

# Marine generator set

## Quiet Diesel™ Series

### 50 QD 50 Hz

### Model MDDCG



# Cummins Onan

Performance you rely on.™



## Features and benefits

- Rugged dependability, high quality and innovation make Cummins Onan Marine Generators the leader in marine generator design and development, providing performance you rely on.™
- The digital QD (Quiet Diesel) Series models are the first marine generator sets with self-monitoring capability and network communication.
- The standard Cummins Onan Digital Display provides user-friendly diagnostics including extensive engine and alternator information, self-diagnostic features and text display.
- The Cummins Onan Marine Generators with advanced design and development processes use technology to lower sound and vibration. Our sound shields minimize noise and deliver better sound quality. The optimized mounting system greatly reduces vibration.
- Certified to U.S. Environmental Protection Agency (EPA) emission standards.
- Cummins Onan Marine Generators have the largest worldwide certified distributor/dealer support network in the industry with more than 70 years of experience.

## Models and ratings

Model	kW*/kVA	Voltage	Amps	Phase	Hz	Engine RPM
<b>50MDDCG</b>	50.0/50.0	110/220	454.5/227.3	1	50	1500
		115/230	434.8/217.4			
		120/240	416.7/208.3			
<b>50MDDCG</b>	50.0/62.5	110/190	189.9	3	50	1500
		115/200	180.4			
		120/208	173.5			
		110/220	164.0			
		115/230	156.9			
		120/240	150.4			
		220/380	95.0			
		230/400	90.2			
		240/416	86.7			
255/440	82.0					

Three phase output at 0.8 power factor. Rating conditions are 100 kPa (29.6 in Hg) barometric pressure, 30% relative humidity and 25° C (77° F) (ref. ISO 3046). \*Unlimited running time at rated power, additional 10% reserve power available.

## Sound level, weight, and size

	Sound level	Dimensions			
	50 Hz configuration	Weight (dry)	Length	Width	Height
<b>With sound shield</b>	72 dB(A)*	1167 kg (2572 lb)	1783 mm (70.2 in)	840 mm (33.1 in)	1039 mm (40.9 in)
<b>Without sound shield</b>		1067 kg (2352 lb)	1779 mm (70.0 in)	822 mm (32.4 in)	994 mm (39.1 in)

\* Full load at 1 m, with optional Cummins Onan sound shield

---

## Standard features

- Advanced digital electronic control providing extensive diagnostic capability
- SAE J-1939 CAN data link for monitoring generator set status and diagnostics for engine and alternator
- Cummins Onan Digital Display - graphical LCD display for generator set operating parameters, diagnostics, and pre-alarm indication in text format
- Shutdown with diagnostic indicator light for: high engine coolant temperature, low oil pressure, over speed/voltage, starter overcrank, additional customer input and many more
- Electronic governor allows the generator set to maintain isochronous frequency control and close voltage regulation to provide quality power for digital appliances and computers
- Three phase alternator, 90° C rise at 50° C ambient, brushless, 12 lead reconnectable
- Digital voltage regulator integral with control
- 12 V DC electric system with battery charging, negative ground
- Mechanical fuel transfer pump with manual priming lever
- Engine starter with automatic start disconnect
- Water cooled exhaust manifold and turbocharger
- Freshwater cooling system with keel cooling connections
- Coolant overflow bottle to easily maintain coolant level
- Dry exhaust elbow with flange connection
- Common fault relay for external alarm
- Combustion air filter with washable element
- Full flow lube oil filter
- Oil drain valve
- Fuel filter/water separator, primary and secondary
- Drip pan
- Bulk head type fuel line connections for ease of installation
- Captive focalized mounting systems with vibration isolators
- Single point lifting bracket for ease of installation
- Plug-in watertight connector for optional remote panel
- Closed crankcase ventilation system with filter to eliminate engine room contamination
- Factory load tested
- Five year limited warranty

