

**SLOVENSKI STANDARD**  
**SIST EN 61010-2-020:2017****01-september-2017****Nadomešča:****SIST EN 61010-2-020:2007**

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**Varnostne zahteve za električno opremo za meritve, nadzor in laboratorijsko uporabo - 2-020. del: Posebne zahteve za laboratorijske centrifuge (IEC 61010-2-020:2016)**

Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 2-020: Particular requirements for laboratory centrifuges (IEC 61010-2-020:2016)

**iTeh STANDARD PREVIEW****(standards.iteh.ai)**

Sicherheitsbestimmungen für elektrische Mess-, Steuer-, Regel- und Laborgeräte - Teil 2-020: Besondere Anforderungen an Laborzentrifugen (IEC 61010-2-020:2016)

[SIST EN 61010-2-020:2017](https://standards.iteh.ai/catalog/standards/sist/6378b044-290d-408a-8c86-57b6412b4010/sist-en-61010-2-020-2017)[https://standards.iteh.ai/catalog/standards/sist/6378b044-290d-408a-8c86-](https://standards.iteh.ai/catalog/standards/sist/6378b044-290d-408a-8c86-57b6412b4010/sist-en-61010-2-020-2017)

Règles de sécurité pour appareils électriques de mesure, de régulation et de laboratoire - Partie 2-020: Exigences particulières pour centrifugeuses de laboratoire (IEC 61010-2-020:2016)

**Ta slovenski standard je istoveten z: EN 61010-2-020:2017****ICS:**

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

**SIST EN 61010-2-020:2017****en,fr,de**

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EUROPEAN STANDARD

**EN 61010-2-020**

NORME EUROPÉENNE

EUROPÄISCHE NORM

April 2017

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Supersedes EN 61010-2-020:2006

English Version

**Safety requirements for electrical equipment for measurement,  
control, and laboratory use - Part 2-020: Particular requirements  
for laboratory centrifuges  
(IEC 61010-2-020:2016)**

Règles de sécurité pour appareils électriques de mesurage,  
de régulation et de laboratoire - Partie 2-020: Exigences  
particulières pour centrifugeuses de laboratoire  
(IEC 61010-2-020:2016)

Sicherheitsbestimmungen für elektrische Mess-, Steuer-,  
Regel- und Laborgeräte - Teil 2-020: Besondere  
Anforderungen an Laborzentrifugen  
(IEC 61010-2-020:2016)

This European Standard was approved by CENELEC on 2016-07-01. 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 CEN-CENELEC Management Centre 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 CEN-CENELEC Management Centre has the same status as the official versions.

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

**CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels**

**EN 61010-2-020:2017****European foreword**

The text of document 66/542/CDV, future edition 3 of IEC 61010-2-020, prepared by IEC/TC 66 "Safety of measuring, control and laboratory equipment" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61010-2-020:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-10-28
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-04-28

This document supersedes EN 61010-2-020:2006.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CENELEC [and/or CEN] shall not be held responsible for identifying any or all such patent rights.

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**Endorsement notice**

SIST EN 61010-2-020:2017

The text of the International Standard IEC 61010-2-020:2016 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following note has to be added for the standards indicated:

**Addition**

IEC 60034 (series)

NOTE Harmonized as EN 60034 (series).

## Annex ZA (normative)

### Normative references to international publications with their corresponding European publications

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.

NOTE 1 When an International Publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

NOTE 2 Up-to-date information on the latest versions of the European Standards listed in this annex is available here: [www.cenelec.eu](http://www.cenelec.eu).

#### Addition

<u>Publication</u>	<u>Year</u> series	<u>Title</u>	<u>EN/HD</u>	<u>Year</u> series
ISO 3864		Graphical symbols - Safety colours and-safety signs - Part 1: Design principles for safety signs and safety markings		

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IEC 61010-2-020

Edition 3.0 2016-05

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE

GROUP SAFETY PUBLICATION  
PUBLICATION GROUPEE DE SÉCURITÉ

**Safety requirements for electrical equipment for measurement, control, and laboratory use –  
Part 2-020: Particular requirements for laboratory centrifuges**

**Exigences de sécurité pour appareils électriques de mesurage, de régulation et de laboratoire –  
Partie 2-020: Exigences particulières pour centrifugeuses de laboratoire**

INTERNATIONAL  
ELECTROTECHNICAL  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

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

### Part 2-020: Particular requirements for LABORATORY CENTRIFUGES

#### 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.
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International Standard IEC 61010-2-020 has been prepared by IEC technical committee 66: Safety of measuring, control and laboratory equipment.

