



# Rental Power KTA50 G3 series engine



1258 kVA 50 Hz Prime  
1120 kW 60 Hz Prime

## Description

This Cummins® rental package is a fully integrated, robust power generation system that sets new benchmarks in performance, reliability and efficiency for Standby and Prime Power applications.

**Dual frequency to meet diverse energy needs** - The versatile C1250 D2R is both 50 and 60 Hz capable, with a wide voltage range for Continuous, Prime or Standby applications in commercial, residential, industrial, utilities, and more.

**An engine that works harder, longer** - Cummins KTA50 G3 engine is recognized for performance, reliability and durability worldwide. With its very high derating threshold for temperatures, altitudes and humidity, the KTA50 G3 engine ranks among the top performers in the harshest operating environments.

**Greater mobility, lower transportation cost** - To meet the increasing demand for electricity, the C1250 D2R comes in a standard 20' ISO container (low cube) for easy transportation across borders and regions. The CSC-certified modules can be shipped around the world like regular containers, which means lower freight and transportation costs.

**A unit that stays cool, in the hottest places on earth** - The cooling system is engineered to meet Limiting Ambient Temperature (LAT) up to 50°C at Continuous rating. Designed with vertical hot air discharge, the C1250 D2R is suitable for multiple set installations.

Model	Standby rating		Prime rating		Continuous rating		Emissions compliance	Controller	Datasheet
	50 Hz kVA (kW)	60 Hz kW (kVA)	50 Hz kVA (kW)	60 Hz kW (kVA)	50 Hz kVA (kW)	60 Hz kW (kVA)			
C1250 D2R	1400 (1120)	1270 (1588)	1258 (1006)	1120 (1400)	1005 (804)	896 (1120)	Unregulated	PCC3.3 MLD	EMERD-5882

## Generator set specifications

Governor regulation class	ISO 8528
Voltage regulation, no load to full load	± 1%
Random voltage variation	± 1%
Frequency regulation	Isochronous
Random frequency variation	± 0.25%
EMC compatibility	BS EN61000-6-2 / BS EN61000-6-4

## Engine specifications

Design	4 cycle, 60° Vee, 16 cylinder diesel, turbo charged, charge air-cooled
Bore	159 mm
Stroke	159 mm
Displacement	50.3 L
Cylinder block	Cast iron
Battery capacity	2 parallel strings of 2 x 12 V, 75 A/hr
Battery charging alternator	35 A
Starting voltage	24 V 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)	Spin on full flow filter
Standard cooling system	50° C ambient radiator

## Alternator specifications

Design	Brushless, single bearing, revolving field
Stator	2/3 pitch
Rotor	Single bearing, flexible disc
Insulation system	Class H
Standard temperature rise	Prime 125°C temp rise @ 40°C ambient Standby 163°C temp rise @ 27°C ambient
Exciter type	Self-excited or Excitation Boost System (EBS)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower fan
AC waveform Total Harmonic Distortion (THDV)	1.5%
Telephone Influence Factor (TIF)	< 50% per NEMA MG1-22.43
Telephone Harmonic Factor (THF)	< 2%

## Available voltages

<b>50 Hz Line – Neutral/Line - Line</b>	60 Hz line – Neutral/ Line - Line
<ul style="list-style-type: none"> <li>• 255/440</li> <li>• 240/416</li> <li>• 230/400</li> <li>• 220/380</li> </ul>	<ul style="list-style-type: none"> <li>• 277/480</li> <li>• 255/440</li> <li>• 240/416</li> </ul>

## Generator set options\*

### Engine

- Heavy duty air cleaner
- Manual oil drain pump
- Automatic oil top up system with 50 L lubricating oil tank
- Water jacket heater
- Coolant heater
- PMG excitation system

### Fuel system

- 900 L fuel tank
- Fuel pre-filter with water separator
- External fuel connection (3-way valve)
- Side external gauge for fuel
- Electric fuel pump with external fuel connection

### Control panel

- Dual frequency
- PowerCommand® 3.3 with Masterless Load Demand (MLD)
- Motorized 4 pole circuit breaker, fixed type
- External access to bus bar connection
- Re-connectable neutral/earth link
- Earth leakage protection
- Fuel leakage warning
- Low fuel level warning and shutdown
- Low coolant level shutdown
- Door limit switch on bus bar compartment

### Warranty

- 1 year unlimited hours

### Battery

- Easy to access heavy duty maintenance-free battery
- Battery charger
- Battery isolator

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

## PowerCommand 3.3 control system with Masterless Load Demand (MLD)



The PowerCommand control system is an integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing. Masterless Load Demand-capable generators are equipped with an additional s-CAN network connection that allows sharing of information amongst paralleled generator sets. MLD has been designed for hassle-free installation, commissioning and operation.

