



1678 bkW (2250 bhp)  
1864 bkW (2500 bhp)  
1800 rpm

Image shown may not reflect actual configuration

## Specifications

Cat® 3512E ATAAC Land Well Service Engine	Metric	Imperial (English)
Configuration	V-12, 4-Stroke-Cycle Diesel	
Emissions	U.S. EPA Tier 4 Final/EU Stage IV	
Peak Torque 2250 bhp 2500 bhp	9017 N•m @ 1350 rpm 10550 N•m @ 1375 rpm	
Bore	170 mm	6.7 in
Stroke	215 mm	8.5 in
Displacement	58.9 L	3596 in <sup>3</sup>
Aspiration	ATAAC	
Governor and Protection	Electronic (ADEM™ A5)	
Core Engine Weight, dry (approx)*	6746 kg	14,872 lb
Capacity for Liquids Lube Oil System (refill) Cooling System	170/246 L 197 L	45/65 gal 52 gal
Oil Change Interval	250/500 hours	
Rotation (from flywheel end)	Counterclockwise	
Flywheel and Flywheel Housing	SAE No. 0	
Flywheel Teeth	151	

See page 5 for fully configured weight or TMI for weights of specific attachments.

## Features

### Engine Design

- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- Air shutoff – integrated with engine controls
- EGR/Diesel Oxidation Catalyst (DOC)/common rail fuel system to meet Tier 4 Final/Stage IV emission standards
- DEF free solution – eliminates the storage, logistics, and issues involved with SCR/DEF design engines

### Attachments

#### Cooling System

Air-to-Air Aftercooler (ATAAC)

**Engine-Mounted Package** – Integrates with engine, aftertreatment, heavy-duty air cleaners, residential grade mufflers available in stainless or carbon steel

### Optional Attachments

#### Engine-Mounted Transmission Oil Cooler –

Integration with engine cooling system allows ease of installation and a tighter overall engine package

### Advanced Digital Engine Management

ADEM A5 engine management system integrates speed control, air/fuel ratio control and ignition/detonation controls into a complete engine management system with integrated digital ignition, engine protection and monitoring

### 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•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, front and flywheel housings
- Machine critical components
- Assemble complete engine

### Web Site

For all your petroleum power requirements, visit [www.cat.com/oilandgas](http://www.cat.com/oilandgas)

## Standard Equipment

### Control System

Cat ADEM A5 ECU – LH  
With Common Rail Electronic Fuel Injection

### Cooling System

ATAAC system  
Thermostats and housing, jacket and separate  
circuit water pump, gear-driven centrifugal

**Aftertreatment Mounting** CEM/muffler support package  
with Heavy-duty air cleaners (2 element with precleaners)

### Exhaust System

Dual DOC - Robust Metallic Substrate  
Exhaust manifold, dry, bellows connection  
Four turbochargers with watercooled bearings Exhaust  
outlet depends on configuration (systems  
with mufflers have installed rain caps)  
Dual 10-inch ANSI round flange as part of the  
aftertreatment

### Flywheel and Flywheel Housings

Flywheel, SAE No. 0, 151 teeth

### Fuel System

Primary/secondary fuel filters  
Fuel priming pump (electric)  
Common rail fuel system  
Fuel transfer pump  
Clean fuel module boost pump

### Instrumentation

Product Link™ engine monitoring

### Lube System

Crankcase breather – top mounted  
Fumes disposal  
Oil cooler  
Oil filler and dipstick – LH  
Oil pump  
Oil filter – RH spin-on type  
Oil pan drain valve – 1" NPT female connection  
Oil scavenger pump

### Mounting System

Trunion front support  
Flywheel housing – two-sided

### Protection System

ADEM A5 ECU system to provide customer  
programmable engine deration strategies to  
protect against adverse operating conditions  
Emergency stop logic inputs provided at 70-pin  
customer interface connection

