

# N45 SM3

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

Engine N45 SM3

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 <sup>2</sup>	0,14	
	flywheel only	kgm <sup>2</sup>	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%	

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3/ COOLING SYSTEM			1500 rpm	1800 rpm
Type			liquid	
Recommended 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 available
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 available
Fan				
diameter	mm		500	
number of blades			8	
drive ratio			1,41 : 1	
speed	rpm		2115,0	2538,0
air flow	m <sup>3</sup> /s		2,2	info not yet available
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 <sup>3</sup> /h (Kg/h)		273 (327)	info not yet available
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 available
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 available

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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 <sub>x</sub>	Oxides of nitrogen	gr/kWh	-	-
HC	Hydrocarbons	gr/kWh	-	-
No <sub>x</sub> +HC		gr/kWh	-	-
CO	Carbon monoxide	gr/kWh	-	-
PT	Particles	gr/kWh	-	-