



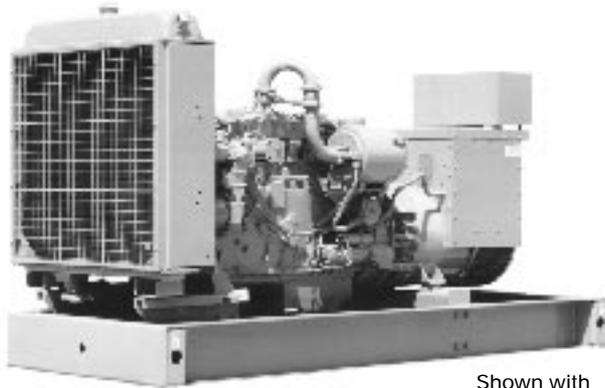
# Gas Generator Set

**G3406**  
1800 rpm  
150 kW 60 Hz

Standby Power — Propane

## CATERPILLAR® ENGINE SPECIFICATIONS

I-6, 4-Stroke-Cycle Naturally Aspirated  
Bore — in (mm) ..... 5.4 (137)  
Stroke — in (mm) ..... 6.5 (164)  
Displacement — cu in (L) ..... 14.6 (893)  
Compression ratio ..... 10.3:1



Shown with  
Optional Equipment



## FEATURES

### ■ CAT® GENERATOR SETS

Factory designed, certified prototype tested with torsional analysis. Production tested and delivered to you in a package that is ready to be connected to your fuel and power lines. EPG designer computer sizing available. Supported 100% by your Caterpillar dealer with warranty on parts and labor; extended warranty available in some areas. The generator set was designed and manufactured in an ISO 9001 compliant facility. Generator set and components meet or exceed the following: AS1359, AS2789, BS4999, DIN6271, DIN6280, IEC 34/1, ISO3046/1, NEMA MG1-22.

### ■ DIESEL STRENGTH BUILT IN

Blocks, crankshafts, liners, and connecting rods are common with Cat diesel engines. Gas engine pressures are 40%-50% lower, resulting in extra long life with the economy of the gaseous fuel.

### ■ CATERPILLAR® SR4B GENERATOR

Single bearing, wye connected, static regulated brushless excited generator designed to match the performance and output characteristics of the Caterpillar engine that drives it.

### ■ EXCLUSIVE CATERPILLAR VOLTAGE REGULATOR

Three-phase sensing and Volts per Hertz regulation with constant voltage in the normal operating range gives precise control and excellent load acceptance.

## CATERPILLAR® SR4B GENERATOR

Type . . . . . Brushless, revolving field, permanent magnet excitation, solid state automatic voltage regulator  
Construction . . . . . Single bearing, close coupled, three phase, wye connected, Class H insulation (rotor and stator)  
Enclosure . . . . . Drip proof IP 22, guarded  
Alignment . . . . . Caterpillar pilot shaft  
Overspeed capability . . . . . 150%  
Paralleling capability . . . . . Optional with adjustable voltage droop – requires paralleling kit  
Voltage regulator . . . . . 3-phase sensing with Volts-per-Hertz response  
Voltage regulation . . . . . Less than ± 1/2% (steady state) and constant load  
Voltage gain . . . . . Adjustable to compensate for engine speed droop and line loss  
Wave form . . . . . Less than 5% deviation

TIF . . . . . Less than 50, meets ISO8528  
THD . . . . . Less than 5%, meets ISO8528

## CATERPILLAR CONTROL PANEL

### 24 Volt DC Control

Terminal box mounted  
Vibration isolated  
NEMA 1/IP 22 enclosure  
Electrically dead front  
Lockable door  
Generator instruments meet ANSI C-39-1

### Voltages Available

60 Hz  
240, 480

(Adjustable a minimum of ±10%)  
Other voltages available – consult your Caterpillar dealer.  
Some voltages require derating.

