

# C4.4 (electronic)

MARINE GENERATOR SET



**65, 80, 99 kW (81, 100, 124 kVA) 50 Hz**  
**Heat Exchanger / Single Circuit Keel /**  
**Combined Circuit Keel**

## GENERAL ENGINE SPECIFICATIONS

### Basic Engine Specifications

In-line 4 cylinder, 4-Stroke-Cycle-Diesel	
Displacement .....	4.4 L (268.5 in <sup>3</sup> )
Rated engine speed .....	1500 rpm
Bore .....	105 mm (4.13 in)
Stroke .....	127 mm (5.0 in)
Aspiration .....	Turbocharged / Aftercooled
Governor .....	ECU
Fuel system type .....	Common Rail
Length (overall) .....	1699-1769 mm (66.9-69.6 in)
Width .....	956 mm (37.6 in)
Height .....	1245 mm (49 in)
Weight, net dry (approx.) .....	1142-1290 kg (2518-2844 lb)
Rotation (from flywheel end) .....	Counter-clockwise



**Cat® C4.4 Marine Generator Set Package**  
Image shown may not reflect actual engine

### Tolerances

Power .....	+/- 3%
Exhaust Stack Temperature .....	+/- 8%
Inlet Air Flow .....	+/- 5%
Intake Manifold Pressure .....	+/- 10%
Exhaust Flow .....	+/- 6%
Specific Fuel Consumption .....	+/- 3%
Heat Rejection .....	+/- 5%
Fuel Rate .....	+/- 5%

### Emission Compliance

EPA Marine Tier 3  
EU Stage V

### Marine Classification Society – Certifications

ABS – BV – DNV – LR – RINA – CCS – NK

### Generator

Insulation .....	Class H
Temperature Rise	
@ 40°C Ambient (110%) .....	Class H (150°K)
@ 50°C Ambient (110%) .....	Class H (140°K)
Winding Pitch Code .....	2/3
Terminals .....	12-lead reconnectable
Standard Voltages .....	≤ 690 V

Ingress Protection Rating .....	IP 23
Air Flow 50 Hz .....	0.25 m <sup>3</sup> /s (530 cfm)
Excitation System .....	AREP
Voltage Regulation (steady state) .....	±1%
Total Harmonic Content LL/LN .....	<4%
Wave Form: NEMA=TIF .....	<50
Wave Form: I.E.C.=THF .....	<2%

• For detailed information about fuel, oil, and cooling water treatment, please refer to “Caterpillar Commercial Diesel Engine Fluids Recommendations” (SEBU6251).

## AIR SYSTEM

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### Combustion Air Inlet System

Intake combustion air flow ..... 6.3m<sup>3</sup>/min (99 ekW), 5.7m<sup>3</sup>/min (80 ekW), 5.3m<sup>3</sup>/min (65 ekW)  
Intake combustion air flow ..... 222cfm (99 ekW), 201cfm (80 ekW) 187cfm (65 ekW)  
Intake combustion air temperature up to ..... 50°C (122°F)

### Engine Room Ventilation Air

Heat rejection to atmosphere ..... 8.0kW (99 ekW), 8.0kW (80 ekW), 8.0kW (65 ekW),  
Heat rejection to atmosphere ..... 455BTU/min (99 ekW), 455BTU/min (80 ekW), 455BTU/min (65 ekW)

## COOLING SYSTEM

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### HTC Cooling Water System (Engine Jacket Water)

Heat rejection to HTC cooling water system ..... 87.3kW (99 ekW), 73.3kW (80 ekW), 62.7kW (65 ekW)  
Heat rejection to HTC cooling water system ..... 4958BTU/min (99 ekW), 4163BTU/min (80 ekW), 3565BTU/min (65 ekW)  
Flow HTC cooling water pump – max. .... 155 L/m (40.9 gal/min)  
min. .... 101 L/min (26.7 gal/min)  
HTC cooling water temperature engine out (nominal) ..... 95°C (203°F)  
HTC cooling water refill capacity (Hex) ..... 21 L (10 gal)  
Coolant medium ..... Cat® Extended Life Coolant (ELC) or equal  
Expansion tank pressure cap ..... 50 kPa (7.25 psi)  
HTC cooling water connection engine inlet ..... 50.8 mm (2.0 in.) OD  
HTC cooling water connection engine outlet ..... 50.8 mm (2.0 in.) OD

