

C4.4

MARINE AUXILIARY ENGINE (Electronic Control System)



71, 81, 108, 129 kW - 60 Hz
Heat Exchanger / Separate Keel Cooled /
Combined Circuit Keel Cooled

GENERAL ENGINE SPECIFICATIONS

Basic Engine Specifications

In-line 4 cylinder, 4-Stroke-Cycle-Diesel	
Displacement	4.4 L (268.5 in ³)
Rated engine speed	1800 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)	856 mm (33.7 in)
Width	778-814 mm (30.6-32.0 in)
Height	1038 mm (40.9 in)
Weight, net dry (approx.)	544-579 kg (1000-1278 lb)
Rotation (from flywheel end)	Counterclockwise



Cat® C4.4
Marine Auxiliary Engine
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

U.S. EPA Tier 3
EU Stage V

General Remarks

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

AIR SYSTEM

Combustion Air Inlet System

Intake combustion air flow	8.3m ³ /min (129 bkW), 7.6m ³ /min (108 bkW), 5.6m ³ /min (81 bkW), 6.1m ³ /min (71 bkW)
Intake combustion air flow	293cfm (129 bkW), 270cfm (108 bkW), 244 cfm (81 bkW) , 215 cfm (71 bkW)
Intake combustion air temperature up to.....	50°C (122°F)

Engine Room Ventilation Air

Heat rejection to atmosphere.....	8.4kW (129 bkW), 8.4kW (108 bkW), 8.4kW (81 bkW), 8.4kW (71 bkW)
Heat rejection to atmosphere.....	477BTU/min (129 bkW), 477BTU/min (108 bkW), 477BTU/min (81 bkW), 477BTU/min (71 bkW)

COOLING SYSTEM

HTC Cooling Water System (Engine Jacket Water)

Heat rejection to HTC cooling water system.....	93.0kW (129 bkW), 81.4kW (108 bkW), 66.3kW (81 bkW) , 55.7kW (71 bkW)
Heat rejection to HTC cooling water system.....	5291BTU/min (129 bkW), 4631BTU/min (108 bkW), 3772BTU/min (81 bkW) , 3169BTU/min (71 bkW)
Flow HTC cooling water pump – max.	190 L/min (50.0 gal/min)
min.	144.5 L/min (38.2 gal/min)
HTC cooling water temperature engine out (nominal)	95°C (203°F)
HTC cooling water refill capacity (Hex/Keel).....	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	16.8kW (129 bkW), 12.6kW (108 bkW), 8.2kW (81 bkW) , 8.2kW (71 bkW)
Heat rejection to LTC cooling water system	956BTU/min (129 bkW), 717BTU/min (108 bkW), 467BTU/min (81 bkW) , 3028BTU/min (71 bkW)
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.)	42°C (129 bkW), 45°C (108 bkW), 48°C (81 bkW) , 49°C (71 bkW)
LTC cooling water refill capacity.....	4 L (1.0 gal) <i>Engine only</i>
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

Exhaust Gas Data

Exhaust gas flow (total).....	10.4kg/min (129 bkW), 5.9kg/min (108 bkW), 8.5kg/min (81 bkW) , 7.5kg/min (71 bkW)
Exhaust stack temperature	431°C (129 bkW), 419°C (108 bkW), 404°C (81 bkW) , 395°C (71 bkW)
Exhaust stack temperature	808°F (129 bkW), 786°F (108 bkW), 759°F (81 bkW) , 743°F (71 bkW)
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 ₂ 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."

FUEL SYSTEM

Fuel rate.....	205g/bkW-hr (129 bkW), 220g/bkW-hr (108 bkW), 232g/bkW-hr (81 bkW), 241g/bkW-hr (71 bkW)
Fuel rate.....	26.3kg/hr (129 bkW), 23.9kg/hr (108 bkW), 19.1kg/hr (81 bkW), 16.1kg/hr (71 bkW)
Fuel flow transfer pump.....	4.1 L/min (64.9gal/hr)
Fuel pressure static head.....	±2.8 m (±9.2 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 8217:1986 (E) Class F EN590, D975, JIS class 1,2,3

LUBE SYSTEM

Sump type.....	Isolated
Sump capacity (max.).....	10.5 L (5.55 gal)
Sump capacity (min.).....	9 L (4.62 gal)
Sump refill capacity (with filter change).....	10.5 L (5.55 gal)
Oil change interval.....	500 Hr <i>(can be extended by S•O•SSM 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.....		
129 bkW at distance 1 m (3.28 ft).....	86.3dB(A)	129 bkW at distance 1 m (3.28 ft).....	101.5dB(A)*
108 bkW at distance 1 m (3.28 ft).....	86.2dB(A)	108 bkW at distance 1 m (3.28 ft).....	101.4dB(A)*
81 bkW at distance 1 m (3.28 ft).....	86.7dB(A)	81 bkW at distance 1 m (3.28 ft).....	101.9dB(A)*
71 bkW at distance 1 m (3.28 ft).....	87.1dB(A)	71 bkW at distance 1 m (3.28 ft).....	102.3dB(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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