



Technical Datasheet		GC248N6			
93800020039_V02_US	with engine	E3042D3			
Fuel		Natural Gas			
Voltage / Frequency		480 V		60 Hz	
Heating water temperatur (in/out)		°F 158 / 194			
NOx emissions ¹⁾		g/bhp-hr 0.5			
Intercooler 2nd stage temperatur (in)		°F --			
Exhaust gas temperature		°F 248			
Electrical power COP, parallel to grid acc. ISO 8528-1		%	100	75	50
Electrical power PRP, prime power acc. ISO 8528-5 G1		%			100
Energy balance					
Electrical power ^{2) 3)}		kWe	248	186	124
Energy input ^{5) 7)}		kBTU/hr	2495	2003	1521
Thermal output total ⁴⁾		kBTU/hr	1445	1205	973
Thermal output engine (block, lube oil, 1st stage intercooler) ⁴⁾		kBTU/hr	867	723	584
Thermal exhaust gas heat exchanger (120°C) ⁴⁾		kBTU/hr	578	482	389
Thermal output 2nd stage intercooler ⁴⁾		kBTU/hr	--	--	--
Engine power ISO 3046-1 ³⁾		bhp	349	263	180
Generator efficiency at power factor = 1		%	95.5	95.1	92.9
Electrical efficiency ^{5) 6)}		%	34.0	31.8	27.9
Total efficiency		%	91.9	91.9	91.9
CHP Coefficient			0.59	0.53	0.44
Power consumption ¹⁵⁾		kW			
Combustion air / Exhaust gas					
Combustion air volume flow ¹⁾		ft ³ /min	425	396	341
Combustion air mass flow		lb/hr	2057	1914	1649
Exhaust gas volume flow, wet ¹⁾		ft ³ /min	469	436	376
Exhaust gas volume flow, dry ¹⁾		ft ³ /min	379	353	304
Exhaust gas mass flow, wet		lb/hr	2180	2026	1748
Exhaust temperature after engine		°F	1132	1112	1076
Reference Fuel					
Natural gas		BTU/ft ³	CH4 > 95 Vol. %		
Sewage gas			--		
Biogas			--		
Landfill gas			--		
CO ₂ / CH ₄ volume ratio			--		
Minimum methane number		MN	70		
Range of heating value: design / operation range		BTU/ft ³	966 / 870 - 1111		
Exhaust gas emissions ⁶⁾					
NOx, stated as NO ₂ (dry)		g/bhp-hr	0.5		
CO (dry)		g/bhp-hr	1		
HCHO (dry) ⁷⁾		g/bhp-hr	--		
VOC (dry)		g/bhp-hr	0.7		
Otto-gas engine					
Number of cylinders / configuration			12 V		
Engine type			E3042D3		
Engine speed		rpm	1800		
Bore		in	5.12		
Stroke		in	5.59		
Displacement		in ³	1380		
Mean piston speed		ft/sec	27.9		
Compression ratio			12		
BMEP at nominal engine speed min ⁻¹		psi	111		
Lube oil consumption ⁸⁾		gal/hr	0.02		
Max. exhaust back pressure after genset / module		in H ₂ O	6.03		
Generator					
Rating power (F)		kVA	347		
Max. allowable p.f. inductive (overexcited) / capacitive (underexcited) ¹⁶⁾			0,8 / 1,0		
Voltage tolerance / frequency tolerance		%	± 5 / ± 5		
Max. ambient temperature		°F	104		
Max. installation altitude		ft	3281		
Engine cooling water system					
Coolant temperature (in/out)		°F	176 / 190		
Coolant flow rate ⁹⁾		gal/min		@	psi delta p
CVs value (Block, lubeoil and 1st stage) ¹⁰⁾					
Max. operation pressure (coolant before engine)		psi			
Exhaust gas heat exchanger (EGHE)					
Exhaust gas temperature (out)		°F	248		
Coolant temperature (in/out)		°F	190 / 198		
Coolant volumetric flow ⁹⁾		gal/min		@	psi delta p
CVs value ¹⁰⁾					
Max. operation pressure (coolant water)		psi			