### General

Paint – Caterpillar yellow  
Vibration damper and guard  
Lifting eyes

## Optional Equipment

### Charge Air System

High temperature hump hoses  
Hybrid insulated CAC adapters  
Inlet adapter with hose barb

### Charging System

80, 95, or 150 amp charging alternator

### Control System

Local speed throttle control  
Throttle position sensors

### Cooling System

Coolant conditioner  
JW inlet and outlet hose barb connections  
JW outlet coupling-style connections  
JW inlet weld-flange connection  
Water level switch gauge  
High temperature ATAAC connections

### Exhaust System

Flex pipe kit  
Residential mufflers (painted steel and stainless  
steel) with outlet elbow and rain cap

### Flywheel and Flywheel Housings

CX48 flywheel  
TH55 flywheel and housing adapter

### Instrumentation

Product Link harness extensions  
LAN adapters

### Lube System

Rear sump oil pan – 250-hour change interval  
Front deep sump oil pan – 500-hour change interval

### Power Take-offs

Front crankshaft stub shaft  
Front crankshaft adapter  
Accessory drive – upper LH and upper RH

### Protection System

Hydraulic actuated air shutoff

### Starting System

Hydraulic starter – LH  
Dual hydraulic starter – LH  
Manual engine barring device

### Transmission Attachments

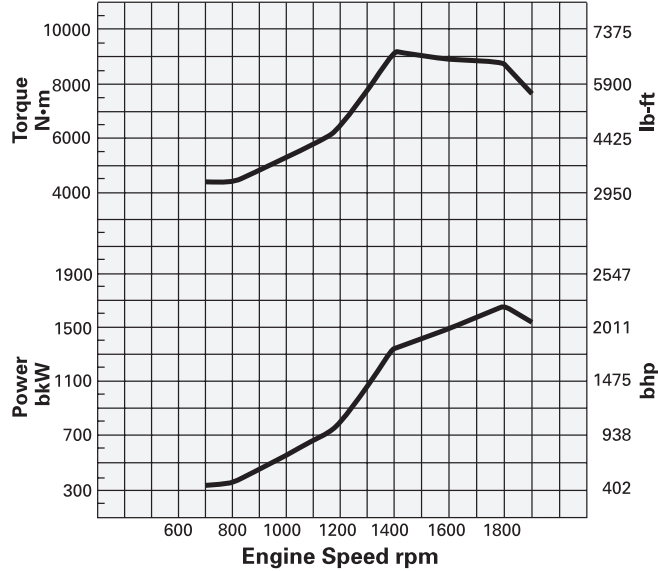
Transmission oil cooler  
Transmission oil cooler 2-1 connections  
Torque converter connections

