C13 TE3A

387 kW (1500 rpm) - 398 kW (1800 rpm)

1/ GENERAL		1500 rpm	1800 rpm
Engine model		C13 TE3A	
Basic engine type		F3BE0685A*B101 - 8050770 XZ	
Number of cylinders		6	
Firing order (cylinder 1 nearest to fan)		1-4-2-6-3-5	
Cylinder arrangement		in line	
Valves per cylinder		4	
Cycle		diesel 4 stroke	
Injection system		direct E.U.I	
Electronic engine control unit		BOSCH EDC7 UC31	
Induction System		turbo aftercooler air/air	
Bore	mm	135	
Stroke	mm	150	
Total displacement	lit	12,88	
Mean piston speed	m/s	7,5	9
Compression ratio		16,5 : 1	
Flywheel rotation		anti clockwise viewed on flywheel	
Housing flywheel		SAE 1	
Flywheel		14"	
Moment of inertia			
without flywheel	kgm^2	1,05	
flywheel only	kgm^2	1,44	
BMEP gross			
Prime Power	bar/kPa	22,6 / 2258,6	19,8 / 1976,3
Stand-by Power	bar/kPa	24,8 / 2484,5	21,7 / 2173,9
Dry weight (including cooling package)	kg	~ 1228	
Energy to coolant	kcal/kWh	370	380
Energy to charge cooler	kcal/kWh	197	236
Energy to radiation	kcal/kWh	32	39
Dimensions L x W x H	mm	2324 x 1270 x 1546,5	

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	295,8	307,6
Prime Power	(gross)	kWm	366,2	384,5
Stand-By Power	(gross)	kWm	401,0	423,0
Fan consumption		kWm	15	25
Continuous Power	(net)	kWm	281,6	282,6
Prime Power	(net)	kWm	352	360
Stand-By Power	(net)	kWm	387	398
Performance condition				
temperature		°C	≤ 40	
altitude a.s.l		m	≤ 1000	
Derating				
temperature > T 40°C		%/5°C	4%	
altitude >1000 <3000 m		%/500m	3%	
altitude >3000 m		%/500m	6%	

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3/ COOLING SYSTEM			1500 rpm	1800 rpm
Type			liquid	
Recommanded coolant			water + 50 % paraflu 11	
Coolant capacity				
engine only		liter	20	
radiator and hoses		liter	48	
Coolant pump flow		l/min	461	553
Pressure cap setting		kPa (bar)	70 (0,7)	
Shutdown switch setting		°C	103	
Maximum additional restriction		Pa	196	
Air To Boil	Prime Power	°C	50	49
Fan				
diameter		mm	700	
number of blades			8	
drive ratio			1,37 : 1	
speed		rpm	2055	2466
air flow		m^3/s	6,8	8,5
power consumption		kWm	15	25

4/ LUBRICATION SYSTEM		1500 rpm	1800 rpm
Oil sump capacity			
max	liter	27	
min	liter	14	
Oil system capacity including filter	liter	35	
Oil pressure at rated speed	kPa	250-500	
Oil temperature			
normal	°C	---	
max	°C	120	
Engine Angularity			
longitudinal	degrees	30°	
transverse	degrees	30°	
Servicing interval	hours	600	
Oil specification		ACEA E3/E5	
Oil consumption	%fuel	< 0,2	

5/ INTAKE SYSTEM		1500 rpm	1800 rpm
Air consumption at 100 % of load	m^3/h (Kg/h)	1770 (2131,5)	1974 (2376,6)
Air intake restriction, clean filter	kPa (mbar)	2 (20)	
Air intake restriction, dirty filter	kPa (mbar)	5 (50)	
Air filter type		dry	

6/ EXHAUST SYSTEM		1500 rpm	1800 rpm
Gas flow at stand-by Power	kg/h	2210	2463
Max temperature at PRP (25°C)	°C	445	450
Max allowable back pressure	kPa (mbar)	5 (50)	
Energy to exhaust	kcal/kWh	703	734

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7/ FUEL SYSTEM		1500 rpm	1800 rpm
Fuel consumption at			
Stand-By	gr/kWh (l/h) [kg/h]	208,1 (98,5) [82,7]	219 (108,7) [91,3]
Full load	gr/kWh (l/h) [kg/h]	208 (87,5) [73,5]	214,3 (98,1) [82,4]
80%	gr/kWh (l/h) [kg/h]	203,6 (72,5) [60,9]	222,1 (82,5) [69,3]
50%	gr/kWh (l/h) [kg/h]	205 (48,6) [40,8]	222,1 (55) [46,2]
Fuel specifications		EN 590	
Feed pump max suction head	m	---	

8/ ELECTRIC SYSTEM		1500 rpm	1800 rpm
Voltage (negative to ground)	V	24	
Starter motor			
make		DENSO	
power	kW	6	
pull current	Amp	12	
hold current	Amp	12	
break away current +20°C	Amp	1250	
cranking current +20°C	Amp	0	
Number of teeth on starter motor		10	
Number of teeth on flywheel		155	
Starting batteries			
recommended capacity	Ah 2x	185	
discharge current	Amp	1200	
(EN 50342)			
Alternator			
voltage	V	28	
charge	Amp	90	

9/ COLD STARTING		1500 rpm	1800 rpm
Without air preheating	°C	-10	
With air preheating	°C	-25	

10/ EMISSION GASEOUS AND PARTICLES			1500 rpm	1800 rpm
No_x	Oxides of nitrogen	gr/kWh	5,20	-
HC	Hydrocarbons	gr/kWh	0,13	-
No_x+HC		gr/kWh	5,33	5,15
CO	Carbon monoxide	gr/kWh	0,35	0,37
PT	Particles	gr/kWh	0,061	0,082

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