

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications - Part 3: Prismatic and cylindrical lithium secondary cells, and batteries made from them

## EESTI STANDARDI EESSÕNA

## NATIONAL FOREWORD

See Eesti standard EVS-EN 61960-3:2017 sisaldab Euroopa standardi EN 61960-3:2017 ingliskeelset teksti.	This Estonian standard EVS-EN 61960-3:2017 consists of the English text of the European standard EN 61960-3:2017.
Standard on jõustunud sellekohase teate avaldamisega EVS Teatajas	This standard has been endorsed with a notification published in the official bulletin of the Estonian Centre for Standardisation.
Euroopa standardimisorganisatsioonid on teinud Euroopa standardi rahvuslikele liikmetele kättesaadavaks 12.05.2017.	Date of Availability of the European standard is 12.05.2017.
Standard on kättesaadav Eesti Standardikeskusest.	The standard is available from the Estonian Centre for Standardisation.

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English Version

Secondary cells and batteries containing alkaline or other non-acid electrolytes - Secondary lithium cells and batteries for portable applications - Part 3: Prismatic and cylindrical lithium secondary cells, and batteries made from them  
(IEC 61960-3:2017)

Accumulateurs alcalins et autres accumulateurs à électrolyte non acide - Accumulateurs au lithium pour applications portables - Partie 3: Eléments et batteries d'accumulateurs au lithium, parallélépipédiques et cylindriques  
(IEC 61960-3:2017)

Akkumulatoren und Batterien mit alkalischen oder anderen nichtsäurehaltigen Elektrolyten - Lithium-Akkumulatoren und -batterien für tragbare Geräte - Teil 3: Prismatische und zylindrische Akkumulatoren und daraus hergestellte Batterien  
(IEC 61960-3:2017)

This European Standard was approved by CENELEC on 2017-03-14. CENELEC members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the CEN-CENELEC Management Centre or to any CENELEC member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CENELEC member into its own language and notified to the CEN-CENELEC Management Centre has the same status as the official versions.

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European Committee for Electrotechnical Standardization  
Comité Européen de Normalisation Electrotechnique  
Europäisches Komitee für Elektrotechnische Normung

CEN-CENELEC Management Centre: Avenue Marnix 17, B-1000 Brussels

## European foreword

The text of document 21A/618/FDIS, future edition 1 of IEC 61960-3, prepared by SC 21A "Secondary cells and batteries containing alkaline or other non-acid electrolytes", of IEC/TC 21 "Secondary cells and batteries" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61960-3:2017.

The following dates are fixed:

- latest date by which the document has to be implemented at national level by publication of an identical national standard or by endorsement (dop) 2017-12-14
- latest date by which the national standards conflicting with the document have to be withdrawn (dow) 2020-03-14

This document supersedes EN 61960:2011

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## Endorsement notice

The text of the International Standard IEC 61960-3:2017 was approved by CENELEC as a European Standard without any modification.

In the official version, for Bibliography, the following notes have to be added for the standards indicated:

IEC 60051	NOTE	Harmonized in EN 60051 series.
IEC 60086-4	NOTE	Harmonized as EN 60086-4.
IEC 61434	NOTE	Harmonized as EN 61434.
IEC 61959	NOTE	Harmonized as EN 61959.
IEC 62281	NOTE	Harmonized as EN 62281.
IEC 62368-1	NOTE	Harmonized as EN 62368-1.

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# SECONDARY CELLS AND BATTERIES CONTAINING ALKALINE OR OTHER NON-ACID ELECTROLYTES – SECONDARY LITHIUM CELLS AND BATTERIES FOR PORTABLE APPLICATIONS –

## Part 3: Prismatic and cylindrical lithium secondary cells, and batteries made from them

### 1 Scope

This part of IEC 61960 specifies performance tests, designations, markings, dimensions and other requirements for secondary lithium single cells and batteries for portable applications.

The objective of this document is to provide the purchasers and users of secondary lithium cells and batteries with a set of criteria with which they can judge the performance of secondary lithium cells and batteries offered by various manufacturers.

Portable applications comprise hand-held equipment, transportable equipment and movable equipment.

Examples of the main uses are shown below:

- a) hand-held equipment: smartphone, tablet PCs, audio/video players, and similar equipment;
- b) transportable equipment: notebook computers, CD players, and similar equipment;
- c) movable equipment
  - 18 kg or less in mass and not fixed in place, or
  - provided with wheels, castors, or other means to facilitate movement by an ordinary person as required to perform its intended use,
  - power tools, power assisted cycles, business-use video cameras, and similar equipment.

NOTE 1 All applications using batteries whose nominal voltages are equal to or over the hazardous voltage of 60 V DC are excluded.

NOTE 2 EESS (Electrical Energy Storage Systems) and UPS, which use batteries over 500 Wh of electric energy are excluded.

NOTE 3 Self-propelled vehicles are excluded.

This document defines a minimum required level of performance and a standardized methodology by which testing is performed and the results of this testing reported to the user. Hence, users will be able to establish the viability of commercially available cells and batteries via the declared specification and thus be able to select the cell or battery best suited for their intended application. The end user can handle only batteries which have completely fulfilled all the requirements of this document and others concerning safety such as IEC 62133-2.

This document covers secondary lithium cells and batteries with a range of chemistries. Each electrochemical couple has a characteristic voltage range over which it releases its electrical capacity, a characteristic nominal voltage and a characteristic final voltage during discharge. Users of secondary lithium cells and batteries are requested to consult the manufacturer for advice.

## 2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

IEC 60050-482:2004, *International Electrotechnical Vocabulary (IEV) – Part 482: Primary and secondary cells and batteries*

IEC 61000-4-2, *Electromagnetic compatibility (EMC) – Part 4-2: Testing and measurement techniques – Electrostatic discharge immunity test*

IEC 62133-2:2017, *Secondary cells and batteries containing alkaline or other non-acid electrolytes – Safety requirements for portable sealed secondary cells and for batteries made from them, for use in portable applications – Part 2: Lithium systems*

## 3 Terms and definitions

For the purposes of this document, the terms and definitions given in IEC 60050-482 and the following 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

#### **charge recovery**

#### **capacity recovery**

capacity that a cell or battery can deliver with subsequent recharge after storage, at a specific temperature, for a specific time, as a percentage of the rated capacity

### 3.2

#### **charge retention**

#### **capacity retention**

capacity that a cell or battery can deliver after storage, at a specific temperature, for a specific time without subsequent recharge as a percentage of the rated capacity

### 3.3

#### **final voltage**

#### **end-of-discharge voltage**

specified closed circuit voltage at which a discharge of a cell or battery is terminated

### 3.4

#### **nominal voltage**

suitable approximate value of the voltage used to designate or identify a cell, a battery or an electrochemical system

Note 1 to entry: The nominal voltages of secondary lithium cells are shown in Table 1 and 2.

Note 2 to entry: The nominal voltage of a battery of  $n$  series connected cells is equal to  $n$  times the nominal voltage of a single cell.

[SOURCE: IEC 60050-482:2004, 482-03-31, modified – Addition Notes 1 and 2 to entry.]