



CUMMINS MARINE
 Charleston, SC 29405
 Marine Performance Curves
gce.cummins.com

Basic Engine Model:
QSB7-DM
 Engine Configuration:
D313014MX03

Curve Number:
DM-93772
 CPL Code: **3460**
 Date: **18-Sep-17**

Displacement: **6.7 liter [408 in³]**
 Bore: **107 mm [4.21 in]**
 Stroke: **124 mm [4.88 in]**
 Fuel System: **High Pressure Common Rail**
 Cylinders: **6**

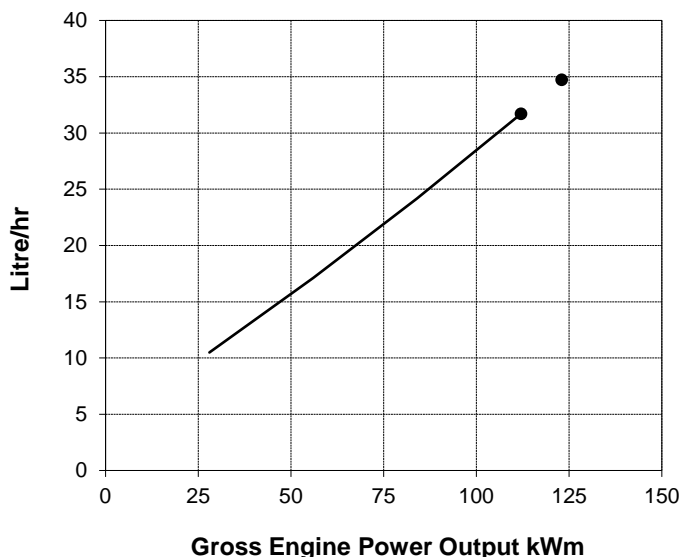
Advertised Power: **112[150]@1800** kW [hp] @ rpm
 Aspiration: **Turbocharged / Aftercooled**
 Exhaust Type: **Water Jacketed**

CERTIFIED: This marine diesel engine complies with or is certified to the:
 EPA Tier 3 - Model year requirements of the EPA marine regulation (40CFR1042)
 IMO Tier II (Two) NOx requirements of International Maritime Organization (IMO), MARPOL 73/78 Annex VI, Regulation 13

Engine Speed	Overload Capacity		Prime Power		Continuous Power	
	kWm	BHP	kWm	BHP	kWm	BHP
1800	123	165	112	150	89	120

Engine Performance Data @ 1800 rpm

OUTPUT POWER			FUEL CONSUMPTION			
%	kWm	BHP	kg/kWh	Lb/ BHP-h	Liter/hour	U.S. Gal/hour
10% OVERLOAD CAPACITY						
110%	123	165	0.234	0.385	34.7	9.2
PRIME POWER						
100%	112	150	0.235	0.387	31.7	8.4
75%	84	113	0.240	0.395	24.2	6.4
50%	56	75	0.255	0.419	17.1	4.5
25%	28	38	0.309	0.509	10.5	2.8
10%	11	15	0.499	0.820	6.6	1.7
CONTINUOUS POWER						
80%	89	120	0.239	0.393	25.6	6.8



Rating Conditions: Ratings are in accordance with ISO 15550 and ISO 8528-5 reference conditions; air pressure at 100 kPa (29.61 in Hg), air temperature 25°C (77°F), and 30% relative humidity.
 Power output curves are based on the engine operating with fuel system, water pump, and lubricating oil pump; not included are battery charging alternator, fan, optional equipment, and driven components.
 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.
 Unless otherwise specified, tolerance on all values is +/-5%.

Prime Power Rating is applicable for supplying continual electrical power at varied load. The following are the Prime Rating parameters:
 * Engines with a Prime Power rating are available for an unlimited number of hours per year in variable load applications. Variable load is not to exceed an 80 percent average of the rated power.
 * A 10 percent overload capability is available for a period of one hour within a 12 hour period of operation.
 * Total operating time at the 10 percent overload power shall not exceed 25 hours per year. This power rating follows ISO 8528 guidelines.

TECHNICAL DATA DEPT.


