UL TEST REPORT

Prepared For :	Shenzhen PULUZ Technology Limited 8/F, 614 Bldg, Bagua 1st Road, Futian, Shenzhen, China
Product Name:	Photographic lamp
Model :	60W COB
Prepared By :	Shenzhen HTT Technology Co., Ltd. 1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen
Test Date:	Jul. 15, 2024 ~ Jul. 30, 2024
Date of Report :	Jul. 30, 2024
Report No.:	HTT202407592LR

UL TEST REPORT
UL 153
STANDARD FOR SAFETY-Portable Electric Luminaires

Testing Laboratory	
Name..... :	Shenzhen HTT Technology Co., Ltd.
Address..... :	1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen
Testing location..... :	Shenzhen HTT Technology Co., Ltd.
Applicant.....:	Shenzhen PULUZ Technology Limited
Address..... :	8/F, 614 Bldg, Bagua 1st Road, Futian, Shenzhen, China
Test specification:	UL test report
Standard.....:	Portable Electric Luminaires UL153 the twelfth edition, Edit revision dated March 25, 2002
Test procedure..... :	Comply with the Standard UL 153
Non-standard test method……..:	--
Product ……..……:	Photographic lamp
Trade Mark.....:	PULUZ
Model and/or type reference.....:	60W COB
Model description.....:	N/A
Manufacturer ..... :	Dongguan Puluz Technology Limited
Address ……:	PangNiu Industrial Park, No.6, Xintang Industrial Road, Wulian, Fenggang, Dongguan, Guangdong, China
Rating(s).....:	Charging input: 5V⎓, 2A Working voltage: 3.7V⎓ Power: 60W Battery:DC 3.7V/37Wh,10000mAh
Test item particulars	
Classification of installation and use:	--
Supply Connection..... :	Through USB charging and internal battery supply
Possible test case verdicts	
- test case does not apply to the test object:	N(/A)
- test object does meet the requirement:	P(Pass)
- test object does not meet the requirement:	F(Fail)

Name and address of the testing laboratory: Shenzhen HTT Technology Co., Ltd.
1F, B Building, Huafeng International Robotics Industrial Park, Gushu, Xixiang Street, Bao'an District, Shenzhen

Test by : Darek Wang (Signature) Jul. 30, 2024 (Date)

Review by : Andy Shen (Signature) Jul. 30, 2024 (Date)

Approved by : Kevin Yang (Signature) Jul. 30, 2024 (Date)

KevinYang/ Manager
Name and Title

General remarks
This test 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 tested.

"(see remark #)" refers to a remark appended to the report.

"(see appended table)" refers to a table appended to the report.

General product information:

Copy of marking plate(s):

PULUZ
Photographic lamp
Model: 60W COB
Charging input: 5V⎓, 2A
Working voltage: 3.7V⎓
Power: 60W
Battery: DC 3.7V/37Wh,10000mAh
Dongguan Puluz Technology Limited
Made in China

Summary of testing:
The sample(s) tested comply with the requirement of UL 153.

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
PART I CONSTRUCTION			
MECHANICAL CONSTRUCTION – GENERAL			**P**
7	**General**		**P**
7.1	These requirements apply to all portable luminaires and shall be used in conjunction with the applicable supplementary requirements in this standard.		P
8	**Assembly and Packaging**		**P**
8.1	Any portion of a portable luminaire that is detachable, for shipping purposes or otherwise, shall be constructed such that it is only able to be assembled in the intended manner.		P
	A part that is capable of being detached and assembled without compromising the mechanical or electrical integrity of the unit is capable of being assembled in more than one manner.		P
8.2	A portable luminaire shall be shipped from the factory in a carton or as an unpackaged complete assembly. Unassembled parts, such as glassware, chains, and similar components, when required elsewhere in the standard to accompany the product, shall be included. Decorative glassware is not required to be mounted in a frame or holder and is able to be separately wrapped to protect it from breakage during shipment.		P
8.3	A portable luminaire is not required to becompletely mechanically assembled when:		P
	a) All parts required to assemble the product, other than an ordinary tool, are provided with the unit;		P
	b) Splices or electrical connections are not exposed nor require completion in the assembly;		--
	c) The integrity of the strain relief at all wiring terminations is intact (see Strain Relief Test, Section 133);		--
	d) Assembly instructions are provided in accordance with 183.2; and		--
	e) When assembled in accordance with the manufacturer's instructions, the unit complies with the requirements in this standard.		--
8.4	When wires pass through a joint between sections of a portable luminaire that are separable for packing purposes, the joint shall be such that rotation of one section with respect to the other during the assembly of the sections is limited to not more that 360 degrees. Friction alone does not meet the intent of the requirement to prevent rotation.		N/A
9	**Enclosures**		**P**
9.1	A portable luminaire shall be constructed so that it has the mechanical strength required to resist the abuses to which it is subjected, without resulting in a risk of fire, electric shock, or injury to persons due to total or partial collapse of any part with resulting reduction of spacings (electrical or thermal), loosening or displacement of parts, or other		P

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	serious defects.		
9.2	A portable luminaire shall be constructed so that all user servicing is completed without subjecting any wiring, component, or part to mechanical damage, or reducing electrical spacings.		P
9.3	A portable luminaire shall be constructed of material such as glass, metal, urea, porcelain, phenolic composition, plastic or wood.		P
9.4	A decorative part is able to be constructed of any material.	Lamp cap	P
9.5	A part such as a splice, a tap, a wire, a transformer, a capacitor, a ballast, a current-carrying part, or a device with an exposed live part shall be contained in an enclosure constructed of metal, glass, ceramic, porcelain, or polymerical material during normal maintenance and use		P
10	**Metal Thickness for Enclosures**		**N/A**
10.1	The thickness of sheet metal used in a portable luminaire shall not be less than specified in Table 10.1.	See Table 10.1.	N/A
10.2	Table 10.1 applies to any single surface or single flat sheet. Values for the thickness of sheet steel are based on uncoated material. Rigid members consisting of 1/2 by 1/2 inch (12.7 by 12.7 mm), 90 degree angle strips formed of sheet steel not less than 0.031 inch (0.79 mm) thick, or flat steel bars not less than 3/8 inch (9.5 mm) wide and 1/8 inch (3.2 mm) thick shall be used to reinforce and divide a larger MARCH 25, 2002 PORTABLE ELECTRIC LUMINAIRES - UL 153 26 area into sections for which lighter metal is able to be used. Such reinforcement, unless along the greater dimension of the surface, shall also be secured to the adjacent sides of the enclosure. A single sheet of metal having a bent corner that forms an angle of not more than 120 degrees is determined to be reinforced at that corner, and the thickness is based on the length and area of the maximum flat surface involved.	See Table 10.1.	N/A
10.3	The minimum thickness of cast metal shall be in accordance with Table 10.2.	See Table 10.2.	N/A
10.4	Metallic tubing shall not be less than 0.040 inch (1.02 mm) thick when cut threads are employed.		N/A
10.5	Unthreaded metallic tubing or metallic tubing having rolled threads shall not be less than 0.025 inch (0.64 mm) thick.		N/A
10.6	The thickness of tubing is to be measured with a round-nose micrometer.		N/A
10.7	An enclosure, a frame, a guard, a handle, or similar part shall not be to constitute a risk of injury to persons in normal maintenance and use.	Saponaceous	N/A
11	**Corrosion Protection**		**N/A**

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11.1	Each external iron or steel surface of a portable luminaire enclosure or wireway shall be protected from corrosion.		N/A
16	**Shade Construction**		**P**
16.1	A portable luminaire shall be shipped with a shade unless:		P
	a) The shade functions only as a decorative part; and		--
	b) Instructions are provided in accordance with 184.1.		--
16.2	A portable luminaire complying with the Temperature Test-Exempt Units requirements of Sections 47 or 60 is able to have a shade constructed of any material.		P
16.3	A shade shall reliably maintain its dimensions. For example, a breeze shall not be able to blow the cloth of a cloth shade closer to the lamp.		N/A
16.4	A dust cover is able to be provided over a shade only when instructions for removal are provided in accordance with 170.3.		N/A
17	**Strain Relief**		**P**
17.1	A portable luminaire shall be provided with strain relief so that a pull exerted on the power supply cord is not transmitted directly to a terminal splice, or interior wiring of the unit. See Strain Relief Test, Section 133.		P
	Exception No. 1: Additional strain relief is not required to be provided when the conductors of the supply cord are permanently assembled to a wiring device (such as a switch), lampholder, or similar device by the manufacturer of the wiring device, in such a manner that replacement of the cord requires the disassembly of the device by the removal of a rivet, drive screw, drive pin, or similar component.		P
	Exception No. 2: Additional strain relief is not required to be provided when a lampholder has insulation piercing terminals and is identified as not requiring an additional strain relief device.		N/A
18	**Portable Luminaires Having Play Value**		**N/A**
18.1	A portion of a portable luminaire that has play value for children eight years or less in age and is intended to be removed from the unit and played with (for example a plush doll not integral with the luminaire) shall comply with the Federal Regulations for toys and children's articles. It is not possible to specify the conditions of tests for all constructions; however, the tests shall include evaluation of impact, bite, flexure, torque, tension, compression, sharp point, sharp edge, and small parts.		N/A
18.2	The portable luminaire shall not overturn when tested in accordance with the Stability Test, Section 132, with a 15 degree inclined plane.		N/A
19	**Resistance to Liquid Damage**		**N/A**
19.1	When a portable luminaire is intended to be used where the deterioration or breakage of a liquid container, seal, or similar component increases the risk of electric shock or liquid spillage, the container, seal, or similar component		N/A

