

Specification sheet

Rental Power C500D6R

500 kW standby - 60Hz



Description

Cummins Power Generation rental generator set is a fully integrated power generation system providing optimum performance, reliability and versatility for stationary standby and prime power applications.

Features

Cummins diesel engine - Heavy-duty performance. Full-authority electronic engine controls combine with the high-pressure fuel system, 24-valve design and centered injectors. It also delivers better fuel economy, has better cold starting capability and is up to 50% quieter in operation than its predecessors.

Alternator - Brushless single bearing, revolving field, four pole, vacuum impregnation. Class H Insulation, IP23 Protection. IC 01 Cooling System. Fully interconnected damper winding. AC exciter and rotating rectifier unit. Epoxy coated stator winding. Rotor and exciter impregnated with polyester resin appropriate to tropical climates, resistant to oil and acids. Low reactance 2/3 pitch windings, low waveform distortion with non-linear loads, fault clearing short-circuit capability.

Permanent Magnet Generator (PMG) - 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, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, auto-shutdown at fault detection, NFPA 110 Level 1 and 2 compliance and paralleling capabilities.

Cooling system - Standard cooling package provides reliable running at up to 45°C (113°F) ambient temperature at the rated power level.

Rental features - Single lift-point enclosure and skid base with fork lift. Internal or external access for fuel. Normal or heavy duty filter. Battery Isolator switch. Containment for fluid leaks. Easy cable connection with external access to the panel. Motorized breaker (optional). Ladder to access the roof of the enclosure. Fuel tank incorporated into base.

Warranty and service - Backed by a comprehensive warranty (1 year standard/ 2 years optional) and worldwide distributor network.

Power Rating

Rpm	Frequency	Standby		Prime	
		kVA	kW	kVA	kW
1800 rpm	60Hz	625	500	569	455

* The engine may be operated at 1800 RPM up to 1100 ft. (335 m) and 77 °F (25 °C) without power deration. For sustained operation above these conditions, derate by an additional 1.8% per 300 m (1000 ft), and 10% per 10 °C (18 °F).

Fuel Consumption

Load	Standby				Prime			
	625 kVA – 500 kW @ 1800 rpm				569 kVA – 455 kW @ 1800 rpm			
	Full	3/4	1/2	1/4	Full	3/4	1/2	1/4
US Gallon/h	34,4	25,6	18,8	11,6	30,4	23,8	17,7	10,9
L/hour	130	97	71	44	115	90	67	41

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G2
Voltage regulation, no load to full load	± 1,0%
Random voltage variation	± 1,0%
Frequency regulation	Isochronous
Random frequency variation	± 0,25%
Radio frequency emissions compliance	BS EN 61000-6-4 / BS EN 61000-6-2
In-skid day fuel tank capacity	950 liters (251,7 gallons)

Engine specifications

Design	Turbocharged and Intercooler
Bore	137 mm (5,39 in)
Stroke	169 mm (6,65 in)
Displacement	15 liters (912 im ³)
Cylinder block	Cast iron, in-line 6 cylinder
Battery capacity	2x 150 Amps Hour
Battery charging alternator	35 amps
Starting voltage	24 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	45°C (113°F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible drive disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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			1-phase
3-phase			1-phase
• 380/220	• 208/120	• 240/120	• N/A
• 416/240	• 220/127	• 254/127	
• 440/254	• 230/132	• 266/133	
• 460/265	• 240/139	• 277/138	
• 480/277			

Note: Consult Cummins Power Generation. for other voltages.

Sistema de Controle PC 3.3



The PowerCommand genset control is suitable for use on a wide range of gensets in 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, 601-45,000 VAC with external PT. Major features include:

- Digital voltage regulation - Three phase full wave FET type regulator compatible with either shunt or PMG systems. Sensing is three phase.
- AmpSentry™ protection - for true alternator overcurrent protection.
- Configurable for single or three phase AC metering.
- Exerciser clock and time of day start/stop initiate a test with or without load, or a Base Load or Peak Shave session.
- Digital Power Transfer Control (AMF) provides load transfer operation in open transition, closed transition, or soft (ramping) transfer modes.
- Extended Paralleling (Peak Shave/Base Load) regulates the genset real and reactive power output while paralleled to the utility.
- Digital frequency synchronization and voltage matching.
- Isochronous Load Share
- Droop KW and KVAR Control

Operator/display panel

- 320 x 240 pixels graphic LED backlight LCD.
- Multiple language support
- Allows for complete genset control setup.
- Bargraph display (optional)

AC data

- Voltage (three phase line-to-line and line-to-neutral)
- Current (three phase and total)
- kW, KVAR, power factor, KVA (three phase and total)
- Frequency

Engine control

- SAE-J1939 CAN interface to full authority ECMS (where applicable)
- 12 VDC/24 VDC battery operations
- Temperature dependent governing dynamics
- Isochronous governing
- Droop electronic speed governing
- Remote start mode
- Engine starting
- Cycle cranking
- Time delay start and stop (cooldown)

Alternator control

- Digital output voltage regulation
- Droop voltage regulation
- Torque-matched V/Hz overload control
- Fault current regulation

Engine data

- Starting battery voltage
- Engine speed
- Engine temperature
- Engine oil pressure
- Engine oil temperature
- Intake manifold temperature
- Coolant temperature
- Comprehensive Full Authority Engine (FAE) data (where applicable)

Digital governing

- Digital engine speed governing (where applicable).
- Provides isochronous frequency regulation.

Digital voltage regulation

- Three phase full wave FET type regulator compatible with either shunt or PMG systems.
- Sensing is three phase.

Paralleling Functions

- First Start Sensor™ system
- Synchronizing
- Load sharing control
- Load govern control
- Load demand control
- Sync check
- Genset and utility/AC bus source AC metering
- Power transfer control
- Breaker control
- Extended paralleling
- Exerciser clock
- Application types

Protective functions

- Battle short mode
- Derate
- Configurable alarm and status inputs
- Emergency stop
- General engine protection
- Hydro mechanical fuel system engine protection
- Full authority electronic engine protection
- Alternator protection
- Paralleling protection

For further detail see document S-1570.

*Optional: PC2.2 available for this model
For further detail see document S-1568*

The documents S-1570 and S-1568 may be found at:
http://cumminspower.com.br/prd_acessorios.asp

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):

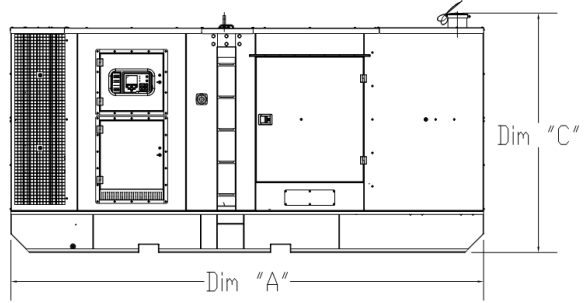
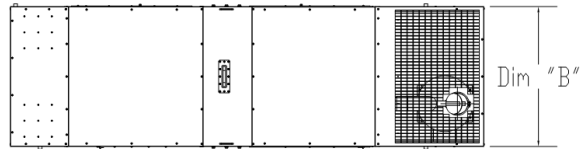
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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 for reference 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* dry kg (lbs)	Set Weight* wet kg (lbs)
C500D6R	5105 (201)	1564 (61.6)	2550 (100,4)	5430 (11971)	6363 (14028)

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

Certifications



This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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