### LTC Cooling Water System (Aftercooler)

Heat rejection to LTC cooling water system ..... 10.0kW (99 ekW), 6.6kW (80 ekW), 5.0kW (65 ekW)  
Heat rejection to LTC cooling water system ..... 569BTU/min (99 ekW), 375BTU/min (80 ekW), 313BTU/min (65 ekW)  
Flow LTC cooling water pump 2484130 – max. .... 124 L/min (32.7 gal/min)  
min. .... 96 L/min (25.3 gal/min)  
LTC water temperature engine in (max.) ..... 46°C (99 ekW), 49°C (80 ekW), 50°C (65 ekW)  
LTC cooling water refill capacity ..... 4 L (1.0 gal) *Engine only*  
Coolant medium ..... Cat Extended Life Coolant (ELC) or equal  
Expansion tank pressure cap ..... 50 kPa (7.25 psi)  
LTC cooling water connection engine inlet (138) ..... 50.8 mm (2.0 in.) OD  
LTC cooling water connection engine outlet (139) ..... 50.8 mm (2.0 in.) OD

## EXHAUST SYSTEM

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### Exhaust Gas Data

Exhaust gas flow (total) ..... 7.9kg/min (99 ekW), 7.12kg/min (80 ekW), 6.60kg/min (65 ekW)  
Exhaust stack temperature ..... 485.9°C (99 ekW), 473°C (80 ekW), 455°C (65 ekW)  
Exhaust stack temperature ..... 907°F (99 ekW), 883°F (80 ekW), 851°F (65 ekW)  
Engine exhaust connection ..... 63 mm (2.5 in) ID, 6 x 9 mm (0.35 in) holes on 88.9 mm (3.5 in) PCD  
Max. allowable system backpressure ..... 15 kPa (60 in H<sub>2</sub>O)

*Specified system backpressure shall not be exceeded in any circumstances. Caterpillar advises to limit value of maximum allowable backpressure to 50% for new (clean) installations. Minimum diameter of customer piping should be according to "Customer piping diameter overview for Caterpillar engines."*

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## FUEL SYSTEM

Specific Fuel Consumption .....	218.9g/bkW-hr (99 ekW), 228g/bkW-hr (80 ekW), 237g/bkW-hr (65 ekW)
Fuel rate .....	23.5kg/hr (99 ekW), 20.0k/hr (80 ekW), 16.9kg/hr (65 ekW)
Fuel flow transfer pump .....	4.1 L/min (63.4gal/hr)
Fuel pressure static head .....	± 2.8 m (± 9.1 ft)
Fuel supply line restriction (max.) .....	10 kPa (2.9 in Hg) (1.45 psi)
Fuel temperature transfer pump in (max.) .....	60°C (140°F)
Fuel return line restriction (max.) .....	10 kPa (2.9 in Hg) (1.45 psi)
Fuel supply / return connections .....	11 / 16 in O ring face seal (ORFS)
Diesel fuel grade.....	ISO-F-DMX/ISO-F-DMA/ISO 8217:2010 (E) Class F, EN590, D975, JIS class 1,2,3

## LUBE SYSTEM

Sump type .....	Isolated
Sump capacity (max.) .....	11 L (5.55 gal)
Sump capacity (min.) .....	9 L (4.62 gal)
Sump refill capacity (with filter change) .....	11 L (5.55 gal)
Oil change interval .....	500 Hr <i>(can be extended by S•O•S<sup>SM</sup> testing)</i>
Max. installation angle (any direction) .....	25 degrees
Max continuous operation angle (any direction) .....	25 degrees
Max. intermittent operation angle (any direction) .....	30 degrees
Quality diesel engine oil (min.) .....	CI-4 10W30 or 15W40 <i>(compliant with Caterpillar specification ECF-2)</i>

## STARTING SYSTEM

### Electrical Starting System

Electrical starting motor .....	24 or 12 VDC
Cold starting .....	800 CCA <i>[at -15°C (5°F) ambient temperature]</i>

## SOUND DATA (ISO 8528-10)

Mechanical Sound Pressure .....	Mechanical Sound Power .....	
99 ekW at distance 1 m (3.28 ft) .....	84.5dB(A) 99 ekW .....	99.7dB(A)*
80 ekW at distance 1 m (3.28 ft) .....	84.4dB(A) 80 ekW .....	99.6dB(A)*
65 ekW at distance 1 m (3.28 ft) .....	84.5dB(A) 65 ekW .....	99.8dB(A)*

\*Mechanical Sound Pressure and Power levels measured according to ISO 8528-10 with engine at 75% Load.

Performance data is calculated in accordance with tolerances and conditions stated in this specification sheet and is only intended for purposes of comparison with other manufacturers' engines. Actual engine performance may vary according to the particular application of the engine and operating conditions beyond Caterpillar's control.

Power produced at the flywheel will be within standard tolerances up to 49°C (120°F) combustion air temperature measured at the air cleaner inlet, and fuel temperature up to 52°C (125°F) measured at the fuel filter base. Power rated in accordance with NMMA procedure as crankshaft power. Reduce crankshaft power by 3% for propeller shaft power.

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The International System of Units (SI) is used in this publication