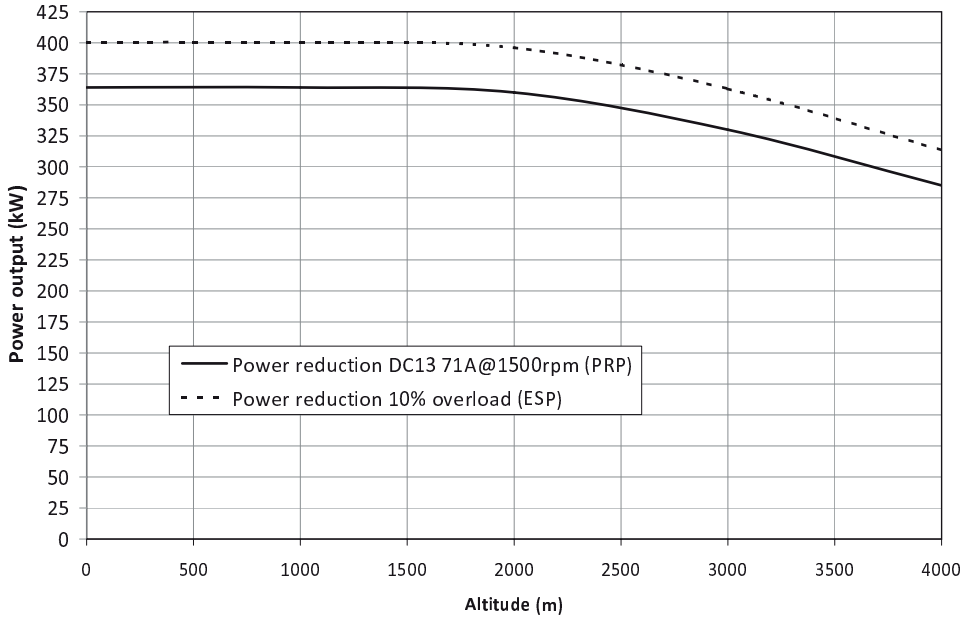
Altitude power reduction

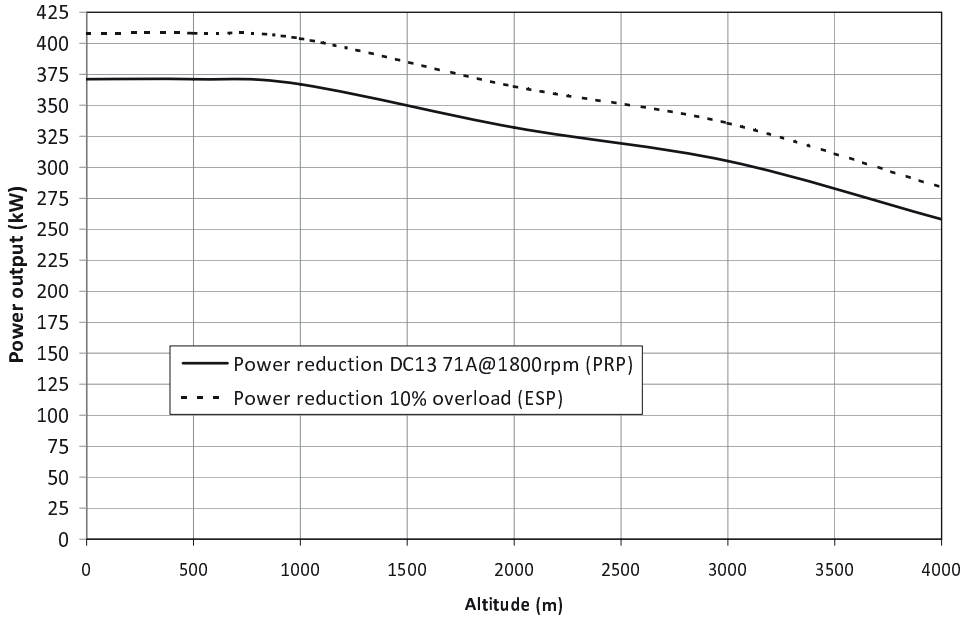
If an installation is used at high altitude, an automatic reduction of the ouput is made by the EMS due to the 'thinner' air intake. This means that in these cases you cannot make use of the highest output available for the engine type in question.

