

MB QUART RLP304

Text and Measurements by Garry Springgay // Photos by Mark Pereira and Manufacturer



There's an old saying that you can never have too much of a good thing. And certainly when it comes to high output woofers that require only tiny amounts of space, the adage holds true. Doing their part to bring big bass to small spaces, the product development team at MB Quart, have recently released a new shallow-mount 12-inch woofer. Labeled the RLP304, the woofer is designed for high performance applications, and with a 300 watt rating, higher than average power levels for a typical shallow woofer application.

The MB Quart RLP304 shallow 12-inch woofer is an excellent choice where musicality and relatively high power handling are required, and enclosure space is limited.

FEATURES

The new MB Quart RLP304 is a very shallow woofer, with a physical mounting depth of only about 3 inches. Allowing an inch or so of air behind the woofer so it can breathe out its vented pole piece, you still have a woofer than can be mounted in only 4 inches of depth.

Designed to work well in enclosures as small as 0.5 cubic feet, the construction of the MB Quart RLP304 woofer is all business. Beginning with a double-rolled stamped steel basket, the shallow design uses a powerful yet compact neodymium motor to provide the magnetic energy required to produce powerful, deep bass. A three inch diameter glass-fiber voice coil former carries a pair of 4 ohm copper wound voice coils. The assembly uses a reinforcement neck made of aluminum to provide

maximum durability under extreme conditions.

The voice coil assembly is then connected to an injection molded polypropylene flat piston cone, which in turn is connected to the basket by a tall foam surround to maximize excursion capability. Beneath the cone is a chrome plated spider landing which provides a bit of flash and bling to the cosmetics, while retaining the outer edge of the single flat poly-cotton spider. The spider design incorporates woven tinsel leads that connect to nickel plated spring type wire terminals. The terminals are very sturdy, and will accommodate 8 gauge cables.

The MB Quart RLP304 uses 8 screws to mount it, and comes with a sturdy good looking trim ring that snaps on over the screws and provides a smooth, trimmed out appearance. >>

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QUICK TECH SPECS

Power Handling	300 WATTS RMS / 600W "PEAK"
Frequency Range	20-1000Hz
Sensitivity	83.6dB/SPL @ 1.0W
Nominal Impedance	(2) 4 ohm coils

MB QUART RLP304 MEASURED THIELE-SMALL PARAMETERS

DUAL 4 OHM COILS, IN PARALLEL METHOD- V/I DOUBLE CURVE - DELTA MASS

REVC=	1.800 Ohms
Fo=	31.913 Hz
Sd=	73.861 in ²
Vas=	1.694 Ft ³
CMS=	148.790 uM/N
MMD=	161.182 G
MMS=	167.164M Kg
BL=	7.580 T·M
QMS=	9.758
QES=	1.050
QTS=	0.948
LEVC=	462.479u H
SPL0=	83.590 dB
EPB=	30.4



I did note that the RLP304 uses a slightly smaller than normal (10.6-inch) mounting diameter and bolt hole pattern, so if you are buying a pre-fab enclosure, make sure the mounting hole diameter is not too large, and drill yourself some new mounting holes.

LISTENING

After a few hours of normal exercising of the new woofer, I mounted the MB Quart RLP304 in a 0.6 cubic foot sealed enclosure, and connected it to my reference listening system. After a few tracks I typically use for tuning, I finally settled on a crossover frequency of 90Hz at -24dB/octave. The RLP304 has a bit more high frequency output than some other woofers, so the crossover point is a bit more important to set correctly to maximize the performance of the woofer and the sound quality of your system. It's not difficult, but always worth checking. Whenever you tune anything, when in doubt, trust your ears! If your amplifier only has a second order (-12dB) filter, you'll probably want to choose a bit lower frequency than I did.

