



CUMMINS MERCURISER DIESEL
Charleston, SC 29405
Marine Performance Curves

Basic Engine Model
QSD2.0-130

Engine Configuration
D0D3003MX03

Curve Number:
BC9139, BC9143

CPL Code: Date:
12-Aug-08

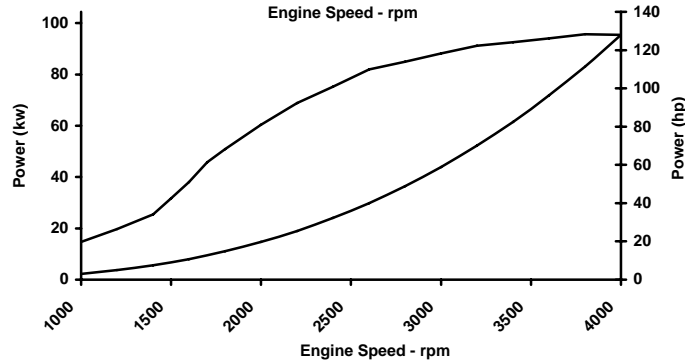
Displacement: **2.0 liter 122 in³**
Bore: **83 mm 3.27 in**
Stroke: **92 mm 3.62 in**
Fuel System: **Bosch Common Rail (CRS 2.0)**
Cylinders: **4**

kW [bhp, mhp] @ rpm
Advertised Power: **95[128, 130] @ 4000**

Aspiration: **Turbocharged/Sea Water Aftercooled**
Rating Type: **High Output**

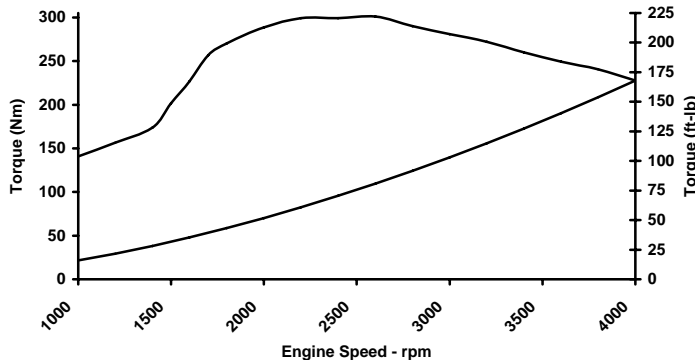
CERTIFIED: This marine diesel engine complies with or is certified to the:

IMO - NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13
EPA Tier 2 - Model year requirements of the EPA marine regulation (40CFR94)



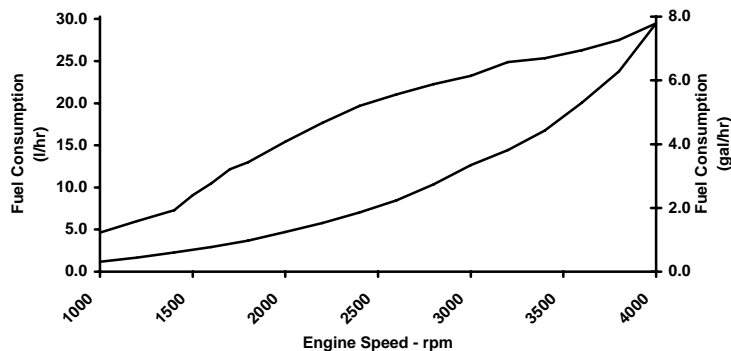
RATED POWER OUTPUT CURVE

| rpm | kW | bhp |
|------|----|-----|
| 4000 | 95 | 128 |
| 3800 | 96 | 128 |
| 3600 | 94 | 126 |
| 3400 | 93 | 124 |
| 3000 | 88 | 118 |
| 2600 | 82 | 110 |
| 2200 | 69 | 92 |
| 1800 | 51 | 68 |
| 1600 | 38 | 51 |
| 1400 | 26 | 34 |
| 1200 | 20 | 26 |
| 1000 | 15 | 20 |



FULL LOAD TORQUE CURVE

| rpm | N-m | ft-lb |
|------|-----|-------|
| 4000 | 228 | 168 |
| 3800 | 240 | 177 |
| 3600 | 249 | 184 |
| 3400 | 260 | 192 |
| 3000 | 281 | 207 |
| 2600 | 301 | 222 |
| 2200 | 299 | 221 |
| 1800 | 270 | 199 |
| 1600 | 227 | 168 |
| 1400 | 174 | 128 |
| 1200 | 156 | 115 |
| 1000 | 141 | 104 |



FUEL CONSUMPTION - PROP CURVE

| rpm | l/hr | gal/hr |
|------|------|--------|
| 4000 | 29.5 | 7.8 |
| 3800 | 23.8 | 6.3 |
| 3600 | 20.1 | 5.3 |
| 3400 | 16.8 | 4.4 |
| 3000 | 12.7 | 3.3 |
| 2600 | 8.5 | 2.2 |
| 2200 | 5.8 | 1.5 |
| 1800 | 3.7 | 1.0 |
| 1600 | 2.9 | 0.8 |
| 1400 | 2.3 | 0.6 |
| 1200 | 1.7 | 0.4 |
| 1000 | 1.2 | 0.3 |

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 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.