Engine usage above 4000 m altitude must be approved from Scania factory.

The graphs below show the maximum power output for different engine types depending on altitude.

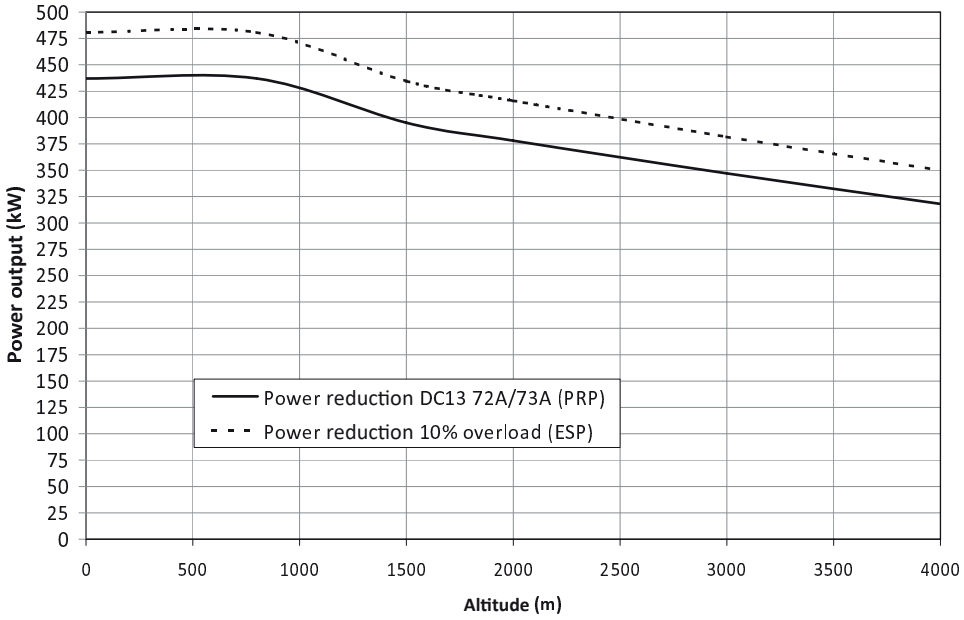
DC13 071A





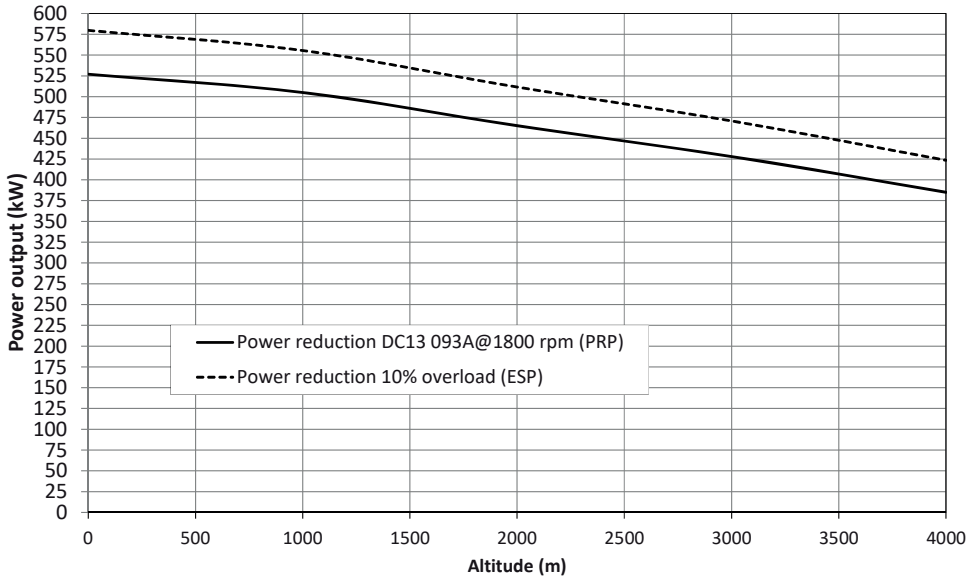
DC13 072/073A

The graph below shows the maximum power output for DC13 072/073A depending on altitude. Lower power outputs that do not reach the maximum power curve will have an output reduction due to air properties with approximately 1.5% per 1000 metres above sea water level.



