



Fire Power

Engine Performance Curve

Cummins Fire Power
DePere, WI 54115
<http://www.cumminsfirepower.com>

Basic Engine Model
CFP33-F35

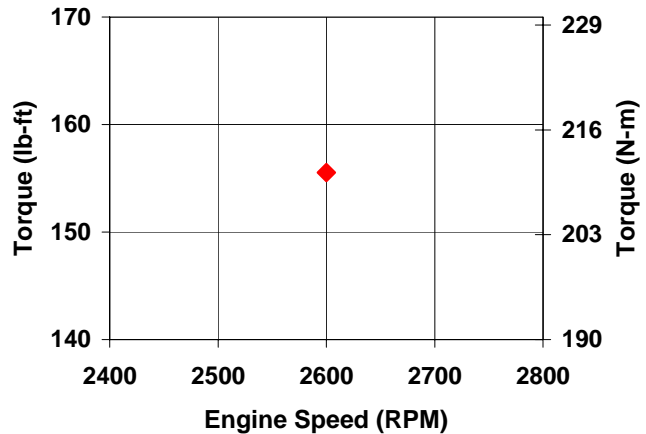
Curve Number: **FR - 30005**
Revision Date: **March 2010**

Engine Family: **G-Drive**
Displacement - in.3 (litre): **199 (3.3)**
Compression Ratio: **17.5:1**
No. of Cylinders: **4**
Fuel System: **Zexel**

CPL Code: **NA**
Emission Certification: **2004 EPA/CARB Tier 2**
Aspiration: **Turbocharged**
Engine Configuration: **D782002GX03**
Minimum rating: **62 HP @ 2600 RPM**
Maximum rating: **62 HP @ 2600 RPM**

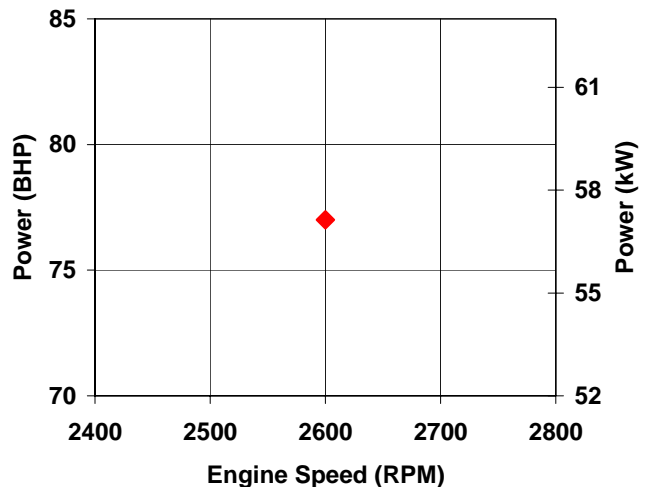
Torque Output *

RPM	lb-ft	N-m
2600	156	211



Horsepower Output *

RPM	BHP	kW
2600	77	57



*CFP33-F35 is not a speed rated engine

1. Curves shown above represent mature gross engine performance capabilities obtained and corrected in accordance with SAE J1349 conditions of 29.61 in Hg (100 kPa) barometric pressure [300 ft. (91.4 m) altitude], 77 °F (25 °C) inlet air temperature, and 0.30 in. Hg (1 kPa) water vapor pressure with No. 2 diesel fuel.
2. The engine may be operated without changing the fuel setting up to 300 ft. (91.4 m) altitude and up to 77°F (25 °C) ambient temperature. For sustained operation at high altitudes, the fuel rate of the engine should be adjusted to limit performance by 3% per 1,000 ft. (305 m) above 300 ft. (91.4 m) altitude. For sustained operation at high ambient temperatures, the fuel rate of the engine should be adjusted to limit performance by 1% per 10 °F above 77 °F (2% per 11 °C above 25 °C).
3. Engine is certified at only 2600 RPM.

Jim Vanden Boogard
Director of Engineering

Certified Within 5%



Engine Datasheet
Cummins Fire Power
 De Pere, WI 54115
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Basic Engine Model CFP33-F25, F35	
Curve Number:	FR - 30005
CPL Code:	NA
Engine Family:	G-Drive
Revision Date:	March 2010

Configuration Number: **D782002GX033**
 Installation Drawing: **15541**

General Engine Data

Type.....	4 Cycle; In-Line; 4 Cylinder
Aspiration.....	Turbocharged
Bore & Stroke - in. (mm).....	3.74 x 4.53 (95 x 115)
Displacement - in. ³ (litre).....	199 (3.3)
Compression Ratio.....	18.3:1
Valves per Cylinder - Intake.....	1
- Exhaust.....	1
Maximum Allowable Bending Moment @ Rear Face of Block - lb.-ft. (N-m).....	918 (1245)

Air Induction System

Max. Temperature Rise Between Ambient Air and Engine Air Inlet - °F (°C).....	18 (10.0)
Maximum Inlet Restriction with Dirty Filter - in. H ₂ O (mm H ₂ O).....	30 (762)
Recommended Air Cleaner Element - (Standard).....	FLG Industrial AH1138

