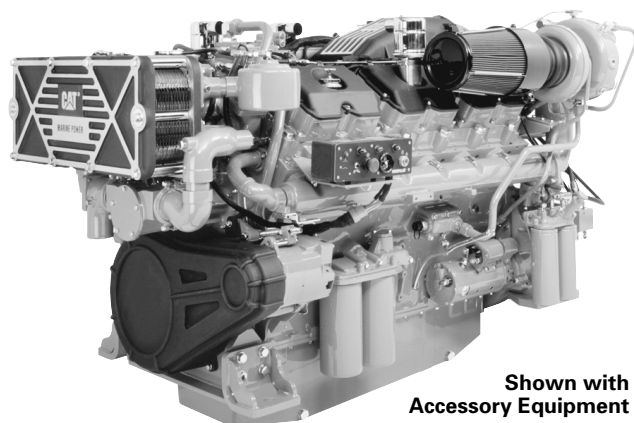




Shown with  
Accessory Equipment

## STANDARD EQUIPMENT

### Air Inlet System

Air cleaner/fumes disposal (closed system);  
corrosion resistant aftercooler core

### Cooling System

Gear driven centrifugal auxiliary sea water pump;  
gear driven centrifugal jacket water pump; block  
heaters (one on each side); titanium plate heat  
exchanger with expansion tank; coolant recovery  
system; oil cooler

### Exhaust System

Watercooled manifold and turbocharger; round  
flanged outlet, 130 mm (5.12 in.)

### Flywheel and Flywheel Housing

SAE No. 1 (113 teeth)  
SAE No. 0 (136 teeth) (side access engines only)

### Fuel System

Fuel priming pump; fuel filter — RH service on port,  
LH service on starboard; Hydraulically actuated  
Electronically Controlled Unit Injector (HEUI) fuel  
system; flexible fuel lines; fuel transfer pump

### Instruments

Instrument panel with start/stop switch; emergency  
button; maintenance due lamp; diagnostic lamp;  
electronic service meter; warning lamp; 15A  
breakers; starter motor magnetic switch; 8-hole  
panel with digital tachometer, oil pressure, oil  
temperature, water temperature, and fuel pressure  
gauges

### Lube System

Crankcase breather; oil filter — RH service on port,  
LH service on starboard; oil filler in valve cover;  
shallow center sump oil pan; deep sump oil pan  
(side access engines only)

### Mounting System

Front support — adjustable; front support (side  
access engines only)

### Protection System

Electronic — 24 volt only

### General

Vibration damper and guard, Caterpillar yellow  
paint, lifting eyes

# Marine Propulsion Engine 3412E

970 bkW (1300 bhp) 1318 mhp @ 2300 rpm

## SPECIFICATIONS

### V-12, 4-Stroke-Cycle-Diesel

Emissions ..... IMO compliant  
Displacement ..... 26.4 L (1649 cu. in.)  
Bore ..... 137.2 mm (5.4 in.)  
Stroke ..... 152.4 mm (6.0 in.)  
Aspiration ..... Turbocharged-Aftercooled  
Governor ..... Electronic  
Engine Weight, Net Dry (approx)  
Standard Engines ..... 2533 kg (5585 lb)  
Side Access Engines ..... 2649 kg (5840 lb)  
Capacity for Liquids  
Cooling System ..... 72.5 L (19.1 U.S. gal)  
Lube Oil System  
Shallow Sump ..... 85 L (22.5 U.S. gal)  
Deep Sump ..... 138 L (35.5 U.S. gal)  
Oil Change Interval  
Shallow Sump ..... 200 hr  
Deep Sump ..... 400 hr  
Caterpillar DEO 10W30 or 15W40  
Rotation (from flywheel end) ..... Counterclockwise