Rated Curves (upper) represents rated power at the crankshaft for mature gross engine performance capabilities obtained and corrected in accordance with ISO 3046. Propeller Curve (lower) is based on a typical fixed propeller demand curve using a 2.7 exponent. 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 (1) hour out of every eight (8) hours of operation. Also, reduced power must be at or below 400 rpm of the maximum rated rpm. This power rating is for pleasure/non-revenue generating applications that operate 500 hours per year or less.

James D. Kahlert

CHIEF ENGINEER

Propulsion Marine Engine Performance Data

Curve No. BC9139, BC9143
DS :
CPL :
DATE: 12-Aug-08

General Engine Data

| | |
|--|-------------|
| Engine Model | QSD2.0-130 |
| Rating Type | High Output |
| Rated Engine PowerkW [hp] | 95 [128] |
| Rated Engine Speedrpm | 4000 |
| Rated Power Production Tolerance±% | 5 |
| Rated Engine TorqueN·m [lb·ft] | 228 [168] |
| Peak Engine Torque @ 2600 rpmN·m [lb·ft] | 301 [222] |
| Brake Mean Effective PressurekPa [psi] | 1438 [209] |
| Minimum Idle Speed Settingrpm | 700 |
| Normal Idle Speed Variationrpm | 25 |
| High Idle Speed Range Minimumrpm | 4080 |
| Maximumrpm | 4120 |
| Maximum Allowable Engine Speedrpm | 4100 |
| Compression Ratio | 17.5:1 |
| Piston Speedm/sec [ft/min] | 12.3 [2415] |
| Firing Order | 1-3-4-2 |
| Weight (Dry) - Engine With Heat Exchanger System - Average.....kg [lb] | 250 [551] |

Fuel System¹

| | |
|--|------------|
| Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cyclel/hr [gal/hr] | 18.5 [5] |
| Fuel Consumption at Rated Speedl/hr [gal/hr] | 29 [8] |
| Maximum Allowable Fuel Supply to Pump Temperature°C [°F] | 60.0 [140] |
| Approximate Fuel Return to Tank Temperature Without Cooler.....°C [°F] | 78.4 [173] |
| With Cooler.....°C [°F] | 41.7 [107] |

Air System¹

| | |
|----------------------------------|-----------|
| Intake Air Flowl/sec [cfm] | 117 [247] |
|----------------------------------|-----------|

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

¹ All Data at Rated Conditions.

² 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://marine.cummins.com>

Propulsion Marine Engine Performance Data

Curve No. BC9139, BC9143
DS :
CPL :
DATE: 12-Aug-08

Exhaust System¹

| | | |
|---|---------|------------|
| Exhaust Gas Temperature (Turbine Out) | °C [°F] | 557 [1033] |
| Exhaust Gas Temperature (Manifold) | °C [°F] | 679 [1254] |

Emissions (ISO 8178 Cycle E5 - for Traditional Propulsion Applications)

| | | |
|--------------------------------|-------------------|-------------|
| NOx (Oxides of Nitrogen) | g/kw-hr [g/hp-hr] | 5.09 [3.79] |
| HC (Hydrocarbons) | g/kw-hr [g/hp-hr] | 0.36 [0.27] |
| CO (Carbon Monoxide) | g/kw-hr [g/hp-hr] | 1.04 [0.78] |
| PM (Particulate Matter) | g/kw-hr [g/hp-hr] | 0.16 [0.12] |

Cooling System¹

| | | |
|--|------------------------|----------|
| Sea Water Pump Specifications | MAB 0.08.17-07/16/2001 | |
| Pressure Cap Rating (With Heat Exchanger Option) | kPa [psi] | 103 [15] |

Engines without Low Temperature Aftercooling (LTA)

Sea Water Aftercooled Engine (SWAC)

| | | |
|---|---------|----------|
| Standard Thermostat Operating Range (Start to Open) | °C [°F] | 70 [158] |
| Standard Thermostat Operating Range (Full Open) | °C [°F] | 90 [194] |

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

¹ All Data at Rated Conditions.

² 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://marine.cummins.com>