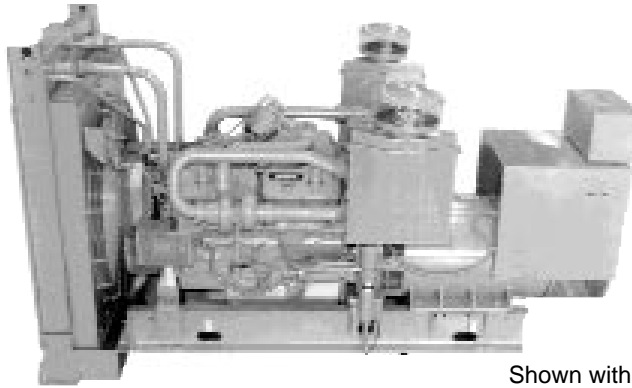




Generator Set

3412

50/60 Hz Standby



Shown with
Optional Equipment

Standby Power 700 kV•A at 50 Hz, 700 kW at 60 Hz
Standby Power 750 kV•A at 50 Hz, 750 kW at 60 Hz
Standby Power 800 kV•A at 50 Hz, 800 kW at 60 Hz

CATERPILLAR ENGINE SPECIFICATIONS

Cat® 3412 Engine, 1500 rpm or 1800 rpm
Watercooled Diesel, four stroke, V-12
Bore – mm (in) 137 (5.4)
Stroke – mm (in) 152 (6.0)
Displacement – L (cu in) 27.0 (1,649)
Aspiration twin turbocharged, aftercooled (TTA);
or series turbocharged, aftercooled (STA)
Compression ratio
TTA 14.5:1
STA 13.0:1
Governor CAT® Electronic

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. Generator Set designed and manufactured in conformance with ISO 9001 Quality System Standard; and generator set and components meet or exceed the following specifications: AS1359, AS2789, ABGSM TM3, BS4999, DIN6271, DIN6280, EGSA101P, JEM1359, IEC 34/1, ISO 3046/1, ISO DIS 8528, NEMA MG1-22, 89/392 EEC.

■ 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 SR4 GENERATOR

Single bearing, wye connected, brushless, permanent magnet 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 with constant voltage in the normal operating range gives precise control, excellent block loading.

CATERPILLAR SR4 GENERATOR

Frame size 590 Family
Type Static regulated brushless excited
Construction Single bearing, close coupled
Three phase Wye connected
Insulation Class H with tropicalization
Terminal box Drip proof IP 22
Overspeed capability 150%
Paralleling capability Standard with adjustable
voltage droop
Voltage regulator . . . 3 phase sensing with Volts-per-Hertz
adjustable – 25%+ 10%
Voltage regulation Less than ± 1/2% (steady state)
Less than ± 1% (no load to full load)
Voltage gain Adjustable to compensate line loss
Wave form Less than 5% deviation
TIF Less than 50
THD Less than 5%

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
(Consult Price List)



STANDARD EQUIPMENT

Engine

Aftercooler
 Air cleaner
 Base, 13 inch rails
 Breather, crankcase
 Cooler, lubricating oil
 Exhaust fitting and flange
 Filters, right hand
 Fuel, full flow
 Lubricating oil, gear driven
 Governor, Cat® electronic
 Lifting eyes
 Manifold, exhaust, dry
 Pumps,
 Fuel transfer, gear driven
 Lubricating oil,
 gear driven
 Jacket water, gear driven
 Radiator
 Shutoff, manual
 Starting, electric, 24 Volt DC

Generator

SR4 brushless with VR3
 Automatic voltage regulator
 Permanent magnet
 excitation system

Control Panel

Digital ammeter, voltmeter
 Phase selector switch,
 frequency meter
 Auto start-stop control module
 w/cycle crank
 and cooldown
 Digital DC Voltmeter,
 tachometer, hourmeter
 Emergency stop pushbutton
 Engine control switch for
 auto, start/run, off/reset,
 stop
 Digital oil pressure and water
 temperature gauges
 Shutoffs with indicators for:
 Low oil pressure
 High water temperature
 Overspeed
 Overcrank
 Emergency stop push-
 button
 Voltage adjust rheostat
 Speed adjust rheostat
 System diagnostic codes –
 Digital readout
 Lamp display

OPTIONAL EQUIPMENT

Engine/Base

Air cleaner, heavy duty
 Air precleaner
 Battery chargers
 Battery/racks
 Charging alternator
 Cooling system
 High ambient radiator
 Exhaust fittings
 Fittings, elbows, pipe
 Flex, mufflers
 Jacketwater heater
 Load share module
 Mounting system
 Fuel tank base
 Lifting arch
 Vibration isolators
 Primary fuel filter
 Protection devices

