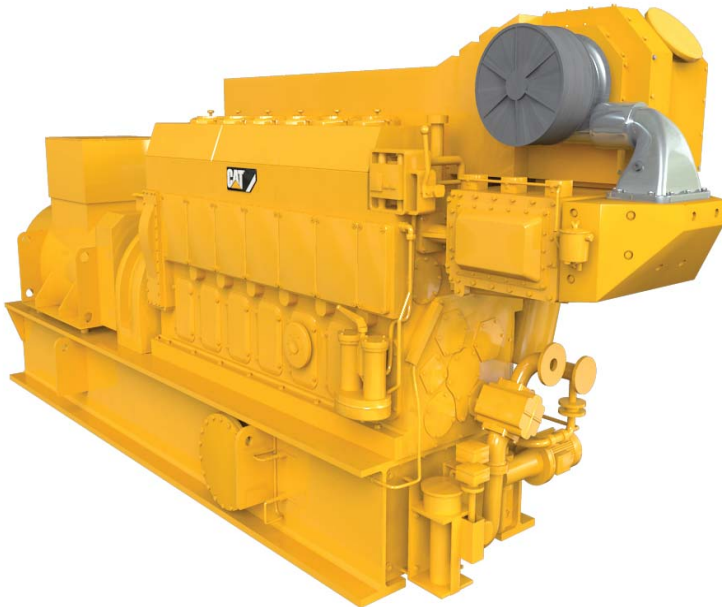


Caterpillar Power Plants

CM20

6CM20 • 8CM20 • 9CM20 • 50Hz



Engine Specifications

| | |
|------------------------------|--------------------------------|
| Engine Type..... | 4 stroke engine |
| Cylinder configuration..... | In-line 6, 8, 9 |
| Fuel type..... | LFO, CRO and HFO up to 700 cSt |
| Bore..... | 200 mm |
| Stroke..... | 300 mm |
| Cylinder displacement..... | 9.4 (L) |
| Cylinder output..... | 190 (kW) |
| Mean piston speed..... | 10 m/s |
| Mean effective pressure..... | 24.1 bar |
| Aspiration..... | Turbo Charged and after cooled |
| Engine rating..... | 1,140 - 1,710 kWm |
| Generator set rating..... | 1,094 - 1,642 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 | |
|-------|---------------|----------------------|------------|------------|-----------|---------------|----------------|-------------------------------|---------------|
| | <u>kWm</u> | <u>kWe</u> | <u>kVA</u> | <u>RPM</u> | <u>Hz</u> | <u>kJ/kWh</u> | <u>Btu/kWh</u> | <u>g/kWh</u> | <u>lb/kWh</u> |
| 6CM20 | 1,140 | 1,094 | 1,368 | 1,000 | 50 | 8,536 | 8,090 | 0.6 | 0.0012 |
| 8CM20 | 1,520 | 1,459 | 1,824 | 1,000 | 50 | 8,536 | 8,090 | 0.6 | 0.0012 |
| 9CM20 | 1,710 | 1,642 | 2,052 | 1,000 | 50 | 8,536 | 8,090 | 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 of 96.0% 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.

FOR MORE INFORMATION Go to:
<http://www.cat.com/powerplants>
<http://www.catpowerplants.com>

| | Engine Dimensions | | | | | | 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> |
| 6CM20 | 2,370 | 93 | 1,425 | 56 | 3,130 | 123 | 10,500 | 23,149 | 3,200 | 7,055 |
| 8CM20 | 2,680 | 106 | 1,425 | 56 | 3,790 | 149 | 13,000 | 28,660 | 5,200 | 11,464 |
| 9CM20 | 2,680 | 106 | 1,425 | 56 | 4,120 | 162 | 14,100 | 31,085 | 6,460 | 14,242 |

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