SLOVENSKI STANDARD
oSIST prEN IEC 62623:2021

01-julij-2021

Namizni in prenosni računalniki - Merjenje porabe energije

Desktop and notebook computers - Measurement of energy consumption

Ordinateurs de bureau et ordinateurs portables - Mesure de la consommation d'énergie

Ta slovenski standard je istoveten z: **prEN IEC 62623:2021**

ICS:

35.160	Mikroprocesorski sistemi	Microprocessor systems

oSIST prEN IEC 62623:2021 **en,fr,de**

100/3583/CDV

COMMITTEE DRAFT FOR VOTE (CDV)

PROJECT NUMBER: **IEC 62623 ED2**	
DATE OF CIRCULATION: **2021-05-21**	CLOSING DATE FOR VOTING: **2021-08-13**
SUPERSEDES DOCUMENTS: **100/3510/CD, 100/3580/CC**	

IEC TA 19 : ENVIRONMENTAL AND ENERGY ASPECTS FOR MULTIMEDIA SYSTEMS AND EQUIPMENT	
SECRETARIAT: Germany	SECRETARY: Mr Andreas Schneider
OF INTEREST TO THE FOLLOWING COMMITTEES:	PROPOSED HORIZONTAL STANDARD: ☐ Other TC/SCs are requested to indicate their interest, if any, in this CDV to the secretary.
FUNCTIONS CONCERNED: ☐ EMC ☒ ENVIRONMENT	☐ QUALITY ASSURANCE ☐ SAFETY
☒ SUBMITTED FOR CENELEC PARALLEL VOTING	☐ NOT SUBMITTED FOR CENELEC PARALLEL VOTING

Attention IEC-CENELEC parallel voting

The attention of IEC National Committees, members of CENELEC, is drawn to the fact that this Committee Draft for Vote (CDV) is submitted for parallel voting.

The CENELEC members are invited to vote through the CENELEC online voting system.

This document is still under study and subject to change. It should not be used for reference purposes.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

TITLE:

Desktop and notebook computers - Measurement of energy consumption (TA 19)

PROPOSED STABILITY DATE: 2025

NOTE FROM TC/SC OFFICERS:

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

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DESKTOP AND NOTEBOOK COMPUTERS – MEASUREMENT OF ENERGY CONSUMPTION

FOREWORD

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International Standard IEC 62623 has been prepared by technical area 19: Environmental and energy aspects for multimedia systems and equipment, of IEC technical committee 100: Safety of electronic equipment within the field of audio/video, information technology and communication technology.

This second edition constitutes a technical revision.

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

This second edition of IEC 62623 includes the following significant technical changes with respect to IEC 62623:2012:

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

The text of this standard is based on the following documents:

FDIS	Report on voting

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

This publication has been drafted in accordance with the ISO/IEC Directives, Part 2.

In this standard, the following print types or formats are used:

– requirements proper and normative annexes: in roman type;

– notes/explanatory matter: in smaller roman type;

– terms that are defined in 3.1: **bold**.

The committee has decided that the contents of this publication will remain unchanged until the stability date indicated on the IEC web site under "http://webstore.iec.ch" in the data related to the specific publication. At this date, the publication will be

- reconfirmed,
- withdrawn,
- replaced by a revised edition, or
- amended.

IMPORTANT – The 'colour inside' logo on the cover page of this publication indicates that it contains colours which are considered to be useful for the correct understanding of its contents. Users should therefore print this document using a colour printer.

INTRODUCTION

This standard 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 standard 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 International Standard 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 standard 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 that should be used with this standard which enables conversion of average power into energy within the **TEC** formulas;

– a pre-defined format for the presentation of results.

This standard does not set any pass/fail criteria for the EUTs. Users of the test results should 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_{work} (see 4.2.10) and $\boldsymbol{T_{work}}$ (see 3.1.12.6) 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.

3.1.4
energy use
energy used by a product when measured from the mains power supply over a given period of time

Note 1 to entry: Energy is measured in kilowatt hour.

