Technical Data Sheet		GB2129N6				
93800050029_V01_US	with engine	20V4000L63				
			Natural gas			
Voltage / Frequency			**480 V**		**60 Hz**	
Heating water temperatur (in/out)	°F		**/**			
NOx emissions (dry, 5 % O_2) [1]	g/bhp-hr		**1**			
Intercooler 2nd stage temperatur (in)	°F		**104**			
Exhaust gas temperature	°F		**831**			
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	2129	1590	1051		
Energy input [5) 7)]	kBTU/hr	17551	13364	9317		
Thermal output total [4)]	kBTU/hr	4132	2954	1991		
Thermal output engine (block, lube oil, 1st stage intercooler) [4)]	kBTU/hr	4132	2954	1991		
Exhaust heat (248 °F) [4)]	kBTU/hr	(3927)	(3234)	(2418)		
Thermal output 2nd stage intercooler [4)]	kBTU/hr	478	348	236		
Engine power ISO 3046-1 [3)]	bhp	2950	2213	1475		
Generator efficiency at power factor = 1	%	97.3	97	96.3		
Electrical efficiency [5) 6)]	%	41.4	40.6	38.5		
Total efficiency	%	65	62.7	59.9		
CHP Coefficient		0.52	0.54	0.53		
Power consumption [15)]	kWe					
Combustion air / Exhaust gas						
Combustion air volume flow [1)]	ft³/min	5023	3736	2547		
Combustion air mass flow	lb/hr	24297	18073	12319		
Exhaust gas volume flow, wet [1)]	ft³/min	5267	3922	2677		
Exhaust gas volume flow, dry [1)]	ft³/min	4711	3479	2383		
Exhaust gas mass flow, wet	lb/hr	25130	18706	12760		
Exhaust temperature after turbocharger	°F	831	892	952		
Reference fuel						
Natural gas		CH_4 > 95 Vol. %				
Sewage gas		not applicable				
Biogas		not applicable				
Landfill gas		not applicable				
CO_2 / CH_4 volume ratio						
Minimum methane number	MN	80				
Range of heating value: design / operation range	BTU/ft³	1014.5 / 773.0 - 1062.8				
Exhaust gas emissions [6) 7)]						
NOx, stated as NO_2 (dry, 5 % O_2)	g/bhp-hr	1				
CO (dry, 5 % O_2)	g/bhp-hr	2				
HCHO (dry, 5 % O_2) [7)]	g/bhp-hr					
VOC (dry, 5 % O_2)	g/bhp-hr	0.7				
Otto-gas engine, lean burn operation with turbocharging						
Number of cylinders / configuration		20 V				
Engine typ		20V4000L63				
Engine speed	rpm	1500				
Bore	in	6.7				
Stroke	in	8.3				
Displacement	in³	5817.5				
Mean piston speed	ft/sec	34.4				
Compression ratio		12.8				
BMEP at nominal engine speed min-1	psi	267.8				
Lube oil consumption [8)]	gal/hr	0.2				
Max. exhaust back pressure after engine	in H_2O	24.11				
Generator						
Rating power (F)	kVA	2736				
Max. allowable p.f. inductive (overexcited) / capacitive (underexcited) [16]		0.8 / 1.0				
Voltage tolerance / frequency tolerance	%	± 5.0 / ± 5.0				
Max. ambient temperature	°F	104				
Max. installation altitude	ft	3281				
Engine cooling water system						
Coolant temperature (in/out)	°F	172 / 194				
Coolant flow rate [9)]	gal/min	378.65	@	34.8	psi delta p	
CVs value (Block, lubeoil and 1st stage) [10)]		64.2				
Max. operation pressure (coolant before engine)	psi	87				
Exhaust gas heat exchanger (EGHE)						
Exhaust gas temperature (out)	°F					
Coolant temperature (in/out)	°F	/				
Coolant volumetric flow [9)]	gal/min		@		psi delta p	
CVs value [10)]						
Max. operation pressure (coolant water)	psi					