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	shall be resistant to deterioration from the liquid intended to be used in contact with that component. The liquid shall be evaluated with respect to its toxic, acid, alkaline, flame and conductive properties. The determination of resistance to deterioration is based upon the material comprising the container, seal, or similar component, its size and shape, the mode of application, and other factors.		
19.2	A portable luminaire (such as a plant lamp) using insulating material that is capable of being adversely affected by moisture under its intended operating conditions shall be investigated in accordance with the Resistance to Moisture Test, Section 140.		N/A
20	**Portable Luminaire Containing Hazardous Substance**		**N/A**
20.1	A portable luminaire containing a hazardous substance, such as the mixture of chemicals used as decorative fluid in lava-type lamps, shall be evaluated with respect to ease of ignition, and whether the substance is toxic. The risk of injury shall be assessed on the basis of the amount of the substance or concentration and a one time exposure due to an accidental spill. Inhalation of vapors, contact with skin or eyes, and ingestion are to be considered as probable events. Chemical changes due to exposure to light (UV) and heat (operating temperature) also are to be determined.		N/A
20.2	A container of a hazardous substance shall not be adversely affected by the substance. Gaskets, seals, and caps shall not be adversely affected by the substance.		N/A
20.3	Soft glass shall not be used as a container of a hazardous substance.		N/A
20.4	The unit shall comply with the marking in 169.12.		N/A
ELECTRICAL CONSTRUCTION – GENERAL			
21	**General**		**P**
21.1	These requirements apply to all portable luminaires and shall be used in conjunction with the applicable supplementary requirements in this Standard.		P
22	**Assembly and Packaging**		**P**
22.1	A portable luminaire shall be completely wired with each electrical component mounted in place and with each splice and connection completed.		P
23	**Accessibility of Live Parts**		**P**
23.1	Each part or device that is required by Enclosures, Section 9, to be enclosed shall be located or shielded so that it is not accessible to unintentional contact by persons during normal use, including relamping, replacement of an automatic starter, or other user maintenance services.		P
23.2	A live part is determined to be inaccessible when a probe as illustrated in Figure 23.1 is unable to be manipulated such that it touches any part. The probe is to be articulated into any configuration and		N/A

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	rotated or angled to any capable position before, during, or after inserting into the opening.		
23.3	All parts that are removable without the use of tools shall be removed when determining accessibility in accordance with 23.2.		N/A
24	**Electrical Spacings**		**N/A**
24.1	The spacing between uninsulated live parts of opposite polarity, and between uninsulated live parts and metal that is capable of being grounded shall not be less than 1/4 inch (6.4 mm) through air or 3/8 inch (9.5 mm) over surface. The outer wrap of an open core and coil ballast is determined to be an uninsulated live part with respect to this requirement.		N/A
24.2	When an uninsulated live part is not rigidly fixed in position by means other than friction between surfaces, or when a movable dead metal part is in proximity to an uninsulated live part, the construction shall be such that the required minimum spacing is maintained.		N/A
25	**Insulating Materials**		**P**
25.1	A polymeric material used as an electrical insulator, or as direct or indirect support of a live part, shall comply with the requirements in the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746C.		P
25.2	An insulating lining or barrier of vulcanized fiber or similar materials used where spacing does not otherwise comply with the requirement shall not be less than 1/32 inch (0.8 mm) thick, and shall be so located that it is not adversely affected by arcing, except that vulcanized fiber not less than 1/64 inch (0.4mm) thick is able to be used in addition to an air spacing of not less than 50 percent of the spacing required for air alone.		N/A
26	**Electrical Ratings**		**P**
26.1	Each electrical device and insulated conductor shall have a voltage rating at least equal to the voltage applied to it in normal use.		P
26.2	Each electrical device and insulated conductor shall have a voltage rating at least equal to the voltage applied to it in normal use.		P
26.3	The ampere rating of the portable luminaire shall be calculated by adding the ratings of all of the following that are provided on the unit:		P
	a) Fifteen amperes for one or two single receptacles or for each duplex receptacle;		--
	b) The ampere rating of each ballast;		--
	c) The calculated load of each line voltage incandescent lampholder is to be determined by dividing the marked wattage rating by 120 volts;		--
	d) The ampere rating of each transformer; and		--

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	e) The ampere rating of any other line-voltage parts, such as a clock, a motor, and similar parts.		--
26.4	The ampacity rating of an insulated conductor shall be as specified in Table 26.1.		P
27	**Wiring and Conductors**		**P**
27.1	Conductor size		P
27.1.1	A conductor of a wire or cord shall be No. 18 AWG (0.82 mm^2) or larger. See Electrical Ratings, Section 26.		N/A
27.1.2	A conductor smaller than No. 18 AWG (0.82 mm^2) is able to be used for internal wiring when it is investigated and found to meet the requirements for the intended application; for example, consideration is to be given for internal fusing, lead routing, and degree of enclosure required under any condition of loading, including short circuit and abnormal operation.		P
27.1.3	A conductor smaller than No. 18 AWG (0.82 mm^2) and not smaller than No. 24 AWG (0.21 mm^2) is usable as a permanently attached lead for a clock motor or a transformer when:		N/A
	a) The lead is completely enclosed;		N/A
	b) The lead is not more than 6 inches (152 mm) long; and		N/A
	c) Stalling of the clock motor, or any load on the secondary of the transformer, including a short circuit, does not result in a risk of fire.		N/A
27.1.4	A conductor smaller than No. 18 AWG (0.82 mm^2) and not smaller than No. 24 AWG (0.21 mm^2) is usable in a low voltage Class 2 power limited circuit.		P
27.2	Temperature rating		P
27.2.1	The temperature ratings of commonly used flexible cords and fixture wires are specified in Table 27.1.		P
27.2.2	Appliance wiring material (AWM) which is suitable for internal wiring and accessible wiring, but not power supply cord is described in Figure 27.1.		P
27.2.3	Wire or cord other than those specified in Table 27.1 is usable when:		P
	a) The insulation of the wire or cord is rated for the maximum temperature involved;		P
	b) The temperature for which the wire or cord is rated is:		N/A
	1) Identified by a colored thread or a colored stripe as described in 27.2.4; or		N/A
	2) Printed on the surface of the insulation;		P
	c) The insulation of the wire or cord is:		P
	1) Rated for the maximum voltage involved and not less than 300 volts; and		--

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	2) When of rubber or thermoplastic, provided with an overall braid;		--
28	**Splices and Connections**		**N/A**
28.1	Stranded conductors of cord or wire intended for connection to a screw terminal shall be twisted and solder-dipped or otherwise treated so as to bind all strands for at least 1/8 inch (3.2 mm) from the end of the stripped conductor prior to connection of the conductor to the terminal so that the strands do not splay during the assembly operation.		N/A
28.2	A splice shall be mechanically and electrically secure and, unless a wire connector is used that meets the intent of this requirement shall be soldered. A wire soldered inside an eyelet terminal or similar movement confining part is determined to be mechanically and electrically secure.		N/A
29	**Wiring Attached to Movable or Flexible Parts**		**N/A**
29.1	Internal wiring attached to a movable or a flexible part that is capable of being bent shall be:		N/A
	a) Stranded; and		N/A
	b) Secured so that:		N/A
29.2	The requirement in 29.1 applies only to constructions in which the wire or cord is capable of being bent, as in an enclosed swivel joint, or where a sharp bend occurs in a wire or cord between two points of restraint that are 6 inches (152 mm) or less apart.		N/A
30	**Protection of Wiring**		**P**
30.1	A power-supply cord shall exit the portable luminaire through an opening that is free from sharp edges, burrs, and fins that are able to damage the conductor insulation.		P
30.2	The power-supply cord shall be provided with mechanical means that prevent the cord being pushed inside the enclosure and contacting:		P
	a) A lamp or heated surface;		P
	b) Sharp edge; or		P
	c) Moving part.		N/A
31	**Power-Supply Cords**		**N/A**
31.1	A portable luminaire shall be provided with a power supply cord consisting of one of the types of flexible cords specified in Table 31.1 and an attachment plug rated as required for the application.		N/A
31.2	A power-supply cord shall not be smaller than No. 18 AWG (0.82 mm 2).		N/A
31.3	A power-supply cord shall be at least 5 feet (1.5 m) long measured from the point where the cord emerges from the body of the lamp to the face of the attachment plug or connector.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
32	**Attachment Plugs**		**N/A**
32.1	A portable luminaire shall be provided with a polarized attachment plug of the 2-wire, parallel- blade or a 3-wire grounded type and see Figure 32.1. The plug shall be of a 15 ampere, 125 volt configuration (NEMA Style Nos. 1-15 P and 5-15P) and shall comply with the requirements in the Standard for Attachment Plugs and Receptacles, UL 498 and/or the Standard for Cord Sets and Power-Supply Cords, UL 817.		N/A
32.2	The attachment plug shall have electrical ratings as required for the ratings of the portable luminaire. See Electrical Ratings, Section 26.		N/A
32.3	For an attachment plug that is assembled to a flexible cord by a manufacturer of the portable luminaire the conductors of the flexible cord shall be fastened securely and in a workmanlike manner to the terminals of the attachment plug. All connections shall be made so that no stray strands of any conductor contacts live parts of opposite polarity or dead metal parts.		N/A
33	**Interconnected Units**		**N/A**
33.1	Only portable luminaires for use in cabinets, under cabinets (under shelves), office furnishings, work lights, and wet location luminaires, are able to be equipped such that one unit provides power for adjacent units.		N/A
33.2	When the supplementary requirements elsewhere in the Standard specify overcurrent protection for the power supply cord, the protection shall either be a circuit breaker or a replaceable fuse.		N/A
33.3	Interconnected units that do not have a NEMA Style 1 and 15, 1 and 15P, 5 and 15 or 5 and 15P plug and are intended to connect to a unit which has overcurrent protection, do not require overcurrent protection.		N/A
34	**Alternate Power-Supply Connections**		**N/A**
34.1	For a portable luminaire that is intended to be used in countries other than the United States, the configuration of the attachment plug shall conform with the standards of the country in which the product is intended to be used and shall be provided with instructions in accordance with 183.8.		N/A
34.2	A proprietary connector provided in place of an attachment plug or an attachment plug and cord shall be investigated and determined usable for the purpose for which it is intended and shall be provided with markings and instructions in accordance with 183.7.		N/A
35	**Polarization and Identification**		**N/A**
35.1	A supply-circuit conductor that is connected to the grounded supply conductor (neutral) shall be marked in accordance with Table 35.1 and shall be connected to the wide blade of a 2-wire attachment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	plug, or the left-hand blade of a 3-wire attachment plug when looking at the face of the plug with the grounding pin up. See Figure 32.1.		
35.2	The screwshell or screwshell contact of each Edison-base lampholder shall be connected to the grounded supply conductor of the supply cord.		N/A
36	**Grounding and Bonding**		**N/A**
36.1	When a 3-conductor cord-and-plug assembly is provided on a portable luminaire, all conductive parts of a portable luminaire not intended to be electrically live, that are accessible to persons including during any user maintenance and that have the potential to inadvertently become energized shall be grounded by being conductively bonded together to the equipment grounding means.		N/A
36.2	When the reliability of a grounding connection is questioned, it shall be subjected to the Grounding Continuity Test, Section 136.		N/A
36.3	A part is determined to be accessible when it is capable of being touched by the probe illustrated in Figure 23.1		N/A
37	**Electronic Circuits**		**P**
37.1	A printed wiring board, including coatings, when provided shall comply with the requirements in the Standard for Printed-Wiring Boards, UL 796, and shall be classified V-0, V-1, or V-2 in accordance with the Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94.		P
37.2	A resistor, capacitor, inductor, transformer, or other part that is mounted on a printed wiring board to form a printed-wiring assembly shall be secured so that the risk of displacement by any force exerted on it is minimized.		P
37.3	A circuit involving a capacitor, rectifier, transistor, or similar component is to be subjected to analysis to determine whether there is a risk of fire or electric shock when the component is opened or shorted. The possible effect of one component on another, encapsulation, and similar factors are to be determined. When a risk is determined to exist, the Component Fault Test, Section 131 is to be conducted.		P
38	**Secondary Low Voltage Circuits**		**P**
38.1	Each secondary circuit exceeding Class 2 limits shall be investigated as though it were a primary circuit with respect to enclosure and accessibility requirements.		P
39	**Separation of Secondary Circuit Conductors**		**N/A**
39.1	All uninsulated live parts connected to different circuits shall be spaced from one another as though they were parts of opposite polarity, in accordance with the		N/A

