

Are the RA0401 and RA0402 High Frequency Ear Simulators fulfilling the IEC 60318-4 standard?

Yes, both RA0401 and RA0402 711 style ear simulators from GRAS are an improved version of the classic RA0045 and RA0045-S1 ear simulators. They fulfil all the specifications from a classic “711” ear simulator mentioned in the IEC 60318-4 standard, like same physical dimensions, the use of a ½” pressure microphone and frequency response tolerances.

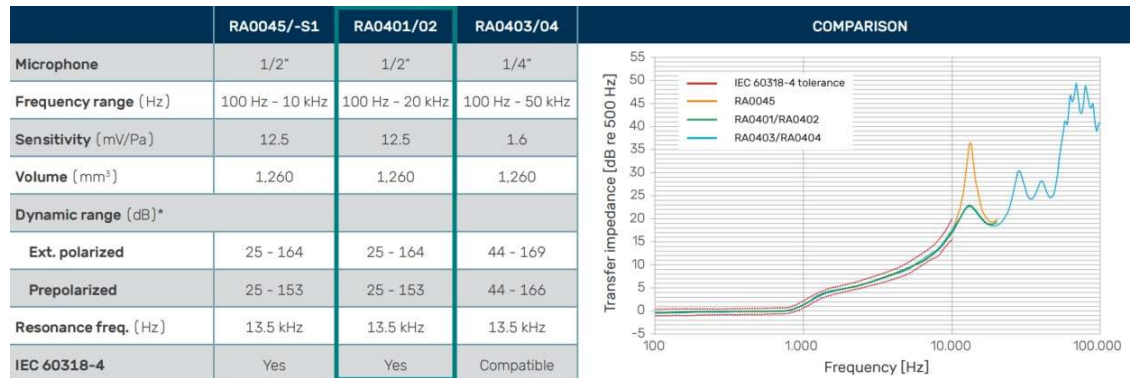


Figure 1. Comparison between the classic RA0045 ear simulator against RA0401/2 and RA0403/4 new family of ear simulators.

The RA0401/2 ear simulators are even keeping the same 13.5 kHz resonance caused by the main air volume in the coupler. A great advantage of the RA0401/2 is that they are adding damping system that attenuates the half-wave resonance at 13.5 kHz. Thanks to this, it is possible to extend the upper frequency range limit from 10 kHz up to 20 kHz. We also added frequency response tolerances from 10 kHz up to 20 kHz, that were inexistent before. IEC 60318-4 provides tolerances from 100 Hz and up to only 10 kHz, which means that there can be huge differences in frequency response from coupler to coupler when measuring above 10 kHz. This will no longer be a problem with RA0401/2 ear simulators.

To sum up, RA0401/2 High Frequency ear simulators use the same ½” microphone as the original version and fully complies with the standard. This is why we recommend it as the first choice when you are looking for a “standard” 60318-4 ear simulator - but without its shortcomings at high frequencies. We think of it as “the new normal”