

Diesel generator set B series



Specification sheet

112-128 kWe, 140-160 kVA Prime

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Latest technology product: Value for money

The **Cummins® 'B series'** engine powered diesel generating sets offer the best fuel economy, best warranty terms and lowest cost of maintenance thereby proving to be the most economical power solution. With the superior designed engine and world class Cummins Generator Technologies (Stamford) make alternator, the gensets come equipped with Cummins corporate genset controller for ease of use and monitoring generator performance.

Silent, compact and light weight

The **Cummins® 'B series'** DG sets are smaller and lighter than any other DG set in its class, thus giving you the advantage of optimising your valuable space.

Environment friendly power

The **Cummins® 'B series'** base DG sets are available with the lowest noise levels in its range and are CPCB certified for emissions and noise compliance, thus offering you environment friendly power.



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

Unmatched warranty

The **Cummins® 'B series'** DG sets are backed by the industry acknowledged best-in-class comprehensive warranty on the entire package including rubber components.

Lowest operating costs

All elements of the **Cummins® 'B series'** DG sets are designed from the start to work together to maximize efficiency, even at part loads, thus offering you the advantage of lowest operating costs.

Single source power assurance

The rugged and reliable **Cummins® 'B series'** DG sets are unique, because all the major components - the engine, alternator, control system and canopy are manufactured by Cummins India. This integral approach means each element of a generating set is designed to work in harmony from the start. A high quality product, complemented by the largest customer support network in India, providing round-the-clock service and spares support, offers you **SINGLE SOURCE POWER ASSURANCE** from the world leaders in power generation.

Standard scope

Engine: **Cummins® 'B series'** diesel generating sets, powered by Cummins® 'B series' engines, are rated at 1500 RPM and conform to ISO 8528 specifications. The engines are radiator cooled, four stroke and multi-cylinder, conforming to BS 5514 / ISO 3046.

The scope of supply includes:

- Electrical starter motor 12V DC
- Battery charging alternator
- Bosch fuel system
- Electronic governor
- Dual spin-on fuel filter
- Spin-on lube oil filter
- Turbocharger
- Charge Air Cooler (CAC)
- Silencer (Hospital grade)
- Dry type air cleaner (Heavy duty air cleaner for B160)
- LLOP/ HWT/ Overspeed - safety tripping
- Flywheel and flywheel housing
- First fill of lube oil and coolant

Alternator: Stamford alternator from Cummins Generator Technologies, suitable for operation at 1500 RPM, 415 Volts, 0.8 pf (lag) suitable for 50 Hz, 3 phase, 4 wire system, conforming to BS 5000 / IS 4722. The Alternator is brushless type, screen protected, revolving field, self excited, self regulated through an AVR. The alternator has the following features:

- ± 1.0 % Voltage regulation (max) in static conditions
- IP: 23 protection with insulation class H
- Permissible overload of 10% for one hour in 12 hours of operation

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Mounting arrangement: Engine and alternator are mounted on a common MS fabricated base frame with AVM pads.

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:

- PCC 1301 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:

Cummins **PowerCommand**® **PCC 1301** is a 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 governing
- Digital voltage control
- Engine control
- Operator interface
- Protection
- Advanced control functions



Standard features of genset controller:

Engine

| Metering | Protection |
|---------------------|-------------------------|
| - RPM | - Low lube oil pressure |
| - Battery voltage | - High water temp. |
| - Lube oil pressure | - High /low DC voltage |
| - Coolant temp. | - Weak battery |
| - Running hours | - Overspeed |

Alternator

| Metering | Protection |
|---------------------------------|-------------------------|
| - 3 phase voltage (L-L and L-N) | - Under voltage |
| - 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

Acoustic enclosure:

The acoustic enclosure is made of 1.6/ 2 mm thick CRCA sheets in Munsel green shade and a structural/ sheet metal base frame painted in black. The walls of the enclosure are insulated with fire retardant foam so as to comply with the 75 dBA at 1mtr sound levels specified by Ministry of Environment & Forest.

