Diesel Generator Set

QSB7 Series Engine
EU Stage IIIA @ 50Hz

> Specification sheet

136 kVA – 220 kVA 50Hz
113 kW – 200 kW 60Hz

Our energy working for you.™

Cummins Power Generation

Description

This Cummins® Power Generation commercial generator set is a fully integrated power generation system, providing optimum performance, reliability, and versatility for stationary standby, prime power, and continuous duty 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.

This generator set is available with CE certification.

Features

Cummins® Heavy-Duty Engine - Rugged 4-cycle industrial diesel delivers reliable power, low emissions and fast response to load changes.

Optional Permanent Magnet Generator (PMG) - Offers enhanced motor starting and fault clearing short circuit capability.

Alternator - Low reactance 2/3 pitch windings; low waveform distortion with non-linear loads, fault clearing short-circuits capability, and class H insulation.

Control system - The PowerCommand® electronic control is standard equipment and provides total genset system integration, including auto remote start/stop, alarm and status message display.

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.

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

	Standby Rating		Prime Rating		Emissions Compliance		
Model	**50Hz kVA (kW)**	**60Hz kW (kVA)**	**50Hz kVA (kW)**	**60Hz kW (kVA)**	**EU Stage**	**Controller**	**Datasheet**
C150 D5e	150 (120)	N/A	136 (109)	N/A	Stage IIIA	1.1	DS89-CPGK
C175 D5e	175 (140)	N/A	158 (126)	N/A	Stage IIIA	1.1/1.2	DS329-CPGK
C200 D5e	200 (160)	N/A	182 (146)	N/A	Stage IIIA	1.2	DS330-CPGK
C220 D5e	220 (176)	N/A	200 (160)	N/A	Stage IIIA	1.2	DS331-CPGK
C125 D6e	N/A	125 (156)	N/A	113 (141)	N/A	1.1	DS90-CPGK
C150 D6e	N/A	150 (188)	N/A	135 (169)	N/A	1.1/1.2	DS332-CPGK
C175 D6e	N/A	175 (219)	N/A	160 (200)	N/A	1.2	DS333-CPGK
C200 D6e	N/A	200 (250)	N/A	180 (225)	N/A	1.2	DS334-CPGK

Our energy working for you.™

www.cumminspower.com

SS**22**-CPGK-RevA (02/09).

Cummins Power Generation

Generator Set Specifications

Governor Regulation	ISO8528G3
Voltage Regulation, No Load to Full Load	± 1%
Random Voltage Variation	± 1%
Frequency Regulation	Isochronous
Random Frequency Variation	± 0.25%
EMC Compatibility	In compliance with BS 800 and VDE levels G and N

Engine Specifications

Design	4 cycle, in-line, Turbo Charged
Bore	107
Stroke	124
Displacement	6.69 liter (408.0 $in.^3$)
Cylinder Block	Cast iron, 6 cylinder
Battery Capacity	100 A/hr
Battery Charging Alternator	70 amps
Starting Voltage	12 volt, negative ground
Fuel System	Direct injection
Fuel Filter	Spin on fuel filters with water separator
Air Cleaner Type	Dry replaceable element with restriction indicator
Lube Oil Filter Type(s)	Spin on full flow filter
Standard Cooling System	122°F (50°C) ambient radiator

Alternator Specifications

Design	Brushless single bearing, revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible disc
Insulation System	Class H
Standard Temperature Rise	125 - 163°C Standby
Exciter Type	Separately Excited by PMG
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct drive centrifugal blower fan
AC Waveform Total Harmonic Distortion	No load < 1.5%. Non distorting balanced linear load < 5%
Telephone Influence Factor (TIF)	<50 per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	<2%

Available Voltages

50Hz Line – Neutral / Line – Line		**60Hz Line – Neutral / Line – Line**		
• 110/190	• 127/220	• 120/208	• 139/240	• 254/440
• 115/200	• 230/400	• 127/220	• 220/380*	• 266/460
• 120/208	• 240/415	• 132/230	• 240/416	• 277/480

* Derate may be applicable at this voltage. Please consult the factory for details.

Generator Set Options

Engine
• Water jacket heater 220/240 v

Cooling
• Antifreeze 50/50 (Ethylene glycol)

Enclosure
• Silent Power Canopy

Alternator
• Alternator heater
• High humidity isolation
• Exciter voltage regulator (PMG)

Control Panel
• PowerCommand 3.3
•4 pole Main Circuit Breaker
• Motorised 3 or 4 Poles Circuit Breaker

Base frame
• Double wall fuel tank

Warranty
• 5 years for Standby application
• 2 years for Prime application

Silencer
• 9 dB attenuation critical silencer
• 25 dB residential - delivered loose

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

Our energy working for you.™

www.cumminspower.com

SS**22**-CPGK-RevA (02/09).

Power Generation

PowerCommand® 1.2 - Generator Set Control

Control system

The PowerCommand® control system is a microprocessor-based generator set monitoring, metering and control system designed to meet the demands of today's engine driven generator sets. The integration of all control functions into a single control system provides enhanced reliability and performance compared to conventional generator set control systems. These control systems have been designed and tested to meet the harsh environment in which gensets are typically applied.

Description

The PowerCommand generator set control is suitable for use on a wide range of generator sets in non-paralleling applications. The PowerCommand control is compatible with shunt or PMG excitation style. It is suitable for use with reconnectable or non reconnectable generators, and it can be configured for any frequency, voltage and power connection from 120-600 VAC line-to-line.
Power for this control system is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 30 VDC.

