Specification sheet

Spark-ignited generator set

20-40 kW Standby

EPA emissions

Description

Cummins® generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby applications.

Features

Gas engine - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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 generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50° C (122° F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminium material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas		Propane		
	Standby 60 Hz		Standby 60 Hz		Data sheets
Model	**kW**	**kVA**	**kW**	**kVA**	**60 Hz**
C20 N6	20	25	20	25	NAD-5693-EN
C25 N6	25	31	25	31	NAD-5695-EN
C30 N6	30	38	30	38	NAD-5696-EN
C36 N6	36	45	36	45	NAD-5697-EN
C40 N6	40	50	40	50	NAD-5698-EN

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Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3*
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

* C36 N6 and C40 N6 are Class G2

Engine specifications

Design	Naturally aspirated or turbocharged (varies by generator set model)
Bore	86.5 mm (3.4 in.)
Stroke	100.0 mm (3.94 in.)
Displacement	2.4 L (143.5 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0° F to 32° F (-18° C to 0° C)
Battery charging alternator	50 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50° C (122° F) ambient cooling system
Rated speed	1800 rpm

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120º C (248° F) Standby
Exciter type	Torque match (shunt) with EBS as option
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 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

1-phanse	3-phase			
• 120/240	• 120/208	• 120/240 delta	• 277/480	• 347/600

Generator set options

Fuel system
- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel – natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

Engine
- Engine air cleaner – normal or heavy duty
- Shut down – low oil pressure
- Extension – oil drain

Alternator
- 120° C (248° F) temperature rise alternator
- 105° C (221° F) temperature rise alternator
- Excitation Boost System (EBS)
- PMG available on 36 kW and 40 kW
- Alternator heater, 120 V

Control
- AC output analog meters (bargraph)
- Stop switch – emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

Electrical
- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

Enclosure
- Aluminium enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

Cooling system
- Shutdown – low coolant level
- Warning – low coolant level
- Extension – coolant drain
- Cold weather options:
  - < 4° C (40° F) – cold weather
  - < -17° C (0° F) – extreme cold weather

Exhaust system
- Exhaust connector NPT

Generator set application
- Base barrier – elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

Generator set options (continued)

Warranty

- Base warranty – 2 year, 1000 hour, Standby
- Standby, 3 year, 1500 hour, parts
- Standby, 5 year, 2500 hour, parts
- Standby, 3 year, 1500 hour, parts and labor
- Standby, 5 year, 2500 hour, parts and labor
- Standby, 3 year, 1500 hour, parts, labor and travel
- Standby, 5 year, 2500 hour, parts, labor and travel

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

Generator set accessories

- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12-inch harness
- HMI211 remote display, including pre-configured 12-inch harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485
- Remote monitoring device – PowerCommand 500
- Battery charger – stand-alone, 12 V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier – elevated generator set
- Mufflers – industrial, residential or critical
- Alternator Excitation Boost System (EBS)
- PMG available on 36 kW and 40 kW
- Alternator heater
- Maintenance and service kit
- Engine lift kit

Control system PowerCommand 1.1

PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 ℃ to +70 ℃ (-40 ℉ to +158 ℉) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 ℃ to +70 ℃
- Bargraph display (optional)

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data

- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

Control functions

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic Transfer Switch (ATS) control
- Generator set exercise, field adjustable

Options

- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation available on 36 kW and 40 kW
- PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
- Remote operator panel

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):

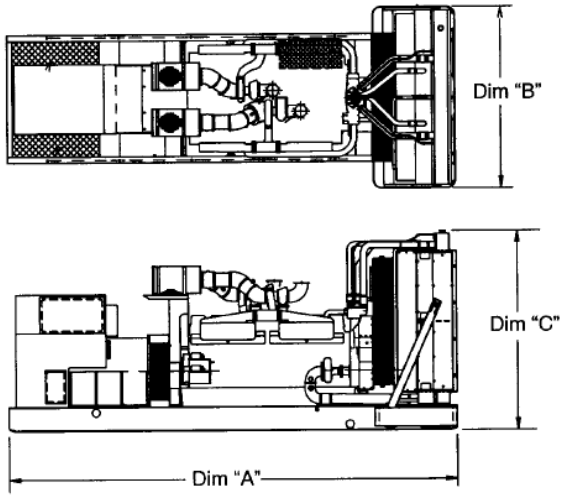
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set weight* dry kg (lbs)	Set weight* wet kg (lbs)
Open set					
C20 N6	1669 (65.7)	864 (34)	1123 (44.2)	423 (933)	440 (969)
C25 N6	1669 (65.7)	864 (34)	1123 (44.2)	441 (972)	457 (1008)
C30 N6	2225 (87.6)	864 (34)	1123 (44.2)	491 (1083)	508 (1119)
C36 N6	2225 (87.6)	864 (34)	1123 (44.2)	520 (1146)	536 (1182)
C40 N6	2225 (87.6)	864 (34)	1123 (44.2)	548 (1208)	564 (1244)
Sound attenuated enclosure Level 1					
C20 N6	1829 (72)	864 (34)	1156 (45.5)	469 (1034)	485 (1070)
C25 N6	1829 (72)	864 (34)	1156 (45.5)	487 (1073)	503 (1109)
C30 N6	2388 (94)	864 (34)	1156 (45.5)	542 (1195)	558 (1231)
C36 N6	2388 (94)	864 (34)	1156 (45.5)	571 (1258)	587 (1294)
C40 N6	2388 (94)	864 (34)	1156 (45.5)	599 (1320)	615 (1356)
Sound attenuated enclosure Level 2					
C20 N6	2073 (81.6)	864 (34)	1156 (45.5)	474 (1045)	490 (1081)
C25 N6	2073 (81.6)	864 (34)	1156 (45.5)	492 (1084)	508 (1120)
C30 N6	2626 (103.4)	864 (34)	1156 (45.5)	547 (1206)	563 (1242)
C36 N6	2626 (103.4)	864 (34)	1156 (45.5)	576 (1269)	592 (1305)
C40 N6	2626 (103.4)	864 (34)	1156 (45.5)	604 (1331)	620 (1367)

* Weights based on 1-phase generator set. Weights may vary with a different configuration.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.		The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.
	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	**U.S. EPA**	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.
	All low voltage models are CSA certified to product class 4215-01.	**International Building Code**	The generator set is certified to International Building Code (IBC) 2012.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

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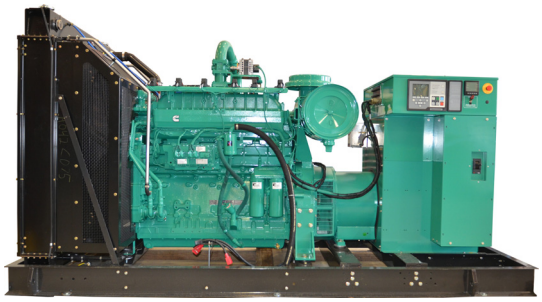
NAS-5692-EN.DOCX (04/19) A052F982

Specification sheet

Gaseous fuel generator set

KTA 19G engine series
350 kW 60 Hz



Description
The Cummins KTA 19G engine series commercial generator set (GenSet) boasts a fully-integrated power generation system providing optimum performance, reliability, and versatility for stationary emergency standby power applications.

Features
- Cummins engine - cutting-edge diesel technology since 1919
- Designed, tested and certified to UL 2200 standards (See Fuel installation requirements on page 4)
- Stamford rugged and reliable alternator with state-of-the-art technology
- One-year warranty supported by a worldwide Cummins twenty-four hour, seven days-a-week, distributor network
- Accepts 100% rated load in a single step
- Surge rating - 110% of nameplate
- The GenSet accepts full rated load in a single step in accordance with NFPA 110 Type 10 (ten seconds) for Level 1 and Level 2 Emergency or Standby Power Supply Systems (EPSSs)
- Standard Power Command Control (PCC) 3300 technology provides digital (precise) frequency and voltage regulation
- Efficient and localized operation monitoring and control options:
  - Modbus over the Internet (monitor and control)
  - Remote HMI (monitor and control)
  - Field server reliable interface to a building management system Supervisory Control and Data Acquisition (SCADA) (monitor, only)

Model	Standby power rating* 60 Hz kW (kVa)	Emissions compliance	Engine data sheet
C350N6	350 (437)	EPA SI Stationary Emergency Certified	FR 4538

* Tested at 0.8 power factor (PF) per NFPA 110.

GenSet specifications

Voltage regulation, no load to full load	±1%
Random voltage variation	±1% (three-phase only)
Frequency regulation	Isochronous
Random frequency variation	±0.5%

Engine specifications

Base Engine	Cummins Model KTA 19G
Displacement	19 L (1159 in^3)
Regenerative Power	18.1 kW
Cylinder Block Configuration	Cast iron with replaceable wet cylinder liners
Cranking Current	900 amps at ambient temperature of 0 °C (32 °F)
Battery Charging Alternator	43 amps
Battery Type	8D (x2)
Starting Voltage	24-volt, negative ground
Standard Cooling System	See derates on Engine Data Sheet
Lube Oil Filter Types	Two spin-on canisters-combination full flow with bypass

Alternator specifications

Design	Brushless, 4-pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct-coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.65 or better
Standard Temperature Rise*	125 °C
Exciter Type	Permanent Magnet Generator (PMG)
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct-drive centrifugal blower

* For UL 1004 ratings, refer to temperature rise at 120 °C or below, and ambient temperature up to 40 °C

Full-load amperage (FLA) at rated voltage

		Voltage*								
Model	**Rating**	**120/240 (1 Ph)**	**120/208**	**127/220**	**139/240**	**220/380**	**240/416**	**254/440**	**277/480**	**347/600**
C350N6	Standby	N/A	1214	1148	1052	665	607	574	526	421

*Three-phase FLA based on 0.8 power factor (PF).

Rated load fuel consumption in standard cubic feet per hour (CFH)*

Model	Rating	Fuel type	100% Load	75% Load	50% Load	25% Load
C350N6	Standby	NG	4615	3587	2560	1310

*See Fuel installation requirements on page 4.

NOTE: Fuel inlet pressure, measured at the fuel shut off valve while under full load, must be 381 to 508 mm WC (15 to 20 in. WC). Fuel supply pressure must not exceed 635 mm WC (25 in. WC) under any conditions.

PowerCommand 3.3 control system

An integrated microprocessor based generator set control system providing voltage regulation, engine protection, alternator protection, operator interface and isochronous governing. Refer to document S-1570 for more detailed information on the control.

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.

Easily upgradeable - PowerCommand controls are designed with common control interfaces.

Reliable design - The control system is designed for reliable operation in harsh environment.

Multi-language support - English, Spanish, French (standard); other languages (optional).

Operator panel features

Operator/display panel

- Displays paralleling breaker status.
- 320 x 240 pixels graphic LED backlight LCD.
- Provides direct control of the paralleling breaker.
- Alphanumeric display with pushbuttons.
- Auto, manual, start, stop, fault reset, and lamp test/panel lamp switches.
- LED lamps indicating GenSet running, remote start, not in auto, common shutdown, common warning, manual run mode, auto mode and stop.

Paralleling control functions

- First Start Sensor System selects first genset to close to bus.
- Phase Lock Loop Synchronizer with voltage matching.
- Sync check relay.
- Isochronous kW and kVar load sharing.
- Load govern control for utility paralleling.
- Extended Paralleling (baseload/peak shave) Mode.
- Digital power transfer control, for use with a breaker pair to provide open transition, closed transition, ramping closed transition, peaking and base load functions.

Other control features

- 150 watt anti-condensation heater.
- DC distribution panel.
- AC auxiliary distribution panel.

Alternator data

- Line-to-neutral and line-to-line AC volts.
- Three-phase AC current.
- Frequency.
- kW, kVar, and power factor kVa (three-phase and total).
- Winding temperature (optional).
- Bearing temperature (optional).

Engine data

- DC voltage and engine speed.
- Lube oil pressure and temperature.
- Coolant temperature.
- Comprehensive FAE data.

Other display data

- GenSet model data.
- Start attempts, starts, running hours, kW hours.
- Load profile (operating hours at % load in 5% increments).
- Fault history – up to 32 events.
- Data logging and fault simulation (requires InPower™).
- Air cleaner restriction indication.
- Exhaust temperature in each cylinder.

Standard control functions

Digital governing

- Temperature dynamic governing.
- Integrated digital electronic isochronous governing.

Digital voltage regulation

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

AmpSentry AC protection

- AmpSentry protective relay.
- Over current and short circuit shutdown.
- Over current warning.
- Single and three-phase fault regulation.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning and shutdown.
- Low coolant temperature warning.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Overload warning with alarm contact.
- Reverse power and reverse var shutdown.
- Field overload shutdown.
- Fuel-in-rupture-basin warning or shutdown.
- Full authority electronic engine protection.
- AMM arc flash provision

Engine protection

- Cranking lockout; overspeed shutdown; and battleshort.
- Sensor failure indication.
- Low fuel level warning or shutdown.
- Fail to start (overcrank) and fail to crank shutdown.
- Full authority electronic engine protection.
- Battery voltage monitoring, protection, and testing.

Control functions

- Data logging and cycle cranking.
- Load shed.
- Remote emergency stop.
- Time delay start and cooldown.
- Configurable inputs and outputs (20).
- Real time clock for fault and event time stamping.
- Exerciser clock and time of day start/stop.

GenSet options and accessories

Engine

- 208 V, 3750 W coolant heaters (2)
- 240/480 V, 4000 W coolant heaters
- 120/208/240 V, 300 W lube oil heater

Alternator

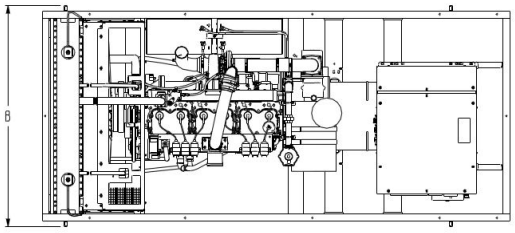
- 80 °C rise
- 105 °C rise

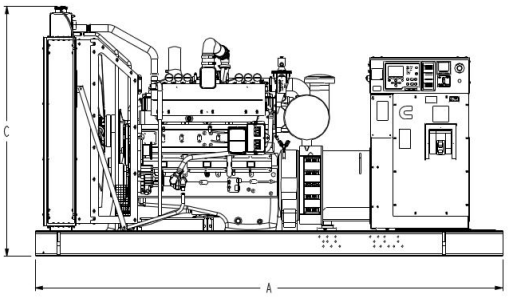
Fuel system - flexible fuel connector and fuel strainer

Exhaust system - GenSet mounted muffler (enclosure models only)

Generator set

- AC entrance box
- Batteries and battery charger
- Main line circuit breaker
- PowerCommand Network Aux 101, 102 module
- Modbus to BACnet Module
- Weather protective enclosure (F001) with silencer
- Level I and Level II enclosure w/silencer
- Audible alarm, remote drains, and oil maintainer
- Remote annunciator panel
- Spring isolators
- Two-year standby warranty
- Five-year basic power warranty





This outline drawing is for reference only.
Do not use for installation design.

	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)
C350N6	3734 (147)	1753 (69)	4966 (82)

NOTE: Consult drawings for applicable weights. See enclosure Specification Sheet for enclosure dimensions.

Codes and standards

Underwriters Laboratory (UL) is a world leader in product safety testing and certification. This GenSet is certified to UL2200 as open set, weather enclosure, and sound-attenuated enclosure configurations. The generator is certified to UL1004. The PowerCommand® Control System is certified to UL508. (See Fuel Installation Requirements on this page.)

CSA Group tests products under a formal process to ensure that they meet the safety and/or performance requirements of applicable standards. This GenSet is certified to: CSA 22.2 No. 100 Motors and Generators; CSA 22.2 No. 0.4-044 Bonding of Electrical Equipment; CSA 22.2 No. 14 Industrial Control Equipment; and CSA 22.2 No. 0 General Requirements - Canadian Electrical Code, Part II. (See Fuel Installation Requirements on this page.)

Engine is certified to Stationary Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ. U.S. applications must be applied per this EPA regulation.

This product has been manufactured under the controls established by a Bureau Veritas Certification approved management system that conforms to ISO 9001:2015.

Fuel installation requirements

Gas supply pressure is specified at the inlet to the fuel shut-off solenoid (FSO). If this engine is equipped with two FSOs in series, this value should be measured at the inlet to the downstream FSO. Each FSO can reduce the supply pressure up to 5" W.C. at full load. Additional options added to the fuel train such as those for CSA or UL compliance, strainers and/or flex connections can add restriction that must be considered in the site installation.

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 is 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.

Demand Response Power Rating - Spark Ignited Gas (DRP):
Applicable for supplying electrical power in parallel with commercially available power in variable and non-variable load applications. This fuel rating is intended for use in situations where power outages are contracted, such as in utility power curtailment. Engine operation is limited to a total of 500 hours per year. Engines may be operated in parallel to the public utility for up to 500 hours per year, with an average load factor no greater than 80% of rated Demand Response Power. Engines with Standby Power ratings available can be run in Emergency Standby applications up to the Standby Power rating for up to 50 hours per year. The customer should be aware, however, that the life of any engine will be reduced by constant high load operation.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical Code.

Specifications are subject to change without notice.

Power You Can Rely On

To order, contact centralregionordergs@cummins.com.

Sales and Service

Cummins Sales and Service
875 Lawrence Drive
DePere, Wisconsin 54115

cummins.com

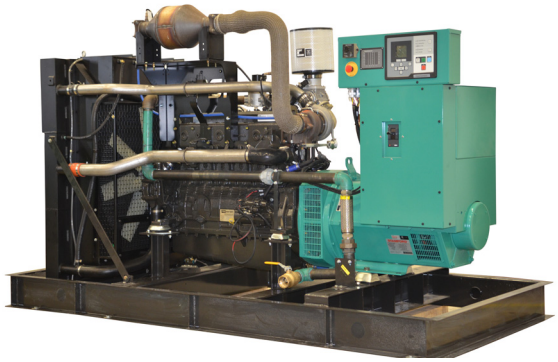
Doc. A042J409 Rev. 3

Specification sheet

Gaseous Fuel Generator Set

11.1L Engine Series

130 kW - 200 kW 60 Hz



Description

The Cummins Inc. commercial Generator Set (GenSet) is a fully integrated power generation system providing optimum performance, reliability, and versatility for stationary standby and prime power applications.

Features

Power Solutions International (PSI) Heavy-Duty Engine - Rugged 4-cycle industrial spark-ignited engine delivers reliable power, low emissions, and quick 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, fault-clearing short-circuit capability, and class H insulation.

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

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

National Fire Protection Association (NFPA) - The GenSet accepts full rated load in a single step in accordance with NFPA 110 Type 10 (ten seconds) for Level 1 and Level 2 Emergency or Standby Power Supply Systems (EPSSs).

	Standby rating*		Prime rating			
Model	Propane 60Hz kW (kVa)	NG 60 Hz kW (kVa)	60 Hz kW (kVa)	50 Hz kW (kVa)	Emissions Compliance	Data Sheet
C200N6	130 (163)	200 (250)			EPA SI NSPS Stationary Emergency Certified	PSI 36300018
			180 (225)		EPA Stationary and MOH Certified	PSI 36300018

* Tested at 0.8 power factor (PF) per NFPA 110.

