

# Commercial generator set Quiet Diesel™ Series 7 QD Model HDKBL



## Features and benefits

- Computer controlled constant speed operation
- Unique sound controlled housing and sound shields minimize noise and deliver better sound quality
- Four-point semi focalized internal mounting system greatly reduces vibration
- Self-diagnostic capabilities simplify troubleshooting
- Optional Cummins Onan digital display provides user-friendly diagnostics including extensive engine and alternator information, self-diagnostic features and text display
- Service and maintenance points accessible through easy latch side service door
- Control panel mounted switches
- Automatic glow plug eliminates preheat time uncertainty
- Products supported by worldwide certified distributor/dealer support network

## Models and ratings

Model	kW	Voltage	Amps	Phase	Hz	Engine RPM
7.0HDKBL	7.0	110/220	63.6/31.8	1	50	1500
		115/230	60.9/30.4	1	50	1500
		120/240	58.3/29.2	1	50	1500
		220	31.8	1	50	1500
		230	30.4	1	50	1500

- Ratings apply up to 500 ft (153 m) altitude, 85 °F (29 °C) ambient\* with No. 2 diesel fuel.
- Maximum power capability decreases 3.5% for each 1000 ft (305 m) above 500 ft (153 m) and 1% for each 10 °F (5.5 °C) increase in ambient temperature above 85 °F (29 °C).
- Ratings are at intermittent power output. Continuous output is 85% of intermittent power.

\* Ambient is defined as the air temperature measured at the cooling air inlet to the set.

## Sound level, weight and size

Sound level	Weight (dry)	Length	Dimensions Width	Height
60 dB(A)*	272 kg (600 lb)	911 mm (35.9 in)	566 mm (22.3 in)	593 mm (23.4 in)

\* Full load at 3m

## Standard features

- Advanced digital electronic control providing extensive diagnostic capability
- Shutdown with diagnostic indicator light for: high engine coolant temperature, low oil pressure, over speed/voltage, starter overcrank, additional customer input and many more
- Start-run-stop switch with glow plug preheat and fuel pump priming modes for easy starting; run light and diagnostic indicator light
- Start function has automatic glow plug preheat providing better, cleaner starting
- Engine starter with automatic start disconnect
- Electronic governor allows the generator set to maintain isochronous frequency control and close voltage regulation to provide quality power for digital appliances and computers
- Single phase AC alternator with single or dual voltages, brushless
- Digital voltage regulator integral with control
- 12 V DC electric system with battery charging, negative ground
- DC control console mounted with isolation and DC protective circuit breakers
- Electric fuel transfer pump for priming and lift capability
- Cooling system with remote heat exchanger and expansion tank to easily maintain coolant level
- Water cooled exhaust manifold
- AC mainline circuit breaker
- Running time meter
- Remote air filter with air intake silencer
- Captive focalized mounting systems with vibration isolators
- Full flow lube oil filter
- Oil drain and hose extension
- Electric fuel shut-off via electronic governing actuator
- Fuel filter/water separator
- Drip pan base capable of containing all generator set fluids
- Bulk head type connections for ease of installation include fuel in, fuel out, battery, generator set ground (vehicle bond) and engine air inlet
- Single point lifting bracket for ease of installation
- Plug-in watertight connector for optional remote control
- Closed crankcase breather re-circulation to eliminate engine room contamination
- Fire extinguisher access port
- Factory load tested

## Engine details

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

**Cylinders:** 3

**Bore:** 78 mm (3.07 in)

**Stroke:** 78.4 mm (3.09 in)

**Displacement:** 1123 cm<sup>3</sup> (68.58 in<sup>3</sup>)

**Compression ratio:** 24:1

**Max fuel lift:** 1.22 m (4 ft)

**Lube oil capacity:** 4.0 L (4.2 qt)

**Coolant capacity:** 4.0 L (4.2 qt)

**Coolant flow rate:** 24.6 L/min (6.5 Gal/min)

**Starting system:** Remote 3-wire, 12 V starting battery, 12 V 70 Ah, 500 CCA; at -15° C (5° F) minimum, 24 V optional

**Power (max):** SAEJ1995

50Hz at 1500 RPM 10.3 kW (13.8 hp)

