Diesel Generator set
QSK23 series engine

840kVA - 900kVA 50Hz
779kW - 825kW 60Hz

> Specification sheet

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Description

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

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.

Generator Set Performance

Voltage Regulation

Maintains voltage output to within ±1.0%.
At any power factor between 0.8 and 1.0
At any variations from No load to Full load.
At any variations from Cold to Hot.
At speed droop variations up to 4.5%.

Frequency Regulation

Isochronous under varying loads from no load to 100% full load when electronic governor is fitted.

Random Frequency Variation

Will not exceed ±0.25% of its mean value for constant loads – no load to full load.

Waveform

Total harmonic distortion open circuit voltage waveform in the order of 1.8%. Three-phase balanced load in the order of 5.0%.

Telephone Influence Factor (TIF)

TIF better than 50.
THF to BS 4999 Part 40 better than 2%.

Alternator Temperature Rise

Class H insulation.

Radio Interference

In compliance with BS 800 and VDE levels G and N.

Features

Cummins® Heavy-Duty Engine - Rugged 4-cycle industrial diesel delivers reliable power, low emissions and fast response to load changes.

Permanent Magnet Generator (PMG) - Offers enhanced motor starting and fault clearing short circuit capability.

Alternator - Several alternator sizes offer selectable motor starting capability with low reactance 2/3 pitch windings; low waveform distortion with non-linear loads, fault clearing short-circuits capability, and class H insulation.

Control System - Standard PowerCommand® electronic control provides total system integration including remote start/stop, precise frequency and voltage regulation, alarm and status message display, AmpSentry protection, output metering, auto-shutdown.

Cooling System - Standard integral set-mounted radiator system, designed and tested for rated ambient temperatures, simplifies facility design requirements for rejected heat.

Enclosures - Optional weather-protective and sound-attenuated enclosures are available.

Warranty and Service - Backed by a comprehensive warranty and worldwide distributor network.

	Standby Rating		Prime Rating	
Model	50Hz kVA (kW)	60Hz kW (kVA)	50Hz kVA (kW)	60Hz kW (kVA)
C840 D5	840 (672)	N/A	760 (608)	N/A
C900 D5	900 (720)	N/A	820 (656)	N/A
C780 D6	N/A	779 (973.75)	N/A	704 (880)
C825 D6	N/A	825 (1031.25)	N/A	744 (930)

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Generator Set Specifications

Governor Regulation Class	ISO8528
Voltage Regulation, No Load to Full Load	± 0.5%
Random Voltage Variation	± 0.5%
Frequency Regulation	Isochronous
Random Frequency Variation	± 0.25%
Radio Frequency Emissions Compliance	IEC 801.2 through IEC 801.5; MIL STD 461C, Part 9

Engine Specifications

Design	4 cycle, in line, turbo Charged and after-cooled
Bore	169.9 mm (6.69 in.)
Stroke	169.9 mm (6.69 in.)
Displacement	23.15 liters (1413 $in.^3$)
Cylinder Block	Cast iron, 6 cylinder
Battery Capacity	254A/hr
Battery Charging Alternator	35 amps
Starting Voltage	24 volt, negative ground
Fuel System	Direct injection
Fuel Filter	Spin on fuel filters with water separator
Air Cleaner Type	Dry replaceable element with restriction indicator
Lube Oil Filter Type(s)	Fleetguard dual venturi spin on, combination full flow and bypass filters
Standard Cooling System	122°F (50°C) ambient radiator

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 - 150°C Standby/Prime
Exciter Type	PMG (Permanent Magnet Generator)
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct drive centrifugal blower fan
AC Waveform Total Harmonic Distortion	No load < 1.5%. Non distorting balanced linear load < 5%
Telephone Influence Factor (TIF)	<50 per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	<3%

Available Voltages

50Hz Line – Neutral / Line - Line	**60Hz** Line – Neutral / Line - Line
• 240/416	• 277/480
• 230/400	• 220/380
• 220/380	• 139/240

Generator Set Options

Engine
- Heavy Duty air filter
- Water jacket heater 220/240 v

Cooling
- Antifreeze 50/50 (Ethylene glycol)

Enclosure
- Sound attentuated enclosure

Alternator
- Alternator heater

Control Panel
- 4 pole Main Circuit Breaker
- PCC3201

Silencer
- Critical silencer
- Residential silencer

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Control System - PCC2100

The PowerCommand™ 2100 Control is a microprocessor-based generator set monitoring, and control system. The control provides an operator interface to the genset, digital voltage regulation, digital governing and generator set protective functions.

