Cummins Power Generation (China)

Diesel Generator Sets

Fully integrated, reliable and efficient

Cummins Power Generation
Diesel Generator Sets
Global Brand.
Cummins Power Generation Inc. is the exclusive generator set manufacturer of Cummins Inc. with all the products adopting the globally unified designing, manufacturing and testing standard of Cummins. We provide an overall quality guarantee with The Power of One™ for the major components of the generator set within the complete-machine warranty, including the engine, generator and control system.

Fully integrated power systems
Cummins Power Generation is a world leader in the design and manufacture of pre-integrated generator sets, ranging from 55 kVA to 2500 kVA. All major components – engine, alternator, transfer switches and control systems – are designed and manufactured by Cummins. We call this integrated approach The Power of One™, where each element works in harmony from the start.

Outstanding control
Generator sets from Cummins Power Generation Inc. are available with industry-leading PowerCommand® controls, which can provide reliable and economic solutions for the digital paralleling. Standard features include not only integrated digital governing and voltage regulating, but also analogue and digital metering, digital engine monitoring systems, smart starting control systems, battery monitoring systems, Amp Sentry™ true alternator protection and more.

Strict quality control
Cummins Power Generation Inc. adopts the globally unified quality control system of Cummins and the procedures for new products development and production quality control to guarantee the quality from raw materials to assembling and tests before being sold.

Satisfactory service and technical support
Cummins has built a nationwide powerful service network through its over 30 years’ development with 12 regional service centers, 50 authorized dealers and distributors, 1 component distribution centre. We guarantee same-day answers, turnkey solutions, quick delivery, split-second start-up.

Diesel Generator Sets
The combination of integrated design and manufacturing give you Cummins diesel generator sets with unequalled reliability, power quality, excellent electrical performance and stable power supply quality, low maintenance costs as well as efficient fuel control.

Delivering rugged, reliable mechanical and electrical performance, our diesel generator sets are also suited to utility peaking plants, distributed generation facilities, peak shaving (or peak lopping) and power management at large commercial or industrial sites.

Diesel-powered generator sets remain the best-value choice worldwide for standby and emergency power systems. Powered by heavy-duty Cummins engines, our fuel-efficient generator sets are available in sizes ranging from 55 kVA to 2500 kVA, and are known for their responsive transient performance. Cooling systems provide guaranteed performance in high ambient temperatures.

High-performance, low-reactance Cummins-manufactured alternators provide good voltage waveform and exceptional motor starting in demanding applications such as data centers, hospitals and industrial facilities.

Main Features of Generator Set
Engine: the whole series are equipped with Cummins engine, which possesses outstanding transient response, fuel economy, environmental emission, higher reliability and longer life cycle.

Alternator: the whole series adopt Stamford alternators with excellent excitation which can enable the generator set to bear high-power transient load with small voltage fluctuation and fast recovery.

Control System: PowerCommand® controls is a microprocessor unit (MPU) based generator set control system, which has the functions such as voltage regulating, engine protection, alternator protection, operation interface, synchronous speed regulation.

Base Frame: Bolted steel base frame with A/V mounting, complex seismic structure and bottom oil tank

Radiator: Standard genset mounted radiator.

Standard Accessories: Exhaust elbow, exhaust bellows, exhaust silencer, etc.
Features of Cummins Generator

Type:
Four-stroke, water cooled, turbo charged and aftercooled.

Structure:
Cast steel crankshaft, connecting rod, cast iron cylinder block.

Fuel injection system:
The unique High Pressure Injection (HPI) PT fuel system can bring more economic fuel consumption and better emission effect. By applying the mature technique with flexible injection timing technology, reduce fuel pipe and increase injection pressure, it is substantial decrease of the fuel consumption ratio of HPI-PT fuel system and the pollutant discharge of oxynitride.

Insulation and Impregnation:
The insulation system is class 'H'.

Cooling system:
Built-in water circulating pump and thermostat improves working efficiency of engine.

Engine oil filtration system:
High-precision paper-based filter with by-pass protection.

Features of Cummins Stamford Alternator

Standard
The generator complies with the requirements of GB755, the third part of the BSS0000, VEDO030, NEMAMG1-22, IEC-34, CSAC22-100 and AS1359 standards.

Electrical Features
Insulation and Impregnation:
The insulation system is class ‘H’. All wound components are impregnated with materials and processes designed specifically to provide the high build required for static windings and the high mechanical strength required for rotating components.

Winding and electronic performance:
All generator stators are wound to 2/3 pitch. This eliminates triplen harmonics on the voltage waveform and is found to be the optimum design for trouble-free supply of non-linear loads.

Telephone interference
THF (as defined in the BS EN60034-1) <2% TIF (as defined in the NEMA MG1 -22) <0.5.

Radio interference:
Brushless device and the high-quality AVR can guarantee a small interference during radio transmission, if necessary, we can provide the RFI in addition.

Protection class:
All the Stamford land alternators have met the IP23 standard protection level; we can provide the optional IP44 AC (air-cooled) protection generator for the customer but suggest that all the IP44 generator should be equipped with a stator winding high-temperature warning device.

Cummins PowerCommand® Digital Control

PowerCommand® control system (including the PS0500, PCC1301/1302, PCC2100/2300 and PCC3201/PCC3300) is a microprocessor unit based monitoring, measuring and control system, which can satisfy the current requirements of engine-driven generator set. This control system hereof integrates all the controlling functions within one control and provides higher performance and reliability than traditional generator set control system; it was designed and has been tested under the commonly-seen severe environment such generator set usually face.

