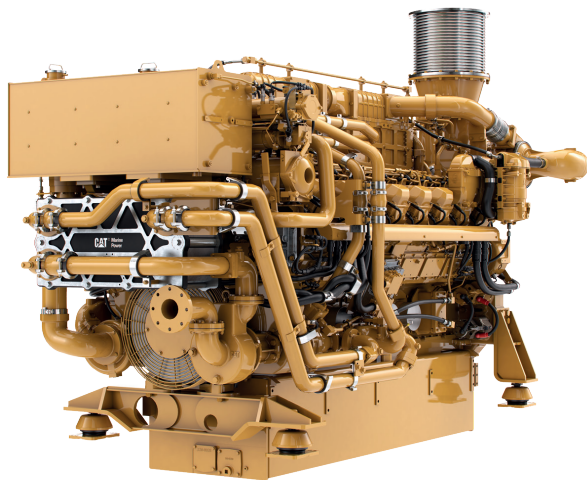


3516E

MARINE PROPULSION ENGINE

2100 bkW (2816 bhp) @ 1600 rpm



3516E Marine Propulsion Engine
U.S. EPA Tier 4 Final / IMO III

ENGINE SPECIFICATIONS

Configurations

Vee 16, 4-stroke-cycle diesel

Emissions

U.S. EPA Tier 4 Final certified
IMO III emissions certified
(SCR required)

Rated Engine Speed

1600 rpm

Bore x Stroke

170 mm x 215 mm
6.69 in x 8.46 in

Displacement

78 Liter
4765 cu in

Aspiration

Turbocharged-aftercooled
aspiration

Governor

Electronic (A5 ECM)

Refill Capacity

Lube Oil System w/ oil filter change:
799 L (211 gal)/1000 hrs pan

Oil Change Interval

1000 hrs

Cooling

Heat exchanger or keel cooled

Flywheel Housing

SAE No. 00 with SAE No. 00 flywheel
(183 teeth)

Rotation

Counterclockwise from flywheel end

FEATURES AND BENEFITS

- Utilizes SCR Technology to enable U.S. EPA Tier 4 Final / IMO III emission regulations compliance while lowering operational costs
- Utilizes closed loop air assisted DEF dosing control strategy that delivers:
 - Highest efficiency mixing and control to lower operational costs
 - Extends emissions useful life
 - Ensures compliance
 - Flexible to urea quality
- Advanced engine combustion design process utilizing optimum configurations and cylinder geometry for maximum engine efficiency
- Enhanced control of fuel injection optimized through crank timing and the latest A5 ECM technology
- Optimal fuel injector nozzle geometry and electronic injection control for improved fuel delivery
- Strengthened cylinder heads and valves for increased durability and peak cylinder pressure capability resulting in higher engine duty cycle capability
- Industry-leading warranty coverage for factory packaged components
- Global dealer network for service in any location

STANDARD ENGINE EQUIPMENT

- Corrosion-resistant aftercooler core
- Dual A5 engine control modules with electronic unit injection and low pressure fuel system
- Dual turbochargers with water-cooled bearings and heat shields
- Vibration damper and guard
- Meets SOLAS regulations
- Duplex Fuel and Oil Filtration
- Auxiliary fresh water pump
- Gear Driven, centrifugal jacket water pump with 40% more capacity

OPTIONAL ATTACHMENTS

- Plate-type heat exchanger with integrated SCAC and JW Water expansion tanks
- Special appearance packages with chrome covers
- Marine society certifications
- Power take-off
- Certified marine alarm and protection safety system
- Standard instrument panel with color touchscreen display
- Mounting rails and trunnion mount options
- Engine mounted fuel cooler (SCAC Water Cooled)
- Sea water pump with 25% more capacity for cooling auxiliary vessel equipment
- Closed crank case ventilation

B RATING (HEAVY DUTY) DEFINITION

Typical applications: For vessels operating at rated load and rated speed up to 80% of the time with some load cycling (40% to 80% load factor). Typical operation ranges from 3000 to 5000 hours per year.

