

Image shown with optional attachments.

CAT® ENGINE SPECIFICATIONS

V-8, 4-Stroke-Cycle-Diesel

Emissions	Not Emissions Certified
Bore	170 mm (6.7 in.)
Stroke	190 mm (7.5 in.)
Displacement	34.5 L (2111 cu. in.)
Aspiration	Turbocharged-Aftercooled
Governor and Protection	Electronic ADEM™ A3
Engine Weight, net dry (approx)	5218 kg (11,503 lb.)
Module Weight, net dry (approx)*	15,352 kg (33,846 lb.)
Capacity for Liquids	
Lube Oil System (refill)	227.1 L (60 U.S. gal.)
Cooling System (engine only)	103 L (27.2 U.S. gal.)
Cooling System (radiator)	206 L (54.4 U.S. gal.)
Oil Change Interval	500 hours

*Module weight includes — inner and outer base, radiator, generator, and engine

FEATURES

Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Assembled, tested, and validated as a package to minimize package vibration and maximize component life
- Market-leading power density
- Designed to perform in oilfield conditions, including high ambient high altitude applications
- Long overhaul life proven in oilfield applications
- Core engine components designed for reconditioning and reuse at overhaul

Advanced Digital Engine Management

ADEM A3 engine management system integrates speed control, air/fuel ratio control, and ignition/detonation controls into a complete engine management system. ADEM A3 has improved user interface, display system, shutdown controls, and system diagnostics and allows electronic integration with transmissions.

Safety

- E-Stop pushbutton on instrument panel
- Air shutoff and explosion relief valves
- Configurable alarm and shutdown features
- Extra alarm switches available for customer-supplied panel

Ease of Installation and Packaging

- Customer interface harness
- Simple engine/package wiring
- Adapters, fittings, and connectors available for cooling, air and exhaust system

Improved Serviceability

Large inspection openings allow convenient access to core engine internals

Reduction of Owning and Operating Costs

- Long filter change intervals, aligned with service intervals
- Excellent fuel economy — direct injection electronic unit injectors precisely meter fuel

Custom Packaging

For any petroleum application, trust Caterpillar to meet your exact needs with a factory custom package. Cat® engines, generators, enclosures, controls, radiators, transmissions — anything your project requires — can be custom designed and matched to create a one-of-a kind solution. Custom packages are globally supported and are covered by a one-year warranty after startup.

Full Range of Attachments

Large variety of factory-installed engine attachments reduces packaging time

Testing

Every engine is full-load tested to ensure proper engine performance.

Product Support Offered Through Global Cat Dealer Network

More than 2,200 dealer outlets

Cat factory-trained dealer technicians service every aspect of your petroleum engine

Cat parts and labor warranty

Preventive maintenance agreements available for repair-before-failure options

S•O•SSM program matches your oil and coolant samples against Caterpillar set standards to determine:

- Internal engine component condition
- Presence of unwanted fluids
- Presence of combustion by-products
- Site-specific oil change interval

Over 80 Years of Engine Manufacturing Experience

Ownership of these manufacturing processes enables Caterpillar to produce high quality, dependable products.

- Cast engine blocks, heads, cylinder liners, and flywheel housings
- Machine critical components
- Assemble complete engine

Web Site

For all your petroleum power requirements, visit www.catoilandgas.cat.com.

STANDARD EQUIPMENT

Air Inlet System

Aftercooler core — corrosion resistant
Air cleaner — regular duty with soot filter
Service indicators

Control System

Caterpillar ADEM A3 ECU — LH
Includes adjustable speed droop capability

Cooling System

Radiator cooled land based
Outlet controlled thermostat and housing
Jacket water pump — gear-driven
Dual outlet
Aftercooler fresh water cooling pump (SCAC) —
gear-driven centrifugal

Exhaust System

Exhaust flexible fittings, adapters and flanges
Dual turbochargers with w/c bearings

Flywheels and Flywheel Housings

SAE No. 00
SAE standard rotation

Fuel System

Fuel filter — LH
Fuel transfer pump
Flexible fuel lines
Fuel priming pump — LH
Electronically controlled unit injectors

Instrumentation

Electronic instrument panel — LH
Analog gauges with digital display data for: engine oil
pressure gauge, engine water temperature gauge,
fuel pressure gauge, system DC voltage gauge, air
inlet restriction gauge, exhaust temperature (prior to

turbochargers) gauge, fuel filter differential pressure
gauge, oil filter differential pressure gauge, service meter
(digital display only), tachometer (digital display only),
instantaneous fuel consumption (digital display only),
total fuel consumed (digital display only), engine start-
stop (off, auto start, manual start, cooldown timer)

Lube System

Crankcase breather
Oil cooler
Oil filter — LH
Shallow oil pan
Oil drain extension, 2" NPT female connection

Mounting System

Oilfield base 7.85 m (25 ft 9 in) length
Heavy-duty land rig inner baseframe — three-point mount
to oilfield base

Power Take-Offs

Accessory drive

Protection System

ADEM A3 ECU monitoring system provides engine
protection strategies to protect against adverse
operating conditions. Selected parameters are customer
programmable.

