



CUMMINS INC.
 Charleston, SC 29405
 Marine Performance Curves
marine.cummins.com

Basic Engine Model
QSB 6.7

Curve Number:
M-94375

Engine Configuration
D313011MX03

CPL Code:
4191

Date:
2-Oct-13

Displacement: **6.7 liter [408 in³]**
 Bore: **107 mm [4.21 in]**
 Stroke: **124 mm [4.88 in]**
 Cylinders: **6**
 Fuel System: **HPCR Bosch CRIN 3.0**

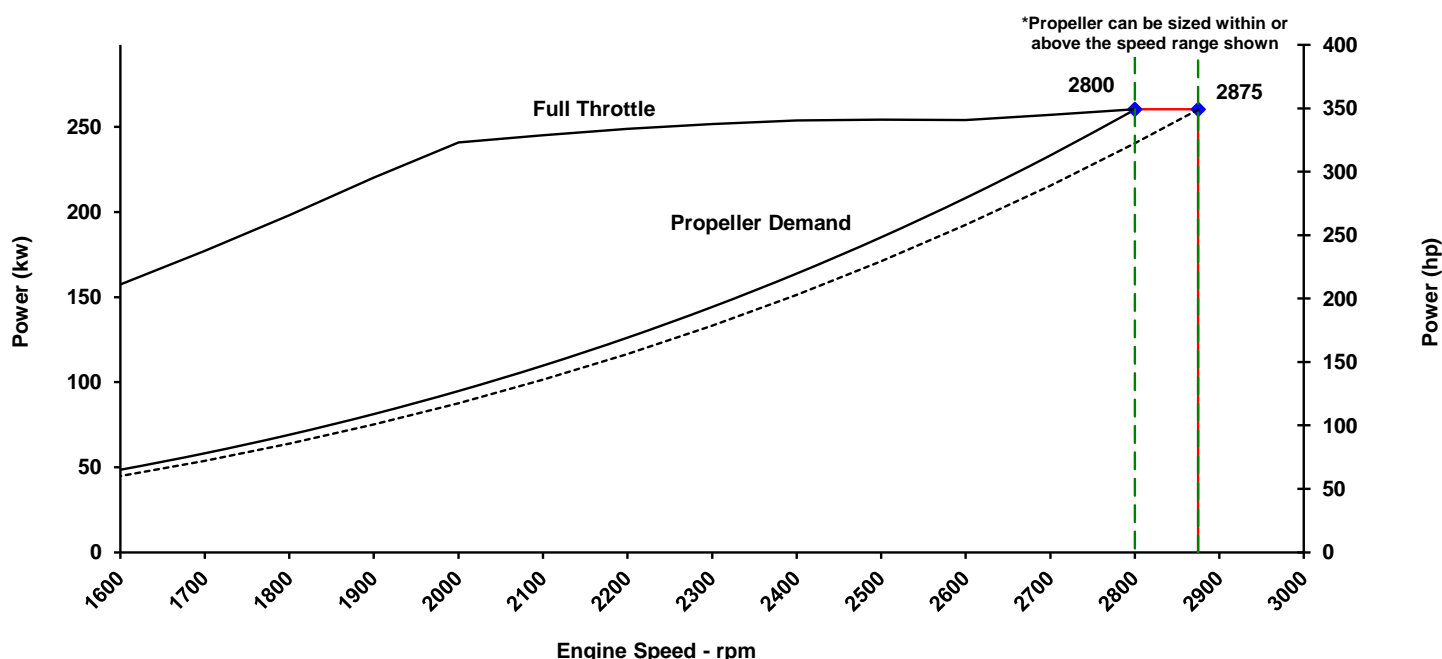
Rated Power: **260 kw [349bhp, 355mhp]**
 Rated Speed: **2800 rpm**
 Rating Type: **Intermittent Duty**
 Aspiration: **Turbocharged / Sea Water Aftercooled**

CERTIFIED: This diesel engine complies with or is certified to the following agencies requirements:

EPA Tier 3 - Model year requirements of the EPA marine regulation (40CFR1042)

EU Stage IIIa - EC Nonroad Mobile Machinery Directive (2004/26/EC)

