C4.4

MARINE AUXILIARY ENGINE (Electronic Control System)

71, 86, 108 bkW - 50 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	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)	856 mm (33.7 in)
Width	778-814 mm (30.6-32.0 in)
Height	1245 mm (49 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	6.3m³/min (108 bkW), 5.7m³/min (86 bkW), 5.3m³/min (71 bkW)
Intake combustion air flow	222cfm (108 bkW), 201cfm (86 bkW) 187cfm (71 bkW)
Intake combustion air temperature up to	50°C (122°F)

Engine Room Ventilation Air

Heat rejection to atmosphere	8.0kW (108 bkW), 8.0kW (86 bkW), 8.0kW (71 bkW),
Heat rejection to atmosphere	455BTU/min (108 bkW), 455BTU/min (86 bkW), 455BTU/min (71 bkW)

COOLING SYSTEM

HTC Cooling Water System (Engine Jacket Water)

Heat rejection to HTC cooling water system	87.3kW (108 bkW), 73.3kW (86 bkW), 62.7kW (71 bkW)
Heat rejection to HTC cooling water system	4958BTU/min (108 bkW), 4163BTU/min (86 bkW), 3565BTU/min (71 bkW)
Flow HTC cooling water pump – max.	155 L/min (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/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	10.0kW (108 bkW), 6.6kW (86 bkW), 5.0kW (71 bkW)
Heat rejection to LTC cooling water system	569BTU/min (108 bkW), 375BTU/min (86 bkW), 313BTU/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.)	46°C (108 bkW), 49°C (86 bkW), 50°C (71 bkW)
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

Exhaust Gas Data

Exhaust gas flow (total)	7.9kg/min (108 bkW), 7.12kg/min (86 bkW), 6.60kg/min (71 bkW)
Exhaust stack temperature	485.9°C (108 bkW), 473°C (86 bkW), 455°C (71 bkW)
Exhaust stack temperature	907°F (108 bkW), 883°F (86 bkW), 851°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_2O)

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

Fuel rate	218.9g/bkW-hr (108 bkW), 228g/bkW-hr (86 bkW), 237g/bkW-hr (71 bkW)
Fuel rate	23.5kg/hr (108 bkW), 20.0kg/hr (86 bkW), 16.9kg/hr (71 bkW)
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 8217:1986 (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
	(can be extended by S•O•S℠ testing)
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
	(compliant with Caterpillar specification ECF-2)

STARTING SYSTEM

Electrical Starting System

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

SOUND DATA (ISO 8528-10)

Mechanical Sound Pressure		Mechanical Sound Power	
108 bkW at distance 1 m (3.28 ft)	84.5dB(A)	108 bkW at distance 1 m (3.28 ft)	99.7dB(A)*
86 bkW at distance 1 m (3.28 ft)	84.4dB(A)	86 bkW at distance 1 m (3.28 ft)	99.6dB(A)*
71 bkW at distance 1 m (3.28 ft)	84.5dB(A)	71 bkW at distance 1 m (3.28 ft)	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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Materials and specifications are subject to change without notice.
The International System of Units (SI) is used in this publication.