CUMMINS INC.	Basic Engine Model	Curve Number:	
Columbus, IN 47201	**QSB 6.7**	**M-94126**	
Marine Performance Curves	Engine Configuration	CPL Code:	Date:
marine.cummins.com	**D313011MX03**	**4191**	**24-Apr-13**

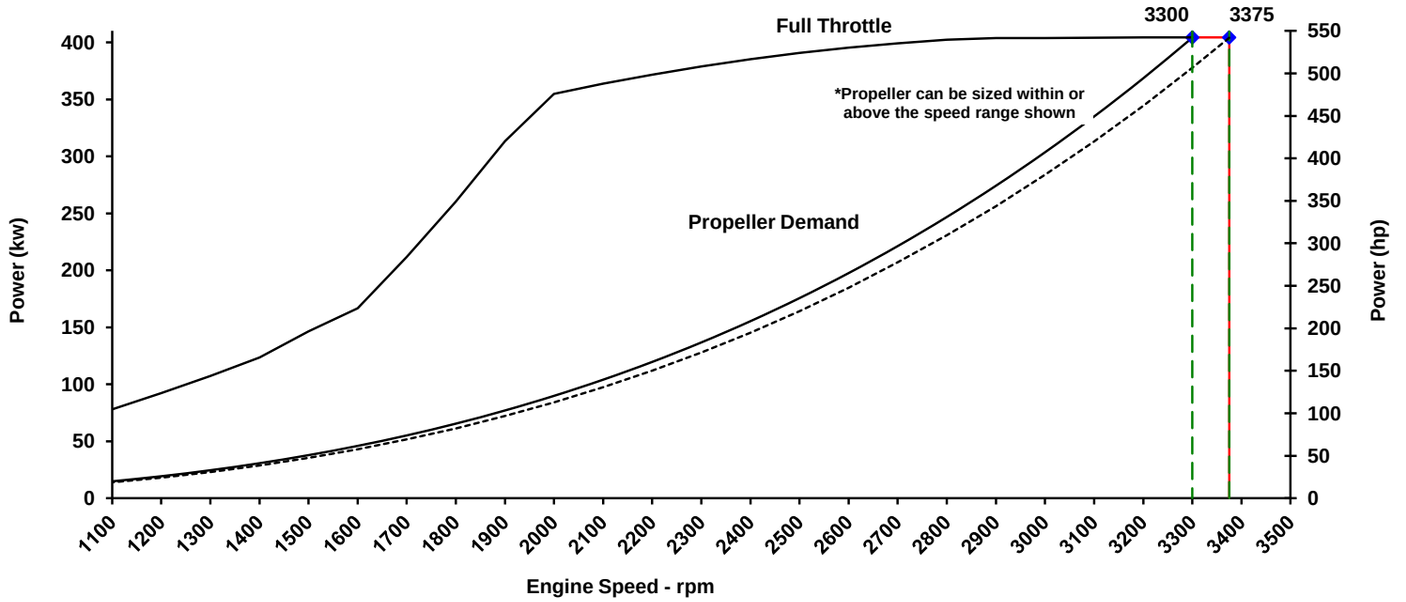
Displacement:	**6.7 liter [408 in³]**	Rated Power:	**404 kw [542 bhp, 550 mhp]**
Bore:	**107 mm [4.21 in]**	Rated Speed:	**3300 rpm**
Stroke:	**124 mm [4.88 in]**	Rating Type:	**Government Service**
Fuel System:	**HPCR Bosch CRIN 3.0**	Aspiration:	**Turbocharged / Sea Water Aftercooled**
Cylinders:	**6**		

CERTIFIED: This diesel engine complies with or is certified to the following agencies requirements:

EPA Tier 3 - Model year requirements of the EPA marine regulation (40CFR1042)

EU Stage IIIa - EC Nonroad Mobile Machinery Directive (2004/26/EC)

IMO Tier II (Two) NOx requirements of International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13



Speed	Full Throttle				Propeller Demand					
	Power		Torque		Power		Torque		Fuel Consumption	
rpm	kw	(hp)	N·m	(ft-lb)	kw	(hp)	N·m	(ft-lb)	L/hr	(gal/hr)
3375	404	(542)	1144	(844)						
3300	404	(542)	1170	(863)	404	(542.0)	1170	(862.6)	110.3	(29.1)
3200	404	(542)	1207	(890)	372	(498.8)	1110	(818.6)	98.4	(26.0)
3100	404	(542)	1245	(918)	341	(457.8)	1052	(775.6)	89.8	(23.7)
3000	404	(542)	1285	(948)	312	(419.0)	995	(733.6)	80.6	(21.3)
2900	404	(542)	1330	(981)	285	(382.4)	939	(692.5)	71.9	(19.0)
2800	402	(540)	1372	(1012)	259	(347.8)	885	(652.4)	65.4	(17.3)
2600	395	(530)	1452	(1071)	212	(284.7)	780	(575.2)	54.6	(14.4)
2400	385	(517)	1533	(1131)	171	(229.4)	681	(502.0)	43.8	(11.6)
2200	372	(498)	1613	(1190)	135	(181.4)	587	(433.0)	34.6	(9.1)
2000	355	(476)	1695	(1250)	105	(140.2)	499	(368.2)	27.4	(7.2)
1800	260	(349)	1382	(1019)	79	(105.5)	417	(307.8)	20.5	(5.4)
1600	167	(224)	995	(734)	57	(76.8)	342	(252.0)	15.1	(4.0)
1400	124	(166)	843	(622)	40	(53.5)	272	(200.8)	10.8	(2.9)
1200	92	(124)	733	(541)	26	(35.3)	209	(154.5)	7.6	(2.0)
1000	65	(87)	620	(457)	16	(21.6)	154	(113.3)	5.1	(1.3)
800	45	(61)	541	(399)	9	(11.8)	105	(77.6)	5.0	(1.3)
600	31	(42)	500	(369)	4	(5.4)	64	(47.6)	2.2	(0.6)

*** Cummins Full Throttle Requirements:**

- Engine achieves or exceeds rated rpm at full throttle under any steady operating condition
- 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 humidy. Member NMMA. Unless otherwise specified, tolerance on all values is +/-5%. 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.

