Technical Datasheet		GC175B6				
93800020091_V01_US	with engine	B3066L8				
Fuel			**Biogas**			
Voltage / Frequency			**480 V**		**60 Hz**	
Heating water temperatur (in/out)	℉		**158 / 194**			
NOx emissions [1]	g/bhp-hr		**2**			
Intercooler 2nd stage temperatur (in)	℉		**- -**			
Exhaust gas temperature	℉		**356**			
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	175	130	87	87	
Energy input [5) 7)]	kBTU/hr	1676	1321	976	976	
Thermal output total [4)]	kBTU/hr	795	669	522	522	
Thermal output engine (block, lube oil, 1st stage intercooler) [4)]	kBTU/hr	474	403	314	314	
Thermal exhaust gas heat exchanger (180℃) [4)]	kBTU/hr	321	266	208	208	
Thermal output 2nd stage intercooler [4)]	kBTU/hr	- -	- -	- -	- -	
Engine power ISO 3046-1 [3)]	bhp	247	186	127	127	
Generator efficiency at power factor = 1	%	94,9	93,8	91,6	91,6	
Electrical efficiency [5) 6)]	%	35,6	33,7	30,4	30,4	
Total efficiency	%	83,0	84,3	83,9	83,9	
CHP Coefficient		0,75	0,67	0,57	0,57	
Power consumption [15)]	kW					
Combustion air / Exhaust gas						
Combustion air volume flow [1)]	ft³/min	436	338	245	404	
Combustion air mass flow	lb/hr	2110	1634	1186	1953	
Exhaust gas volume flow, wet [1)]	ft³/min	489	380	277	453	
Exhaust gas volume flow, dry [1)]	ft³/min	427	331	241	396	
Exhaust gas mass flow, wet	lb/hr	2366	1839	1338	2189	
Exhaust temperature after turbocharger	℉	934	- -	- -	- -	
Reference Fuel						
Natural gas	BTU/ft³	- -				
Sewage gas		CH4 60 Vol. %; CO2 40 Vol. %				
Biogas		CH4 55 Vol. %; CO2 45 Vol. %				
Landfill gas		CH4 50 Vol. %; CO2 30 Vol. %; Rest N2				
CO_2 / CH_4 volume ratio		0,67				
Minimum methane number	MN	120				
Range of heating value: design / operation range	BTU/ft³	483 - 48 / 435 - 676				
Exhaust gas emissions [6)]						
NOx, stated as NO_2 (dry)	g/bhp-hr	2				
CO (dry)	g/bhp-hr	5				
HCHO (dry) [7)]	g/bhp-hr	- -				
VOC (dry)	g/bhp-hr	1				
Otto-gas engine						
Number of cylinders / configuration		6 R				
Engine typ		B3066L8				
Engine speed	rpm	1800				
Bore	in	5,12				
Stroke	in	6,10				
Displacement	in³	753				
Mean piston speed	ft/sec	30,5				
Compression ratio		13,8				
BMEP at nominal engine speed min^{-1}	psi	144				
Lube oil consumption [8)]	gal/hr	0,01				
Max. exhaust back pressure after genset / module	in H_2O	10,05				
Generator						
Rating power (F)	kVA	219				
Max. allowable p.f. inductive (overexcited) / capacitive (underexcited) [16]		0,8 / 1,0				
Voltage tolerance / frequency tolerance	%	± 5 / ± 5				
Max. ambient temperature	℉	104				
Max. installation altitude	ft	3281				
Engine cooling water system						
Coolant temperature (in/out)	℉	- - / - -				
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)	℉	356				
Coolant temperature (in/out)	℉	- - / - -				
Coolant volumetric flow [9)]	gal/min	- -	@	- -	psi delta p	
CVs value [10)]						
Max. operation pressure (coolant water)	psi	- -				

Technical Datasheet		GC175B6				
93800020091_V01_US	with engine	B3066L8				
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	201 / 180				
Heating water temperatur (in/out)	°F	158 / 194				
Heating water volumetric flow [9]	gal/min	44,0	@	14,50	psi delta p	
CVs value [10]		100,0				
Max. operation pressure (heating water)	psi	232				
Space ventilation						
Genset ventilation heat [11]	kBTU/hr	58,0				
Combustion air temperature: (min./design/max.)	°F	50 / 77 / 95				
Min. engine room temperature [12]	°F	41				
Max. temperature difference ventilation air (in/out)	°F	36				
Min. ventilation air flow in (combustion+ventilation) [13]	ft³/min	1766				
Gearbox						
Gear ratio		- -				
Thermal output gearbox (watercooled)	kBTU/hr	- -				
Efficiency		- -	- -	- -	- -	
Filling quantities						
Lube oil for engine	gal	5				
Coolant for engine	gal	62,1				
Coolant for intercooler	gal	1,32				
Heating water for plate heat exchanger	gal	4,0				
Engine sound level [14] (1 meter distance, free field)						
Frequency	Hz	**63**	**125**	**250**	**500**	
Sound pressure level	dB	67,4	76,9	78,4	85,7	
Frequency	Hz	**1000**	**2000**	**4000**	**8000**	
Sound pressure level	dB	80,5	76,3	71,1	73,0	
Sum of pressure levels	Lin dB	88,4				
	dB A	85,4				
Sound power level	dB A	104,5				
Undampened exhaust noise (1 meter distance to outlet within 90°, free field)						
Frequency	Hz	**63**	**125**	**250**	**500**	
Sound pressure level	dB	86,6	81,5	66,2	63,5	
Frequency	Hz	**1000**	**2000**	**4000**	**8000**	
Sound pressure level	dB	57,0	59,0	49,7	36,8	
Sum of pressure levels	Lin dB	87,8				
	dB A	67,5				
Sound power level	dB A	79,0				
Dimensions						
Length	in	144,9				
Width	in	73,6				
Height	in	84,3				
Gross weight / dry weight	lb	10362 / 9766				
Power derating						
Altitude		1.2 % / 328 ft > 328 ft NN				
Combustion air temperature		0,6 % / 1 °F > 86 °F				
Intercooler 2nd stage temperature (in)		- -				
Methane number		0,8 % / MN < 120				
Boundary conditions and consumables						
		DK-BS-0001				

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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07.09.2012
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