

Image shown may not reflect actual package.

PRIME 455 ekW 568 kVA 60 Hz 1800 rpm 480 Volts

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

FEATURES



EMISSIONS

• EPA and CARB Emissions Certified for nonroad mobile applications

UL 2200

• UL 2200 Listed configuration available

ENCLOSURES (optional)

Weather protective and sound attenuated

SINGLE-SOURCE SUPPLIER

 Fully prototype tested with certified torsional vibration analysis available

WORLDWIDE PRODUCT SUPPORT

- Caterpillar dealers provide extensive post sale support including maintenance and repair agreements
- Caterpillar dealers fill 99.7% of parts orders within 24 hours
- Caterpillar dealers have over 1844 dealer branch stores operating in 166 countries
- The Cat Scheduled Oil Sampling (S•O•SSM) program cost effectively detects internal engine component condition, even the presence of unwanted fluids and combustion byproducts



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

- Matched to the performance and output characteristics of Caterpillar 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

CAT CONTROL PANELS

- · Two levels of controls to meet individual customer needs:
- EMCP II offers digital monitoring, metering, and protection
- EMCP II+ offers EMCP II features plus full-featured power metering and protective relaying



FACTORY INSTALLED STANDARD & OPTIONAL EQUIPMENT

| System | Standard | Optional | |
|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|
| Air Inlet | Modular air cleaner, single element Service indicator | Dual element air cleaner Heavy-duty air cleaner Heavy-duty air cleaner with muffler and dust ejector | |
| 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 Block heater | |
| Exhaust | Stainless steel exhaust flex and ANSI weld flange Turbo outlet elbow | 20 dBA muffler 30 dBA muffler 15 dBA engine mounted muffler with HD air cleaner Engine mounted muffler with HD air cleaner Elbow mounting and through-wall installation kits Manifold and turbocharger guards | |
| Fuel | Primary and secondary fuel filters Water separator Fuel priming pump Fuel pressure gauge Flexible fuel lines Fuel cooler | Manual transfer pump Choice of three automatic transfer systems | |
| 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 Digital Voltage Regulator Digital Voltage Regulator with KVAR/PF control Anti-condensation space heater Oversize and premium generators (except 455 ekW Prime/500 ekW Standby) Circuit breaker, IEC compiant, 3-pole and 4-pole with shunt trip (80% and 100% rated) UL Listed multiple circuit breakers | |
| Governor | Electronic (ADEM II) | Electronic load sharing | |
| Control Panels | • EMCP II | EMCP II+ Local alarm and remote annunciator modules Protective devices Instrument package | |
| Lube | Lubricating oil and filter Oil drain line with valves Fumes disposal Lube oil level indicator | Manual sump pump | |
| Mounting | Formed steel narrow base Linear vibration isolators between base and engine generator | Wide base Skid base UL Listed integral and 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) | Integral 5 and 10 amp battery chargers Oversize batteries Ether starting aid Battery disconnect switch 10 amp dual rate battery charger | |
| Other | | Enclosures - sound attenuated, weather protective Automatic transfer switches Floor standing and package mounted circuit breakers | |

PRIME 455 ekW 568 kVA 480 Volts 60 Hz 1800 rpm



SPECIFICATIONS



CAT SR4B GENERATOR

| Frame size |
|-----------------------------------------------------------------|
| ExcitationSelf Excited |
| Pitch0.6667 |
| Number of poles4 |
| Number of bearingsSingle Bearing |
| Number of leads |
| Insulation .UL 1446 Recognized Class H with tropicalization and |
| antiabrasion |
| IP rating |
| Alignment |
| Overspeed capability125% of rated |
| Wave form Less than 5% deviation |
| Paralleling kit droop transformer |
| Voltage regulator 3 Phase sensing with selectible volts/Hz |
| Voltage Regulation Less than +/- 1/2% (steady state) |
| Less than +/- 1% (no load to full load) |
| Telephone Influence FactorLess than 50 |
| Harmonic distortion Less than 5% |



CAT ENGINE

| 3456 ATAAC, 4-stroke-cycle watercooled diesel | | | | | |
|-----------------------------------------------|--|--|--|--|--|
| Bore - mm | | | | | |
| Stroke - mm | | | | | |
| Displacement - L | | | | | |
| Compression ratio16.1 | | | | | |
| Aspiration | | | | | |
| Fuel system | | | | | |
| Governor type | | | | | |



CAT CONTROL PANEL

NEMA 1, IP22 enclosure Electrically dead front Generator instruments meet ANSI C-39-1 Terminal box mounted Single location customer connector point

Consult your Caterpillar dealer for available voltages.

