Thank you for giving UL the opportunity to partner with you.
Please note, Follow-Up Procedure Revisions or Report Revisions do not include Authorization Pages, Indices, Section General, and/or Appendices unless revisions were required or requested.

Should you have any questions, after reviewing the material, or need to report any inaccuracies, please reach out to your UL representative or find UL contact details for your local Customer Service Department at https://www.ul.com/about/locations.

Please find attached the related material

For your convenience, the below describes the related updates:

E535641-Vol1-AuthorizationPage
E535641-vol1-ListingMarkData
E535641-vol1-Index
E535641-vol1-SectionGeneral
E535641-20230824-CertificateofCompliance
E535641-20230824-Description
Figure-10-Total
Illustration-9-Total
E535641-20230824-TestRecord

Times change, Trust Remains™

FOLLOW-UP SERVICE PROCEDURE
(TYPE R)

LOW-VOLTAGE LIGHTING SYSTEMS, POWER UNITS, LUMINAIRES AND FITTINGS
(IFDR, IFDR7)

Manufacturer:	SEE ADDENDUM FOR MANUFACTURER LOCATIONS
Applicant:	3341379 (Party Site) Fuzhou Hongrui Optoelectronic Technology Co.,Ltd. 3rd Floor, Building 1, 195 Yesha Road, Cangshan District, Fuzhou City, Fujian Province Fuzhou Fujian Sheng 350007 CN
Listee/Classified Company:	3341379 (Party Site) SAME AS APPLICANT

Use of the Mark

This Follow-Up Service Procedure authorizes the above Manufacturer(s) to use the marking specified by UL LLC, or any authorized licensee of UL LLC, including the UL Contracting Party, only on products when constructed, tested and found to be in compliance with the requirements of this Follow-Up Service Procedure and in accordance with the terms of the applicable service agreement with UL Contracting Party. The UL Contracting Party for Follow-Up Services is listed in the addendum to this Follow-Up Service Procedure ("UL Contracting Party"). UL Contracting Party and UL LLC are referred to jointly herein as "UL."

It is the responsibility of the Applicant, Manufacturer(s), and Listee/Classified Company to make sure that only the products meeting the aforementioned requirements bear the authorized Marks of UL LLC, or any authorized licensee of UL LLC.

Additional Responsibilities

Additional responsibilities, duties and requirements for the Applicant and Manufacturers are defined under Additional Resources at the following website: https://www.ul.com/fus. Manufacturers without Internet access may obtain the current version of these documents from their local UL customer service representative or UL field representative. For assistance, or to obtain a paper copy of these documents or the Follow-Up Service Terms referenced below, please contact UL's Customer Service at https://www.ul.com/aboutul/locations/, select a location and enter your request, or call the number listed for that location.

Acceptance of Follow-Up Services

The Applicant and the specified Manufacturer(s) and any Listee/Classified Company in this Follow-Up Service Procedure must agree to receive Follow-Up Services from UL Contracting Party. If your applicable service agreement is a Global Services Agreement ("GSA"), the Applicant, the specified Manufacturer(s), and any Listee/Classified Company will be bound to a Service Agreement for Follow-Up Services upon the earliest by any Subscriber of a) use of the prescribed UL Mark, b) acceptance of the factory inspection, or c) payment of the Follow-Up Service fees. The Service Agreement incorporates such GSA, this Follow-Up Service Procedure and the Follow-Up Service Terms which can be accessed by clicking the following link: https://www.ul.com/resources/contracts/follow-up-service-terms. In all other events, Follow-Up Services will be governed by and incorporate the terms of your applicable service agreement and this Follow-Up Service Procedure.

Use and Ownership of the Follow-Up Service Procedure

This Follow-Up Service Procedure, and any subsequent revisions, is the property of UL and is not transferable. This Follow-Up Service Procedure contains confidential information for use only by the Applicant, the specified Manufacturer(s), and representatives of UL and is not to be used for any other purpose. It is provided to the Subscribers with the understanding

that it is not to be copied, either wholly or in part unless specifically allowed, and that it will be returned to UL, upon request.

Definition of Terms

Capitalized terms used but not defined herein have the meanings set forth in the GSA and the applicable Service Terms or any other applicable UL service agreement.

No Third Party Liability

UL shall not incur any obligation or liability for any loss, expense or damages, including incidental, consequential or punitive damages arising out of or in connection with the use or reliance upon this Follow-Up Service Procedure to anyone other than the above Manufacturer(s) as provided in the agreement between UL LLC or an authorized licensee of UL LLC, including UL Contracting Party, and the Manufacturer(s).

Certification Body

UL LLC has signed below solely in its capacity as the certification body to indicate that this Follow-Up Service Procedure fulfills the requirements for certification documentation issued by the certification body. The certification body's accreditation status for the applicable certification scheme and identification of the accreditation body can be found at https://www.ul.com/resources/accreditation.

Deborah Jennings-Conner
VP Regulatory Services
UL LLC

LOCATION

3341379 (Party Site)
Fuzhou Hongrui Optoelectronic Technology Co.,Ltd.
3rd Floor, Building 1, 195 Yesha Road, Cangshan District, Fuzhou City, Fujian Province
Fuzhou Fujian Sheng 350007 CN
Factory ID: NONE
UL Contracting Party for above site is: UL GmbH

Listing Mark Data Page

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only.

The word "LISTED" shall be in either the four or six o'clock position with respect to the UL symbol (see example below). Minimum size of the Listing Mark is not specified, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible. Camera-ready artwork and relative proportions are available online at www.ul.com.

[PRODUCT IDENTITY]
XXXX

XXXX = The control number assigned by UL, E535641.

The product identity is: "LOW VOLTAGE LUMINAIRE," "LOW VOLTAGE RECESSED LUMINAIRE," "LOW VOLTAGE CABINET LUMINAIRE," "LOW VOLTAGE LUMINAIRE POWER SUPPLY," "LOW VOLTAGE LIGHTING SYSTEM," "LOW VOLTAGE LUMINAIRE SYSTEM," "LOW VOLTAGE LUMINAIRE FITTING," "PoE FITTING," "PoE LUMINAIRE," "PoE POWER SUPPLY," or other appropriate product identities as shown in the individual Listing.

The term "FIXTURE" may be used in lieu of "LUMINAIRE" in the product identity.

The product identity may be omitted if the Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process.

The product identity may appear elsewhere on the product when the other three elements are directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process or part of the nameplate that includes the rating or the catalog or model designation.

A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) shall always include the four elements.

PROCUREMENT

The manufacturer may reproduce the Mark or obtain it from an authorized label supplier. Authorized label suppliers can be found online at www.ul.com.

Canadian Listing Mark Data Page

(FILE IMMEDIATELY AFTER AUTHORIZATION PAGE)

LISTING MARK

The Listing Mark consists of four elements placed in close proximity and shall appear on Listed products only.

The word "LISTED" shall be in either the four or six o'clock position with respect to the UL symbol (see example below). Minimum size of the Listing Mark is not specified, as long as it is legible. The minimum height of the registered trademark symbol ® shall be 3/64 of an inch. When the overall diameter of the UL symbol is less than 3/8 of an inch, the trademark symbol may be omitted if it is not legible. Camera-ready artwork and relative proportions are available online at www.ul.com.

The Canadian/US symbol shall be used if both Canadian and US coverage is authorized (see example below).

[PRODUCT IDENTITY]
XXXX

The Canadian symbol shall be used if only Canadian coverage is authorized (see example below).

[PRODUCT IDENTITY]

XXXX = The control number assigned by UL, E535641 .

The product identity is: "LOW VOLTAGE LUMINAIRE," "LOW VOLTAGE RECESSED LUMINAIRE," "LOW VOLTAGE CABINET LUMINAIRE," "LOW VOLTAGE LUMINAIRE POWER SUPPLY," "LOW VOLTAGE LIGHTING SYSTEM," "LOW VOLTAGE LUMINAIRE SYSTEM," "LOW VOLTAGE LUMINAIRE FITTING," "PoE FITTING," "PoE LUMINAIRE," "PoE POWER SUPPLY," or other appropriate product identities as shown in the individual Listing.

Canadian Listing Mark Data Page

The term “FIXTURE” may be used in lieu of “LUMINAIRE” in the product identity.

The product identity may be omitted if the Mark is directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process.

The product identity may appear elsewhere on the product when the other three elements are directly and permanently applied to the product by stamping, molding, ink-stamping, silk screening or similar process or part of the nameplate that includes the rating or the catalog or model designation.

A separable Listing Mark (not part of a nameplate and in the form of decals, stickers or labels) shall always include the four elements.

PROCUREMENT

The manufacturer may reproduce the Mark or obtain it from an authorized label supplier. Authorized label suppliers can be found online at www.ul.com.

INDEX

Product	Section	Issue Date	USL	CNL
Class 2 Luminaries, surface mounted, models HR-DGY-25-RGBW-48V, HR-DGY-30-RGBW-12V.	1	2023-08-24	X	X

USL – Unite State Standard, Listed
CNL – Canadian Standard, Listed

GENERAL

PRODUCT COVERED:

USL, CNL - Low Voltage Lighting Systems, Power Units, Luminaires and Fittings.

FACTORY LOCATION AND IDENTIFICATION:

When more than one manufacturing location is indicated on the Authorization Page Addendum for the Procedure Volume, the factory identification code and associated manufacturing location are as indicated in the Addendum.

[x] TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE USE):

USL indicates product complies with UL 2108, The Standard for Low Voltage Lighting Systems.

CNL indicates product complies with CAN/CSA 22.2 No. 250.2, the Canadian Standard for Lighting Systems.

Notes: USL = United States Standards – Listed
USR = Recognized

CNL = Canadian Standards – Listed
CNR = Recognized

GENERAL CONSTRUCTION - ALL PRODUCTS:

C-UL Components - All components of products bearing the C-UL mark shall be Listed, Recognized, or otherwise evaluated for compliance with the applicable Canadian requirements. Components that bear a CSA Certified mark are considered to comply with this requirement.

Conductors - A conductor shall be made of copper or copper alloy, shall have insulation rated for the voltage, temperature and condition of service to which it will be subjected as indicated in the individual Reports, and shall not be smaller than No. 18 AWG unless otherwise specified.

Wire Connectors - Shall be rated for the size and number of wires to be connected and for the temperature and voltage involved.

Conductor Protection - Insulated conductors that pass over edges or through openings in metal shall be secured from contacting the edges or be protected from cutting and abrasion. For sheet metal less than 0.042 in. (1.1 mm) thick, protection shall be provided by one of the following methods:

a) Rolling the edges of the metal not less than 120 degrees;
b) A bushing or grommet of a material other than rubber at least 0.047 in. (1.2 mm) thick; or
c) Glass sleeving at least 0.010 in. (0.25 mm) thick.

Electrical Spacing - Each spacing between current-carrying parts of opposite polarity and between live and dead metal parts shall not be less than those specified in Table 1 below.

1. The spacing requirements do not apply to components located in a Class 2 circuit.
2. A minimum spacing of 0.010 in. shall be maintained through air and over surface in secondary circuits of exposed bare conductor systems.

TABLE 1 - MINIMUM SPACINGS

Voltage Involved	Minimum Spacings In (mm)	
	Through Air	Over Surface
0 to 50	0.063 (1.6)	0.063 (1.6)
51 to 150	0.125 (3.2)	0.250 (6.4)
151 to 300	0.250 (6.4)	0.375 (9.5)
301 to 600	0.375 (9.5)	0.500 (12.7)

Conduit Connections - An opening for conduit and the minimum unobstructed diameter of the flat surface surrounding the back of the opening for unthreaded conduit shall have dimensions as indicated in Table 2 below.
A threaded opening for conduit shall:

a) Have no fewer than 3-1/2 or more than 5 threads when tapped all the way through the opening;
b) Have at least 5 full threads when not tapped all the way through the opening;
c) The unthreaded part of the opening shall be smooth and well rounded for protection of the conductors; and
d) The unthreaded throat diameter of the hole shall have an internal diameter as noted in Table 2 below.

TABLE 2 - DIMENSIONS ASSOCIATED WITH OPENINGS FOR CONDUIT

Nominal Trade Size of Conduit	Unthreaded Opening Diameter[a]		Minimum Throat Diameter		Maximum Throat Diameter		Minimum Diameter of Flat Surface	
inch	Inch	(mm)	Inch	(mm)	inch	(mm)	inch	(mm)
1/2	0.875	22.2	0.53	13.4	0.62	15.8	1.11	28.1
3/4	1.109	28.2	0.70	17.7	0.82	20.8	1.34	34.0
1	1.375	34.9	0.88	22.4	1.05	26.7	1.69	42.9
1-1/4	1.734	44.0	1.17	29.7	1.38	35.1	2.17	55.1

a - Knockout diameters will be measured at other than points where a tab may remain after removal of knockout.

Grounding - A low voltage secondary circuit exceeding class 2 limits shall not be grounded.

Corrosion Protection - Ferrous metal parts of the enclosure not inherently corrosion resistant shall be protected against corrosion by enameling, galvanizing, zinc or cadmium plating, or other equivalent means. Edges, punched holes, and spot welds in prefinished steel, enclosed steel pipe, and hanger locations for painting or plating in ferrous metals do not require any corrosion protection.

