Engine Data Sheet

Cummins India Ltd.
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Basic Engine Model	
CFPI59-F20	
Curve Number:	**FR97614**
CPL Code:	**5827**
Application:	**Fire Pump**
Revision Date:	**May 2022**

Configuration Number: **D403068CX03**
Installation Drawing: **A066H843**

General Engine Data

Type…	4 Cycle; In-Line; 6 Cylinder	
Aspiration…	Turbocharged, charge air cooled	
Bore x Stroke - in. (mm)	4.02 x 4.72	(102 x 120)
Displacement - $in.^3$ (litre)	359	(5.9)
Compression Ratio…	16.5:1	
Valves per Cylinder - Intake	1	
- Exhaust…	1	
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N-m)	996	(1350)

Air Induction System

Maximum Intake Manifold Temperature @ 77 °F (25 °C) ambient °F (°C)	122	(50)
Maximum Inlet Restriction with clean Filter element - in. H_2O (kPa)	15	(3.8)
Maximum Inlet Restriction with Dirty Filter element - in. H_2O (kPa)	25	(6.2)
Recommended Air Cleaner - (Standard)	Fleetguard Normal Duty	A064F305
Element Part Numbers	Primary	A042M073
	Secondary	A042M072

Lubrication System

Oil Pressure Range at Rated - PSI (kPa)	30-60	(207-414)
Oil Capacity of Pan (High - Low) - U.S. quarts (litre)	15-13	(14.2-12.3)
Recommended Lube Oil Filter	Fleetguard (Cummins)	LF 9261 (5285612)

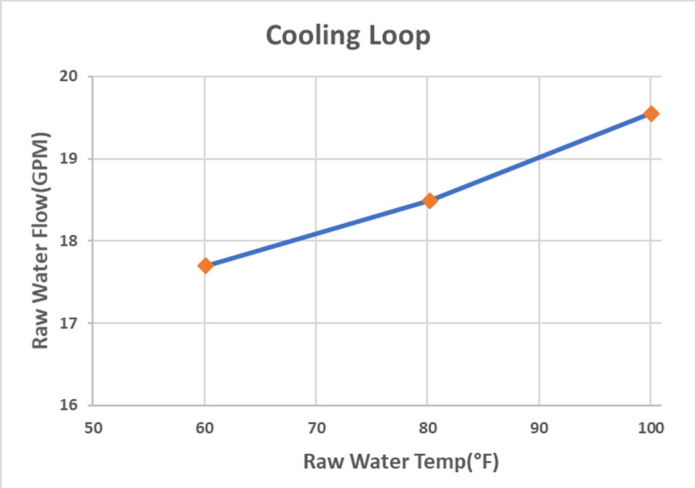
Cooling System

RawWater Working Pressure Range at Heat Exchanger - PSI (kPa)	60	(413) MAX
Recommended Min. Water Supply Pipe Size to Heat Exchanger - in. (mm)	0.75	(19.05)
Recommended Min. Water Disch. Pipe Size from Heat Exchanger -in. (mm)	1.00	(25.40)
Coolant Water Capacity (Engine only) - U.S. gal. (litre)	2.4	(9.1)
Approx total coolant capacity (Including Heat exchanger) - U.S. gal. (litre)	6.4	(24.3)
Minimum Pressure cap rating - PSI. (kPa)	7	(48)
Standard Thermostat - Type…	Modulating	
Range - deg F (deg C)	180-203	(82-95)

Minimum Raw Water Flow

with Water Temperatures to 60 °F (16 °C) - U.S. GPM (litre/s)	17.7	(1.12)
with Water Temperatures to 80 °F (27 °C) - U.S. GPM (litre/s)	18.5	(1.17)
with Water Temperatures to 100 °F (38 °C) - U.S. GPM (litre/s)	19.5	(1.23)

A jacket water heater is mandatory on this engine. The recommended heater wattage is 2000 down to 40 °F (4 °C).
Recommended Cooling Water Filter…….. Fleetguard (Cummins)……..None



Exhaust System

Max. Back Pressure Imposed by Complete Exhaust System in in. Hg (kPa)	3.0	(10.2)
Minimum Exhaust Pipe Size Normally Acceptable - in. (mm)	4.0	(102)

Noise Emissions

Top	99.0 dBa
Right Side	96.3 dBa
Left Side	98.9 dBa
Front	96.3 dBa
Exhaust	116.0 dBa

The noise emission values are approximate estimated sound pressure levels measured at 3.3 ft. (1 m.).

