



Engine Specification Data • EMI4041D  
2100-3000RPM  
Fire Pump Diesel Engine

Issue Date: April 30, 2004

**General Data**

Speed	U L HP (k w)	FM HP (k w)
2100	34 (25)	32 (24)
2350	39 (29)	38 (28)
3000	43 (32)	43 (32)

Model	EMI4041D21-30
Number of Cylinders	4
Bore and Stroke-in (mm)	3.31x3.54 (84x90)
Displacement-in <sup>3</sup> (L)	121.7 (1.994)
Compression Ratio	18:1
Valves per Cylinder-Intake/Exhaust	1/1
Firing Order	1-3-4-2
Combustion System	Direct Injection
Engine Type	In-Line, 4-Cycle
Aspiration	Natural
Engine Crankcase Vent System	Open
Maximum Crankcase Pressure-in H <sub>2</sub> O (kPa)	2 (0.5)

**Physical Data**

Length-in (mm)	32.2 (819)
Width-in (mm)	24.2 (615)
Height-in (mm)	31.0 (787)
Weight, dry (power unit)-lb (kg)	502 (228)
(Includes flywheel & electronics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)-in (mm)	7.32 (186)
Right of Crankshaft (Y-axis)-in (mm)	0.18 (-4.6)
Above Crankshaft (Z-axis)-in (mm)	3.62 (92)
Maximum Allowable Static Bending Moment at	
Rear Face of Flywhi Hsg. w/5-G Load-lb-ft (N-m)	159 (216)
Thrust Bearing Cont Load Limit (Forward)-lb (N)	639 (2842)

**Fuel System**

Fuel Injection Pump	Yanmar
Governor Regulation	10% max
Governor Type	Mechanical
Fuel Consumption lb/hp-hr (kg/kw-hr) approx	0.39 (0.24)*
Maximum Allowable Fuel Pump Suction	
Clean System--psi (kPa)	1.13 (7.8)
Fuel Filter Micron Size @ 98% Efficiency	10

**Lubrication System**

Oil Pressure at Rated Speed-psi (kPa)	59.7 (412)
Oil Pressure at Low Idle-psi (kPa)	28.4 (196)
In Pan Oil Temperature-°F (°C)	240 (115)
Oil Pan Capacity, High-qt (L)	6.0 (5.8)
Oil Pan Capacity, Low-qt (L)	3.6 (3.5)
Total Engine Oil Capacity with Filters--qt (L)	6.7 (6.4)
Engine Angularity Limits (Continuous)	
Any Direction-degrees	25

**Air System**

Maximum Allowable Temp Rise--Ambient Air to	
Engine Inlet-°F (°C)	18 (10)
Maximum Air Intake Restriction	
Dirty Air Cleaner-in H <sub>2</sub> O (kPa)	25 (6.25)
Clean Air Cleaner-in H <sub>2</sub> O (kPa)	12 (3)
Combustion Air Flow-ft <sup>3</sup> /min (m <sup>3</sup> /min)	113 (3.2)
Recommended Intake Pipe Diameter--in (mm)	1.97 (50)

**Cooling System**

Engine Heat Rejection--BTU/min (kW)	1298 (22.8)
Coolant Flow--gal/min (L/min)	18.2 (70)
Thermostat Start to Open-°F (°C)	160 (71)
Thermostat Fully Open-°F (°C)	185 (85)
Max. Water Pump Inlet Restriction-in H <sub>2</sub> O (kPa)	40 (10)
Engine Coolant Capacity--qt (L)	4.9 (4.7)
Recommended Pressure Cap--psi (kPa)	12.8 (88)
Maximum Top Tank Temp-°F (°C)	221 (105)
Recommended Air to Boil-°F (°C)	117 (47)

**Exhaust System**

Exhaust Flow--ft <sup>3</sup> /Min (M3/Min)	307 (8.7)
Exhaust Temperature--°F (°C)	1112 (600)
Max. Allowable Back Pressure-in H <sub>2</sub> O (kPa)	51.3 (12.3)

**Electrical System**

Recommended Battery Capacity (CCA)	
12 Volt System--amp	700
Maximum Allowable Starting Circuit Resistance	
12 Volt System--Ohm	0.0012
Starter Rolling Current--12 Volt System	
At 32°F (0°C)--amp	350
Jacket Water Heater 1000 Watts, 120 Volts, 1-Phase, 50/60 Hz	

**Performance Data**

Rated Speed--max rpm	3000
Noise--dB(A) @ 1m	94

Note -The following NFPA 20, 1999 paragraphs prescribe horsepower deductions for altitude and temperature:

8-2.2.4 A deduction of 3 percent from engine horsepower rating at standard SAE condition shall be made for diesel engines for each 1000 ft (305 m) altitude above 300 ft (91.4 m).

8-2.2.5 A deduction of 1 percent from engine horsepower rating as corrected to standard SAE conditions shall be made for diesel engines for every 10°F (5.6°C) above 77°F (25°C) ambient temperature.

\*To convert lb/hp-hr into gallons/hp-hr multiply lb/hp-hr by 0.141.

To convert gallons/hp-hr into liters/kw-hr multiply gallons/hp-hr by 5.07.