

Shown with
Optional Equipment

CATERPILLAR® ENGINE SPECIFICATIONS

In-line 6-Cylinder, 4-Stroke-Cycle Diesel

Bore — in (mm)	4.33 (110)
Stroke — in (mm)	5.0 (127)
Displacement — cu in (L)	441 (7.2)
Aspiration	Turbocharged
Compression Ratio	16.5:1
Rotation (from flywheel end) ..	Counterclockwise
Cooling System ¹ — gal (L)	3.5 (13.2)
Lube Oil System (refill) — gal (L)	5.5 (21) ²
Weight, Net Dry (approx) — lb (kg) including flywheel	1295 (588)

¹ Engine only. Capacity will vary with radiator size and use of cab heater.

² Optional 7.5 gal (28L) oil pan also available in some OEM chassis.

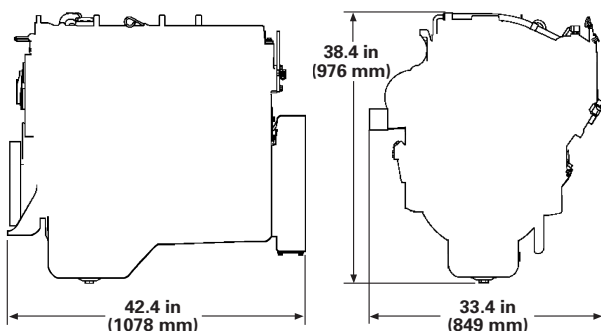
STANDARD EQUIPMENT

- Air inlet manifold heater
- Cooling: belt-driven water pump, oil cooler
- Crankcase breather
- Diesel Oxidation Catalyst (required)
- Electronic Control Module (ECM)
- Electronic Data Link, SAE/ATA, SAE/J1939
- Fuel: spin-on secondary filter, transfer pump
- Governor: full-range, electronically controlled
- HEUI™ Fuel System
- Lifting eyes
- Lubrication: gear-driven pump, front or rear sump pan, full flow spin-on filter, oil filler, oil level gauge (dipstick)
- SAE No. 1 or SAE No. 2 flywheel housing
- Turbocharger
- Vibration damper

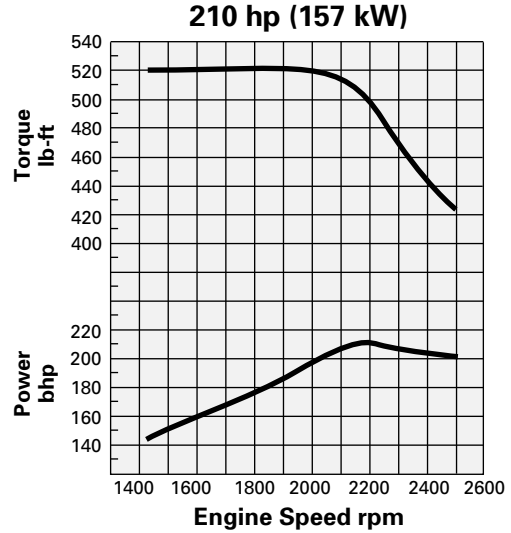
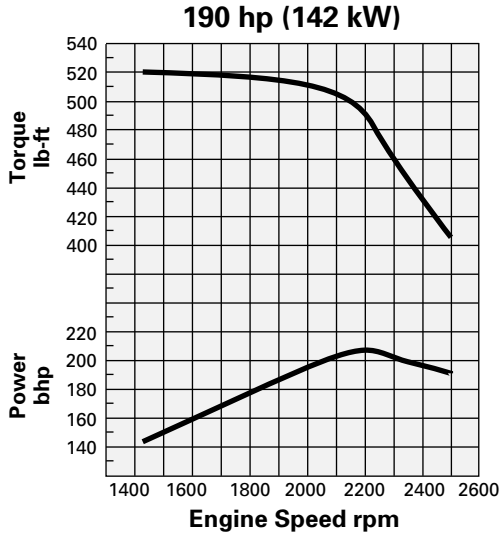
ACCESSORY EQUIPMENT

