Diesel generator set
QSK78 series engine
EPA emissions

> Specification sheet
2000 kW - 2660 kW 50 Hz

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Power Generation

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, prime power and continuous duty power 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.

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.

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

Control System - The PowerCommand® electronic control is standard equipment and provides total genset system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, AmpSentry™ protection, output metering, and auto-shutdown at fault detection.

Cooling System - Standard remote cooled configuration with a selection of optional set-mounted radiator or remote radiator package available.

Structural Steel Skid Base - Robust skid base supports the engine, alternator and radiator.

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

	Standby Rating		Prime Rating	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)
DQLB		2660 (3325)		2400 (3000)

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Power Generation

Generator Set Specifications

Governor Regulation Class	ISO8528 Part 1 Class G3
Voltage Regulation, No Load to Full Load	± 0.5%
Random Voltage Variation	± 0.5%
Frequency Regulation	Isochronous
Random Frequency Variation	± 1%
Radio Frequency Emissions Compliance	BS EN 61000-6-4:2001 emissions-industrial
Immunity Frequency Emissions Compliance	BS EN 61000-6-2:2001 immunity-industrial IEC 801.2 through IEC 801.5; MIL STD 461C, Part 9

Engine Specifications

Design	4 cycle, V-block, turbocharged and low temperature aftercooled
Bore	170 mm (6.69 in)
Stroke	190.0 mm (7.48 in)
Displacement	77.6 litres (4735 in^3)
Cylinder Block	Cast iron, 60°V 18 cylinder
Battery Capacity	2600 amps minimum at ambient temperature of -18 °C to 0 °C (0 °F to 32 °F)
Battery Charging Alternator	40 amps
Starting Voltage	24 volt, negative ground
Fuel System	Direct injection: number 2 diesel fuel
Fuel Filter	Triple element, 10 micron filtration, spin-on fuel filters with water separator
Air Cleaner Type	Dry replaceable element
Lube Oil Filter Type(s)	Six spin-on, combination full flow filter and bypass filters
Standard Cooling System	Remote radiator configuration

Alternator Specifications

Design	Brushless, 4 pole, revolving field
Stator	2/3 pitch
Rotor	Two bearing, flexible disc
Insulation System	Class H on low voltage, Class F on medium and high voltage
Standard Temperature Rise	125 ºC standby
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	< 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

60 Hz Line-Neutral/Line-Line				**50 Hz** Line-Neutral/Line-Line			
• 220/380	• 347/600	• 7200/12470	• 7970/13800	• 220/380	• 240/415	• 1905/3300	• 3810/6600
• 277/480	• 2400/4160	• 7620/13200		• 230/400	• 254/440	• 3640/6300	• 6350/11000

- Note: Consult factory for other voltages.

Generator Set Options and Accessories

Engine
- ☐ 208/240/480 V coolant heater for ambient above 4.5 °C (40 °F) - 10,000 W max.
- ☐ 208/240/480 V coolant heater for ambient below 4.5 °C (40 °F) - 12,840 W max.
- ☐ Eliminator - centrifugal oil cleaner

Control Panel
- ☐ 120/240 V, 100 W control anti-condensation space heater
- ☐ Paralleling configurations
- ☐ Remote fault signal package
- ☐ Run relay package

Alternator
- ☐ 80 °C rise alternator
- ☐ 105 °C rise alternator
- ☐ 125 °C rise alternator
- ☐ 120/240 V, 300 W anti-condensation heater
- ☐ Temperature sensor - RTDs, 2/phase
- ☐ Temperature sensor – alternator bearing RTD
- ☐ Differential current transformers

Exhaust System
- ☐ Industrial grade exhaust silencer
- ☐ Residential grade exhaust silencer
- ☐ Critical grade exhaust silencer

Cooling System
- ☐ Radiator, 40 °C ambient
- ☐ Radiator, 50 °C ambient
- ☐ Remote radiator

Generator Set
- ☐ Batteries
- ☐ Battery rack w/hold-down - floor standing
- ☐ PowerCommand Network
- ☐ Remote annunciator panel
- ☐ Vibration isolators
- ☐ 2 year warranty
- ☐ 5 year warranty
- ☐ 10 year major components warranty

* Note: Some options may not be available on all models - consult factory for availability.