### General

Air compressor  
Additional paint selections

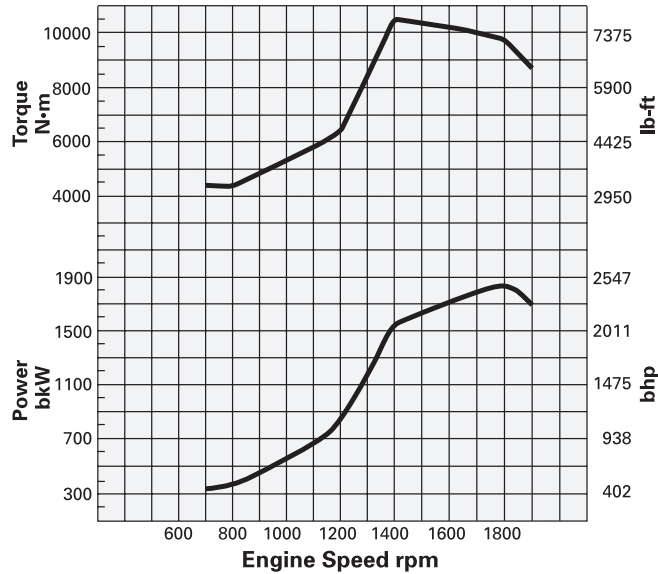
## Performance Curves

1678 bkW (2250 bhp) @ 1800 rpm



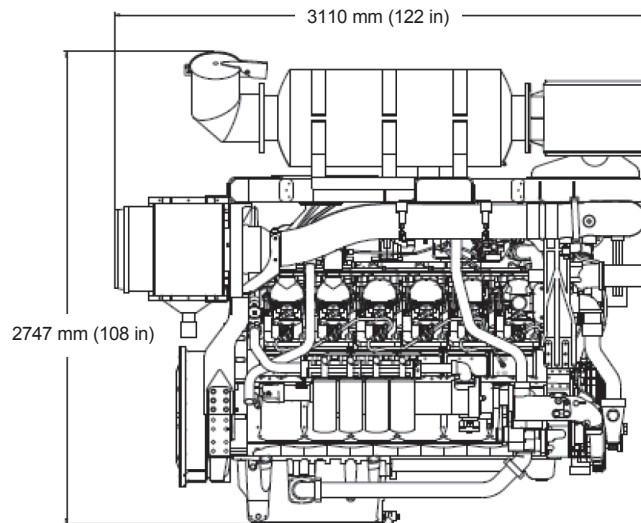
Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From 2nd Stage Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1800	1672	2241	859	48850.5	49	2758	1068	60728	444	25238

1864 bkW (2500 bhp) @ 1800 rpm

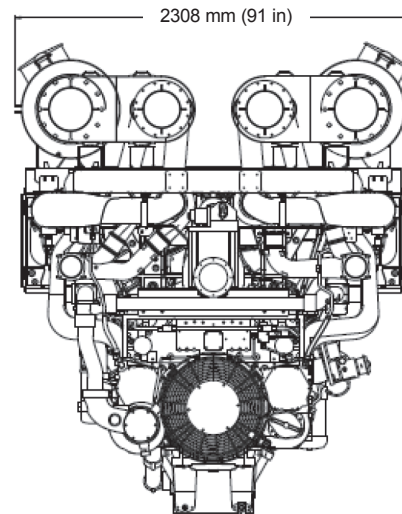


Heat Rejection Data										
Engine Speed rpm	Engine Power		Rej to JW		Rej to Atmos		Rej to Exh		From 2nd Stage Aft Clr	
	bkW	bhp	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min	bkW	Btu/min
1800	1862	2496	929	52831.3	54	3048	1204	68453	508	28889

## Dimensions



Right Side View



Front View

Package Dimensions and Weight		
Length	3110 mm	122 in
Width	2308 mm	91 in
Height	2747 mm	108 in
Weight	8970 kg	19,775 lb

**Note:** Maximum configured attachment level – dry weight. Consult TMI for weights of specific attachments.

## Rating Definitions and Conditions

### Oil & Gas – E Rating

For fire pump, offshore cranes, well fracturing, and cementing/kill pump – the power and speed capability of the engine which can be used to power high-pressure well service equipment. For C32 engines and smaller, the maximum average load factor is 35%. For well fracturing engines, the maximum average load factor is 50%, and the maximum time at rated load and speed is less than 2.5 hours per year. For cementing and kill pump engines, the maximum average load factor is 40%, and the maximum time at rated load and speed is less than 2 hours per year. When used as a fire pump and NFPA certification is required, size the pump power to 90% of the advertised rating.

**Engine Performance** is corrected to inlet air standard conditions of 99 kPa (29.31 in Hg) dry barometer and 25°C (77°F) temperature. These values correspond to the standard atmospheric pressure and temperature as shown in SAE J1995.

Performance measured using a standard fuel with fuel gravity of 35 degrees API having a lower heating value of 42 780 kJ/kg (18,390 BTU/lb) when used at 29°C (84.2°F) where the density is 838.9 g/L (7.001 lb/U.S. gal).

The corrected performance values shown for Cat engines will approximate the values obtained when the observed performance data is corrected to SAE J1995, ISO 3046-2, ISO 8665, ISO 2288, ISO 9249, ISO 1585, EEC 80/1269, and DIN 70020 standard reference conditions.

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