

Test Report UL 1559 Standard for Insect-Control Equipment - Electrocution Type	
Report Reference No	AiTSZ-250904139S
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Applicant's name	ZHEJIANG SORBO TECHNOLOGY CO.,LTD.
Address	No.2,Daqing Road,Gaoxiang Industrial Zone,Xinqiao Street,Ouhai,Wenzhou,China
Manufacturer's name	ZHEJIANG SORBO TECHNOLOGY CO.,LTD.
Address	No.2,Daqing Road,Gaoxiang Industrial Zone,Xinqiao Street,Ouhai,Wenzhou,China
Factory's name	ZHEJIANG SORBO TECHNOLOGY CO.,LTD.
Address	No.2,Daqing Road,Gaoxiang Industrial Zone,Xinqiao Street,Ouhai,Wenzhou,China
Test specification:	
Standard	UL 1559:2022
Test procedure	Safety Report
Procedure deviation	N/A
Non-standard test method	N/A
Note: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the specific product described herein. It must not be duplicated or used in part without prior written consent from Guangdong Asia Hongke Test Technology Limited. Unless otherwise specified, the measurement uncertainty is not considered in this report.	

Test Object:

Description.....: Bug Zapper

Trademark.....: --

Manufacturer.....: ZHEJIANG SORBO TECHNOLOGY CO.,LTD.

Model and/or type reference.....: SB-6508H

Serial number.....: --

Rating(s).....: Input: 5V $\overline{\text{---}}$ 2A

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.



1. The above marks are the minimum requirements required by the safety standard. For the final production, the additional marks which do not give rise to misunderstanding may be added.

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)

TESTING:

Date of receipt of test item..... : 2025-09-04

Date (s) of performance of tests..... : 2025-09-04 to 2025-09-12

GENERAL REMARKS:

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

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

The test results presented in this report relate only to the object tested.

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Throughout this report a ☐ comma / ☒ point is used as the decimal separator.

Summary of testing:

All tests were performed at the worst case and all test results complied with the standard on cover page.

General product information:

1. The product is Bug Zapper designed as audio/video, information and communication technology equipment, for indoor use only.
2. All the circuits of EUT are considered as ES1 circuits.
3. Instructions and equipment marking related to safety is applied in the language that is acceptable in the country in which the equipment is to be sold.

UL 1559			
Clause	Requirement + Test	Result - Remark	Verdict

PART I - CONSTRUCTION			
MECHANICAL CONSTRUCTION - GENERAL			
1	Scope		--
2	Glossary		--
3	Components		--
4	Units of Measurement		--
5	Referenced		--
CONSTRUCTION			
6	Frame and Enclosure		P
6.1	Insect- electrocution equipment shall be so formed and assembled that it will have the strength and rigidity necessary to resist the abuses that it is likely to be subjected to, without increasing the likelihood of fire, electric shock, or injury to persons due to total or partial collapse with resulting reduction of spacings, loosening or displacement of parts, or other serious defects		P
6.2	All electrical parts, except a supply cord, that may involve a risk of fire, electric shock, or injury to persons under any condition of use, shall be enclosed in an acceptable enclosure.		N/A
6.3	A knockout in a sheet metal enclosure shall be effectively secured and removable without undue deformation of the enclosure.	No knockout	N/A
6.4	A knockout shall be surrounded by a flat surface to provide for seating of a conduit bushing or locknut of the appropriate size .	No knockout	N/A
6.5	Sheet metal to which a wiring system is to be connected in the field shall have a minimum thickness of 0.032 inch (0.81 mm) if uncoated steel, 0.034 inch (0.86 mm) if galvanized steel, and 0.045 inch (1. 14mm) if nonferrous metal.		N/A
6.6	Cast metal to which a wiring system is to be connected in the field shall have an average thickness not less than 1/8 inch (3.2 mm).		N/A
6.7	The enclosure of insect- electrocution equipment for outdoor use shall be constructed so as to exclude a beating rain. See Water Spray Test, Section 35.	Indoor used only	N/A
6.8	A gasket or seal relied upon to comply with the requirements in Water Spray Test, Section 3 5 , will be subjected to an investigation .		N/A

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6.9	A polymeric enclosure, frame, or cover shall be evaluated with respect to mechanical strength, resistance to impact, moisture absorption properties, combustibility, resistance to arcing, dielectric strength, aging characteristics and other environmental conditions to which the enclosure may be subjected		P
6.10	To determine compliance with 6.9, a polymeric enclosure, frame, or cover shall be evaluated in accordance with the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746 C, and other applicable tests in this standard		P
6.11	A polymeric enclosure, frame, or cover of insect-electrocution equipment intended for outdoor use shall additionally be evaluated in accordance with the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746 C, for exposure to ultraviolet light and water		P
6.12	An insect catch tray shall be provided with insect-electrocution equipment not marked for “ Outdoor Use Only” or the equivalent. The insect catch tray shall be removable without the use of a tool to facilitate insect disposal.		P
6.13	A polymeric enclosure, frame, cover or insect catch tray shall be classified not less than V-2 in accordance with the Standard for Tests for Flammability of Plastic Materials for Parts in Devices and Appliances, UL 94		P
6.14	A flame retardant coating on a polymeric enclosure shall not be used, unless the uncoated polymeric material complies with 6.13 and the coating complies with the applicable Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746 C.		P
6.15	A keyhole slot in the enclosure shall be provided with a barrier to protect against the likelihood of the hanger (nail, screw, or similar fasteners) from contacting live parts or falling into the enclosure, if an increase in the risk of fire or electric shock may result.		P
7	Protection Against Corrosion		P
7.1	General		P
7.1.1	Ferrous metal parts shall be protected against corrosion by enameling, galvanizing, plating, Sherardizing, or other equivalent means		P
7.2	Enclosure intended for outdoor use		P
8	Leakage Current		N/A

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8.1	Leakage current from any part that is accessible during normal use, shall be within the limit specified in 27. 1 if the open-circuit potential between the accessible part and earth ground or any other accessible part is more than: a) 42.4 V peak for indoor use only equipment, and b) 21.2 V peak for outdoor-use equipment or where wet contact is likely to occur		N/A
9	Electric Shock		N/A
9.1	Risk of electric shock is considered to exist at any live part, if the open-circuit potential between the part and earth ground or any other accessible part is more than: a) 42.4 V peak for an indoor use only unit or b) 21.2 V peak for an outdoor unit or where wet contact is likely to occur, and: 1) The continuous current flow through a 500-ohm resistor is more than 5.0 mA, or 2) The combination of magnitude and duration of peak current flow exceeds the limits specified in 9.2, or 3) The combination of capacitance and voltage exceeds the limits specified in 9.3.		N/A
9.2	The duration of a transient current unidirectional (or alternating) through a 500-ohm resistor, connected between any exposed part and earth ground or any other accessible part, shall satisfy the following equation:		N/A
9.3	The maximum capacitance between capacitor terminals or any part conductively connected to the terminals shall satisfy the following equations:		N/A
9.4	Polarization of an attachment plug on cord-connected equipment is to be disregarded when evaluating the risk of electric shock.		N/A
10	Accessibility of Parts Involving the Risk of Electric Shock		N/A
10.1	An opening in the enclosure is acceptable if the appropriate probe, when inserted through the opening, cannot be made to touch any uninsulated part involving the risk of electric shock or coated-magnet wire that involves risk of electric shock. The probe shall be applied in all possible articulated positions before, during, and		N/A

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	after insertion.		
10.2	The probe shown in Figure 10 . 1 is to be used for determining the accessibility of a primary circuit part.		N/A
10.3	The probe shown in Figure 10 . 2 is to be used for determining the accessibility of a secondary circuit part.		N/A
10.4	In connection with the requirements in 10. 1, a part of the outer enclosure that may be removed without the use of a tool is to be disregarded that is, it is not to be assumed that the part in question affords protection against electric shock.		N/A
11	User Servicing		P
11.1	The necessary routine maintenance of insect-electrocution equipment, such as removal of insects and replacing lamps and starters, shall not result in a risk of fire, electric shock (see Electric Shock Section 9) or injury to persons (see Protection Against Injury to Persons, Section 12)		P
11.2	The equipment shall be constructed such that while performing routine maintenance (such as insect removal, changing a lamp or lamp starter, or similar activities), the equipment will remain intact except for an enclosure part(s) that must be removed to perform the maintenance		P
11.3	A part that must be removed during user servicing is to be removed when determining the accessibility of live parts that involve a risk of electric shock.		P
11.4	An interlock device provided to reduce the risk of electric shock shall be constructed so that it cannot be unintentionally activated to energize the equipment during servicing		N/A
11.5	The interlock device described in 1 1.4 shall be constructed and installed so as to be reliable, substantial and not easily defeated by improper disassembly or reassembly of the equipment.		N/A
11.6	A seal relied upon to preclude rain from entering the enclosure of insect- electrocution equipment intended for outdoor use shall not be adversely affected by opening the enclosure during user servicing See 35 5		N/A
12	Protection Against Injury to Persons		P

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12.1	An edge, projection, or corner of an enclosure, opening, frame, guard, knob, handle, or other feature of insect-electrocution equipment shall be smooth and well-rounded and not sufficiently sharp to cause a cut-type injury when contacted during intended use or user maintenance.		P
12.2	If the sharpness of an edge is questionable, the requirements for the determination of sharpness of edges on equipment, UL 1439 are to be used.		P
13	Supply Connections		P
13.1	General		P
13.1.1	Insect-electrocution equipment intended for permanent securement to the building structure shall be provided with a means for permanent connection to the branch-circuit supply.		N/A
13.2	Permanently-connected equipment		N/A
13.2.1	General		N/A
13.2.1.1	Equipment intended for permanent connection to the branch-circuit supply shall have provision for the connection of one of the wiring methods that, in accordance with the National Electrical Code, ANSI/NFPA No. 70, would be acceptable for the purpose		N/A
13.2.1.2	The location of a wiring compartment, in which branch-circuit connections to permanently-wired equipment are to be made, shall be such that these connections can be readily inspected without disturbing the wiring of the equipment after the equipment is installed as intended		N/A
13.2.1.3	No electrical component shall be mounted on a part, such as a box cover, that must be removed for the examination of old-wiring connections		N/A
13.2.1.4	A wiring compartment intended for connection of a supply raceway shall be so attached to the equipment that it can not turn with respect thereto		N/A
13.2.2	Field wiring terminals and leads		N/A
13.2.2.1	Insect-electrocution equipment intended for permanent connection to the power supply shall be provided with wiring terminals or leads for the connection of conductors having an ampacity (current-carrying capacity in amperes) according to the National Electrical Code, ANSI/NFPA No. 70, appropriate for the equipment.		N/A
	Pigtail leads provided for connection to the branch-circuit supply shall have an ampacity		

