

# INTERNATIONAL STANDARD

# NORME INTERNATIONALE



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**Desktop and notebook computers – Measurement of energy consumption**

**Ordinateurs de bureau et ordinateurs portables – Mesurage de la consommation d'énergie**



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**Ordinateurs de bureau et ordinateurs portables – Mesurage de la consommation d'énergie**

INTERNATIONAL  
ELECTROTECHNICAL  
COMMISSION

COMMISSION  
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## INTERNATIONAL ELECTROTECHNICAL COMMISSION

**DESKTOP AND NOTEBOOK COMPUTERS –  
MEASUREMENT OF ENERGY CONSUMPTION**

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IEC 62623 has been prepared by technical area 19: Environmental and energy aspects for multimedia systems and equipment, of IEC technical committee 100: Audio, video and multimedia systems and equipment. It is an International Standard.

This second edition cancels and replaces the first edition published in 2012. This edition constitutes a technical revision.

The first edition of this standard was originally based on ECMA-383.

This edition includes the following significant technical changes with respect to the previous edition:

- a) Additions to terms & definitions and modification to short & long idle descriptions.
- b) Test setup modifications for notebooks where battery pack cannot be removed for testing.
- c) Categorisation procedure based on ECMA-389 removed.
- d) Replace majority profile with new duty cycle study including new duty cycle attributes for desktop and notebook in a residential and enterprise application.
- e) Removal of any reference and test methodology to ENERGY STAR V5.

The text of this International Standard is based on the following documents:

| Draft        | Report on voting |
|--------------|------------------|
| 100/3583/CDV | 100/3669/RVC     |

Full information on the voting for its approval can be found in the report on voting indicated in the above table.

The language used for the development of this International Standard is English.

This document was drafted in accordance with ISO/IEC Directives, Part 2, and developed in accordance with ISO/IEC Directives, Part 1 and ISO/IEC Directives, IEC Supplement, available at [www.iec.ch/members\\_experts/refdocs](http://www.iec.ch/members_experts/refdocs). The main document types developed by IEC are described in greater detail at [www.iec.ch/standardsdev/publications](http://www.iec.ch/standardsdev/publications).

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## INTRODUCTION

This document provides definitions of energy saving modes and generic energy saving guidance for designers of desktop and notebook computers, by defining a methodology on how to measure the energy consumption of a product whilst providing key categorisation attributes that enable energy consumption comparisons of similar products.

This document is originally based on ECMA-383 and complements the guidance given in IEC 62075.

# DESKTOP AND NOTEBOOK COMPUTERS – MEASUREMENT OF ENERGY CONSUMPTION

## 1 Scope

This document covers personal computing products. It applies to desktop and notebook computers as defined in 4.1 that are marketed as final products and that are hereafter referred to as the equipment under test (EUT) or product.

This document specifies:

- a test procedure to enable the measurement of the power and/or energy consumption in each of the EUT's power modes;
- formulas for calculating the **typical energy consumption (TEC)** for a given period (normally annual);
- a majority profile to be used with this document which enables conversion of average power into energy within the **TEC** formulas;
- a pre-defined format for the presentation of results.

This document does not set any pass/fail criteria for the EUTs. Users of the test results define such criteria.

## 2 Normative references

There are no normative references in this document.

## 3 Terms, definitions and abbreviations

For the purposes of this document, the following terms and definitions apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

- IEC Electropedia: available at <http://www.electropedia.org/>
- ISO Online browsing platform: available at <http://www.iso.org/obp>

### 3.1 Terms and definitions

#### 3.1.1

##### **active workload**

simulated amount of productive or operative activity that the EUT performs as represented in the  $P_{\text{work}}$  (see 4.2.12) and  $T_{\text{work}}$  (see 3.1.11.6) attributes of the **TEC** equation (see 5.6)

#### 3.1.2

##### **category**

classification within a product type that is based on product features and installed components

#### 3.1.3

##### **duty cycle**

divisions of time the EUT spends in each of its individual power modes

Note 1 to entry: A duty cycle is expressed as a percentage totalling 1.