DC13 093A

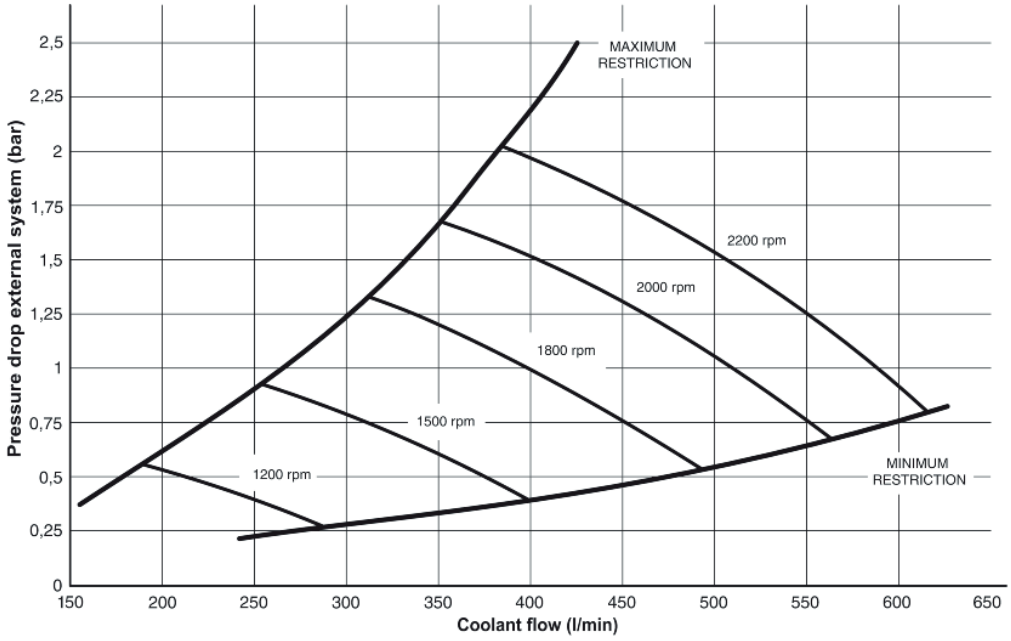
The graph below shows the maximum power output for DC13 093A depending on altitude. Lower power outputs that do not reach the maximum power curve will have an output reduction due to air properties with approximately 1.5% per 1000 metres above sea water level.



