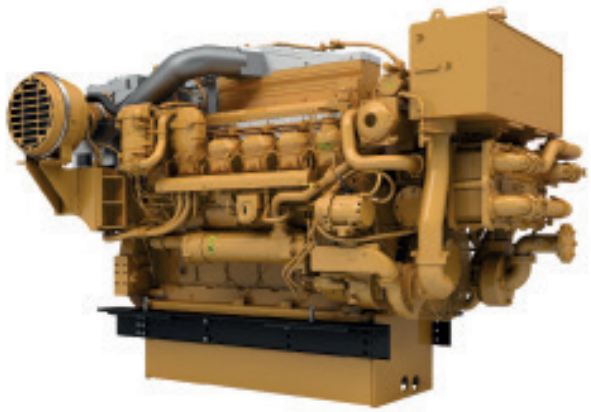
3512E Marine Propulsion Engines



ENGINE SPECIFICATIONS

CONFIGURATION	V 12, 4-Stroke Cycle Diesel
EMISSIONS	IMO II / III Switchable / EU Stage V / U.S. EPA Tier 4
RATED ENGINE SPEED	1600 / 1800
DISPLACEMENT	58.6 L / 3574 in^3
ASPIRATION	Twin Turbocharged - Aftercooled
GOVERNOR	Electronic (ADEM5)
FLYWHEEL HOUSING	SAE No. 00 with SAE No. 00 Flywheel (183 teeth)

BORE X STROKE	170 mm x 215 mm / 6.69 in x 8.46 in
REFILL CAPACITY LUBE OIL SYSTEM W/OIL FILTER CHANGE	250 hour Shallow Sump: 155 L / 41 gal 500 hour Standard Sump: 311 L / 82 gal 1000 hour Deep Sump: 614 L / 162 gal
OIL CHANGE INTERVAL	250 / 500 / 1000 hour
ROTATION (FROM FLYWHEEL END)	Clockwise or Counterclockwise
COOLING	SCAC (Separate Circuit Aftercooler Core)

KEY FEATURES & BENEFITS

- Utilizes SCR technology for IMO III, EU Stage V, and U.S. EPA Tier 4 certification
- Utilizes a closed loop air assisted DEF dosing strategy that contributes to efficient mixing and control, service life before replacement is extended, adapts to urea quality
- Enhanced control of fuel injection optimized through crank timing and ADEM5 ECM technology monitors engine operation and helps to minimize fuel consumption
- Strengthened cylinder heads and valves for durability and peak cylinder pressure capability, resulting in high engine duty cycle

RATINGS & FUEL DATA

Rating	mhp	bhp	bkW	rpm	Rotation	U.S. g/h	g/bkW-h	IMO	U.S. EPA	EU	China
A	1360	1341	1000	1600	CW / CCW	60.4	194.2	II/III	NC	NC	NC
A	1523	1502	1120	1600	CW / CCW	66.9	192.2	II/III	NC	NC	NC
A	1523	1502	1120	1800	CW / CCW	70.3	202.0	II/III	NC	NC	NC
A	1598	1576	1175	1800	CW / CCW	73.2	200.5	II/III	NC	NC	NC
A	1672	1649	1230	1800	CW / CCW	76.3	199.5	II/III	NC	NC	NC
A	1724	1700	1268	1600	CW / CCW	75.3	191.1	II/III	NC	NC	NC
A	1835	1810	1350	1600	CW / CCW	80.2	191.2	II/III	NC	NC	NC
A	2029	2000	1492	1600	CW / CCW	90.5	195.2	II/III	NC	NC	NC
A	2281	2250	1678	1800	CW / CCW	104.9	201.2	II/III	NC	NC	NC
B	2141	2112	1575	1600	CW / CCW	93.8	191.6	II/III	NC	NC	NC
B	2408	2375	1771	1800	CW / CCW	110.9	201.4	II/III	NC	NC	NC
C	2243	2213	1650	1600	CW / CCW	98.3	191.8	II/III	NC	NC	NC
C	2586	2550	1902	1800	CW / CCW	118.3	200.3	II/III	NC	NC	NC
A	1360	1341	1000	1600	CCW	61.0	196.4	III	T4	NC	NC
A	1523	1502	1120	1600	CCW	67.7	194.6	III	T4	NC	NC
A	1523	1502	1120	1800	CCW	71.0	204.1	III	T4	NC	NC
A	1598	1576	1175	1800	CCW	73.9	202.4	III	T4	NC	NC
A	1672	1649	1230	1800	CCW	77.0	201.5	III	T4	NC	NC
A	1724	1700	1268	1600	CCW	76.3	193.7	III	T4	NC	NC
A	1835	1810	1350	1600	CCW	81.3	193.9	III	T4	NC	NC
A	2027	2000	1491	1600	CCW	90.1	194.4	III	T4	NC	NC
A	2281	2250	1678	1800	CCW	104.9	201.2	III	T4	NC	NC
B	2141	2112	1575	1600	CCW	95.4	194.8	III	T4	NC	NC
B	2408	2375	1771	1800	CCW	110.9	201.5	III	T4	NC	NC
C	2243	2213	1650	1600	CCW	100.1	195.2	III	T4	NC	NC
C	2585	2550	1901	1800	CCW	118.3	200.3	III	T4	NC	NC
A	1360	1341	1000	1600	CW / CCW	61.9	199.1	NC	NC	EU-V	NC
A	1523	1502	1120	1600	CW / CCW	68.6	197.0	NC	NC	EU-V	NC
A	1724	1700	1268	1600	CW / CCW	77.0	195.5	NC	NC	EU-V	NC
B	1835	1810	1350	1600	CW / CCW	82.2	195.9	NC	NC	EU-V	NC

