Compliance Testing Report for Australian/New Zealand Standards AS/NZS5110:2010 (Draft)
Recessed Luminaire Barriers
(Partial Testing Only)

Client:	Efficiency Matrix
Address:	14 Ondine Drive, Wheelers Hill, Victoria 3150
Report Number:	1018EFFDOWMIT01_5110P Replacement for report 1013EFFDOWMIT01_5110P
Date of Testing:	18th of October 2010
File Number:	EFF100930

Equipment Name:	Loft Mitt
Equipment Model Number:	Dowmit01
Equipment Description:	Testing Loft Mitt to Draft Standard AS/NZS5110:2010

Result:	Refer to summary page
Tested by:	James Emery Electrical Safety Test Engineer
Approved by:	Kenneth Fu Electrical Safety Manager
Date of issue:	18th of October 2010

Accredited for compliance with ISO / IEC 17025.
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SUMMARY OF COMPLIANCE WITH AUSTRALIAN AND NEW ZEALAND STANDARDS (DRAFT) AS/NZS 5110:2010 (Partial Testing)

The EUT (Equipment Under Test) known as a Loft Mitt, model: Dowmit01 and was supplied for testing to Clause 5.7 of the draft standard AS/NZS5110:2010 by Efficiency Matrix of 14 Ondine Drive, Wheelers Hill, Victoria 3150.

At the client's request the EUT was tested to Clause 5.7 of the above mentioned standard (Abnormal Operation) which requires a lamp to be energised to 264V. A fixed head halogen mounting fixture was used along with R 5.0 Insulation completely covering the EUT and ballast as a worst case test.

This report is the replacement report for test report number 1013EFFDOWMIT01_5110P due to the correction of the test point diagram to reflect the correct values.

The EUT **COMPLIES** with the tested clause 5.7 (Abnormal Operation) of Draft Standard AS/NZS5110:2010

Special Conditions for Compliance:

1) **The EUT was tested as per Appendix 4, supplied by client.**

2) **The EUT was tested to a draft standard only.**

Method
Testing was performed in accordance with the draft standard:
5110:2010 man

Possible Test Case Verdicts:
- test case does not apply to the test object .....N(.A)
- test object does meet the requirements.....P(ass)
- test object does not meet the requirements .....F(ail)
- test was not performed .....NT(not tested)
- noted.....ND

Draft Standard AS/NZS5110:2010			
Clause	Requirement - Test	Result - Remark	Verdict

5.7	TABLE: temperature rise measurements for **abnormal operation** Test Box completely filled with R5 rated insulation. Test was conducted for 8Hrs. Values shown are maximum temperatures achieved. Temperatures are adjusted to an ambient temperature of 25 degrees Celsius.		P
	test voltage (V) ..... :	264 V	—

Temperature (^{0}C) of part	Max. Reached T (^{0}C)	Max. Allowed T (^{0}C)
P1	338.8	Refer to Manufacturer Data
P2	266.4	Refer to Manufacturer Data
P3	226.0	Refer to Manufacturer Data
P4	198.0	Refer to Manufacturer Data
Lamp Holder	240.4	Refer to Manufacturer Data
Lamp Fitting	96.4	135
Plaster	50.6	135
Ballast power cable at lamp holder	169.0	200
Ballast power cable 40cm from lamp holder	128.6	200
Mitt inside Lower	106.5	Refer to Manufacturer Data
Mitt Inside at top	111.4	Refer to Manufacturer Data
Exterior of ballast	83.3	90
Outside Mitt left side	75.7	135
Outside Mitt right side	81.3	135
Outside Mitt at top	87.2	135
Top of Enclosure	31.8	135
Ambient	23.0 (Adj. to 25)	20-30

