



CSA C22.2 No. 60335-2-89:21
Household and similar electrical appliances — Safety —
Part 2-89: Particular requirements for commercial refrigerating
appliances and ice-makers with an incorporated or remote
refrigerant unit or motor-compressor
(IEC 60335-2-89:2019, MOD)



Legal Notice for Standards

Canadian Standards Association (operating as “CSA Group”) develops standards through a consensus standards development process approved by the Standards Council of Canada. This process brings together volunteers representing varied viewpoints and interests to achieve consensus and develop a standard. Although CSA Group administers the process and establishes rules to promote fairness in achieving consensus, it does not independently test, evaluate, or verify the content of standards.

Disclaimer and exclusion of liability

This document is provided without any representations, warranties, or conditions of any kind, express or implied, including, without limitation, implied warranties or conditions concerning this document’s fitness for a particular purpose or use, its merchantability, or its non-infringement of any third party’s intellectual property rights. CSA Group does not warrant the accuracy, completeness, or currency of any of the information published in this document. CSA Group makes no representations or warranties regarding this document’s compliance with any applicable statute, rule, or regulation.

IN NO EVENT SHALL CSA GROUP, ITS VOLUNTEERS, MEMBERS, SUBSIDIARIES, OR AFFILIATED COMPANIES, OR THEIR EMPLOYEES, DIRECTORS, OR OFFICERS, BE LIABLE FOR ANY DIRECT, INDIRECT, OR INCIDENTAL DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES, HOWSOEVER CAUSED, INCLUDING BUT NOT LIMITED TO SPECIAL OR CONSEQUENTIAL DAMAGES, LOST REVENUE, BUSINESS INTERRUPTION, LOST OR DAMAGED DATA, OR ANY OTHER COMMERCIAL OR ECONOMIC LOSS, WHETHER BASED IN CONTRACT, TORT (INCLUDING NEGLIGENCE), OR ANY OTHER THEORY OF LIABILITY, ARISING OUT OF OR RESULTING FROM ACCESS TO OR POSSESSION OR USE OF THIS DOCUMENT, EVEN IF CSA GROUP HAS BEEN ADVISED OF THE POSSIBILITY OF SUCH DAMAGES, INJURY, LOSS, COSTS, OR EXPENSES.

In publishing and making this document available, CSA Group is not undertaking to render professional or other services for or on behalf of any person or entity or to perform any duty owed by any person or entity to another person or entity. The information in this document is directed to those who have the appropriate degree of experience to use and apply its contents, and CSA Group accepts no responsibility whatsoever arising in any way from any and all use of or reliance on the information contained in this document.

CSA Group is a private not-for-profit company that publishes voluntary standards and related documents. CSA Group has no power, nor does it undertake, to enforce compliance with the contents of the standards or other documents it publishes.

Intellectual property rights and ownership

As between CSA Group and the users of this document (whether it be in printed or electronic form), CSA Group is the owner, or the authorized licensee, of all works contained herein that are protected by copyright, all trade-marks (except as otherwise noted to the contrary), and all inventions and trade secrets that may be contained in this document, whether or not such inventions and trade secrets are protected by patents and applications for patents. Without limitation, the unauthorized use, modification, copying, or disclosure of this document may violate laws that protect CSA Group’s and/or others’ intellectual property and may give rise to a right in CSA Group and/or others to seek legal redress for such use, modification, copying, or disclosure. To the extent permitted by licence or by law, CSA Group reserves all intellectual property rights in this document.

Patent rights

Attention is drawn to the possibility that some of the elements of this standard may be the subject of patent rights. CSA Group shall not be held responsible for identifying any or all such patent rights. Users of this standard are expressly advised that determination of the validity of any such patent rights is entirely their own responsibility.

Authorized use of this document

This document is being provided by CSA Group for informational and non-commercial use only. The user of this document is authorized to do only the following:

If this document is in electronic form:

- load this document onto a computer for the sole purpose of reviewing it;
- search and browse this document; and
- print this document if it is in PDF format.

Limited copies of this document in print or paper form may be distributed only to persons who are authorized by CSA Group to have such copies, and only if this Legal Notice appears on each such copy.

In addition, users may not and may not permit others to

- alter this document in any way or remove this Legal Notice from the attached standard;
- sell this document without authorization from CSA Group; or
- make an electronic copy of this document.

If you do not agree with any of the terms and conditions contained in this Legal Notice, you may not load or use this document or make any copies of the contents hereof, and if you do make such copies, you are required to destroy them immediately. Use of this document constitutes your acceptance of the terms and conditions of this Legal Notice.



