

Cummins Technical Operations



Engine Model: L375 20
Curve and Datasheet: FR91678

Rev 00 Jan/2009



Automotive Engine Data Sheet: FR91678

EURO II

Engine Model: L375 20

CPL: 8686

Advertised Power: 276 kW @ 2200 rpm
375 HP @ 2200 rpm

Peak Torque: 1480 N.m @ 1400 rpm

Displacement: 8.9 L

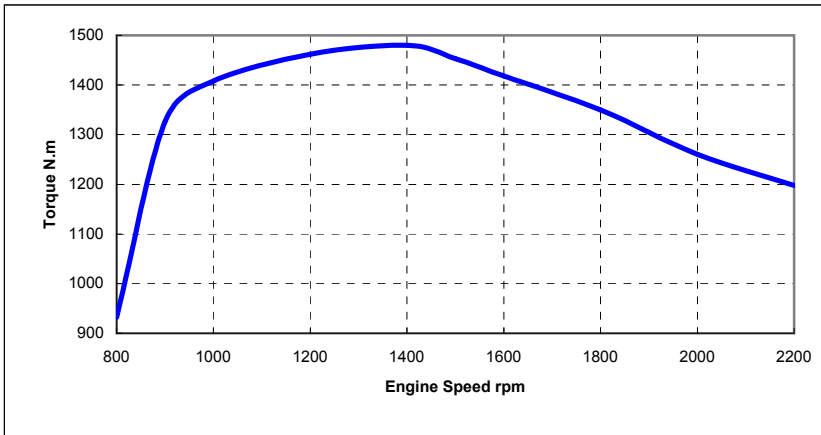
Bore: 114 mm

Aspiration: Turbocharged & Aftercooler

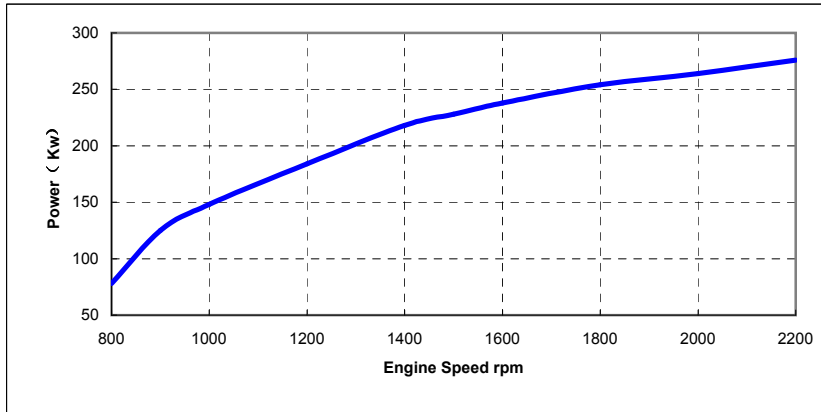
Configuration: 6 cylinder in line

Stroke: 145 mm

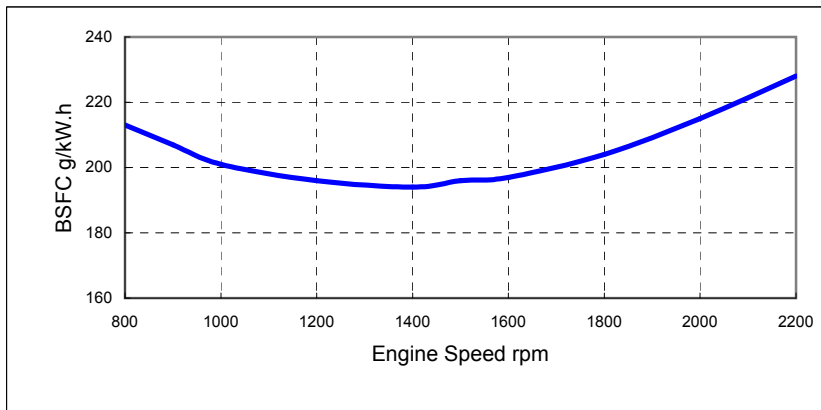
Fuel System: BOSCH P7100/RQV-K



Torque	
rpm	N.m
800	932
900	1326
1000	1408
1200	1462
1400	1480
1500	1453
1600	1418
1800	1350
2000	1260
2200	1198



Power	
rpm	kW
800	78
900	125
1000	148
1200	184
1400	218
1500	228
1600	238
1800	254
2000	264
2200	276



