



SLOVENSKI STANDARD SIST EN 2591-607:2004

01-maj-2004

Aerospace series - Elements of electrical and optical connection - Test methods - Part 607: Optical elements - Immunity to ambient light coupling

Aerospace series - Elements of electrical and optical connection - Test methods - Part 607: Optical elements - Immunity to ambient light coupling

Luft- und Raumfahrt - Elektrische und optische Verbindungselemente - Prüfverfahren - Teil 607: Optische Elemente - Fremdlichteinkopplung

Série aérospatiale - Organes de connexion électrique et optique - Méthodes d'essais - Partie 607: Organes optiques - Immunité de couplage à la lumière ambiante

<https://standards.iteh.ai/catalog/standards/sist/acf233a2-d9b0-4b3d-8c87-307a7161d3a5/sist-en-2591-607-2004>

Ta slovenski standard je istoveten z: EN 2591-607:2002

ICS:

49.060 Štejni in optični elementi za povezavo električnih in optičnih sistemov v letalski in vesoljski opremi in sistemih
Aerospace electric equipment and systems

SIST EN 2591-607:2004

en

iTeh STANDARD PREVIEW
(standards.iteh.ai)

SIST EN 2591-607:2004

<https://standards.iteh.ai/catalog/standards/sist/acf233a2-d9b0-4b3d-8c87-307a7161d3a5/sist-en-2591-607-2004>

EUROPEAN STANDARD
NORME EUROPÉENNE
EUROPÄISCHE NORM

EN 2591-607

June 2002

ICS 49.060

English version

**Aerospace series - Elements of electrical and optical connection
- Test methods - Part 607: Optical elements - Immunity to
ambient light coupling**

Série aérospatiale - Organes de connexion électrique et
optique - Méthodes d'essais - Partie 607: Organes optiques
- Immunité de couplage à la lumière ambiante

Luft- und Raumfahrt - Elektrische und optische
Verbindungselemente - Prüfverfahren - Teil 607: Optische
Elemente - Fremdlichteinkopplung

This European Standard was approved by CEN on 8 February 2002.

CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration. Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Management Centre or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Management Centre has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

<https://standards.iteh.ai/catalog/standards/sist/acf233a2-d9b0-4b3d-8c87-307a7161d3a5/sist-en-2591-607-2004>



EUROPEAN COMMITTEE FOR STANDARDIZATION
COMITÉ EUROPÉEN DE NORMALISATION
EUROPÄISCHES KOMITEE FÜR NORMUNG

Management Centre: rue de Stassart, 36 B-1050 Brussels

Foreword

This document (EN 2591-607:2002) has been prepared by the European Association of Aerospace Manufacturers (AECMA).

After enquiries and votes carried out in accordance with the rules of this Association, this Standard has received the approval of the National Associations and the Official Services of the member countries of AECMA, prior to its presentation to CEN.

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by December 2002, and conflicting national standards shall be withdrawn at the latest by December 2002.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to implement this European Standard: Austria, Belgium, Czech Republic, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Malta, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom

1 Scope

This standard specifies a method of measuring the immunity of optical connection elements (including permanent connections) and fibre couplers to the coupling of power coming from an external light source.

It shall be used together with EN 2591-100.

2 Normatives references

This European Standard incorporates by dated or undated reference provisions from other publications. These normative references are cited at the appropriate places in the text and the publications are listed hereafter. For dated references, subsequent amendments to or revisions of any of these publications apply to this European Standard only when incorporated in it by amendment or revision. For undated references the latest edition of the publication referred to applies.

EN 2591-100 Aerospace series – Elements of electrical and optical connection – Test methods – Part 100: General ¹⁾

3 Preparation of specimens

3.1 The specimens shall be fitted with normal accessories and terminated as specified in the product standard. Cavities with unterminated contacts shall have filler plugs fitted (where applicable).

3.2 Unless specified in the technical specification, the following details shall be stated:

- type and length of cable/fibre;
- spectral characteristics of the light source or color temperature of the black body radiation.

4 Apparatus

The apparatus shall comprise:

- C a modulator set to frequency which is not a multiple of 50 Hz or 60 Hz;
- D a detector;
- Di a diffuser;
- IS an integration sphere;
- LA a locking amplifier to achieve the detection measurement;
- LDS a Light Detector System in accordance with the spectral characteristics of the light source;
- Le a lens;
- LS a Light Source;
- T a terminator to provide a non reflective termination;
- a removable light proof element of the same length as the specimen;

¹⁾ Published as AECMA Prestandard at the date of publication of this standard

A typical arrangement is shown in figure 1.

