

Diesel Generator set X3.3 series engine



TST CO.

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> Specification sheet

30 kVA - 38 kVA @ 50 Hz
27 kW - 35 kW @ 60 Hz

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**Power
Generation**

Description

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



This generator set is available with CE certification.

2000/14/EC

All enclosed products are designed to meet or exceed EU noise legislation 2000/14/EC step 2006.

ISO8528

This generator set has been designed to meet or exceed ISO8528 regulation.



This generator set is designed in facilities certified to ISO9001 and manufactured in facilities certified to ISO9001 or ISO9002.

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

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

1-Phase Ratings*

Standby Rating		Prime Rating		data sheet
50 Hz kVA (kW)	60 Hz kW (kVA)	50 Hz kVA (kW)	60 Hz kW (kVA)	
28.3 (28.3)	N/A	25.7 (25.7)	N/A	DS93-CPGK
30 (30)	N/A	27 (27)	N/A	DS94-CPGK
N/A	30 (30)	N/A	27 (27)	DS95-CPGK
N/A	33 (33)	N/A	30 (30)	DS96-CPGK

* 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

50 Hz line-neutral/line-line		50 Hz single phase	60 Hz line-neutral/line-line		60 Hz single phase
• 230/400(STD)	• 240/416	• 220	• 127/220(STD)	• 120/208	• 220
• 220/380	• 127/220	• 230	• 133/230	• 138/240	• 230
• 138/240	• 254/440	• 240	• 220/380	• 240/416	• 240
• 120/208	• 133/230		• 255/440	• 277/480	
			• 265/460		

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-parallel 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 shutdown 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.



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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.

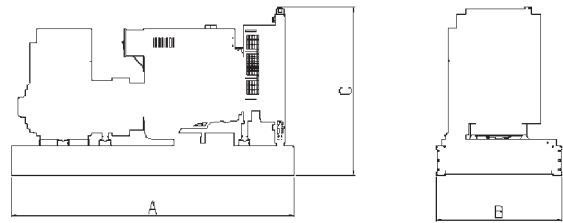
Prime Power (PRP):

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.

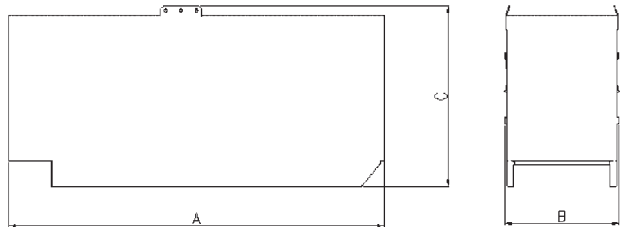
Base Load (Continuous) Power (COP):

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



Enclosed



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.

Model	Open				Enclosed			
	A mm/Inch	B mm/Inch	C mm/Inch	Dry Wt. kg/lbs	A mm/Inch	B mm/Inch	C mm/Inch	Dry Wt. kg/lbs
C33 D5	1753/70	930/37	1250/50	710/1562	2242/89	967/38	1513/60	1070/2354
C38 D5	1753/70	930/37	1250/50	745/1639	2242/89	967/38	1513/60	1105/2431
C30 D6	1753/70	930/37	1250/50	710/1562	2242/89	967/38	1513/60	1070/2354
C35 D6	1753/70	930/37	1250/50	745/1639	2242/89	967/38	1513/60	1105/2431

Note: Weights represent a set with standard features

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