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	requirements in 24.1 and shall be judged on the basis of the highest voltage involved.		
40	**Component Mounting**		**N/A**
40.1	Uninsulated live parts shall be secured to the base or mounting surface so that they are restrained from turning or shifting in position, when such motion results in a reduction of spacing below the minimum required value.		N/A
40.2	A joint between metal parts or between fastening arms and supports, shall be strong and rigid and shall not turn when such turning results in movement of a wire or a wiring device after the assembly is completed.		N/A
41	**Lampholders**		**N/A**
41.1	General		N/A
41.1.1	A lampholder with exposed terminals shall have the terminals located behind a permanent barrier or similar construction to comply with the requirements for Enclosures, Section 9, and the requirements for Accessibility of Live Parts, Section 23.		N/A
42	**Switches and Dimmers**		**P**
42.1	A switch provided for the control of a portable luminaire shall have a current rating for the load it controls in accordance with Figure 42.1.		P
42.2	A switch shall not be connected in the load side of a ballast.		N/A
43	**Receptacles**		**N/A**
43.1	A convenience receptacle provided on a portable luminaire shall be of the same type and configuration as the attachment plug of the unit, and shall be wired such that it provides the same polarized supply as the attachment plug of the unit. See Figure 32.1.		N/A
43.2	A portable luminaire shall not be provided with more than two single or one duplex receptacle. The electrical rating shall be marked in accordance with 169.6.3.		N/A
44	**Transformers**		**N/A**
44.1	Transformers used in portable luminaires shall be subjected to the Transformer Voltage Output Test, Section 138, and Transformer Short-Circuited Test, Section 130, or shall comply with the requirements in one of the following standards:		N/A
	a) Standard for Class 2 Power Units, UL 1310;		N/A
	b) Standard for Transformers and Motor Transformers for Use In Audio-, Radio-, and Television-Type Appliances, UL 1411; or		N/A
	c) Standard for Class 2 and Class 3 Transformers, UL 1585.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
45	**Motors**		**N/A**
45.1	Each motor shall be of a type that is intended for its application and shall operate at its maximum normal load during the Normal Temperature Test, Sections 124 – 128, without resulting in a risk of fire, electric shock, or injury to persons.		N/A
45.2	A motor winding shall resist the absorption of moisture.		N/A
45.3	Each motor shall be protected from overheating as the result of any condition of load, up to and including stalled rotor.		N/A
PART II PERFORMANCE			
GENERAL – NORMAL TEMPERATURE TEST			**P**
124	**General**		**P**
124.1	A portable luminaire shall be subjected to a normal temperature test in accordance with the following:		P
	a) Freestanding and Surface Mounted Units – Shall be tested in accordance with Sections 124 – 126.		N/A
	b) Portable Cabinet Lights – Shall be tested in accordance with Section 124, General, Section 125, Test Method – General, and Section 127, Specific Test Conditions – Portable Cabinet Lights.		N/A
	c) Work Lights – Shall be tested in accordance with Section 124, General, Section 125, Test Method – General, and Section 128, Specific Test Conditions – Work Lights.		P
124.2	A temperature test is not required for portable luminaires that comply with the temperature test exempt requirements for:		N/A
	a) Incandescent units specified in Section 47, Temperature Test-Exempt Units,		N/A
	b) Tungsten-halogen units using medium base Type A lamps specified in 54.1.2, and		N/A
	c) Fluorescent units specified in Section 60, Temperature Test-Exempt Units.		N/A
124.3	A portable luminaire that requires evaluation under any other part of this standard requires temperature testing in accordance with the particular part.		P
124.4	A temperature test conducted with an aluminum shade shall not be used to represent a steel shade. A temperature test conducted with a light colored or reflective shade shall not be used to represent a dark colored or nonreflective shade. A temperature test conducted with a phenolic or porcelain lampholder in the base-up position shall not be used to represent a metal shell lampholder.		N/A
125	**Test Method – General**		**P**
125.1	Temperature limits		P
125.1.1	The temperature limits specified in Table 125.1 are based		P

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Clause	Requirement + Test	Result - Remark	Verdict
	on an ambient temperature of 25°C (77°F). The temperature test is to be conducted at any ambient temperature between 20 and 30°C (68 and 96°F) and corrected to an ambient of 25°C (77°F).		
125.1.2	A polymeric material used as a decorative trim or part shall not melt or deform in such a way as to interfere with the normal operation of the lamp.		N/A
125.2	Test duration		P
125.2.1	A portable luminaire is to be operated continuously at rated lamp wattage until constant temperatures are attained. A motor or other component is to be on and operating at maximum load during the temperature test. A temperature is determined to be constant when:		P
	a) The test has been running for at least 3 hours; and		P
	b) Three successive readings, taken at 30-minute intervals, are within 1°C of one another and are still not rising.		P
125.3	Temperature measurement by thermocouple		P
125.3.1	When temperature readings are to be obtained by means of thermocouples, the thermocouples shall consist of wires not larger than No. 24 AWG (0.21 mm 2). When thermocouples are used in the determination of temperatures in connection with the heating of electrical devices, it is common practice to use thermocouples consisting of No. 30 AWG (0.05 mm 2) iron and constantan wire, and an instrument specifically designed for accurate determination of the attained temperature; and such equipment is to be used whenever referee temperature measurements are required. The thermocouple wire is to conform with the requirements specified in the Initial Calibration Tolerances for Thermocouples table in Temperature Measurement Thermocouples, ANSI/ISA MC96.1.		P
125.4	Temperature measurement by change-of resistance		N/A
125.4.1	The temperature of a coil or winding of a ballast or transformer employing a Class 130 or higher insulation system is to be measured by means of the change-of-resistance method. For a potted device, it is usually required to have a portable luminaire made up with test leads brought out before it is potted, as well as having a thermocouple placed on the capacitor (when provided).		N/A
125.5	Ambient temperature measurement		P
125.5.1	The ambient temperature is to be measured by means of a thermocouple immersed in a bath of 15 milliliters of mineral oil in a glass container. The oil bath is to be placed:		P
	a) At the same level as the horizontal plane formed by a line that passes through the portable luminaire halfway down its vertical length; and		P

