**C7 ACERT™ Petroleum Engine**

<table>
<thead>
<tr>
<th>Specification</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Peak Torque at Speed</td>
<td>716.2 lbs-ft</td>
</tr>
<tr>
<td>Rated Speed</td>
<td>2200 rpm</td>
</tr>
<tr>
<td>Bore</td>
<td>110 mm (4.3 in)</td>
</tr>
<tr>
<td>Stroke</td>
<td>127 mm (5 in)</td>
</tr>
<tr>
<td>Displacement</td>
<td>7.2 L (441.8 cu in)</td>
</tr>
<tr>
<td>Aspiration</td>
<td>Turbocharged-Aftercooled</td>
</tr>
<tr>
<td>Governor and Protection</td>
<td>Electronic (ADEM™ 3)</td>
</tr>
<tr>
<td>Engine Weight, net dry (approx)</td>
<td>629 kg (1386 lb)</td>
</tr>
<tr>
<td>Lube Oil System (refill)</td>
<td>18 L (4.8 gal)</td>
</tr>
<tr>
<td>Oil Change Interval</td>
<td>250 hours</td>
</tr>
<tr>
<td>Rotation (from flywheel end)</td>
<td>Counterclockwise</td>
</tr>
<tr>
<td>Flywheel Teeth</td>
<td>SAE 1, 2, or 3</td>
</tr>
</tbody>
</table>

**FEATURES**

**Engine Design**
- Proven reliability and durability
- Robust diesel strength design prolongs life and lowers owning and operating costs
- Broad operating speed range
- High power density — lightweight engine for weight sensitive applications
- Broad power range provides superior pumping performance

**Advanced Digital Engine Management**
ADEM A3 control system providing integrated ignition, speed governing, protection, and controls, including detonation-sensitive variable ignition timing. ADEM A3 has improved: user interface, display system, shutdown controls, and system diagnostics.

**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•SS™ 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**
- Turbocharger, air to air aftercooled
- Air inlet, LH side facing front 79.0 mm (3.11 in)
  connection

**Control System**
- Electronic governing, PTO speed control
- Programmable ratings
- Cold mode start strategy
- Automatic altitude compensation
- Power compensation for fuel temperature
- Programmable low and high idle and TEL
- Electronic diagnostics and fault logging
- Programmable monitoring system (engine speeds, temperature, pressure)
- J1939 broadcast (diagnostic and engine status)
- Automatic variable timing, electronic
- All engines shipped at max rated rpm

**Cooling System**
- Thermostats and housing, vertical outlet
- Jacket water pump — belt-driven, centrifugal
- Water pump, inlet RH front vertical inlet (pointing down)

**Exhaust System**
- Exhaust manifold — dry
- Front turbo exhaust

**OPTIONAL EQUIPMENT**

**Air Compressor**
- Air compressors
- Air compressor governor

**Air Inlet System**
- Air cleaners
- Precleaner
- Air inlet elbow
- Air shutoffs

**Charging Systems**
- Charging alternators
- Alternator mountings
- Alternator belt tensioner
- Alternator pulleys
- Alternator guards

**Cooling System**
- Radiators
- Fan drive and pulley - f/u/w radiator packages
- Fans f/u/w radiator packages
- Coolant level sensor
- Fan drive mountings
- Fan adapters
- Fan adapter for blower fans
- Fan pulleys
- Fan height instructions
- Vee belts for customer-supplied radiators
- Suction fans and blower fans
- Water inlet elbows
- Dry charge coolant conditioners

**Emissions Certification**
- IMO Certification

**Exhaust System**
- Flexible fitting
- Turbocharger exhaust outlet adapters
- Elbows, flange, pipes, clamp
- Rain caps
- Manifolds
- Mufflers

**Flywheels and Flywheel Housing**
- See Mandatory Options attachments

**Fuel System**
- Hydraulic Electronic Unit injection (HEUI)
- Fuel filter — secondary, LH front (2-micron high performance)
- Fuel transfer pump — LH front
- Fuel priming pump — LH front

**General**
- Vibration damper
- Paint — Cat yellow
- Lifting eyes
- Electronic installation kit (connectors, pins, sockets)

**Lube System**
- Crankcase breather, LH side
- Oil cooler, RH
- Oil filler, front top valve cover
- Oil filter and sampling valve, RH
- Oil pan, front sump. 31 L (33 qt) oil change capacity
- Oil dipstick, LH rear.
- Engine oil pump (gear-driven)
- Engine shipped without oil

**Power Take-Offs**
- Crankshaft drive pulley — 2 grooves, 190 mm (7.5 in)
  diameter, 22.3 mm (0.88 in) wide

**Flywheels and Flywheel Housing**
- Crankshaft seal

**Fuel System**
- Flexible fuel lines
- Water separator and fuel filters
- Fuel cooler

**General**
- Tool set

**Instrumentation**
- Gauges and instrument panels
- Interconnect harnesses
- Voltmeters
- Gauge mounting
- Ammeter

**Lube System**
- Oil pan
- Drain and cover
- Oil level gauges
- Remote oil filter
- Oil fillers
- Lubricating oil
- Fumes disposal

**Mounting System**
- Structural steel base
- Front engine support
- Rear engine supports

**Power Take-Offs**
- Enclosed clutch
- Clutch supports
- Flywheel stub shaft
- Hydraulic pump drives
- Hydraulic gear pumps

**Starting System**
- Starting Aids
- Electric Starting Motors — 12V and 24V
- Battery Sets - 12V and 24V (dry)
- Battery Cable
PERFORMANCE CURVES

Turbocharged-Aftercooled

D Rating — 168-223 kW (225-300 bhp) @ 2200 rpm*

DM9223-02

*Other engine ratings are available. Please contact dealer for performance data.
**C7 ACERT™ PETROLEUM ENGINE**

**DRY MANIFOLD**

168-223 bkW (225-300 bhp)

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**PETROLEUM ENGINE**

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**Engine Dimensions**

<table>
<thead>
<tr>
<th></th>
<th>Length</th>
<th>Width</th>
<th>Height</th>
<th>Engine Weight (dry)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>1052 mm</td>
<td>759 mm</td>
<td>1031 mm</td>
<td>629 kg</td>
</tr>
</tbody>
</table>

**Note:** Do not use for installation design. See general dimension drawings for detail (Drawing #347-5717).

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**RATING DEFINITIONS AND CONDITIONS**

**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.

**IND-D**

For service where maximum power is required for periodic overloads.

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