BSFC (g/bkW-h) and VFC (U.S. g/h) are provided at rated RPM & Power.

STANDARD EQUIPMENT

- Corrosion-resistant aftercooler core
- Dual ADEM5 engine control modules with electronic unit injection and low pressure fuel system
- Dual water-cooled turbochargers
- Vibration damper and guard
- Meets SOLAS regulations
- Duplex fuel and oil filtration
- Auxiliary fresh water pump
- Gear driven centrifugal jacket water pump with enhanced capacity

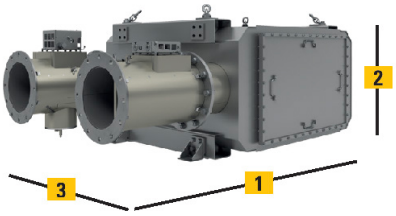
OPTIONAL ATTACHMENT

- Plate-type heat exchanger with integrated SCAC and Jacket 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% added capacity for cooling auxiliary vessel equipment
- Closed crank case ventilation

CLEAN EMISSIONS MODULE (CEM)

Dimensions and Weight				
Model	**Length (1)**	**Height (2)**	**Width (3)**	**Weight**
12 Brick Z-Flow	3453.6 mm 135.97 in	1012.4 mm 39.86 in	1627.2 mm 64.06 in	1253.6 kg 2763.7 lb
12 Brick U-Flow	2712.0 mm 106.77 in	1012.4 mm 39.86 in	1627.2 mm 64.06 in	1261.5 kg 2783.3 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.

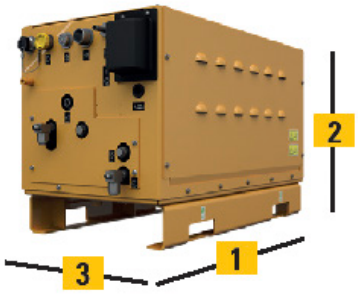


The 3512E engine requires Selective Catalyst Reduction (SCR) technology.

The easy-to-install Cat® SCR System is an exhaust gas aftertreatment solution certified to be U.S. EPA Tier 4 / EU Stage V / IMO III emission standards.

- IMO II-III switchable calibrations available
- 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.

Dosing Cabinet



Rating Definitions and Conditions:

A Rating (Unrestricted Continuous)

Typical Applications: For Vessels operating at rated load and rated speed up to 100% of the time without interruption or load cycling (80% to 100% load factor).

Typical operation ranges from 5000 to 8000 hours per year.

B Rating (Heavy Duty)

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.

C Rating (Maximum Continuous)

Typical applications: For vessels operating at rated load and rated speed up to 50% of the time with cyclical load and speed (20% to 80% load factor).

Typical operation ranges from 2000 to 4000 hours per year.

ENGINE DIMENSIONS & WEIGHT

LENGTH	Max: 125.4 in. / 3184.1 mm Min: 123.5 in. / 3136.1 mm
HEIGHT	Max: 92.1 in. / 2340.3 mm Min: 91.9 in. / 2334.6 mm
WIDTH	Max: 81.9 in. / 2080.1 mm Min: 80.2 in. / 2036.7 mm
DRY WEIGHT	Max: 12824.3 lb / 5817 kg Min: 12606.0 lb / 5718 kg