N45 SM3

81 kW (1500 rpm) - 87 kW (1800 rpm)

1/ GENERAL		1500 rpm	1800 rpm
Engine model		N45 SM3	
Basic engine		F4GE0455A*B601 - 5801734702	
Number cylinders		4	
Firing order (N°1 nearest to fan)		1-3-4-2	
Cylinder arrangement		in line	
Valves per cylinder		2	
Type		diesel 4 stroke	
Injection system		direct	
Induction System		Turbocharged	
Bore	mm	104	
Stroke	mm	132	
Total displacement	liter	4,5	
Mean piston speed	m/s	6,6	7,9
Compression ratio		17,5 : 1	
Flywheel rotation		anti clockwise viewed on flywheel	
Housing flywheel		SAE 3	
Flywheel		11"1/2	
Moment of inertia			
without flywheel	kgm^2	0,14	
flywheel only	kgm^2	0,71	
BMEP			
Prime Power	bar/kPa	13,26 / 1326	11,8 / 1180
Stand-by Power	bar/kPa	14,57 / 1457	13 / 1300
Dry weight (including cooling package)	kg	~450	
Energy to coolant	kcal/kWh	412	info not yet available
Energy to radiation	kcal/kWh	335	info not yet available
Dimensions L x W x H	mm	1259 x 657 x 1016	

2/ PERFORMANCES			1500 rpm	1800 rpm
Continuous Power	(gross)	kWm	59,7	info not yet available
Prime Power	(gross)	kWm	74,6	81
Stand-By Power	(gross)	kWm	82,0	89
Fan consumption		kWm	1,3	2,25
Continuous Power	(net)	kWm	58,4	info not yet available
Prime Power	(net)	kWm	73,3	78,8
Stand-By Power	(net)	kWm	81	86,8
Performance conditions				
temperature		°C	≤ 40	
altitude a.s.l		m	≤ 1000	
Derating				
temperature > T 40°C		%/5°C	3%	
altitude >1000 <3000 m		%/500m	0,03	
altitude > 3000 m		%/500m	6%	

FPT POWERTRAIN TECHNOLOGIES

N45 SM3

81 kW (1500 rpm) - 87 kW (1800 rpm)

3/ COOLING SYSTEM		1500 rpm	1800 rpm
Type		liquid	
Recommanded coolant		water + 50%paraflu 11	
Coolant capacity			
motor only	liter	8,5	
radiator and hose	liter	10	
Coolant pump flow	l/min	103,3	info not yet avaiable
Pression cap setting	kPa (bar)	70 (0,7)	
Shutdown switch setting	°C	103	
Maximal additional restriction	Pa	147	
Air To Boil Prime Power	°C	49	info not yet avaiable
Fan			
diameter	mm	500	
number of blades		8	
drive ratio		1,41 : 1	
speed	rpm	2115,0	2538,0
air flow	m^3/s	2,2	info not yet avaiable
power consumption	kWm	1,3	2,3

4/ LUBRICATION SYSTEM		1500 rpm	1800 rpm
Oil sump capacity			
max	liter	8,5	
min	liter	5,5	
Oil system capacity including filters	liter	12,8	
Oil pressure at PRP	kPa	300 - 500	
Oil temperature			
normal	°C	---	
max	°C	120	
Engine angularity			
longitudinal	degrees	25°	
trasverse	degrees	25°	
Servicing intervall	hours	800	
Oil specification		ACEA E3 / E5	
Oil consumption	%fuel	< 0,1	

5/ INTAKE SYSTEM		1500 rpm	1800 rpm
Air consumption at 100% of load	m^3/h (Kg/h)	273 (327)	info not yet avaiable
Air intake restriction clean filter	kPa (mbar)	2 (20)	
Air intake restriction dirty filter	kPa (mbar)	5 (50)	
Air filter type		dry	

6/ EXHAUST SYTEM		1500 rpm	1800 rpm
Gas flow at stand by power	kg/h	345	info not yet avaiable
Max temperature at PRP (25°C)	°C	516	510
Max allowable back pressure	kPa (mbar)	5 (50)	
Energy to exhaust	kcal/kWh	543	info not yet avaiable

FPT POWERTRAIN TECHNOLOGIES

7/ FUEL SYSTEM		1500 rpm	1800 rpm
Fuel consumption at			
Stand-By	gr/kWh (l/h) [kg/h]	215.8 (21.2) [17.7]	224.7 (24) [20]
full load PRP	gr/kWh (l/h) [kg/h]	216.7 (19.4) [16.17]	222.2 (21.6) [18]
80%	gr/kWh (l/h) [kg/h]	215.4 (15.4) [12.86]	226.6 (15.4) [14.5]
50%	gr/kWh (l/h) [kg/h]	214.4 (9.6) [8]	224.7 (10.9) [9.1]
Fuel specifications		EN 590	
Fuel pump max suction head	m	---	
Injection pump	type STANADYNE	DB4429	

8/ ELECTRIC SYSTEM		1500 rpm	1800 rpm
Voltage (negative to ground)	V	12	
Starter motor			
make		Bosch	
power	kW	3	
pull current	Amp	60	
hold current	Amp	12	
break away current(+20°C)	Amp	1580	
cranking current (+20°C)	Amp		
Number of teeth on Starter motor		10	
Number of teeth on flywheel		125	
Starting batteries			
recommended capacity	Ah	1 x 100	
discharge current	Amp	650	
(EN 50342)			
Stop solenoid energized to run			
Alternator			
voltage	V	14	
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	-	-
HC	Hydrocarbons	gr/kWh	-	-
No_x+HC		gr/kWh	-	-
CO	Carbon monoxide	gr/kWh	-	-
PT	Particles	gr/kWh	-	-

Date of update September 2014
Specifications subject to change without notice