Doc. A042J402 Rev. 1

GenSet Specifications

Voltage Regulation, No Load to Full Load	±1%
Random Voltage Variation	±1% (Three-phase only.)
Frequency Regulation	Isochronous
Random Frequency Variation	±0.5%
Radio Frequency Interference	Optional PMG excitation operates in compliance with BS800 and VDE level G and N. Addition of RFI protection kit allows operation per MIL-STD-461 and VDE level K.

Engine Specifications

Base Engine	Power Solutions International (PSI)
Displacement	11.1 L (677 in^3)
Overspeed Limit	2100 rpm
Regenerative Power	11 kW
Cylinder Block Configuration	Cast iron
Cranking Current	900 amps at ambient temperature of 0 °C (32 °F)
Battery Charging Alternator	45 amps
Battery Type	4D (x2)
Starting Voltage	24-volt, negative ground
Standard Cooling System	See derates on Engine Data Sheet
Lube Oil Filter Types	One spin-on canister-combination full flow with bypass
Total System Back Pressure Allowed	76 mm Hg (3 in. Hg)
Catalyst Back Pressure	38 mm Hg (1.5 in. Hg)
Silencer Back Pressure (Factory Enclosed Units Only)	15 mm Hg (.59 in. Hg)

Alternator Specifications

Design	Brushless, 4-pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct-coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.65 or better
Standard Temperature Rise *	125 °C
Exciter Type	Shunt or Permanent Magnet Generator (PMG)
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct-drive centrifugal blower

* For UL 1004 ratings, refer to temperature rise at 120 °C or below, and ambient temperature up to 40 °C

Amp Rating at Full-load Voltage

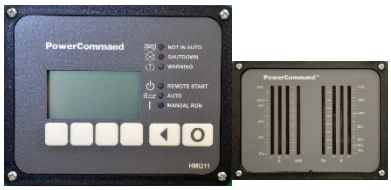
	Full Load Voltage		120/240 (1 Ph)	120/208	127/220	139/240	220/380	240/416	254/440	277/480	347/600
C200N6	Propane	**Amps**	N/A	451	426	391	247	226	213	195	156
	Prime NG	**Amps**	N/A	625	590	541	342	312	295	271	217
	Standby NG	**Amps**	N/A	694	656	601	380	347	328	301	241

Fuel Consumption

		Rated Load Fuel Consumption in Standard Cubic Feet per Hour (CFH)			
Model	**Fuel Type**	**1/4**	**1/2**	**3/4**	**Full**
C200N6	Propane	244	488	651	814
	Prime NG	518	1341	1630	2043
	Standby NG	635	1269	1692	2115

Fuel inlet pressure at GenSet connection: 180 to 280 mm WC (7 to 11 in. WC)

PowerCommand® 1.1 Control System



The PowerCommand® Control is an integrated GenSet control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional GenSet control systems. Prototype tested; UL, CSA, and CE compliant.

The PowerCommand® Control system includes:

Environment

- Ambient operating temperature from: -40 to +70 ºC (-40 to 158 ºF). HMI from -20 to +70 ºC (-4 to 158 ºF).
- Operating altitude up to 5000 m (13,000 ft.).

Features

- Control boards potted for environmental protection.
- InPower™ PC-based service tool available for detailed diagnostics.
- Battery monitoring and testing features and smart starting control system.
- Standard PowerCommand® Control Network (PCCNet) interface to devices such as remote annunciator for NFPA 110 applications.

AC Protection

- Field overload.
- Over current warning and shutdown.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Over excitation (loss of sensing) fault.
- Integrated digital electronic voltage regulator.

Digital Voltage Regulation

- Three-phase line-to-line sensing.
- Configurable torque matching.
- Integrated digital electronic voltage regulator.

Engine Data

- DC voltage battery charge.
- Adjustable lube oil pressure.
- Adjustable engine idle speed.
- 12/24 VDC battery configuration.

Alternator Data

- 60 Hz frequency.
- Three-phase AC current.
- AC: Single or three-phase line-to-line or line-to-neutral.
- Digital output voltage regulation within +/-1.0% any loads between no load to full. Drift equals no more than +/-1.5% for 40 ºC (104 ºF) temperature change in eight hours.

Control Functions

- Cycle cranking.
- PCCNet interface.
- Configurable inputs (2).
- Configurable outputs (2).
- Remote emergency stop.
- Time delay start and cooldown.

Engine Protection.

- Cranking lockout.
- Overspeed shutdown.
- Fail to start (overcrank) shutdown.
- Fail to crank shutdown
- sensor failure indication.
- Redundant start disconnect.
- Low fuel level warning or shutdown.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning or shutdown.
- Low coolant temperature warning.
- High, low, and weak battery voltage warning.

Operator/Display Panel

- Manual off switch.
- Bargraph display (optional).
- LED lamps indicating GenSet running, not in auto, common warning, common shutdown, manual run mode, and remote start.
- Alphanumeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols).

Other Display Data

- Fault history.
- GenSet model data.
- RS485 Modbus® interface.
- Start attempts, starts, running hours.
- Data logging and fault simulation (requires InPower™ service tool).

Control Options

- Remote operator panel.
- PMG alternator excitation.
- AC output analog meters (bargraph).
- Color-coded graphical display of: kVa, Frequency, 3-phase current, and three-phase AC voltage
- Auxiliary output relays (2).
- Modbus® to BACnet™ Module.
- ComAp InteliGen^{NTC} parallel controller.
- 120/240 V, 100 W anti-condensation heater.
- Remote annunciator with configurable inputs (3) and configurable outputs (4).
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8).
- PowerCommand® 2.2 control with AmpSentry™ protection.

GenSet options and accessories

Engine

- 120/240/480 V, 2500 W coolant heaters
- 120 V, 400 W lube oil heater

Fuel System

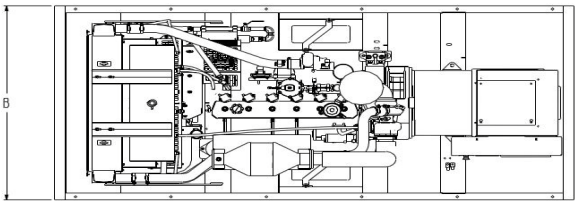
- Flexible fuel connector and fuel strainer

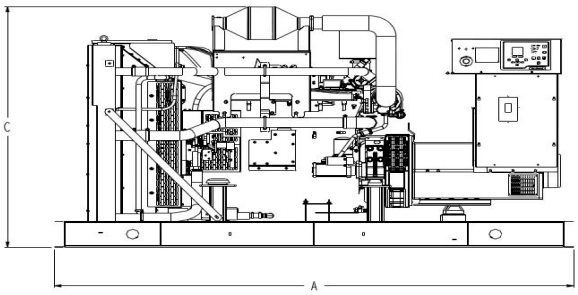
Exhaust System

- GenSet mounted muffler (enclosure models, only)

Generator Set

- Batteries and battery charger
- Main line circuit breaker
- PowerCommand® Network Input/Output (I/O) Module
- Modbus® to BACnet™ Module
- Weather protective enclosure (F001) with silencer
- Level I enclosure w/silencer (C180N6 only)
- Level II enclosure w/silencer
- Audible alarm; remote drains; oil maintainer
- Remote annunciator panel and spring isolators
- 2-year standby and 5-year basic power warranty (model-specific)





This outline drawing is for reference only.
Do not use for installation design.

	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)
C200N6 Standby	3124 (123)	1524 (60)	1886 (74)
C200N6 Prime	4039 (159)	1626 (64)	1892 (75)

NOTE: Consult drawings for applicable weights. Contact the factory for additional information. See enclosure Specification Sheet for enclosure dimensions.

Codes and Standards

Codes or standards compliance may not be available with all model configurations - consult factory for availability.

The Prototype Test Support (PTS) program verifies the performance integrity of the GenSet design. Products bearing the PTS symbol have been subjected to demanding tests in accordance with NFPA 110 to verify the design integrity and performance under both normal and abnormal operating conditions. These conditions include: short circuit, endurance, temperature rise, torsional vibration, and transient response, as well as full load pickup.

Engine is certified to Stationary Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ.

Engine is certified to Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ.

Engine is certified to Mobile Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ. U.S. **applications** must be applied per EPA regulations.

CSA Group tests products under a formal process to ensure that they meet the safety and/or performance requirements of applicable standards. This GenSet is certified to: CSA 22.2 No. 100 Motors and Generators; CSA 22.2 No. 0.4-044 Bonding of Electrical Equipment; CSA 22.2 No. 14 Industrial Control Equipment; and CSA 22.2 No. 0 General Requirements - Canadian Electrical Code, Part II.

This product has been manufactured under the controls established by a Bureau Veritas Certification approved management system that conforms with ISO 9001:2015.

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 is 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.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical Code.

Specifications are subject to change without notice.

Sales and Service

Cummins Sales and Service
875 Lawrence Drive
DePere, Wisconsin 54115

www.power.cummins.com

Doc. A042J402 Rev. 1

Specification sheet

Spark-ignited generator set

20-40 kW Standby

EPA emissions

Description

Cummins® generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary Standby applications.

Features

Gas engine - Rugged 4-cycle Cummins QSJ2.4 spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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 generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminum material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The intelligent design has removable panels and service doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas		Propane		
	Standby 60 Hz		Standby 60 Hz		Data sheets
Model	**kW**	**kVA**	**kW**	**kVA**	**60 Hz**
C20 N6	20	25	20	25	NAD-5693-EN
C25 N6	25	31	25	31	NAD-5695-EN
C30 N6	30	38	30	38	NAD-5696-EN
C36 N6	36	45	36	45	NAD-5697-EN
C40 N6	40	50	40	50	NAD-5698-EN

Our energy working for you.™

Generator set specifications

Governor regulation class	ISO8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated or turbocharged (varies by generator set model)
Bore	86.5 mm (3.4 in.)
Stroke	100.0 mm (3.94 in.)
Displacement	2.4 liters (143.5 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	550 amps at ambient temperature of 0 °F to 32 °F (-18 °C to 0 °C)
Battery charging alternator	50 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on with relief valve
Standard cooling system	50 °C (122 °F) ambient cooling system
Rated speed	1800 rpm

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120 ºC (248 °F) Standby
Exciter type	Torque match (shunt) with PMG/EBS as option
Alternator cooling	Direct drive centrifugal blower
AC waveform Total Harmonic Distortion (THDV)	< 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

1-phase	3-phase			
• 120/240	• 120/208	• 120/240 delta	• 277/480	• 347/600

Generator set options

Fuel system
- Single fuel - natural gas or propane vapor, field selectable
- Dual fuel – natural gas and propane vapor auto changeover
- Low fuel gas pressure warning

Engine
- Engine air cleaner – normal or heavy duty
- Shut down – low oil pressure
- Extension – oil drain

Alternator
- 120 °C (248 °F) temperature rise alternator
- 105 °C (221 °F) temperature rise alternator
- Excitation Boost System (EBS) or PMG
- Alternator heater, 120 V

Control
- AC output analog meters (bargraph)
- Stop switch – emergency
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)

Electrical
- Single circuit breaker
- Dual circuit breakers
- 80% rated circuit breakers
- 100% rated circuit breakers

Enclosure
- Aluminum enclosure Sound Level 1 or Level 2, with muffler installed, sandstone or green color
- Open set

Cooling system
- Shutdown – low coolant level
- Warning – low coolant level
- Extension – coolant drain
- Cold weather options:
  - <4 °C (40 °F) – cold weather
  - <-17 °C (0 °F) – extreme cold weather

Exhaust system
- Exhaust connector NPT

Generator set application
- Base barrier – elevated generator set
- Battery rack, larger battery
- Radiator outlet duct adapter

Generator set options (continued)

Warranty

- Base warranty – 2 year, 1000 hour, Standby
- Standby, 3 year, 1500 hour, parts
- Standby, 5 year, 2500 hour, parts
- Standby, 3 year, 1500 hour, parts and labor
- Standby, 5 year, 2500 hour, parts and labor
- Standby, 3 year, 1500 hour, parts, labor and travel
- Standby, 5 year, 2500 hour, parts, labor and travel

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

Generator set accessories

- Extreme cold weather kit
- Battery rack, larger battery
- Battery heater kit
- HMI211RS in-home display, including pre-configured 12” harness
- HMI211 remote display, including pre-configured 12” harness
- HMI220 remote display
- Auxiliary output relays (2)
- Auxiliary configurable signal inputs (8) and relay outputs (8)
- Annunciator – RS485
- Remote monitoring device – PowerCommand 500
- Battery charger – stand-alone, 12 V
- Circuit breakers
- Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- Enclosure paint touch up kit
- Base barrier – elevated generator set
- Mufflers – industrial, residential or critical
- Alternator Excitation Boost System (EBS) or PMG
- Alternator heater
- Maintenance and service kit
- Engine lift kit

Control system PowerCommand 1.1

PowerCommand control is an integrated generator set control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). Major features include:

- Battery monitoring and testing features and smart starting control system.
- Standard PCCNet interface to devices such as remote annunciator for NFPA 110 applications.
- Control boards potted for environmental protection.
- Control suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 meters (13,000 feet).
- Prototype tested; UL, CSA, and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics.

Operator/display panel

- Manual off switch
- Alpha-numeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating generator set running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -40 °C to +70 °C
- Bargraph display (optional)

AC protection

- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown

Alternator data

- Line-to-Line and Line-to-Neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data

- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase Line-to-Line sensing
- Configurable torque matching

Control functions

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic Transfer Switch (ATS) control
- Generator set exercise, field adjustable

Options

- Auxiliary output relays (2)
- Remote annunciator with (3) configurable inputs and (4) configurable outputs
- PMG alternator excitation
- PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
- Digital governing
- AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
- Remote operator panel

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):

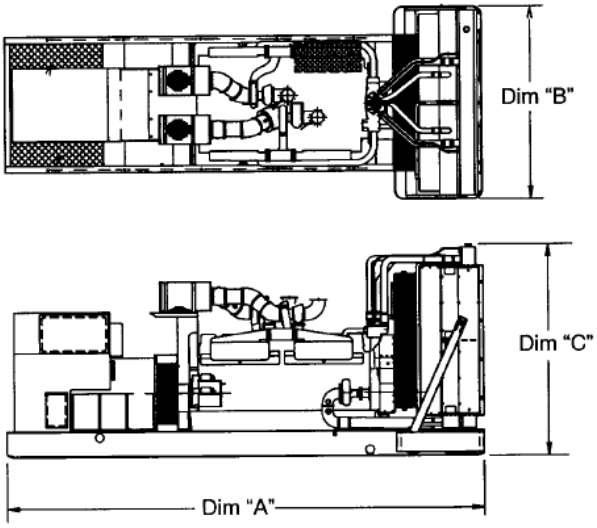
Applicable for supplying power to a constant electrical load for limited hours. Limited-Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set weight* dry kg (lbs)	Set weight* wet kg (lbs)
Open set					
C20 N6	1669 (65.7)	864 (34)	1123 (44.2)	423 (933)	440 (969)
C25 N6	1669 (65.7)	864 (34)	1123 (44.2)	441 (972)	457 (1008)
C30 N6	2225 (87.6)	864 (34)	1123 (44.2)	491 (1083)	508 (1119)
C36 N6	2225 (87.6)	864 (34)	1123 (44.2)	520 (1146)	536 (1182)
C40 N6	2225 (87.6)	864 (34)	1123 (44.2)	548 (1208)	564 (1244)
Sound attenuated enclosure Level 1					
C20 N6	1829 (72)	864 (34)	1156 (45.5)	469 (1034)	485 (1070)
C25 N6	1829 (72)	864 (34)	1156 (45.5)	487 (1073)	503 (1109)
C30 N6	2388 (94)	864 (34)	1156 (45.5)	542 (1195)	558 (1231)
C36 N6	2388 (94)	864 (34)	1156 (45.5)	571 (1258)	587 (1294)
C40 N6	2388 (94)	864 (34)	1156 (45.5)	599 (1320)	615 (1356)
Sound attenuated enclosure Level 2					
C20 N6	2073 (81.6)	864 (34)	1156 (45.5)	474 (1045)	490 (1081)
C25 N6	2073 (81.6)	864 (34)	1156 (45.5)	492 (1084)	508 (1120)
C30 N6	2626 (103.4)	864 (34)	1156 (45.5)	547 (1206)	563 (1242)
C36 N6	2626 (103.4)	864 (34)	1156 (45.5)	576 (1269)	592 (1305)
C40 N6	2626 (103.4)	864 (34)	1156 (45.5)	604 (1331)	620 (1367)

* Weights based on 1-phase generator set. Weights may vary with a different configuration.

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.		The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.
	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.	**U.S. EPA**	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.
	All low voltage models are CSA certified to product class 4215-01.	**International Building Code**	The generator set is certified to International Building Code (IBC) 2012.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

For more information contact your local Cummins distributor or visit power.cummins.com

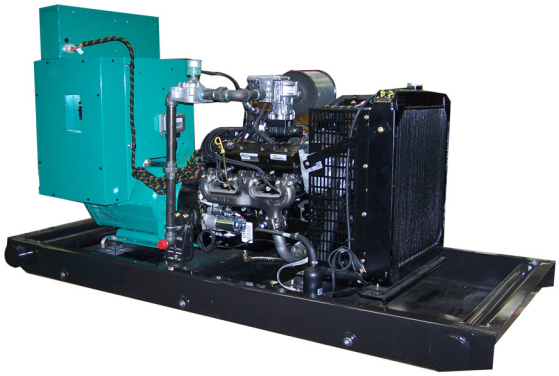
Our energy working for you.™

NAS-5692-EN (10/17)

Specification sheet

Gaseous Fuel Generator Set

5.7L Engine Series



55 kW 60 Hz

Description

The Cummins Inc. commercial Generator Set (GenSet) is a fully integrated power generation system providing optimum performance, reliability, and versatility for prime power applications.

Features

Power Solutions International (PSI) Industrial Engine - Rugged 4-cycle industrial spark-ignited engine delivers reliable power, low emissions, and quick 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, fault-clearing short-circuit capability, and class H insulation.

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

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

	Standby rating		Prime rating			
Model	60Hz kW (kVa)	50 Hz kW (kVa)	NG 60 Hz kW (kVa)	Propane 60 Hz kW (kVa)	Emissions Compliance	Data Sheet
C55N6C			55 (69)	55 (69)	EPA Stationary and MOH Certified	PSI 36300018

Doc. A042J400 Rev. 1

GenSet Specifications

Voltage Regulation, No Load to Full Load	±1%
Random Voltage Variation	±1% (Three-phase only.)
Frequency Regulation	Isochronous
Random Frequency Variation	±0.5%
Radio Frequency Interference	Optional PMG excitation operates in compliance with BS800 and VDE level G and N. Addition of RFI protection kit allows operation per MIL-STD-461 and VDE level K.

