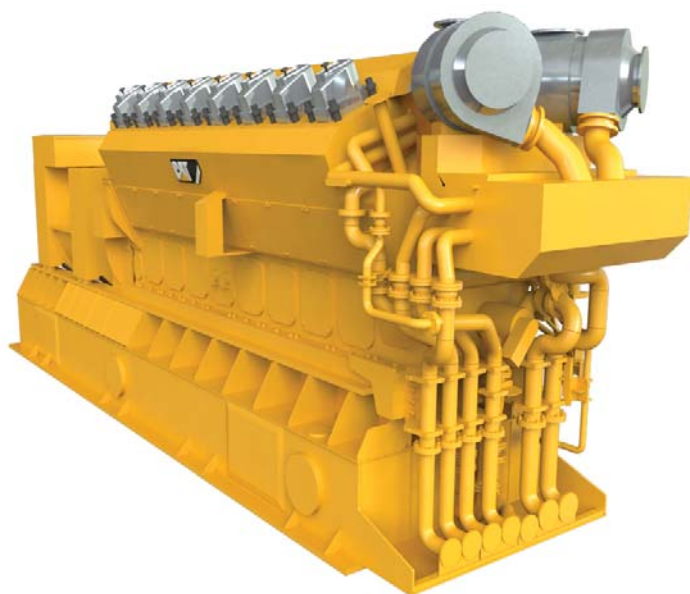


# Caterpillar Power Plants

# CM32

12CM32 • 16CM32 • 50Hz



## Engine Specifications

Engine Type.....4-stroke engine  
Cylinder configuration..... Vee - 12, 16  
Fuel type.....LFO, CRO and HFO up to 700 cSt  
Bore.....320 mm (12.6 in)  
Stroke.....420 mm (WBII 460)  
Cylinder displacement.....33.8 L (WBII 37.0)  
Cylinder output.....500 kW(644 bhp)  
Mean piston speed.....10.5 m/s (WBII 11.5)  
Mean effective pressure.....22.7 bar (WBII 22.8)  
Aspiration.....Turbocharged and after-cooled  
Engine rating.....6,000-8,000kW  
Generator set rating.....5,820-7,760 kWe

## Features

### Designed for Reliable Operation

- ▶ Intensive cooling of key components including exhaust valve seats, injector cooling integrated into lube oil system and high-efficiency turbocharger
- ▶ Capable of operation up to 700 cSt/50° C fuel quality according to CIMAC H55/K55

### Minimized Mechanical Wear

- ▶ Modular design
- ▶ State of the art material ensures long life of components

### Overall Economy

- ▶ High availability and long life
- ▶ Low fuel and oil consumption
- ▶ Low maintenance requirements

### Highest Quality Engine Parts

- ▶ Semi-dry wear resistant liners with calibration inserts
- ▶ Pistons with forged steel crown and aluminum skirt
- ▶ Inlet/Outlet valves with armored seats
- ▶ High efficiency turbo charger

### One-Piece Dry Engine Block

- ▶ High strength nodular cast iron with under slung crankshaft and free from cooling water

### Ease of Maintenance & Reliability

- ▶ Easily removable cylinder heads, quick removable fluid connections
- ▶ Split connecting rods to allow piston removal without disturbing the big end bearing
- ▶ High reliability, modular design and integral construction reduce the number of components by 40% over conventional designs

### Total Power Solutions

- ▶ Caterpillar® can develop, finance, design, build, test, maintain and operate medium speed reciprocating engine power plants and at the customer's option provide:
  - Power generation equipment
  - Engineered systems
  - Turnkey power plants
  - Contract power
  - Combined heat and power systems
  - Construction and installation services
  - Operation and maintenance services

### Worldwide Product Support

- ▶ With nearly 200 Cat dealers & 1500 facilities worldwide serving in excess of 200 countries, you're never far from the Caterpillar support you need.
- ▶ Customer Support Agreements offer back-to-back services including scheduled inspections, preventative maintenance and overhauls to full operations and maintenance.

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## Nominal Performance

|        | Engine Rating | Generator Set Rating | Speed      | Frequency  | Heat Rate |               |                |               | Specific Lube Oil Consumption |              |               |
|--------|---------------|----------------------|------------|------------|-----------|---------------|----------------|---------------|-------------------------------|--------------|---------------|
|        |               |                      |            |            | WB I      |               | WB II          |               |                               |              |               |
|        | <u>kWm</u>    | <u>kWe</u>           | <u>kVA</u> | <u>RPM</u> | <u>Hz</u> | <u>kJ/kWh</u> | <u>Btu/KWh</u> | <u>kJ/kWh</u> | <u>Btu/KWh</u>                | <u>g/kWh</u> | <u>lb/kWh</u> |
| 12CM32 | 6,000         | 5,820                | 7,275      | 750        | 50        | 7,870         | 7,459          | 7,914         | 7,501                         | 0.6          | 0.0012        |
| 16CM32 | 8,000         | 7,760                | 9,700      | 750        | 50        | 7,870         | 7,459          | 7,914         | 7,501                         | 0.6          | 0.0012        |

## Rating Definitions and Conditions

Fuel type: Light fuel oil (LFO), crude oil (CRO) and heavy fuel oil (HFO) with fuel quality limit at 50° C according to CIMAC H55/K55.

Ratings: Based on ISO 3046/1 standard reference conditions.

Power output: May require adjustment for values other than ISO 3046/1 standard reference conditions.

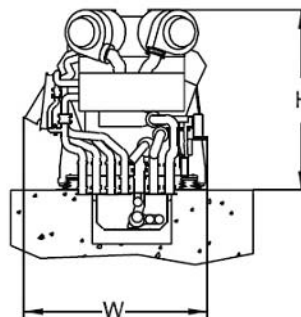
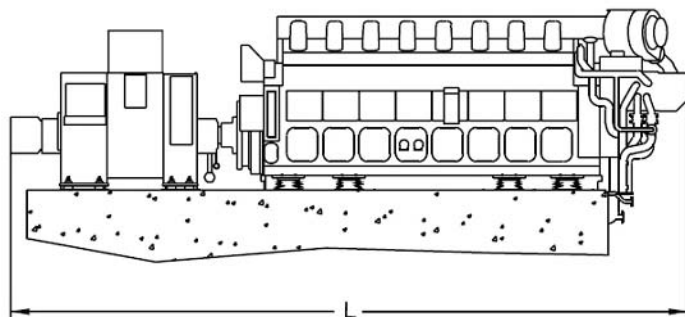
Conditions output: Available for an unlimited time without varying load.

Generator efficiency: Efficiency of 97.0% based on 0.8 pf with medium voltage class generator; actual efficiency will depend on generator selection.

Fuel consumption: Based on ISO 3046/1 standard reference conditions of 25° C (77 F) and 100 kPa (29.61 in Hg), including one engine-driven lube oil pump, with 5% tolerance and LCV=42, 700 kJ/kg (18, 358 Btu/lb). Value based on measurement at the generator terminals.

Lube oil consumption: Tolerance on value of +/-0.3 g/kWh (0.0007-lb/kWh). Lube oil consumption can only be demonstrated after 500 hours of operation.

## GENERATOR SET DIMENSIONS



FOR MORE INFORMATION  
Email: [cat-powerplants@cat.com](mailto:cat-powerplants@cat.com)  
Internet: <http://www.cat.com/powerplants>

|        | Generator Set Dimension |           |           |           |            |           | Approximate Weight (Dry) |           |           |           |
|--------|-------------------------|-----------|-----------|-----------|------------|-----------|--------------------------|-----------|-----------|-----------|
|        | Height (H)              |           | Width (W) |           | Length (L) |           | Engine                   |           | Generator |           |
|        | <u>mm</u>               | <u>in</u> | <u>mm</u> | <u>in</u> | <u>mm</u>  | <u>in</u> | <u>kg</u>                | <u>lb</u> | <u>kg</u> | <u>lb</u> |
| 12CM32 | 3,329                   | 131       | 3,394     | 134       | 11,193     | 441       | 64,400                   | 141,978   | 24,800    | 54,675    |
| 16CM32 | 3,329                   | 131       | 3,394     | 134       | 12,646     | 498       | 81,400                   | 179,456   | 38,500    | 84,878    |

Materials and specifications are subject to change without notice.

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