

# REDLINE VERSION



GROUP SAFETY PUBLICATION

**Safety requirements for electrical equipment for  
measurement, control, and laboratory use –  
Part 2-081: Particular requirements for automatic and semi-automatic  
laboratory equipment for analysis and other purposes**



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INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR  
MEASUREMENT, CONTROL, AND LABORATORY USE –Part 2-081: Particular requirements for automatic and semi-automatic  
laboratory equipment for analysis and other purposes

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**This Redline version provides you with a quick and easy way to compare all the changes between this standard and its previous edition. A vertical bar appears in the margin wherever a change has been made. Additions are in green text, deletions are in strikethrough red text.**

International Standard IEC 61010-2-081 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

It has the status of a group safety publication in accordance with IEC Guide 104.

This third edition cancels and replaces the second edition published in 2015. This edition constitutes a technical revision.

This edition includes the following significant technical changes with respect to the previous edition:

- adaptation of changes introduced by Amendment 1 of IEC 61010-1:2010;
- added tolerance for stability of AC voltage test equipment to Clause 6.

The text of this International Standard is based on the following documents:

CDV	Report on voting
66/652/CDV	66/671A/RVC

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

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

A list of all parts of the IEC 61010 series, published under the general title *Safety requirements for electrical equipment for measurement, control, and laboratory use*, can be found on the IEC website.

This Part 2-081 is to be used in conjunction with IEC 61010-1. It was established on the basis of the third edition (2010) and its Amendment 1 (2016), hereinafter referred to as Part 1.

This Part 2-081 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes*.

Where a particular subclause of Part 1 is not mentioned in this Part 2-081, that subclause applies as far as is reasonable. Where this Part 2-081 states "addition", "modification", "replacement", or "deletion", the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

In this standard:

- 1) the following print types are used:
  - requirements: in roman type;
  - NOTES: in smaller roman type;
  - *conformity and test: in italic type*;
  - terms used throughout this standard which have been defined in Clause 3: SMALL ROMAN CAPITALS.
- 2) subclauses, figures, tables and notes which are additional to those in Part 1 are numbered starting from 101. Additional annexes are lettered starting from AA and additional list items are lettered from aa).

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

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

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## SAFETY REQUIREMENTS FOR ELECTRICAL EQUIPMENT FOR MEASUREMENT, CONTROL, AND LABORATORY USE –

### Part 2-081: Particular requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes

#### 1 Scope and object

This clause of Part 1 is applicable except as follows:

##### 1.1.1 Equipment included in scope

*Replacement:*

*Replace the text, except the first paragraph, by the following new text:*

This part of IEC 61010 applies to automatic and semi-automatic laboratory equipment for analysis and other purposes.

Automatic and semi-automatic laboratory equipment consists of instruments or systems for measuring or modifying one or more characteristics or parameters of samples, performing the complete process or parts of the process without manual intervention. Equipment forming part of such a system is within the scope of this document.

Examples of equipment within the scope of this document include:

- analytical equipment;
- automatic sampler (pipettor, aliquoter);
- equipment for sample replication and amplification.

NOTE 1 In the case of analytical equipment, the complete process usually includes the following steps:

- taking a specific quantity of the sample;
- preparing the sample by chemical, thermal, mechanical or other means;
- measurement;
- display, transmission or printing of the results of measurement.

NOTE 2 If all or part of the equipment falls within the scope of one or more other Part 2 documents of IEC 61010 as well as within the scope of this document, consideration ~~s-have-to-be~~ is given to those other Part 2 documents.

##### 1.1.2 Equipment excluded from scope

*Addition:*

*Add the following new item:*

- aa) IEC 61010-2-101 (in vitro diagnostic (IVD) equipment).



## 1.2 Object

### 1.2.1 Aspects included in scope

*Addition:*

*Add the following new items:*

- aa) biohazards;
- bb) hazardous chemical substances.

### 1.2.2 Aspects excluded from scope

*Addition:*

*Add the following new item and note:*

- aa) handling or manipulation of material outside the equipment.

NOTE Requirements covering these subjects are the responsibility of committees preparing the relevant standards.

## 2 Normative references

This clause of Part 1 is applicable.

## 3 Terms and definitions

This clause of Part 1 is applicable.

## 4 Tests

This clause of Part 1 is applicable.


## 5 Marking and documentation

This clause of Part 1 is applicable except as follows:

**Table 1 – Symbols**

*Additions:*

*Add the following new symbol to Table 1:*

Number	Symbol	Publication Reference	Description
101	 <p>Background colour – optional</p> <p>Symbol colour – optional</p> <p>Outline / outline colour – optional</p>	ISO 7000-0659 (2004-01)	Biological risks