



# ANSI/CAN/UL 8802:2023

JOINT CANADA-UNITED STATES  
NATIONAL STANDARD

## STANDARD FOR SAFETY

Ultraviolet (UV) Germicidal Equipment  
and Systems

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UL Standard for Safety for Ultraviolet (UV) Germicidal Equipment and Systems, ANSI/CAN/UL 8802

First Edition, Dated November 16, 2023

### **Summary of Topics**

***This is the First Edition of ANSI/CAN/UL 8802, Standard for Ultraviolet (UV) Germicidal Equipment and Systems, dated November 16, 2023.***

The requirements are substantially in accordance with Proposal(s) on this subject dated April 28, 2023 and August 25, 2023.

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ANSI/CAN/UL 8802:2023

Standard for Ultraviolet (UV) Germicidal Equipment and Systems

First Edition

November 16, 2023

This ANSI/CAN/UL Safety Standard consists of the First Edition.

The most recent designation of ANSI/UL 8802 as an American National Standard (ANSI) occurred on November 16, 2023. ANSI approval for a standard does not include the Cover Page, Transmittal Pages, Title Page, Preface or SCC Foreword.

This standard has been designated as a National Standard of Canada (NSC) on November 16, 2023.

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## Preface

This is the First Edition of ANSI/CAN/UL 8802, Standard for Ultraviolet (UV) Germicidal Equipment and Systems.

ULSE is accredited by the American National Standards Institute (ANSI) and the Standards Council of Canada (SCC) as a Standards Development Organization (SDO).

This Standard has been developed in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization.

This ANSI/CAN/UL 8802 Standard is under continuous maintenance, whereby each revision is approved in compliance with the requirements of ANSI and SCC for accreditation of a Standards Development Organization. In the event that no revisions are issued for a period of four years from the date of publication, action to revise, reaffirm, or withdraw the standard shall be initiated.

In Canada, there are two official languages, English and French. All safety warnings must be in French and English. Attention is drawn to the possibility that some Canadian authorities may require additional markings and/or installation instructions to be in both official languages.

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 the Collaborative Standards Development System (CSDS) at <https://csds.ul.com>.

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This edition of the standard has been formally approved by the Technical Committee (TC) on Ultraviolet (UV) Germicidal Equipment and Systems, TC 8802.

This list represents the TC 8802 membership when the final text in this standard was balloted. Since that time, changes in the membership may have occurred.

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This Standard is intended to be used for conformity assessment.

The intended primary application of this standard is stated in its scope. It is important to note that it remains the responsibility of the user of the standard to judge its suitability for this particular application.

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## INTRODUCTION

### 1 Scope

1.1 These requirements apply to ultraviolet germicidal irradiation (UVGI) equipment and systems intended for installation and use in accordance with the U.S. National Electrical Code (NEC), NFPA 70 and in accordance with the Canadian Electrical Code, Part I (CEC), CSA C22.1. These requirements cover:

a) UV Germicidal Equipment – These devices emit uncontained UV energy into the surrounding area while the space or room being treated may be occupied. The UV overexposure risk may be mitigated by one or more safeguards. Examples of such safeguards include a fixed installation at a minimum height above the floor, and directional baffling to minimize direct UV emissions towards the occupied space when direct emission is not permitted. This equipment may also produce visible light. See Part 1 of this standard.

b) UV Emitter Assemblies – These devices emit UV uncontained energy into the surrounding area while the space being treated is vacant (i.e., not occupied by persons). Alternatively, these devices can be built into germicidal equipment as components. These assemblies are not considered stand-alone devices; they are intended for use as part of a UV germicidal system. This equipment may also produce visible light. See Part 2 of this standard.

c) UV Germicidal Systems – These systems are intended to expose surfaces within an unoccupied area with uncontained UV energy where the exposure dose would otherwise pose a risk of personal injury to occupants. System components include UV emitters, switches, sensors and other controls acting as site or equipment safeguards. The installation and operating instructions are considered an integral system component. A system may also include devices that produce visible light. See Part 3 of this standard.

d) UV Germicidal Retrofit Kits – These devices are retrofit kits which facilitate replacement of the light source of a General Lighting Service (GLS) luminaire with a UV emitter assembly. These retrofit kits emit UV energy into the surrounding area while the space being treated may be occupied. The UV overexposure risk may be mitigated by the exclusive use of UV sources that are compliant with 'Risk Group 0 (Exempt)' level(s) in accordance with the photobiological assessment for the device. The UV source may also produce visible light. See Part 4 of this standard.

e) Contained UV Germicidal Equipment – These devices include an integral enclosed UV source(s) to treat air flowing through it. The UV overexposure risk may be mitigated through UV source containment by the use of baffles, louvers or similar means to minimize UV emissions from the equipment. This equipment also produces visible light. See Part 5 of this standard.

NOTE – Contained UV Germicidal Equipment that does not produce visible light is generally covered under CSA C22.2 No. 113/UL 507 or CSA C22.2 No. 187/UL 867.

1.2 Parts 1 through 4 of this standard do not cover:

- a) Equipment intended for use in dwellings; or
- b) Portable equipment.

NOTE: In regard to item 'a', dwelling refers to the defined term from NFPA 70 and hence does not exclude spaces of transient occupancy where the equipment is expected to be installed and maintained by qualified service personnel.

1.3 This standard does not cover hand-held equipment.

1.4 Products generating ultraviolet radiation are intended for use in accordance with Title 21 Code of Federal Regulations (CFR), Parts 1000 through 1004, and section 1005.25.