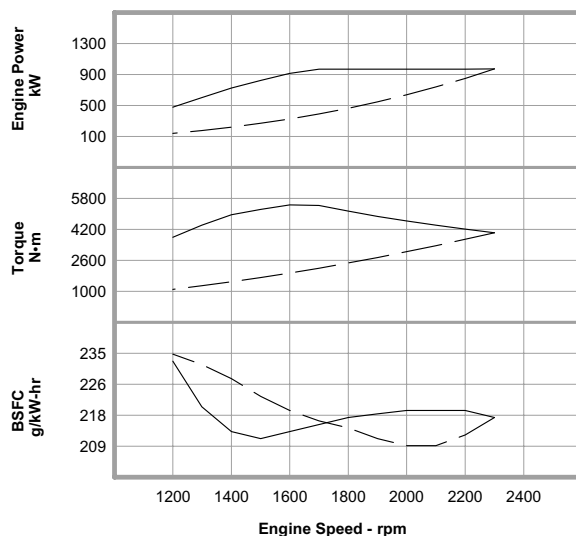
## ACCESSORY EQUIPMENT

Air Starting Motor (side access engines only)  
Alarm Contactor — Transmission Oil Pressure  
and Oil Temperature  
24V 60 Amp Alternator  
Digital Tachometer  
Double Wall Oil Lines  
Duplex Fuel Filter, RH or LH  
Duplex Oil Filter (side access engines only)  
24V Electric Starting Motor  
Engine Monitoring System  
Engine-to-Engine Wiring Harness  
Engine Vision Display System  
Fuel Cooler  
GPS Interface Module  
Hose Kit  
Hydraulic Pump Drives  
Light Duty Air Cleaner  
Marine Power Display System  
Non-Self-Priming Auxiliary Sea Water Pump  
OEM Wiring Harness  
Pilot House Instrument Panel  
Primary Fuel Filter/Water Separator  
Sea Water Inlet Connection (LH, U-Shaped;  
RH, Straight)  
Sea Water Outlet Connection, 57 mm (2.25 in.)  
Spare Parts Kit  
Throttle Position Sensor  
Vibration Isolation Mounting

**PERFORMANCE CURVES**

**E Rating — DM4106-01**

**IMO Compliant**



**Metric**

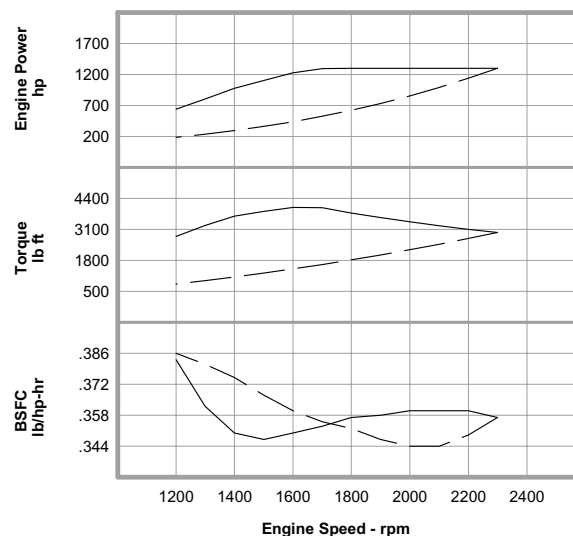
Maximum Power  
Prop Demand

**970 kW**

**Performance Data**

|                           | Engine Speed<br>rpm | Engine Power<br>kW | Engine Torque<br>N-m | BSFC<br>g/kW-hr | Fuel Rate<br>L/hr |
|---------------------------|---------------------|--------------------|----------------------|-----------------|-------------------|
| <b>Maximum Power Data</b> | 2300                | 970                | 4025                 | 217.0           | 251.1             |
|                           | 2200                | 969                | 4207                 | 219.0           | 252.6             |
|                           | 2100                | 969                | 4407                 | 219.0           | 253.1             |
|                           | 2000                | 969                | 4626                 | 219.0           | 252.5             |
|                           | 1900                | 969                | 4868                 | 218.0           | 251.4             |
|                           | 1800                | 968                | 5138                 | 217.0           | 250.1             |
|                           | 1700                | 967                | 5430                 | 215.0           | 248.2             |
|                           | 1600                | 915                | 5458                 | 213.0           | 232.3             |
|                           | 1500                | 822                | 5230                 | 211.0           | 206.8             |
|                           | 1400                | 727                | 4962                 | 213.0           | 184.5             |
| <b>Prop Demand Data</b>   | 1300                | 601                | 4417                 | 220.0           | 157.8             |
|                           | 1200                | 476                | 3790                 | 233.0           | 132.0             |
|                           | 2300                | 970                | 4025                 | 217.0           | 251.1             |
|                           | 2200                | 848                | 3683                 | 212.0           | 214.2             |
|                           | 2100                | 738                | 3356                 | 209.0           | 183.6             |
|                           | 2000                | 637                | 3044                 | 209.0           | 158.6             |
|                           | 1900                | 547                | 2747                 | 211.0           | 137.7             |
|                           | 1800                | 465                | 2465                 | 214.0           | 118.7             |
|                           | 1700                | 392                | 2199                 | 216.0           | 101.0             |
|                           | 1600                | 326                | 1948                 | 219.0           | 85.1              |
|                           | 1500                | 269                | 1712                 | 223.0           | 71.5              |
|                           | 1400                | 219                | 1491                 | 228.0           | 59.3              |
|                           | 1300                | 175                | 1286                 | 232.0           | 48.4              |
|                           | 1200                | 138                | 1096                 | 235.0           | 38.6              |

Cubic prop demand curve with 3.0 exponent for displacement hulls only.



