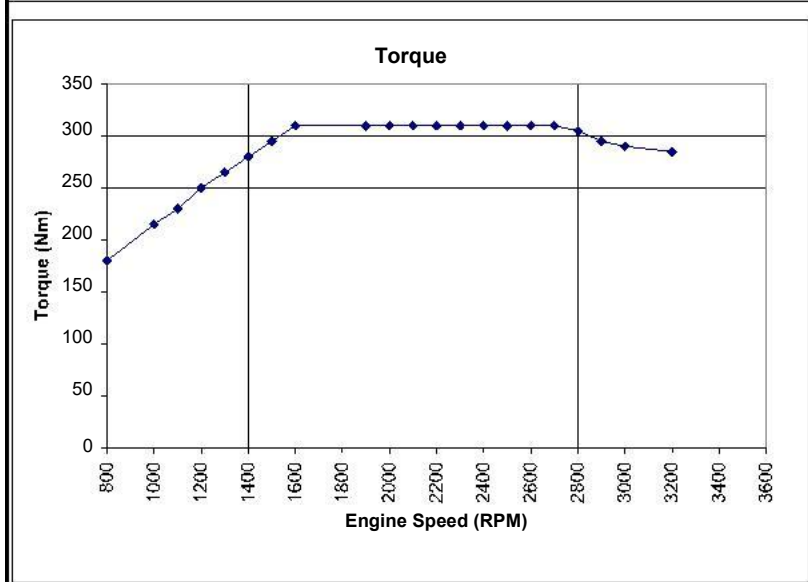
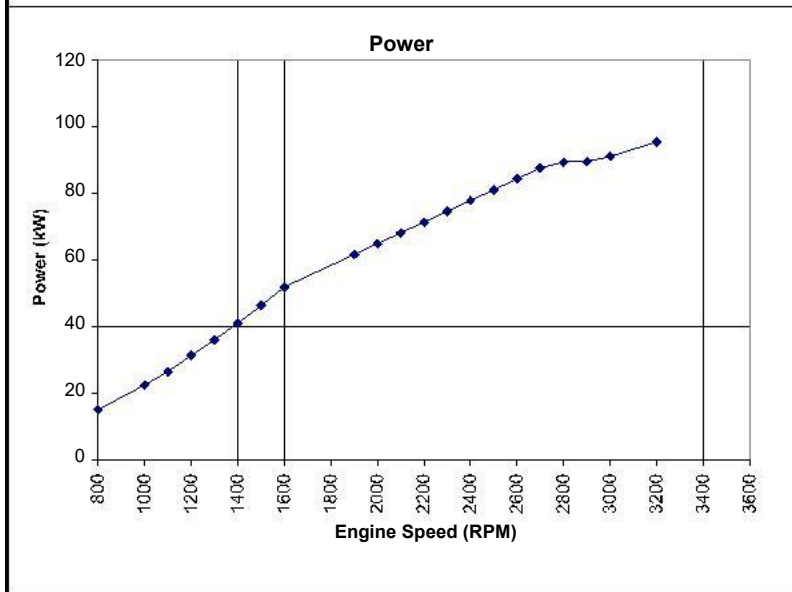


Engine Performance Curve Cummins Ltd Yarm Road, Darlington http://www.cummins.com	ISF2.8s4129T	96KW@3200RPM	Automotive
		310Nm @1600RPM	Page 1
		Curve Number FR93081	
		CPL code 3409	
		Date 15-Mar-10	

Compression Ratio 16.5:1	Engine Configuration DOE3002BX03
Fuel System Bosch Electronic	Emission Certification Euro 4
Cylinders 4	Aspiration Turbocharged and Charge Air Cooled
Bore 94 mm	Displacement 2.8L
Stroke 100 mm	Status Limited (Measured data)



