

Diesel Generator set QSX15 series engine



> Specification sheet

450kVA - 550kVA 50Hz
410kW - 500kW 60Hz

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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 available with CE certification.

2000/14/EC

All enclosed products are designed to meet or exceed EU noise legislation 2000/14/EC step 2006.

ISO8528

This generator set has been designed to comply with ISO8528 regulation.



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

EMISSIONS
COMPLIANCE

This generator set conforms to EU Stage II emissions regulation

Features

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

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

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-circuits capability, and class H insulation.

Control System - Standard PowerCommand® electronic control provides total system integration including remote start/stop, precise frequency and voltage regulation, alarm and status message display, AmpSentry protection, output metering, auto-shutdown.

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

Model	Standby Rating		Prime Rating		Emissions Compliance	Datasheet	
	50Hz kVA (kW)	60Hz kW (kVA)	50Hz kVA (kW)	60Hz kW (kVA)		50Hz	60Hz
C500 D5	500 (400)	N/A	450 (360)	N/A	4g/EU Stage II	DS28-CPGK	N/A
C550 D5	550 (440)	N/A	500 (400)	N/A	4g/EU Stage II	DS29-CPGK	N/A
C450 D6	N/A	450 (563)	N/A	410 (513)	N/A	N/A	DS74-CPGK
C500 D6	N/A	500 (625)	N/A	450 (563)	N/A	N/A	DS75-CPGK



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Generator Set Specifications

Governor Regulation Class	ISO8528 G2
Voltage Regulation, No Load to Full Load	± 1%
Random Voltage Variation	± 1%
Frequency Regulation	Isochronous
Random Frequency Variation	± 0.25%
EMC Compatibility	BS EN 61000-6-4 / BS EN 61000-6-2

Engine Specifications

Design	4 cycle, in-line, Turbo Charged, Air-cooled
Bore	137 mm (5.39 in.)
Stroke	169 mm (6.65 in.)
Displacement	15 liter (912 in.3)
Cylinder Block	Cast iron, 6 cylinder
Battery Capacity	100 A/hr
Battery Charging Alternator	35 amps
Starting Voltage	24 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	Self Excited
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	
• 277/480	• 220/380	• 277/480	• 220/380
• 254/440	• 127/220	• 254/440	• 127/220
• 240/416	• 115/200	• 230/400	• 115/200
• 230/400	• 110/190	• 240/416	• 110/190

Generator Set Options

Engine

- Heavy Duty air filter
- Water jacket heater 220/240 v

Cooling

- Antifreeze 50/50 (Ethylene glycol)

Enclosure

- Sound attenuated canopy

Alternator

- Alternator heater
- Exciter voltage regulator (PMG)

Control Panel

- PCC3201
- 4 pole Main Circuit Breaker

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.

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Control System – PCC2100

The PowerCommand™ 2100 Control is a microprocessor-based generator set monitoring, and control system.

The control provides an operator interface to the genset, digital voltage regulation, digital governing and generator set protective functions.

The PowerCommand™ 2100 generator set control is suitable for use on a wide range of generator sets in nonparalleling applications.

The PowerCommand™ Control can be configured for any frequency, voltage and power connection configuration from 120 to 600VAC for 50Hz or 60Hz operation.

Power for the control is derived from the generator set starting batteries. The control functions over a voltage range from 8VDC to 35VDC.

Major Features

- 12 or 24 VDC Battery Operation.
- Digital Engine Speed Governing (optional) to provide isochronous frequency regulation.
- Digital Voltage Regulation with 3-phase sensing.
- AmpSentry™ Protection for true alternator overcurrent protection.
- Digital AC Output Metering with Optional Analog Metering.
- Battery Monitoring System to sense and warn against a weak battery condition.
- Digital Alarm and Status Message Display.
- Generator set Monitoring: Displays status of all critical engine and alternator generator set functions.
- Smart Starting Control System: Integrated fuel ramping to limit black smoke and frequency overshoot.

Control System

Includes all functions to locally or remotely start and stop, and protect the generator set.

Control Switch - RUN/OFF/AUTO

OFF Mode - the generator set is shut down and cannot be started.

RUN mode the generator set will execute its start sequence.

AUTO mode, the generator set can be started with a start signal from a remote device.

LED Indicating Lamps – includes LED indicating lamps for the following functions:

- Generator set running
- Not-in-auto mode
- Common warning
- Five LED indicating lamps that are configurable for colour and function
- Low oil pressure warning
- High engine temperature warning
- Low oil pressure shutdown
- Overspeed shutdown
- Fail to start
- Emergency Stop Switch. Immediate shut down of the generator set on operation.

Base Engine Protection

- Overspeed shutdown
- Low Oil Pressure Warning / Shutdown
- High Engine Temperature Warning / Shutdown
- Underspeed / Sensor Fail Shutdown
- Fail to Start / Fail to Crank
- Low / high battery voltage

Options

- Analog AC Metering Panel
 - Key Type Mode Selector Switch
 - Exhaust Temperature Monitoring
 - PowerCommand Network
 - CAN Engine Interface (Optional on Some Models)
- Refer to the PowerCommand Controls Technical Bulletin for detailed information (S1409d)



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Diesel Power Plant Development Co.

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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):

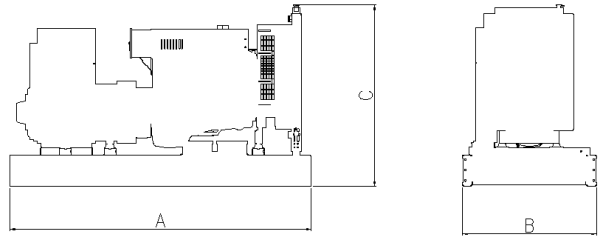
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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.



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	Dim "B" mm	Dim "C" mm	Set weight* dry kg	Set weight* wet kg
C500 D5	3433	1500	2065	4117	4022
C550 D5	3433	1500	2065	4125	4220
C450 D6	3433	1500	2065	4117	4022
C500 D6	3433	1500	2065	4125	4220

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

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