IMO Tier II (Two) NOx requirements of International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13



Speed	Full Throttle				Propeller Demand					
	Power		Torque		Power		Torque		Fuel Consumption	
	kw	(hp)	N-m	(ft-lb)	kw	(hp)	N-m	(ft-lb)	L/hr	(gal/hr)
rpm										
2875	260	(349)	865	(638)						
2800	260	(349)	888	(655)	260	(349.0)	888	(654.6)	68.1	18.0
2700	257	(345)	910	(671)	236	(316.4)	834	(615.4)	61.5	(16.2)
2600	254	(341)	933	(688)	213	(285.7)	782	(577.1)	56.0	14.8
2500	254	(341)	971	(716)	192	(257.0)	732	(539.9)	50.8	(13.4)
2400	254	(340)	1010	(745)	172	(230.2)	683	(503.7)	45.3	12.0
2300	252	(338)	1045	(771)	153	(205.2)	635	(468.6)	40.2	10.6
2200	249	(334)	1080	(797)	136	(182.0)	589	(434.5)	36.0	9.5
2100	245	(329)	1115	(822)	120	(160.5)	544	(401.4)	31.8	(8.4)
2000	241	(323)	1150	(848)	105	(140.7)	501	(369.5)	28.1	(7.4)
1900	220	(295)	1107	(816)	91	(122.5)	459	(338.6)	24.3	(6.4)
1800	198	(266)	1051	(775)	79	(105.9)	419	(308.9)	21.0	(5.5)
1700	177	(238)	996	(734)	68	(90.7)	380	(280.3)	18.1	(4.8)
1600	158	(211)	940	(693)	57	(77.0)	343	(252.8)	15.6	(4.1)
1500	134	(179)	850	(627)	48	(64.7)	307	(226.6)	13.2	(3.5)
1400	113	(152)	772	(569)	40	(53.7)	273	(201.5)	11.3	(3.0)
1300	98	(131)	718	(530)	33	(44.0)	241	(177.6)	9.6	(2.5)
1200	83	(112)	664	(490)	26	(35.4)	210	(155.0)	8.1	(2.1)
1100	73	(97)	630	(465)	21	(28.0)	181	(133.7)	6.8	(1.8)
1000	62	(84)	596	(440)	16	(21.7)	154	(113.7)	5.7	(1.5)
900	54	(72)	568	(419)	12	(16.3)	129	(95.1)	4.6	(1.2)
800	45	(61)	541	(399)	9	(11.9)	106	(77.8)	3.7	(1.0)
600	31	(42)	500	(369)	4	(5.5)	65	(47.7)	2.4	(0.6)

*** Cummins Full Throttle Requirements:**

- Engine achieves or exceeds rated rpm at full throttle under any steady operating condition
- Engines in variable displacement boats (such as pushboats, tugboats, net dragners, etc.) achieve no less than 100 rpm below rated speed at full throttle during a dead push or bollard pull
- Engine achieves or exceeds rated rpm when accelerating from idle to full throttle

Rated Conditions: Ratings are based upon ISO 15550 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25deg. C [77 deg. F] and 30% relative humidity. Member NMMA. Unless otherwise specified, tolerance on all values is +/-5%. Values from engine control modules and displayed on instrument panels are not absolute. Tolerance varies, but is generally less than +/-5% when operating within 30% of rated power.

Full Throttle curve represents power at the crankshaft for mature gross engine performance corrected in accordance with ISO 15550. Propeller Curve represents approximate power demand from a typical propeller. Propeller Shaft Power is approximately 3% less than rated crankshaft power after typical reverse/reduction gear losses and may vary depending on the type of gear or propulsion system used.

Fuel Consumption is based on fuel of 35 deg. API gravity at 16 deg C [60 deg. F] having LHV of 42,780 kJ/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

Intermittent Duty (INT): Intended for intermittent use in variable load applications where full power is limited to two hours out of every eight hours of operation. Also, reduced power operations must be at or below 200 rpm of the maximum rated rpm. This rating is an ISO 15550 fuel stop power rating and is for applications that operate less than 1,500 hours per year.

