**CUMMINS INC.**

**Columbus, IN 47201**

**marine.cummins.com**

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**Basic Engine Model:** QSB 6.7  
**Curve Number:** M-94125  
**Engine Configuration:** D313011MX03  
**CPL Code:** 4191  
**Date:** 24-Apr-13

**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)
- IMO Tier II (Two) NOx requirements of International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13
- RCD - meets the requirements of the Recreational Craft Directive 94/25/EC as amended by 2003/44/EC in accordance with ISO 8178-1

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**Displacement:** 6.7 liter [408 in³]  
**Rated Power:** 404 kw [542 bhp, 550 mhp]  
**Bore:** 107 mm [4.21 in]  
**Rated Speed:** 3300 rpm  
**Stroke:** 124 mm [4.88 in]  
**Rating Type:** High Output  
**Fuel System:** HPCR Bosch CRIN 3.0  
**Aspiration:** Turbocharged / Sea Water Aftercooled

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**Table: Power Torque**

<table>
<thead>
<tr>
<th>Speed (rpm)</th>
<th>Power (kw)</th>
<th>Torque (N·m)</th>
<th>Power (kw)</th>
<th>Torque (N·m)</th>
<th>Fuel Consumption (L/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3375</td>
<td>404 (542)</td>
<td>1144 (844)</td>
<td>404 (542.0)</td>
<td>1170 (862.6)</td>
<td>110.3 (29.1)</td>
</tr>
<tr>
<td>3300</td>
<td>404 (542)</td>
<td>1170 (863)</td>
<td>372 (498.8)</td>
<td>1110 (818.6)</td>
<td>98.4 (26.0)</td>
</tr>
<tr>
<td>3200</td>
<td>404 (542)</td>
<td>1207 (890)</td>
<td>341 (457.8)</td>
<td>1052 (775.6)</td>
<td>89.8 (23.7)</td>
</tr>
<tr>
<td>3100</td>
<td>404 (542)</td>
<td>1245 (918)</td>
<td>312 (419.0)</td>
<td>995 (733.6)</td>
<td>80.6 (21.3)</td>
</tr>
<tr>
<td>3000</td>
<td>404 (542)</td>
<td>1285 (948)</td>
<td>285 (382.4)</td>
<td>939 (692.5)</td>
<td>71.9 (19.0)</td>
</tr>
<tr>
<td>2900</td>
<td>404 (542)</td>
<td>1330 (981)</td>
<td>259 (347.8)</td>
<td>885 (652.4)</td>
<td>65.4 (17.3)</td>
</tr>
<tr>
<td>2800</td>
<td>402 (540)</td>
<td>1372 (1012)</td>
<td>212 (284.7)</td>
<td>780 (575.2)</td>
<td>54.6 (14.4)</td>
</tr>
<tr>
<td>2600</td>
<td>395 (530)</td>
<td>1452 (1071)</td>
<td>171 (229.4)</td>
<td>681 (502.0)</td>
<td>43.8 (11.6)</td>
</tr>
<tr>
<td>2400</td>
<td>385 (517)</td>
<td>1533 (1131)</td>
<td>135 (181.4)</td>
<td>587 (433.0)</td>
<td>34.6 (9.1)</td>
</tr>
<tr>
<td>2200</td>
<td>372 (498)</td>
<td>1613 (1190)</td>
<td>105 (140.2)</td>
<td>499 (368.2)</td>
<td>27.4 (7.2)</td>
</tr>
<tr>
<td>2000</td>
<td>355 (476)</td>
<td>1695 (1250)</td>
<td>79 (105.5)</td>
<td>417 (307.8)</td>
<td>20.5 (5.4)</td>
</tr>
<tr>
<td>1800</td>
<td>260 (349)</td>
<td>1382 (1019)</td>
<td>57 (76.8)</td>
<td>342 (252.0)</td>
<td>15.1 (4.0)</td>
</tr>
<tr>
<td>1600</td>
<td>167 (224)</td>
<td>995 (734)</td>
<td>40 (53.5)</td>
<td>272 (200.8)</td>
<td>10.8 (2.9)</td>
</tr>
<tr>
<td>1400</td>
<td>124 (166)</td>
<td>843 (622)</td>
<td>26 (35.3)</td>
<td>209 (154.5)</td>
<td>7.6 (2.0)</td>
</tr>
<tr>
<td>1200</td>
<td>92 (124)</td>
<td>733 (541)</td>
<td>16 (21.6)</td>
<td>154 (113.3)</td>
<td>5.1 (1.3)</td>
</tr>
<tr>
<td>1000</td>
<td>65 (87)</td>
<td>620 (457)</td>
<td>9 (11.8)</td>
<td>105 (77.6)</td>
<td>5.0 (1.3)</td>
</tr>
<tr>
<td>800</td>
<td>45 (61)</td>
<td>541 (399)</td>
<td>4 (5.4)</td>
<td>64 (47.6)</td>
<td>2.2 (0.6)</td>
</tr>
<tr>
<td>600</td>
<td>31 (42)</td>
<td>500 (369)</td>
<td>2.2 (0.6)</td>
<td>4.0 (0.6)</td>
<td></td>
</tr>
</tbody>
</table>

* Cummins Full Throttle Requirements:
  - Engine achieves or exceeds rated rpm at full throttle under any steady operating condition
  - 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].

