Technical data 50 Hz TBG 616 V 8K, Bio gas, 500 NOx

Power : ISO standard power ICN
Speed : 1500 min^{-1}
Speed governor : TEM

Fuel gas : Bio gas (65% CH4 / 35% CO2 or 50% CH4 / 27% CO2, Rest N2)
Heating value (LHV) : >= 5.0 kWh/m³n
Starter motor : 5,4 kW, 24V DC
Emission NOx : <= 500.0 mg/m³n

Engine type		**TBG 616 V 8K wet exhaust manifold without inliner**		
Number of cylinder / configuration			8 V	
Bore / stroke		mm	132.0 / 160.0	
Displacement		dm³	17.5	
Compression ratio			12.0 : 1	
Mean piston speed		m / s	8.0	
Lube oil content		dm³	70	
Lube oil consumption at full load	+ 20%	g / kWh	0.30	mineral oil
Engine jacket water volume/ Kvs value		dm³ / m³/h	28 / 30.8	- with glycol
Engine jacket water temperature in / out max.		°C	78 / 90	(78 / 90)
Engine jacket water flow rate min. / max.		m³/h	16 / 30	
Engine jacket water flow rate / pressure loss		m³/h / bar	22.6 / 0.54	(24.3 / 0.62)
Intercooler coolant volume engine / Kvs value		dm³ / m³/h	3.0 / 18.8	
Intercooler coolant temperature in / out		°C	40.0 / 42.3	(40.0 / 42.5)
Intercooler coolant flow rate / pressure loss		m³/h / bar	8.0 / 0.18	(8.0 / 0.18)
Generator				
Generator brand / type			Marelli M8B 400 SB 4 or equal	
Voltage / frequency		V / Hz	400 / 50	
Generator efficiency	(with power factor = 1.00)	%	96.4	96.1 95.2

Load		**%**	**100**	**75**	**50**
Engine power according ISO 3046/1		kW	323	242	162
Mean effective pressure		bar	14.8	11.1	7.4
Exhaust temperature	approx.	°C	359	368	375
Exhaust mass flow wet	approx.	kg / h	1802	1383	954
Combustion air mass flow - ISO 3046/1	approx.	kg / h	1594	1221	839

Energy balance	(tolerance for heat rejection ± 8%)				
Electrical power	(with power factor = 1.00)	kWel	311	233	154
Jacket water heat		kW	306	246	179
Intercooler LT heat with coolant temperature	40 °C	kW	21	15	9
Exhaust heat cooled to	120 °C	kW	132	106	75
Exhaust heat cooled to	150 °C	kW	115	93	66
Lube oil heat					
Engine radiation heat		kW	20	20	20
Generator radiation heat		kW	12	9	8
Fuel consumption	(tolerance + 5%)	kW	878	686	485
Specific fuel consumption		kWh / kWh	2.72	2.83	2.99
Mechanical efficiency		%	36.8	35.3	33.4
Electrical efficiency		%	35.4	34.0	31.8
Thermal efficiency		%	49.9	51.3	52.4
Total efficiency		%	85.3	85.3	84.2

System parameters				
Ventilation air flow for	ΔT = 15 K	approx. kg / h	9236	(including combustion air)
Combustion air temperature minimum / design	Altitude	°C	20 / 25	100 m
Exhaust backpressure minimum / maximum		mbar	30.0 / 50.0	
Maximum pressure loss in front of air cleaner		mbar	5.0	
Gas flow pressure, fixed between		mbar	20.0 / 100.0	(pressure variation ± 10%)
Starter battery 24V, capacity required		Ah	143	
Dry weight engine		kg	1810	
Dry weight genset		kg	3990	

Noise emissions (at 1m)

TBG 616 V 8K	Frequency band	Hz	63	125	250	500	1000	2000	4000	8000
Exhaust noise	120 dB(A) ± 2.5	dB(lin)	108	125	123	116	114	112	107	103
Air-borne noise	97 dB(A) ± 1.0	dB(lin)	85	85	91	93	87	88	92	91