



Diesel generator set 6CTA series engine

182 kVA - 250 kVA 50 Hz

165 kW - 225 kW 60 Hz



Description

This Cummins® 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.

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 nonlinear loads, fault clearing short-circuits capability, and class H insulation.

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

Control system - Standard PowerCommand® electronic control provides total system integration, including auto remote start/stop, alarm and status message display.

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		Data sheet	
	50 Hz kVA (kW)	60 Hz kW (kVA)	50 Hz kVA (kW)	60 Hz kW (kVA)	50 Hz	60 Hz
C220 D5	220 (176)		200 (160)		APD-5946-EN	
C250 D5	250 (200)		227 (182)		APD-5947-EN	
C175 D6		175 (219)		160 (200)		APD-5948-EN
C200 D6		200 (250)		180 (225)		APD-5949-EN
C225 D6		225 (281)		205 (256)		APD-5950-EN

Generator set specifications

Governor regulation class	ISO 8528 G2*
Voltage regulation (no load to full load)	±1%
Steady-state voltage variation	±1%
Frequency regulation (no load to full load)	Isochronous
Steady-state frequency variation	±0.25%
EMC compatibility	BS EN61000-6-4 /BS EN61000-6-2

Engine specifications

Design	4 cycle, in-line, turbocharged
Bore	114 mm (4.49 in)
Stroke	135 mm (5.32 in)
Displacement	8.3 liter (505 in ³)
Cylinder block	Cast iron, 6 cylinder
Battery capacity	80 Ah
Battery charging alternator	40 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	150-163 °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 (THDV)	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

50 Hz Line – Neutral/Line – Line	60 Hz Line – Neutral/Line – Line
<ul style="list-style-type: none"> • 254/440 • 240/416 • 230/400 • 220/380 	<ul style="list-style-type: none"> • 127/220 • 115/200 • 110/190
	<ul style="list-style-type: none"> • 277/480 • 254/440 • 240/416 • 220/380*
	<ul style="list-style-type: none"> • 139/240 • 127/220 • 120/208

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

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)

Circuit breaker

- 4 pole main circuit breaker
- Motorised 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: PMG option must be selected to meet G2 compliance. Some options may not be available on all models - consult factory for availability.

Control system

Generator set control PowerCommand 1.2 -

The PowerCommand 1.2 control is a microprocessor based generator set monitoring 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 1.2 control is suitable for use on a wide range of generator sets in non-parallel applications.
- The PowerCommand control can be configured for any frequency, voltage and power configuration from 120 to 600 VAC for 50 Hz or 60 Hz operation.
- Power for the control is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 35 VDC.
- A larger HMI reduces setup time, provides more information per screen, enhanced navigation and serviceability.
- 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 reset 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 – includes LED indicating lamps for the following functions:

- Remote start
- Warning
- Shutdown
- Auto
- Run
- Remote emergency stop switch input. Immediate shut down of the generator set on operation

Major features

- 12 or 24 VDC battery operation
- Digital engine speed governing 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).
- Configurable inputs and outputs – two discrete inputs and two dry contact relay outputs.
- Smart starting control system – integrated fuel ramping to limit black smoke and frequency overshoot.
- Advanced serviceability using InPower™, a PC based software service tool.

Base engine protection

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

HMI220 operator interface

- Back-lit graphics 128 x 128 LCD display
- English text and symbolic overlay
- Multiple language LCD screens
- Dedicated manual/off/auto function switches with mode LEDs and configurable access code (key switch)
- Control set-up without PC-based tool (InPower)
- UL508 recognized/CSA certified/CE compliant
- Multiple HMIs per generator set (one local and one remote)
- Plug and play operation

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):

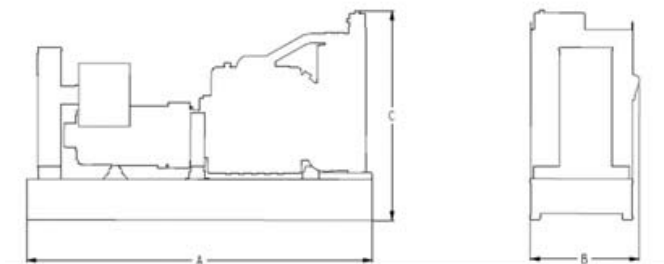
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

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	Dry wt.* kg	Wet wt.* kg
C220 D5	2746	1100	1646	1650	2050
C250 D5	2746	1100	1646	1700	2100
C175 D6	2746	1100	1646	1600	2000
C200 D6	2746	1100	1646	1650	2050
C225 D6	2746	1100	1646	1700	2100

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

Codes and standards

	<p>This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.</p>	<p>2000/14/EC</p>	<p>All enclosed products are designed to meet or exceed EU noise legislation 2000/14/EC step 2006.</p>
	<p>This generator set is available with CE certification.</p>	<p>ISO 8528</p>	<p>This generator set has been designed to comply with ISO 8528 regulation.</p>

For more information contact your local Cummins distributor or visit power.cummins.com

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