Technical Data Sheet		GB2129N6				
93800050029_V01_US	with engine	20V4000L63				
Oilcooler, external						
Coolant temperature (in/out)						
Coolant volumetric flow [9]			@			psi delta p
CV-Value [10]						
Max. operation pressure						
Intercooler 2nd stage, external						
Coolant temperature (in/out)	°F	104 / 112				
Coolant volumetric flow [9]	gal/min	118.88	@	8.702		psi delta p
CVs value [10]		40.3				
Max. operation pressure in front of intercooler	psi	87				
Plate heat exchanger						
Coolant temperature (in/out)	°F	/				
Heating water temperatur (in/out)	°F	/				
Heating water volumetric flow [9]	gal/min		@			psi delta p
CVs value [10]						
Max. operation pressure (heating water)	psi					
Space ventilation						
Genset ventilation heat [11]	kBTU/hr	584				
Combustion air temperature: (min./design/max.)	°F	68 / 77 / 86				
Min. engine room temperature [12]	°F	59				
Max. temperature difference ventilation air (in/out)	°F	36				
Min. ventilation air flow in (combustion+ventilation) [13]	ft³/min	19000				
Gearbox						
Gear ratio		1.2				
Thermal output gearbox (watercooled)	kBTU/hr	34				
Efficiency		99.44	99.36	99.2		
Filling quantities						
Lube oil for engine	gal	92.46				
Coolant for engine	gal	81.89				
Coolant for intercooler	gal	6.08				
Heating water for plate heat exchanger	gal					
Engine sound level [14] (1 meter distance, free field)						
Frequency	Hz	**63**	**125**	**250**	**500**	
Sound pressure level	dB	83.3	96.5	92.6	97.1	
Frequency	Hz	**1000**	**2000**	**4000**	**8000**	
Sound pressure level	dB	94.5	91.7	87.2	93.8	
Sum of pressure levels	Lin dB	102.8				
	dB A	100.1				
Sound power level	dB A	120.3				
Undampened exhaust noise (1 meter distance to outlet within 90°, free field)						
Frequency	Hz	**63**	**125**	**250**	**500**	
Sound pressure level	dB	110.4	110.7	104.8	99.7	
Frequency	Hz	**1000**	**2000**	**4000**	**8000**	
Sound pressure level	dB	93.8	91.1	85.3	75.4	
Sum of pressure levels	Lin dB	114.4				
	dB A	102.1				
Sound power level	dB A	114.1				
Dimensions (Aggregate)						
Length	in	283				
Width	in	75				
Height	in	104				
Gross weight (dry weight)	lb	49758 (48193)				
Power derating						
Altitude						
Combustion air temperature						
Intercooler 2nd stage temperature (in)						
Methane number						
Boundary conditions and consumables						

1) Normal ft3 at p = 14.696 psi und T = 32 °F
2) Generator gross power at nominal voltage, power factor = 1 and nominal frequency
3) At standard reference conditions (ISO 3046-1); atmospheric pressure: 14.5 psi; air temperature: 77 °F; rel. air humidity 30 %
4) Thermal output at layout temperature; tolerance +/- 8 %
5) According to ISO 3046 (+ 5 % tolerance), using reference fuel used at nominal voltage, power factor = 1 and nominal frequency
6) Deviations from the layout parameters respectivitely the reference fuel can have influence to the obtained efficiency and exhaust emissions
7) Emission values during system parallel operation - where required with Oxcat
8) Reference value at nominal load (without amount of oil exchange)
9) Stated values for pure water, adaption for other cooling fluid composition necessary
10) The CVs value declares the volumetric flow in gal/min at a pressure drop of 1 psi
11) Only generator- and surface losses
12) Frost-free conditions must be guaranteed
13) Amount of ventilation air must be adapted to the gas safety concept
14) All sound pressure levels at nominal load COP
15) Power consumption of all electrical consumer, which are mounted at the module / aggregate
16) Max. allowable cos phi at nominal power (view of producer)

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