Characteristics
• Multiple languages support.
• AmpSentry™ UL certified patent technique realize true generator over-current protection.
• Modbus® interface connects to customer device.
• 12 V and 24 V battery operation.
• Digital voltage regulation: single/twin phase full wave SCR regulator compatible to self-excited or permanent magnet generator system.
• Digital engine speed governing.
• Generation Set monitoring and protection.
• Digital power switching системы (PSC2IP) can actualize the load switching operation under the open circuit switching, close circuit switching and soft-switching (uniform changing) models.
• Parallel extension (pitch peak/base load) function can regulate the active and reactive power output of generator set when running in parallel with mains. The power regulation can be conducted in both the generator set and the bus monitoring point of mains.
• Digital frequency synchronization and voltage matching.
• Synchronous load distribution.
• Active and reactive power controlling under the drop mode.
• Synchronous inspection function can conduct inspection towards the phase angle window, voltage window, frequency window, time delay, etc.
• Mains/AC bus measuring and protection system.
• Advanced serviceability - Utilizing HiPower™, a PC based software service tool.
• Environmental protection: The control system is designed for reliable operation in harsh environments. The core control board is an encapsulated module that is fully protected from the elements.
• Real-time clock can provide time marking for defaults and incidents.
• By exercising the operation clock and starting/stopping time set, we can start the testing operation for situation with load, no-load, base load or pitch peak.

Certification
Suitable for use on generator sets that are designed, manufactured, tested and certified to relevant UL, NFPA, ISO, IEC, M1 Std. and CE standards.

Note: above mentioned functions might be various in accordance to the difference of control types; detailed information please refer to the comparative part of control functions within this manual.
### 55kVA-2500kVA/(50HZ)

<table>
<thead>
<tr>
<th>Model</th>
<th>Engine Type</th>
<th>Standby (kVA)</th>
<th>Standby (kW)</th>
<th>Prime (kVA)</th>
<th>Prime (kW)</th>
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<tbody>
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<td>C55 D5</td>
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</table>

*230/400VAC, 0.8PF(lagging) 3 phase 4 wire
PowerCommand® Generator Set Controls

PowerCommand® controls give you reliable, cost-effective solutions to integrated digital paralleling.

Only generator sets from Cummins Power Generation are available with industry-leading PowerCommand® controls. Standard features include not only integrated digital governing and voltage regulation, but also analogue and digital metering, digital engine monitoring systems, smart-starting systems, battery monitoring systems, Amp Sentry™ true alternator protection and more.

### Main Features

- **PowerCommand® Generator Controls**
  - PowerCommand® PowerCommand® PowerCommand® PowerCommand® 1.1/2.2/3.3
  - General
  - Engine
  - Alternator
  - Generator Controls
  - Power Command
  - Engine
  - Alternator
  - Generator Controls

- **Generator Controls**
  - PowerCommand® PowerCommand® PowerCommand® PowerCommand® 1.1/2.2/3.3
  - General
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  - Power Command
  - Engine
  - Alternator
  - Generator Controls

### Main Features Generator Controls

- **PowerCommand® Generator Control**
  - PowerCommand® PowerCommand® PowerCommand® PowerCommand® 1.1/2.2/3.3
  - Machine Protection & Indication
  - Line & Line Voltage
  - Line & Line Frequency
  - Branch/Phase
  - Branch/Phase
  - Line & Line Voltage
  - Line & Line Frequency

- **Engine Controls**
  - Engine
  - Engine
  - Engine
  - Engine
  - Engine
  - Engine
  - Engine

- **Alternator Controls**
  - Alternator
  - Alternator
  - Alternator
  - Alternator
  - Alternator
  - Alternator
  - Alternator

- **Generator Controls**
  - Generator Controls
  - Generator Controls
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  - Generator Controls

### Dimensions and Weights of Generator Sets

- **Model**
  - C55 D5
  - C50 D5
  - C440 D5
  - C380 D5
  - C260 D5
  - C220 D5
  - C200 D5
  - C175 D5
  - C2000 D5
  - C1675 D5
  - C1675 D5A
  - C1400 D5
  - C1250 D5A
  - C1100 D5B
  - C1100 D5A
  - C1000 D5
  - C900 D5
  - C825 D5
  - C700 D5
  - C690 D5
  - C640 D5
  - C500 D5

- **Dimensions**
  - Length (mm)
  - Width (mm)
  - Height (mm)

- **Weight (net weight) (kg)**
  - C55 D5
  - C50 D5
  - C440 D5
  - C380 D5
  - C260 D5
  - C220 D5
  - C200 D5
  - C175 D5
  - C2000 D5
  - C1675 D5
  - C1675 D5A
  - C1400 D5
  - C1250 D5A
  - C1100 D5B
  - C1100 D5A
  - C1000 D5
  - C900 D5
  - C825 D5
  - C700 D5
  - C690 D5
  - C640 D5
  - C500 D5

Dimensions are for reference only, do not use in installation and design.
Specifications and Options

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 8528-2005 and GBT 2820-2009. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Limited-Time Running Power (LTP) : Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528-2005 and GBT 2820-2009.

Prime Power (PRP) : Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528-2005 and GBT 2820-2009. 10% overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base Load (Continuous) Power (COP) : Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528-2005 and GBT 2820-2009, ISO 3046, AS 2789, DIN 6271 and BS 5514. For comprehensive conditions of application including COP and LTP, please refer to factory.

Extending your peace of mind with our suite of Extended Warranty Options

Every one of our generator sets is covered by a Base Warranty for round-the-year reliability. To further safeguard your investment, we’ll extend that protection to cover every major component in our generator sets anywhere in the world. You can choose from our suite of Extended Warranty coverage ranging from two years, five years to ten years to suit your specific needs before the original guarantee comes to an end.

For further details on all Extended Warranty options, please contact your local Cummins Power Generation distributor.