Engine Specifications

Base Engine	Power Solutions International (PSI)
Displacement	5.7 L (348 in^3)
Overspeed Limit	2100 rpm
Regenerative Power	6.62 kW
Cylinder Block Configuration	Cast iron
Cranking Current	630 amps at ambient temperature of -18 °C (0 °F)
Battery Charging Alternator	70 amps
Battery Type	Group 24 (x1)
Starting Voltage	12-volt, negative ground
Standard Cooling System	See derates on Engine Data Sheet
Lube Oil Filter Types	One spin-on canister-combination full flow with bypass
Total System Back Pressure Allowed	76 mm Hg (3 in. Hg)
Catalyst Back Pressure	50.8 mm Hg (2 in. Hg) estimate
Silencer Back Pressure (Factory Enclosed Units Only)	16.76 mm Hg (.66 in. Hg)

Alternator Specifications

Design	Brushless, 4-pole, drip-proof revolving field
Stator	2/3 pitch
Rotor	Direct-coupled by flexible disc
Insulation System	Class H per NEMA MG1-1.65 or better
Standard Temperature Rise *	105 °C
Exciter Type	Shunt or Permanent Magnet Generator (PMG)
Phase Rotation	A (U), B (V), C (W)
Alternator Cooling	Direct-drive centrifugal blower

* For UL 1004 ratings, refer to temperature rise at 120 °C or below, and ambient temperature up to 40 °C

Amp Rating at Full-load Voltage

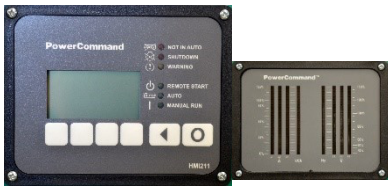
	Full Load Voltage	120/240 (1 Ph)	120/208	127/220	139/240	220/380	240/416	254/440	277/480	347/600
C55N6C	**Amps**	229	191	180	165	104	95	90	83	66

Fuel Consumption

		Rated Load Fuel Consumption in Standard Cubic Feet per Hour (CFH)			
Model	**Fuel Type**	**1/4**	**1/2**	**3/4**	**Full**
C55N6C	Propane	89	173	226	267
C55N6C	NG	245	483	631	744

Fuel inlet pressure at GenSet connection: 180 to 280 mm WC (7 to 11 in. WC)

PowerCommand® 1.1 Control System



The PowerCommand® Control is an integrated GenSet control system providing voltage regulation, engine protection, operator interface and isochronous governing (optional). The integration of all functions into a single control system provides enhanced reliability and performance compared to conventional GenSet control systems. Prototype tested; UL, CSA, and CE compliant.

The PowerCommand® Control system includes:

Environment

- Ambient operating temperature from: -40 to +70 ºC (-40 to 158 ºF). HMI from -20 to +70 ºC (-4 to 158 ºF).
- Operating altitude up to 5000 m (13,000 ft.).

Features

- Control boards potted for environmental protection.
- InPower™ PC-based service tool available for detailed diagnostics.
- Battery monitoring and testing features and smart starting control system.
- Standard PowerCommand® Control Network (PCCNet) interface to devices such as remote annunciator for NFPA 110 applications.

AC Protection

- Field overload.
- Over current warning and shutdown.
- Over and under voltage shutdown.
- Over and under frequency shutdown.
- Over excitation (loss of sensing) fault.
- Integrated digital electronic voltage regulator.

Digital Voltage Regulation

- Three-phase line-to-line sensing.
- Configurable torque matching.
- Integrated digital electronic voltage regulator.

Engine Data

- DC voltage battery charge.
- Adjustable lube oil pressure.
- Adjustable engine idle speed.
- 12/24 VDC battery configuration.

Alternator Data

- 60 Hz frequency.
- Three-phase AC current.
- AC: Single or three-phase line-to-line or line-to-neutral.
- Digital output voltage regulation within +/-1.0% any loads between no load to full. Drift equals no more than +/-1.5% for 40 ºC (104 ºF) temperature change in eight hours.

Control Functions

- Cycle cranking.
- PCCNet interface.
- Configurable inputs (2).
- Configurable outputs (2).
- Remote emergency stop.
- Time delay start and cooldown.

Engine Protection.

- Cranking lockout.
- Overspeed shutdown.
- Fail to start (overcrank) shutdown.
- Fail to crank shutdown
- sensor failure indication.
- Redundant start disconnect.
- Low fuel level warning or shutdown.
- Low oil pressure warning and shutdown.
- High coolant temperature warning and shutdown.
- Low coolant level warning or shutdown.
- Low coolant temperature warning.
- High, low, and weak battery voltage warning.

Operator/Display Panel

- Manual off switch.
- Bargraph display (optional).
- LED lamps indicating GenSet running, not in auto, common warning, common shutdown, manual run mode, and remote start.
- Alphanumeric display with pushbutton access for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols).

Other Display Data

- Fault history.
- GenSet model data.
- RS485 Modbus® interface.
- Start attempts, starts, running hours.
- Data logging and fault simulation (requires InPower™ service tool).

Control Options

- Remote operator panel.
- PMG alternator excitation.
- AC output analog meters (bargraph).
- Color-coded graphical display of: kVa, Frequency, 3-phase current, and three-phase AC voltage
- Auxiliary output relays (2).
- Modbus® to BACnet™ Module.
- ComAp InteliGen^{NTC} parallel controller.
- 120/240 V, 100 W anti-condensation heater.
- Remote annunciator with configurable inputs (3) and configurable outputs (4).
- Auxiliary, configurable signal inputs (8) and configurable relay outputs (8).
- PowerCommand® 2.2 control with AmpSentry™ protection.

GenSet options and accessories

Engine

- 120/240 V, 1500 W coolant heaters
- 120 V, 150 W lube oil heater

Fuel System

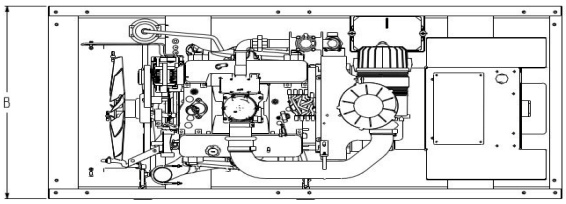
- Flexible fuel connector
- Fuel strainer

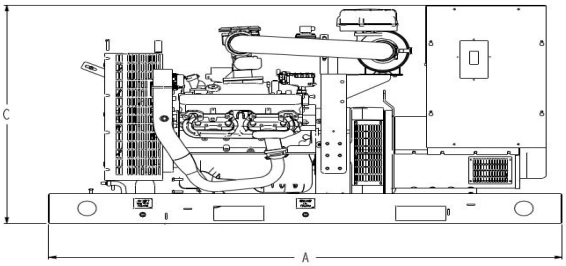
Exhaust System

- GenSet mounted muffler (enclosure models, only)

Generator Set

- Battery
- Battery charger
- Main line circuit breaker
- Modbus® to BACnet™ Module
- Level I enclosure w/silencer
- Level II enclosure w/silencer
- Audible alarm
- Remote drains
- Oil maintainer
- Remote annunciator panel
- Spring isolators





This outline drawing is for reference only.
Do not use for installation design.

	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)
C55N6C	2083 (82)	991 (39)	1118 (44)

NOTE: Consult drawings for applicable weights. Contact the factory for additional information. See enclosure Specification Sheet for enclosure dimensions.

Codes and Standards

CSA Group tests products under a formal process to ensure that they meet the safety and/or performance requirements of applicable standards. This GenSet is certified to: CSA 22.2 No. 100 Motors and Generators; CSA 22.2 No. 0.4-044 Bonding of Electrical Equipment; CSA 22.2 No. 14 Industrial Control Equipment; and CSA 22.2 No. 0 General Requirements - Canadian Electrical Code, Part II.

Engine is certified to Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ. U.S. applications must be applied per EPA regulations.

Engine is certified to Mobile Non-Emergency U.S. EPA New Source Performance Standards (NSPS), 40 CFR 60 subpart JJJJ. U.S. applications must be applied per EPA regulations.

This product has been manufactured under the controls established by a Bureau Veritas Certification approved management system that conforms with ISO 9001:2015.

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 is 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.

Warning: Backfeed to a utility system can cause electrocution and/or property damage. Do not connect GenSets to any building electrical system except through an approved device or after the building main disconnect is open. Neutral connection must be bonded in accordance with National Electrical Code.

Specifications are subject to change without notice.

Sales and Service

Cummins Sales and Service
875 Lawrence Drive
DePere, Wisconsin 54115

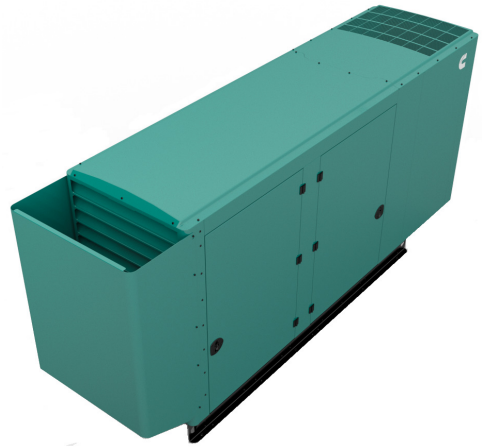
www.power.cummins.com

Doc. A042J400 Rev. 1

Specification sheet

Spark-ignited generator set

125 & 150 kW standby
EPA emissions



Description

Cummins Power Generation generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby applications.

Features

Gas engine - Rugged 6-cyclinder Cummins QSJ8.9G spark-ignited engine delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 2.3 electronic control is standard equipment and provides total generator set system integration including automatic remote starting/stopping, precise frequency and voltage regulation, alarm and status message display, output metering, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 ℃ (122 ℉) ambient temperature.

Enclosures - The aesthetically appealing enclosure incorporates special designs that deliver one of the quietest generators of its kind. Aluminum material plus durable powder coat paint provides the best anti-corrosion performance. The generator set enclosure has been evaluated to withstand 180 MPH wind loads in accordance with ASCE7-10. The design has hinged doors to provide easy access for service and maintenance.

NFPA - The generator set accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural Gas		
	Standby (60 Hz)		Data sheets
Model	**kW**	**kVA**	**60 Hz**
C125 N6	125	156	NAD-6303
C150 N6	150	188	NAD-6304

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Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.25% @ 60 Hz
Radio frequency emissions compliance	FCC code title 47 part 15 class B

Engine specifications

Design	Turbocharged and Aftercooled
Bore	114.1 mm (4.49 in)
Stroke	144.5 mm (5.69 in)
Displacement	8.9 liters (543 in^3)
Cylinder block	Cast iron, in-line 6 cylinder
Battery capacity	850 amps at ambient temperature of 0 ℉ to 32 ℉ (-18 ℃ to 0 ℃)
Battery charging alternator	100 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on
Standard cooling system	125 kW - 50 ℃ (122 ℉) ambient cooling system 150 kW - 45 ℃ (113 ℉) ambient cooling system
Rated speed	1800 rpm

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	120 ºC (248 ℉) standby
Exciter type	Torque match (shunt) with PMG as option
Alternator cooling	Direct drive centrifugal blower
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

1-phase	3-phase				
• 120/240	• 120/208	• 120/240	• 277/480	• 347/600	• 127/220

Generator set options

Fuel system
- ☐ Low fuel gas pressure warning

Engine
- ☐ Normal or Heavy duty engine air cleaner
- ☐ Shut down – low oil pressure
- ☐ Extension – oil drain
- ☐ Engine oil heater

Alternator
- ☐ 120 ℃ temperature rise alternator
- ☐ 105 ℃ temperature rise alternator
- ☐ PMG
- ☐ Alternator heater, 120V
- ☐ Reconnectable full 1 phase output alternator

Control
- ☐ AC output analog meters
- ☐ Stop switch – emergency
- ☐ Auxiliary output relays (2)
- ☐ Auxiliary configurable signal inputs (8) and relay outputs (8)

Electrical
- ☐ One, two or three circuit breaker configurations
- ☐ 80% rated circuit breakers
- ☐ 100% rated LSI circuit breakers

Enclosure
- ☐ Aluminum enclosures with muffler installed – green color
  - ○ Weather
  - ○ Sound Level 1
  - ○ Sound Level 2

Cooling system
- ☐ Shutdown – low coolant level
- ☐ Warning – low coolant level
- ☐ Extension – coolant drain
- ☐ Coolant heater options:
  - ○ < 4 ℃ (40 ℉) - Cold weather
  - ○ < -17 ℃ (0 ℉) - Extreme cold

Exhaust system
- ☐ Exhaust connector NPT
- ☐ Exhaust muffler mounted

Generator set application
- ☐ Base barrier – elevated genset
- ☐ Battery rack, single or dual battery
- ☐ Radiator outlet duct adapter

Warranty
- ☐ Base warranty – 2 year / 1000 hours, standby
- ☐ 3 year standby warranty options
- ☐ 5 year standby warranty options

Generator set accessories

- ☐ Coolant heaters – 1000W / 1500W
- ☐ Battery rack, single or dual battery
- ☐ Battery heater kit
- ☐ Engine oil heater
- ☐ Remote control displays
- ☐ Auxiliary output relays (2)
- ☐ Auxiliary configurable signal inputs (8) and relay outputs (8)
- ☐ Annunciator – RS485
- ☐ Remote monitoring device – PowerCommand 500/550
- ☐ Battery charger – stand-alone, 12V
- ☐ Circuit breakers
- ☐ Enclosure Sound Level 1 to Sound Level 2 upgrade kit
- ☐ Base barrier – elevated generator set
- ☐ Mufflers – industrial, residential, or critical
- ☐ Alternator PMG
- ☐ Alternator heater

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Control system PowerCommand 2.3

PowerCommand® 2.3 control - An integrated generator set control system providing voltage regulation, engine protection and operator interface.
Control - Provides battery monitoring and testing features and smart-starting control system.

InPower™ – PC-based service tool available for detailed diagnostics.

PCCNet RS485 - Network interface (standard) to devices such as remote annunciator for NFPA 110 applications.

Control boards - Potted for environmental protection.

Ambient operation - Suitable for operation in ambient temperatures from -40 ℃ to +70 ℃ and altitudes to 13,000 feet (5,000 meters).

AC Protection

- AmpSentry protective relay
- Over current warning and shutdown
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation (loss of sensing) fault
- Field overload
- Overload warning
- Reverse kW shutdown
- Reverse VAR shutdown
- Short circuit protection

Engine protection

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High, low and weak battery voltage warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel level warning or shutdown
- Emergency stop
- Fuel-in-rupture-basin warning or shutdown

Operator/display panel

- Manual off switch
- 320 x 240 Pixels graphic LED backlight LCD with push button access for viewing engine and alternator data and providing setup, controls, and adjustments (English, Spanish, or French).
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode and remote start
- Suitable for operation in ambient temperatures from -20 ℃ to +70 ℃

Alternator data

- Line-to-line and Line-to-neutral AC volts
- 3-phase AC current
- Frequency
- Total kVa

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Engine speed

Other data

- Generator set model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower service tool)

Digital governing (optional)

- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation

- Integrated digital electronic voltage regulator
- 2-phase line-to-line sensing
- Configurable torque matching

Control functions

- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (2) Configurable inputs
- (2) Configurable outputs
- Remote emergency stop
- Automatic transfer switch (ATS) control
- Generator set exercise, field adjustable

Options

☐ Auxiliary output relays (2)
☐ Remote annunciator with (3) configurable inputs and (4) configurable outputs
☐ PMG alternator excitation
☐ PowerCommand 500/550 for remote monitoring and alarm notification (accessory)
☐ Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)
☐ Digital governing
☐ AC output analog meters (bargraph)
  - Color-coded graphical display of:
    - 3-phase AC voltage
    - 3-phase current
    - Frequency
    - kVa
☐ Remote operator panel

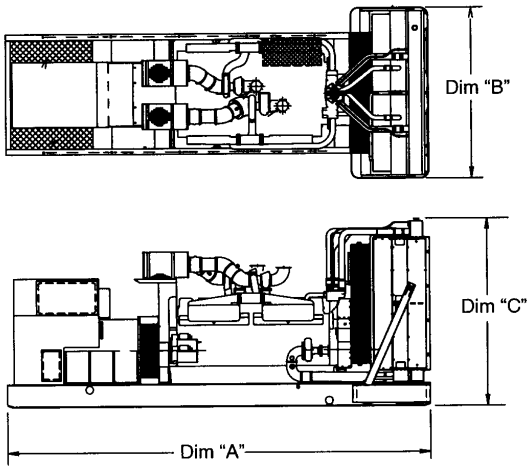
Ratings definitions

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* wet kg (lbs.)
Open Set				
C125 N6	2867 (113)	1415 (56)	1016 (40)	1580 (3483)
C150 N6	2867 (113)	1415 (56)	1016 (40)	1580 (3483)
Weather Protective Enclosure				
C125 N6	2867 (113)	1836 (72)	1016 (40)	1661 (3662)
C150 N6	2867 (113)	1836 (72)	1016 (40)	1661 (3662)
Sound Attenuated Enclosure Level 1				
C125 N6	3621 (143)	1836 (72)	1016 (40)	1776 (3915)
C150 N6	3621 (143)	1836 (72)	1016 (40)	1776 (3915)
Sound Attenuated Enclosure Level 2				
C125 N6	4061 (160)	1836 (72)	1016 (40)	1791 (3940)
C150 N6	4061 (160)	1836 (72)	1016 (40)	1791 (3940)

* Weights above are average. Actual weight varies with product configuration

Codes and standards

Codes or standards compliance may not be available with all model configurations – consult factory for availability.

