

GENERAL

Engine model	F32SM1X		
Basic engine	F5CE9455B* A001 - 504326072XY		
Number of 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	6.2	
Compression ratio	17 : 1		
Flywheel rotation	anti clockwise viewed on flywheel		
Housing flywheel	SAE 3		
Flywheel	11"½		
Moment of inertia			
	without flywheel	Nm ²	2.8
	flywheel only	Nm ²	7.76
BMEP			
	Prime Power	bar	9.1
	Stand-by Power	bar	10
Dry weight (including cooling package)	kg	380	
Energy to coolant	kcal/kWh	-	
Energy to charge cooler	kcal/kWh	0	
Energy to radiation	kcal/kWh	-	
Dimensions L x W x H	mm	1200 x 600 x 930	

PERFORMANCE

Continuous Power	(gross)	kWm	35
Prime Power	(gross)	kWm	43.7
Stand-By Power	(gross)	kWm	48
Fan consumption		kWm	1.5
Continuous Power	(net)	kWm	34
Prime Power	(net)	kWm	42.3
Stand-By Power	(net)	kWm	46.5
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

COOLING PACKAGE

Type		liquid
Recommended coolant		water + 50 % paraflu 11
Coolant capacity		
engine only	liter	4.27
radiator and hoses	liter	15
Coolant pump flow	l/min	115
Pressure cap setting	kPa (bar)	70 (0.7)
Shutdown switch setting	°C	103°
Maximum additional restriction	Pa	147
Air To Boil	Prime Power	°C
Fan		
diameter	mm	500
number of blades		10
drive ratio		1.01 : 1
speed	rpm	1818
air flow	m ³ /s	2
power consumption	kWm	1.5

LUBRICATION SYSTEM

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	600
Oil specification		ACEA E3/E5
Oil consumption	%fuel	< 0.1

INTAKE SYSTEM

Air consumption at 100 % of load	m ³ /h (Kg/h)	179 (230)
Air intake restriction, clean filter	kPa (mbar)	2 (20)
Air intake restriction, dirty filter	kPa (mbar)	5 (50)
Air filter type		dry

EXHAUST SYSTEM

Gas flow (stand by Power)	kg/h	241
Max temperature at Stand-By (25°C)	°C	540°
Max allowable back pressure	kPa (mbar)	5 (50)
Energy to exhaust	kcal/kWh	702

FUEL SYSTEM

Fuel consumption at			
Stand-By	gr/kWh (l/h) [kg/h]		230 (13.3) [11]
Full load	gr/kWh (l/h) [kg/h]		230.2 (12) [9.9]
80%	gr/kWh (l/h) [kg/h]		230.6 (10.5) [8.7]
50%	gr/kWh (l/h) [kg/h]		250.7 (7.2) [6]
Fuel specifications			EN 590
Feed pump max suction head	m		-
Injection pump	Make DELPHI		Type Rotare DPGE

ELECTRIC SYSTEM

Voltage (negative to ground)	V		12
Starter motor			
make			Bosch
power	kW		3
pull current	Amp		60
hold current	Amp		12
break away current	Amp		1580
cranking current	Amp		0
Number of teeth on starter motor			10
Number of teeth on flywheel			125
Starting batteries			
recommended capacity	Ah	1 x	100
discharge current (EN 50342)	Amp		650
Stop solenoid energized to run	Amp		0
Alternator			
voltage	V		14
charge	Amp		95

COLD STARTING

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

EMISSION GASEOUS AND PARTICLES

No _x	Oxides of nitrogen	gr/kWh	4.35
HC	Hydrocarbons	gr/kWh	0.2
No _x +HC		gr/kWh	4.55
CO	Carbon monoxide	gr/kWh	1.46
PT	Particles	gr/kWh	0.17
	Smoke	Bosch	-