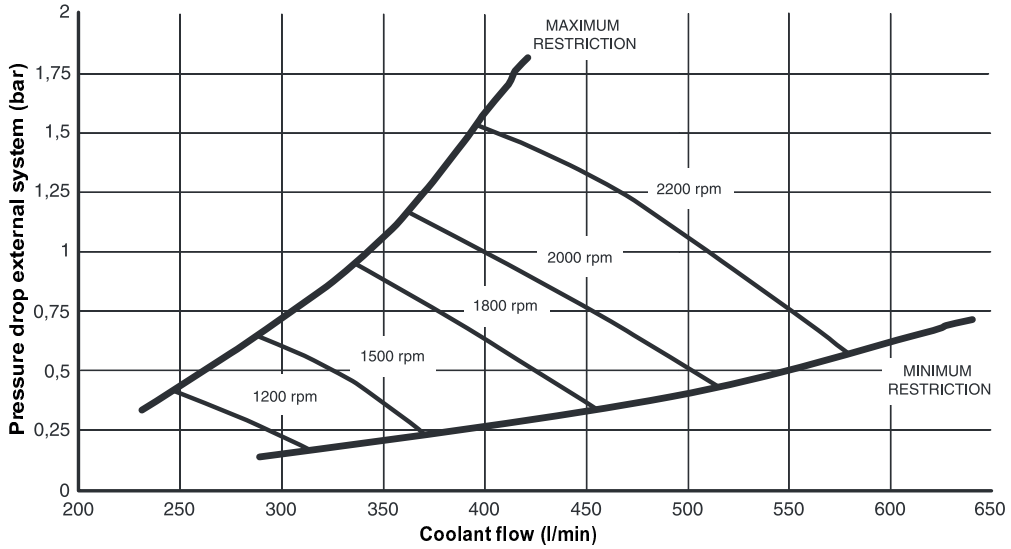
Coolant flow

The coolant flow depends on the pressure drop in the external system according to the graphs below.

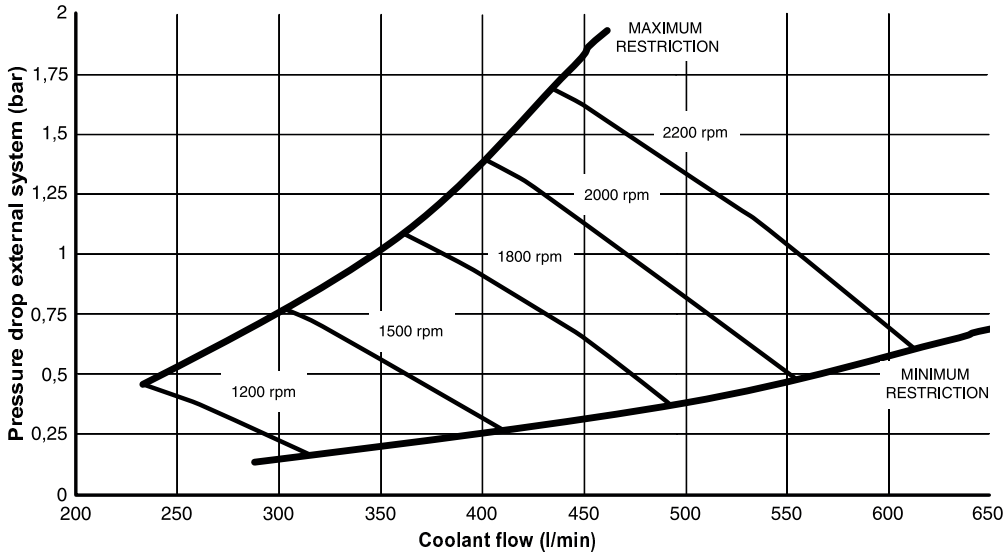
DC13 320A



DC13 071A



DC13 072/073/093A



Exhaust noise

The table below presents unsilenced exhaust noise measured 1 m after the turbocharger at maximum power. Most important overall frequency range for exhaust noise is 50-500 Hz. Noise at higher frequencies is generally not induced by the engine gas pulsations but by the exhaust system itself, for example turbulent and whistle noise.

5

Engine size	Power (kW)	Engine speed (rpm)	Sound level (dB(A))	1/3 octave band (Hz)
D13	257-316	1500	115	80 + 160
		1800	117	100 + 200
	331-405	1500	118	80 + 160
		1800	120	100 + 200

If the engine is equipped with an exhaust gas aftertreatment system, the exhaust noise is reduced to some extent, depending on the position of the SCR unit.

