

# Diesel generator set QSB7 series engine EPA emissions



> **Specification sheet**  
100 kW - 150 kW 60 Hz

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## Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary and prime power applications.



This generator set is designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.



The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.



All low voltage models are CSA certified to product class 4215-01.



The generator set is available Listed to UL2200, Stationary Engine Generator Assemblies.

## U.S. EPA

Engine certified to U.S. EPA Nonroad Source Emissions Standards, 40 CFR 89, Tier 3.

## Features

**Cummins® heavy-duty engine** - Rugged 4-cycle, industrial diesel delivers reliable power, low emissions and fast response to load changes.

**Alternator** - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.

**Permanent magnet generator (PMG)** - Offers enhanced motor starting and fault clearing short-circuit capability.

**Control system** - The PowerCommand® 1.1 electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance. The optional PowerCommand 2.2 control is UL 508 Listed and provides AmpSentry™ protection.

**Cooling system** - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

**Enclosures** - Optional weather protective and sound attenuated enclosures are available.

**NFPA** - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

**Warranty and service** - Backed by a comprehensive warranty and worldwide distributor network.

Model	Standby rating		Prime rating		Continuous rating		Data sheets	
	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
<b>DSGAA</b>	100 (125)		90 (113)				D-3349	
<b>DSGAB</b>	125 (156)		113 (141)				D-3350	
<b>DSGAC</b>	150 (188)		135 (169)				D-3351	

## Generator set specifications

Governor regulation class	
Voltage regulation, no load to full load	± 1%
Random voltage variation	± 0.5%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%
Radio frequency emissions compliance	

## Engine specifications

Design	4 cycle, turbocharged and charge air aftercooled
Bore	107 mm (4.21 in)
Stroke	124.0 mm (4.88 in)
Displacement	6.69 litres (408 in <sup>3</sup> )
Cylinder block	Cast iron, in-line, 6 cylinder
Battery capacity	1100 amps minimum at ambient temperature of -18 °C to 0 °C (0 °F to 32 °F)
Battery charging alternator	100 amps
Starting voltage	12 volt, negative ground
Fuel system	Direct injection: number 2 diesel fuel
Fuel filter	Single element, 10 micron filtration, spin-on fuel filter with water separator
Air cleaner type	Dry replaceable element
Lube oil filter type(s)	One spin-on, full flow filter
Standard cooling system	High ambient radiator

## Alternator specifications

Design	Brushless, 4 pole, revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible disc
Insulation system	Class H
Standard temperature rise	150 °C standby @ 40 °C ambient
Exciter type	Torque match (shunt) standard, PMG optional
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 50 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3

## Available voltages

60 Hz Three phase line-neutral/line-line	50 Hz Single phase line-neutral/line-line
<ul style="list-style-type: none"> <li>• 110/190</li> <li>• 110/220</li> <li>• 115/200</li> </ul>	<ul style="list-style-type: none"> <li>• 110/220</li> </ul>
<ul style="list-style-type: none"> <li>• 115/230 Delta</li> <li>• 120/208</li> <li>• 120/240 Delta</li> </ul>	<ul style="list-style-type: none"> <li>• 115/230</li> </ul>
<ul style="list-style-type: none"> <li>• 127/220</li> <li>• 139/240</li> <li>• 220/380</li> <li>• 230/400</li> </ul>	<ul style="list-style-type: none"> <li>• 120/240</li> </ul>
<ul style="list-style-type: none"> <li>• 240/416</li> <li>• 255/440</li> <li>• 277/480</li> <li>• 347/600</li> </ul>	

\* Note: Consult factory for other voltages.

## Generator set options and accessories

### Engine

- 120 V, 150 W lube oil heater
- 120/240 V, 1500 W coolant heater

### Fuel System

- 24 hour dual wall sub-base tank

### Alternator

- 105 °C rise alternator
- 125 °C rise alternator
- 120 V, 100 W anti-condensation heater
- PMG excitation
- Single phase

### Exhaust system

- Heavy duty exhaust elbow
- Slip on exhaust connection

### Generator set

- Battery
- Battery charger
- Enclosure: aluminum, steel, weather protective or sound attenuated
- Main line circuit breaker

- PowerCommand Network Communications Module (NCM)
- Remote annunciator panel
- Spring isolators
- UL 2200 Listed
- 2 year prime power warranty
- 2 year standby power warranty
- 5 year basic power warranty

\* Note: Some options may not be available on all models - consult factory for availability.

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## Control system

### Operator panel features

**PowerCommand control** - An integrated generator set control system providing voltage regulation, engine protection, generator protection, operator interface and isochronous governing (optional).

**Control** - Provides battery monitoring and testing features and smart-starting control system.

**InPower™** - PC-based service tool available for detailed diagnostics.

**PCCNet RS485** - Network interface (standard) to devices such as remote annunciator for NFPA 110 applications.

**Control boards** - Potted for environmental protection.

**High ambient operation** - Suitable for operation in ambient temperatures from -40 °C to +70 °C and altitudes to 13,000 feet (5000 meters).

**Prototype tested** - UL, CSA and CE compliant.

### AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

### Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown
- Fuel-in-rupture-basin warning or shutdown

### Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C

### Alternator data

- Line-to-neutral AC volts
- Line-to-line AC volts
- 3-phase AC current
- Frequency
- Total kVA

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## Standard control functions

### Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature

### Other data

- Genset model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

### Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

### Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase line-to-line sensing
- Configurable torque matching

### Control functions

- Time delay start and cooldown
- Glow plug control (some models)
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop

### Options

- Auxiliary output relays (2)
- 120/240 V, 100 W anti-condensation heater
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation
- PowerCommand for Windows® remote monitoring software (direct connect)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- AC output analogue meters
- PowerCommand 2.2 control with AmpSentry protection



**Standard PowerCommand 1.1 control operator/display panel**



**Optional AC output analog meters**

## Ratings definitions

### Emergency standby power (ESP):

Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Limited-time running power (LTP):

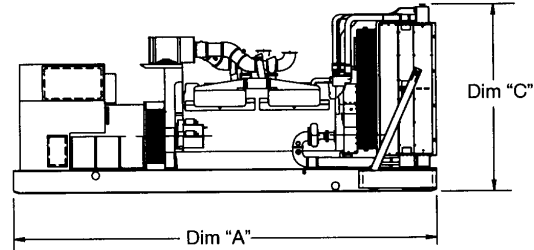
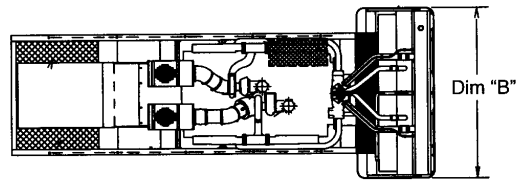
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

### Prime power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### Base load (continuous) power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

**Do not use for installation design**

Model	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
<b>DSGAA</b>	2656 (104.6)	1100 (43.3)	1549 (61)		1180 (2602)
<b>DSGAB</b>	2656 (104.6)	1100 (43.3)	1549 (61)		1225 (2700)
<b>DSGAC</b>	2656 (104.6)	1100 (43.3)	1549 (61)		1263 (2784)

\* Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

### Cummins Power Generation

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Important: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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