



Engine Performance Curve

Cummins Inc

Columbus, Indiana 47202-3005

<http://www.cummins.com>

ISL9 400

400 hp (298 kw) @ 2100 rpm
1250 lb-ft (1696 N-m) @ 1400 rpm

Curve Number
FR93543

CPL Code
3689

Date
10-Feb-2011

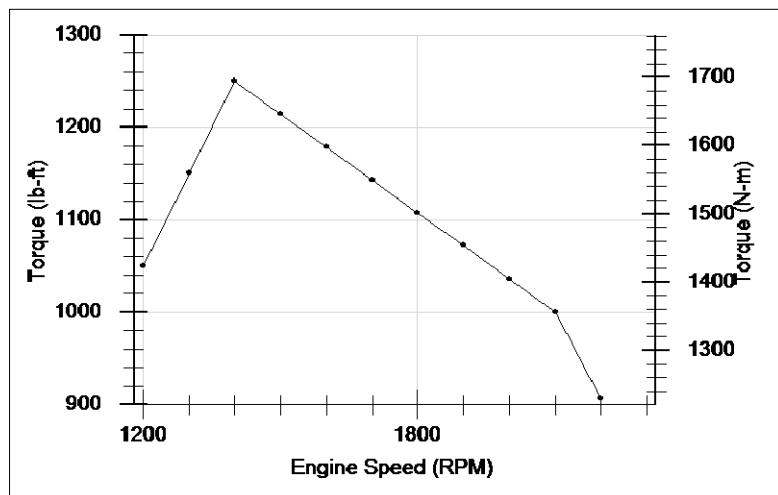
Automotive
Pg. No.

1

Compression Ratio: :1
Fuel System: XPI
Cylinders: 6
Bore: 4.49 in (114 mm)
Stroke: 5.69 in (145 mm)

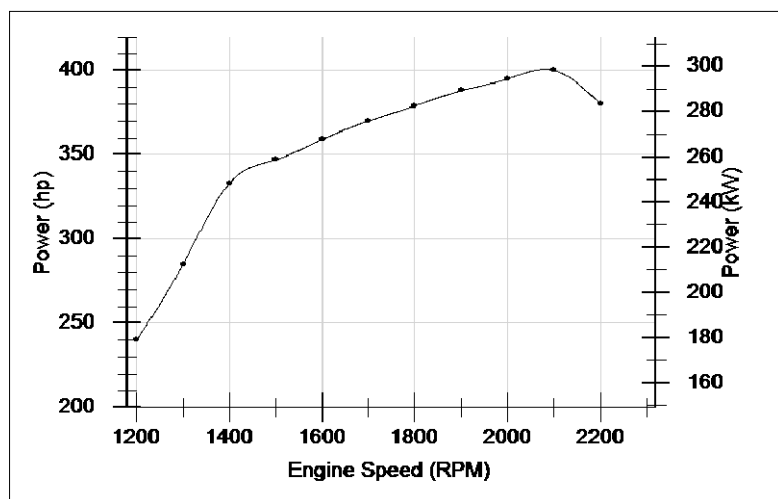
Engine Configuration: D563010BX03
Emission Certification: EPA 2010, CARB 2010
Aspiration: Turbocharged and Charge Air Cooled
Displacement: 543 in3 (8.9 L)

Auto and RV Applications



Torque Output

RPM	lb-ft	N-m
1,200	1,050	1,424
1,300	1,150	1,559
1,400	1,250	1,695
1,500	1,214	1,646
1,600	1,179	1,599
1,700	1,143	1,550
1,800	1,107	1,501
1,900	1,072	1,453
2,000	1,036	1,405
2,100	1,000	1,356
2,200	907	1,230



Power Output

RPM	hp	kW
1,200	240	179
1,300	285	213
1,400	333	248
1,500	347	259
1,600	359	268
1,700	370	276
1,800	379	283
1,900	388	289
2,000	395	295
2,100	400	298
2,200	380	283

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 (90 m) altitude], 77 deg F (25 deg C) inlet air temperature, and 0.30 in Hg (1 kPa) water vapor pressure with No. 2 diesel fuel.

