



Basic engine specifications

Rating	.....P1
Rated power-kW	..... 205
Rated speed-rpm	.....2100
Overload power-kW	..... 225
Overload speed-rpm	.....2167
Rated power tolerance-%	.....5
Idle speed-rpm	..... 650
High idle speed-rpm	.....2310
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 ³)	..... 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)	..... 21 (28.6)
Max. output torque of front end- N.m(ft-lbs) / (/)
Inertia of flywheel- kg.m ² (lb.ft ²)	..... 1.00 (23.73)
Inertia of crankshaft- kg.m ² (lb.ft ²)	..... 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	.....2415
Shut down speed-rpm	.....2520
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) 110.5
--	-------------

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)

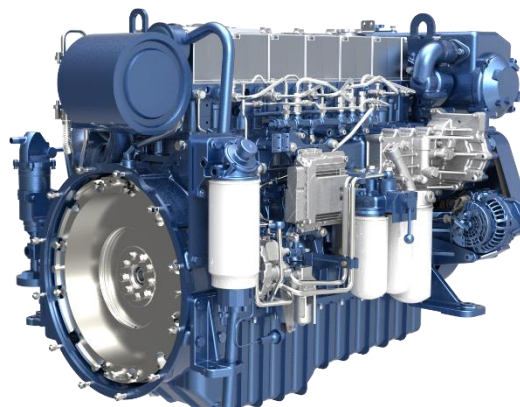
The engine can run at full load for 2h every 8h. The average load factor is 70% to 90%. Annual working time is less than 500h.

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: D000210204.



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



WP7C278-21E120 Marine propulsion engine



Air intake system

Intake air flow-m ³ /min(cfm)	16.46 (0.46)
Max. allowable intake air restriction(include pipe and air filter)- kPa(in H ₂ O)	3 (12)
Intake air temperature up to-°C(°F)	60 (140)
Heat rejection to atmosphere-kW(BTU/min)	26 (1478.6)

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 ₂ O)	50 (7.2)
Heat dissipating to heat exchanger- kW(BTU/min)	129 (7336.0)
Coolant flow-m ³ /h(gal/h)	17 (3.74)
Recommended outlet water temperature-°C(°F)	75~95 (167~203)

Exhaust system

Exhaust flow-m ³ /min(cfm)	28.90 (0.81)
Max. exhaust back pressure-kPa(in H ₂ 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)

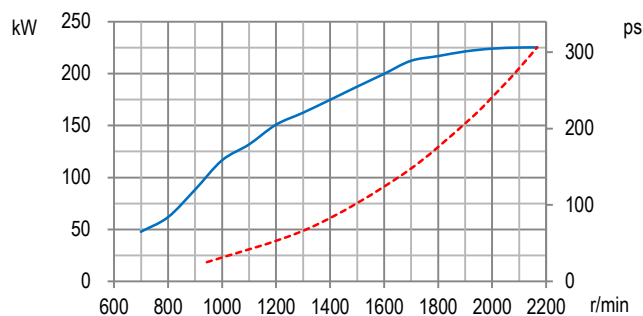
Fuel system

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 ₂ O)	65 (261.0)
Fuel supply restriction on engine-kPa(in H ₂ O)	10 (40.2)
Allowable fuel restriction of shipyard supplied components-kPa(in H ₂ O)	55 (220.8)
Max. fuel return restriction-kPa(in H ₂ 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)

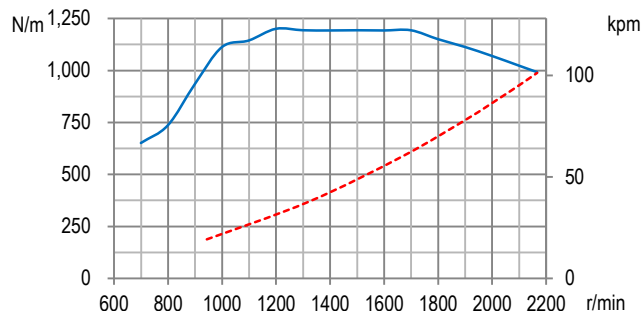
Electric system

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

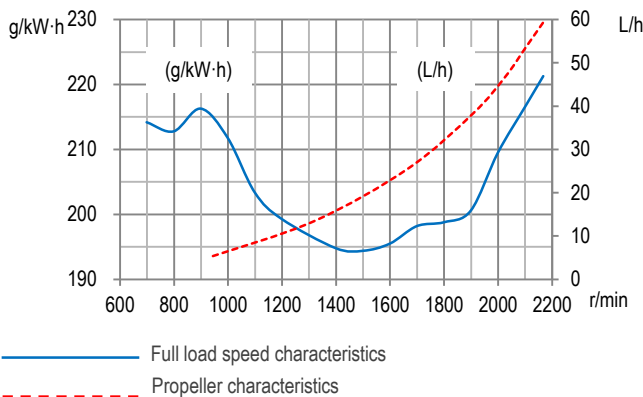
Power



Torque



Fuel consumption



— Full load speed characteristics
 - - - Propeller characteristics

@2020 Weichai

All rights reserved.

Materials and specifications are subject to change without notice.