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Report No.: PTC802139160815S-IE01

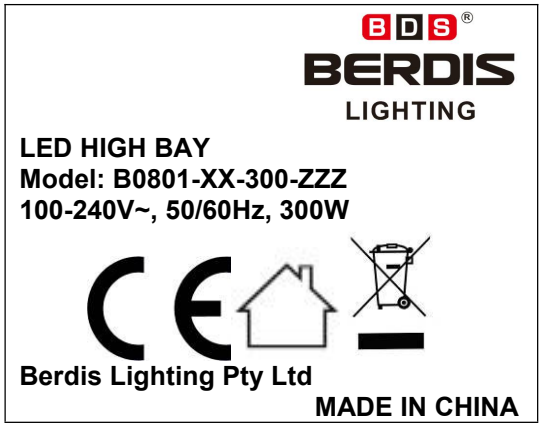
TEST REPORT
AS/NZS 60598.2.1
Luminaires
Part 2: Particular requirements:
Section One-Fixed general purpose luminaires

Report Number :	PTC802139160815S-IE01
Date(s) of performance of tests :	August 08, 2016 ~ August 22, 2016
Date of issue :	August 22, 2016
Tested by (name + signature) :	Even Li
Approved by (name + signature) :	Chris Du
Testing Laboratory Name :	Dongguan Precise Testing & Certification Corp., Ltd.
Address :	Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District, Dongguan, Guangdong, China
Applicant's name :	Berdis Lighting Pty Ltd
Address :	Floor 6, No 1., Huatai East Road, Caosan Industrial Park, Guzhen Town, Zhongshan City, Guangdong, Province
Manufacturer's name :	Berdis Lighting Pty Ltd
Address :	Floor 6, No 1., Huatai East Road, Caosan Industrial Park, Guzhen Town, Zhongshan City, Guangdong, Province
Test specification:	
Standard :	AS/NZS 60598.2.1: 2014; AS/NZS 60598.1: 2013; IEC 62031: 2008+A1: 2012+A2: 2014
Test procedure :	Compliance with AS/NZS 60598.2.1: 2014; AS/NZS 60598.1: 2013; IEC 62031: 2008+A1: 2012+A2: 2014
Test item description :	LED HIGH BAY
Trade Mark :	BDS® BERDIS LIGHTING
Model/Type reference :	See model list
Ratings :	See model list

This report is only for applicant use. Any copying this report to/for any other person or entity, and use our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

General remarks "(see remark #)" refers to a remark appended to the report. "(see Annex #)" refers to an annex appended to the report. Clause numbers between brackets refer to clauses in AS/NZS 60598.1. Throughout this report a comma is used as the decimal separator. **The test results presented in this report relate only to the object tested.** This report shall not be reproduced except in full without the written approval of the testing laboratory. Unless otherwise specified, test are made under normal conditions at an ambient temperature within the range of 15℃ to 35℃, RH45% to 75% and an air pressure of 860mbar of 1060mbar	**Attachment with:** - Amendment No.1: Deviation AS/NZS 60598.2.1/Amdt 1: 2016. - Attachment No.1: IEC 62031. -ANNEX A: Photo Documents.
Summary of testing: - The sample found to comply with the requirements of the relevant standard(s). - All models are similar except size and shape appearance, all test conducted on model B0801-XX-300-ZZZ.	
Testing location: Dongguan Precise Testing & Certification Corp., Ltd. Building D, Baoding Technology Park, Guangming Road 2, Guangming Community, Dongcheng District, Dongguan, Guangdong, China.	
Summary of compliance with National Differences Australia and New Zealand National Difference.	

Copy of marking plate:



Remarks: labels of other models are the same except model No. and rated power.

General product information:

The products are fixed luminaires and indoor use.

All models are identical except appearance size and rated power.

The specified max. ambient temperature is 25°C.

Model list:

Model	Rating	CCT	Driver
B08-XX-050-ZZZ	100-240V~, 50/60Hz, 50W	6000K	ADS-50W1A5-MEP, 3PCS
B0801-XX-100-ZZZ	100-240V~, 50/60Hz, 100W	6000K	ADS-50W1A5-MEP, 3PCS
B0801-XX-120-ZZZ	100-240V~, 50/60Hz, 120W	6000K	ADS-50W1A5-MEP, 3PCS
B0801-XX-150-ZZZ	100-240V~, 50/60Hz, 150W	6000K	ADS-50W1A5-MEP, 3PCS
B0801-XX-180-ZZZ	100-240V~, 50/60Hz, 180W	6000K	ADS-50W1A5-MEP, 4PCS
B0801-XX-200-ZZZ	100-240V~, 50/60Hz, 200W	6000K	ADS-50W1A5-MEP, 4PCS
B0801-XX-250-ZZZ	100-240V~, 50/60Hz, 250W	6000K	ADS-50W1A5-MEP, 5PCS
B0801-XX-300-ZZZ	100-240V~, 50/60Hz, 300W	6000K	ADS-50W1A5-MEP, 6PCS
Series B08-XX-YYY-ZZZ and B0801-XX-YYY-ZZZ. Remark: “XX” represent for size of the lampshade; “YYY” represent for power, It can be 050, 100, 120, 150, 180, 200, 250, 300; “ZZZ” represent for code of the product.			

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
1 (0)	**SCOPE (GENERAL INTRODUCTION)**		**P**
1 (0.1)	Scope		--
	Information for luminaires design considered	Yes [√] No [ ]	P
	Supply voltage	100-240V~	P
2 (0.2)	**REFERENCED DOCUMENT**		**--**
3 (0.3)	**GENERAL REQUIREMENTS**		**P**
3 (0.4)	General test requirements and verification		P
4 (1)	**TERMS AND DEFINITIONS**		**P**
5 (2)	**CLASSIFICATION**		**P**
5 (2.1)	General		--
5 (2.2)	Type of protection ..... :	Class I	P
5 (2.3)	Degree of protection ..... :	IP20	P
5 (2.4)	Luminaire suitable for direct mounting on normally flammable surfaces ……..:	Yes	P
	Luminaire not suitable for direct mounting on normally flammable surfaces ……:	No	N
5 (2.5)	Luminaire for normal use ..... :	Yes	P
	Luminaire for rough service ..... :	No	N
6 (3)	**MARKING**		**P**
6 (3.1)	General		--
6 (3.2)	Markings on luminaires	See marking label	P
	a)Marking to be observed when replacing lamps or other replaceable components		N
	b)Marking to be observed during installation	The height of symbols more than 5mm, text more than 2mm	P
	c)Marking to be observed after installation		N
	Format of symbols/text	Height of symbols more than 5mm, except for symbols for class II and class III minimum of 3 mm, and symbols of not	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
		suitable for direct mounting on normally flammable surfaces minimum 25mm; text more than 2mm	
6 (3.3)	Additional information		P
	Language of instructions	In official language	P
6 (3.3.1)	Combination luminaires	Not combination luminaire	N
6 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
6 (3.3.3)	Operating temperature		P
6 (3.3.4)	Symbol or warning notice		N
6 (3.3.5)	Wiring diagram	See the manual	P
6 (3.3.6)	Special conditions	No such special conditions	N
6 (3.3.7)	Metal halid lamp luminaire – warning		N
6 (3.3.8)	Limitation for semi-luminaires		N
6 (3.3.9)	Power factor and supply current for supply information		P
6 (3.3.10)	Suitability for use indoors		P
6 (3.3.11)	Luminaires with remote control	Not such construction	N
6 (3.3.12)	Clip-mounted luminaire - warning		N
6 (3.3.13)	Specifications of protective shields		N
6 (3.3.14)	Symbol for nature of supply	~	P
6 (3.3.15)	Rated current of socket outlet	No socket outlet	N
6 (3.3.16)	Rough service luminaire	Normal service luminaire	N
6 (3.3.17)	Mounting instruction for type Y, Type Z and some type X attachments	type Z	P
6 (3.3.18)	Non-ordinary luminaires with PVC cable		N
6 (3.3.19)	Protective conductor current in instruction if applicable		N
6 (3.3.20)	Provided with information if not intended to be mounted within arms reach		N
6 (--)	WARNING: NOT FOR USE WITH ANY FLUORESCENT LAMP—FOR USE ONLY WITH TYPE X LED LAMPS		N
6 (3.4)	Test with water and petroleum spirit	15s	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Legible after test	Lables still be legible, marking labels not be easily removable and no curling.	P
7 (4)	**CONSTRUCTION**		**P**
7 (4.1)	General		--
7 (4.2)	Components replaceable without difficulty	All components can not be replaced.	P
7 (4.3)	Wireways smooth and free from sharp edges		P
7 (4.4)	Lampholders	No lampholder	N
7 (4.4.1)	Integral lampholder		N
7 (4.4.2)	Wiring connection		N
7 (4.4.3)	Lampholder for end-to-end mounting	No such lampholder	N
7 (4.4.4)	Positioning		N
	Lampholders for a fluorescent lamp		N
	- pressure test (N)……..:		N
	After test the lampholder comply with relevant standard sheets and show no damage		N
	After test on signal-capped lampholder the lampholder have not moved form its position and show no permanent deformation		N
	Edison screw or bayonet-capped lampholders		N
	- bending test (Nm)……..:		N
	After test the lamholder have not moved from its position and show no permanent deformation		N
7 (4.4.5)	Luminaires with ignitor	Not ignitor	N
7 (4.4.6)	Centre contact	Not ignitor	N
7 (4.4.7)	Parts in rough service luminaires resistant to tracking	Not for rough service	N
7 (4.4.8)	Lamp connectors	No lamp connector	N
7 (4.4.9)	Caps and bases correctly used		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
7 (4.4.10)	Lampholder or connector according to IEC60061		N
7 (4.5)	Starter holders	No such parts	N
	Starter holder in luminaries other than Class II		N
	Starter holder Class II construction		N
7 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
7 (4.7)	Terminals and supply connections		P
	Luminaries type	Class I Fixed luminaries	N
7 (4.7.1)	Taken to prevent metal parts from becoming live due to a detached wire or screw		N
7 (4.7.2)	Supply terminals		N
	8 mm test live conductor		N
7 (4.7.3)	Terminals for supply cords		N
7 (4.7.3.1)	Welding method and material		N
	- stranded or solid wire of copper materials		N
	- spot welding		N
	- welding of wire and plate		N
	- welded connectionsare used in type Z attachments only		N
	- mechanical test according to 15.6.2		N
	- electrical test according to 15.6.3		N
	- heat test according to 15.6.3.2.3 and 15.6.3.2.4		N
7 (4.7.4)	Terminals other than supply connection		N
	- comply with the requirements of Sections 14 and 15		N
7 (4.7.5)	Heat-resistant wiring/sleeves		N
7 (4.7.6)	Multi-pole plug and socket		N
	- test at 30 N		N
7 (4.8)	Switches:		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- adequate rating		N
	- adequate fixing		N
	- degree of protection		N
	- polarized supply		N
	- compliance with 61058-1 for electronic switches		N
7 (4.9)	Insulating lining and sleeves		P
7 (4.9.1)	Reliably retained in position		P
7 (4.9.2)	Adequate mechanical, electrical and thermal strength		P
	Resistant to temperature >20℃ to the wire temperature or		N
	a) & c) insulation resistance and electric strength		N
	b)roast test. Temperature（℃）		N
7 (4.10)	Insulation of Class II luminaires		N
7 (4.10.1)	No contact, mounting surface - accessible metal parts - wiring of basic insulation		N
	Safe installation fixed luminaires		N
	Capacitors and switches		N
	Interference suppression capacitors according to IEC 60384-14and their connection accordance with 8.6 of IEC60065:2001		N
7 (4.10.2)	Assembly gaps:		P
	- not coincidental		P
	- no straight access with test probe		P
7 (4.10.3)	Supplementary insulation or reinforced insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lampholder		N
7 (4.10.4)	Protective impedance device		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Y1, Y2 capacitors according to IEC 60384-14and their connection accordance with 8.6 of IEC60065		N
7 (4.11)	Electrical connections and current-carrying parts		P
7 (4.11.1)	Contact pressure		P
7 (4.11.2)	Screws:		P
	- Self-tapping screws		P
	- thread- cutting screws		N
7 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
7 (4.11.4)	Material of current-carrying parts	> 50% copper	P
7 (4.11.5)	No contact to wood or mounting surface	No wood	P
7 (4.11.6)	Electro-mechanical contact systems		N
	-test		N
7 (4.12)	Screws and connections (mechanical) and glands		P
7 (4.12.1)	Screw not made of soft metal		P
	Screws made of insulating material	Impair supplementary or reinforced insulation if replacement by a metal screw	N
	Screws used to provide earthing continuity		P
	Fixing screws for ballasts and other components	at least one screw retaining the ballast will have a mechanical and electrical function.	N
	- not considered to be maintenance		N
	Screws of insulating material used in cord anchorages		N
	Torque test: torque (Nm); part ……..:	Fixed lampshade, 0.5Nm	P
	Torque test: torque (Nm); part ……..:	Fixed driver, 0.6Nm	P
	Torque test: torque (Nm); part ……..:	Earthing screw, 0.6Nm	P
	Torque test: torque (Nm); part ……..:	Fixed LED PCB, 0.5Nm	P
7 (4.12.2)	Screws transmitting contact pressure and screws		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Screw with diameter < 3 mm screw into metal		P
7 (4.12.3)	Not used		--
7 (4.12.4)	Screwed and other fixed connections between different parts of luminaires		N
	- locked connections; torque (Nm) ..... :		N
	- locked lampholder during lamp replacement; torque (Nm) .....:		N
	- push-button switches; torque (Nm) .....:	No such switches	N
7 (4.12.5)	Screwed glands; force (N) .....:		P
7 (4.13)	Mechanical strength		P
7 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm) .....:	0.2Nm, no damage	P
	- other parts; energy (Nm) .....:	0.35Nm, no damage	P
	1) live parts not have become accessible		P
	2) effectiveness of insulating linings and barriers not have been impaired		P
	3) degree of protection	IP20	P
	4) possible to remove and to replace external covers		N
7 (4.13.2)	Metal parts enclosing live parts have adequate mechanical strength		P
7 (4.13.3)	Straight test finger with a force of 30 N	metal parts not touch live parts, not be excessively deformed and continue to meet the requirements of Section 11	P
7 (4.13.4)	Rough service luminaires	Normal service luminaires	N
	IP 54 or higher		N
	a) fixed rough service luminaires and portable rough service luminaires (not hand-held)		N
	b) hand-held luminaires		N
	c) luminaires delivered with a stand		N
	d) luminaires for temporary installations and suitable for mounting on a stand		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
7 (4.13.5)	Not used		--
7 (4.13.6)	Plug-ballast/transformers and mains socket-outlet-mounted luminaires		N
	Tumbling barrel test		N
	- sample does not exceed 250 g	50 times	N
	- sample exceeds 250 g	25 times	N
7 (4.14)	Suspensions, fixings and means of adjustment		P
7 (4.14.1)	Adequate factors of safety		P
	Test A) four times the weight.....:	4xMax.5.1kg	P
	- suspended or fixed luminaire		P
	- external parts fixed to the luminaire		N
	Test B) for rigid suspension luminaires: torque 2.5 Nm.....:		N
	Test C) for rigid suspension brackets: bracket arm; force (N) ..... :		N
	a) for heavy-duty brackets		N
	b) for light-duty brackets	10N, 1min	N
	D) for load track- mounted luminaires		N
	E) for clip-mounted luminaires:		N
7 (4.14.2)	Load to flexible cables:	No flexible cable	N
	mass (kg) .....:		N
	stress in conductors (N/mm²) .....:		N
	Mass (kg) of semi-luminaires .....:		N
	Bending moment (Nm) of semi-luminaires :		N
7 (4.14.3)	Adjusting devices:	No adjusting devices	N
	a) adjusting devices and means of adjustment		N
	- flexing test; number of cycles .....:		N
	- not more than 50 % of the strands in a conductor are broken		N
	- insulation resistance and high-voltage tests afterwards		N
	b) luminaires with a means of adjustment intended to be installed within arm's reach		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	c) luminaires intended to be mounted within arm's reach		N
7 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No such tubes	N
7 (4.14.5)	Guide pulleys	No such construction	N
7 (4.14.6)	Plug-ballast/transformers and mains socket-outlet-mounted luminaires	Not such unit	N
7 (4.15)	Flammable materials:		P
	- glow- wire test 650℃		P
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions	Spacing from heated parts min 3mm	N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
7 (4.15.2)	Luminaires made of thermoplastic material		N
	a) construction		N
	b) temperature sensing control		N
	c) surface temperature		N
7 (4.16)	Luminaires for mounting on normally flammable surfaces		P
	Lamp control gear		N
7 (4.16.1)	Lamp control gear shall spacing:		N
	- spacing 10 mm		N
	- spacing 35 mm		N
7 (4.16.2)	Thermal protection:	No such component	N
	- external		N
	-fixed position		N
	- class P" thermally protected ballast/transformer,		N
	- temperature declared thermally protected ballast/transformer,		N
7 (4.16.3)	Design to satisfy the test of 12.6		N
7 (4.17)	Drain holes	No drain holes	N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Clearance at least 5 mm		N
7 (4.18)	Resistance to corrosion:	Insulating paint	N
7 (4.18.1)	- more than IPX1 luminaires		N
7 (4.18.2)	- season cracking in copper		N
7 (4.18.3)	- corrosion of aluminium		N
7 (4.19)	Ignitors	No ignitors used	N
7 (4.20)	Rough service vibration ..... :	No such appliance	N
7 (4.21)	Protective shield		N
7 (4.21.1)	Shield fitted		N
	Shield of glass if tungsten halogen lamps		N
7 (4.21.2)	Particles from a shattering lamp not impair safety		N
7 (4.21.3)	No direct path		N
7 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
7 (4.22)	Attachments to lamps	Max. g, <500g	N
7 (4.23)	Semi-luminaires comply with Class II	No semi-luminaires	N
7 (4.24)	Photobiological hazards		N
7 (4.24.1)	UV radiation		N
7 (4.24.2)	Retinal blue light hazard		N
7 (4.25)	Mechanical hazard	No sharp points or edges	P
7 (4.26)	Short-circuit protection		N
7 (4.26.1)	uninsulated accessible SELV parts		N
7 (4.26.2)	Short circuit test		N
7 (4.26.3)	Test chain according to figure 29		N
7 (4.27)	Terminal blocks with integrated screwless earthing contacts		N
7 (--)	LED luminaires or new luminaires designed for T8 to T5 converters with G5 and G13 lampholders shall include a fuse to protect a fluorescent lamp that is inadvertently installed. Each fuse shall —		N
	a) be of the 250V HRC type;		N
	b) have a 2 A max. quick-acting type rating;		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	c) be used to protect a maximum of two lamps;		N
8 (11)	**CREEPAGE DISTANCES AND CLEARANCES**		**P**
	Working voltage (V) ..... :	100-240V~	P
	Voltage form	Sinusoidal [√] Non-sinusoidal [ ]	P
	PTI	< 600 [√] ≥ 600 [ ]	P
	Impusle withstand category (normal category II) (category III annex U)		P
	Rated pulse voltage (kV) ..... :		N
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm) .....:	Cr: 3.2mm, limit: 2.5mm Cl: 3.2mm, limit: 1.5mm	P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm) .....:	Cr: 6.6mm, limit: 2.5mm Cl: 6.6mm, limit: 1.5mm	P
	(3) Parts becoming live due to breakdown of basic insulation and metal parts: cr (mm); cl (mm) ..... :		N
	(4) Outer surface of cable where it is clamp and metal parts: cr (mm); cl (mm) ..... :		N
	(5)not used		N
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm) .....:	Cr: 6.6mm, limit: 2.5mm Cl: 6.6mm, limit: 1.5mm	P
9 (7)	**PROVISION FOR EARTHING**		**P**
9 (7.2.1 + 7.2.3)	Accessible Metal parts		P
	metal parts in contact with supporting surface		P
	Resistance < 0.5 Ω	0.022 Ω	P
	Self-tapping screws used		P
	Thread-forming screws		N
	Thread-forming screws used in a grove		N
	Earth marks contact first		P
9 (7.2.2 +7.2.3)	Earth continuity in joints etc.		P
9 (7.2.4)	Locking of clamping means		P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Compliance with 4.7.3		P
	Terminal blocks with integrated screwless earthing contacts tested according Annex V		N
9 (7.2.5)	Earth terminal integral part of Connector socket		N
9 (7.2.6)	Earth terminal adjacent to mains terminals		P
9 (7.2.7)	Electrolytic corrosion of the earth terminal		P
9 (7.2.8)	Material of earth terminal		P
	Contact surface bare metal		P
9 (7.2.10)	Class II luminaire for looping-in		N
	Double or reinforced insulation to functional earth		N
9 (7.2.11)	Earthing core coloured green-yellow		P
	Length of earth conductor		P
10 (14)	**SCREW TERMINALS**		**N**
	Separately approved: component list	See annex 1	N
	Part of the luminaire		N
10 (15)	**SCREWLESS TERMINALS and electrical connections**		**N**
	Separately approved: component list	See annex 1	N
	Part of the luminaire		N
11 (5)	**EXTERNAL AND INTERNAL WIRING**		P
11 (5.2)	Supply connection and other external wiring		P
11 (5.2.1)	Means of connection..... :	Supply plug	P
11 (5.2.2)	Type of supply cord..... :	H05VV-F	P
	Nominal cross-section area (mm^2)	3G0.75mm^2	P
	Cables equal to IEC 60227 and IEC 60245		P
11 (5.2.3)	Type of attachment, X ,Y or Z		P
11 (5.2.5)	Type Z not connected to screws		P
11 (5.2.6)	Cable entries		N
	- suitable for introduction		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- adequate degree of protection		N
11 (5.2.7)	Cable entries through rigid material have rounded edges		N
11 (5.2.8)	Insulating bushings in class II luminaires, in settable and adjustable luminaires or in portable luminaires other than those for wall mounting:		N
	- suitably fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- tubes or guard made of insulating material		N
11 (5.2.9)	Bushing locking of screw bushings	No such component	N
11 (5.2.10)	Cord anchorage:		P
	- covering protected from abrasion		P
	- clear how to be effective		P
	- no mechanical or thermal stress		P
	- no tying of cables into knots etc.		P
	- insulating material or lining		P
11 (5.2.10.1)	Cord anchorage for type X attachment cord	Not such construction	N
	a) at least one part fixed		N
	b) types of cable		N
	c) no damaging of the cable		N
	d) whole cable can be mounted		N
	e) no touching of clamping screws		N
	f) metal screw not directly on cable		N
	g) replacement without special tool		N
	Glands not used as anchorage		N
	Labyrinth type anchorage		N
11 (5.2.10.2)	Adequate cord anchorages for type Y and type Z attachments	type Z	P
11 (5.2.10.3)	Tests:		P
	- impossible to push cable; unsafe		P
	- pull test: 25 times; pull (N)	60N, 1min	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- torque test: torque (Nm)	0.25Nm	P
	- displacement ≤ 2 mm	0.6mm	P
	- no movement of conductors		P
	- no damage of cable or cord		P
11 (5.2.11)	External wiring passing into luminaire		N
11 (5.2.12)	Looping- in terminals	Not looping-in appliance	N
11 (5.2.13)	Wire ends not tinned		P
	Wire ends tinned: no cold flow		N
11 (5.2.14)	Mains plug same protection		P
	Class III luminaire plug		N
11 (5.2.16)	Appliance inlets (IEC 60320)	No appliance inlet	N
	Appliance couplers of class II type		N
11 (5.2.17)	No standardized in interconnecting cables assembled		N
11 (5.2.18)	Used plug in accordance with		P
	- IEC 60083		N
	- other standard	AS/NZS 3112	P
11 (5.3)	Internal wiring		P
11 (5.3.1)	Internal wiring of suitable size and type	22AWG	P
	Through wiring		N
	- not delivered/ mounting instruction		N
	- factory assembled		N
	- socket outlet loaded (A)..... :		N
	- temperatures..... :		N
	Green-yellow for earth only		P
11 (5.3.1.1)	Internal wiring connected directly to fixed wiring		N
	Cross-Sectional area (mm^2)		N
	Insulation thickness		N
	Extra insulation added where necessary		N
11 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limited device		N
	Adequate cross-section area and insulation thickness		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
11 (5.3.1.3)	Double or reinforced insulation for class II		N
11 (5.3.1.4)	Conductors without insulation	Not used	N
11 (5.3.1.5)	SELV current-carrying parts		N
11 (5.3.1.6)	Insulation thickness other than PVC or rubber		N
11 (5.3.2)	Sharp edges etc.		P
	No moving parts of switches etc.		P
	Joints, raising/lowering devices		N
	Telescopic tubes etc.		N
	No twisting over 360^0		P
11 (5.3.3)	Insulating bushings on class II luminaires, in settable and adjustable luminaires, or in portable luminaires other than those for wall mounting,		N
	- suitable fixed		N
	- material in bushings		N
	- material not likely to deteriorate		N
	- cables with protective sheath		N
11 (5.3.4)	Joints and Junctions effectively insulated		N
11 (5.3.5)	Strain on internal wiring		N
11 (5.3.6)	Wire carriers		N
11 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
12 (8)	**PROTECTION AGAINST ELECTRIC SHOCK**		P
12 (8.2.1)	Live parts not accessible with standard test finger		P
	Basic insulated parts not used on the outer surface without appropriate protection		P
	Basic insulated parts not accessible with standard test finger on portable and adjustable luminaires		N
	Basic insulated parts not accessible with ⌀50mm probe from outside, within arms reach, on wall-mounted luminaires		P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Lamp and startholders in portable and adjustable luminaires comply with double or reinforced insulation requirements		N
	Basic insulation only accessible under lamp or starter replacement		N
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable		P
	Double-ended high pressure discharge lamp		N
	Relevant warming according to 3.2.18 fitted to the luminaire		N
12 (8.2.2)	Portable luminaire adjusted in most unfavourable position	Fixed luminaire	N
12 (8.2.3 a)	Class II luminaire:		N
	- basic insulated metal parts not accessible during starter or lamp replacement		N
	- basic insulated not accessible other than during starter or lamp replacement		N
	- glass protective shields not used as supplementary insulation	No such parts	N
12 (8.2.3b)	BC lampholder of metal in class I luminaires shall be earthed		N
12 (8.2.3c)	Class III luminaires with expose SELV parts:		N
	Ordinary luminaire :		N
	- touch current		N
	- no-load voltage		N
	- other than ordinary luminaire:		N
	- nominal voltage		N
12 (8.2.4)	Portable luminaire:	Fixed luminaire	N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
12 (8.2.5)	Compliance with the standard test finger or relevant probe		P
12 (8.2.6)	Covers reliably secured		P
12 (8.2.7)	Discharging of capacitors >0.5 µF	0V after 1min	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Portable plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N
13 (12)	**ENDURANCE TEST AND THERMAL TEST**		P
13 (12.3)	Endurance test:		P
	- mounting- position .....:	Normal installation	P
	- test temperature (℃) .....:	25℃+10℃	P
	- total duration (h) .....:	240hrs. Totally 10 cycles, each 24h	P
	- supply voltage: Un factor; calculated voltage (V) .....:	1.1x240V	P
	- lamp used .....:	LED lamp	P
13 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system		N
	- marking legible		P
	- no cracks, deformation etc.		P
13 (12.4)	Thermal test (normal operation)	(see table 12.4)	P
13 (12.5)	Thermal test (abnormal operation)		N
	Short-circuit of starter contacts		N
	Lamps removed and not replaced		N
13 (12.6)	Thermal test (failed lamp control gear condition):		N
13 (12.6.1)	Through wiring or looping-in wiring loaded by a current of (A)		N
	- case of abnormal conditions ..... :		N
	- electronic ballast		N
	- measured winding temperature (°C): at 1.1 Un		N
	- measured mounting surface temperature (°C): at 1.1 Un .....:		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- calculated mounting surface temperature(°C)		N
	- track-mounted luminaires		N
13 (12.6.2)	Temperature sensing control:		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- track-mounted luminaires		N
13 (12.7)	Thermal test (failed ballast or transformer in plastic luminaires):		N
13 (12.7.1)	Luminaire without temperature sensing control		N
13 (12.7.1.1)	Luminaire with fluorescent lamp ≤ 70W		N
	Test method 12.7.1.1 or Annex V		N
	Test according to 12.7.1.1:		N
	- case of abnormal conditions		N
	- Ballast failure at supply voltage (V)		N
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
	Test according to Annex V:		N
	- case of abnormal conditions		N
	- measured winding temperature (℃): at 1.1 Un.. :		N
	- measured temperature of fixing point/exposed part (℃): at 1.1Un.....:		N
	- calculated temperature of fixing point/exposed part (℃) .....:		N
	Ball-pressure test:		N
	- part tested; temperature (℃)..... :		N
	- part tested; temperature (℃)..... :		N
13 (12.7.1.2)	Luminaire with discharge lamp, fluorescent lamp > 70W, transformer > 10 VA		--
	- case of abnormal conditions		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- measured winding temperature (℃): at 1.1 Un.. .....:		N
	- measured temperature of fixing point/exposed part (℃): at 1.1 Un..... :		N
	- calculated temperature of fixing point/ exposed part (℃) ..... :		N
	Ball-pressure test:		N
	- part tested; temperature (℃)..... :		N
	- part tested; temperature (℃)..... :		N
13 (12.7.1.3)	Luminaire with short circuit proof transformers ≤ 10 VA		N
	- case of abnormal conditions		N
	- Components retained in place after the test		N
	- Test with standard test finger after the test		N
13 (12.7.2)	Luminaire with temperature sensing control		N
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- case of abnormal conditions		N
	- highest measured temperature of fixing point/exposed part (℃):..... :		N
	Ball-pressure test:		N
	- part tested; temperature (℃)..... :		N
	- part tested; temperature (℃)..... :		N

14 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
14 (9.2)	Tests for ingress of dust, solid objects and moisture:		N
	- classification according to IP .....:	IP20	P
	- mounting position during test .....:		N
	- fixing screws tightened; torque (Nm) .....:		N
	- tests according to clauses .....:		N
	- electric strength		P
	a) no deposit in dust-proof luminaire		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	b) no talcum in dust- tight luminaire		N
	c) no trace of water on current-carrying parts or SELV parts or where it could become a hazard		N
	d) i) For luminaires without drain holes – no water entry		N
	d) ii) For luminaires with drain holes – no hazardous water entry		N
	e) no water in watertight luminaire		N
	f) no contact with live parts (IP 2X)		N
	f) no entry into enclosure (IP 3X and IP 4X)		N
	f) no contact with live parts (IP3X and IP4X)		N
	g) no trace of water on part of lamp requiring protection from splashing water		N
	h) no damage of protective shield or glass envelope		N
14 (9.3)	Humidity test 48h	Relative humidity 93%, temperature 25℃, 48h, followed by hi-pot test	P
15 (10)	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		P
15 (10.2.1)	Insulation resistance test:		P
	Cable or cord covered by metal foil or replaced by a metal rod of mm Ø.....:		P
	Insulation resistance:		P
	SELV:		--
	- between current-carrying parts of different polarity..... :		N
	- between current-carrying parts and mounting surface ..... :		N
	- between current-carrying parts and metal parts of the luminaire ..... :	＞100MΩ, limit: 1 MΩ	P
	Other than SELV:		P
	- between live parts of different polarity .....:	＞100MΩ, limit: 2 MΩ	P
	- between live parts and mounting surface.:	＞100MΩ, limit: 2 MΩ	P

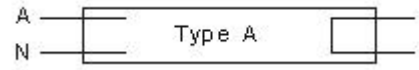
AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- between live parts and accessible parts.. :	＞100MΩ, limit: 2 MΩ	P
	- between live parts of different polarity through action of a switch ..... :		N
15 (10.2.2)	Electric strength test:		P
	Dummy lamp		N
	Luminaires with ignitors after 24 h test		N
	Luminaires with manual ignitors		N
	Test voltage (V):		P
	SELV:		--
	- between current-carrying parts of different polarity..... :		N
	- between current-carrying parts and mounting surface ..... :		N
	- between current-carrying parts and metal parts of the luminaire ..... :	500Vac, no breakdown	P
	Other than SELV:		--
	- between live parts of different polarity .....:	1480Vac, no breakdown	P
	- between live parts and mounting surface.....:	1480Vac, no breakdown	P
	- between live parts and accessible parts..:	1480Vac, no breakdown	P
	- between live parts of different polarity through action of a switch ..... :		N
15 (10.3)	Touch current, protective conductor current and electric burn..... :	protective conductor current : 0.07mA limit: 3.5mA	P
16 (13)	**RESISTANCE TO HEAT, FIRE AND TRACKING**		P
16 (13.2.1)	Ball-pressure test:		P
	- part tested; temperature (°C) .....:	Plastic cover, 125°C, 0.9mm	P
	- part tested; temperature (°C) .....:	Nipple terminal: 125°C, 1.4mm	P
16 (13.3.1)	Needle flame test (10 s):		N
	- part tested .....:		N
16 (13.3.2)	Glow- wire test:		P

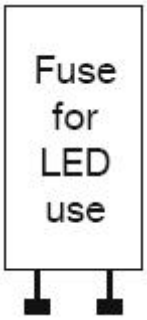
AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	- part tested .....:	Plastic cover, 650℃, No burning	P
	- part tested .....:	Nipple terminal, 750℃, Extinguish after 1.8s, Flame high: 14mm	P
16 (13.4)	Tracking test: part tested .....:		N
Annex A	**TEST TO ESTABLISH WHETHER A CONDUCTIVE PART MAY CAUSE AN ELECTRIC SHOCK**		P
A.2	Voltage not exceed 35 V a.c. peak or 60 V ripple free d.c.		P
A.3	Touch-current not exceed:		N
	- for a.c.: 0,7 mA (peak);		N
	- for d.c.: 2,0 mA		N
Annex B	**TEST LAMP**		N
Annex C	**ABNORMAL CIRCUIT CONDITIONS**		N
	a) Short-circuit of starter contacts		N
	b) Lamp rectification		N
	c) Lamps removed and not replaced		N
	d) One electrode of lamp open-circuited		N
	e) Lamp will not start, but both electrodes are intact		N
	f) Blockage of the motor(s) contained in the luminaire		N
Annex D	**DRAUGHT-PROOF ENCLOSURE**		N
Annex E	**DETERMINATION OF WINDING TEMPERATURE RISES BY THE INCREASE—IN-RESISTANCE METHOD**		N
Annex F	**TEST FOR RESISTANCE TO STRESS CORROSION OF COPPER AND COPPER ALLOYS**		N
Annex G	**MEASUREMENT OF TOUCH CURRENT AND PROTECTIVE CONDUCTOR CURRENT**		N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict

APPENDIX A	**SAFETY REQUIREMENTS FOR DOUBLE-CAPPED LED LAMPS**		**N**
A1	General		--
A1.1	Scope		N
a)	G5 or G13 lamp caps intended for replacing, in existing luminaires, fluorescent lamps with corresponding G5 or G13 caps;		N
b)	other lamp cap types intended for replacing, in existing luminaires, incandescent, tungsten halogen or other lamp types with the corresponding lamp caps; and		N
c)	any lamp cap type, intended for inserting in new luminaires for double-capped lamps in lieu of fluorescent, incandescent, tungsten halogen or other lamp types.		N
A1.2	Application		N
A1.3	Testing		N
A1.4	Specific requirements of this Appendix		N
A1.5	Requirements of relevant test specifications		N
A1.6	LED lamp connection types		N
A2	**REFERENCED DOCUMENTS**		--
A3	**DEFINITION**		**--**
A4	**CLASSIFICATIONS OF LAMP(S)**		**N**
A4.1	Class II lamps		N
	Class III lamps		N
A4.2	Type		N
	Type A: Type A LED lamps shall be constructed such that one end of the lamp has the lamp cap pins electrically bridged and the other end of the lamp has the line and neutral supply connected to the pins of that lamp cap.		N
	Type B: Type B LED lamps shall be constructed such that one end of the lamp has the lamp cap pins electrically isolated from each other and the other end of the lamp has the line and neutral supply connected to the pins of that lamp cap.		N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict

A5	**MARKING**		**N**
A5.1	General		--
A5.2	Marking on the lamp		--
	a) Mark of origin	See label	N
	b) Rated supply voltage or voltage range		N
	c) Rated wattage		N
	d) Rated frequency		N
	e) A value for allowable case temperature tc and a marked point of measurement		N
	f) Model number		N
	g) IP rating if greater than IP20		N
	h) Markings to identify the line and neutral supply connections of the lampholder		N
	i)The lamp type shall be marked with the text 'Type A' or 'Type B: Type A:  Type B: 		N
	For LED lamps that have lamp caps not on the ends of the lamp, and are only for use with a luminaire that has a means of automatic double pole disconnection operative when the lamp is replaced, the following warning shall be marked on the lamp body: WARNING: This lamp is only for use with a luminaire that has a means of automatic double-pole disconnection operative when the lamp is replaced.		N
A5.3	Warning label for the luminaire		--
	WARNING: NOT FOR USE WITH ANY FLUORESCENT LAMP—FOR USE ONLY WITH TYPE A/B LED LAMPS	See label	N
A5.4	Marking of associated components		--
	If lamps need to be used with a component which replaces the starter, the component		N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
	to replace the starter shall be marked as shown in Figure A2. 		
A6	**INSTRUCTIONS**	See instruction	**N**
A6.1	Information to be supplied with the lamp		N
	a) not suitable for dimming		N
	b) wiring diagram for lamp installation		N
	c) compatibility of control gear		N
	d) ambient		N
	e) lamp length, lamp cap configuration and IP rating.		N
A6.2	Information to be supplied for emergency luminaires		N
A6.3	Information about additional components		N
A6.4	Warnings:		N
A6.5	Additional information		N
A7	**CONSTRUCTION**		**N**
A7.1	General		N
a)	There shall be adequate provision, with or without the use of tools, for the replacement of lamps and replacement or general cleaning of optical components (such as diffusers or reflectors) without exposing live parts or unearthed exposed metal parts to personal contact.		N
b)	Protection against electric shock shall be maintained for all methods and positions of installation in normal use, having regard to		N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
	the limitations indicated in the manufacturer's installation instructions. Protection shall be maintained after removal of all parts that can be removed by hand.		
c)	Where necessary, to ensure continued safe use, metal parts shall be inherently non-corrosive, protected against corrosion or otherwise suitable for the purpose.		N
d)	Internal wiring is considered as basic insulation only. If internal wiring can come in contact with external metal parts then sleeving, or equivalent method, that complies with the requirements for supplementary insulation shall be used to prevent contact with the external metal parts		N
A7.2	Components that replace the starter		N
	If lamps need to be used with a component that replaces the starter, the component shall have an internal 250 V HRC 2 A max. quick-acting fuse.		N
	If lamps need to operate in combination with a component that replaces the starter, this component shall be supplied together with the lamp. This component shall comply with the dimensions, appropriate electrical, mechanical and thermal tests required by Section 1 of AS/NZS 60155.		N
A7.3	Emergency lamps		N
	Lamps suitable for use in emergency luminaires shall comply with the requirements of AS 2293.3 in that specific luminaire.		N
A7.4	Compatibility of electrical supply to the lamp		N
	Lamps shall be constructed such that one end of the lamp has the lamp cap pins electrically bridged (Type A) or electrically isolated from each other (Type B) and the other end of the lamp has the line and neutral supply connected to the pins of that		N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
	lamp cap.		
A8	**INTERCHANGEABILITY**		**N**
	Lamp caps in accordance with IEC 60061-1 and gauges in accordance with IEC 60061-3.		N
A9	**MASS**		**N**
	G13 lamp cap: not exceed 500 g	Max. g; < 500g	N
	G5 lamp cap: not exceed 200g		N
A10	**DIMENSIONS**		**N**
	Dimensional requirements do not apply to IEC 60081.		N
A11	**MECHANICAL REQUIREMENTS AND TESTS FOR CAPS**		**N**
A11.1	Construction and assembly		N
A11.2	Torque test		N
	1.0Nm test 30s	After test, cap not exceeding an angular displacement of 6°, no damage	N
A11.3	Heat treatment and secure fixing test		N
	Where two or more screws, welding or a similar mechanical connection is used for fixing the cap, the test in this clause is not applicable. However, where screws are used they and their fixings shall comply with the requirements of the torque test of Section 4 of AS/NZS 60598.1.		N
	for cap fixing that uses cement or chemical bonding		N
A12	**CREEPAGE DISTANCES AND CLEARANCES**	Reference with AS/NZS 60598.2.1	**N**
A13	**PROVISION FOR EARTHING**	Reference with AS/NZS 60598.2.1	**N**
A14	**TERMINALS**	Reference with AS/NZS 60598.2.1	**N**
A15	**EXTERNAL AND INTERNAL WIRING**	Reference with AS/NZS 60598.2.1	**N**

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
A16	**PROTECTION AGAINST ELECTRIC SHOCK**		**N**
A16.1	General		N
A16.2	Protection against electric shock		N
	A force of 10 N test		N
A16.3	Discharge capacitors		N
	Lamps incorporating a capacitor of capacitance exceeding 0.1 µF shall be provided with an internal discharge device, so that 1 s after disconnection the voltage between the pins of the lamp does not exceed 34 V.		N
A16.4	Electrical continuity		N
A17	**ENDURANCE TEST AND THERMAL TESTS**		**N**
A17.1	General		N
A17.2	Endurance test	See report of AS/NZS 60598.2.1	N
A17.3	Thermal test (normal operation)		N
A17.4	Thermal test compliance		N
	The surface temperature of inaccessible parts of the lamp cap shall not exceed 120°C. NOTE: The limit of 120°C is based on the 95 K temperature rise limit for lamps using caps of G5 and G13 specified in IEC 61195.		N
A17.5	Thermal test (abnormal operation) for class III lamps		--
A18	**POWER REQUIREMENT**		**N**
A19	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**N**
A20	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**	See Clause 16 of report AS/NZS 60598.2.1	N
A21	**RESISTANCE TO HEAT, FIRE AND TRACKING**	See Clause 16 of report AS/NZS 60598.2.1	N
	In addition, double or reinforced insulation	See Clause 16 of report	N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
	material shall be subject to the following needle flame test:	AS/NZS 60598.2.1	
A22	**PHOTOBIOLOGICAL HAZARD**	See product instruction	N
A23	**FAULT CONDITIONS**		N
A24	**SURGE TEST**		N
APPENDIX B	**SAFETY REQUIREMENTS FOR T8 TO T5 LAMP CONVERTERS**		N
B1.1	**Scope of Appendix**		N
B1.2	Application		N
B1.3	Testing		N
B1.4	Specific requirements of this Appendix		N
B1.5	Requirements of relevant test specifications		N
B2	**REFERENCED DOCUMENTS**		N
B3	**DEFINITION**		N
B3.1	T8 to T5 (T8–T5) converter		N
B4	**CLASSIFICATIONS OF CONVERTER(S)**		N
B5	**MARKING**		N
B5.1	General		N
B5.2	Marking on the converter		N
B5.3	Warning label for the luminaire	WARNING: Not for use with any fluorescent lamp without T8–T5 converter installed	N
B5.4	Marking of associated components		N
B6	**INSTRUCTIONS**		N
B6.1	Information to be supplied with the converter		N
B6.2	Information to be supplied for emergency luminaires		N
B6.3	Information about additional components		N
B6.4	Warnings		N
B6.4.1	For existing luminaire:	See the instruction	N

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict
	The instructions for converters intended for use in an existing luminaire that requires modification or to show wiring diagrams that require an existing luminaire to be modified (other than replacement of the lamp)		
B6.4.2	For new luminaire: The instructions for converters intended for use in a new luminaire	See the instruction	N
B6.5	Additional information		N
B7	**CONSTRUCTION**		N
B7.1	General		N
B7.2	Components that replace the starter		N
B7.3	Emergency lamps		N
B8	**INTERCHANGEABILITY**		N
B9	**MASS**		N
B10	**DIMENSIONS**		N
B11	**MECHANICAL REQUIREMENTS AND TESTS FOR CAPS**		N
B11.1	Construction and assembly		N
B11.2	Torque test		N
B11.3	Heat treatment and secure fixing test		N
B12	**CREEPAGE DISTANCES AND CLEARANCES**		**N**
B13	**PROVISION FOR EARTHING**		**N**
B14	**TERMINALS**		**N**
B15	**EXTERNAL AND INTERNAL WIRING**		**N**
B16	**PROTECTION AGAINST ELECTRIC SHOCK**		**N**
B16.1	General		N
B16.2	Protection against electric shock		N
B16.3	Discharge capacitors		N
B17	**ENDURANCE TEST AND THERMAL**		**N**

Amendment No. 1 - AS/NZS 60598.2.1/Amdt 1: 2016			
Clause	Requirement - Test	Result - Remark	Verdict

	TESTS		
B17.1	General		N
B17.2	Endurance test		N
B17.3	Thermal test (normal operation)		N
B17.4	Thermal test (abnormal operation)		N
B17.5	Thermal test—Fault conditions		N
B18	**POWER REQUIREMENT**		**N**
B19	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**N**
B20	**INSULATION RESISTANCE AND ELECTRIC STRENGTH**		**N**
B21	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**N**
B22	**FAULT CONDITIONS**		**N**
B23	**BEHAVIOUR OF THE CONTROL GEAR AT END OF LAMP LIFE**		**N**
B24	**SURGE TEST**		**N**

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict

APPENDIX AZZ	**Variations to draft Ed.7 of IEC 60598-1: 2008 for application in Australia and New Zealand**		**P**
0.4.2	In Australia, the supply voltage is 230 V/400 V +10% - 6% and for testing according to this Standard, the rated voltage shall be 240 V/415 V.	AC100-240V	P
0.5	Throughout this document, where there is a relevant Australian/New Zealand Standard, it replaces the IEC Standard unless otherwise specified.		P
0.5.2A	Capacitors shall comply with Clause 4.2A		N
2.2	Class 0 luminaires are not allowed in Australia or New Zealand.		N
3.2.12	In Australia, luminaires with non-detachable flexible cables or cords which are intended to be connected to the supply via a socket-outlet and which are not fitted with a plug are not permitted.		P
	In Australia, luminaires for household use and similar with supply cords which are not fitted with a plug shall be marked with a cord tag with the symbol for “must be installed by a licensed electrician”		N
3.3	Instructions and other texts required by this Standard shall be written in English.	English	P
3.3.7	Luminaires for use with metal halide lamps shall be provided with instructions that state the substance of the following:	See the manual	N
	To avoid potential unsafe lamp failure, the luminaire shall be switched off for at least 30 minutes at least once a week. In addition, the luminaire shall be operated:		N
	-complete with its protective shield		N
	-with a double jacketed lamp		N
3.3.21	The instructions shall contain details related to components in the luminaire that require replacement as part of a maintenance program		N
4.8	Switches that indicate an off position shall have contacts with an air break and comply with AS/NZS 3133 or AS/NZS 61058.1		N
4.2A	Capacitors shall be of a type to ensure that any capacitor failure results in a failsafe outcome		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Capacitors shall be not less than Type B capacitors with metal body and break action protection in accordance with IEC 61048 and IEC 61049. A capacitor complying with ANCI/EIA-456-A shall comply with IEC 61049 and IEC 61048:2006 excluding the endurance test of 18.1.1.		N
5.2.1	Portable luminaires with non detachable cables or cords shall be fitted with plugs complying with AS/NZS 3112. The plug portion of the luminaire with integral pins shall comply with Appendix J of AS/NZS 3112. Also see note under Clause 3.2.12.	Fixed luminaires	N
5.2.2	Flexible cables or cords used as a means of connection to the supply, when supplied by the luminaire manufacturer, shall be at least equal in their mechanical and electrical properties to those specified in table 5.1, and shall be capable of withstanding, without deterioration, the highest temperature to which they may be exposed under normal conditions of use.		N
	Materials other than polyvinyl chloride and rubber are suitable if the above requirements are met.		P
	To provide adequate mechanical strength, the nominal cross-sectional area of the conductors shall be not less than:		P
	- 0.75 mm2 for ordinary luminaires;		P
	- 1 mm2 for other luminaires.		N
	If the luminaire is provided with a 10/16 A socket-outlet, the flexible conductor nominal cross-section area shall be at least 1,5 mm2.		N
5.2.16	Installation couplers complying with AS/NZS 3131 or AS/NZS 61535.1 (Int) are an acceptable alternative in Australia and New Zealand.	No such parts	N
	Class II luminaires for fixed wiring incorporating an appliance coupler shall not have means to allow further luminaires to be connected, including looping in by cascading		N
	Luminaire couplers incorporated with the luminaire shall comply withIEC 61995-1		N

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
5.2.18	All portable luminaires with a flexible supply cord shall be fitted with a plug complying with AS/NZS 3112. Other luminaires with flexible cords shall be fitted with a plug complying with AS/NZS 3112, unless they have the warning allowed by Clause 3.2.12.		N
5.2.19	Installation couplers incorporated within luminaires shall comply with the requirements of AS/NZS 61535		N
	Luminaires incorporating installation couplers may have means to allow further luminaires to be connected by cascading provided the through wiring is rated for the current rating of the installation coupler		N
5.3.1	Internal wires coloured green, yellow or green/yellow combination shall be used for making protective earth connections only. Functional earth connections shall not be made by wires coloured green, yellow or green/yellow combination.		P
7.2.11	All conductors, whether internal or external, coloured green, yellow or green/yellow combination, shall only be connected to an earthing terminal		P
8.2.1	Luminaires shall be so constructed that their live parts and basic insulation are not accessible when the luminaire has been installed and wired as in normal use. Live parts shall not be accessible when the luminaire is opened as necessary for replacing lamps, replaceable light sources or (replaceable) starters, even if the operation cannot be achieved by hand.		P
	Where a protective cover is used over a non-user-replaceable light source to provide protection against electric shock, and the cover is marked with the “caution, electric shock risk” symbol in accordance with IEC 60417-6042, the cover shall be left in place during the tests and inspections detailed by Section 8 of this Standard. The cover shall be held securely in position by fixings requiring the use of a tool for their removal, and at least two independent fixings shall be used	 : “caution, electric shock risk” symbol must attached to the cover. cover fixed by glue and screw.	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
8.2.4	For Class I portable luminaires and luminaires for wall mounting within arm's reach (see Clause 1.4.12 of AS/NZS 3000), terminal blocks shall be completely covered and it shall not be possible to touch basic insulation unless opened for replacement of lamps or replaceable control gear.		N
13.3	Resistance to flame and ignition		P
	Parts of non-metallic material shall be resistant to flame and ignition	See clause 13 of AS/NZS 60598.2.1	P
	For materials other than ceramic, compliance is checked by the tests of 13.3.1 and 13.3.2, 13.3.3 and 13.3.4, as appropriate	Ditto	P
	This requirement does not apply to decorative trims, knobs, wiring insulation and other parts not likely to be ignited or to propagate flames from inside the luminaire		P
	This Clause applies to all parts, including components, even if they have been tested to their own standard.		P
13.3.1	Parts of non-metallic material supporting connections shall withstand the following test:	See clause 13 of AS/NZS 60598.2.1	P
	Parts are subjected to a test using a nickel-chromium glow-wire heated to 750 °C. The test apparatus and test procedure shall be those described in AS/NZS 60695.2.10.		P
	Any flame or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4, spread out horizontally 200 mm ± 5 mm below the sample.		P
13.3.2	All other parts of non-metallic material shall withstand the following test:		P
	Parts are subjected to a test using a nickel-chromium glow-wire heated to 650 °C. The test apparatus and test procedure shall be those described in AS/NZS 60695.2.10.	See clause 13 of AS/NZS 60598.2.1	P

AS/NZS 60598.2.1			
Clause	Requirement - Test	Result - Remark	Verdict
	Any flame or glowing of the sample shall extinguish within 30 s of withdrawing the glow-wire, and any burning or molten drop shall not ignite a single layer of tissue paper specified in 4.187 of ISO 4046-4, spread out horizontally 200 mm ± 5 mm below the sample.		N
13.3.3	During the application of the 750 °C glow wire test of Clause 13.3.1, if a flame is produced that persists for longer than 2 s, the luminaire is further tested as follows:		P
	The needle-flame test of AS/NZS 60695.11.5 is applied to non-metallic parts that encroach within the envelope of a vertical cylinder having a diameter of 20 mm and a height of 50 mm above the point of application of the glow wire. The needle flame is applied to the test sample for 30 s.		N
	The duration of burning shall not exceed 30 s after removal of the test flame and any burning drop shall not ignite the underlying parts or tissue paper specified in 4.187 of ISO 4046-4:2002, spread out horizontally 200 mm ± 5 mm below the sample.		N
	The needle-flame test is not carried out on parts that are made of material classified as V-0 or V-1 according to AS/NZS 60695.11.10. The sample of material classified in accordance with AS/NZS 60695.11.10 shall be no thicker than the relevant part.		N
13.3.4	PCBs in luminaires shall be subject to the needle-flame test of AS/NZS 60695.11.5. The needle flame shall be applied for 30 seconds to an edge of the PCB at least 10 mm from a corner		N
	The duration of burning shall not exceed 15 s after removal of the needle flame and any burning droplets shall not ignite the tissue paper placed underneath the PCB		N
	The needle-flame test is not carried out on PCBs made of material that is V-0 rated according to AS/NZS 60695.11.10		N

Tables

	ANNEX 1: components					**P**
object/part No.	Code	manufacturer/trademark	type/model	technical data	standard	mark(s) of conformity
Plastic cover	B	Bayer Materialscience Ag	6255 + (z)	V-0, 125℃, PC	UL94	UL E41613
Supply plug	B	Zhongshan Henglan Boyi Electrical Appliance Factory	BY-06	250V, 10A	AS/NZS 3112	SAA130835EA
Supply cords	B	Zhongshan Henglan Boyi Electrical Appliance Factory	H05VV-F	3G0.75mm2	AS/NZS 60227.5: 2003 Inc A1	SAA130527EA
Nipple terminal	B	TEIJIN CHEMICALS LT	LN-2250	120℃	UL94 UL746	UL E50075
Output wire of LED driver(input wire of LED module)	B	Shenzhen Jiahuida Electronics Co Ltd	3239	22AWG, Maximum 200 deg C, 60000 Vdc	UL 758	UL E361915
LED PCB	B	SHEZHEN BOMINXING ELECTRONIC CO., LTD	BMX-03	V-0, 130℃	ANSI/UL 94	UL E226252
LED Bead	B	Shenzhen Tongfang Photoelectric Technology Co., Ltd	Z100-TY	IF: 1750mA Vr: 50V P:59.5W	IEC 62471	Test with appliance
LED Driver	B	Zhongshan Done Electronics Technology Co., Ltd	ADS-50W1A5-MEP	Input: 100-240V~, 50/60Hz, 0.68A, Output: 20-36Vdc, 1500Ma ta40℃, tc80℃	AS/NZS 61347.1; AS/NZS IEC 61347.2.13	TUV020736EA

The codes above have the following meaning:

A – The component is replaceable with another one, also certified, with equivalent characteristics

B – The component is replaceable if authorized by the test house

C – Integrated component tested together with the appliance

D – Alternative component

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
	Type reference …….....:	B0801-XX-300-ZZZ	P

Tables

	Lamp used ……..…….....:	LED lamp	P
	Lamp control gear used……..…..:	LED lamp controlgear	P
	Mounting position of luminaire……..……:	See user manual	P
	Supply wattage (W) …….. ….:	304.6W	P
	Supply current (A) ……..……:		P
	Calculated power factor……..……:		P
	Table: measured temperatures corrected for ta = 25℃：		P
	- abnormal operating mode……..……:		N
	- test 1: rated voltage……..……:	240V~	P
	- test 2: 1,06 times rated voltage or 1,05 times Rated wattage ……..……:	1.06x240V~	P
	- test 3: Load on wiring to socket-outlet, 1.06 times voltage or 1,05 times wattage ….....:	--	N
	- test 4: 1,1 times rated voltage or 1,05 times Rated wattage ….....:		N
	Through wiring or looping-in wiring loaded by a current of A during the test ….....:		N

Temperature(℃) of part	Clause 12.4 – normal				Clause 12.5 – abnormal	
	Test 1	Test 2	Test 3	Limits	Test 4	Limit
Plastic cover, inside	68.6	69.3	--	125	--	--
Supply cord	30.2	32.2	--	90	--	--
Nipple terminal	46.5	53.9	--	110	--	--
Input wire of LED driver	47.6	51.4	--	120	--	--
Output wire of LED driver near LED module	76.7	78.9	--	200	--	--
Tc of LED driver	75.8	76.3	--	80	--	--
LED PCB	84.3	89.3	--	130	--	--
Light surface(10cm)	28.3	29.1	--	90	--	--
Mounting surface	32.6	33.4	--	90	--	--
Ambient	25.0	25.0	--	--	--	--

	ANNEX 3: screw terminals (part of the luminaire)		**--**
14	**SCREW TERMINALS**		**--**
14.2	Type of terminal..... :		--

Tables

	Rated current (A)..... :		--
14.3.2.1	One or more conductors		N
14.3.2.2	Special preparation		N
14.3.2.3	Terminal size		N
	Cross-sectional area (mm²)..... :		N
14.3.3	Conductor space (mm)..... :		N
14.4	Mechanical tests		N
14.4.1	Minimum distance		N
14.4.2	Cannot slip out		N
14.4.3	Special preparation		N
14.4.4	Nominal diameter of thread (metric ISO thread)..... :		N
	External wiring		N
	No soft metal		N
14.4.5	Corrosion		N
14.4.6	Nominal diameter of thread (mm)..... :		N
	Torque (Nm)..... :		N
14.4.7	Between metal surfaces		N
	Lug terminal		N
	Mantle terminal		N
	Pull test; pull (N)..... :		N
14.4.8	Without undue damage		N

	ANNEX 4: screwless terminals (part of the luminaire)		**--**
15	**SCREWLESS TERMINALS**		**--**
15.2	Type of terminal..... :		—
	Rated current (A)..... :		—
15.3.1	Material		N
15.3.2	Clamping		N
15.3.3	Stop		N
15.3.4	Unprepared conductors		N
15.3.5	Pressure on insulating material		N
15.3.6	Clear connection method		N
15.3.7	Clamping independently		N

Tables

15.3.8	Fixed in position		N
15.3.10	Conductor size		N
	Type of conductor		N
15.5.1	Terminals internal wiring		N
15.5.1.1	Pull test spring-type terminals (4 N, 4 samples)		N
15.5.1.2	Pull test pin or tab terminals (4 N, 4 samples)		N
	Insertion force not exceeding 50 N		N
15.5.2	Permanent connections: pull-off test (20 N)		N
15.6	Electrical tests		--
	Voltage drop (mV) after 1 h (4 samples).....:		N
	Voltage drop of two inseparable joints		N
	Number of cycles..... :		N
	Voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N
	Voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N
	After ageing, voltage drop (mV) after 10th alt. 25th cycle (4 samples).....:		N
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:		N
15.7	Terminals external wiring		N
	Terminal size and rating		N
15.8.1	Pull test spring-type terminals (4 samples); pull (N)		N
	Pull test pin or tab terminals (4 samples); pull (N)		N
15.9	Contact resistance test		N
	Voltage drop (mV) after 1 h		N

terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

	Voltage drop of two inseparable joints		
	Voltage drop after 10th alt. 25th cycle		
	Max. allowed voltage drop (mV)..... :		—

terminal	1	2	3	4	5	6	7	8	9	10

Tables

voltage drop (mV)										
	Voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 10th alt. 25th cycle									
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										
	Continued ageing: voltage drop after 50th alt. 100th cycle									
	Max. allowed voltage drop (mV)..... :									—
terminal	1	2	3	4	5	6	7	8	9	10
voltage drop (mV)										

Attachment No.1

TEST REPORT

IEC 62031 LED modules for general lighting - Safety specifications

Report Number.....	See report AS/NZS 60598.2.1
Date(s) of performance of tests.....	See report AS/NZS 60598.2.1
Date of issue.....	See report AS/NZS 60598.2.1
Tested by (name + signature).....	See report AS/NZS 60598.2.1
Approved by (name + signature).....	See report AS/NZS 60598.2.1
Testing Laboratory Name	See report AS/NZS 60598.2.1
Address	See report AS/NZS 60598.2.1
Applicant's name.....	See report AS/NZS 60598.2.1
Address.....	See report AS/NZS 60598.2.1
Manufacturer's name.....	See report AS/NZS 60598.2.1
Address.....	See report AS/NZS 60598.2.1
Test specification:	
Standard.....	IEC 62031: 2008+A1: 2012+A2: 2014
Test procedure	Compliance with IEC 62031: 2008+A1: 2012+A2: 2014
Test item description.....	See report AS/NZS 60598.2.1
Trade Mark.....	See report AS/NZS 60598.2.1
Model/Type reference.....	See report AS/NZS 60598.2.1
Ratings.....	See report AS/NZS 60598.2.1

This report is only for applicant use. Any copying this report to/for any other person or entity, and use our name or trademark, is permitted only with our prior written permission. This report sets forth our findings solely with respect to the test samples identified herein. The results set forth in this report are not indicative or representative of the quality or characteristics of the lot from which a test sample was taken or any similar or identical product unless specifically and expressly noted. Our report includes all of the tests requested by you and the results thereof based upon the information that you provided to us. Unless specific mention, the uncertainty of measurement has been explicitly taken into account to declare the compliance or non-compliance to the specification

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict
4	**GENERAL REQUIREMENTS**		**---**
4.1	Designed of modules	Normal used	P
4.2	All electrical measurements of LED modules		P
4.3	Self-ballasted LED modules		N
4.4	Integral LED modules	Conform to the requirement Clause 5 of IEC/EN 60598-1	P
4.5	Independent LED modules	Conform to the requirement IEC/EN 60598-1, including marking requirements	N
4.6	LED module is a factory sealed unit		P
5	**GENERAL TEST REQUIREMENTS**		---
5.1	Tests according to this standard are type tests		P
5.2	Tests ambient temperature		P
5.3	Otherwise specified about the type test		N
5.4	Light output has detectably changed		N
5.5	For SELV-operated LED modules, Annex I, apply additionally.	LED controlgear conform to the requirements of IEC 61347-2-13	P
6	**CLASSIFICATION**		---
	Independent ..... :		N
	Built-in ..... :		N
	Integral ..... :		P
7	**MARKING**		---
7.1	Mandatory marking for built-in or independent modules		N
	a) Mark of origin		N
	b) Model number or type reference of the manufacturer.		N
	LED module requires a stable voltages		N
	LED module requires a stable current		N
	d) Nominal power.		N
	e) Connecting wires	Wiring diagram	N
	f) Value of tc		N
	g) Blue light hazard	RG0	P

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict
	h) Symbol of built-in modules		N
	i)The heat transfer temperature td		N
	j) The power for heat-conduction Pd		N
	k) Working voltage of the insulation designed		P
7.2	Location of marking		---
	Items a), b), c) and f) of 7.1 shall be marked on the module.		P
	Items d), e), g) and h), i) and j) of 7.1 shall be marked legible on the module or on the module data sheet. Item k) should be in the manufacturer's literature		P
	For integral modules, no marking is required		P
7.3	Durability and legibility of marking		N
	Rubbing 15 s water, 15 s petroleum; marking legible		N
8	**SCREW TERMINALS**		**N**
	Separately approved: component list	See annex 2	N
	Part of the luminaire	See annex 3	N
	SCREWLESS TERMINALS and electrical connections		**N**
	Separately approved: component list	See annex 2	N
	Part of the luminaire	See annex 4	N

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict

9	**PROVISION FOR PROTECTIVE EARTHING**		**N**
	The requirements of IEC 61347-1, Clause 9, apply		N
	Provisions for protective earthing		N
	Earthing terminals compliance with clause 8 of IEC 61347-1		N
	Contact ono-rusting or bare metal		N
	Protective earth, symbol		N
	Provisions for functional earthing		N
	Lamp controlgear with conductors for protective earthing by tracks on printed circuit boards		N
	a.c. current of 25 A for 1 min between the earthing terminal or earthing contact and each of the accessible metal parts, measured resistance (Ω): < 0,5 Ω		N
	Earthing of built-in lamp controlgear		N
	Earthing via independent controlgear		N
	Earth connection to other equipment		N
	minimum cross-section of 1,5mm2 and be of copper, or an equivalent conductive material		N
	Earthing of the lamp compartments powered via the independent lamp controlgear		N
	a.c. current of 25 A for 1 min between the earthing terminal or earthing contact and each of the accessible metal parts, measured resistance (Ω): < 0,5 Ω		N
	a.c. current of 10 A for 1 min between the earthing terminal or earthing contact and the accessible metal parts, measured resistance (Ω): < 0,5 Ω		N

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict

10	**PROTECTION AGAINST ACCIDENTAL CONTACT WITH LIVE PARTS**		**N**
	The requirements of IEC 61347-1, Clause 10, apply		N
	Lamp controlgear which do not rely upon the luminaire enclosure for protection against electric shock compliance Annex A		N
	Integral lamp controlgear, which relies upon the luminaire enclosure for protection		N
	Lacquer or enamel is not considered		N
	Parts providing protection against accidental contact have adequate mechanical strength		N
	- a force of 10 N test with test finger		N
	Capacitors > 0,5 μF: voltage after 1 min (V): < 50V:		N
	SELV-equivalent controlgear accessible parts are insulated from live parts by double or reinforced insulation		N
	SELV output circuits is be electrically separated from earth by at least basic insulation		N
	Controlgears providing ELV conductive parts is insulation		N
	SELV may be have accessible		N
	The rated output voltage under load does not exceed 25Vr.m.s. or 60Vd.c		N
	– for a.c.: 0,7 mA (peak);		N
	– for d.c.: 2,0 mA;		N
	– the no-load output does not exceed 35Vpeak or 60Vripple free d.c.		N
	If exceeding the values given above, compliance with 500Vdc insulation test		N
	One capacitor Y1 or two capacitors Y2 of the same values used in series between live parts and the body or primary and secondary circuits - Capacitor complying with IEC 60384-14 - Other components bridging the separating transformer complying with IEC 60065, clause 14		N

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict
11	**MOISTURE RESISTANCE AND INSULATION**		**P**
	The requirements of IEC 61347-1, Clause 11, apply		P
	After storage 48 h at 91- 95% relative humidity and 20- 30 °C measuring of insulation resistance with d.c. 500 V (MΩ)::		P
	⩾ 2 MΩ for basic insulation..... :		P
	⩾ 4 MΩ for double or reinforced insulation..... :		P
12	**ELECTRIC STRENGTH**		**P**
	The requirements of IEC 61347-1, Clause 12, apply		P
	Immediately after clause 11 electric strength test for 1 min		P
	Basic insulation for voltages of SELV		N
	Up to and including 50 V		N
	Above 50Vup to and including 1 000 V		N
	- basic insulation (2U+1000)	See report AS/NZS 60598.2.1	P
	- supplementary insulation (2U+1000)		N
	- double or reinforced insulation (4U+2000)	See report AS/NZS 60598.2.1	P
	Solid or thin sheet insulation		P
	No flashover or breakdown after electric strength test		P
13	**Fault conditions**		**---**
13.1	The requirements of IEC 61347-1, Clause 14, apply		N
	- does not emit flames or molten Material		N
	- does not produce flammable gases		N
	- protection against accidental contact not impaired		N
	Thermally protected controlgear does not exceed the marked temperature value		N
	Fault conditions: capacitors, resistors or inductors without proof of compliance with relevant specifications have been short-circuited or disconnected		N
	controlgear provided with the marking  , comply with the requirements specified in Annex C		N

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict
	Short-circuit of creepage distances and clearances if less than specified in clause 16 in Part 1 (except between live parts and accessible metal parts)		N
	Distances on printed boards provided with coating according to IEC 60664-3		N
	Short-circuit or interruption of semiconductor devices		N
	Short-circuit across insulation consisting of lacquer, enamel or textile		N
	Short-circuit across electrolytic capacitors		N
	After the tests the insulation resistance with d.c. 500 V (MΩ) are ⩾ 1 MΩ ..... :		N
	After the tests the accessible parts has not become live		N
	During the tests, a five-layer tissue paper, where the test specimen is wrapped, does not ignite		N
	Accessible parts compliance with Annex A		N
	Connect the controlgear under test to a high-power a.c. supply capable of passing a fault current of 160 A 010% r.m.s.		N
13.2(--)	Overpower condition		P
	The module shall be switched on and the power monitored (at the input side) and increased until 150 % of the rated voltage, current or power is reached. The test shall be continued until the module is thermally stabilised. A stable condition is reached, if the temperature does not change by more than 5 K in 1 h. The temperature shall be measured in the tc point. The module shall withstand the overpower condition for at least 15 min, the time period of which can lie within the stabilisation period if the temperature change is ≤ 5 K.		P
15	**Construction**		**P**
	Wood, cotton, silk, paper and similar fibrous material shall not be used as insulation.		P

IEC 62031			
Clause	Requirement - Test	Result - Remark	Verdict
16	**Creepage distances and clearances**		**P**
	Reference IEC/EN 61347-1 and IEC/EN 60598-1	See report AS/NZS 60598.2.1	P
17	**SCREWS, CURRENT-CARRYING PARTS AND CONNECTIONS**		**P**
	The requirements of IEC 61347-1, Clause 17, apply	See report AS/NZS 60598.2.1	P
18	**RESISTANCE TO HEAT, FIRE AND TRACKING**		**---**
	Parts of insulating Material retaining live parts in position, ball-pressure test:		P
	- part; test temperature (°C)	See report AS/NZS 60598.2.1	P
	Resistance to flame and ighition		P
	Insulating Material retaining live parts in position, glow-wire test	See report AS/NZS 60598.2.1	P
	Needle-flame test		N
	Resistant to tracking.		N
19	**RESISTANCE TO CORROSION**		**---**
	Rust protection:		N
	-10% solution of ammonium chloride in water		N
	- adequate varnish on the outer surface		N
20	**INFORMATION FOR LUMINAIRE DESIGN**		**---**
21	**HEAT MANAGEMENT**		**---**
21.2	Heat-conducting foil and paste		N
21.3	Heat protection		N
21.4	Construction		
22	**PHOTOBIOLOGICAL SAFETY**		**---**
22.1	UV radiation		N
22.2	Blue light hazard		N
22.3	Infrared radiation		N

Tables

13	**TABLE: tests of fault conditions**		N
Part	Simulated fault	Test result	Hazard
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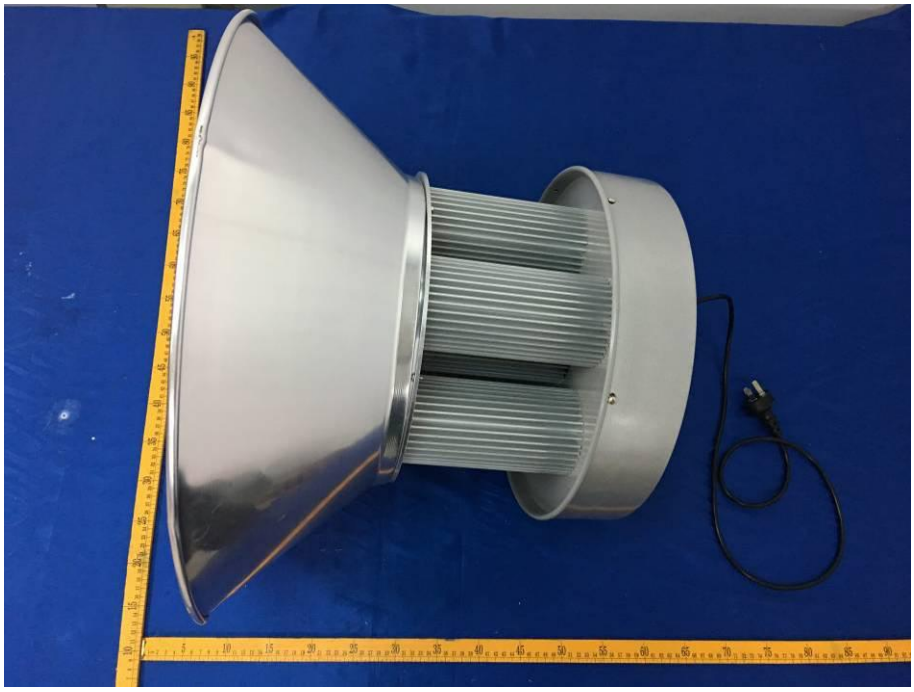
16	**TABLE: creepage distances and clearances**						P
	Minimum distances for a.c. (50/60 Hz) sinusoidal voltages						N
RMS working voltage (V) not exceeding		50	150	250	500	750	1000
1 minimum distances between live parts of different polarity. Specify the value measured.		>1.2					
2 minimum distances between live parts and accessible parts which are permanently fixed to the ballast, including screws or devices for fixing covers or fixing the ballast to its support. Specify the value measured.		>1.2					
- required creepage distances (mm), insulation PTI ≥ 600		0,6	1,4	1,7	3	4	5,5
- required creepage distances (mm), insulation PTI < 600		1,2	1,6	2,5	5	8	10
- required clearances (mm)		0,2	1,4	1,7	3	4	5,5
3 minimum distances between live parts and a flat supporting surface or a loose metal cover, if any, if the construction does not ensure that the values under 2 above are maintained under the most unfavourable circumstances							
- required clearances (mm)		2	3,2	3,6	4,8	6	8
	Minimum distances for non-sinusoidal pulse voltages						N
rated pulse voltage (peak kV)	2,0	2,5	3,0	4,0	5,0	6,0	8,0
required minimum distances, clearances (mm)	1,0	1,5	2	3	4	5,5	8
Specify the value measured							
rated pulse voltage (peak kV)	10	12	15	20	25	30	40
required minimum distances, clearances (mm)	11	14	18	25	33	40	60
Specify the value measured							
rated pulse voltage (peak kV)	50	60	80	100	-	-	-
required minimum distances, clearances (mm)	75	90	130	170	-	-	-
Specify the value measured							

ANNEX A Photo



General view – 1(model: B0801-XX-300-ZZZ)

Remark: All models have the same appearance photo like above view except their size and number of LED module.

Top view – 2

ANNEX A Photo

Bottom view – 3

Internal view – 4