

ISO 11904-1:2002-10 (E)

Acoustics - Determination of sound immission from sound sources placed close for the ear - Part 1: Technique using a microphone in a real ear (MIRE technique)

Contents

Page

Foreword	iv
Introduction	v
1 Scope	1
2 Normative references	1
3 Terms and definitions	2
4 Measurement principle	3
5 Instrumentation	3
5.1 Ear canal microphone	3
5.2 Reference field microphone	4
5.3 Check of calibration	4
5.4 Filters	4
6 Subjects	4
7 Use of ear canal microphone	4
7.1 Choice of ear canal measurement position	4
7.2 Mounting of microphones	6
7.3 Safety	6
8 Determination of free-field or diffuse-field related equivalent continuous A-weighted sound pressure level	6
8.1 Measurement of ear canal sound pressure level	6
8.2 Conversion to free-field or diffuse-field related sound pressure level	7
8.3 A-weighting and summation	7
9 Free-field and diffuse-field frequency responses for selected ear canal measurement positions	7
10 Determination of free-field or diffuse-field frequency responses	7
10.1 General	7
10.2 Measurement principle	9
10.3 Establishment of a free reference sound field	9
10.4 Establishment of a quasi-free reference sound field	9
10.5 Establishment of a diffuse reference sound field	9
10.6 Measurement of the reference sound field	9
10.7 Measurement of ear canal sound pressure level in reference sound field	9
10.8 Determination of free-field or diffuse-field frequency response	10
10.9 Simplifications in specific cases	10
10.10 Optional check of the measurement arrangement	10
11 Test report	10
Annex A (informative) Example of sources of measurement uncertainty	11
Annex B (informative) Example of an uncertainty analysis	17
Bibliography	19