



CUMMINS MERCUISER DIESEL
Charleston, SC 29405
Marine Performance Curves

Basic Engine Model
QSM11-M

Curve Number:
M-20142

Engine Configuration
D353013MX03

CPL Code:
1794

Date:
24-Aug-06

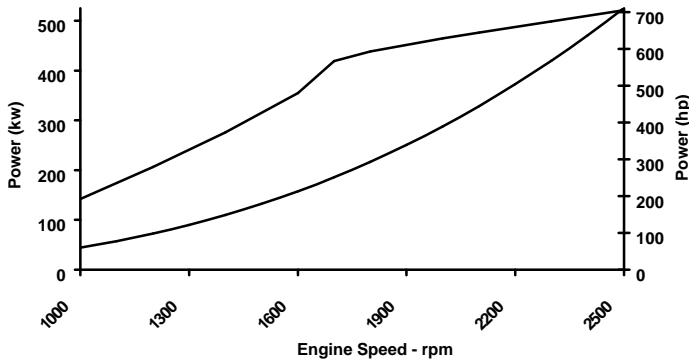
Displacement: **10.8 liter** [661 in³]
 Bore: **125 mm** [4.92 in]
 Stroke: **147 mm** [5.79 in]
 Fuel System: **CELECT**
 Cylinders: **6**

kW [bhp, mhp] @ rpm
 Advertised Power: **526 (705, 715) @ 2500**

Aspiration: **Turbocharged / Sea Water Aftercooled**
 Rating Type: **Government Service**

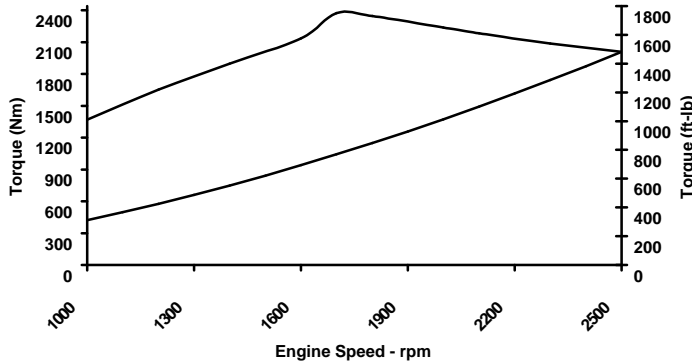
PRELIMINARY

CERTIFIED: This marine diesel engine is certified to the model year requirements of EPA Marine Tier 2 per 40 CFR 94 and conforms with the NOx requirements of the International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13 as applicable.



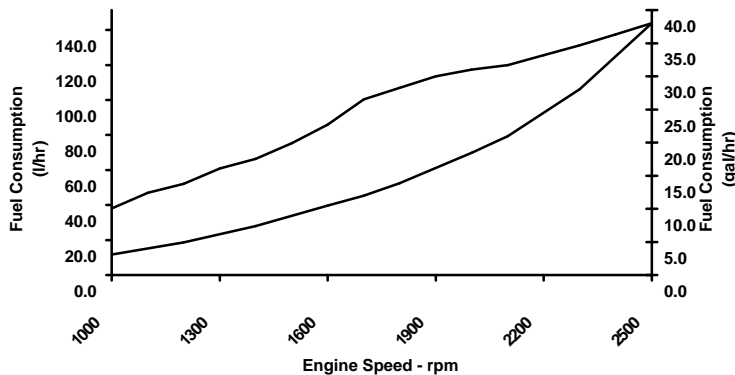
RATED POWER OUTPUT CURVE

rpm	kw	bhp
2500	526	705
2300	503	674
2100	480	644
2000	469	629
1800	442	593
1700	423	566
1600	358	480
1400	278	373
1200	208	279
1000	143	192



FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
2500	2008	1481
2300	2088	1540
2100	2183	1610
2000	2238	1650
1800	2346	1730
1700	2373	1750
1600	2135	1575
1400	1898	1400
1200	1654	1220
1000	1369	1010



FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
2500	143.8	38.0
2300	106.3	28.1
2100	79.4	21.0
2000	69.8	18.4
1800	52.5	13.9
1700	45.3	12.0
1600	39.7	10.5
1400	28.0	7.4
1200	18.7	4.9
1000	11.7	3.1

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].

Government Service (GS): This Rating is 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 operations must be at or below 200 RPM of the maximum rated RPM. This power rating is only for use in National, State, and Local government non-revenue producing applications.

Propulsion Marine Engine Performance Data

Curve No. M-20142
 DS : 3013
 CPL : 1794
 DATE: 24-Aug-06

PRELIMINARY

Exhaust System¹

Exhaust Gas Flow	l/sec [cfm]	1871 [3964]
Exhaust Gas Temperature (Turbine Out)	°C [°F]	544 [1010]
Exhaust Gas Temperature (Manifold)	°C [°F]	732 [1349]

Emissions (in accordance with ISO 8178 Cycle E3)

NOx (Oxides of Nitrogen)	g/kw-hr [g/hp-hr]	4.51 [3.36]
HC (Hydrocarbons)	g/kw-hr [g/hp-hr]	0.15 [0.11]
CO (Carbon Monoxide)	g/kw-hr [g/hp-hr]	0.49 [0.37]
PM (Particulate Matter)	g/kw-hr [g/hp-hr]	0.14 [0.10]

Emissions (in accordance with ISO 8178 Cycle E5)

NOx (Oxides of Nitrogen)	g/kw-hr [g/hp-hr]	4.59 [3.42]
HC (Hydrocarbons)	g/kw-hr [g/hp-hr]	0.19 [0.14]
CO (Carbon Monoxide)	g/kw-hr [g/hp-hr]	0.54 [0.40]
PM (Particulate Matter)	g/kw-hr [g/hp-hr]	0.15 [0.11]

Cooling System¹

Sea Water After Cooled Engine

Sea Water Pump Specifications	MAB 0.08.17-07/16/2001	
Pressure Cap Rating.....	kPa [psi]	103 [15]
Thermostat Operating Range (Start to Open).....	°C [°F]	71 [160]
Thermostat Operating Range(Full Open).....	°C [°F]	80 [175]

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://www.cummins.com>