



UL 61010-2-020 (IEC 61010-2-020:2016)

STANDARD FOR SAFETY

Safety Requirements for Electrical
Equipment for Measurement, Control,
and Laboratory Use – Part 2-020:
Particular Requirements for Laboratory
Centrifuges

ULNORM.COM : Click to view the full PDF of UL 61010-2-020 2022

ULNORM.COM : Click to view the full PDF of UL 61010-2-020 2022

UL Standard for Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-020: Particular Requirements for Laboratory Centrifuges, UL 61010-2-020

Third Edition, Dated December 15, 2016

Summary of Topics

This revision of ANSI/UL 61010-2-020 dated February 4, 2022 is being issued to update the title page to reflect the most recent designation as a Reaffirmed American National Standard (ANS). No technical changes have been made.

Adoption of IEC 61010-2-020, Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 2-020: Particular Requirements for Laboratory Centrifuges (third edition issued May 2016) as a new IEC-based UL standard, UL 61010-2-020, with no National Differences.

Text that has been changed in any manner or impacted by UL's electronic publishing system is marked with a vertical line in the margin.

The requirements are substantially in accordance with Proposal(s) on this subject dated December 17, 2021.

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted in any form by any means, electronic, mechanical photocopying, recording, or otherwise without prior permission of UL.

UL provides this Standard "as is" without warranty of any kind, either expressed or implied, including but not limited to, the implied warranties of merchantability or fitness for any purpose.

In no event will UL be liable for any special, incidental, consequential, indirect or similar damages, including loss of profits, lost savings, loss of data, or any other damages arising out of the use of or the inability to use this Standard, even if UL or an authorized UL representative has been advised of the possibility of such damage. In no event shall UL's liability for any damage ever exceed the price paid for this Standard, regardless of the form of the claim.

Users of the electronic versions of UL's Standards for Safety agree to defend, indemnify, and hold UL harmless from and against any loss, expense, liability, damage, claim, or judgment (including reasonable attorney's fees) resulting from any error or deviation introduced while purchaser is storing an electronic Standard on the purchaser's computer system.

No Text on This Page

ULNORM.COM : Click to view the full PDF of UL 61010-2-020 2022

DECEMBER 15, 2016
(Title Page Reprinted: February 4, 2022)



ANSI/UL 61010-2-020-2016 (R2022)

1

UL 61010-2-020 (IEC 61010-2-020:2016)

**Standard for Safety Requirements for Electrical Equipment for
Measurement, Control, and Laboratory Use – Part 2-020: Particular
Requirements for Laboratory Centrifuges**

Third Edition

December 15, 2016

This ANSI/UL Standard for Safety consists of the Third Edition including revisions through February 4, 2022.

The most recent designation of ANSI/UL 61010-2-020 as a Reaffirmed American National Standard (ANS) occurred on February 4, 2022. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, or Preface. The IEC Foreword is also excluded from the ANSI approval of IEC-based standards.

Comments or proposals for revisions on any part of the Standard may be submitted to UL at any time. Proposals should be submitted via a Proposal Request in UL's On-Line Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

UL's Standards for Safety are copyrighted by UL. Neither a printed nor electronic copy of a Standard should be altered in any way. All of UL's Standards and all copyrights, ownerships, and rights regarding those Standards shall remain the sole and exclusive property of UL.

COPYRIGHT © 2022 UNDERWRITERS LABORATORIES INC.

No Text on This Page

ULNORM.COM : Click to view the full PDF of UL 61010-2-020 2022

CONTENTS

PREFACE	5
FOREWORD	7
1 Scope and object	9
1.1.1 Scope	9
1.1.2 Equipment excluded from scope	9
1.2 Object	9
1.4 Environmental conditions	10
2 Normative references	10
3 Terms and definitions	10
3.1 Equipment and states of equipment	10
3.2 Parts and accessories	11
3.5 Safety terms	11
4 Tests	11
5 Marking and documentation	12
5.1 Marking	12
5.4.2 Equipment ratings	12
5.4.3 Equipment installation	12
5.4.4 Equipment operation	13
5.4.5 Equipment maintenance	13
5.4.101 Hazardous substances	14
5.4.102 Cleaning and decontamination	14
5.4.103 Effects of chemicals and environmental influences	15
6 Protection against electric shock	15
7 Protection against mechanical HAZARDS	15
7.1 General	15
7.3 Moving parts	15
7.4 Stability	17
7.7 Expelled parts	18
8 Mechanical resistance to shock and impact	22
9 Protection against the spread of fire	23
10 Equipment temperature limits and resistance to heat	23
11 Protection against HAZARDS from fluids	23
11.2 Cleaning	23
11.3 Spillage	24
11.101 Refrigerated and water-cooled LABORATORY CENTRIFUGES	24
12 Protection against radiation, including laser sources, and against sonic and ultrasonic pressure	24
13 Protection against liberated gases and substances, explosion and implosion	24
13.101 Microbiological materials	24
14 Components	25
15 Protection by interlocks	25
16 HAZARDS resulting from application	25
17 RISK assessment	25

Annexes

Annex L Index of defined terms

Annex AA (normative) Dynamic microbiological test method for BIOSEALS

AA.1	General.....	28
AA.2	Equipment and method	28
	AA.2.1 CENTRIFUGE.....	28
	AA.2.2 Test cabinet or test room.....	28
	AA.2.3 Test suspension	28
	AA.2.4 Test plates	28
	AA.2.5 Sampling equipment.....	28
	AA.2.6 Fumigation equipment	28
	AA.2.7 Assessment of samples	29
AA.3	Test procedure.....	29
	AA.3.1 Checking of test suspension	29
	AA.3.2 Test method	29
AA.4	Pass and fail criteria.....	30

Annex BB (informative) General guidance and rationale for particular subclauses

BB.1	Subclause 1.4 Environmental conditions.....	31
BB.2	Subclause 3.5.102 mca (MAXIMUM CREDIBLE ACCIDENT)	31
BB.3	Subclause 5.4.102 relation to Table 101	31
BB.4	Subclause 7.3.101.1 LID (first paragraph).....	31
BB.5	Subclause 7.3.101.2 Exception.....	32
BB.6	Subclause 7.4.101 LABORATORY CENTRIFUGE movement during malfunction.....	32
	BB.6.1 Sub-clause 7.7.1 a) Protection against expelled parts or projected parts.....	33
	BB.6.2 Sub-clause 7.7.1 Conformity statement – paragraph 2	33
BB.7	Subclause 13.101	33
BB.8	Reference documents	34

Annex CC (informative) General guidance for an empirical method to determine the kinetic energy of a ROTOR**Bibliography**

ULNORM.COM : Click to view the full PDF of UL 61010-2-020 2022