	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.		This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.
			The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.
International Building Code	The generator set is certified to International Building Code (IBC) 2012.		All low voltage models are CSA certified to product class 4215-01.
		U.S. EPA	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

North America
1400 73rd Avenue N.E.
Minneapolis, MN 55432
USA

Phone 763 574 5000
Fax 763 574 5298

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NAS-6298-EN (9/17) A057Y417

power.cummins.com

Model: GGHH
KW rating: 100 natural gas standby
100 propane standby
Frequency: 60
Fuel type: Natural gas/propane

EPA Emissions

† Generator set data sheet

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Power Generation

Exhaust emission data sheet:	EDS-327
Exhaust emission compliance sheet:	
Sound performance data sheet:	MSP-185
Cooling performance data sheet:	
Prototype test summary data sheet:	PTS-147
Standard set-mounted radiator cooling outline:	0500-3485

Fuel consumption

	Natural gas								Propane							
	Standby kW (kVA)				Prime kW (kVA)				Standby kW (kVA)				Prime kW (kVA)			
Ratings	100 (125)								100 (125)							
Load	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full	1/4	1/2	3/4	Full
scfh	406	618	848	1090					178	272	367	467				
m^3/hr	11.5	17.5	24	30.9					5.1	7.7	10.4	13.2				

Engine

	Natural gas		Propane	
	Standby rating	Prime rating	Standby rating	Prime rating
Engine model	WSG-1068			
Configuration	Cast iron, V 10 cylinder			
Aspiration	Turbocharged			
Gross engine power output, kWm (bhp)	131.3 (176.0)		122.3 (164.0)	
BMEP at rated load, kPa (psi)	1158.3 (168.0)		1158.3 (168.0)	
Bore, mm (in)	90.2 (3.55)		90.2 (3.55)	
Stroke, mm (in)	105.9 (4.17)		105.9 (4.17)	
Rated speed, rpm	1800		1800	
Piston speed, m/s (ft/min)	6.4 (1250.0)		6.4 (1250.0)	
Compression ratio	9.0:1		9.0:1	
Lube oil capacity, L (qt)	6.1 (6.5)		6.1 (6.5)	
Overspeed limit, rpm	2400 ± 50		2400 ± 50	
Regenerative power, kW	16.00		16.00	

Fuel flow

Minimum operating pressure, kPa (in H_2O)	1.7 (7.0)		1.7 (7.0)	
Maximum operating pressure, kPa (in H_2O)	3.4 (13.6)		3.4 (13.6)	

D-3385d (4/11)

Air

	Natural gas		Propane	
	Standby rating	Prime rating	Standby rating	Prime rating
Combustion air, m^3/min (scfm)	6.3 (222.0)		5.8 (204.0)	
Maximum air cleaner restriction, kPa (in H_2O)	1.2 (5.0)		1.2 (5.0)	
Alternator cooling air, m^3/min (scfm)	37.0 (1308.0)		37.0 (1308.0)	

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	19.4 (687.0)		17.9 (633.0)	
Exhaust temperature, °C (°F)	573 (1063)		555 (1031)	
Maximum back pressure, kPa (in H_2O)	6.2 (25.0)		6.2 (25.0)	
Available back pressure for additional sound attenuation and piping, kPa (in H_2O)	2.5 (10.0)		2.5 (10.0)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	40 (104)		40 (104)	
Fan load, kW (HP)	7.3 (9.8)		7.3 (9.8)	
Coolant capacity (with radiator), L (US gal)	33.1 (8.8)		33.0 (8.8)	
Coolant system air flow, m^3/min (scfm)	193.1 (6825.0)		193.1 (6825.0)	
Total heat rejection, MJ/min (Btu/min)	9.3 (8740.0)		9.3 (8740.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	124.5 (0.5)		124.5 (0.5)	

Weights[2]

Unit dry weight kgs (lbs)	1093 (2410)
Unit wet weight kgs (lbs)	1133 (2498)

Notes:
[1] For non-standard remote installations contact your local Cummins Power Generation representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

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www.cumminspower.com

D-3385d (4/11)

Cummins Power Generation

Alternator data

Natural gas three phase table[1]		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet number		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		111	111	112	110	109	109	111	110	108	109	109
Motor starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full load current amps at standby rating	120/208	127/220	139/240	220/380	240/416	277/480	347/600
	347	328	301	190	173	150	120

Propane three phase table[1]		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet number		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		104	104	104	103	102	102	104	103	101	102	102
Motor starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full load current amps at standby rating	120/208	127/220	139/240	220/380	240/416	277/480	347/600
	347	328	301	190	173	150	120

Natural gas single phase table		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[2]	120/240[3]	120/240[3]			
Surge kW		108	108	110	109	106	106	109	108			
Motor starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full load current amps at standby rating	120/240[2]	120/240[3]
	278	417

Propane Single phase table		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[2]	120/240[3]	120/240[3]			
Surge kW		101	101	103	102	100	100	102	101			
Motor starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full load current amps at standby rating	120/240[2]	120/240[3]
	278	417

Notes:

1. Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below.
2. The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.
3. The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

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D-3385d (4/11)

Cummins Power Generation

Derating factors

Natural gas

Standby/prime Three phase	Engine power available up to 594 m (1950 ft) at ambient temperatures up to 40 °C (104 °F). Altitude derate - 4% per 305 m (1000 ft) above 594 m (1950 ft). Temperature derate - 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).
Standby/prime Full single phase output	Engine power available up to 594 m (1950 ft) at ambient temperatures up to 30 °C (86 °F). Altitude derate - 4% per 305 m (1000 ft) above 594 m (1950 ft). Temperature derate - 4% per 10 °C (2% per 10 °F) above 30 °C (86 °F).

Propane

Standby/prime	Engine power available up to 305 m (1000 ft) at ambient temperatures up to 25 °C (77 °F). Altitude derate - 4% per 305 m (1000 ft) above 305 m (1000 ft). Temperature derate - 2% per 11 °C (1% per 10 °F) above 25 °C (77 °F).

Ratings definitions

Emergency standby power (ESP):	Limited-time running power (LTP):	Prime power (PRP):	Base load (continuous) power (COP):
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 (LTP) is in accordance with ISO 8528.	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.	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.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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D-3385d (4/11)

Spark-ignited generator set 35 - 50 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60 for emergency (standby) application.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating*		Standby rating		Prime rating*		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGPA	35.0 (44.0)		30.0 (38.0)		35.0 (44.0)		30.0 (38.0)		D-3482	
GGPB	40.0 (50.0)		35.0 (44.0)		40.0 (50.0)		35.0 (44.0)		D-3483	
GGPC	45.0 (56.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	50.0 (63.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	D-3485	D-3484

* Prime rated sets are not available for installations within the U.S. territory.

S-1617 (1/10)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.6%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	95.3 mm (3.75 in)
Stroke	88.4 mm (3.48 in)
Displacement	5.0 litres (305 in^3)
Cylinder block	Cast iron, V8 cylinder
Battery capacity	625 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	70 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	50 °C (122 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible drive disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 ºC (302 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 110/190	• 120/240	• 240/416	• 110/220	• 110/190	• 110/220	• 115/200	• 110/220
• 110/220	• 127/220	• 254/440	• 115/230	• 115/230	• 120/208	• 120/240	• 115/230
• 115/200	• 139/240	• 277/480	• 120/240	• 127/220	• 220/380	• 230/400	• 120/240
• 115/230	• 220/380	• 347/600		• 240/416	• 254/440		
• 120/208	• 230/400						

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust System
- ☐ Adapter NPT
- ☐ Mounted muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Oil drain extension
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1617 (1/10)

Cummins Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator Interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency

Total and individual phase kW and kVA

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Time delay start and cooldown
- Fault simulation (requires InPower)
- Cycle cranking
- Data logging on faults
- (4) configurable customer inputs
- (4) configurable customer outputs
- Remote emergency stop

Options

☐ Analog AC Meter Display
☐ Thermostatically Controlled Space Heater
☐ Key-type mode switch
☐ Ground fault module
☐ Auxiliary relays (3)
☐ Echelon® LONWORKS® interface
☐ Modlon Gateway to convert to Modbus (loose)
☐ PowerCommand iWatch™ web server for remote monitoring and alarm notification (loose)
☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1617 (1/10)

Cummins Power Generation

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):

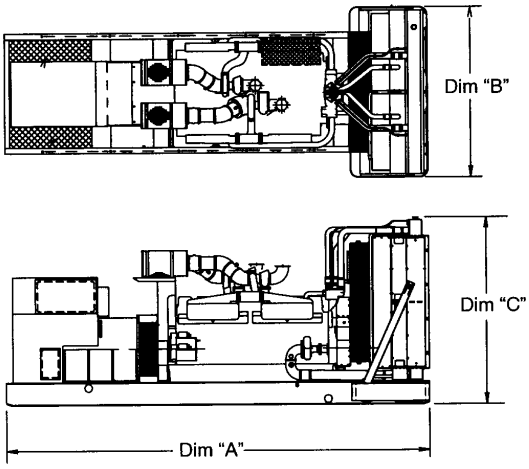
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGPA	2104 (83.0)	1016 (40.0)	1255 (49.0)	795 (1752)	821 (1811)
GGPB	2104 (83.0)	1016 (40.0)	1255 (49.0)	819 (1805)	845 (1864)
GGPC	2104 (83.0)	1016 (40.0)	1255 (49.0)	857 (1889)	884 (1948)

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

Cummins Power Generation
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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1617 (1/10)

Cummins Power Generation

Residential generator
RS Series
20000

Cummins **Onan**

Performance you rely on.™

Features and benefits

- Very quiet operation
- Aluminum weather resistant housing
- Fully automatic operation when used with a Cummins Onan automatic transfer panel
- Available for use with natural gas or LP vapor
- Attractive and discreet housing
- Electronic governor for precise frequency control
- Includes 120 V coolant heater
- Listed to UL 2200

Weight, size and sound level

Weight: 1105 lb (501 kg)

Size: Footprint dimensions (for recommended installation): length 64.4 in (1635 mm), width 30 in (762 mm), height 46.7 in (1184.89 mm)

Overall dimensions: length 85.3 in (2166.68 mm), width 30 in (762 mm), height 46.7 in (1184.89 mm)

Sound: 66 dB(A) at 7m, at full load

Models and ratings

Order model	Fuel	Voltage	Rated kW	kVa	Rated amps	Circuit breaker
20GGMA-6110	Natural gas	120/240	20	20	166.7/83.3	90 A, 2 pole
20GGMA-6111	LP vapor	120/240	20	20	166.7/83.3	90 A, 2 pole

Site derating factors:

Natural gas	Engine power available up to 3000 ft (915 m) at ambient temperatures up to 104 °F (40 °C). Above 3000 ft (915 m) derate at 4% per 1000 ft (305 m), and 1.1% per 10 °F (2% per 10 °C) above 104 °F (40 °C)
Propane	Engine power available up to 3000 ft (915 m) at ambient temperatures up to 104 °F (40 °C). Above 3000 ft (915 m) derate at 4% per 1000 ft (305 m), and 1.1% per 10 °F (2% per 10 °C) above 104 °F (40 °C)

A-1492b (5/09)

Standard features

Engine:

- Electronic ignition
- Electronic governor
- Full-pressure lubrication
- High-capacity oil sump, spin-on oil filter
- Solenoid shift starter
- 60 A, engine-driven battery charger

Control system:

- Automatic remote starting
- Controls generator set starting and shutdown
- Control components designed to withstand the vibration levels typical in generator sets
- Field circuit breaker
- High temperature, low oil pressure, overcrank and over speed shutdowns
- Running time meter
- 90 A UL Listed circuit breaker
- DC control fuse

Exhaust muffler:

- Enclosed exhaust silencer
- Low noise

Engine details

Engine: GM Industrial, spark-ignited
Design: In-line 4-cylinder, liquid-cooled
Compression ratio: 10:5:1
Displacement: 181 cu in (3.0 L)
Cooling system: 122° F (50 °C) ambient cooling system
Oil sump capacity: 4.5 qt (4.3 L) with filter
Operating speed: 1800 RPM
Gross engine power output, kWm (bhp): 23.8 (31.9)

Average fuel consumption:

Fuel consumption-natural gas

Load:	1/4	1/2	3/4	Full
Cfh:	156.3	203.7	251.1	298.4
m^3/hr:	4.3	5.9	7.6	9.5

Fuel consumption-propane

Load:	1/4	1/2	3/4	Full
Cfh:	59.8	78.8	97.7	116.6
m^3/hr:	1.7	2.7	2.8	3.3
Gal/hr	1.6	2.2	2.7	3.2

Conversion factor:
8.58 ft^3 = 1 lb
0.535m^3 = 1 kg
36.39 ft^3 = 1 gal

Alternator details

Design: Brushless, revolving field, single bearing, 4-pole, drip-proof construction.
Insulation system: Class H per NEMA MG1-1.65 and BS2757.
Temperature rise: At rated load is less than 125 °C at standby rating, per NEMA MG1.22.40, IEEE 115 and IEC 34-1.
Exciter type: The excitation system derived is a self-excited (shunt) system with the voltage directly from the generator set output.
Alternator cooling: Direct drive centrifugal blower.
Rotor: Supported by a pre-lubricated maintenance-free ball bearing.
AC wave form total harmonic distortion: less than 5% total no load to full load, less than 3% for any single harmonic.

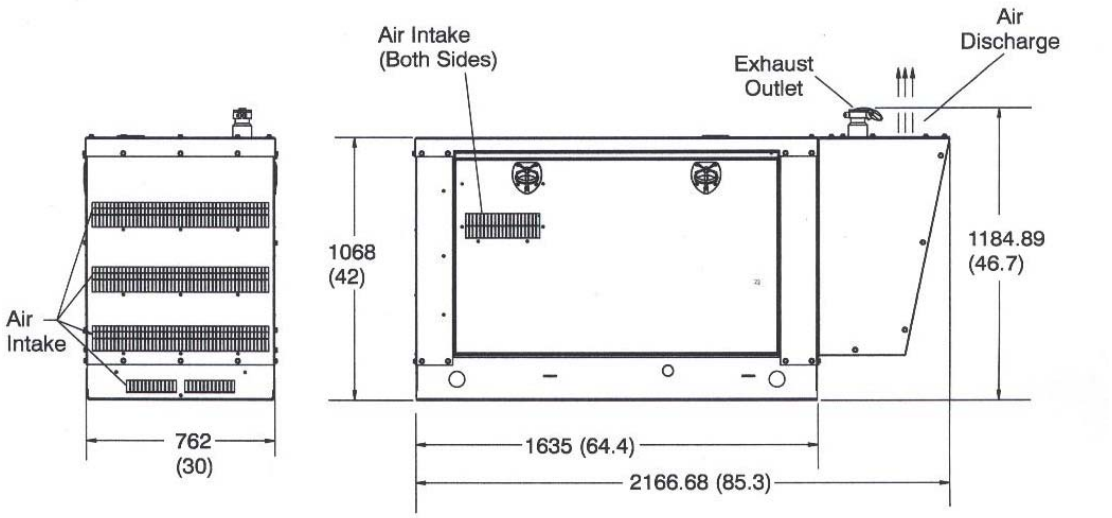
Generator set performance

Voltage: 120/240 V AC, single phase, 1.0 pf.
Governor regulation class: ISO 8528 Part 1 Class 63
Motor starting kVA (at 90% sustained voltage): 46
Voltage regulation: ±1%, no load to full load.
Frequency regulation: Isochronous, 0% no load to full load.
Random frequency variation: ±0.5% at 60 Hz.
Operating temperature: -20 °F (-28.8 °C) to 122 °F (50 °C).

A-1492b (5/09)

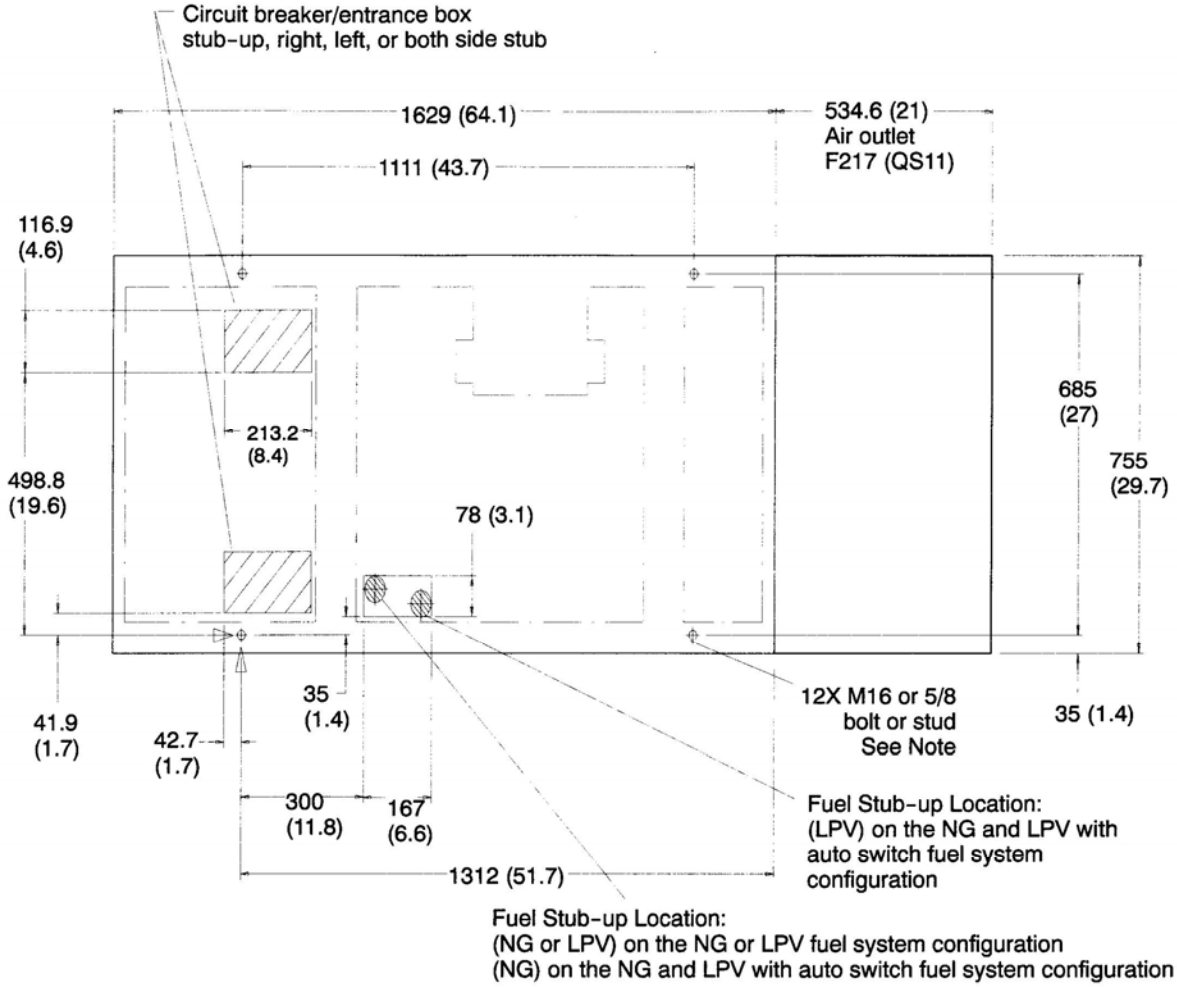
Dimensions: mm/in

Basic dimensions



Note: This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-4511 or 500-4512 and wiring diagram from your distributor/dealer.

Installation drawing

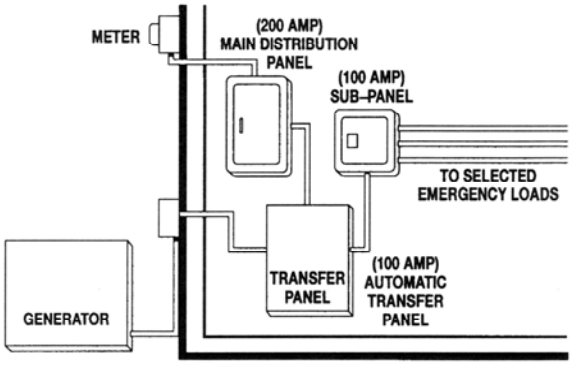


Note: Skid-base has a flange thickness of 3.42 mm (.135 inches)
Allow extra length on hardware for uneveness of mounting surface.

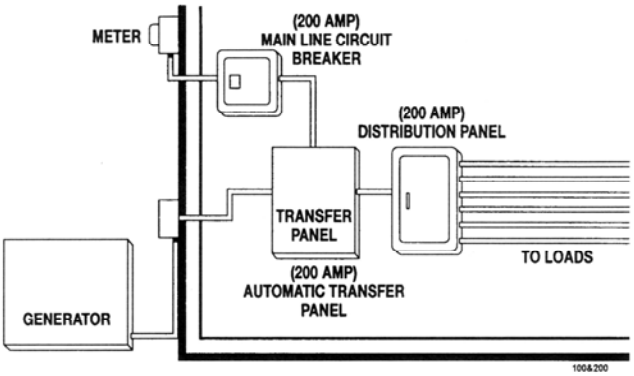
mm (in)

A-1492b (5/09)

Automatic transfer panel configurations



Dedicated emergency standby service system (100 A)



Full-service rating standby system (200 A)

Options and accessories

- Battery, 12 V, 325 cca (P/N 416-0774)
- Battery heater kit (P/N 333-0469)
- LCD Display Interface (P/N 0179-4861-05)
- Full line of complementing automatic transfer panels

Housing features

- Weather protective design, two easy service access doors - key-lockable
- Internal starting battery tray and tie down
- Heavy-duty aluminum housing

Testing and standards

- Listed to UL 2200
- This generator set was designed and manufactured in facilities certified to ISO 9001.
- CSA-certified for electrical equipment. Meets CSA C22.2.
- Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60

U.S. EPA

Warranty policy

The Cummins Onan RS 20000 home standby system comes with a standard two year warranty. Additional two and five-year warranty options are available. See your certified distributor or dealer for details.

