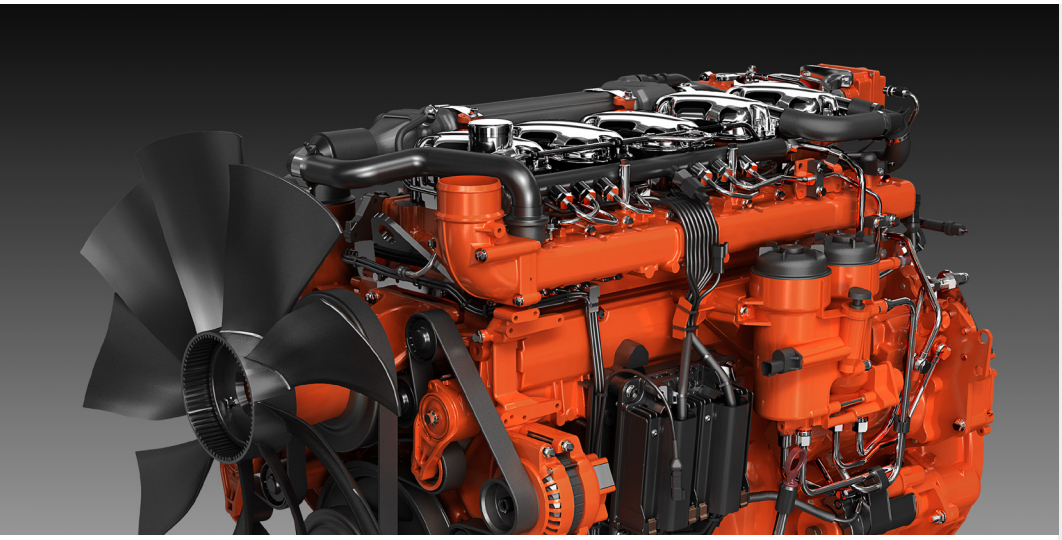
DC09 085A. 234 kW (260 kVA)

US Tier 4f



The engines from Scania are based on a robust design with a strength optimised cylinder block containing wet cylinder liners that can easiliy be exchanged. Individual cylinder heads with 4 valves per cylinder promotes reparability and fuel economy.

The engine is equipped with a Scania developed Engine Management System, EMS, in order to ensure the control of all aspects related to engine performance. The injection system is Scania's XPI (Extra High Pressure Injection), a common rail system that in combination with SCR (Selective Catalytic Reduction) and EGR (Exhaust Gas Recirculation) gives low exhaust emissions with good fuel economy and a high torque. The engine can be fitted with many accessories such as air cleaners, silencers, PTOs and flywheels in order to suit a variety of installations.

	Engine speed (rpm)
	1800 rpm (60 Hz)
	PRP
Gross power (kW)	234
Gross power (kWe)	206
Gross power (kVA)	260
Gross torque (Nm)	1241
Spec fuel consumption. Full load (g/kWh)	206
Spec fuel consumption. 3/4 load (g/kWh)	211
Spec fuel consumption. 1/2 load (g/kWh)	225
Reductant consumption. Full load (g/kWh)	11
Heat rejection to coolant (kW)	120

PRP – Prime power: For continuous operation at varying load. Max mean load factor of 70% of rated power over 24 h of operation. 1 hour/12 hours period of accumulated peak overload to 110%.

Standard equipment

- Scania Engine Management System, EMS
- Extra high pressure fuel injection system, XPI
- Variable Geometry Turbocharger
- Fuel filter and extra pre-filter with water separator
- Fuel heater
- Oil filter, full flow
- Centrifugal oil cleaner
- Oil cooler, integrated in cylinder block
- Oil filler in cylinder block
- Deep front oil sump
- Oil dipstick in cylinder block
- Magnetic drain plug for oil draining
- Starter motor, 1-pole 6.0 kW
- Alternator, 1-pole 100 A
- Flywheel, for use with friction clutch
- Silumin flywheel housing, SAE 1 flange
- Front-mounted engine suspension
- SCR system
- EGR system
- Open crankcase ventilation

Optional equipment

- Cooling package
- Puller and pusher fans
- Side-mounted PTO
- Exhaust connections
- Engine heater
- Stiff rubber engine suspension
- Air cleaner
- Closed crankcase ventilation
- Studs in flywheel housing
- Coolant level sensor
- Ramp start delay
- Ramp-up rate

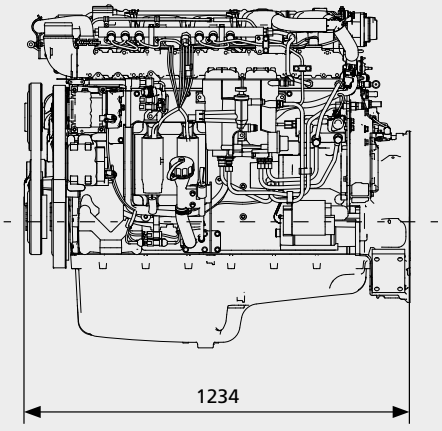
This specification may be revised without notice.

