



# 3508 Land Electric-Drive Drilling Module

641 kW  
(860 bhp)  
1200 rpm

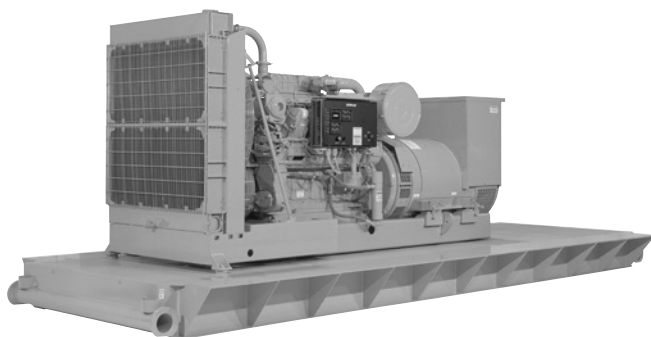


Image shown with optional attachments.

## CAT® MODULE 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 in <sup>3</sup> )
Aspiration .....	Turbocharged-Aftercooled
Governor and Protection .....	Woodward
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) .....	160 L (42.3 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

### 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

### 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 Cat module 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•S<sup>SM</sup> 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](http://www.catoilandgas.cat.com).

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**STANDARD EQUIPMENT**
**Air Inlet System**

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

**Control System**

Governor, Woodward EG6PC actuator — RH (controls provided by the SCR supplier)  
 Magnetic pickup

**Cooling System**

Thermostats and housing (dual outlet)  
 Jacket water pump — gear-driven

**Exhaust System**

Exhaust flexible fitting  
 Weldable flange  
 Exhaust manifolds — dry

**Flywheels and Flywheel Housings**

SAE No. 00  
 SAE standard rotation

**Fuel System**

Fuel filter — LH  
 Fuel transfer pump  
 Fuel return line — hard, with flexible connection  
 Fuel priming pump — LH

**Instrumentation**

Electronic instrument panel — LH, 8 hole, 7 gauge  
 Oil pressure  
 Fuel pressure  
 Oil filter differential pressure  
 Water temperature  
 Tachometer  
 Service meter  
 Exhaust temperature — dual

**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**

Hydra-mechanical shutoffs (low oil pressure, high water temperature and overspeed, air inlet shutoff); monitoring gauge and emergency remote shutoff  
 Alarm switches, low oil pressure, high water temperature (Marine Society approved) for connection to customer-supplied alarm panel  
 Manual shutoff control — LH

**Starting System**

Air starting motor — LH control  
 Air silencer

**General**

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

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**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**

Coolant level sensors  
 Connections

**European Union Certifications**
**Exhaust System**

Elbows  
 Mufflers

**Fuel System**

Primary fuel filter

**Generator**

Oilfield spec twin-bearing, close-coupled  
 Factory aligned

**Generator Attachments**

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  
 Starting aids

**General**

Engineering bearing group  
 Tool set



**GENERATOR DATA**

**60 Hz – Standard**

ekW / kVA.....	700 / 1000	Voltage .....	600
rpm.....	1200	Voltage Regulator .....	Optional
Rated pf.....	0.7	Configuration .....	2 bearing free standing
Temperature Rise.....	80°C @ 40°C ambient	Coastal Protection .....	Yes
Insulation Class.....	H	Space Heater .....	Included
Overload .....	50% / 2 min	Construction .....	Form wound
Excitation .....	Permanent magnet	Frame Size .....	862

**ALTITUDE CAPABILITY**

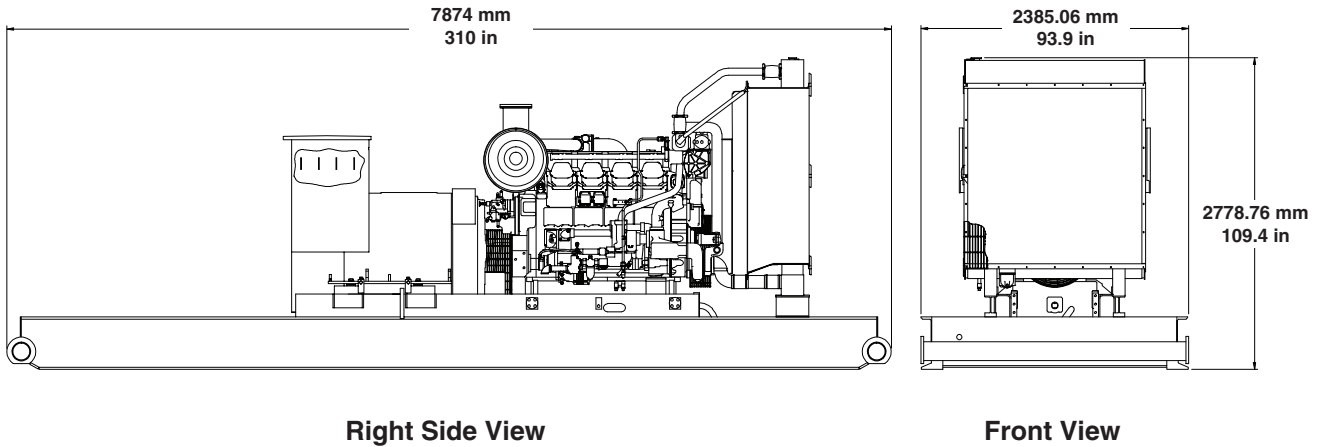
Altitude Capability Data (corrected power altitude capability)									
Ambient Operating Temp. (°F)	Altitude (feet)								
	10,499	9843	8202	6562	4921	3281	1640	984	0
50	685	704	750	798	849	860	860	860	860
68	662	680	724	771	819	860	860	860	860
86	641	657	700	746	793	842	860	860	860
104	620	636	677	721	767	815	860	860	860
122	601	617	657	699	743	790	839	860	860
Normal	687	701	739	778	818	860	860	860	860



# LAND ELECTRIC-DRIVE DRILLING MODULE

641 kW (860 bhp)

## LAND ELECTRIC-DRIVE DRILLING MODULE



Right Side View

Front View

Module Dimensions		
Length	7874 mm	310 in.
Width	2385.06 mm	93.9 in
Height	2778.76 mm	109.4 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 #205-2346)

\*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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