

Investigation of the just noticeable difference of the clarity index for music, C80.

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The just noticeable difference (JND) of the clarity index for music, C80, has been reported to be approximately 1 dB, but there is limited research to support this value. A subjective study was conducted to verify this JND using a total of 51 musically-trained subjects. Test signals were created using digital delays, equalizers and reverberation-units, and sent out to eight loudspeakers distributed throughout an anechoic chamber. Three motifs and two C80 base-cases were tested: (1) had a C80 of -1 dB (1 kHz) with a 2.1 s reverberation time (RT), while (2) had a C80 of +3 dB (1 kHz) with a 1.6 s RT. Signals were presented in pairs with the first signal being the base-case and the second having a positive difference ranging between 0.5-3.0 dB. Control cases with no C80 differences were also presented. Results from all 51 subjects did not reveal a clear relationship between the percentages who heard a difference versus the difference in dB. However, when the data were filtered to include 17 of the subjects, clearer trends resulted that suggest a higher JND of approximately 1.6 dB.

Implications for future research will be discussed. [Work supported by the Paul S. Veneklasen Research Foundation.]

Ahearn, M.J., Schaeffler, M.J., Celmer, R.D., and Vigeant, M.C. (2009). "Investigation of the just noticeable difference of the clarity index for music, C80 (A)." *J. Acoust. Soc. Am.*, San Antonio, TX, **126**: 2288