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	b) At least three unit diameters from the product horizontally.		P
125.6	Test voltage, current, and wattage		P
125.6.1	A portable luminaire that uses a lamp rated for other than the voltage it operates at in the product is to be tested in the manner that results in a maximum temperature rise, either at rated voltage or rated wattage. For example, a nominal 120 volt, 60 watt product intended for use with a lamp rated for 130 volts, 60 watts usually operates hotter at rated wattage. Conversely, a nominal 120 volt, 60 watt product intended for use with a lamp rated for 110 volts, 60 watts usually operates hotter at rated voltage.		P
125.6.2	A portable luminaire provided with a transformer, a ballast, a power supply, or another device that alters the characteristics of the power supply prior to the lamp is to be tested at rated voltage.		N/A
125.7	High intensity discharge lamp nominal test conditions		N/A
125.7.1	When subjected to a temperature test, a high intensity discharge (HID) type unit shall be provided with a nominal system consisting of a ballast, capacitor, and lamp combination that complies with 125.7. A unit is to be operated at rated frequency and at:		N/A
	a) A supply voltage rated for the ballast; or		--
	b) The supply voltage required to be determined a nominal system in accordance with 125.7.2.		--
125.7.2	A nominal system shall be a combination of components such that, when connected to the supply voltage rated for the ballast and measured as specified in 125.7.3, the lamp operates at its marked wattage rating ±5 percent. The capacitance of the capacitor is to be within ±5 percent of the capacitance rated for the ballast.		N/A
125.8	Incandescent test lamps		N/A
125.8.1	An incandescent type unit is to be tested with a test lamp of the wattage and type marked. When intended for a three-way lamp holder, a three-way lamp is to be used and operated at the highest wattage setting whether marked otherwise or not.		N/A
125.9	Tungsten-halogen test lamps		N/A
125.9.1	A tungsten-halogen type unit is to be tested with a test lamp of the wattage and type marked.		N/A
125.10	Fluorescent test lamps		N/A
125.10.1	A fluorescent type unit is to be tested with a test lamp of the wattage and type marked except as noted in 125.10.2.		N/A
125.10.2	A portable luminaire that uses fluorescent lamps with integral starters shall be tested with the lamp(s) that produces maximum heating. This requires a test with the lamp which produces the highest current as		N/A

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	well as the lamp which produces the highest wattage.		
125.11	High intensity discharge test lamps		N/A
125.11.1	A high intensity discharge (HID) unit is to be tested with a test lamp of the wattage and type marked.		N/A
125.12	Shade positions and decorative parts		N/A
125.12.1	A portable luminaire that is able to be adjusted to several positions of usage shall be tested in the (each) position that results in a maximum temperature rise. This requires testing in more than one position, such as shade horizontal, 45 degrees below horizontal, and vertically down.		N/A
125.12.2	A portable luminaire with multiple shades is to be tested in each position that results in a maximum temperature rise on any surface subject to temperature limits in accordance with Table 125.1. The positions used are to represent reasonable positions of use. No shade is to be placed in a position in which the path of light from the shade is obstructed by another shade. Shades are to be tilted, raised, lowered, rotated, or otherwise adjusted as permitted.		N/A
125.12.3	A portable luminaire with a shade that clips onto a lamp or a shade supported by a harp shall be tested in any position allowed by the clip on harp adjustments unless compliance with 47.4.1 is established.		N/A
125.12.4	A portable luminaire that is provided with an optional or decorative part is to be tested both with and without the part in place when the temperatures on the unit vary, depending on the presence of the part. For example, a metal shade provided with a plastic baffle that extends up over the shade is to be tested with and without the baffle to determine maximum shade temperatures on the metal shade surface. Actuating or moveable parts are to be positioned in any position of normal use, including closing hinged covers (″barn doors″).		N/A
126	**Specific Test Conditions – Free Standing and Surface Mounted Units**		**N/A**
126.1	General		N/A
126.1.1	Free standing units shall be tested on a level sheet of 1/2 inch (12.7 mm) thick plywood that extends beyond the lamp at least 2 feet (61 cm) in each direction, and is located at least 3 feet (91.4 cm) away from other horizontal or vertical surfaces.		N/A
126.1.2	Portable luminaires intended for attachment to a vertical surface, under a cabinet or shelf, or on a ceiling shall be attached to a sheet of 1/2 inch (12.7 mm) thick plywood that extends beyond the lamp at least 2 feet (61 cm) in each direction. The units shall be attached in the worst case position(s) permitted by the manufacturers' directions.		N/A
127	**Specific Test Conditions – Portable Cabinet Lights**		**N/A**

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127.1	Other than pot style		N/A
127.1.1	The portable cabinet light shall be tested while totally enclosed in a six-sided box having inside dimensions of 12 inches (30 cm) by 12 inches (30 cm) by 12 inches (30 cm). When the length of the portable cabinet light exceeds 12 inches (30 cm), the inside dimension of the test box shall be adjusted to the length of the portable cabinet light. Alternately, the test box is able to have dimensions in accordance with 188.2.1. The test box is to be made of 1/2 inch (12.7 mm) thick plywood or particle board, with a 1/8 inch (3.2 mm) thick glass front. All seams shall be sealed with tape or the equivalent to restrict air exchange.		N/A
128	**Specific Test Conditions – Work Lights**		**P**
128.1	General		P
128.1.1	A work light is to be temperature tested with the light source adjusted to produce maximum temperatures on the test surface. Multiple temperature tests are to be performed, when required.		P
128.1.2	When a work light is intended for use with more than one base or stand, each unique configuration is to be evaluated.		N/A
128.2	Test results		P
128.2.1	Results of the tests meet the intent of the requirement when:		P
	a) Temperatures do not exceed the applicable values specified in Table 125.1; and		P
	b) Temperatures on the supporting surface under the work light do not exceed 90°C (194°F).		P
128.2.2	A work light rated less than 150 W shall additionally comply with the 90°C external surface temperature requirements in Table 125.1.		N/A
129	**Adjustable Position or Multiple Shade Abnormal Operation Test**		**N/A**
129.1	General		N/A
129.1.1	Adjustable or Flexible Shade Position – A portable wall, table or floor type unit that is able to be adjusted such that the shade rests against the supporting surface so as to block the air flow to the lamp is to be tested as described in 129.2 and 129.3.		N/A
129.1.2	Multiple Shades – A portable luminaire that is able to be adjusted such that one shade directs light onto another shade is to be tested as described in 129.2 and 129.4. The test is to be conducted in each position that results in a maximum temperature rise on any shade.		N/A
129.1.3	Folding Position – A portable luminaire that is able to fold up so as to block the air flow to the lamp is to be tested as described in 129.2 and 129.5.		N/A

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129.1.4	Compliance criteria is described in 129.6.		N/A
130	**Transformer Short-Circuited Test**		**N/A**
130.1	General		N/A
130.1.1	A portable luminaire using a transformer in accordance with Transformers, Section 44 shall be tested as described in 130.2. Compliance criteria is described in 130.3.		N/A
130.2	Test method		N/A
130.2.1	The portable luminaire is to be placed in its normal operating position on white tissue paper on a softwood surface, connected to a supply circuit of maximum rated voltage, and operated continuously.		N/A
130.2.2	The portable luminaire is to be operated at all voltage settings with each of the following loads, using a new transformer for each test:		N/A
	a) The intended lamp;		--
	b) A load that draws 25 percent of the short-circuit current;		--
	c) A load that draws 50 percent of the short-circuit current; and		--
	d) A load that draws 75 percent of the short-circuit current.		--
130.2.3	The short-circuit current is to be determined by shorting the secondary of the portable luminaire through an ammeter and determining the current after 1 minute of operation of the unit at rated voltage. Any overcurrent-protective device is to be by-passed while the value of the short-circuit current is determined.		N/A
130.2.4	The tissue paper used in the abnormal test is to be untreated white paper commonly used for gift wrapping.		N/A
131	**Component Fault Test**		**P**
131.1	General		P
131.1.1	A circuit employing an electronic component that requires a component fault test in accordance with 37.3 shall be tested in accordance with 131.2. Compliance criteria is described in 131.3.		P
131.2	Test method		P
131.2.1	A circuit involving a capacitor, rectifier, transistor, or similar component involving a risk of fire or electric shock shall be subjected to a component fault test, with the component opened or shorted in accordance with 37.3.		P
132.2.2	For the test described in 131.2.1, only one component and fault condition is to be conducted per each test.		P
132.2.3	The portable luminaire is to be placed on a knot- free softwood surface covered with tissue paper. Any dead metal is to be connected through a 3 ampere nonrenewable fuse to either:		N/A

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	a) Earth ground when the unit is provided with a grounding type attachment plug; or		N/A
	b) The neutral conductor when not provided with a grounding type attachment plug.		N/A
131.2.4	The unit is to be loosely draped with a single layer of cheese cloth and operated continuously.		P
131.2.5	It is usually required to operate the unit continuously for 7 hours to determine that the ultimate result has been obtained.		P
131.2.6	The cloth used in the abnormal test is to be bleached cheesecloth, 36 inches (914 mm) wide, running 14 – 15 square yards per pound (26 – 28 m 2 /kg) and having what is known in the trade as a count of 32 by 28; that is, for any square inch 32 threads in one direction and 28 in the other direction (for any square centimeter, 13 threads in one direction and 11 in the other direction). The cloth is to be loosely draped over the portable luminaire being tested in order to serve as a flame indicator (presence of ash or burnt holes), not as a blanket to trap heat.		P
132	**Stability Test**		**N/A**
132.1	General		N/A
132.1.1	Freestanding units and units intended for both wall and table support shall be tested as described in 132.2 and as modified in 132.3 when provided with a flexible or articulated arm, or as modified in 132.4 when provided with provisions for loading. Compliance criteria is described in 132.5.		N/A
132.2	Test method – general		N/A
132.2.1	The portable luminaire, complete with glassware or shade provided as a part of the lamp or with a representative cloth-and-wire shade when none is provided, is to be placed on the inclined plane and turned to a position that results in tip over. When the shade is supported by an adjustable harp, or clips onto the lamp, it is to be positioned so that the lamp-to-shade spacing is equidistant to the lamp.		N/A
132.2.2	The plane is to be inclined at an angle of 8 degrees with the horizontal.		N/A
132.2.3	For lamps having toy-like appearance the plane is to be inclined to an angle of 15 degrees.		N/A
133	**Strain Relief Test**		**P**
133.1	General		P
133.1.1	All strain reliefs provided on a portable luminaire shall be tested as described in 133.2. Compliance criteria is described in 133.3.		P
133.2	Test method		P
133.2.1	The conductors of the flexible cord are to be severed immediately adjacent to the terminals or splices except that the cord is not to be severed when any		P

