



**CUMMINS MERCUISER DIESEL**  
**Charleston, SC 29405**  
**Marine Performance Curves**

Basic Engine Model  
**QSM11-M-355 CON**

Curve Number:  
**M-20046**

Engine Configuration  
**D353021MX03**

CPL Code:  
**8590**

Date:  
**10-Jul-06**

Displacement: **10.8 liter** [660 in<sup>3</sup>]  
 Bore: **125 mm** [4.92 in]  
 Stroke: **147 mm** [5.79 in]  
 Fuel System: **CELECT**  
 Cylinders: **6**

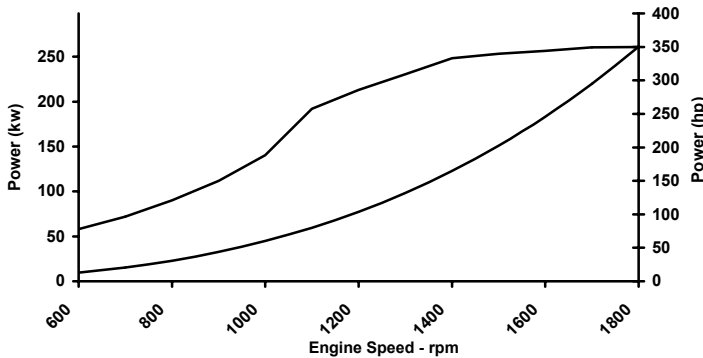
kW [bhp, mhp] @ rpm  
 Advertised Power: **261 [350, 355] @ 1800**

Aspiration: **Turbocharged/Jacket Water Aftercooled**  
 Rating Type: **Continuous Duty**

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.

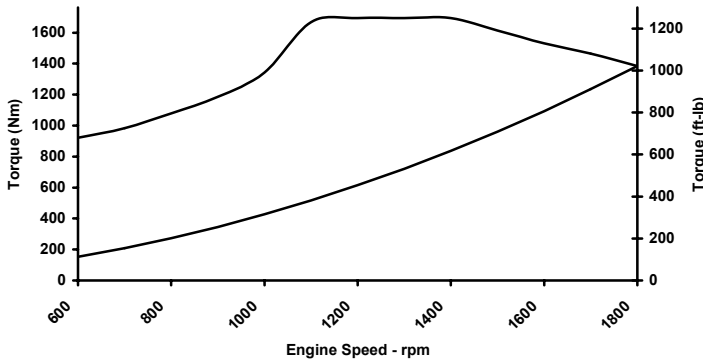
**RATED POWER OUTPUT CURVE**

rpm	kW	bhp
1800	261	350
1600	257	344
1400	249	333
1300	231	309
1100	192	258
1000	141	188
900	112	150
800	90	121
700	72	97



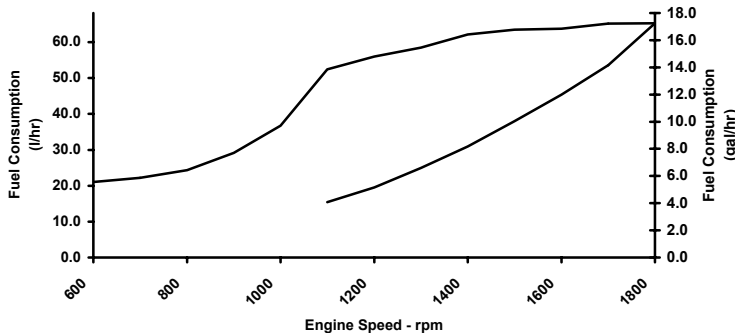
**FULL LOAD TORQUE CURVE**

rpm	N-m	ft-lb
1800	1384	1021
1600	1532	1130
1400	1695	1250
1300	1695	1250
1100	1668	1230
1000	1342	990
900	1186	875
800	1078	795
700	983	725



**FUEL CONSUMPTION - PROP CURVE**

rpm	l/hr	gal/hr
1800	65.3	17.2
1700	54.5	14.2
1600	47.0	12.0
1500	40.1	10.0
1400	33.4	8.2
1300	27.6	6.6
1200	22.1	5.2
1100	17.9	4.1



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 3.0 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].

**Continuous Duty (CON)** Intended for continuous use in applications requiring uninterrupted service at full power. This rating is an ISO 3046 standard power rating.

CHIEF ENGINEER



# Propulsion Marine Engine Performance Data

**Curve No.**    **M-20046**  
**DS :**            **3021**  
**CPL :**          **8590**  
**DATE:**        **10-Jul-06**

## Exhaust System<sup>1</sup>

Exhaust Gas Flow .....	l/sec [cfm]	726 [1538]
Exhaust Gas Temperature (Turbine Out) .....	°C [°F]	398 [748]
Exhaust Gas Temperature (Manifold) .....	°C [°F]	555 [1031]

## Emissions (in accordance with ISO 8178 Cycle E3)

NOx (Oxides of Nitrogen) .....	g/kw-hr [g/hp-hr]	6.57 [4.90]
HC (Hydrocarbons) .....	g/kw-hr [g/hp-hr]	0.24 [0.18]
CO (Carbon Monoxide) .....	g/kw-hr [g/hp-hr]	0.50 [0.37]
PM (Particulate Matter) .....	g/kw-hr [g/hp-hr]	0.16 [0.12]

## Cooling System<sup>1</sup>

### 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]

### Engines with Single Loop Keel Cooling

Coolant Flow to Keel Cooler (with blocked open thermostat) .....	l/min [gal/min]	169 [45]
LTA Thermostat Operating Range (Start to Open) .....	°C [°F]	66 [150]
LTA Thermostat Operating Range (Full Open) .....	°C [°F]	80 [175]
Heat Rejection to Engine Coolant <sup>3</sup> .....	kW [Btu/min]	219 [12460]
Maximum Coolant Inlet Temperature from LTA Cooler .....	°C [°F]	54 [130]

TBD= To Be Determined

N/A = Not Applicable

N.A. = Not Available

<sup>1</sup> All Data at Rated Conditions.

<sup>2</sup> Consult Installation Direction Booklet for Limitations.

<sup>3</sup> 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.

<sup>4</sup> Consult option notes for flow specifications of optional Cummins seawater pumps, if applicable.

<sup>5</sup> 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>