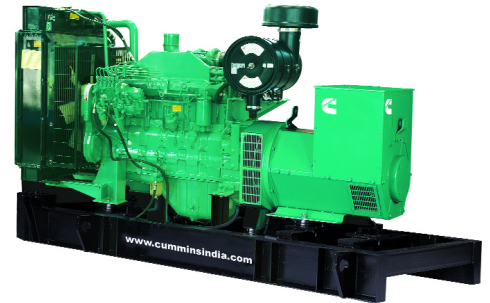


Specification sheet



Diesel Generator Set C Series

144-200 kWe, 180-250 kVA Prime



Lowest life cycle cost

'C series' design features has made Cummins® diesel generator sets, the standard for comparison of operating economy, reliability and long life. When all cost factors like initial purchase, fuel, lube oil, maintenance etc. are considered, the bottom line will show that this Cummins® 'C series' will deliver the lowest life cycle cost.

Heavy duty, durable and emission compliant

Cummins® 'C series' diesel engine comes with heavy duty features, bigger size camshaft, optimized turbo-matching and is yet compact in size with optimum power to weight ratio making it the obvious choice for your long-term power needs.



This genset powered by the reliable Cummins® 'C series' diesel engine meets stringent exhaust emission tests as per CPCB norms without sacrificing fuel efficiency at normal operating loads.

Silent Power

Cummins® 180-250 kVA enclosures are designed so as to have optimum performance and serviceability over the complete operating range. The enclosures are compact with integral fuel tank and are designed for ease in maintenance. The powder coated enclosures are manufactured on latest CNC machines to ensure superior finish and durability.

Single source power assurance

The rugged and reliable Cummins® 'C series' DG sets are unique, because all the major components – the engine, alternator, control system and canopy are designed, manufactured and tested by Cummins India. This, complemented by the largest customer support network in India and capable of providing round-the-clock service and spares support, offers you *SINGLE SOURCE POWER ASSURANCE* from the world leader in power generation.

Standard scope

Engine: Cummins® 'C series', direct injection, water cooled engine, 6 cylinder, in-line, 4 stroke, rated at 1500 RPM, conforming to ISO 3046 / BS 5514 has the following specifications:

- In-line fuel pump with mechanical governor for 180-200 kVA
- In-line fuel pump with electronic governor for 250 kVA
- Optimised turbocharger
- Stainless steel exhaust flexible coupling
- Silencer (Hospital Grade)
- Radiator
- Coolant inhibitor
- Plate-type lube oil cooler
- Spin-on filters - coolant, fuel & lube oil
- Dry-type, heavy duty, replaceable paper element air cleaner with restriction indicator
- Flywheel housing and flywheel to suit single bearing alternator
- Electrical starter motor
- Battery charging alternator
- First fill lube oil

Alternator: Stamford brushless alternator

- Self-excited, self regulated
- Class 'H' insulation
- Salient pole revolving field
- Single bearing
- Digital automatic voltage regulator

Our energy working for you.™

PGBU/CIL/009/C 180-250 kVA/CPG/90deg./Apr. 2013/5000

www.cumminspower.com

Control Panel: The control panel is manufactured with 14/16 gauge CRCA sheet and is powder coated for weather-proof and long lasting finish.



The control panel consists of the following parts:

- PC 1.1 Controller
- Aluminum bus bars with suitable capacity with in/outgoing terminals
- Indicating lamps for 'Load On' and 'Set Running'
- Instrument fuses duly wired and ferruled
- MCCB of suitable rating with overload and short circuit protections

Genset controller PC 1.1

- Basic stand-alone Genset control system
- Feature laden modular Genset control system
- Part of our modular and interchangeable control product line

PMG compatibility and extra inputs and communication capability (ModBus & CAN), are the major advantages.

Features:

- Digital Full Wave SCR AVR for shunt or PMG excitation with torque matching.
- Digital Electronic Governing with temperature compensation and Smart Starting.
- SAE J1939 Interface to Full Authority Electronic (FAE) engines. (For future products considering CPCB-II)
- Engine Metering: Oil Pressure, Coolant Temperature, Battery Voltage, Engine Speed
- AC Alternator Metering: L-L Voltage and N voltage (phase and average), Current (phase and total), Volt-Amperes (phase and total), and Frequency.
- Engine Protection: Low Lube Oil Pressure, High Coolant Temperature, Over speed, DC Over/Under/Weak Volts, Fail to Crank/Start, Sensor Failure.
- AC Alternator Protection: Over/Under Voltage, Over/Under Frequency, Over Current, Short Circuit, and Loss of AC Sensing.
- Fault Codes and Description on HMI
- Data Logging: Engine Hours, Control Hours, Engine Starts and 10 Fault Codes
- Control Set-Up without PC-based tool (InPower)
- Battle Short fault bypass function
- Configurable Glow Plug Control
- Configurable Cycle Cranking
- 12 and 24 Volt DC Operation
- Easy Wiring connectors for factory connections, terminal blocks for field connections
- Configurable Time Delay Start/Stop
- Sleep Mode Low power in Off and/or Auto

- Programmable I/O (2 inputs and 2 outputs) expandable with AUX101/102 modules
- Low Coolant Level and Low Fuel Level Fault Inputs
- Self-Configuring PCCNet Network
- Easy Upgrades / Downgrades to PCC1302, PCC2300 and PCC3300
- Modbus Interface (RS485 RTU)
- InPower Compatible (PC based service tool)
- Environmental Protection (NEMA 3R/IP53)
- NFPA110 Level 1 Compliant (with remote annunciation)
- UL508 Recognized / CSA Certified / CE Compliant

Accessories:

