DIESEL GENERATOR SET

CATERPILLAR®

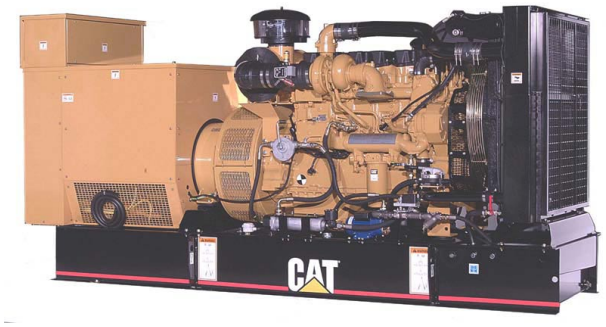


Image shown may not reflect actual package

STANDBY 500 ekW

60 Hz 277/480 □

Caterpillar is leading the power generation marketplace with Power Solutions engineered to deliver unmatched flexibility, expandability, reliability, and cost-effectiveness.

FEATURES

PERFORMANCE STRATEGY OPTIONS
- Low emissions and Optimized Fuel Consumption (Low BSFC) versions available

FULL RANGE OF ATTACHMENTS
- Wide range of bolt-on system expansion attachments, factory designed and tested

ENCLOSURES (optional)
- Weather protective ~~and sound attenuated~~

SINGLE-SOURCE SUPPLIER
- **Fully Prototype Tested** with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT
- Worldwide parts availability through the Caterpillar dealer network
- With over 1,800 dealer branch stores operating in 166 countries, you're never far from the Caterpillar part you need.
- 99.7% of parts orders filled within 24 hours. The best product support record in the industry.
- Caterpillar dealer service technicians are trained to service every aspect of your electric power generation system.
- Preventive maintenance agreements
- The Cat Scheduled Oil Sampling (S·O·S^{SM}) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion by-products

CAT® 3456 ATAAC DIESEL ENGINE
- Reliable, rugged, durable design
- Field-proven in thousands of applications worldwide
- Four-stroke-cycle diesel engine combines consistent performance and excellent fuel economy with minimum weight

CAT SR4B GENERATOR
- Designed to match performance and output characteristics of Caterpillar diesel engines
- Optimum winding pitch for minimum total harmonic distortion and maximum efficiency
- Segregated low voltage (AC/DC) accessory box provides single point access to accessory connections
- UL 1446 Recognized Class H Insulation System

CAT CONTROL PANELS
- Two levels of controls, designed to meet individual customer needs:
  - EMCP II provides digital monitoring, metering, and protection
  - EMCP II+ provides EMCP II features along with full-featured power metering and protective relaying

FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

System	Standard	Optional
Air Inlet	Modular air cleaner, single element Service indicator	
Cooling	Radiator with guard sized for 50° C Coolant level sight gauge Coolant drain line with valve Fan and belt guards Low coolant level alarm or shutdown Caterpillar Extended Life Coolant	Jacket water heater with shutoff valves
Exhaust	Stainless steel exhaust flex and ANSI weld flange Turbo outlet elbow	30 dBA muffler Elbow mounting and through-wall installation kits
Fuel	Primary and secondary fuel filters Water separator Fuel priming pump Fuel pressure gauge Flexible fuel lines Fuel cooler	
Generator	Self excited Random wound Class H Insulation AVR with adjustable 1:1 or 2:1 Volts/Hz Bus bar termination Extension box Segregated low voltage wiring panel	Permanent magnet Circuit breaker, 3-pole with shunt trip (80% rated)
Governor	Electronic (ADEM II)	
Control Panels	EMCP II	Local alarm and remote annunciator modules
Lube	Lubricating oil and filter Oil drain line with valves Fumes disposal Lube oil level indicator	
Mounting	Formed steel narrow base Linear vibration isolators between base and engine generator	UL Listed sub base fuel tanks
Starting/Charging	45 amp charging alternator 24 volt starting motor Batteries with rack and cables Safety shutoff protection (ADEM II control)	Battery disconnect switch 10 amp dual rate battery charger
Other		Enclosures – weather protective Automatic transfer switches

SPECIFICATIONS

CAT SR4B GENERATOR

Frame size 499
Excitation ..... …Permant Magnet
Pitch 0.6667
Number of poles 4
Number of bearings 1
Number of leads 12
Insulation .....UL 1446 Recognized Class H Insulation
IP rating .....Drip proof IP22
Alignment .....Pilot shaft
Overspeed capability 125%

Wave form .....Less than 5% deviation
Paralleling kit droop transformer .....Standard
Voltage regulator .....3-phase sensing with adjustable 1:1 or 2:1 Volts/Hz, UL 508A Listed
TIF .....Less than 50
THD ..... Less than 5%

Consult your Caterpillar dealer for available voltages.

