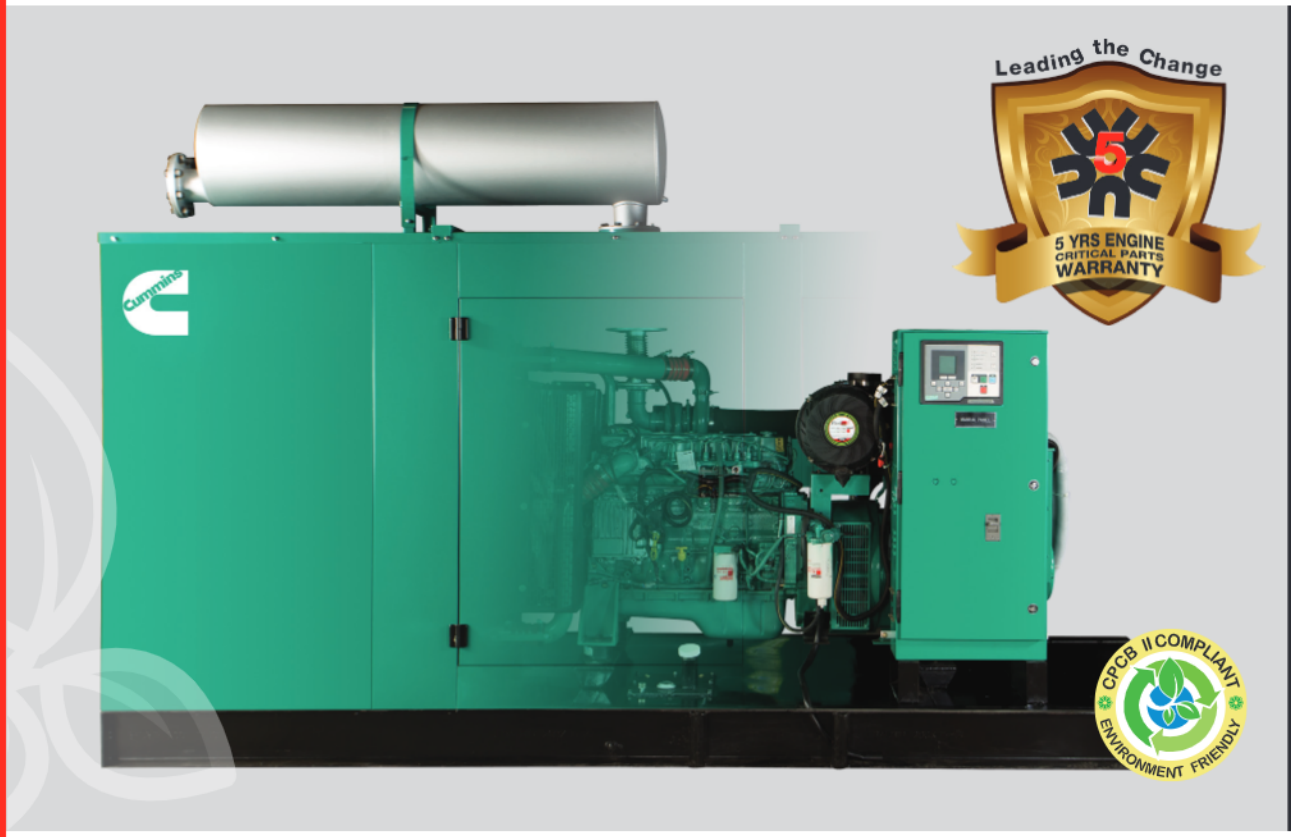
Diesel Generator Set

QSB6.7 Series

180-225 kVA, 144-180 kWe Prime



Specification Sheet

Latest Technology Product with Global Cummins® Platform

- The Cummins® QSB6.7 series heavy-duty engine and world class Stamford alternator powered diesel generator set
- Class defining Quantum engine technology with fully integrated subsystems
- Full Authority Electronic Engine
- Advanced in-cylinder technology to meet latest emission norms without any after-treatment device
- Smart aesthetic and superior finish
- Compact in size with optimum power to weight ratio

Environment Friendly Power

- Class defining technology engine is designed to meet stringent exhaust emission tests as per revised MoEF norms, thus offering environment friendly power
- Cummins® diesel generator sets are available with the lowest noise levels in its range

Lowest Operating Cost and Comprehensive Warranty

- Highly reliable and durable product
- All elements are designed to work together to maximize efficiency even at part loads, offering the advantage of lowest operating costs.
- 500 Hours/ 1 year service interval
- Industry acknowledged best-in-class comprehensive warranty on the entire package including rubber components