WET AND DAMP LOCATIONS CONSTRUCTION – ALL PRODUCTS
Insulation - All insulation that is relied upon to provide electrical spacings or sole support of live electrical parts or as electrical insulation shall be of a non-absorptive material. Untreated fiber and asbestos, etc., are examples of materials that shall not be used; while vulcanized fiber, phenolic, urea, porcelain, etc. are examples of acceptable materials.

Drain Holes - An open drain hole when specified in the individual Reports shall permit insertion of a 3.2 mm (0.125 in) rod.

Power Supply Cord - If a power supply cord is provided for a product marked for wet locations, it shall be marked "W" following the type designation.

Wet Location Fittings - A fitting that requires specific methods for sealing the mounting surface or specific fittings for supply connections shall be provided with installation instructions.

GENERAL CONSTRUCTION - POWER UNITS ONLY:

PWB - R/C (ZPMV2) rated min. V-0, V-1, or V-2. See individual reports for additional requirements.

Grounding\Bonding - All conductive parts of a power unit not intended to be electrically live, that are accessible to persons and that are able to inadvertently become energized, including ground shields on transformers, shall be grounded by being conductively bonded to a common point that incorporates provision for grounding of the power unit. This does not apply to power units identified as being double insulated.

1. Conductive parts required to be grounded that are coated with vitreous enamel, paint, or similar coatings, shall be bonded to the grounding system. The coated parts are to be treated by masking, removal of the coating at points of connection, or the use of fastening means that penetrate the surface coating.

2. A grounding means shall consist of a pigtail lead grounding conductor, a pressure terminal connector, a wire binding screw, the grounding contact of a receptacle, the grounding pin of an attachment plug, or the equivalent. The grounding means shall be at the same location as the power supply connection means.

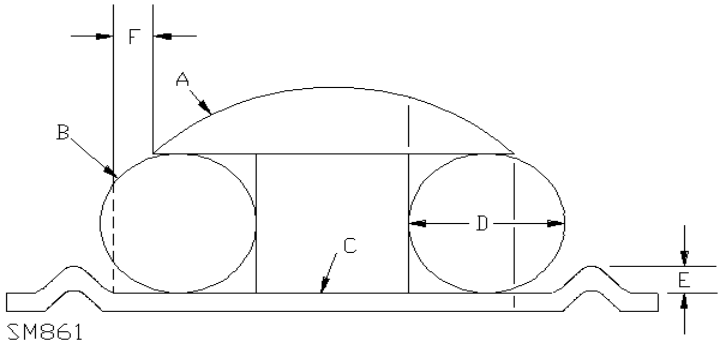
3. An equipment-grounding conductor shall not be smaller in size than the current carrying supply conductor and in no case shall it be smaller than 18 AWG (0.82 mm).

4. When insulated, the equipment grounding conductor, where visible to the installer, shall have a braid of continuous green color with or without a yellow tracer or, when no braid is employed; the insulation on the conductor shall be green with or without one or more yellow stripes. A conductor having green insulation and a braid of other than green is also able to be employed when the green insulation is readily visible where connections to the branch-circuit supply wires will be made.

5. A wire binding screw intended for the field connection of an equipment-grounding conductor shall have a green colored head that is hexagonal shaped, slotted, or both. A wire binding screw shall be No. 8 [4.2 mm (major diameter)] or larger and shall be provided with a cupped washer or similar means to hold the wire under the head of the screw. A sheet metal screw is not usable for grounding. A cupped washer is not required to be provided when the terminal plate is provided with two raised areas around the tapped hole that are at least 1/4 inch (6.4 mm) apart (on center) as shown in Figure 1.

6. An equipment-grounding conductor shall not be terminated to another device or part that is removable during replacement of any device or component.

Figure 1 - Terminal-conductor relationship



A - Wire Binding Screw
B - Conductor
C - Terminal Plate
D - Maximum conductor diameter, but not less than 0.08 inch (2 mm)
E - Minimum height of raised areas = 0.04 inch (1.0 mm)
F - The horizontal dimension from the edge of the screwhead to the inside edge of the raised area = 0 to 1/4 D

A terminal plate having a tapped hole for a wire binding screw shall be of metal no less than 0.030 inch (0.76 mm) in thickness and shall have no fewer than two full threads in the metal.

GENERAL CONSTRUCTION - LUMINAIRES ONLY:

Rotation - Rotation of a part of an assembly constructed for rotation shall be limited to no more than 360 degrees when damage to wiring or any other electrical part results from rotation in excess of 360 degrees. A swivel lighting luminaire is able to be turned no more than 200 degrees in either direction for a total of 400 degrees.

Metal Enclosure - The minimum thickness for a metal enclosure of a luminaire shall be 0.016 inch (1.6 mm) unless otherwise specified in the individual reports. This requirement does not apply to luminaires intended to be connected to an exposed bare conductor power unit with integral protection against inadvertent shorting and overload.

Glass - A diffuser or lens constructed of flat glass shall be a minimum of 0.083 inches (2.11 mm) thick unless otherwise specified in the individual reports and shall be secured by clips in a frame, channels, adhesive, or equivalent means. Flat glass that does not require removal during relamping may be secured by its own weight in a frame.

Supplementary Insulation - An insulated internal wire of lampholder lead that is rated between 90°C and 125°C is considered as rated for 150°C if each wire is individually provided with snugly fitting supplementary insulation of 0.010 in. (0.25 mm) thick fiberglass sleeving.

MARKINGS – ALL PRODUCTS:

General
The required markings shall be shall be legible, and be one of the types designated and located as indicated in the tables below.

Note – For luminaires of other than Class 2 and exposed bare conductor types, alternate equivalent markings and forms as described under the Section "MARKINGS – LUMINAIRES OTHER THAN CLASS 2 AND EXPOSED BARE CONDUCTOR TYPES' may be used.

The minimum letter height for markings shall be 1/8 inch (3.2 mm).

For small luminaires or fittings where 1/8 inch lettering does not physically fit, the words "WARNING" or "CAUTION," are not prohibited from being 3/32 inch (2.4 mm) minimum. In this case, all other wording shall be 1/16 inch (1.6 mm) minimum.

Form designations for type of marking

Form letter of marking	**Type**
A	Permanent – Paint-stenciled, die-stamped, indelibly printed lettering, or indelibly printed pressure sensitive label[a]
B	Temporary – Pressure-sensitive label, decalcomania transfer, paper label, paint, ink, or die stamped lettering[b]
C	Instructions – Tie-on tag, stuffer sheet or equivalent[c,d]

[a] Pressure sensitive labels shall comply with the requirements in the Standard for Marking and Labeling Systems, UL 969.

[b] Form A markings are also able to be used.

[c] Forms A and B markings are also able to be used.

[d] Instructions are permitted to be abbreviated if they include a website reference where the full set of instructions can be accessed without need for password or registration.

Form number of marking	**Location of markings[a]**
1	Visible after installation on an exterior surface or by removal of a part using an ordinary tool
2	Visible during relamping
3	Visible during installation
4	On the smallest unit packaging carton

[a] Form A markings of field-cuttable class 2 luminaires (strips or tapes) are to be repeated at intervals not exceeding the minimum cut length as specified in the installation instructions.

A product marked for supply connections greater than 90°C (194°F) shall be marked "Not for use in dwellings". Form B3.

Wet and Damp Locations:

Damp Locations - A product complying with the damp location requirements and identified in the individual reports may be marked “Suitable for Damp Locations”. Form A3 for power units; form C for luminaires.

A product marked for damp locations shall not be provided with any information such as markings, instructions, or illustrations either on the carton or with the product that implies or depicts a wet location use.

Wet Locations - A product complying with the wet location requirements and identified in the individual reports may be marked “Suitable for Wet Locations”. Form A3 for power units; form C for luminaires.

Wall and Ceiling Mount Products:

Wall Mounting - A product shall be marked “Wall” or “Wall only” if specified only for wall mounting in the individual reports. Form B3.

Non-Combustible – A product shall be marked “Mount on _____ only” if specified in the individual reports for non-combustible mounting surfaces. The blank is to be filled with an identified noncombustible material (such as concrete or steel) as specified in the individual reports. Form B3.

Cabinet and Under-cabinet Mount Products:

Cabinet Use - An identified cabinet-mounted product shall be marked “For cabinet use only”. Form B3.

An identified cabinet-mounted product shall not be provided with any information such as markings, instructions, or illustrations either on the carton or with the luminaire that implies or depicts an installation into a ceiling.

Minimum Spacing - A cabinet-mounted product shall be marked “CAUTION” and the following or the equivalent: “To prevent the risk of fire, do not install closer than ____ inches to cabinet wall or in a compartment smaller than ____ inches by ____ inches by ____ inches.” Metric dimensions are permitted. The blanks are to be filled in per the individual reports. Form C.

Open Top - A cabinet-mounted product intended only for use in a cabinet, where the cabinet is not enclosed at the top as identified in the individual reports shall be marked “Install only in cabinets where the top of the cabinet light housing is not enclosed” or “Install only in open top cabinets.” Form B1.

Under-cabinet Use – An under-cabinet or under shelf mounted product shall be marked “For under-cabinet mount,” or “For under-cabinet or shelf mount” as applicable. Form B3.

An identified under-cabinet or shelf-mounted product shall not be provided with any information such as markings, instructions, or illustrations either on the carton or with the luminaire that implies or depicts an installation into an open or enclosed cabinet.

CLOTHES CLOSET STORAGE AREA: A product evaluated for use in the storage area of a clothes closet is permitted to be marked "Suitable for Installation in the Storage Area of a Clothes Closet." Form C.

Recessed Mount Products:

Type IC - A Type IC identified product shall be marked:

a) "Type IC Recessed" Form B3; and
b) "Notice – Blinking light may indicate improper lamp wattage or type (or other condition causing overheating)," Form A2, when provided with a thermal protective device; or
c) "Inherently Protected" when not provided with a thermal protective device. Form B3.

Type Non-IC - A Type Non-IC identified product shall be marked:

a) "Type Non-IC Recessed," Form B3; and
b) "Warning – Risk of Fire. Do not install insulation within 3 inches of unit sides or above unit in such a manner to entrap heat." Form B3.
c) "Notice – Thermally protected. Blinking light may indicate insulation too close to unit (or other condition causing overheating)" Form A2.

Concrete Only - A product identified in individual reports as only intended for poured concrete use only shall be marked "For use in concrete only." Form B3.

In-ground Use - A product identified in individual reports as only intended for in-ground use only shall be marked "For in-ground installation only." Form B3.

Access Above Ceiling - "Access above ceiling required" or "Access behind wall required." Form C. If specified in the individual reports.

Noncombustible Surfaces – A recessed product identified in individual reports as only intended for noncombustible mounting shall be marked "Mount only on noncombustible surfaces." Form B3.

Polymeric Recessed Housing - A product with a polymeric recessed housing shall be marked "For use in one-and-two family dwellings only" (Form C) or "Not for use in fire rated installations" (Form B3).

Products found suitable for installation in air handling spaces are permitted to be marked "Suitable for Use in Air Handling Spaces" or "Suitable for Use in Other Environmental Air Space in Accordance with Section 300.22(C) of the National Electrical Code." Form A3.

MARKINGS - POWER UNITS ONLY:

General

All products - A power unit shall be marked in Form A1 with the:

a) Manufacturer's name;
b) Catalog or model number;
c) Electrical ratings; and
d) Date or other dating period of manufacture, not exceeding any three consecutive months.

The electrical ratings shall include the following:

1) Input voltage;
2) Input current;
3) Frequency;
4) Nominal output voltage; and
5) Nominal output current or wattage.

The date of manufacture may be abbreviated or in a nationally recognized conventional code or in a code affirmed by the manufacturer, when the code does not repeat in less than 10 years; and does not require reference to the production records of the manufacturer to determine when the product was manufactured.

Not For Use With Dimmer – A power unit not temperature tested with a 2-volt dc offset or with a specific dimmer shall be marked in Form A3 with either (a) "Not for use with dimmers" or (b) "Dimmer, if used, must be a magnetic low-voltage dimmer" if the power unit is magnetic and "Dimmer, if used, must be electronic low-voltage dimmer" if the power unit is electronic.

Exposed Bare Conductor Type Power Unit - An exposed bare conductor type power unit shipped separately from the luminaires shall be marked "For use with _____ low voltage lighting system only," where the blank spaces are to be filled in with the manufacturer's name and series designation. Form B3.

Replaceable Fuse - When a replaceable fuse is provided, there shall be a marking located near the fuseholder that states "CAUTION: Disconnect power before replacing fuse. Replace only with same type _____ A, _____ V fuse." The blanks are to be filled in with the appropriate fuse ratings in the individual reports. Form A1.

Grounding - A power unit having a pressure wire terminal for the connection of an equipment grounding conductor shall be marked adjacent to the terminal or screw

"GROUND", "GRND", "GND", or similar designation in Form B3. The symbol  (IEC Publication 417, Symbol 5019) is usable, and when used alone the symbol shall be defined in the installation instruction provided with the equipment.

Open Devices -- Installation instructions provided with an open device shall identify:

a) The minimum spacing requirements, if any, between the device and any combustible materials or other devices,

b) Suitable material types for housing the device, relative to fire containment, and

c) Whether the housing is permitted to have ventilation openings or other features relative to the environmental exposure of the device.

