**Basic Engine Model:** QSB7-DM  
**Curve Number:** DM-93771

<table>
<thead>
<tr>
<th>Engine Configuration:</th>
<th>CPL Code:</th>
<th>Date:</th>
</tr>
</thead>
<tbody>
<tr>
<td>D313014MX03</td>
<td>3460</td>
<td>19-Sep-17</td>
</tr>
</tbody>
</table>

**Displacement:** 6.7 liter \( [408 \text{ in}^3] \) \n**Bore:** 107 mm \( [4.21 \text{ in}] \) \n**Stroke:** 124 mm \( [4.88 \text{ in}] \) \n**Fuel System:** High Pressure Common Rail \n**Cylinders:** 6

**Advertised Power:** 142 [190] \( @1800 \) rpm  
**Aspiration:** Turbocharged / Aftercooled  
**Exhaust Type:** Water Jacketed

CERTIFIED: This marine diesel engine complies with or is certified to the:  
- 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

### Engine Performance Data @ 1800 rpm

<table>
<thead>
<tr>
<th>Engine Speed</th>
<th>Overload Capacity</th>
<th>Prime Power</th>
<th>Continuous Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>RPM</td>
<td>kWm</td>
<td>BHP</td>
<td>kWm</td>
</tr>
<tr>
<td>1800</td>
<td>156</td>
<td>209</td>
<td>142</td>
</tr>
</tbody>
</table>

#### Output Power

<table>
<thead>
<tr>
<th>%</th>
<th>kWm</th>
<th>BHP</th>
<th>kg/kWh</th>
<th>Lb/ BHP h</th>
<th>Liter/ h</th>
<th>U.S. Gal/ hour</th>
</tr>
</thead>
<tbody>
<tr>
<td>10% OVERLOAD CAPACITY</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>110%</td>
<td>156</td>
<td>209</td>
<td>0.228</td>
<td>0.375</td>
<td>42.9</td>
<td>11.3</td>
</tr>
<tr>
<td>PRIME POWER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>100%</td>
<td>142</td>
<td>190</td>
<td>0.229</td>
<td>0.376</td>
<td>39.2</td>
<td>10.4</td>
</tr>
<tr>
<td>75%</td>
<td>106</td>
<td>143</td>
<td>0.233</td>
<td>0.383</td>
<td>29.7</td>
<td>7.8</td>
</tr>
<tr>
<td>50%</td>
<td>71</td>
<td>95</td>
<td>0.240</td>
<td>0.394</td>
<td>20.5</td>
<td>5.4</td>
</tr>
<tr>
<td>25%</td>
<td>35</td>
<td>48</td>
<td>0.285</td>
<td>0.468</td>
<td>12.1</td>
<td>3.2</td>
</tr>
<tr>
<td>10%</td>
<td>14</td>
<td>19</td>
<td>0.387</td>
<td>0.637</td>
<td>7.0</td>
<td>1.9</td>
</tr>
<tr>
<td>CONTINUOUS POWER</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>80%</td>
<td>113</td>
<td>152</td>
<td>0.232</td>
<td>0.381</td>
<td>31.6</td>
<td>8.3</td>
</tr>
</tbody>
</table>

#### Fuel Consumption

- **Gross Engine Power Output kWm**
- **Litre/hr**
- **U.S. Gal/hour**

**Rating Conditions:** Ratings are in accordance with ISO 15550 and ISO 8528-5 reference conditions; air pressure at 100 kPa (29.61 in Hg), air temperature 25°C (77°F), and 30% relative humidity.

Power output curves are based on the engine operating with fuel system, water pump, and lubricating oil pump; not included are battery charging alternator, fan, optional equipment, and driven components.

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. Unless otherwise specified, tolerance on all values is +/-5%.

**Prime Power Rating** is applicable for supplying continual electrical power at varied load. The following are the Prime Rating parameters:

* Engines with a Prime Power rating are available for an unlimited number of hours per year in variable load applications. Variable load is not to exceed an 80 percent average of the rated power.
* A 10 percent overload capability is available for a period of one hour within a 12 hour period of operation.
* Total operating time at the 10 percent overload power shall not exceed 25 hours per year. This power rating follows ISO 8528 guidelines.