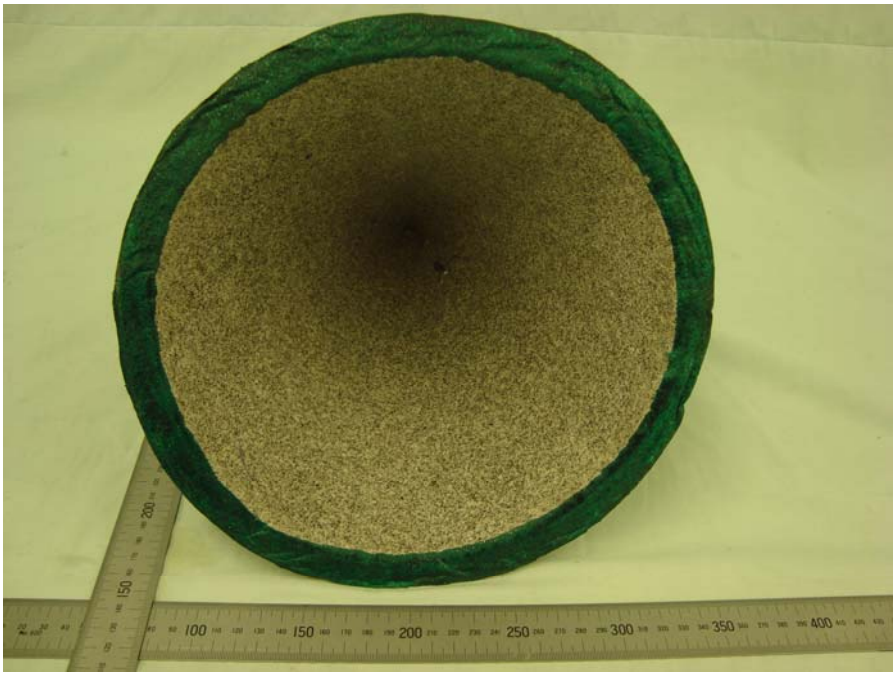
***** END OF REPORT BODY *****

Appendix 1 – Critical Component List
Appendix 2 – Photographic Record of Sample
Appendix 3 – Supplied Test Points
Appendix 4 – Supplied Draft Standard

Appendix 1- Critical Component List

Appendix 1	TABLE: Components				p
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Transformer	TRIDONIC.ATCO	VIPER	Primary: 230-240V~ 50/60Hz Secondary: 11.6V	-	V99
Dichroic Lamp	GE	FNV/CG	12V 50W	-	-
Ceiling Batt R5.0	Insulco	201504	Maximum Thickness	-	-
[1)] An asterisk indicates a mark which assures the agreed level of surveillance					

