Irish Standard
I.S. EN 61710:2013

Power law model - Goodness-of-fit tests and estimation methods (IEC 61710:2013 (EQV))

I.S. EN 61710:2013

Incorporating amendments/corrigenda issued since publication:

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EUROPEAN STANDARD

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English version

Power law model - Goodness-of-fit tests and estimation methods
(IEC 61710:2013)

Modèle de loi en puissance - Essais d'adéquation et méthodes d'estimation des paramètres (CEI 61710:2013)

Potenzgesetz-Modell - Anpassungstests und Schätzverfahren (IEC 61710:2013)

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CENELEC

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

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Foreword

The text of document 56/1500/FDIS, future edition 2 of IEC 61710, prepared by IEC/TC 56 "Dependability" was submitted to the IEC-CENELEC parallel vote and approved by CENELEC as EN 61710:2013.

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)	2014-03-26
• latest date by which the national standards conflicting with the document have to be withdrawn	(dow)	2016-06-26

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Endorsement notice

The text of the International Standard IEC 61710:2013 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 61703	NOTE	Harmonised as EN 61703.
IEC 61164:2004	NOTE	Harmonised as EN 61164:2004 (not modified).

Annex ZA
(normative)

Normative references to international publications with their corresponding European publications

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

NOTE When an international publication has been modified by common modifications, indicated by (mod), the relevant EN/HD applies.

Publication	Year	Title	EN/HD	Year
IEC 60050-191	1990	International Electrotechnical Vocabulary (IEV) - Chapter 191: Dependability and quality of service	-	-

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INTERNATIONAL ELECTROTECHNICAL COMMISSION

POWER LAW MODEL – GOODNESS-OF-FIT TESTS AND ESTIMATION METHODS

FOREWORD

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International Standard IEC 61710 has been prepared by IEC technical committee 56: Dependability.

This second edition cancels and replaces the first edition, published in 2000, and constitutes a technical revision.

The main changes with respect to the previous edition are listed below:

– the inclusion of an additional Annex C on Bayesian estimation for the power law model.

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

FDIS	Report on voting
56/1500/FDIS	56/1508/RVD

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.

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 International Standard describes the power law model and gives step-by-step directions for its use. There are various models for describing the reliability of repairable items, the power law model being one of the most widely used. This standard provides procedures to estimate the parameters of the power law model and to test the goodness-of-fit of the power law model to data, to provide confidence intervals for the failure intensity and prediction intervals for the length of time to future failures. An input is required consisting of a data set of times at which relevant failures occurred, or were observed, for a repairable item or a set of copies of the same item, and the time at which observation of the item was terminated, if different from the time of final failure. All output results correspond to the item type under consideration.

Some of the procedures can require computer programs, but these are not unduly complex. This standard presents algorithms from which computer programs should be easy to construct.