Cat® G3520E

50 Hz Continuous Natural Gas Generator Sets

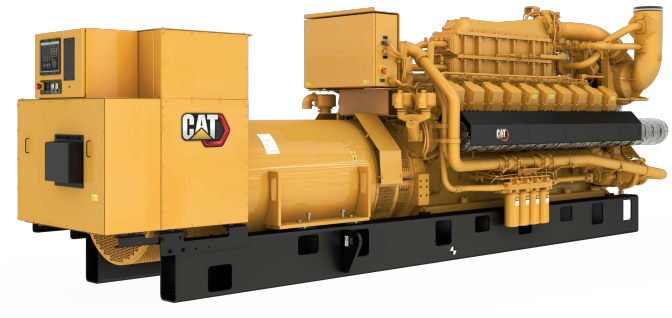


Image shown may not reflect actual configuration

Bore – mm (in)	170 (6.7)
Stroke – mm (in)	190 (7.5)
Displacement – L (in^3)	69.0 (4210)
Aspiration	Turbocharged
Fuel System	Electronic Fuel Control Valve
Governor	ADEM™ A3 W/ IM

	Fuel Type	ekW (kVA)	Compression	Engine Speed – rpm
High Altitude/Ambient - W/ Pumps	Natural Gas	1995 (2494)	11.9	1500
High Altitude/Ambient - W/O Pumps	Natural Gas	2022 (2528)	11.9	1500

Standard Features

Cat® Engine

- Robust high speed block design provides prolonged life and lower owning and operating costs
- Designed for maximum performance on low pressure gaseous fuel supply
- High compression ratio coupled with high efficiency, power density and durability
- Island-Mode capability

Generator Set Package

- Top tier electrical efficiency
- Reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Generators

- Low Loss Steel LV Generator provides high electrical output and efficiency
- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat engines

Applications

- Caterpillar generator sets are capable of maximizing power production opportunities in an extensive range of industries

EMCP 4 Control Panels

- User-friendly interface and navigation
- Scalable system to meet a wide range of installation requirements
- Expansion modules and site specific programming for specific customer requirements

Warranty

- 12 months/unlimited hour warranty for continuous ratings
- Extended service protection is available to provide extended coverage options

Worldwide Product Support

- Cat dealers have over 1,800 dealer branch stores operating in 200 countries
- Your local Cat dealer provides extensive post-sale support, including maintenance and repair agreements

Financing

- Caterpillar offers an array of financial products to help you succeed through financial service excellence
- Options include loans, finance lease, operating lease, working capital, and revolving line of credit
- Contact your local Cat dealer for availability in your region

Optional Equipment

Engine

Air Cleaner

- ❑ Regular duty - shipped loose
- ❑ Heavy duty - shipped loose

Cooling System

- ❑ JW & SCAC engine driven pumps
- ❑ RH JW outlet flange
- ❑ ANSI/ DIN flanges

Exhaust System

- ❑ Elbows
- ❑ Expanders
- ❑ Flanges
- ❑ Flexible fittings

Fuel System

- ❑ Gas train pressure sensors
- ❑ Gas knockdown regulator

General

- ❑ Barring group

Lubrication

- ❑ Lubricating oil (NGEO)
- ❑ Oil level regulator
- ❑ Positive crankcase ventilation
- ❑ Electric prelube

Mufflers

- ❑ Industrial Grade (15dB)
- ❑ Residential Grade (18dB)
- ❑ Critical Grade (25dB)
- ❑ Spark Arresting

Protection System

- ❑ Explosion relief valves

Starting/Charging

- ❑ Charging alternator - 60A
- ❑ Battery charger - 20A
- ❑ Oversized batteries
- ❑ Battery cables / racks
- ❑ Air starters
- ❑ Jacket water heater

Generators

Output voltage

- ❑ 380V ❑ 6300V
- ❑ 400V ❑ 6600V
- ❑ 415V ❑ 6900V
- ❑ 3300V ❑ 10000V
- ❑ 10500V
- ❑ 11000V

Temperature Rise (over 40°C ambient)

- ❑ 105°C
- ❑ 80°C

Attachments

- ❑ Anti-condensation heater
- ❑ Generator RTD module
- ❑ Neutral Ground - LV
- ❑ Cross-Current CT - HV
- ❑ Differential CTs - HV
- ❑ Diode fault detector - HV
- ❑ Air cleaner - HV
- ❑ Auto/manual control - HV

Power Termination

Type

- ❑ IEC Bus bar - LV
- ❑ Circuit breaker - LV

Circuit Breaker Options

- ❑ 4000A
- ❑ UL ❑ IEC
- ❑ 3-pole ❑ 4-pole
- ❑ Manually operated
- ❑ Electrically operated