- Silencer suitably optimized to meet stringent sound emission standards laid down by MOEF / CPCB
- Base rail with integral fuel tank (285 litres for 180-200 kVA and 360 litres for 250 kVA) is provided with drain plug, air vent, inlet and outlet connection, level indicator, manhole etc.
- Suitable batteries with connecting leads and terminals

Acoustic enclosure:



- Specially designed to meet stringent MOEF/ CPCB norms of 75 dBA @ 1mtr at 75% load under free field conditions
- Designed to have optimum serviceability
- Air inlet louvers specially designed to operate at rated load even at 50 deg C air inlet temp.
- Made on special purpose CNC machines for consistency in quality and workmanship
- Powder coated for long lasting service life and superior finish
- With UV resistant powder coating, can withstand extreme environment
- Use of stainless steel hardware
- Insulation material meets exacting IS 8183 specs for better sound attenuation

Optionals

Engine:

- Coolant heater with thermostatic switch
- Lube oil heater
- Electronic governor for 180-200 kVA

Alternator: Thermistors, space heater

Control panel: AMF control panel, battery charger, remote/ auto start panel, auto/ manual synchronizing panel, audio-visual annunciation and indication lamps for engine faults

Others: Mobile sets with canopy

Technical data

Generator set specifications

Model	C180 D5 P	C200 D5 P	C250 D5 P
Prime Power Rating kVA	180	200	250
Output Voltage and Frequency	415 Volts, 50 Hz	415 Volts, 50 Hz	415 Volts, 50 Hz
Power Factor	0.8 (lag)	0.8 (lag)	0.8 (lag)
No. of phases	3 phase	3 phase	3 phase

Engine specifications

Make	Cummins	Cummins	Cummins
Model	6CTA8.3G2-I	6CTAA8.3G1-I	6CTAA8.3G4
No. of cylinders	6, in- line	6, in- line	6, in- line
Aspiration	Turbocharged-Aftercooled	Turbocharged-Air to air cooled	Turbocharged-Air to air cooled
Bore x Stroke	114 mm x 135 mm	114 mm x 135 mm	114 mm x 135 mm
Displacement	8.3 ltrs	8.3 ltrs	8.3 ltrs
Output - Prime	164 KWm	183 KWm	231 KWm
Fuel consumption @ 75% / 100% load with Radiator & Fan	29.9 / 39.0 ltr/hr	31.5 / 42.8 ltr/hr	40.8 / 53.3 ltr/hr
Typical lube oil consumption @ full load	0.10 ltr / hr	0.11 ltr / hr	0.14 ltr/hr
Total wet weight (engine + radiator)	766 Kg	892 Kg	968 kg
Length x Width x Height (engine)	1129 x 711 x 1171 mm	1129 x 711 x 1171 mm	1129 x 711 x 1171 mm
Compression Ratio	16.8 : 1	16.8 : 1	15.3 : 1
Piston Speed	6.75 m/s	6.75 m/s	6.75 m/s
Governor / Class	Mechanical / A1	Mechanical / A1	Electronic / A1
Lubricating oil sytem capacity	22 ltrs	22 ltrs	32 ltrs
Coolant capacity (engine + radiator)	30 ltrs	32 ltrs	42 ltrs
Combustion air intake @ 100% load (+/- 5%)	11.8 m ³ /min	11.9 m ³ /min	17.1 m ³ /min
Fan air flow across radiator	11736 CFM	14323 CFM	23976 CFM
Exhaust Temperature	569 °C	598 °C	523 °C

Alternator specifications

Make	Stamford	Stamford	Stamford
Frame size / Model No.	UC27G	UC27H	HC4C
Voltage Regulation	± 1.0 %	± 1.0 %	± 1.0%
Insulation	Class H	Class H	Class H
Standard Enclosure	IP 23	IP 23	IP 23
Winding Pitch	2 / 3 Pitch	2 / 3 Pitch	2 / 3 Pitch
Stator Winding	Double layer lap	Double layer lap	Double layer lap
Rotor	Dynamically balanced	Dynamically balanced	Dynamically balanced
Wave form distortion	No load < 1.8 %, non distorting balanced linear load < 5 %	No load < 1.8 %, non distorting balanced linear load < 5 %	No load < 1.8 %, non distorting balanced linear load < 5 %
Telephone Interference Factor	Better than 50	Better than 50	Better than 50
Total Harmonic Factor	Better than 2%	Better than 2%	Better than 2%

Conformance standards

IS 4722, BS 5000, IS 1460, ISO 8528, BS 5514, ISO 3046, IS10000*

* For X1.7G1

Rating definitions

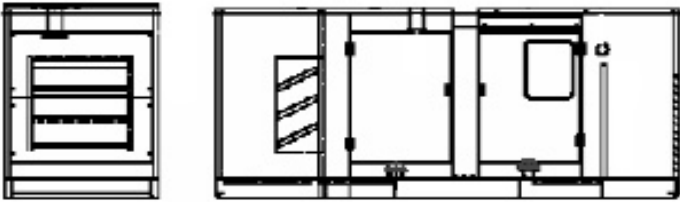
Prime Power (PRP):

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.

- Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460
- Oil consumption data is based on oil having specific gravity of 0.89 and meeting CH4 API categories
- Fuel consumption tolerance is +5%

Typical enclosed genset dimensions*

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Weight (kgs.) (Dry)	Std. Fuel Tank Capacity (Ltrs)
C180 D5 P	180 kVA	4500	1500	1850	4252	285
C200 D5 P	200 kVA	4500	1500	1850	4710	285
C250 D5 P	250 kVA	4650	1700	2050	5424	360



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