Diesel Generator set
X3.3 series engine

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> Specification sheet
30 kVA - 38 kVA @ 50 Hz
27 kW - 35 kW @ 60 Hz

Description
This Cummins® Power Generation commercial generator set is a fully integrated power generation system, providing optimum performance, reliability and versatility for stationary standby, prime power, and continuous duty applications.

Features
Cummins engine - Rugged 4-cycle delivers reliable power, and fast response to load changes.
Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings, low waveform distortion with non-linear loads and fault clearing short-circuit capability.
Control system - The PowerCommand® 1.1 electronic control is standard equipment and provides total Genset system integration, including automatic remote starting/stopping, alarm and status message display.
Cooling system - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.
Enclosure - Optional weather protective and sound attenuated enclosure is available.
Fuel tank - In-skid, fuel tank of 175 litre capacity and provided with 110% Fluid Retention capability.
Warranty and service - Backed by a comprehensive warranty and worldwide distributor network.

Extended Oil Change Interval - The standard oil change intervals of 500 hours (using CES 20071, CES 20076) ensures lower operating costs for products in prime applications.

3-Phase Ratings

<table>
<thead>
<tr>
<th>Model</th>
<th>Standby Rating</th>
<th>Prime Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 Hz kVA (kW)</td>
<td>60 Hz kVA (kW)</td>
</tr>
<tr>
<td>C33 D5</td>
<td>33 (26.4) N/A</td>
<td>30 (24) N/A</td>
</tr>
<tr>
<td>C38 D5</td>
<td>38 (30.4) N/A</td>
<td>35 (28) N/A</td>
</tr>
<tr>
<td>C30 D6</td>
<td>N/A 30 (37.5)</td>
<td>N/A 27 (33.8)</td>
</tr>
<tr>
<td>C35 D6</td>
<td>N/A 35 (43.8)</td>
<td>N/A 32 (40)</td>
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</table>

1-Phase Ratings*

<table>
<thead>
<tr>
<th>Model</th>
<th>Standby Rating</th>
<th>Prime Rating</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50 Hz kVA (kW)</td>
<td>60 Hz kVA (kW)</td>
</tr>
<tr>
<td>DS93-CPGK</td>
<td>28.3 (28.3) N/A</td>
<td>25.7 (25.7) N/A</td>
</tr>
<tr>
<td>DS94-CPGK</td>
<td>30 (30) N/A</td>
<td>27 (27) N/A</td>
</tr>
<tr>
<td>DS95-CPGK</td>
<td>N/A 30 (30)</td>
<td>N/A 27 (27)</td>
</tr>
<tr>
<td>DS96-CPGK</td>
<td>N/A 33 (33)</td>
<td>N/A 30 (30)</td>
</tr>
</tbody>
</table>

* 1.0 PF

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Generator Set Specifications

Governor regulation class ISO8528 Part 1 Class G2
Voltage regulation, no load to full load ± 1%
Random voltage variation ± 1%
Frequency regulation Droop
Random frequency variation ± 0.25%

Engine Specifications

Design 4 cycle, In-line, naturally aspirated
Bore 91.7mm (3.6 in.)
Stroke 127mm (5.3 in.)
Displacement 3.3 litre (201 in.)
Cylinder block Alloy Cast iron, In-line 4 cylinder
Battery capacity 88 Ampere-Hour
Battery charger alternator 36 amps.
Starting voltage 12 volt, negative ground
Fuel system Direct injection: Number 2 diesel fuel
Fuel Filter Single element, Spin-on fuel cum Water Separator, Filtration efficiency 25 micron 99% (min), Water separation efficiency 90% (min)
Air cleaner tape Dry replaceable element
Lube oil filter type(s) Spin on full flow filter, Filtration efficiency 25 micron 99% (min)
Standard cooling system 122˚F (50˚C) ambient radiator with coolant Recovery System

Alternator Specifications

Design Brushless, 4 pole, revolving field
Stator 2/3 pitch
Rotor Single bearing, flexible disc
Insulation system Class H
Standard temperature rise 163˚C standby @ 27˚C ambient
Exciter type Torque match (shunt) standard, EBS optional EBS (Excitation Boost System)
Phase rotation A (U), B (V), C (W)
Alternator cooling Direct drive centrifugal blower fan
AC waveform total harmonic distortion < 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF) < 50 per NEMA MG1-22.43
Telephone harmonic factor (THF) < 3

