

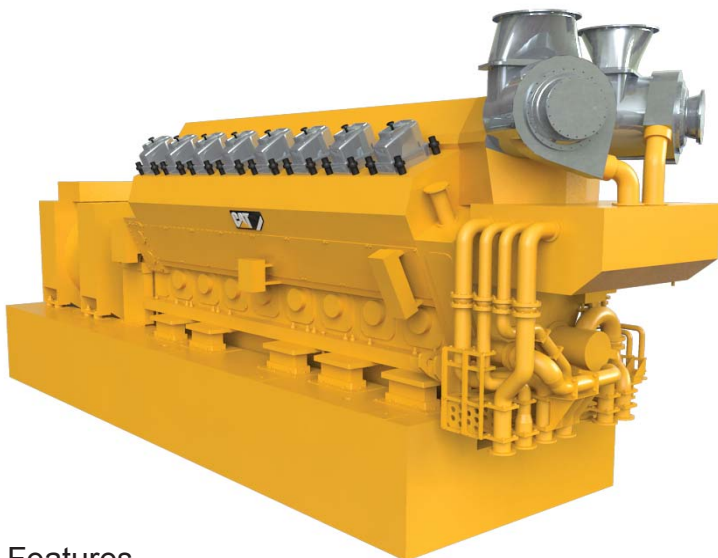
Caterpillar Power Plants

CM46DF

12CM46DF • 16CM46DF • 60Hz

Engine Specifications

Engine Type.....	4-stroke engine
Cylinder configuration.....	Vee - 12, 16
Fuel type.....	LFO, CRO, HFO & NG up to 700 cSt
Bore.....	460 mm (18 in)
Stroke.....	610 mm (24 in)
Cylinder displacement.....	101.4 (6182 cu in)
Cylinder output.....	900 kW(1207 bhp)
Mean piston speed.....	10.5 m/s (34.4 ft/s)
Mean effective pressure.....	20.7 bar (299 psig)
Aspiration.....	Turbocharged and after-cooled
Engine rating.....	10,800-14,400 kW
Generator set rating.....	10,368-13,968 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
- ▶ Natural Gas. Min methane number >80
- ▶ Can be retrofitted on CM43 LFO, CRO, HFO engines
- ▶ Alternative bio fuels

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>Liquid Mode</u>		<u>Gas Mode</u>		<u>g/kWh</u>	<u>lb/kWh</u>
						<u>kJ/kWh</u>	<u>Btu/kWh</u>	<u>kJ/kWh</u>	<u>Btu/kWh</u>		
12CM46DF	10,800	10,368	13,095	514	60	8,270	7,838	7,572	7,177	0.6	0.0012
16CM46DF	14,400	13,968	17,460	514	60	8,270	7,838	7,572	7,177	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.

Natural gas with minimum methane number >80 and lower heating value of 28 MJ/Nm³ (710 Btu/Scf).

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

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

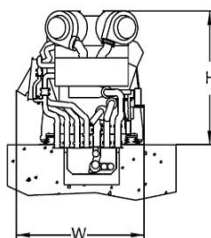
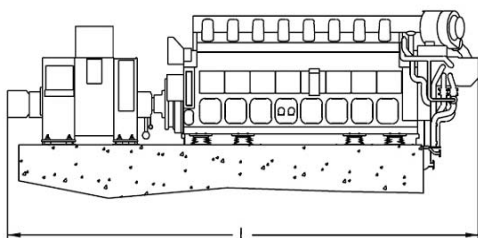
Conditions output: Available for an unlimited time without varying load.

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

Heat Rate: 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. Value based on measurement at the generator terminals.

Lube oil consumption: At 100% load. 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
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	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>
12CM46DF	4,524	178	4,147	163	13,947	549	162,000	357,149	50,050	110,341
16CM46DF	4,524	178	4,147	163	15,891	626	215,000	473,994	66,500	146,607

Materials and specifications are subject to change without notice.

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