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GEMS Regulator

Appendix: GEMS Check Testing Policy – with Validity Criteria



GREENHOUSE & ENERGY
**MINIMUM
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PART 1 - Purpose and Interpretation

1. Guidance on Check Testing Validity Criteria

This document is the Appendix to the Greenhouse and Energy Minimum Standards Check Testing Policy – with Validity Criteria (**GEMS Check Testing Policy**).

This Appendix sets out, for the purpose of the GEMS Check Testing Policy:

- the Check Testing Validity Criteria for the Stage 1 Check Tests and Stage 2 Check Tests that are applied by the GEMS Regulator: and
- the number of samples of products (units) to be tested for the Stage 1 Check Tests and Stage 2 Check Tests, in relation to products registered against each of the relevant GEMS determination.

In some cases, there are determinations under the GEMS Act that set out a GEMS requirement for which there is no Check Testing Validity Criteria included within this Appendix. In these situations, the product must meet the requirements of the relevant determination in order to pass Stage 1 Check Test and Stage 2 Check Test (no tolerances are applicable).

2. Number of samples of products required

Unless specified otherwise for the individual Check Testing Validity Criteria, this appendix indicates that the Stage 2 Check Tests require three (3) units or up to 3 units to be tested. In this case the following rules are applied:

- for GEMS labelling requirements, three units must be tested and, as applicable the average of all three units must pass the requirement; and
- for GEMS level requirements, two units may be tested initially against the Check Testing Validity Criteria, with the third unit only being required to be tested (to avoid a failure to meet the Check Testing Validity Criteria) if one of the two initial units fails to meet the Check Testing Validity Criteria.

For some products, the relevant Part of this Appendix identifies additional processes that may be applied as part of conducting the Stage 2 Check Testing.

Appendix: GEMS Check Testing Policy – with Validity Criteria

3. Interpretation

Each of the following Parts of this Appendix identify the relevant determination under the GEMS Act to which the Check Testing Validity Criteria set out in that Part apply.

Unless the contrary intention appears, words and expressions used in each Part have the same meaning as in the relevant determination under the GEMS Act. If a term or phrase is not defined under the GEMS Act, the regulations to the GEMS Act or in the relevant determination, but the term is defined in a standard mentioned in the relevant determination, then the term or phrase is to be read for the purposes of the relevant Check Testing Validity Criteria as having the meaning under the relevant standard.

Aspects of the Check Testing Validity Criteria are based on standards as referenced in the relevant determination under the GEMS Act. Please note that where updated or replacement versions of a standard have been issued, the standards applicable for the purpose of conducting Check Testing remain the versions that are referenced in the relevant determination under the GEMS Act.

The following abbreviations are used within the Check Testing Validity Criteria:

- **DV** is the declared value that has been included on the energy label and or in the GEMS product registration (otherwise as required on the product package) for the relevant units subject to check testing.
- **DV_{CEC}** is the declared value comparative energy consumption (CEC) for a model that has been included on the energy label and or in the GEMS product registration (otherwise as required on the product package) of the relevant unit subject to check testing.
- **DV_{SCEC}** is the declared value supplementary CEC for a model that has been included on the energy label and or in the GEMS product registration (otherwise as required on the product package) of the relevant unit subject to check testing.
- **MV** is the Check Test measured value of the amount referred to in that item in the column headed “Requirement”, when tested in accordance with the requirements for that amount as specified in the relevant determination under the GEMS Act.

- **MV_{ave}** is equal to the sum of the MV for each of the units tested, divided by the total number of units tested.
- **SR** is the specified requirement for the amount referred to in that item in the column headed “Requirement”, as specified in the relevant determination under the GEMS Act.
- **SR_{max}** is the maximum value specified for the relevant SR where a range is specified in the relevant determination under the GEMS Act.
- **SR_{min}** is the minimum value specified for the relevant SR where a range is specified in the relevant determination under the GEMS Act.

PART 2 - Greenhouse and Energy Minimum Standards (Rotary Clothes Dryers) Determination 2015

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Maximum tested energy performance	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: (a) for a model with an autosensing control mechanism: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clause 4.4 of AS/NZS 2442.1:1996

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
						(b) for a model with a timer control mechanism: $(MV \times 0.97) \leq SR$	
2	Section 7	GEMS labelling requirement	Projected annual energy consumption	All	For each unit tested: $MV \leq (DV_{CEC} \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV_{CEC} \times 1.1)$	The GEMS labelling requirements are set out in section 7 of the determination and in sections 2 and 5 and Appendix B of AS/NZS 2442.2:2000
3	Section 8	Other GEMS requirement	Drying clothes in a single operation	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.95) \leq SR$	The specified requirements are set out in clause 3.2 of AS/NZS 2442.2:2000. In this specific case the MV in Stage 2 is the measured final moisture content (%) reached in a single setting.
4	Section 8	Other GEMS requirement	Maximum fabric temperature	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV - 5) \leq SR$	The specified requirements are set out in clause 3.3 of AS/NZS 2442.2:2000