- Air compressor: gear driven, 13.2 cfm (0.37 m³/min), 15.7 cfm (0.44 m³/min), or 16.5 cfm (0.46 m³/min)
- Air conditioner compressor mounting
- Air inlet elbow
- Automatic transmission adapter
- Auxiliary brake compatible (exhaust)
- Fan drive
- Fan drive mounting bracket
- Flywheel
- Front engine support
- Front PTO adapter
- Fuel priming pump
- Hydraulic pump drive, SAE A
- Jacket water heater
- Rear PTO (RPTO)
- Starting motor: 12V or 24V
- Turbocharger compressor outlet elbow

DIMENSIONS



PERFORMANCE CURVES

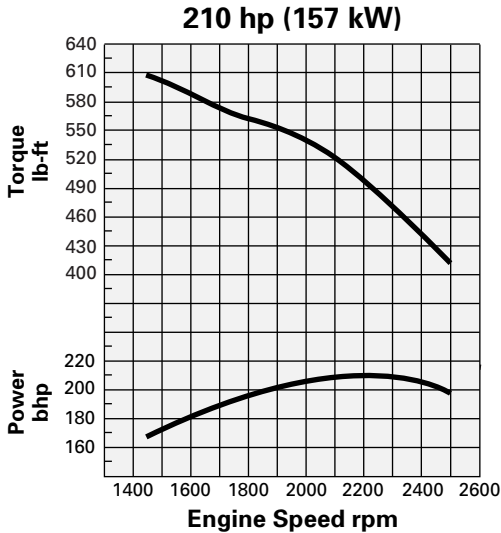


PERFORMANCE DATA

Operating Range (rpm) 1440-2500
Governed Speed — rpm **2500**
 Advertised hp (kW) 190 (142)
 Max hp (kW) 207 (154)
Peak Torque — lb-ft (N•m)..... **520 (705)**
 Peak Torque — rpm..... 1440
 Torque rise (%)..... 28
 Altitude Capability — ft (m)..... 10,000 (3048)

Operating Range (rpm) 1440-2500
Governed Speed — rpm **2500**
 Advertised hp (kW) 210 (157)
 Max hp (kW) 210 (157)
Peak Torque — lb-ft (N•m)..... **520 (705)**
 Peak Torque — rpm 1440
 Torque rise (%)..... 23
 Altitude Capability — ft (m)..... 10,000 (3048)

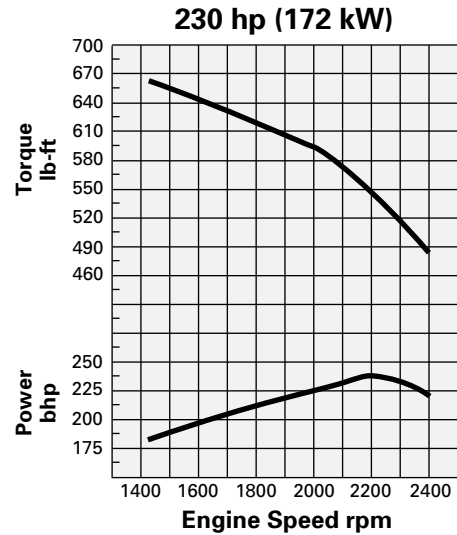
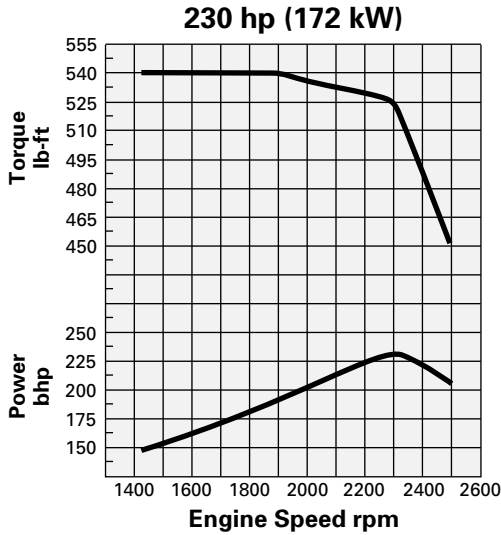
PERFORMANCE CURVES



