Cat® G3520K
50 Hz Continuous Gas Generator Sets

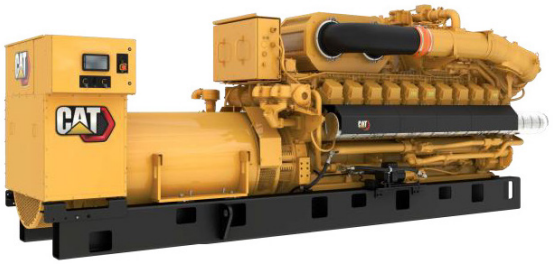


Image shown may not reflect actual configuration.

Bore – mm (in)	170 (6.7)
Stroke – mm (in)	215 (8.5)
Displacement – L (in^3)	97.6 (5956)
Aspiration	Turbocharged
Fuel System	Electronic Fuel Control Valve
Governor Type	ADEM™ 6

	Fuel Type	ekW (kVA)	Compression Ratio	Engine Speed – rpm
High Response without Pumps	Natural Gas	2567 (3176)	10.5	1500
High Response with Pumps	Natural Gas	2552 (3158)	10.5	1500
High Efficiency without Pumps	Natural Gas	2567 (3176)	11.0	1500
High Response with Pumps	Natural Gas	2552 (3158)	11.0	1500

Features

Cat® Gas Engine

- Robust high speed block design provides prolonged life and lower owning and operating costs
- High power density and efficiency

Generator Set Package

- Top tier electrical efficiency
- Lower maintenance and overhaul costs driven by lower oil consumption, extended service intervals, and reduced downtime
- Capable of ISO 8528-5 Class G1 & G2 transient performance with specified load steps
- Genset reliability verified through torsional vibration, fuel consumption, oil consumption, transient performance, and endurance testing

Generators

- High-efficiency design
- Designed to match performance and output characteristics of Cat engines

Applications

- Caterpillar generator sets can maximize power production opportunities in an extensive range of industries
- Improved thermal efficiency with lower jacket water temperature – Refer to LEHE22854
- Compliant with European Grid Codes
  - o Ships with required documentation

Cat Energy Control System (ECS)

- 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
- Graphical touchscreen display
- Easily upgradeable

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

Standard and Optional Equipment

Engine

Air Cleaner
- ❑ Installed
- ❑ Supplied loose with 0-, 45-, or 90-degree hump hose

Cooling System
- ❑ JW & SCAC engine driven pumps
- ❑ No pumps option
- ❑ RH or LH JW out connection

Exhaust System
- ❑ Elbows
- ❑ Expanders
- ❑ Flanges
- ❑ Flexible fittings

Fuel System
- ❑ Gas train pressure sensors
- ❑ Gas knockdown regulator
- ❑ Natural Gas Supply
- ❑ Gas Train (EU or NFPA/CSA version)
- ❑ DN125 Elbow

General
- ❑ Barring group

Lubrication
- ❑ Lubricating oil (NGEO or SYN HP)
- ❑ Oil level regulator
- ❑ Electric prelube

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

Protection System
- ❑ Explosion Relief Valves

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

Generators

Output voltage
- ❑ 400V
- ❑ 415V
- ❑ 6300V
- ❑ 6600V
- ❑ 6900V
- ❑ 10500V
- ❑ 11000V

Temperature Rise (over 40°C ambient)
- ❑ 105 °C

Attachments
- ❑ Anti-condensation heater
- ❑ Generator RTD module
- ❑ Neutral Ground – LV
- ❑ Cross-Current CT – HV
- ❑ Differential CTs – HV
- ❑ PTs – HV

Power Termination

Type
- ❑ IEC Bus Bar – LV
- ❑ NEMA Bus Bar – LV
- ❑ Circuit breaker – LV

Circuit Breaker Options
- ❑ 5000A
- ❑ UL
- ❑ 3-pole
- ❑ IEC
- ❑ UV
- ❑ Electrically operated

Trip Unit Options
- ❑ LSI
- ❑ LSIG-P
- ❑ LSI-G

Cat Connect

Connectivity
- ❑ Ethernet
- ❑ Cellular

Control System

Controller
- ❑ Cat ECS 100
- ❑ Cat ECS 200

Attachments
- ❑ Load share module
- ❑ DIO Modules
- ❑ CAN2 Wiring
- ❑ Remote monitoring software

Vibration Isolators
- ❑ Spring
- ❑ Seismic rated

Certifications
- ❑ 2006/42/EC & 2006/95/EC Declaration of Incorporation
- ❑ Eurasian Conformity (EAC)