PART 3 - Greenhouse and Energy Minimum Standards (Clothes Washing Machines) Determination 2015

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 7	GEMS labelling requirement	Projected annual energy consumption	All	For each unit tested: $MV \leq (DV_{CEC} \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV_{CEC} \times 1.1)$	The GEMS labelling requirements are set out in sections 2 and 5 and Appendix B of AS/NZS 2040.2:2005

PART 4 - Greenhouse and Energy Minimum Standards (Dishwashers) Determination 2015

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 7	GEMS labelling requirement	Projected annual energy consumption	All	For each unit tested: $MV \leq (DV_{CEC} \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV_{CEC} \times 1.1)$	The GEMS labelling requirements are set out in sections 2 and 5, and Appendix B of AS/NZS 2007.2:2005

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 7	GEMS labelling requirement	Supplementary Projected annual energy consumption	All	For each unit tested: $MV \leq (DV_{sCEC} \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV_{sCEC} \times 1.1)$	The GEMS labelling requirements are set out in sections 2 and 5, and Appendix B of AS/NZS 2007.2:2005

PART 5 - Greenhouse and Energy Minimum Standards (Household Refrigerating Appliances) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	MEPS	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clause 3.5 of AS/NZS 4474.2:2009
2	Section 7	GEMS labelling requirement	Projected annual energy consumption	All	For each unit tested: $MV \leq (DV \times 1.075)$	For the set of units tested: $MV_{ave} \leq (DV \times 1.075)$	The GEMS labelling requirements are set out in section 5 of AS/NZS 4474.2:2009
3	Section 8	Other GEMS requirement	Rated Volume - Gross Volume of each compartment	All	For each unit tested, either: (a) $MV \geq (DV \times 0.95)$; or (b) $MV \geq (DV - 1)$	For the set of units tested, either: (a) $MV_{ave} \geq (DV \times 0.95)$; or (b) $MV_{ave} \geq (DV - 1)$	The requirements are set out in clause 3.2 of AS/NZS 4474.2:2009 The equation that yields the largest value shall be used.
4	Section 8	Other GEMS requirement	Rated Volume - Gross volume of the appliance	All	For each unit tested, either: (a) $MV \geq (DV \times 0.95)$; or (b) $MV \geq (DV - 5)$	For the set of units tested, either: (a) $MV_{ave} \geq (DV \times 0.95)$; or (b) $MV_{ave} \geq (DV - 5)$	The requirements are set out in clause 3.2 of AS/NZS 4474.2:2009 The equation that yields the largest value shall be used.
5	Section 8	Other GEMS requirement	Pull Down	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested:	The specified requirements are set

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
						$MV \leq (SR + 0.5)$	<p><i>out in clause 3.3 of AS/NZS 4474.2:2009.</i></p> <p><i>In this specific case MV relates to the instantaneous compartment temperature achieved in each compartment within the permitted test time.</i></p>
6	Section 8	Other GEMS requirement	Operating Temperature Performance -	1 to 7	<p>For each unit tested at each ambient condition for the SR:</p> $SR_{min} \leq MV \leq SR_{max}$	<p>For at least 2 of the units tested at each ambient condition for the SR:</p> $(SR_{min} - 0.5) \leq MV \leq (SR_{max} + 0.5)$	<p>The ambient conditions and allowable temperature ranges are specified in Tables 3.2 and 3.3 of AS/NZS 4474.1:2007</p> <p>The specified requirements are set out in clause 3.4 of AS/NZS 4474.2:2009. In this specific case MV relates to the average compartment temperature achieved simultaneously in each compartment.</p>

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
7	Section 8	Other GEMS requirement	Operating Temperature - frozen food compartments	2 to 10	For each unit tested at each ambient condition for the SR: $MV \leq SR_{\square}$	For at least 2 of the units tested at each ambient condition for the SR: $MV \leq (SR_{\square} + 0.5)$	The ambient conditions and allowable temperature ranges are specified in Tables 3.2 and 3.3 of AS/NZS 4474.1:2007 The specified requirements are set out in clause 3.4 of AS/NZS 4474.2:2009. In this specific case MV relates to the average compartment temperature achieved simultaneously in each compartment.
8	Section 8	Other GEMS requirement	Ice making capacity	All	For each unit tested: $MV \geq (DV \times 0.9)$	For the set of units tested: $MV_{ave} \geq (DV \times 0.9)$	The specified requirements are set out in clause 3.5 of AS/NZS 4474.1:2007
9	Section 8	Other GEMS requirement	Energy Test Performance - Temperature Excursions During Defrost and Recovery	5, 6, 7, 10	For each unit tested: $MV \leq SR_{\square}$	For at least 2 of the units tested: $MV \leq (SR_{\square})^{**}$	The specified requirements are set out in clause 3.7.3(a) of AS/NZS 4474.1:2007. In this specific case MV is the time the instantaneous temperature of any

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
							<i>freezer temperature sensor is above the temperature specified (0°C). SR is the specified maximum time (20 min). ** For Stage 2 tests, the time the instantaneous temperature of any freezer temperature sensor is above +0.5°C is assessed.</i>