Fuel Consumption

CFPI59-F20-1	Nominal Fuel Consumption - Gal./hr. (L/hr)	8.4	(31.9)
CFPI59-F20-2	Nominal Fuel Consumption - Gal./hr. (L/hr)	7.9	(30.0)
CFPI59-F20-3	Nominal Fuel Consumption - Gal./hr. (L/hr)	7.5	(28.3)
CFPI59-F20-4	Nominal Fuel Consumption - Gal./hr. (L/hr)	6.8	(25.6)
CFPI59-F20-5	Nominal Fuel Consumption - Gal./hr. (L/hr)	6.1	(23.2)
CFPI59-F20-6	Nominal Fuel Consumption - Gal./hr. (L/hr)	5.7	(21.4)
CFPI59-F20-7	Nominal Fuel Consumption - Gal./hr. (L/hr)	5.0	(19.0)
CFPI59-F20-8	Nominal Fuel Consumption - Gal./hr. (L/hr)	4.6	(17.5)

Fuel Type (As per ASTM D975)	Number 2 Diesel Only	
Minimum Supply Line Size (ID)- in. (mm)	0.375	(9.5)
Minimum Drain Line Size (ID) - in. (mm)	0.375	(9.5)
Max. Fuel Height above C/L Fuel Pump with check valve (A066K091/ A067M023)- in. (m)	50	(1.27)
Max. Fuel Height above C/L Fuel Pump with check valve (178079/ A071X672)- in. (m)	6	(0.15)
Recommended Fuel Filter - Primary	Fleetguard (Cummins) FF91242	(5292575)
- Secondary	None	
Recommended Water Separator	Fleetguard Cummins) FF91242	(5292575)
Recommended Strainer -		(4080720)
Maximum Restriction @ Lift Pump-Inlet - With Clean Filter - in. Hg (kPa)	4.0	(13.5)
Maximum Restriction @ Lift Pump-Inlet - With Dirty Filter - in. Hg (kPa)	8.0	(27)
Maximum Return Line Restriction - Without Check Valves - in. Hg (kPa)	20	(68)
Minimum Fuel Tank Vent Capability - ft^3/hr (m^3/hr)	12	(0.36)
Maximum Fuel Temperature @ Lift Pump Inlet - °F (°C)	160	(71)

Starting and Electrical System — 12V

Min. Recommended Batt. Capacity - Cold Soak at 0°F (-18°C) or Above (with starting aid)	
Engine Only - Cold Cranking Amperes - (CCA)	950
Engine Only - Reserve Capacity - Minutes	430
Battery Cable Size (Minimum of 2/0 AWG & Maximum Cable Length Not to Exceed 6 ft. [1.5 m]	00
Maximum Resistance of Starting Circuit - Ohms	0.002
Typical Cranking Speed - RPM	120
Alternator (Standard), Internally Regulated - Ampere	55
Wiring for Automatic Starting (Negative Ground)	Standard
Reference Wiring Diagram	A065H754

Performance Data

All data is based on the engine operating with fuel system, water pump, lubricating oil pump, air cleaner, and alternator; not included are compressor, fan, optional equipment, and driven components. Data is based on operation at SAE standard J1349 conditions of 300 ft. (91.4 m) altitude, 29.61 in. (752 mm) Hg dry barometer, and 77 °F (25 °C) intake air temperature, using No.2 diesel or a fuel corresponding to ASTM-D2.