This is a preview. [Click here to purchase the full publication.](#)

Standards Update Service

CSA C22.2 No. 60335-2-89:21 October 2021

Title: *Household and similar electrical appliances — Safety — Part 2-89: Particular requirements for commercial refrigerating appliances and ice-makers with an incorporated or remote refrigerant unit or motor-compressor*

To register for e-mail notification about any updates to this publication

- go to www.csagroup.org/store/
- click on **Product Updates**

The **List ID** that you will need to register for updates to this publication is **2428884**.

If you require assistance, please e-mail techsupport@csagroup.org or call 416-747-2233.

Visit CSA Group's policy on privacy at www.csagroup.org/legal to find out how we protect your personal information.

Canadian Standards Association (operating as “CSA Group”), under whose auspices this National Standard has been produced, was chartered in 1919 and accredited by the Standards Council of Canada to the National Standards system in 1973. It is a not-for-profit, nonstatutory, voluntary membership association engaged in standards development and certification activities.

CSA Group standards reflect a national consensus of producers and users — including manufacturers, consumers, retailers, unions and professional organizations, and governmental agencies. The standards are used widely by industry and commerce and often adopted by municipal, provincial, and federal governments in their regulations, particularly in the fields of health, safety, building and construction, and the environment.

More than 10 000 members indicate their support for CSA Group’s standards development by volunteering their time and skills to Committee work.

CSA Group offers certification and testing services in support of and as an extension to its standards development activities. To ensure the integrity of its certification process, CSA Group regularly and continually audits and inspects products that bear the CSA Group Mark.

In addition to its head office and laboratory complex in Toronto, CSA Group has regional branch offices in major centres across Canada and inspection and testing agencies in fourteen countries. Since 1919, CSA Group has developed the necessary expertise to meet its corporate mission: CSA Group is an independent service organization whose mission is to provide an open and effective forum for activities facilitating the exchange of goods and services through the use of standards, certification and related services to meet national and international needs.

For further information on CSA Group services, write to
CSA Group
178 Rexdale Boulevard
Toronto, Ontario, M9W 1R3
Canada

A National Standard of Canada is a standard developed by a Standards Council of Canada (SCC) accredited Standards Development Organization, in compliance with requirements and guidance set out by SCC. More information on National Standards of Canada can be found at www.scc.ca.

SCC is a Crown corporation within the portfolio of Innovation, Science and Economic Development (ISED) Canada. With the goal of enhancing Canada's economic competitiveness and social well-being, SCC leads and facilitates the development and use of national and international standards. SCC also coordinates Canadian participation in standards development, and identifies strategies to advance Canadian standardization efforts.

Accreditation services are provided by SCC to various customers, including product certifiers, testing laboratories, and standards development organizations. A list of SCC programs and accredited bodies is publicly available at www.scc.ca.

Standards Council of Canada
600-55 Metcalfe Street
Ottawa, Ontario, K1P 6L5
Canada



Cette Norme Nationale du Canada est disponible en versions française et anglaise.

Although the intended primary application of this Standard is stated in its Scope, it is important to note that it remains the responsibility of the users to judge its suitability for their particular purpose.

**A trademark of the Canadian Standards Association, operating as “CSA Group”*

CSA Technical Committee on Consumer and Commercial Products

S. Lawrence	Scarborough, Ontario, Canada <i>Category: General Interest</i>	<i>Chair</i>
F. LaRicca	Health Canada, Ottawa, Ontario, Canada <i>Category: Regulatory Authority</i>	<i>Vice-Chair</i>
G. Benjamin	ABB Électrification Canada SRI, Dorval, Québec, Canada <i>Category: Producer Interest</i>	
N. Breton	Electrical Safety Authority (ESA), Mississauga, Ontario, Canada <i>Category: Regulatory Authority</i>	
D. Brière	CSA Group, Toronto, Ontario, Canada <i>Category: General Interest</i>	
W. J. Burr	Burr and Associates, Campbell River, British Columbia, Canada <i>Category: User Interest</i>	
J. E. Evans	Evans Regulatory Certification, Jasper, Ontario, Canada <i>Category: User Interest</i>	
W. Hansen	La Crosse, Wisconsin, USA <i>Category: User Interest</i>	
J. A. Huzar	Consumers Council of Canada, Victoria, British Columbia, Canada <i>Category: User Interest</i>	
D. Lenasi	Signify Canada Ltd., Langley, British Columbia, Canada <i>Category: Producer Interest</i>	
B. K. Lowe	Vancouver, British Columbia, Canada <i>Category: General Interest</i>	