PART 6 - Greenhouse and Energy Minimum Standards (Household Refrigerating Appliances) Determination 2019

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 8	GEMS level requirement	MEPS	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in section 4.2 of AS/NZS 4474:2018

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 9	GEMS labelling requirement	Energy for labelling	All	For each unit tested: $MV \leq (DV \times 1.075)$	For the set of units tested: $MV_{ave} \leq (DV \times 1.075)$	The GEMS labelling requirements are set out in section 2 of AS/NZS 4474:2018
3	N/A	N/A	Volume of each compartment	All	For each unit tested, either: (a) $MV \geq (DV \times 0.95)$; or (b) $MV \geq (DV - 1)$	For 3 or more of the units tested either: (a) $MV_{ave} \geq (DV \times 0.95)$; or (b) $MV_{ave} \geq (DV - 1)$	The equation that yields the largest value shall be used.
4	N/A	N/A	Total Volume	All	For each unit tested, either: (a) $MV \geq (DV \times 0.95)$; or (b) $MV \geq (DV - 5)$	For 3 or more of the units tested either: (a) $MV_{ave} \geq (DV \times 0.95)$; or (b) $MV_{ave} \geq (DV - 5)$	The equation that yields the largest value shall be used.
5	Section 10	Other GEMS requirement	Pull Down	All	For each unit tested: $MV \leq SR_{\square}$	For at least 2 of the units tested: $MV \leq (SR + 0.5)$	The specified requirements are set out in clause 4.4 of AS/NZS 4474:2018. In this specific case MV relates to the instantaneous compartment temperature achieved

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
							<i>in each compartment within the permitted test time.</i>
6	Section 10	Other GEMS requirement	Storage Test	1 to 7	For each unit tested at each ambient condition for the SR: $SR_{min} \leq MV \leq SR_{max}$	For at least 2 of the units tested at each ambient condition for the SR: $(SR_{min} - 0.5) \leq MV \leq (SR_{max} + 0.5)$	The ambient conditions and specified requirements are set out in clause 4.5 of AS/NZS 4474:2018. In this specific case MV relates to the average compartment temperature achieved simultaneously in each compartment.
7	Section 10	Other GEMS requirement	Temperature Excursions During Defrost and Recovery.	2 to 7	For each unit tested: $MV \leq SR_{\square}$	For at least 2 of the units tested: $MV \leq (SR_{\square})^{**}$	The specified requirements are set out in clause 4.6 of AS/NZS 4474:2018. In this specific case MV is the time the instantaneous temperature of any freezer temperature sensor is above the temperature specified (0°C). SR is the specified maximum time (20 min). ** For Stage 2 tests, the time the instantaneous

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
							<i>temperature of any freezer temperature sensor is above +0.5°C is assessed.</i>

Note that where marked as N/A in the table, the Check Test Validity Criteria relate to provisions of the determination that are not GEMS requirements but support the testing of other GEMS requirements.

PART 7 - Greenhouse and Energy Minimum Standards (Air Conditioners up to 65kW) Determination 2019

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria¹

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Sections 20, 22 and 23	GEMS level requirement	Tested Annual Energy Efficiency Ratio (AEER) at the MEPS rating point (rated capacity or part load as applicable)	All except Product Classes 2, 3 and 4	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.03) \geq SR$	The specified requirements are the relevant MEPS level specified for the product class in Schedule 1 of the determination.
2	Section 20, 22 and 23	GEMS level requirement	Tested Annual Coefficient of Performance (ACOP) at the MEPS rating point (rated capacity or part load as applicable)	All except Product Classes 2, 3 and 4	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.03) \geq SR$	The specified requirements are the relevant MEPS level specified for the product class in Schedule 1 of the determination.

3	Section 38	GEMS labelling requirement	Tested effective power input for cooling and heating at rated capacity	All	For each unit tested: $MV \leq 1.10 \times DV$	For the set of units tested: $MV_{ave} \leq 1.10 \times DV$	This item applies where ERL is used instead of ZERL in relation to products that are permitted to comply with the Greenhouse and Energy Minimum Standards (Air Conditioners and Heat Pumps) Determination 2013.
4	Part 4, Division 2	GEMS labelling requirement	Tested cooling and heating capacity output at rated capacity	All	For each unit tested: $MV \geq 0.90 \times DV$	For the set of units tested: $MV_{ave} \geq 0.90 \times DV$	Greenhouse and Energy Minimum Standards (Air Conditioners and Heat Pumps) Determination 2013.
5	Section 21	GEMS level requirement	Tested EER at rated capacity at the MEPS rating point	Classes 2, 3 and 4	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.03) \geq SR$	The specified requirements are the relevant MEPS level specified for the product class in Schedule 1 of the determination.
6	Section 21	GEMS level requirement	Tested COP at rated capacity at the MEPS rating point	Classes 2, 3 and 4	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.03) \geq SR$	The specified requirements are the relevant MEPS level specified for the product class in Schedule 1 of the determination.