Grid Code
- ❑ Germany: VDE-AR-N-4110:2018
- ❑ Germany: VDE-AR-N-4120:2018
- ❑ Great Britain: G99 (Amendment 9)
- ❑ Italy: CEI 0-16;V3 (2024-01)
- ❑ Italy: Terna Codice di Trasmissione, Dispacciamento, Sviluppo e Sicureeza della Rete
- ❑ Belgium: Synergrid C10/11 ed.2.2
- ❑ Netherlands: Netcode Elektriciteit
- ❑ France: Arrêté du 9 juin 2020
- ❑ Poland: Wymogi ogólnego stosowania 2018
- ❑ Czech Republic: Příloha č.4 PPDS 2022
- ❑ Greece: ΦΕΚ 3757B
- ❑ Spain: TED/749/2020
- ❑ Romania: ANRE Ord. 72/2017, Ord. 214/2018
- ❑ Ireland: Distribution Code Version 8.0
- ❑ European Standard: EN 50549-2

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

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- ❑ Installed
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Fuel System
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- ❑ Electric prelube

Mufflers
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Circuit Breaker Options
- ❑ 5000A
- ❑ UL
- ❑ 3-pole
- ❑ IEC
- ❑ UV
- ❑ Electrically operated

Trip Unit Options
- ❑ LSI
- ❑ LSI-G
- ❑ LSIG-P

Cat Connect

Connectivity
- ❑ Ethernet
- ❑ Cellular

Control System

Controller
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Attachments
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50 Hz High Response Package Performance

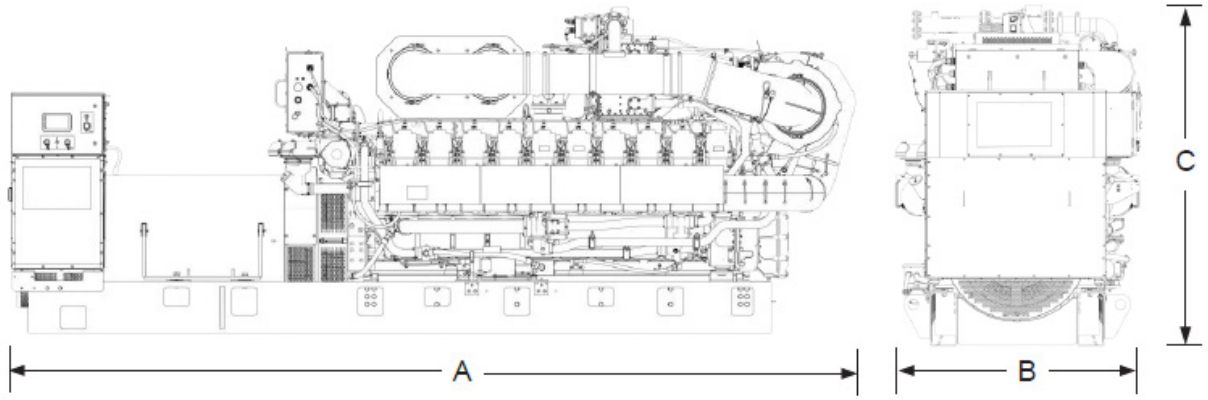
Performance	Continuous			
Frequency	50 Hz		50 Hz	
Genset power rating @ 1.0 power factor – ekW (kVA)	2567	(3176)	2567	(3176)
Engine Speed – rpm	1500		1500	
Compression ratio	10.5		10.5	
NOx Emission Level – mg/Nm^3 (g/bhp-hr) NOx	250	(0.51)	500	(0.99)
Performance number	EM7196-00		EM7194-00	
Genset Electrical Efficiency (@ 1.0 power factor)	45.0 %		46.0 %	
Fuel Consumption				
100% load with fan – MJ/ekW-hr (Btu/ekW-hr)	8.07	(7655)	7.90	(7494)
75% load with fan – MJ/ekW-hr (Btu/ekW-hr)	8.16	(7737)	8.01	(7590)
50% load with fan – MJ/ekW-hr (Btu/ekW-hr)	8.59	(8149)	8.43	(7992)
Cooling System				
Auxiliary Circuit temperature (maximum inlet) – °C (°F)	57	(134)	57	(134)
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)	3.91	(6614)	3.76	(6364)
Altitude Capability				
At 25°C (77°F) ambient, above sea level – m (ft)	1080	(3543)	1310	(4298)
Exhaust System				
Exhaust temperature – engine outlet – °C (°F)	397	(746)	397	(747)
Exhaust gas flow (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.14	(15970)	3.99	(15375)
Exhaust gas mass flow – kg/bkW-hr (lb/hr)	5.22	(30339)	5.03	(29207)
Heat Rejection				
Heat rejection to jacket water – kW (Btu/min)	566	(32180)	564	(32071)
Heat rejection to exhaust (LHV to 120°C/248°F) – kW (Btu/min)	1176	(66878)	1132	(64390)
Heat rejection to auxiliary circuit – kW (Btu/min)	128	(7299)	120	(6821)
Heat rejection to atmosphere from engine and generator – kW (Btu/min)	178	(10130)	171	(9717)
Heat rejection to jacket water circuit (JW+OC+AC1) – kW (Btu/min)	1420	(80714)	1380	(78475)