S. Mercier	Régie du bâtiment du Québec, Montréal, Québec, Canada <i>Category: Regulatory Authority</i>	
J. C. Potts	Nunavut Department of Community and Government Services, Iqaluit, Nunavut, Canada <i>Category: Regulatory Authority</i>	
J. Pourkarimi	IBM Canada, Markham, Ontario, Canada <i>Category: Producer Interest</i>	
J.-L. Renard	Miele, Vaughan, Ontario, Canada <i>Category: Producer Interest</i>	
A. Z. Tsisserev	AES Engineering Ltd., Vancouver, British Columbia, Canada <i>Category: General Interest</i>	
M. B. Williams	Association of Home Appliance Manufacturers (AHAM), Washington, DC, USA <i>Category: Producer Interest</i>	
A. Andronesu	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

CSA Subcommittee on Household Appliances for Refrigeration

M. Tepic	Minus Forty Technologies Corp., Georgetown, Ontario, Canada	<i>Vice-Chair</i>
J. Ban	PSC International Division of 1019051 Ontario Limited, Richmond Hill, Ontario, Canada	
K. W. Bartholomaus	Paul Mueller Company, Springfield, Missouri, USA	
R. Bellina	TESLA, Inc., Fremont, California, USA	
M. Chowdhury	GE Appliances, a Haier company, Washington, DC, USA	
S. Daley	GEA Farm Technologies, Inc., Galesville, Wisconsin, USA	
W. Gao	CSA Group, Guangzhou, China	
S. E. Gatz	Whirlpool Corporation, Amana, Iowa, USA	
D. V. Grandin	Bureau Veritas Consumer Products Services, Buffalo, New York, USA	
A. C. Granzow	NIBCO Inc., Elkhart, Indiana, USA	
M. Hamilton	Greenway Home Products, Guelph, Ontario, Canada	
H. Lee	LG Electronics Inc., Changwon, South Korea	
T. Li Jiayin	GE Appliances, a Haier company, Shanghai, China	

M. A. Li-Ying	Honeywell Limited, Mississauga, Ontario, Canada	
T. P. McRae	The Chemours Company, Mississauga, Ontario, Canada	
M. Mongeau	Refplus Inc., Saint-Hubert, Québec, Canada	
D. Perroni	BSH Hausgeräte GmbH, Giengen, Germany	
J.-L Renard	Miele, Vaughan, Ontario, Canada	
S. Rizvi	Marmon Foodservice Technologies, Carol Stream, Illinois, USA	
S. Schaefer	Hoshizaki America, Incorporated, Peachtree City, Georgia, USA	
R. Shebik	Husmann Corporation, Bridgeton, Missouri, USA	
C. Strickland	Electrolux Home Products North America, a division of WCI, Inc., Anderson, South Carolina, USA	
C. Wen	Guangzhou Midea Hualing Refrigerator Co., Ltd., Guangzhou, Guangdong, China	
K. Woods	QBD Cooling Systems Inc., Brampton, Ontario, Canada	
G. Woyczynski	Association of Home Appliance Manufacturers (AHAM), Washington, DC, USA	
G. M. Yui	Electrotemp Technologies China Inc., Beilun, China	
U. Edelman	CSA Group, Toronto, Ontario, Canada	<i>Project Manager</i>

National Standard of Canada

CSA C22.2 No. 60335-2-89:21

***Household and similar electrical appliances — Safety —
Part 2-89: Particular requirements for commercial
refrigerating appliances and ice-makers with an
incorporated or remote refrigerant unit
or motor-compressor
(IEC 60335-2-89:2019, MOD)***

Note: For brevity, this Standard will be referred to as “CSA C22.2 No. 60335-2-89” throughout.

OCTOBER 27, 2021

This national standard is based on publication IEC 60335-2-89, Third Edition (2019),
including Corrigendum 1 dated September 2019.

*Prepared by
International Electrotechnical Commission*



Reviewed by



CSA Group
CSA C22.2 No. 60335-2-89:21
Second Edition
(IEC 60335-2-89:2019, MOD)



Underwriters Laboratories Inc.
UL 60335-2-89
Second Edition

ICS 97.130.20



ANSI/UL 60335-2-89-2021

This is a preview. [Click here to purchase the full publication.](#)

Commitment for Amendments

This standard is issued jointly by the Canadian Standards Association (operating as “CSA Group”) and Underwriters Laboratories Inc. (UL). Comments or proposals for revisions on any part of the standard may be submitted to CSA Group or UL at anytime. Revisions to this standard will be made only after processing according to the standards development procedures of CSA Group and UL. CSA Group and UL will issue revisions to this standard by means of a new edition or revised or additional pages bearing their date of issue.