7	Part 4, Division 2	GEMS labelling requirement	Tested heating capacity at H2	All	For each unit tested: $MV \geq 0.90 \times DV$	For the set of units tested: $MV_{ave} \geq 0.90 \times DV$	
8	Section 40	Other GEMS requirement	Average True Power Factor for heating and cooling	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.02) \geq SR$	The specified requirements are the requirements for products that are set out in section 40 of the determination.
9	Part 4, Division 2,	GEMS labelling requirement	Tested TCSPF and HSPF	Classes 1, 2, 5, 6, 8-10 and those products in classes in 6 and 11 with a capacity of <30kW	For each unit tested: $DV \times 0.95 \leq MV$	For the set of units tested: $DV \times 0.95 \leq MV_{ave}$	The TV is calculated in accordance with Annex B of AS/NZS 3823.4.1:2014 and clause 6.1 of AS/NZS 3823.4.2:2014

PART 8 - Greenhouse and Energy Minimum Standards (Close Control Air Conditioners) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	MEPS	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.03) \geq SR$	The specified requirements are set out in clause 2.2 of AS/NZS 4965.2:2008

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
							<i>Cooling Capacity</i>
							<i>Power Input</i>

PART 9 - Greenhouse and Energy Minimum Standards (Liquid-chilling Packages Using the Vapour Compression Cycle) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	1 Conditions for Stage 2 Check Testing will be specified by the GEMS Regulator under subsection 61(3) of the GEMS Act and may permit use of the same unit subject to Stage 1 Check Testing in a second test facility

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	MEPS (COP)	All	For each unit tested: $(MV \times 1.075) \geq SR$	For each unit tested: $(MV \times 1.075) \geq SR$	The specified requirements are set out in section 5 of AS/NZS 4776.2:2008
2	Section 6	GEMS level requirement	MEPS (IPLV)	All	For each unit tested: $(MV \times 1.08) \geq SR$	For each unit tested: $(MV \times 1.08) \geq SR$	The specified requirements are set out in section 5 of AS/NZS 4776.2:2008

PART 10 - Greenhouse and Energy Minimum Standards (Self-ballasted Compact Fluorescent Lamps for General Lighting Services) Determination 2017

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Items	Stage 1 Check Test	Stage 2 Check Test
1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12 and 14	10	20
13	3	6
15 and 16	1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Initial efficacy	All	For the set of units tested: $MV_{ave} \geq SR$	For the set of units tested: $(MV_{ave} \times 1.05) \geq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
2	Section 7	GEMS labelling requirement	Light output	All	For the set of units tested: $MV_{ave} \geq ((DV - 5) \div 1.1)$	For the set of units tested: $MV_{ave} \geq ((DV - 5) \div 1.1)$	The GEMS labelling requirements are set out in clause 4.4 of AS/NZS 4847.2:2010
3	Section 7	GEMS labelling requirement	Wattage in watts	All	For the set of units tested: $((DV - 0.5) \div 1.1) \leq MV_{ave} \leq ((DV + 0.5) \div 0.9)$	For the set of units tested: $((DV - 0.5) \div 1.1) \leq MV_{ave} \leq ((DV + 0.5) \div 0.9)$	The GEMS labelling requirements are set out in clause 4.4 of AS/NZS 4847.2:2010
4	Section 7	GEMS labelling requirement	Lifetime	All	For at least 5 of the 10 units tested: $MV_{\square} \geq ((DV - 50 \text{ hours}) \div 1.1)$	For at least 10 of the 20 units tested: $MV_{\square} \geq ((DV - 50 \text{ hours}) \div 1.1)$	The GEMS labelling requirements are set out in clause 4.4 of AS/NZS 4847.2:2010
5	Section 8	Other GEMS requirement	Starting time	All	For at least 80% of the units tested: $MV \leq SR$	For at least 80% of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
6	Section 8	Other GEMS requirement	Run-up time	All	For the set of units tested: $MV_{ave} \leq SR$	For the set of units tested: $(MV_{ave} \times 0.98) \leq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
7	Section 8	Other GEMS requirement	Lumen maintenance	All	For the set of units tested: $MV_{ave} \geq SR$	For the set of units tested: $(MV_{ave} \times 1.05) \geq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
8	Section 8	Other GEMS requirement	Maximum premature lamp failure rate	All	For the set of units tested: $MV \leq SR$	For the set of units tested: $MV \leq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010 Note the specified requirement is that not more than 10% of units fail by the time 30% of rated life has elapsed.
9	Section 8	Other GEMS requirement	Minimum lifetime	All	For at least 5 of the 10 units tested: $MV \geq SR$	For at least 10 of the 20 units tested: $MV \geq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
10	Section 8	Other GEMS requirement	Minimum true power factor	All	For the set of units tested:	For the set of units tested:	The specified requirements are set out in clauses 4.2 and

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
					$MV_{ave} \geq SR$	$(MV_{ave} \times 1.04) \geq SR$	4.3 of AS/NZS 4847.2:2010
11	Section 8	Other GEMS requirement	Colour appearance	All	For each unit tested: $MV \leq SR$	For each unit tested: $(MV \times 0.9925) \leq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
12	Section 8	Other GEMS requirement	Minimum colour rendering index	All	For the set of units tested: $MV_{ave} \geq SR$	For the set of units tested: $(MV_{ave} + 3) \geq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
13	Section 8	Other GEMS requirement	Maximum mercury content	All	For the set of units tested: $MV_{ave} \leq SR$	For the set of units tested: $(MV_{ave} \times 0.98) \leq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
14	Section 8	Other GEMS requirement	Minimum switching withstand	All	For at least 80% of the units tested: $MV \geq SR$	For at least 80% of the units tested: $MV \geq SR$	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010
15	Section 8	Other GEMS requirement	Harmonics	All	Each units tested must meet the SR.	At least 2 of the units tested must meet the SR.	The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
<i>16</i>	<i>Section 8</i>	<i>Other GEMS requirement</i>	<i>Immunity</i>	<i>All</i>	<i>Each unit tested must meet the SR.</i>	<i>At least 2 of the units tested must meet the SR.</i>	<i>The specified requirements are set out in clauses 4.2 and 4.3 of AS/NZS 4847.2:2010</i>

PART 11 - Greenhouse and Energy Minimum Standards (Transformers and Electronic Step-down Converters for ELV Lamps) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	MEPS - Efficiency	1 and 2	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.02) \geq SR$	The specified requirements are set out in clause 4.2 of AS/NZS 4879.2: 2010

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 7	GEMS labelling requirement	Energy performance mark	All	For each unit tested: $MV \geq (SR_{\square} \times 0.95)$	For the set of units tested: $MV_{ave} \geq (SR_{\square} \times 0.95)$	The specified requirements are set out in Appendix A of AS/NZS 4879.1:2008
3	Section 8	Other GEMS requirement	High efficiency level (when claimed)	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.02) \geq SR$	The specified requirements are set out in clause 4.2 of AS/NZS 4879.2: 2010
4	Section 8	Other GEMS requirement	Output voltage	All	For each unit tested: $SR_{min} \leq MV$ $\leq SR_{max}$	For at least 2 of the units tested: $(SR_{min} \times 0.98) \leq MV$ $\leq (SR_{max} \times 1.02)$	The specified requirements are set out in clause 5.5 of AS/NZS 4879.2:2010

PART 12 - Greenhouse and Energy Minimum Standards (Incandescent Lamps for General Lighting Services) Determination 2016

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Item	Stage 1 Check Test	Stage 2 Check Test
1, 2, 3, and 6	10	20
4 and 5	20	20

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Initial efficacy	All	For the set of units tested:	For the set of units tested: $(MV_{ave} \times 1.06) \geq SR$	The specified requirements are set out

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
					$(MV_{ave} \times 1.06) \geq SR$		<i>in section 6 of the Determination.</i> <i>The flux and wattage values for this requirement are set out in Appendix A of AS 4934.2-2011</i>
2	Section 7	GEMS labelling requirement	Light output	All	For the set of units tested: $MV_{ave} \geq (DV - 5)/1.1$	For the set of units tested: $MV_{ave} \geq (DV - 5)/1.1$	
3	Section 7	GEMS labelling requirement	Power in watts	All	For the set of units tested: $(DV - 0.5)/1.05 \leq MV_{ave} \leq (DV + 0.5)/0.95$	For the set of units tested: $(DV - 0.5)/1.05 \leq MV_{ave} \leq (DV + 0.5)/0.95$	
4	Section 7	GEMS labelling requirement	Average lifetime	All	For at least 10 of the 20 units tested: $MV \geq (DV - 50)/1.1$	For at least 10 of the 20 units tested: $MV \geq (DV - 50)/1.1$	
5	Section 8	Other GEMS requirement	Median lifetime	All	For at least 10 of the 20 units tested: $MV \geq SR$	For at least 10 of the 20 units tested: $MV \geq SR$	<i>The specified requirements are set out in section 8 of the determination.</i>
6	Section 8	Other GEMS requirement	Lumen maintenance	All	For the set of units tested:	For the set of units tested:	<i>The specified requirements are set out</i>

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
					$MV_{ave} \geq SR$	$(MV_{ave} \times 1.05) \geq SR$	<i>in section 8 of the determination</i>
7	Section 8	Other GEMS requirement	Maximum Wattage	7	For the set of units tested: $MV_{ave} \leq SR$	For the set of units tested: $(MV_{ave} \times 0.98) \leq SR$	The specified requirements are set out in section 8 of the determination

PART 13 - Greenhouse and Energy Minimum Standards (Ballasts for Fluorescent Lamps) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Corrected total input power	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clause 6.4.1 of AS/NZS 4783.2:2002

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 7	GEMS labelling requirement	Energy efficiency index	All	For the set of units tested MV_{ave} of corrected total input power corresponds to the marked energy efficiency index	For the set of units tested MV_{ave} of corrected total input power corresponds to the marked energy efficiency index	The GEMS labelling requirements are set out in clause 5.4 of AS/NZS 4783.2:2002.
3	Section 8	Other GEMS requirement	Ballast performance requirements	All	Each unit tested must meet the SR.	At least 2 of the units tested must meet the SR.	The specified requirements are set out in clause 6.2 of AS/NZS 4783.2:2002
4	Section 8	Other GEMS requirement	Ballast lumen factor	All	For the set of units tested, the Ballast Lumen Factor shall be declared for each of its recommended ballast-lamp combinations.	For the set of units tested, the Ballast Lumen Factor shall be declared for each of its recommended ballast-lamp combinations.	The specified requirements are set out in clause 6.3 of AS/NZS 4783.2:2002

PART 14 - Greenhouse and Energy Minimum Standards (Double-capped Fluorescent Lamps) Determination 2017

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	10

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Initial efficacy	All	For each unit tested: $MV \geq SR$	For at least 9 of the units tested: $(MV \times 1.05) \geq SR$	The specified requirements are set out in clause 2.2 of AS/NZS 4782.2: 2004

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 6	GEMS level requirement	Maintained efficacy	All	For each unit tested: $MV \geq SR$	For at least 9 of the units tested: $(MV \times 1.05) \geq SR$	The specified requirements are set out in clause 2.2 of AS/NZS 4782.2: 2004
3	Section 8	Other GEMS requirement	Colour rendering index	All	For each unit tested: $MV \geq SR$	For at least 9 of the units tested: $(MV + 3) \geq SR$	The specified requirements are set out in clause 2.2 of AS/NZS 4782.2: 2004
4	Section 8	Other GEMS requirement	Mercury content	All	For each unit tested: $MV \leq SR$	For at least 9 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in subsection 8(2) of the determination

PART 15 - Greenhouse and Energy Minimum Standards (Electric Water Heaters) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Maximum allowable heat loss	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.95) \leq SR$	The specified requirements are set out in subclause 2.2 of AS/NZS 4692.2:2005
2	Section 8	Other GEMS requirement	Rated hot water delivery	1 and 2	For each unit tested: $MV \geq (DV \times 0.96)$	For the set of units tested:	The relevant requirements are set out

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
						$MV_{ave} \geq (DV \times 0.96)$	<i>in subclause 2.2 of AS/NZS 4692.2:2005</i>
3	Section 8	Other GEMS requirement	Hot water delivery	3	For each unit tested: $MV \geq (SR \times 0.97)$	For the set of units tested: $MV_{ave} \geq (SR \times 0.97)$	The specified requirements are set out in subclause 2.2 of AS/NZS 4692.2:2005
4	Section 8	Other GEMS requirement	Nominal heat storage volume	3	For each unit tested: $MV \geq (DV \times 0.975)$	For the set of units tested: $MV_{ave} \geq (DV \times 0.975)$	The relevant requirements are set out in subclause 2.2 of AS/NZS 4692.2:2005
5	Section 8	Other GEMS requirement	Mixed hot water delivery	All	For each unit tested: $MV \geq (DV \times 0.97)$	For the set of units tested: $MV_{ave} \geq (DV \times 0.97)$	The relevant requirements are set out in subclause 2.4 of AS/NZS 4692.2:2005

PART 16 – Greenhouse and Energy Minimum Standards (Gas Water Heaters) Determination 2017

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Annual energy consumption	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.97) \leq SR$	The specified requirements are set out in section 2.1 of AS/NZS 4552.2:2010
2	Section 8	Other GEMS requirement	Thermal Efficiency – Minimum	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested:	The specified requirements are set out

Greenhouse and Energy Minimum Standards Check Testing Policy – with Validity Criteria

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
						$(MV \times 1.03) \geq SR$	<i>in section 5.13.101 of AS/NZS 5263.1.2:2016</i>

PART 17 - Greenhouse and Energy Minimum Standards (Television) Determination 2013 (No.2)

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Maximum energy consumption	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clause 5.3 of AS/NZS 62087.2.2:2011
2	Section 7	GEMS labelling requirement	Projected Annual Energy Consumption	All	For each unit tested: $MV \leq (DV \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV \times 1.1)$	The GEMS labelling requirements are set out in clause 4 of AS/NZS 62087.2.2:2011, as modified by subsection 7(1) of the determination
3	Section 8	Other GEMS requirement	Recommended home viewing picture mode	All	Each unit tested must meet the SR.	Each unit tested must meet the SR.	The specified requirements are set out in clause 2.1 of AS/NZS 62087.2.2:2011
4	Section 8	Other GEMS requirement	User selection of the recommended home viewing picture mode	All	Each unit tested must meet the SR.	Each unit tested must meet the SR.	The specified requirements are set out in clause 2.2 of AS/NZS 62087.2.2:2011
5	Section 8	Other GEMS requirement	Implementation of Picture set-up or installation menus	All	Each unit tested must meet the SR.	Each unit tested must meet the SR.	The specified requirements are set out in clause 2.3 of AS/NZS 62087.2.2:2011