PERFORMANCE DATA

Operating Range (rpm) 1440-2500
Governed Speed — rpm **2500**
 Advertised hp (kW) 210 (157)
 Max hp (kW) 210 (157)
Peak Torque — lb-ft (N•m)..... **605 (820)**
 Peak Torque — rpm..... 1440
 Torque rise (%)..... 40
 Altitude Capability — ft (m)..... 10,000 (3048)

PERFORMANCE CURVES

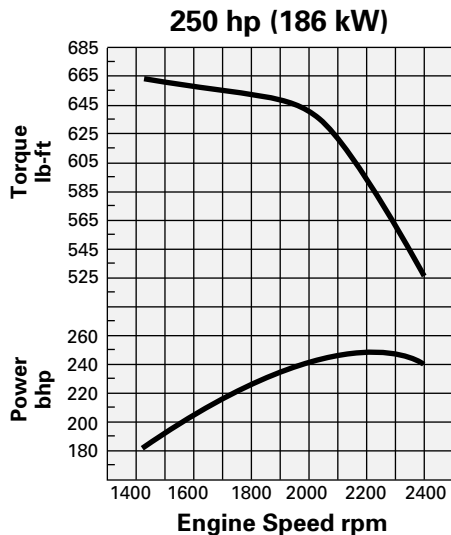


PERFORMANCE DATA

Operating Range (rpm) 1440–2500
Governed Speed — rpm **2500**
 Advertised hp (kW) 230 (172)
 Max hp (kW) 230 (172)
Peak Torque — lb-ft (N·m)..... **540 (732)**
 Peak Torque — rpm..... 1440
 Torque rise (%)..... 10
 Altitude Capability — ft (m)..... 10,000 (3048)

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 230 (172)
 Max hp (kW) 230 (172)
Peak Torque — lb-ft (N·m)..... **660 (895)**
 Peak Torque — rpm 1440
 Torque rise (%) 37
 Altitude Capability — ft (m)..... 10,000 (3048)

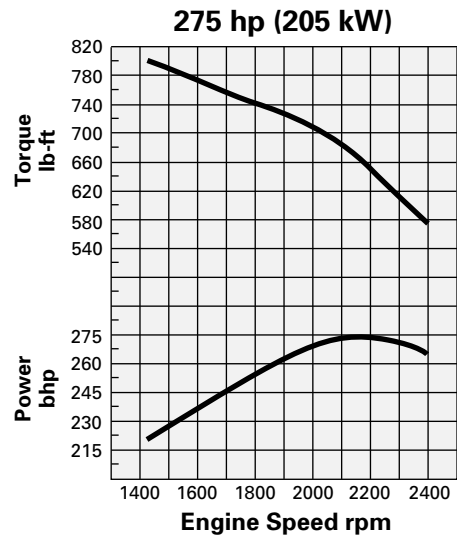
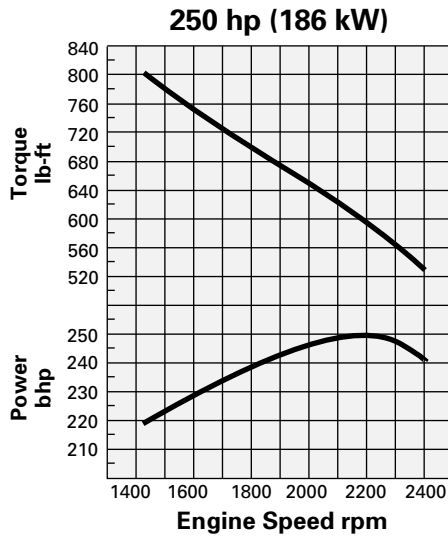
PERFORMANCE CURVES



PERFORMANCE DATA

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 250 (186)
 Max hp (kW) 250 (186)
Peak Torque — lb-ft (N·m)..... **660 (895)**
 Peak Torque — rpm..... 1440
 Torque rise (%) 26
 Altitude Capability — ft (m)..... 10,000 (3048)

