

**FINAL VERSION**

**VERSION FINALE**

---

**Electrical supply track systems for luminaires**

**Systèmes d'alimentation électrique par rail pour luminaires**



## CONTENTS

FOREWORD .....	3
1 Scope .....	5
2 Normative references .....	5
3 Terms and definitions .....	6
4 Classification .....	8
5 General test requirements .....	8
6 Marking .....	9
7 General requirements and ratings .....	11
8 Construction .....	11
9 Creepage distances and clearances .....	16
10 Terminals .....	16
11 External and internal wiring .....	16
12 Thermal endurance and operating temperatures .....	17
13 Protection against electric shock .....	18
14 Resistance to humidity .....	18
15 Insulation resistance and electric strength .....	18
16 Provision for earthing .....	19
17 Resistance to heat, fire and tracking .....	19
18 Terminals and connections for external wiring .....	20
Annex A (informative) Test to be carried out on luminaires supplied with track systems providing control signals .....	24
Figure 1 – Luminaire track systems (definitions) .....	21
Figure 2 – Measurement positions for typical class III adaptor contacts .....	22
Figure 3 – Measurement positions for typical class I tracks (not to scale) .....	22
Figure 4 – Measurement positions for typical class III adaptor contacts with protruding contacts .....	23

## INTERNATIONAL ELECTROTECHNICAL COMMISSION

# ELECTRICAL SUPPLY TRACK SYSTEMS FOR LUMINAIRES

## FOREWORD

- 1) The International Electrotechnical Commission (IEC) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of IEC is to promote international co-operation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, IEC publishes International Standards, Technical Specifications, Technical Reports, Publicly Available Specifications (PAS) and Guides (hereafter referred to as "IEC Publication(s)"). Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of IEC on technical matters express, as nearly as possible, an international consensus of opinion on the relevant subjects since each technical committee has representation from all interested IEC National Committees.
- 3) IEC Publications have the form of recommendations for international use and are accepted by IEC National Committees in that sense. While all reasonable efforts are made to ensure that the technical content of IEC Publications is accurate, IEC cannot be held responsible for the way in which they are used or for any misinterpretation by any end user.
- 4) In order to promote international uniformity, IEC National Committees undertake to apply IEC Publications transparently to the maximum extent possible in their national and regional publications. Any divergence between any IEC Publication and the corresponding national or regional publication shall be clearly indicated in the latter.
- 5) IEC itself does not provide any attestation of conformity. Independent certification bodies provide conformity assessment services and, in some areas, access to IEC marks of conformity. IEC is not responsible for any services carried out by independent certification bodies.
- 6) All users should ensure that they have the latest edition of this publication.
- 7) No liability shall attach to IEC or its directors, employees, servants or agents including individual experts and members of its technical committees and IEC National Committees for any personal injury, property damage or other damage of any nature whatsoever, whether direct or indirect, or for costs (including legal fees) and expenses arising out of the publication, use of, or reliance upon, this IEC Publication or any other IEC Publications.
- 8) Attention is drawn to the Normative references cited in this publication. Use of the referenced publications is indispensable for the correct application of this publication.
- 9) Attention is drawn to the possibility that some of the elements of this IEC Publication may be the subject of patent rights. IEC shall not be held responsible for identifying any or all such patent rights.

### **DISCLAIMER**

**This Consolidated version is not an official IEC Standard and has been prepared for user convenience. Only the current versions of the standard and its amendment(s) are to be considered the official documents.**

**This Consolidated version of IEC 60570 bears the edition number 4.2. It consists of the fourth edition (2003-01) [documents 34D/770/FDIS and 34D/774/RVD], its amendment 1 (2017-04) [documents 34D/1221/CDV and 34D/1242A/RVC] and its amendment 2 (2019-12) [documents 34D/1502/FDIS and 34D/1517/RVD]. The technical content is identical to the base edition and its amendments.**

**This Final version does not show where the technical content is modified by amendments 1 and 2. A separate Redline version with all changes highlighted is available in this publication.**

International Standard IEC 60570 has been prepared by subcommittee 34D: Luminaires, of IEC technical committee 34: Lamps and related equipment.

This fourth edition constitutes a minor revision.

This standard shall be used in conjunction with IEC 60598-1.

NOTE In this standard, the following print types are used:

- requirements proper: in roman type;
- *test specifications: in italic type;*
- notes: in smaller roman type.

The committee has decided that the contents of the base publication and its amendments will remain unchanged until the stability date indicated on the IEC web site under "<http://webstore.iec.ch>" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

## ELECTRICAL SUPPLY TRACK SYSTEMS FOR LUMINAIRES

### 1 Scope

This International Standard applies to the following track systems with two or more poles for the connection of luminaires to the electrical supply consisting of, either

- a system with a rated voltage not exceeding 440 V between poles (live conductors) with provision for earthing (class I) and a rated current not exceeding 16 A per conductor, or
- a SELV system without provision for protective earthing (class III) and a rated current not exceeding 25 A per conductor, or
- a combination of the two systems mentioned above (mixed supply system) for the connection of both mains voltage luminaires (class I or II) and SELV supplied luminaires (class III) simultaneously, but in different sector openings (mains or SELV).

The track systems may also provide for the mechanical support of the luminaires.

It applies to track systems designed for ordinary interior use for mounting on, or flush with, or suspended from walls and ceilings. These track systems are not intended for locations where special conditions prevail as in ships, vehicles and the like and in hazardous locations, for example, where explosions are liable to occur.

This document does not cover operational or performance compatibility between different track systems. Protection against unsafe compatibility between Class I and Class III circuit is covered by this document.

The track system can be provided with auxiliary circuits for the purpose of a control or audio signal other than supply.

NOTE 1 At present, the following types of control systems are available on the market:

- control signal, with basic insulation to LV supply (e.g. digital addressable lighting interface, 1 V to 10 V DC signal);
- control signal, SELV/PELV insulated to LV supply (e.g. DMX);
- control signal, not insulated to LV supply (e.g. push button control/phase cut/step dim).

Track systems can also be provided with conductors specifically identified for emergency lighting luminaires.

NOTE 2 Requirements for PELV are under consideration, pending modification in IEC 60598-1.

### 2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60417-2, *Graphical symbols for use on equipment – Part 2: Symbol originals*

IEC 60598-1:2014, *Luminaires – Part 1: General requirements and tests*  
IEC 60598-1:2014/AMD1:2017

NOTE The 9<sup>th</sup> edition of IEC 60598-1 is under preparation. Stage at the time of publication IEC PRVC 60598-1:2019. This 9<sup>th</sup> edition provides a cross link between IEC 60598-1 and IEC 60570 for track mounted luminaires.