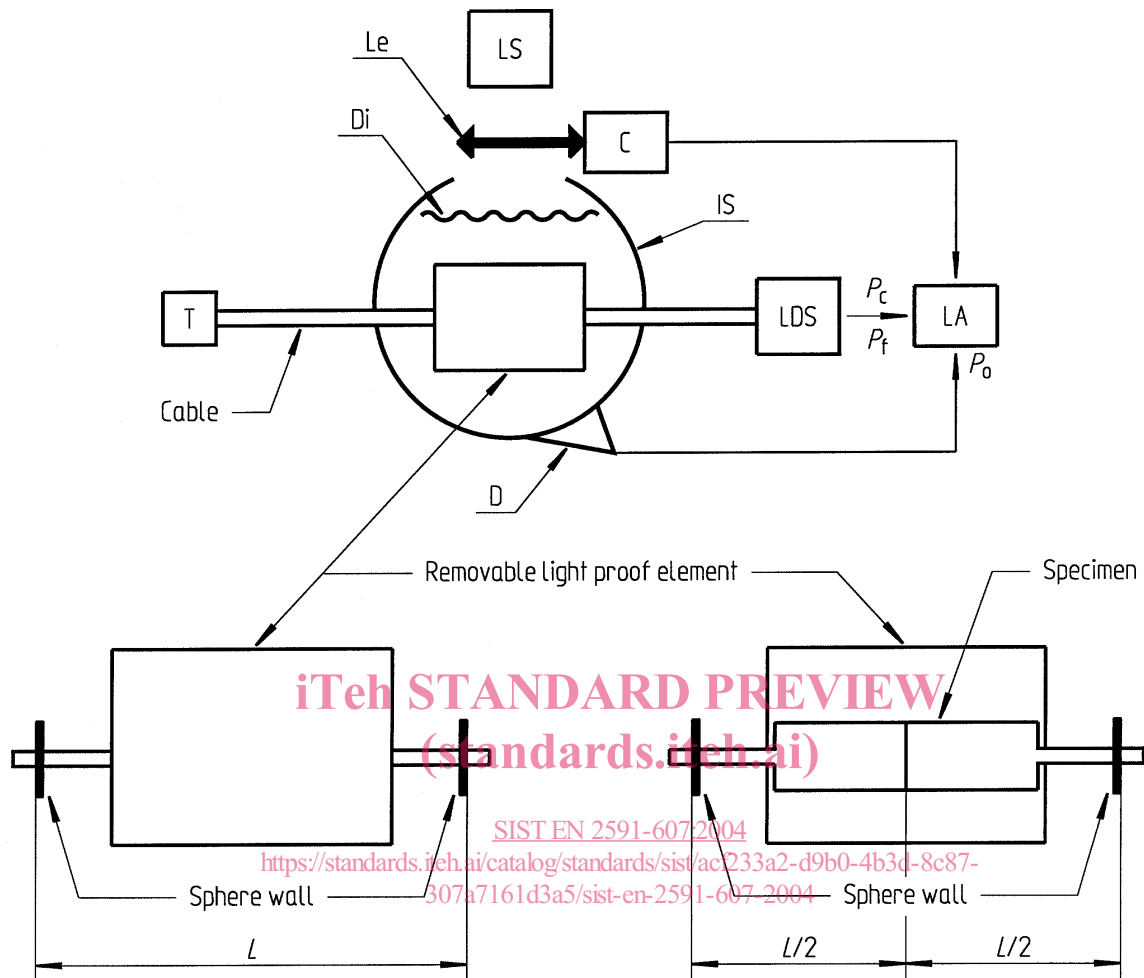


Figure 1

5 Method

The method consists of measuring the ambient light coupled in the specimen by the use of an integrated sphere (see figure 1).

5.1 Procedure

Install the specimen in the light proof element.

Turn on the LS, C, D, LDS and LA.

Insert the specimen with the removable light proof element in the integrated sphere.

Adjust the power of LS so that the output power is close to the upper detection limits of D and then measure the output powers P_o and P_f .

Remove the light proof element.

If necessary, adjust the power of LS again so that new P value P_1 is equal to P_o .

Measure the new power P_c .

P_0 = level of optical power launched into the integration sphere after insertion of the removable light proof element with the specimen

P_1 = level of optical power launched into the integration sphere after the light proof element has been removed

P_f = ambient light coupled in the specimen in the removable light proof element

P_c = ambient light coupled in the specimen once the light proof element has been removed

5.2 Final measurements and requirements

Calculate the external light coupling coefficient with the help of the following equation:

$$\text{Coupling coefficient (dB)} = \frac{P_c - P_f}{P_0}$$

NOTE This calculation assumes that values P_0 and P_1 are equal.

iTeh STANDARD PREVIEW
(standards.iteh.ai)

[SIST EN 2591-607:2004](https://standards.iteh.ai/catalog/standards/sist/acf233a2-d9b0-4b3d-8c87-307a7161d3a5/sist-en-2591-607-2004)

<https://standards.iteh.ai/catalog/standards/sist/acf233a2-d9b0-4b3d-8c87-307a7161d3a5/sist-en-2591-607-2004>