High Output (HO): Intended for use in variable load applications where full power is limited to one hour out of every eight hours of operation. Also, reduced power must be at or below 300 rpm of the maximum rated rpm. This power rating is for pleasure/non-revenue generating applications that operate 500 hours per year or less.

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**Signature:**  
TECHNICAL DATA DEPT.  
Chief Engineer
Propulsion Marine Engine Performance Data

General Engine Data

Engine Model ............................................................... QSB 6.7
Rating Type ............................................................... High Output
Rated Engine Power ....................................................... kW [hp] 404 [542]
Rated Engine Speed ....................................................... rpm 3300
Rated Power Production Tolerance ................................... ±% 5
Rated Engine Torque .................................................... N·m [lb·ft] 1170 [863]
Peak Engine Torque @ 2000 rpm ...................................... N·m [lb·ft] 1695 [1250]
Brake Mean Effective Pressure ....................................... kPa [psi] 2197 [319]
Maximum Allowable Engine Speed .................................. rpm 3375
Maximum Power Production Tolerance ............................... ±% 5
Rated Engine Torque .................................................... N·m [lb·ft] 0 [0]
Compression Ratio ....................................................... 16.5:1
Piston Speed ............................................................... m/sec [ft/min] 13.6 [2685]
Firing Order ............................................................... 1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System - Average ... kg [lb] 658 [1450]

Governor Settings

Default Droop Value .................................................. Refer to MAB 2.04.00-03/23/2006 for Droop explanation 0%
High Speed Governor Break Point ................................... rpm 3375
Minimum Idle Speed Setting .......................................... rpm 550
Normal Idle Speed Variation .......................................... ±rpm 10
High Idle Speed Range Minimum .................................... rpm 3370
High Idle Speed Range Maximum .................................... rpm 3380

Noise and Vibration

Average Noise Level - Top ............................................... dBA @ 1m 75
Average Noise Level - Right Side ..................................... dBA @ 1m 100
Average Noise Level - Left Side ...................................... dBA @ 1m 76
Average Noise Level - Front ........................................... dBA @ 1m 103

Fuel System¹

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle .................. l/hr [gal/hr] 72.6 [19.2]
Fuel Consumption at Rated Speed ..................................... l/hr [gal/hr] 110.2 [29.1]
Approximate Fuel Flow to Pump ....................................... l/hr [gal/hr] 215.8 [57.0]
Maximum Allowable Fuel Supply to Pump Temperature ................... °C [°F] 60.0 [140]
Approximate Fuel Flow Return to Tank ................................ l/hr [gal/hr] 105.6 [27.9]
Maximum Heat Rejection to Drain Fuel ................................ kW [Btu/min] 2.1 [122]

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.
⁵ May not be at rated load and speed. Maximum heat rejection may occur at other than rated conditions.

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### Air System¹
- Intake Manifold Pressure: 251 [74] kPa [in Hg]
- Intake Air Flow: 511 [1082] l/sec [cfm]
- Heat Rejection to Ambient: 33 [1873] kW [Btu/min]

### Exhaust System¹
- Exhaust Gas Temperature (Manifold): 699 [1,290] °C [°F]

### Emissions (in accordance with ISO 8178 Cycle E3)
- NOx (Oxides of Nitrogen): 5.00 [3.73] g/kw·hr [g/hp·hr]
- HC (Hydrocarbons): 0.11 [0.08] g/kw·hr [g/hp·hr]
- CO (Carbon Monoxide): 0.45 [0.34] g/kw·hr [g/hp·hr]
- PM (Particulate Matter): 0.07 [0.06] g/kw·hr [g/hp·hr]
- CO₂ (Carbon dioxide): 707.49 [527.58] g/kw·hr [g/hp·hr]

### Emissions (in accordance with ISO 8178 Cycle E5)
- NOx (Oxides of Nitrogen): 4.88 [3.64] g/kw·hr [g/hp·hr]
- HC (Hydrocarbons): 0.15 [0.11] g/kw·hr [g/hp·hr]
- CO (Carbon Monoxide): 0.48 [0.36] g/kw·hr [g/hp·hr]
- PM (Particulate Matter): 0.06 [0.05] g/kw·hr [g/hp·hr]
- CO₂ (Carbon dioxide): 700.52 [522.38] g/kw·hr [g/hp·hr]

### Cooling System²
- Sea Water Pump Specifications: MAB 0.08.17-07/16/2001
- Pressure Cap Rating (With Heat Exchanger Option): 103 [15] kPa [psi]
- Max. Coolant Outlet Pressure from the Engine: 414 [60] kPa [psi]

### Sea Water Aftercooled Engine (SWAC)
- Standard Thermostat Operating Range (Start to Open): 71 [160] °C [°F]
- Standard Thermostat Operating Range (Full Open): 83 [182] °C [°F]

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