

 <p>Enriching Lives</p>	<h2>Engine Data Sheet</h2> <p>Kirloskar Oil Engines Limited Laxmanrao Kirloskar Road Khadki, Pune - 411003 (India)</p>	<p>Basic Engine Model: KFP4R-UF16R1</p>
		Reference Number : EDS - UF16R1 - 00
		Revision Date : 28.05.2018 Rev. Number : 00

General Engine Data

Engine Manufacturer.....	KOEL
Ignition Type.....	Compression (Diesel)
Number of Cylinders.....	4
Bore and Stroke - in(mm).....	4.13 x 4.72 (105 x 120)
Displacement - in ³ (L).....	254 (4.16)
Compression Ratio.....	17.0 : 1
Valve per cylinder - Intake.....	1
Exhaust.....	1
Combustion System.....	Direct Injection
Engine Type.....	In-Line, 4 Stroke Cycle
Aspiration.....	Turbocharged, Aftercooled
Firing Order.....	1-3-4-2
Charge Air Cooling Type.....	Raw Watercooled
Rotation(Viewed from Flywheel end) - Clockwise..	Not Available
Counter-Clockwise.....	Standard
Engine Crankcase Vent System.....	Open
Installation Drawing.....	4H.2806.00.0.00

Power Rating - Approved

	2800	2900	3000
Engine Nameplate Power - HP(kW).....	105(78)	128(95)	152(113)

Cooling system

	2800	2900	3000
Engine Coolant Heat - Btu/sec(kW).....	49.3(52)	62.5(66)	77.7(82)
Engine Radiated Heat - Btu/sec(kW).....	21.8(23)	34.1(36)	55(58)
Heat Exchanger minimum Flow			
60°F (16°C) Raw Water - gal/min (LPM)....	14.6(55)		
100°F (38°C) Raw Water - gal/min (LPM)...	15.9(60)		
Heat Exchanger Maximum Cooling Water			
Inlet Pressure - lb/in ² (bar)	60(4.13)		
Flow - gal/min (LPM).....	26.5(100)		
Thermostat, Start to Open - °F (°C).....	165.2(74)		
Fully Opened - °F (°C).....	183.2(84)		
Engine Coolant capacity - L.....	9.5		
Engine Coolant High Temp. Switch - °F (°C).....	203(95)		
Engine Coolant Low Temp. Switch - °F (°C).....	95(35)		
Raw water High Temp. Switch - °F (°C).....	149(65)		

Continued.....

Electric System - DC

System Voltage (Nominal).....	12 V
Battery Capacity for Ambient above 32 ⁰ F (0 ⁰ C)	
Voltage (Nominal).....	12 V
Current Capacity - Amp/hr.....	150
Qty. per Battery Bank.....	1
CCA at 0 ⁰ F (-18 ⁰ C).....	640
Reserve Capacity - Minutes.....	260
Battery Cable Minimum Size - mm ²	35
Charging Alternator Output - Amp.....	35
Starter Cranking Amps - at 60 ⁰ F (15 ⁰ C).....	250 - 350

Exhaust System

	2800	2900	3000
Exhaust Flow - ft ³ /min (m ³ /min).....	789.8(22.4)	914.4(25.9)	1107.7(31.4)
Exhaust Temperature - ⁰ F (⁰ C).....	932(500)	968(520)	1058(570)
Max. Allowable Back Pressure - in H ₂ O(kPa).....	16(4)		
Exhaust pipe Dia. In (mm) for further exhaust piping(Min.).....	4 (100)		

Fuel System

	2800	2900	3000
Fuel Consumption - gal/hr (L/hr).....	6.02(22.8)	7.66(29)	9.75(37)
Fuel Return - gal/hr (L/hr).....	47.24(178.8)	45.6(172.6)	43.51(164.7)
Total Supply Fuel Flow - gal/hr (L/hr).....	53.26(201.6)	53.26(201.6)	53.26(201.6)
Fuel Pressure - lb/in ² (kPa).....	36.25(250)		
Fuel Supply Line Size(Min.) - in(mm)	0.5(12.7)		
Fuel Return Line Size(Min.) - in(mm).....	0.375(9.5)		
Max. Allowable Fuel Pump Suction With Clean Filter - in H ₂ O (m H ₂ O).....	31(0.8)		
Max. Allowable Fuel Head Above Fuel Pump Supply or Return - m (ft).....	5 (16.4)		
Fuel Filter Size - Micron.....	3-5 micron		

Heater System

Jacket Water Heater.....	Standard
Wattage (Nominal).....	1500
Voltage - AC, 1P.....	240

Continued.....

Air Intake System	2800	2900	3000
Air Cleaner Type.....	Dry type, Indoor service only		
Air Intake Restriction Maximum Limit			
Dirty Air Cleaner - in H ₂ O (kPa).....	8(2) for 2800 to 3000 rpm		
Clean Air Cleaner - in H ₂ O (kPa).....	4(1.0) - 5(1.25)		
Engine Air Flow - ft ³ /min (m ³ /min).....	296.6(8.4)	332(9.4)	377.9(10.7)
Air Temperature(At Engine Inlet) - °F (°C).....	113(45) Max. Allowable		

Lubrication System

Oil Pressure(Normal) - lb/in ² (kPa).....	36.26 to 79.77 (250 to 550)
Oil Temperature(In Pan) - °F (°C) (max.).....	248 - 266 (120 - 130)
Oil Pan Capacity, High - L.....	9.5
Low - L.....	8.5
Total Oil Capacity with filter - L.....	11.5

Performance

	2800	2900	3000
BMEP - lb/in ² (kPa).....	117.2(808)	137.9(951)	158.2(1091)
Piston Speed - ft/min (m/min).....	2205(672)	2283(696)	2362(720)
Mechanical Noise - dB(A) at 1m.....	102 approx.		
Power Curve.....	Performance curve No. : EPC - UF16R1 - 00		

Note : The unit 'gal/hr or gal/min' mentioned in above data sheet is US gallon.