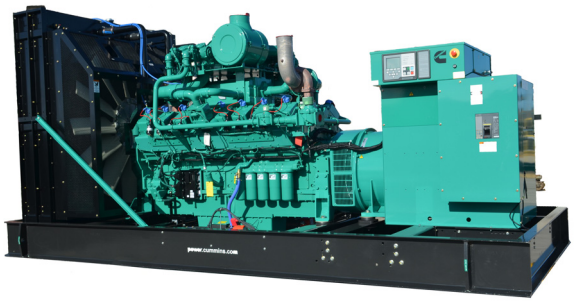
Specification sheet

Gaseous Fuel Generator Set



GTA50E Engine Series

600 kW - 700 kW 60 Hz

Demand Response Power (DRP)

Description

The Cummins GTA50E-series commercial Generator Set (GenSet) boasts an EPA-certified, fully-integrated power generation system providing optimum performance, reliability, and versatility for demand response and stationary emergency standby power applications.

Features

- Cost-saving EPA-certified GenSet - no site emissions testing
- Cummins engine - cutting-edge diesel technology since 1919
- Stamford® rugged and reliable alternator with state-of-the-art technology
- One-year warranty backed by a worldwide Cummins twenty-four hour, seven days-a-week, distributor network
- Accepts 100% 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)
- Surge Rating - 110% of nameplate
- Standard Power Command® Control (PCC) 3300 Masterless Load Demand (MLD) technology provides digital (precise) frequency and voltage regulation and allows multiple paralleled GenSets to automatically start based upon load demand
- Efficient and convenient operation monitoring and control options:
  - Modbus® over the Internet (monitor and control)
  - Remote HMI (monitor and control)
  - Protonode N34 reliable interface to a building management system Supervisory Control and Data Acquisition (SCADA) (monitor, only)

Model	Demand Response Power Rating* 60 Hz kW (kVa)	Emissions Compliance	Engine Data Sheet
C650N6	600 (750)	EPA SI NSPS Non-Emergency Certified	FR60525
C750N6	700 (875)	EPA SI NSPS Non-Emergency Certified	

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

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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	Cummins Model GTA50E
Displacement	50.3 L (3069 in^3)
Overspeed Limit	2100 rpm
Regenerative Power	TBD
Cylinder Block Configuration	Cast iron with replaceable wet cylinder liners
Cranking Current	1800 CCA at ambient temperature of 0 °C (32 °F)
Battery Charging Alternator	43 amps
Battery Type	8D (x4)
Starting Voltage	24-volt, negative ground
Standard Cooling System	See derates on Engine Data Sheet
Lube Oil Filter Types	Four 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

Model	Fuel Type	Voltage								
		120/240 (1 Ph)	120/208	127/220	139/240	220/380	240/416	254/440	277/480	347/600
C650N6	NG	N/A	2082	1968	1804	1140	1041	984	902	722
C750N6	NG	N/A	2917	2429	2296	2105	1329	1214	1148	842

Rated Load Fuel Consumption in Standard Cubic Feet per Hour (CFH)*

Model	Fuel Type	Load			
		1/4	1/2	3/4	Full
C650N6	NG	3358	5424	7226	9557
C750N6	NG	3704	5851	8247	10777

*See Fuel Installation Requirements on page 4.

Fuel inlet pressure, measured at the regulator inlet, must be 356 to 508 mm WC (14 to 20 in. WC).

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.

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GenSet options and accessories

Engine

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

Alternator

- 80 °C rise
- 105 °C rise

Fuel System (See Fuel Installation Requirements on this page.)

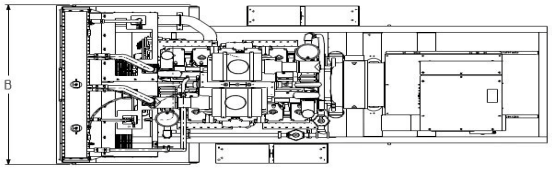
- Flexible fuel connector and fuel strainer
- UL-listed gas train
- Engineered for CSA site compliance

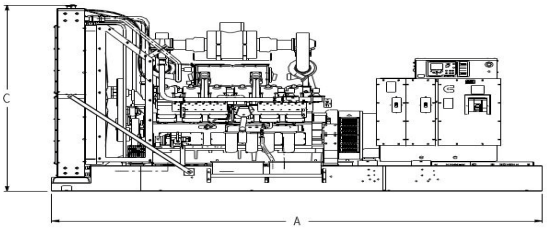
Exhaust System

- GenSet mounted muffler (enclosure models, only)

Generator Set

- 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 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.)
All Models	5182 (204)	2286 (90)	2721 (107)

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

Codes and Standards

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.

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 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 with ISO 9001:2015.

Fuel Installation Requirements

Gas supply pressure is specified at the inlet to the on-engine Maxitrol® regulator or the electronic pressure regulator (EPR). As standard equipment, one fuel shut-off (FSO) valve is located upstream from the regulator on this unit. Additional options added to the fuel train, such as those for CSA or UL compliance, and/or flexible fuel connections or strainers, add restriction that must be considered when determining gas supply pressure.

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 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

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