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13.2.2.2	not less than that of the conductor of the next smaller size than that listed in the National Electrical Code, ANSI/NFPA No. 70, as appropriate for the rating of the equipment. The conductor size in any case is to be not less than 16 AWG (1.3 mm ²). See 13.2.2.3.		N/A
13.2.2.3	For the purpose of these requirements it is assumed that 60°C (140°F) wire will be installed, unless the equipment is marked in accordance with 52.2 .		N/A
13.2.2.4	A field- wiring terminal assembly shall be prevented from turning or shifting in position by means other than friction between surfaces. This may be accomplished by two screws or rivets, square shoulders or mortises, a dowel pin, lug or offset, a connecting strap or clip fitted into an adjacent part, or some other equivalent method.		N/A
13.2.2.5	A field- wiring terminal shall be provided with a soldering lug or pressure wire connector firmly bolted or held by a screw.		N/A
13.2.2.6	Upturned lugs or a cupped washer shall be capable of retaining a power-supply conductor, corresponding in size to that mentioned in 13.2.2.1, under the head of the screw or the washer.		N/A
13.2.2.7	A wire-binding screw at a wiring terminal shall not be smaller than 10 (4.8 mm diameter). The threads shall not be finer than that of the National Fine Thread Series for the screw size.		N/A
13.2.2.8	The free length of a lead inside an outlet box or field- wiring compartment shall be 6 inches (152.4 mm) or more.		N/A
13.2.2.9	A terminal plate tapped for a wire-binding screw shall be of metal not less than 0.050 inch (1.27 mm) thick, except that a plate not less than 0.030 inch (0.76 mm) thick is acceptable if the tapped threads have adequate mechanical strength. There shall not be less than two full threads in the metal of the plate		N/A
13.2.2.10	A terminal plate formed from stock having the minimum acceptable thickness mentioned in 13.2.2.9 may have the metal extruded at the tapped hole to provide two full threads for the binding screw.		N/A
13.2.3	Grounding terminals and leads		N/A
13.2.3.1	A field- wiring terminal or lead for connection of an equipment- grounding conductor shall be		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	provided		
13.2.3.2	A field- wiring terminal intended solely for connection of an equipment- grounding conductor shall be capable of securing a conductor of the size acceptable for the particular application, in accordance with the National Electrical Code, ANSI/NFPA No 70 See 13 2 3 4		N/A
13.2.3.3	The surface of an insulated lead intended for the connection of an equipment- grounding conductor shall be green, with or without one or more yellow stripes, and no other lead shall be so identified in the field- wiring compartment.		N/A
13.2.3.4	A wire- binding screw intended for the connection of an equipment- grounding conductor shall have a green colored head that is hexagonal, slotted, or both. A pressure wire connector intended for connection of such a conductor shall be plainly identified by being marked "G, " "GR, ""GND, " Ground, ""Grounding" or similar designation or by a marking on the wiring diagram provided on the equipment		N/A
13.2.3.5	The wire-binding screw, p ressure wire connector, or grounding lead shall be so located that it is unlikely to be removed during the servicing of the equipment, not involving the supply connection.		N/A
13.2.3.6	A quick- connect terminal or solder lug shall not be used for the grounding terminal		N/A
13.2.3.7	Sheet metal screws shall not be used for: a) Field connection of equipment grounding conductors to an enclosure; nor b) Connection of a factory- provided grounding lead to an enclosure		N/A
13.2.4	Grounded terminal and leads		N/A
13.2.4.1	If provided with a single-pole switch, Edison- base lampholder, single- pole circuit breaker, or a fuse, permanently connected insect- electrocution equipment rated 125 or 125/250 V (three- wire) or less shall have one terminal or lead identified for the connection of the grounded conductor of the supply circuit		N/A
13.2.4.2	The identification required in 13.2.4. 1 shall be by a metal or metal coating substantially white in color or the word "white" located adjacent to the grounded terminal. If wire leads are provided instead of terminals, the surface of the grounded lead shall be nished to show white or grey color and shall be easily distinguishable from the other leads.		N/A
13.3	Cord- connected equipment		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
13.3.1	General		N/A
13.3.1.1	Cord- connected insect- electrocution equipment (equipment intended to be connected to the power-supply circuit by means of a flexible cord) shall be provided with a length of attached flexible cord with a molded-on attachment plug, or a motor-attachment plug for connection to a supply circuit.		N/A
13.3.1.2	The flexible cord shall be a Type SJ, SJE, or SJT or shall have such properties that will be at least equally serviceable for the application.		N/A
13.3.1.3	A power-supply cord shall be provided with a grounding conductor unless the equipment is double-insulated. The grounding conductor of the flexible cord shall be conductively connected to all exposed dead metal that may become energized, by means of a screw and lock washer or by equivalent means that is not likely to be removed during the servicing operation not involving the supply cord. Neither a quick-connect type connector nor solder alone shall be used for securing the grounding conductor. The grounding conductor shall be connected to the grounding member of a grounding- type attachment plug. Sheet metal screws shall not be used for: a) Field connection of equipment grounding conductors to an enclosure; nor b) Connection of a factory-provided grounding lead to an enclosure. Length of flexible cord shall be not less than		N/A
13.3.1.4	Tg 5.5 ft (1.7 m), as measured external to the equipment to the face of the attachment plug.		N/A
13.3.1.5	A power- supply cord shall have a minimum flammability classification of VW- 1		N/A
13.3.1.6	A motor-attachment plug provided with insect-electrocution equipment shall be appropriate for the application, and shall be protected from rain and direct sunlight.		N/A
13.3.1.7	The flexible cord used with insect- electrocution equipment intended for outdoor use shall be surface marked with the suffix "W" on its jacket.		N/A
13.3.1.8	The current and voltage ratings of a flexible cord provided with insect- electrocution equipment, shall not be less than that of the equipment		N/A
13.3.2	Strain relief		N/A
	Strain relief shall be provided so that a mechanical stress on a power-supply cord will		

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Clause	Requirement + Test	Result - Remark	Verdict
13.3.2.1	not be transmitted to terminals, splices, or interior wiring		N/A
13.3.2.2	Means shall be provided so that a power-supply cord can not be pushed into or twisted inside the enclosure of the equipment through the cord-entry hole if such displacement is likely to: a) Subject the cord to mechanical damage, or b) Expose the cord to a temperature higher than that for which it is acceptable, or c) Reduce spacings (such as to a metal strain-relief clamp) below the minimum acceptable values		N/A
13.3.2.3	The strain- relief means shall not adversely affect the supply- cord insulation		N/A
13.3.2.4	The strain- relief means provided shall comply with the test in Strain Relief Test, Section 39 .		N/A
13.3.3	Bushings		N/A
13.3.3.1	At a point where a flexible cord passes through an opening in a wall, barrier, or enclosing case, there shall be a bushing or the equivalent that shall be substantial, reliably secured in place, and shall have a smooth, well-rounded surface against which the cord may bear. For cord lighter than Type SJ or SJT, such as Type SPT-2 cord, the bushing shall be an insulating type		N/A
13.3.3.2	A cord hole in nonconducting material, having a smooth, well- rounded surface is considered to be equivalent to a bushing		N/A
14	Current-Carrying Parts		P
14.1	A current-carrying part involving a risk of fire or electric shock shall be of aluminum , silver, copper, a copper alloy, or other material acceptable for the purpose.		P
14.2	Stainless steel or plated iron or steel may be used for a current-carrying part of the electrocution electrodes. The plating shall be equivalent to the corrosion protection required for the enclosure.		P
14.3	An uninsulated live part and its support shall be so secured to the base or mounting surface that it will not turn or shift in position if such motion may result in a reduction of spacings below the minimum acceptable values		P
14.4	Friction between surfaces is not acceptable as the sole means to restrict the turning of a live part, but a lock washer or a factory- assembled		P

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	press-fit, if properly applied, is acceptable for this purpose.		
15	Internal Wiring		P
15.1	General		P
15.1.1	The internal wiring of insect- electrocution equipment shall be VW-1 and consist of types of wires that are acceptable for the particular application, with consideration given to the temperature and voltage to which the wiring is likely to be subjected, and other environmental conditions such as ultra-violet light and water. The The voltage rating of the wire shall be acceptable for the peak voltage involved		P
15.1.2	Type AF and CF wires shall not be employed.		P
15.1.3	Unsplit flexible cord, equivalent to Type SP-2 , SPT- 2, or SPE-2 or heavier, may be used for internal wiring if it is found acceptable for the particular application		P
15.2	Protection of wiring		P
15.2.1	Internal wiring leads or flexible cord that are exposed to the weather shall be of a type acceptable for outdoor use, such as Types SPT-2W-A, SJTW-A, or SPE-2W-A.		P
15.2.2	Internal wiring that is likely to be handled or disturbed during user servicing, such as during replacement of a lamp or starter, shall not be smaller than 18 AWG (0.82 mm 2) conductor having insulation thickness of not less than 1/ 32 inch (0.79 mm). These wires shall be provided with a strain relief means so that stresses will not be transmitted to terminals or splices See 39 3		P
15.2.3	A wire within an enclosure, compartment or wireway shall be so located or protected that the conductor insulation will not be damaged as a result of contact with any rough, sharp, or moving part.		P
15.2.4	A hole in an internal sheet metal wall for the passage of insulated wires shall be provided with a supplementary insulating bushing, unless the wire is provided with insulation thickness of at least 1/32 inch (0.79 mm) and the sheet metal is formed to provide a rounded edge within the hole.		P
15.3	Splices and connections		P
15.3.1	All splices and connections shall be mechanically secured and shall provide good electrical contact. A soldered connection shall be made mechanically secure before being		P