Trip Unit Options

- ❑ LSI ❑ LSI-G
- ❑ LSIG-P

Cat Connect

Connectivity

- ❑ Ethernet
- ❑ Satellite
- ❑ Cell

Control System

Controller

- ❑ EMCP 4.3
- ❑ EMCP 4.4

Attachments

- ❑ Discrete I/O module
- ❑ Load share module
- ❑ Local annunciator module
- ❑ Remote annunciator module
- ❑ Remote monitoring software

Vibration Isolators

- ❑ Rubber
- ❑ Spring
- ❑ Seismic rated

Certifications

- ❑ 2006/42/EC & 2006/95/EC Declaration of Incorporation
- ❑ Grid Code Compliance (Germany)
- ❑ Eurasian Conformity (EAC)
- ❑ Turkish Ministry Compliance

Enclosure

- ❑ Weather protective
- ❑ Sound attenuated

Attachments

- ❑ Cold weather bundle
- ❑ DC lighting package
- ❑ AC lighting package
- ❑ Motorized louvers

Ancillary Equipment

- ❑ Automatic transfer switch (ATS)
- ❑ Uninterruptible power supply (UPS)
- ❑ Paralleling switchgear
- ❑ Paralleling controls

Note: *Some options may not be available on all models. Certifications may not be available with all model configurations. Consult factory for availability.*

50 Hz High Altitude/Ambient Package Performance – AC and JW Pumps

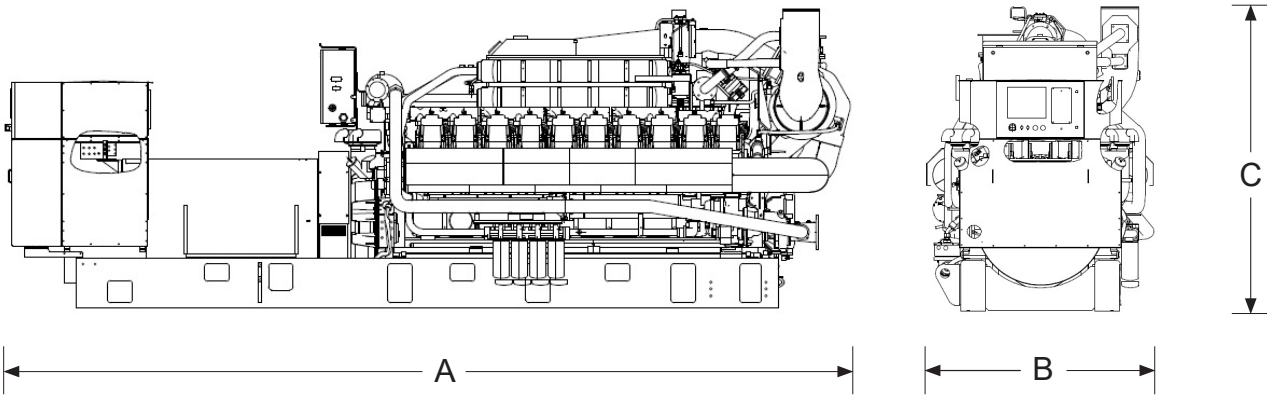
Performance	Continuous		Continuous	
Frequency	50 Hz		50 Hz	
Genset power rating @ 0.8 power factor – ekW (kVA)	1995	(2494)	1995	(2494)
Engine speed – rpm	1500		1500	
Compression ratio	11.9		11.9	
Emissions –mg/Nm^3 (g/bhp-hr) NOx	250	(0.50)	500	(1.00)
Performance number	DM8927-02		DM8925-02	
Fuel Consumption (ISO 3046/1)				
100% load – MJ/ekW-hr (Btu/ekW-hr)	9.13	(8654)	8.87	(8411)
75% load – MJ/ekW-hr (Btu/ekW-hr)	9.29	(8805)	9.08	(8614)
50% load – MJ/ekW-hr (Btu/ekW-hr)	9.83	(9320)	9.64	(9136)
Cooling System				
Auxiliary circuit temperature (maximum inlet) – °C (°F)	54	(130)	54	(130)
Jacket water temperature (maximum outlet) – °C (°F)	99	(210)	99	(210)
Inlet Air				
Combustion air inlet flow rate (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.24	(5637)	4.04	(5383)
Altitude Capability				
At 25°C (77°F) ambient, above sea level – m (ft)	1500	(4921)	2000	(6562)
Exhaust System				
Exhaust temperature – engine outlet – °C (°F)	429	(805)	430	(805)
Exhaust gas flow (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.50	(14283)	4.30	(13658)
Exhaust gas mass flow – kg/bkW-hr (lb/hr)	5.67	(25886)	5.42	(24739)
Heat Rejection				
Heat rejection to jacket water – kW (Btu/min)	634	(36060)	655	(37227)
Heat rejection to exhaust (LHV to 120°C/248°F) – kW (Btu/min)	1055	(60007)	988	(56206)
Heat rejection to auxiliary circuit – kW (Btu/min)	165	(9362)	157	(8925)
Heat rejection to atmosphere from engine and generator – kW (Btu/min)	215	(12215)	215	(12215)
Heat rejection to jacket water circuit (JW+OC+AC1) – kW (Btu/min)	1205	(68539)	1181	(67193)