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	of the following occur:		
	a) A knot is used as a strain relief;		P
	b) The construction is of the type described in Exception No. 1 of 17.1; or		P
	c) The construction is of the type described in Exception No. 2 of 17.1.		--
133.2.2	A 35 pound (16 kg) weight is to be suspended from the cord for 1 minute so that the force is applied in a direction normal to the plane of the surface containing the cord opening or bushing. When the lamp surface that supports the strain relief is fragile, care is to be taken to properly support that surface during the test. For instance, when the strain relief consists of a knot in the cord bearing against the side of a ceramic figurine, the surface under the figurine is to be padded such that the pull exerted on the cord is the only strain on the area providing the strain relief.		N/A
133.2.3	The strain-relief device required by Exception No. 5 of 9.5 shall comply with the requirements specified in this Section except that a weight of 20 pounds (9.1 kg) is to be used.		N/A
134	**Drop Test**		**P**
134.1	General		P
134.1.1	The Drop Test described in 134.2 is only conducted when the Exception to 132.1.1 is applied. Compliance criteria is described in 134.3.		P
134.2	Test method		P
134.2.1	One sample of a shelf mounted unit shall be dropped 3 feet (91.4 cm) onto a tissue paper covered nominal 1/2 inch (12.7 mm) thick trade size, knot-free softwood including plywood sheet supported by a concrete floor. The unit shall be energized for this test.		P
134.2.2	The unit shall remain energized for 1 hour.		P
135	**Security of Screws Test**		**P**
135.1	General		P
135.1.1	The following tests described in 135.2 applies to self-threading or sheet-metal screw used to:		P
	a) Mount or support a part that weighs more than 7-1/2 pounds (3.4 kg);		P
	b) Join two or more sheets of material other than sheet steel.		P
136	**Grounding Continuity Test**		**N/A**
136.1	General		N/A
136.1.1	The following test described in 136.2 applies to accessible dead metal parts that are required to be grounded in accordance with Grounding and Bonding,		N/A

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	Section 36. Compliance criteria is described in 136.3.		
136.2	Test method		N/A
136.2.1	The impedance between the point of connection of the equipment-grounding means and any other accessible metal part required to be grounded, shall be determined by applying a current of 25 amperes – derived from a 60 hertz source with a no-load voltage not exceeding 6 volts – between the grounding connection and the metal part in question. The resulting impedance is calculated by dividing the value of the measured voltage by the applied current (25 A).		N/A
136.3	Test results		N/A
136..3.1	The results meet the intent of the requirement when the impedance between the point of connection of the equipment-grounding means and any other metal part that is required to be grounded does not exceed 0.1 ohm.		N/A
137	**Dielectric Voltage-Withstand Test**		**P**
137.1	General		P
137.1.1	The following test described in 137.2 applies to portable luminaires having accessible dead metal parts or low voltage circuits. Compliance criteria is described in 137.3.		P
138	**Transformer Voltage Output Test**		**N/A**
138.1	General		N/A
138.1.1	The following test described in 138.2 applies to a transformer that has been evaluated in accordance with end-use test requirements for Transformers, Section 44. Compliance criteria is described in 138.3.		N/A
139	**Low Voltage Hinged or Movable Part Cycling Test**		**N/A**
139.1	General		N/A
139.1.1	The following test described in 139.2 applies to low-voltage hinged or movable parts that are used to carry current in accordance with Secondary Low Voltage Circuits, Section 38. Compliance criteria is described in 139.3.		N/A
140	**Resistance to Moisture Test**		**P**
140.1	General		P
140.1.1	The following test described in 140.2 applies to a portable luminaire using insulating material that is able to be adversely affected by moisture under its intended operating conditions such as a plant lamp. Compliance criteria is described in 140.3.		P
140.3	Test results		P
140.3.1	The results meet the intent of the requirement when the leakage current does not exceed 0.5		P

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	milliampere.		
150	**Polymeric Lamp Containment Barrier Test**		**N/A**
150.1	General		N/A
150.1.1	The test described in 150.2 apply only to that part of a lamp containment barrier (as defined by 2.22) that is of a polymeric material and is located where particles from a ruptured tungsten-halogen lamp drop to and rest. Compliance criteria is described in 150.3.		N/A
150.3	Test results		N/A
150.3.1	The results meet the intent of the requirement when during the testing of the samples, the dry absorbent cotton located below the test samples is not ignited by:		N/A
	a) Flaming drops of plastic material; or		N/A
	b) Any arc tube segment that penetrates the lamp containment barrier material and falls on the cotton.		N/A
151	**Interlock Switch Endurance Test**		**N/A**
151.1	General		N/A
151.1.1	The following test described in 151.2 applies to a tungsten-halogen interlock switch that has been evaluated in accordance with 53.2. Compliance criteria is described in 151.3.		N/A
152	**Heat Flux Density Measurement Test**		**N/A**
152.1	General		N/A
152.1.1	One sample of the tungsten-halogen torchiere unit as described in 52.1.6 shall be subjected to the test described in this section.		N/A
PART III MARKINGS			
169	**General**		**P**
169.1	Form		P
169.1.1	A required marking shall be legible and unless otherwise indicated, the types of marking and the minimum height of the letters shall be as specified by the applicable form letter in Table 169.1, and the location of the marking shall be as specified by the applicable form number in Table 169.2. The wording, form letter, and form number shall be as specified in the applicable paragraphs.		P
169.1.2	When the wording of a particular marking is given within quotation marks in this standard, the verbatim wording shall be used. Words located within parentheses are optional. Other substitute words are acceptable when the marking text is followed by the phrase "or the equivalent."		P
169.2	Form "A" marking label		P

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169.2.1	The combination of a label material and ink used for Form A in Table 169.1 shall be permanent and rated for the type of surface and temperature of surface determined during the Normal Temperature Test, Section 124 – 128. The marking and labeling system shall comply with the Standard for Marking and Labeling Systems, UL 969.		N/A
169.2.2	The marking material temperature rating for portable luminaires complying with the Temperature Test-Exempt Units requirements in Sections 47 and 60 shall be at least 60°C (140°F), except:		P
	Incandescent Temperature Test Exempt		N/A
	a) A material located on an incandescent lampholder shall be rated for a temperature of at least the lampholder lead wires as specified in Table 47.5;		N/A
	Fluorescent Temperature Test Exempt		N/A
	b) A material located on a fluorescent lampholder shall be rated for a temperature of at least the lampholder lead wires as specified in Table 58.1; and		N/A
	c) A material located within 3 inches (76.2 mm) of a ballast shall be rated for a temperature of at least 80°C (176°F).		N/A
169.2.3	When the 1/8 inch (3.2 mm) minimum letter height required by a Form A-3 marking is not accommodated because of the product's small physical size, the letter height is not prohibited from being reduced when:		P
	a) The specific marking permits a reduced marking size;		P
	b) The signal word ″WARNING″ or ″CAUTION″ is a minimum of 7/64 inch (2.75 mm) high;		P
	c) The text is a minimum of 1/16 inch (1.6 mm) high and contrasting in color to the background; and		P
	d) When molded or stamped, the text is a minimum of 5/64 inch (2.0 mm) high and when not contrasting in color to the background, is raised or depressed a minimum of 0.01 inch (0.25mm).		N/A
169.3	Tag type markings		N/A
169.3.1	For markings required to be on a tag, the tag shall be affixed to the cord. The marking shall be indelible.		N/A
169.3.2	Tag markings shall be provided in either of the following forms:		N/A
	a) A hang-type tag having a hole to permit securement to the cord by a plastic strap or equivalent. The strap shall not be removable without cutting.		N/A
	b) A flag-type tag with the adhesive back. The tag is to be wrapped around and adhere to the cord. The ends of the tag are to adhere to each other and project as a flag.		N/A
169.4	Pictograph type markings		N/A
169.4.1	A marking required elsewhere in this standard is able to be in the form of a pictograph or a combination of a		N/A

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	pictograph and word(s) when the marking is investigated and found to contain:		
	a) An attention getting flag, symbol or word;		N/A
	b) An indication of the possible risk; and		N/A
	c) What is able to be done to reduce the risk.		N/A
169.5	Manufacturer's identification		P
169.5.1	A portable luminaire shall be marked in Form B-1 with the manufacturer's name, trademark, or other descriptive marking by which the organization responsible for the product, hereinafter referred to as the manufacturer, is identified.		P
169.5.2	When a manufacturer produces or assembles portable luminaires at more than one factory, each unit shall have a distinctive marking in Form B-1 by which it is able to be identified as the product of a particular factory. The absence of a marking is able to be used to identify one factory when the other factories have identifying marks.		N/A
169.6	Electrical ratings		P
169.6.1	A portable luminaire intended for use on other than a nominal 120 Volts supply shall be marked in Form B-1 with its input voltage rating.	DC 5V	P
169.6.2	A portable luminaire incorporating a component that is intended for use on alternating current only (such as a ballast, a transformer, or a switch rated ″AC ONLY″) shall be marked in Form B-1 with its voltage, current, and frequency rating.		N/A
169.6.3	A convenience receptacle shall be marked in Form A-1 on or near the receptacle with its rated voltage and current.		N/A
169.7	Mounting orientation		N/A
169.7.1	When a portable luminaire is able to be mounted in more than one orientation, such as either a wall or under a cabinet, and the correct orientation of the unit is required to comply with a specific requirement in this standard, it shall be marked in Form A-1, to indicate the correct orientation.		N/A
169.8	Hot surface marking		N/A
169.8.1	When the temperature measured on the exterior surface of a wall or ceiling unit during the Normal Temperature Test, Sections 124 – 128, exceeds 90°C (194°F) and does not exceed 150°C (302°F), the portable luminaire shall be marked in Form A-3 ″CAUTION: Hot surface. Keep away from curtains and other combustible materials″, or equivalent.		N/A
169.9	Interconnected units		N/A
169.9.1	An interconnected unit with a short cord in accordance with Interconnected Units, 33.9, shall be marked in Form B-5 ″Only connect to adjacent units (or other appropriate product name).″		N/A

