Displacement: 5.9 liter [359 in³]  
Rated Power: 313 kw [420 bhp, 425 mhp]  
Rated Speed: 3000 rpm  
Bore: 102 mm [4.02 in]  
Stroke: 120 mm [4.72 in]  
Fuel System: HPCR  
Aspiration: Turbocharged / Sea Water Aftercooled  
Cylinders: 6

<table>
<thead>
<tr>
<th>Speed (rpm)</th>
<th>Full Throttle-Power (kw [hp])</th>
<th>Full Throttle-Torque (N·m [ft-lb])</th>
<th>Fuel Cons.-Prop. Curve 2.7 Exp. (L/hr [gal/hr])</th>
</tr>
</thead>
<tbody>
<tr>
<td>3000</td>
<td>313 (420)</td>
<td>996 (735)</td>
<td>81.3 (21.5)</td>
</tr>
<tr>
<td>2800</td>
<td>307 (411)</td>
<td>1045 (771)</td>
<td>65.5 (17.3)</td>
</tr>
<tr>
<td>2600</td>
<td>299 (401)</td>
<td>1100 (811)</td>
<td>53.0 (14.0)</td>
</tr>
<tr>
<td>2400</td>
<td>292 (391)</td>
<td>1161 (856)</td>
<td>43.4 (11.5)</td>
</tr>
<tr>
<td>2200</td>
<td>279 (374)</td>
<td>1209 (892)</td>
<td>35.7 (9.4)</td>
</tr>
<tr>
<td>2000</td>
<td>258 (346)</td>
<td>1231 (908)</td>
<td>28.0 (7.4)</td>
</tr>
<tr>
<td>1800</td>
<td>215 (288)</td>
<td>1140 (841)</td>
<td>21.5 (5.7)</td>
</tr>
<tr>
<td>1600</td>
<td>168 (225)</td>
<td>1003 (740)</td>
<td>15.4 (4.1)</td>
</tr>
<tr>
<td>1400</td>
<td>124 (167)</td>
<td>847 (625)</td>
<td>10.7 (2.8)</td>
</tr>
<tr>
<td>1200</td>
<td>89 (119)</td>
<td>705 (520)</td>
<td>7.3 (1.9)</td>
</tr>
<tr>
<td>1000</td>
<td>64 (86)</td>
<td>610 (450)</td>
<td>4.7 (1.2)</td>
</tr>
<tr>
<td>800</td>
<td>43 (58)</td>
<td>515 (380)</td>
<td>2.9 (0.8)</td>
</tr>
<tr>
<td>600</td>
<td>28 (38)</td>
<td>447 (330)</td>
<td>2.2 (0.6)</td>
</tr>
</tbody>
</table>

* Engine achieves or exceeds rated rpm at full throttle under any steady operating condition
* Engines in variable displacement boats (such as pushboats, tugboats, net draggers, 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. Power is in accordance with IMCI procedure. Member NMMA. Unless otherwise specified, tolerance on all values is +/-5%.

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 300 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.
General Engine Data

Engine Model: QSB5.9-425 INT
Rating Type: Intermittent Duty
Rated Engine Power: 313 [420] kW [hp]
Rated Engine Speed: 3000 rpm
Rated Engine Torque: 997 [735] N·m [lb·ft]
Peak Engine Torque @ 2000 rpm: 1231 [908] N·m [lb·ft]
Brake Mean Effective Pressure: 2129 [309] kPa [psi]
Indicated Mean Effective Pressure: N.A. [N.A.]
Maximum Allowable Engine Speed: 3085 rpm
Compression Ratio: 17
Piston Speed: 12.0 [2362] m/sec [ft/min]
Firing Order: 1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System: 658 [1450] kg [lb]

Governor Settings

Default Droop Value: 0%
High Speed Governor Break Point: 3065 rpm
Minimum Idle Speed Setting: 600 rpm
Normal Idle Speed Variation: 10 rpm
High Idle Speed Range Minimum: 3065 rpm

Noise and Vibration

Average Noise Level - Top (Idle): 76 dBA @ 1m
Average Noise Level - Right Side (Idle): 76 dBA @ 1m
Average Noise Level - Left Side (Idle): 77 dBA @ 1m
Average Noise Level - Front (Idle): 76 dBA @ 1m
Average Noise Level - Top (Rated): 99 dBA @ 1m
Average Noise Level - Right Side (Rated): 101 dBA @ 1m
Average Noise Level - Left Side (Rated): 107 dBA @ 1m
Average Noise Level - Front (Rated): 100 dBA @ 1m

Fuel System¹

Fuel Consumption at Rated Speed: 81.3 [21.5] l/hr [gal/hr]
Approximate Fuel Flow to Pump: 189.3 [50.0] l/hr [gal/hr]
Maximum Allowable Fuel Supply to Pump Temperature: 60.0 [140] °C [°F]
Approximate Fuel Flow Return to Tank: 107.9 [28.5] l/hr [gal/hr]
Approximate Fuel Return to Tank Temperature: 65.6 [150] °C [°F]
Maximum Heat Rejection to Drain Fuel: 1.4 [81] kW [Btu/min]
Fuel Pressure - Pump Out/Rail: 150002 [21756] kPa [psi]

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.

CUMMINS ENGINE COMPANY, INC
COLUMBUS, INDIANA

All Data is Subject to Change Without Notice - Consult the following Cummins intranet site for most recent data: http://cmdmarine.com/
# Propulsion Marine Engine Performance Data

## Preliminary

<table>
<thead>
<tr>
<th>Curve No.</th>
<th>M-93263</th>
</tr>
</thead>
<tbody>
<tr>
<td>DS :</td>
<td>3075</td>
</tr>
<tr>
<td>CPL :</td>
<td>1860</td>
</tr>
<tr>
<td>DATE:</td>
<td>12-May-10</td>
</tr>
</tbody>
</table>

## Air System¹
- Intake Manifold Pressure ................................................................. kPa [in Hg] 236 [70]
- Intake Air Flow ................................................................. l/sec [cfm] 374 [793]
- Heat Rejection to Ambient ................................................................. kW [Btu/min] 24 [1383]

## Exhaust System¹
- Exhaust Gas Temperature (Turbine Out) ................................................................. °C [°F] 447 [837]
- Exhaust Gas Temperature (Manifold) ................................................................. °C [°F] 652 [1205]

## Emissions (in accordance with ISO 8178 Cycle E3)
- NOx (Oxides of Nitrogen) ................................................................. g/kW·hr [g/hp·hr] 5.01 [3.74]
- HC (Hydrocarbons) ................................................................. g/kW·hr [g/hp·hr] 0.16 [0.12]
- CO (Carbon Monoxide) ................................................................. g/kW·hr [g/hp·hr] 0.90 [0.67]
- PM (Particulate Matter) ................................................................. g/kW·hr [g/hp·hr] 0.11 [0.08]

## Cooling System¹
### Sea Water After Cooled Engine
- Sea Water Pump Specifications ................................................................. MAB 08.17-07/16/2001
- Pressure Cap Rating ................................................................. kPa [psi] 103 [15]
- Thermostat Operating Range (Start to Open) ................................................................. °C [°F] 74 [165]
- Thermostat Operating Range (Full Open) ................................................................. °C [°F] 85 [185]
- Coolant Flow to Engine Heat Exchanger ................................................................. l/min [gal/min] 273 [72]

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