Generator

Coastal protected generator
 Manual voltage control
 Space heater
 MIL Std. 461B
 RFI N Level (VDE 875),
 BS800
 Self excited

Switchgear

Circuit breaker
 Manual
 Automatic transfer switch

Control Panel

Enclosure, NEMA 12/IP 44
 Provision for:
 Alarm module – std
 Alarm module – NFPA 99
 Alarm module – NFPA 110
 Auxiliary relay
 Illuminating lights
 Low coolant level
 Reverse power relay
 Starting aid switch
 Synchronizing lights

Caterpillar® EMCP II

Electronic Modular Control Panel

The Electronic Modular Control Panel (EMCP) 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 electro-mechanical and many competitive panel systems.



The EMCP 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; eight 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 22 cabinet
- Three spare inputs for customer use

TECHNICAL DATA – 700 kW/kV•A

3412 TTA Standby Power Generator Set (Twin Turbo)			50 Hz–1500 RPM	60 Hz–1800 RPM
Rating Information	Power Rating @ 0.8 PF with Fan	kW	560	700
	Power Rating @ 0.8 PF with Fan	kV•A	700	875
Dimensions	Generator Frame Size		595	595
	Length	mm in	3,772 148.5	3,772 148.5
	Width	mm in	1,483 58.4	1,483 58.4
	Height	mm in	2,143 84.4	2,143 84.4
	Weight (Dry)	kg lb	5,334 11,760	5,334 11,760
Lubrication & Cooling Systems	Engine Lubricating Oil Capacity	L qts	117 124	117 124
	Engine Coolant Capacity without Radiator	L gal	60.6 16.0	60.6 16.0
	Engine Coolant Capacity with Radiator	L gal	117.3 31.0	117.3 31.0
	Standard Radiator Arrangement Data:			
	Air Flow (Max @ Rated Speed)	m ³ /min cfm	820 28,966	984 34,759
	Air Flow Restriction (after radiator)	kPa in water	.06 0.25	.06 0.25
	Ambient Air Temperature with standard radiator (Consult T.M.I.)	Deg. C Deg. F	46 116	44 112
	Coolant Pump External Resistance (max. allowable)	m water ft water	5.1 16.8	5.1 16.8
Coolant Pump Flow at Max. Allowable Resistance	L min gpm	530.6 140	530.6 140	
Exhaust System	System Backpressure (Max. Allowable)	kPa in water	6.7 27	6.7 27
	Exhaust Flange Size (Internal Diameter)	mm in	200.2 8	200.2 8
Performance Data @ Rated Conditions	Fuel Consumption (100% load) with Fan	L/Hr gph	155.1 41.0	189.6 50.1
	Fuel Consumption (75% load) with Fan	L/Hr gph	119.2 31.5	143.6 37.9
	Combustion Air Inlet Flow Rate	m ³ /min cfm	38.6 1,363	55.1 1,946
	Exhaust Gas Flow Rate	m ³ /min cfm	116.2 4,104	153.3 5,414
	Heat Rejection to Coolant (total)	kW Btu/min	364 20,700	444 25,250
	Heat Rejection to Exhaust (total)	kW Btu/min	545 30,994	666 37,875
	Heat Rejection to Atmosphere from Engine	kW Btu/min	131 7,450	134 7,620
	Heat Rejection to Atmosphere from Generator	kW Btu/min	30.2 1,717	35.7 2,030
	Exhaust Gas Stack Temperature	Deg. C Deg. F	613 1,135	551 1,024

