

# Cat® 3606

## Diesel Generator Sets

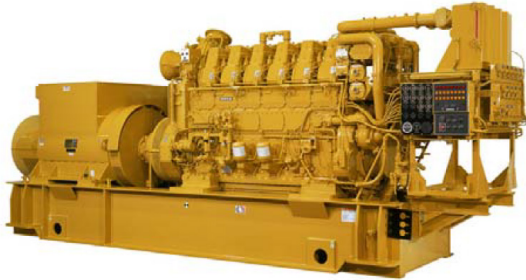


Image shown may not reflect actual configuration.

Bore – mm (in)	280 (11.0)
Stroke – mm (in)	300 (11.8)
Displacement per cylinder – L (in <sup>3</sup> )	18.5 (1127)
Total Displacement – L (in <sup>3</sup> )	111 (6,762)
Compression Ratio	13:1
Aspiration	TA
Fuel System	Direct Unit Injection

### Features

#### Cat® Diesel Engine

- Designed and optimized for low fuel consumption
- Reliable, rugged, durable design

#### Alternators

- Superior motor starting capability minimizes need for oversizing generator
- Designed to match performance and output characteristics of Cat diesel engines

#### Generator Set Package

- Fully prototype tested with certified torsional vibration analysis available

#### 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

#### Cat Genset Monitoring System (GMS)

The Genset Monitoring System (GMS) provides protection, monitoring, and control for a single 3600 diesel generator set utilizing a digital based control panel housed in an IP55 enclosure. All critical shutdowns are a relay-based protection. Contactors are wired directly to the junction panel when an accessory module is ordered and is factory packaged. Use of the GMS eliminates the need for a separate gauge panel and annunciator panel. Accepts remote signals for starting/interlock, stopping, and emergency stop. All monitored parameters and status signals are available over MODBUS RS485 network. A default Ethernet connection is available for connection.

- Simple user friendly interface and navigation
- Provides protection, monitoring, and control of the generator set
- Redundant shutdown protection
- 5.7 inch (145 mm) color monitor to display all engine parameters and alarm annunciation
- Annunciation of all engine shutdowns, alarms, and status points
- Start/prelube control switch, fuel control switch and emergency stop button
- Speed control switch with automatic changing to ball head control when electronic signal failure occurs, if ball head control is available
- Contacts are available for customer use
- Selection of local/remote control of engine
- Selection of idle/rated control of engine
- Equipped for remote communication from the panel
- Relay outputs available: energize to run, energize to stop, air shutoff, prelube, air start and local remote
- Optional output available for alarms and faults

## Standard and Optional Equipment

### Air Inlet

- ☐ Aftercooler, fresh water, corrosion resistant coated (air side)
- ☐ Air inlet shutoff
- ☐ Air cleaner
- ☐ Breather, crankcase, top-mounted
- ☐ Turbocharger, engine oil lubricated
- ☐ Soot filter
- ☐ Air cleaner louver assembly
- ☐ Vertical support bracket
- ☐ Heavy duty air cleaner
- ☐ Air inlet adapter
- ☐ Boost control valve

### Cooling

- ☐ Engine coolant water drains
- ☐ Front mounted turbos
- ☐ Three-bundle oil cooler
- ☐ Water temperature regulator
- ☐ Jacket water thermostats
- ☐ Heat exchanger for single circuit
- ☐ Heating aids
- ☐ Cooling system aids
- ☐ Auxiliary water pump
- ☐ Expansion tank

### Exhaust

- ☐ 457 mm (18 in) Cat bolt pattern
- ☐ Dry, gas tight, exhaust manifold
- ☐ Includes adapter, flexible exhaust fitting
- ☐ Flexible exhaust fittings
- ☐ Weld flange and related hardware

### Fuel

- ☐ Simplex or Duplex
- ☐ Fuel Priming Pump
- ☐ Duplex Primary Fuel Strainer
- ☐ Fuel System Connections

### Generator

- ☐ Custom generator
- ☐ 3 Phase, six leads, WYE
- ☐ Class F insulation
- ☐ Busbar connections
- ☐ Winding temperature detectors
- ☐ Anti-condensation space heaters