50 Hz High Efficiency Package Performance

Performance	Continuous			
Frequency	50 Hz		50 Hz	
Genset power rating @ 1.0 power factor – ekW (kVA)	2567	(3176)	2567	(3176)
Engine Speed – rpm	1500		1500	
Compression ratio	11.0		11.0	
NOx Emission Level – mg/Nm3 (g/bhp-hr) NOx	250	(0.51)	500	(0.99)
Performance number	EM7192-00		EM7190-00	
Genset Electrical Efficiency (@ 1.0 power factor)	45.5 %		46.5 %	
Fuel Consumption				
100% load with fan – MJ/ekW-hr (Btu/ekW-hr)	7.99	(7577)	7.82	(7414)
75% load with fan – MJ/ekW-hr (Btu/ekW-hr)	8.17	(7746)	7.96	(7552)
50% load with fan – MJ/ekW-hr (Btu/ekW-hr)	8.86	(8396)	8.69	(8236)
Cooling System				
Auxiliary Circuit temperature (maximum inlet) – °C (°F)	53	(127)	53	(127)
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)	3.87	(6559)	3.72	(6301)
Altitude Capability				
At 25°C (77°F) ambient, above sea level – m (ft)	655	(2149)	935	(3068)
Exhaust System				
Exhaust temperature – engine outlet – °C (°F)	372	(702)	373	(703)
Exhaust gas flow (0°C, 101.3 kPa)/(77°F, 14.7 psia) – Nm^3/bkW-hr (ft^3/min)	4.11	(15246)	3.95	(14674)
Exhaust gas mass flow – kg/bkW-hr (lb/hr)	5.18	(30085)	4.98	(28919)
Heat Rejection				
Heat rejection to jacket water – kW (Btu/min)	554	(31483)	546	(31038)
Heat rejection to exhaust (LHV to 120°C/248°F) – kW (Btu/min)	1058	(60177)	1020	(58032)
Heat rejection to auxiliary circuit – kW (Btu/min)	114	(6495)	110	(6243)
Heat rejection to atmosphere from engine and generator – kW (Btu/min)		(9748)	171	(9730)
Heat rejection to jacket water circuit (JW+OC+AC1) – kW (Btu/min)	1490	(84711)	1431	(81367)

G3520K 50 Hz Continuous Gas Generator Sets
Electric Power

Weights and Dimensions



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Dry Weight kg (lb)
6383 (251.30)	2482 (97.72)	2534 (99.76)	20,500 (45,195)

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

Ratings Definitions

Continuous Power

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

AS 1359, CSA C22.2 No. 100-04, UL 142, UL 489, UL 869, UL 2200, NFPA37, NFPA70, NFPA99, NFPA110, IBC, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG1-22, NEMA MG1-33, 2014/35/EU, 2006/42/EC, 2014/30/EU.

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

50 Hz 2567 ekW Continuous / Standard

EM7194-00 (500 mg/Nm^3 NOx) – High Response (w/o Pumps)
EM7196-00 (250 mg/Nm^3 NOx) – High Response (w/o Pumps)
EM7190-00 (500 mg/Nm^3 NOx) – High Efficiency (w/o Pumps)
EM7192-00 (250 mg/Nm^3 NOx) – High Efficiency (w/o Pumps)

50 Hz 2552 ekW Continuous / Standard

EM7195-00 (500 mg/Nm^3 NOx) – High Response (w/ Pumps)
EM7197-00 (250 mg/Nm^3 NOx) – High Response (w/ Pumps)
EM7191-00 (500 mg/Nm^3 NOx) – High Efficiency (w/ Pumps)
EM7193-00 (250 mg/Nm^3 NOx) – High Efficiency (w/ Pumps)

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