3412 GENERATOR SET



TECHNICAL DATA – 750 kW/kV•A

3412 STA Standby Power Generator Set (Series Turbo)			50 Hz–1500 RPM	60 Hz–1800 RPM
Rating Information	Power Rating @ 0.8 PF with Fan	kW	600	750
	Power Rating @ 0.8 PF with Fan	kV•A	750	938
Dimensions	Generator Frame Size		596	596
	Length	mm in	3,874 152.5	3,874 152.5
	Width	mm in	2,096 82.5	2,096 82.5
	Height	mm in	2,143 84.4	2,143 84.4
	Weight (Dry)	kg lb	5,543 12,220	5,543 12,220
Lubrication & Cooling Systems	Engine Lubricating Oil Capacity	L qts	117 124	117 124
	Engine Coolant Capacity without Radiator	L gal	60.6 16.0	60.6 16.0
	Engine Coolant Capacity with Radiator	L gal	117.3 31.0	117.3 31.0
	Standard Radiator Arrangement Data: Air Flow (Max @ Rated Speed)	m ³ /min cfm	820 28,966	984 34,759
	Air Flow Restriction (after radiator)	kPa in water	.06 0.25	.06 0.25
	Ambient Air Temperature with standard radiator (Consult T.M.I.)	Deg. C Deg. F	48 119	43 110
	Coolant Pump External Resistance (max. allowable)	m water ft water	5.1 16.8	5.1 16.8
	Coolant Pump Flow at Max. Allowable Resistance	L min gpm	530.6 140	530.6 140
Exhaust System	System Backpressure (Max. Allowable)	kPa in water	6.7 27	6.7 27
	Exhaust Flange Size (Internal Diameter)	mm in	200.2 8	200.2 8
Performance Data @ Rated Conditions	Fuel Consumption (100% load) with Fan	L/Hr gph	160.8 42.3	222.6 58.8
	Fuel Consumption (75% load) with Fan	L/Hr gph	120.6 31.9	155.1 40.9
	Combustion Air Inlet Flow Rate	m ³ /min cfm	47.9 1,692	68.7 2,426
	Exhaust Gas Flow Rate	m ³ /min cfm	130.5 4,609	181.8 6,420
	Heat Rejection to Coolant (total)	kW Btu/min	374 21,269	486 27,638
	Heat Rejection to Exhaust (total)	kW Btu/min	562 31,960	730 41,514
	Heat Rejection to Atmosphere from Engine	kW Btu/min	111 6,312	168 9,554
	Heat Rejection to Atmosphere from Generator	kW Btu/min	31.2 1,774	36.8 2,093
	Exhaust Gas Stack Temperature	Deg. C Deg. F	535 995	514 957