Torque Output	
RPM	Nm
800	180
1000	215
1100	230
1200	250
1300	265
1400	280
1500	295
1600	310
1900	310
2000	310
2100	310
2200	310
2300	310
2400	310
2500	310
2600	310
2700	310
2800	310
2900	310
3000	310
3200	285



Power Output	
RPM	kW
800	15
1000	23
1100	26
1200	31
1300	36
1400	41
1500	46
1600	52
1900	62
2000	65
2100	68
2200	71
2300	75
2400	78
2500	81
2600	84
2700	88
2800	89
2900	90
3000	91
3200	96

Performance data shown is nominal and is to 80/1269/EEC (as amended) conditions of 990 mbar barometric pressure and 25 deg C air intake temperature. All data is based on the engine operating with fuel system, water pump, lubricating oil pump with inlet and exhaust restriction at or below Datasheet limits. Not included are air compressor, fan and alternator.

Customer Engineering Certified within 5%
Chris Nash Cummins Confidential

Engine Performance Curve Cummins Ltd Yarm Road, Darlington http://www.cummins.com	ISF2.8s4129T	96KW@3200RPM 310Nm @1600RPM	Automotive
		Curve Number FR93081 CPL code 3409 Date 15-Mar-10	Page 2
Compression Ratio 16.5:1 Fuel System Bosch Electronic Cylinders 4 Bore 94 mm Stroke 100 mm	Engine Configuration DOE3002BX03 Emission Certification Euro 4 Aspiration Turbocharged and Charge Air Cooled Displacement 2.8L Status Limited (Measured data)		
General Performance Data			
	Maximum low idle speed	800	RPM
	Minimum low idle speed	700	RPM
	Nominal no load governed speed	3,600	RPM
	Maximum overspeed capability	4,800	RPM
	Clutch engagement torque at 800rpm	180	N-m
	Maximum altitude for continuous operation without derate	2300	m
Air Induction System			
	Maximum temperature rise between ambient air and engine air inlet	15	delta deg C
Exhaust System			
	Maximum back pressure imposed by complete exhaust system	20	kPa
Cooling System			
	Maximum coolant temperature (engine out) with 103kPa pressure cap	110	deg C
	Maximum coolant pressure (exclusive of pressure cap; closed thermostat at maximum no load speed)	215	kPa
	Maximum temperature rise between ambient air and intake manifold	30	deg C
	Maximum allowable pressure drop across charge air cooler and OEM CAC piping (CACDP)	13	kPa
	Maximum coolant temperature for engine protection controls	114	deg C
	Maximum coolant flow to accessories	23	L/minute
	Refer to AEB 21.52 for territory related cooling standard		
Maximum Rating Performance Data			
		Maximum Power	Peak Torque
Engine speed		3200 RPM	1600 RPM
Output power		96 KW	52 KW
Torque		285 Nm	310 Nm
Inlet air flow		535 m3/hr	202 m3/hr
Charge air flow		625 kg/hr	236 kg/hr
Exhaust Gas Flow		646 Kg/hr	247 kg/hr
Exhaust gas temperature		434 Deg C	500 Deg C
Heat Rejection to coolant		43 KW	28 KW
Radiator coolant flow*		203 L/min	96 L/min
Heat Rejection to charge air cooler**		18.2 KW	4.5 KW
Turbo Comp. Outlet Pressure		152.1 Kpa	76.1 Kpa
Turbo Comp. Outlet Temperature		161 Deg C	108.3 Deg C
Fuel Consumption		21.1 Kg/hr	10.7 Kg/hr
Brake Mean Effective Pressure		12.6 bar	13 bar
*Radiator coolant flow is approximately 5% less with a continuously deaerating system. Coolant: 50/50 Ethylene Glycol/Water by volume. Values are within +/-5%			
**Heat rejection to charge air cooler is at standard engine test conditions of 25degC turbo air inlet temperature			
This rating is dynamometer certified for vehicles above 3500kg GVW			
Cummins Confidential			