

**EU Stage V Locomotive  
3000 bkW/4023 bhp @ 1800 rpm**

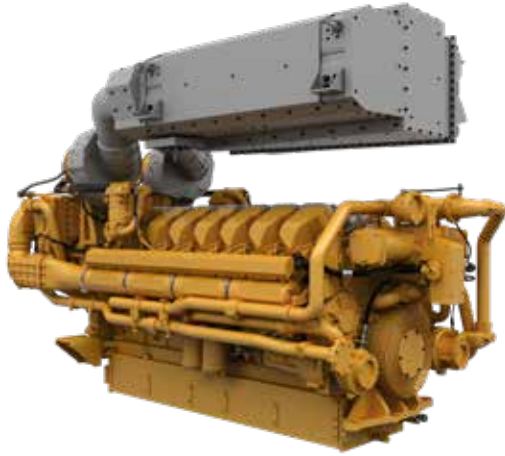


Image shown may not reflect actual configuration

## Specifications

| <b>Cat® C175-16 Locomotive Engine</b>  | <b>Metric</b>                               | <b>Imperial (English)</b>           |
|--|---|-------------------------------------|
| Configuration  | V-16, 4-Stroke-Cycle Diesel                 |                                     |
| Bore   | 175 mm                                      | 6.9 in                              |
| Stroke   | 220 mm                                      | 8.7 in                              |
| Displacement   | 84.7 L                                      | 5169 in <sup>3</sup>                |
| Aspiration   | Turbocharged – 2-Stage Aftercooled          |                                     |
| Compression Ratio  | 16.3  |                                     |
| Rotation (from flywheel end)   | Counterclockwise                            |                                     |
| Capacity for Liquids —<br>Cooling System<br>Lube Oil System (refill)                         | 394 L<br>530 L                              | 104 U.S. gal<br>140 U.S. gal        |
| Weight, Net Dry (approx)<br>Engine (including flywheel)*<br>Aftertreatment<br>Dosing Cabinet | 12 500 kg<br>1000 kg<br>115 kg              | 27,558 lbs<br>2205 lbs<br>253.5 lbs |
| Cold Start Capability – unaided  | 0°C   | 32°F                                |
| Electronic Fuel Injection  | Meets EU Stage V Exhaust Emission Standards |                                     |

\*Final weight is dependent upon configuration

## **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  
Selective Catalytic Reduction (SCR)/common rail fuel system to meet EU Stage V emission standards

### **Control System**

ADEM™ A5 electronic control system, automatic altitude compensation, power compensated for fuel temperature, configurable software features, engine monitoring system, SAE J1939 broadcast.

### **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

- Caterpillar factory-trained dealer technicians service every aspect of your locomotive engine
- Caterpillar 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

## **Standard Equipment**

### **Air Inlet System**

2-stage aftercooler core  
Two rear-mounted turbochargers with  
water-cooled bearing housing  
Ship-loose air cleaners

### **Control System**

ADEM A5 electronic engine control  
Electronic governing  
Cold mode start strategy  
Automatic altitude compensation  
Programmable low idle  
Electronic diagnostics and fault logging  
SAE J1939 data link (diagnostic engine status  
and control)

### **Cooling System**

Jacket water electronic coolant temperature  
control  
Jacket water and separate circuit pumps —  
gear-driven, centrifugal  
Separate Circuit Aftercooler (SCAC) cooling  
circuit thermostatically controlled to  
maintain the aftercooler water temperature  
Coolant connections, flange type:  
Jacket water — single inlet, single outlet  
Separate circuit — single inlet, single outlet

### **Exhaust System**

Exhaust manifold, dry, heat shielded  
Exhaust outlet directly to atmosphere from  
aftertreatment

### **Flywheels and Flywheel Housing**

Flywheel, SAE No. 00, 183 teeth  
Flywheel housing, SAE No. 00  
SAE standard rotation

### **Fuel System**

Common rail fuel system  
Fuel filters — cartridge  
Fuel transfer pump  
Primary fuel filters

### **Lube System**

Closed crankcase breathers  
Oil cooler  
Oil filler — RH  
Oil filter — cartridge type  
Oil pump — gear-type  
Prelubrication pump — 24V or 64V  
Oil pan drain valve

### **Protection System**

ECM controlled warnings, derates, and shutdowns  
for coolant temperature, oil pressure, intake air  
restriction, crankcase pressure, and overspeed

### **General**

Caterpillar Yellow paint  
Vibration damper and guard  
Lifting eyes  
Preservation  
Remote monitoring equipment