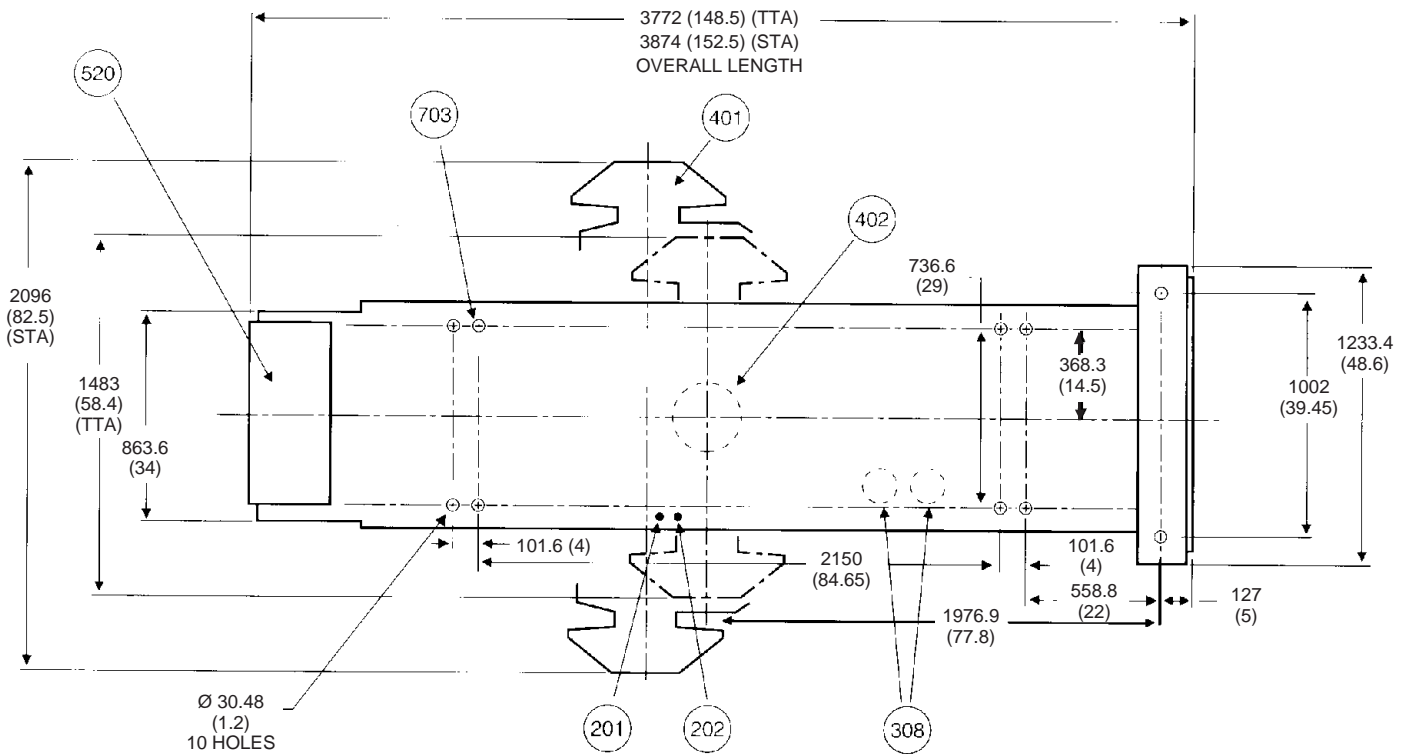
3412 GENERATOR SET



TECHNICAL DATA – 800 kW/kV•A

3412 STA Standby Power Generator Set (Series Turbo)			50 Hz–1500 RPM	60 Hz–1800 RPM	
Rating Information	Power Rating @ 0.8 PF with Fan	kW	640	800	
	Power Rating @ 0.8 PF with Fan	kV•A	800	1000	
Dimensions	Generator Frame Size	597	597	597	
	Length	mm	3,874	3,874	
		in	152.5	152.5	
	Width	mm	2,096	2,096	
		in	82.5	82.5	
Height	mm	2,143	2,143		
	in	84.4	84.4		
Weight (Dry)	kg	5,729	5,729		
	lb	12,630	12,630		
Lubrication & Cooling Systems	Engine Lubricating Oil Capacity	L qts	117 124	117 124	
	Engine Coolant Capacity without Radiator	L gal	60.6 16.0	60.6 16.0	
	Engine Coolant Capacity with Radiator	L gal	117.3 31.0	117.3 31.0	
	Standard Radiator Arrangement Data:	Air Flow (Max @ rated speed)	kPa cfm	820 28,966	984 34,759
		Air Flow Restriction (after radiator)	m ³ /min in water	.06 0.25	.06 0.25
	Ambient Air Temperature with standard radiator (Consult T.M.I.)	Deg. C	41	39	
		Deg. F	107	103	
	Coolant Pump External Resistance (max. allowable)	m water ft water	5.1 16.8	5.1 16.8	
Coolant Pump Flow at Max. Allowable Resistance	L min gpm	530.6 140	530.6 140		
Exhaust System	System Backpressure (Max. Allowable)	kPa in water	6.7 27	6.7 27	
	Exhaust Flange Size (Internal Diameter)	mm in	200.2 8	200.2 8	
Performance Data @ Rated Conditions	Fuel Consumption (100% load) with Fan	L/Hr gph	170.9 45.1	224.0 59.2	
	Fuel Consumption (75% load) with Fan	L/Hr gph	129.2 34.1	165.1 43.6	
	Combustion Air Inlet Flow Rate	m ³ /min	50.3	73.3	
		cfm	1,776	2,589	
	Exhaust Gas Flow Rate	m ³ /min	137.5	194.8	
		cfm	4,856	6,879	
	Heat Rejection to Coolant (total)	kW	398	523	
		BTU/min	22,634	29,743	
	Heat Rejection to Exhaust (total)	kW	598	784	
Btu/min		34,007	44,585		
Heat Rejection to Atmosphere from Engine	kW	118	189		
	Btu/min	6,711	10,748		
Heat Rejection to Atmosphere from Generator	kW	32.6	38.4		
	Btu/min	1,854	2,184		
Exhaust Gas Stack Temperature	Deg. C	536	518		
	Deg. F	997	964		

STANDBY POWER GEN SET PACKAGE



- | | | | |
|------------------|--------------------------|-----------------|-------------------------------|
| | (202) Excess Fuel Return | (401) Air Inlet | (520) Control and Power Panel |
| (201) Fuel Inlet | (308) Oil Filter | (402) Exhaust | (703) Customer Mounting Holes |

Note: General configuration not to be used for installation. See general dimension drawings for detail.

CONDITIONS AND DEFINITIONS

Prime — Output available with varying load for an unlimited time. Prime power in accordance with ISO8528, Overload power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514.

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.

Continuous — Output available without varying load for an unlimited time. Continuous power in accordance with ISO8528, 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 ISO3046 and on fuel oil of 35° API (16° C or 60° F) gravity having a LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29° C (85° F) and weighing 838.9 g/L (7.001 lbs/U.S. gal.).