C393-12

# Test methods for measuring power consumption in low and idle power modes of commercial and industrial equipment

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# *Preface*

This is the first edition of CSA C393, *Test methods for measuring power consumption in low and idle power modes of commercial and industrial equipment*.

The values of THD of the supply voltage specified in the first edition reflect the values found in other standards, but knowledge of practical capabilities of test labs was limited. As practical experience is gained on testing of idle power in commercial and industrial equipment, lower limits for THD may want to be considered.

This Standard was prepared by the Subcommittee on Commercial and Industrial Three Phase No Load (Standby) Power Test Method, under the jurisdiction of the Technical Committee on Energy Efficiency of Industrial Equipment and the Strategic Steering Committee on Performance Energy, Efficiency and Renewables, and has been formally approved by the Technical Committee.

**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 Standard 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.*

**(4)** *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****.*

**(5)** *This Standard is subject to periodic review, and 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.*

# *C393-12*
# *Test methods for measuring power consumption in low and idle power modes of commercial and industrial equipment*

## 1 Scope

### 1.1
This Standard specifies methods for measuring electrical power consumption of equipment intended for use in commercial and industrial application when in low power mode(s) (i.e., standby mode, off mode, and network mode) and idle mode.

This Standard is applicable to electrical products with a rated input voltage or voltage range that lies wholly or partly in the range 100 V a.c. to 347 V a.c. for single phase input and 130 V a.c. to 7200 V a.c. for other inputs.

**Notes:**

**(1)** *The measurement of energy consumption and performance of products during intended use are generally specified in the relevant product standards and are not covered by this Standard.*

**(2)** *Where this Standard is referenced by performance standards or procedures, these should define and name the relevant low power modes (see Clause 3) to which this Standard is applied.*

**(3)** *The inclusion of d.c. powered products within the scope of this Standard is under consideration.*

### 1.2
This Standard does not specify safety requirements. It does not specify minimum performance requirements nor does it set maximum limits on power or energy consumption.

The methods described in this Standard are not intended to be used to measure power consumption of products during in-service mode, as these are generally covered by other product standards (see Bibliography for some examples), although the measuring techniques, measurement uncertainty determination, and test equipment specifications may be adapted for such measurements with careful review.

### 1.3
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.