



Specification sheet

Gaseous fuel generator set

GTA 8.3G engine series
115 kW - 175 kW 60 Hz
Non-regulated



Description

The Cummins GTA 8.3G engine series commercial generator set (GenSet) boasts a fully-integrated power generation system providing optimum performance, reliability, and versatility for stationary standby and continuous power applications.

Features

- Cummins engine - cutting-edge diesel technology since 1919
- 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)
- 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)	Continuous power rating 60 Hz kW (kVa)	Engine data sheet
C175N6	175 (219)	115 (144)	FR 92933/FR 94544

* 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 GTA 8.3
Displacement	8 L (488 in ³)
Regenerative Power	TBD
Cylinder Block Configuration	Cast iron with replaceable wet cylinder liners
Cranking Current	900 CCA (cold soak at -18 °C (0 °F) or above)
Battery Charging Alternator	43 amps
Battery Type	8D (x2)
Starting Voltage	24-volt, negative ground
Standard Cooling System *	38 °C (100 °F)
Lube Oil Filter Types	One spin-on canister-combination full flow with bypass

* This unit has a limiting ambient temperature (LAT) rating of 100 °F in an open configuration. Enclosures can affect/reduce LAT by a

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

Full-load amperage (FLA) at rated voltage

Model	Rating	Voltage*								
		120/240 (1 Ph)	120/208	127/220	139/240	220/380	240/416	254/440	277/480	347/600
C175N6	Continuous	479	399	377	346	218	200	189	173	138
C175N6	Standby	N/A	607	574	526	332	304	287	263	210

*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
C175N6	Continuous	NG	1552	1217	895	556
C175N6	Standby	NG	2202	1708	1217	848

*See Fuel installation requirements on page 4.

NOTE: Fuel inlet pressure, measured at the fuel shut off valve while under full load, must be 356 to 508 mm WC (14 to 20 in. WC). Fuel supply pressure must not exceed 635 mm WC (25 in. WC) under any conditions.

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:

Features

- 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.

Environmental conditions

- Control boards potted for environmental protection.
- Ambient operating temperature from: -40 to +70 °C (-40 to 158 °F). HMI from -20 to +70 °C (-4 to 158 °F).
- Operating altitude up to 4000 m (13,000 ft.).

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

- 50/60 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 °C (104 °F) 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).
- Auxiliary output relays (2).
- Modbus to BACnet Module.
- 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

- 120/208/240 V, 1500 W coolant heater
- 120 V, 150 W lube oil heater

Alternator

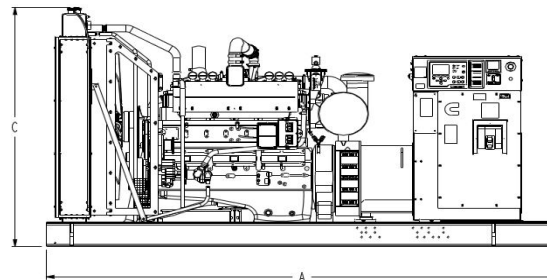
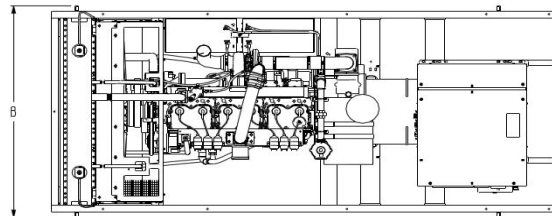
- 80 °C rise (C175N6 only)
- 105 °C rise

Fuel system - flexible fuel connector and fuel strainer

Exhaust system - GenSet mounted muffler (enclosure models only)

Generator set

- AC entrance box
- Batteries
- Battery charger
- Main line circuit breaker
- Modbus to BACnet Module
- Weather protective enclosure (F001) with silencer
- Level I and Level II enclosure w/silencer (C185N6)
- Audible alarm
- Remote drains
- Oil maintainer
- Remote annunciator panel
- Spring isolators
- 2-year standby basic power warranty (C175N6 Standby only)
- 5-year basic power warranty (C175N6 Standby only)



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.)
C175N6 Continuous	2794 (110)	1016 (40)	1499 (59)
C175N6 Standby	2921 (115)	1016 (40)	1499 (59)

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

Codes and standards



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 centralregionorders@cummins.com.



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