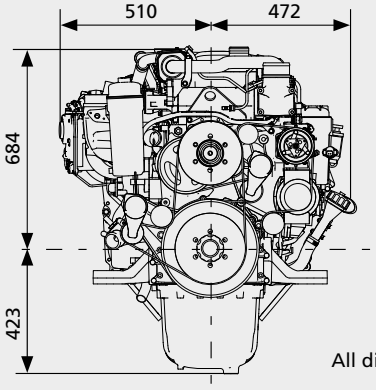
DC09 085A. 234 kW (260 kVA)

US Tier 4f

Engine description

No of cylinders	5 in-line
Working principle	4-stroke
Firing order	1 - 2 - 4 - 5 - 3
Displacement	9.3 litres
Bore x stroke	130 x 140 mm
Compression ratio	17:1
Weight	975 kg (excl oil and coolant)
Piston speed at 1500 rpm	7.0 m/s
Piston speed at 1800 rpm	8.4 m/s
Camshaft	High position alloy steel
Pistons	Aluminium pistons
Connection rods	I-section press forgings of alloy steel
Crankshaft	Alloy steel with hardened and polished bearing surfaces
Oil capacity	31-36 dm^3
Electrical system	1-pole 24 V DC





All dimensions in mm

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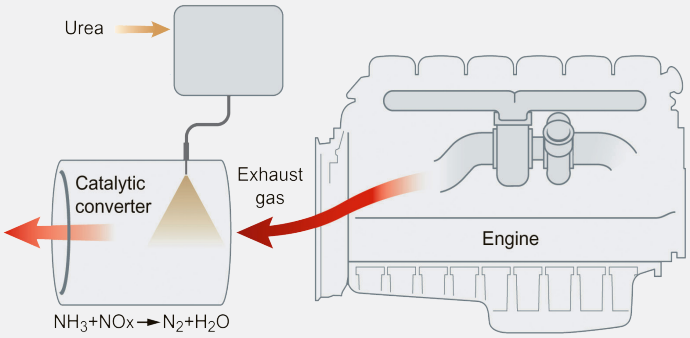
SCR system

EU Stage IV, US Tier 4f

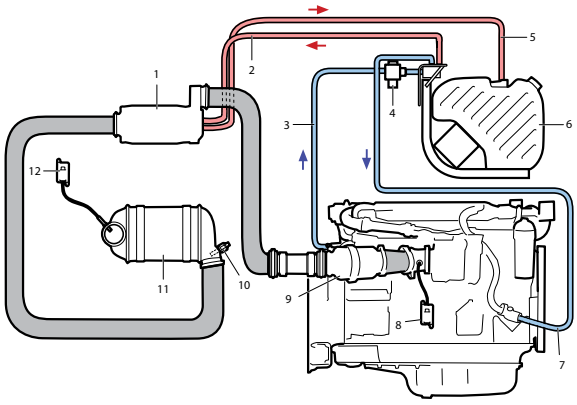


Working principle for Scania's SCR system

SCR (Selective Catalytic Reduction) technology is used on Scania's engines for EU Stage IV and US Tier 4f, to reduce NO_x content in the exhaust gases. A chemical process is started by injecting reductant, a mixture of urea and water, into the exhaust gas stream. During injection, the water evaporates and the urea breaks down to form ammonia. The ammonia then reacts with the nitrogen gases in the catalytic converter and forms harmless nitrogen gas and water. Using SCR, exhaust gases are purged of poisonous levels of NO_x in a highly efficient way. Scania makes use of a system that is carefully developed and tested in our own laboratory.

The reductant tank is available in different sizes. It is heated by the engine cooling system in order to avoid freezing of the urea solution; urea freezes at -11°C. The reductant tank and a pump are delivered as a unit, which is fitted with brackets for easy installation. The Scania system contains all necessary mechanical and electrical parts, except exhaust piping, which is to be adapted to the customer's installation.

