

Australian/New Zealand Standard™

**Performance of transformers and
electronic step-down convertors for ELV
lamps**

**Part 2: Minimum Energy Performance
Standards (MEPS) requirements**



AS/NZS 4879.2:2010

This Joint Australian/New Zealand Standard was prepared by Joint Technical Committee EL-041, Lamps and Lighting Equipment—Energy Performance. It was approved on behalf of the Council of Standards Australia on 19 January 2010 and on behalf of the Council of Standards New Zealand on 29 January 2010. This Standard was published on 16 February 2010.

The following are represented on Committee EL-041:

Consumers' Federation of Australia
Department of the Environment, Water, Heritage and the Arts
Electrical Compliance Testing Association
Energy Efficiency and Conservation Authority of New Zealand
Equipment Energy Efficiency Committee
Institution of Professional Engineers New Zealand
Lighting Council New Zealand
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PREFACE

This Standard was prepared by the Joint Standards Australia/Standards New Zealand Committee EL-041, Lamps and Related Equipment, with contributions from the Subcommittee EL-041-08, Lamps and Lighting Equipment—Energy Performance.

The objective of this Standard is to specify the Minimum Energy Performance Standards requirements (MEPS) for transformers and electronic step-down converters for ELV lamps.

This Standard is Part 2 of a series that consists of the following:

AS/NZS

4879	Performance of transformers and electronic step-down converters for ELV lamps
4879.1	Part 1: Test method—Energy performance
4879.2	Part 2: Minimum Energy Performance Standards requirements (this Standard)

The terms ‘normative’ and ‘informative’ are used in this Standard to define the application of the Appendix to which they apply. A normative appendix is an integral part of a Standard, whereas an informative appendix is for information and guidance.

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FOREWORD

The prevalence of ELV lighting systems in Australia and New Zealand has led to the development of Standards to enforce Minimum Energy Performance Standards (MEPS) requirements for ELV lighting systems in Australia and New Zealand, which are not as common in other countries. The MEPS requirement in this Standard is believed to be the first of its kind.

A technical report is available for download from the website <http://www.energyrating.gov.au/library/pubs/200513-mepshalogentrans.pdf>

STANDARDS AUSTRALIA/STANDARDS NEW ZEALAND

Australian/New Zealand Standard**Performance of transformers and electronic step-down convertors for ELV lamps****Part 2: Minimum Energy Performance Standards (MEPS) requirements****1 SCOPE AND GENERAL****1.1 Scope**

This Standard specifies Minimum Energy Performance Standards (MEPS) requirements for magnetic isolating transformers and electronic step-down convertors with the following characteristics:

- (a) For use with extra-low voltage (ELV).
- (b) Mains supply input.
- (c) Single a.c or d.c ELV output (up to 50 V).
- (d) Rated load up to and including 500 VA.

Units covered by this Standard are referred to as ELV lighting convertors (ELCs) throughout the document.

This Standard is to be read in conjunction with AS/NZS 4879.1.

This Standard does not cover safety requirements that are covered separately in AS/NZS 61347.1 and AS/NZS 61347.2.2.

1.2 Application

This Standard applies to ELCs used in Class III luminaires or SELV lighting systems with an output voltage not exceeding 50 V a.c.

2 REFERENCED DOCUMENTS

The following documents are referred to in this Standard:

AS/NZS	
4879	Performance of transformers and electronic step-down convertors for ELV lamps
4879.1	Part 1: Test method—Energy performance
61347	Lamp controlgear
61347.1	Part 1: General and safety requirements (IEC 61347-1:2000, MOD)
61347.2.2	Part 2.2: Particular requirements for d.c. or a.c. supplied electronic step-down convertors for filament lamps (IEC 61347-2-2, Ed. 1.2 (2006) MOD)

3 DEFINITIONS

For the purposes of this Standard, the definitions given in AS/NZS 4879.1 apply.

4 ENERGY EFFICIENCY CLASSIFICATION**4.1 Number of samples**

At least one ELC shall be tested in accordance with AS/NZS 4879.1. In addition, at the vendor's discretion, more than one ELC may be tested to verify performance.

4.2 Efficiency levels

The energy performance requirements for each numeral mark shall be as noted in Table A1 of AS/NZS 4879.1:2008. The values of MEPS and high efficiency levels shall be as specified in Table 1.

TABLE 1
MEPS AND HIGH EFFICIENCY LEVELS

Rated ELC power (VA)	MEPS efficiency level at full load (%)	High efficiency level at full load (%)
≤200	≥86 (≥ level III)	≥92.5 (≥ level V)
200 < power ≤500	≥91 (≥ level IV)	≥92.5 (≥ level V)

5 PERFORMANCE REQUIREMENTS

5.1 General

The performance criteria set out in Clauses 5.2 to 5.5 shall be met by each individual unit tested, where applicable, for the ELC model.

5.2 Minimum Energy Performance Standards (MEPS)

All ELCs covered by this Standard shall meet the full load MEPS efficiency level as stated in Table 1.

5.3 Declaration of high efficiency

Only those ELCs with efficiency greater than or equal to the efficiency listed in Table 1 shall be capable of being termed ‘high efficiency’, ‘efficient’ or ‘energy efficient’.

5.4 No load losses

No load losses for ELCs covered by this Standard are under consideration.

5.5 Output voltage

The output voltage of any ELCs rated between 50–70 W (inclusive) shall be more than 11.0 V and less than 12.8 V when measured under special load conditions with a 35 W lamp.

6 APPLICATION AND TEST RESULT FORMATS

6.1 Application for registration

6.1.1 *Australia*

In Australia, where the relevant regulatory authority requires registration or approval of energy labels or MEPS requirements, Clauses 6.1.2 to 6.1.6 shall apply.

