F32 TM1X
56.5 kW @ 1800 rpm

GENERAL

Engine model		F32TM1X
Basic engine		F5CE9485B*A001 - 504326327XY
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-Aftercooled air/air
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	11
Stand-by Power	bar	12
Dry weight (including cooling package)	kg	380
Energy to coolant	kcal/kWh	533
Energy to charge cooler	kcal/kWh	75
Energy to radiation	kcal/kWh	146
Dimensions L x W x H	mm	1200 x 600 x 930

PERFORMANCE

Continuous Power	(gross)	kWm	42.2
Prime Power	(gross)	kWm	52.8
Stand-By Power	(gross)	kWm	58
Fan consumption		kWm	1.5
Continuous Power	(net)	kWm	41
Prime Power	(net)	kWm	51.5
Stand-By Power	(net)	kWm	56.5
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

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COOLING PACKAGE

Type			liquid
Recommanded 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	-
Air To Boil	Prime Power	°C	52°
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	105°
	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)	215.5 (278)
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	291
Max temperature at Stand-By (25°C)	°C	502°
Max allowable back pressure	kPa (mbar)	5 (50)
Energy to exhaust	kcal/kWh	643

FUEL SYSTEM

Fuel consumption at			
Stand-By	gr/kWh (l/h) [kg/h]		221.5 (15.6) [12.8]
Full load	gr/kWh (l/h) [kg/h]		223 (14.4) [11.8]
80%	gr/kWh (l/h) [kg/h]		226.8 (11.7) [9.6]
50%	gr/kWh (l/h) [kg/h]		238 (7.7) [6.3]
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	Amp		650
(EN 50342)			
Stop solenoide 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	4.11
HC	Hydrocarbons	gr/kWh	0.09
No_x+HC		gr/kWh	4.2
CO	Carbon monoxide	gr/kWh	0.695
PT	Particles	gr/kWh	0.194
	Smoke	Bosch	-

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