---

## Engine details

**Design:** 4-cycle, turbocharged, water-cooled diesel

**Cylinders:** 4

**Bore:** 106.5 mm (4.2 in)

**Stroke:** 127 mm (5.0 in)

**Displacement:** 4.5 L (275 in<sup>3</sup>)

**Compression ratio:** 17.6:1

**Max fuel lift:** 3 m (10 ft)

**Lube oil capacity:** 12.6 L (13.3 qt)

**Coolant flow rate:** 53 L/min (14 Gal/min)

**Raw water flow rate:** 70 L/min (18 Gal/min)

**Starting system:** Remote 3-wire, 12 V starting battery required, 640 CCA; 24 V optional

**Power (max):** SAEJ1349

50 Hz at 1500 RPM 61 kW (82 hp)

**Fuel injection pump:** Stanadyne DE-10

**Combustion chamber:** Direct injection

**Max raw water lift:** 3 m (10 ft)

## Typical fuel consumption

No. 2 diesel fuel, L/hr (Gal/hr)	<u>1/4 load</u>	<u>1/2 load</u>	<u>3/4 load</u>	<u>Full load</u>
<b>50.0 MDDCG</b>	4.6 (1.2)	7.6 (2.0)	10.8 (2.9)	14.1 (3.7)

---

## Alternator details

**Design:** Cummins Onan brushless, revolving field, 4-pole alternator; rigidly coupled to engine and permanently aligned

**Voltage regulator:** Solid state, circuit board encapsulated for corrosion protection

**Exciter system:** Brushless with 8-pole stator mounted in endbell; rotating rectifier assemblies are encapsulated for protection from adverse environments

**Stator:** Skewed stator and 2/3 pitch windings minimize field heating and voltage harmonics; resin-coated for corrosion protection

**Rotor:** Dynamically balanced assembly; direct-coupled to engine by flexible drive discs; supported by pre-lubricated, maintenance-free ball bearing

**Cooling:** Direct drive centrifugal blower

**Insulation system:** Class H per NEMA MG1-1.65 and BS 5000

---

## Generator set performance

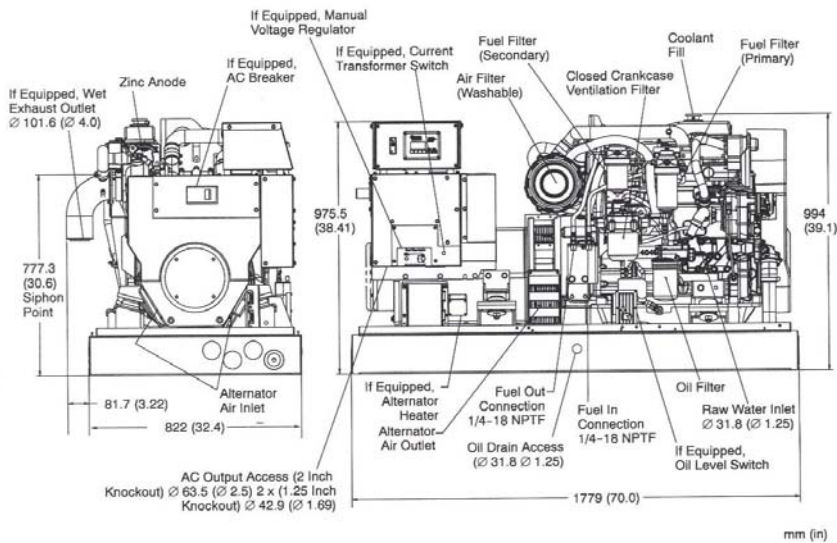
**Operating environment:** Generator sets are durability tested at maximum ambient air temperature: 50° C (122° F); raw water temperature 37.8° C (100° F)

**Frequency regulation:** Isochronous

**Steady-state frequency band:** Less than 0.5% per ISO 8528-5

**Steady-state voltage deviation:** Less than +/-1% per ISO 8528-5

## Basic dimensions



**Note:** This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-3799 and wiring diagram from your distributor/dealer.