ISBN 978-1-4883-3492-4 © 2021 Canadian Standards Association

All rights reserved. No part of this publication may be reproduced in any form whatsoever without the prior permission of the publisher.

This Standard is subject to review within five years from the date of publication, and suggestions for its improvement will be referred to the appropriate committee. The technical content of IEC and ISO publications is kept under constant review by IEC and ISO. To submit a proposal for change, please send the following information to inquiries@csagroup.org and include "Proposal for change" in the subject line: Standard designation (number); relevant clause, table, and/or figure number; wording of the proposed change; and rationale for the change.

To purchase CSA Group Standards and related publications, visit CSA Group's Online Store at www.csagroup.org/store/ or call toll-free 1-800-463-6727 or 416-747-4044.

Copyright © 2021 Underwriters Laboratories Inc.

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.

This ANSI/UL Standard for Safety consists of the Second Edition. The most recent designation of ANSI/UL 60335-2-89 as an American National Standard (ANSI) occurred on October 27, 2021. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page (front and back), or the Preface. The National Difference Page and IEC Foreword are 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>.

To purchase UL Standards, visit UL's Standards Sales Site at <http://www.shopulstandards.com/HowToOrder.aspx> or call toll-free 1-888-853-3503.

CONTENTS

PREFACE	9
NATIONAL DIFFERENCES	13
FOREWORD	15
INTRODUCTION.....	19
1 Scope	21
1DV.1 Modification to replace the second paragraph in Clause 1 of the Part 2 with the following:	22
1DV.2 Modification to add the following after the second paragraph in Clause 1 of the Part 2:	22
1DV.3 Modification of the sixth paragraph in Clause 1 of the Part 2 by replacing it with the following:	23
1DV.4 Modification of Clause 1 of the Part 2 by adding the following paragraph:	23
1DV.5 Modification of Note 103 in Clause 1 of the Part 2 by replacing it with the following:	23
2 Normative references	23
2DV Modification of Clause 2 of the Part 2 to add the following normative references:	24
3 Terms and definitions.....	27
3.1.9DV Modify the third paragraph of Clause 3.1.9 in the Part 2 by replacing it with the following:	27
3.1.101DV Modify Note 1 to entry by replacing it with the following:.....	28
3.5 Definitions relating to types of appliances	28
3.5.101DV Modify Clause 3.5.101 of the Part 2 by adding the following:	28
3.6 Definitions relating to parts of an appliance	28
3.6.105DV Modification of Clause 3.6.105 in the Part 2 by replacing it with the following:	29
3.6DV Add the following definitions to Clause 3.6 of the Part 2:	30
3.7 Definitions relating to safety components.....	30
3.7.102DV Modify Clause 3.7.102 by replacing it with the following:	30
3.8 Definitions relating to miscellaneous matters	31
3.8DV Add the following definitions to Clause 3.8 of the Part 2:	31
4 General requirement	33
5 General conditions for the tests	34
5.2DV Modify Clause 5.2 in the Part 2 by adding the following:	34
5.7DV Modify Clause 5.7 by adding the following:.....	35
6 Classification	35
6.2DV Modification by adding the following to Clause 6.2 of the Part 1:	36
7 Marking and instructions	36
7.1DV.1 Modification of Clause 7.1 of the Part 2 to add the following dashed items after the first dashed item in the “Addition”:	38
7.1DV.2 Modification of Clause 7.1 of the Part 2 by adding the following below the list of dashed items in the “Addition”:.....	38
7.1DV.3 Modification of Clause 7.1 of the Part 2 by adding the following:	38
7.1DV.4 Modification of Clause 7.1 of the Part 2 by replacing the seventh dashed item in the “Addition” with the following:	39
7.1DV.5 Modification of Clause 7.1 of the Part 2 by adding the following to the fifth dashed item in the “Addition”:	39
7.1DV.6 Modification by adding the following to Clause 7.1 of the Part 2:	39
7.1DV.7 Modification by adding the following to Clause 7.1 of the Part 2:	39
7.1DV.8 Modification of Clause 7.1 of the Part 2 by adding the following dashed items after the first dashed item in the “Addition”:	40
7.1DV.9 Modification of Clause 7.1 of the Part 2 by adding the following:	40
7.1ADV Add Clauses 7.1ADV.1 to 7.1ADV.6 to Clause 7 of the Part 2:	40