

# Cummins Inc.

## Marine Engine General Data Sheet

Engine Model: **QSB6.7**

Data Sheet: **D31-MX-1**

Date: **17DEC13**

### GENERAL ENGINE DATA

### Metric [U.S. Customary]

Type .....	4Cycle - In-Line	
Cylinders .....	6	
Bore .....	mm [in]	107 [4.21]
Stroke .....	mm [in]	124 [4.88]
Displacement .....	liter [in <sup>3</sup> ]	6.7 [408.25]

### ENGINE MOUNTING & ACCESSORY DRIVES

Max. Allowable Bending Moment at Rear Face of Block .....	N·m [ft·lb]	1356 [1000]
Max. Allowable Axial Thrust Load on Crankshaft .....	N [lb]	1379 [310]
Crankshaft Radial Load Limit.....	MAB 0.01.09-12/02/2005	
Max. Allowable Radial Load on Front of Crankshaft (250 & 305 only, Higher ratings-no capacity)		
At All Angles .....	N [lb]	262 [59]
At 0° .....	N [lb]	262 [59]
At 45° .....	N [lb]	378 [85]
At 90° .....	N [lb]	1712 [385]
At 135° .....	N [lb]	2669 [600]
At 180° .....	N [lb]	2669 [600]
At 225° .....	N [lb]	2669 [600]
At 270° .....	N [lb]	2544 [572]
At 315° .....	N [lb]	427 [96]
Installation/Operating Angles - Engine Installation Angles		
In-Line drive Installation: Static Installed Engine Pitch Angle		
Engine Front Up From Horizontal .....	Min.	0°
Engine Front Up From Horizontal .....	Max.	12°
Vee Drive Installation: Static Installed Engine Pitch Angle		
Engine Front Up From Horizontal .....	Min.	2°
Engine Front Up From Horizontal .....	Max.	12°
Maximum Operating Angles (see MAB No. 0.16.00-03/27/2007 for definitions and options to gain greater capability)		
Continuous Pitch Angle		
Engine Front Up From Horizontal .....	Deg.	-15°
Engine Front Down From Horizontal .....	Deg.	25°
Continuous Roll Angle		
"Right" from vertical viewed from flywheel end of engine.....	Deg.	5°
"Left" from vertical viewed from flywheel end of engine.....	Deg.	5°
Intermittent Pitch Angle (intermittent operation less than 1 minute)		
Engine Front Up From Horizontal .....	Deg.	-30°
Engine Front Down From Horizontal .....	Deg.	45°
Intermittent Roll Angle (intermittent operation less than 1 minute)		
"Right" from vertical viewed from flywheel end of engine.....	Deg.	35°
"Left" from vertical viewed from flywheel end of engine.....	Deg.	35°

### FUEL SYSTEM

Maximum Allowable Restriction to Fuel Pump (Customer Connection Point)		
Clean Filter .....	kPa [in Hg]	8 [2.5]
Dirty Filter .....	kPa [in Hg]	14 [4.0]
Maximum Allowable Return Line Pressure .....	kPa [in Hg]	34 [10.0]
Maximum Static Pressure at Fuel Pump .....	kPa [in Hg]	34 [10.0]
Maximum Height of Fuel In Tank Above Fuel Pump .....	m [ft]	4.11 [13.5]

### EXHAUST SYSTEM

Maximum Allowable Back Pressure .....	kPa [in Hg]	17 [5]
Maximum Bending Moment at Turbine Outlet Mounting Flange (Y Direction).....	N·m [ft·lb]	19 [14]
Maximum Incremental Direct Load at Turbine Outlet Mounting Flange .....	kg [lb]	9 [20]
Maximum Torque About Axis (X Direction) .....	N·m [ft·lb]	15 [11]

### CUMMINS ENGINE COMPANY, INC COLUMBUS, INDIANA

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<http://www.cummins.com>

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### AIR INDUCTION SYSTEM

Max. Allowable Intake Restriction - Turbocharged		
Clean Filter .....	kPa [in H <sub>2</sub> O]	4 [15]
Dirty Filter .....	kPa [in H <sub>2</sub> O]	6 [25]
Maximum Air Cleaner Inlet Temperature Rise Over Ambient .....	°C [°F]	17 [30]
Maximum Allowable Air Inlet Temperature at the Filter.....	°C [°F]	54 [130]

### LUBRICATION SYSTEM

Oil Pressure at Normal Operating Temperature		
Idle Speed - Minimum in Main Oil Gallery .....	kPa [psi]	35 [5]
Rated Speed - Measured in Main Oil Gallery (Low) .....	kPa [psi]	207 [30]
Max. Allowable Oil Temperature (Sump) .....	°C [°F]	121 [250]
Oil Pan Capacity (Shallow) OP		
Low .....	liter [gal]	12.5 [3.3]
High .....	liter [gal]	14.4 [3.8]
Total System Capacity (Max. Sump + Filter(s)) .....	liter [gal]	15.1 [4.0]

### COOLING SYSTEM

Coolant Capacity		
Engine Only .....	liter [gal]	9.8 [2.6]
Engine Including Heat Exchanger and Integral Expansion Tank.....	liter [gal]	26.5 [7.0]
Max. Pressure Drop Across Any External Cooling System Circuit .....	kPa [psi]	34.5 [5.0]
Max. Allowable Block Coolant System Pressure .....	kPa [psi]	344.7 [50.0]
Max. Coolant Head From Crankshaft Centerline With 15 psi Pressure Cap .....	m [ft]	1.5 [5.0]
Max. Coolant Temperature at Engine Outlet .....	°C [°F]	96 [205.0]
Min. Block Coolant Temperature (Warm Engine) .....	°C [°F]	71 [160.0]
Min. Allowable Coolant Expansion Space .....	% of System Capacity	6%
Maximum Sea Water Pressure .....	kPa [psi]	137.9 [20.0]
Maximum Sea Water Inlet Restriction (Dirty Strainer).....	kPa [in Hg]	-16.9 [-5.0]

### ELECTRICAL AND STARTER SYSTEM

Electrical		<b><u>12V</u></b>	<b><u>24V</u></b>
Min. Recommended Battery Capacity			
Cold Cranking Amperes Rating (CCA) .....		1100	550
Marine Cranking Amperes Rating (MCA) .....		1375	688
Reserve Capacity (Discharging 25 Amps @ 80°F) .....	Minutes	260	130
Min. Allowable System Voltage (@ Battery While Running) .....	Volts	12.0	24.0
Min. Allowable System Voltage (@ Battery While Cranking) .....	Volts	10.6	21.2
Max. Allowable System Voltage (@ Battery While Running) .....	Volts	15.5	31.0
Max. Allowable Voltage Drop of Starting Circuit (While Cranking) .....	Volts	1.0	2.0
Min. Engine Cranking Speed .....	rpm	150	150
Max. Engine (Running) Current Draw .....	Amps	30	15
Min. Ambient Temperature for Cold Start (No Aids) .....	°C [°F]	0 [32]	0 [32]

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