**English**

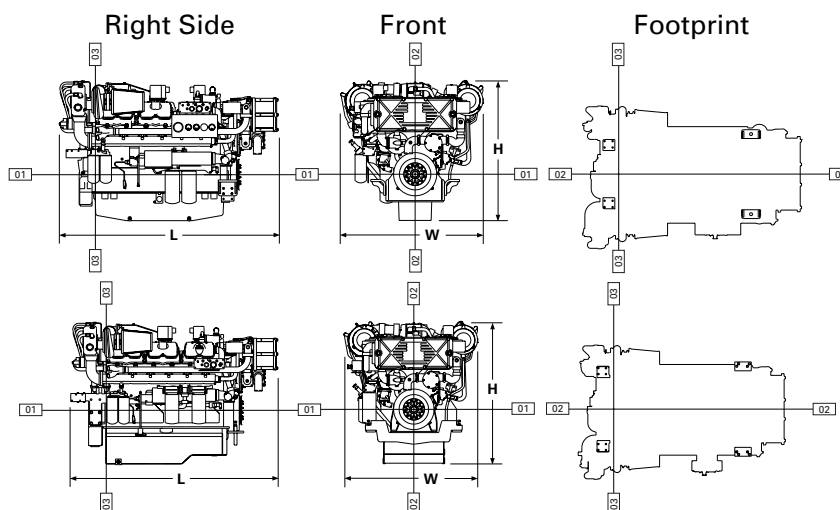
Maximum Power  
Prop Demand

**1300 hp**

**Performance Data**

|                           | Engine Speed<br>rpm | Engine Power<br>hp | Engine Torque<br>lb-ft | BSFC<br>lb/hp-hr | Fuel Rate<br>gph |
|---------------------------|---------------------|--------------------|------------------------|------------------|------------------|
| <b>Maximum Power Data</b> | 2300                | 1300               | 2969                   | .357             | 66.3             |
|                           | 2200                | 1300               | 3103                   | .360             | 66.7             |
|                           | 2100                | 1300               | 3250                   | .360             | 66.9             |
|                           | 2000                | 1299               | 3412                   | .360             | 66.7             |
|                           | 1900                | 1299               | 3590                   | .358             | 66.4             |
|                           | 1800                | 1299               | 3789                   | .357             | 66.1             |
|                           | 1700                | 1296               | 4005                   | .353             | 65.6             |
|                           | 1600                | 1226               | 4025                   | .350             | 61.4             |
|                           | 1500                | 1102               | 3857                   | .347             | 54.6             |
|                           | 1400                | 975                | 3660                   | .350             | 48.7             |
| <b>Prop Demand Data</b>   | 1300                | 806                | 3258                   | .362             | 41.7             |
|                           | 1200                | 639                | 2795                   | .383             | 34.9             |
|                           | 2300                | 1300               | 2969                   | .357             | 66.3             |
|                           | 2200                | 1138               | 2716                   | .349             | 56.6             |
|                           | 2100                | 990                | 2475                   | .344             | 48.5             |
|                           | 2000                | 855                | 2245                   | .344             | 41.9             |
|                           | 1900                | 733                | 2026                   | .347             | 36.4             |
|                           | 1800                | 623                | 1818                   | .352             | 31.4             |
|                           | 1700                | 525                | 1622                   | .355             | 26.7             |
|                           | 1600                | 438                | 1437                   | .360             | 22.5             |
|                           | 1500                | 361                | 1263                   | .367             | 18.9             |
|                           | 1400                | 293                | 1100                   | .375             | 15.7             |
|                           | 1300                | 235                | 948                    | .381             | 12.8             |
|                           | 1200                | 185                | 808                    | .386             | 10.2             |

Power produced at the flywheel will be within standard tolerances up to 50°C (122°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.