Engine sound power level

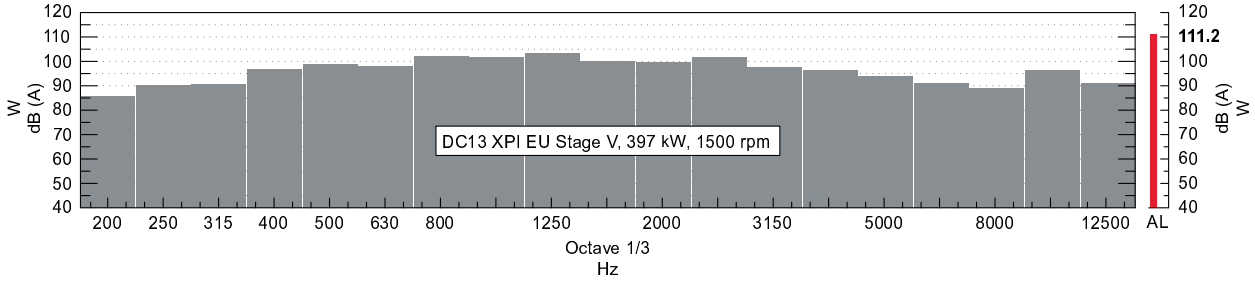
The engine sound power level measurements are performed according to ISO 3744 with 10 microphones placed in a hemispherical pattern with the engine in the centre. There has been one exception concerning the radius of the hemisphere and that is that it has been limited by the dimensions of the test cell to 2 m, which is less than what is recommended in ISO 3744.

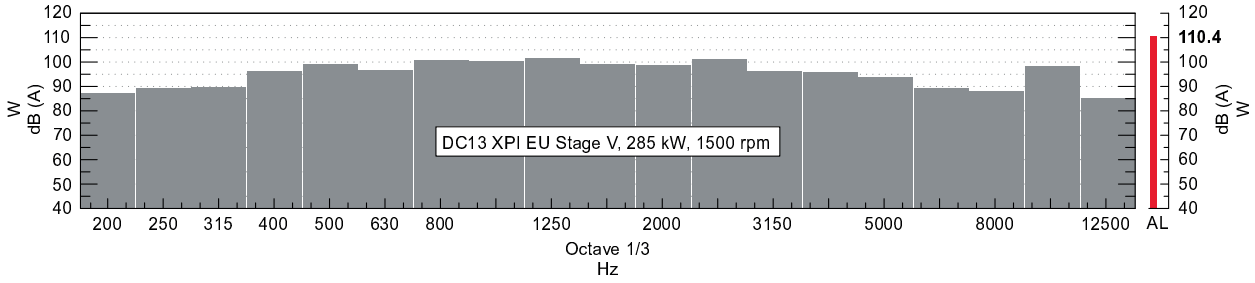
The sound power level measurements are made with the following test parameters:

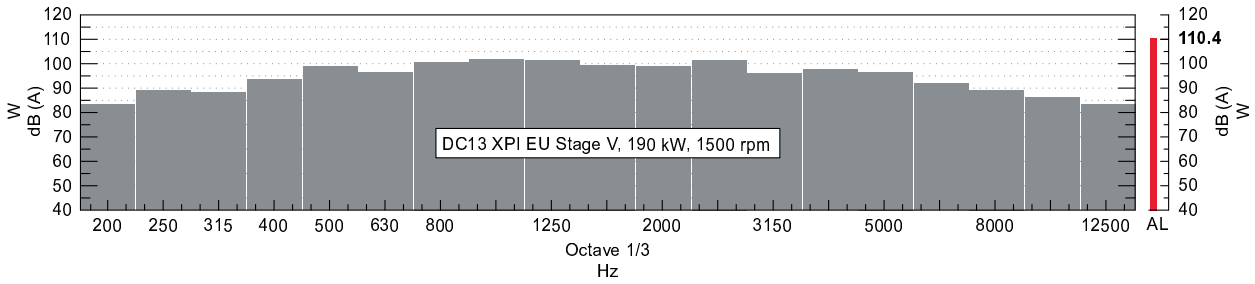
Frequency range: 0-16384 Hz
Frequency resolution: 1 Hz
Engine speed: 1500 rpm and 1800 rpm

The results of the sound power level measurements are presented on the following pages in several 1/3 octave band charts in dB(A). The bar to the right in every chart shows the total level of all 1/3 octave band in dB(A). The results are presented in charts for engines with XPI and engines with PDE respectively.