Major Features

- 128 x 128 pixels graphic LED backlight LCD.
- Digital voltage regulation. Single phase full wave SCR type regulator compatible with either shunt or PMG systems.
- Digital engine speed governing (where applicable).
- Generator set monitoring and protection.
- Advanced over-current protection.
- Modbus® interface for interconnecting to customer equipment.
- 12 and 24 VDC battery operation.
- Warranty and service. Backed by a comprehensive warranty and worldwide distributor service network.
- Certification. Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC Mil Std., CE and CSA standards.

Base control functions

HMI capability
Operator adjustments - The HMI includes provisions for many set up and adjustment functions.
Data logs - Includes engine run time, controller on time, number of start attempts.
Fault history - Provides a record of the most recent fault conditions with control hours time stamp. Up to 10 events are stored in the control non-volatile memory.

Alternator data
- Voltage (single or three phase line-to-line and line-to-neutral)
- Current (single or three phase)
- KVA (three phase and total)
- Frequency

Engine data
- Starting battery voltage
- Engine speed
- Engine temperature
- Engine oil pressure
- Partial Full Authority Engine (FAE) data (where applicable)

Service adjustments - The HMI includes provisions for adjustment of generator set control functions. Adjustments are protected by a password.
Functions include:
- Engine speed governor adjustments
- Voltage regulation adjustments
- Cycle cranking
- Configurable fault set up
- Configurable output set up
- Meter calibration
- Units of measurement

Protective functions

Protective functions include:
- Battle short mode
- Configurable alarm and status inputs
- Emergency stop
- Hydro mechanical fuel system engine protection
- Overspeed shutdown
- Low lube oil pressure warning.
- High lube oil temperature warning/shutdown
- High engine temperature warning/shutdown
- Low coolant temperature warning
- Sensor failure indication
- Full authority electronic engine protection

- General engine protection
- Low and high battery voltage warning
- Weak battery warning
- Fail to start (overcrank) shutdown
- Fail to crank
- Cranking lockout

Alternator protection
- High AC voltage shutdown (59)
- Low AC voltage shutdown (27)
- Overcurrent warning/shutdown
- Under frequency shutdown (81 u)
- Over frequency shutdown/warning (81o)
- Loss of sensing voltage shutdown
- Field overload shutdown

Field control interface

Input signals to the base control include:
- Remote start
- Local and emergency stop
- Configurable inputs: Control includes (4) input signals from customer

Output signals from the PowerCommand control include:
- Configurable relay outputs: Control includes (2) relay output contacts rated at 2 A.

Our energy working for you.™

www.cumminspower.com

SS**22**-CPGK-RevA (02/09).

Power Generation

Ratings Definitions

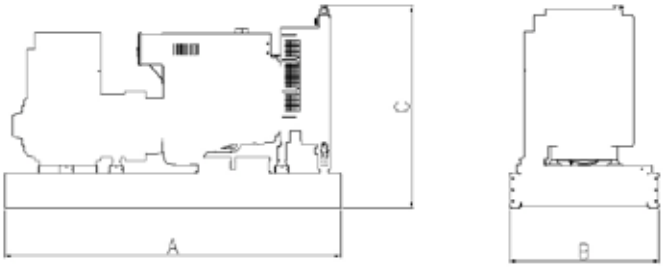
Emergency Standby Power (ESP):
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

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.

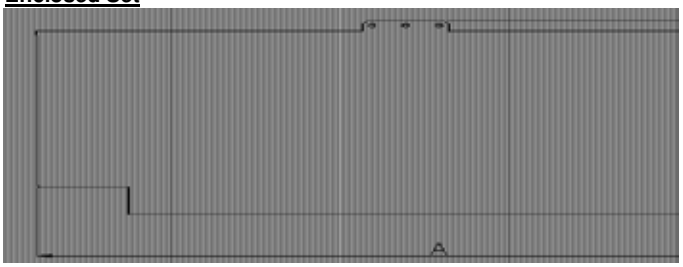
Prime Power (PRP):
Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

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.

Open Set



Enclosed Set



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.

Open Set

Model	Dim "A" mm	Dim "B" mm	Dim "C" mm	Set weight* dry kg	Set weight* wet kg
C150 D5e	2656	1100	1658	1467	1506
C175 D5e	2656	1100	1658	1546	1572
C200 D5e	2656	1100	1658	1544	1670
C220 D5e	2656	1100	1658	1544	1670
C125 D6e	2656	1100	1658	1467	1506
C150 D6e	2656	1100	1658	1546	1572
C175 D6e	2656	1100	1658	1544	1670
C200 D6e	2656	1100	1658	1544	1670

Enclosed Set

Model	Dim "A" mm	Dim "B" mm	Dim "C" mm	Set weight* dry kg	Set weight* wet kg
C150 D5e	3980	1100	2062	2343	2947
C175 D5e	3900	1100	2246	2557	3160
C200 D5e	3900	1100	2246	2698	3301
C220 D5e	3900	1100	2246	2698	3301
C125 D6e	3980	1100	2062	2343	2947
C150 D6e	3900	1100	2246	2387	2991
C175 D6e	3900	1100	2246	2557	3160
C200 D6e	3900	1100	2246	2698	3301

*Note: Weights represent a set with standard features. Does not include fuel. See outline drawings for weights of other configurations.

Cummins Power Generation

Europe, CIS, Middle East and Africa
Manston Park Columbus Ave.
Manston Ramsgate
Kent CT12 5BF United Kingdom
Phone 44 1843 255000
Fax 44 1843 255902

Americas
1400 73rd Avenue N.E.
Minneapolis, MN 55432 USA
Phone 763 574 5000
Fax 763 574 5298

Asia Pacific
10 Toh Guan Road #07-01
TT International Tradepark
Singapore 608838
Phone 65 6417 2388
Fax 65 6417 2399

Our energy working for you.™

www.cumminspower.com

SS**22**-CPGK-RevA (02/09).

Power Generation