# Diesel Generator Set

# X2.7 Series

25-30 kVA, 20-24 kWe Prime

Specification Sheet

## Latest Technology And Unmatched Performance

- The Cummins® X2.7 series rugged engine and world class Stamford alternator powered diesel generator set
- Advanced in-cylinder technology to meet latest emission norms without any after-treatment device
- Best in class transient reponse with 100% block loading capacity
- 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.
- The 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 interaval
- 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

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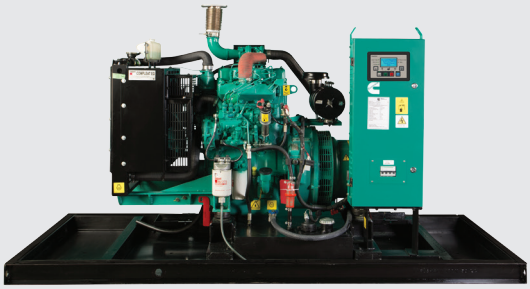
## Engine

- Cummins® X series, 3 cylinder, In-line 4 stroke, radiator cooled engine
- Well designed air handling system with
  - Dry type, Replaceable paper element air cleaner with restriction indicator
  - Air to air aftercooling for 25 kVA & 30 kVA
  - Optimised turbocharger for increased altitude capabilities
- Best in class fuel economy with
  - Inline fuel pump with A1 class mechanical governing
  - Spin on fuel filter
- Standard integral set-mounted radiator system, designed and tested for 50°C ambient temperature
- Full flow spin on lube oil filter
- First fill of lube oil and coolant
- Electrical starter motor with soft start engagement feature
- Battery charging alternator
- 1X12 V DC battery



## Alternator

- Stamford S0L2 alternator frames from Cummins Geneartor Technology
- Brushless type, Screen protected, Revolving field, Self excited alternator conforming to IS/IEC 60034-1
- Dedicated winding specially designed for 3 phase operation
- 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:

- PS0600 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
- Circuit breakers of suitable rating with overload and short circuit protections

**PS0600 Features**

Cummins® PowerStart™ PS0600 control is a microprocessor based generator set monitoring and control system. AMF Functionality is inbuilt and this control includes an intuitive operator interface that allows for complete generator set control as well as system metering, fault annunciation, configuration, and diagnostics.

- AMF Functionality
- Intuitive operator interface which includes LED backlit 128X64 pixel graphic display with tactile feel soft-switches. Indications - Generator set, Utility Status Lamp.
- Remote Start-Stop
- Engine Metering: Oil pressure, Engine temperature, Starting battery voltage, Engine running hours
- AC Alternator Metering: L-L Voltage and L-N Voltage, Current (phase and total), kVA (phase and total) and Frequency, kwh, Total & per phase (kw & kVA), PF, Utility Voltage and Freq.
- Engine Protection: Low lube oil pressure, High/Low coolant temperature, Battery Over/Under/Weak Volts, Fail to Crank/ Start, Sensor failure, Cranking lockout, Low fuel level.
- AC Alternator Protection: Over/Under Voltage, Over/Under Frequency, Loss of AC Sensing, Overspeed, Over Current.
- Data Logging: Engine Hours, Control Hours and upto 5 recent fault codes
- Configurable glow plug control
- 12/24 Volt DC operation
- Sleep mode
- Modbus interface (RS485 RTU)
- InPower compatible (PC based service tool)
- Certifications - meets the requirement of relevant ISO, EN, Mil Std. and CE standards
- Maintenance due alarm based on Engine Run Time and due date
- Exercisor scheduler

## Silencers

- Critical grade silencer suitably optimized to meet stringent sound 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:** Electronic Governing
- **Control Panel:** PC1.1
  Microprocessor / relay based AMF control panel

