

C87 TE3F

256 kW (1500 rpm)

Engine C87 TE3F

1/ GENERAL

1500 rpm

Engine model		CURSOR87 TE3F
Basic engine type		F2CE9685C*E003 - 5801367162
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		direct common rail
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	6,8
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	0,3
flywheel only	kgm ²	1,94
Degree of irregularity at PRP		0,035
BMEP gross		
Prime Power	bar/kPa	22 (2197)
Stand-by Power	bar/kPa	24,2 (2418)
Dry weight (including cooling package)	kg	~ 1050
Energy to coolant	kcal/kWh	316
Energy to charge cooler	kcal/kWh	150
Energy to radiation	kcal/kWh	133
Dimensions L x W x H	mm	2050 x 1055 x 1380

2/ PERFORMANCES

1500 rpm

Continuous Power	(gross)	kWm	191,2
Prime Power	(gross)	kWm	239
Stand-By Power	(gross)	kWm	263
Fan consumption		kWm	6,8
Continuous Power	(net)	kWm	185,5
Prime Power	(net)	kWm	232
Stand-By Power	(net)	kWm	256
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%

3/ COOLING SYSTEM

1500 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
Thermostat: start to open	°C	85
Thermostat: fully open	°C	79
Engine coolant outlet max temp.	°C	85
Engine coolant inlet temp.	°C	95
Pressure cap setting	kPa (bar)	70 (0,7)
Shutdown switch setting	°C	103
Maximum additional restriction	Pa	196
Air To Boil	Prime Power	°C
		49
Fan		
diameter	mm	700
number of blades		8
drive ratio		1,03 : 1
speed	rpm	1545
air flow	m ³ /s	5,1
power consumption	kWm	6,8

4/ LUBRICATION SYSTEM

1500 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	°C	0
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

Air consumption at 100 % of load	m ³ /h (Kg/h)	1025 (1230)
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

Gas flow at stand-by Power	kg/h	1285
Max temperature at PRP (25°C)	°C	488
Max allowable back pressure	kPa (mbar)	5 (50)
Energy to exhaust	kcal/kWh	650

7/ FUEL SYSTEM

1500 rpm

Fuel consumption at		
Stand-By	gr/kWh (l/h) [kg/h]	209 (65,5) [55]
Full load	gr/kWh (l/h) [kg/h]	215 (61) [51]
80%	gr/kWh (l/h) [kg/h]	220(55) [46]
50%	gr/kWh (l/h) [kg/h]	230 (35,7) [30]
Fuel specifications		EN 590
Feed pump max suction head	m	-

8/ ELECTRIC SYSTEM

1500 rpm

Voltage (negative to ground)	V	24
Starter motor		
make		DENSO
power	kW	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	2x	120
discharge current	Amp	540
(EN 50342)		
Alternator		
voltage	V	28
charge	Amp	90

9/ COLD STARTING

1500 rpm

Without air preheating	°C	-10
With air preheating	°C	-25

10/ EMISSION GASEOUS AND PARTICLES

1500 rpm

No _x	Oxides of nitrogen	gr/kWh	3,76
HC	Hydrocarbons	gr/kWh	0,09
No _x +HC		gr/kWh	3,85
CO	Carbon monoxide	gr/kWh	0,53
PT	Particles	gr/kWh	0,07