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169.9.2	An interconnected unit shall be marked in Form A-1 adjacent to the receptacle ″ ″a″ units maximum″, where ″a″ is the number ofunits.		N/A
169.9.3	An interconnected unit with an internal fuse shall be marked in Form A-1 adjacent to the fuseholder: ″ ″b″ A fuse maximum.″ where ″b″ is fuse ampere rating.		N/A
169.9.4	An interconnected unit without overcurrent protection in accordance with 89.3.2 shall be marked in Form B-3: ″CAUTION – Risk of Electrical Shock or Fire, Use only on 15 Amp maximum branch circuit.″		N/A
169.9.5	An interconnected unit that is intended to be connected to the secondary circuit of a ballast or transformer in an adjacent unit, or to a fused unit, shall be marked in Form B-5 ″Only for use with (number of units) (catalog or parts number) manufactured by (manufacturer's name) (product name) or the equivalent.″		N/A
169.10	Units with integral shelf, rack, or table		N/A
169.10.1	Each shelf, magazine rack, or other means that are part of the portable luminaires assembly and intended to support any object(s) shall be marked in Form A-1: ″WARNING – Risk of tip over″; and ″Max.____lb. Load″, or equivalent, where the blank space specifies the maximum load in pounds.		N/A
169.11	Resemblance to toy		N/A
169.11.1	A portable luminaire required by 18.4 to have a marking shall be marked: "WARNING – THIS IS AN ELECTRIC LAMP – NOT A TOY! TO AVOID RISK OF FIRE, BURNS, PERSONAL INJURY AND ELECTRIC SHOCK IT SHOULD NOT BE PLAYED WITH OR PLACED WHERE SMALL CHILDREN CAN REACH IT.″, or equivalent.		N/A
169.11.2	The marking required by 169.11.1 shall be provided in contrasting colors and shall be:		N/A
	a) Form A where visible during initial setup and handling; and		N/A
	b) In letters a minimum of 1/4 inch (6.4 mm) high on the external surface of the carton or packaging where visible during purchase.		N/A
169.12	Marking for luminaires containing hazardous substances		N/A
169.12.1	With reference to 20.4, a portable luminaire containing hazardous substances shall be marked ″KEEP OUT OF REACH OF CHILDREN.″		N/A
PART IV INSTRUCTIONS			
183	**General**		**P**
183.1	Location		P
183.1.1	Required instructions shall be included on the portable luminaire, on the carton, on a tag on the power-supply cord, on a stuffer sheet, or by an equivalent means. See Form C.		P

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183.2	Assembly instructions		P
183.2.1	A portable luminaire that requires mechanical assembly after shipment shall be marked in Form C with instructions for proper assembly. The instructions shall describe a method of assembling the lamp that does not introduce a risk of fire, electric shock, or injury to persons during or after its assembly.		P
183.3	Polarization instructions		N/A
183.3.1	A portable luminaire having a polarized plug shall be provided with instructions for use on the plug. The instructions shall be titled "IMPORTANT SAFETY INSTRUCTIONS" in letters not less than 3/16 inch (4.8 mm) high. Immediately following the title shall be the following text or the equivalent: "This portable luminaire has a polarized plug (one blade is wider than the other) as a feature to reduce the risk of electric shock. This plug will fit in a polarized outlet only one way. If the plug does not fit fully in the outlet, reverse the plug. If it still does not fit, contact a qualified electrician. Never use with an extension cord unless plug can be fully inserted. Do not alter the plug."		N/A
183.4	Interconnected units		N/A
183.4.1	Instructions for interconnected unit use shall include at least the following:		N/A
	a) Voltage and current rating of portable luminaire;		N/A
	b) Maximum number of units to be interconnected; and		N/A
	c) Instructions for mounting including maximum distance between units to be interconnected.		N/A
183.5	Pin type attachment plug		N/A
183.5.1	When a pin-type attachment plug is provided in accordance with 32.4, the portable luminaire shall be provided with clear, illustrated instructions specifying proper attachment. The instructions shall include:		N/A
	a) A description of the plug and cord, including the means of identifying polarity;		N/A
	b) An explanation of why polarity is important;		N/A
	c) Instructions for assembly; and		N/A
	d) The polarization instructions detailed in 183.3.		N/A
183.6	Shortened cord		N/A
183.6.1	A product provided with a shortened (or no) power supply cord shall be provided with instructions specifying the correct mounting and intended use of the product. The instructions are able to be generic for a type or style of portable luminaire. A statement that the maximum distance to the receptacle (or between interconnected units, when applicable) is determined by the length of cord provided shall be included in the instructions.		N/A

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
	Alternatively, the maximum distance to the receptacle (or between interconnected units, when applicable) is able to be included in the instructions.		
183.7	Alternate supply connection		N/A
183.7.1	A product provided with an alternate power-supply connector in accordance with Alternate Power- Supply Connections, Section 34, shall be provided with markings and instructions consistent with the supply circuit for which it is intended to be used.		N/A
183.8	Attachment plugs complying with foreign standards		P
183.8.1	A product provided with an attachment plug in accordance with 34.1 shall be provided with instructions to conform with the standards of the country in which the product is intended to be used.		P
PART V MANUFACTURING AND PRODUCTION TESTS			
194	**Manufacturing and Production Tests**		**P**
194.1	General		P
194.1.1	The following test described in 194.2 applies to portable luminaires having accessible dead metal parts or low circuits. Compliance criteria is described in 194.3.		P
194.1.2	A dielectric test shall also be conducted on portable luminaire subassemblies that are shipped with factory made wiring connections.		P
194.2	Test method		P
194.2.1	Each portable luminaire shall have a routine production-line test and the application of a potential as specified in Table 194.1 between:		P
	a) Primary wiring, including connected components, and accessible dead metal parts of a portable luminaire that are likely to become energized, including those parts that are accessible only during relamping; and		N/A
	b) Primary wiring and accessible low-voltage– 42.4 volts peak or less– metal parts, including terminals.		P
194. 2.2	The production line test is to be in accordance with either condition A or B of Table 194.1.		P
194.2.3	The test shall be conducted when the portable luminaire is complete – fully assembled. It is not intended that the unit be unwired, modified, or disassembled for the test.		P
	Exception No. 1: Parts such as shades, diffusers, and similar components that interfere with performance of the test are not required to be in place.		N/A
	Exception No. 2: The test is able to be conducted before final assembly when the test represents that for the completed portable luminaire.		N/A
	Exception No. 3: When a portable luminaire employs a solid-state component that in not relied upon to reduce the		N/A

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
	risk of electric shock, and is capable of being damaged by the dielectric potential, the test is to be conducted before the component is electrically connected. In this case, a sample is to be selected at random from production each day and tested at the potential specified in 194.2.2. The circuitry is to be rearranged as required for the purpose of the test to reduce the risk of solid-state-component damage while retaining the representative dielectric stress of the circuit.		
194.2.4	The test equipment shall include a transformer having a sinusoidal output, a means of indicating the test potential, and an audible or visual indication of breakdown. In the event of breakdown, manual reset of an external switch or an automatic reject of the unsatisfactory portable luminaire under test is required.		N/A
194.2.5	When the output of the test-equipment transformer is less than 500 volt-amperes, the equipment shall include a voltmeter in the output circuit to directly indicate the test potential.		N/A
194.2.6	When the output of the test equipment transformer is 500 volt-amperes or larger, the test potential is to be indicated by:		N/A
	a) A voltmeter in the primary circuit or a tertiary- winding circuit;		N/A
	b) By a selector switch marked to indicate the test potential; or		N/A
	c) By a marking in a readily visible location to indicate the test potential of equipment having a single test-potential output.		N/A
	When a marking is used without an indicating voltmeter, the equipment shall include a positive means, such as power-on lamp, to indicate that the manually reset switch has been reset following a tripout.		N/A
194.2.7	Test equipment other than that described in 194.2.4 and 194.2.6 is able to be used when found to accomplish the intended factory control.		N/A
194.2.8	During the test, the primary switch is to be in the on position, both sides of primary circuit of the portable luminaire are to be connected together and to one terminal of the test equipment, and the second test-equipment terminal is to be connected to the accessible dead metal.		N/A
	Exception No. 1: A portable luminaire (resistive, high-impedance winding, or similar components) having circuitry not subject to excessive secondary- voltage buildup in case of electrical breakdown during the test is able to be tested:		N/A
	a) With a single-pole primary switch when used, in the off position; or		N/A
	b) With only one side of the primary circuit connected to the test equipment when the primary switch is in the on position, or when a primary switch is not used.		N/A

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
	Exception No. 2: The primary switch is not required to be in the on position when the testing means applies full test potential between primary wiring and dead metal parts with the switch not in the on position.		N/A
194.3	Test results		P
	As a result of the test specified in 194.2, there shall be no electrical breakdown.		P
195	**Polarity Test**		**N/A**
195.1	General		N/A
195.1.1	The following test described in 195.2 applies to all portable luminaires provided with a polarized attachment plug of the 2-wire parallel-blade type. Compliance criteria is described in 195.3.		N/A
195.2	Test method		N/A
195.2.1	Each product shall be checked as routine production-line test to verify that there is electrical continuity between the grounded supply-circuit conductor of the attachment plug – wide blade of a 2-wire type – and the part of the product that is intended to be connected to the grounded supply- circuit conductor of the attachment plug (for example, screw shell of an incandescent lampholder). The continuity shall be determined either visually or through the use of an electrical test. Equivalently, continuity is able to be verified between the ungrounded supply-circuit conductor of the attachment plug and the part of the product that is intended to be connected to the ungrounded conductor (for example, the center contact of an incandescent lampholder).		N/A
195.3	Test results		N/A
195.3.1	The results meet the intent of the requirement when there is electrical continuity.		N/A
196	**Continuity of Grounding Connection Test**		**N/A**
196.1	General		N/A
196.1.1	The following test described in 196.2 applies to all portable luminaires provided with an attachment plug of the 3-wire grounded type. Compliance criteria is described in 196.3.		N/A
196.2	Test method		N/A
196.2.1	Each product provided with a grounding attachment plug shall be tested for electrical continuity between the grounding blade of the attachment plug and all conductive parts that are accessible – only those parts that pose a risk of electric shock. Electrical continuity shall be maintained and verified as a routine production-line test.		N/A
196.2.2	The continuity shall be determined by the use of an indicating device, either audible or visual, such as an ohmmeter or a battery-and-buzzer combination.		N/A
196.3	Test results		N/A