CAT ENGINE

3456 ATAAC, 4-stroke-cycle watercooled diesel
Bore — mm (in) 139.7 (5.5)
Stroke — mm (in) 171.5 (6.75)
Displacement — L (cu in) 15.83 (966)
Compression ratio 16.1:1
Aspiration ..... Air-to-Air Aftercooled
Fuel system ..... Electronic Unit Injection
Governor type .....Electronic (ADEM II)

CAT CONTROL PANEL

24 Volt DC Control
NEMA 1, IP22 enclosure
Electrically dead front
Lockable hinged door
Generator instruments meet ANSI C-39-1
Terminal box mounted
Single location customer connector point
EC compliant — segregated AC/DC connections and wiring

[redacted] TECHNICAL DATA

Open Package Generator Set — 1800 rpm/60 Hz/480 Volts		Standby		Prime	
		DM6329	DM6341	DM6330	DM6342
Package Performance					
Power rating	kW	500		455	
Power rating @ 0.8 pf	kVA	625		569	
Performance Strategy		Low Emissions	Low BSFC	Low Emissions	Low BSFC
Fuel Consumption					
100% load with fan	L/hr	137.4	137.2	123.7	123.1
	Gal/hr	36.3	36.2	32.7	32.5
75% load with fan	L/hr	97.6	95.8	88.6	87.0
	Gal/hr	25.8	25.3	23.4	23.0
50% load with fan	L/hr	66.3	65.6	60.9	60.4
	Gal/hr	17.5	17.3	16.1	16.0
Cooling System					
Ambient air temperature*	Deg C	50	50	50	50
	Deg F	122	122	122	122
Air flow restriction (system)**	kPa	.12	.12	.12	.12
	in water	.5	.5	.5	.5
Air flow (maximum @ rated speed for standard radiator arrangement)	m^3/min	563	563	563	563
	cfm	19,868	19,868	19,868	19,868
Engine coolant capacity with radiator	L	78.2	78.2	78.2	78.2
	Gal	20.6	20.6	20.6	20.6
Exhaust System					
Combustion air inlet flow rate	m^3/min	39.2	39.2	38.3	38.2
	cfm	1384	1384	1352	1349
Exhaust stack gas temperature	Deg C	527	526	482	480
	Deg F	981	979	900	896
Exhaust gas flow rate	m^3/min	110.9	110.5	102.1	101.6
	cfm	3916	3902	3605	3587
Exhaust flange size – (internal diameter)	mm	157	157	157	157
(qty. of 2)	in	6.18	6.18	6.18	6.18
Exhaust system backpressure	kPa	6.7	6.7	6.7	637
(maximum allowable)	in water	27	27	27	27
Heat Rejection					
Heat rejection to coolant (total)	kW	199	195	168	161
	Btu/min	11,317	11,090	9554	9156
Heat rejection to exhaust (total)	kW	500	500	441	438
	Btu/min	28,435	28,435	25,080	24,909
Heat rejection to atmosphere from engine	kW	76	78	82	86
	Btu/min	4322	4436	4663	4891
Heat rejection to atmosphere from generator	kW	36.47	36.47	32.09	32.09
	Btu/min	2075.1	2075.1	1798.2	1798.2
Alternator					
Motor starting capability @ 30% voltage dip	KVA	1477	1477	1477	1477
Frame		499	499	499	499
Temperature rise	Deg C	130	130	105	105
Lube System					
Lube oil refill volume w/filter change for std sump	L	38	38	38	38
	Qts	40	40	40	40
Emissions* **					
NO_X	g/hp-hr	5.02		4.84	
	mg/N·m^3 @ 5% O_2	2438		2368	
CO	g/hp-hr	.26		.18	
	mg/N·m^3 @ 5% O_2	124		90	
HC	g/hp-hr	.03		.04	
	mg/N·m^3 @ 5% O_2	15		20	
PM	g/hp-hr	.023		.023	
	mg/N·m^3 @ 5% O_2	11		11	

*Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes consult your Caterpillar dealer.

**This is added to existing restriction from factory.

***Emissions data measurements are consistent with those described in EPA CFR 40 Part 89 Subpart D & E and ISO8178-1 for measuring HC, CO, PM, NO_X. Engine exhaust emissions are in compliance with the EPA and California nonroad regulations referenced in the above table. The nominal emissions data shown is subject to instrumentation, measurement, facility and engine variations.