### Governor

- ☐ UG Actuator
- ☐ Electronic / actuators
- ☐ Digital programmers
- ☐ Battery backup / power supply
- ☐ 230 UA
- ☐ 723 Plus
- ☐ EGB Actuator

### Lube

- ☐ Centrifugal oil filters with single shutoff
- ☐ Service side engine mounted on cylinder block inspection covers
- ☐ Wet oil sump. Includes engine-driven main lubrication pump, installed oil lines, engine-driven oil pump and oil pan
- ☐ Oil filler and dipstick
- ☐ Valve, oil pressure regulating
- ☐ Valves, crankcase explosion relief
- ☐ Oil pan drain valve
- ☐ Lube ANSI adapter (emergency connection)

### Mounting

- ☐ Damper, torsional vibration
- ☐ Engine and generator mounting
- ☐ Isolator
- ☐ Spring type vibration isolator
- ☐ Vertically restrained
- ☐ Non-vertically restrained

### Starting / Charging

- ☐ Vane type air starter
- ☐ Two motors, engine mounted at rear, on left side
- ☐ Includes air silencer
- ☐ Line group for single point custom connection
- ☐ Pressure reducing valve
- ☐ Compressed air flex hose
- ☐ Turbine type air starters
- ☐ Redundant air starters

### General

- ☐ Paint, Caterpillar yellow
- ☐ Pumps, gear driven: fuel, oil, jacket water, aftercooler / oil cooler water
- ☐ Custom paint colors