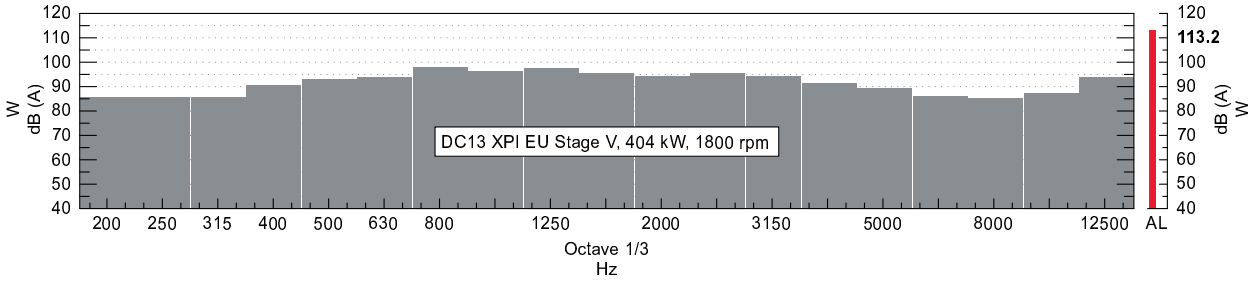
DC13 XPI, 1500 rpm

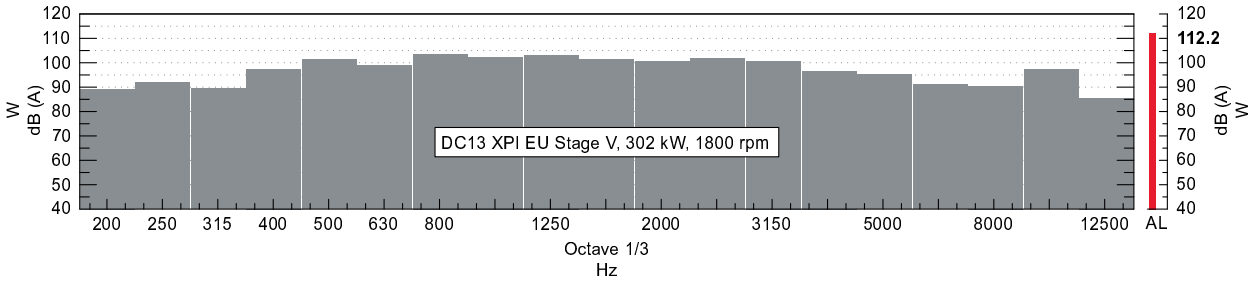


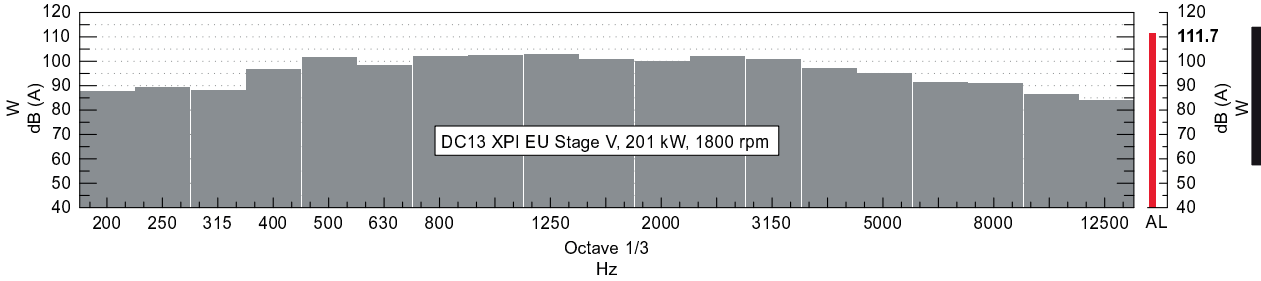




DC13 XPI, 1800 rpm







DC13 PDE, 1500 rpm