6.1.2 *Registration*

An application for registration of an ELC, in the format discussed in Appendix A of this Standard, shall be submitted.

For registration, the relevant state regulatory authority shall be contacted. Details of the relevant regulatory bodies are available from <http://www.energyrating.gov.au>.

6.1.3 *Test report*

A test report in accordance with AS/NZS 4879.1 for each model tested shall be held by the manufacturer or responsible vendor if not supplied with the original registration.

6.1.4 *Declaration*

The manufacturer or responsible vendor of the ELC shall declare compliance with Clause 5. The appropriate documents shall be made available to the relevant regulatory authority upon request.

6.1.5 *Records availability*

Records shall be retained for at least five years after the last date of manufacture or import, whichever is applicable.

6.1.6 *Duration of registration*

Registrations for energy labelling and MEPS may have a validity of up to five years. Registration expiry dates are reviewed annually and records may be extended (up to the five year limit in one year increments) where there is no forthcoming change to regulatory requirements.

More details on the duration of registration can be found in the National Appliance and Equipment Energy Efficiency Program Administrative Guideline. The most up-to-date version can be obtained from <http://www.energyrating.gov.au>.

6.2 Holding of records

6.2.1 *New Zealand*

In New Zealand, where registration is not required, Clauses 6.2.2 to 6.2.4 shall apply.

6.2.2 *Provision of information*

The manufacturer or responsible vendor shall complete and submit the prescribed form to the relevant regulatory authority. The prescribed form is Appendix A.

NOTES:

- 1 This can be done online at the <http://www.energyrating.gov.au> website. This is the preferred method. However, the form can be completed on paper and submitted to the regulatory authority Energy Efficiency Conservation Authority (EECA). Models registered in Australia are deemed to have complied with this requirement.
- 2 Full details of the regulatory requirements for manufacturers or responsible vendors in New Zealand are found in the Energy Efficiency (Energy Using Products) Regulations 2002.

6.2.3 *Test report*

6.2.3.1 *General*

A test report for each model of the ELC tested in accordance with AS/NZS 4879.1 shall be held by the manufacturer or responsible vendor and made available to the relevant regulatory authority upon request.

Under New Zealand's Energy Efficiency (Energy Using Products) Regulations 2002, a test report shall be made available to the regulatory authority (EECA) upon request within five working days.

6.2.3.2 *Records availability*

Records shall be retained for at least five years after the last date of manufacture or import, whichever is applicable.

6.3 MEPS transition

All products within the scope of MEPS manufactured or imported for sale in Australia or New Zealand on or after the relevant MEPS date shall meet the relevant MEPS requirements. Such units shall hold a valid registration at the time of sale, which shall indicate compliance with these MEPS requirements.

More details on the duration and validity of registrations can be found in the National Appliance and Equipment Energy Efficiency Program Administrative Guideline. The most up-to-date version can be obtained from <http://www.energyrating.gov.au>.

7 DATE OF MANUFACTURE INFORMATION

The date of manufacture shall be visible on the product or on the packaging. Information shall be provided on the registration form (see Appendix A).

NOTE: Regulators will use the date of manufacture as a guide as to when a product may have been available for sale in Australia and New Zealand. It is therefore preferable to be able to determine at least the month and year of manufacture from information on the product. This does not, however, preclude the use of other markings, for example serial numbers, which indicate those products manufactured within a period of time, with such details given on the registration form.

Irrespective of the information marked on the product, local manufacturers or importers may be required to provide evidence of the actual manufacture or import date if requested by a regulator.

APPENDIX A
APPLICATION FOR REGISTRATION OF AN ELC FOR MEPS
(Normative)

The application form is available online at www.energyrating.gov.au.

The application form requires the inclusion of, but is not limited to, the following information:

- (a) Details of the applicant and contact persons.
- (b) Relevant Standards.
- (c) General product description—
 - (i) brand;
 - (ii) model;
 - (iii) family designation;
 - (iv) product availability;
 - (v) country of manufacture;
 - (vi) date of manufacture; and
 - (vii) traceability.
- (d) Testing details—
 - (i) details of the testing laboratory;
 - (ii) test laboratory accreditation;
 - (iii) test Standards; and
 - (iv) test settings.
- (e) Specific product details (type/subtype).
- (f) Key test results and performance claims.
- (g) Declarations of compliance.
- (h) Other pertinent information as determined by the regulatory authorities.

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Standards Australia is an independent company, limited by guarantee, which prepares and publishes most of the voluntary technical and commercial standards used in Australia. These standards are developed through an open process of consultation and consensus, in which all interested parties are invited to participate. Through a Memorandum of Understanding with the Commonwealth government, Standards Australia is recognized as Australia's peak national standards body.

Standards New Zealand

The first national Standards organization was created in New Zealand in 1932. The Standards Council of New Zealand is the national authority responsible for the production of Standards. Standards New Zealand is the trading arm of the Standards Council established under the Standards Act 1988.

Australian/New Zealand Standards

Under a Memorandum of Understanding between Standards Australia and Standards New Zealand, Australian/New Zealand Standards are prepared by committees of experts from industry, governments, consumers and other sectors. The requirements or recommendations contained in published Standards are a consensus of the views of representative interests and also take account of comments received from other sources. They reflect the latest scientific and industry experience. Australian/New Zealand Standards are kept under continuous review after publication and are updated regularly to take account of changing technology.

International Involvement

Standards Australia and Standards New Zealand are responsible for ensuring that the Australian and New Zealand viewpoints are considered in the formulation of international Standards and that the latest international experience is incorporated in national and Joint Standards. This role is vital in assisting local industry to compete in international markets. Both organizations are the national members of ISO (the International Organization for Standardization) and IEC (the International Electrotechnical Commission).

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