

C87 TE1D

255 kW @ 1500 rpm - 276 kW @ 1800 rpm

GENERAL		1500 rpm	1800 rpm
Engine model		C87 TE1D	
Basic engine		F2CE9685A*E001 - 504165736	
Number of cylinders		6	
Firing order (N° 1 nearest to fan)		1-4-2-6-3-5	
Cylinder arrangement		in line	
Valves per cylinder		4	
Cycle		diesel 4 stroke	
Injection system		ECR	
Electronic engine control unit		BOSCH EDC7 UC31	
Induction System		Turbo aftercooler air/air	
Bore	mm	117	
Stroke	mm	135	
Total displacement	lit	8.7	
Mean piston speed	m/s	6.75	8.10
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	0.30
	flywheel only	kgm ²	1.94
BMEP gross			
	Prime Power	bar/kPa	22 (2200) 20.2 (2020)
	Stand-by Power	bar/kPa	24.2 (2420) 22.2 (2220)
Dry weight (including cooling package)	kg	~ 1220	
Energy to coolant	kcal/kWh	327	309
Energy to charge cooler	kcal/kWh	225	215
Energy to radiation	kcal/kWh	68	118
Dimensions L x W x H	mm	2042 x 1055 x 1394	

PERFORMANCES		1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	191.2 211
Prime Power	(gross)	kWm	239 263.6
Stand-By Power	(gross)	kWm	263 290
Fan consumption		kWm	6.8 10
Continuous Power	(net)	kWm	184,7 201
Prime Power	(net)	kWm	232.2 253.6
Stand-By Power	(net)	kWm	256.2 280
Performance condition			
	temperature	°C	≤ 40°
	altitude a.s.l	m	≤ 1000
Derating			
	temperature > T 40°C	%/5°C	3%
	altitude > 1000 < 3000 m	%/500m	3%
	altitude > 3000 m	%/500m	6%

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COOLING SYSTEM			1500 rpm	1800 rpm
Type			liquid	
Recommended coolant			water + 50 % paraflu 11	
Coolant capacity				
engine only	liter		15	
radiator and hoses	liter		48	
Coolant pump flow	l/min		239.5	287.5
Pressure cap setting	kPa (bar)		70 (0.7)	
Shutdown switch setting	°C		103°	
Maximum additional restriction	Pa		196	
Air To Boil	Prime Power	°C	55°	52°
Fan				
diameter	mm		700	
number of blades			8	
drive ratio			1.03 : 1	
speed	rpm		1545.0	1854.0
air flow	m ³ /s		5.14	6.5
power consumption	kWm		6.8	10

LUBRICATION SYSTEM			1500 rpm	1800 rpm
Oil sump capacity				
max	liter		23	
min	liter		12.5	
Oil system capacity including filter	liter		28	
Oil pressure at rated speed	kPa		300 - 500	
Oil temperature				
normal				
max			120	
Engine angularity				
longitudinal	degrees		30°	
transverse	degrees		30°	
Servicing interval	hours		600	
Oil specification			ACEA E3/E5	
Oil consumption	%fuel		< 0.2	

INTAKE SYSTEM			1500 rpm	1800 rpm
Air consumption at 100 % of load	m ³ /h (Kg/h)		1200 (1440)	1248 (1497)
Air intake restriction, clean filter	kPa (mbar)		2 (20)	
Air intake restriction, dirty filter	kPa (mbar)		5 (50)	
Air filter type			dry	

EXHAUST SYSTEM			1500 rpm	1800 rpm
Gas flow (stand by Power)	kg/h		1495	1557
Max temperature at PRP (25°C)	°C		488	500
Max allowable back pressure	kPa (mbar)		5 (50)	
Energy to exhaust	kcal/kWh		650	668

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FUEL SYSTEM			1500 rpm	1800 rpm
Fuel consumption at				
Stand-By	gr/kWh (l/h) [kg/h]		200.9 (64.5) [53.8]	205 (72.3) [60.7]
Full load	gr/kWh (l/h) [kg/h]		205.4 (58.5) [49.1]	204.5 (64.3) [54.7]
80%	gr/kWh (l/h) [kg/h]		209.3 (47.6) [40]	215 (54) [45.4]
50%	gr/kWh (l/h) [kg/h]		225 (35.4) [29.7]	225 (38.8) [32.6]
Fuel specifications			EN 590	
Feed pump max suction head	m		-	

ELECTRIC SYSTEM			1500 rpm	1800 rpm
Voltage (negative to ground)	V		24	
Starter motor				
make			DENSO	
power	kW		4,5	
pull current	Amp		12	
hold current	Amp		12	
break away current (+20°C)	Amp		1020	
cranking current (+20°C)	Amp		-	
Number of teeth on starter motor			10	
Number of teeth on flywheel			149	
Starting batteries				
recommended capacity	Ah	2 x	185	
discharge current (EN 50342)	Amp		1200	
Alternator				
voltage	V		28	
charge	Amp		90	

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

EMISSION GASEOUS AND PARTICLES			1500 rpm	1800 rpm
No _x	Oxides of nitrogen	gr/kWh	5.54	-
HC	Hydrocarbons	gr/kWh	0,10	-
No _x +HC		gr/kWh	5.64	3.4
CO	Carbon monoxide	gr/kWh	0.20	0.6
PT	Particles	gr/kWh	0.06	0.13