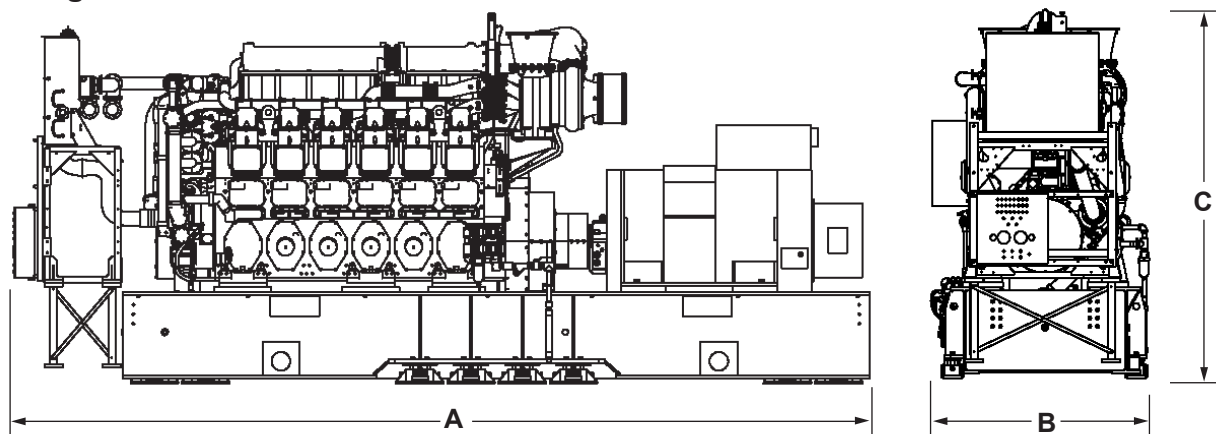
## Package Performance

Performance – 1000 rpm	Notes	Standby	Prime	Continuous
Frequency		50 Hz	50 Hz	50 Hz
Engine power – bkW	(2)	2240	2030	1850
Generator power – ekW	(2)	2150	1940	1760
Performance number		DM5410-06	DM5409-06	DM5407-06
<b>Engine Data</b>				
Fuel consumption (ISO 3046/1) – g/bkW-hr	(1)	196.2	195.3	196.0
Fuel consumption (nominal) – g/bkW-hr	(1)	200.0	199.1	199.8
Fuel Consumption (90% confidence) – g/bkW-hr	(1)	202.1	201.3	202.2
Air flow (@ 25°C, 101.3 kPa) – m³/min		196.2	179.5	164.8
Air mass flow – kg/hr		13131	12012	11031
Compressor outlet pressure – kPa (abs)		261.1	228.1	199.5
Compressor outlet temperature – °C		198.2	182.7	169.2
Inlet manifold pressure – kPa (abs)		258.1	225.3	196.9
Inlet Manifold temperature – °C		68.4	65.8	63.7
Timing – °BTDC	(10)	22.5	22.5	22.5
Exhaust stack temperature – °C		432.8	427.3	427.9
Exhaust gas flow (@ stack temperature, 101.3 kPa) m³/min		941.5	854.0	784.9
Exhaust gas mass flow – kg/hr		13590	12425	11409
<b>Energy Balance Data (nominal)</b>				
Fuel input energy (LHV) – kW	(1)	5446	4914	4495
Heat rejection to jacket water – kW	(4)	483	404	378
Heat rejection to atmosphere – kW	(5)	109	98	90
Heat rejection to oil cooler – kW	(6)	225	214	205
Heat rejection to exhaust (LHV to 25°C) – kW	(4)	1804	1632	1508
Heat rejection to exhaust (LHV to 177°C) – kW	(4)	1072	991	914
Heat rejection to aftercooler – kW	(7), (8)	615	522	452
<b>Emissions</b>				
NOx – g/bkW-hr	(9)	19.0	20.0	20.7
CO – g/bkW-hr	(3)	0.9	0.9	0.9
HC – g/bkW-hr	(3)	1.2	1.0	1.0
PM – g/bkW-hr	(9)	0.4	0.4	0.4

### Notes

- Fuel consumption tolerance. ISO 3046/1 is 0, + 5% of full load data. Nominal is ± 3% of full load data.
- Engine power tolerance is ± 3% of full load data.
- Emission data shown are not to exceed values.
- Heat rejection to jacket water and exhaust tolerance is ± 10% of full load data. (Heat rate based on treated water.)
- Heat rejection to atmosphere tolerance is ± 50% of full load data. (Heat rate based on treated water.)
- Heat rejection to lube oil tolerance is ± 20% of full load data. (Heat rate based on treated water.)
- Heat rejection to aftercooler tolerance is ± 5% of full load data. (Heat rate based on treated water.)
- Total aftercooler heat = aftercooler heat x ACHRF. (Heat rate based on treated water.)
- Emission data shown are dry and nominal values.
- Timing based on AFM Injectors.

## Weights and Dimensions



Dim "A" mm (in)	Dim "B" mm (in)	Dim "C" mm (in)	Weight kg (lb)
10261.7 (404.0)	2530.3 (99.62)	3977.7 (156.6)	34 070 (74,970)

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

## Ratings and Definitions

### Standby

Output available with varying load for the duration of the interruption of the normal source power. Average power output is 70% of the standby rated ekW. Typical operation is 200 hours per year, with maximum expected usage of 500 hours per year.

### Prime

Output available with varying load for an unlimited time. Average power output is 70% of the prime rated ekW. Typical peak demand is 100% of prime rated ekW with 10% overload capability for emergency use for a maximum of 1 hour in 12. Overload operation cannot exceed 25 hours per year.

### Continuous

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

### Applicable Codes and Standards

AS 1359, CSA, IEC 60034-1, ISO 3046, ISO 8528, NEMA MG 1-22, NEMA MG 1-33, UL508A, 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.

**Engine Rating** obtained and presented in accordance with ISO 3046/1 and SAE J1995 JAN90 standard reference conditions of 25°C, 100 kPa, 30% relative humidity and 150m altitude at the stated aftercooler water temperature. Consult altitude curves for applications above maximum rated altitude and/or temperatures.

**Ratings** are based on SAE J1349 standard conditions. These ratings also apply at ISO 3046 standard conditions.

**Fuel Rates** are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 15°C (59°F) and weighing 850 g/liter (7.0936 lbs/U.S. gal). Additional ratings may be available for specific customer requirements, also, for information regarding low sulfur fuel and biodiesel capability, please consult your Cat dealer.

[www.cat.com/electricpower](http://www.cat.com/electricpower)

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