Full Throttle curve represents power at the crankshaft for mature gross engine performance corrected in accordance with ISO 15550. Propeller Curve represents approximate power demand from a typical propeller. 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): Intended for use in variable load applications where full power is limited to one hour out of every eight hours of operation. Also reduced power must be at or below 300 RPM of the maximum rated RPM. This power rating is only for use in National, State or Local government non-revenue producing applications.

TECHNICAL DATA DEPT.

Chief Engineer

Propulsion Marine Engine Performance Data

Curve No. M-94126
DS: D31-MX-2
CPL: 4191
DATE: 24-Apr-13

General Engine Data

Engine Model		QSB 6.7
Rating Type		Government Service
Rated Engine Speed	rpm	3300
Rated Power Production Tolerance	±%	5
Rated Engine Torque	N·m [lb·ft]	1170 [863]
Peak Engine Torque @ 2000 rpm	N·m [lb·ft]	1695 [1250]
Brake Mean Effective Pressure	kPa [psi]	2197 [319]
Maximum Allowable Engine Speed	rpm	3375
Maximum Torque Capacity from Front of Crank[2]	N·m [lb·ft]	0 [0]
Compression Ratio		16.5:1
Piston Speed	m/sec [ft/min]	13.6 [2685]
Firing Order		1-5-3-6-2-4
Weight (Dry) - Engine With Heat Exchanger System - Average	kg [lb]	658 [1450]

Governor Settings

Default Droop Value	Refer to MAB 2.04.00-03/23/2006 for Droop explanation		0%
High Speed Governor Break Point		rpm	3375
Minimum Idle Speed Setting		rpm	550
Normal Idle Speed Variation		±rpm	10
High Idle Speed Range	Minimum	rpm	3370
	Maximum	rpm	3380

Noise and Vibration

Average Noise Level - Top	(Idle)..	dBA @ 1m	75
	(Rated)	dBA @ 1m	102
	(Rated)	dBA @ 1m	101
Average Noise Level - Front	(Idle)..	dBA @ 1m	76
	(Rated)	dBA @ 1m	103

Fuel System[1]

Avg. Fuel Consumption - ISO 8178 E3 Standard Test Cycle	l/hr [gal/hr]	72.6 [19.2]
Fuel Consumption at Rated Speed	l/hr [gal/hr]	110.2 [29.1]
Approximate Fuel Flow to Pump	l/hr [gal/hr]	215.8 [57.0]
Maximum Allowable Fuel Supply to Pump Temperature	°C [°F]	60.0 [140]
Approximate Fuel Flow Return to Tank	l/hr [gal/hr]	105.6 [27.9]
Approximate Fuel Return to Tank Temperature	°C [°F]	79.5 [175]
Maximum Heat Rejection to Drain Fuel	kW [Btu/min]	2.1 [122]

TBD= To Be Determined **N/A = Not Applicable** **N.A. = Not Available**

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.**

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COLUMBUS, INDIANA

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Propulsion Marine Engine Performance Data

Curve No. M-94126
DS: D31-MX-2
CPL: 4191
DATE: 24-Apr-13

Air System[1]		
Intake Manifold Pressure	kPa [in Hg]	251 [74]
Intake Air Flow	l/sec [cfm]	511 [1082]
Heat Rejection to Ambient	kW [Btu/min]	33 [1873]
Exhaust System[1]		
Exhaust Gas Flow	l/sec [cfm]	1156 [2,450]
Exhaust Gas Temperature (Turbine Out)	°C [°F]	522 [970]
Exhaust Gas Temperature (Manifold)	°C [°F]	699 [1,290]
Emissions (in accordance with ISO 8178 Cycle E3)		
NOx (Oxides of Nitrogen)	g/kw·hr [g/hp·hr]	5.00 [3.73]
HC (Hydrocarbons)	g/kw·hr [g/hp·hr]	0.11 [0.08]
CO (Carbon Monoxide)	g/kw·hr [g/hp·hr]	0.45 [0.34]
PM (Particulate Matter)	g/kw·hr [g/hp·hr]	0.07 [0.06]
CO_2 (Carbon dioxide)	g/kw·hr [g/hp·hr]	707.49 [527.58]
CH_4 (Methane)	g/kw·hr [g/hp·hr]	0.00 [0.00]
Cooling System[1]		
Sea Water Pump Specifications	MAB 0.08.17-07/16/2001	
Pressure Cap Rating (With Heat Exchanger Option)	kPa [psi]	103 [15]
Max. Coolant Outlet Pressure from the Engine	kPa [psi]	414 [60]
Sea Water Aftercooled Engine (SWAC)		
Standard Thermostat Operating Range (Start to Open)	°C [°F]	71 [160]
Standard Thermostat Operating Range (Full Open)	°C [°F]	83 [182]

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