The PowerCommand™ 2100 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 connection configuration from 120 to 600VAC for for 50Hz or 60Hz operation.

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

Major Features

- 12 or 24 VDC Battery Operation.
- Digital Engine Speed Governing (optional) to provide isochronous frequency regulation.
- Digital Voltage Regulation with 3-phase sensing
- AmpSentry™ Protection for true alternator overcurrent protection.
- Digital AC Output Metering with Optional Analog Metering.
- Battery Monitoring System to sense and warn against a weak battery condition.
- Digital Alarm and Status Message Display
- Generator set Monitoring: Displays status of all critical engine and alternator generator set functions.
- Smart Starting Control System: Integrated fuel ramping to limit black smoke and frequency overshoot,
- Advanced Serviceability using InPower™, a PC-based software service tool.

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 and cannot be started
- 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

LED Indicating Lamps - includes LED indicating lamps for the following functions:
- Generator set running
- Not-in-auto mode
- Common warning
- Five LED indicating lamps that are configurable for colour and function
- Low oil pressure warning
- High engine temperature warning
- Low oil pressure shutdown
- Overspeed shutdown
- Fail to start

Emergency Stop Switch. Immediate shut down of the generator set on operation.
Base Engine Protection:
- Overspeed shutdown
- Low Oil Pressure Warning / Shutdown
- High Engine Temperature Warning / Shutdown
- Underspeed / Sensor Fail Shutdown
- Fail to Start / Fail to Crank
- Low / high battery voltage

Options

Analog AC Metering Panel
Key Type Mode Selector Switch
Exhaust Temperature Monitoring
PowerCommand Network
CAN Engine Interface (Optional on Some Models)
Refer to the PowerCommand Controls Technical Bulletin for detailed information (S1409d)

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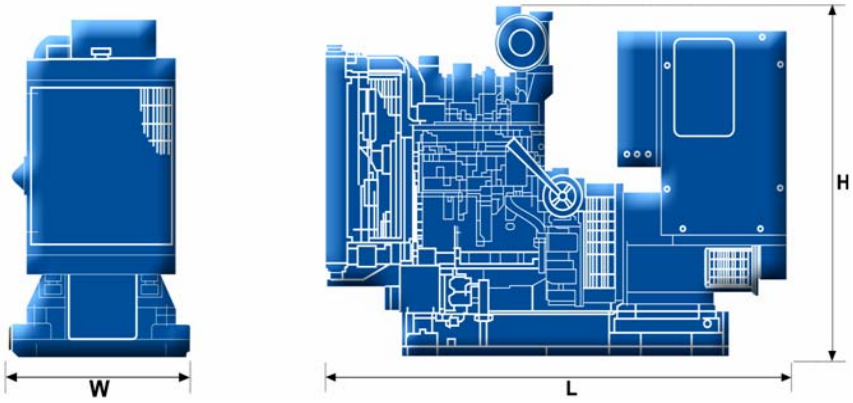
Ratings Definitions

Standby:	Limited Time Running:	Prime (Unlimited Running Time):	Base Load (Continuous):
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.	Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power is in accordance with ISO 8528.	Applicable for supplying power to varying electrical load for unlimited hours. Prime Power is in accordance with ISO 8528.Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.	Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous power in accordance with ISO 8528, ISO 3046, AS 2789, DIN 6271 and BS 5514.



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	Length (mm)	Width (mm)	Height (mm)	Set weight dry kg	Set weight wet kg
C840 D5	4593	1502	2086	6550	6873
C900 D5	4593	1502	2086	6700	7023
C780 D6	4593	1502	2086	6550	6873
C825 D6	4593	1502	2086	6700	7023

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