PRIME 455 ekW 568 kVA 1800 rpm 480 Volts 60 Hz



TECHNICAL DATA

| Open Generator Set - — 1800 rpm/60 Hz/480 Volts | PRIME DM6218 | |
|-------------------------------------------------------|-----------------|------------------|
| Package Performance | 455 110/ | |
| Power rating | 455 ekW | |
| Power rating @ 0.8 pf | 568.75 kVA | |
| Fuel Consumption | | |
| 100% load with fan | 123.7 L/hr | 32.7 Gal/hr |
| 75% load with fan | 88.6 L/hr | 23.4 Gal/hr |
| 50% load with fan | 60.9 L/hr | 16.1 Gal/hr |
| Cooling System* | | |
| Ambient air temperature | 50 Deg C | 122 Deg F |
| Air flow restriction (system) | .12 kPa | 0.48 in. water |
| Air flow (max @ rated speed for radiator arrangement) | 563 m³/min | 19,882 cfm |
| Engine coolant capacity with radiator | 72.8 L | 19.2 Gal |
| Exhaust System | | |
| Combustion air inlet flow rate | 38.3 m³/min | 1,352.6 cfm |
| Exhaust stack gas temperature | 482.4 Deg C | 900 Deg F |
| Exhaust gas flow rate | 102.1 m³/min | 3,605.6 cfm |
| Exhaust flange size (internal diameter) | 152.4 mm | 6.0 in |
| Exhaust system backpressure (maximum allowable) | 6.7 kPa | 26.9 in. water |
| Heat Rejection | | |
| Heat rejection to coolant (total) | 168 kW | 9,554 Btu/min |
| Heat rejection to exhaust (total) | 442 kW | 25,136 Btu/min |
| Heat rejection to atmosphere from engine | 82 kW | 4,663 Btu/min |
| Heat rejection to atmosphere from generator | 32.09 kW | 1,824.95 Btu/min |
| Alternator** | | |
| Motor starting capability @ 30% voltage dip | 855 skVA | |
| Frame | 499 | |
| Temperature Rise | 105 Deg C | |
| Lube System | | |
| Lube oil refill volume with filter change for | 38.0 L | 10.0 Gal |
| standard sump | | |
| Emissions*** | | |
| Nox g/hp-hr (not to exceed) | < 5.85 g/bhp-hr | |
| CO g/hp-hr (not to exceed) | < .34 g/bhp-hr | |
| HC g/hp-hr (not to exceed) | < .08 g/bhp-hr | |
| PM g/hp-hr (not to exceed) | < .044 g/bhp-hr | |

^{*}Ambient capability at 200 m (660 ft) above sea level. For ambient capability at other altitudes, consult your Caterpillar dealer. Air flow restriction (system) is added to existing restriction from factory.

^{**}Generator temperature rise is based on a 40 degree C ambient per NEMA MG1-32.

^{***}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, NOx. This engine's exhaust emissions are in compliance with the US EPA and California nonroad regulations. Data shown is based on steady state operating conditions of 77 deg F, 28.42 in HG and number 2 diesel fuel with 35 deg API and LHV of 18,390 Btu/lb.



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 MG 1-22, VDE0530, 89/392/EEC, 89/336/EEC

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.



| Package Dimensions | | | | |
|--------------------|-----------|-----------|--|--|
| Length | 4074.0 mm | 160.39 in | | |
| Width | 1239.7 mm | 48.81 in | | |
| Height | 1960.0 mm | 77.17 in | | |
| Weight | 4741 kg | 10,452 lb | | |

Note: Do not use for installation design. See general dimension drawings for detail (Drawing #2018963).

TMI Reference No.: DM6218

PL Reference No.: 456DE07

U.S. Sourced

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Materials and specifications are subject to change without notice. The International System of Units (SI) is used in this publication.