MARKINGS – LUMINAIRES OTHER THAN CLASS 2 AND EXPOSED BARE CONDUCTOR TYPES

General – These markings are in addition to the markings required for all products.

Note – Alternate equivalent markings and forms as described under the Sections "MARKINGS – GENERAL" and "MARKINGS – LUMINAIRES - CLASS 2 AND EXPOSED BARE CONDUCTOR TYPES" may be used.

Each luminaire shall be marked with the following applicable markings in addition to the markings indicated in the individual Reports. See Table 3 for format minimum size designation for marking height and typeface and Table 4 for format location designation for markings.

TABLE 3 - FORMAT MINIMUM SIZE DESIGNATION FOR MARKING HEIGHT AND TYPEFACE

SIZE DESIGNATION	LETTER HEIGHT mm (in)	TYPEFACE, UPPERCASE
S16	1.6 (0.062)	Not specified
S24	2.4 (0.094)	Univers Bold
S32	3.2 (0.125)	Not specified
S48	4.8 (0.188)	Univers Bold

TABLE 4 - FORMAT LOCATION DESIGNATION FOR MARKING

LOCATION DESIGNATION	DESCRIPTION	LABEL EXPOSED TO DRY ENVIRONMENT	LABEL EXPOSED TO DAMP/WET ENVIRONMENT
L1	Visible during relamping, and after installation	Type P	Type P
L2	Visible during installation	Type N	Type P
L3	Visible during installation and inspection of wire connections, located near the supply connections	Type N	Type P
L4	On smallest unit package or carton	Type T	Type T
L5	On instruction sheet or tag	Type T	Type T
L6	Visible during component replacement	Type T	Type P

Notes:

Type N	Non-permanent label or nameplate	Material: Paper with an adhesive suitable for the temperature involved.
Type P	Permanent label or nameplate	Material: Metal, plastic, or other suitable material with an adhesive suitable for the temperature involved
Type T	Temporary label or instruction sheet	Material: Printed matter with or without adhesive and/or attachment, intended to be included with or attached to the product.

Product Identifier

Shall be marked with the Manufacturer's name, Catalog or model number, and input voltage (for luminaires that operate on constant voltage input) or input current (for luminaires that operate on constant current input). Format S16-L1.

Supply Markings

CONDITION	MARKING	FORMAT
If greater than 60°C supply wiring	"MIN ___ °C SUPPLY CONDUCTORS".	S24-L3 or S32-L4
Luminaire with supply wire greater than 90°C	"NOT FOR USE IN DWELLINGS".	S24-L3
Outlet box mounted luminaire with greater than 60°C supply wiring	"CAUTION – RISK OF FIRE. CONSULT A QUALIFIED ELECTRICIAN TO ENSURE CORRECT BRANCH CIRCUIT CONDUCTOR".	S24-L4

Relamping Markings – Same as for class 2 luminaires (see below).

Damp/Dry/Wet Locations

CONDITION	MARKING	FORMAT
Default environmental option.	"DRY LOCATIONS ONLY"	S24-L2
Units complying with damp location requirements.	"SUITABLE FOR DAMP LOCATIONS"	L5
Units complying with wet location requirements.	"SUITABLE FOR WET LOCATIONS"	L5
A wet location surface or recessed wall mounted, or ground mounted surface luminaire fitting subjected to rain and sprinkler test.	"SUITABLE FOR MOUNTING WITHIN 1.2 m (4 ft) OF THE GROUND"	S24-L2
A wet location luminaire fitting intended for covered ceiling and only tested from ceiling side.	"COVERED CEILING MOUNT ONLY"	S24-L2

MARKINGS – CLASS 2 AND EXPOSED BARE CONDUCTOR TYPE LUMINAIRES

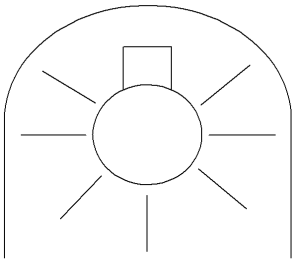
Shall be marked with the Manufacturer's name, Catalog or model number, and input voltage or voltage range (for luminaires that operate on constant voltage input) or input current or current range (for luminaires that operate on constant current input). Form A1.

Lamp Replacement Marking – If the luminaire is provided with a user replaceable lamp, the lamp wattage, as noted in each individual report, shall be marked "CAUTION – Risk of Fire" and "Max __ watt" (type) or "Max __ W" (type), or equivalent. The lamp wattage shall be in the blank space and the lamp type indicated (example "Max 50 W MR16") in the marking. Form A2. When the lamp (bulb) does not have a marked wattage rating, the lamp trade number designation shall be substituted.

A luminaire with a non-standard user-replaceable light source, such as a plug-connected LED module, shall be marked "Replace with _____ part _____", or equivalent, with the blanks identifying the manufacturer and part number. Form A2.

Not Provided With Containment Barrier Or UV Filter - A tungsten-halogen luminaire identified in the individual reports as not provided with a lamp containment barrier or UV filter shall have the relamping marking include the word "SHIELDED" or the pictograph below and be provided with instruction in Form C that include the following statement: "CAUTION" and the following or the equivalent, "To reduce the risk of fire do not use a lamp identified for use in enclosed luminaires."

Open luminaire pictograph



S4636

Similar To Halogen Shape - A luminaire identified in the individual reports as intended for non-halogen lamps for which similar shaped and rated halogen (or xenon) lamps are available, shall be provided with instructions in Form C that include the statement "Warning – Risk of Fire and Burns. Do not use halogen (or xenon) type lamps with this product."

Shipped Separately - A luminaire intended for connection to a Class 2 power unit that is shipped separately shall be marked in Form A3:

a) "Use only with Class 2 power unit", or
b) with a specific power unit manufacturer and model number.

Recessed Luminaire - A recessed luminaire shall be marked with a lamp replacement marking which is visible during relamping for all trims in Form A2. A lamp replacement marking is not prohibited from being located behind the trim when the luminaire is marked "See other side of trim for relamping instructions" Form A2.

Recessed Trim Correlation - A recessed luminaire intended for use with multiple trims shall be marked in Form A2 on the luminaire housing "Use only with (manufacturer's name) (catalog number) trims." The trims shall be marked with the trim manufacturer's name and catalog number as specified in the individual reports.

INSTALLATION INSTRUCTIONS - POWER UNITS AND SYSTEMS

General

A power unit intended for use with multiple luminaires shall have installation instructions, which provide information to the user on how to determine the number of luminaires and the lamp wattage to be used with the power unit.

Mounting and Wiring - Installation instructions shall be provided that include specific instructions for mounting, proper wiring, minimum wire size, grounding, and servicing of the power unit.

Exposed Bare Conductor Type systems

Mounting and Wiring - For exposed bare conductor type power units, the maximum intended length of the exposed bare conductors shall also be included in the mounting and wiring instructions.

Power Unit Shipped Separately - An exposed bare conductor type power unit shipped separately from the luminaires shall include instructions "For use with _____ low voltage lighting system only," where the blank spaces are to be filled in with the manufacturer's name and series designation.

Safety Instructions - Important safety instructions shall be provided with an exposed bare conductor type power unit, which includes the following information:

"IMPORTANT SAFETY INSTRUCTIONS

a) Read all instructions.
b) Do not conceal or extend exposed conductors through a building wall.
c) Do not install this system in wet locations.

d) To reduce the risk of fire and burns, do not install this lighting system where the exposed bare conductors can be shorted or contact any conductive materials.
e) To reduce the risk of fire and overheating, make sure all connections are tight.
f) Do not install any luminaire closer than 6 inches (15.25 cm) from any curtain, or similar combustible materials.
g) Turn off electrical power before modifying the lighting system in any way.
h) For low voltage exposed insulated conductor systems, do not install any part of this system less than 7 feet (2.2 m) above the floor.

SAVE THESE INSTRUCTIONS"

The phrases "IMPORTANT SAFETY INSTRUCTIONS" and "SAVE THESE INSTRUCTIONS" shall be at least 3/16 inch (4.8 mm) high. All other lettering shall be at least 1/16 inch (1.6mm) high.

INSTALLATION INSTRUCTIONS - LUMINAIRES

Luminaire Shipped Separately - A luminaire part of a lighting system and shipped separately from the power unit shall be marked "For use with _____ power unit," where the blank spaces are to be filled in with the manufacturer's name and series designation. Form C.

Tungsten Halogen Luminaire - A tungsten-halogen low voltage lighting luminaire shall be provided with instructions that include the items in the following list or equivalent statements for each item. The statements "INSTRUCTIONS PERTAINING TO A RISK OF FIRE OR INJURY TO PERSONS"□AND "IMPORTANT SAFETY INSTRUCTIONS" or the equivalent shall precede the list, and the statement "SAVE THESE INSTRUCTIONS" or the equivalent shall either precede or follow the list. All words shown entirely in upper case letters shall be in upper case letters or shall be emphasized to distinguish them from the rest of the text.

INSTRUCTIONS PERTAINING TO A RISK OF FIRE, OR INJURY

IMPORTANT SAFETY INSTRUCTIONS
Lighted lamp is HOT!

WARNING - To reduce the risk of FIRE OR INJURY:

Turn off power and allow to cool before replacing lamp.

Lamp gets HOT quickly! Contact only switch/plug when turning on.

Do not touch hot lens, guard, or enclosure.*

Keep lamp away from materials that may burn.

Do not touch the lamp at any time. Use a soft cloth. Oil from skin may damage lamp.

Do not operate the luminaire with a missing or damaged shield.

Exception: Reference to a shield is able to be replaced with equivalent wording.

SAVE THESE INSTRUCTIONS

* An explanation, a picture, or a drawing of a lens, a guard, a shield, or an enclosure shall be provided so that the user will be able to identify these parts on the luminaire.

MANUFACTURING AND PRODUCTION TESTS - POWER UNITS

Dielectric Voltage Withstand Test -

Each power unit shall withstand without electrical breakdown, as a routine production-line test, the application of a 40 – 70 hertz potential between:

a) Primary wiring, including connected components, and accessible dead metal parts of a unit that are at risk of becoming energized, including those parts that are accessible only during relamping; and

b) Primary wiring and accessible low voltage (42.4 volts peak or less) metal parts, including terminals.

The test potential is to be 1200 volts applied for 1 second or 1000 volts applied for 1 minute.

As an alternative, a DC potential of 1.414 times the designated AC potential is permitted.

The test shall be conducted when the unit is fully assembled. It is not intended that the unit be unwired, modified, or disassembled for the test.
The test is able to be conducted before final assembly when it is representative of testing performed on the completed unit. When a unit employs a solid-state component that is not relied upon to reduce the risk of electric shock and that is able to be damaged by the dielectric potential, the test is able to be conducted before the component is electrically connected, when a random sample from production each day is tested at the potential specified. The circuitry is able to be rearranged for the purpose of the test to reduce the risk of solid-state-component damage while retaining the representative dielectric stress of the circuit.

The test equipment is to 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 unit under test that does not meet the requirements is required.

When the output of the test-equipment transformer is less than 500 volts-amperes, the equipment is to include a voltmeter in the output circuit to directly indicate the test potential. When the output of the test equipment transformer is 500 volt-amperes or larger, the test potential is to be indicated by a voltmeter in the primary circuit or a tertiary-winding circuit, by a selector switch marked to indicate the test potential, or by a marking in a readily visible location to indicate the test potential of equipment having a single test-potential output. When a marking is used without an indicating voltmeter, the equipment is to include a positive means, such as a power-on lamp, to indicate that the manually reset switch has been reset after it trips open.

During the test, the primary switch is to be in the “on” position, both sides of primary circuit of the unit 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.

Continuity of Grounding Connection Test -

Each grounded power unit design is to be tested as a random production line test, for grounding continuity between the grounding means and the accessible dead-metal parts of the power unit.

Any effective indicating device (an ohmmeter, low voltage battery and buzzer combination, or the like) may be employed for the test described above; however, the maximum voltage applied shall not exceed 12 V.

CERTIFICATE OF COMPLIANCE

Certificate Number	UL-US-2335708-0
Report Reference	E535641-20230824
Date	28-Aug-2023
Issued to:	Fuzhou Hongrui Optoelectronic Technology Co.,Ltd. 3rd Floor, Building 1, 195 Yesha Road, Cangshan District, Fuzhou City, Fujian Province Fuzhou, Fujian Sheng 350007 China
This is to certify that representative samples of	IFDR - Low-voltage Lighting Systems, Power Units, Luminaires and Fittings See Addendum Page for Product Designation(s).
	Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	UL 2108, Edition 2, Issue Date 2015-12-07, Revision Date 2023-04-18
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number UL-US-2335708-0
Report Reference E535641-20230824
Date 28-Aug-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
HR-DGY-25-RGBW-48V	Low Voltage Lighting Systems
HR-DGY-30-RGBW-12V	Low Voltage Lighting Systems

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number	UL-CA-2330775-0
Report Reference	E535641-20230824
Date	28-Aug-2023
Issued to:	Fuzhou Hongrui Optoelectronic Technology Co.,Ltd. 3rd Floor, Building 1, 195 Yesha Road, Cangshan District, Fuzhou City, Fujian Province Fuzhou, Fujian Sheng 350007 China
This is to certify that representative samples of	IFDR7 - Low-voltage Lighting Systems, Power Units, Luminaires and Fittings Certified for Canada See Addendum Page for Product Designation(s). Have been evaluated by UL in accordance with the Standard(s) indicated on this Certificate.
Standard(s) for Safety:	CSA C22.2 NO. 250.2, 1st Ed., Issue Date: 2020-01-01
Additional Information:	See the UL Online Certifications Directory at https://iq.ulprospector.com for additional information

This Certificate of Compliance indicates that representative samples of the product described in the certification report have met the requirements for UL certification. It does not provide authorization to apply the UL Mark. Only the Authorization Page that references the Follow-Up Services Procedure for ongoing surveillance provides authorization to apply the UL Mark.