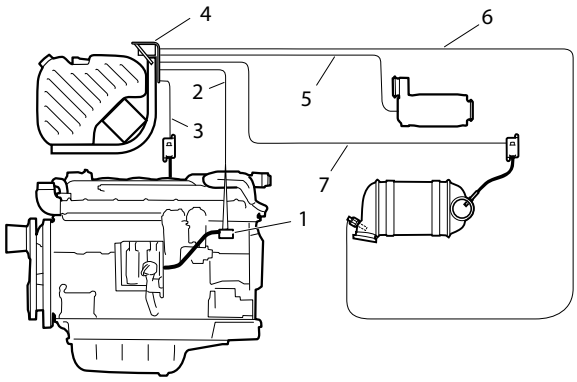
Mechanical system



		Standard	Optional
1	Evaporator	✓	-
2	Reductant pressure line	2.5 m	4 m, 5 m, 6.5 m
3	Coolant hose for heating of reductant tank and pump	-	-
4	Coolant valve	✓	-
5	Reductant return line	2.5 m	4 m, 5 m, 6.5 m
6	Reductant tank	38 l	45 l, 60 l, 63 l, 70 l
7	Coolant hose, return from heating of tank and pump	-	-
8	NO_x sensor with control unit	✓	-
9	Oxidation catalytic converter[1)]	Engine-mounted	Separately
10	Exhaust temperature sensor	✓	-
11	SCR catalytic converter	✓	-
12	NO_x sensor with control unit	✓	-

1) Not DC13 085A or DC16.

Electrical system



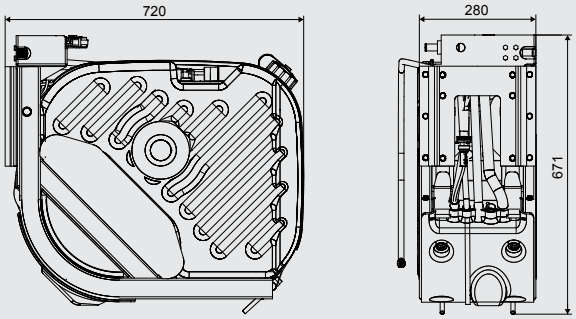
		Standard	Optional
1	Customer interface to SCR system	✓	–
2	Electrical cable between engine and SCR control unit	3 m	4.5 m, 6 m
3	NO_x sensor electrical cable	3 m	4.5 m, 6 m
4	Electrical interface to SCR system	✓	-
5	Reductant doser electrical cable	3 m	4.5 m, 6 m
6	Temperature sensor electrical cable	3 m	4.5 m, 6 m, 9 m
7	NO_x sensor electrical cable	3 m	4.5 m, 6 m, 9 m

This specification may be revised without notice.

SCR system

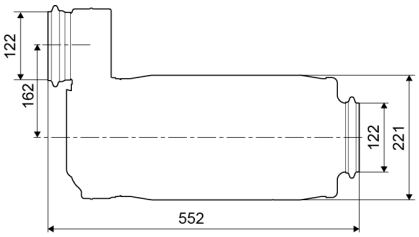
EU Stage IV, US Tier 4f

Reductant tank 38 litres
Total volume: 50 litres
Filling volume: 38 litres

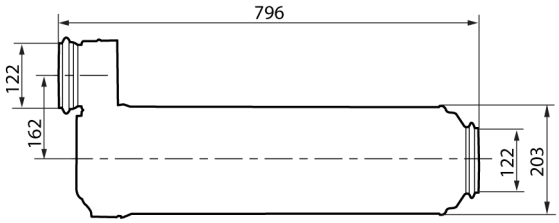


Other available sizes: 45 litres (total volume 60 litres)
60 litres (total volume 75 litres
63 litres (total volume 80 litres)
70 litres (total volume 90 litres)

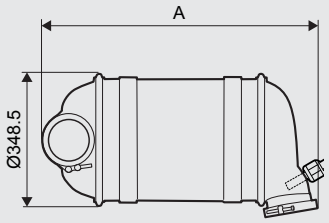
Evaporator module (DC9 and DC13)



Evaporator module (DC16)

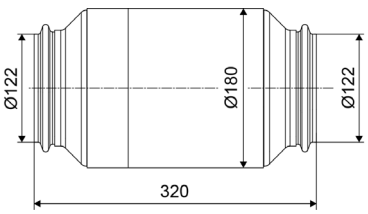


SCR catalyst



Engine	Dimensions A (mm)
DC09 (202 kW-257 kW)	786
DC09 (276 kW-294 kW)	900
DC13 (257 kW-331 kW)	900
DC13 (368 kW-405 kW)	970
DC16	970

Oxidation catalytic converter (not DC13 085A or DC16)



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