BUILT FOR IT.™



TECHNICAL DATA

3516E Marine Propulsion Engine

PROP DEMAND FUEL & DEF CONSUMPTION (B RATING)

| rpm | Brake Specific Fuel Consumption | | | | DEF Consumption 32.5 % Concentration | | DEF Consumption 40 % Concentration | |
|------|---------------------------------|-----------|------|----------|---|-----------|---------------------------------------|-----------|
| | bhp | lb/bhp-hr | bkW | g/bkW-hr | Gal/hr | Liters/hr | Gal/hr | Liters/hr |
| 1600 | 2816 | 0.331 | 2100 | 197.6 | 8.7 | 32.9 | 6.6 | 24.8 |
| 1400 | 1887 | 0.322 | 1407 | 192.1 | 5.7 | 21.4 | 4.3 | 16.2 |
| 1200 | 1188 | 0.330 | 886 | 197.1 | 4.4 | 16.8 | 3.4 | 12.7 |
| 1000 | 688 | 0.349 | 513 | 208.5 | 3.4 | 12.9 | 2.6 | 9.7 |
| 800 | 353 | 0.363 | 263 | 216.4 | 0.0 | 0.0 | 0.0 | 0.0 |

For Cat® dealers:
Please reference TMI
Web for most current
information.

- ISO 3046/1 fluid consumption tolerance of -0/+5%
- Reference 32.5% DEF density of 1.0895 kg/L
- Reference 40% DEF density of 1.1120 kg/L

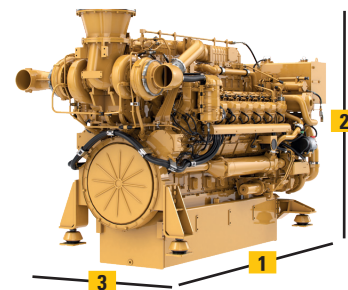
Consult your local Cat® dealer to create a customized engine TCO (Total Cost of Ownership) analysis specific to your vessel.

DIMENSIONS & WEIGHT

| | Length (1) | Height (2) | Width (3) | Engine dry weight |
|------|------------------|-----------------|-----------------|---------------------|
| min. | 146.6 in/3724 mm | 90.9 in/2309 mm | 72.8 in/1850 mm | 22,060 lb/10,006 kg |
| max. | | | 87.9 in/2230 mm | |

Note: Do not use these dimensions for installation design.

See general dimension drawings for detail - Drawing 5139209 (LH)/ 5139210 (RH)

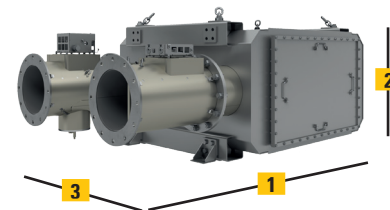


CLEAN EMISSIONS MODULE (CEM)

| Dimensions & Weight | | | | |
|---------------------|------------------------|-----------------------|-----------------------|-----------------------|
| Model | Length (1) | Height (2) | Width (3) | Weight |
| 16 Brick Z-Flow | 3678.8 mm 144.83 in | 1003.3 mm 39.50 in | 1769.9 mm 69.67 in | 1399 kg 3084.3 lb |
| 16 Brick U-Flow | 2945.4 mm 115.96 in | 1003.2 mm 39.50 in | 1769.7 mm 69.67 in | 1390 kg 3064.43 lb |
| Dosing Cabinet | 948.6 mm 37.35 in | 534.5 mm 21.05 in | 477.3 mm 18.79 in | --- |

Clean Emissions Module (CEM)

Available in U-flow configurations (shown) and Z-flow configurations.



Dosing Cabinet



The 3516E engine requires Selective Catalyst Reduction (SCR) technology. The easy-to-install Cat® SCR System is an exhaust gas aftertreatment solution compliant with U.S. EPA Tier 4 Final / IMO III emission standards.

- Proven technology to meet U.S. EPA Tier 4 Final / IMO III emission standards
- Maintains engine efficiency, durability and reliability
- Easy to install with minimum impact to vessel design
- Compact package from one single source
- Available for new builds and retrofits
- For detailed dimensions and installation requirements, please refer to latest revision of A&I guide LEBM0023.

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U.S. Sourced

LEHM0255-01

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