Only those products bearing the UL Mark should be considered as being UL Certified and covered under UL's Follow-Up Services.

Look for the UL Certification Mark on the product.

Deborah Jennings-Conner

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

CERTIFICATE OF COMPLIANCE

Certificate Number UL-CA-2330775-0
Report Reference E535641-20230824
Date 28-Aug-2023

This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements

Model	Category Description
HR-DGY-25-RGBW-48V	Low Voltage Lighting Systems
HR-DGY-30-RGBW-12V	Low Voltage Lighting Systems

Deborah Jennings-Conner, VP Regulatory Services

UL LLC

File E535641

Project 4790926569

August 24, 2023

REPORT

On

LOW-VOLTAGE LIGHTING SYSTEMS, POWER UNITS, LUMINAIRES AND FITTINGS

FUZHOU HONGRUI OPTOELECTRONIC TECHNOLOGY CO.,LTD.
Fujian, China

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DESCRIPTION

PRODUCT COVERED:

USL, CNL - Low-voltage Class 2 Luminaries, surface mounted, models HR-DGY-25-RGBW-48V, HR-DGY-30-RGBW-12V.

Note: USL – United States Standard Listed
CNL - Canadian Standard Listed

ELECTRICAL RATINGS:

MODEL NO.	Voltage (Vdc), CV	Max. Watts per unit(W/pcs)	Max. Total wattage (W)
HR-DGY-25-RGBW-48V	48	1.5	100
HR-DGY-30-RGBW-12V	12	1.5	60

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):

USL – Products designated USL have been investigated using US requirements as noted in the Test Record.

CNL – Products designated CNL have been investigated using Canadian requirements as noted in the Test Record.

CONSTRUCTION DETAILS:

The products covered shall be constructed in accordance with the following descriptions. A summary of them is given in the following pages.

Corrosion Protection – All ferrous metal parts shall be protected against corrosion by enameling, galvanizing, zinc or plating, or other equivalent means.

MARKINGS:

In additional with Sec. Gen., the following markings shall be provided unless otherwise noted in the descriptive report.

1. Listee’s name, UL file number, trade name, or trademark in Form A1 for UL and S16-L2 for CUL.

2. The date or other dating period of manufacture in Form A1 for UL and S16-L2 for CUL.

3. Distinctive catalog, part, or model number in Form A1 for UL and S16-L2 for CUL.

4. Electrical ratings (input voltage and wattage) in Form A1 for UL and S16-L3 for CUL.

5. “Suitable for Damp Locations (Verbatim)” in Form C for UL and S16-L3 for CUL.

6. "Use only with Class 2 power unit" in Form A3 for UL and S16-L2 for CUL.

In Canada, bilingual marking is the jurisdiction of provincial regulatory authorities that may require marking to also be in French.

INSTALLATION INSTRUCITON:

Each luminaire shall be provided with Installation Instructions that include specific instructions for mounting, proper wiring, minimum wire size, intended power unit, and servicing of the luminaire. The instructions shall also caution against using the luminaire with other than a Class 2 Power Unit. Instruction shall also include how to determine the number of luminaires and lamp wattage to be used with the power supply. Instructions shall be included with the luminaire in a manner that will require the installer to handle the instructions during installation, or the luminaire carton shall be marked to require installation by a qualified electrician.

See Ill.5 as an example for installation instruction.

Model HR-DGY-25-RGBW-48V – Figs. 1 to 5
Model HR-DGY-30-RGBW-12V– Figs. 6 to 10

General - The general design, shape, and arrangement shall be as illustrated except where variations are specifically described as below. All dimensions are nominal, within engineering tolerances, except where specifically indicated as a minimum or a maximum.

1.LED Printed Wiring Board (PWB) - Located in class 2 circuit. R/C (ZPMV2/8), rated min. HB, 80°C, measured minimum 1.5 mm thick. See below table for component list for details. Mechanically fitted within Housing.

Model No.	Component	Rated	Quantity Per unit	Min.spacing between 2 units, mm	PWB dimension(mm)	PWB layout and Circuit diagram
HR-DGY-25-RGBW-48V	RGB LED	Max. 3.2Vdc, Max. 20 mA	3	75	34.4 mm length by 26.5 mm width	Ill. 1
	White LED	Max. 3.2Vdc, Max. 150 mA	3			
HR-DGY-30-RGBW-12V	RGB LED	Max. 3.2Vdc, Max. 20 mA	3	100	26.2 mm diameter	ILL. 2
	White LED	Max. 3.2Vdc, Max. 20 mA	3			

2.L1 – Only for model HR-DGY-25-RGBW-48V. Rated 22uH, consist of below items:
a. Core - Ferrite, Overall 4 mm diameter by 3 mm height
b. Coil(N1) - Enameled copper wire. Rated min. 80°C. 0.16 mm diameter, 28.5 turns X 1 P.

3. components on LED PWB – See Ill. 1A for model HR-DGY-25-RGBW-48V(For E-cap CV1, rated min. 80°C) and Ill. 2A for model HR-DGY-30-RGBW-12V.

4.Input/Output Wire – R/C(AVLV2/8), min. 24 AWG, suitable for external use, rated min. 300V, min. 80 °C, soldered to LED PWB. May provided with a connector, the polymeric material of Connector is R/C (QMFZ2/8), rated min. HB, min. 65 °C.

Alternate – Same as above except Listed(ZJCZ/7), min. 24 AWG, min. 80°C, 300 V.

5.Housing – Two parts construction, top and bottom, mechanically fitted with each other. R/C(QMFZ2/8), rated min. HB, min. 65 °C. Enclosed all components on LED PWB. See below table for detail dimensions.

MODEL NO.	Ill. no.
HR-DGY-25-RGBW-48V	Ill. 3
HR-DGY-30-RGBW-12V	Ill. 3A

6.Potting Compound – R/C(QMFZ2/8), min. 65°C, fully covered all the components on LED PWB.

7.Heat Sink – Optional, aluminum, min. 0.7 mm thick, see below table for detail dimensions as representative. The spacing between two units can be various and should exceed spacing noted in table of item 1. Mechanically fitted with Housing.

MODEL NO.	Ill. no.
HR-DGY-25-RGBW-48V	Ill. 4
HR-DGY-30-RGBW-12V	Ill. 4A

8.Mounting Assembly –

a. For models with Heat Sink, secured to mounting surface by screws, two provided for every 250 mm spacing, 5.0 mm diameter by 20.0 mm length.

b. For models without Heat Sink, the luminaire provided with double-sided adhesive tape at the back of Housing.

