C654-10

Fluorescent lamp ballast efficacy measurements

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Preface

This is the second edition of CSA C654, *Fluorescent lamp ballast efficacy measurements*. It supersedes the previous edition, published in 1991.

This Standard was prepared based on NEMA performance Standards for fluorescent lamps (C78 Series) and ballasts (C82 Series), with the purpose of specifying ballast efficacy limits and methods of measurement for energy conservation.

In this edition, this Standard has been revised to include minimum ballast efficacy factor (BEF) levels for T8 type ballasts and optional high-performance levels for T8 ballasts. In addition, this Standard now includes a method to calculate and compare system efficacies based on the ballast factor (BF) and BEF. This method, described in Annex A, is intended to allow the end-user to better assess and compare the system efficacy as well as the system light output. This Standard has further been modified and simplified to take into consideration revisions to the referenced NEMA Standards. Requirements for safety of ballasts are specified in CAN/CSA-C22.2 No. 74

CSA acknowledges that the development of this Standard was made possible, in part, by the financial support of NRCan, BC Hydro, Manitoba Hydro, Hydro-Québec, Ontario Ministry of Energy, Canadian Electricity Association, Ontario Power Authority, and Conserve Nova Scotia.

This Standard was prepared by the Subcommittee on Fluorescent Lamp Ballasts, under the jurisdiction of the Technical Committee on Performance of Lighting Equipment and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables, and has been formally approved by the Technical Committee. This Standard will be submitted to the Standards Council of Canada for approval as a National Standard of Canada.

November 2010

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* 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.*

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(b) relevant clause, table, and/or figure number;
(c) wording of the proposed change; and
(d) rationale for the change.

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Fluorescent lamp ballast efficacy measurements

1 Scope

1.1
This Standard applies to measurement of the efficacy of fluorescent lamp ballasts for use in fluorescent luminaires to be installed in industrial, commercial, or residential locations.

1.2
This Standard applies to ballasts intended to operate at a line frequency of 60 Hz.

1.3
This Standard covers ballasts for the types of fluorescent lamp specified in Table 1.
Note: *It is possible that fluorescent lamp and ballast combinations not covered by this Standard will be included in a future edition of this Standard.*

1.4
This Standard does not apply to ballasts designed for use in ambient temperatures of –28.9 °C (20°F) or lower.

1.5
In CSA standards, "shall" is used to express a requirement, i.e., a provision that the user is obliged to 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 (nonmandatory) to define their application.

1.6
The values given in SI units are the units of record for the purposes of this Standard. The values given in parentheses are for information and comparison only.

2 Reference publications
Note: *In cases where the editions listed below are amended, replaced by new editions, or superseded by another standard during the life of this referencing Standard, it is the responsibility of the users of this Standard to investigate the possibility of applying those amendments, new editions, or superseding standards.*
This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below.