

Spark-ignited generator set WSG-1068 series



> **Specification sheet**
60 kW - 100 kW standby

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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.

Features

Ford heavy-duty gas engine - Rugged 4-cycle industrial spark-ignited delivers reliable power. The electronic governor provides 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. An optional 50 °C (122 °F) cooling system is offered.

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.

| Model | Natural gas | | | | Propane | | | | Data sheets | |
|-------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-------------|--------|
| | Standby rating | | Prime rating | | Standby rating | | Prime rating | | 60 Hz | 50 Hz |
| | 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) | | |
| GGHE | 60 (75) | | 51 (64) | | 60 (75) | | 51 (64) | | D-3382 | |
| GGHF | 70 (87) | 55 (69) | 60 (75) | 47 (59) | 75 (94) | 60 (75) | 64 (80) | 51 (64) | D-3383 | D-3386 |
| GGHG | 85 (106) | | | | 85 (106) | | | | D-3384 | |
| GGHH | 100 (125) | 75 (94) | | | 100 (125) | 75 (94) | | | D-3385 | D-3387 |

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 | GGHE and GGHF ± 0.6%, GGHH ± 0.5%, GGHG ± 0.33% |
| Radio frequency emissions compliance | Meets requirements of most industrial and commercial applications |

Engine specifications

| | |
|-----------------------------|---|
| Design | Naturally aspirated or 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 | 200 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 | 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 | • 110/190 | • 110/220 | • 115/200 |
| • 139/240 | • 240/416 | • 254/440 | • 115/230 | • 120/208 | • 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

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

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)

Cooling system

- 50 °C (122 °F) ambient cooling system
- Remote radiator cooling

Exhaust system

- Adapter NPT to slip fit
- Mounted residential muffler

Generator set

- AC entrance box
- Battery charger
- Battery rack
- Coolant drain extension

- Duct adapter
- Export box packaging
- Main line circuit breaker
- Oil drain extension
- Enclosure: Aluminum, steel, weather protection or sound attenuated
- Remote annunciator panel
- UL 2200 Listed
- 2 year standby warranty
- 2 year prime power, 6000 hours, 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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Control system

PowerCommand control with AmpSentry

protection - An integrated generator set control system providing 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.
- Includes battery monitoring and testing features and smart starting control system.
- InPower™ PC-based service tool available for detailed diagnostics.
- Standard PCCNet interface. Available with Echelon® LONWORKS® network interface.
- NEMA 3R enclosure.
- 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.

AmpSentry AC protection

- 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
- Excitation fault

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
- PMG (optional)
- Single and three phase fault regulation
- Configurable torque matching

Control functions

- Data logging on faults
- Fault simulation (requires InPower)
- Time delay start and cooldown
- Cycle cranking
- PCCNet interface
- (4) configurable customer inputs
- (4) configurable customer outputs
- (8) configurable network inputs and (16) outputs (with optional network)

Options

- Analog AC meter display
- Thermostatically controlled space heater
- Key-type mode switch
- Ground fault module
- Engine oil temperature
- Auxiliary relays (3)
- Echelon LONWORKS interface
- Digital input and output module(s) (loose)
- Remote Annunciator (loose)



PowerCommand 2100 control operator/display panel

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Ratings definitions

Emergency standby power (ESP):

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

Limited-time running power (LTP):

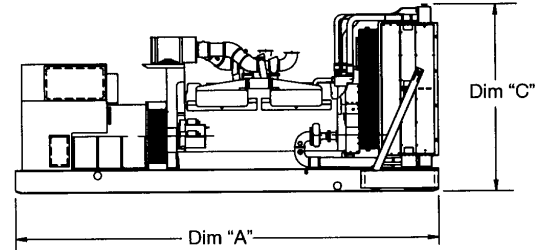
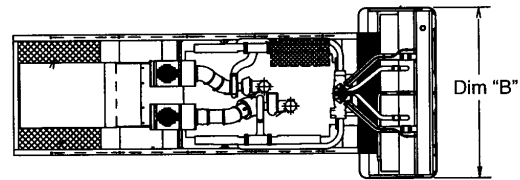
Applicable for supplying power to a constant electrical load for limited hours. Limited Time Running Power (LTP) is in accordance with ISO 8528.

Prime power (PRP):

Applicable for supplying power to varying electrical load for unlimited hours. Prime Power (PRP) is in accordance with ISO 8528. Ten percent overload capability is available in accordance with ISO 3046, AS 2789, DIN 6271 and BS 5514.

Base load (continuous) power (COP):

Applicable for supplying power continuously to a constant electrical load for unlimited hours. Continuous Power (COP) in accordance with ISO 8528, ISO 3046, AS 2789, 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) |
| 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.

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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