A Keith McIntire
Customer Engineering

Certified within 5%

Final-(Measured data)



Engine Performance Curve

Cummins Inc

Columbus, Indiana 47202-3005
http://www.cummins.com

ISL9 400

400 hp (298 kW) @ 2100 rpm
1250 lb-ft (1696 N-m) @ 1400 rpm

Curve Number
FR93543

CPL Code
3689

Date
10-Feb-2011

Automotive
Pg. No.

2

Compression Ratio: **:1**
Fuel System: **XPI**
Cylinders: **6**
Bore: **4.49 in (114 mm)**
Stroke: **5.69 in (145 mm)**

Engine Configuration: **D563010BX03**
Emission Certification: **EPA 2010, CARB 2010**
Aspiration: **Turbocharged and Charge Air Cooled**
Displacement: **543 in3 (8.9 L)**

General Performance Data

Maximum low idle speed 800 RPM
Minimum low idle speed 700 RPM
Nominal no load governed speed 2,400 RPM
Maximum overspeed capability
Torque available at clutch engagement 550 lb-ft 746 N-m

Air Induction System

Maximum temperature rise between ambient air and engine air inlet 20 delta deg F 11.1 delta deg C

Exhaust System

Maximum back pressure imposed by complete exhaust system 11.2 in-Hg 38 kPa

Cooling System

Maximum coolant temperature - engine out 225 deg F 107 deg C
Maximum charge air cooler outlet temperature (pumping mode) N/A deg F N/A deg C
Maximum coolant temperature - engine out (pumping mode) N/A deg F N/A deg C
Maximum coolant pressure (exclusive of pressure cap; closed thermostat at maximum no load speed) 37 psi 255 kPa
Minimum cooling capability @ nominal fuel rate [Level II] with 25 mile/hr (40 km/hr) ram air speed and 50/50 E.G. coolant:
Engine out coolant to ambient @ 2,100 RPM 119 delta deg F 66.1 delta deg C
Engine out coolant to ambient @ 1,400 RPM 128 delta deg F 71.1 delta deg C
Charge air cooler to ambient @ 2,100 RPM 43 delta deg F 23.9 delta deg C
Maximum allowable pressure drop across charge air cooler and OEM CAC piping (CACDP) 3.5 in-Hg 11.8 kPa
Maximum coolant temperature for engine protection controls 235 deg F 113 deg C

Maximum Rating Performance Data

	Governed Speed		Maximum Power		Peak Torque	
Engine Speed	2,200 RPM		2,100 RPM		1,400 RPM	
Output Power	380 hp	283 kW	400 hp	298 kW	333 hp	248 kW
Torque	907 lb-ft	1,230 N-m	1,000 lb-ft	1,356 N-m	1,250 lb-ft	1,695 N-m
Inlet Air Flow	665 ft3/min	314 L/s	672 ft3/min	317 L/s	518 ft3/min	244 L/s
Charge Air Flow	48.4 lb/min	22 kg/min	49 lb/min	22 kg/min	38 lb/min	17 kg/min
Exhaust Gas Flow	1,285 ft3/min	606 L/s	1,315 ft3/min	621 L/s	1,135 ft3/min	536 L/s
Exhaust Gas Temperature	912 deg F	489 deg C	935 deg F	502 deg C	919 deg F	493 deg C
Heat Rejection to Coolant	11,050 BTU/min	194 kW	11,220 BTU/min	197 kW	7,960 BTU/min	140 kW
Radiator Coolant Flow *	88 gpm	5.6 L/s	84 gpm	5.3 L/s	56 gpm	3.5 L/s
Turbo Comp. Outlet Pressure	68 in-Hg	230 kPa	72 in-Hg	242 kPa	70 in-Hg	235 kPa
Turbo Comp. Outlet Temperature	383 deg F	195 deg C	396 deg F	202 deg C	400 deg F	204 deg C
Fuel Consumption	135 lb/hr	61.2 kg/hr	140 lb/hr	63.5 kg/hr	109 lb/hr	49.4 kg/hr
Brake Mean Effective Pressure	253 psi	1,744 kPa	279 psi	1,924 kPa	349 psi	2,406 kPa

* - Radiator Coolant Flow is approximately 5% less with a continuously deaerating system.
Coolant: 50/50 - Ethylene Glycol/Water by volume. Values are within +/- 5%.

Change Log

Date	Author	Change Description
2/4/2011	A Keith McIntire	Created initial FR93543 rating sheet. End of Report