Single Source Power Assurance

- All the major components – the engine, alternator, control system and canopy are designed, manufactured and tested by Cummins India.
- Best and largest customer support network in India, capable of providing round-the-clock service and spares support
- All these things put together, Cummins® offers you SINGLE SOURCE POWER ASSURANCE

Engine

- Cummins® QSB6.7 series, 6 cylinder, in-line 4 stroke, radiator cooled engine
- Full Authority Electronic Engine
- Well designed air handling system with
  - Dry type, Replaceable paper element air cleaner with restriction indicator
  - Air to air aftercooler
  - Optimised turbocharger for increased altitude capabilities
- Best in class fuel economy with
  - Bosch HPCR fuel system with A1 class electronic governing
  - Dual fuel filter system: Pre filter including water separator and Water In Fuel (WIF) sensor and main filter
- Standard integral set-mounted radiator system, designed and tested for 50°C ambient temperature
- Full flow spin on lube oil filter
- Plate type lube oil cooler
- First fill of lube oil and coolant
- Electrical starter motor with soft start engagement feature
- Battery charging alternator
- 2 x 12 V DC batteries

Alternator

- Stamford UC27 alternator frames from Cummins Generator Technologies
- Brushless type, Screen protected, Revolving field, Self excited alternator conforming to IS/IEC 60034-1
- 3 Phase reconnectable winding with 12 terminals brought out for connection
- Better motor starting capability
- Best in class efficiency
- Compact design with sealed bearings for longer life and lesser maintenance
- Impregnation on all wound components for better mechanical strength

Control Panel

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:

- PowerCommand® 1.1 Controller
- Aluminum bus bars with suitable capacity with incoming/ 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

PowerCommand® 1.1 features

The PowerCommand® control system is a microprocessor-based generator set monitoring, metering and control system with LCD display designed to meet the demands of today's engine driven generator sets

- Intuitive operator interface which includes LED backlit LCD display with tactile feel soft-switches & generator set status LED lamps
- Digital 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.
- Remote start-stop
- Engine metering: Oil pressure, Coolant temperature, Battery voltage, Engine speed
- AC Alternator metering: L-L Voltage and L-N Voltage, Current (1 and 3 phase), Volt-Amperes (phase and total) and Frequency.
- Engine protection: Low lube oil pressure, High/Low coolant temperature, Over speed, Battery 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.
- Data logging: Engine hours, Control hours, Engine starts and upto 10 recent fault codes
- Configurable glow plug control
- Configurable cycle cranking
- 12 and 24 Volt DC operation
- Sleep mode
- Programmable I/Os (4 inputs and 2 outputs), expandable with AUX101/102 modules
- Modbus interface (RS485 RTU)
- InPower compatible (PC based service tool)
- Certifications - meets the requirement of relevant UL, NFPA, ISO, IEC, Mil Std., CE and CSA standards

Silencer

- Hospital grade silencer suitably optimized to meet stringent noise emission standards laid down by MoEF / CPCB

Mounting Arrangement

- Engine and alternator are mounted on a common MS fabricated base frame with AVM pads.
- Base frame with integral fuel tank is provided with drain plug, air vent, inlet and outlet connection, level indicator and provision for cleaning

Optional

- **Engine:** Coolant heater
- **Control Panel:**
  - PC3.3
  - Air to air aftercooler
  - Bar-graph For PC3.3 Panel with kW, Power factor, Frequency,Current, Voltage
  - Remote HMI.
- **Alternator:** PMG

Acoustic Enclosure

- Specially designed to meet stringent MoEF/ CPCB norms of 75 dBA @ 1mtr at 75% load under free field conditions
- The acoustic enclosure is made of CRCA sheets in munsel green shade and a structural/ sheet metal base frame painted in black
- High quality noise absorbant and fire-retardant grade acoustic insulation material (PU Foam) complying to IS 8183
- Two 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
- 11 tank pretreatment process and UV resistant powder coating of all parts to withstand extreme environment
- Use of special hardware for longer life
- Flush styling - no projections
- Fluid drains for lube oil and fuel
- Fuel filling arrangement inside the enclosure

