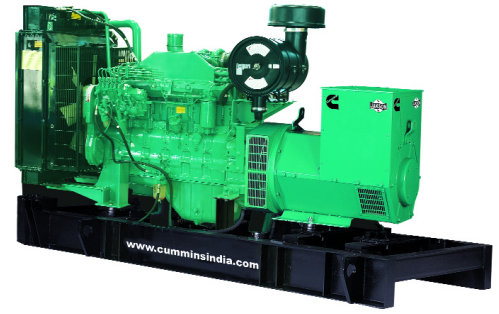


# Diesel generator set C series



## Specification sheet

144-160 kWe, 160-200 kVA Prime



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## Lowest life cycle cost

'C series' design features have made Cummins® diesel, the standard for comparison of operating economy, reliability and long life. When all cost factors like initial purchase, fuel, lube oil, maintenance and overhaul 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.



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

## Silent Power

**Cummins® 160-200 kVA** enclosures are so designed 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

Design, manufacture and testing of engine, alternator, enclosure and other accessories is done by Cummins India/ Channel partners (Jaksons Limited) for that optimum performance integrity and is backed by countrywide product support network with single source responsibility for the entire package.

## 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:

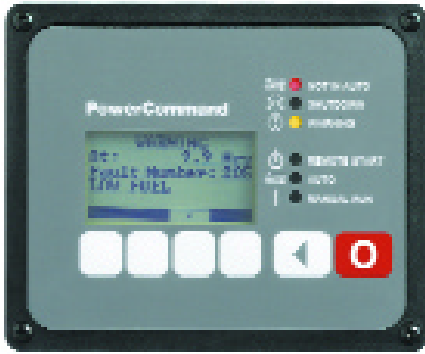
- In-line fuel pump with mechanical governor
- Optimised turbocharger
- Stainless steel exhaust flexible coupling
- Silencer
- Radiator
- Coolant inhibitor
- Plate-type lube oil cooler
- Spin-on filters - coolant, fuel & lube oil
- Dry-type, heavy duty, replaceable paper element air cleaner with restriction 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 (part of PCC 1301)



**Genset controller:** Cummins **PowerCommand**® **PCC 1301** microprocessor based integrated generator set monitoring, metering, protection and control system with built-in torque matched Volts/Hz overload control.



**Single control for all genset functions:**

- Digital voltage control
- Engine control
- Operator interface
- Protection
- Advanced control functions

**Standard features of genset controller:**

Engine		
Metering	Protection	
- RPM	- Low lube oil pressure	- Fail to crank
- Battery voltage	- High water temp.	- Fail to start
- Lube oil pressure	- High /low DC voltage	- Sensor failure
- Coolant temp.	- Weak battery	
- Running hours	- Overspeed	
Alternator		
Metering	Protection	
- 3 phase voltage (L-L and L-N)	- Under voltage	- Field overload
- 3 phase current	- Over voltage	
- Frequency	- Over current	
- kVA	- Under/ over-frequency	
	- Loss of sensing	
Others		
- Battle switch function		
- Delay start/ stop		
- Configurable cranking cycle		
- Sleep mode time		

**Accessories:**

- Silencer suitably optimized to meet stringent sound emission standards laid down by MOEF / CPCB
- Base rail with integral fuel tank (285 litres capacity) is provided with drain plug, air vent, inlet and outlet connection, level indicator, manhole etc.
- 2 x 12 V dry, uncharged batteries with connecting leads and terminals

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**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 environments
- Use of stainless steel hardware
- Insulation material meets exacting IS 8183 specs for better attenuation



**Control panel:** Powder coated control panel manufactured with 14 / 16 gauge CRCA sheet provides:

- MCCB of suitable rating with overload and short circuit protection
- Combined meter for KW, kVA and PF
- KWh meter
- Current transformers
- Aluminum busbars of suitable capacity with incoming and outgoing terminations
- Indicating lamps for "DG On" and "Load On"
- Instrument fuses/ MCB duly wired and ferruled

**Optionals**

**Engine:** Coolant heater with thermostatic switch, lube oil heater and digital electronic governor

**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	CJ 160 D5 P	CJ 180 D5 P	CJ 200 D5 P
Prime Power Rating kVA	160	180	200
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	6CTA8.3G1-I	6CTA8.3G2-I	6CTAA8.3G1-I
No. of cylinders	6, in- line	6, in- line	6, in- line
Aspiration	Turbocharged-Aftercooled	Turbocharged-Aftercooled	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	153 KW	164 KW	183 KW
Fuel consumption @ 75% load with Radiator & Fan	28.1 ltr / hr	29.9 ltr / hr	31.5 ltr / hr
Fuel consumption @ 100% load with Radiator & Fan	36.9 ltr / hr	39.0 ltr / hr	42.8 ltr / hr
Typical lube oil consumption @ full load	0.09 ltr / hr	0.10 ltr / hr	0.11 ltr / hr
Total wet weight ( engine + radiator)	766 Kg	766 Kg	892 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	16.8 : 1
Piston Speed	6.75 m/s	6.75 m/s	6.75 m/s
Governor / Class	Mechanical / A1	Mechanical / A1	Mechanical / A1
Lubricating oil sytem capacity	23.8 ltrs	23.8 ltrs	23.8 ltrs
Coolant capacity (engine + radiator)	38.9 ltrs	38.9 ltrs	40.8 ltrs
Combustion air intake @ 100% load (+/- 5%)	11.5 m <sup>3</sup> /min	11.8 m <sup>3</sup> /min	11.9 m <sup>3</sup> /min
Fan air flow across radiator	11736 CFM	11736 CFM	14323 CFM
Exhaust Temperature	561 °C	569 °C	598 °C
Battery Capacity / Rating	180 AH, 2 X 12 V	180 AH, 2 X 12 V	180 AH, 2 X 12 V

### Alternator specifications

Make	Stamford	Stamford	Stamford
Frame size / Model No.	UC27F	UC27G	UC27H
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

### 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 CF4 API categories
- Fuel consumption tolerance is +5%

#### 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.

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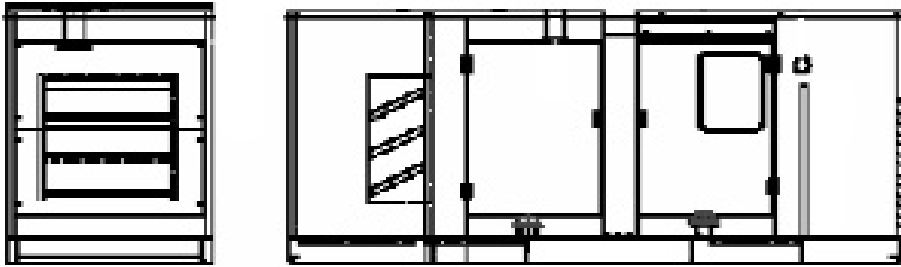
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## Typical enclosed genset dimensions\*

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Weight (kgs.) (Dry)
<b>CJ 160 D5 P</b>	160 kVA	4500	1500	1850	4200
<b>CJ 180 D5 P</b>	180 kVA	4500	1500	1850	4252
<b>CJ 200 D5 P</b>	200 kVA	4500	1500	1850	4710



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