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
	The results meet the intent of the requirement when there is electrical continuity.		N/A

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict

Table	Critical components information				P
Object / part No.	Manufacturer/ trademark	Type / model	Technical data	Standard	Mark(s) of conformity
Li-ion Battery	--	--	10000mAh, DC 3.7V/37Wh	IEC 62133	CB
Internal wire	--	--	20-24AWG, 300V, 200℃	UL 758	UL
LED module	--	--	--	--	UL
PCB boards	--	--	V-0,130℃, Thickness:1.0mm	UL 94/UL 796	UL
Enclosure shell	--	--	V-0,90℃, Thickness:1.5mm	UL 94/ UL 746C	UL
Power switch	--	--	6A,250Vac	EN 61058-1	CE
1）An asterisk indicates a mark which assures the agreed level of surveillance					

124	TABLE: Temperature measurements			P
	Supply voltage (V)	3.7Vdc, working condition		—
	Ambient T_{min} (°C).....	24.2	--	—
	Ambient T_{max} (°C).....	24.6	--	—
Maximum measured temperature T of part/at:		T (°C)		Allowed T_{max} (°C)
Test condition No.:		a)	--	--
Enclosure shell		30.6	--	50
Internal wire		33.2	--	80
PCB boards		37.4	--	105
Battery surface		34.1	--	50
Power switch		28.2	--	60
Lamp cover		32.4	--	90
Ambient		24.5	--	--

Supplementary information: *) Temperature limits for winding include less 10K for thermocouple measurement method.

Temperature T of winding:	t_1 (°C)	R_1 (Ω)	t_2 (°C)	R_2 (Ω)	T (°C)	Allowed T_{max} (°C)	Insulation class
--	--	--	--	--	--	--	--
--	--	--	--	--	--	--	--

Supplementary information:

Note 1: Tma should be considered as directed by appliable requirement

Note 2: Tma is not included in assessment of Touch Temperatures (Clause 9)

130	TABLE: Transformer Short-Circuited Test	N/A
Sample No.	Test condition	Observation
--	--	--

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict
--	--	--	

Supplementary information:
The tissue paper used in the abnormal test is to be untreated white paper commonly used for gift wrapping.

131	TABLE: Component Fault Test						P
	ambient temperature (°C) :			24.5°C			
	model/type of power supply :			--			
No.	component No.	fault	test voltage (V)	test time	fuse No.	Input current (A)	Result
1.	D1	S-C	3.7V	5s	--	--	Unit shutdown immediately. No damage and hazards.
2.	IC	S-C	3.7V	5s	--	--	Unit shutdown immediately. No damage and hazards.

Supplementary information:
S-C=short circuit

132	TABLE: Stability Test	N/A
--	--	--

Sample No:

133	TABLE: Strain Relief Test	N/A
Location	Test condition	Observation
--	--	--

Sample No:
A portable luminaire.

134	TABLE: Drop tests				P
Part/Location	Material	Thickness (mm)	Drop Height (mm)	Observation	
Lamp shell	Plastic	1.5	914	No damaged	

Supplementary information:
The unit shall be energized for this test.

136	TABLE: Ground continue test			N/A
Location	Resistant measured (Ω)	Voltage Drop (Volts)	Comments	
--	--	--	--	
--	--	--	--	

137	TABLE: Dielectric Voltage-Withstand Test		P
Test voltage applied between:		test voltage(V)	Breakdown Yes/No

UL 153			
Clause	Requirement + Test	Result - Remark	Verdict

	a. c / d. c.	
Between live parts to easily accessible metal parts	1200V ac	No
Between live parts to easily accessible lamp plastic cap surface	1200V ac	No
Note (s):		

138	TABLE: Transformer Voltage Output Test						N/A
U (V)	I (A)	I rated (A)	P (W)	P rated (W)	Fuse No	I fuse (A)	Condition/status
--	--	--	--	--	--	--	--
Supplementary information:							

Appendix A:
Equipment list

Code	Name	Model/Type	S/N	Calibrated date	Next Calibration Date	Manufacture
HTT-001	Digital Multimeter	34401A	MY47043456	2024.02.20	2025.02.19	agilent
HTT-004	Push/pull gSepe	NK-500	2Q10060932	2024.02.20	2025.02.19	--
HTT-005	Electronic weight	DSI-861	198692	2024.02.20	2025.02.19	shangdeli
HTT-006	Insulation resistance tester	CS2676CX	1107032-009	2024.02.20	2025.02.19	changshen
HTT-007	Earthing resistance tester	YD2668-4B	4B-2307	2024.02.20	2025.02.19	Yangzi
HTT-008	HI-pot/Insulation tester	CS2672C	1108006-002	2024.02.20	2025.02.19	changshen
HTT-010	AC Voltage Regulator	TDGC2J	--	2024.02.20	2025.02.19	SAKO
HTT-013	AC power source	HPA-3110	3513	2024.02.20	2025.02.19	Henqiang
HTT-014	Temperature/Humidity chamber	SDJ-80L	SDJ-80J	2024.02.20	2025.02.19	Shenzhen hongjian
HTT-015	Electric oven	HK45AS	F11011008	2024.02.20	2025.02.19	Guangzhou KENTON
HTT-017	AC digital power meter	PF9901	YG100731N11 070075	2024.02.20	2025.02.19	Yuanfang
HTT-019	DC electronic load	IT8512	002002506670 001002	2024.02.20	2025.02.19	ITECH
HTT-022	Leakage current tester	228	10-866030	2024.02.20	2025.02.19	simpson
HTT-023	Oscilloscope	TDS1012C-SC	C013300	2024.02.20	2025.02.19	tektronix
HTT-024	Tape measure	DK-2041	--	2024.02.20	2025.02.19	Proskit
HTT-025	Stop watch	TA-228	--	2024.02.20	2025.02.19	KTJ
HTT-026	Data acquisition/switch unit	34970A	MY44057668	2024.02.20	2025.02.19	Agilent
HTT-027	Temperature/humidity meter	VC230	--	2024.02.20	2025.02.19	ViCTOR
HTT-028	Torque drive	3RTD	435850B	2024.02.20	2025.02.19	TOHNICHI
HTT-030	Impact hammer	ZLT-CJ1	C011207	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-031	Inclined plane	ZLT-WD1	W011201	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-033	Test finger	ZLT-I02	I021203	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-034	Test pin	ZLT-I09	I091201	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-038	Test apparatus of the mains plug	ZLT-LJ2	LJ011202	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-039	Ball pressure apparatus	ZLT-QY1	Q011202	2024.02.20	2025.02.19	Guangzhou zhilitong
HTT-042	Caliper rule	CD-6 " CSX	500-196-20	2024.02.20	2025.02.19	MITUTOYO
HTT-044	Glow wire tester	ZRS-2	12121304	2024.02.20	2025.02.19	Guangzhou Xinna
HTT-045	Needle flame tester	ZY-2	12121311	2024.02.20	2025.02.19	Guangzhou Xinna

Appendix B
Figure documentation

PHOTO 1

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PHOTO 2

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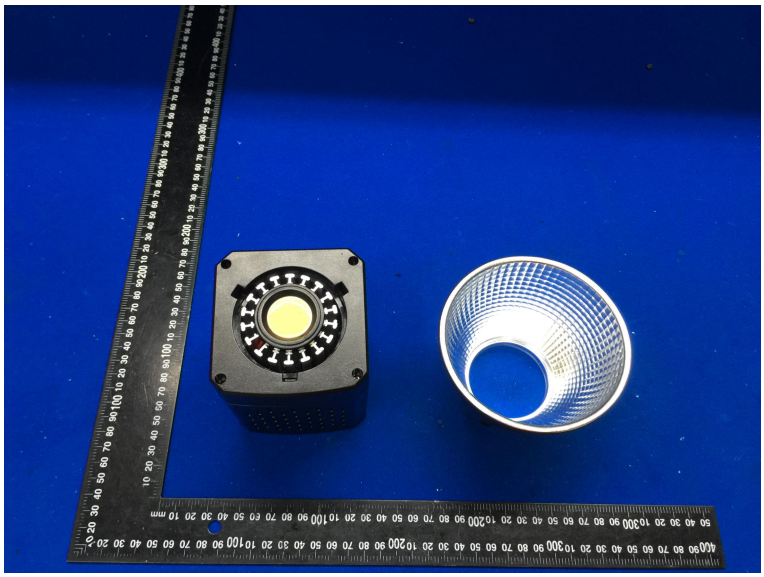

