

# 16V250 and 12V250 Diesel Generator Sets

For more than 40 years, GE Transportation has designed and built high-performance diesel engines and today is one of the world's largest manufacturers of medium-speed diesel engines. GE's advanced engines and generator sets not only are dependable, long-lasting and efficient, but also perform in the world's most challenging environments.

	Emergency standby power	Limited time running	Prime power	Continuous power
<b>16V250 GSU 50 Hz</b> ekW (kVA)	5,065 (6,331)	4,676 (5,845)	4,287 (5,359)	3,897 (4,871)
<b>16V250 GSU 60 Hz</b> ekW (kVA)	4,556 (5,695)	4,205 (5,256)	3,855 (4,819)	3,505 (4,379)
<b>12V250 GSU 50 Hz</b> ekW (kVA)	3,798 (4,748)	3,506 (4,383)	3,213 (4,016)	2,922 (3,653)
<b>12V250 GSU 60 Hz</b> ekW (kVA)	3,419 (4,274)	3,157 (3,946)	2,893 (3,616)	2,631 (3,289)

Based on 96.5% efficiency alternator. Power factor = 0.8

## Features

### GE's heavy-duty four-stroke diesel engine

- Rugged design optimized for fuel efficiency, long service intervals, low lifecycle costs and low emissions

### Optimization

- Available in fuel-optimized, World Bank, U.S. EPA Tier 2 and U.S. EPA Tier 4 configurations

### Worldwide product support

- More than 15,000 of GE's medium-speed diesel engines in service worldwide
- GE's network of parts distribution centers and service representatives are available 24/7 worldwide
- A leader in on-time delivery of parts and services



GE imagination at work

## Scope of supply

### Basic engine equipment

- Exhaust gas turbocharger, intercooler
- Electronic fuel injection
- Lubricating oil pump (gear-driven)
- Lubricating oil filters in main circuit
- Lubricating oil sump, lubricating oil heat exchanger
- Jacket water pump
- Flywheel for alternator operation
- Exhaust gas manifold
- Viscous damper
- Segmented camshafts
- Unitized power assemblies

### Engine accessories

- Engine combustion air filter
- Pneumatic air starter motor
- Electronic speed monitoring device including starting and over-speed control
- Engine pre-lube
- Transducers and switches for oil pressure and temperature
- One thermocouple per cylinder
- Main bearing temperature sensors
- Closed crankcase breather system
- Accessory rack

### Unenclosed genset equipment

- 16V250 or 12V250 stationary diesel engine
- Base frame for genset
- Brushless alternator with automatic voltage regulator
- Flexible coupling
- Engine and genset controls

### Documentation

- Operation manual
- Maintenance manual
- Spare parts manual
- Troubleshooting guide
- Installation guide

### Generator set specifications

Performance class	ISO 8528 – G2
Diesel engine	ISO 3046

### Engine specifications

Engine speed	1,000 RPM (50 HZ) / 900 RPM (60 HZ)	
Bore	250 mm (9.8 in)	
Stroke	320 mm (12.6 in)	
Cylinder configuration	V 16	V 12
Displacement	251L	188L
Fuel system	Direct injection	
Acceptable fuel	Diesel fuel (ASTM D-975 Number 2 Diesel) Marine diesel oil (MDO) DMA, DMB, DMX, as defined by ISO 8217:2005(E)	
Fuel filter	2 stage solid particle and water separator	
Air cleaner type	2 stage vortex and bag filters	
Lube oil filter type(s)	Low maintenance, dual filtration, auto back flush filter and centrifugal filter	
Standard cooling system	Remote radiator connections	

Alternator specifications	
Design	Brushless, 6-pole or 8-pole, 4-wire, drip-proof revolving field
Stator	5/6 pitch
Rotor	Two-bearing flexible coupling
Insulation system	Class F on medium voltage
Standard temperature rise	Class B -80°C at 50°C ambient
Number of bearings	2
Exciter type	Auxiliary winding
Phase rotation	A-B-C
Alternator cooling	Self-ventilated (shaft-mounted fan)
AC waveform total harmonic distortion	5%
Standard compliance	IEC 60034 or NEMA MG1
Accessories	Anti-condensation heater Stator and bearing thermal monitoring Star-point mounted CT's for differential protection

**Available 50 Hz voltages:** 11 kV, 6.6 kV and 3.3 kV

**Available 60 Hz voltages:** 13.8 kV and 4.16 kV

Additional alternator choices available. Check with factory for details.