Lubrication System

Oil Pressure Range at Rated - PSI (kPa)	50-80 (345-551)
Oil Capacity of Pan (High - Low) - U.S. quarts (litre)	7.4-5.8 (7.0-5.5)
Total System Capacity - U.S. Gal. (litre)	2.1 (8)
Recommended Lube Oil Filter	Fleetguard (Cummins)..... LF16011 (C6002112110)

Cooling System

Raw Water 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 Side) - U.S. quarts (litre)	9.3 (8.8)
Standard Thermostat - Type.....	Modulating
- Range - deg F (deg C)	180-203 (82-95)
Minimum Raw Water Flow	
with Water Temperatures to 90 °F (32 °C) - U.S. GPM (litre/s)	12 (0.76)
Recommended Cooling Water Filter.....	Fleetguard (Cummins)..... None

A jacket water heater is mandatory on this engine. The recommended heater wattage is 1500 down to 40 °F (4 °C).

Exhaust System

Max. Back Pressure Imposed by Complete Exhaust System in in. H ₂ O (kPa)	40.8 (10.2)
Exhaust Pipe Size Normally Acceptable - in. (mm)	3.0 (76)

Noise Emissions

Top.....	91.6 dBa
Right Side.....	93.2 dBa
Left Side.....	93.2 dBa
Front.....	93.2 dBa
Exhaust.....	93.2 dBa

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

Fuel Supply / Drain System**2600**

CFP33-F35 Nominal Fuel Consumption - Gal./hr. (L/hr)	4.3 (16.1)	
CFP33-F25 Nominal Fuel Consumption - Gal./hr. (L/hr)	3.4 (13.0)	
Fuel Type	Number 2 Diesel Only	
Minimum Supply Line Size - in. (mm)	0.25	(6.35)
Minimum Drain Line Size - in. (mm)	0.125	(3.18)
Maximum Fuel Height above C/L Fuel Pump ft (m)	24	(7)
Recommended Fuel Filter - Primary	Fleetguard (Cummins).....	FS5114 (C6003112110)
- Secondary	None	
Maximum Restriction @ Lift Pump-Inlet - With Clean Filter - in. Hg (mm Hg)	3.0	(76)
Maximum Restriction @ Lift Pump-Inlet - With Dirty Filter - in. Hg (mm Hg)	8.0	(203)
Maximum Return Line Restriction - Without Check Valves - in. Hg (mm Hg)	15	(381)
Minimum Fuel Tank Vent Capability - ft ³ /hr (m ³ /hr)	12	(0.36)
Maximum Fuel Temperature @ Lift Pump Inlet - °F (°C)	158	(70)

Starting and Electrical System**12V****24V**

Min. Recommended Batt. Capacity - Cold Soak at 0°F (-18°C) or Above		
Engine Only - Cold Cranking Amperes - (CCA)	900	24 volt
Engine Only - Reserve Capacity - Minutes	430	option is
Battery Cable Size (Maximum Cable Length Not to Exceed 5 ft. [1.5 m] AWG)	00	not
Maximum Resistance of Starting Circuit - Ohms	0.0012	offered
Typical Cranking Speed - RPM	120	
Alternator (Standard), Internally Regulated - Ampere	60	
Wiring for Automatic Starting (Negative Ground)	Standard	
Reference Wiring Diagram	16122	

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 J1394 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 (EPA Tier T2) [Reference Emissions Data Doc. 9805]**g/kW-hr****g/BHP-hr**

Hydrocarbons (HC/OMHCE).....	0.35	0.26
Oxides of Nitrogen (NOx).....	5.85	4.36
Non-Methane Hydrocarbons + NOx (NMHC+NOx).....	6.20	4.62
Carbon Monoxide (CO).....	1.10	0.82
Particulate.....	0.26	0.19

FM Approved and UL Listed Ratings for CFP33-F25, F35

Engine Speed - RPM	2600
CFP33-F35 Output - BHP (kW)	77 (57)
Ventilation Air Required for Combustion - CFM (litre/sec)	195 (92)
Exhaust Gas Flow - CFM (litre/sec)	475 (224)
Exhaust Gas Temperature - °F (°C)	1075 (579)
Engine Heat Rejection to Coolant- BTU/min. (kW)	2201 (39)
Engine Heat Rejection to Ambient - BTU/min. (kW)	881 (15)
 CFP33-F25 Output - BHP (kW)	 62 (46)
Ventilation Air Required for Combustion - CFM (litre/sec)	166 (78)
Exhaust Gas Flow - CFM (litre/sec)	404 (191)
Exhaust Gas Temperature - °F (°C)	914 (490)
Engine Heat Rejection to Coolant- BTU/min. (kW)	1871 (33)
Engine Heat Rejection to Ambient - BTU/min. (kW)	749 (13)

All Data is Subject to Change Without Notice.

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