**Fuel injection pump:** Bosch PFR-MD mini

**Combustion chamber:** Spherical, three vortex combustion system

## Typical fuel consumption

No. 2 diesel fuel, L/hr (Gal/hr)	No load	1/4 Load	1/2 load	3/4 Load	Full load
<b>7.0 HDKBL-50 Hz</b>	0.7 (0.2)	1.1 (0.3)	1.5 (0.4)	2.0 (0.5)	2.8 (0.8)

## 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

**Frequency regulation:** Isochronous

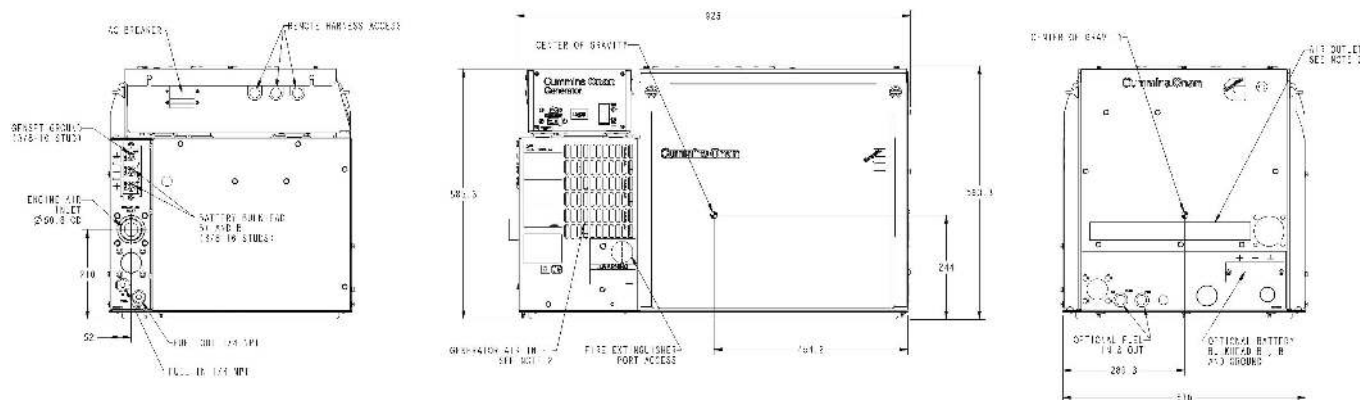
**Random frequency variation:** Will not exceed +/-0.5% of its mean value for constant loads from no load to full load

**Voltage regulation:** No load to rated load +/-1.5%

**Random voltage variation:** Will not exceed +/-1% of its mean value for constant loads from no load to full load

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

## 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 A040F773 and wiring diagram from your distributor/dealer.

## Options and accessories

- Cummins Onan Digital Display - graphical LCD set-mounted display for generator set operating parameters, diagnostics, and pre-alarm indication in text format
- SAE J-1939 CAN data link for monitoring generator set status and diagnostics for engine and alternator
- 24 V DC electric system with battery charging, negative ground
- Basic remote panel with start/stop switch with run (green) and control status/diagnostic indicator (amber) lamps
- Remote start/stop switch with dual lamps and mating harness only for panel installation
- Cooling package: A035A433
- Coolant recovery tank kit
- Remote station harness pigtail
- Remote panel wire harness - 15 ft, 25 ft, 45 ft, 75 ft, 100 ft or 150 ft
- Y adapter harness for dual remote stations
- Line circuit breakers for field conversion AC voltage output
- Dry exhaust muffler, flexible exhaust stainless steel tube assembly
- Bulk head battery terminal boots
- Shore power selector switch
- Application hardware kits: A041G001- 12V, A041G006 - 24V
- Remote mounted Cummins Onan Digital Display - graphical LCD display for generator set operating parameters, diagnostics, and pre-alarm indication in text format (available as an accessory item)

## Standards and testing

- Tested at extremes of temperature 5 °F (-15 °C) to 120 °F (49 °C) for starting and operation
- Tested with commercial loads
- Field test program
- Advanced sound lab tested for optimum sound quality and sound levels
- CE certified



## Warranty policy

The Cummins Onan limited warranty covers virtually everything except routine maintenance for the first two years you own your generator set, or the first 2,000 hours of operation, whichever comes first. In addition, it includes a free 90-day adjustment policy, which provides that Cummins Inc. will make minor adjustments to your new generator set during the first three months you own it - free of charge.



### WARNING:

Back feed 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 (A041K811), Installation (A041K812), Parts (A041K815), Service (A041K813).

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.

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