

Diesel generator set QSB7 series engine EPA emissions



> Specification sheet

100 kW - 150 kW

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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 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 generator-drive 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; fault clearing short-circuit capability.

Permanent magnet generator (PMG) (available on most models) - Offers enhanced motor starting and fault clearing short circuit capability.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration, including automatic remote starting/stopping and precise frequency and voltage regulation. Optional features include alarm and status message display, output metering, auto-shutdown at fault detection, and NFPA 110 Level 1 compliance.

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

Fuel tanks - Dual wall sub-base fuel tanks are also offered.

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
DSGAA	100 (125)		90 (113)				D-3349	
DSGAB	125 (156)		113 (141)				D-3350	
DSGAC	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 after-cooled
Bore	107 mm (4.21 in.)
Stroke	124.0 mm (4.88 in.)
Displacement	6.69 litres (408 in ³)
Cylinder block	Cast iron, In-line, 6 cylinder
Battery capacity	1100 amps minimum at ambient temperature of 0°F to 32°F (-18°C to 0°C)
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	60 Hz Single phase line-neutral/line-line
<ul style="list-style-type: none"> <li style="width: 25%;">• 110/190 <li style="width: 25%;">• 115/230 Delta <li style="width: 25%;">• 120/240 Delta <li style="width: 25%;">• 220/380 <li style="width: 25%;">• 255/440 	<ul style="list-style-type: none"> <li style="width: 33%;">• 110/220 <li style="width: 33%;">• 115/230 <li style="width: 33%;">• 120/240
<ul style="list-style-type: none"> <li style="width: 25%;">• 110/220 <li style="width: 25%;">• 120/208 <li style="width: 25%;">• 127/220 <li style="width: 25%;">• 230/400 <li style="width: 25%;">• 277/480 	
<ul style="list-style-type: none"> <li style="width: 25%;">• 115/200 <li style="width: 25%;">• 139/240 <li style="width: 25%;">• 240/416 <li style="width: 25%;">• 347/600 	

* **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
- UL2200 Listed
- Main line circuit breaker
- PowerCommand Network Communications Module (NCM)
- Remote annunciator panel
- Spring isolators
- 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 NFPA110 applications.

Control boards are potted for environmental protection.

Suitable for operation in ambient temperatures from – 40C to +70C, 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, & 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, 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

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



Standard PCC1302 control operator/display panel



Optional AC output analog meters

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Ratings definitions

Standby:

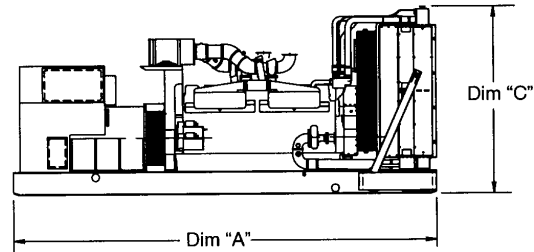
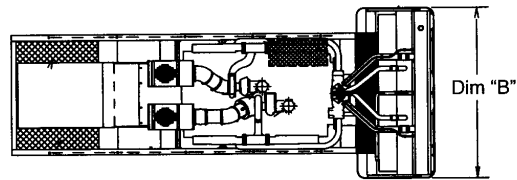
Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to Fuel Stop Power in accordance with ISO3046, AS2789, DIN6271 and BS5514). Nominally rated.

Prime (unlimited running time):

Applicable for supplying power in lieu of commercially purchased power. Prime power is the maximum power available at a variable load for an unlimited number of hours. A 10% overload capability is available for limited time. (Equivalent to Prime Power in accordance with ISO8528 and Overload Power in accordance with ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.

Base load (continuous):

Applicable for supplying power continuously to a constant load up to the full output rating for unlimited hours. No sustained overload capability is available for this rating. Consult authorized distributor for rating. (Equivalent to Continuous Power in accordance with ISO8528, ISO3046, AS2789, DIN6271, and BS5514). This rating is not applicable to all generator set models.



This outline drawing is to provide representative configuration details for Model series 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* wet kg (lbs)	Set weight w/tank wet kg (lbs)
DSGAA	2656 (104.6)	1100 (43.3)	1549 (61)	1180 (2602)	1761 (3882)
DSGAB	2656 (104.6)	1100 (43.3)	1549 (61)	1225 (2700)	1806 (3980)
DSGAC	2656 (104.6)	1100 (43.3)	1549 (61)	1263 (2784)	1844 (4064)

* Note: Weights represent a set with standard features. See outline drawings for weights of other configurations. Dim "D" available only on models with sub-base fuel tank option.

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