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ISO

INTERNATIONAL ORGANIZATION FOR STANDARDIZATION

ISO RECOMMENDATION

R 357

EXPRESSION OF THE POWER AND INTENSITY LEVELS OF SOUND OR NOISE

This ISO Recommendation is supplementary to ISO Recommendation R 131 -

Expression of the Pysical and Subjective Magnitudes of Sound or Noise

1st EDITION

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BRIEF HISTORY

The ISO Recommendation R 357, *Expression of the Power and Intensity Levels of Sound or Noise,* was drawn up by Technical Committee ISO/TC 43, *Acoustics*, the Secretariat of which is held by the British Standards Institution (B.S.I.).

Work on this question by the Technical Committee began in 1960 and led, in 1961, to the adoption of a Draft ISO Recommendation.

In March 1962, this Draft ISO Recommendation (No. 504) was circulated to all the ISO Member Bodies for enquiry. It was approved by the following Member Bodies:

Australia	Denmark	New Zealand
Austria	Finland	Poland
Belgium	France	Portugal
Brazil	Germany	Switzerland
Burma	Hungary	Sweden
Canada	India	United Kingdom
Chile	Japan	U.S.A.
Czechoslovakia	Netherlands	U.S.S.R.
		Yugoslavia

No Member Body opposed the approval of the Draft.

The Draft ISO Recommendation was then submitted by correspondence to the ISO Council, which decided, in December 1963, to accept it as an ISO RECOMMENDATION.

ISO Recommendation R 357 December 1963

EXPRESSION OF THE POWER AND INTENSITY LEVELS OF SOUND OR NOISE

This ISO Recommendation is supplementary to
ISO Recommendation R 131
Expression of the Physical and Subjective Magnitudes of Sound or Noise

1. SOUND POWER LEVEL

The sound power level of a sound or noise is expressed as

$$10 \log_{10} \frac{P}{P_o} \quad \text{in decibels, dB}$$

where P is the sound power in question, and
P_o is the reference sound power, expressed in the same units as P.

It is recommended that the value

10^{-12} W, that is, 1 picowatt (pW),

be universally adopted as the reference sound power.

2. SOUND INTENSITY LEVEL

The sound intensity level of a sound or noise is expressed as

$$10 \log_{10} \frac{I}{I_o} \quad \text{in decibels, dB}$$

where I is the sound intensity in question, and
I_o is the reference sound intensity expressed in the same units as I.

It is recommended that for sound in air the value

10^{-12} W/m^2, that is, 1 pW/m^2, also expressed as 10^{-16} W/cm^2,

be universally adopted as the reference sound intensity.