



Technical Data Sheet		GB854N5			
93800050309_V01_GB		with engine		8V4000L33	
Fuel		Natural gas			
Voltage / Frequency		400 V		50 Hz	
Heating water temperatur (in/out)		°C /			
NOx emissions (dry, 5 % O2) ¹⁾		mg/m ³ i.N. < 500			
Intercooler 2nd stage temperatur (in)		°C 40			
Exhaust gas temperature		°C 443			
Electrical power COP, parallel to grid acc. ISO 8528-1		100		75 50	
Electrical power PRP, prime power acc. ISO 8528-5 G1		%			
Energy balance					
Electrical power ²⁾³⁾		kW		854 641 427	
Energy input ⁵⁾⁷⁾		kW		1993 1548 1084	
Thermal output total ⁴⁾		kW		443 333 238	
Thermal output engine (block, lube oil, 1st stage intercooler) ⁴⁾		kW		443 333 238	
Exhaust heat (120 °C) ⁴⁾		kW		(448) (371) (276)	
Thermal output 2nd stage intercooler ⁴⁾		kW		49 42 29	
Engine power ISO 3046-1 ³⁾		kW		880 662 445	
Generator efficiency at power factor = 1		%		97 96.8 96	
Electrical efficiency ⁵⁾⁶⁾		%		42.8 41.4 39.4	
Total efficiency		%		65.1 62.9 61.3	
CHP Coefficient		1.93		1.92 1.79	
Power consumption ¹⁵⁾		kW			
Combustion air / Exhaust gas					
Combustion air volume flow ¹⁾		m ³ i.N./h		3493 2634 1801	
Combustion air mass flow		kg/h		4511 3402 2326	
Exhaust gas volume flow, wet ¹⁾		m ³ i.N./h		3497 2640 1806	
Exhaust gas volume flow, dry ¹⁾		m ³ i.N./h		3237 2437 1665	
Exhaust gas mass flow, wet		kg/h		4524 3413 2336	
Exhaust temperature after turbocharger		°C		443 472 502	
Reference fuel					
Natural gas H		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		kWh/m ³ i.N.		10.5 / 8.0 - 11.0	
Exhaust gas emissions ⁶⁾⁷⁾					
NOx, stated as NO ₂ (dry, 5 % O ₂)		mg/m ³ i.N.		< 500	
CO (dry, 5 % O ₂)		mg/m ³ i.N.		< 1000	
HCHO (dry, 5 % O ₂) ⁷⁾		mg/m ³ i.N.			
VOC (dry, 5 % O ₂)		mg/m ³ i.N.			
Otto-gas engine, lean burn operation with turbocharging					
Number of cylinders / configuration		8 V			
Engine type		8V4000L33			
Engine speed		1/min		1500	
Bore		mm		170	
Stroke		mm		210	
Displacement		dm ³		38.1	
Mean piston speed		m/s		10.5	
Compression ratio		12.8			
BMEP at nominal engine speed min-1		bar		18.5	
Lube oil consumption ⁸⁾		dm ³ /h		0.2	
Max. exhaust back pressure after engine		mbar		60	
Generator					
Rating power (F)		kVA		1445	
Max. allowable p.f. inductive (overexcited) / capacitive (underexcited) ¹⁶⁾		0.8 / 0.95			
Voltage tolerance / frequency tolerance		± 10.0 / ± 5.0			
Max. ambient temperature		°C 40			
Max. installation altitude		m 1000			
Engine cooling water system					
Coolant temperature (in/out)		°C		78 / 90	
Coolant flow rate ⁹⁾		m ³ /h		35 @ 1.3 bar delta p	
CVs value (Block, lubeoil and 1st stage) ¹⁰⁾		30.7			
Max. operation pressure (coolant before engine)		bar		6	
Exhaust gas heat exchanger (EGHE)					
Exhaust gas temperature (out)		°C			
Coolant temperature (in/out)		°C /			
Coolant volumetric flow ⁹⁾		m ³ /h		@ bar delta p	
CVs value ¹⁰⁾					
Max. operation pressure (coolant water)		bar			

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Oilcooler, external					
Coolant temperature (in/out)					
Coolant volumetric flow ⁹⁾			@		bar delta p
CV-Value ¹⁰⁾					
Max. operation pressure					
Intercooler 2nd stage, external					
Coolant temperature (in/out)	°C	40 / 42			
Coolant volumetric flow ⁹⁾	m ³ /h	22	@	0.7	bar delta p
CVs value ¹⁰⁾				26.3	
Max. operation pressure in front of intercooler	bar			6	
Plate heat exchanger					
Coolant temperature (in/out)	°C	/			
Heating water temperatur (in/out)	°C	/			
Heating water volumetric flow ⁹⁾	m ³ /h		@		bar delta p
CVs value ¹⁰⁾					
Max. operation pressure (heating water)	bar				
Space ventilation					
Genset ventilation heat ¹¹⁾	kW	58			
Combustion air temperature: (min./design/max.)	°C			20 / 25 / 30	
Min. engine room temperature ¹²⁾	°C			15	
Max. temperature difference ventilation air (in/out)	K			20	
Min. ventilation air flow in (combustion+ventilation) ¹³⁾	m ³ i.N./h			12000	
Gearbox					
Gear ratio					
Thermal output gearbox (watercooled)	kW				
Efficiency					
Filling quantities					
Lube oil for engine	dm ³			160	
Coolant for engine	dm ³			135	
Coolant for intercooler	dm ³			15	
Heating water for plate heat exchanger	dm ³				
Engine sound level ¹⁴⁾ (1 meter distance, free field)					
Frequency	Hz	63	125	250	500
Sound pressure level	dB	75.9	85.8	87.5	90.8
Frequency	Hz	1000	2000	4000	8000
Sound pressure level	dB	86.5	86.2	91.6	95.9
Sum of pressure levels	Lin dB	99.2			
	dB A	98.1			
Sound power level	dB A	117.2			
Exhaust noise (1 meter distance to outlet within 90°, free field)					
Frequency	Hz	63	125	250	500
Sound pressure level	dB	101.1	117.9	109.3	103.9
Frequency	Hz	1000	2000	4000	8000
Sound pressure level	dB	96.0	94.2	90.4	85.1
Sum of pressure levels	Lin dB	118.7			
	dB A	106.0			
Sound power level	dB A	118.2			
Dimensions (Aggregate)					
Length	mm			4106	
Width	mm			1986	
Height	mm			2251	
Gross weight (dry weight)	kg			10350 (10000)	
Power derating					
Altitude					
Combustion air temperature					
Intercooler 2nd stage temperature (in)					
Methane number					
Boundary conditions and consumables					
Systems and consumables have to conform to the following actual company standards:				DK-BS-0002	
<p>1) Normal cubic meter at 1013,25 mbar und T = 273,15 K</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: 1000 mbar; air temperature: 25 °C; 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 m³/h at a pressure drop of 1 bar</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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