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Power Generation

Control System

Operator Panel Features

Analog AC Metering Panel - Provides color-coded display of generator set output voltage, current, frequency, power factor and kW. All phases of voltage and current are simultaneously displayed. Easy to see output status from a distance.

Graphical Data Display - Allows operator to view all engine and alternator data; perform operator adjustments for speed, voltage and time delays; view fault history; and set up and adjust the generator set (set up requires password access). A portion of the display is allocated to display system status including alarm and shutdown conditions. Display is controlled by sealed membrane switches. Up to 9 lines of data can be displayed with approximately 26 characters per line.

LED Status Lamps - The status lamps indicate remote start command (green), not in auto (red-flashing), warning (amber) and shutdown (red).

Mode Selector Switch - Off/manual/auto and run/stop switches allow remote automatic starting or manual starting from the operator panel. Panel includes an LED lamp to indicate manual mode operation.

Exerciser Switch - Automated exercise function in the control allows an operator to initiate an exercise period and have it automatically completed by the control.

Fault Reset Switch - Allows the operator to reset the control after a warning or shutdown condition. LED lamp with switch indicates that a fault is present on the system.

Panel Lamps and Switch - Operator panel can be illuminated by a series of high-intensity LED lamps controlled by a membrane switch on the panel. Panel lamps include a time delay to automatically switch off after a preset time period.

Emergency Stop Switch - Provides positive and immediate shutdown of the generator set on operation.

Construction - Operator panel is a sealed design with membrane switches for most functions. Mechanical switches are oil-tight design. Plug interfaces are provided to the generator set control system. Display panel labeling is configurable for language. NEMA3R/IP53

Standard Control Functions

- Integrated Isochronous governing and fuel control system.
- Integrated 3-phase sensing voltage regulation system with automatic single and three phase fault regulation.
- Integrated AC protective functions include over/under voltage, short-circuit, overcurrent (warning and shutdown) and overload.
- Integrated engine management system including configurable cycle-cranking functions and configurable start sequence.
- Comprehensive warning and shutdown protection including customer configurable warning and shutdown conditions.
- Comprehensive data displays including 3-phase AC voltage, current, power factor, kW and kVA; engine oil pressure, coolant temperature, DC volts and other service functions; operating history (load and fault conditions) and system setup information.

Options

- ☐ Integrated digital paralleling controls including options for semi-automatic, automatic and utility paralleling applications.
- ☐ LonMark compliant network interface.
- ☐ Control anti-condensation heater.
- ☐ Key-type mode select switch.
- ☐ Relay outputs for genset running, common warning and common shutdown.
- ☐ Exhaust temperature alarm.
- ☐ Alternator temperature alarm(s).

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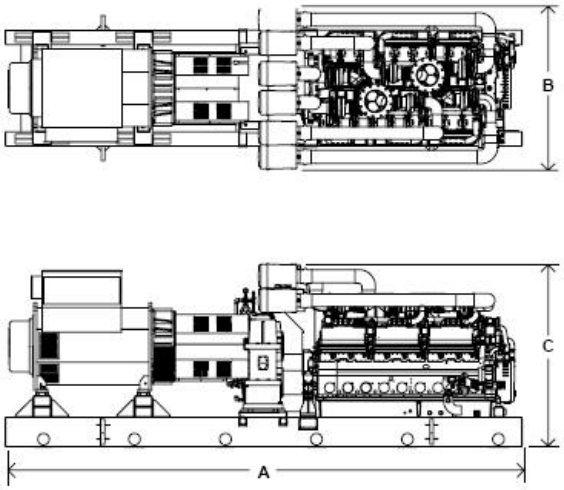
Ratings Definitions

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.



DQLB

This outline drawing is for reference only. See respective model data sheet for specific model outline drawing number.

Do not use for installation design

Model	Length "A" (mm)	Width "B" (mm)	Height "C" (mm)	Set weight dry kg	Set weight wet kg
DQLB	7158	2251	2535	25157	25800

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