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Clause	Requirement + Test	Result - Remark	Verdict
	soldered, if breaking or loosening of the connection may result in any risk of fire or electric shock.		
15.3.2	A splice shall be provided with insulation equivalent to that of the wires involved, if permanence of spacing between the splice and other metal parts is not provided.		P
15.3.3	In determining acceptance of splice insulation consisting of coated-fabric, thermoplastic, or other type of tubing, consideration shall include dielectric properties, heat-resistant and moisture-resistant characteristics. See Electrical Insulation, Section 16.		P
15.3.4	The means of connecting stranded internal wiring to a wire-binding screw shall be such that loose strands of wire will be prevented from contacting other live parts not always of the same polarity as the wire and from contacting dead-metal parts.		P
15.3.5	An electrical connection involving aluminum to aluminum conductors or, aluminum to other metal conductors shall be terminated by a method appropriate for the combination of metals at the connection point		P
15.3.6	The wire connection mentioned in 15.3.5 shall be evaluated with respect to temperature, heat cycling, vibration and exposure to moisture		P
15.4	Separation of circuits		P
15.4.1	Internal wiring and components of different circuits shall either be: a) Provided with insulation rated for the highest voltage involved, b) Provided with insulation on at least one of the wires or components rated for the sum of the voltages involved, c) Separated by a barrier, or Reliably spaced apart. See Spacings, Section 17		P
15.4.2	Secondary and primary circuits, for example, are considered to be different circuits with reference to the requirement in 15.4.1		P
15.4.3	A barrier used to provide separation between wiring or components or both of different circuits shall have sufficient physical strength, and be secured in place. Openings in a barrier for the passage of wires shall be no larger than required for the passage of the wires, but sufficiently large so as not to cause injury to the wire insulation. See also 15.2.4.		P
15.4.4	A metal barrier, if provided, shall be electrically connected to the grounding conductor of the		P

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	supply circuit.		
15.4.5	A barrier of insulating material used to provide separation between conductors of primary and secondary circuits shall be moisture resistant and acceptable for the sum of the voltages involved, and shall comply with 16 4		P
16	Electrical Insulation		P
16.1	An insulating washer, bushing, or similar protective part that is an integral part of a unit or accessory, and bases or supports for the mounting of live parts, shall be of a moisture resistant material that will not be affected adversely by the temperatures to which they will be subjected under conditions of actual use. A molded part shall be so constructed that it will have mechanical strength and rigidity to withstand the stresses of intended service		P
16.2	lg a) Mechanical strength, b) Dielectric properties , c) Insulation resistance, d) Tracking resistance, e) Heat- resistant qualities , f) The degree to which it is enclosed or protected, and g) Any other features having a bearing on the risk of fire and electric shock involved, in conjunction with conditions of actual service such as exposure to partial discharge (corona), ultra- violet light, ozone, water, high humidity and other environmental exposure		P
16.3	In the mountin or supportin of small fraile, insulating parts, screws or other fastenings should not be tight enough to cause cracking or breaking of these parts with expansion and contraction.		P
16.4	Insulating material employed to maintain spacing between uninsulated live parts or as direct or indirect support of live parts shall be a material acceptable for the application in accordance with the Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746 C, and shall have a amma0bility classification of at least V-2		P
16.5	Insulating material used to insulate, support, enclose or maintain electrical spacings shall withstand the arc tracking test in Arc Tracking Test, Section 33.		P



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17	Spacings		P
17.1	General		P
18	Transformers	Power supply approved	N/A
18.1	An isolating transformer shall be employed to energize the insect killing electrodes.		N/A
18.2	There shall be no electrical connection between primary and secondary windings of a transformer		N/A
18.3	The transformer shall have a single secondary winding that may be tapped, or may have two or more secondary windings that are electrically interconnected.		N/A
18.4	Coils shall be constructed to provide insulation between the primary and secondary windings, and between the windings and dead metal parts.		N/A
18.5	Insulation between windings and between the windings and the core shall be electrical grade paper, polymeric, or other acceptable material. The insulation shall be acceptably resistant to moisture and have dielectric and thermal properties acceptable for the application. The film coating on the magnet wire alone is not acceptable for this application		N/A
19	Edison- Base Lampholders		N/A
19.1	An Edison-base lampholder employed in insect-electrocution equipment shall comply with the requirements in the Standard for Edison-Base Lampholders, UL 496		N/A
19.2	An Edison-base lampholder used in equipment intended for outdoor use shall have a body of porcelain or molded composition. The porcelain body shall be glazed. Absorptive insulating material, such as untreated fiber, shall not be employed		N/A
19.3	An Edison- base lampholder shall not incorporate a switching mechanism , if it is intended for outdoor use		N/A
19.4	An Edison- base lampholder having an aluminum screwshell shall not be used in equipment intended for outdoor use		N/A
19.5	An Edison-base lampholder shall be wired so that the screw shell is connected to the grounded (white) conductor of the supply circuit.		N/A
20	Fluorescent Lampholders and Starter Holders		N/A
	The fluorescent lampholder and the starter holder for fluorescent lamps shall comply with the		

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20.1	requirements in the Standard for Lampholders, Starters, and Starter Holders for Fluorescent Lamps, UL542.		N/A
20.2	A fluorescent lampholder shall be of a type acceptable for use with the ballast and type of lamp employed .		N/A
20.3	A fluorescent lampholder and starter holder provided on insect- electrocution equipment intended for outdoor use, shall be a weatherproof type		N/A
21	Fluorescent Lamps and Lamp Ballasts		N/A
21.1	Fluorescent lamp ballasts		N/A
21.2	Fluorescent lamps		N/A
22	Printed Wiring Boards		P
22.1	A printed wiring board that directly or indirectly supports live parts shall comply with the requirements of the Standard for Printed Wiring Boards, UL 796.		P
22.2	A printed wiring board that directly or indirectly supports live parts shall be rated minimum V- 1		P
22.3	A component mounted on a printed wiring board shall be soldered, welded or otherwise securely connected. A soldered connection shall be mechanically secured before soldering. Integral leads of a small component such as a resistor, capacitor, and inductor, may be inserted through holes in the printed wiring board and soldered.		P
22.4	A small component on a printed wiring board, such as a resistor, capacitor and inductor, that is in the user's serviceable area shall be so protected against any displacement that is likely to involve a risk of electric shock or fire.		P
22.5	Spacings between uninsulated live parts on a printed wiring board shall be in accordance with the requirements in Spacings, Section 1 7 .		P
23	Capacitors	No Capacitors	N/A
23.1	A capacitor, its enclosure, or both shall preclude emission of flame from the enclosure of the product in the event of malfunction of the capacitor or some component in surrounding circuitry.		N/A
23.2	The voltage rating of a capacitor shall not be less than the maximum steady- state potential to which the capacitor is subjected during operation of the equipment at rated voltage		N/A
23.3	A liquid-electrolyte, metallized- film, or conductive-		N/A
24	Switches	No Switches	N/A

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Clause	Requirement + Test	Result - Remark	Verdict
24.1	A switch shall have a rating adequate for the application and shall be properly secured.		N/A
24.2	Through cord switches and pendant switches shall not be provided with insect-electrocution equipment intended for outdoor use.		N/A
24.3	A manually operated switch other than those indicated in 24.2, if provided with outdoor insect-electrocution equipment, shall be protected against high humidity and water.		N/A
24.4	A single-pole switch, if in a primary circuit, shall be connected to the ungrounded conductor only.		N/A
25	Protective Devices		N/A
25.1	An overcurrent or thermal protective device shall be of a type acceptable for the application and designed for the purpose of overload protection.		N/A
25.2	A manual reset protective device or a fuse that is intended for resetting or replacement by the user shall be in a readily accessible location.		N/A
25.3	The resetting or replacement of a protective device shall not result in risk of electric shock, fire, or injury to persons.		N/A
25.4	A protective device provided in insect electrocution equipment intended for outdoor use shall be enclosed to protect it against the weather.		N/A
25.5	A single-pole protective device shall be connected to the ungrounded conductor only. The screw shell of a plug fuseholder and the accessible contact of an extractor fuseholder shall be connected toward the load		N/A
PERFORMANCE			
26	General		P
26.1	Representative units of the insect-electrocution equipment shall be subjected to the applicable tests described in Sections 27 - 45. Each test shall be conducted at the input voltage indicated in Table 26.1 and at the rated frequency or frequencies, unless otherwise specified.		P
27	Leakage Current Test		N/A
27.1	The leakage current of cord-connected equipment when tested in accordance with 27.2 – 27.6 shall not be more than 0.5 mA.		N/A
27.2	Leakage current refers to all currents, including capacitively coupled currents, that may be conveyed between exposed conductive surfaces of a product and ground or other		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	exposed conductive surfaces of the product.		
27.3	All exposed conductive surfaces are to be tested for leakage currents. The leakage currents from these surfaces are to be measured to the grounded supply conductor individually, as well as collectively, if simultaneously accessible. Parts are considered to be exposed surfaces unless guarded by an enclosure considered acceptable for protection against electric shock as defined in Electric Shock, Section 9. Surfaces are considered to be simultaneously accessible if they can be readily contacted by one or both hands of a person at the same time.		N/A
27.4	If a conductive surface other than metal is used for the enclosure or part of the enclosure, the leakage current is to be measured using a metal foil with an area of 10 by 20 cm in contact with the surface. If the surface is less than 10 by 20 cm, the metal foil is to be the same size as the surface. The metal foil is not to remain in place long enough to affect the temperature of the equipment.		N/A
27.5	The measurement circuit for the leakage current measurements is to be as shown in Figure 27. 1. The ideal measurement instrument is defined in (a) – (d). The meter actually used for a measurement is required only to indicate the same numerical value for a particular measurement as the defined ideal instrument		N/A
27.6	The meter used is not required to have all the attributes of the defined ideal instrument. The representative product is to be tested for leakage current starting with the as-received condition –the as-received condition being without prior energization, except as is able to occur as part of the production-line testing. The supply voltage is to be adjusted to rated voltage. The test sequence, with reference to the measuring circuit, Figure 27. 1, is to be as follows: a) With switch S1 open, the product is to be connected to the measuring circuit. Leakage current is to be measured using both positions of switch S2, and with the product switching devices in all their normal operating positions. b) Switch S1 is then to be closed, energizing the product, and within 5 seconds the leakage current is to be measured using both positions		P