Figure-1 Page-1

Figure-2 Page-1

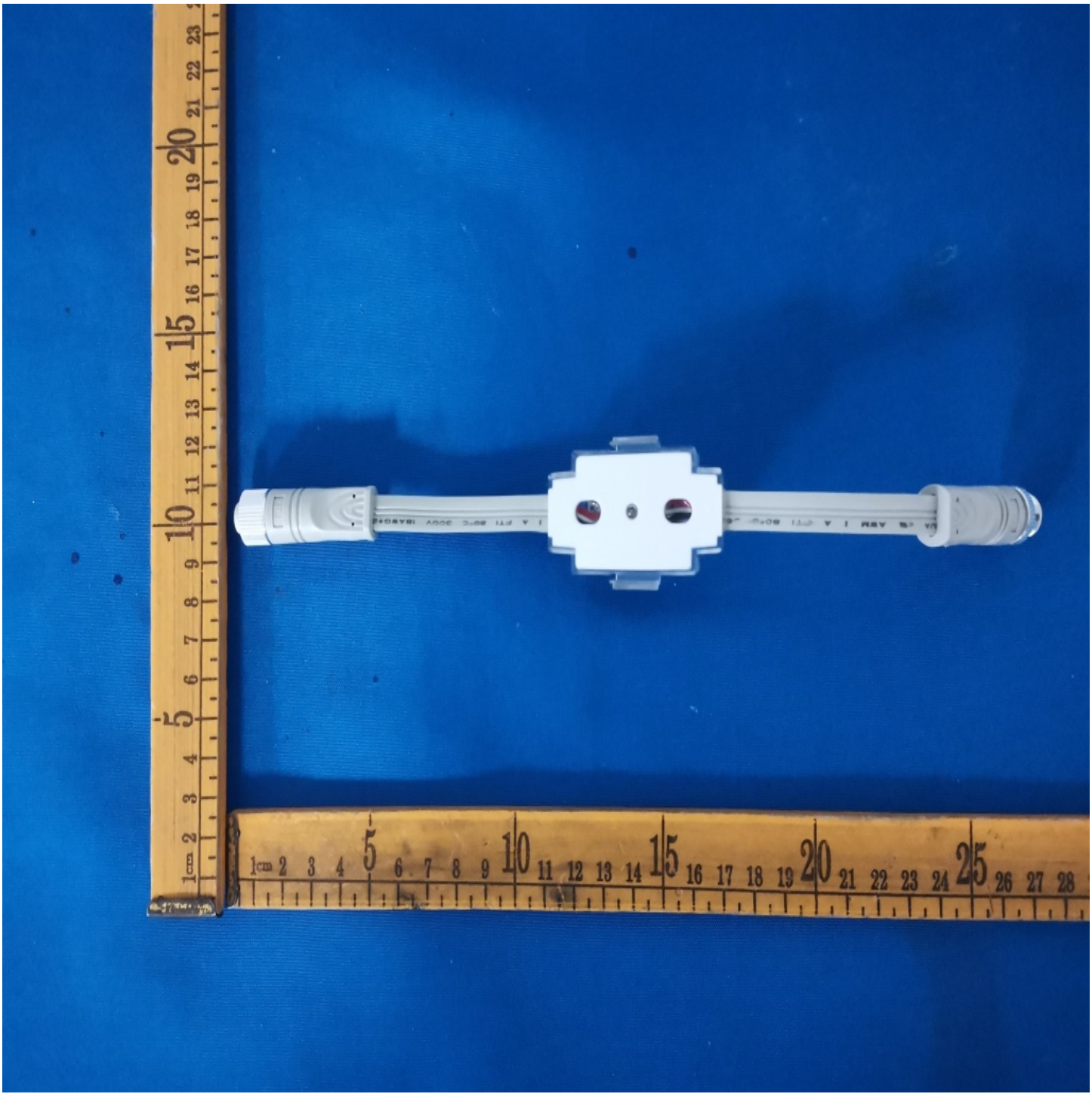


Figure-3 Page-1

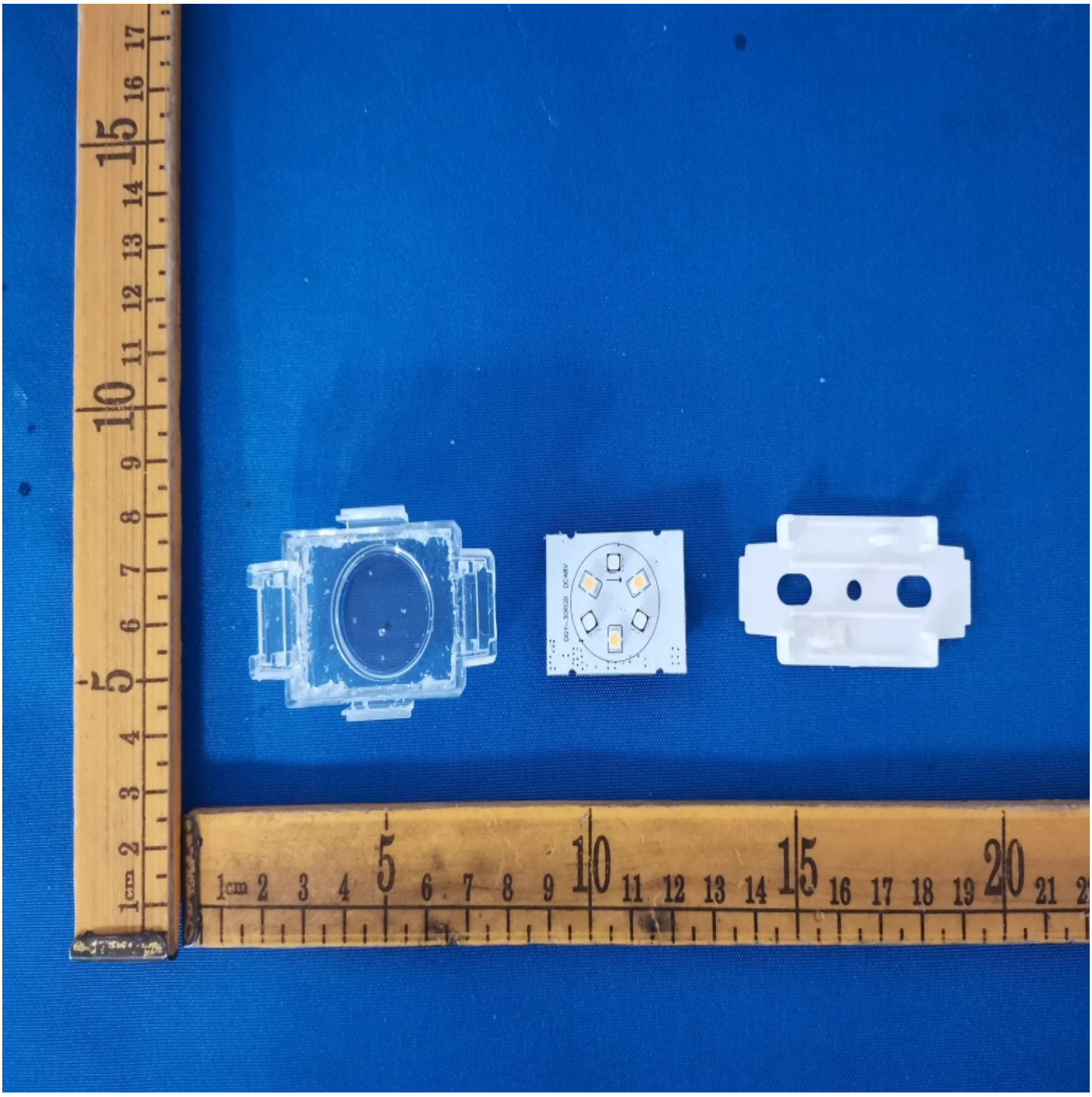


Figure-4 Page-1

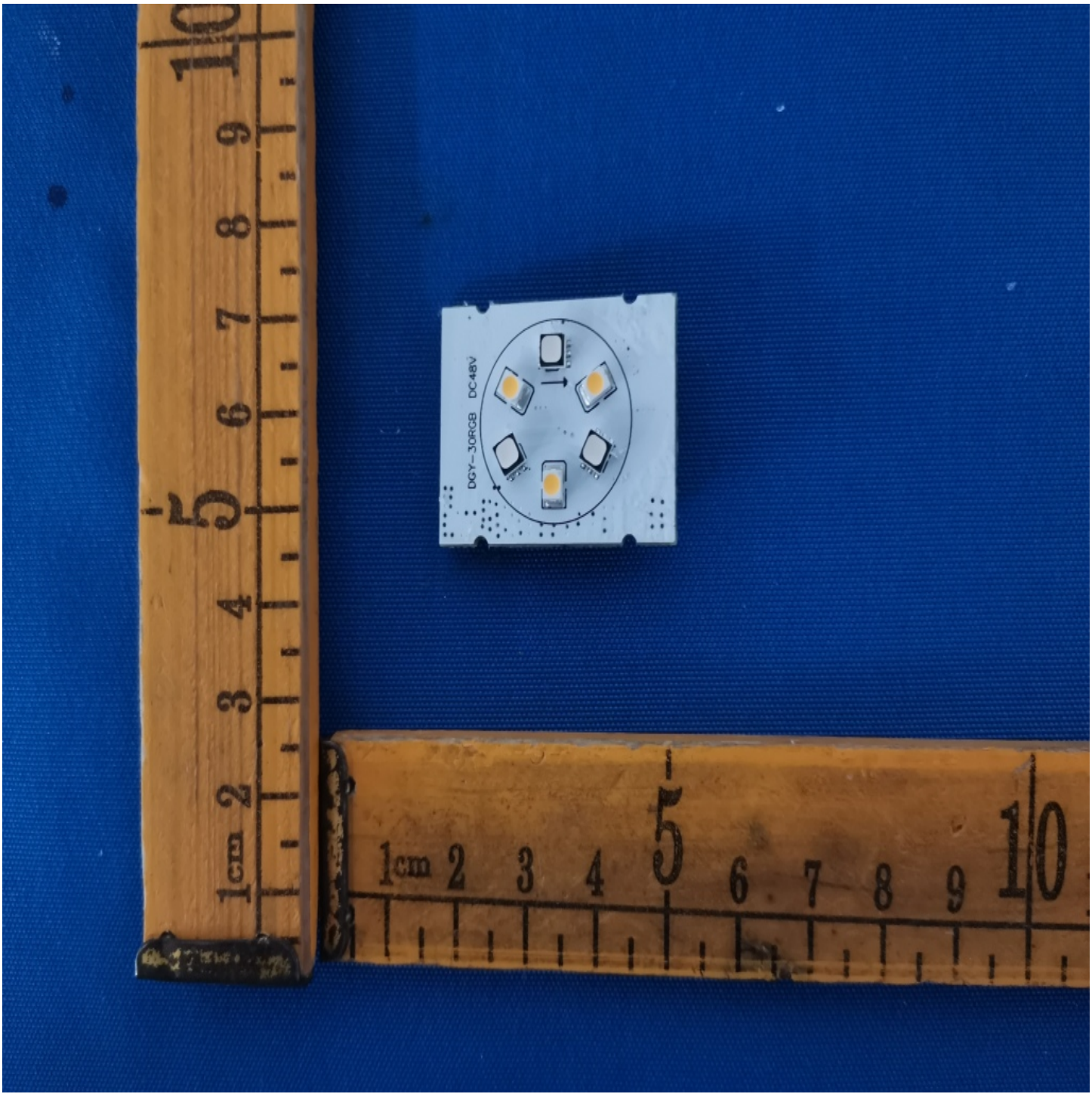
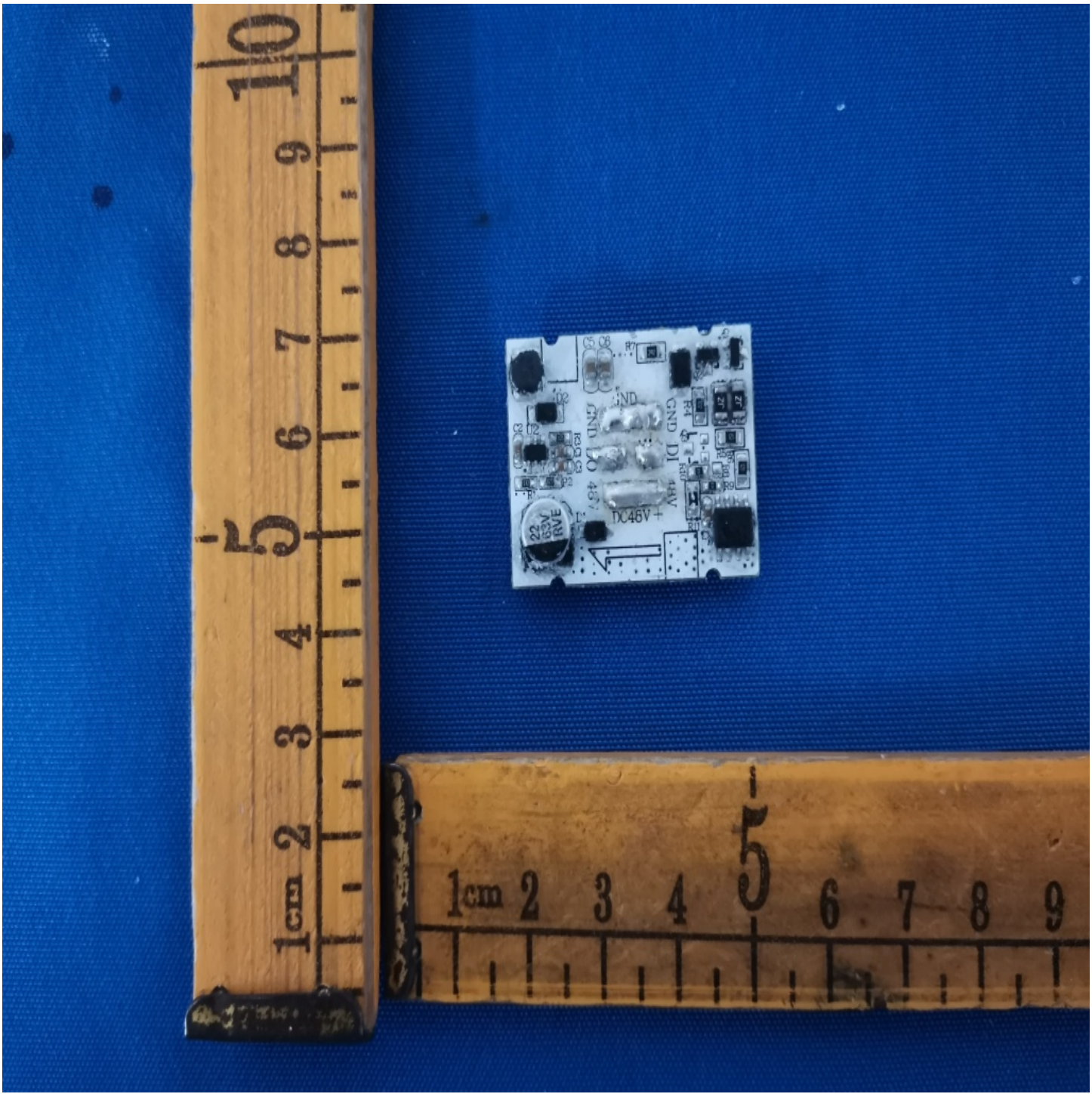


Figure-5 Page-1



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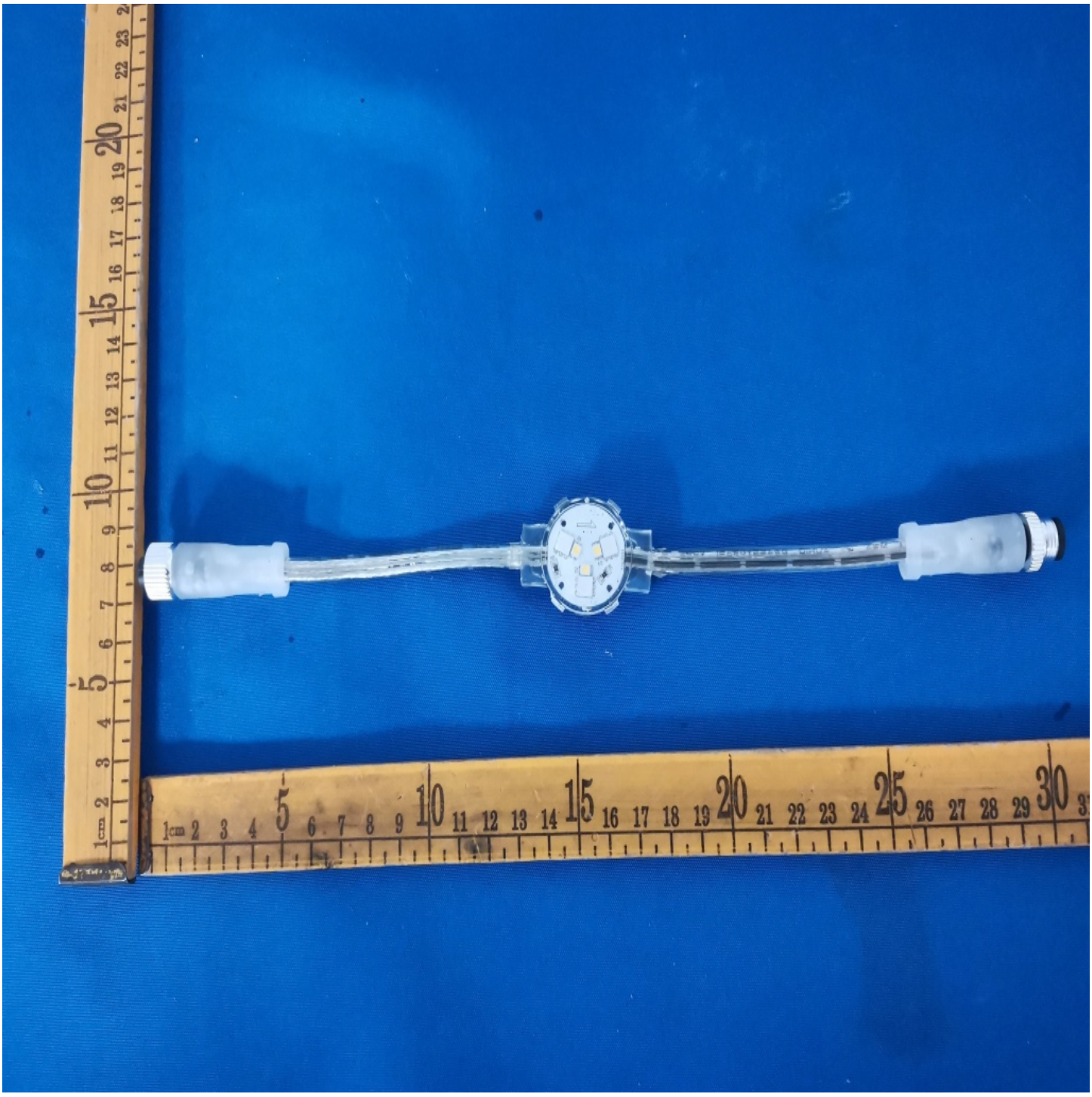


