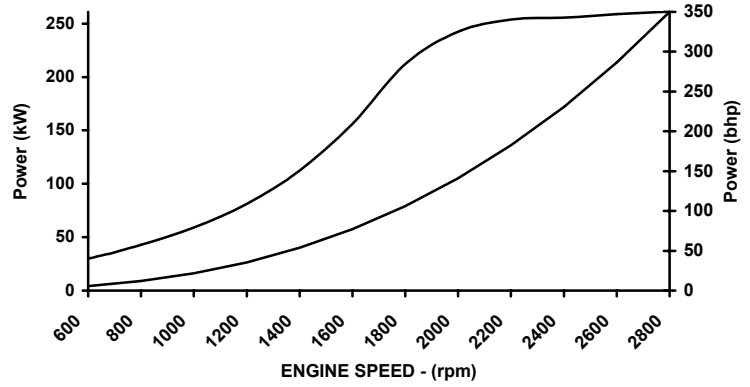
CUMMINS MERCRUISER DIESEL Charleston, SC 29405 Marine Performance Curves	Basic Engine Model: QSB5.9-355 HO	Curve Number: M-91368	
	Engine Configuration: D403075MX03	CPL Code 8464	Date: 31-Jan-06

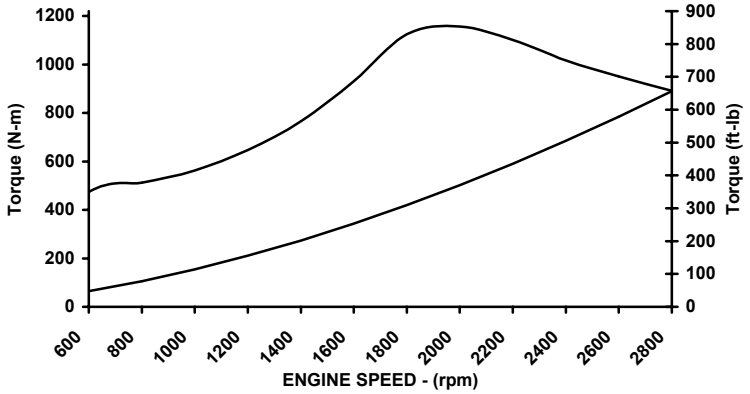
Displacement:	**5.9 liter**	**[359 in^3]**	kW [bhp, mhp] @ rpm	
Bore:	**102 mm**	**[4.02 in]**	Advertised Power:	**261 [350, 355] @ 2800**
Stroke:	**120 mm**	**[4.72 in]**		
Fuel System:	**HPCR**		Aspiration:	**Turbocharged / Sea Water Aftercooled**
Cylinders:	**6**		Rating Type:	**High Output**

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.



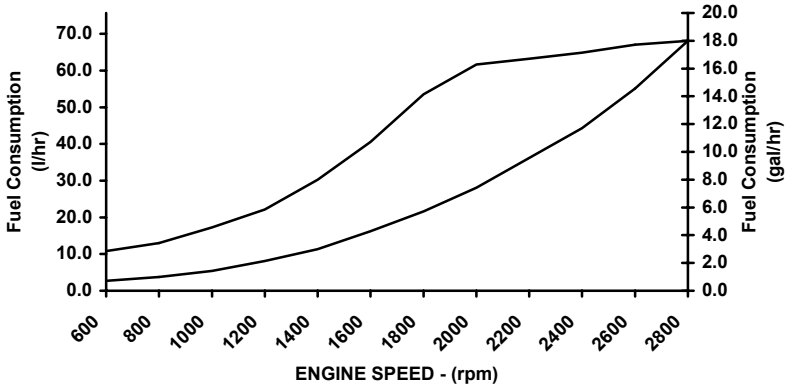
RATED POWER OUTPUT CURVE

rpm	kW	bhp
2800	261	350
2600	259	347
2400	256	343
2200	254	340
2000	242	325
1800	212	284
1600	156	209
1400	112	151
1200	81	109
1000	59	79
800	43	58
600	30	40



FULL LOAD TORQUE CURVE

rpm	N-m	ft-lb
2800	891	657
2600	950	701
2400	1017	750
2200	1101	812
2000	1156	853
1800	1125	830
1600	931	687
1400	766	565
1200	647	477
1000	563	415
800	512	378
600	475	350



FUEL CONSUMPTION - PROP CURVE

rpm	l/hr	gal/hr
2800	68.1	18.0
2600	55.2	14.6
2400	44.3	11.7
2200	36.2	9.6
2000	28.1	7.4
1800	21.6	5.7
1600	16.2	4.3
1400	11.4	3.0
1200	8.1	2.1
1000	5.4	1.4
800	3.8	1.0
600	2.7	0.7

Rated Conditions: Ratings are based upon ISO 8665 and SAE J1228 reference conditions; air pressure of 100 kPa [29.612 in Hg], air temperature 25 deg. 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. F0 having LHV of 42,780 kj/kg [18390 Btu/lb] and weighing 838.9 g/liter [7.001 lb/U.S. gal].