PERFORMANCE CURVES

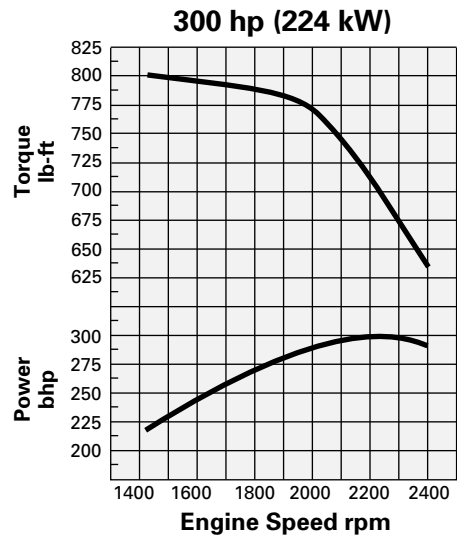
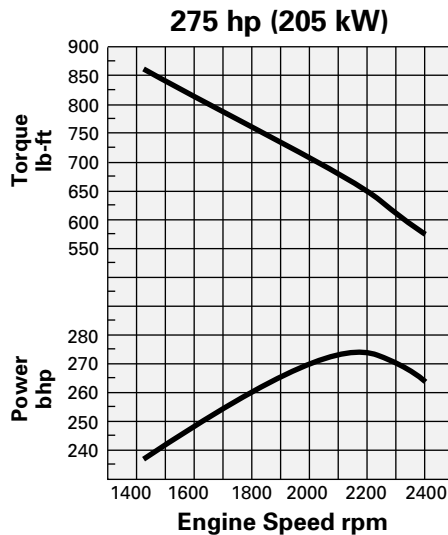


PERFORMANCE DATA

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 250 (186)
 Max hp (kW) 250 (186)
Peak Torque — lb-ft (N·m) **800 (1085)**
 Peak Torque — rpm 1440
 Torque rise (%) 54
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 275 (205)
 Max hp (kW) 275 (205)
Peak Torque — lb-ft (N·m) **800 (1085)**
 Peak Torque — rpm 1440
 Torque rise (%) 39
 Altitude Capability — ft (m) 10,000 (3048)

PERFORMANCE CURVES

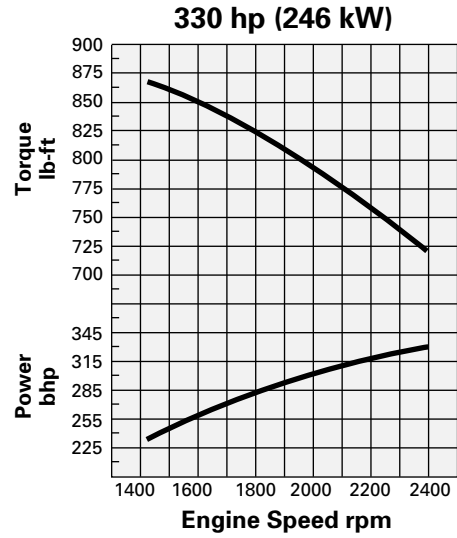
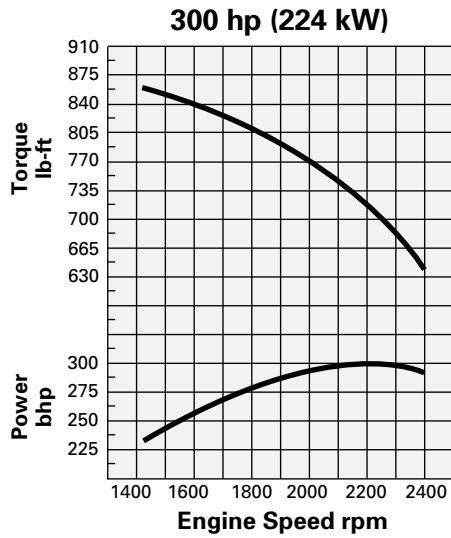


PERFORMANCE DATA

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 275 (205)
 Max hp (kW) 275 (205)
Peak Torque — lb-ft (N·m) **860 (1166)**
 Peak Torque — rpm 1440
 Torque rise (%) 49
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1440–2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 300 (224)
 Max hp (kW) 300 (224)
Peak Torque — lb-ft (N·m) **800 (1085)**
 Peak Torque — rpm 1440
 Torque rise (%) 27
 Altitude Capability — ft (m) 10,000 (3048)