3.1.5
external power supply
EPS
equipment contained in a separate physical enclosure external to the computer casing and designed to convert mains power supply to lower d.c. voltage(s) for the purpose of powering the computer

Note 1 to entry: This note applies to the French language only.

Note 2 to entry: The **EPS** is sometimes referred to as an a.c. brick.

Note 3 to entry: A reference to a document which outlines the testing procedures for measuring **EPS** efficiencies (External Power Supply Efficiency Test Method) can be found in the Bibliography.

3.1.6
internal power supply
IPS
component contained in the same physical enclosure to the computer casing and designed to convert a.c. voltage from the mains power supply to lower d.c. voltage(s) for the purpose of powering the computer components

Note 1 to entry: This note applies to the French language only.

Note 2 to entry: A reference to a document which outlines the testing procedures for measuring **IPS** efficiencies (Generalized Internal Power Supply Efficiency Test Protocol) can be found in the Bibliography.

3.1.7
local area network
LAN
computer network located on a user's premises within a limited geographical area

[SOURCE: IEC 60050-732-01-04]

Note 1 to entry: This note applies to the French language only.

Note 2 to entry: Currently the two primary technologies used in computers are IEEE 802.3 Ethernet or Wired **LAN**, and IEEE 802.11 WiFi or Wireless **LAN.**

3.1.8
manufacturer
organization responsible for the design, development and production of a product in view of its being placed on the market, regardless of whether these operations are carried out by that organization itself or on its behalf

3.1.9
typical energy consumption
TEC
number for the consumption of energy of a computer that is used to compare the energy performance of like computers, which focuses on the typical energy consumed by an EUT for a given profile while in normal operation during a representative period of time

Note 1 to entry: This note applies to the French language only.

Note 2 to entry: For desktops and notebook computers, the key criterion of the **TEC** approach is a value for typical annual **energy use**, measured in kilowatt-hours (kWh), using measurements of average operational mode power levels scaled by an assumed typical **duty cycle** that represent annualized use for a profile.

3.1.10
actual energy consumption
TEC measured using P_{work}

Note 1 to entry: The **actual energy consumption** is referenced as $\mathbf{TEC}_{\mathbf{actual}}$.

3.1.11
duty cycle attributes
percentage of time the EUT spends in each of its individual power modes

Note 1 to entry: Examples of **duty cycle attributes** are defined in 3.1.12.1 to 3.1.12.7.

3.1.11.1
off component of duty cycle
$\boldsymbol{T}_{\mathbf{off}}$
percentage of time the EUT is in the off mode

3.1.11.2
sleep component of duty cycle
$\boldsymbol{T}_{\mathbf{sleep}}$ **and** $\boldsymbol{T}_{\mathbf{sleepWoL}}$
percentage of time the EUT is in the sleep modes

3.1.11.3
on components of duty cycle
$\boldsymbol{T}_{\mathbf{on}}$
percentage of time the EUT is in the on mode

Note 1 to entry: The $T_{\mathbf{on}}$ **duty cycle** is equal to the sum of the $T_{\mathbf{work}}$ + $T_{\mathbf{sidle}}$ + $T_{\mathbf{idle}}$.

3.1.11.4
short idle component of duty cycle
$\boldsymbol{T}_{\mathbf{sidle}}$
percentage of time the EUT is in the short idle mode

3.1.11.5
long idle component of duty cycle
$\boldsymbol{T}_{\mathbf{idle}}$
percentage of time the EUT is in the long idle mode

3.1.11.6
alternative low power component of duty cycle
$\boldsymbol{T}_{\mathbf{alpm}}$
percentage of time the EUT is in the alternative low power mode

3.1.11.7
active component of duty cycle
$\boldsymbol{T}_{\mathbf{work}}$
percentage of time the EUT is in the active (work) mode

3.1.12
user of the test results
entity that will utilise the test results to apply to their needs

Note 1 to entry: Examples of such an entity are voluntary agreement owners, regulators, private companies, etc.