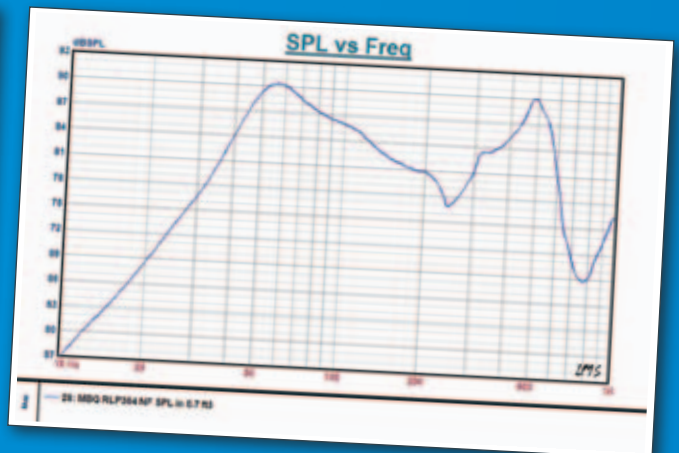
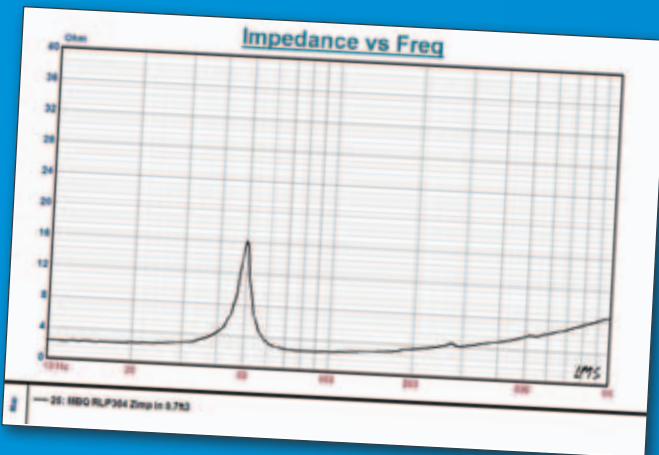
Once the adjustments were complete, my listening began in earnest. Whether I was playing rap, hip hop, rock, country or classical, the MB Quart woofer sounded natural and authentic. The bass output from this woofer is smooth and "round"

sounding, but retains good definition and articulation. I noticed no unwanted mechanical noise from the woofer, which can't be said of all the shallow woofers currently available. With Level 42's album "World Machine" cranked up, I was impressed with the woofers ability to reproduce Mark King's infamous "slap-bass" playing. Even with the power reaching the advertised design limits of the woofer, it handled deep notes well without complaint. Sustained very low notes like the keyboards in Billy Idol's "Prodigal Son" also were reproduced with authority, and if you turned your back, you'd never know you were listening to a shallow mount subwoofer.

Overall I was quite impressed with the sonic performance of the woofer, and I think it will surprise more than a few people when heard in a car with the vehicles natural transfer function increasing the lowest octaves.

ON THE BENCH

After the woofer had cooled off and normalized, I connected it to my LinearX test gear and measured the Thiele-Small parameters. Comparing the published specs to my measurements, I found they were easily within the normal tolerances we'd expect in woofers, and the published specs are good to use for enclosure design software. >>



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I did find it a little odd however, that MB Quart chose to measure the woofer with the 4 ohm coils in series resulting in an 8 ohm nominal impedance. I made my measurements with the coils in parallel, simply because I believe that's how 99% of these woofers will be connected in the real world. I measured the impedance curve of the system in the 0.6ft3 enclosure, and as expected, it was never below about 2.5 ohms with the woofers coils in parallel. The in box resonant frequency was almost exactly 50Hz, which means the recommended enclosure size was appropriate.

CONCLUSION

The MB Quart RLP304 shallow 12-inch woofer is an excellent choice where musicality and relatively high power handling are required, and enclosure space is limited. The woofer sounds very good, and with the ability to handle 300 watts, it will also provide you with a surprising amount of output. And because it works well in very small spaces, you may just be able to fit a pair of them... Once again proving that you really can't have too much of a good thing! **PBS**

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