This product is EPA Emissions certified for emergency standby use only.

IMPORTANT

Standby rating based on: Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to fuel stop power in accordance with ISO3046, AS2789, DIN6271 and BS5514.) nominally rated.

WARNING:

Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building electrical except through an approved device or after building main breaker is open.

(See T-030 document for more information.)

After sale support

Largest distributor/dealer support network

Cummins Onan generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins Onan distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories, and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

Manuals: Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins Onan distributor/dealer and request the following manual numbers: Operation (961-0117), Installation (961-0615), Parts (961-0214), Service (961-0510).

To easily locate the nearest Cummins Onan distributor/dealer in your area, or for more information, contact us at 1-800-888-6626 (or 763-574-5000), or visit www.cumminsonan.com.

Contact your distributor/dealer for more information.

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Email www.cumminsonan.com/contact
www.cumminsonan.com

A-1492b (5/09)

Spark-ignited generator set 20 – 30 kW standby EPA Emissions

> Specification sheet

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 53 °C (127 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGMA	20.0 (25.0)				20.0 (25.0)				D-3390	
GGMB	25.0 (31.0)				25.0 (31.0)				D-3391	
GGMC	29.0 (36.0)				30.0 (38.0)				D-3392	

S-1591b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.5% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	101.6 mm (4.0 in)
Stroke	91.4 mm (3.6 in)
Displacement	3.0 litres (181 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	420 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	60 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on full flow
Standard cooling system	53 °C (127 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	125 ºC (257 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 40 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3

Available voltages

Reconnectable				**Non-Reconnectable**		
3-phase				1-phase	3-phase	
• 120/208	• 120/240 delta	• 127/220	• 139/240	• 120/240	• 220/380	• 347/600
• 240/416	• 254/440	• 277/480				

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Propane vapor withdrawal
- ☐ Natural gas/propane vapor with auto changeover

Alternator
- ☐ 12 lead, broad range (full single phase output)
- ☐ Single phase (4 lead)
- ☐ 105 °C (221 °F) rise alternator (prime)
- ☐ 125 °C (257 °F) rise alternator (standby)

Generator set
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Oil drain extension
- ☐ Duct adapter
- ☐ Enclosure, aluminum weather protective, with critical silencer
- ☐ Export box packaging
- ☐ Main line circuit breakers
- ☐ UL 2200 Listed
- ☐ 2 year prime power warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty
- ☐ Flex fuel lines

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

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S-1591b (1/09)

Power Generation

Control system

PowerCommand control
- The PowerCommand Control is an integrated generator set control system providing isochronous governing, voltage regulation, engine protection, generator protection and operator interface functions.
- Control provides battery monitoring and testing features, and smart starting control system.
- InPower™ PC-based service tool available for detailed diagnostics.
- Standard PCCNet RS485 network interface to devices such as remote annunciator for NFPA110 applications.
- Control boards are potted for environmental protection.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F), and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.

AC protection
- Over current warning and shutdown*
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation
- Field overload

Engine protection
- Overspeed shutdown
- Low oil pressure warning and shutdown*
- High coolant temperature warning and shutdown*
- Low coolant level warning or shutdown*
- Low coolant temperature warning*
- High, low and weak battery voltage warning*
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel pressure warning*

Operator/display panel (optional)
- Manual off switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode, remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C (-4 °F to 158 °F).

Alternator data
- Line-to-line and line-to-neutral AC volts*
- Three phase AC current*
- Frequency*
- Total kVA*

Engine data
- DC voltage*
- Lube oil pressure*
- Coolant temperature*

Other data
- Genset model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower Service Tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- Two phase line-to-line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- (2) configurable inputs
- (2) configurable outputs
- Remote emergency stop

Options
- ☐ Local operator/display panel
- ☐ Digital electronic governing
- ☐ Auxiliary output relays (2)
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ Emergency stop switch
- ☐ Remote annunciator with (3) configurable inputs and (4) configurable outputs
- ☐ PowerCommand for Windows remote monitoring software (direct connect)
- ☐ Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)

Standard operator panel

Optional operator/display panel

* Optional operator/display panel required to display warnings and sensor data, and for NFPA 110 and CSA 282 applications.

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S-1591b (1/09)

Power Generation

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):

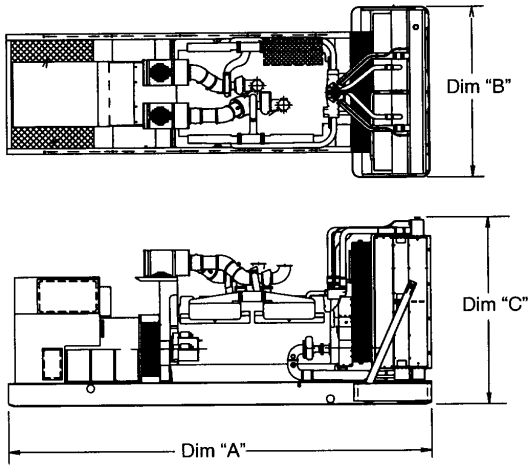
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGMA	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	418 (922)	434 (956)
GGMB	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	440 (970)	455 (1004)
GGMC	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	507 (1117)	522 (1151)

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

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1591b (1/09)

Power Generation

Spark-ignited generator set 20 – 30 kW standby EPA Emissions

> Specification sheet

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 53 °C (127 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGMA	20.0 (25.0)				20.0 (25.0)				D-3390	
GGMB	25.0 (31.0)				25.0 (31.0)				D-3391	
GGMC	29.0 (36.0)				30.0 (38.0)				D-3392	

S-1591b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.5% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	101.6 mm (4.0 in)
Stroke	91.4 mm (3.6 in)
Displacement	3.0 litres (181 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	420 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	60 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on full flow
Standard cooling system	53 °C (127 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	125 ºC (257 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 40 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3

Available voltages

Reconnectable				**Non-Reconnectable**		
3-phase				1-phase	3-phase	
• 120/208	• 120/240 delta	• 127/220	• 139/240	• 120/240	• 220/380	• 347/600
• 240/416	• 254/440	• 277/480				

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Propane vapor withdrawal
- ☐ Natural gas/propane vapor with auto changeover

Alternator
- ☐ 12 lead, broad range (full single phase output)
- ☐ Single phase (4 lead)
- ☐ 105 °C (221 °F) rise alternator (prime)
- ☐ 125 °C (257 °F) rise alternator (standby)

Generator set
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Oil drain extension
- ☐ Duct adapter
- ☐ Enclosure, aluminum weather protective, with critical silencer
- ☐ Export box packaging
- ☐ Main line circuit breakers
- ☐ UL 2200 Listed
- ☐ 2 year prime power warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty
- ☐ Flex fuel lines

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

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S-1591b (1/09)

Power Generation

Control system

PowerCommand control
- The PowerCommand Control is an integrated generator set control system providing isochronous governing, voltage regulation, engine protection, generator protection and operator interface functions.
- Control provides battery monitoring and testing features, and smart starting control system.
- InPower™ PC-based service tool available for detailed diagnostics.
- Standard PCCNet RS485 network interface to devices such as remote annunciator for NFPA110 applications.
- Control boards are potted for environmental protection.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F), and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.

AC protection
- Over current warning and shutdown*
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation
- Field overload

Engine protection
- Overspeed shutdown
- Low oil pressure warning and shutdown*
- High coolant temperature warning and shutdown*
- Low coolant level warning or shutdown*
- Low coolant temperature warning*
- High, low and weak battery voltage warning*
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel pressure warning*

Operator/display panel (optional)
- Manual off switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode, remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C (-4 °F to 158 °F).

Alternator data
- Line-to-line and line-to-neutral AC volts*
- Three phase AC current*
- Frequency*
- Total kVA*

Engine data
- DC voltage*
- Lube oil pressure*
- Coolant temperature*

Other data
- Genset model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower Service Tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- Two phase line-to-line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- (2) configurable inputs
- (2) configurable outputs
- Remote emergency stop

Options
- ☐ Local operator/display panel
- ☐ Digital electronic governing
- ☐ Auxiliary output relays (2)
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ Emergency stop switch
- ☐ Remote annunciator with (3) configurable inputs and (4) configurable outputs
- ☐ PowerCommand for Windows remote monitoring software (direct connect)
- ☐ Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)

Standard operator panel

Optional operator/display panel

* Optional operator/display panel required to display warnings and sensor data, and for NFPA 110 and CSA 282 applications.

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S-1591b (1/09)

Power Generation

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):

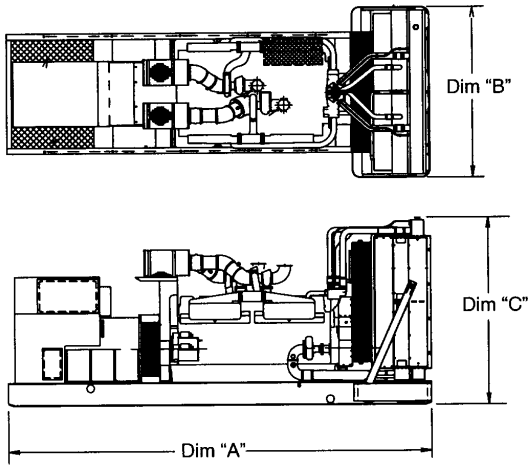
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGMA	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	418 (922)	434 (956)
GGMB	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	440 (970)	455 (1004)
GGMC	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	507 (1117)	522 (1151)

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

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1591b (1/09)

Power Generation

Spark-ignited generator set 35 - 50 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60 for emergency (standby) application.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating*		Standby rating		Prime rating*		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGPA	35.0 (44.0)		30.0 (38.0)		35.0 (44.0)		30.0 (38.0)		D-3482	
GGPB	40.0 (50.0)		35.0 (44.0)		40.0 (50.0)		35.0 (44.0)		D-3483	
GGPC	45.0 (56.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	50.0 (63.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	D-3485	D-3484

* Prime rated sets are not available for installations within the U.S. territory.

S-1617 (1/10)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.6%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	95.3 mm (3.75 in)
Stroke	88.4 mm (3.48 in)
Displacement	5.0 litres (305 in^3)
Cylinder block	Cast iron, V8 cylinder
Battery capacity	625 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	70 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	50 °C (122 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible drive disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 ºC (302 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 110/190	• 120/240	• 240/416	• 110/220	• 110/190	• 110/220	• 115/200	• 110/220
• 110/220	• 127/220	• 254/440	• 115/230	• 115/230	• 120/208	• 120/240	• 115/230
• 115/200	• 139/240	• 277/480	• 120/240	• 127/220	• 220/380	• 230/400	• 120/240
• 115/230	• 220/380	• 347/600		• 240/416	• 254/440		
• 120/208	• 230/400						

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust System
- ☐ Adapter NPT
- ☐ Mounted muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Oil drain extension
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1617 (1/10)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator Interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency

Total and individual phase kW and kVA

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Time delay start and cooldown
- Fault simulation (requires InPower)
- Cycle cranking
- Data logging on faults
- (4) configurable customer inputs
- (4) configurable customer outputs
- Remote emergency stop

Options

☐ Analog AC Meter Display
☐ Thermostatically Controlled Space Heater
☐ Key-type mode switch
☐ Ground fault module
☐ Auxiliary relays (3)
☐ Echelon® LONWORKS® interface
☐ Modlon Gateway to convert to Modbus (loose)
☐ PowerCommand iWatch™ web server for remote monitoring and alarm notification (loose)
☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1617 (1/10)

Power Generation

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):

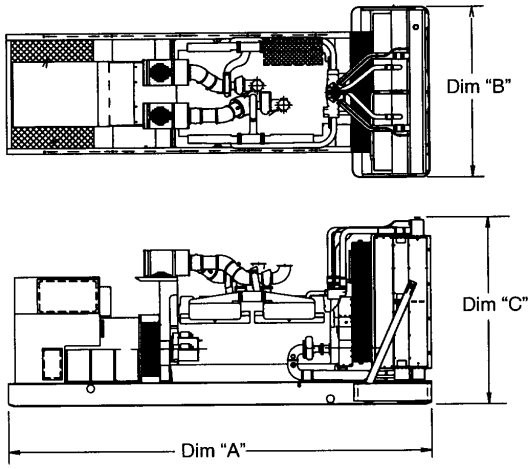
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGPA	2104 (83.0)	1016 (40.0)	1255 (49.0)	795 (1752)	821 (1811)
GGPB	2104 (83.0)	1016 (40.0)	1255 (49.0)	819 (1805)	845 (1864)
GGPC	2104 (83.0)	1016 (40.0)	1255 (49.0)	857 (1889)	884 (1948)

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

Cummins Power Generation
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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1617 (1/10)

Power Generation

Model: GGPB
KW rating: 40 natural gas standby
40 propane standby
Frequency: 60
Fuel type: Natural gas/propane

Generator set data sheet

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Power Generation

Exhaust emission data sheet:	**EDS-1107**
Exhaust emission compliance sheet:	**EPA-1151**
Sound performance data sheet:	**MSP-1085**
Cooling performance data sheet:	**MCP-190**
Prototype test summary data sheet:	**PTS-292**
Standard set-mounted radiator cooling outline:	**0500-5030**

Fuel consumption

	Natural gas								Propane							
	Standby kW (kVA)				Prime kW (kVA)				Standby kW (kVA)				Prime kW (kVA)			
Ratings	40 (50)								40 (50)							
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**¼**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
cfh	296.6	366.9	474.2	589.9					103.6	145.5	182.2	225.3				
m^3/hr	7.3	9.6	12.1	14.9					2.9	4.0	5.2	6.4				

Engine

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Engine model	GM 5.0 L			
Configuration	Cast iron, V 8 cylinder			
Aspiration	Naturally aspirated			
Gross engine power output, kWm (bhp)	57.6 (77.3)		63.6 (85.3)	
BMEP at rated load, kPa (psi)	636.4 (92.3)		636.4 (92.3)	
Bore, mm (in)	95.3 mm (3.75 in)			
Stroke, mm (in)	88.4 mm (3.48 in)			
Rated speed, rpm	1800			
Piston speed, m/s (ft/min)	5.3 (1044.0)			
Compression ratio	9.4:1			
Lube oil capacity, L (qt)	5.5 (5.8)		5.5 (5.8)	
Overspeed limit, rpm	2250 ± 50			
Regenerative power, kW	13.0			

Fuel flow

Minimum operating pressure, kPa (in H_2O)	1.7 (7.0)	1.7 (7.0)
Maximum operating pressure, kPa (in H_2O)	3.4 (13.6)	3.4 (13.6)

Air

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Combustion air, m^3/min (scfm)	2.8 (99.4)		2.5 (90.0)	
Maximum air cleaner restriction, kPa (in H_2O)	1.2 (5.0)			
Alternator cooling air, m^3/min (scfm)	18.6 (657.0)			

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	9.6 (340.0)		8.7 (307.1)	
Exhaust temperature, °C (°F)	630.0 (1165.7)		628.0 (1162.1)	
Maximum back pressure, kPa (in H_2O)	5.0 (20.0)			

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)			
Fan load, kW (HP)	2.8 (3.8)			
Coolant capacity (with radiator), L (US gal)	23.3 (6.1)			
Coolant system air flow, m^3/min (scfm)	164.2 (5800.0)			
Total heat rejection, MJ/min (Btu/min)	3.2 (3060.0)		3.2 (3060.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)			

Weights[2]

Unit dry weight kgs (lbs)	819 (1805)
Unit wet weight kgs (lbs)	845 (1864)

Notes:
[1] For non-standard remote installations contact your local Cummins Power Generation representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

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D-3483 (1/10)

Power Generation

Alternator data

Natural gas three phase table[1]		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		202	202	204	202	201	202	203	201	201	201	201
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		48.3	47.9	49.1	48.5	46.5	47.9	48.6	46.5	46.5	42.5	46.5
Motor starting kVA (at 90% sustained voltage)	Shunt	163	163	231	163	131	163	188	131	131	131	131
	PMG	191	191	272	191	155	191	221	155	155	155	155

Full load current amps at standby rating	120/208	127/220	120/240	139/240	220/380	240/416	255/440	277/480	347/600	Other voltages are available.
	139	131	120	120	76	69	66	68	48	

Propane three phase table[1]		105 °C	105 °C	105 °C	105 °C	125 °C	125 °C	125 °C	125 °C	150 °C	150 °C	150 °C
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		202	202	204	202	201	202	203	201	201	201	201
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		53.3	50.0	54.8	53.6	46.5	50.0	53.6	46.5	46.5	42.5	46.5
Motor starting kVA (at 90% sustained voltage)	Shunt	163	163	231	163	131	163	188	131	131	131	131
	PMG	191	191	272	191	155	191	221	155	155	155	155

Full load current amps at standby rating	120/208	127/220	120/240	139/240	220/380	240/416	255/440	277/480	347/600	Other voltages are available.
	139	131	120	120	76	69	66	68	48	

Natural gas single phase table			105 °C	105 °C	105 °C		125 °C	125 °C	125 °C			
Feature code			B415	B274	B268		B414	B273	B267			
Alternator data sheet number			202	202	204		202	202	203			
Voltage ranges			120/240[2]	120/240[3]	120/240[3]		120/240[2]	120/240[3]	120/240[3]			
Surge kW			40.0	44.0	46.8		40.0	44.0	44.9			
Motor starting kVA (at 90% sustained voltage)	Shunt		95	95	130		95	95	113			
	PMG		112	112	153		112	112	133			

Full load current amps at standby rating	120/240[2]	120/240[3]	Other voltages are available.
	111	167	

Propane single phase table			105 °C	105 °C	105 °C		125 °C	125 °C	125 °C			
Feature code			B415	B274	B268		B414	B273	B267			
Alternator data sheet number			202	202	204		202	202	203			
Voltage ranges			120/240[2]	120/240[3]	120/240[3]		120/240[2]	120/240[3]	120/240[3]			
Surge kW			40.0	44.0	50.0		40.0	44.0	45.0			
Motor starting kVA (at 90% sustained voltage)	Shunt		95	95	130		95	95	113			
	PMG		112	112	153		112	112	153			

Full load current amps at standby rating	120/240[2]	120/240[3]	Other voltages are available.
	111	167	

Notes:

1. Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below.
2. The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.
3. The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

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D-3483 (1/10)

Power Generation

Derating factors

Natural gas	
Standby/prime	Engine power available up to 1005 m (3300 ft) at ambient temperatures up to 40 °C (104 °F). Above 1005 m (330 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Propane	
Standby/prime	Engine power available up to 1585 m (5200 ft) at ambient temperatures up to 40 °C (104 °F). Above 1585 m (5200 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Ratings definitions

Emergency standby power (ESP):	**Limited-time running power (LTP)**:	**Prime power (PRP)**:	**Base load (continuous) power (COP)**:
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 (LTP) is in accordance with ISO 8528.	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.	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.