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TECHNICAL DATA DEPT.  
CHIEF ENGINEER
Auxiliary Marine Engine Performance Data

General Engine Data

Engine Model                                      QS87-DM
Rating Type                                      Prime Power
Governed Engine Speed                             rpm 1800
Rated Engine Torque                               N·m [lb·ft] 752 [554] 827 [610]
Default Idle Speed Setting                        rpm 700
Low Idle Speed Range Minimum                      rpm 700

Maximum Continuous Torque Capacity from Front of Crank

Maximum Torque Capacity from Front of Crank²     N·m [lb·ft] 751 [554]
Brake Mean Effective Pressure                     kPa [psi] 1412 [205] 1553 [225]
Compression Ratio                                 17.3:1
Piston Speed                                     m/sec [ft/min] 7 [1465]
Firing Order                                      1-5-3-6-2-4
Friction Power                                    kW [hp] 19 [25]
Steady State Stability Band at Constant Load      % 0.25

Weight Dry - Engine With Heat Exchanger           kg [lb] 708 [1561]

Noise and Vibration

Average Noise Level - Top                         dBA @ 1m N.A.
Average Noise Level - Right Side                  dBA @ 1m N.A.
Average Noise Level - Left Side                   dBA @ 1m N.A.

Fuel System¹

Approximate Fuel Flow to Pump                     l/hr [gal/hr] 134.0 [35.4] 134.0 [35.4]
Maximum Allowable Fuel Supply to Pump Temperature °C [°F] 60 [140] 60 [140]
Approximate Fuel Flow Return to Tank              l/hr [gal/hr] 94.8 [25.0] 91.1 [24.1]
Approximate Fuel Return to Tank Temperature       °C [°F] 57 [134] 57 [135]
Average Fuel Consumption- Emissions ISO 8178 D2 Test Cycle l/hr [gal/hr] 19.8 [5.2]

Air System¹

Intake Manifold Pressure                          mm Hg [in Hg] 160 [47] 173 [51]
Heat Rejection to Ambient                        kW [Btu/min] 6 [342] 6 [317]

Exhaust System¹

Exhaust Gas Temperature (Manifold)                °C [°F] 559 [1038] 563 [1080]
Heat Rejection to Exhaust                        kW [Btu/min] 97 [5520] 107 [8083]

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.
### Emissions (in accordance with ISO 8178 Cycle D2)

<table>
<thead>
<tr>
<th>Emission</th>
<th>g/kw·hr</th>
<th>g/bhp·hr</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx (Oxides of Nitrogen)</td>
<td>4.324</td>
<td>[3.224]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HC (Hydrocarbons)</td>
<td>0.354</td>
<td>[0.264]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO (Carbon Monoxide)</td>
<td>0.986</td>
<td>[0.735]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM (Particulate Matter)</td>
<td>0.141</td>
<td>[0.105]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ (Carbon dioxide)</td>
<td>841</td>
<td>[627]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Emissions (in accordance with ISO 8178 Cycle E2)

<table>
<thead>
<tr>
<th>Emission</th>
<th>g/kw·hr</th>
<th>g/bhp·hr</th>
<th>Value 1</th>
<th>Value 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>NOx (Oxides of Nitrogen)</td>
<td>4.475</td>
<td>[3.337]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HC (Hydrocarbons)</td>
<td>0.198</td>
<td>[0.148]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO (Carbon Monoxide)</td>
<td>0.667</td>
<td>[0.498]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PM (Particulate Matter)</td>
<td>0.114</td>
<td>[0.085]</td>
<td></td>
<td></td>
</tr>
<tr>
<td>CO₂ (Carbon dioxide)</td>
<td>754</td>
<td>[562]</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Cooling System

- **Sea Water Pump Specifications**
  - MAB 0.08.17-07/16/2001
- **Minimum Pressure Cap Rating**
  - 103 [15] kPa [psi]

#### Engines with Keel Cooling

- **Coolant Flow to Cooler (with blocked open thermostat)**
  - 174 [46] l/min [gal/min]
- **Standard Thermostat Operating Range**
  - Start to open: 71 [160] °C [°F]
  - Full open: 83 [181] °C [°F]
- **Heat Rejection to Engine Coolant³**
  - 135 [7675] kW [Btu/min]
- **Maximum Engine Coolant Inlet Temperature from Cooler**
  - 54 [130] °C [°F]

#### Engines with Radiator Cooling

- **Coolant Flow to Radiator (with blocked open thermostat)**
  - 174 [46] l/min [gal/min]
- **Standard Thermostat Operating Range**
  - Start to open: 71 [160] °C [°F]
  - Full open: 83 [181] °C [°F]
- **Heat Rejection to Engine Coolant³**
  - 135 [7675] kW [Btu/min]
- **Maximum Coolant Inlet Temperature from Radiator**
  - For Radiator @ 35° C [95° F] Ambient Air: 54 [130] °C [°F]
  - For Radiator @ 50° C [122° F] Ambient Air: 68 [155] °C [°F]

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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.