PHOTO 3

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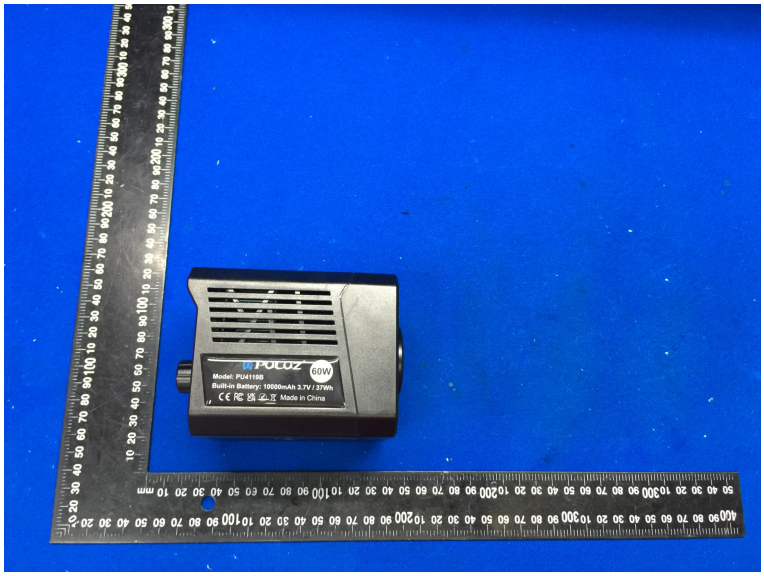

PHOTO 4

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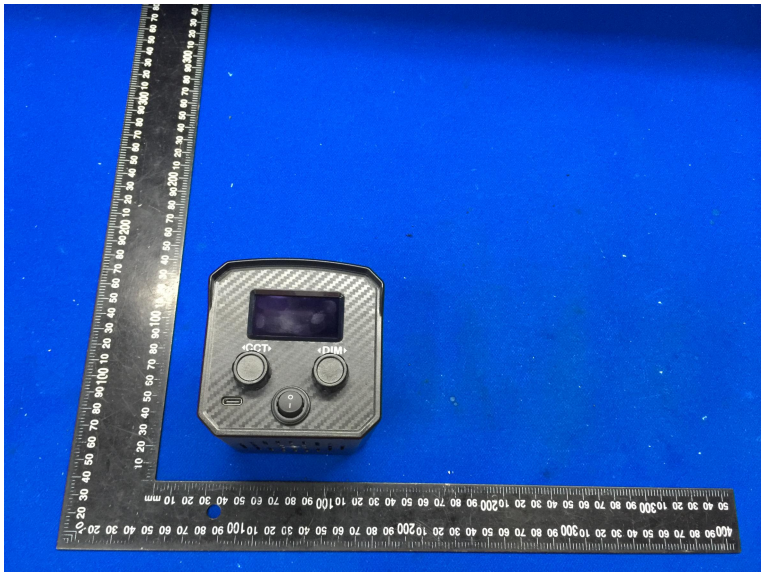

PHOTO 5

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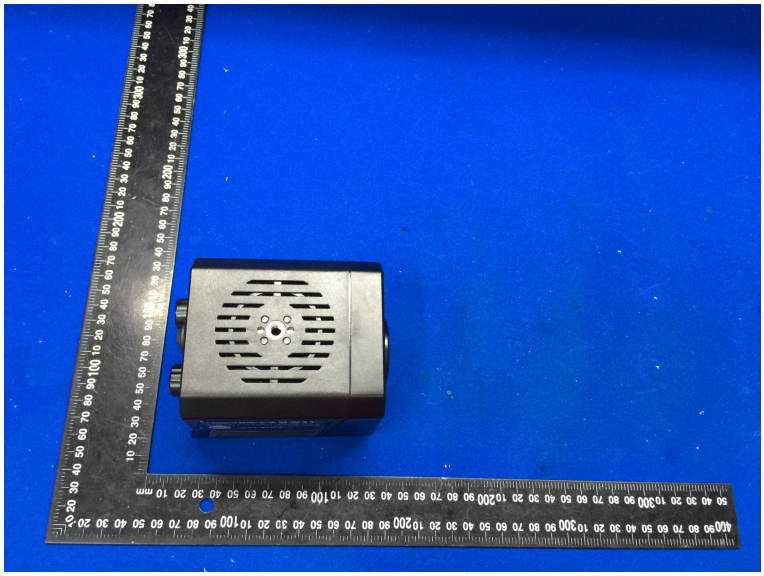

PHOTO 6

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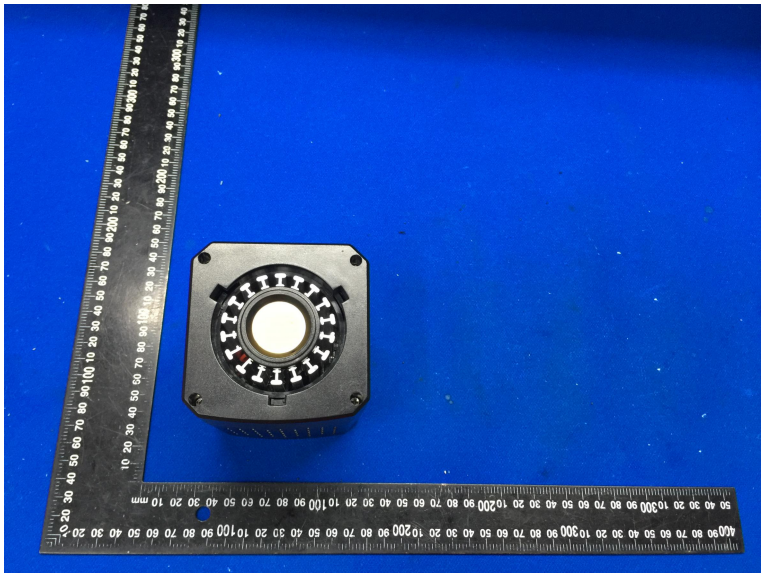

PHOTO 7

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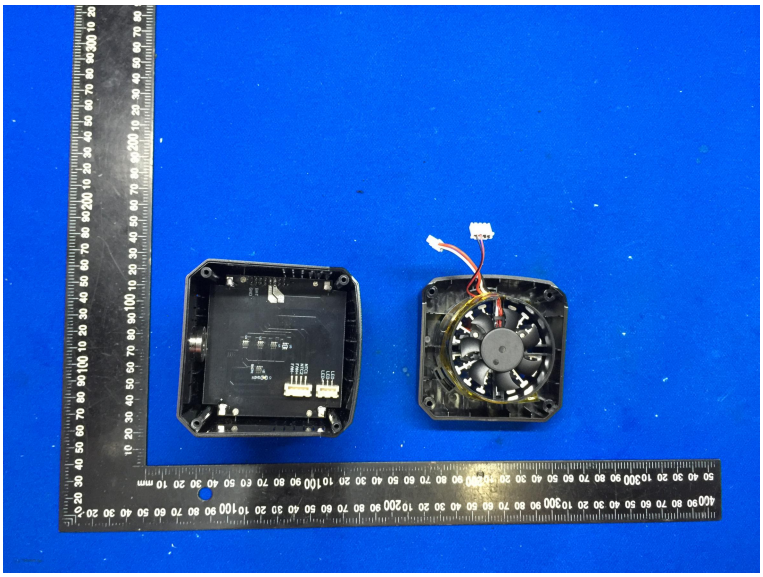

PHOTO 8

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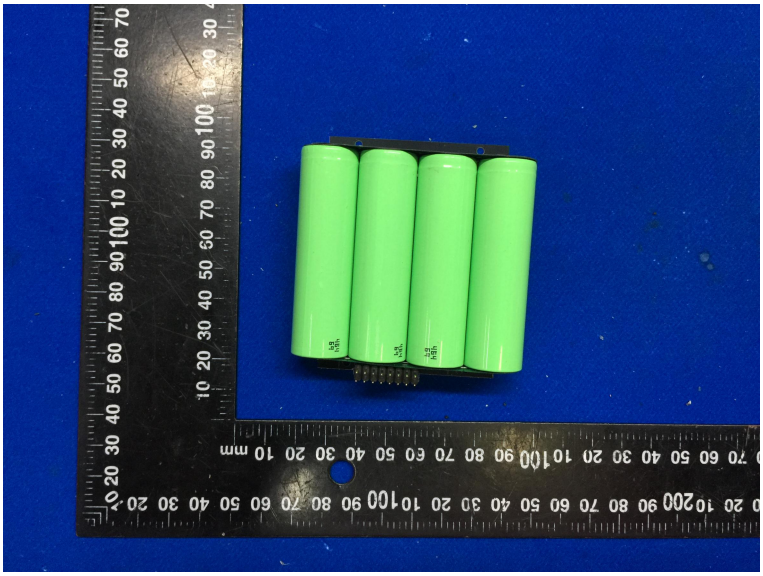

PHOTO 9

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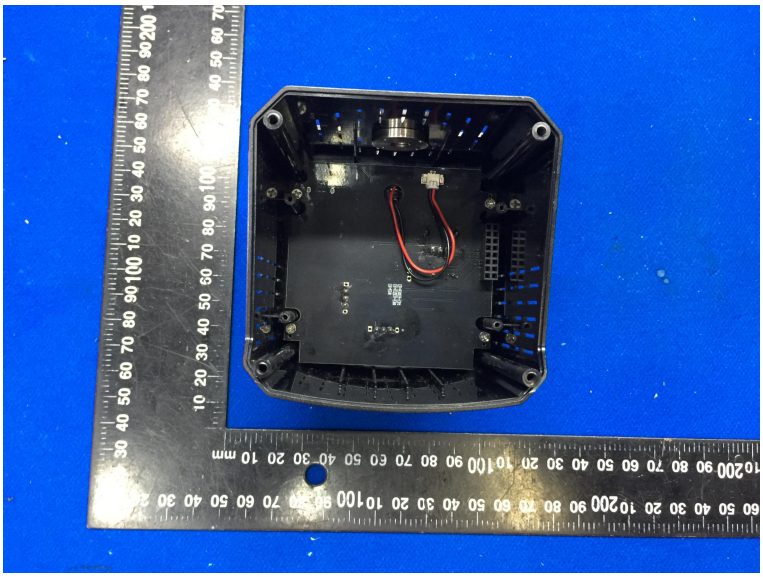

*****End of the test report*****