The enclosure has the following features:

- Specially designed to meet stringent MOEF/ CPCB norms of 75 dBA @ 1mtr at 75% load under free field conditions
- Single point lifting for easy handling at customer site
- Designed to have optimum serviceability
- Air inlet louvers specially designed to operate at rated load - 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 special hardware for longer life
- Insulation material meets exacting IS 8183 specifications for better sound attenuation
- Flush styling - no projections
- Fluid drains for lube oil and fuel
- Fuel filling point



Others:

- Fuel tank suitable for 8 hours of operation

Optionals

- Microprocessor / relay based AMF control panel
- Trolley mounted mobile sets
- Cold starting aid

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Technical data

Generator set specifications

| | | |
|-----------------------------|-----------------|-----------------|
| Model | C 140 D5 P | C 160 D5 P |
| Prime Power Rating kVA / kW | 140 kVA /112 kW | 160 kVA /128 kW |
| Current (Amps) | 195 | 223 |
| No. of Phases | 3 Phase | 3 Phase |
| Power Factor | 0.8 (lag) | 0.8 (lag) |

Engine specifications

| | | |
|---|------------------------------------|------------------------------------|
| Make | Cummins | Cummins |
| Model | 6BTAA 5.9G4 | 6BTAA 5.9G5 |
| BHP | 170 | 195 |
| Cooling | Water Cooled | Water Cooled |
| Aspiration | Turbocharged Charged Air Cooled | Turbocharged Charged Air Cooled |
| No. of Cylinders | 6 | 6 |
| RPM | 1500 | 1500 |
| Bore (mm) x Stroke (mm) | 102 x 120 | 102 x 120 |
| Compression Ratio | 17.6:1 | 16.5:1 |
| Displacement (Ltrs.) | 5.88 | 5.88 |
| Fuel | HSD | HSD |
| Fuel Consumption (Ltr/hr) @ 75% Load with Radiator & Fan | 22.9 | 29 |
| Governor | Electronic | Electronic |
| Starting System | 12 V Electrical | 12 V Electrical |
| Lube oil Specification | CF4 15W40 | CF4 15W40 |
| Lube oil Sump Capacity (Ltrs.) | 14.3 | 14.3 |
| Lube oil consumption (LPH) | 0.04 | 0.06 |
| Total Coolant Capacity (Ltrs.) | 26 | 26 |
| Exhaust Pipe Size (mm) | 100 | 100 |
| Battery Capacity / Rating (Cummins Pulselite) | 65 AH 12 V | 65 AH 12 V |

Alternator specifications

| | | |
|--------------------------|--------------|--------------|
| Voltage | 380 / 415 | 380 / 415 |
| RPM / Frequency | 1500 / 50 Hz | 1500 / 50 Hz |
| Enclosure | IP 23 | IP 23 |
| Voltage Regulation (max) | +/- 1% | +/- 1% |
| Class of Insulation | H Class | H Class |
| Alternator Frame | UC274E | UC274F |

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% as per ISO 3046

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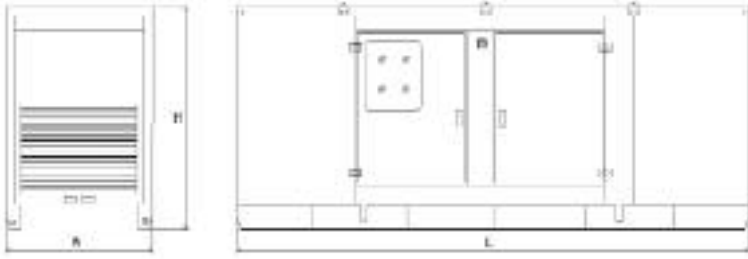
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Typical enclosed genset dimensions*

| Genset Model | Rating (kVA) | Length (mm) | Width (mm) | Height (mm) | Weight (kgs.) (Wet) |
|-------------------|--------------|-------------|------------|-------------|---------------------|
| C 140 D5 P | 140 kVA | 4000 | 1150 | 1700 | 2291 |
| C 160 D5 P | 160 kVA | 4500 | 1500 | 1850 | 3028 |



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