## Optional Equipment

### Air Inlet System

Air cleaners — single or dual element  
Air cleaner adapter hardware

### Exhaust System

Low mount CEM for UK market  
High mount CEM for EU market

### Fuel System

Fuel boost pump

### Lube System

Lubricating oil  
Closed crankcase breather heaters

### Mounting System

Trunion support for baseless design

### Power Take-offs

Front accessory drives:  
RH — SAE C and D pump drives  
LH — SAE C only

### Protection System

ECM provides diagnostic capability

### Starting System

Electric starting motors (dual)  
24/64 volt available

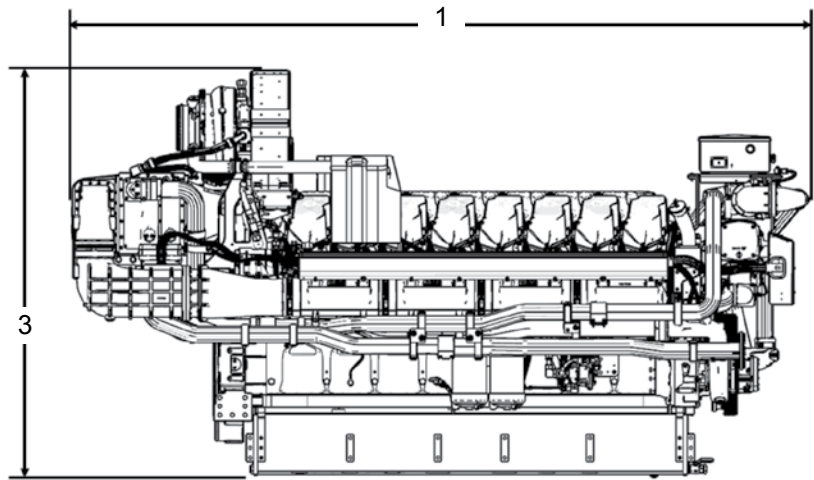
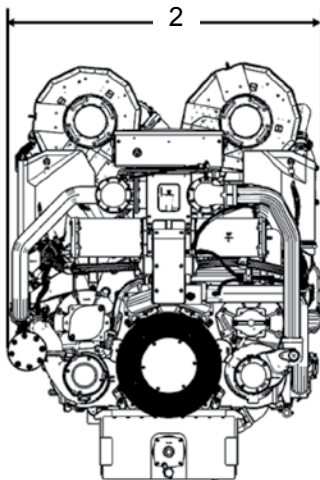
### Flywheel and Coupling

SAE #00 flywheel with rubber in compression  
coupling

### General

Barring device  
Remote monitoring external antenna

## Engine Dimensions

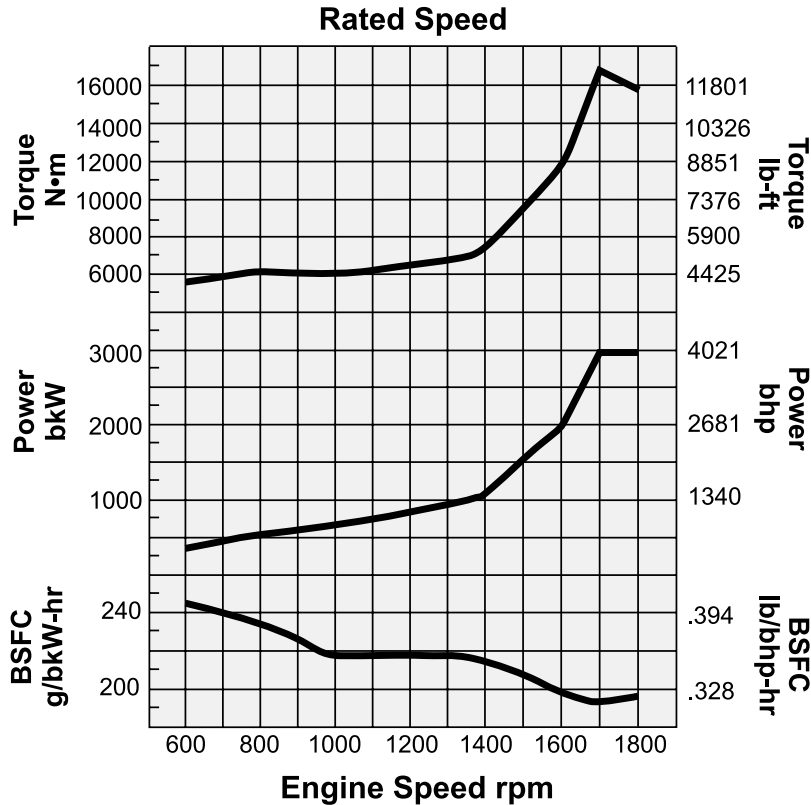


(1) Length — 4325 mm (170.27 in) (2) Width — 1800 mm (70.86 in) (3) Height — 2360 mm (92.91 in)

**Note:** Final dimensions dependent on selected options

## Performance Data

Turbocharged-Aftercooled — 1800 rpm



| Rating   | Peak Power |               |                | Peak Torque |                 |                   |
|----------|------------|---------------|----------------|-------------|-----------------|-------------------|
|          | Speed rpm  | Peak Power kW | Peak Power bhp | Speed rpm   | Peak Torque N·m | Peak Torque lb-ft |
| <b>C</b> | 1800       | 3000          | 4023           | 1700        | 16 852          | 12,429            |

## Ratings Definitions and Conditions

**C Rating (Intermittent)** service where maximum power and/or speed are cyclic (time at full load not to exceed 50% of the duty cycle).

**Performance** obtained and corrected in accordance with ISO3046/2 standard atmospheric conditions of 99 kPa (29.31 in Hg ) and 25°C (77°F). These values correspond to the standard atmospheric pressure and temperature as shown on SAE J1995.

**Performance and fuel consumption** are based on 35 API 15°C (60°F) gravity fuel having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) where the density is 839.9 g/liter (7.001 lb/U.S. gal). Tolerance is +/-3%.

Engine equipped with fuel, lube oil, and water pumps.

## Clean Emissions Module (CEM) Remote-mounted Configuration



### **CEM DIMENSIONS**

#### **Approximate Size and Weight**

- (1) Length — 2317 mm (91.2 in)
  - (2) Width — 1740 mm (68.5 in)
  - (3) Height — 814 mm (32 in)
- Weight — 1000 kg (2205 lbs)

### **DOSING CABINET DIMENSIONS**

#### **Approximate Size and Weight**

- (1) Length — 791 mm (31.1 in)
  - (2) Width — 620 mm (24.4 in)
  - (3) Height — 490 mm (19.3 in)
- Weight — 115 kg (253.5 lbs)

## Standard Emissions Control Equipment

**SCR:** Selective Catalytic Reduction

**CEM:** Clean Emissions Module

Materials and specifications are subject to change without notice.  
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