

F32 SM1F

31,5 kW (1500 g/1')

1/ GENERAL

1500 rpm

Engine model	F32SM1F	
Basic engine type	F5CE9459B*A001 - 504261378XY	
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	99
Stroke	mm	104
Total displacement	lit	3,2
Mean piston speed	m/s	5,2
Compression ratio	18:1	
Flywheel rotation	anti clockwise viewed on flywheel	
Housing flywheel	SAE 3	
Flywheel	11"1/2	
Moment of inertia		
without flywheel	kgm ²	0,28
flywheel only	kgm ²	0,79
Degree of irregularity at PRP	0,018	
BMEP gross		
Prime Power	bar/kPa	7,2/720
Stand-by Power	bar/kPa	8/800
Dry weight (including cooling package)	kg	380
Energy to coolant	kcal/kWh	n/a
Energy to radiation	kcal/kWh	n/a
Dimensions L x W x H	mm	1157 x 594 x 963

2/ PERFORMANCES

1500 rpm

Continuous Power	(gross)	kWm	23,2
Prime Power	(gross)	kWm	29,1
Stand-By Power	(gross)	kWm	32
Fan consumption		kWm	0,5
Continuous Power	(net)	kWm	22,7
Prime Power	(net)	kWm	28,6
Stand-By Power	(net)	kWm	31,5
Performance condition			
temperature	°C		≤ 40
altitude a.s.l	m		≤ 1000
Derating			
temperature > T 40°C	%/5°C		1
altitude >1000 <3000 m	%/500m		2
altitude >3000 m	%/500m		4

3/ COOLING SYSTEM			1500 rpm
Type			liquid
Recommended coolant			water - paraflu 50%
Coolant capacity			
engine only	liter		4,27
radiator and hoses	liter		15
Coolant pump flow	l/min		95
Pressure cap setting	kPa (bar)		100 (1,0)
Shutdown switch setting	°C		103
Maximum additional restriction	Pa		n/a
Air To Boil	Prime Power	°C	n/a
Fan			
diameter	mm		450
number of blades			10
drive ratio			1,01 : 1
speed	rpm		1515
air flow	m ³ /s		1,4
power consumption	kWm		0,5

4/ LUBRICATION SYSTEM			1500 rpm
Oil sump capacity			
max	liter		8,5
min	liter		6,5
Oil system capacity including filter	liter		10,5
Oil pressure at rated speed	kPa		300
Oil temperature			
normal	°C		101
max	°C		115
Engine angularity			
longitudinal	degrees		45°
transverse	degrees		45°
Servicing interval	hours		500
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)		n/a
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		n/a
Max temperature at PRP (25°C)	°C		n/a
Max allowable back pressure	kPa (mbar)		5 (50)
Energy to exhaust	kcal/kWh		n/a

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7/ FUEL SYSTEM

1500 rpm

Fuel consumption at

Stand-By	gr/kWh (l/h) [kg/h]	226,1 (8,4) [7,1]
Full load	gr/kWh (l/h) [kg/h]	226,8 (7,9) [6,6]
80%	gr/kWh (l/h) [kg/h]	228,8 (6,5) [5,4]
50%	gr/kWh (l/h) [kg/h]	243,8 (4,6) [3,9]
Fuel specifications		EN 590
Feed pump max suction head	m	---
Injection pump	type DELPHI	DB4427-XXXX

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	-
cranking current +20°C	Amp	-
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	-
Alternator		
voltage	V	14
charge	Amp	95

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	6,83
HC	Hydrocarbons	gr/kWh	0,17
No _x +HC		gr/kWh	7
CO	Carbon monoxide	gr/kWh	1,78
PT	Particles	gr/kWh	0,32