Eton RES 12: Active subwoofer for the spare wheel

Premium Spare Wheel Subwoofer

Eton is clearly regarded as a specialist in active subwoofers. Indeed, in addition to their normal Move bass enclosures, the Neu-Ulm company offer a whole series of special solutions. Now with the RES 12, the dealers are getting a new top model.

The Eton RES 12 is not about building the smallest possible subwoofer, but rather about making use of space. In respect of the installation space inside the spare wheel rim, the aim was to get as much bass as possible out of this limited space. Around 34 cm in diameter and 17 cm high, the RES 12 is suitable for somewhat larger rims, other solutions being available in the case of an emergency spare wheel. In respect of the enclosure, we are dealing with an ultra strong construction of robust cast aluminum. From the outside the RES 12 looks rather unremarkable, except for the lid with its familiar stealth design. This conceals the most interesting thing about the RES 12, namely the driver and how it is installed. The intermediate level underneath is the acoustic baffle of the subwoofer, and this is almost completely taken up by the bass driver. The woofer in 12-inch format therefore has the maximum size for this type of enclosure, and it is a massive chunk. It works with an aluminum cone that has been made ultra stable with radial embossing. A broad rubber surround provides a seal both on the inside and outside of the cone. A hole goes right through the centre of the cone and enclosure that serves to fasten the woofer to the spare wheel spigot. Woofer basket and enclosure lid are cast as one and the same part that has been specially designed for the RES 12. Eton has obviously put in some effort here. The driver turns out to be generous with a 50 mm voice coil and a thick ferrite magnet. The rear of the driver opens directly into the bottom enclosure lid, where the woofer lower pole plate, sealed with moss rubber, protrudes out of the bottom of the enclosure. Consequently, the enclosure hugs the installed woofer as close as possible, while optimal use is made of the space in the wheel rim. Naturally we also find a power amp which in the RES 12 stands out from the

The 12 incher fills up the entire lid area, the pole core looking down to the floor

miniature pcb of the fairly small active subwoofer. Instead we find a fairly lavish power supply unit with a decent transformer and an analog mono amplifier stage with two large power transistors. A cable remote control is also included, incorporating all the user controls. With low-pass filter, gain control and a polarity reversal switch, the

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The mono power amp is analog operating in Class AB and has got a powerful transformer power supply unit

Radial struts make the aluminum cone as stiff as a board

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feature set is nevertheless kept within limits.

Measurements and Sound

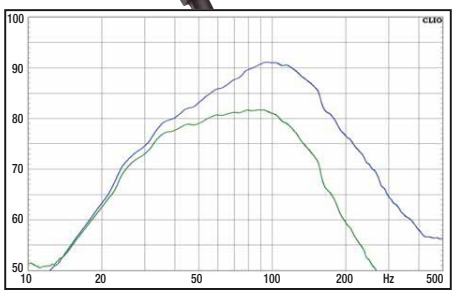
The first thing that we probed was the built-in power amp, and this proved to be extremely powerful. Thanks to the 2-ohm woofer voice coil it delivers 140 watts, which for such an active sub is rather powerful. A subsonic filter permanently set at 25 Hz does not help much, but it is at least something. But the low-pass works cleanly and does exactly what it should. Acoustically this expresses itself in an amplitude response that delivers up to 40 Hz of effective sound pressure. All credit to a subwoofer enclosure of just a few liters in size: evidently the installed bass driver is very well designed for the concept. Sonically the RES 12 performs impressively with astounding pressure into the mid to lower bass registers. It loves following fast bass lines and plays the cues spot on. And the best is that the output level can match that of a handy bass box eminently well – hats off!

This stealth spaceship fits in the spare wheel rim; the mounting hole is in the centre

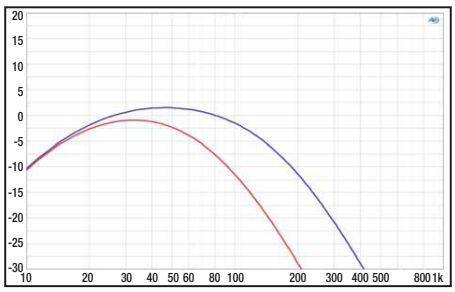
Summary

The performance of a compact enclosed subwoofer, but out of sight from the spare wheel. The Eton RES 12 manages this balancing act easily. Since it has been elaborately made, it unfortunately belongs to the more expensive examples of the small active subwoofer, but is worth the price for the bass.

Everything under control: remote control for gain, low-pass filter and phase switch



The acoustic frequency response shows an overemphasis of the upper bass when the low-pass is turned up. At a lower setting the RES 12 is balanced down into the low end.



The electrical frequency response shows the subsonic with a deeper and flatter characteristic.
The low-pass works perfectly.

Eton RES 12

Price	about 400 Euro
Distributor	ACR, CH-5330 Zurzach
Hotline	info@acr.eu
Internet	www.acr.eu

Summary

Sound quality	30 %	1,1	
Bass foundation	7,5 %	1,0	
Pressure	7,5 %	1,0	
Accuracy	7,5 %	1,0	
Dynamics	7,5 %	1,5	
Lab	40 %	0,9	
Frequency response	10 %	1,0	
max. volume	10 %	0,5	
Amp power	20 %	1,0	
Practice	30 %	1,3	
Features	10 %	1,5	
Workmanship electr.	10 %	1,5	
Workmanship mech.	10 %	1,0	

Technical Data

Width	34.0 cm
Hight	16.5 cm
Depth	32.0 cm
Volume	closed 8 l
BR port (d x l)	–
Weight	9.1 kg
Chassis diameter	30 cm
Nominal impedance	2 ohms
Coil diameter	50 mm
Power @ nominal impedance	140 W
Sensitivity max mV	80 mV
Sensitivity min V	5.0 V
THD+N (<22 kHz) 5 W	0.07 %
THD+N (<22 kHz) half load	0.45 %
Signal/Noise Ratio dB(A)	82 dB

Features

Lowpass	50 – 150 Hz
Bass-boost	–
Subsonicfilter	25 Hz, fixed
Phaseshift	pole switching
Low-Level inputs	•
High-Level inputs	•
Autosense	•, DC
Start/Stop compatible	• (6.4 V)
Remote	•, Gain, Phase, TP
Other	spare tire rim

Eton RES 12

Compact-Class 1,1

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Price/performance: very good

"Premium bass for the spare wheel"