

# Metrology & Hallmark

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## The realization of the primary standard for sound pressure at the Central Office of Measures

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[laboratory standard microphones primary standard of sound pressure](#)

### Abstract

In the paper the measurement setup used for this purpose at the Central Office of Measures, which together with the set of laboratory standard microphones composes the primary standard of sound pressure is described. It enables to determine the pressure sensitivity level of class LS1 microphones in the frequency range 2 Hz to 10 kHz and the pressure sensitivity level of LS2 microphones in the frequency range 20 Hz to 20 kHz with the best available measurement uncertainty of 0,03 dB. The measurement method used conforms to the requirements of IEC 61094-2:2009. The results obtained in the years 1999–2014, demonstrating the stability of standard microphones, are also presented. The equivalence of the primary standard used at the GUM was confirmed many times internationally through the participation in key comparisons organised by the International Committee for Weights and Measures (CIPM) and Regional Metrology Organizations: EURAMET, COOMET and AFRIMETS. The examples of the comparisons results referring to the Polish primary standard of sound pressure are given in the paper.

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