## Options

- Low and high oil level indicator and shutdown
- Heat exchanger cooling with gear-driven raw water pump with loss of raw water flow protection
- 12 V DC electric system with battery charging, isolated DC
- 24 V DC electric system with battery charging, negative ground
- 24 V DC electric system with battery charging, isolated DC
- Single phase alternator, 90° C rise at 50° C ambient, 4 lead
- Set-mounted mainline circuit breaker; shunt trip and auxiliary contacts available
- Water cooled exhaust mixing elbow with high temperature shutdown
- Dry exhaust elbow with 8 bolt flange per ASME B16.5
- Electric fuel transfer pump for increased fuel lift capability
- Front power take off - 12 V or 24 V - 70 or 100 hp clutch with torsional coupling and configured for a "C" splined 1-1/4 in pump shaft (SAE J744)
- Coolant heater, 120 V or 240 V, 1000 W
- Anti-condensation resistance heater, 120 V or 240 V, 100 W
- Permanent magnet generator (PMG) exciter and analog voltage regulator for paralleling operation
- Manual voltage regulator
- Droop compensator for parallel operation
- Commercial limited warranty packages
- Export box packing
- Sound shield housing with fire extinguisher access port



Standard model without sound shield

## Accessories

- Cummins Onan Digital Display - graphical LCD remote display for generator set operating parameters, diagnostics, and pre-alarm indication in text format
- Basic remote panel with start/stop switch with run (green) and control status (amber) lamps
- Remote start/stop switch with dual lamps and mating harness for panel installation
- Panel with start/stop switch with run (green) and control status (amber) lamps; replaces Cummins Onan Digital Display if mounted remotely
- Pigtail harness for generator set remote connectors and remote panels
- Remote panel wire harness - 15 ft, 25 ft, 45 ft, 75 ft, 100 ft or 150 ft
- Y adapter harness for dual remote stations
- Set-mounted mainline circuit breaker; shunt trip and auxiliary contacts available
- Siphon break kit
- Wet exhaust hose
- Marine muffler and water separator
- Battery
- Coolant heater, 120 V or 240 V, 1000 W
- Anti-condensation resistance heater, 120 V or 240 V, 100 W
- Low and high oil level indicator and shutdown
- Manual voltage regulator
- Keel cooling expansion tank, set-mountable
- Secondary vibration isolator system
- Front power take off - 12 V or 24 V - 70 or 100 hp clutch with torsional coupling and configured for a "C" splined 1-1/4 in pump shaft (SAE J744)
- Sound shield housing with fire extinguisher access port
- Electric fuel transfer pump for increased fuel lift capability



Cummins Onan Digital Display

---

## Standards and testing

National Marine Manufacturers Association (NMMA) members produce every conceivable product used by recreational boaters. NMMA provides a wide variety of programs and services including technical expertise, standards monitoring, government relations advocacy and industry statistics.

The American Boat and Yacht Council (ABYC) develops standards and recommended practices for designing, constructing, equipping and maintaining small pleasure and commercial craft.

This generator set was designed and manufactured in facilities certified to ISO 9001.



## Warranty policy

The Cummins Onan express, written limited warranty covers virtually everything except routine maintenance for the first two years you own your marine generator set, and covers parts and labor on major power train and generator set parts during the third through fifth years.

For complete Cummins Onan limited warranty details see your Onan distributor/dealer.

**Warning:** Backfeed to a utility system can cause electrocution and/or property damage. Do not connect to any building electrical except through an approved device or after building main breaker is open.

## After sale support

### Largest distributor/dealer support network

Cummins Onan generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins Onan distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

**Manuals:** Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins Onan distributor/dealer and request the following manual numbers: Operation (981-0178), Installation (981-0639), Parts (981-0276), Service (981-0539).

To easily locate the nearest Cummins Onan distributor/dealer in your area, or for more information, contact us at 1-800-888-6626 (or 763-574-5000), or visit [www.cumminsonan.com](http://www.cumminsonan.com).

---

## Contact your distributor/dealer for more information

# Cummins Onan

### Cummins Power Generation

1400 73rd Ave. NE  
Minneapolis, MN 55432 USA  
Phone 1 763 574 5000  
Toll-free 1 800 888 6626  
Fax 1 763 574 5298  
Email [www.cumminsonan.com/contact](http://www.cumminsonan.com/contact)  
[www.cumminsonan.com](http://www.cumminsonan.com)