Technical Data

Generator Set Specification			
Model	C180D5P	C200D5P	C225D5P
Duty	Prime	Prime	Prime
Power Rating kVA / kWe	180/144	200/160	225/180
No. of Phases	3	3	3
Output Voltage and Frequency (V and Hz)	415 V, 50 Hz	415 V, 50 Hz	415 V, 50 Hz
Power Factor	0.8 (lagging)	0.8 (lagging)	0.8 (lagging)
Current (A)	250	278	313
RPM	1500	1500	1500
Engine specification			
Make	Cummins®	Cummins®	Cummins®
Model	QSB6.7-G14	QSB6.7-G15	QSB6.7-G16
MoEF Certified Power (bhp)	234	256	280
Required Power for Rated kVA (bhp)	227	248	277
Cooling	Liquid cooled (EG Compleat 50:50)	Liquid cooled (EG Compleat 50:50)	Liquid cooled (EG Compleat 50:50)
Aspiration	Turbocharged, Charge air cooled	Turbocharged, Charge air cooled	Turbocharged, Charge air cooled
No. of cylinders	6, In-line	6, In-line	6, In-line
Bore (mm) x Stroke (mm)	107 x 124	107 x 124	107 x 124
Compression ratio	17.2:1	17.2:1	17.2:1
Displacement (litre)	6.7	6.7	6.7
Fuel	High Speed Diesel	High Speed Diesel	High Speed Diesel
Fuel consumption @75% load with radiator and fan* (litre/hr)	31.78	34.66	38.22
Fuel consumption @100% load with radiator and fan* (litre/hr)	41.69	44.55	50.15
Performance class of generator set	ISO 8528-5 G2	ISO 8528-5 G2	ISO 8528-5 G2
Starting system	24 V DC Electrical	24 V DC Electrical	24 V DC Electrical
Lube oil specification	CI4+ 15W40	CI4+ 15W40	CI4+ 15W40
Lube oil sump capacity, High-Low level (litre)	17.5-15	17.5-15	17.5-15
Total lubrication system capacity (litre)	19.5	19.5	19.5
Lube oil consumption @ full load** (litre/hr)	0.09	0.09	0.09
Total coolant capacity (litre)	32.4	32.4	32.4
Exhaust pipe size (inch)	5	5	6
Total wet weight (Engine+Radiator)## (kg)	639	639	639
Length x Width x Height (Engine) (mm)	1057 x 733 x 1139	1057 x 733 x 1139	1057 x 733 x 1139
Mean piston speed (m/s)	6.2	6.2	6.2
Combustion air intake @100% load (±5%) (cfm)	446	455	455
Exhaust Temperature (°C)	538	543	543
Alternator specification			
Make	Stamford (CGT)	Stamford (CGT)	Stamford (CGT)
Alternator Frame	UCI274G	UCI274H	UCI274K
Enclosure	IP23	IP23	IP 23
Voltage regulation (Max.)	±1%	±1%	±1%
Class of Insulation	H Class	H Class	H Class
Winding Pitch	2/3	2/3	2/3
Stator Winding	Double layer lap	Double layer lap	Double layer lap
Rotor	Dynamically Balanced	Dynamically Balanced	Dynamically Balanced
Waveform distortion/ Total Harmonic Distortion	No load < 1.5 %, Non distorting balanced linear load < 5 %	No load < 1.5 %, Non distorting balanced linear load < 5 %	No load < 1.5 %, Non distorting balanced linear load < 5 %
Maximum Unbalanced Load across phases#	less than or equal to 25%	less than or equal to 25%	less than or equal to 25%
Telephonic Harmonic factor	< 2%	< 2%	< 2%

** Fuel consumption data is based on diesel having specific gravity of 0.85 and conforming to IS:1460. Fuel consumption tolerance is +5%*

 # With the condition that none of the phases exceeds its rated current

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.

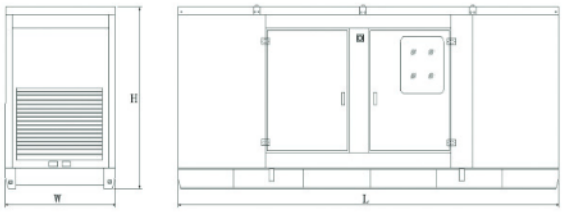
Conformance Standards

- IS/IEC 60034-1
- IS 1460
- ISO 8528
- ISO 3046
- ISO 9001
- IS 13018

Typical Enclosed Genset Dimensions

Genset Model	Rating (kVA)	Length (mm)	Width (mm)	Height (mm)	Wet Weight## (kg)	Standard Fuel tank Capacity (litre)
C180D5P	180	4200	1350	1850	2704	350
C200D5P	200	4200	1350	1850	2704	350
C225D5P	225	4200	1350	1850	2704	350

##Approximate weight



Authorised Representative