

# Diesel Generator set 4BT3.3 series engine



## > Specification sheet

40kVA - 55kVA 50Hz  
45kW - 50 kW 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.

## Features

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

**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 automatic remote starting/stopping, precise voltage regulation, 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.

## 3-Phase Settings

Model	Standby Rating		Prime Rating	
	50Hz kVA (kW)	60Hz kW (kVA)	50Hz kVA (kW)	60Hz kW (kVA)
<b>C55 D5</b>	55 (44)	N/A	40 (50)	N/A
<b>C50 D6</b>	N/A	50 (62.5)	N/A	45 (56.3)

## 1-Phase Settings

Standby Rating		Prime Rating		Datasheet
50Hz kVA/kW	60Hz kW/kVA	50Hz kVA/kW	60Hz kW/kVA	
35	N/A	31.8	N/A	DS13-CPGK
N/A	44	N/A	40	DS60-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	Droop
Random Frequency Variation	± 0.25%
EMC Compatibility	BS EN 61000-6-4 / BS EN 61000-6-2

## Engine Specifications

Design	4 cycle, in-line, naturally aspirated
Bore	95mm (3.74 in.)
Stroke	115mm (4.53 in.)
Displacement	3.3 liter (199 in.3 )
Cylinder Block	Cast iron, 4 cylinder
Battery Capacity	70 A/hr
Battery Charging Alternator	45 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	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	• 115/200	• 254/440	• 115/200
• 240/416	• 110/190	• 240/416	• 110/190
• 230/400	• 220-240*	• 230/400	• 220-240*

\*Single Phase

## 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

### Control Panel

- 3 pole Main Circuit Breaker

### Warranty

- 5 years for Standby application
- 2 years for Prime application

### Silencer

- 9 dB attenuation industrial 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 – PCC1301

The PowerCommand™ 1301 Control is a microprocessor-based generator set monitoring, and control system. The control provides a simple operator interface to the generator set, digital voltage regulation, digital engine speed governing, start / stop control, and protective functions.

The PowerCommand™ 1301 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 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 Full wave rectified single phase (line to line) sensing.
- Generator Set Monitoring. Monitors status of all critical engine and alternator conditions functions.
- Engine Starting includes relay drivers for start, fuel shut off (FSO), and glow plug.
- Configurable Inputs and Outputs. Two discrete inputs and two dry contact relay outputs.
- 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.
- Advanced Serviceability using InPower™, a PC-based software service tool.

### 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; as well as resets faults.

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.

**Status Indications** – The control has a lamp driver for external fault/status indication. Functions include:

The lamp flashes during preheat (when used) and while the generator set is starting.

READY TO LOAD - flashing until the set is at rated voltage and frequency, then on continuously.

Fault conditions are displayed by flashing a two-digit fault code number.

**LED Indicating Lamps** – (optional display) includes LED indicating lamps for the following functions:

- Not in auto
- Remote start
- Warning
- Shutdown
- Auto
- Run

**Remote Emergency Stop Switch Input.** Immediate shut down of the generator set on operation.

#### Base Engine Protection

- Overspeed shutdown
- Low oil pressure shutdown
- High engine temperature shutdown
- Underspeed/sensor fail shutdown
- Fail to start
- Battery charging alternator fail warning

#### Options

Digital Engine Speed Governing to provide isochronous frequency regulation.

Operator Display Panel an easy to use operator display of critical parameters and operating history.



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# 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):

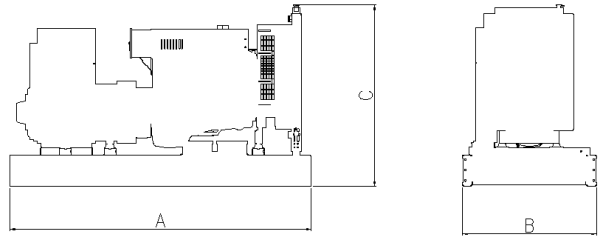
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

## 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
<b>C55 D5</b>	1753	930	1256	711	776
<b>C50 D6</b>	1753	930	1256	711	776

\*Note: Weights represent a set with standard features. 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

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