**AmpSentry** – Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.

**Power management** – Control function provides battery monitoring and testing features and smart starting control system.

**Advanced control methodology** – Three phase sensing, full wave rectified voltage regulation, with a PWM output for stable operation with all load types.

**Communications interface** – Control comes standard with PCCNet and Modbus interface.

**Regulation compliant** – Prototype tested: UL, CSA and CE compliant.

**Service** - InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

**Reliable design** – The control system is designed for reliable operation in harsh environments.

Multi-language support

### Operator panel features

**Operator panel features** – The operator panel, in addition to the alternator, displays the Utility/AC Bus data.

### Operator/display functions

- 320 x 240 pixels graphic LED backlight LCD
- Auto, manual, start, stop, fault reset and lamp test/panel lamp switches
- Alpha-numeric display with pushbuttons
- LED lamps indicating generator set running, remote start, not in auto, common shutdown, common warning, manual run mode, auto mode and stop

### Paralleling control functions

- Digital frequency synchronization and voltage matching
- Isochronous kW and kVAr load sharing controls
- Droop kW and kVAr control
- Sync check
- Extended paralleling (Peak Shave/Base Load)
- Digital power transfer control (AMF) provides load transfer operation in open or closed transition or soft (ramping) transfer mode

### Alternator data

- Line-to-Neutral and Line-to-Line AC volts
- 3-phase AC current
- Frequency
- kW, kVAr, power factor kVA (three phase and total)

### Engine data

- DC voltage
- Engine speed
- Lube oil pressure and temperature
- Coolant temperature
- Comprehensive FAE data (where applicable)

### Other data

- Generator set model data
- Start attempts, starts, running hours, kW hours
- Load profile (operating hours at % load in 5% increments)
- Fault history
- Data logging and fault simulation (requires InPower)

### Standard control functions

#### Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

### Digital voltage regulation

- Integrated digital electronic voltage regulator
- 3-phase, 4-wire line-to-line sensing
- Configurable torque matching

### AmpSentry AC protection

- AmpSentry protective relay
- Over current and short circuit shutdown
- Over current warning
- Single and three phase fault regulation
- Over and under voltage shutdown
- Over and under frequency shutdown
- Overload warning with alarm contact
- Reverse power and reverse VAr shutdown
- Field overload

### Engine Protection

- Battery voltage monitoring, protection and testing
- Over speed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- Fail to start (over crank) shutdown
- Fail to crank shutdown
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown
- Fuel-in-rupture-basin warning or shutdown
- Full authority electronic engine protection

### Control functions

- Time delay start and cool down
- Real time clock for fault and event time stamping
- Exerciser clock and time of day start/stop
- Data logging
- Cycle cranking
- Load shed
- Configurable inputs and outputs (4)
- Remote emergency stop

### Masterless Load Demand (MLD)

- Improved fuel efficiency of multi-gen systems reduces fleet operation costs
- Run-hour equalization feature lowers onsite support costs
- Supports large fleet operation up to 16 generator sets
- Change system settings from any one display and broadcast to all generator sets
- View information about the entire system from any one display

## 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):

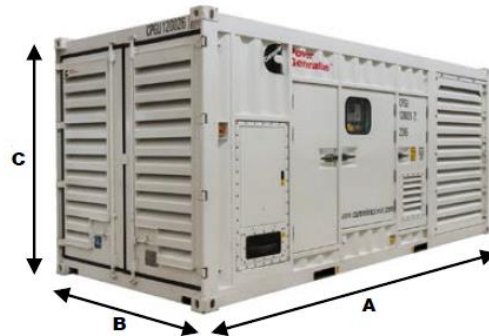
Applicable for supplying power to varying electrical load for the duration of power interruption of a reliable utility source. Emergency Standby Power (ESP) is in accordance with ISO 8528. Fuel Stop power in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

### 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) is 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	Dim 'A' (mm)	Dim 'B' (mm)	Dim 'C' (mm)	Set weight dry* (kg)	Set weight wet* (kg)
C1250 D2R	6.058	2.438	2.591	16879	18132

\*Note: Weights represent a set with standard features. See outline drawings for weights of other configurations.

### Codes and standards

	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.	2000/14/EC	All enclosed products are designed to meet or exceed EU noise legislation 2000/14/EC step 2006.
	This generator set is available with CE certification.	ISO 8528	This generator set has been designed to comply with ISO 8528 regulation

For more information contact your local Cummins distributor or visit [power.cummins.com](http://power.cummins.com)

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