High Output Rating: 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 rating is for pleasure/non-revenue generating applications that operate 500 hours per year.

James D Kahlenbach

CHIEF ENGINEER

Marine Engine Performance Data

Curve No.: M-91368
DS-3075
DATE: 31Jan06

General Engine Data			
Engine Model			QSB5.9-355 HO
Rating Type			High Output
Rated Engine Power		kW [bhp]	261 [350]
Rated Engine Speed		rpm	2800
Rated HP Production Tolerance		±%	5
Rated Engine Torque		N•m [ft•lb]	890 [657]
Peak Engine Torque @ 2000 rpm		N•m [ft•lb]	1156 [853]
Brake Mean Effective Pressure		kPa [psi]	1901 [276]
Indicated Mean Effective Pressure		kPa [psi]	N.A.
Minimum Idle Speed Setting		rpm	600
Normal Idle Speed Variation		±rpm	10
High Idle Speed Range	Minimum	rpm	2865
	Maximum	rpm	2885
Maximum Allowable Engine Speed		rpm	2885
Maximum Torque Capacity from Front of Crank[2]		N•m [ft•lb]	346 [255]
Compression Ratio			17.2:1
Piston Speed		m/sec [ft/min]	11.2 [2203]
Firing Order			1-5-3-6-2-4
Weight (Dry) Engine only - Average		kg [lb]	N.A.
Weight (Dry) Engine With Heat Exchanger System - Average		kg [lb]	612 [1350]
Weight Tolerance (Dry) Engine only - Average		kg [lb]	N.A.

Noise and Vibration			
Average Noise Level – Top	(Idle)	dBA @ 1m	76
	(Rated)	dBA @ 1m	99
Average Noise Level – Right Side	(Idle)	dBA @ 1m	76
	(Rated)	dBA @ 1m	100
Average Noise Level – Left Side	(Idle)	dBA @ 1m	77
	(Rated)	dBA @ 1m	107
Average Noise Level – Front	(Idle)	dBA @ 1m	76
	(Rated)	dBA @ 1m	100

Fuel System[1]			
Average Fuel Consumption – ISO 8178 E3Standard Test Cycle		l/hr [gal/hr]	45.8 [12.1]
Fuel Consumption @ Rated Speed		l/hr [gal/hr]	68 [18]
Approximate Fuel Flow to Pump		l/hr [gal/hr]	189 [50]
Maximum Allowable Fuel Supply to Pump Temperature		°C [°F]	60 [140]
Approximate Fuel Flow Return to Tank		l/hr [gal/hr]	121 [32]
Approximate Fuel Return to Tank Temperature		°C [°F]	66 [150]
Maximum Heat Rejection to Drain Fuel[5]		kW [Btu/min]	2 [90]
Fuel Transfer Pump Pressure Range		kPa [psi]	76 [11]
Fuel Rail Pressure	Gauge	kPa [psi]	N.A.
	INSITE	kPa [psi]	142,997 [20,740]

Air System[1]			
Intake Manifold Pressure		kPa [in Hg]	203 [60]
Intake Air Flow		l/sec [cfm]	306 [649]
Heat Rejection to Ambient		kW [Btu/min]	40 [2280]

Exhaust System[1]			
Exhaust Gas Flow		l/sec [cfm]	709 [1502]
Exhaust Gas Temperature	Turbine Out	°C [°F]	436 [816]
	Manifold	°C [°F]	592 [1097]

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

[1]All Data at Rated Conditions
[2]Consult Installation Direction Booklet for Limitations
[3]Heat rejection 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

Marine Engine Performance Data

Curve No.: M-91368
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Emissions (in accordance with ISO 8178 Cycle E3)

NOx (Oxides of Nitrogen) ....g/kw·hr [g/hp·hr]	6.225 [4.642]
HC (Hydrocarbons)....g/kw·hr [g/hp·hr]	0.095 [0.071]
CO (Carbon Monoxide)....g/kw·hr [g/hp·hr]	0.313 [0.233]
PM (Particulate Matter)....g/kw·hr [g/hp·hr]	0.109 [0.081]

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]

Engines *without* Low Temperature Aftercooling (LTA)

Sea Water Aftercooled Engine (SWAC)

Coolant Flow to Engine Heat Exchanger…….... l/min [gal/min]	250 [66]
Standard Thermostat Operating Range Start to Open....°C [°F]	74 [165]
Full Open ....°C [°F]	85 [185]
Heat Rejection to Engine Coolant[3] ....kW [Btu/min]	199 [11300]

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