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Clause	Requirement + Test	Result - Remark	Verdict
	of switch S2, and with the product switching devices in all their normal operating positions. c) Leakage current is to be monitored until thermal stabilization. Both positions of switch S2 are to be used in determining this measurement. Thermal stabilization is to be obtained by operation as in the normal temperature test		
28	Input Test		P
28.1	The input current or power to insect-electrocution equipment shall not be greater than 1 10 percent of the marked rating		P
28.2	To determine compliance with 28.1, the insect-electrocution equipment shall be connected to a supply source having a voltage equal to the maximum marked voltage. The input current or power is to be measured while a 500 ohm noninductive resistor is connected across the electrodes.		P
29	Output Test		N/A
29.1	Under any condition of loading, the current output between the electrodes shall not exceed 12 mA for cord-connected insect-electrocution equipment and 20 mA for permanently-connected insect-electrocution equipment. See 51.2 . 10 and 52.3		N/A
29.2	To determine compliance with 29.1, the insect control equipment shall be connected to a supply source having a voltage in accordance with Table 26.1. A noninductive variable resistor is to be connected between the electrodes. The value of the resistance is to be varied until maximum output current is obtained.		N/A
29.3	The maximum voltage and current at the electrodes shall not exceed the marked rating, if any, by more than 10 percent. See 51.1.3.		N/A
30	Normal Temperature Test		P
30.1	Under any condition of operation for which it is designed, the insect-electrocution equipment shall not attain a temperature exceeding the limit for any material employed in the product. See Table 30.1.		P
30.2	A protective device, such as, a fuse, thermal protector, or similar measures, shall not operate		P

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Clause	Requirement + Test	Result - Remark	Verdict
	during the test.		
30.3	No flame or molten material shall be emitted either within or outside the enclosure of the equipment during the test		P
30.4	Unless investigated and found acceptable, a supporting means formed of soft rubber or a rubber-like material is to be removed prior to the test. If the supporting means has a metal insert, such as a screw or rivet, the test is to be conducted with the product supported by the metal insert.		P
30.5	To determine compliance with 30. 1, the unit is to be connected to a supply source of specified voltage; see Table 26. 1. The product is to be operated continuously until thermal equilibrium is attained under the following operating conditions: a) Electrodes open- circuited (normal standby condition) , b) Electrodes short- circuited , c) Arcing between electrodes with a duty cycle of 1 second "ON" and 2 seconds "OFF" . The spark gap is to be adjusted for the maximum distance possible while maintaining the arc, and d) A resistive load connected between the electrodes, and adjusted so as to result in the maximum input current or power.		P
30.6	Winding temperatures are to be measured by the resistance method. In addition, winding temperatures may be measured by thermocouples located on winding surfaces unless the coil is inaccessible for mounting of thermocouples, such as a coil embedded in sealing compound or a coil wrapped with thermal insulation. If the temperature is affected by an external source of heat, the temperature rise measured by thermocouple at a point on the surface of a coil may be 5°C (9°F) more than the indicated in items 12 and 13 in Table 30. 1, if the temperature rise of the coil as measured by the resistance method is no more than that specified.		P
30.7	The temperature rise of a windin g is to be calculated using the equation		P
30.8	All values of temperature rise in Table 30. 1 are based on an assumed ambient temperature of 25°C(77°F). Tests may be conducted at any ambient temperature within the range of 10 –40°C (50 – 104°F).		P

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Clause	Requirement + Test	Result - Remark	Verdict
30.9	A short length of rubber- or thermoplastic insulated flexible cord within the product exposed to a temperature of more than 60°C (140°F) is acceptable if supplementary insulation, acceptable for the measured temperature and of adequate dielectric properties, is employed on each individual conductor.		P
30.10	Except as indicated in 30.6, temperatures are to be measured by thermocouples consisting of wires not larger than 24 AWG (0.21 mm ²) and not smaller than 30 AWG (0.05 mm ²). The thermocouples and the related instrument are to be accurate and calibrated in accordance with standard laboratory practice. 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(1982). Thermocouples using iron and constantan 30 AWG (0.05 mm ²) wires are to be used with a potentiometer- type instrument whenever a referee temperature measurement by thermocouple is necessary.		N/A
30.11	A thermocouple junction and adjacent thermocouple lead wires are to be securely held in good thermal contact with the surface of the material being measured. In most cases, good thermal contact will result from securely taping or cementing the thermocouple in place, but if a metal surface is involved, brazing or soldering of the thermocouple to the metal may be necessary.		N/A
30.12	With reference to 30.5, thermal equilibrium is considered to exist if two successive readings taken at least 30 minutes apart indicate no change		P
31	Abnormal Temperature Test		P
31.1	The electrode transformer windings, under a condition of continuous arcing of the secondary, shall not have a temperature rise of more than 110°C (198°F) for Class 105 and 135°C (243°F) for Class 130 insulation when measured by the resistance method.		P
31.2	To determine compliance with 31. 1, the product is to be connected to a supply source of specified voltage; see Table 26. 1. The product is to be operated continuously until thermal equilibrium is attained during a condition of sustained arcing between electrodes. The spark gap is to be adjusted for the maximum distance possible		P

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Clause	Requirement + Test	Result - Remark	Verdict
	while maintaining the arc		
32	Dielectric Voltage- Withstand Test		P
32.1	Insect- electrocution equipment shall withstand for 1 minute without a breakdown that could result in the risk of fire or electric shock, the application of an essentially sinusoidal potential of an appropriate frequency with the product at the maximum operating temperature reached in the temperature test: a) One thousand volts plus twice the primary voltage (test voltage per Table 26. 1) applied between the primary circuit and exposed or grounded dead- metal parts. b) 125 percent of the maximum measured secondary- circuit voltage applied between 1) The primary and secondary circuit(s) , and 2) Between a secondary circuit and exposed dead- metal parts. c) A primary voltage applied to the ends of the primary winding of the electrode transformer with one side of the primary winding solidly connected to the enclosure. The test shall be made first with one end of the secondary, and then the other in turn, connected to the enclosure. The primary voltage shall be increased to cause a secondary voltage equal to 150 percent of the maximum normal secondary voltage. d) One thousand volts plus twice the primary voltage (test voltage per Table 26. 1) between the terminals of a capacitor used for radio interference elimination or arc suppression in the primary circuit. 150 percent of the maximum voltage obtained in normal operation between the terminals of a capacitor connected across the secondary of a transformer. f) One thousand volts plus twice the secondary voltage applied between secondary circuit parts of opposite polarity. The transformer and the electrodes may be disconnected during the test, if necessary		P
	If one end of the electrode-transformer secondary winding is connected to the frame or enclosure, the insect- electrocution equipment shall be subjected to the following additional tests without breakdown. The test voltage shall		

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Clause	Requirement + Test	Result - Remark	Verdict
32.2	be essentially sinusoidal of an appropriate frequency, and shall be maintained for 1 minute. The tests specified in 32. 1 (b) and (c) are to be waived: a) Twice the sum of maximum primary circuit voltage and maximum secondary circuit voltage plus 1000 V between primary and secondary circuits. b) The electrode transformer primary winding is to be connected to a sinusoidal supply source, with one end of the primary winding also connected to a common connection of the secondary winding and the frame or enclosure. The supply voltage shall be increased so as to cause the voltage in the secondary to equal 3 times the maximum normal secondary voltage. c) The test in (b) shall be repeated with the other end of the electrode transformer primary winding connected to the common connection of the secondary winding and frame or enclosure .		P
32.3	The requirements in 32. 1 and 32.2, it is to be tested by means of a transformer of 500 - VA capacity or larger, having an output voltage that is essentially sinusoidal and can be varied. The tests are to be conducted at the rated frequency, except that the test specified in 32. 1 (c) and 32.2 (b) and (c), is to be conducted at a higher frequency to preclude the exciting current from causing excessive heating of the transformer. The applied potential is to be increased from zero until the required test level is reached, and is to be held at that level for 1 minute. The increase in applied potential is to be at a substantially uniform rate and as rapid as is consistent with its value being correctly indicated by a voltmeter.		P
33	Arc- Tracking Test		N/A
33. 1	The insulating material referenced in 16.5 and 17. 1. 10 shall be subjected to the tests in 33.2 and 33.3 without increasing the risk of fire or electric shock		N/A
33.2	The arc, using the energy available from the parts involved, is to be established between the high-voltage part and any adjacent part of different potential where breakdown is likely to occur. The arc is to be used to attempt to ignite materials forming parts of the high- voltage enclosure or to ignite materials located between the parts of different potential. The arc is to be		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
	established by means of a conductive probe. The conductive probe is to be used to break through insulation or to create arc-tracking across the surface of insulating materials. The arcing is to be continued for 15 minutes at each location. During the 15-minute period, if flaming occurs the arcing is to be stopped, and the time of flaming measured. If the flame extinguishes in less than 30 seconds, the arcing is to be reestablished and continued for a total arcing time of 15 minutes. If the material is ignited, the flame shall self extinguish within 30 seconds		
33.3	There shall be no permanent carbon conductor path determined by the application of a dielectric voltage-withstand potential equal to twice the voltage in the circuit plus 1000 V, applied for 60 seconds between the parts involved.		N/A
34	Abnormal Operation Test		P
34.1	If a semiconductor device (rectifier, transistor, or similar component), or an electrolytic capacitor is provided, there shall not be a risk of fire or electric shock resulting from short-circuiting, singly, of any of these components		P
34.2	To comply with 34.1, one representative unit of the insect-electrocution equipment is to be connected to a supply circuit with the appropriate voltage (Table 26.1), with the component short-circuited. Only two terminals are to be short circuited together at one time, if there are more than two terminals on the component. The test is to be repeated on two additional units, if it is interrupted by the opening of a component or protective device in the equipment without evidence of a risk of fire or electric shock. However, the test may be discontinued if it continues for 7 hours without evidence of a risk of fire or electric shock.		P
34.3	During the test, a user-replaceable fuse shall be replaced with a fuse having the maximum ampere rating which can be accommodated in the product		P
34.4	During the test, the complete product is to be covered with a layer of cheesecloth. The cloth is to be bleached cheesecloth 36 inches (914 mm) wide, running 14 – 15 yd/lb (approximately 28 –30 m/kg), and having what is known to the trade as a “count of 32 x		P

