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**ANSI Z83.20-2016 • CSA 2.34-2016**

# **Gas-fired tubular and low-intensity infrared heaters**

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**Gas-fired tubular and low-intensity**  
**infrared heaters**



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*Interprovincial Gas Advisory Council*



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# Preface

This is the third edition of ANSI Z83.20 • CSA 2.34, *Gas-fired tubular and low-intensity infrared heaters*. It supersedes the previous editions published in 2008 and 2001.

This Standard was prepared by the Z21/CSA Joint Technical Advisory Group on Standards for Gas-Fired Infrared 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 Z21/83 and CSA Technical Committees, 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 publication.*
- 5) *This Standard is subject to review at least every five years; suggestions for its improvement will be referred to the appropriate committee. To submit a proposal for change, please send the following information to **inquiries@csagroup.org** and include “Proposal for change” in the subject line:*
  - a) *Standard designation (number);*
  - b) *relevant clause, table, and/or figure number;*
  - c) *wording of the proposed change; and*
  - d) *rationale for the change.*
- 6) *To submit a request for interpretation of this Standard, please send the following information to **inquiries@csagroup.org** and include “Request for interpretation” in the subject line:*
  - a) *define the problem, making reference to the specific clause, and, where appropriate, include an illustrative sketch;*
  - b) *provide an explanation of circumstances surrounding the actual field condition; and*
  - c) *where possible, phrase the request in such a way that a specific “yes” or “no” answer will address the issue.*

*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 Low-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 Low-Intensity Infrared Heaters, Z83.20/CSA 2.34 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 Low-Intensity Infrared Heaters, the subcommittee recommended the proposed draft standard to the 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 Low-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 American National Standard/CSA Standard for Gas-Fired Low-Intensity Infrared Heaters was approved by the Canadian Interprovincial Gas Advisory Council (IGAC) on January 4, 2001 and by the American National Standards Institute, Inc. (ANSI), on March 14, 2001.

The second edition of the American National Standard/CSA Standard for Gas-Fired Low-Intensity Infrared Heaters, was approved by the Canadian Interprovincial Gas Advisory Council (IGAC) on September 14, 2007 and by the American National Standards Institute, Inc. (ANSI) on February 15, 2008.

This, the third edition of the American National Standard/CSA Standard for Gas-Fired Low Intensity Infrared Heaters, was approved by the Canadian Interprovincial Gas Advisory Council (IGAC) on November 11, 2016 and by the American National Standards Institute, Inc. (ANSI) on XX-XX-XXXXX

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

ANSI Z83.20-2016 • CSA 2.34-2016

# ANSI Z83.20-2016 • CSA 2.34-2016

## ***Gas-fired tubular and low-intensity infrared heaters***

### **1 Scope**

#### **1.1**

This Standard applies to newly produced, gas-fired low-intensity infrared heaters and infrared radiant tube 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/hr (117.23 kW) 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; and
- 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**

The 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**

Low-intensity infrared heaters and infrared radiant tube 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**

Heaters covered by this Standard may be of the catalytic type (see Clause 3, Definitions). These heaters are intended for indoor installation. The heaters are to be constructed of entirely of new, unused parts and materials with inputs up to and including 100,000 Btu/hr (29.3 kW) per burner.