**STANDARD EQUIPMENT**
**Engine**

Air cleaner, normal duty with rain cap and service indicator  
 Base  
 Breather, crankcase  
 Cooler, lubricating oil, RH  
 EMCP II, generator control, engine start/stop logic  
 Filter, lubricating oil, RH  
 Flywheel housing, SAE No. 0  
 Governor, Woodward Flo-Tech 68  
 Ignition system  
     Altronic 5  
 Jacket water heater  
 Lifting eyes  
 Manifold, exhaust, watercooled  
 Paint, Caterpillar yellow  
 Protection devices, see controls  
 Pumps,  
     jacket water, gear driven  
 Radiator, integral expansion tank  
 SAE standard rotation  
 Starter, 24 Volt DC  
 Supports, engine

Thermostats and housing  
 Torsional vibration damper  
 Valve, 24V gas shutoff  
 Vaporizer/Regulator

**Generator**

All metal components are plated or painted  
 Optimum winding pitch for minimum total harmonic distortion  
 Permanent magnet excitation (300% short circuit current)  
 Standards: meets or exceeds the requirements of IEC 34-1, NEMA MG1-22, BS4999, VDE0530, UTE5100, CSA 22.2, ISO 8528-3  
 Three-phase sensing automatic voltage regulator  
 VR3 voltage regulator  
 Wet layer wound rotors individually tested to 125% overspeed; prototypes to 150% @ 338° F (170° C)  
 Windings coated with a fungus-resistant varnish

**OPTIONAL EQUIPMENT**
**Engine**

Battery, tray, cables, and chargers  
 Charging alternator systems  
 Enclosure  
 Muffler

**Generator**

DVR – digital voltage regulator, adjustable volts/H<sub>3</sub> regulation for large block loads. Diode monitor, under- and over-voltage protection  
 Extra dips and bakes of insulating resins  
 Manual voltage control  
 RFI filter – 82/499/EEC, VDE 875/10.84 A2 Level N, BS800 standards, and MIL-STD-461B (conducted, radiated, and susceptibility)  
 Self excitation  
 VR3F for enhanced transient response and block loading

**ENGINE AND GENERATOR CONTROLS**

The EMCP II comes complete with many control features competitive manufacturers only offer as options.

**Standard Features**

Adjustable purge cycle from 0-20 seconds (factory set at 5 seconds)  
 Auto start-stop engine control with programmable safety shutdowns  
 Cooldown timer, adjustable from 0 to 30 minutes  
 Cycle cranking, with adjustable crank/rest periods of 1 to 60 seconds  
 Delayed ignition (magneto) "kill" after gas valve is closed. Five second delay  
 Emergency stop button

Flashing LED indicators for protection and diagnostics, including: low oil pressure, high coolant temperature, low coolant level (when optional coolant sensor is installed), overspeed, overcrank, emergency stop, fault shutdown, spare fault alarm

Generator voltage adjust potentiometer  
 Indicator/display test switch  
 LCD digital readout for:  
     engine oil pressure, coolant temperature, engine rpm, system DC volts, generator AC volts and amps, and generator frequency  
 NEMA 1/IP 22 enclosure  
 Programmable for energize to shutoff or energize to run  
 Spare alarm and fault inputs for customer use

**Optional Features**

Alarm modules and remote annunciators to meet NFPA 99 or NFPA 110 codes  
 Auxiliary relay  
 Coolant loss sensor  
 Customer interface module  
 Dustproof enclosure  
 Frequency adjust potentiometer  
 Panel lights  
 Reverse power relay  
 Synchronizing modules



**TECHNICAL DATA**

<b>G3406 Standby Power Gas Generator Sets — 1800 rpm</b>		
Power Rating @ 0.8 PF with (without) Fan	ekW	150 (160)
Power Rating @ 0.8 PF with (without) Fan	kV•A	187 (200)
Generator Frame Size		447
Engine Lubricating Oil Capacity	gal	10
System Backpressure (Max Allowable)	in water	12
Exhaust Flange Size — (Internal Diameter)	in	5
Length	in	140.0
Width	in	56.0
Height	in	80.25
Shipping Weight	lbs	5800
Engine Coolant Capacity with Radiator	gal	22.5
100% Load Fuel Consumption (100% load) with Fan per ISO3046/1: +5%, -0% tolerance	BTU/bhp-hr	7730
Motor Starting (35% voltage dip)	SkVA (volt)	795 (480)
Combustion Air Inlet Flow Rate	ft <sup>3</sup> /min	353.6
Exhaust Gas Flow Rate (at stack temp)	ft <sup>3</sup> /min	1095
Air Flow Through Radiator (Radiator only has static pressure of .84 in. water)	ft <sup>3</sup> /min	21 200
Heat Rejection to Exhaust (total)	BTU/min	7987
Heat Rejection to Coolant	BTU/min	10 321
Heat Rejection to Atmosphere from Engine	BTU/min	1175
Heat Rejection to Atmosphere from Generator	BTU/min	478
Exhaust Gas Stack Temperature	Deg F	1143
Deration for Engine Altitude – 3.5% per 500 feet above 2% per 10° F above	ft Deg F	500 110
* Note: For permitting see TMI data.		