Figure-7 Page-1

Figure-8 Page-1

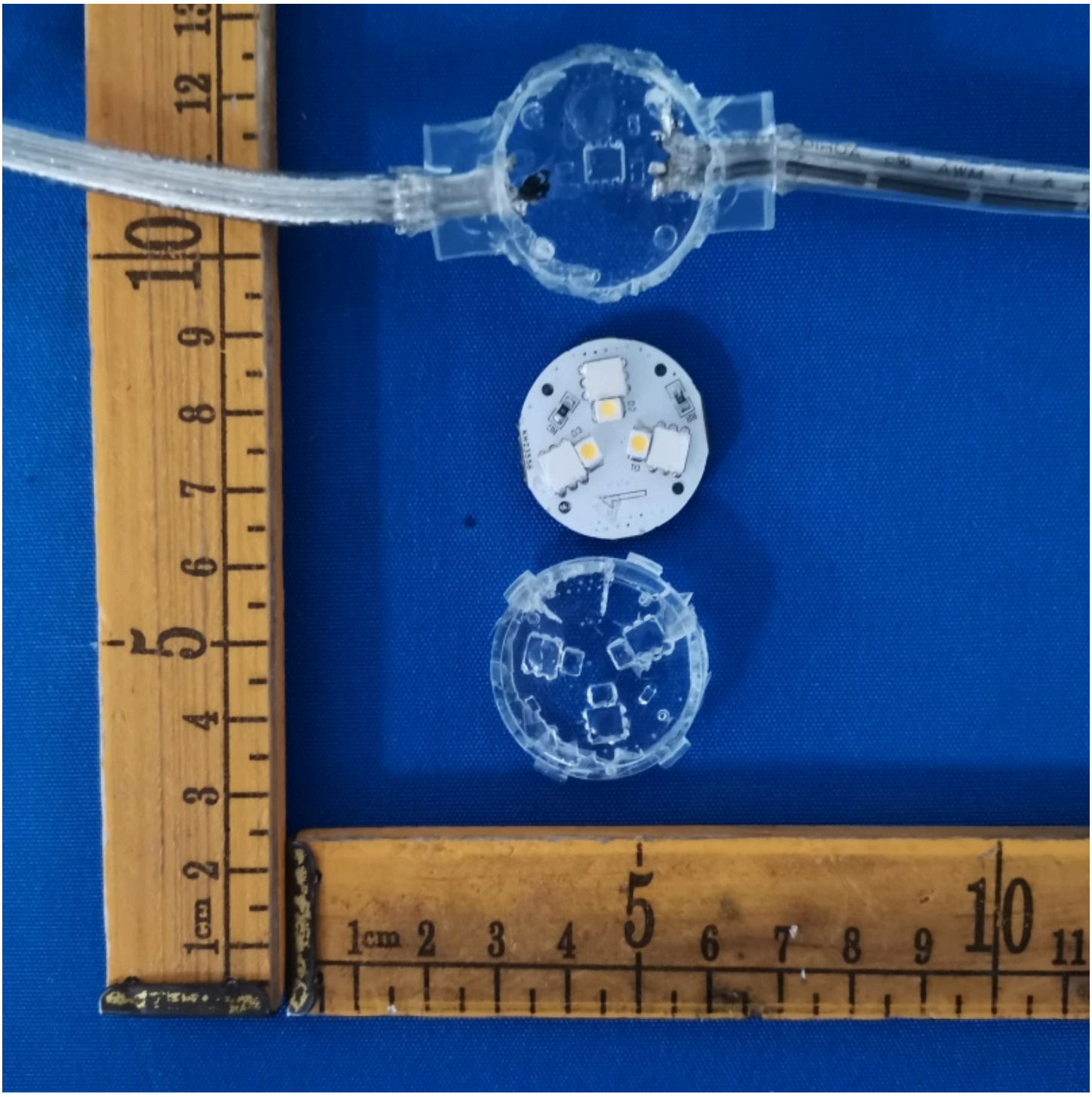
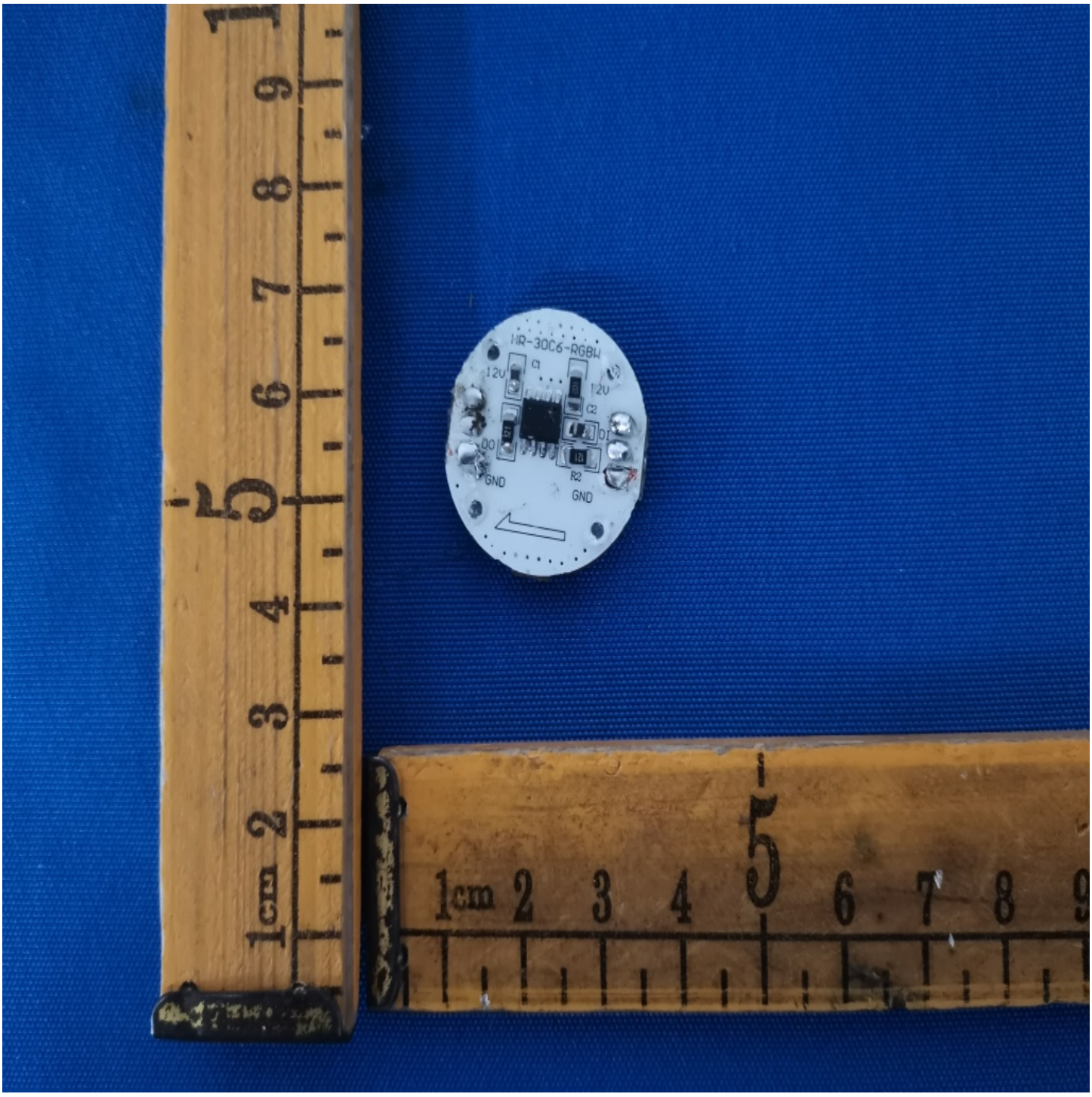


Figure-9 Page-1

Figure-10 Page-1



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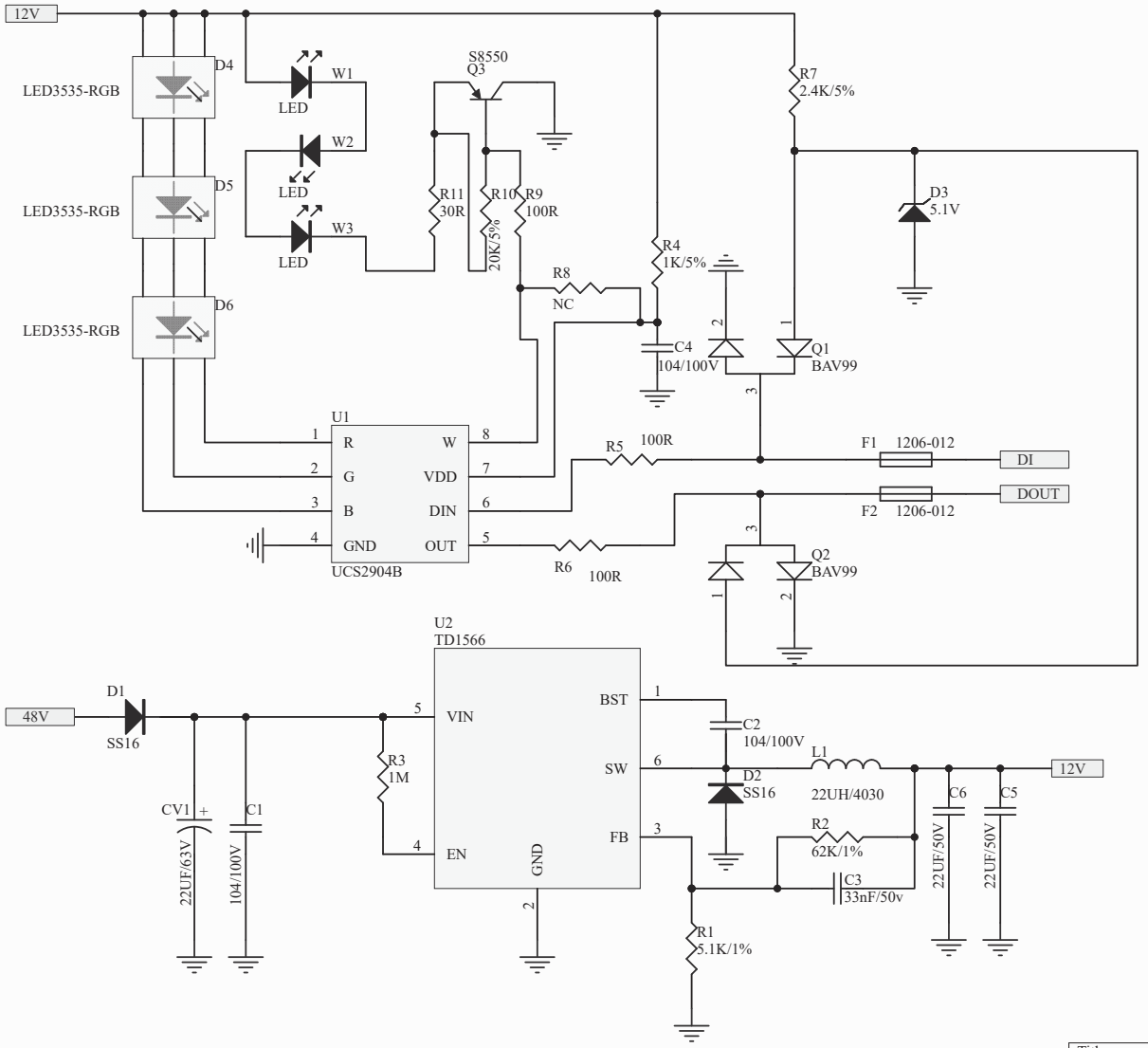

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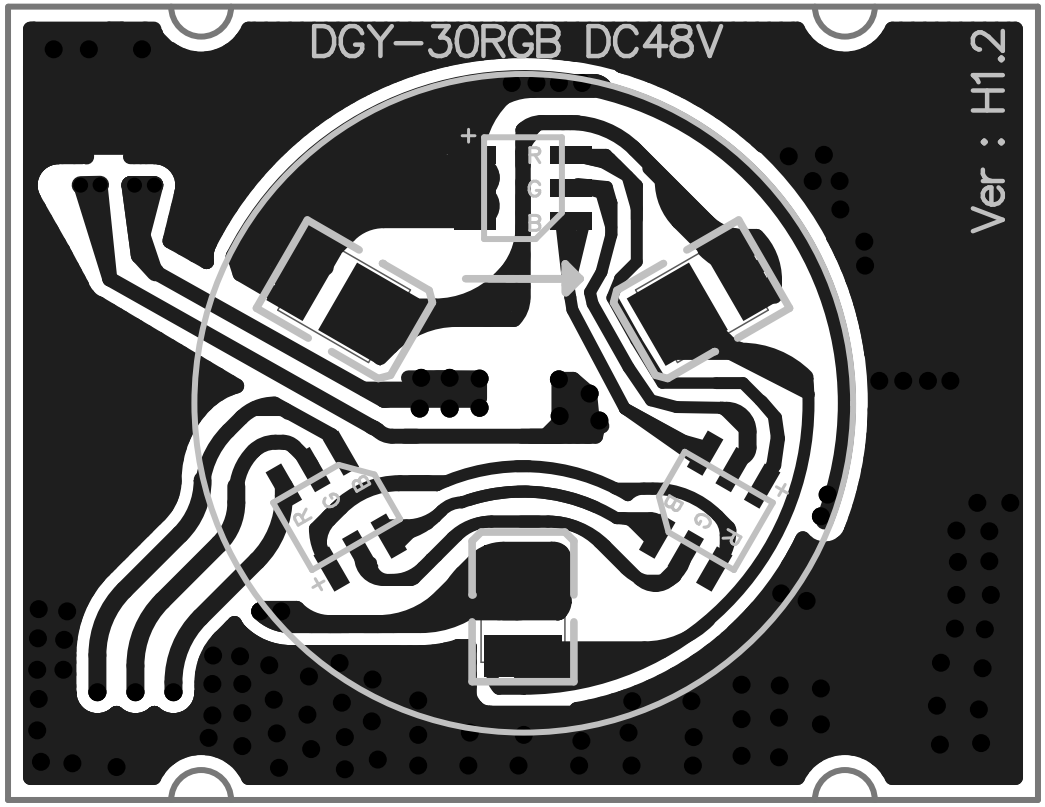
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Ver : H1.2