Formulas for calculating full load currents:

Three phase output

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times 1000}{Voltage}$$

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D-3483 (1/10)

Power Generation

Spark-ignited generator set 35 - 50 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60 for emergency (standby) application.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating*		Standby rating		Prime rating*		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGPA	35.0 (44.0)		30.0 (38.0)		35.0 (44.0)		30.0 (38.0)		D-3482	
GGPB	40.0 (50.0)		35.0 (44.0)		40.0 (50.0)		35.0 (44.0)		D-3483	
GGPC	45.0 (56.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	50.0 (63.0)	35.0 (44.0)	40.0 (50.0)	30.0 (38.0)	D-3485	D-3484

* Prime rated sets are not available for installations within the U.S. territory.

S-1617 (1/10)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.6%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	95.3 mm (3.75 in)
Stroke	88.4 mm (3.48 in)
Displacement	5.0 litres (305 in^3)
Cylinder block	Cast iron, V8 cylinder
Battery capacity	625 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	70 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	50 °C (122 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by flexible drive disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 ºC (302 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 110/190	• 120/240	• 240/416	• 110/220	• 110/190	• 110/220	• 115/200	• 110/220
• 110/220	• 127/220	• 254/440	• 115/230	• 115/230	• 120/208	• 120/240	• 115/230
• 115/200	• 139/240	• 277/480	• 120/240	• 127/220	• 220/380	• 230/400	• 120/240
• 115/230	• 220/380	• 347/600		• 240/416	• 254/440		
• 120/208	• 230/400						

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust System
- ☐ Adapter NPT
- ☐ Mounted muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Oil drain extension
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1617 (1/10)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
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- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
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- Cranking lockout
- Sensor failure indication

Operator Interface

- Off/manual/auto mode switch
- Manual run/stop switch
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- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency

Total and individual phase kW and kVA

Engine data

- DC voltage
- Lube oil pressure
- Coolant temperature

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Time delay start and cooldown
- Fault simulation (requires InPower)
- Cycle cranking
- Data logging on faults
- (4) configurable customer inputs
- (4) configurable customer outputs
- Remote emergency stop

Options

☐ Analog AC Meter Display
☐ Thermostatically Controlled Space Heater
☐ Key-type mode switch
☐ Ground fault module
☐ Auxiliary relays (3)
☐ Echelon® LONWORKS® interface
☐ Modlon Gateway to convert to Modbus (loose)
☐ PowerCommand iWatch™ web server for remote monitoring and alarm notification (loose)
☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1617 (1/10)

Power Generation

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):

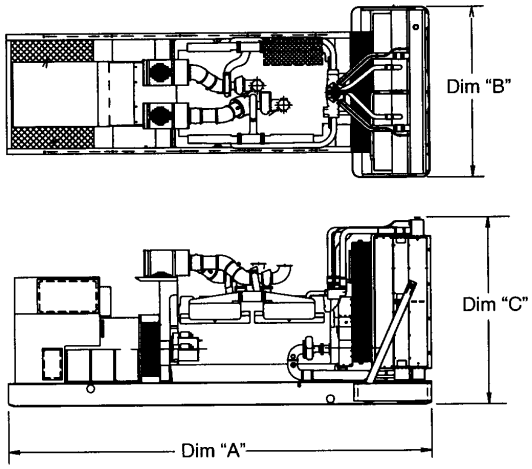
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGPA	2104 (83.0)	1016 (40.0)	1255 (49.0)	795 (1752)	821 (1811)
GGPB	2104 (83.0)	1016 (40.0)	1255 (49.0)	819 (1805)	845 (1864)
GGPC	2104 (83.0)	1016 (40.0)	1255 (49.0)	857 (1889)	884 (1948)

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

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S-1617 (1/10)

Power Generation

Model: GGPA
KW rating: 35 natural gas standby
35 propane standby
Frequency: 60
Fuel type: Natural gas/propane

Generator set data sheet

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Power Generation

Exhaust emission data sheet:	**EDS-1106**
Exhaust emission compliance sheet:	**EPA-1150**
Sound performance data sheet:	**MSP-1084**
Cooling performance data sheet:	**MCP-189**
Prototype test summary data sheet:	**PTS-292**
Standard set-mounted radiator cooling outline:	**0500-5030**

Fuel consumption

	Natural gas								Propane							
	Standby kW (kVA)				Prime kW (kVA)				Standby kW (kVA)				Prime kW (kVA)			
Ratings	35 (43.8)								35 (43.8)							
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**¼**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
cfh	257.2	338.6	428.2	527.9					97.9	131.7	166.1	204.2				
m^3/hr	7.3	9.6	12.1	14.9					2.8	3.7	4.7	5.8				

Engine

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Engine model	GM 5.0 L			
Configuration	Cast iron, V 8 cylinder			
Aspiration	Naturally aspirated			
Gross engine power output, kWm (bhp)	57.6 (77.3)		63.6 (85.3)	
BMEP at rated load, kPa (psi)	572.3(83.0)		572.3 (83.0)	
Bore, mm (in)	95.3 mm (3.75 in)			
Stroke, mm (in)	88.4 mm (3.48 in)			
Rated speed, rpm	1800			
Piston speed, m/s (ft/min)	5.3 (1044.0)			
Compression ratio	9.4:1			
Lube oil capacity, L (qt)	5.5 (5.8)		5.5 (5.8)	
Overspeed limit, rpm	2250 ± 50			
Regenerative power, kW	13.00			

Fuel flow

Minimum operating pressure, kPa (in H_2O)	1.7 (7.0)	1.7 (7.0)
Maximum operating pressure, kPa (in H_2O)	3.4 (13.6)	3.4 (13.6)

Air

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Combustion air, m^3/min (scfm)	2.5 (89.0)		2.3 (81.5)	
Maximum air cleaner restriction, kPa (in H_2O)	1.2 (5.0)			
Alternator cooling air, m^3/min (scfm)	18.6 (657.0)			

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	8.4 (298.6)		7.7 (272.7)	
Exhaust temperature, °C (°F)	613.0 (1135.1)		610.0 (1129.7)	
Maximum back pressure, kPa (in H_2O)	5.0 (20.0)			

Standard set-mounted radiator cooling

Ambient design, °C (°F)	50 (122)			
Fan load, kW (HP)	2.8 (3.8)			
Coolant capacity (with radiator), L (US gal)	23.3 (6.1)			
Coolant system air flow, m^3/min (scfm)	164.2 (5800.0)			
Total heat rejection, MJ/min (Btu/min)	3.0 (2890.0)		3.0 (2890.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	0.12 (0.5)			

Weights[2]

Unit dry weight kgs (lbs)	795 (1752)
Unit wet weight kgs (lbs)	821 (1811)

Notes:
[1] For non-standard remote installations contact your local Cummins Power Generation representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

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D-3482 (1/10)

Power Generation

Alternator data

Natural gas three phase table[1]		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**	**150 °C**	**150 °C**	**150 °C**
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		201	201	203	201	201	201	202	201	201	201	201
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		46.5	42.5	48.7	46.7	46.5	42.5	48.1	46.5	46.5	42.5	46.5
Motor starting kVA (at 90% sustained voltage)	Shunt	131	131	188	131	131	131	163	131	131	131	131
	PMG	155	155	221	155	155	155	191	155	155	155	155

Full load current amps at standby rating	120/208	127/220	120/240	139/240	220/380	240/416	255/440	277/480	347/600	Other voltages are available.
	122	115	105	105	67	61	57	53	42	

Propane three phase table[1]		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**	**150 °C**	**150 °C**	**150 °C**
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		201	201	203	201	201	201	202	201	201	201	201
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		46.5	42.5	53.5	46.5	46.5	42.5	50.0	46.5	46.5	42.5	46.5
Motor starting kVA (at 90% sustained voltage)	Shunt	131	131	188	131	131	131	163	131	131	131	131
	PMG	155	155	221	155	155	155	191	155	155	155	155

Full load current amps at standby rating	120/208	127/220	120/240	139/240	220/380	240/416	255/440	277/480	347/600	Other voltages are available.
	122	115	105	105	67	61	57	53	42	

Natural gas single phase table			**105 °C**	**105 °C**	**105 °C**		**125 °C**	**125 °C**	**125 °C**			
Feature code			B415	B274	B268		B414	B273	B267			
Alternator data sheet number			201	202	203		201	202	202			
Voltage ranges			120/240[2]	120/240[3]	120/240[3]		120/240[2]	120/240[3]	120/240[3]			
Surge kW			33.5	44.0	45.0		33.5	44.0	40.0			
Motor starting kVA (at 90% sustained voltage)	Shunt		72	95	113		72	95	95			
	PMG		85	112	133		85	112	112			

Full load current amps at standby rating	120/240[2]	120/240[3]	Other voltages are available.
	97	146	

Propane single phase table			**105 °C**	**105 °C**	**105 °C**		**125 °C**	**125 °C**	**125 °C**			
Feature code			B415	B274	B268		B414	B273	B267			
Alternator data sheet number			201	202	203		201	202	202			
Voltage ranges			120/240[2]	120/240[3]	120/240[3]		120/240[2]	120/240[3]	120/240[3]			
Surge kW			33.5	44.0	45.0		33.5	44.0	40.0			
Motor starting kVA (at 90% sustained voltage)	Shunt		72	95	113		72	95	95			
	PMG		85	112	133		85	112	112			

Full load current amps at standby rating	120/240[2]	120/240[3]	Other voltages are available.
	97	146	

Notes:

1. Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below.
2. The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.
3. The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

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D-3482 (1/10)

Power Generation

Derating factors

Natural gas	
Standby/prime	Engine power available up to 1675 m (5500 ft) at ambient temperatures up to 40 °C (104 °F). Above 1675 m (5500 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Propane	
Standby/prime	Engine power available up to 2130 m (7000 ft) at ambient temperatures up to 40 °C (104 °F). Above 2130 m (7000 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Ratings definitions

Emergency standby power (ESP):	**Limited-time running power (LTP)**:	**Prime power (PRP)**:	**Base load (continuous) power (COP)**:
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 (LTP) is in accordance with ISO 8528.	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.	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.

Formulas for calculating full load currents:

Three phase output

$$\frac{kW \times 1000}{Voltage \times 1.73 \times 0.8}$$

Single phase output

$$\frac{kW \times SinglePhaseFactor \times 1000}{Voltage}$$

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D-3482 (1/10)

Power Generation

Spark-ignited generator set 60 – 75 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

Ford heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 40 °C (104 °F) ambient temperature.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGHE	60 (75)				60 (75)				D-3382	
GGHF	70 (87)	55 (69)			75 (94)	60 (75)			D-3383	D-3386

S-1589b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.6%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	90.2 mm (3.55 in)
Stroke	105.9 mm (4.17 in)
Displacement	6.8 L (412.5 in^3)
Cylinder block	Cast iron, V 10 cylinder
Battery capacity	600 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	65 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	40 °C (104 °F) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 120/208	• 120/240	• 127/220	• 120/240	• 110/190	• 110/220	• 115/200	• 110/220
• 139/240	• 240/416	• 254/440		• 115/230	• 120/208	• 120/240	• 120/240
• 277/480	• 347/600			• 127/220	• 220/380	• 230/400	
				• 240/416	• 254/440		

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range, extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust system
- ☐ Adapter NPT to slip fit
- ☐ Mounted residential muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Oil drain extension
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1589b (1/09)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AmpSentry AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- High oil temperature warning (optional)
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase kW and kVA

Engine Data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (optional)

Other data

- Genset model data
- Start attempts, starts, running hours
- KW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- (4) configurable customer inputs
- (4) configurable customer outputs

Options

- ☐ Analog AC Meter Display
- ☐ Thermostatically Controlled Space Heater
- ☐ Key-type mode switch
- ☐ Ground fault module
- ☐ Auxiliary relays (3)
- ☐ Echelon LONWORKS interface
- ☐ Modlon Gateway to convert to Modbus (loose)
- ☐ PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- ☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1589b (1/09)

Cummins Power Generation

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):

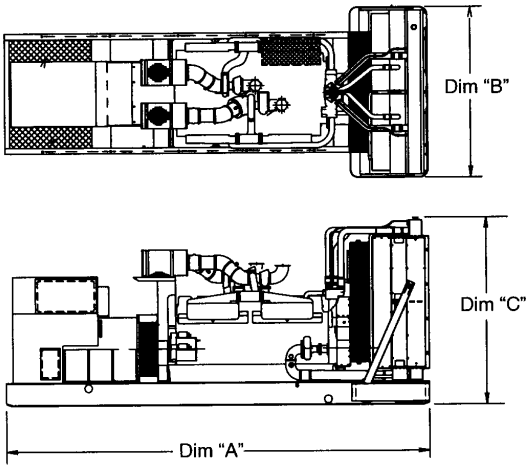
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGHE	2103 (82.8)	1016 (40.0)	1265 (49.8)	892 (1966)	929 (2048)
GGHF	2103 (82.8)	1016 (40.0)	1265 (49.8)	945 (2083)	982 (2165)

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

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S-1589b (1/09)

Cummins Power Generation

Spark-ignited generator set 60 – 75 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

Ford heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 40 °C (104 °F) ambient temperature.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGHE	60 (75)				60 (75)				D-3382	
GGHF	70 (87)	55 (69)			75 (94)	60 (75)			D-3383	D-3386

S-1589b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.6%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	90.2 mm (3.55 in)
Stroke	105.9 mm (4.17 in)
Displacement	6.8 L (412.5 in^3)
Cylinder block	Cast iron, V 10 cylinder
Battery capacity	600 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	65 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	40 °C (104 °F) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 120/208	• 120/240	• 127/220	• 120/240	• 110/190	• 110/220	• 115/200	• 110/220
• 139/240	• 240/416	• 254/440		• 115/230	• 120/208	• 120/240	• 120/240
• 277/480	• 347/600			• 127/220	• 220/380	• 230/400	
				• 240/416	• 254/440		

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range, extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust system
- ☐ Adapter NPT to slip fit
- ☐ Mounted residential muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Oil drain extension
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1589b (1/09)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AmpSentry AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- High oil temperature warning (optional)
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase kW and kVA

Engine Data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (optional)

Other data

- Genset model data
- Start attempts, starts, running hours
- KW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- (4) configurable customer inputs
- (4) configurable customer outputs

Options

- ☐ Analog AC Meter Display
- ☐ Thermostatically Controlled Space Heater
- ☐ Key-type mode switch
- ☐ Ground fault module
- ☐ Auxiliary relays (3)
- ☐ Echelon LONWORKS interface
- ☐ Modlon Gateway to convert to Modbus (loose)
- ☐ PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- ☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1589b (1/09)

Cummins Power Generation

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):

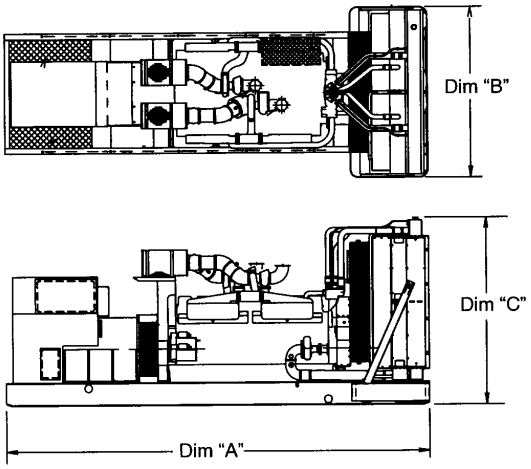
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGHE	2103 (82.8)	1016 (40.0)	1265 (49.8)	892 (1966)	929 (2048)
GGHF	2103 (82.8)	1016 (40.0)	1265 (49.8)	945 (2083)	982 (2165)

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

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1589b (1/09)

Cummins Power Generation

Spark-ignited generator set 85 – 100 kW standby EPA Emissions

> Specification sheet

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

Ford heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Three-Way Catalyst – Simultaneously converts NO_x, CO and HC to nitrogen, oxygen, carbon dioxide and water, minimizing the harmful emissions of the genset.

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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 40 °C (104 °F) ambient temperature.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGHG	85 (106)				85 (106)				D-3384	
GGHH	100 (125)	75 (94)			100 (125)	75 (94)			D-3385	D-3387

S-1607 (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	GGHH ± 0.5%, GGHG ± 0.33%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Turbocharged
Bore	90.2 mm (3.55 in)
Stroke	105.9 mm (4.17 in)
Displacement	6.8 L (412.5 in^3)
Cylinder block	Cast iron, V 10 cylinder
Battery capacity	600 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	65 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	40 °C (104 °F) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 120/208	• 120/240	• 127/220	• 120/240	• 110/190	• 110/220	• 115/200	• 110/220
• 139/240	• 240/416	• 254/440		• 115/230	• 120/208	• 120/240	• 120/240
• 277/480	• 347/600			• 127/220	• 220/380	• 230/400	
				• 240/416	• 254/440		

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range, extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust system
- ☐ Mounted residential muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1607 (1/09)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AmpSentry AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- High oil temperature warning (optional)
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase kW and kVA

Engine Data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (optional)

Other data

- Genset model data
- Start attempts, starts, running hours
- KW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- (3) configurable customer inputs
- (3) configurable customer outputs

Options

- ☐ Analog AC Meter Display
- ☐ Thermostatically Controlled Space Heater
- ☐ Key-type mode switch
- ☐ Ground fault module
- ☐ Auxiliary relays (3)
- ☐ Echelon LONWORKS interface
- ☐ Modlon Gateway to convert to Modbus (loose)
- ☐ PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- ☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1607 (1/09)

Cummins Power Generation

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):

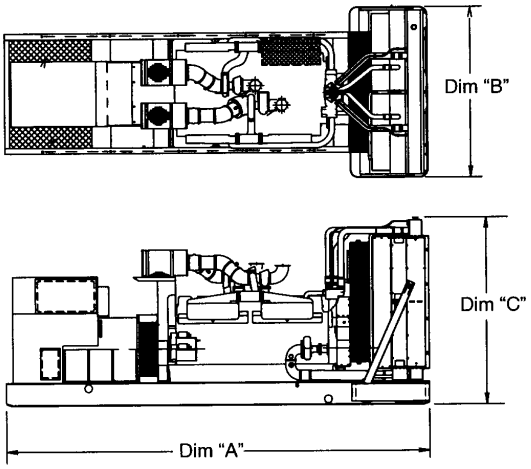
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGHG	2662 (104.8)	1016 (40.0)	1397 (55.0)	1071 (2362)	1111 (2450)
GGHH	2662 (104.8)	1016 (40.0)	1397 (55.0)	1093 (2410)	1133 (2498)

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

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S-1607 (1/09)

Cummins Power Generation

EPA Emissions

Model: GGHH
KW rating: 100 natural gas standby
100 propane standby
Frequency: 60
Fuel type: Natural gas/propane

➤ **Generator set data sheet**

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Power Generation

Exhaust emission data sheet:	**EDS-327**
Exhaust emission compliance sheet:	
Sound performance data sheet:	**MSP-185**
Cooling performance data sheet:	
Prototype test summary data sheet:	**PTS-147**
Standard set-mounted radiator cooling outline:	**0500-3485**

