

INTERNATIONAL STANDARD

NORME INTERNATIONALE

Lightning density based on lightning location systems (LLS) – General principles

Densité de foudroiement basée sur des systèmes de localisation de la foudre (LLS) – Principes généraux





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INTERNATIONAL ELECTROTECHNICAL COMMISSION

**LIGHTNING DENSITY BASED ON LIGHTNING LOCATION SYSTEMS (LLS) –
GENERAL PRINCIPLES**

FOREWORD

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International Standard IEC 62858 has been prepared by IEC technical committee 81: Lightning protection.

The text of this standard is based on the following documents:

FDIS	Report on voting
81/470/FDIS	81/494/RVD

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC website 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- withdrawn,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.

INTRODUCTION

International standards for lightning protection (e.g. IEC 62305-2) provide methods for the evaluation of the lightning risk on buildings and structures.

The lightning ground flash density N_G , defined as the mean number of lightning flashes to ground per square kilometer per year is the primary input parameter to perform such an evaluation.

In many areas of the world N_G is derived from data provided by lightning location systems (LLS), but no common rule exists defining requirements either for their performance or for the elaboration of the measured data.

LIGHTNING DENSITY BASED ON LIGHTNING LOCATION SYSTEMS (LLS) – GENERAL PRINCIPLES

1 Scope

This International Standard introduces and discusses all necessary measures to make reliable and homogeneous the values of N_G obtained from LLS in various countries. Only parameters that are relevant to risk assessment are considered.

2 Normative references

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

IEC 62305-1, *Protection against lightning – Part 1: General principles*

IEC 62305-2, *Protection against lightning – Part 2: Risk management*

3 Terms, definitions and abbreviations

3.1 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 62305-1 and IEC 62305-2, as well as the following, apply.

3.1.1

cloud-to-ground lightning

CG

discharge that is comprised of one or more cloud-to-ground lightning strokes that propagate from cloud to ground or vice versa and lead to a net transfer of charge between cloud and ground

Note 1 to entry: This note applies to the French language only.

3.1.2

cloud lightning

IC

discharge occurring within or among thunderclouds (intracloud), or between thunderclouds (intercloud), or between cloud and air, without a ground termination

Note 1 to entry: This note applies to the French language only.

3.1.3

first return stroke

first stroke to ground of a cloud-to-ground lightning discharge

Note 1 to entry: The stepped leader and attachment process precede the first return stroke.

3.1.4

subsequent stroke

subsequent stroke to ground that follows a previous (return) stroke in the same flash