
Photography — Still-picture projectors — Determination of noise emissions

*Photographie — Projecteurs de prises de vue — Détermination des
émissions sonores*



Foreword

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Introduction

Noise emission characteristics include both the sound power level and emission sound pressure level at the work station. The determination of these quantities allows

- a) manufacturers to declare the noise emitted;
- b) comparison of the noise emitted by equipment within the family concerned;
- c) experimental verification of the noise control measures taken at the design stage.

The determination of one or both of the quantities can be required by, for example, legislation, directives, contracts or agreements.

Photography — Still-picture projectors — Determination of noise emissions

1 Scope

This International Standard specifies the means to determine, declare and verify the noise emission characteristics (sound power level and emission sound pressure level at the work station) of still-picture projectors.

It specifies noise measurement methods and the operating and mounting conditions that shall be used for the test.

The use of this International Standard ensures the reproducibility of the determination of the noise emission characteristics within specified limits determined by the grade of accuracy of the basic noise measurement method used. Noise measurement methods allowed by this International Standard are engineering methods (grade 2) and survey methods (grade 3).

The engineering grade of accuracy (grade 2) is preferred and is applicable, for example, to type tests or for declaration and comparison purposes.

The survey grade of accuracy (grade 3) is applicable, for example, to quality control purposes during manufacture. Survey methods usually enable measurements to be made in work rooms.

2 Normative references

The following normative documents contain provisions which, through reference in this text, constitute provisions of this International Standard. For dated references, subsequent amendments to, or revisions of, any of these publications do not apply. However, parties to agreements based on this International Standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 1755, *Photography — Projector slides — Dimensions*.

ISO 3744:1994, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Engineering method in an essentially free field over a reflecting plane*.

ISO 3746, *Acoustics — Determination of sound power levels of noise sources using sound pressure — Survey method using an enveloping measurement surface over a reflecting plane*.

ISO 4871:1996, *Acoustics — Declaration and verification of noise emission values of machinery and equipment*.

ISO 7574-4:1985, *Acoustics — Statistical methods for determining and verifying stated noise emission values of machinery and equipment — Part 4: Methods for stated values for batches of machines*.

ISO 11203, *Acoustics — Noise emitted by machinery and equipment — Determination of emission sound pressure levels at a work station and at other specified positions from the sound power level*.

3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions – taken from the basic noise emission standards – apply. Further terms and definitions are given in the International Standards which are designated in clause 2 and the Bibliography.

3.1

sound power level

L_W

ten times the logarithm to the base 10 of the ratio of the sound power radiated by the source under test to the reference sound power; it is expressed in decibels

The frequency weighting or the width of the frequency band used shall be indicated. The reference power is 1 pW ($1 \text{ pW} = 10^{-12} \text{ W}$).

EXAMPLE

The A-weighted sound power level is L_{WA} .

3.2

emission sound pressure level

L_p

ten times the logarithm to the base 10 of the ratio of the square of the emission sound pressure, $p^2(t)$, to the square of the reference sound pressure, p_0^2 , measured with a particular time weighting and a particular frequency weighting, selected from those defined in IEC 60651; it is expressed in decibels; the reference sound pressure is 20 μPa

EXAMPLES

Maximum A-weighted emission sound pressure level with time weighting F : $L_{pAF, \max}$.

C-weighted peak emission sound pressure level: $L_{pC, \text{peak}}$.

3.3

noise emission declaration

information on the noise emitted by the machine, given by the manufacturer or supplier in technical documents or other literature, concerning noise emission values

NOTE 1 The noise emission declaration may take the form of either the declared single-number noise emission value or the declared dual-number noise emission value.

NOTE 2 For this International Standard, the application of declared single-number noise emission values is required (see 12.2).

3.4

declared single-number noise emission value

L_d

the sum of a measured noise emission value L and the associated uncertainty K , rounded to the nearest decibel:

$$L_d = L + K$$

3.5

reference box

hypothetical surface which is the smallest rectangular parallelepiped that just encloses the source and terminates on the reflecting plane

4 Description of machinery family

This International Standard applies to still-picture projectors, i.e.

— slide projectors (full-automatic, half-automatic and hand-operated),