Available Voltages

<table>
<thead>
<tr>
<th>50 Hz line-neutral/line-line</th>
<th>50 Hz single phase</th>
<th>60 Hz line-neutral/line-line</th>
<th>60 Hz single phase</th>
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</thead>
<tbody>
<tr>
<td>230/400 (STD)</td>
<td>240/416</td>
<td>120/208</td>
<td>220</td>
</tr>
<tr>
<td>220/380</td>
<td>127/220</td>
<td>133/230</td>
<td>230</td>
</tr>
<tr>
<td>138/240</td>
<td>254/440</td>
<td>220/380</td>
<td>120/208</td>
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<tr>
<td>120/208</td>
<td>133/230</td>
<td>255/440</td>
<td>240</td>
</tr>
<tr>
<td></td>
<td></td>
<td>265/460</td>
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</tbody>
</table>

Generator Set Options

Engine
- 120/240 Volt coolant heater

Exhaust system
- Standard Residential grade exhaust silencer

Control panel
- Shunt Trip
- Auxiliary Contacts
- Earth Fault Relay

Alternator
- 105˚C Temp Rise Alternator
- 125˚C Temp Rise Alternator
- 150˚C Temp Rise Alternator
- EBS (Excitation Boost System)
- 120/240 V, 25 W, anti-condensation heater

Generator set
- Heavy Duty Air Cleaner
- Electronic Governing
- Battery Charger
- 1500/3000 hours Maintenance Kit

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The PowerCommand®
1.1 - Generator Set Control

• The PowerCommand® 1.1 control is a microprocessor-based generator set monitoring control system. The control provides a simple operator interface to the generator set, digital voltage regulation, digital engine speed governing, start/stop control, and protective functions.

• The PowerCommand® 1.1 generator set control is suitable for use on a wide range of generator sets in non-paralleling applications.

• The PowerCommand Control can be configured for any frequency, voltage and power configuration from 120 to 600 VAC for 50 Hz or 60 Hz operation.

• Power for the control is derived from the generator set starting batteries. The control functions over a voltage range from 8 VDC to 35 VDC.

Major Features

• 12 or 24 VDC Battery Operation

• Digital Engine Speed Governing (optional) to provide isochronous frequency regulation.

• Digital Voltage Regulation full wave rectified single phase (line to line) sensing.

• Generator Set Monitoring. Monitors status of all critical engine and alternator conditions functions.

• Engine Starting includes relay drivers for start, fuel shut off (FSO), and glow plug.

• Configurable Inputs and Outputs. Two discrete inputs and two dry contact relay outputs.

• Generator Set Monitoring: Displays status of all critical engine & alternator generator set functions.

• Smart Starting Control System: Integrated fuel ramping to limit black smoke & frequency overshoot.

• Advanced Serviceability using INPOWER.

Control System

Includes all functions to locally or remotely start and stop, and protect the generator set.

Control Switch - RUN/OFF/AUTO

OFF Mode - the generator set is shut down & cannot be started; as well as resets faults.

RUN mode - the generator set will execute its start sequence.

AUTO mode - the generator set can be started with a start signal from a remote device.

Status Indications

The control has a lamp driver for external fault/status indication. Functions include:

• The lamp flashes during preheat (when used) and while the generator set is starting.

• READY TO LOAD - flashing until the set is at rated voltage and frequency, then on continuously.

• Fault conditions are displayed by flashing a two-digit fault code number.

LED Indicating Lamps - includes LED indicating lamps for the following functions;
Not in Auto
Remote Start
Warning
Shutdown
Auto
Run

Remote Emergency Stop Switch Input. Immediate shut down of the generator set on operation.

Base Engine Protection -
Low Oil Pressure Shutdown
High Engine Temperature Shutdown
Underspeed/Sensor Fail Shutdown
Fail to Start
Battery Charging Alternator Fail Warning

Options

Digital Engine Speed Governing to provide isochronous frequency regulation.
Ratings Definitions

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.

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.

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.

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, ISO 3046, AS 2789, DIN6271 and BS 5514.

Open

<table>
<thead>
<tr>
<th>Model</th>
<th>A mm/Inch</th>
<th>B mm/Inch</th>
<th>C mm/Inch</th>
<th>Dry Wt. kg/lbs</th>
<th>A mm/Inch</th>
<th>B mm/Inch</th>
<th>C mm/Inch</th>
<th>Dry Wt. kg/lbs</th>
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<tr>
<td>C33 D5</td>
<td>1753/70</td>
<td>930/37</td>
<td>1250/50</td>
<td>710/1562</td>
<td>2242/89</td>
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Note: Weights represent a set with standard features

This outline drawing is to provide representative configuration details for Model series only.

See respective model data sheet for specific model outline drawing number.

Do not use for installation design.