

SLOVENSKI STANDARD

SIST EN 61010-2-081:2003

01-marec-2003

Varnostne zahteve za električno opremo za meritve, nadzorovanje in laboratorijsko uporabo - 2-081. del: Posebne zahteve za avtomatsko in polavtomatsko laboratorijsko opremo, ki se uporablja za analizo in druge namene

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

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte -- Teil 2-081: Besondere Anforderungen an automatische und semiautomatische Laborgeräte für Analysen und andere Zwecke

Règles de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire -- Partie 2-081: Prescriptions particulières pour les appareils de laboratoire, automatiques et semi-automatiques, destinés à l'analyse et autres usages

Ta slovenski standard je istoveten z: EN 61010-2-081:2002

ICS:

19.080	Električno in elektronsko preskušanje	Electrical and electronic testing
71.040.10	Kemijski laboratoriji. Laboratorijska oprema	Chemical laboratories. Laboratory equipment

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EUROPEAN STANDARD

EN 61010-2-081

NORME EUROPÉENNE

EUROPÄISCHE NORM

June 2002

ICS 19.080; 71.040.10

English version

**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**
(IEC 61010-2-081:2001)

Règles de sécurité pour appareils
électriques de mesurage, de régulation
et de laboratoire

Partie 2-081: Prescriptions particulières
pour les appareils de laboratoire,
automatiques et semi-automatiques,
destinés à l'analyse et autres usages
(CEI 61010-2-081:2001)

Sicherheitsbestimmungen für elektrische
Mess-, Steuer-, Regel- und Laborgeräte
Teil 2-081: Besondere Anforderungen
an automatische und semiautomatische
Laborgeräte für Analysen und andere
Zwecke

(IEC 61010-2-081:2001)

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This European Standard was approved by CENELEC on 2002-03-01. CENELEC 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 Central Secretariat or to any CENELEC 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 CENELEC member into its own language and notified to the Central Secretariat has the same status as the official versions.

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

CENELEC

European Committee for Electrotechnical Standardization
Comité Européen de Normalisation Electrotechnique
Europäisches Komitee für Elektrotechnische Normung

Central Secretariat: rue de Stassart 35, B - 1050 Brussels

Foreword

The text of document 66/260/FDIS, future edition 1 of IEC 61010-2-081, prepared by IEC TC 66, Safety of measuring, control, and laboratory equipment, was submitted to the IEC-CENELEC parallel vote and was approved by CENELEC as EN 61010-2-081 on 2002-03-01.

The following dates were fixed:

- latest date by which the EN has to be implemented
at national level by publication of an identical
national standard or by endorsement (dop) 2002-12-01
- latest date by which the national standards conflicting
with the EN have to be withdrawn (dow) 2005-03-01

This Part 2-081 is to be used in conjunction with EN 61010-1:2001, Safety requirements for electrical equipment for measurement, control and laboratory use -- Part 1: General requirements.

This Part 2-081 supplements or modifies the corresponding clauses of EN 61010-1 so as to convert it into the European Standard: Safety requirements for automatic and semi-automatic laboratory equipment for analysis and other purposes.

Where a particular clause or subclause of Part 1 is not mentioned in this Part 2-081, that clause or subclause applies as far as is reasonable. Where this Part 2-081 states "addition", "modification" or "replacement", the relevant text of Part 1 is to be adapted accordingly.

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In this standard:

- 1) the following print types are used: [SIST EN 61010-2-081:2003](https://standards.iteh.ai/catalog/standards/sist/493ca04c-94cd-419c-b7e2-2c057cd432a5/sist-en-61010-2-081-2003)
 - 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 or figures which are additional to those in Part 1 are numbered starting from 101, additional annexes are lettered AA, BB, etc.

Annexes designated "normative" are part of the body of the standard.

Annexes designated "informative" are given for information only.

In this standard, annexes AA, BB and ZA are normative.

Annex ZA has been added by CENELEC.

Endorsement notice

The text of the International Standard IEC 61010-2-081:2001 was approved by CENELEC as a European Standard without any modification.