## DIMENSIONS\*

|                                                                 | Standard Engine |      | Side Access Engine |      |
|-----------------------------------------------------------------|-----------------|------|--------------------|------|
|                                                                 | mm              | in.  | mm                 | in.  |
| <b>Overall Length</b>                                           |                 |      |                    |      |
| Length from front to rear face of block                         | 1734.7          | 68.3 | 1734.7             | 68.3 |
| Length from rear face of block to back of engine                | 341.9           | 13.5 | 358.1              | 14.1 |
| <b>Overall Height</b>                                           |                 |      |                    |      |
| Height from crankshaft centerline to top of engine              | 1327.5          | 52.3 | 1437.2             | 56.6 |
| Height from crankshaft centerline to bottom of oil pan          | 888.8           | 35.0 | 888.8              | 35.0 |
|                                                                 | 438.7           | 17.3 | 548.4              | 21.6 |
| <b>Overall Width</b>                                            |                 |      |                    |      |
| Width from crankshaft centerline to port side (left side)       | 1354.2          | 53.3 | 1354.2             | 53.3 |
| Width from crankshaft centerline to starboard side (right side) | 646.2           | 25.4 | 646.2              | 25.4 |
|                                                                 | 708.0           | 27.9 | 708.0              | 27.9 |
| <b>Standard Engine</b>                                          | <b>Front</b>    |      | <b>Rear</b>        |      |
|                                                                 | mm              | in.  | mm                 | in.  |
| Customer mounting hole diameter                                 | 27.5            | 1.1  |                    | 5/8  |
| Width from crankshaft centerline to side                        | 380.0           | 15.0 | 252.4              | 9.9  |
|                                                                 |                 |      | 312.7              | 12.3 |
| Length from rear face of block to mounting hole                 | 1255.1          | 49.4 | 57.9               | 2.3  |
|                                                                 |                 |      | 134.2              | 5.3  |
| <b>Side Access Engine</b>                                       | <b>Front</b>    |      | <b>Rear</b>        |      |
|                                                                 | mm              | in.  | mm                 | in.  |
| Customer mounting hole diameter                                 | 20.5            | 0.8  |                    | 5/8  |
| Width from crankshaft centerline to side                        | 431.8           | 17.0 | 352.7              | 13.9 |
|                                                                 | 457.2           | 18.0 | 413.0              | 16.3 |
| Length from rear face of block to mounting hole                 | 1242.5          | 48.9 | 78.4               | 3.1  |
|                                                                 | 1261.5          | 49.7 | 154.6              | 6.1  |
|                                                                 | 1350.5          | 53.2 |                    |      |
|                                                                 | 1369.5          | 53.9 |                    |      |

\*Illustrations and dimensions from drawings: 180-7468 Standard Engine, 173-0014 Side Access Engine.

## RATING DEFINITIONS AND CONDITIONS

### E Rating –

Typical Application . . . . . Planing hull vessels such as pleasure craft, harbor patrol, harbor master, and some fishing and pilot boats.

Typical Hours Per Year . . . . . 250 to 1000

Time at Rated Speed . . . . . Up to 8%

Load Factor . . . . . Up to 30%

Typical Time at Full Load . . . . . 1/2 out of 6 hours

Rated Speed . . . . . 2300 rpm

Maximum Cruise Speed . . . . . 2100 rpm

Maximum Continuous Cruise Speed . . . . . 1900 rpm

### Engine Performance Parameters

Power . . . . . ±3%

Specific Fuel Consumption . . . . . ±3%

Fuel Rate . . . . . ±5%

**Ratings** are based on SAE J1228/ISO8665 standard conditions of 100 kPa (29.61 in. Hg), 25°C (77°F), and 30% relative humidity. These ratings also apply at ISO3046/1, DIN6271/3, and BS5514 conditions of 100 kPa (29.61 in. Hg), 27°C (81°F), and 60% relative humidity.

**Fuel rates** are based on fuel oil of 35° API [16°C (60°F)] gravity having an LHV of 42 780 kJ/kg (18,390 Btu/lb) when used at 29°C (85°F) and weighing 838.9 g/L (7.001 lb/U.S. gal).

Additional ratings may be available for specific customer requirements. Consult your Caterpillar representative for additional information.



## **3412E MARINE PROPULSION — 970 bkW (1300 bhp)**

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.

TMI Reference No.: DM4106-01 (6-19-01)

Materials and specifications are subject to change without notice.

LEHM1640-00 (6-01)  
Supersedes LEHM9097-01

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

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