BSFC	
rpm	g/kW.h
800	213
900	207
1000	201
1200	196
1400	194
1500	196
1600	197
1800	204
2000	215
2200	228

Performance data is gotten from Standard conditions, and by the GB/T18297-2001 method, without compressor, fan and alternator



Automotive Engine Datasheet FR91678

General

Aspiration:	Turbocharged、air to air aftercooled
Certification:	GB17691/GB14761
Data on this sheet refer to installation diagram	
Weight dry: kg (with flywheel and alternator, But less starter and air compressor)	650
Weight wet: kg	680
Compression ratio:	16.6:1
C.G. distance from F.F.O.B.: mm	427
C.G. distance above crank center line: mm	163
Maximum bending moment at R.F.O.B.: N.m	1356
Thrust bearing load limit	
Maximum intermittent: N	5338
Maximum condition: N	2670

Performance data

Idle speed: rpm	750±100
Maximum no load speed: rpm	2500
Maximum overspeed capability: rpm (15sec max)	3500
Maximum altitude for continuous operation: m	2000
Clutch engagement torque at 800 rpm: N.m	932
When using exhaust brake	
Exhaust pressure, at 2420rpm, at turbocharger outlet, must not exceed: kPa	450
Brake blade must have orifice to control exhaust pressure.	
Approximate engine retardation: kW	114

Engine Speed RPM	Oil Pressure kPa	Air to Turbo kg/min	Air From Turbo		Exhaust Flow m ³ /hr	Exh. Temp. °C	Fuel Flow l/hr	Coolant Flow l/m	Heat rejection		Friction Power kW
			Flow kg/min	Pressure kPa					Coolant kW	Air kW	
2200	370	25	1618	180	62	515	75	280	120	75	36.5
1400	250	16.5	1043	140	38	525	48	175	74	34	17

All data within ±5%



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Lubrication System

Oil pan capacity	
High: litre	19.0
Low: litre	15.2
Total capacity: litre	27.6
Angularity low oil level: Front up 45°, Rear up 45°, F/P side up 45°, Exh side up 45°	

Air Intake System

Max. temp. rise between ambient air and turbo air inlet: °C	15
Max. intake restriction with dry type air cleaner, with clean filter	
Medium Duty: kPa (mmH2O)	2.9 (300)
Heavy Duty: kPa (mmH2O)	3.7 (380)
Max. intake restriction with dirty filter: kPa (mmH2O)	6.2 (635)

Charge Air Cooling

Design parameters for ambients:	Level 2	Level 3
Max. inlet manifold temperature: °C	55	50
Air on to charge cooler temperature: °C	25	20
Max. DP between turbo out/manifold in: kPa (mHg)		16.7 (125)
Intake pipe size normally acceptable: mm dia		100

Exhaust System

Max. back pressure imposed by piping and silencer: kPa (mmHg)	10.0 (75)
Exhaust pipe size normally acceptable: mm dia	75

Fuel System

Max. restriction at fuel pump with clean filter: mmHg	150
Max. return line restriction: mmHg	520

Cooling System

Engine coolant capacity: litre	11.1
Standard modulating thermostat (range): °C	83–95
Max. coolant pressure (no pressure cap and thermostat closed): kPa	290
Max. coolant temperature (engine out): °C	100
Max. deaeration time: mins	25
Max. coolant flow to accessories: litre/min	56
Min. coolant temperature: °C	70
Min. fill rate: litre/min	19
Min. coolant expansion space % of system capacity	6
Min. drawdown capacity excluding expansion space : litre	6
Min. allowable pressure cap: kPa	50
Coolant alarm activation temperature: °C	104
Air on fan, typical operating temperature range: °C	75 - 80
Shutter opening temperature: °C	Do Not Use
Min. cooling capability at normal fuel rate:	Level 2 Level 3
Limiting ambient temperature (LAT) at rated rpm: °C	45 42
Limiting ambient temperature (LAT) at peak torque rpm: °C	40 37

Electrical System 24Volt

Max. resistance of starting circuit: ohms	0.002
Min. recommended battery capacity as per DIN72311 and BS3911	
Engine only with de-clutched load cold cranking amperes: CCA	510

Starting System

Min. unaided cold start temperature	-12°C@Average RPM 120rpm
Min. aided (ether) cold start temperature	-35°C@Average RPM 180rpm