Fuel – Liquid propane only  
 Base – Heavy duty skidable base

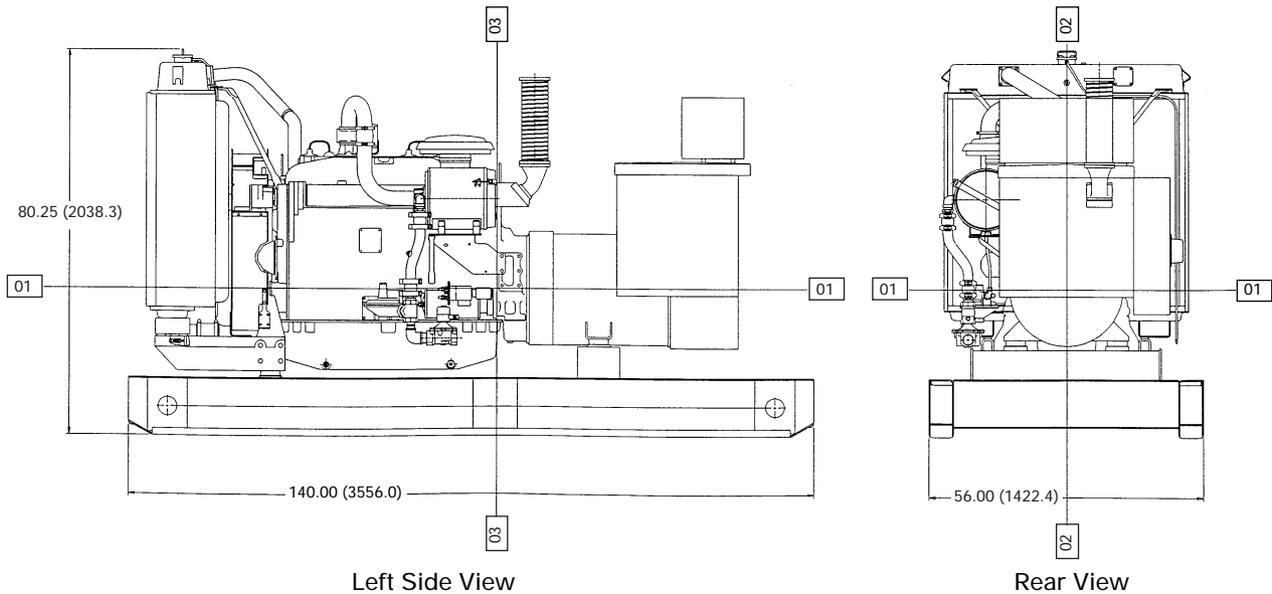
### Rating Information

150 kW up to 500 ft (152 m) and 110° F (43° C).  
 Above these conditions, see engine power deration  
 Generator temperature across stator is a maximum of 221° F (105° C). Generator oversized for motor starting and efficiency

### Cooling system

Sized for 50/50 glycol, 125° F (52° C) ambient and 600 ft (183 m) without enclosure  
 Derate ambient capability by 0.5° F (0.28° C) for every 200 ft (61 m) above 500 ft (152 m) without enclosure  
 For Caterpillar enclosure, derate ambient capability 7° F (4° C) for all conditions

## STANDBY GENERATOR SET PACKAGE — PROPANE



- 01 Centerline of Crankshaft
- 02 Centerline of Engine
- 03 Rear Face of Cylinder Block

See General Dimension Drawing 123-8787 for additional information.

Note: General configuration not to be used for installation.  
 Dimensions are in in (mm).

## RATING DEFINITIONS AND CONDITIONS

**Ratings** are based on SAE J1349 standard conditions of 29.61 in Hg (100 kPa) and 77° F (25° C). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 29.61 in Hg (100 kPa) and 81° F (27° C); and API 7B-11C standard conditions of 29.38 in Hg (99 kPa) and 85° F (29° C) also apply.

**Ratings** are based on dry natural gas having a low heat value of 905 btu/ft<sup>3</sup> (35.22 MJ/m<sup>3</sup>). Variations in altitude, temperature, and gas composition from standard conditions may require a reduction in engine horsepower; consult your Caterpillar dealer.

**Naturally aspirated** engines apply to 500 ft (150 m) and 77° F (25° C). For applications which exceed these limits consult your Caterpillar dealer.

**Standby** — Output available with varying load for the duration of the interruption of the normal source power. Fuel stop power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514.