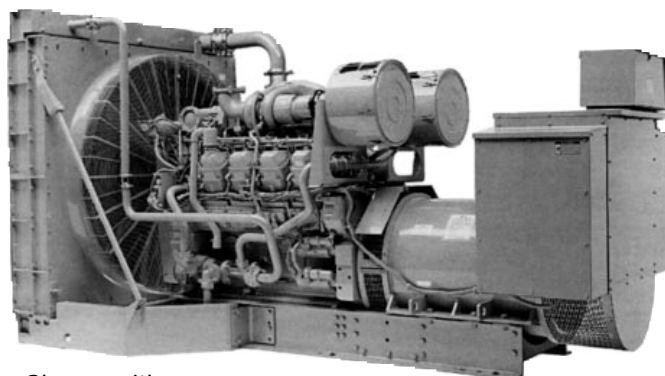


# CATERPILLAR®



Shown with  
Optional Equipment

## FEATURES

### ■ CAT® DIESEL 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 specifications: ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC 34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG1-22, VDE0530, 89/392/EEC, 89/336/EEC.

## Generator Set

**3508B**  
1800 rpm  
1000 kW 60 Hz

### Standby Power

### CATERPILLAR® ENGINE SPECIFICATIONS

V-8, 4-Stroke-Cycle Watercooled Diesel  
Bore — mm (in) ..... 170 (6.7)  
Stroke — mm (in) ..... 190 (7.5)  
Displacement — L (cu in) ..... 34.5 (2105)  
Compression ratio ..... 14:1  
Oil ..... CF-4



### ■ RELIABLE, FUEL EFFICIENT DIESEL

The compact, four-stroke-cycle diesel engine combines durability with minimum weight while providing dependability and economy. The fuel system operates on a variety of fuels.

### ■ CATERPILLAR® SR4B GENERATOR

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

### ■ EXCLUSIVE CATERPILLAR VOLTAGE REGULATOR

Three-phase sensing and Volts per Hertz regulation give precise control, excellent block loading, and constant voltage in the normal operating range.

### CATERPILLAR® SR4B GENERATOR

Type. .... Brushless, revolving field,  
solid-state exciter  
Construction ..... Single bearing, close coupled  
Three phase ..... Wye connected  
Insulation ..... Class H with tropicalization  
and antiabrasion  
Enclosure. .... Drip proof IP 22  
Alignment ..... Pilot shaft  
Overspeed capability. .... 150%  
Wave form ..... Less than 5% deviation  
Paralleling capability ..... standard with  
adjustable voltage droop  
Voltage regulator ..... 3-phase sensing with  
Volts-per-Hertz  
Voltage regulation ..... Less than  $\pm 1/2\%$   
Voltage gain ..... Adjustable to compensate  
for engine speed droop and line loss

TIF ..... Less than 50  
THF ..... Less than 3%

### CATERPILLAR CONTROL PANEL

#### 24 Volt DC Control

Terminal box mounted  
Vibration isolated  
NEMA 1/IP 23 enclosure  
Electrically dead front  
Lockable hinged door  
Generator instruments meet ANSI C-39-1

#### Voltages Available 60 Hz

380, 480, 600, and 4160

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

## STANDARD EQUIPMENT

Engine	Generator
Aftercooler	SR4B brushless
Air cleaner	permanent magnet
regular duty	excited with VR3
Breather, crankcase	voltage regulator
Cooler, lubricating oil	Space heaters
Exhaust fitting and	<b>ELECTRONIC MODULAR</b>
flange	<b>CONTROL PANEL (EMCP)</b>
Filters, right hand	<b>Standard generator</b>
fuel	<b>controls and monitoring:</b>
lubricating oil	Ammeter/voltmeter
Flywheel housing	phase selector switch
SAE No. 00	Digital ammeter,
standard rotation	voltmeter, and
Fuel system	frequency meter
electronic controlled	Voltage adjust rheostat
unit injectors	<b>Standard engine controls</b>
Governor	<b>and monitoring:</b>
ADEM electronic	Automatic/manual
control	start-stop control
Manifold, exhaust, dry	Engine control switch
Oil pan, shallow	for:
Pumps,	off/reset, auto start,
fuel transfer;	manual start, stop,
aftercooler water,	cooldown timer,
jacket water,	cycle cranking,
lubricating oil –	emergency stop
gear driven	pushbutton
Radiator	<b>Safety shutoff protection</b>
Rails, mounting	<b>and LED indicators for:</b>
Shutoff, manual	High coolant temp.
Starting, electric,	Low oil pressure
24 Volt DC	Overcrank
Turbochargers	Overspeed
Vibration damper	Emergency stop
	pushbutton

