12	
Speed:	[1/min]	900
Configuration / number of cylinders:	[-]	V / 12
Bore / Stroke / Displacement:	[in] / [in] / [in ³]	10,2 / 12,6 / 12442
Compression ratio:	[-]	12,0
Mean piston speed:	[ft/s]	31,496063
Mean lube oil consumption at full load:	[lb/hr]	1,98412698
Engine-management-system:	[-]	TEM EVO

Generator:	Marelli MJH 710 MC8	
Voltage / voltage range / cos Phi:	[V] / [%] / [-]	4160 / ±10 / 1
Speed / frequency:	[1/min] / [Hz]	900 / 60

Energy balance

Load:	[%]	100	75	50
Electrical power COP acc. ISO 8528-1:	[kW]	3000	2250	1500
Engine jacket water heat:	[BTU/min±8%]	52651	38990	24703
Intercooler LT heat:	[BTU/min±8%]	15254	10416	6944
Lube oil heat:	[BTU/min±8%]	19239	15938	12864
Exhaust heat with temp. after heat exchanger:	[BTU/min±8%]	92381	76785	60107
Exhaust temperature:	[°F]	838	896	964
Exhaust mass flow, wet:	[lb/hr]	35726	26905	18931
Combustion mass air flow:	[lb/hr]	34549	25993	18281
Radiation heat engine / generator:	[BTU/min±8%]	9847 / 3927	9335 / 3415	8424 / 3017
Fuel consumption:	[BTU/min+5%]	389387	302016	214929
Electrical / thermal efficiency:	[%]	43,9 / 42,2	42,4 / 43,6	39,7 / 45,5
Total efficiency:	[%]	86,1	86,0	85,2

System parameters 1)

Ventilation air flow (comb. air incl.) with ΔT = 15K	[lb/hr]	196200
Combustion air temperature minimum / design:	[°F]	41 / 77
Exhaust back pressure from / to:	[inWC]	12 / 20
Maximum pressure loss in front of air cleaner:	[inWC]	2
Zero-pressure gas control unit selectable from / to: 2)	[inWC]	8 / 80
Pre-pressure gas control unit selectable from / to: 2)	[psi]	7 / 145
Air bottle, volume / pressure	[ft ³] / [psi]	71 / 435
Starter motor:	[ft ³ /s] / [psi]	28 / 232
Lube oil content engine / base frame:	[gal(US)]	383 / -
Dry weight engine / genset:	[lb]	41154 / 90831

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	0 / 35
Water volume engine jacket / intercooler:	[gal(US)]	114 / 13,5
KVS / Cv value engine jacket water / intercooler:	[ft ³ /h]	3143 / 2013
Jacket water coolant temperature in / out:	[°F]	176 / 194
Intercooler coolant temperature in / out:	[°F]	104 / 113
Engine jacket water flow rate from / to:	[gpm]	299 / 418
Water flow rate engine jacket water / intercooler:	[gpm]	360 / 242
Water pressure loss engine jacket water / intercooler:	[psi]	12 / 14
Lube oil temp. engine inlet max. / lube oil flow rate:	[°F] / [gpm]	176 / 440

1) See also "Layout of power plants":

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

3332580EC

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,Totz} [dB(lin)]	104	107	111	111	114	115	117	116	118	115	114	113	110	110	111	111	111	109	109	113	112	114	118	117	112	110	108	100	125	200	
Exhaust noise 4) L _{W,Octave} [dB(lin)]				139		140		137		135		130		128		126		117											137	16,9	

3) DIN EN ISO 3746

4) DIN 45635-11 Appendix A (±3 dB)

L_W: Sound power level

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