Fuel consumption

	Natural gas								Propane							
	Standby kW (kVA)				Prime kW (kVA)				Standby kW (kVA)				Prime kW (kVA)			
Ratings	100 (125)								100 (125)							
Load	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**	**1/4**	**1/2**	**3/4**	**Full**
scfh	506.5	780.0	1048.5	1352.4					200.7	293.3	399.5	501.7				
m^3/hr	14.3	22.1	29.7	38.3					5.7	8.3	11.3	14.2				

Engine

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Engine model	WSG-1068			
Configuration	Cast iron, V 10 cylinder			
Aspiration	Turbocharged			
Gross engine power output, kWm (bhp)	131.3 (176.0)		122.3 (164.0)	
BMEP at rated load, kPa (psi)	1158.3 (168.0)		1158.3 (168.0)	
Bore, mm (in)	90.2 (3.55)		90.2 (3.55)	
Stroke, mm (in)	105.9 (4.17)		105.9 (4.17)	
Rated speed, rpm	1800		1800	
Piston speed, m/s (ft/min)	6.4 (1250.0)		6.4 (1250.0)	
Compression ratio	9.0:1		9.0:1	
Lube oil capacity, L (qt)	6.1 (6.5)		6.1 (6.5)	
Overspeed limit, rpm	2400 ± 50		2400 ± 50	
Regenerative power, kW	16.00		16.00	

Fuel flow

Minimum operating pressure, kPa (in H_2O)	1.7 (7.0)		1.7 (7.0)	
Maximum operating pressure, kPa (in H_2O)	3.4 (13.6)		3.4 (13.6)	

Air

	Natural gas		Propane	
	Standby rating	**Prime rating**	**Standby rating**	**Prime rating**
Combustion air, m^3/min (scfm)	6.3 (222.0)		5.8 (204.0)	
Maximum air cleaner restriction, kPa (in H_2O)	1.2 (5.0)		1.2 (5.0)	
Alternator cooling air, m^3/min (scfm)	37.0 (1308.0)		37.0 (1308.0)	

Exhaust

Exhaust flow at rated load, m^3/min (cfm)	19.4 (687.0)		17.9 (633.0)	
Exhaust temperature, °C (°F)	540.0 (1004.0)		540 (1004)	
Maximum back pressure, kPa (in H_2O)	6.2 (25.0)		6.2 (25.0)	
Available back pressure for additional sound attenuation and piping, kPa (in H_2O)	2.5 (10.0)		2.5 (10.0)	

Standard set-mounted radiator cooling

Ambient design, °C (°F)	40 (104)		40 (104)	
Fan load, kW (HP)	7.3 (9.8)		7.3 (9.8)	
Coolant capacity (with radiator), L (US gal)	33.1 (8.8)		33.0 (8.8)	
Coolant system air flow, m^3/min (scfm)	193.1 (6825.0)		193.1 (6825.0)	
Total heat rejection, MJ/min (Btu/min)	9.3 (8740.0)		9.3 (8740.0)	
Maximum cooling air flow static restriction, kPa (in H_2O)	124.5 (0.5)		124.5 (0.5)	

Weights[2]

Unit dry weight kgs (lbs)	1093 (2410)
Unit wet weight kgs (lbs)	1133 (2498)

Notes:
[1] For non-standard remote installations contact your local Cummins Power Generation representative.
[2] Weights represent a set with standard features. See outline drawing for weights of other configurations.

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D-3385c (7/09)

Power Generation

Alternator data

Natural gas three phase table[1]		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**	**150 °C**	**150 °C**	**150 °C**
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		111	111	112	110	109	109	111	110	108	109	109
Motor starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full load current amps at standby rating	120/208	127/220	139/240	220/380	240/416	277/480	347/600
	347	328	301	190	173	150	120

Propane three phase table[1]		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**	**150 °C**	**150 °C**	**150 °C**
Feature code		B418	B415	B268	B304	B417	B414	B267	B303	B416	B413	B419
Alternator data sheet		208	208	210	207	207	207	209	207	206	207	206
Voltage ranges		110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	120/208 thru 139/240 240/416 thru 277/480	347/600	110/190 thru 120/208 220/380 thru 240/416	120/208 thru 139/240 240/416 thru 277/480	347/600
Surge kW		104	104	104	103	102	102	104	103	101	102	102
Motor starting kVA (at 90% sustained voltage)	Shunt	422	422	563	360	360	360	516	360	313	360	313
	PMG	497	497	663	423	423	423	607	423	368	423	368

Full load current amps at standby rating	120/208	127/220	139/240	220/380	240/416	277/480	347/600
	347	328	301	190	173	150	120

Natural gas single phase table		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[2]	120/240[3]	120/240[3]			
Surge kW		108	108	110	109	106	106	109	108			
Motor starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full load current amps at standby rating	120/240[2]	120/240[3]
	278	417

Propane Single phase table		**105 °C**	**105 °C**	**105 °C**	**105 °C**	**125 °C**	**125 °C**	**125 °C**	**125 °C**			
Feature code		B418	B415	B274	B268	B417	B414	B273	B267			
Alternator data sheet number		208	208	209	210	207	207	208	209			
Voltage ranges		120/240[2]	120/240[2]	120/240[3]	120/240[3]	120/240[2]	120/240[2]	120/240[3]	120/240[3]			
Surge kW		101	101	103	102	100	100	102	101			
Motor starting kVA (at 90% sustained voltage)	Shunt	250	250	305	330	215	215	250	305			
	PMG	290	290	360	385	250	250	290	360			

Full load current amps at standby rating	120/240[2]	120/240[3]
	278	417

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D-3385c (7/09)

Power Generation

Notes:

1. Single phase power can be taken from a three phase generator set at up to 2/3 set rated 3-phase kW at 1.0 power factor. Also see Note 3 below.
2. The broad range alternators can supply single phase output up to 2/3 set rated 3-phase kW at 1.0 power factor.
3. The extended stack (full single phase output) and 4 lead alternators can supply single phase output up to full set rated 3-phase kW at 1.0 power factor.

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D-3385c (7/09)

Power Generation

Derating factors

Natural gas	
Standby/prime	Engine power available up to 594 m (1950 ft) at ambient temperatures up to 40 °C (104 °F). Above 594 m (1950 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

Propane	
Standby/prime	Engine power available up to 305 m (1000 ft) at ambient temperatures up to 25 °C (77 °F). Above 305 m (1000 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 25 °C (77 °F).

Ratings definitions

Emergency standby power (ESP):	**Limited-time running power (LTP)**:	**Prime power (PRP)**:	**Base load (continuous) power (COP)**:
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 (LTP) is in accordance with ISO 8528.	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.	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.

Formulas for calculating full load currents:

Three phase output

$$\frac{\text{kW} \times 1000}{\text{Voltage} \times 1.73 \times 0.8}$$

Single phase output

$$\frac{\text{kW} \times \text{SinglePhaseFactor} \times 1000}{\text{Voltage}}$$

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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D-3385c (7/09)

Power Generation

Spark-ignited generator set 85 – 100 kW standby EPA Emissions

> Specification sheet

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

Ford heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Three-Way Catalyst – Simultaneously converts NO_x, CO and HC to nitrogen, oxygen, carbon dioxide and water, minimizing the harmful emissions of the genset.

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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 40 °C (104 °F) ambient temperature.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGHG	85 (106)				85 (106)				D-3384	
GGHH	100 (125)	75 (94)			100 (125)	75 (94)			D-3385	D-3387

S-1607 (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	GGHH ± 0.5%, GGHG ± 0.33%
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Turbocharged
Bore	90.2 mm (3.55 in)
Stroke	105.9 mm (4.17 in)
Displacement	6.8 L (412.5 in^3)
Cylinder block	Cast iron, V 10 cylinder
Battery capacity	600 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	65 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Single spin-on canister-combination full flow with bypass
Standard cooling system	40 °C (104 °F) ambient radiator

Alternator specifications

Design	Brushless, 4 pole, drip proof revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
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				**50 Hz**			
3-phase			1-phase	3-phase			1-phase
• 120/208	• 120/240	• 127/220	• 120/240	• 110/190	• 110/220	• 115/200	• 110/220
• 139/240	• 240/416	• 254/440		• 115/230	• 120/208	• 120/240	• 120/240
• 277/480	• 347/600			• 127/220	• 220/380	• 230/400	
				• 240/416	• 254/440		

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 150 °C (302 °F) rise alternator
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ 12 lead, broad range, extended stack (full single phase output)
- ☐ Lower broad range
- ☐ PMG excitation
- ☐ Upper broad range
- ☐ Single phase (4 lead)

Exhaust system
- ☐ Mounted residential muffler

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Duct adapter
- ☐ Enclosure: Aluminum, steel, weather protection or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breaker
- ☐ Remote annunciator panel
- ☐ UL 2200 Listed
- ☐ 2 year prime power, 6000 hours, warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1607 (1/09)

Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AmpSentry AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- High oil temperature warning (optional)
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Dead battery shutdown
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication

Operator interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp/test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase kW and kVA

Engine Data

- DC voltage
- Lube oil pressure
- Coolant temperature
- Lube oil temperature (optional)

Other data

- Genset model data
- Start attempts, starts, running hours
- KW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Integrated digital electronic isochronous governor
- Temperature dynamic governing
- Smart idle speed mode
- Glow plug control (some models)

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- (3) configurable customer inputs
- (3) configurable customer outputs

Options

- ☐ Analog AC Meter Display
- ☐ Thermostatically Controlled Space Heater
- ☐ Key-type mode switch
- ☐ Ground fault module
- ☐ Auxiliary relays (3)
- ☐ Echelon LONWORKS interface
- ☐ Modlon Gateway to convert to Modbus (loose)
- ☐ PowerCommand iWatch web server for remote monitoring and alarm notification (loose)
- ☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1607 (1/09)

Cummins Power Generation

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):

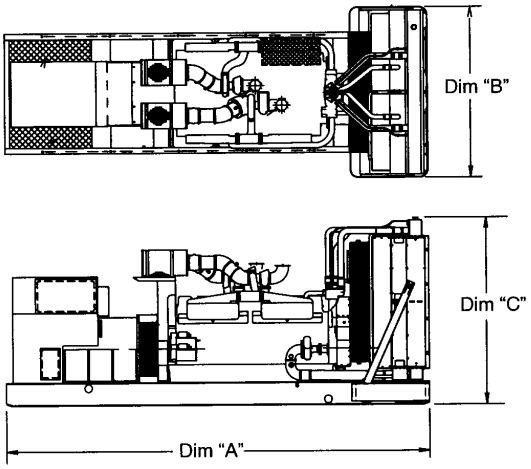
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGHG	2662 (104.8)	1016 (40.0)	1397 (55.0)	1071 (2362)	1111 (2450)
GGHH	2662 (104.8)	1016 (40.0)	1397 (55.0)	1093 (2410)	1133 (2498)

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

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1607 (1/09)

Cummins Power Generation

Residential generator
RS Series
85000 and 100000

Cummins **Onan**

Performance you rely on.™

Features and benefits

- Extremely quiet operation
- Fully automatic operation when used with a Cummins Onan automatic transfer panel
- Available for use with natural gas or LP vapor
- Attractive and discreet sound attenuated housing
- Electronic governor for precise frequency control
- Includes 120 V coolant heater
- Listed to UL 2200
- Aluminum enclosure

Size and sound level

Size: Length 142 in (3614 mm), width 60 in (1520 mm), height 70 in (1789 mm)

Sound: Measured at 7 m, average at full load
GGHG: 72 dB(A)*
GGHH: 73 dB(A)*

Models and ratings

Order model	Fuel	Voltage	Rated kW	kVa	Rated amps	Circuit breaker	Enclosure
85GGHG-6122J	NG	120/240	85	85	708/354	400 A, 2 pole	Aluminum
85GGHG-6123J	LP	120/240	85	85	708/354	400 A, 2 pole	Aluminum
100GGHH-6124J	NG	120/240	100	100	834/417	500 A, 2 pole	Aluminum
100GGHH-6125J	LP	120/240	100	100	834/417	500 A, 2 pole	Aluminum

Note: See page 4 of this document for derating factors.

A-1549 (4/09)

Standard features

Engine:

- Electronic ignition
- Electronic governor
- Full-pressure lubrication
- High-capacity oil sump, spin-on oil filter
- Solenoid shift starter
- 65 A, engine-driven battery charger
- 120 V coolant heater
- Oil drain extension

Control system:

- PCC 2100 control system
- Automatic remote starting
- Controls generator set starting and shutdown
- Control components designed to withstand the vibration levels typical in generator sets
- Field circuit breaker
- High temperature, low oil pressure, low coolant level, overcrank and over speed shutdowns
- Running time meter
- UL Listed circuit breaker
- DC control fuse

Exhaust muffler:

- Enclosed exhaust silencer
- Low noise

Average fuel consumption:

GGHG

Natural Gas

Load	¼	½	¾	Full
ft³/hr	468.6	703.4	938.2	1173
m³/hr	13.3	19.9	26.6	33.2
Propane				
ft³/hr	183.2	268.7	354.2	439.7
m³/hr	5.2	7.6	10.0	12.4
Gal/hr	5.0	7.4	9.7	12.1
L/hr	19.1	28.0	36.8	45.7

GGHH

Natural Gas

Load	¼	½	¾	Full
ft³/hr	506.5	780	1048.5	1352.4
m³/hr	14.3	22.1	29.7	38.3
Propane				
ft³/hr	200.7	293.3	399.5	501.7
m³/hr	5.7	8.3	11.3	14.2
Gal/hr	5.5	8.1	11.0	13.8
L/hr	20.9	30.5	41.6	52.2

Engine details

Engine: Ford, industrial, spark-ignited

Design: 10-cylinder V, liquid-cooled, turbocharged

Compression ratio: 9.0:1

Displacement: 415 cu in (6.8 L)

Cooling system: 122 °F (50 °C) ambient cooling system

Oil Sump capacity, L (qt): 6.1 (6.5)

Operating speed: 1800 RPM

Gross engine power, kWm (bhp):

Model	Natural Gas	Propane
GGHG	131.3 (176.0)	122.3 (164.0)
GGHH	131.3 (176.0)	122.3 (164.0)

Genset weight:

Model	Enclosure	Weight lbs (kg)
GGHG	Aluminum	2925 (1327)
GGHH	Aluminum	2973 (1349)

Alternator details

Design: Brushless, revolving field, 12-lead re-connectable single phase design.

Insulation system: Class H per NEMA MG1-1.65.

Temperature rise: At rated load is less than 125 °C at standby rating, per NEMA MG1.22.40, IEEE 115 and IEC 34-1.

Exciter type: The excitation system derives its power from the main output of the generator, eliminating the need for a separate excitation power source.

Alternator cooling: Direct drive centrifugal blower.

Rotor: Supported by a pre-lubricated maintenance-free ball bearing.

AC wave form total harmonic distortion: Less than 5% total no load to full load, less than 3% for any single harmonic.

Generator performance

Voltage: 120/240 V AC, single phase, 1.0 pf.

Governor regulation class: ISO 8528 Part 1 Class G3.

Voltage regulation: 1%, no load to full load.

Frequency regulation: Isochronous, 0% no load to full load.

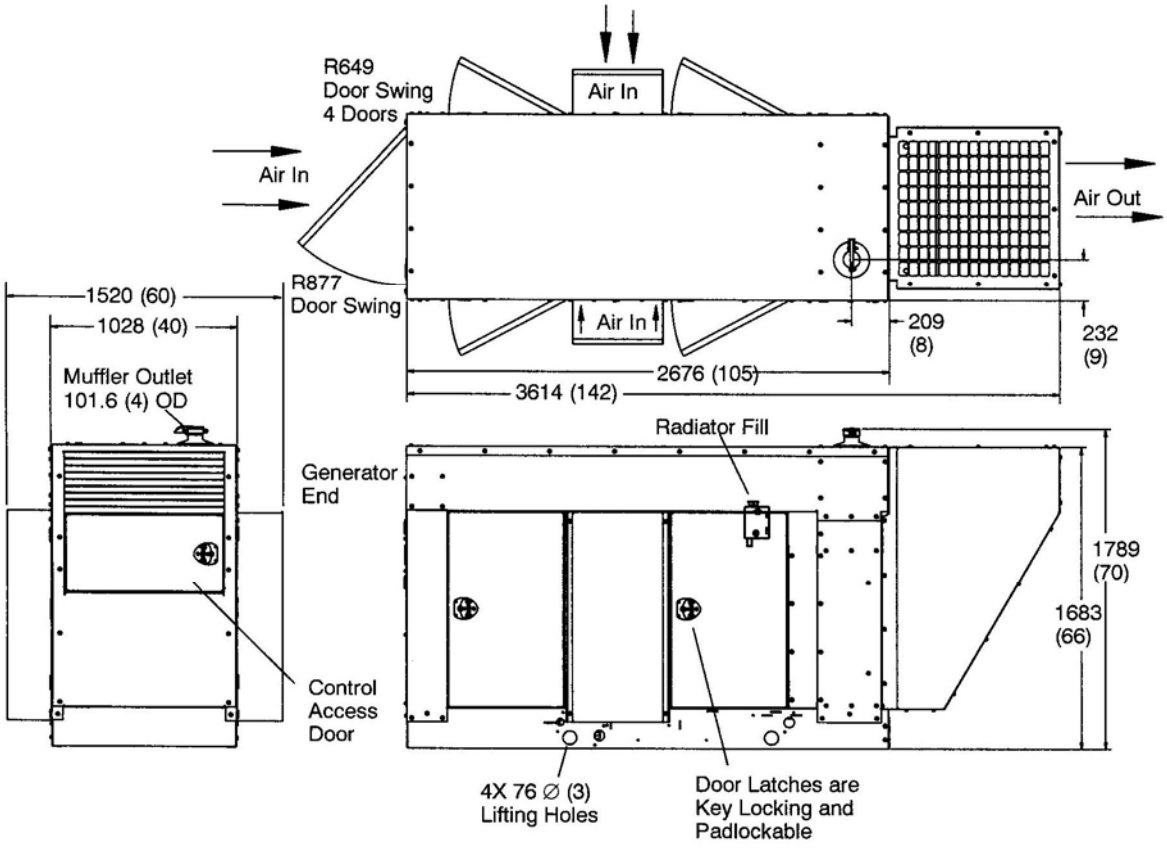
Operating temperature: -20 °F (-28.8 °C) to 122 °F (50 °C).

