

Caterpillar

3512C - stage IIIA

Preliminary Technical Data

Document reference - EAME 102/2

Date - 11/06/2008

1550 kW

1800 rpm

Also consult:

Locomotive Engine Specification sheet:

Performance specification:

Engine arrangement:

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Engine specification		values indicated are nominal	
1	UIC nominal engine power D-E or Fuel stop power D-H	1550	bkW
	Rated speed	1800	rpm
	Minimum low idle speed	600	rpm
	Engine torque	8223	Nm
	BMEP	1766	kPa
	BSFC at rated power and UIC conditions	213.1	g/kWh
	Fuel consumption at low idle speed - no load	5.7	kg/h
	Number of cylinders / arrangement	12 / 60 V	
	Bore / stroke	170 / 215	mm
	Displacement per total	58.6	dm ³
	Engine dry weight	5970	kg
	Engine clearance length / height / width	2918 / 1953 / 1715	mm
	Engine flywheel housing number standard / option	OO / O	SAE
	Emissions regulation	Stage IIIA	

Air system			
2	Combustion air flow rate at UIC conditions	28.9	m ³ /sec
	Boost pressure	272	kPa,
	Intake manifold temperature	53	°C
	Max allowable airintake restriction w/ clean filter elements.	2.5	kPa
	Max allowable airintake restriction w/ dirty filter elements.	6.2	kPa

Control system			
3	Governor type	Electronic	

Engine jacket water and oilcooler cooling system - High temperature circuit			
4	Coolant capacity	138	dm ³
	Pump performance as function of radiator restriction	DM1298	
	Max allowable engine coolant outlet temperature	104	°C
	Regulator start to open / full open temperature	82 / 92	°C
	Regulator location	outlet	°C

Engine aftercooler cooling system - Low temperature circuit			
5	Coolant capacity	28	dm ³
	Pump performance min / max	305 / 430	l/min
	Max allowable coolant inlet temperature without engine derate	45	°C
	Regulator start to open / full open temperature	20 / 30	°C
	Regulator location	outlet	°C

Exhaust system			
6	Combustion air flow rate	6.51	m ³ /sec
	Exhaust stack temperature at rated (max at part load 550 °C).	405	°C
	Exhaust manifold temperature at rated (max at part load 730 °C)	586	°C
	Max allowable exhaust system back pressure	6.7	kPa
	Manifold type	Dry	

Fuel system			
7	Fuel system type	Electronic Unit Injector	
	Max. fuel flow to engine (to transfer pump)	21	l/min
	Max allowable fuel supply line restriction (incl. Primary fuel filter)	30	kPa
	Max allowable fuel temperature to engine	66	°C
	Max fuel flow from engine (return line)	20.7	l/min
	Max allowable fuel return line restriction.	27	kPa
	Fuel system pressure nominal	415	kPa

Lubrication system			
8	Recommended oil type (CAT spec)	CAT ECF-1 or API CG-4	
	Lube oil consumption after 100 hrs average at rated condition	0.17	g/kWh
	Lube oil flow @ rated speed	442	l/min
	Sump capacity standard / deep	318 / 625	dm ³
	Top-up capacity dip stick: min / max	xx / xx	dm ³
	Oil manifold pressure at rated speed max / min	427 / 356	kPa
	Oil manifold pressure at low idle speed min (warning)	155	kPa
	Oil manifold temperature (to bearing) nominal	97 - 100	°C

Engine heat rejection			
9	Heat rejection from engine, aftercooler and oil cooler HT	964.4	kW
	Heat rejection from aftercooler LT	194.8	kW
	Heat rejection radiation	112.4	kW

Environment conditions			
10	Min cranking speed	120	rpm
	lowest ambient start temperature without assistance	10	°C
	maximum engine room temperature	65	°C