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
6	Section 8	Other GEMS requirement	Picture Mode Luminance	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.05) \geq SR$	The specified requirements are set out in clause 2.4 of AS/NZS 62087.2.2:2011
7	Section 8	Other GEMS requirement	On screen warning when set in store mode	All	Each unit tested must meet the SR.	Each unit tested must meet the SR.	The specified requirements are set out in clause 2.5 of AS/NZS 62087.2.2:2011

PART 18 - Greenhouse and Energy Minimum Standards (Digital Television Set-top Boxes) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Passive standby maximum power	1 and 2	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in section 4.1 of AS/NZS 62087.2.1:2008
2	Section 6	GEMS level requirement	Active standby maximum	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested:	The specified requirements are set out

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
			<i>power - maximum platform allowance (MPA)</i>			$(MV \times 0.98) \leq SR$	<i>in sections 4.1 and 5.1 of AS/NZS 62087.2.1:2008</i>
3	Section 6	GEMS level requirement	Active standby maximum power - maximum power limit (MPL)	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in sections 4.1 and 5.1 of AS/NZS 62087.2.1:2008
4	Section 6	GEMS level requirement	On mode maximum power - maximum platform allowance (MPA)	1 and 2	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in section 4.1 of AS/NZS 62087.2.1:2008
5	Section 6	GEMS level requirement	On mode maximum power - maximum power limit (MPL)	1 and 2	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in section 4.1 of AS/NZS 62087.2.1:2008
6	Section 8	Other GEMS requirement	High Efficiency Level	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested:	The specified requirements are set out in section 3 of the

Greenhouse and Energy Minimum Standards Check Testing Policy – with Validity Criteria

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
					<i>And the features as noted in section 3 of AS/NZS 62087.2.1:2008 must be present</i>	$(MV \times 0.99) \leq SR$ <i>And the features as noted in section 3 of AS/NZS 62087.2.1:2008 must be present</i>	<i>determination and section 3 of AS/NZS 62087.2.1:2008</i>

PART 19 - Greenhouse and Energy Minimum Standards (External Power Supplies) Determination 2014

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 7	GEMS level requirement	No load power consumption	1, 2	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in clause 2.1 of AS/NZS 4665.2:2005
2	Section 7	GEMS level requirement	Average active mode efficiency	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested:	The specified requirements are set out

Greenhouse and Energy Minimum Standards Check Testing Policy – with Validity Criteria

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
						$(MV \times 1.04) \geq SR$	<i>in clauses 2.1 and 2.2 of AS/NZS 4665.2:2005</i>
3	Section 8	GEMS labelling requirements	Energy performance mark	All	For each unit tested: $MV \geq (SR_{min} \times 0.95)$	For the set of units tested: $MV_{ave} \geq (SR_{min} \times 0.95)$	The specified requirements are set out in Appendix A of AS/NZS 4665.1:2005, section 5 of AS/NZS 4665.2:2005 and the IEMP
4	Section 9	GEMS labelling requirements	High efficiency level - no load power consumption	1 and 2	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.96) \leq SR$	The specified requirements are set out in section 3 of AS/NZS 4665.2:2005 and the IEMP This item is only applicable where a HE performance level is claimed
5	Section 9	GEMS labelling requirements	High efficiency level - average active mode efficiency	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.04) \geq SR$	The specified requirements are set out in section 3 of AS/NZS 4665.2:2005 and the IEMP This item is only applicable where a HE performance level is claimed

PART 20 - Greenhouse and Energy Minimum Standards (Computer Monitors) Determination 2014

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Off mode power	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.99) \leq SR$	The specified requirements are set out in section 2 of AS/NZS 5815.2:2013

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 6	GEMS level requirement	Standby active (sleep) mode power	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.99) \leq SR$	The specified requirements are set out in section 2 of AS/NZS 5815.2:2013
3	Section 6	GEMS level requirement	On mode power	All	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.8) \leq SR$	The specified requirements are set out in section 2 of AS/NZS 5815.2:2013
4	Section 7	GEMS labelling requirement	Projected Annual Energy Consumption	All	For each unit tested: $MV \leq (DV_{CEC} \times 1.075)$	For the set of units tested: $MV_{ave} \leq (DV_{CEC} \times 1.075)$	The specified requirements are set out in sections 3 and 4 of AS/NZS 5815.2:2013, as modified by subsection 7(1) of the determination.