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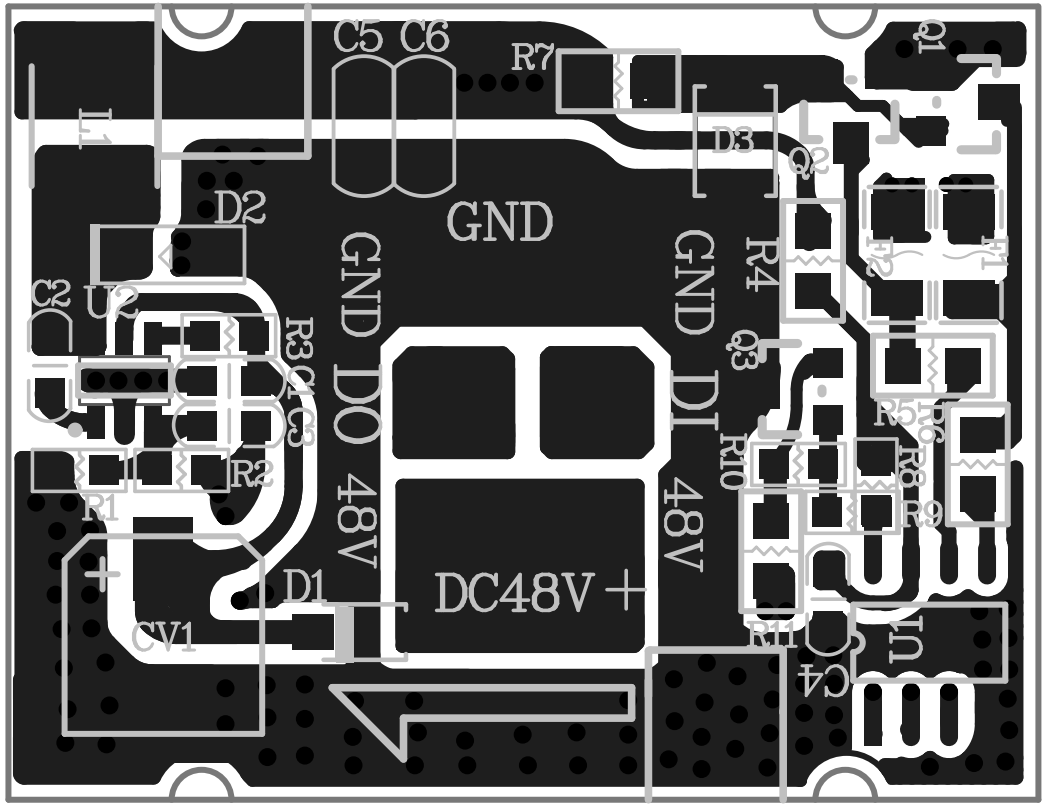
C5 C6
R7
Q1
D3
Q2
GND
D2
GND DO 48V
GND DI 48V
R4
Q3
C2
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C3
R2
R1
D1
DC48V+
CV1
R11
C4
U1

Bottom

The following Page(s) are related to Illustration-1A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Bill of Material for HR-DGY-25-RGBW-48V				
Comment	Description	Designator	Footprint	Quantity
104/100V	capacitor	C1, C2, C4	C0603	3
33nF/50V	capacitor	C3	C0603	1
22uf/50V	capacitor	C5, C6	C0805	2
22uF/63V	capacitor	CV1	C6.3*5.4	1
SS16	diode	D2, D11	SOD-123	2
5.1V	diode	D3	SMAF	1
LED3535RGB	LED	D4, D5, D6	3535	3
2A/60V	Resettable Fuse	F1, F2	F1206	2
22uH	inductance	L1	L4030	1
BAV99	diode	Q1, Q2	SOT-23	2
S8550	triode	Q3	SOT-23	1
5.1K/1%	resistor	R1	R0603	1
62K/1%	resistor	R2	R0603	1
1M	resistor	R3	R0603	1
1K	resistor	R4	R0805	1
100R	resistor	R5, R6	R0805	2
2.4K	resistor	R7	R0805	1
NC	resistor	R8	R0603	1
100R	resistor	R9	R0603	1
20K	resistor	R10	R0603	1
30R	resistor	R11	R0805	1
UCS2904	chip	U1	SOP-8	1
TD1566	DC-DC	U2	SOT23-6	1
LED2835W	LED	W1, W2, W3	LED3528	3

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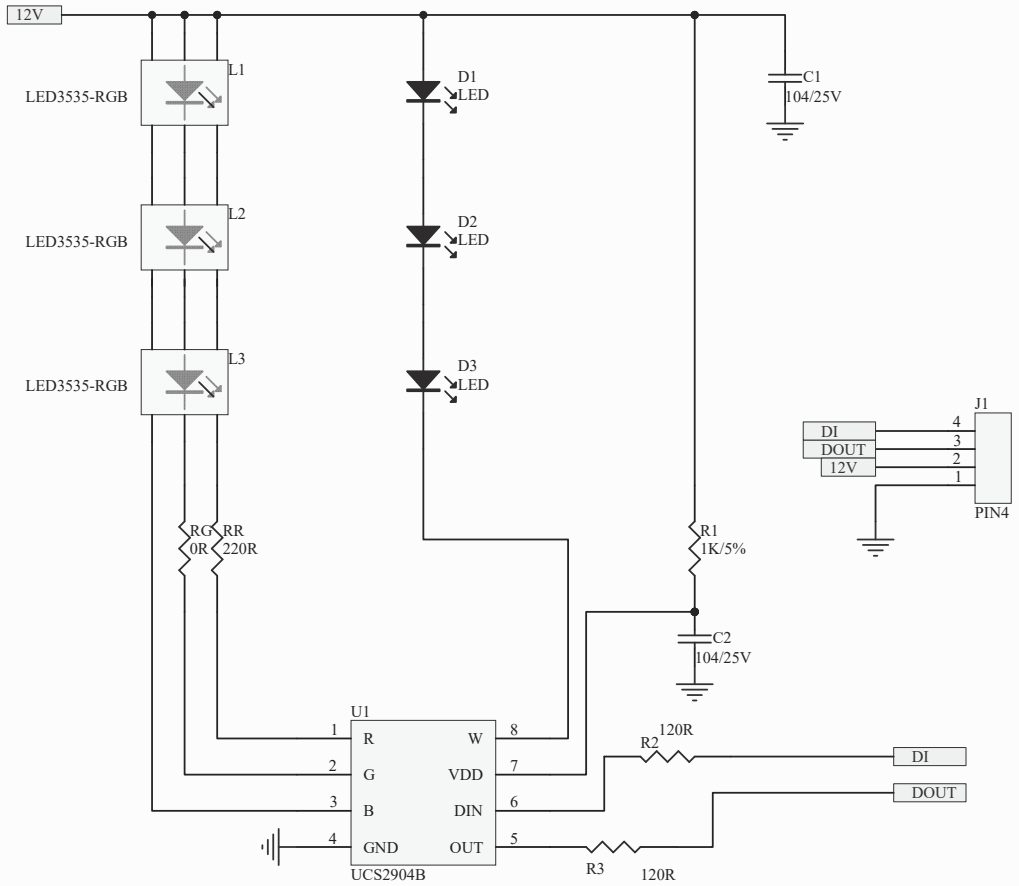

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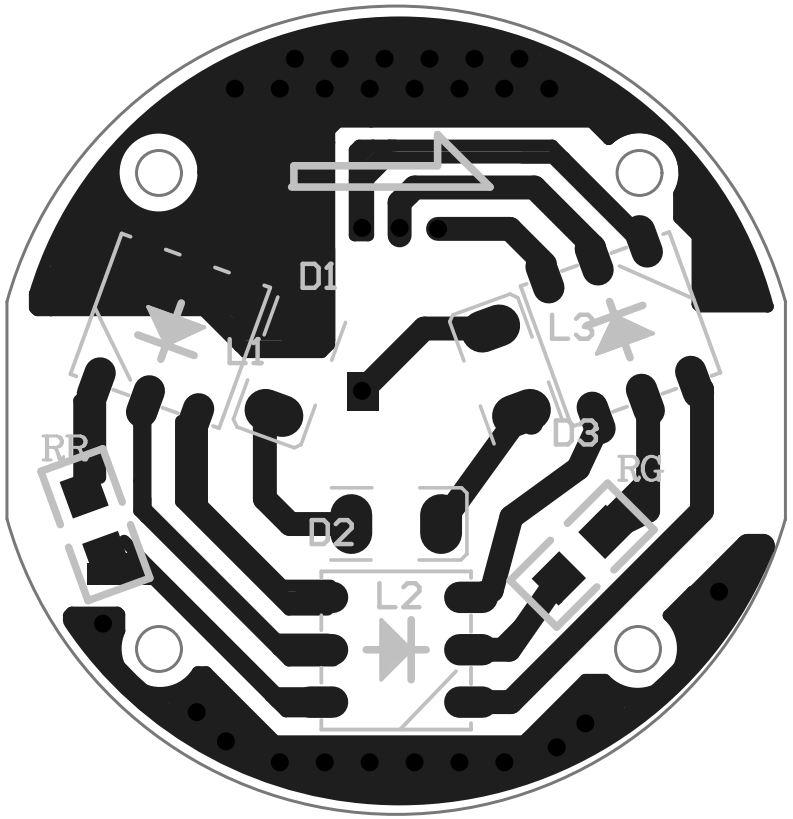
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L1
L3
RB
D3
RG
D2
L2

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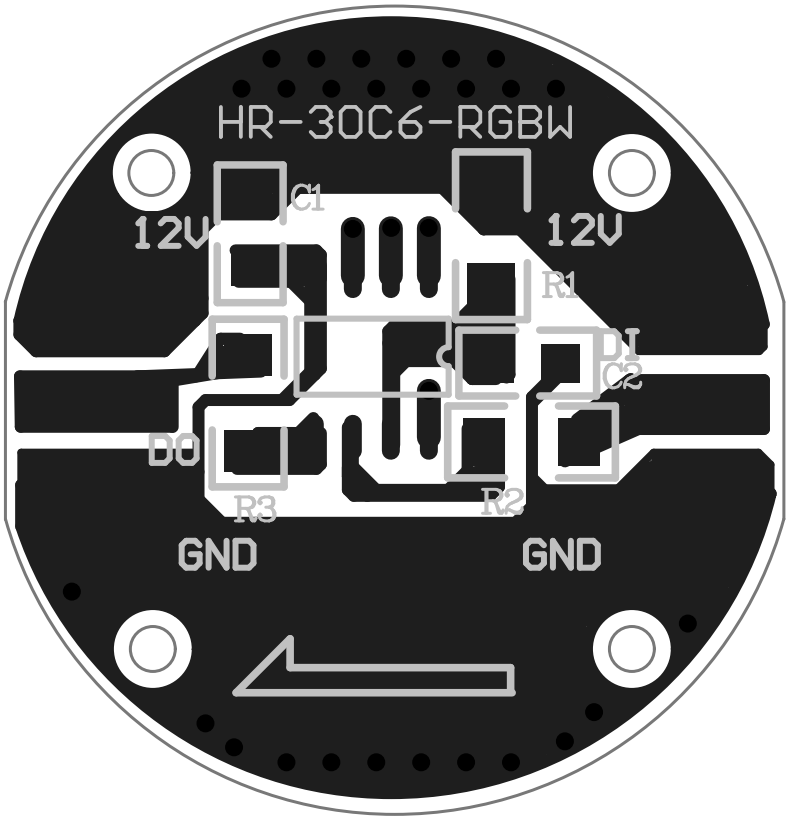

HR-30C6-RGBW
C1
12V
12V
R1
DI
C2
DO
R3
R2
GND
GND

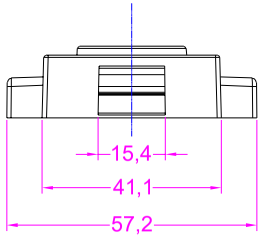
Bottom

The following Page(s) are related to Illustration-2A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

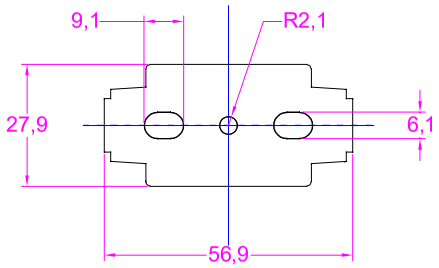
Bill of Material for HR-DGY-30-RGBW-12V				
Comment	Description	Designator	Footprint	Quantity
104/25V	capacitor	C1, C2	0805	2
LED3528	LED	D1, D2, D3	3528	3
LED5050RGB	LED	L1, L2, L3	5050	3
1K	resistor	R1	1206	1
120R	resistor	R2, R3	1206	2
0R	resistor	RG	0805	1
220R	resistor	RR	0805	1
UCS2904	chip	U1	SOP-8	1

