

EP3 SONIC DEFENDERS® & EP4 SONIC DEFENDERS® PLUS

Passive Hearing Protection Earpieces

The Sonic Defenders have a NRR (noise reduction rating) of 16dB for the 2 flange EP3 earplugs. EP4 Sonic Defenders Plus have 3 flanges and a 19dB NRR¹. Normal communications can be heard through the filter in both quiet and continuous noise. Localization is good; the device is comfortable, and low profile to fit under hats or helmets.



EP3 Sonic Defenders®



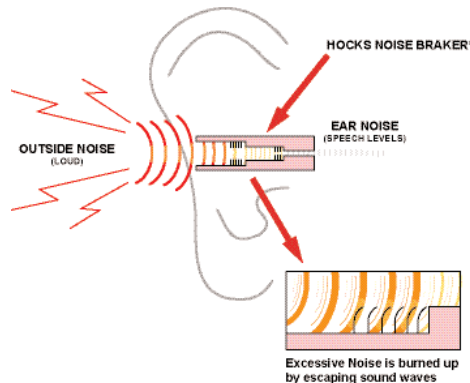
EP4 Sonic Defenders® PLUS

These patent pending earpieces by EarPro by SureFire are made from flexible, hypo-allergenic material that is shaped like the concha of the ear. The flanges are slightly bent to fit the bend of the auditory canal and are very comfortable.

The filter used is the Hocks noise braker uses the laws of physics, specifically the accelerated Resonant Decay Principle which states that we cannot create or destroy energy, we can only convert it. The filter converts sonic energy into thermal energy by means of compression acceleration (see diagram below). The rise in temperature is so minute that it can't be noticed. You can still hear, but dangerous sound levels cannot get through the filter.² Specifically for hearing protection, the filter reduces the sound according to the input table below:

Input level Noise	Braker Attenuation*
70dB	4dB
80dB	26dB
90dB	34dB
100dB	32dB
110dB	36dB
120dB	39dB

All values are C-scale values³



Significant attenuation starts at 80dB at a value of 26dB rising to 34dB at 90dB inputs but remaining roughly constant at an average of 35dB through sound levels of 120dB.⁴ For example if the level of the noise is 110dB, the noise braker will attenuate the sound to 74dB, well below the mandated action level of 85dB.

Conclusion

Hocks Noise Braker filters will reduce the level of sound coming into the ear in conjunction with properly fitted EarPro earpieces. EarPro earpieces will stay in the ear and perform optimally to achieve the maximum noise reduction rating and no sound over 80dB will pass through.

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¹ NRR, June 2005 Howard Leight Industries

² <http://www.hocksproducts.com/products/howitworks.php>

³ C-scale is an all encompassing scale, taking into account almost all frequencies—covering more of the real life noise

⁴ Jack Vernon, Ph.D., University of Oregon, Health Sciences Center