Reference Data Sheet

Technical data
4050 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]	0,93

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:	**CG260-16**	
Speed:	[1/min]	900
Configuration / number of cylinders:	[-]	V / 16
Bore / Stroke / Displacement:	[in] / [in] / [in^3]	10,2 / 12,6 / 16589
Compression ratio:	[-]	12,0
Mean piston speed:	[ft/s]	31,5
Mean lube oil consumption at full load:	[lb/hr]	2,7
Engine-management-system:	[-]	TEM EVO
Generator:	**Marelli MJH 800 LA8**	
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]	**4050**	**3037**	**2025**
Engine jacket water heat:	[BTU/min±8%]	88396	62839	43031
Intercooler LT heat:	[BTU/min±8%]	18954	12408	7456
Lube oil heat:	[BTU/min±8%]	35973	32387	26468
Exhaust heat with temp. after heat exchanger:	[BTU/min±8%]	93348	79175	62327
Exhaust temperature:	[°F ±43°F]	693	754	826
Exhaust mass flow, wet:	[lb/hr]	48460	35925	24553
Combustion mass air flow:	[lb/hr]	46886	34714	23695
Radiation heat engine / generator:	[BTU/min±8%]	12978 / 5863	9961 / 5123	7115 / 4554
Fuel consumption:	[BTU/min+5%]	520701	400544	283744
Electrical / thermal efficiency:	[%]	44,3 / 41,8	43,2 / 43,5	40,6 / 46,5
Total efficiency:	[%]	86,1	86,7	87,1

System parameters 1)

Ventilation air flow (comb. air incl.) with ΔT = 15K	[lb/hr]	265400
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)]	489 / -
Dry weight engine / genset:	[lb]	54873 / 117507

Cooling system

Glycol content engine jacket water / intercooler:	[% Vol.]	0 / 35
Water volume engine jacket / intercooler:	[gal(US)]	151 / 13,5
KVS / Cv value engine jacket water / intercooler:	[ft^3/h]	3178 / 2189
Jacket water coolant temperature in / out:	[°F]	172 / 194
Intercooler coolant temperature in / out:	[°F]	104 / 113
Engine jacket water flow rate from / to:	[gpm]	396 / 506
Water flow rate engine jacket water / intercooler:	[gpm]	504 / 286
Water pressure loss engine jacket water / intercooler:	[psi]	23 / 17
Lube oil temp. engine inlet max. / lube oil flow rate:	[°F] / [gpm]	176 / 498

3332510ED

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) $L_{W,Terz}$ [dB(lin)]	101,7	105,8	107,3	109,4	110,8	111,1	115,2	119,7	119,7	115,3	114,4	115,2	113,9	110,9	113,6	114,3	116,8	111,1	110,7	110,6	110,8	110,7	118	122,9	125,9	112	109,1	108,8	103,6	129,5 ±4dB(A)	220
Exhaust noise 4) $L_{W,Terz}$ [dB(lin)]	126,2	125,1	133,8	136,7	142,2	127,3	129,6	134,2	129,5	128,7	128,5	128,5	128,1	128	127,8	127,4	127,2	124,7	124,5	124,9	123,4	123,9	125,6	126	121,1	119,9	119,8	120,4	117,9	137,2 ±3dB(A)	16,9 5)

3) DIN EN ISO 3746 (σ_{R0}=±4 dB) 4) Measured in exhaust pipe (f ≤ 250Hz: ±5dB; f > 250Hz: ±3db) L_W: Sound power level S: Area of measurement surface (S_0=1m^2) 5) DIN 45635-11, Appendix A