



## Basic engine specifications

Rating .....	P1
Rated power-kW .....	110
Rated speed-rpm .....	1500
Overload power-kW .....	121
Overload speed-rpm .....	1548
Rated power tolerance-% .....	5
Idle speed-rpm .....	650
High idle speed-rpm .....	1650
N° of Cylinders / Valves .....	6/24
Cylinders arrangement .....	In-line
Thermodynamic cycle .....	4 stroke
Bore × Stroke-mm(in) .....	108×136 (1.25×5.35)
Compression ratio .....	18:1
Displacement-L(in <sup>3</sup> ) .....	7.47 (455.82)
Fuel system .....	Common rail
Injection system .....	Direct injection
Aspiration .....	Turbocharged and aftercooled
Flywheel housing/Flywheel/N° of teeth on flywheel ring gear(standard) .....	SAE 1/14#/159
Flywheel housing/Flywheel/N° of teeth on flywheel ring gear(optional) .....	/
Firing order .....	1-5-3-6-2-4
Rotation(from flywheel end) .....	Counterclockwise
Overall dimensions (L×W×H) -mm(in) .....	1398×865×980 (55.0×34.1×38.6)
Dry weight-kg(lb) .....	900±50 (1984±110)
Wet weight-kg(lb) .....	960±50 (2116±110)
Max. output power of front end-kW(ps) .....	64 (87.0)
Max. output torque of front end- N.m(ft-lbs) .....	/ (/)
Inertia of flywheel- kg.m <sup>2</sup> (lb.ft <sup>2</sup> ) .....	1.00 (23.73)
Inertia of crankshaft- kg.m <sup>2</sup> (lb.ft <sup>2</sup> ) .....	1.50 (35.60)
Max. bending moment @ flywheel housing- N.m(ft-lbs) .....	11700 (8633.43)
Location of GC-mm[in] .....	( 573,-26,134 ) [ ( 22.6,1.02,5.28 ) ]
Emission compliance .....	IMO Tier II

## Security parameters

Alarm speed-rpm .....	1725
Shut down speed-rpm .....	1800
Alarm oil pressure-MPa .....	0.1
Shut down oil pressure-MPa .....	0.08
Alarm oil temperature-°C(°F) .....	105(221)
Alarm coolant temperature-°C(°F) .....	97(206.6)

## Noise

Diesel engine noise(Acoustic power level)- dB(A) .....	107.6
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## Rating definitions

### Continuous power (P1)

The engine can run at full load continuously. The average load factor is 70% to 100%. Annual working time is more than 4000h.

### Heavy duty power (P2)

The engine can run at full load for 8h every 12h. The average load factor is 40% to 80%. Annual working time is 2000h to 4000h.

### Pleasure vessels in commercial operation (P3)

The engine can run at full load for 4h every 12h. The average load factor is 50% to 70%. Annual working time is 500h to 2000h.

### Government vessels (P4)

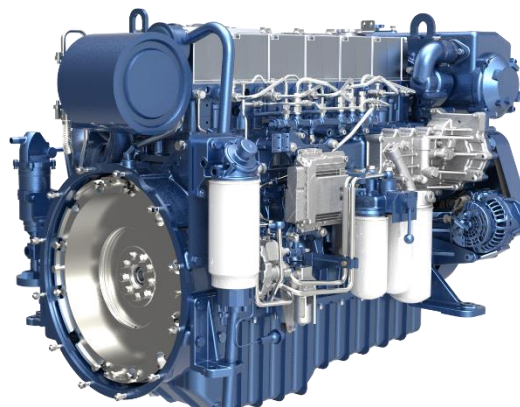
The engine can run at full load for 2h every 8h. The average load factor is 70% to 90%. Annual working time is less than 500h.

### Light duty power (P5)

The engine can run at full load for 0.5h every 5h. The average load factor is 60%. Annual working time is less than 300h.

## General remarks

- The origin of coordinates is at the center of the flywheel housing back end surface. X axis directs from flywheel to front, Z axis directs vertical up, Y axis direction is defined by right-hand rule.
- All ratings are based on operating conditions under ISO 8665, ISO 3046-1.
- Curves represent net engine performance in accordance with ISO 3046/1 with standard accessories such as fuel injection pump, water pump and L.O. pump under the condition of 25°C/77°F ambient temperature, 100kPa[29.612 in Hg] barometric pressure, 30% relative humidity and 25°C/77°F raw water temperature at inlet.
- Reference document: D000280170.



This picture is for reference only and does not represent the actual product status.



