



## Engine Specification Data • EMI4080D Fire Pump Diesel Engine

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### General Data

Speed	UL HP (kw)	FM HP (kw)
1760	63 (47)	64 (48)
2100	78 (58)	79 (59)
2350	85 (63)	84 (63)

Model	EMI4080D
Number of Cylinders	4
Bore and Stroke--in (mm)	4.19 x 5.00 (106 x 127)
Displacement-in <sup>3</sup> (L)	276 (4.5)
Compression Ratio	17.6:1
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)	33.9 (860)
Width--in (mm)	24.1 (612)
Height--in (mm)	33.3 (846)
Weight, dry--lb (kg)	851(387)
(Includes flywheel housing, flywheel & electrics)	
Center of Gravity Location	
From Rear Face of Block (X-axis)--in (mm)	9.3(235)
Right of Crankshaft (Y-axis)--in (mm)	0.3 (7)
Above Crankshaft (Z-axis)--in (mm)	5.7 (144)
Maximum Allowable Static Bending Moment at	
Rear Face of Flywhl Hsg w/ 5-G Load-lb-ft (N-m)	600 (814)
Thrust Bearing Load Limit (Forward)-lb (N) [I]	900(4003)

### Fuel System

Fuel Injection Pump	Stanadyne
Governor Regulation	4-10 %
Governor Type	Mechanical
Fuel Consumption lb/hp-hr (kg/kw-hr)	0.36 (0.22)*
Total Fuel Flow--lb/hr (kg/hr)	228 (104)
Maximum Fuel Transfer Pump Suction--ft (m) fuel	3 (0.9)
Fuel Filter Micron Size @ 98% Efficiency	8

### Lubrication System

Oil Pressure at Rated Speed--psi (kPa)	50 (345)
Oil Pressure at Low Idle-psi (kPa)	15 (105)
In Pan Oil Temperature--°F (°C)	240 (115)
Oil Pan Capacity, High-qt (L)	13 (12.3)
Oil Pan Capacity, Low-qt (L)	12 (11.3)
Total Engine Oil Capacity with Filters--qt (L)	14 (13.3)
Engine Angularity Limits, Any Direction-Degrees	30

### Air System

Maximum Allowable Temp Rise-Ambient Air to	
Engine Inlet--°F (°C)	15 (8)
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)	166 (4.7)
Intake Manifold Pressure--psi (kPa)	Ambient
Recommended Intake Pipe Diameter-in (mm)	3 (76.2)

### Cooling System

Engine Heat Rejection-BTU/min (kW)	1934 (34)
Coolant Flow--gal/lmin (L/min)	47 (178)
Thermostat Start to Open--°F (°C)	180 (82)
Thermostat Fully Open--°F (°C)	202 (94)
Max. Water Pump Inlet Restriction-in H <sub>2</sub> O (kPa)	40(10)
Engine Coolant Capacity--qt (L)	9 (8.5)
Recommended Pressure Cap--psi (kPa)	10 (69)

### Exhaust System

Exhaust Flow--ft <sup>3</sup> /min (M <sup>3</sup> /Min)	442 (12.5)
Exhaust Temperature--°F (°C)	1089 (587)
Max. Allowable Back Pressure-in H <sub>2</sub> O (kPa)	30 (7.5)

### Electrical System

Recommended Battery Capacity (CCA)	
12 Volt System-amp	930
Maximum Allowable Starting Circuit Resistance	
12 Volt System--Ohm	0.0012
Starter Rolling Current--12 Volt System	
At 32 °F (0 °C)--amp	780
Jacket Water Heater 1000 Watts, 120 Volts, 1-Phase, 50/60 Hz	

### Performance Data

Rated Speed-max rpm	2350
Noise--dB(A) @ 1 m	98.2

**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 conditions 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