## 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 (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 | C25D5P | C30D5P |
| Duty | Prime | Prime |
| Power Rating kVA / kWe | 25/20 | 30/24 |
| No. of Phases | 3 Phase | 3 Phase |
| Output Voltage (V) | 415 | 415 |
| Power Factor | 0.8 (lagging) | 0.8 (lagging) |
| Current (3 phase/ 1 phase) (A) | 35 | 42 |
| Frequency (Hz) and RPM | 50 Hz, 1500 RPM | 50 Hz, 1500 RPM |
| **Engine Specification** | | |
| Make | Cummins® | Cummins® |
| Model | X2.7T-G1 | X2.7TAA-G2 |
| MoEF Certified Power (bhp) | 32 | 38.5 |
| Required Power for Rated kVA (bhp) | 31.6 | 38.1 |
| Cooling | Liquid Cooled (EG Compleat 50:50) | Liquid Cooled (EG Compleat 50:50) |
| Aspiration | Turbocharged | Turbocharged, Charge Air Cooled |
| No. of cylinders | 3, In-line | 3, In-line |
| Bore (mm) x Stroke (mm) | 95 x 127 | 95 x 127 |
| Compression ratio | 18.3:1 | 18.3:1 |
| Displacement (litre) | 2.7 | 2.7 |
| Fuel | High Speed Diesel | High Speed Diesel |
| Fuel consumption @75% load with radiator and fan* (litre/hr) | 4.6 | 5.61 |
| Fuel consumption @100% load with radiator and fan* (litre/hr) | 6.27 | 7.45 |
| Performance class of generator set | ISO 8528-5 G2 | ISO 8528-5 G2 |
| Starting system | 12 V DC Electrical | 12 V DC Electrical |
| Lube oil specification | CH4 15W40 | CH4 15W40 |
| Lube oil sump capacity, High-Low level (litre) | 7.3-3.2 | 7.3-3.2 |
| Total lubrication system capacity (litre) | 8 | 8 |
| Total coolant capacity (litre) | 11 | 11 |
| Exhaust pipe size (inch) | 2.5 | 2.5 |
| Total wet weight (Engine+Radiator)## (kg) | 322 | 322 |
| Length x Width x Height (Engine) (mm) | 701 x 600 x 889 | 701 x 600 x 889 |
| Mean piston speed (m/s) | 6.35 | 6.35 |
| Combustion air intake @100% load (±5%) (cfm) | 67 | 70 |
| Exhaust Temperature (°C) | 463 | 487 |
| **Alternator Specification** | | |
| Make | Stamford (CGT) | Stamford (CGT) |
| Alternator frame | S0L2M1 | S0L2P1 |
| Enclosure | IP23 | IP23 |
| Voltage regulation (Max.) | ±1% | ±1% |
| Class of Insulation | H Class | H Class |
| Winding Pitch | 2/3 | 2/3 |
| Stator Winding | Double layer lap | Double layer lap |
| Rotor | 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 % |
| Maximum Unbalanced Load across phases# | less than or equal to 25% | less than or equal to 25% |
| Telephonic Harmonic factor | < 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*

***For the above ratings, 1 phase gensets are available. Please contact Cummins Marketing team for more details.***

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## 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.

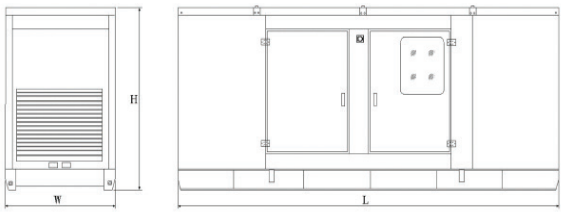
## Conformance Standards

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

## Typical Enclosed Genset Dimensions

| Genset Model | Rating (kVA) | Length (mm) | Width (mm) | Height (mm) | Wet Weight## (kg) | Standard Fuel tank Capacity (litre) |
|---|---|---|---|---|---|---|
| C25D5P | 25 | 2400 | 950 | 1400 | 1090 | 70 |
| C30D5P | 30 | 2400 | 950 | 1400 | 1090 | 70 |

*##Approximate weight*




Authorised Representative

**Cummins Power Systems Offices**

| | |
|---|---|
| Bengaluru: | Tel.: (080) 2325 9161 / 63, 2325 9165 / 67<br>Fax: (080) 2325 9164 |
| Chandigarh: | Tel.: (0172) 224 0371-73<br>Fax: (0172) 224 0372 |
| Chennai: | Tel.: (044) 2446 8110 / 2446 8113<br>Fax: (044) 2491 1120 |
| Gurgaon: | Tel.: (0124) 391 0900-01<br>Fax : (0124) 391 0916 |
| Hyderabad: | Tel.: (040) 2340 9970 / 2340 9980<br>Fax. (040) 2340 9990 |
| Jaipur: | Tel.: (0141) 236 4944<br>Fax: (0141) 403 8794 |
| Kolkata: | Tel.: (033) 2287 8065 / 2287 2481<br>Fax: (033) 2290 3839 |
| Lucknow: | Tel.: (0522) 230 5049 / 230 5059<br>Fax: (0522) 230 5035 |
| Mohali: | Tel.: (0172) 224 0371 / 72 / 73<br>Fax: (0172) 224 0371 / 72 / 73 |
| Vadodara: | Tel.: (0265) 233 0627 / 3053627<br>Fax: (0265) 234 0623 |

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**Cummins India Limited**
**Power Systems Business**
Cummins India Office Campus
Tower-A, 8th Floor, S. No. 21,
Balewadi, Pune – 411 045 (India)

Email: cpgindia@cummins.com
www.cumminsindia.com

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