

Specifications

Technical code		F1AE3481A*XXXX
Thermodynamic cycle		Diesel 4 stroke
Air handling		TAA
Arrangement		4L
Bore x Stroke	mm	88 x 94
Total displacement	L	2.3
Valves per cylinder		4
Cooling system		liquid
Direction of rotation		CCW
Compression ratio		16.2 :1
Rotation mass moment of inertia (without flywheel)	kgm ²	0.043
Standard flywheel inertia	kgm ²	0.323

Fuel System

Injection system		Electronic Common Rail - Multijet II
Upstream injectors fuel pressure	bar	1600
Gas oil max intake temperature	°C	80

Air Intake

Max suggested intake restriction with clean air filter	kPa(bar)	6 (0.06)
Max allowable restriction with dirty air filter	kPa(bar)	10.5 (0.15)
Air requirement for combustion at 100% load/rated speed	kg/h	510
Turbocharging pressure at full load/rated speed	kPa(bar)	135 (1.35)
Turbocharging air max temperature (engine inlet)	°C	55
Heat rejected to intercooler at maximum power	kW	13.6
Intercooler system max pressure drop	kPa(bar)	10 (0.10)

Exhaust System

Max allowable backpressure	kPa(bar)	25 (0.250)
Max exhaust temperature at full load/rated speed	°C	720
Exhaust flow at max output	kg/h	510

S23 ENT 5

78 kW (106 HP) @ 3900 rpm - 270Nm @ 1500-2750 rpm

EURO 5

Lubrication System

Minimum oil pressure at idle	kPa(bar)	100 (1.0)
Max oil pressure at rated speed	kPa(bar)	400 (4.0)
Max oil temperature at full load/rated speed	°C	130
Engine angularity limits continuous operation:		
max front up and front down	0/360°	35°
max left hand and right hand	0/360°	35°
Total system capacity including pipes, filters, etc.	liters	5.3

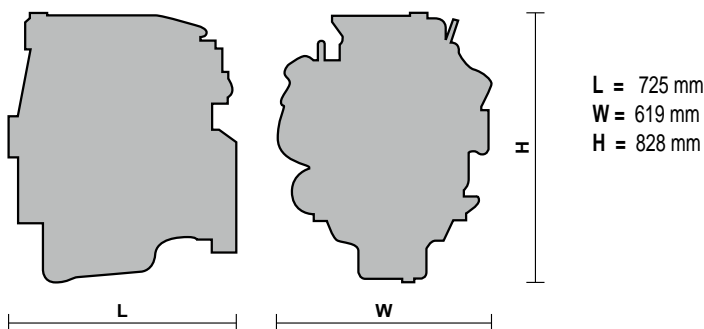
Cooling System

Coolant capacity (crankcase + cylinder head)	liters	3.7
Water pump flow at max power	liters/min	126.7
Heat to reject by heat exchanger at max power	kW	50.9
Modulating range thermostat	°C	80 ÷ 94
Cooling liquid max temperature	°C	105
Max inner pressure in the cooling circuit	kPa(bar)	170 (1.7)
External cooling system max pressure drop	kPa(bar)	n. av.

Electrical System

Voltage	V	12
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Dimensions:



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Performance

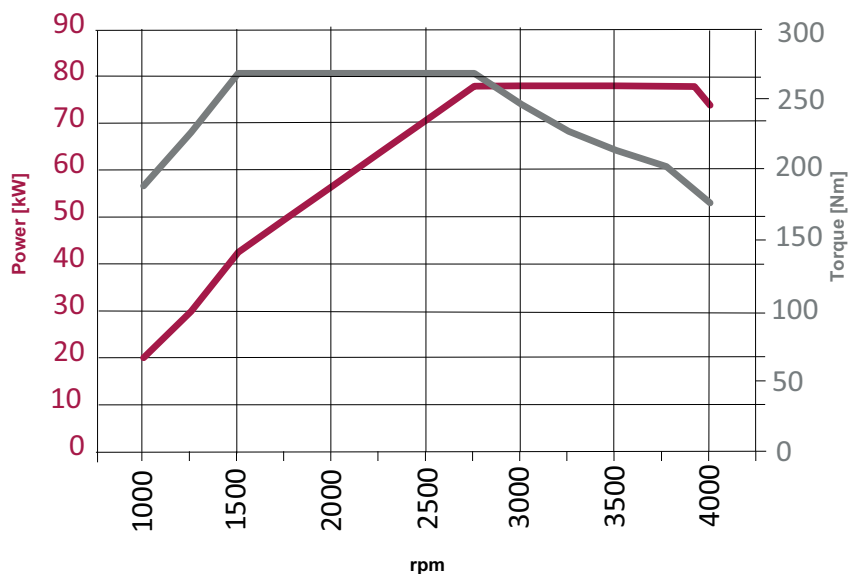
Maximum rating [*]	kW(HP)	78 (106)
At speed	rpm	3900
Maximum torque	Nm(kgm)	270 (28)
At speed	rpm	1500 - 2750
Maximum no load governed speed at max rating	rpm	4600 ± 25
Minimum idling speed	rpm	800 ± 25
Mean piston speed at rated speed	m/s	11.3
BMEP at max torque	bar	15.1
Available certifications		715/2007/CE - 692/2008/CE
Specific fuel consumption at full load (best value)	g/kWh @ rpm	203.3 @ 2250
Oil consumption at max rating	g/h	15
Noise at max rating (ISO 3744)	dBA	n.a.v.
Minimum starting temperature without auxiliaries	°C	-25
Oil and oil filter maintenance interval for replacement [**]	Km	40,000
Dry weight (standard configuration without: oil, cooling, starter, clutch, Compressor A/C, alternator)	kg	221

FOR INFORMATION ON THE AVAILABLE RATINGS NOT LISTED IN THIS DOCUMENT PLEASE CONTACT THE FPT SALES NETWORK.

[*] Power at: flywheel according to 97/68 EC (without fan), after 50 hours running, 3% tolerance, fuel Diesel EN 590.

[**] Oil type: ACEA C2/C3, SAE 5W30

Test conditions: ISO 3046/1, 25 °C air temperature, 100 kPa atmospheric pressure, 30 % relative humidity - Applicable also to DIN 6271, BS 5514, SAE J1349 Standards.



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Standard configuration

Flywheel housing	type	n.a.
Flywheel size	inch	10" 1/2 dual mass
Intake manifold location		engine front direction / left side
Exhaust manifold location		middle high / right side / back
Turbocharger		fixed geometry with Waste Gate valve
Turbocharger location		center / right side
Fan transmission ratio		n.av.
Distance between fan - crankshaft centers	mm	x = -19 ; y = +165
Fuel filter		included in pressure regulator
Oil filter		single cartridge - left side
Oil sump		suspended sheet steel
Oil vapours blow-by circuit		close case ventilation
Oil heat exchanger		integrated into the block
Oil filler		on valve cover
Alternator (available version)		12V - (110 A -140 A -180 A)
Engine stop device		by electronic control unit
Wiring harness		interface wiring loom with accessories
PTO maximum available torque		n.av.
Painting	colour	n.a.

Not included in the standard configuration

Power take off - transmission ratio		n.a.
Starter		12 V - 2.5 kW
Battery - minimum capacity recommended		12 V - 105 Ah
Battery - minimum cold cranking capacity recommended		12 V - 800 A (EN)

LEGEND:

n.a. = not applicable

n.av. = not available

Aftertreatment System

Main components - Functional Scheme



- PreCat
- DOC*
- DPF**

*DOC: Diesel Oxidation Catalyst

**DPF: Diesel Particulate Filter

FPT OFFERS THE WIDEST AVAILABILITY OF ENGINE BUILD OPTIONS TO CUSTOMER SPECIFIC REQUIREMENTS WITHIN THE ENGINE SUPPLY. TO FIND OUT MORE ABOUT THE CONFIGURATIONS AND ACCESSORIES WHICH ARE AVAILABLE, CONTACT THE FPT SALES NETWORK.

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Specifications subject to change without notice.
Illustrations may include optional equipment.