



Critical review of loudness standards

Roland Sottek

HEAD acoustics GmbH, Ebertstr. 30a, 52134 Herzogenrath, Germany
roland.sottek@head-acoustics.de

Abstract

In general, the two different loudness standards ANSI S3.4-2007 and DIN 45631 provide significantly different loudness values. Thus the question arises about selecting the model to use for evaluating a given sound, especially regarding technical or industrial sounds which are often more important than synthetic signals. Recent research results have shown similar performance of both standards with respect to loudness matching, although the absolute loudness values were different.

Validating different loudness methods is a challenge, because there are many parameters used within the models causing opposite effects. Therefore many experiments are needed to investigate the influence of each parameter. For this purpose new listening tests were performed using multi-tone complexes in paired comparison tests. The results of the study will be presented and compared to the performance of both loudness standards.

Keywords: loudness, paired comparison test, hearing model

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HEAD acoustics GmbH
Ebertstraße 30a
52134 Herzogenrath, Germany