ANSI Z83.19-2017 • CSA 2.35-2017

CSA Group

Gas-fired high-intensity infrared heaters

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ANSI Z83.19-2017 • CSA 2.35-2017, Gas-fired high-intensity infrared heaters

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ANSI Z83.19-2017 • CSA 2.35-2017

Gas-fired high-intensity infrared heaters

American National Standards Institute, Inc.

International Gas Advisory Council

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Preface

This is the third edition of ANSI Z83.19/CSA 2.35, *Gas-fired high intensity infrared heaters*. It supersedes the previous editions published in 2009 and 2001.

This Standard was prepared by the Z83/CSA Joint Technical Subcommittee on Standards for Gas-Fired Infrared Radiant Heaters, under the jurisdiction of the Technical Committee on Performance and Installation of Gas Burning Appliances and Related Accessories and the Strategic Steering Committee on Standards for Gas Appliances and Related Accessories, and had been formally approved by the Technical Committee(s), American National Standards Institute, and the Interprovincial Gas Advisory Council.

Interpretations: The Strategic Steering Committee on Standards for Gas Appliances and Related Accessories has provided the following direction for the interpretation of standards under its jurisdiction: "The literal text shall be used in judging compliance of products with the safety requirements of this Standard. When the literal text cannot be applied to the product, such as for new materials or construction, and when a relevant committee interpretation has not already been published, CSA Group's procedures for interpretation shall be followed to determine the intended safety principle."

Notes:

1) *Use of the singular does not exclude the plural (and vice versa) when the sense allows.*

2) *This standard contains SI (Metric) corresponding to the yard/pound quantities, the purpose being to allow the standard to be used in SI (Metric) units. (*Standard for use of the International System of Units (SI): The Modern Metric System, IEEE/ASTM SI 10 *or* ISO 80000-1:2009 Quantities and units– Part 1: General *are used as a guide in making metric conversion from yard/pound quantities.) If a value for a measurement and a corresponding value in other units are stated, the first stated value is to be regarded as the requirement. The given corresponding value may be approximate. If a value for a measurement and a corresponding value in other units are both specified as a quoted marking requirement, the first stated unit, or both shall be provided.*

3) *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 of the Standard to judge its suitability for their particular purpose.*

4) *This publication was developed by consensus, which is defined by* CSA Policy governing standardization — Code of good practice for standardization *as "substantial agreement. Consensus implies much more than a simple majority, but not necessarily unanimity". It is consistent with this definition that a member may be included in the Technical Committee list and yet not be in full agreement with all clauses of this Standard.*

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Committee interpretations are processed in accordance with the CSA Directives and guidelines governing standardization *and are available on the* Current Standards Activities *page at* ***standardsactivities.csa.ca***.

History of the development of the standard for Gas-fired high-intensity infrared heaters

Note: *This History is informative and is not part of the standard.*

With the onset of the Free Trade Agreement between the United States and Canada on January 2, 1988, significant attention was given to the harmonization of the United States and Canadian safety standards addressing gas-fired equipment for residential, commercial and industrial applications. It was believed that the elimination of the differences between the standards would remove potential trade barriers and provide an atmosphere in which North American manufacturers could market more freely in the United States and Canada. The harmonization of these standards was also seen as a step toward harmonization with international standards.

The draft harmonized standard was based on current coverage from the American National Standard for Gas-Fired Infrared Heaters, Z83.6-1990, and the Canadian Standard for Gas-Fired Infra-Red Heaters, CAN1-2.16-M81.

At the November 18, 1998 meeting of the Z21/(Interim) CSA Joint Subcommittee for Gas-Fired Infrared Heaters, the subcommittee approved the draft harmonized standard on Gas-Fired High-Intensity Infrared Heaters, Z83.19/CSA 2.35 for distribution for Public Review and Comment. The proposed draft harmonized standard was distributed for industry review on January 15, 1999.

At its October 1999 meeting, following reconsideration and modifications of the proposed draft standard for Gas-Fired High-Intensity Infrared Heaters, the subcommittee recommended the proposed draft standard to Accredited Standards Committee Z21/83 and the CSA Technical Committee on Gas Appliances and Related Accessories for approval.

The proposed draft harmonized standard for Gas-Fired High-Intensity Infrared Heaters was approved by the Z21/83 Committee on January 19, 2001, and by the CSA Technical Committee by letter ballot dated February 25, 2000.

The first edition of the harmonized American National Standard/CSA Standard for Gas-Fired High-Intensity Infrared Heaters was approved by the Canadian Interprovincial Gas Advisory Council on January 4, 2001 and by the American National Standards Institute, Inc., on March 14, 2001.

The second edition of the American National Standard/CSA Standard for Gas-Fired High-Intensity Infrared Heaters was approved by the Canadian Interprovincial Gas Advisory Council (IGAC) on February 11, 2009 and by the American National Standards Institute, Inc. (ANSI) on July 8, 2009.

This, the third edition of the American National Standard/CSA Standard for Gas-Fired High-Intensity Infrared Heaters was approved by the Canadian Interprovincial Gas Advisory Council (IGAC) on September 11, 2017 and by the American National Standards Institute, Inc. (ANSI) on October 11, 2017.

