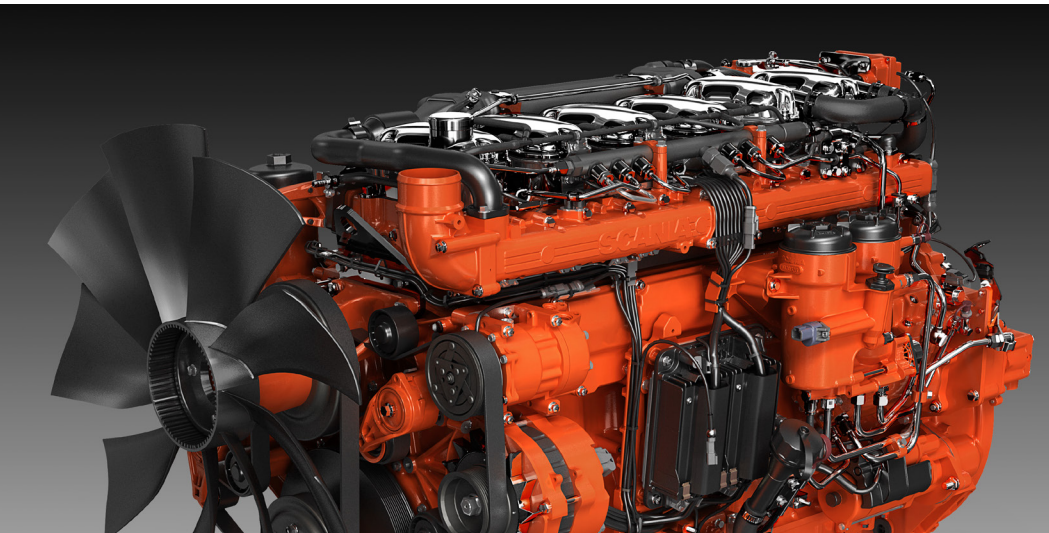




# DC13 084A. 301 kW (330 kVA)

US Tier 4f



The power generation engines from Scania are based on a robust design with a strength-optimized cylinder block containing wet cylinder liners, which can easily 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, 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, PTOs and cooling package, to suit a variety of installations. It is developed for 60 Hz applications.

	Engine speed (rpm)
	1800 rpm (60 Hz)
	PRP
Gross power (kW)	301
Gross power (kWe)	264
Gross power (kVA)	330
Gross torque (Nm)	1597
Fuel consumption at full load (g/kWh)	200
Fuel consumption at 3/4 load (g/kWh)	202
Fuel consumption at 1/2 load (g/kWh)	215
Reductant consumption. Full load (g/kWh)	9
Heat rejection to coolant (kW)	140

**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 hour period above 100% load. Max. 25 h accumulated service time above 100% load per year.

### 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 valve cover
- 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
- Cast iron flywheel housing
- 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.

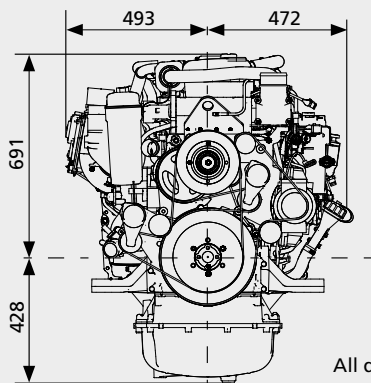
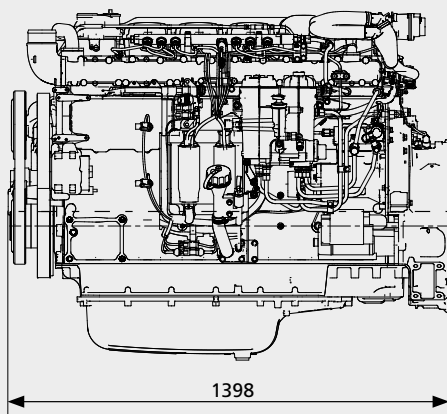


# DC13 084A. 301 kW (330 kVA)

US Tier 4f

## Engine description

No of cylinders	6 in-line
Working principle	4-stroke
Firing order	1 - 5 - 3 - 6 - 2 - 4
Displacement	12.7 litres
Bore x stroke	130 x 160 mm
Compression ratio	17.3:1
Weight	1075 kg (excl oil and coolant)
Piston speed at 1500 rpm	8.0 m/s
Piston speed at 1800 rpm	9.6 m/s
Camshaft	High position alloy steel
Pistons	Steel pistons
Connection rods	I-section press forgings of alloy steel
Crankshaft	Alloy steel with hardened and polished bearing surfaces
Oil capacity	34-45 dm <sup>3</sup>
Electrical system	1-pole 24 V