Starting System

Air starting motor
Air silencer

General

Paint — Cat yellow
Vibration damper and guard
Lifting eyes
Lift and cable tow provisions

OPTIONAL EQUIPMENT

Air Inlet System

Heavy-duty air cleaners and precleaners
Remote air inlet adapters

Charging Systems

Charging alternators

Control System

Load sharing modules
Governor conversion
2301A load sharing governors

Cooling Systems

High gloss black conventional core radiator (installed)
Belt guard, radiator guard
Blower fan
Fan drive and fan pulley
Radiator cover
Water level switch gauge
Coolant level sensors

European Union Certifications**Exhaust System**

Elbows
Mufflers

Fuel System

Primary fuel filter

Generator

Twin-bearing, close-coupled
0.7 power factor, form wound
Permanent magnet excitation
Factory aligned
Class H insulation, 80°C temp rise

Generator Attachments

Installed SR4B generators
Low voltage extension box
Potential transformer
Current-drop transformers
Air filter
Cable access box
Bearing temperature detectors

Instrumentation

Customer management device
Gauges and instrument panels
Switches and contactors

Lube System

Fumes disposal
Oil pan accessories

Mounting System

Bases
Base removal

Power Take-Offs

Front stub shaft
Pulleys

Protection System

Explosion relief valve
Shutoffs
Switches and contactors

Starting System

Air pressure regulator
Manual air starter
Starting aids

General

Engine bearing group
Tool set
Cat data link wire

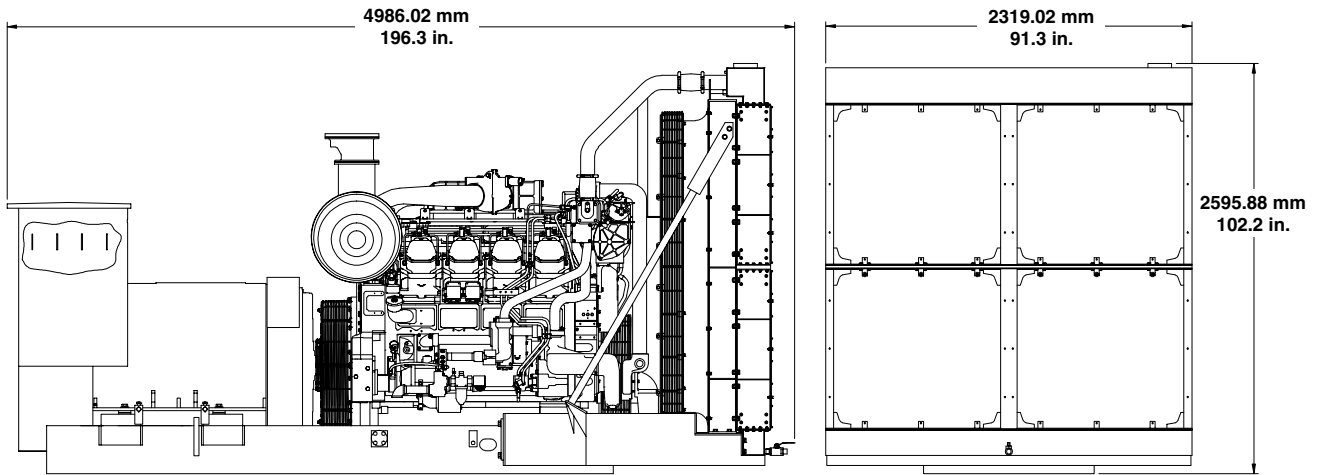
GENERATOR DATA

	50 Hz — Standard	
ekW Rating	1050	1050
kVA Rating	1500	1500
rpm	1500	1500
Rated PF	0.7	0.7
Temperature Rise	80°C @ 40°C	105°C @ 40°C
Insulation Class	VPI	VPI
Overload	50% / 2 min	50% / 2 min.
Excitation	Permanent Magnet	Permanent Magnet
Voltage	600	600
Voltage Regulator	Optional	Optional
Configuration	2-Bearing, Free-Standing	2-Bearing, Close-Coupled
Coastal Protection	Yes	Yes
Space Heater	Included	Included
Construction	Form Wound	Form Wound
Frame Size	825	824

ALTITUDE CAPABILITY

Approximate Power (bhp) as a function of Altitude and Inlet Manifold Temperature									
Ambient Operating Temp. (°F)	Altitude (feet)								
	10,499	9843	8202	6562	4921	3281	1640	984	0
50	1041	1067	1137	1180	1180	1180	1180	1180	1180
68	1006	1031	1098	1169	1180	1180	1180	1180	1180
86	972	998	1062	1130	1180	1180	1180	1180	1180
104	941	966	1029	1094	1164	1180	1180	1180	1180
122	912	936	996	1061	1128	1180	1180	1180	1180
Normal	1043	1065	1121	1180	1180	1180	1180	1180	1180

LAND ELECTRIC DRILLING MODULE



Right Side View

Front View

Module Dimensions		
Length	4986.02 mm	196.3 in.
Width	2319.02 mm	91.3 in.
Height	2595.88 mm	102.2 in.
Engine Weight (dry)	5218 kg	11,503 lb.
Module Weight (dry)*	15,352 kg	33,846 lb.

Note: Do not use for installation design.
See general dimension drawings for detail.
(Drawing #230-7331)

*Module weight includes — inner and outer base, radiator, generator, and engine

RATING DEFINITIONS AND CONDITIONS

Ratings are based on SAE J1995 standard conditions of 100 kPa (29.61 in Hg) and 25° C (77° F). These ratings also apply at ISO3046/1, DIN6271, and BS5514 standard conditions of 100 kPa (29.61 in Hg), 27° C (81° F), and 60% relative humidity. Ratings are valid for air cleaner inlet temperatures up to and including 50° C (122° F).

Fuel consumption has a tolerance of +5% and is 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). Fuel consumption shown with all oil, fuel, and water pumps, engine driven.

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