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Clause	Requirement + Test	Result - Remark	Verdict
	28" – that is, for any square inch, 32 threads in one direction and 28 threads in the other direction (for any square centimeter, 13 threads in one direction and 11 in the other direction)		
35	Water Spray Test		N/A
35.1	Insect- electrocution equipment intended for outdoor use shall be subjected to the equivalent of a beating rain on its top and sides. The spray is to be applied for 4 hours as described in 35.2. During the test the equipment is to be energized, or unenergized, whichever results in the most severe condition.		N/A
35.2	The water spray test apparatus is to consist of three spray heads constructed in accordance with the details shown in Figure 35.1 and mounted in a water-supply pipe rack shown in Figure 35.2. The water pressure is to be maintained at each spray head at approximately 5 lbf/in ² (3500 N/m ²). The product is to be brought into the focal area of the three spray heads in such a position and under such conditions that the greatest quantity of water, if any, will enter it.		N/A
35.3	After exposure to the water spray test described in 35.1 and 35.2, insect-electrocution equipment that is cord-connected shall comply with the leakage current requirements of Leakage Current Test, Section 27. Equipment not required to be tested for leakage current shall have an insulation resistance of not less than 50,000 ohms between live parts and accessible dead-metal parts. Following the leakage-current or insulation-resistance measurements, the equipment shall be tested for dielectric voltage-withstand between primary circuitry and accessible metal parts and between primary circuitry and secondary circuitry in accordance with Dielectric Voltage-Withstand Test, Section 32.		N/A
35.4	The insulation resistance is to be measured: a) By a megohmmeter that has an open-circuit output of 500 V, b) By a voltmeter having an internal resistance of at least 30,000 ohms and using a 250-V direct-current circuit, or c) By equivalent equipment.		N/A

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Clause	Requirement + Test	Result - Remark	Verdict
35.5	Insect- electrocution equipment that employs a seal that may be adversely affected during user servicing shall be subjected to the tests in 35. 1 – 35.4, after having the seal removed. See 1 1.6.		N/A
36	Humidity Conditioning Test		P
36. 1	Insect- electrocution equipment shall be exposed for 48 hours to moist air having a relative humidity of 88 ± 2 percent at a temperature of $32.0 \pm 2.0^{\circ}\text{C}$ ($89.6 \pm 3.6^{\circ}\text{F}$). Following the 48-hour period, and while still exposed to the moist air, cord- connected equipment is to be tested for leakage current in accordance with Leakage Current Test, Section 27 . The insulation resistance of all other equipment is to be measured and shall not be less than 50,000 ohms		P
36.2	If the insect-electrocution equipment is intended for outdoor use, a ballast of other than Type 1, Type 2, or weatherproof type, and a transformer shall be exposed for 168 hours to moist air having a relative humidity of 88 ± 2 percent at a temperature of $32.0 \pm 2.0^{\circ}\text{C}$ ($89.6 \pm 3.6^{\circ}\text{F}$). Following the 168 -hour period and while still exposed to moist air, the insulation resistance between live and dead metal parts shall be measured and shall not be less than 50,000 ohms		P
36.3	Following the leakage current or insulation-resistance measurements required in 36. 1 and 36.2, the equipment is to be tested for dielectric voltage- withstand between primary circuitry and accessible metal parts in accordance with Dielectric Voltage-Withstand Test, Section 32		P
36.4	The insulation resistance is to be measured: a) By a megohmmeter that has an open circuit output of 500 V, b) By a voltmeter having an internal resistance of at least 30 ,000 ohms and using a 250 -V direct- current circuit, or c) By equivalent equipment .		P
37	Enclosure Pressure Test		
	The external enclosure shall withstand 20 lbf (89 N) without permanent distortion reducing spacings below the values specified in Spacings, Section 17, or transient distortion that results in contact with live parts. The force is to be applied for one minute by means of a 0.50		

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Clause	Requirement + Test	Result - Remark	Verdict
37.1	inch (12.7 mm) diameter rod with a hemispherical end. The acceptability of an opening that occurs during application of the force is to be determined under the requirements in Accessibility of Parts Involving the Risk of Electric Shock, Section 10.		P
38	Enclosure Impact Test		P
38.1	Insect- electrocution equipment shall not involve risk of fire, electric shock or injury to persons when subjected to the impact tests described in 38.2 – 38.5. For outdoor-use insect-electrocution equipment, impacting shall not impair the water tightness of the enclosure.		P
38.2	Each of three representative units of insect-electrocution equipment shall be subjected to three impacts of 5 ft-lb (6.8 J) on surfaces that are likely to be exposed to impacting during use		P
38.3	The impact specified in 38.2 is to be performed by dropping or swinging as a pendulum a steel sphere, 2 inches (50.8 mm) in diameter and weighing 1. 18 lb (0.535 kg) from the height necessary to cause the specified impact. See Figure 38 2		P
38.4	An uninsulated live part involving risk of electric shock shall not become accessible after being impacted as determined by the probe illustrated in Figures 10. 1 or 10.2, whichever is applicable in accordance with 10.2 and 10.3.		P
38.5	After being impacted, the product shall be subjected to the dielectric voltage- withstand test of 32. 1(a).		P
39	Strain Relief Test		P
39.1	When tested in accordance with 39.2, the power-supply cord strain relief shall be capable of withstanding for 1 minute, a direct pull of 35 lbf (156 N) applied to the cord with its connections within the equipment disconnected		P
39.2	The specified force is to be applied to the cord so that the strain relief will be stressed from any angle which the construction of the equipment permits. The strain relief is not acceptable if, at the point of disconnection of the conductors, there is sufficient movement of the cord to indicate that stress on the connections would have resulted.		P
39.3	Pigtail leads, if provided, and internal wiring that is subject to handling during user servicing, such as the lamp leads, shall be provided with strain-relief means. The strain-relief device shall be capable of withstanding for one		P



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Clause	Requirement + Test	Result - Remark	Verdict
	minute without transmitting stresses to the lead connections within the product a direct pull of 5 lbf (22 N) applied to the individual leads.		
39.4	If the strain-relief device employed for the power-supply cord or internal wiring is supported by or dependent upon a polymeric enclosure for its security, the test in 39. 1 – 39.3 shall be performed after the polymeric enclosure has been subjected to the mold-stress-relief distortion test Standard for Polymeric Materials – Use in Electrical Equipment Evaluations, UL 746 C, and after the enclosure has cooled to room temperature.		P
40	Continuity of Grounding Connection Test		N/A
40. 1	The resistance of the grounding path between an exposed dead-metal part of a product that is intended to be grounded and a grounding terminal shall be no more than 0. 1 ohm .		N/A
40.2	With respect to 40. 1, the resistance may be determined by any convenient method. If unacceptable results are recorded, the resistance is to be measured using either a direct or alternating current, at a potential of not more than 12 V, equal to the current rating of the maximum branch- circuit overcurrent-protective device that may be employed with the product. The current is to be passed from the grounding terminal to the dead-metal part. The resulting drop in potential in volts is to be divided by the current in amperes passing between the two points to determine the resistance.		N/A
40.3	The grounding-path resistance is to be measured between all exposed dead-metal parts that are likely to become energized and a) The grounding terminal or lead of a permanently- connected product, or b) The point of connection of the grounding lead of the supply cord of a cord- connected product		N/A
41	Mounting Means Strength Test		N/A
41. 1	Insect- electrocution equipment provided with a bracket, hanger, mounting hole, or similar mounting means shall be subjected to the test in 41 2		N/A
	Insect- electrocution equipment shall be mounted or hung in the intended manner. A		

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Clause	Requirement + Test	Result - Remark	Verdict
41.2	weight equal to three times the weight of the equipment is to be applied to the equipment, positioned so that it is approximately in the geometric center axis of the equipment. The weight is to be applied for 5 minutes. The manufacturer's installation instructions are to be followed when mounting or hanging the product for this test.		N/A
41.3	After the test described in 41.2, the effectiveness of the mounting or hanging means shall not be impaired.		N/A
42	Cold Impact Test		N/A
42.1	A polymeric enclosure of insect- electrocution equipment intended for outdoor use shall withstand an impact of 5 ft-lb (6.8 J) at a temperature of $-35.0 \pm 2.0^{\circ}\text{C}$ ($-31.0 \pm 3.6^{\circ}\text{F}$).		N/A
42.2	To determine compliance with 42.1, each of three representative units of the product shall be placed for a minimum of 3 hours in a $-35.0 \pm 2.0^{\circ}\text{C}$ ($-31.0 \pm 3.6^{\circ}\text{F}$) ambient until thermal equilibrium is attained. While at the test temperature, each unit is to be subjected to the impact test of Enclosure Impact Test, Section 38. The enclosure shall withstand the impact without resulting in exposure of live parts as determined by the probes illustrated in Figure 10.1 or Figure 10.2, whichever is appropriate, or otherwise involving a risk of fire, electric shock or injury to persons. The enclosure is not required to maintain its water tightness after the test.		N/A
43	Temperature Cycling Test		P
43.1	A polymeric enclosure for insect- electrocution equipment intended for outdoor use shall not show any degradation that would result in a risk of fire, electric shock or injury to persons when subjected to five complete cycles of alternating ambient temperature from $50.0 \pm 2.0^{\circ}\text{C}$ ($122.0 \pm 3.6^{\circ}\text{F}$) to $-35.0 \pm 2.0^{\circ}\text{C}$ ($-31.0 \pm 3.6^{\circ}\text{F}$).		P
43.2	To determine compliance with 43.1, each of three representative units of the product shall be placed alternately for 1/2 hour each in a $50.0 \pm 2.0^{\circ}\text{C}$ ($122.0 \pm 3.6^{\circ}\text{F}$) oven and $-35.0 \pm 2.0^{\circ}\text{C}$ ($-31.0 \pm 3.6^{\circ}\text{F}$) freezer for five complete cycles. There shall not be deformation or cracking of the enclosure that would permit entrance of water into the enclosure, or otherwise involves a risk of fire, electric shock or injury to persons.		P