CHIEF ENGINEER

Auxiliary Marine Engine Performance Data

Curve No. **DM-93772**
DS : **D31-MX-1**
CPL : **3460**
DATE: **18-Sep-17**

General Engine Data

Engine Model	QSB7-DM		
Rating Type	Prime Power	Overload	
Rated Engine Power	112 [150]	123 [165]	
Governed Engine Speed	1800		
Rated HP Production Tolerance	5		
Rated Engine Torque	593 [438]	653 [481]	
Default Idle Speed Setting	700		
Low Idle Speed Range Minimum	700		

Maximum Continuous Torque Capacity from Front of Crank

Maximum Torque Capacity from Front of Crank ²	594 [438]		
Brake Mean Effective Pressure	1115 [162]	1226 [178]	
Compression Ratio	17.3:1		
Piston Speed	7 [1465]		
Firing Order	1-5-3-6-2-4		
Friction Power	19 [25]		
Steady State Stability Band at Constant Load	0.25		
 Weight Dry - Engine With Heat Exchanger	 708 [1561]		

Noise and Vibration

Average Noise Level - Top	(Idle)..	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.
Average Noise Level - Right Side	(Idle)..	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.
Average Noise Level - Left Side	(Idle)..	dBA @ 1m	N.A.
	(Rated)	dBA @ 1m	N.A.

Fuel System¹

Approximate Fuel Flow to Pump	134.0 [35.4]	134.0 [35.4]	
Maximum Allowable Fuel Supply to Pump Temperature	60 [140]	60 [140]	
Approximate Fuel Flow Return to Tank	102.3 [27.0]	99.3 [26.2]	
Approximate Fuel Return to Tank Temperature	57 [134]	57 [135]	
Maximum Heat Rejection to Drain Fuel	1 [50]	1 [50]	
Average Fuel Consumption- Emissions ISO 8178 D2 Test Cycle.....	16.6 [4.4]		

Air System¹

Intake Manifold Pressure	117 [35]	129 [38]	
Intake Air Flow	169 [358]	177 [375]	
Heat Rejection to Ambient	7 [377]	6 [319]	

Exhaust System¹

Exhaust Gas Flow	345 [732]	368 [780]	
Exhaust Gas Temperature (Turbine Out)	381 [717]	398 [748]	
Exhaust Gas Temperature (Manifold)	535 [995]	565 [1048]	
Heat Rejection to Exhaust	79 [4503]	87 [4958]	

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.

CUMMINS INC.
COLUMBUS, INDIANA

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Auxiliary Marine Engine Performance Data

Curve No. **DM-93772**
DS : **D31-MX-1**
CPL : **3460**
DATE: **18-Sep-17**

Emissions (in accordance with ISO 8178 Cycle D2)

NOx (Oxides of Nitrogen)	g/kw-hr [g/bhp-hr]	4.311	[3.215]		
HC (Hydrocarbons)	g/kw-hr [g/bhp-hr]	0.570	[0.425]		
CO (Carbon Monoxide)	g/kw-hr [g/bhp-hr]	1.335	[0.996]		
PM (Particulate Matter)	g/kw-hr [g/bhp-hr]	0.240	[0.179]		
CO ₂ (Carbon dioxide)	g/kw-hr [g/bhp-hr]	898	[670]		

Emissions (in accordance with ISO 8178 Cycle E2)

NOx (Oxides of Nitrogen)	g/kw-hr [g/bhp-hr]	4.389	[3.273]		
HC (Hydrocarbons)	g/kw-hr [g/bhp-hr]	0.325	[0.243]		
CO (Carbon Monoxide)	g/kw-hr [g/bhp-hr]	0.920	[0.686]		
PM (Particulate Matter)	g/kw-hr [g/bhp-hr]	0.183	[0.137]		
CO ₂ (Carbon dioxide)	g/kw-hr [g/bhp-hr]	781	[582]		

Cooling System¹

Sea Water Pump Specifications	MAB 0.08.17-07/16/2001				
Minimum Pressure Cap RatingkPa [psi]	103	[15]		

Engines with Keel Cooling

Coolant Flow to Cooler (with blocked open thermostat).....	l/min [gal/min]	174	[46]		
Standard Thermostat Operating Range	Start to open.....	71	[160]		
	Full open.....	83	[181]		
Heat Rejection to Engine Coolant ³	kW [Btu/min]	110	[6260]	115	[6526]
Maximum Engine Coolant Inlet Temperature from Cooler.....	°C [°F]	54	[130]		

Engines with Radiator Cooling

Coolant Flow to Radiator (with blocked open thermostat).....	l/min [gal/min]	174	[46]		
Standard Thermostat Operating Range	Start to open.....	71	[160]		
	Full open.....	83	[181]		
Heat Rejection to Engine Coolant ³	kW [Btu/min]	110	[6260]	115	[6526]
Maximum Coolant Inlet Temperature from Radiator					
For Radiator @ 35° C [95° F] Ambient Air.....	°C [°F]	54	[130]		
For Radiator @ 50° C [122° F] Ambient Air.....	°C [°F]	68	[155]		

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