RATING DEFINITIONS AND CONDITIONS

Meets or Exceeds International Specifications:

- ABGSM TM3, AS1359, AS2789, BS4999, BS5000, BS5514, DIN6271, DIN6280, EGSA101P, IEC34/1, ISO3046/1, ISO8528, JEM1359, NEMA MG1-22, VDE0530, 89/392/EEC, 89/336/EEC

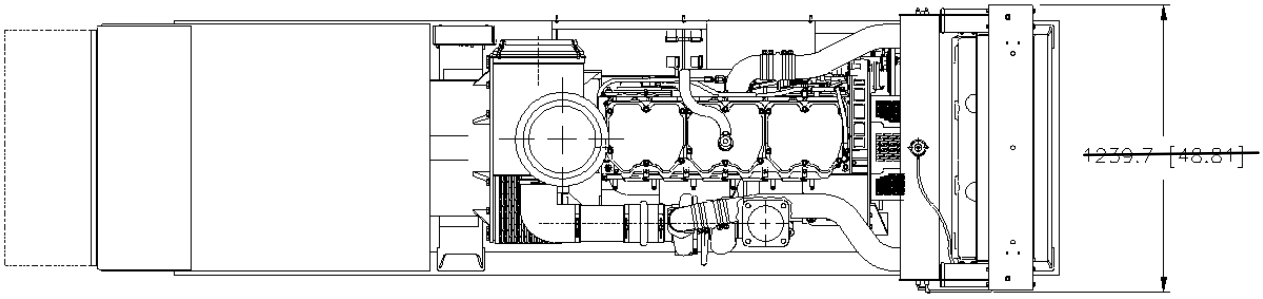
Standby — Output available with varying load for the duration of the interruption of the normal source power. Standby power in accordance with ISO8528. Fuel stop power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514. Standby ambients shown indicate ambient temperature at 100 percent load which results in a coolant top tank temperature just below the shutdown temperature.

Prime — Output available with varying load for an unlimited time. Prime power in accordance with ISO8528. 10% overload power in accordance with ISO3046/1, AS2789, DIN6271, and BS5514 available on request. Prime power ambients shown indicate ambient at 100 percent load which results in a coolant top tank temperature just below the alarm temperature.

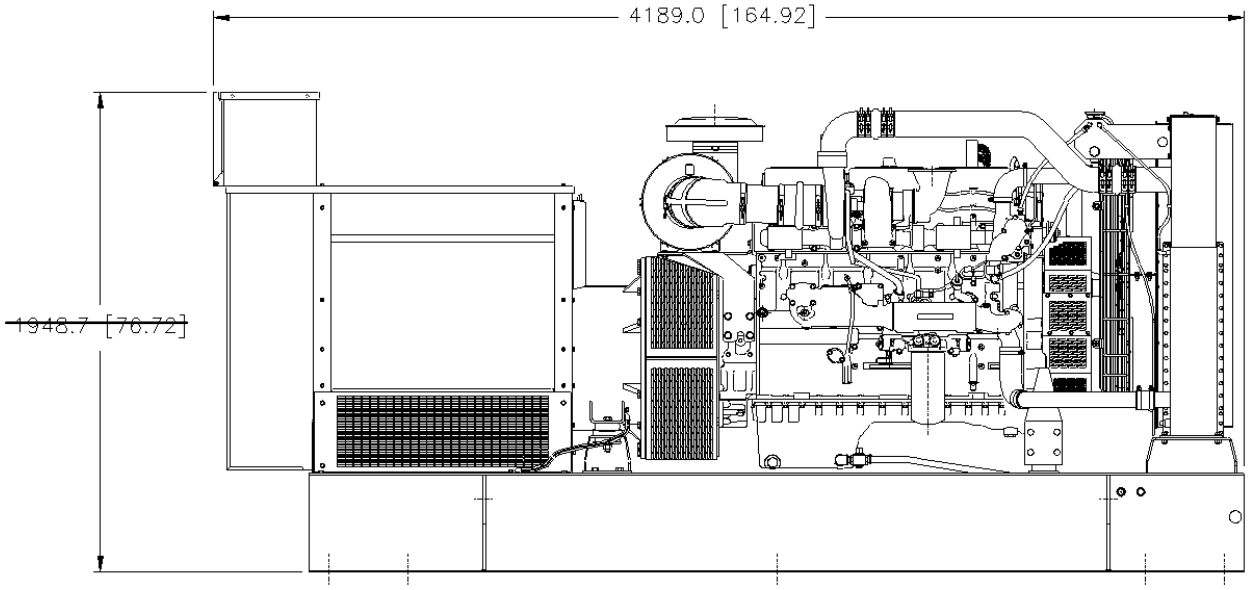
Ratings are based on SAE J1349 standard conditions. These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions.

Fuel rates are based on fuel oil of 35° API [@16° C (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.).
Additional ratings may be available for specific customer Requirements. Consult your Caterpillar representative for details.

STANDBY/PRIME POWER GENERATOR SET PACKAGE — TOP VIEW



STANDBY/PRIME POWER GENERATOR SET PACKAGE — SIDE VIEW



Package Dimensions		
Length		
Width		
Height		
Approximate Weight		

Note: Do not use for installation design. See general dimension drawings for detail (Drawing # 2018620).

www.CAT-ElectricPower.com

TMI Reference No.: DM6329, DM6330, DM6341, DM6342

U.S. sourced

Last Updated: October 9, 2001