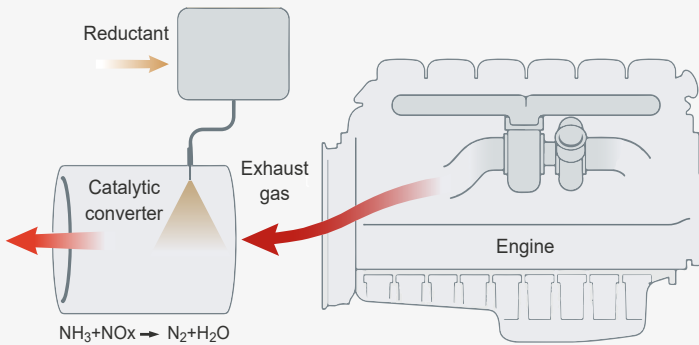
All dimensions in mm



**SCANIA**

# SCR system

## US Tier 4f

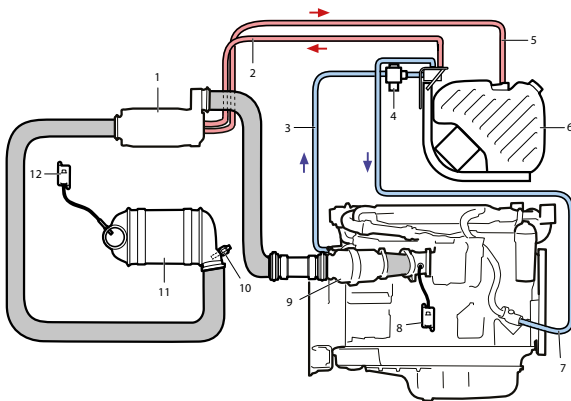


Working principle for Scania's SCR system

SCR (Selective Catalytic Reduction) technology is used on Scania's engines for US Tier 4f to reduce  $NO_x$  content in the exhaust gases. A chemical process is started when reductant, a urea and water mixture, is injected into the exhaust gas stream. During the injection, the water evaporates, and the urea breaks down to form ammonia. The ammonia then reacts with the nitrogen gases in the SCR catalytic converter and forms harmless products such as nitrogen gas and water. Through the use of SCR, the 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 to avoid freezing of the urea solution; urea freezes at  $-11^\circ C$ . 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 should be adapted to the customer's installation.

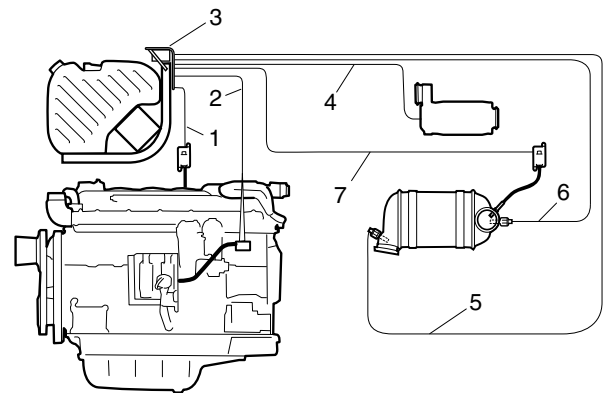
### Mechanical system



	Standard	Optional
1 Evaporator	✓	-
2 Reductant pressure hose	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 hose	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*	Engine-mounted	Separate
10 Exhaust temperature sensor	✓	-
11 SCR catalytic converter	✓	-
12 $NO_x$ sensor with control unit	✓	-

\*Not DC13 085A or DC16.

### Electrical system



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



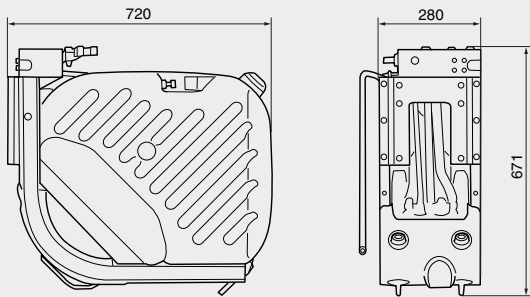
# SCR system

## US Tier 4f

### Reductant tank 38 litres

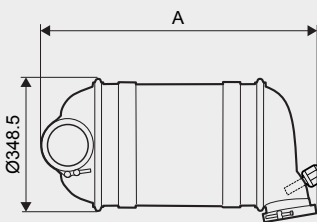
Total volume: 50 litres

Filling volume: 38 litres



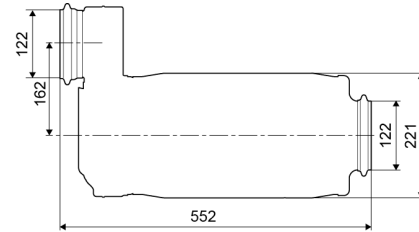
Other available sizes: 45 litres (total volume 60 litres)  
 60 litres (total volume 75 litres)  
 63 litres (total volume 80 litres)  
 70 litres (total volume 90 litres)

### SCR catalytic converter

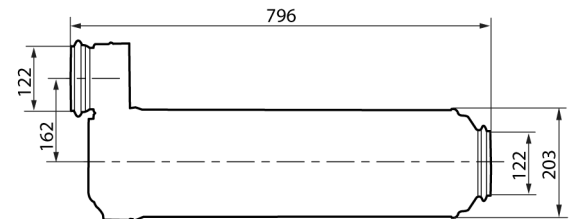


Engine	Dimensions A (mm)
DC09 (202 kW-257 kW)	786
DC09 (276 kW-294 kW)	900
DC13 (257 kW-331 kW)	900
DC13 (368 kW-405 kW)	970
DC16	970

### Evaporator (DC09 and DC13)



### Evaporator (DC16)



### Oxidation catalytic converter (not DC13 085A or DC16)