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Clause	Requirement + Test	Result - Remark	Verdict
44	Metallic- Coating Thickness Test		N/A
44.1	The method of determining the thickness of a zinc or cadmium coating by the test is described in 44.2 – 44.9.		N/A
44.2	The solution used for this test is to be made from distilled water and is to contain 200 g/L of reagent Grade chromic acid (CrO_3) and 50 g/L of reagent grade concentrated sulfuric acid (H_2SO_4). The latter is equivalent to 27 mL/L of reagent grade concentrated sulfuric acid, specific gravity 1.84, containing 96 percent of H_2SO_4		N/A
44.3	The test solution is to be contained in a glass vessel, such as a separatory funnel, with the outlet equipped with a stopcock and a capillary tube having an inside bore of 0.025 inch (0.64 mm) and a length of 5.5 inches (140 mm). The lower end of the capillary tube is to be tapered to form a tip, the drops from which are about 0.05 mL each. To preserve an effectively constant level, a small glass tube is to be inserted in the top of the funnel through a rubber stopper and its position is to be adjusted so that, when the stopcock is open, the rate of dropping is 100 ± 5 drops per minute. If desired, an additional stopcock may be used in place of the glass tube to control the rate of dropping		N/A
44.4	The representative test unit and the test solution are to be kept in the test room long enough to acquire the temperature of the room, which is to be noted and recorded. The test is to be conducted at an ambient temperature of $21.1 \pm 3.2^\circ\text{C}$ ($70.0 \pm 90.0^\circ\text{F}$).		N/A
44.5	Each unit is to be thoroughly cleaned before testing. All grease, lacquer, paint, and other nonmetallic coatings are to be removed completely by means of solvents. The units are then to be thoroughly rinsed in water and dried. Care is to be exercised to avoid contact of the cleaned surface with the hands or any foreign material.		N/A
44.6	The unit to be tested is to be supported from 0.7 – 1.0 inch (17.8 – 25.4 mm) below the orifice, so that the drops of solution strike the point to be tested and run off quickly. The surface to be tested is to be inclined about 45 degrees from horizontal.		N/A
	The stopcock is to be opened and the time in seconds is to be measured until the dropping		

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Clause	Requirement + Test	Result - Remark	Verdict
44.7	solution dissolves the protective metallic coating, exposing the base metal. The end point is the first appearance of the base metal recognizable by a change in color at that point.		N/A
44.8	Each unit is to be tested at three or more points, excluding cut, stenciled, and threaded surfaces, on the inside surface and at an equal number of points on the outside surface, at places where the metallic coating may be expected to be the thinnest. On enclosures made from precoated sheets, the external corners that are subjected to the greatest deformation are likely to have thin coatings		N/A
44.9	To calculate the thickness of the coating being tested, select from Table 44. 1 the thickness factor appropriate for the temperature at which the test was conducted and multiply by the time in seconds required to expose base metal as described in 44. 7. The following formulas are to be used in which: a) T in is coating thickness in inches, b) T mm is coating thickness in millimeters , c) S is time in seconds , and d) F is the thickness factor for the room temperature.		N/A
45	Permanence of Marking		N/A
45. 1	A marking required to be permanent – durable and affixed securely – shall be molded, die-stamped, paint-stenciled, stamped or etched on metal, or indelibly stamped on pressure-sensitive labels secured by adhesive. Pressure-sensitive labels secured by adhesive shall comply with the requirements for marking and labeling systems, UL 969. Ordinary usage, handling, storage, and similar activities, of the appliance shall be considered in determination of performance of marking. See also 51.2. 13 and 51.2. 14.		N/A

MANUFACTURING AND PRODUCTION-LINE TESTS			
46	Dielectric Voltage- Withstand Test		P
46. 1	Each product shall withstand without electrical breakdown, as a routine production-line test, the application of a potential at a frequency within the range of 40 – 70 Hz, between the primary wiring, including connected components, and accessible dead-metal parts that are likely to become energized. The test potential shall be:		P

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Clause	Requirement + Test	Result - Remark	Verdict
	a) 1200 +2 .4 V (V is the rated voltage of the insect-electrocution equipment) volts applied for 1 second or b) 1000 +2 V applied for 1 minute		
46.2	The product may be in a heated or unheated condition for the test.		P
46.3	The test shall be conducted when the equipment is complete (fully assembled). It is not intended that the product be unwired, modified, or disassembled for the test		P
46.4	The test equipment shall include a transformer having an essentially sinusoidal output, a means of indicating the test potential, an audible or visual indicator of electrical breakdown, and either a manual-reset device to restore the equipment after electrical breakdown or an automatic reject feature of any unacceptable unit		P
46.5	If the output of the test- equipment transformer is less than 500 VA, the equipment shall include a voltmeter in the output circuit that directly indicates the test potential.		P
46.6	If the output of the test- equipment transformer is 500 VA or larger, the test potential may be indicated by: a) A voltmeter in the primary circuit or in a tertiary-winding circuit, b) By a selector switch marked to indicate the test potential, or c) In the case of equipment having a single test-potential output, by a marking in a readily visible location to indicate the test potential.		P
46.7	Test equipment other than that described by 46.4 – 46.6, may be used if found to accomplish the intended factory control		P
46.8	During the test a sufficient number of primary switching components shall be in the on position so that all primary circuitry will be stressed. Both sides of the primary circuit of the product 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.		P
47	Grounding- Continuity Test		N/A
47.1	Each product that has a power-supply cord having a grounding conductor shall be tested, as a routine production-line test, to determine that there is grounding continuity between the grounding blade of the attachment plug and the accessible dead-metal parts of the product that are likely to become energized.		N/A
47.2	Only a single test need be made if the accessible metal selected is conductively connected by mechanical assembly to all other accessible metal		N/A
	Any indicating device (an ohmmeter, a battery-and-buzzer combination, or similar instruments) may be		



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Clause	Requirement + Test	Result - Remark	Verdict
47.3	used to determine compliance with the grounding continuity requirement in 47. 1.		N/A
48	Polarization Test		N/A
48. 1	Each product that is required to be provided with a polarized attachment plug shall have an electrical-continuity test made between the grounded supply-circuit (white) conductor of the attachment plug and the part of the product that is intended to be connected to the grounded supply-circuit conductor. If the continuity cannot be readily determined by visual inspection and component checking, an electrical-continuity test is to be made.		N/A
48.2	For the purpose of a ppl ying 48. 1, a polarized attachment plug includes a 2-wire plug polarized with a wide blade, as well as a grounding-type plug.		N/A
RATING			
49	Electrical		P
49. 1	A product shall be rated in volts, amperes or watts, and frequency. The ampere rating shall be included unless the full-load power factor is 80 percent or more.		P
MARKINGS			
50	General		P
50. 1	A required marking in Visible After Installation, Section 51 , and Visible During Installation and Examination, Section 52, shall be permanent and shall be located on a part that cannot be removed without impairing the operation of the product, unless the requirement speci cally indicates otherwise. See 45. 1.		P
51	Visible After Installation		P
51. 1	General		P
51.2	Cautionary and warning		P
52	Visible During Installation and Examination		P
52. 1	The markings required by 52.2 shall be plain,legible, and readily visible during installation and examination of the supply- wiring connections		P
52.2	If any part within a terminal box or wiring compartment of a permanently- connected product in which field-installed conductors are intended to be connected (including such conductors themselves) attains a temperature higher than 60°C (140°F) during the normal-temperature test, the product shall be legibly marked “For supply connections, use ____ AWG or larger wires suitable for at least ____ °C (____ °F) ” or with an equivalent statement, and the temperature value shall be in accordance with Table 52. 1. The wire size is not required to be specified if 14 AWG (2. 1 mm 2) wire was used during the test. This wording		P



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Clause	Requirement + Test	Result - Remark	Verdict
	shall be located at or near the point where the supply connections are to be made.		
52.3	A permanently- connected insect- electrocution equipment with a secondary output current capability of more than 12 mA shall be provided with a marking or an installation instruction sheet containing the statement, “CAUTION - High Voltage. Install where this product is not accessible to children” , or an equivalent wording following the word “CAUTION” See 29.1		P
53	Instruction Manual		P
53.1	General		P
53.2	All cord-connected products		P
53.3	User maintenance		P

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Clause	Requirement + Test	Result - Remark	Verdict

TABLE	Dielectric Voltage- Withstand Test			P
Test voltage applied between:	Voltage shape (AC, DC)	Test voltage (V)	Breakdown Yes / No	
DC inlet to enclosure	DC	500	No	
Supplementary information:				

TABLE: Input test					P
Test voltage(V)	Rating Current(A)	Test Current(A)	Deviation(%)	Description	
5	2	1.68	- 16.0%	Pass	
Supplementary information:					
Normal operation: operating under most unfavourable normal condition with max. brightness, max. Contrast and play video.					