Motor starting kVA (at 90% sustained voltage): GGHG: 250, GGHH: 305

A-1549 (4/09)

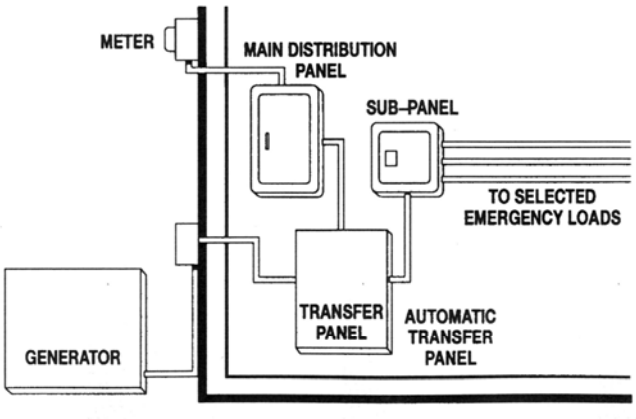
Dimensions: mm/in

Basic dimensions

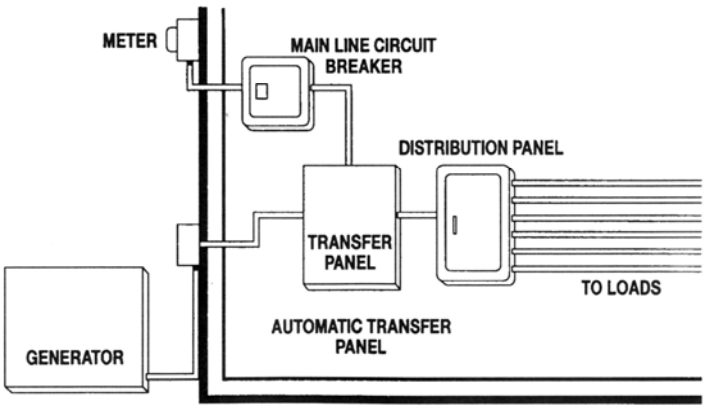


Note: This outline drawing is provided for general reference only and is not intended for design or installation. For more information see Operation and Installation manuals or obtain drawing 500-4087 and wiring diagram from your distributor/dealer.

Automatic transfer panel configurations



Dedicated emergency standby service system



Full-service rating standby system

Options and accessories

- Battery, 12 V 620 cca (P/N 416-0823)
- Battery heater kit (P/N 333-0469)
- Full line of complementing automatic transfer panels

Housing features

- Sound attenuated, weather protective design, key-lockable service access doors
- Internal starting battery tray and tie down
- Heavy-duty aluminum housing, stainless steel fasteners

A-1549 (4/09)

Derating factors

85GGHG Model, Natural Gas

Engine power available up to 1554 m (5100 ft) at ambient temperatures up to 40 °C (104 °F). Above 1554 m (5100 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

85GGHG Model, Propane

Engine power available up to 1097 m (3600 ft) at ambient temperatures up to 40 °C (104 °F). Above 1097 m (3600 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

100GGHH Model, Natural Gas

Engine power available up to 594 m (1950 ft) at ambient temperatures up to 40 °C (104 °F). Above 594 m (1950 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 40 °C (104 °F).

100GGHH Model, Propane

Engine power available up to 305 m (1000 ft) at ambient temperatures up to 25 °C (77 °F). Above 305 m (1000 ft) derate at 4% per 305 m (1000 ft), and 2% per 11 °C (1% per 10 °F) above 25 °C (77 °F).

Testing and standards

ISO 9001	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.
PTS	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.
CSA	All low voltage models are CSA certified to product class 4215-01.
UL	The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.
U.S. EPA	Engine certified to U.S. EPA SI Stationary Emergency Emission Regulation 40 CFR, Part 60.

After sale support

Largest distributor/dealer support network

Cummins Onan generator sets are supported by the largest and best trained worldwide certified distributor/dealer network in the industry. This network of knowledgeable Cummins Onan distributor/dealers will help you select and install the right generator set and accessories to meet the requirements of your specific application. This same network offers a complete selection of commonly used generator set maintenance parts, accessories, and products plus manuals and specification sheets. Plus, they can answer your questions regarding proper operation, maintenance schedules and more.

Manuals: Operation and installation manuals ship with the generator set. To obtain additional copies or other manuals for this model, see your Cummins Onan distributor/dealer.

To easily locate the nearest Cummins Onan distributor/dealer in your area visit www.cumminsonan.com.

Warranty policy

Cummins Onan residential home standby generators come with a standard two-year warranty. Additional two and five-year warranty options are available. Some restrictions apply. See warranty document AB2023-02 for more information.

This product is EPA Emissions certified for emergency standby use only.

IMPORTANT

Standby rating based on: Applicable for supplying emergency power for the duration of normal power interruption. No sustained overload capability is available for this rating. (Equivalent to fuel stop power in accordance with ISO3046, AS2789, DIN6271 and BS5514.) nominally rated.

WARNING:

Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building electrical except through an approved device or after building main breaker is open.

Contact your distributor/dealer for more information.

Cummins **Onan**

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A-1549 (4/09)

Spark-ignited generator set 125 – 150 kW standby EPA Emissions

> Specification sheet

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Cummins Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby power applications.

ISO 9001	This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.
PTS	The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design.
CSA	All low voltage models are CSA certified to product class 4215-01.
UL	The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies. The PowerCommand control is Listed to UL 508 - Category NITW7 for U.S. and Canadian usage.
U.S. EPA	Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

GM heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance and fast response to load changes.

Three-Way Catalyst - Simultaneously converts NO_x, CO and HC to nitrogen, oxygen, carbon dioxide and water, minimizing the harmful emissions of the generator set.

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® 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 cooling package provides reliable running at up to 50 °C (122 °F) ambient temperature.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGLA	125 (156)								D-3388	
GGLB	150 (188)				140 (175)				D-3389	

S-1590b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.5%
Radio frequency emissions compliance	IEC 801.2 through IEC 801.5

Engine specifications

Design	GGLA: Turbocharged, GGLB: Turbocharged and CAC
Bore	108.0 mm (4.25 in)
Stroke	111.0 mm (4.37 in)
Displacement	8.1 L (496.0 in^3)
Cylinder block	Cast iron, V 8 cylinder
Battery capacity	600 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	70 amps
Starting voltage	12 volt, negative ground
Lube oil filter type	Single spin-on canister-combination full flow with bypass
Standard cooling system	50 °C (122 °F) ambient radiator cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled by a flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	150 °C (302 °F) standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
AC waveform total harmonic distortion	< 5% total 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

Reconnectable			**Non-reconnectable**	
3-phase			1-phase	3-phase
• 120/208	• 139/240	• 220/380	• 120/240	• 347/600
• 240/416	• 277/480	• 120/240 delta		

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120 V 1500 W coolant heaters
- ☐ 240 V 1500 W coolant heaters

Alternator
- ☐ 105 °C (221 °F) rise alternator
- ☐ 125 °C (257 °F) rise alternator
- ☐ 120/240 V, 100 W alternator anti-condensation heater
- ☐ 12 lead, broad range extended stack (full single phase output)
- ☐ Single phase (4-lead)
- ☐ PMG excitation

Fuel system
- ☐ Natural gas
- ☐ Natural gas/propane liquid with automatic changeover
- ☐ Natural gas/propane vapor with automatic changeover
- ☐ Propane liquid withdrawal
- ☐ Vapor withdrawal

Exhaust system
- ☐ Mounted residential grade silencer

Generator set
- ☐ AC entrance box
- ☐ Battery
- ☐ Battery charger
- ☐ Enclosure: aluminum, steel, weather protective or sound attenuated
- ☐ Export box packaging
- ☐ Main line circuit breakers
- ☐ Remote annunciator panel
- ☐ Spring isolators
- ☐ UL 2200 Listed
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty

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

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S-1590b (1/09)

Cummins Power Generation

Control system

PowerCommand PCC2100 - An integrated generator set control system providing isochronous governing, voltage regulation, engine protection and operator interface functions.

- Includes integral AmpSentry protection, which provides a full range of alternator protection functions that are matched to the alternator provided.
- Control function provides battery monitoring and testing features, and smart starting control system.
- Three phase sensing, full wave rectified voltage regulation system, with a PWM output for stable operation with all load types.
- Standard PCCNet interface.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F) and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.
- InPower™ PC-based service tool available for detailed diagnostics, setup, data logging and fault simulation.

AmpSentry AC protection

- AmpSentry Protective Relay – UL-listed
- 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

- Overspeed shutdown
- Low oil pressure warning and shutdown
- High coolant temperature warning and shutdown
- Low coolant level warning or shutdown
- Low coolant temperature warning
- High and low battery voltage warning
- Weak battery warning
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Sensor failure indication

Operator interface

- Off/manual/auto mode switch
- Manual run/stop switch
- Panel lamp test switch
- Emergency stop switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments including voltage adjustment
- LED lamps indicating genset running, not in auto, common warning, common shutdown
- (5) configurable LED lamps
- LED Bargraph AC data display (optional)

Alternator data

- Line-to-line and line-to-neutral AC volts
- Three phase AC current
- Frequency
- Total and individual phase kW and kVA

Engine Data

- DC voltage
- Lube oil pressure
- Coolant temperature

Other data

- Genset model data
- Start attempts, starts, running hours
- kW hours (total and since reset)
- Fault history
- Load profile (hours less than 30% and hours more than 90% load)
- System data display (optional with network and other PowerCommand gensets or transfer switches)

Governing

- Digital engine speed control for fixed isochronous frequency regulation

Voltage regulation

- Integrated digital electronic voltage regulator
- Three phase line-to-neutral sensing
- Configurable torque matching
- PMG (optional)

Control functions

- Time delay start and cooldown
- Fault simulation (requires InPower)
- Cycle cranking
- Data logging on faults
- (2) configurable customer inputs
- (3) configurable customer outputs
- Remote emergency stop

Options

☐ Analog AC Meter Display
☐ Thermostatically Controlled Space Heater
☐ Key-type mode switch
☐ Ground fault module
☐ Auxiliary relays (3)
☐ Echelon® LONWORKS® interface
☐ Modlon Gateway to convert to Modbus (loose)
☐ PowerCommand iWatch™ web server for remote monitoring and alarm notification (loose)
☐ PCCNet and Lonworks Digital input and output module(s) and Remote annunciators (loose)

PowerCommand 2100 control operator/display panel

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S-1590b (1/09)

Power Generation

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):

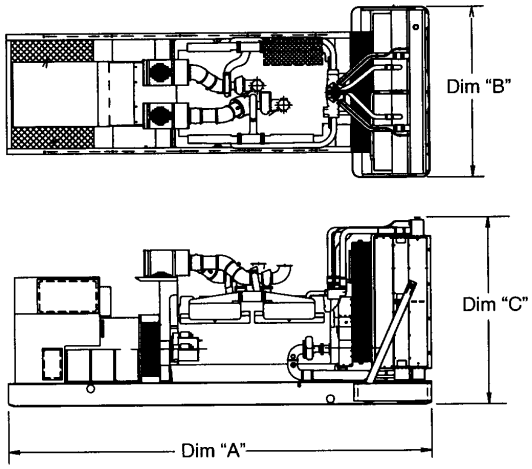
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGLA	2496 (98.2)	1016 (40.0)	1422 (56.0)	1157 (2550)	1213 (2675)
GGLB	2496 (98.2)	1016 (40.0)	1422 (56.0)	1157 (2550)	1213 (2675)

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

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Warning: Back feed to a utility system can cause electrocution and/or property damage. Do not connect to any building's electrical system except through an approved device or after building main switch is open.

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S-1590b (1/09)

Power Generation

Spark-ignited generator set 20 – 30 kW standby EPA Emissions

> Specification sheet

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Power Generation

Description

Cummins Power Generation commercial generator sets are fully integrated power generation systems providing optimum performance, reliability and versatility for stationary standby and prime power applications.

This generator set is designed in facilities certified to ISO 9001 and manufactured in facilities certified to ISO 9001 or ISO 9002.

The Prototype Test Support (PTS) program verifies the performance integrity of the generator set design. Cummins Power Generation products bearing the PTS symbol meet the prototype test requirements of NFPA 110 for Level 1 systems.

All low voltage models are CSA certified to product class 4215-01.

The generator set is available Listed to UL 2200, Stationary Engine Generator Assemblies.

U.S. EPA Engine certified to U.S. EPA SI Stationary Emission Regulation 40 CFR, Part 60.

Features

GM heavy-duty gas engine - Rugged 4-cycle, industrial spark-ignited delivers reliable power. The electronic air/fuel ratio control provides optimum engine performance 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® 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, auto-shutdown at fault detection and NFPA 110 Level 1 compliance.

Cooling system - Standard cooling package provides reliable running at up to 53 °C (127 °F) ambient temperature at the rated power level.

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

NFPA - The genset accepts full rated load in a single step in accordance with NFPA 110 for Level 1 systems.

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

	Natural gas				Propane					
	Standby rating		Prime rating		Standby rating		Prime rating		Data sheets	
Model	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz kW (kVA)	50 Hz kW (kVA)	60 Hz	50 Hz
GGMA	20.0 (25.0)				20.0 (25.0)				D-3390	
GGMB	25.0 (31.0)				25.0 (31.0)				D-3391	
GGMC	29.0 (36.0)				30.0 (38.0)				D-3392	

S-1591b (1/09)

Generator set specifications

Governor regulation class	ISO 8528 Part 1 Class G3
Voltage regulation, no load to full load	± 1.0%
Random voltage variation	± 1.0%
Frequency regulation	Isochronous
Random frequency variation	± 0.5% @ 60 Hz
Radio frequency emissions compliance	Meets requirements of most industrial and commercial applications

Engine specifications

Design	Naturally aspirated
Bore	101.6 mm (4.0 in)
Stroke	91.4 mm (3.6 in)
Displacement	3.0 litres (181 in^3)
Cylinder block	Cast iron, in-line 4 cylinder
Battery capacity	420 amps minimum at ambient temperature of 0 °C (32 °F)
Battery charging alternator	60 amps
Starting voltage	12 volt, negative ground
Lube oil filter type(s)	Spin-on full flow
Standard cooling system	53 °C (127 °F) ambient cooling system

Alternator specifications

Design	Brushless, 4 pole, drip proof, revolving field
Stator	2/3 pitch
Rotor	Direct coupled, flexible disc
Insulation system	Class H per NEMA MG1-1.65
Standard temperature rise	125 ºC (257 °F) at standby
Exciter type	Torque match (shunt)
Phase rotation	A (U), B (V), C (W)
Alternator cooling	Direct drive centrifugal blower
AC waveform total harmonic distortion	< 5% no load to full linear load, < 3% for any single harmonic
Telephone influence factor (TIF)	< 40 per NEMA MG1-22.43
Telephone harmonic factor (THF)	< 3

Available voltages

Reconnectable				**Non-Reconnectable**		
3-phase				1-phase	3-phase	
• 120/208	• 120/240 delta	• 127/220	• 139/240	• 120/240	• 220/380	• 347/600
• 240/416	• 254/440	• 277/480				

Note: Consult factory for other voltages.

Generator set options and accessories

Engine
- ☐ 120/240 V 1500 W coolant heaters
- ☐ Heavy duty air cleaner

Fuel system
- ☐ Natural gas
- ☐ Propane vapor withdrawal
- ☐ Natural gas/propane vapor with auto changeover

Alternator
- ☐ 12 lead, broad range (full single phase output)
- ☐ Single phase (4 lead)
- ☐ 105 °C (221 °F) rise alternator (prime)
- ☐ 125 °C (257 °F) rise alternator (standby)

Generator set
- ☐ Battery
- ☐ Battery charger
- ☐ Coolant drain extension
- ☐ Oil drain extension
- ☐ Duct adapter
- ☐ Enclosure, aluminum weather protective, with critical silencer
- ☐ Export box packaging
- ☐ Main line circuit breakers
- ☐ UL 2200 Listed
- ☐ 2 year prime power warranty
- ☐ 2 year standby warranty
- ☐ 5 year basic power warranty
- ☐ 5 year comprehensive warranty
- ☐ Flex fuel lines

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

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S-1591b (1/09)

Power Generation

Control system

PowerCommand control
- The PowerCommand Control is an integrated generator set control system providing isochronous governing, voltage regulation, engine protection, generator protection and operator interface functions.
- Control provides battery monitoring and testing features, and smart starting control system.
- InPower™ PC-based service tool available for detailed diagnostics.
- Standard PCCNet RS485 network interface to devices such as remote annunciator for NFPA110 applications.
- Control boards are potted for environmental protection.
- Suitable for operation in ambient temperatures from -40 °C to +70 °C (-40 °F to +158 °F), and altitudes to 5000 m (13,000 ft).
- Prototype tested; UL, CSA and CE compliant.

AC protection
- Over current warning and shutdown*
- Over and under voltage shutdown
- Over and under frequency shutdown
- Over excitation
- Field overload

Engine protection
- Overspeed shutdown
- Low oil pressure warning and shutdown*
- High coolant temperature warning and shutdown*
- Low coolant level warning or shutdown*
- Low coolant temperature warning*
- High, low and weak battery voltage warning*
- Fail to start (overcrank) shutdown
- Fail to crank shutdown
- Redundant start disconnect
- Cranking lockout
- Sensor failure indication
- Low fuel pressure warning*

Operator/display panel (optional)
- Manual off switch
- Alpha-numeric display with pushbutton access, for viewing engine and alternator data and providing setup, controls and adjustments (English or international symbols)
- LED lamps indicating genset running, not in auto, common warning, common shutdown, manual run mode, remote start
- Suitable for operation in ambient temperatures from -20 °C to +70 °C (-4 °F to 158 °F).

Alternator data
- Line-to-line and line-to-neutral AC volts*
- Three phase AC current*
- Frequency*
- Total kVA*

Engine data
- DC voltage*
- Lube oil pressure*
- Coolant temperature*

Other data
- Genset model data
- Start attempts, starts, running hours
- Fault history
- RS485 Modbus® interface
- Data logging and fault simulation (requires InPower Service Tool)

Digital governing (optional)
- Integrated digital electronic isochronous governor
- Temperature dynamic governing

Digital voltage regulation
- Integrated digital electronic voltage regulator
- Two phase line-to-line sensing
- Configurable torque matching

Control functions
- Time delay start and cooldown
- Cycle cranking
- (2) configurable inputs
- (2) configurable outputs
- Remote emergency stop

Options
- ☐ Local operator/display panel
- ☐ Digital electronic governing
- ☐ Auxiliary output relays (2)
- ☐ 120/240 V, 100 W anti-condensation heater
- ☐ Emergency stop switch
- ☐ Remote annunciator with (3) configurable inputs and (4) configurable outputs
- ☐ PowerCommand for Windows remote monitoring software (direct connect)
- ☐ Auxiliary, configurable signal inputs (8) and configurable relay outputs (8)

Standard operator panel

Optional operator/display panel

* Optional operator/display panel required to display warnings and sensor data, and for NFPA 110 and CSA 282 applications.

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Power Generation

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):

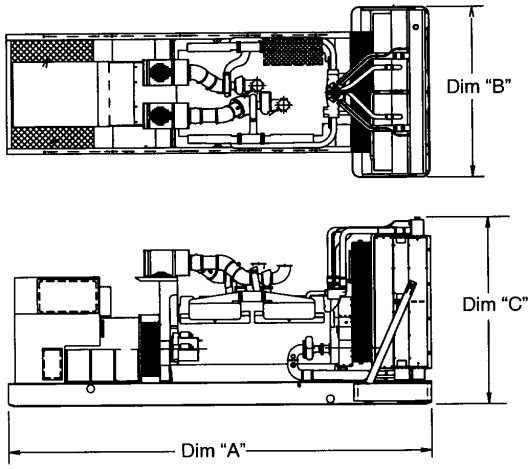
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

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, DIN 6271 and BS 5514.



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	Dim "A" mm (in.)	Dim "B" mm (in.)	Dim "C" mm (in.)	Set Weight* dry kg (lbs)	Set Weight* wet kg (lbs)
GGMA	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	418 (922)	434 (956)
GGMB	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	440 (970)	455 (1004)
GGMC	1626 (64.0)	762.0 (30.0)	889.0 (35.0)	507 (1117)	522 (1151)

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

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