# WP7C150-15E120 Marine propulsion engine



## Air intake system

Intake air flow-m <sup>3</sup> /min(cfm)	8.85 (0.25)
Max. allowable intake air restriction(include pipe and air filter)- kPa(in H <sub>2</sub> O)	3 (12)
Intake air temperature up to-°C(°F)	60 (140)
Heat rejection to atmosphere-kW(BTU/min)	13 (739.3)

## Cooling system

Coolant capacity of the engine-L(gal)	36 (7.92)
Max. sea water strainer mesh hole diameter- mm(in)	2 (0.08)
Sea water pump power-kW(ps)	/ (l)
Expansion tank pressure cap- kPa(in H <sub>2</sub> O)	50 (7.2)
Heat dissipating to heat exchanger- kW(BTU/min)	78 (4435.7)
Coolant flow-m <sup>3</sup> /h(gal/h)	17 (3.74)
Recommended outlet water temperature-°C(°F)	75-95 (167-203)

## Exhaust system

Exhaust flow-m <sup>3</sup> /min(cfm)	15.52 (0.43)
Max. exhaust back pressure-kPa(in H <sub>2</sub> O)	7.5 (30.1)
Max. exhaust temperature before turbocharger-°C(°F)	/ (l)
Max. exhaust temperature after turbocharger-°C(°F)	550 (1022)
Max. bending moment of turbocharger flange- N.m(ft-lbs)	10 (7.4)
Exhaust smoke-FSN	≤1.0

## Lubricating system

Max. install angle(fore-aft)	5
Max. install angle(athwart ship)	15
Max. operating angle(fore-aft)	7.5
Max. operating angle(athwart ship)	22.5
Sump type	Wet
Oil capacity Low/High-L(gal)	20/24 (4.4/5.3)
Oil fuel consumption ratio based on engine fuel consumption data-%	≤0.1
Oil flow- L/min(gal/min)	/ (l)

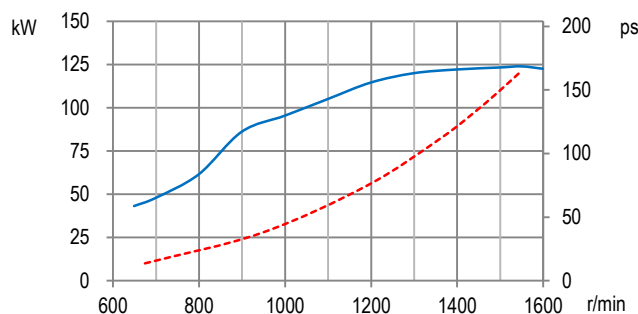
## Fuel system

Fuel flow supply line- L/h(gal/h)	240 (52.80)
Fuel flow return line- L/h(gal/h)	130 (28.6)
Max. Allowable fuel supply restriction -kPa(in H <sub>2</sub> O)	65 (261.0)
Fuel supply restriction on engine-kPa(in H <sub>2</sub> O)	10 (40.2)
Allowable fuel restriction of shipyard supplied components-kPa(in H <sub>2</sub> O)	55 (220.8)
Max. fuel return restriction-kPa(in H <sub>2</sub> O)	20 (80.3)
Max. self-priming height of fuel delivery pump-m(ft)	3 (9.8)
Max. fuel inlet temperature-°C(°F)	70 (158)

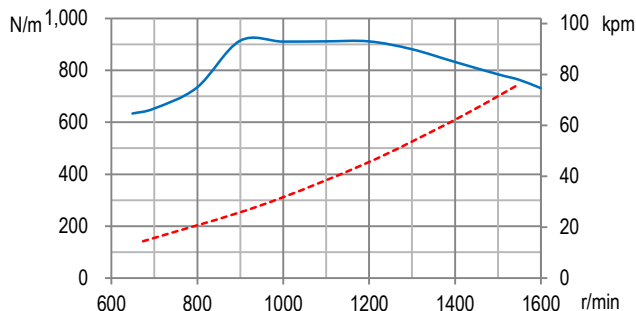
## Electric system

Electrical system voltage(2-pole)-V	24
Starter power-kW(ps)	6 (8.2)
Recommended battery capacity(5°C and above)- A.h	180×2
Recommended battery capacity(-5°C and above) - A.h	/
Alternator working current-A	120

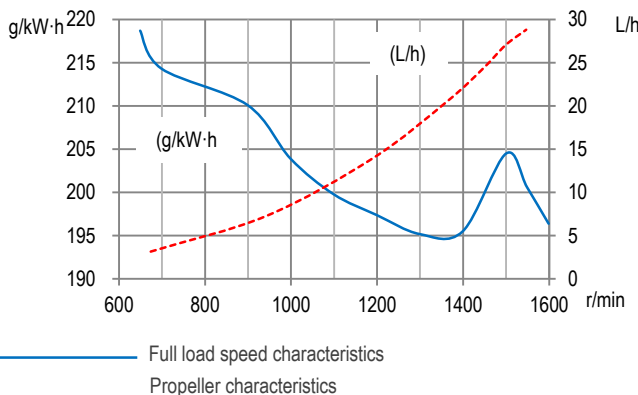
## Power



## Torque



## Fuel consumption



— Full load speed characteristics  
 - - - Propeller characteristics

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Materials and specifications are subject to change without notice.