Editorial modification to IEC 61010-2-81:

Replace figure AA.1 by the following (from EN ISO 14971:2000):

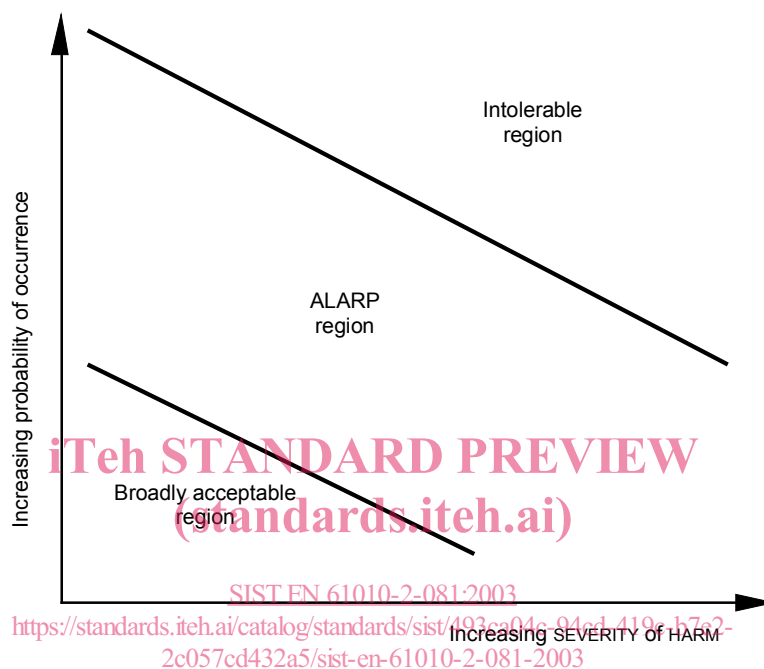


Figure AA.1 – Risk acceptability

Annex ZA
(normative)**Normative references to international publications
with their corresponding European publications***Addition to annex ZA of EN 61010-1:*

<u>Publication</u>	<u>Year</u>	<u>Title</u>	<u>EN/HD</u>	<u>Year</u>
IEC 60068-2-75	1997	Environmental testing – Part 2-75: Tests – Test Eh: Hammer tests	EN 60068-2-75	1997

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NORME INTERNATIONALE INTERNATIONAL STANDARD

**CEI
IEC**

61010-2-081

Première édition
First edition
2001-12

PUBLICATION GROUPÉE DE SÉCURITÉ
GROUP SAFETY PUBLICATION

Règles de sécurité pour appareils électriques de mesure, de régulation et de laboratoire –

Partie 2-081:

Prescriptions particulières pour les appareils de
laboratoire, automatiques et semi-automatiques,
destinés à l'analyse et autres usages

**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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Commission Electrotechnique Internationale
International Electrotechnical Commission
Международная Электротехническая Комиссия

CODE PRIX
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Pour prix, voir catalogue en vigueur
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[Index of defined terms](#) [shai/catalog/standards/sist/493ca04c-94cd-419c-b7e2-2c057cd432a5/sist-en-61010-2-081-2003](#)

[Annex AA \(normative\) Risk management](#)

[Annex BB \(normative\) Impact spring hammer \(see 8.2\)](#)

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**

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the 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, the IEC publishes International Standards. 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. The 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 the 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 National Committees.
- 3) The documents produced have the form of recommendations for international use and are published in the form of standards, technical specifications, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.
- 5) The IEC provides no marking procedure to indicate its approval and cannot be rendered responsible for any equipment declared to be in conformity with one of its standards.
- 6) Attention is drawn to the possibility that some of the elements of this International Standard may be the subject of patent rights. The IEC shall not be held responsible for identifying any or all such patent rights.

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.

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

FDIS	Report on voting
66/260/FDIS	66/269/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 3.

This part 2 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the second edition (2001). Consideration may be given to future editions of, or amendments to, IEC 61010-1.

This part 2 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Safety 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, that subclause applies as far as is reasonable. Where this part 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 or figures which are additional to those in part 1 are numbered starting from 101; additional annexes are lettered starting from AA.

Annexes AA and BB form an integral part of this standard.

The committee has decided that the contents of this publication will remain unchanged until 2004. At this date, the publication 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 Scope

Replacement:

This part 2 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 standard.

Examples of equipment within the scope of this standard 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 standards of IEC 61010 as well as within the scope of this standard, it will also need to meet the requirements of those other parts 2 standards.

1.2 Object

1.2.1 Aspects included in scope

Replacement:

Replace the first sentence by the following:

The purpose of this standard is to ensure that the design and methods of construction used provide a high degree of protection at a TOLERABLE RISK for the OPERATOR and the surrounding area, using RISK management where specified (see 7.2.101 and annex AA).