## Control system operations

- Start/stop
- Synchronizing (live or dead bus)
- Protective relaying (breaker tripping)
- Idle/rated speed control (electronic fuel injection)
- Event monitoring and logging (200+ events)
- Alternator field excitation
- Real and reactive power load sharing
- Hardwire remote control interface
- Off-board communication link — TCP/IP ModBus

## Engine protection

- High-temperature exhaust gas warning
- High-temperature lube oil inlet warning and shut down
- High-temperature water outlet warning
- High-temperature water inlet warning and shut down
- High- and low-fuel temperature warning
- High-temperature manifold air warning

- High-temperature inner cooler water warning
- Low-pressure lube oil pump warning
- Low-pressure lube oil inlet warning and shut down
- High crank case pressure shut down
- Low-pressure water inlet warning and shut down
- Low-fuel press warning
- High-pressure manifold air warning and shut down
- High-temperature pre-turbo warning and shut down
- Low-pressure inner cooler water warning
- Engine main bearing high-temperature shut down
- High-speed turbo warning and shut down
- High-speed engine shut down

## Protective relaying

- 87 — Differential protective relay
- 50 — Instantaneous overcurrent
- 51 — AC time overcurrent relay
- 81 — Frequency relay
- 27 — Under-voltage relay

- 59 — Over-voltage relay
- 47 — Phase-sequence or phase-balance voltage relay
- 46 — Rev. phase or phase-balance current relay
- 40 — Field (over/under excitation) relay
- 24 — Volts-per-hertz relay
- 32 — Directional power relay
- 32R — Reverse power, real and reactive

## Options

- Remote radiator
- Heat-recovery solutions
- Cooling system expansion tank
- Switch gear/breaker
- Outdoor NGR (neutral grounding resistor)
- Auxiliary transformer
- Remote control panel
- Oil and coolant pre-heat system
- Exhaust gas silencer
- Anti-vibration mounts
- Alternator

## Rating definitions

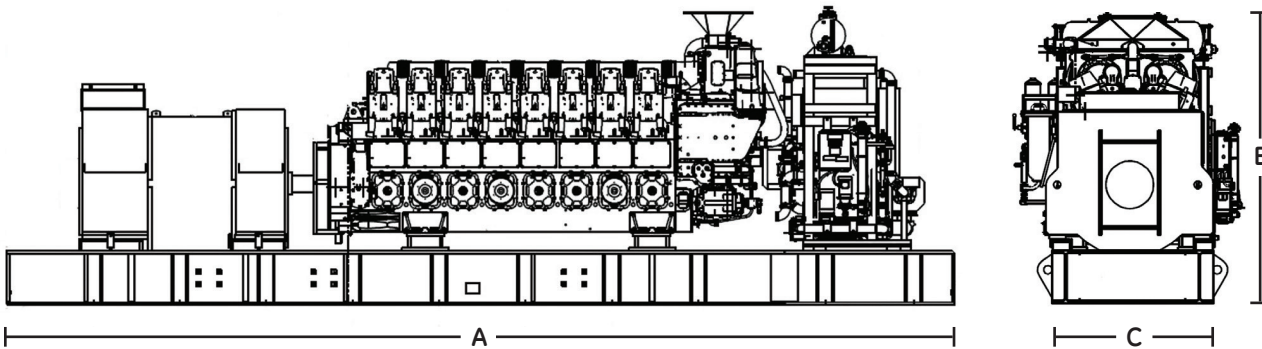
Rating definitions are in accordance with ISO 8528.

**Continuous power (COP)** — The maximum power which the generating set is capable of delivering continuously while supplying a constant electrical load when operated for an unlimited number of hours per year.

**Limited-time running power (LTP)** — The maximum power available for which the generating set is capable of delivering for up to 500 hours of operation per year. Load factor may be up to 100%.

**Prime power (PRP)** — The maximum power which a generating set is capable of delivering continuously while supplying a variable electrical load when operated for an unlimited number of hours per year. Load factor during a 24-hour period is less than 70%.

**Emergency standby power (ESP)** — The maximum power available during a variable electrical power sequence for which a generating set is capable of delivering in the event of a utility power outage or under test conditions for up to 200 hours of operation per year.



## Weight and dimensions

		16V250	12V250
A	Length	488 in (12,395 mm)	488 in (12,395 mm)
B	Height	156 in (3,962 mm)	156 in (3,962 mm)
C	Width	75 in (1,905 mm)	75 in (1,905 mm)
	Weight	139,932 lbs (63,472 kg)	118,949 lbs (53,954 kg)

Weight represents a set with standard features. Specifications may change without notice.

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