

RAINBOW PROFI TAKES AUDIOPHILES TO HEAVEN

Passion for high end audio returns



I have long been a massive fan of German manufacturer Rainbow's work. Not only do their products sound fantastic, they look great too! New from Rainbow is a range of speakers engineered to the very highest standard.

Rainbow is known for its tireless pursuit of audio excellence in a car. The attention to detail that goes into the physical design of their speakers is matched only by the breath-taking performance they always manage to deliver. I have a pair of Germaniums in my own car which I have been running for three years now and I still enjoy them as much as I did on day one, despite being lucky enough to hear many cars with different levels of equipment during the course of writing for Driving Sounds Magazine.

I have been looking forward to the arrival of the higher-end Profi range for quite a while now and I am certainly not disappointed. The first product I got to look at was the PL-T28 tweeter. It is so stunningly beautiful that I am certain there are those out there who would buy a pair just to have them on display in art-filled homes without even realising that they have a purpose beyond that as pure objet d'art. They seem large and are very shiny yet the size and performance are directly connected. With a large damped rear chamber to suppress any chance of phase distortion and to ensure a very low resonant frequency, it was clear that I was looking at a very special tweeter indeed. You can read the results of my listening test elsewhere in the magazine so I will stick to introducing the range of products for the remainder of this article.

The set of tweeters in the range is designated PL-T28. As the model number suggests, the diaphragm diameter is 28mm. I am afraid it is now necessary for me to get quite technical but try and stick with it! It is desirable that any speaker's resonant frequency (the frequency it would vibrate at if you hit it with a stick!) is as far away as possible from the frequencies it reproduces. Each PL-T28 operates at frequencies between 2kHz to 30kHz and has a resonant frequency of 650Hz, so job done there. They have a nominal impedance of 4 Ohms and a sensitivity of 92dB. (Sensitivity is the measured output level of a speaker in dB SPL at one meter with one watt delivered to it). This figure indicates that it is easy to drive but more importantly hints at an ability to separate loud sounds from soft sounds, which is always a great thing in the pursuit of audio excellence. The most striking physical attributes are the size and weight with each tweeter weighing in at 330g. Tweeters are mounted in a hand-polished stainless steel housing and feature hand-treated silk domes. Neodymium magnets are vented for heat dissipation allowing Rainbow to avoid using ferrofluid that can restrict pulse response time and change viscosity with temperature. The rear chamber is damped with a mix of Merino wool and other acoustic materials to optimise performance and prevent colouration. A stainless steel mounting ring gives a very high-end finish.

The PL-M3P is a 3" mid-range speaker. A multiple layer hand-coated lightweight cone is anchored to the anti-resonance die cast aluminium basket via a W-shaped compound rubber surround which ensures low distortion and offers high linearity at high excursion. Flow-optimised vents in the magnets help to dissipate heat and further precautions are taken with the inclusion of an aluminium phase plug that also optimises frequency response. Once more the product is given a high-end finish by the inclusion of a highly polished

stainless steel mounting ring and a posh grille is available as an optional extra. The connection terminals and lead wires are on symmetrically opposite sides of the cone to ensure the cone is perfectly balanced to prevent any "wobble" being introduced. This is the kind of attention to detail that Rainbow has become famous for. The mids handle 80 Watts RMS and operate from 250Hz all the way up to 8kHz if required. The resonant frequency is a very low 85Hz (I needed a bigger stick to test this!).

Rainbow feature two woofers in its Profi range. Both are similar in design to the PL-M3P midrange and feature many of the same technologies. The specifications are also electronically similar although the PL-W6C operates from 33Hz to 5kHz as opposed to 35Hz at the low end for the PL-W6P. The resonant frequencies also differ between the two products and the PL-W6P is slightly more sensitive. There are two similarly closely spec'd woofers in the Hertz Mille Pro range and I think they both exist for the same reason. The slightly more sensitive version being more suitable for use without a subwoofer. There is, however, a big difference in cone design between the two Profi woofers. Where as the PL-W6P features a traditional shaped cone with a phase plug in the centre, the PL-W6C has a multi-faceted "crystal" cone which presumably does away with the need for a phase plug as its shape scatters sound.

This may also help with dispersion although I have not had the opportunity to hear these side-by-side and cannot therefore vouch for the merits of one design over the other. I have to say that the multi-faceted design does look really cool and if my woofers were on show, I would rather they looked like this!

A 10" subwoofer completes the range and if looks give any clues to performance at all, I would guess it is a throbbing beast of sub bass. Once more it contains many of the design elements of the woofers and mid-range. As we know, sub bass takes a lot more power to reproduce at similar levels to full-range sound and so

everything is scaled up. The triple-stacked magnet looks most impressive and is once again topped off with a hand-polished stainless steel, vented back plate. This time the cone attaches to the chassis via a large single wave surround and everything in the specification points toward it being developed with huge excursion in mind. This beast handles 1000 Watts continuous and operates from 25 Hz to 500Hz and it weighs in at 9.5kg. It can also perform in a compact box with a volume of just 16 Litres.

Handling this product gives a hint of awesome performance. I was lucky enough to get to hear a pair of the mids and tweeters in a BMW 5-series just before we went to print. As a result, we felt compelled to bring you the results. You can read this in the piece entitled "Beaming Smiles" elsewhere in this issue. It is not always possible to judge the performance of a speaker by its specification unless you know the manufacturer. I know Rainbow very well and I am certain the Profi range will deliver.

Go and see a set at your local FOUR MASTER. Alternatively, you can hear them on the Driving Sounds stand at the 2016 Goodwood Festival of Speed or check our website to find out where else we will be demonstrating throughout the year.



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