50 Hz High Altitude/Ambient Package Performance – No Pumps

Performance	Continuous		Continuous	
Frequency	50 Hz		50 Hz	
Genset power rating @ 0.8 power factor – ekW (kVA)	2022	(2528)	2022	(2528)
Engine speed – rpm	1500		1500	
Compression ratio	11.9		11.9	
Emissions –mg/Nm^3 (g/bhp-hr) NOx	250	(0.50)	500	(1.00)
Performance number	DM8926-02		DM8924-02	
Fuel Consumption (ISO 3046/1)				
100% load – MJ/ekW-hr (Btu/ekW-hr)	9.00	(8538)	8.75	(8299)
75% load– MJ/ekW-hr (Btu/ekW-hr)	9.13	(8653)	8.93	(8466)
50% load – MJ/ekW-hr (Btu/ekW-hr)	9.58	(9082)	9.39	(8902)
Cooling System				
Auxiliary circuit temperature (maximum inlet) – °C (°F)	54	(130)	54	(130)
Jacket water temperature (maximum outlet) – °C (°F)	99	(210)	99	(210)
Inlet Air				
Combustion air inlet flow rate (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.18	(5637)	3.99	(5383)
Altitude Capability				
At 25°C (77°F) ambient, above sea level – m (ft)	1500	(4921)	2000	(6562)
Exhaust System				
Exhaust temperature – engine outlet – °C (°F)	429	(805)	430	(805)
Exhaust gas flow (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.44	(14283)	4.24	(13658)
Exhaust gas mass flow – kg/bkW-hr (lb/hr)	5.59	(25886)	5.34	(24739)
Heat Rejection				
Heat rejection to jacket water – kW (Btu/min)	634	(36060)	655	(37227)
Heat rejection to exhaust (LHV to 120°C/248°F) – kW (Btu/min)	1055	(60007)	988	(56206)
Heat rejection to auxiliary circuit – kW (Btu/min)	165	(9362)	157	(8925)
Heat rejection to atmosphere from engine and generator – kW (Btu/min)	216	(12274)	216	(12274)
Heat rejection to jacket water circuit (JW+OC+AC1) – kW (Btu/min)	1205	(68539)	1181	(67193)

G3520E Continuous Natural Gas Generator Sets Electric Power

Weights and Dimensions



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
6940.2 (273.4)	1827.5 (71.95)	2449.8 (96.45)	17826 (39306)

Note: *For reference only. Do not use for installation design. Contact your local Cat dealer for precise weights and dimensions.*

Ratings Definitions

Continuous Power Rating

Output available with non-varying load for an unlimited time. Average power output is 70-100% of the continuous power rating. Typical peak demand is 100% of continuous rated ekW for 100% of operating hours.

Applicable Codes and Standards

AS1359, CSA C22.2 No100-04, UL142,UL489, UL869, UL2200, NFPA37, NFPA70, NFPA99, NFPA110, IEC60034-1, ISO3046, ISO8528, NEMA MG1-22, NEMA MG1-33, 2006/95/EC, 2006/42/EC, 2004/108/ EC.

Note: Codes may not be available in all model configurations. Please consult your local Cat dealer for availability.

Fuel Rates

1. For transient response, ambient, and altitude capabilities consult your local Cat dealer.
2. Fuel pressure range specified is to the engine fuel control valve. Additional fuel train components may be required and should be considered in pressure and flow calculations.
3. For a complete reference of definitions and conditions see the following data sheets
   a. **50 Hz 1995ekW Continuous / Standard (W/ Pumps)**
      DM8925-02 (500mg/Nm^3 NOx) - SCAC IN: 54ºC
      DM8927-02 (250mg/Nm^3 NOx) - SCAC IN: 54ºC
      DM8929-02 (500mg/Nm^3 NOx) - SCAC IN: 43ºC
      DM8931-02 (250mg/Nm^3 NOx) - SCAC IN: 43ºC
   b. **50 Hz 2022ekW Continuous / Standard (W/O Pumps)**
      DM8924-02 (500mg/Nm^3 NOx) - SCAC IN: 54ºC
      DM8926-02 (250mg/Nm^3 NOx) - SCAC IN: 54ºC
      DM8928-02 (500mg/Nm^3 NOx) - SCAC IN: 43ºC
      DM8930-02 (250mg/Nm^3 NOx) - SCAC IN: 43ºC

http://www.cat.com/powergeneration