PERFORMANCE CURVES



PERFORMANCE DATA

Operating Range (rpm) 1440-2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 300 (224)
 Max hp @ 1600 rpm (kW) 300 (224)
Peak Torque — lb-ft (N·m) **860 (1166)**
 Peak Torque — rpm 1440
 Torque rise (%) 38
 Altitude Capability — ft (m) 10,000 (3048)

Operating Range (rpm) 1440-2400
Governed Speed — rpm **2400**
 Advertised hp (kW) 330 (246)
 Max hp @ 1600 rpm (kW) 330 (246)
Peak Torque — lb-ft (N·m) **860 (1166)**
 Peak Torque — rpm 1440
 Torque rise (%) 19
 Altitude Capability — ft (m) 10,000 (3048)

GEARING CONSIDERATIONS

The C7 is designed and built to take full advantage of a “gear fast, run slow” strategy. The fully electronic C7 does not need to be gearbound to limit maximum vehicle speed — this should be done using Vehicle Speed Limiting (VSL) and VSL Protection parameters. (It is recommended that VSL be set to prevent excessive mph).

For the best balance of performance and fuel economy, spec axle ratios and tire sizes to obtain: **2000 rpm @ 60 mph** (97 km/h). Maximum recommended cruise speed is **65 mph** (105 km/h).

Minimum recommended engine speed is **1800 rpm**, typically with a cruise speed of 55 mph (89 km/hr).

If GCW is 50,000 lb or higher, spec. your truck to cruise at **2200 rpm @ 60 mph**.

The minimum startability requirements are 10% for pick-up and delivery, 14% for linehaul, 20% for on/off highway, and 25% for off-highway. At peak torque rpm in top gear, the recommended gradeability is 1.8% (1.5% minimum). At cruise speed in top gear, 1.0% is the ideal gradeability.

To optimize your truck’s performance characteristics, a computerized spec’ing tool called Design Pro is offered by your Caterpillar dealer. It calculates effects of various driveline variables on engine operation such as transmissions, axles, and tires. This analysis allows you to verify that your truck’s driveline specifications are best suited to your application.

RATING DEFINITIONS AND CONDITIONS

Performance is based on SAE J1995 standard conditions of 29.61 in. Hg (100 kPa) and 77° F (25° C).

The curves shown are for a standard engine without fan, but equipped with air compressor and fuel, lubricating oil, and water pumps.

ELECTRONIC FEATURES

- **Real time clock with date and time stamping of critical events**
- **Electronic self-diagnostics**
- **Compatible with Caterpillar Electronic Technician (ET)**
- **Cold weather startup strategy and electronic idle control functions**
- **ECM storage of operational, maintenance, diagnostic codes and diagnostic data**
- **J1939 compatible**
- **Customer selectable, re-programmable operational parameters:**
 - **2-speed fast idle capabilities**
 - **Adjustable low idle rpm**
 - **Automated transmission compatibility**
 - **Cooling fan control**
 - **Cruise control with exclusive Soft Cruise**
 - **Customer password protection**
 - **Engine Monitoring System — warning, derate, or shutdown**
 - **Enhanced theft deterrent and secure idle (Cat Messenger or Pocket Tec required)**
 - **Exhaust brake operational modes**
 - **Fleet Information Software capability**
 - **Idle shutdown timer & override**
 - **Maintenance monitor [miles (km) or hours]**
 - **OEM parameter lockout**
 - **Progressive shifting and gear-down protection**
 - **Selectable AT/MT/HT shift points for automatic transmission**
 - **Vehicle speed [mph (km/h)] limiting and protection**
- **Programmable Power Take-Off (PTO) functions:**
 - **Adjustable maximum engine rpm speed**
 - **Adjustable minimum engine rpm speed**
 - **Adjustable ramp rate up or down between PTO set speed(s)**
 - **Adjustable rpm “bump” intervals**
 - **Adjustable speed control [mph (km/h)] of vehicle while in PTO mode**
 - **Limit engine torque to driven equipment**
 - **Multi-speed PTO set speed capability**
 - **Selectable PTO configuration for “in cab” or station of remote operation**