



Enriching Lives

Engine Data Sheet
Kirloskar Oil Engines Limited
Laxmanrao Kirloskar Road
Khadki, Pune - 411003 (India)

Basic Engine Model :
KFP4R-UF15

Reference Number : EDS - UF15 - 00

Revision Date : 13.02.2014

Rev. Number : 01

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.....	18.0 : 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.2588.00.00

Cooling system

	1760	2100	2200	2350	2600
Engine Coolant Heat - Btu/sec.(kW).....	55 (58)	57.4(60.5)	61.1(64.5)	75.8(80)	85.4(90.1)
Engine Radiated Heat - Btu/sec.(kW).....	11.9(12.6)	12.4(13.1)	13.2(14)	16.4(17.3)	18.5(19.5)
Heat Exchanger minimum Flow					
59°F (15°C) Raw Water - gal/min. (LPM)....	7(27)	9(35)	10(38)	11(41)	12(45)
95°F (35°C) Raw Water - gal/min. (LPM)....	9(34)	11(41)	12(45)	13(49)	14(54)
Heat Exchanger Maximum Cooling Water					
Inlet Pressure - bar (lb./in. ²) (kPa).....	4 (60)(400)				
Flow - gal/min. (LPM).....	31.5(120)				
Thermostat, Start to Open - °F (°C).....	165.2(74)				
Fully Opened - °F (°C).....	183.2(84)				
Engine Cooling capacity - L.....	9.5				
Engine Coolant Temperature (Maximum) - °F (°C)..	203(95)				
Engine Coolant Temperature (Minimum) - °F (°C)..	165.2(74)				
Engine Coolant Low Temperature Switch - °F (°C)..	89.6(32) - 100.4(38)				
Raw water High Temperature Switch - °F (°C).....	143.6(62) - 154.4(68)				

Continued.....

Electric System - DC

System Voltage (Nominal).....	12 V
Battery Capacity for Ambients above 32 ⁰ F (0 ⁰ C)	
Voltage (Nominal).....	12 V
Qty. per Battery Bank.....	1
SAE size per J537.....	4D - 640
CCA at 0 ⁰ F (-18 ⁰ C).....	640
Reserve Capacity - Min.....	280
Battery Cable Circuit*, Max. Resistance - ohm.....	0.0012
Battery Cable Minimum Size	
0 - 120 in. Circuit* Length.....	0
121 - 160 in. Circuit* Length.....	0
161 - 200 in. Circuit* Length.....	0
Charging Alternator Output - Amp.....	55
Starter Cranking Amps - at 60 ⁰ F (15 ⁰ C).....	400
*Positive and Negative Cables Combined Length	

Exhaust System

	1760	2100	2200	2350	2600
Exhaust Flow - ft ³ /min (m ³ /min).....	494(14)	604(17)	643(18.2)	797(22.6)	898(25.4)
Exhaust Temperature - ⁰ F (⁰ C).....	1022(550)	1022(550)	1022(550)	1022(550)	1022(550)
Max. Allowable Back Pressure - in. of H ₂ O(kPa)...	16 (4) at 1760 rpm and 27 (6.6) at 2600 rpm				
Exhaust pipe Dia. In. (mm)** for further exhaust piping(Min.).....	4 (100)				

Fuel System

	1760	2100	2200	2350	2600
Fuel Consumption - gal./hr. (L/hr.).....	4.3(19.6)	4.5(20.5)	4.8(21.8)	5.9(27)	6.7(30.5)
Fuel Returnn - gal./hr. (L/hr.).....	17.2(78.4)	18(82)	19.2(87.2)	23.6(108)	26.8(122)
Total Supply Fuel Flow - gal./hr. (L/hr.).....	21.5(98)	22.5(102.5)	24(109)	29.5(135)	33.5(152.5)
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.).....	2.7(9)				
Fuel Filter Size - Micron.....	10				

Heater System

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

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Induction Air System

	1760	2100	2200	2350	2600
Air Cleaner Type.....	Dry				
Air Intake Restriction Maximum Limit					
Dirty Air Cleaner - in. of Water (kPa).....	10 (2.5) at 1760 rpm and 16 (4) at 2600 rpm				
Clean Air Cleaner - in. of Water (kPa)...	6 (1.5)				
Engine Air Flow - ft.3/min. (m3/min).....	180(5.1)	221.7(6.3)	236(6.7)	292.7(8.3)	329.9(9.3)
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.).....	230 - 248 (110 - 120)				
Oil Pan Capacity, High - L.....	9.5				
Low - L.....	8.5				
Total Oil Capacity with filter - L.....	11.5				

Performance

	1760	2100	2200	2350	2600
BMEP - lb./in. ² (kPa).....	189(1304)	163(1123)	164(1130)	187(1293)	179(1234)
Piston Speed - ft./min (m/min).....	1385(422)	1653(504)	1732(528)	1850(564)	2047(624)
Mechanical Noise - dB(A) at 1m.....	102 Approx.				
Power Curve.....	Performance curve No. : EPC - UF15 - 00				