Table	Temperature measurements						P
	Supply voltage (V) :	5	--	--	--	--	—
	Ambient T _{min} (°C) :	40.0	--	--	--	--	—
	Ambient T _{max} (°C) :	40.0	--	--	--	--	—
Maximum measured temperature T of part/at:		T(°C)					Allowed T _{max} (°C)
Battery surface		56.8	--	--	--	--	Ref.
Internal wire		48.7	--	--	--	--	130
PCB near Mains IC		53.2	--	--	--	--	130
Motor surface		58.2	--	--	--	--	Ref.
Enclosure		48.9	--	--	--	--	85
Supplementary information:							
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:							

Table	Abnormal Temperature Test						
	Supply voltage (V) :	--	--	--	--	--	—
	Ambient T _{min} (°C) :	--	--	--	--	--	—
	Ambient T _{max} (°C) :	--	--	--	--	--	—
Maximum measured temperature T of part/at:		T(°C)					Allowed T _{max} (°C)



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Clause	Requirement + Test	Result - Remark	Verdict

Supplementary information:							
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:							

EUT Photos



Photo 1 Overall view



Photo 2 External view

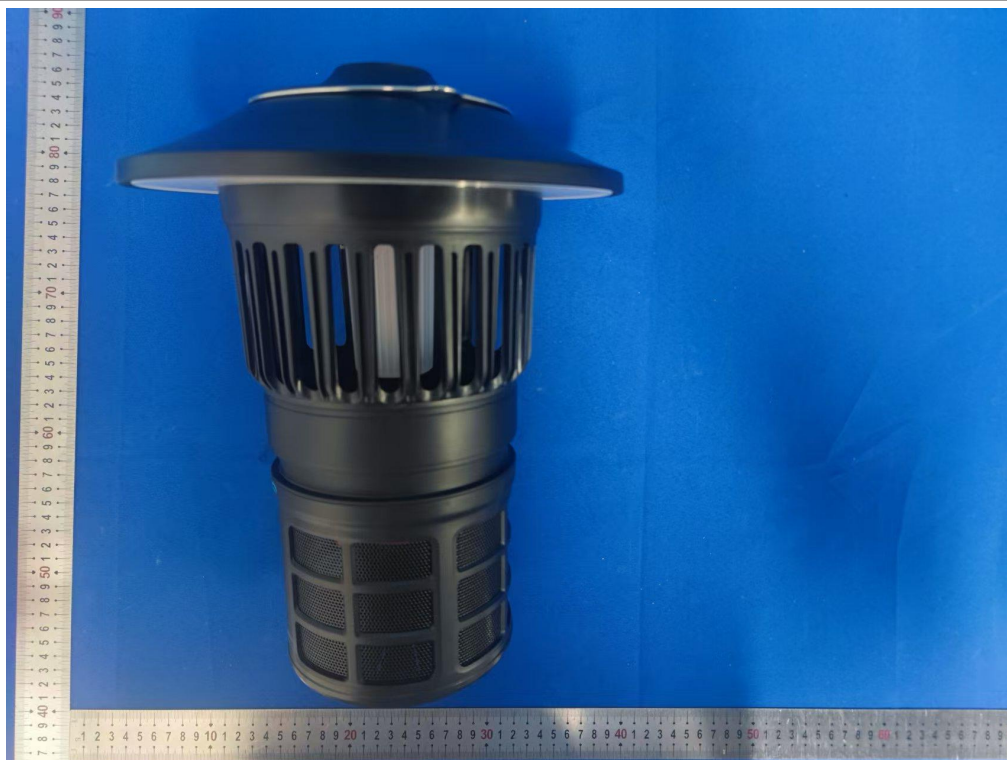


Photo 3 External view



Photo 4 External view



Photo 5 External view



Photo 6 Input port view



Photo 7 External view



Photo 8 External view

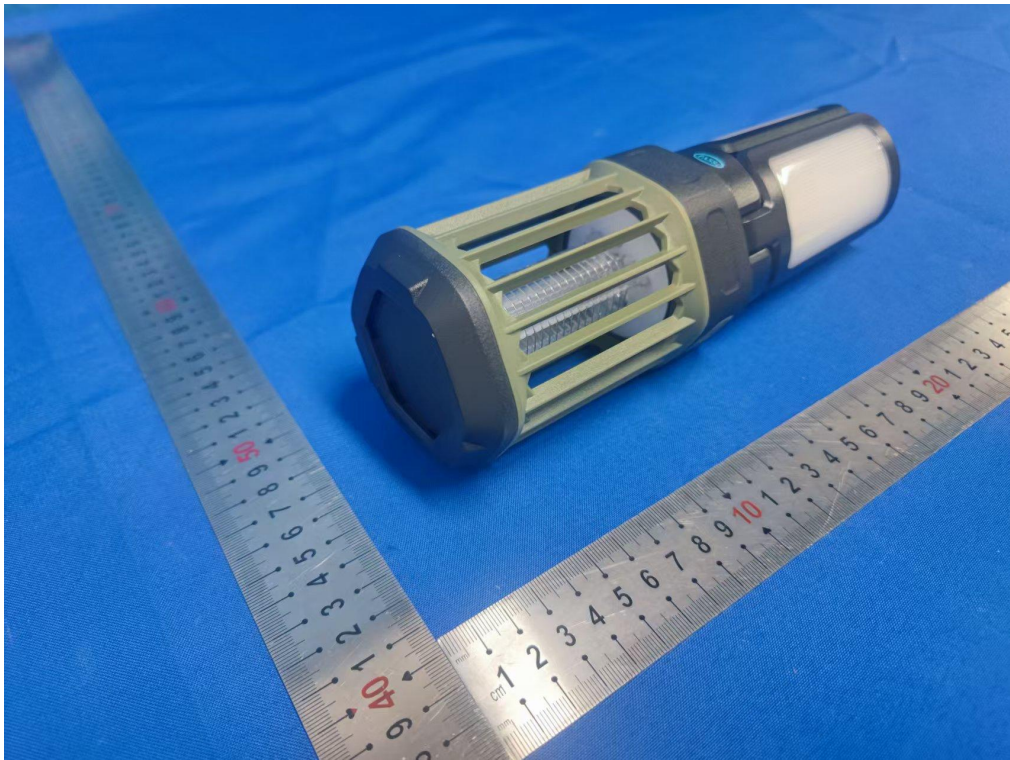


Photo 9 External view



Photo 10 Input port view

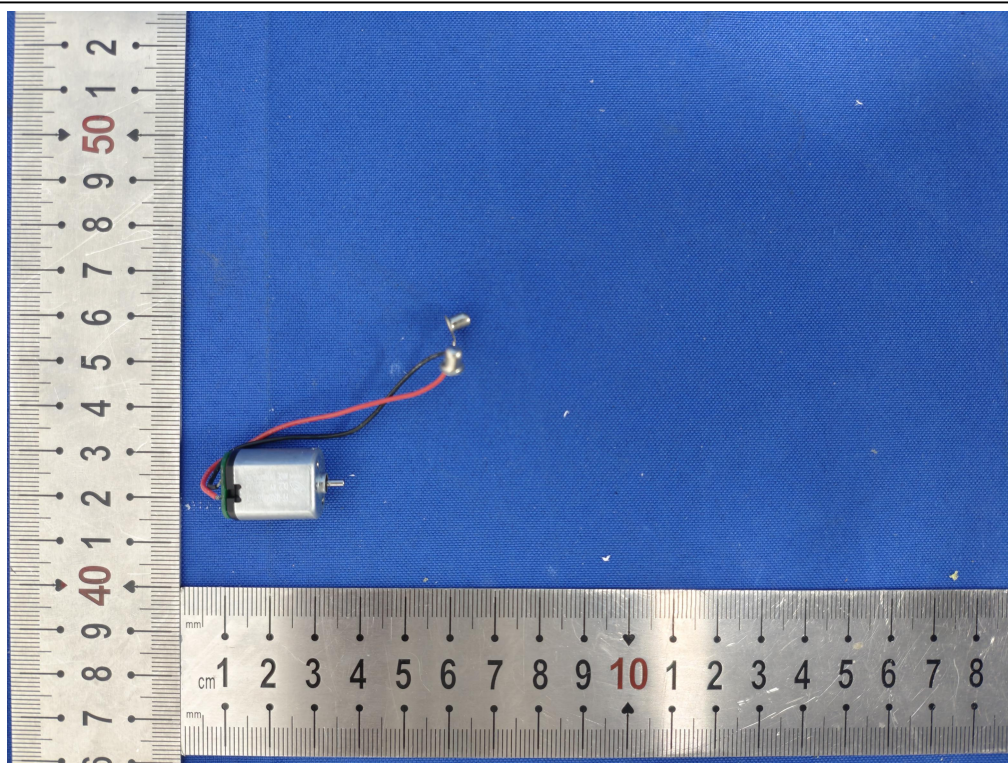


Photo 11 Motor view

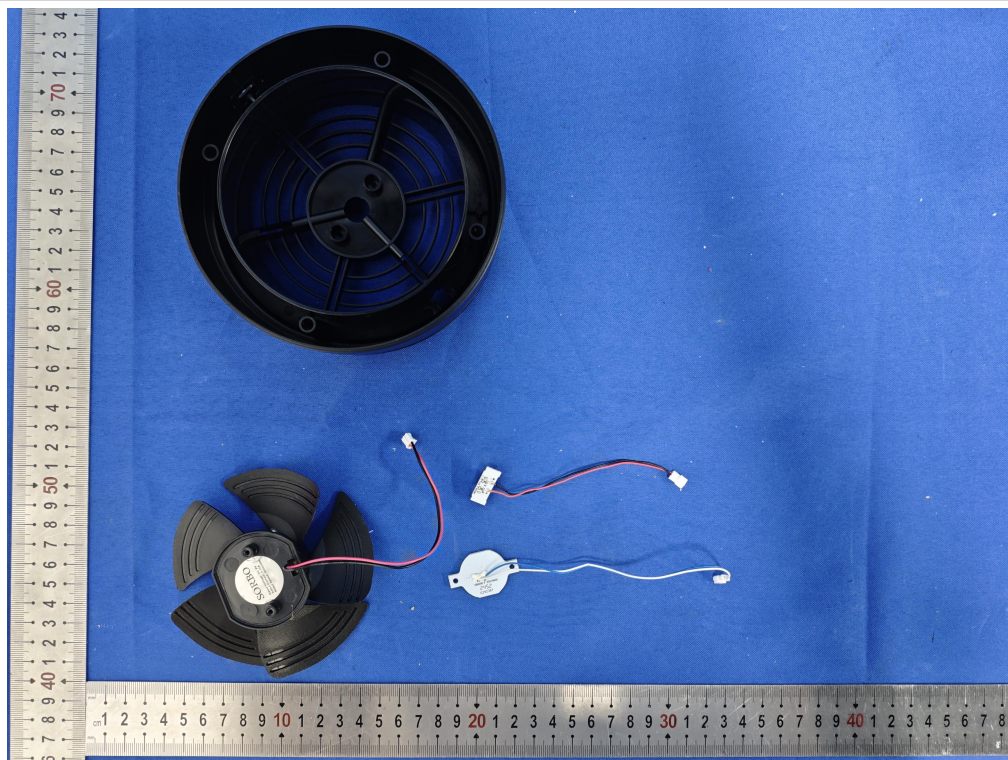


Photo 12 Internal view

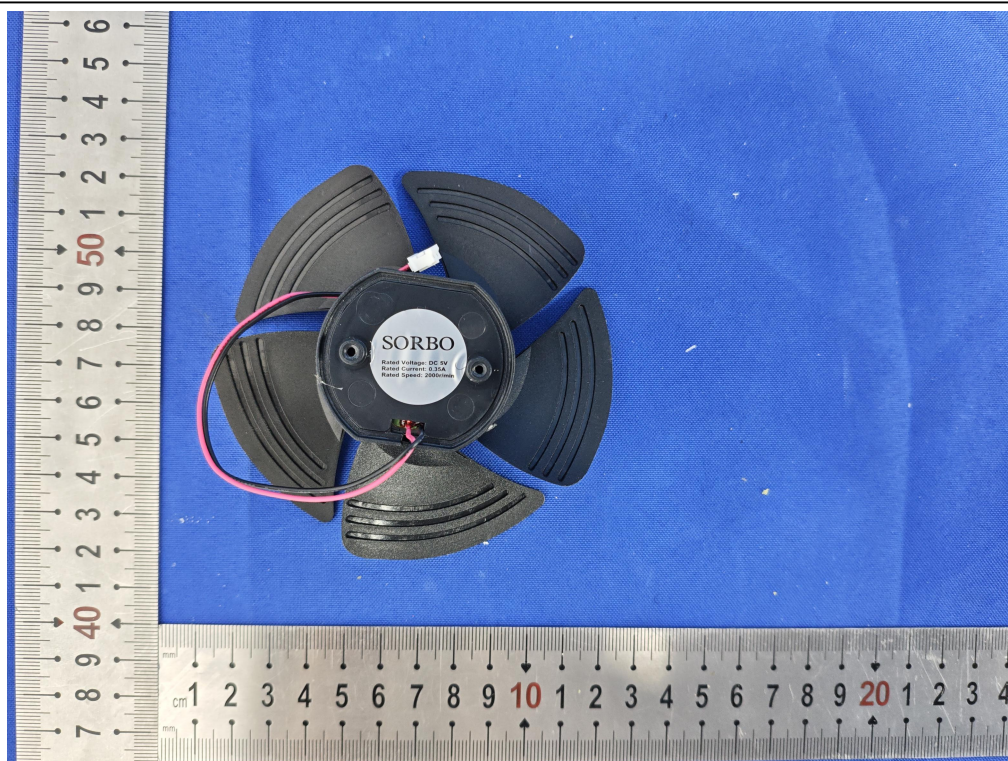


Photo 13 Fan view

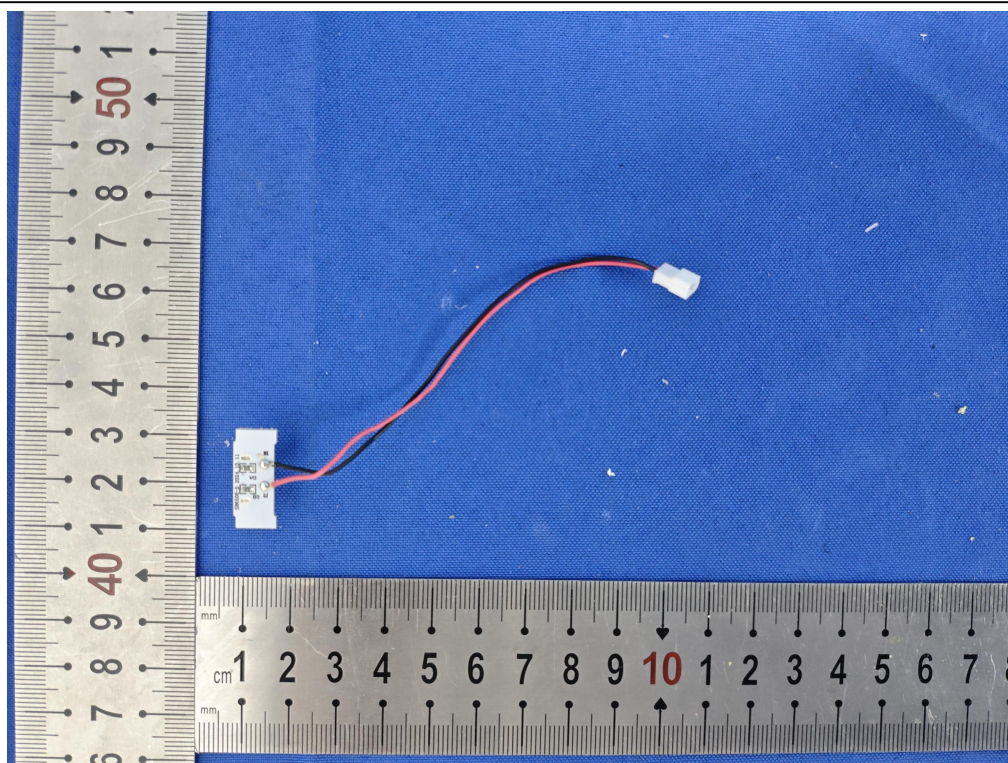


Photo 14 PCB view

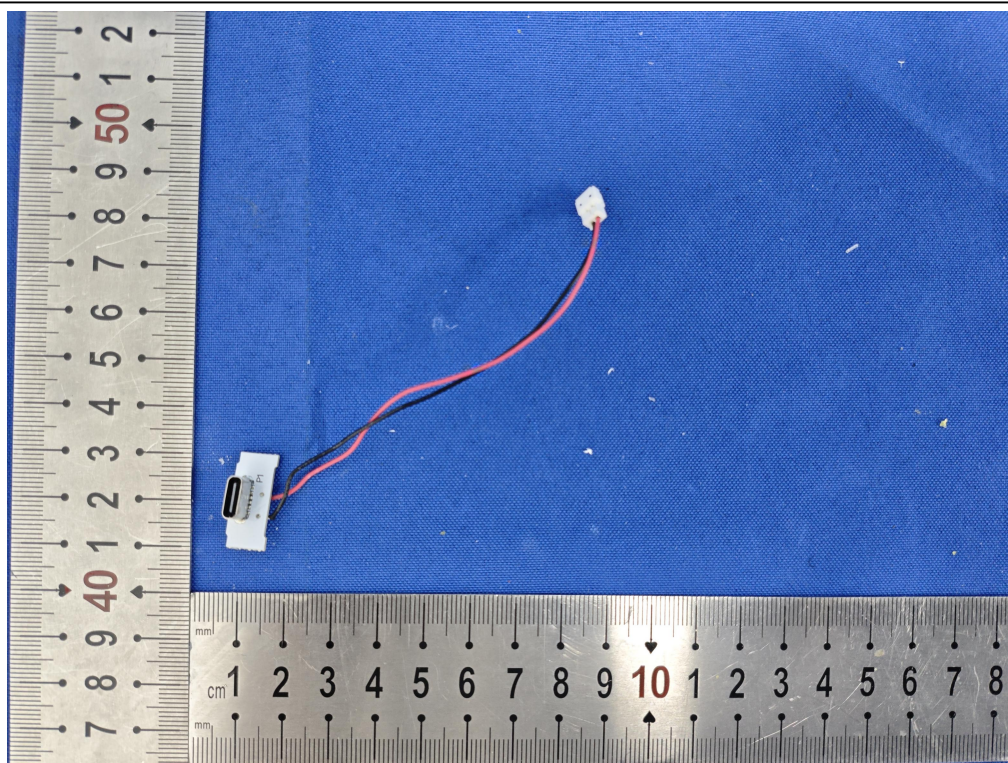


Photo 15 PCB view

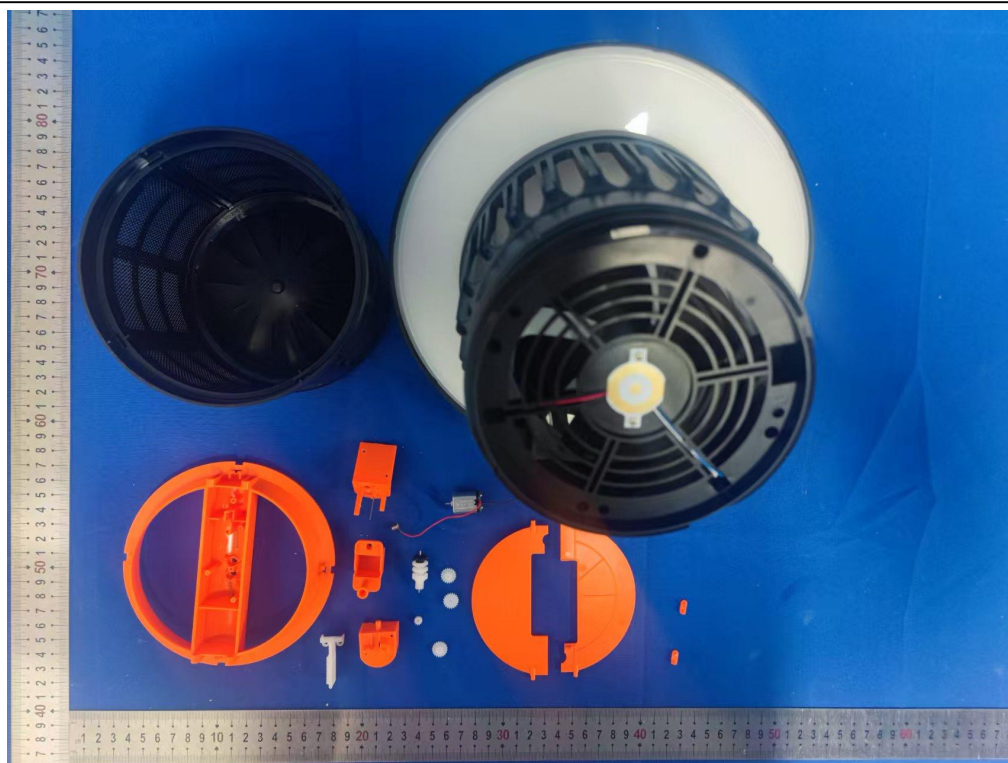


Photo 16 Internal view

*****End of Report*****