PART 21 - Greenhouse and Energy Minimum Standards (Computers) Determination 2013

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	Typical energy consumption (TEC)	1, 2, 3	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in subclauses 4.5.1 and 4.5.2 of AS/NZS 5813.2:2012

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Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
2	Section 6	GEMS level requirement	Idle mode power	4	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in subclause 4.5.3 of AS/NZS 5813.2:2012
3	Section 6	GEMS level requirement	Power requirements for small-scale servers - Standby (off mode) WOL disabled	4	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in subclause 4.5.3 of AS/NZS 5813.2:2012
4	Section 6	GEMS level requirement	Power requirements for small-scale servers - Standby (off mode) WOL enabled	4	For each unit tested: $MV \leq SR$	For at least 2 of the units tested: $(MV \times 0.98) \leq SR$	The specified requirements are set out in subclause 4.5.3 of AS/NZS 5813.2:2012
5	Section 6	GEMS level requirement	Deemed-to-comply computer - minimum efficiency of its internal power supply	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.04) \geq SR$	The specified requirements are set out in clause 4.4 of AS/NZS 5813.2:2012 This item relates to a computer that is a deemed-to-comply computer under

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
							<i>subsections 6(2) and 6(3) of the determination</i>
6	Section 6	GEMS level requirement	Deemed-to-comply computer - minimum power factor	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.04) \geq SR$	<i>The specified requirements are set out in clause 4.4 of AS/NZS 5813.2:2012 This item relates to a computer that is a deemed-to-comply computer under subsections 6(2) and 6(3) of the determination</i>

PART 22 - Greenhouse and Energy Minimum Standards (Three Phase Cage Induction Motors) Determination 2019

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 14	GEMS level requirement	MEPS	All	For each unit tested where motor output $\leq 150kW$: $MV \geq SR - (0.15 \times (1 - SR))$	For at least 2 of the units tested where	The specified requirements are set out in section 14 of

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
					<p><i>For each unit tested where motor output > 150kW:</i></p> $MV \geq SR - (0.10 \times (1 - SR))$	<p><i>motor output < 150kW:</i></p> <p><i>As per Stage 1</i></p> <p><i>For each unit tested where motor output \geq 150kW:As per Stage 1</i></p>	<p><i>the determination</i></p>
2	Section 21	Other GEMS requirement	High Efficiency Level	All	<p><i>For each unit tested</i></p> $MV \geq SR$	<p><i>For at least 2 of the units tested</i></p> $MV \times 1.0025 \geq SR$	<p><i>The specified requirements are set out in section 21 of the determination</i></p>

PART 23 - Greenhouse and Energy Minimum Standards (Power Transformers) Determination 2012

Number of test units to be selected

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 6	GEMS level requirement	MEPS	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 1.0002) \geq SR$	The specified requirements are set out in clause 2.1 of AS 2374.1.2-2003

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
<i>2</i>	<i>Section 8</i>	<i>Other GEMS requirement</i>	<i>High Efficiency</i>	<i>All</i>	<i>For each unit tested: $MV \geq SR$</i>	<i>For at least 2 of the units tested: $(MV \times 1.0002) \geq SR$</i>	<i>The specified requirements are set out in clause 3.1 of AS 2374.1.2-2003 This item is only relevant where the HE performance level is claimed.</i>

PART 24 - Greenhouse and Energy Minimum Standards (Refrigerated Cabinets) Determination 2020**Number of test units to be selected**

The required number of units of a model in a product class covered by the relevant determination to be tested is:

Stage 1 Check Test	Stage 2 Check Test
1	3

Stage 1 and Stage 2 Check Test Validity Criteria

The Stage 1 Check Test Validity Criteria and Stage 2 Check Test Validity Criteria for a model in a product class covered by the relevant determination for this Part, are set out in the following table:

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
1	Section 23	GEMS level requirement	MEPS	All	For each unit tested: $MV \geq SR$	For at least 2 of the units tested: $(MV \times 0.98) \geq SR$	The specified requirements are set out in Division 2 Section 23 of the determination
2	Section 25	Other GEMS requirement	Annual Energy Consumption (AEC)	All	For each unit tested: $MV \leq (DV \times 1.1)$	For the set of units tested: $MV_{ave} \leq (DV \times 1.1)$	
3	Section 32	Other GEMS requirement	M-Package temperature classification	1 – 4 & 6 - 15	For each unit tested at each tested M-package temperature class $MV \leq HT$ and $MV \geq LT$ and $MV \leq HM$	For at least 2 of the units tested at each tested M-package temperature class $MV - 0.5 \leq HT$ and $MV + 0.5 \geq LT$ and $MV - 0.5 \leq HM$	HT = the highest temperature of the warmest M-package (as applicable)* LT = lowest temperature of the coldest M-package (as applicable)* HM = Highest Minimum Temperature of all M-package (as applicable)* *As specified in Schedule 4 of the determination The test conditions and climate class settings shall be as specified in Section 32 of the Determination

Item	Provision of the determination	Type of GEMS requirement	Requirement	Product class	Stage 1 check test validity criteria	Stage 2 check test validity criteria	Notes
4	Section 32	Other GEMS requirement	M-Package temperature classification	5	For each unit tested at each tested M-package temperature class $MV \leq WC$ and $MV \leq WM$	For at least 2 of the units tested at each tested M-package temperature class $MV - 0.5 \leq WC$ and $MV - 0.5 \leq WM$	WC = the warmest M-package temperature in all tests except lid opening test (as applicable)* WM = the warmest M-package maximum temperature rise (as applicable)* *As specified in Schedule 4 of the determination The test conditions and climate class settings shall be as specified in Section 32 of the Determination

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