## STANDBY POWER ATTACHMENTS

Engine	Control Panel
Air cleaners	Auxiliary relay
Charging systems	Enclosure,
Cooling systems	NEMA 12/IP 44
fan drives, radiators,	Governor speed switch
fans, expansion tanks	Illuminating lights
Control systems	Installed speed sensing
governor, Woodward	governor (Woodward)
2301A load share	Low coolant level
Exhaust system	Provision for:
fittings, elbows,	alarm module –
flanges, muffler	NFPA 99
Lube system	alarm module –
Mounting systems	NFPA 110
Protection devices	Reverse power relay
Starting system	Starting aid switch
	Synchronizing lights
<b>Generator</b>	
Oversized generators	
Manual voltage control	
RFI Filters –	
N level (VDE 875),	
BS800, MIL Std 461B	
Digital voltage regulator	
2:1 volts per hertz VR3	

## Caterpillar® EMCP II

### Electronic Modular Control Panel

The Electronic Modular Control Panel (EMCP II) is a generator-mounted control panel, available on all Caterpillar packaged generator sets. It utilizes environmentally sealed, solid-state, microprocessor-based modules for engine control and AC metering. This new application of mature, high-tech electronics to generator monitoring provides more features, accuracy, and reliability than present electromechanical and many competitive panel systems.



The EMCP II provides these standard control and monitoring features, many of which are options on other panels:

- Automatic/manual start-stop engine control with programmable safety shutdowns and associated flashing LED indicators for low oil pressure, high coolant temperature, overspeed, overcrank, and emergency stop
- Cycle cranking – adjustable 1-60 second crank/rest periods
- Cooldown timer – adjustable 0-30 minutes
- Energized to run or shutdown fuel control systems
- LCD digital readout for: engine oil pressure, coolant temperature, engine rpm, system DC volts, engine running hours, system diagnostic codes, generator AC volts, generator AC amps, and generator frequency
- Engine control switch
- Ammeter-voltmeter phase selector switch
- Emergency stop pushbutton
- Indicator/display test switch
- Voltage adjust potentiometer
- Rugged NEMA 1/IP 23 cabinet

## TECHNICAL DATA

3508B Standby Power Generator Sets — 1800 rpm					
Power Rating @ 0.8 PF with Fan	ekW kV•A	1000 1250			
Engine Rating without Fan	bhp	1592			
Generator Frame Size		692			
Engine Lubricating Oil Capacity — Requires CF-4 Oil	qts	240			
Engine Coolant Capacity without Radiator	gal	27			
System Backpressure (Max Allowable)	in water	27			
Exhaust Flange Size — (Internal Diameter) (Dual)	in	6			
Low Emissions Version					Lo BSFC
Coolant to Aftercooler Temperature (Max)	F	85	140	195	195
Length	in	179	179	179	186
Width	in	57.4	57.4	57.4	64.0
Height	in	88	88	88	92
Shipping Weight	lbs	20 335	20 335	20 335	19 920
Engine Coolant Capacity with Radiator	gal	55	55	55	50
Separate Circuit Aftercooler	gal	7	7	7	N/A
Aftercooler Cooling Circuit	gal/min	153	153	153	N/A
Aftercooler Pump Coolant Flow at 22 feet water head					
100% Load					
Fuel Consumption (100% load) with Fan per ISO3046/1: +5%, -0% tolerance	gal/hr	69.9	69.3	69.4	69.6
*NOx emissions at ISO standard conditions: + or - 15% tolerance	lb/hr g/hr	13.5 6140	29.2 9155	24.1 10 950	25.3 11 475
75% Load					
Fuel Consumption (75% load) with Fan per ISO3046/1: +5%, -0% tolerance	gal/hr	52.8	53.9	53.6	52.0
*NOx emissions at ISO standard conditions: + or - 15% tolerance	lb/hr g/hr	10.3 4660	9.8 4465	11.8 5370	19.4 8790
50% Load					
Fuel Consumption (50% load) with Fan per ISO3046/1: +5%, -0% tolerance	gal/hr	36.8	36.9	37.0	35.8
*NOx emissions at ISO standard conditions: + or - 15% tolerance	lb/hr g/hr	6.9 3125	7.5 3420	7.2 3265	12.0 5455
Combustion Air Inlet Flow Rate	ft <sup>3</sup> /min	3060	2975	2890	2895
Exhaust Gas Flow Rate	ft <sup>3</sup> /min	7670	7735	7935	7960
Heat Rejection to Jacket Water	BTU/min	27 695	27 470	27 580	27 640
Heat Rejection to Aftercooler	BTU/min	15 525	12 400	11 490	11 490
Heat Rejection to Exhaust (total)	BTU/min	55 900	57 440	59 090	59 200
Heat Rejection to Atmosphere from Engine	BTU/min	3755	3755	3755	3755
Heat Rejection to Atmosphere from Generator	BTU/min	3300	3300	3300	3300
Exhaust Gas Stack Temperature	Deg F	882	931	944	945
Deration for Engine Altitude – 3% per 1000 feet above	ft	3280	2215	1476	1476
*Note: For permitting see TMI data.					

## CONDITIONS AND DEFINITIONS

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**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.

**Ratings** are based on SAE J1349 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions.

**Fuel rates** are based on fuel oil of 35° API (16° C or 60° F) gravity having an LHV of 42 780 kJ/kg (18 390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/liter (7.001 lbs/U.S. gal.). Lubricating oil – requires CF-4 oil.

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for details.