

N45 SM2A

73 kW (1500 rpm)

Engine N45 SM2A

1/ GENERAL

1500 rpm

Engine model	N45SM2A-5	
Basic engine type	F4GE0455A*F650 - 504253543	
Number cylinders	4	
Firing order (N° 1 nearest to fan)	1-3-4-2	
Cylinder arrangement	in line	
Valves per cylinder	2	
Cycle	diesel 4 stroke	
Injection system	direct	
Induction System	Turbocharged	
Bore	mm	104
Stroke	mm	132
Total displacement	lit	4,5
Mean piston speed	m/s	6,6
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 gross		
Prime Power	bar/kPa	12,0 / 1196,0
Stand-by Power	bar/kPa	13,2 / 1315,6
Dry weight (including cooling package)	kg	~450
Energy to coolant	kcal/kWh	510,8
Energy to radiation	kcal/kWh	172
Dimensions L x W x H	mm	1259 x 657 x 1016

2/ PERFORMANCES

1500 rpm

Continuous Power	(gross)	kWm	54,2
Prime Power	(gross)	kWm	67,4
Stand-By Power	(gross)	kWm	74
Fan consumption		kWm	1,3
Continuous Power	(net)	kWm	52,9
Prime Power	(net)	kWm	66,1
Stand-By Power	(net)	kWm	72,7
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 + paraflu 50%
Coolant capacity			
engine only	liter		8,5
radiator and hoses	liter		10
Coolant pump flow	l/min		103,3
Pressure cap setting	kPa (bar)		70 (0,7)
Shutdown switch setting	°C		103
Maximum additional restriction	Pa		147
Air To Boil	Prime Power	°C	55
Fan			
diameter	mm		500
number of blades			8
drive ratio			1,41 : 1
speed	rpm		2115
air flow	m ³ /s		2,2
power consumption	kWm		1,3

4/ LUBRICATION SYSTEM

1500 rpm

Oil sump capacity			
max	liter		8,5
min	liter		5,5
Oil system capacity including filter	liter		12,8
Oil pressure at rated speed	kPa		300 - 500
Oil temperature			
normal	°C		---
max	°C		120
Engine angularity			
longitudinal	degrees		25°
transverse	degrees		25°
Servicing interval	hours		600
Oil specification			ACEA E3 / E5
Oil consumption	%fuel		< 0,1

5/ INTAKE SYSTEM

1500 rpm

Air consumption at 100 % of load	m ³ /h (Kg/h)		295 (354)
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		370
Max temperature at PRP (25°C)	°C		525
Max allowable back pressure	kPa (mbar)		5 (50)
Energy to exhaust	kcal/kWh		662,6

N45 SM2A

73 kW (1500 rpm)

Engine N45 SM2A

7/ FUEL SYSTEM

1500 rpm

Fuel consumption at

Stand-By	gr/kWh (l/h) [kg/h]	216,2 (19,0) [16,0]
Full load	gr/kWh (l/h) [kg/h]	214,1 (17,1) [14,4]
80%	gr/kWh (l/h) [kg/h]	212,1 (12,7) [10,7]
50%	gr/kWh (l/h) [kg/h]	214,1 (8,60) [7,20]
Fuel specifications		EN 590
Feed pump max suction head	m	---
Injection pump	type STANADYNE	DB4429-5952

8/ ELECTRIC SYSTEM

1500 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	0
Number of teeth on starter motor		10
Number of teeth on flywheel		125
Starting batteries		
recommended capacity Ah	1x	100
discharge current	Amp	650
(EN 50342)		
Stop solenoid energized to run	Amp	0
Alternator		
voltage	V	14
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	5,73
HC	Hydrocarbons	gr/kWh	0,51
No _x +HC		gr/kWh	6,24
CO	Carbon monoxide	gr/kWh	0,69
PT	Particles	gr/kWh	0,145

Date of update April 2009
Specifications subject to change without notice
Illustrations may include optional equipment.