Altitude Above Which Output Should be Limited - ft. (m)	300	(91.4)
Correction Factor per 1000 ft. (305 m) above Altitude Limit	3%	
Temperature Above Which Output Should be Limited - °F (°C)	77	(25)
Correction Factor per 10 °F (11 °C) Above Temperature Limit	1%	(2%)

Exhaust Emissions

Non- certified

FM-approved and UL-listed Ratings for CFPI59-F20

Engine Speed – RPM	1760
CFPI59-F20-1 Output - BHP (kW)	**171 (128)**
Ventilation Air Required for Combustion - CFM (litre/sec)	288 (136)
Exhaust Gas Flow - CFM (litre/sec)	687 (324)
Exhaust Gas Temperature - °F (°C)	781 (416)
Engine Heat Rejection to Coolant- BTU/min. (kW)	3442 (61)
Engine Heat Rejection to Ambient - BTU/min. (kW)	1233 (22)
CFPI59-F20-2 Output - BHP (kW)	**165 (123)**
Ventilation Air Required for Combustion - CFM (litre/sec)	272 (128)
Exhaust Gas Flow - CFM (litre/sec)	640 (302)
Exhaust Gas Temperature - °F (°C)	765 (407)
Engine Heat Rejection to Coolant- BTU/min. (kW)	3356 (59)
Engine Heat Rejection to Ambient - BTU/min. (kW)	1153 (20)
CFPI59-F20-3 Output - BHP (kW)	**155 (116)**
Ventilation Air Required for Combustion - CFM (litre/sec)	264 (125)
Exhaust Gas Flow - CFM (litre/sec)	608 (287)
Exhaust Gas Temperature - °F (°C)	750 (399)
Engine Heat Rejection to Coolant- BTU/min. (kW)	3227 (57)
Engine Heat Rejection to Ambient - BTU/min. (kW)	975 (17)
CFPI59-F20-4 Output - BHP (kW)	**140 (104)**
Ventilation Air Required for Combustion - CFM (litre/sec)	239 (113)
Exhaust Gas Flow - CFM (litre/sec)	546 (258)
Exhaust Gas Temperature - °F (°C)	725 (385)
Engine Heat Rejection to Coolant- BTU/min. (kW)	3098 (54)
Engine Heat Rejection to Ambient - BTU/min. (kW)	868 (15)
CFPI59-F20-5 Output - BHP (kW)	**125 (93)**
Ventilation Air Required for Combustion - CFM (litre/sec)	221 (104)
Exhaust Gas Flow - CFM (litre/sec)	492 (232)
Exhaust Gas Temperature - °F (°C)	698 (370)
Engine Heat Rejection to Coolant- BTU/min. (kW)	2926 (51)
Engine Heat Rejection to Ambient - BTU/min. (kW)	783 (14)
CFPI59-F20-6 Output - BHP (kW)	**115 (86)**
Ventilation Air Required for Combustion - CFM (litre/sec)	209 (98)
Exhaust Gas Flow - CFM (litre/sec)	459 (216)
Exhaust Gas Temperature - °F (°C)	678 (359)
Engine Heat Rejection to Coolant- BTU/min. (kW)	2797 (49)
Engine Heat Rejection to Ambient - BTU/min. (kW)	763 (13)
CFPI59-F20-7 Output - BHP (kW)	**100 (75)**
Ventilation Air Required for Combustion - CFM (litre/sec)	194 (92)
Exhaust Gas Flow - CFM (litre/sec)	416 (196)
Exhaust Gas Temperature - °F (°C)	646 (341)
Engine Heat Rejection to Coolant- BTU/min. (kW)	2625 (46)
Engine Heat Rejection to Ambient - BTU/min. (kW)	678 (12)

CFPI59-F20-8 Output - BHP (kW) ……	**90 (67)**
Ventilation Air Required for Combustion - CFM (litre/sec) ……	184 (87)
Exhaust Gas Flow - CFM (litre/sec) ……	386 (182)
Exhaust Gas Temperature - ^{o}F (^{o}C) ……	624 (329)
Engine Heat Rejection to Coolant- BTU/min. (kW) ……	2494 (44)
Engine Heat Rejection to Ambient - BTU/min. (kW) ……	574 (10)

All Data is within ±5% & Subject to Change Without Notice..