

# ISO 3741:2010-10 (E)

## Acoustics - Determination of sound power levels and sound energy levels of noise sources using sound pressure - Precision methods for reverberation test rooms

---

| <b>Contents</b>   | <b>Page</b> |
|---|-------------|
| Foreword .....  | iv          |
| Introduction .....  | v           |
| 1 Scope .....   | 1           |
| 2 Normative references .....  | 2           |
| 3 Terms and definitions .....   | 2           |
| 4 Reference meteorological conditions .....   | 6           |
| 5 Reverberation test room .....   | 6           |
| 6 Instrumentation and measurement equipment .....   | 10          |
| 7 Definition, location, installation, and operation of noise source under test .....  | 10          |
| 8 Measurements in the reverberation test room .....   | 12          |
| 9 Determination of sound power levels and sound energy levels .....   | 19          |
| 10 Measurement uncertainty .....  | 27          |
| 11 Information to be recorded .....   | 30          |
| 12 Test report .....  | 31          |
| Annex A (informative) Guidelines for the design of reverberation test rooms .....   | 32          |
| Annex B (informative) Guidelines for the design of rotating diffusing vanes .....   | 34          |
| Annex C (normative) Reverberation test room qualification procedure for the measurement of broad-band sound .....   | 35          |
| Annex D (normative) Reverberation test room qualification procedure for the measurement of discrete-frequency components .....  | 37          |
| Annex E (informative) Extension of frequency range to frequencies below 100 Hz .....  | 42          |
| Annex F (normative) Calculation of octave band sound power levels and sound energy levels, A-weighted sound power levels and A-weighted sound energy levels from one-third-octave band levels ..... | 45          |
| Annex G (informative) Guidelines on the development of information on measurement uncertainty   | 48          |
| Bibliography .....  | 60          |