[Signature]
 CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No. M-94375
 DS: D31-MX-1
 CPL: 4191
 DATE: 2-Oct-13

General Engine Data

Engine Model	QSB 6.7
Rating Type	Intermittent Duty
Rated Engine Power	260 [349]
Rated Engine Speed	2800
Rated Power Production Tolerance	5
Rated Engine Torque	890 [657]
Peak Engine Torque @ 2000 rpm.....	1150 [848]
Brake Mean Effective Pressure	1672 [242]
Indicated Mean Effective Pressure.....	1972 [286]
Maximum Allowable Engine Speed	2875

Maximum Continuous Torque Capacity from Front of Crank Specifications

Maximum Torque Capacity from Front of Crank ²	888 [655]
Compression Ratio	16.5:1
Piston Speed	11.6 [2278]
Firing Order	1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System - Average.....	658 [1450]

Governor Settings

Default Droop Value.....	0%
High Speed Governor Break Point.....	2875
Minimum Idle Speed Setting	550
Normal Idle Speed Variation	5
High Idle Speed Range Minimum	2870
Maximum	2880

Noise and Vibration

Average Noise Level - Top	(Idle).....	dBA @ 1m	75
	(Rated)	dBA @ 1m	100
Average Noise Level - Right Side	(Idle).....	dBA @ 1m	75
	(Rated)	dBA @ 1m	100
Average Noise Level - Left Side	(Idle).....	dBA @ 1m	76
	(Rated)	dBA @ 1m	102
Average Noise Level - Front	(Idle).....	dBA @ 1m	76
	(Rated)	dBA @ 1m	101

Fuel System¹

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	47.7 [12.6]
Fuel Consumption at Rated Speed	68.1 [18.0]
Approximate Fuel Flow to Pump	215.8 [57.0]
Maximum Allowable Fuel Supply to Pump Temperature	60.0 [140]
Approximate Fuel Flow Return to Tank	147.6 [39.0]
Approximate Fuel Return to Tank Temperature	79.5 [175]
Maximum Heat Rejection to Drain Fuel	3.0 [170]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

- ¹ Unless otherwise specified, all data is at rated power conditions and can vary ± 5%.
- ² No rear loads can be applied when the FPTO is fully loaded. Max PTO torque is contingent on torsional analysis results for the specific drive system. Consult Installation Direction Booklet for Limitations.
- ³ Heat rejection to coolant values are based on 50% water/50% ethylene glycol mix and do NOT include fouling factors. If sourcing your own cooler, a service fouling factor should be applied according to the cooler manufacturer's recommendation.
- ⁴ Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

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 COLUMBUS, INDIANA

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Air System¹

Intake Manifold Pressure	kPa [in Hg]	183 [54]
Intake Air Flow	l/sec [cfm]	363 [770]
Heat Rejection to Ambient	kW [Btu/min]	20 [1159]

Exhaust System¹

Exhaust Gas Flow	l/sec [cfm]	721 [1,527]
Exhaust Gas Temperature (Turbine Out)	°C [°F]	391 [736]
Exhaust Gas Temperature (Manifold)	°C [°F]	563 [1,045]

Emissions (in accordance with ISO 8178 Cycle E3)

NO _x (Oxides of Nitrogen)	g/kw-hr [g/hp-hr]	4.84 [3.61]
HC (Hydrocarbons)	g/kw-hr [g/hp-hr]	0.16 [0.12]
CO (Carbon Monoxide)	g/kw-hr [g/hp-hr]	0.69 [0.52]
PM (Particulate Matter)	g/kw-hr [g/hp-hr]	0.04 [0.03]
CO ₂ (Carbon dioxide)	g/kw-hr [g/hp-hr]	496.00 [369.87]

Cooling System¹

Sea Water Pump Specifications	MAB 0.08.17-07/16/2001	
Pressure Cap Rating	kPa [psi]	110 [16]
Max. Coolant Outlet Pressure from the Engine.....	kPa [psi]	414 [60]

Sea Water Aftercooled Engine (SWAC)

Standard Thermostat Operating Range (Start to Open)	°C [°F]	71 [160]
Standard Thermostat Operating Range (Full Open)	°C [°F]	83 [182]

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