The previous editions of the Gas-Fired High-Intensity Infrared Heaters, and addendas thereto, approved by the IGAC and ANSI Institute, Inc. are as follows:

ANSI Z83.19-2001 • CSA 2.35-2001
ANSI Z83.19a-2002 • CSA 2.35a-2002
ANSI Z83.19b-2007 • CSA 2.35b-2007

ANSI Z83.19-2009 • CSA 2.35-2009
ANSI Z83.19a-2011 • CSA 2.35a-2011

The following identifies the designation and year of the harmonized standard:

ANSI Z83.19-2017 • CSA 2.35-2017

ANSI Z83.19-2017 • CSA 2.35-2017
Gas-fired high-intensity infrared heaters

1 Scope

1.1

This Standard applies to newly produced, gas-fired high-intensity infrared heaters (see Clause 3, Definitions), hereinafter referred to as heaters or appliances, constructed entirely of new, unused parts and materials with inputs up to and including 400,000 Btu per hour (117 228 W) per burner:

a) for use with natural gas;
b) for use with manufactured gas;
c) for use with mixed gas;
d) for use with propane gas;
e) for use with LP gas-air mixtures; or
f) convertible for use with natural gas and propane gas, when provision is made for the simple conversion from one gas to the other.

1.2

Heaters covered by this Standard are intended for installation in and heating of outdoor spaces or nonresidential indoor spaces and are intended for location where flammable gases or vapors are not generally present.

Although heaters covered by this Standard may, in certain instances, be suitable for application in industrial processes, this Standard does not cover industrial process burners.

1.3

High-intensity infrared heaters may be suspended overhead, angle mounted overhead, wall mounted, or floor mounted. Floor-mounted heaters may be free-standing and, when for outdoor installation, also may be portable to the extent defined in Clause 3, Definitions.

1.4

Overhead heaters complying with this Standard are suitable for use in:

a) aircraft hangars when installed in accordance with the Standard for *Aircraft Hangars,* NFPA 409; and
b) garages when installed in accordance with the Standard for *Parking Structures,* NFPA 88A, or the Standard for *Repair Garages,* NFPA 88B; or the *Canadian Natural Gas and Propane Installation Code,* CSA B149.1, and are so marked.

1.5

The heaters covered by this Standard may be:

a) designed for connection to a vent; or
b) not designed for connection to a vent.

1.6
The construction and performance of heaters covered by this Standard are specified in Clauses 4 and 5, respectively. The definitions for certain terms used are in Clause 3, Definitions.

1.7
If a value for measurement as given in this Standard is followed by an equivalent value in other units, the first stated value is to be regarded as the specification.

1.8
All references to “psi” are to be considered gauge pressures unless otherwise specified.

1.9
Special construction provisions applicable to an appliance designed for use with an optional listed conversion kit are outlined under Annex C, (Optional) Provisions for listed gas appliance conversion kits.

1.10
Annex A, Items Unique to the United States, contains provisions that are unique to the United States.

1.11
Annex B, Items Unique to Canada, contains provisions that are unique to Canada.

1.12
Special construction provisions applicable to an appliance designed for use with an optional listed conversion kit are outlined under Annex C, (Optional) Provisions for Listed Gas Appliances Conversion Kits.

1.13
Clause 2, Reference Publications, contains a list of standards specifically referenced in this Standard, and sources from which these reference standards may be obtained.

1.14
In this Standard, “shall” is used to express a requirement, i.e., a provision that the user shall satisfy in order to comply with the standard; “should” is used to express a recommendation or that which is advised but not required; and “may” is used to express an option or that which is permissible within the limits of the standard.

Notes accompanying clauses do not include requirements or alternative requirements; the purpose of a note accompanying a clause is to separate from the text explanatory or informative material.

Notes to tables and figures are considered part of the table or figure and may be written as requirements.

Annexes are designated normative (mandatory) or informative (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.

CSA Group

ANSI Z21.15-2009 (R2014) • CSA 9.1-2009 (R2014), ANSI Z21.15a-2012 (R2014) • CSA 9.1a-2012 (R2014), Addenda ANSI Z21.15b-2013 (R2014) • CSA 9.1b-2013 (R2014)
Manually Operated Gas Valves for Appliances, Appliance Connector Valves and Hose End Valves

ANSI Z21.18-2012 • CSA 6.3-2012
Gas Appliance Pressure Regulators

ANSI Z21.20-2005, ANSI Z21.20a-2008
Automatic Gas Ignition Systems and Components

ANSI Z21.21-2012 • CSA 6.5-2012
Automatic Valves for Gas Appliances

ANSI Z21.35-2005 (R2015) • CSA 6.8-2005 (R2015)
Pilot Gas Filters

ANSI Z21.77-2005 (R2015) • CSA 6.23-2005 (R2015)
Manually Operated Piezo-Electric Spark Gas Ignition Systems and Components

ANSI Z21.78-2010 • CSA 6.20-2010
Combination Gas Controls for Gas Appliances

CSA 2.17-M91 (R2014)
Gas-Fired Appliances for Use at High Altitudes

CAN1-2.21-M85 (R2015)
Gas-Fired Appliances for Outdoor Installation

CAN1-2.28-M81 (R1996) (withdrawn)
Gas-Fired Appliances Equipped With Electrically Operated Automatic Vent Damper Devices Provided as Integral Components

CAN1-6.4-M79 (R2011)
Automatic Gas Ignition Systems and Components

CSA B1.1
Unified American Screw Threads

CSA B149.1-15
Natural Gas and Propane Installation Code

CSA C22.1-15
Canadian Electrical Code, Part I