Appendix 2 – Photographic Record of Sample



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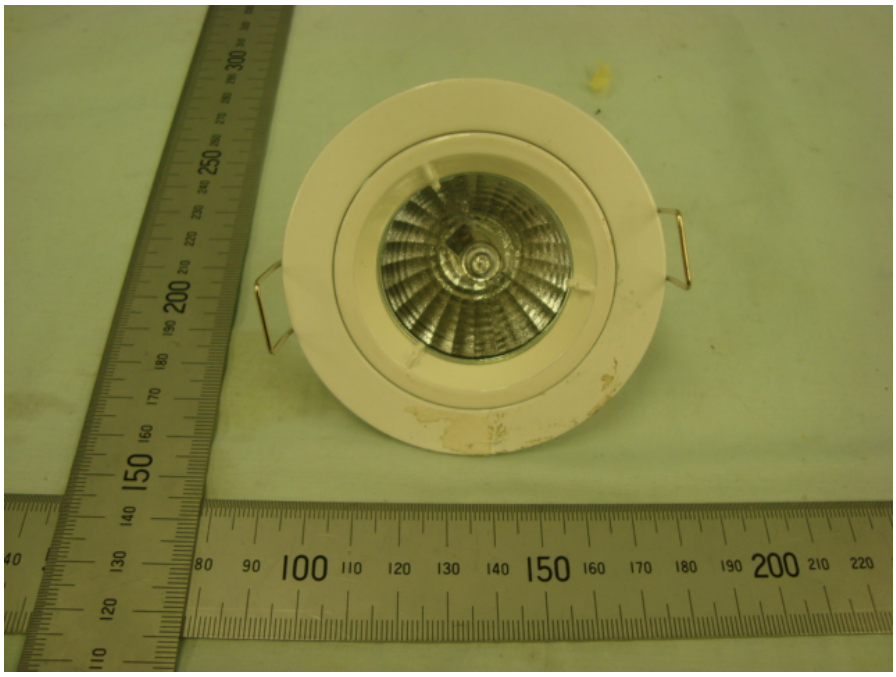
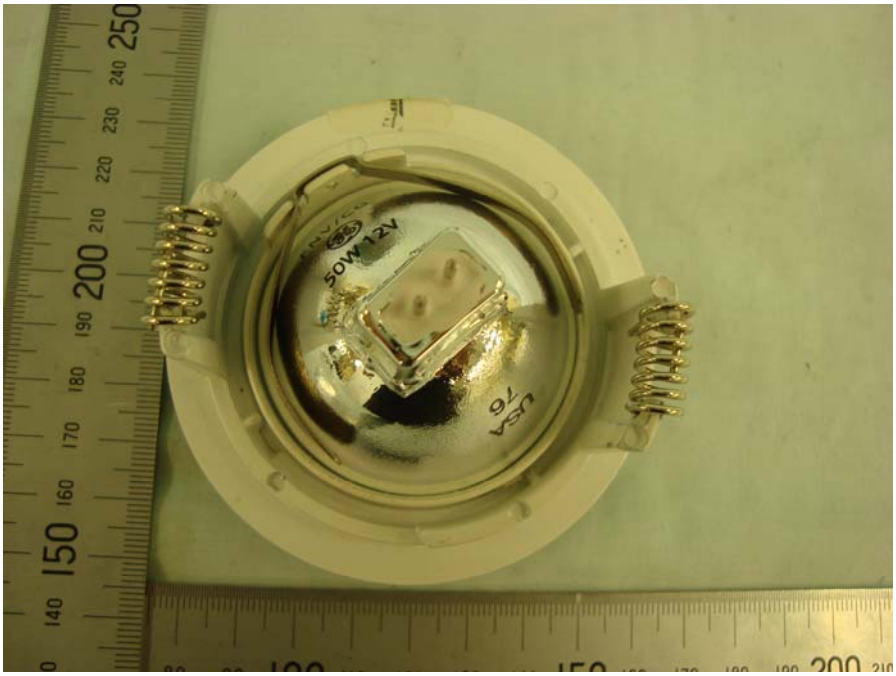
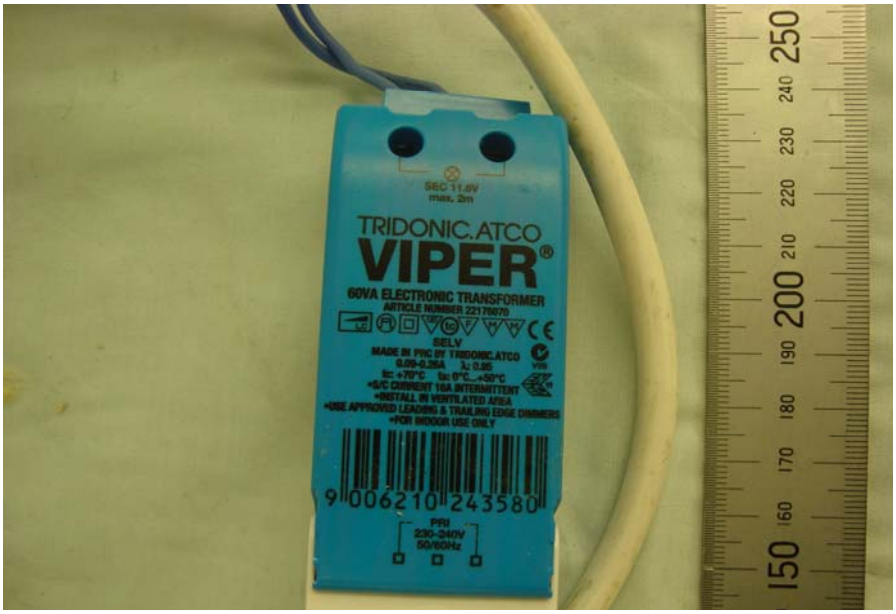




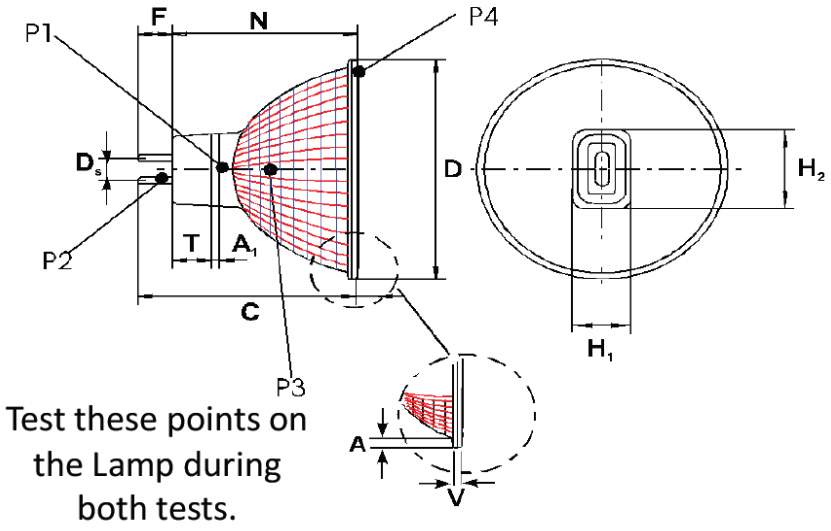
Appendix 2 – Photographic Record of Sample



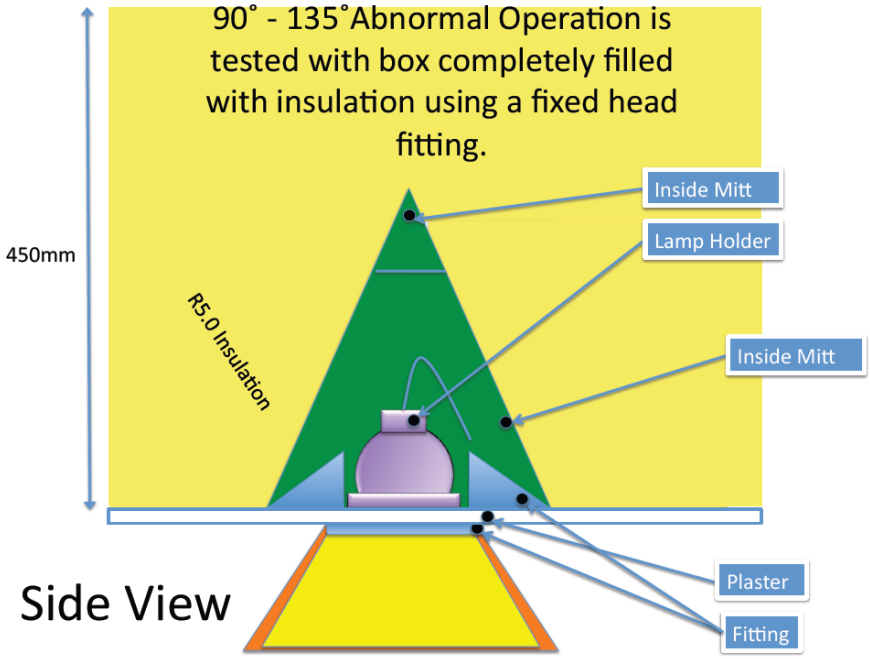
Appendix 2 – Photographic Record of Sample

Appendix 3 – Supplied Test Points

50W Dichroic Lamp Temp Points



Test these points on the Lamp during both tests.



Side View

Appendix 4 – Supplied Draft Standard

5.7 THERMAL TEST—ABNORMAL OPERATION

5.7.1 Setup of procedure

In the case where the thermal test was not performed completely filled with insulation, the top is removed and segmented insulation shall be cut and added to abut the barrier and sides of the box. Additional thermocouples are added if necessary to record the highest temperature where the barrier touches insulation. Segmented insulation is then added to completely fill the rest of the box above the barrier.

The test box top shall be replaced and sealed.

The test box shall be positioned in a draught proof thermal room as described in Appendix A at a temperature of 25 ± 5°C.

5.7.2 Test procedure

The thermal test lamp is energized at 1.05 × rated wattage for a filament lamp or 264 V for other lamps. Lamps controlled by auxiliary control gear have this gear energized at 264 V or barriers classified as 'generic' barriers shall have the cartridge heater energized at 50% of the rated wattage. The test is run till 8 h has elapsed.

All temperatures measured shall be referred (mathematically adjusted) to an ambient temperature of 25°C.

5.7.3 Criteria

Thermocouples on the outside of the barrier shall not exceed 135°C. Thermocouples on the mounting surface shall not exceed 135°C. Thermocouples on the inside of the barrier shall not exceed the maximum temperature value specified by the barrier manufacturer. Unlike in AS/NZS 60598.1, no concession is given for variability of temperature measurement.

There shall be no damage to the barrier such as scorching, deforming or melting.

NOTES:

1 The reason behind the abnormal test is to reflect unusual conditions in ceilings where insulation may move, for instance, by wind or animals, and cover lighting equipment. Failure in a lamp, luminaire or transformer etc, should indicate to the occupant that something is wrong and corrective action is required to rectify/correct the abnormal situation.

2 Temperature limitations have been set after considering information from insulation material manufacturers, plasterboard manufacturers and referring to AS/NZS 60598.1.