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C381.2-14

Test method for determining the energy performance of battery-charging systems



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Preface

This is the second edition of CSA C381.2, *Test method for determining the energy performance of battery-charging systems*. It supersedes the edition published in 2008 under the title *Test method for determining the energy efficiency of battery-charging systems*.

This Standard specifies requirements, definitions, and test methods for determining the energy performance of battery-charging systems. It is written in SI (metric) units.

CSA acknowledges the use of U.S. Department of Energy's *Uniform Test Method for Measuring the Energy Consumption of Battery Chargers*

CSA acknowledges that the development of this Standard was made possible, in part, by the financial support of Natural Resources Canada (NRCan), BC Hydro, Manitoba Hydro, and the Ontario Power Authority (OPA).

This Standard is considered suitable for use for conformity assessment within the stated scope of the Standard.

This Standard was prepared by the Subcommittee on the Performance of External Power Supplies and Battery-Charging Systems, under the jurisdiction of the Technical Committee on Residential Equipment and the Strategic Steering Committee on Performance, Energy Efficiency, and Renewables.

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 review five years after publication, 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.*

C381.2-14

Test method for determining the energy performance of battery-charging systems

1 Scope

1.1

This Standard covers the test requirements used to measure battery charger energy consumption for battery chargers intended to be operated from 115 V ac, 60 Hz line voltage connected by plug to wall receptacles or existing dc sources (such as automotive power jacks or USB ports).

1.2

This Standard applies to battery-charging systems that are intended to charge secondary battery chemistries such as nickel cadmium, lead acid, lithium ion, and nickel-metal hydride.

1.3

This Standard does not apply to primary cell chemistries such as alkaline “dry” cells.

1.4

The test method specified in this Standard is intended to complement the methodology contained in CSA C381.1. This Standard and CSA C381.1 define two classifications of products for the purpose of energy-performance testing; products within the scope of CSA C381.1 are not intended to be tested by this Standard. Annex B specifies requirements for determining the appropriate test method (CSA C381.1 or CSA C381.2) for measuring a product's energy performance.

1.5

In this Standard, “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; “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 (non-mandatory) to define their application.

2 Reference publications

This Standard refers to the following publications, and where such reference is made, it shall be to the edition listed below, including all amendments published thereto.