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Oilcooler, external					
Coolant temperature (in/out)	°F				
Coolant volumetric flow ⁹⁾	gal/min		@		psi delta p
CV-Value ¹⁰⁾					
Max. operation pressure	psi				
Intercooler 2nd stage, external					
Coolant temperature (in/out)	°F				
Coolant volumetric flow ⁹⁾	gal/min		@		psi delta p
CVs value ¹⁰⁾				--	
Max. operation pressure in front of intercooler	psi				
Plate heat exchanger					
Coolant temperature (in/out)	°F	198 / 176			
Heating water temperatur (in/out)	°F	158 / 194			
Heating water volumetric flow ⁹⁾	gal/min	88.1	@	362.59	psi delta p
CVs value ¹⁰⁾				40.0	
Max. operation pressure (heating water)	psi			232	
Space ventilation					
Genset ventilation heat ¹¹⁾	kBTU/hr	109.2			
Combustion air temperature: (min./design/max.)	°F			50 / 77 / 77	
Min. engine room temperature ¹²⁾	°F			41	
Max. temperature difference ventilation air (in/out)	°F			36	
Min. ventilation air flow in (combustion+ventilation) ¹³⁾	ft ³ /min			3000	
Gearbox					
Gear ratio				--	
Thermal output gearbox (watercooled)	kBTU/hr				
Efficiency		--	--	--	--
Filling quantities					
Lube oil for engine	gal			9	
Coolant for engine	gal			66.0	
Coolant for intercooler	gal				
Heating water for plate heat exchanger	gal			2.6	
Engine sound level ¹⁴⁾ (1 meter distance, free field)					
Frequency	Hz	63	125	250	500
Sound pressure level	dB	69.0	74.4	80.9	87.5
Frequency	Hz	1000	2000	4000	8000
Sound pressure level	dB	78.8	75.3	73.3	68.7
Sum of pressure levels	Lin dB	89.3			
	dB A	85.7			
Sound power level	dB A	105.0			
Undampened exhaust noise (1 meter distance to outlet within 90°, free field)					
Frequency	Hz	63	125	250	500
Sound pressure level	dB	86.6	82.8	70.3	64.9
Frequency	Hz	1000	2000	4000	8000
Sound pressure level	dB	59.6	54.5	45.0	31.8
Sum of pressure levels	Lin dB	88.2			
	dB A	68.6			
Sound power level	dB A	80.5			
Dimensions					
Length	in			144.9	
Width	in			72.0	
Height	in			87.4	
Gross weight / dry weight	lb			10582 / 9921	
Power derating					
Altitude				1.2 % / 328 ft > 328 ft NN	
Combustion air temperature				1.0 % / 1.0 °F > 86 °F	
Intercooler 2nd stage temperature (in)				--	
Methane number				0,8 % / MN < 70	
Boundary conditions and consumables					
DK-BS-0001					
<p>1) Normal ft3 at p = 14.696 psi und T = 32 °F</p> <p>2) Generator gross power at nominal voltage, power factor = 1 and nominal frequency</p> <p>3) At standard reference conditions (ISO 3046-1); atmospheric pressure: 14.5 psi; air temperature: 77 °F; rel. air humidity 30 %</p> <p>4) Thermal output at layout temperature; tolerance +/- 8 %</p> <p>5) According to ISO 3046 (+ 5 % tolerance), using reference fuel used at nominal voltage, power factor = 1 and nominal frequency</p> <p>6) Deviations from the layout parameters respectively the reference fuel can have influence to the obtained efficiency and exhaust emissions</p> <p>7) Emission values during system parallel operation - where required with Oxcat</p> <p>8) Reference value at nominal load (without amount of oil exchange)</p> <p>9) Stated values for pure water, adaption for other cooling fluid composition necessary</p> <p>10) The CVs value declares the volumetric flow in gal/min at a pressure drop of 1 psi</p> <p>11) Only generator- and surface losses</p> <p>12) Frost-free conditions must be guaranteed</p> <p>13) Amount of ventilation air must be adapted to the gas safety concept</p> <p>14) All sound pressure levels at nominal load COP</p> <p>15) Power consumption of all electrical consumer, which are mounted at the module / aggregate</p> <p>16) Max. allowable cos phi at nominal power (view of producer)</p>					

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