This third edition cancels and replaces the second edition published in 2006. It constitutes a technical revision and includes the following significant changes from the second edition:

- a) This Part 2 is established on the basis of the third edition (2010) of IEC 61010-1. The changes listed in its foreword affect this Part 2, too.
- b) The language has been updated to reflect current terminology for LABORATORY CENTRIFUGES used in the industry today.

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:

CDV	Report on voting
66/542/CDV	66/565A/RVC

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.

This Part 2-020 is intended to be used in conjunction with IEC 61010-1. It was established on the basis of the third edition (2010).

This Part 2-020 supplements or modifies the corresponding clauses in IEC 61010-1 so as to convert that publication into the IEC standard: *Safety requirements for LABORATORY CENTRIFUGES*.

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" or "replacement", the relevant requirement, test specification or note in Part 1 should be adapted accordingly.

In this standard:

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

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

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.

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

## Part 2-020: Particular requirements for laboratory centrifuges

### 1 Scope and object

This clause of Part 1 is applicable except as follows:

#### 1.1.1 Scope

*Replacement:*

This Part 2 is applicable to electrically powered LABORATORY CENTRIFUGES.

This group safety publication is primarily intended to be used as a product safety standard for the products mentioned in the scope, but shall also be used by technical committees in the preparation of its publications for products similar to those mentioned in the scope of this standard, in accordance with the principles laid down in IEC Guide 104 and ISO/IEC Guide 51.

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NOTE 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 Part 2 standards.

#### 1.1.2 Equipment excluded from scope

*Addition:*

<https://standards.iteh.ai/catalog/standards/sist/6378b044-290d-408a-8c86-f70b6a33bc0b/sist-en-61010-2-020-2017>

*Add the following new item:*

- aa) IEC 60034 (Rotating electrical machinery);

### 1.2 Object

#### 1.2.1 Aspects included in scope

*Addition:*

*Add the following new items:*

- aa) contact with moving parts (see 7.3);
- bb) LABORATORY CENTRIFUGE movement during any DISRUPTION (see 7.3.101);
- cc) high energy chemical reaction after ROTOR DISRUPTION (see 7.7.2.2 l));
- dd) ineffectiveness of BIOSEALS (see 13.101)

#### 1.2.2 Aspects excluded from scope

*Addition:*

*Add the following new items:*

- aa) additional precautions which may need to be observed when centrifuging materials which are flammable or explosive (see 5.4.101);

- bb) additional precautions which may need to be observed when centrifuging materials that could react chemically with sufficient vigour to cause a HAZARD (see 5.4.101).

## 1.4 Environmental conditions

### 1.4.1 Normal environmental conditions

*Replacement:*

*Replace item c) by the following:*

- c) temperature 2 °C to 40 °C;

### 1.4.2 Extended environmental conditions

*Replacement:*

*Replace item c) by the following:*

- c) ambient temperatures below 2 °C or above 40 °C;

## 2 Normative references

This clause of Part 1 is applicable except as follows:

*Addition:*

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ISO 3864 (all parts), *Graphical symbols – Safety colours and safety signs*  
[SIST EN 61010-2-020:2017](#)

## 3 Terms and definitions

<https://standards.iteh.ai/catalog/standards/sist/6378b044-290d-408a-8c86-f70b6a33bc0b/sist-en-61010-2-020-2017>

This clause of Part 1 is applicable except as follows:

### 3.1 Equipment and states of equipment

*Addition:*

*Add the following new terms and definitions:*

#### 3.1.101

##### LABORATORY CENTRIFUGE

apparatus intended for laboratory use that applies a centrifuging effect to sample materials

#### 3.1.102

##### CENTRIFUGE-ROTOR COMBINATION

LABORATORY CENTRIFUGE and ROTOR ASSEMBLY that are intended to operate together and which have to be evaluated together

#### 3.1.103

##### DISRUPTION

event in which the ROTOR ASSEMBLY, or part of it, fails or becomes detached during rotation