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# Preface

This is the second edition of CSA Standard Z317.5, *Illumination Systems in Health Care Facilities*, and it supersedes the first edition published in 1989. It is one of a series of Standards that establishes criteria for the development of a health-promoting environment in health care facilities. It is written in SI (metric) units.

The illumination system in a health care facility must serve many purposes. The system as a whole, and its subsystems, must provide suitable illumination for many diverse tasks which have varying degrees of importance. It must be integrated with a variety of space usages; it must contribute to safety; and it must be efficient, low in maintenance, and able to serve a facility that may operate 24 h a day, 365 days a year.

Two major factors govern adequate illumination in each area and for each activity in the health care facility:

- (a) the quality of the illumination, ie, the colour rendition and the distribution of luminance; and
- (b) the quantity of illumination.

It is recognized that age influences the suitability of lighting levels in the performance of tasks. The mean age within Canadian health care facilities is rising, resulting in the need for higher lighting levels. The lighting levels in this Standard have been specified based on a minimum user population age of 55. It is recognized that this may lead to an increase in energy consumption. Where appropriate and with proper consultation, the lighting levels may be modified to suit individual needs.

This Standard has been written for as wide an audience as possible, including designers, consultants, hospital administration, and engineering departments. Every effort has been made not to restrict the application of new technologies within the health care facility. However, proper evaluation of new technologies prior to implementation is needed to ensure overall safety.

This Standard is not intended to be used as a textbook on lighting. The IES *Lighting Handbook* and other similar material, courses, and seminars serve these purposes.

To help establish the levels of illumination to be included in this Standard, the energy conservation measures in many health care facilities were examined. A survey of these health care facilities produced data which, together with the data from the Illuminating Engineering Society of North America (IESNA), illumination societies in the United Kingdom, Sweden, and Germany, and German and Australian standards, have formed the basis for the levels of illumination recommended in this Standard. The Alberta Government publication *Mechanical and Electrical Design Guidelines for Health Care Facilities*, the Ontario Ministry of Health publication *Illumination Systems in Hospitals*, and the IESNA publication *Illumination Systems in Health Care Facilities* were also referred to and contributed to the preparation of the first edition of this Standard.

This Standard was prepared by the Subcommittee on Illumination in Health Care Facilities, under the jurisdiction of the Technical Committee on Health Care Facility Engineering and Physical Plant and the Strategic Steering Committee on Health Care Technology. The Standard was formally approved by these Committees.

March 1998

## Notes:

- (1) Use of the singular does not exclude the plural (and vice versa) when the sense allows.
- (2) 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.
- (3) This publication was developed by consensus, which is defined by the CSA Regulations Governing Standardization as "substantial agreement reached by concerned interests. Consensus includes an attempt to remove all objections and implies much more than the concept of 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 the publication.

**(4)** *CSA Standards are subject to periodic review, and suggestions for their improvement will be referred to the appropriate committee.*

**(5)** *All enquiries regarding this Standard, including requests for interpretation, should be addressed to Canadian Standards Association, Standards Development, 178 Rexdale Boulevard, Etobicoke, Ontario M9W 1R3.*

*Requests for interpretation should*

*(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) be phrased where possible to permit a specific "yes" or "no" answer.*

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# Z317.5-98

# ***Illumination Systems in Health Care Facilities***

## **1. Scope**

### **1.1**

This Standard provides specific design criteria for illumination systems in various locations within a health care facility.

**Note:** *Lighting is both an art and a science. The basic technical criteria given in this Standard are not intended to inhibit creative design, but rather to ensure that minimum requirements are met.*

### **1.2**

This Standard deals with

- (a) illumination sources;
- (b) luminaires;
- (c) illumination levels (see Tables 1, 2, and 3); and
- (d) guidelines for specific areas and tasks.

### **1.3**

This Standard does not deal with

- (a) therapeutic illumination devices (eg, phototherapy lamps); and
- (b) special purpose devices such as UV sources for sterilization.

### **1.4**

This Standard addresses requirements for illumination systems. However, it is not meant to remove the need for consultation with users regarding specific or unusual requirements.

### **1.5**

The requirements in this Standard are intended to be subordinate to applicable Provincial, Federal, or local regulatory authorities.

### **1.6**

In this Standard, "shall" indicates a mandatory requirement; "should" indicates a recommendation, or that which is advised but not mandatory. Notes accompanying clauses do not include mandatory or alternative requirements. The purpose of a Note accompanying a clause is to separate from the text explanatory or informative material that is not properly a part of the Standard. Notes to figures and tables are considered to be part of the figure or table and are written as mandatory requirements.

## **2. Definitions**

### **2.1**

The following definitions apply in this Standard: