CE

APPLICATION FOR LVD
On Behalf of

LED ALADDIN LIMITED

Product Name:	**LED Light Bulb**
Trademark:	**LEDaladdin**
Model :	**AL-MLK-9W** **AL-MLK-7W, AL-MLK-4W, AL-NLK-9W, AL-NLK-7W, AL-NLK-4W, AL-MYX-4W, AL-MYX-5.5W, AL-MYX-NINI-4W.**
Prepared For : Address：	**LED ALADDIN LIMITED** 392# Xihong Road. Gulou District, Fuzhou 350002, Fujian, China
Prepared By : Address：	**Shenzhen BCTC Technology Co., Ltd.** A.Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
Test Date:	**Nov. 19 - Nov. 24, 2012**
Date of Report :	**Nov. 24, 2012**
Report No.:	**BCTC-12110795S**

TEST REPORT

EN 60598-1&EN 60598-2-1

Luminaires

Part 2: Particular requirements
Section One – Fixed general purpose luminaires

Testing Laboratory Name ..... :	**Shenzhen BCTC Technology Co., Ltd.**
Address ..... :	A.Floor 3, 44 Building, Tanglang Industrial Park B, Taoyuan Street, Nanshan District, Shenzhen, China
Testing location ..... :	**Shenzhen BCTC Technology Co., Ltd.**
Applicant's Name ..... :	**LED ALADDIN LIMITED**
Address ..... :	392# Xihong Road. Gulou District, Fuzhou 350002, Fujian, China
Manufacturer …… ……:	**LED ALADDIN LIMITED**
Address …… …… :	392# Xihong Road. Gulou District, Fuzhou 350002, Fujian, China
Test specification	
Standard..... :	**EN 60598-1:2008+A11:2009** **EN 60598-2-1:1989** **EN 61347-1: 2008+A1:2011** **EN61347-2-13:2006** **EN 60968: 1990+A1:1993+A2:1999** **EN62471: 2008** **EN 62301: 2005**
Test procedure ..... :	LVD
Procedure deviation ..... :	N/A
Non-standard test method ..... :	N/A
Test Report Form	
Test Report Form No. ..... :	6598201E/00-10
TRF originator . ..... :	SEMKO
Master TRF ..... :	dated 00-08
Copyright reserved to the bodies participating in the IECEE Schemes (CB and CB-FCS) and/or the bodies participating in the C.I.G.	
Test item description ..... :	**LED Light Bulb**
Trademark ..... :	**LEDaladdin**
Model and/or type reference ..... :	**AL-MLK-9W**
Rating(s)..... :	**AC230V 50/60Hz 9W**
Test case verdicts	
Test case does not apply to the test object ... :	N/A
Test item does meet the requirement ..... :	P(ass)
Test item does not meet the requirement ..... :	F(ail)

General remarks

This report shall not be reproduced except in full without the written approval of the testing laboratory.

The test results presented in this report relate only to the item(s) tested.

"(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 IEC 60 598-1 (EN 60 598-1)

Throughout this report a comma is used as the decimal separator.

Brief description of the test sample:

The equipment is a **LED Light Bulb** for general use.

The test data is based on the model**: AL-MLK-9W**.
Except the model number is different. The additional models: Please refer to the first page are same in the constructions, shape of enclosures and electronics circuits as the basic model: **AL-MLK-9W.**

Artwork of marking plate:

LED Light Bulb

Model: AL-MLK-9W

AC230V 50/60Hz 9W

LED ALADDIN LIMITED

Name and address of the testing laboratory : Shenzhen BCTC Technology Co., Ltd.

A.Floor 3, 44 Building, Tanglang Industrial Park B,
Taoyuan Street, Nanshan District, Shenzhen, China

Date of Test: **Nov. 19 - Nov. 24, 2012**

Prepared by(Engineer) : Sanji Guan

Reviewer(Quality Manager) : Sophie Lee

Approved&Authorized Signer(Manager) : Casey Wang

SHENZHEN BCTC TECHNOLOGY CO., LTD. APPROVED

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.1 (0)	SCOPE		P
1.1 (0.1)	More sections applicable .....:	Yes [ ] No [√]	—
1.4 (2)	CLASSIFICATION		
1.4 (2.2)	Type of protection .....:	Class II	—
1.4 (2.3)	Degree of protection .....:	IPX0	—
1.4 (2.4)	Portable or handheld luminaire .....:	No	—
	Fixed luminaire suitable for normally flammable surfaces .....:	Yes	—
	Fixed luminaire suitable for non-combustible materials only .....:	No	—
1.4 (2.5)	Luminaire for normal use .....:	Yes	—
	Luminaire for rough service .....:	No	—
1.5 (3)	MARKING		P
1.5 (3.2)	Mandatory markings		P
	Position of the marking	On the enclosure	P
	Format of symbols/text		P
1.5 (3.2.1)	Mark of origin		P
1.5 (3.2.2)	Rated voltage(s) in volts	AC230V	P
1.5 (3.2.3)	Rated max. ta, if other than 25 °C		N
1.5 (3.2.4)	Symbol for class II luminaires		P
1.5 (3.2.5)	Symbol for class III luminaires		N
1.5 (3.2.6)	Marking (if applicable) with IP number		N
1.5 (3.2.7)	Maker's model number or type reference		P
1.5 (3.2.8)	Rated wattage	9W	P
1.5 (3.2.9)	Where applicable, the relevant symbol (see Figure 1) for luminaires not suitable for direct mounting on normally flammable surfaces		N
1.5 (3.2.10)	Information concerning special lamp		N
1.5 (3.2.11)	Symbol for 'cool beam'		N
1.5 (3.2.12)	Except for type Z attachments, terminations shall be clearly marked		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	Information for luminaires with non-detachable flexible cable not fitted with a plug		N
	ELV d.c. supplied fluorescent luminaires		N
1.5 (3.2.13)	Symbol for minimum distance		N
	Explanation for its meaning in instructions		N
1.5 (3.2.14)	Symbol for rough service luminaires		N
1.5 (3.2.15)	Symbol for luminaires with bowl mirror lamp		N
1.5 (3.2.16)	Luminaires with glass protective shield		N
1.5 (3.2.17)	Interconnected luminaires		N
1.5 (3.2.18)	Warning for lumiaires with ignitors		N
1.5 (3.2.19)	Symbol for luminaires designed for use with self-shielded tungsten halogen lamps only		N
1.5 (3.2.20)	The means of adjustment where not obvious, needs to be identified		N
1.5 (3.2.21)	The relevant symbol (see Figure 1) for luminaires not suitable for covering with thermally insulated material		N
1.5 (3.2.22)	Symbol (see Figure 1 from IEC 61558-1), if applicable, for luminaires with internal replaceable fuses		N
1.5 (3.3)	Additional information	User manual provided	P
	Language of instructions	English	P
1.5 (3.3.1)	Combination luminaires	Not combination luminaire	N
1.5 (3.3.2)	Nominal frequency in Hz	50/60Hz	P
1.5 (3.3.3)	Operating temperature	See user manual	P
1.5 (3.3.4)	Symbol or warning notice	User manual provided	P
1.5 (3.3.5)	Wiring diagram		P
1.5 (3.3.6)	Special conditions		N
1.5 (3.3.7)	Metal halid lamp luminaire – warning		N
1.5 (3.3.8)	Limitation for semi-luminaires		N
1.5 (3.3.9)	Power factor and supply current		P
1.5 (3.3.10)	Suitability for use indoors		P

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.5 (3.3.11)	Luminaires with remote control	No remote control	N
1.5 (3.3.12)	Clip-mounted luminaire – warning	Fixed luminaire	N
1.5 (3.3.13)	Specifications of protective shields		N
1.5 (3.3.14)	Symbol for nature of supply	~	P
1.5 (3.3.15)	Rated current of socket outlet	Not provided socket outlet	N
1.5 (3.3.16)	Rough service luminaire		N
1.5 (3.3.17)	Mounting instruction for type Y, type Z and some type X attachments	No external supply cord	N
1.5 (3.3.18)	Non-ordinary luminaires with PVC cable	The equipment is ordinary luminaire	N
1.5 (3.3.19)	For luminaires which generate a protective conductor current greater than 10 mA and intended for permanent connection, the protective conductor current shall be clearly stated in the manufacturers' instructions		N
1.5 (3.3.20)	Wall mounted and adjustable luminaires not intended to be mounted within arms reach shall be provided with information to advise their correct installation, i.e. "Only to be installed outside arms reach"		N
1.5 (3.4)	Test with water	15s with water	P
	Test with hexane	15s with hexane	P
	Legible after test	The marking is legible	P
	Label attached	The marking not be easily removable and shows no curling	P

1.6 (4)	CONSTRUCTION		P
1.6 (4.2)	Components replaceable without difficulty		P
1.6 (4.3)	Wireways smooth and free from sharp edges		P
1.6 (4.4)	Lampholders		N
1.6 (4.4.1)	Integral lampholder		N
1.6 (4.4.2)	Wiring connection		N
1.6 (4.4.3)	Lampholder for end-to-end mounting		N
1.6 (4.4.4)	Positioning		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.4.5)	Peak pulse voltage		N
1.6 (4.4.6)	Centre contact		N
1.6 (4.4.7)	Rough service luminaires	Ordinary luminaires	N
1.6 (4.4.8)	Lamp connectors	No lamp connector provided	N
1.6 (4.4.9)	Caps or bases originally developed for single-capped ELV lamps shall not be used in the luminaires intended for use with general purpose tungsten halogen lamps with rated voltages higher than 50V.		N
1.6 (4.5)	Starter holders		N
	Starter holder in luminaires other than class II		N
	Starter holder class II construction		N
1.6 (4.6)	Terminal blocks		N
	Tails		N
	Unsecured blocks		N
1.6 (4.7)	Terminals and supply connections		N
1.6 (4.7.1)	Contact to metal parts		N
1.6 (4.7.2)	Test 8 mm live conductor		N
	Test 8 mm earth conductor		N
1.6 (4.7.3)	Terminals for supply conductors		N
1.6 (4.7.4)	Terminals other than supply connection		N
1.6 (4.7.5)	Heat-resistant wiring/sleeves		N
1.6 (4.7.6)	Multi-pole plug		N
1.6 (4.8)	Switches:		N
	- adequate rating	No switch	N
	- adequate fixing		N
	- polarized supply		N
1.6 (4.9)	Insulating lining and sleeves		N
1.6 (4.9.1)	Retainment		N
	Method of fixing .....:		N
1.6 (4.9.2)	Insulated linings and sleeves		N
	a) & c) Insulation resistance and electric strength		N
	b) Ageing test. Temperature (°C) .....:		N
1.6 (4.10)	Double and reinforced insulation		P
1.6 (4.10.1)	No contact, mounting surface - accessible metal parts - wiring of basic insulation		P
	Safe installation fixed luminaires		P

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	Capacitors		N
	Interference suppression capacitors according to IEC 60384-14	No such capacitor	N
1.6 (4.10.2)	Assembly gaps:		N
	- not coincidental		N
	- no straight access with test probe		N
1.6 (4.10.3)	Retainment of insulation:		N
	- fixed		N
	- unable to be replaced; luminaire inoperative		N
	- sleeves retained in position		N
	- lining in lampholder		N
1.6 (4.11)	Electrical connections and current-carrying parts		P
1.6 (4.11.1)	Contact pressure	Not transmitted through insulating material	P
1.6 (4.11.2)	Screws:		P
	- self-tapping screws		P
	- thread-cutting screws		N
	- at least two self-tapping screws		N
1.6 (4.11.3)	Screw locking:		N
	- spring washer		N
	- rivets		N
1.6 (4.11.4)	Material of current-carrying parts		P
1.6 (4.11.5)	No contact to wood	No wood material in the luminaire	P
1.6 (4.11.6)	Electro-mechanical contact systems	No such systems	N
1.6 (4.12)	Mechanical connections and glands		N
1.6 (4.12.1)	Screws not made of soft metal		P
	Screws of insulating material		N
	Torque test: torque (Nm); part.....:	0.4	P
	Torque test: torque (Nm); part.....:		N
	Torque test: torque (Nm); part.....:		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.12.2)	Screws with diameter < 3 mm screwed into metal		N
1.6 (4.12.4)	Locked connections:		N
	- fixed arms; torque (Nm) .....:		N
	- lampholder; torque (Nm) .....:		N
	- push-button switches; torque 0,8 Nm.....:		N
1.6 (4.12.5)	Screwed glands; force (Nm).....:		N
1.6 (4.13)	Mechanical strength		P
1.6 (4.13.1)	Impact tests:		P
	- fragile parts; energy (Nm).....:		N
	- other parts; energy (Nm) .....:	Enclosure : 0.35Nm	P
	1) live parts	Not access	P
	2) linings		N
	3) protection	Continue to afford the degree of protection against ingress of dust, solid objects and moisture	P
	4) covers	No break	P
1.6 (4.13.3)	Straight test finger		N
1.6 (4.13.4)	Rough service luminaires		N
	a) fixed	Ordinary luminaire	N
	b) hand-held		N
	c) delivered with a stand		N
	d) for temporary installations and suitable for mounting on a stand		N
1.6 (4.13.6)	Tumbling barrel	Not plug-ballast/transformer and mains socket-outlet-mounted luminaires	N
1.6 (4.14)	Suspensions and adjusting devices		N
1.6 (4.14.1)	Mechanical load:		N
	A) four times the weight	Not suspended luminaire	N
	B) torque 2,5 Nm		N
	C) bracket arm; bending moment (Nm).....:		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	D) load track-mounted luminaires		N
	E) clip-mounted luminaires, glass-shelve. Thickness (mm) .....:		N
	metal rod. Diameter (mm) .....:		N
1.6 (4.14.2)	Load to flexible cables		N
	Mass (kg).....:	Not suspended by flexible cables	N
	Stress in conductors (N/mm²).....:		N
	Semi-luminaires – mass (kg) .....:		N
	Semi-luminaires – bending moment (Nm).....:		N
1.6 (4.14.3)	Adjusting devices:		N
	- flexing test; number of cycles.....:	No adjusting devices	N
	- strands broken		N
	- electric strength test afterwards		N
1.6 (4.14.4)	Telescopic tubes: cords not fixed to tube; no strain on conductors	No telescopic tubes	N
1.6 (4.14.5)	Guide pulleys	No guide pulleys	N
1.6 (4.14.6)	Strain on socket-outlets	No socket-outlet	N
1.6 (4.15)	Flammable materials:		N
	- glow-wire test 650 °C		N
	- spacing ≥ 30 mm		N
	- screen withstanding test of 13.3.1		N
	- screen dimensions		N
	- no fiercely burning material		N
	- thermal protection		N
	- electronic circuits exempted		N
1.6 (4.15.2)	Luminaires made of thermoplastic material with lamp control gear		N
	a) construction	No lamp control gear	N
	b) temperature sensing control		N
	c) surface temperature		N
1.6 (4.16)	Luminaires for mounting on normally flammable surface		P
	No lamp control gear		P

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.16.1)	Lamp control gear spacing:		N
	- spacing 35 mm		N
	- spacing 10 mm		N
1.6 (4.16.2)	Thermal protection:		N
	- in lamp control gear		N
	- external		N
	- fixed position		N
	- temperature marked lamp control gear		N
1.6 (4.16.3)	If the luminaire does not comply with 4.16.1 and 4.16.2, it shall be so designed that it satisfies the test of 12.6		P
1.6 (4.17)	Drain holes	Not protection against water	N
	Clearance at least 5 mm		N
1.6 (4.18)	Resistance to corrosion:		N
1.6 (4.18.1)	- rust-resistance	Not protection against water	N
1.6 (4.18.2)	- season cracking in copper		N
1.6 (4.18.3)	- corrosion of aluminium		N
1.6 (4.19)	Ignitors compatible with ballast		N
1.6 (4.20)	Rough service vibration .....:	Ordinary service luminaire	N
1.6 (4.21)	Protective shield:		N
1.6 (4.21.1)	Shield fitted		N
1.6 (4.21.2)	Particles from a shattering lamp not impair safety		N
1.6 (4.21.3)	No direct path		N
1.6 (4.21.4)	Impact test on shield		N
	Glow-wire test on lamp compartment		N
1.6 (4.22)	Attachments to lamps	No attachments	N
1.6 (4.23)	Semi-luminaires comply class II		N
1.6 (4.24)	UV radiation	No UV radiation	N
1.6 (4.25)	No sharp point or edges	No sharp points or edges	P
1.6 (4.26)	Short-circuit protection:		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.6 (4.26.1)	Uninsulated accessible SELV parts	No SELV parts	N
1.6 (4.26.2)	Short-circuit test		N
1.6 (4.26.3)	Test chain according to IEC 61032		N

1.7 (11)	CREEPAGE DISTANCES AND CLEARANCES		P
	Working voltage (V).....:	AC230V	—
	Voltage form	Sinusoidal	—
	PTI	< 600	—
	Rated pulse voltage (kV) .....:	--	—
	(1) Current-carrying parts of different polarity: cr (mm); cl (mm).....:		P
	(2) Current-carrying parts and accessible parts: cr (mm); cl (mm).....:		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 clamped and metal parts: cr (mm); cl (mm).....:		N
	(5) Current-carrying parts of switches and metal parts, after removal of insulation: cr (mm); cl (mm).....:		N
	(6) Current-carrying parts and supporting surface: cr (mm); cl (mm).....:		P

1.8 (7)	PROVISION FOR EARTHING		N
1.8 (7.2.1 + 7.2.3)	Accessible metal parts		N
	Metal parts in contact with supporting surface		N
	Resistance < 0,5 Ω		N
	Two self-tapping screws used		N
	Thread-forming screws		N
	Connector earthing first		N
1.8 (7.2.2 + 7.2.3)	Earth continuity in joints etc.		N
1.8 (7.2.4)	Locking of clamping means		N
	Compliance with 4.7.3		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.8 (7.2.5)	Earth terminal integral part of connector socket		N
1.8 (7.2.6)	Earth terminal adjacent to mains terminals		N
1.8 (7.2.7)	Electrolytic corrosion of the earth terminal		N
1.8 (7.2.8)	Material of earth terminal		N
	Contact surface bare metal		N
1.8 (7.2.10)	Class II luminaire for looping-in		N
1.8 (7.2.11)	Earthing core coloured green-yellow		N
	Length of earth conductor		N

1.9 (14)	SCREW TERMINALS		N
	Separately approved; component list	(see Annex)	N
	Part of the luminaire	(see Annex)	N

1.9 (15)	SCREWLESS TERMINALS		N
	Separately approved; component list	(see Annex)	N
	Part of the luminaire	(see Annex)	N

1.10 (5)	EXTERNAL AND INTERNAL WIRING		P
1.10 (5.2)	Supply connection and external wiring		N
1.10 (5.2.1)	Means of connection .....:	No external cables	N
1.10 (5.2.2)	Type of cable .....:		N
	Nominal cross-sectional area (mm²) .....:		N
1.10 (5.2.3)	Type of attachment, X, Y or Z		N
1.10 (5.2.5)	Type Z not connected to screws		N
1.10 (5.2.6)	Cable entries:		N
	- suitable for introduction		N
	- adequate degree of protection		N
1.10 (5.2.7)	Cable entries through rigid material have rounded edges		N
1.10 (5.2.8)	Insulating bushings:		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	- suitably fixed		N
	- material in bushings		N
	- tubes or guards made of insulating material		N
1.10 (5.2.9)	Locking of screwed bushings		N
1.10 (5.2.10)	Cord anchorage:		N
	- covering protected from abrasion		N
	- clear how to be effective		N
	- no mechanical or thermal stress		N
	- no tying of cables into knots etc.		N
	- insulating material or lining		N
1.10 (5.2.10.1)	Cord anchorage for type X attachment:		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 anchorages		N
1.10 (5.2.10.2)	Adequate cord anchorage for type Y and type Z attachment		N
1.10 (5.2.10.3)	Tests:		N
	- impossible to push cable; unsafe		N
	- pull test: 25 times; pull (N).....:		N
	- torque test: torque (Nm) .....:		N
	- displacement ≤ 2 mm		N
	- no movement of conductors		N
	- no damage of cable or cord		N
1.10 (5.2.11)	External wiring passing into luminaire		N
1.10 (5.2.12)	Looping-in terminals		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.10 (5.2.13)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N
1.10 (5.2.14)	Mains plug same protection		N
	Class III luminaire plug		N
1.10 (5.2.15)	Colour code low voltage		N
1.10 (5.2.16)	Appliance inlets (IEC 60320)		N
	Appliance couplers of class II type		N
1.10 (5.3)	Internal wiring		P
1.10 (5.3.1)	Internal wiring of suitable size and type	$0.5mm^2$ PVC insulation cord.	P
	Through wiring		P
	- not delivered/ mounting instruction		P
	- factory assembled		P
	- socket outlet loaded (A).....:		N
	- temperatures .....:		P
	Green-yellow for earth only		N
1.10 (5.3.1.1)	Internal wiring connected directly to fixed wiring		P
	Cross-sectional area (mm²).....:	0.5 mm²	P
	Insulation thickness		P
	Extra insulation added where necessary		N
1.10 (5.3.1.2)	Internal wiring connected to fixed wiring via internal current-limiting device		N
	Adequate cross-sectional area and insulation thickness		N
1.10 (5.3.1.3)	Double or reinforced insulation for class II		P
1.10 (5.3.1.4)	Conductors without insulation		N
1.10 (5.3.1.5)	SELV current-carrying parts		N
1.10 (5.3.1.6)	Insulation thickness other than PVC or rubber		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
1.10 (5.3.2)	Sharp edges etc.	Inner wire can't touch the sharp edges , rivets and similar components	P
	No moving parts of switches etc.	No moving parts used	N
	Joints, raising/lowering devices	No such devices	N
	Telescopic tubes etc.	No telescopic tubes etc.	N
	No twisting over 360°		P
1.10 (5.3.3)	Openings	No openings	N
	Bushings not removable		N
	Bushings in sharp openings		N
	Cables with protective sheath		N
1.10 (5.3.4)	Joints and junctions effectively insulated	No joints and junctions	N
1.10 (5.3.5)	Strain on internal wiring		N
1.10 (5.3.6)	Wire carriers	The equipment is fixed luminaire	N
1.10 (5.3.7)	Wire ends not tinned		N
	Wire ends tinned: no cold flow		N

1.11 (8)	PROTECTION AGAINST ELECTRIC SHOCK		P
1.11 (8.2.1)	Live parts not accessible	No access of live part in normal use	P
	Protection in any position		P
	Double-ended tungsten filament lamp		N
	Insulation lacquer not reliable	No insulation lacquer and similar materials as protection against electric shock	N
	Double-ended high pressure discharge lamp		N
1.11 (8.2.2)	Portable luminaire adjusted in most unfavourable position	Fixed luminaire	N
1.11 (8.2.3)	Class II luminaire:		P
	- basic insulated metal parts not accessible during starter or lamp replacement		N
	- basic insulation not accessible other than during starter or lamp replacement		P

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	- glass protective shields not used as supplementary insulation		N
	Class I luminaire with BC lampholder		N
1.11 (8.2.4)	Portable luminaire:		N
	- protection independent of supporting surface		N
	- terminal block completely covered		N
1.11 (8.2.6)	Covers reliably secured		N
1.11 (8.2.7)	Discharging of capacitors ≥ 0,5 μF	No such capacitor	N
	Portable plug connected luminaire with capacitor		N
	Other plug connected luminaire with capacitor		N
	Discharge device on or within capacitor		N
	Discharge device mounted separately		N

1.12 (12)	ENDURANCE TEST AND THERMAL TEST		P
1.12 (12.3)	Endurance test:		P
	- mounting-position.....:	Normal position	—
	- test temperature (°C).....:	25°C	—
	- total duration (h) .....:	168h	—
	- supply voltage: Un factor; calculated voltage (V):	Un factor:0.833 voltage :243.8V	—
	- lamp used.....:	LED	—
1.12 (12.3.2)	After endurance test:		P
	- no part unserviceable		P
	- luminaire not unsafe		P
	- no damage to track system	No track system	N
	- marking legible	Marking still legible and shows no curling	P
	- no cracks, deformation etc.		P
1.12 (12.4)	Thermal test (normal operation)	(see Annex)	P
1.12 (12.5)	Thermal test (abnormal operation)		P
1.12 (12.6)	Thermal test (failed control gear condition):		N
1.12 (12.6.1)	- case of abnormal conditions.....:		—

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	- electronic lamp control gear		N
	- measured winding temperature (°C) at 1,1 Un..:		—
	- measured mounting surface temperature (°C) at 1,1 Un .....:		N
	- calculated mounting surface temperature (°C)..:		N
	- track-mounted luminaires		N
1.12 (12.6.2)	Temperature sensing control		N
	- case of abnormal conditions.....:	No temperature sensing control	—
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured mounting surface temperature (°C) :		N
	- track-mounted luminaires		N
1.12 (12.7)	Thermal test :		N
	- case of abnormal conditions.....:		—
1.12 (12.7.1)	- measured winding temperature (°C) at 1,1 Un..:		—
	- measured temperature of fixing point/ exposed part (°C) at 1,1 Un .....:		N
	- calculated temperature of fixing point/ exposed part (°C) .....:		N
1.12 (12.7.2)	Temperature sensing control		N
	- thermal link		N
	- manual reset cut-out		N
	- auto reset cut-out		N
	- measured temperature of fixing point/ exposed part (°C) .....:		N

1.13 (9)	RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE		P
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		N
	- classification according to IP .....:		—
	- mounting position during test .....:		—
	- fixing screws tightened; torque (Nm).....:		—
	- tests according to clauses .....:		—

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	- electric strength test afterwards		N
	a) no deposit in dust-proof luminaire		N
	b) no talcum in dust-tight luminaire		N
	c) no trace of water on current-carrying 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
1.13 (9.3)	Humidity test 48 h	R.H.:93% T:25℃	P

1.14 (10)	INSULATION RESISTANCE AND ELECTRIC STRENGTH		P
1.14 (10.2.1)	Insulation resistance test		P
	Insulation resistance (MΩ):		P
	SELV:		N
	- 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 .....:		N
	Other than SELV:		P
	- between live parts of different polarity .....:	>100MΩ	P
	- between live parts and mounting surface .....:	>100MΩ	P
	- between live parts and enclosure .....:	>100MΩ	P
	- between live parts of different polarity through action of a switch .....:		N
1.14 (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

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
	SELV:		N
	- 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 .....:		N
	Other than SELV:		P
	- between live parts of different polarity.....:	1460V	P
	- between live parts and mounting surface.....:	2920V	P
	- between live parts and enclosure.....:	2920V	P
	- between live parts of different polarity through action of a switch .....:		N
1.14 (10.3.1)	Leakage current (mA).....:	0.03 mA <0.7mA	P

1.15 (13)	RESISTANCE TO HEAT, FIRE AND TRACKING		N
1.15 (13.2.1)	Ball-pressure test:		N
	- part tested; temperature (°C).....:		N
	- part tested; temperature (°C).....:		N
1.15 (13.3.1)	Needle flame test (10 s):		N
	- part tested.....:		N
	- part tested.....:		N
1.15 (13.3.2)	Glow wire test (650°C):		N
	- part tested.....:		N
	- part tested.....:		N
1.15 (13.4.1)	Tracking test: part tested .....:		N

	COMMON MODIFICATIONS		N
(5.2.1)	For luminaires connected by tails, information about terminal block		N
(5.2.2)	Cables equal to HD 21 S2 or HD 22 S2		N
(5.2.15)	Colour code low voltage		N

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
ZB	ANNEX ZB, SPECIAL NATIONAL CONDITIONS		N
(2.2)	Class 0 not accepted		N
(3.3)	DK: power supply cord with label		N
	IT: warning label on Class 0 luminaire		N
(4.5.1)	DK: socket-outlets		N
(4.5.1)	FR: socket-outlets		N
(5.2.1)	DK, FI, SE, GB: type of plug		N

ZC	ANNEX ZC, NATIONAL DEVIATIONS		N
(13.3)	DK: Needle flame test or glow-wire test 750°C for luminaires in access routes		N
(13.3)	GB: Requirements according to United Kingdom Building Regulation		N
(13.3.2)	FR: Glow-wire test 850°C alt. 750°C for luminaires in premises open to public and workers		N

	ANNEX 1: components				
object/part No.	manufacturer/ trademark	type/model	technical data	standard	mark(s) of conformity
Internal wire	Various	Various	VW-1,85℃	--	UL
PCB	Various	Various	V-0, 130℃	--	UL
X-capactiors	Shenzhen Su Rong Electronic Co., Ltd.	MEX/TENTA MKP	275VAC, Max. 0.1μF, 40/100/21	EN 60384-14	VDE

	ANNEX 2: temperature measurements, thermal tests of Section 12		P
	Type reference.....:	AL-MLK-9W	—
	Lamp used.....:	LED	—
	Lamp control gear used.....:	Not used	—
	Mounting position of luminaire.....:	Normal position	—
	Supply wattage (W) .....:	9W	—
	Supply current (A).....:	--	—
	Calculated power factor.....:	0.833	—
	Table: measured temperatures corrected for ta = 25 °C:		
	- abnormal operating mode .....:	No abnormal mode	—
	- test 1: rated voltage.....:	--	—

EN 60598-1& EN60598-2-1						
Cl.	Requirement – Test			Result		Verdict
	- test 2: 1,06 times rated voltage or 1,05 times rated wattage.....:			243.8V		—
	- test 3: Load on wiring to socket-outlet, 1,06 times voltage or 1,05 times wattage.....:			--		—
	- test 4: 1,1 times rated voltage or 1,05 times rated wattage.....:			--		—
temperature (°C) of part		clause 12.4 - normal			clause 12.5 - abnormal	
	test 1	test 2	test 3	limits	test 4	limit
C3 body		45.3		105		
PCB near DB1		66.4		130		
Internal wire		34.1		85		
CX1 body		47.8		100		
Metal enclosure		44.9		70		
Plastic enclosure		39.2		85		
Mounting surface		36.5		90		
Ambient		24.9				

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

EN 60598-1& EN60598-2-1			
Cl.	Requirement – Test	Result	Verdict
(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)		N
(15)	SCREWLESS TERMINALS		N
(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
(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		N
	Voltage drop (mV) after 1 h (4 samples) .....:		N
	Voltage drop of two inseparable joints		N
	Number of cycles.....:		—
	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

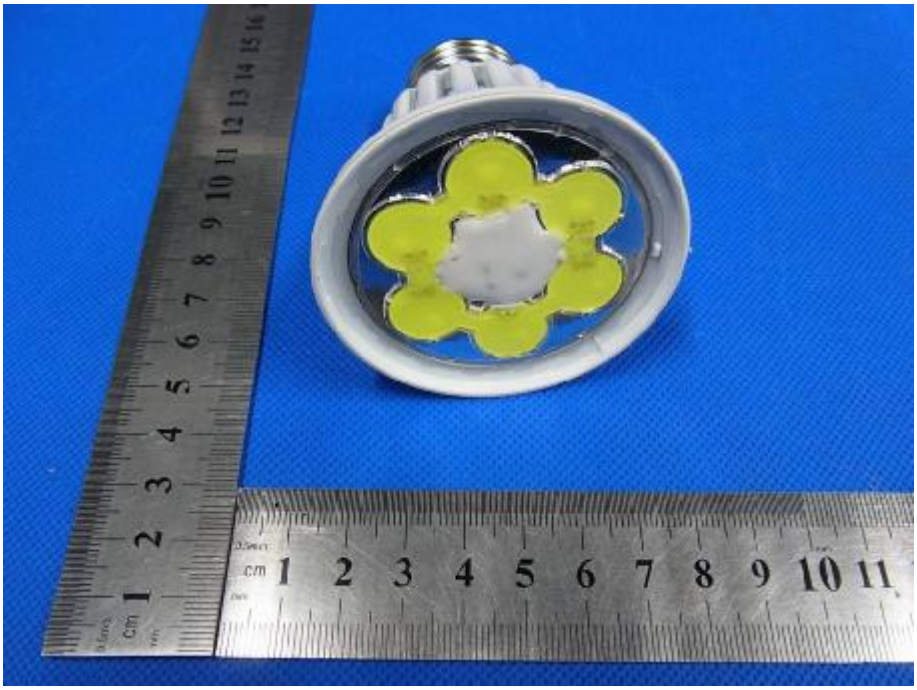
EN 60598-1& EN60598-2-1										
Cl.	Requirement – Test					Result				Verdict
	After ageing, voltage drop (mV) after 50th alt. 100th cycle (4 samples).....:									N
(15.7)	Terminals external wiring									N
	Terminal size and rating									N
(15.8.1)	Pull test spring-type terminals (4 samples); 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
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)										

ANNEX A:

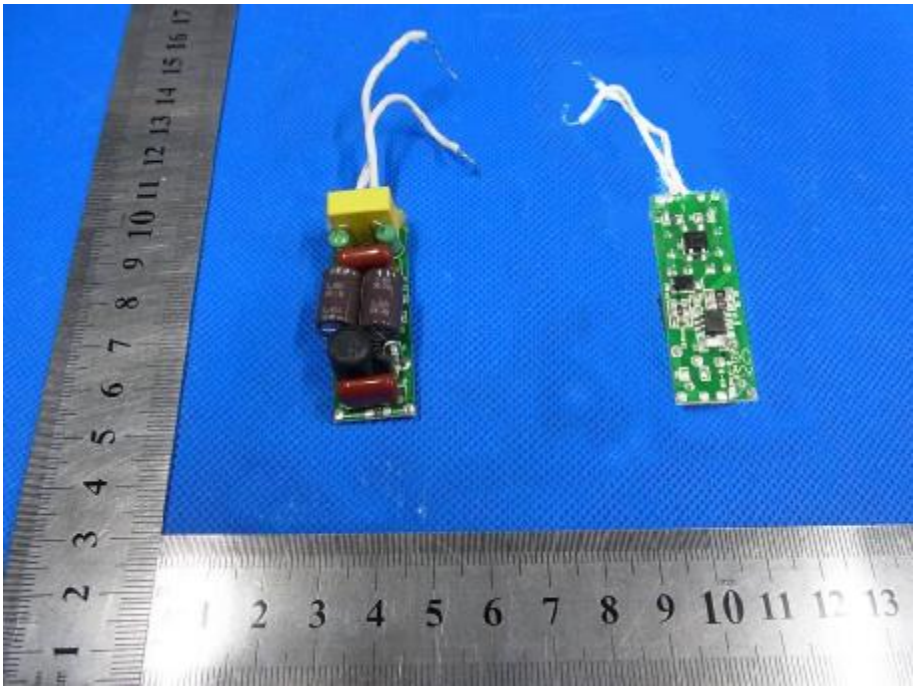
Photo-documentation

EUT Photo 1

EUT Photo 2



EUT Photo 3



EUT Photo 4

※※※※※ END OF REPORT ※※※※※