The following Page(s) are related to Illustration-3. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

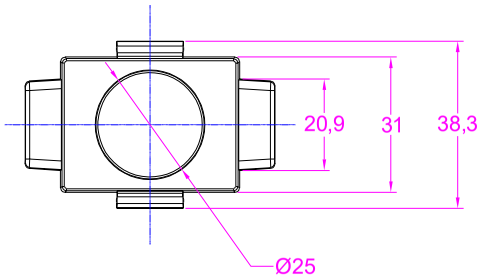
Technical documents	Drawing No	



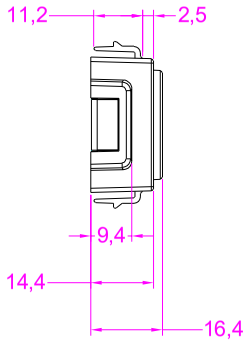
Side view



Rear cover



Front view



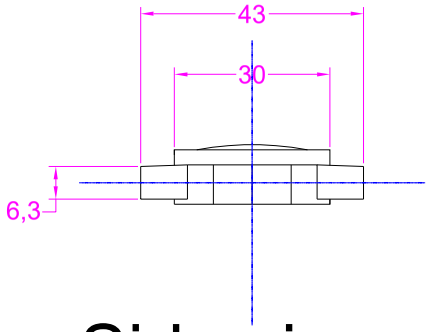
Left view

Unit: mm

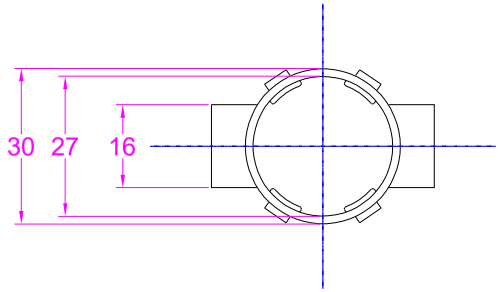
Fuzhou Hongrui optoelectronic Technology Co., LTD	Design		Review	

The following Page(s) are related to Illustration-3A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

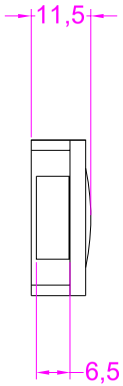
Technical documents	Drawing No	



Side view



Front view



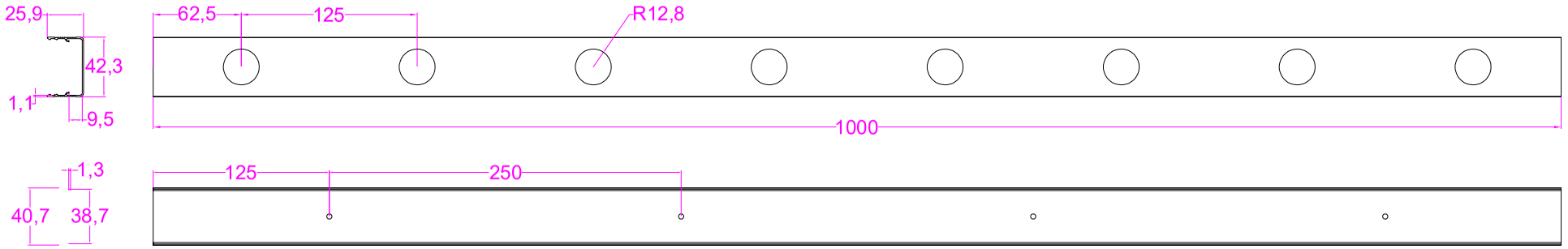
Left view

Unit: mm

Fuzhou Hongrui optoelectronic Technology Co., LTD	Design		Review	

The following Page(s) are related to Illustration-4. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Technical documents	Drawing No	

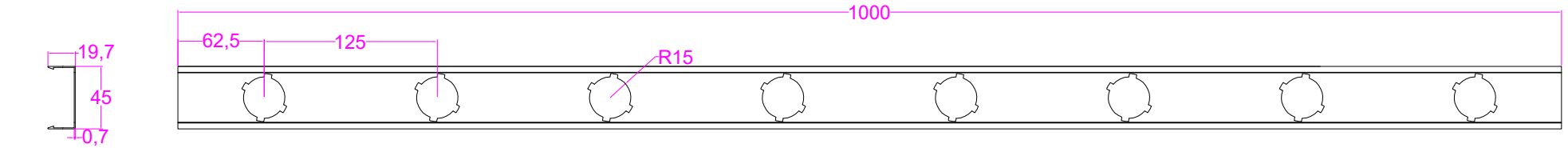


Unit: mm

Fuzhou Hongrui optoelectronic Technology Co., LTD	Design		Review	

The following Page(s) are related to Illustration-4A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Technical documents	Drawing No	



Unit: mm

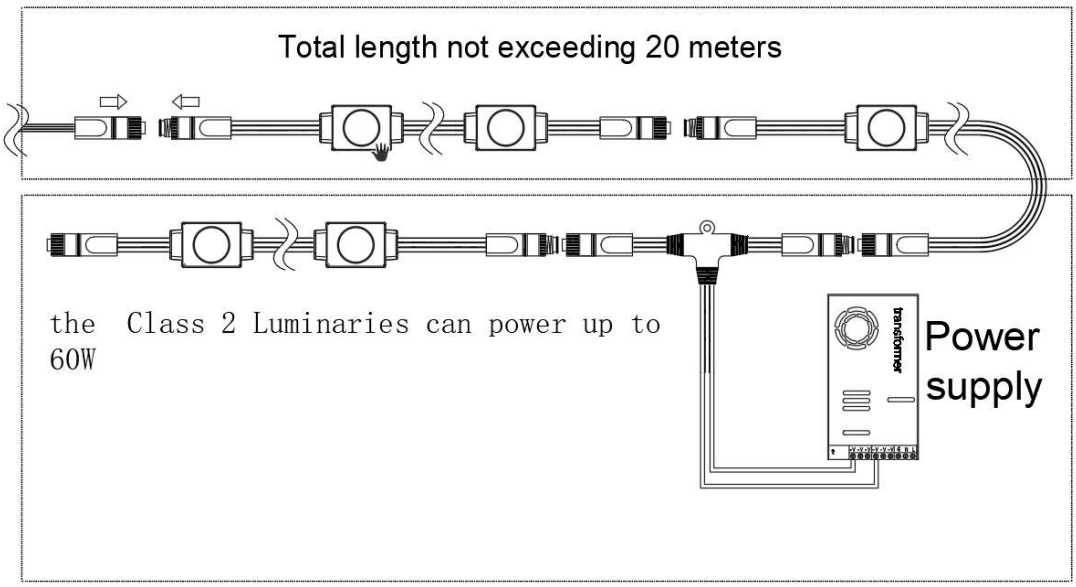
Fuzhou Hongrui optoelectronic Technology Co., LTD	Design		Review	

The following Page(s) are related to Illustration-5. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

Installation instructions

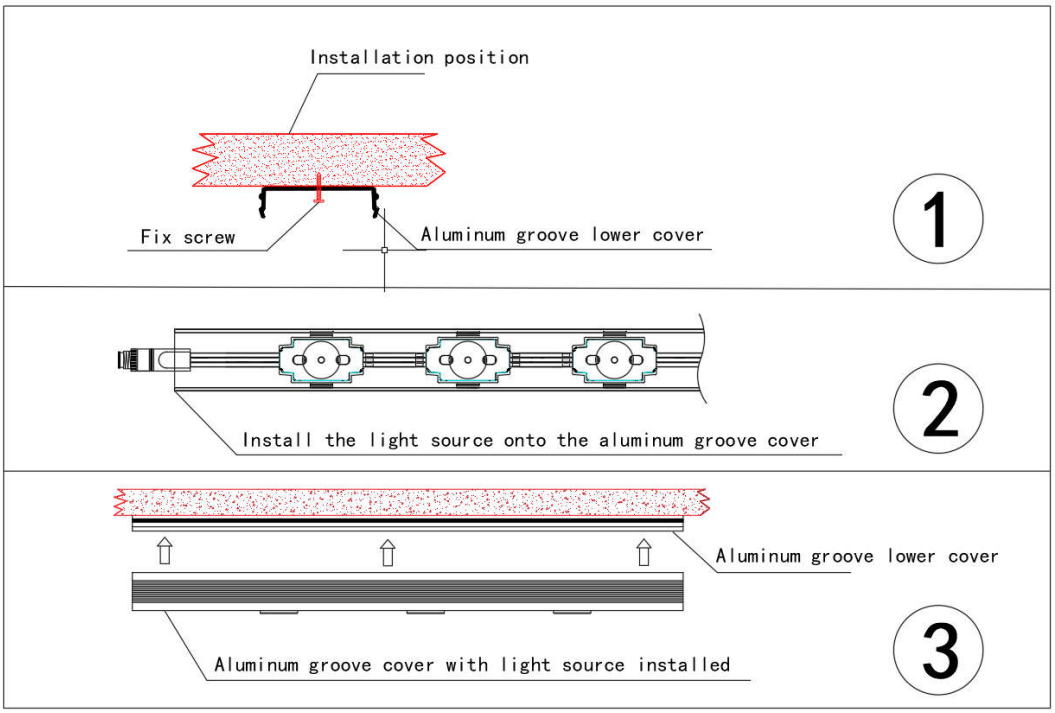
THIS PRODUCT MUST BE INSTALLED IN ACCORDANCE WITH THE APPLICABLE INSTALLATION CODE BY A PERSON FAMILIAR WITH THE CONSTRUCTION AND OPERATION OF THE PRODUCT AND THE HAZARDS INVOLVED

◆ Wiring instructions:



◆ Installation instructions:

◆ HR-DGY-25-RGBW-48V



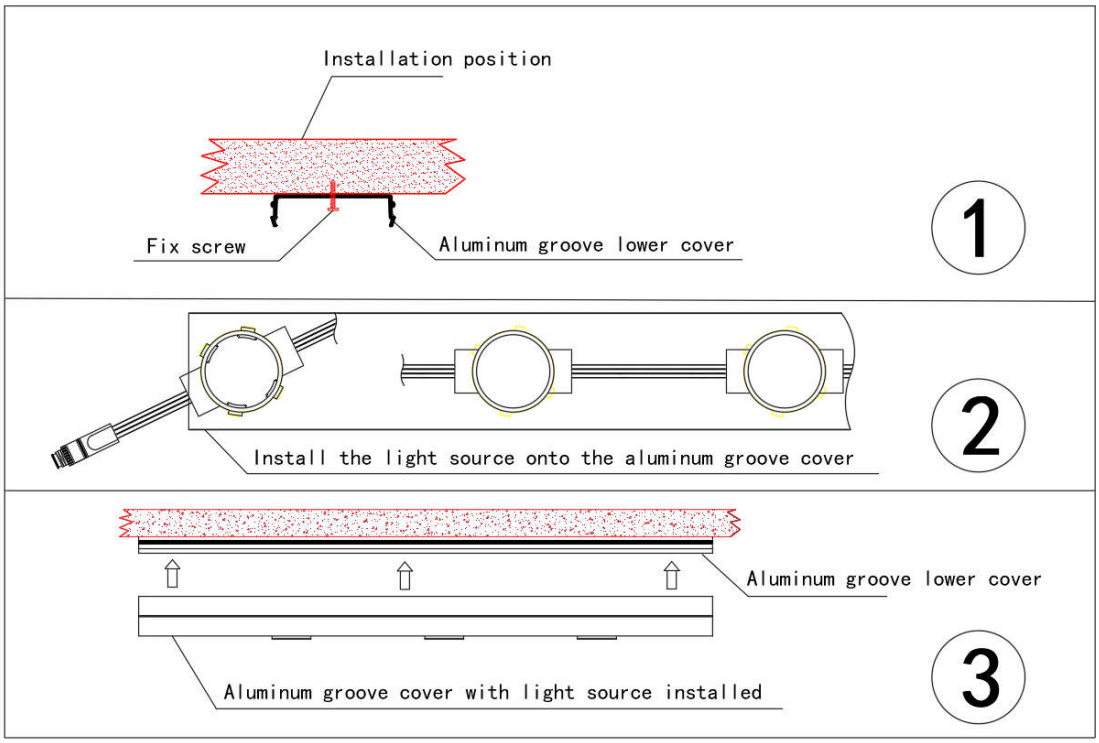
ADD: 318, Floor 1-3, Workshop No.2, No.195, Yexia Road, Gaishan Town, Cangshan District, Fuzhou city, Fujian Province TEL: 0086-13805061752 (Lemon)

Step 1: Fix the aluminum slot lower cover in the installation position with fixing screws.

Step 2: Align the circular convex surface of the light source with the aluminum slot opening and push it into the aluminum slot, ensuring that the buckle is securely fastened.

Step 3: Snap the aluminum groove cover that has already installed the light source into the lower cover of the aluminum groove, and tighten the docking connector.

◆ HR-DGY-30-RGBW-12V

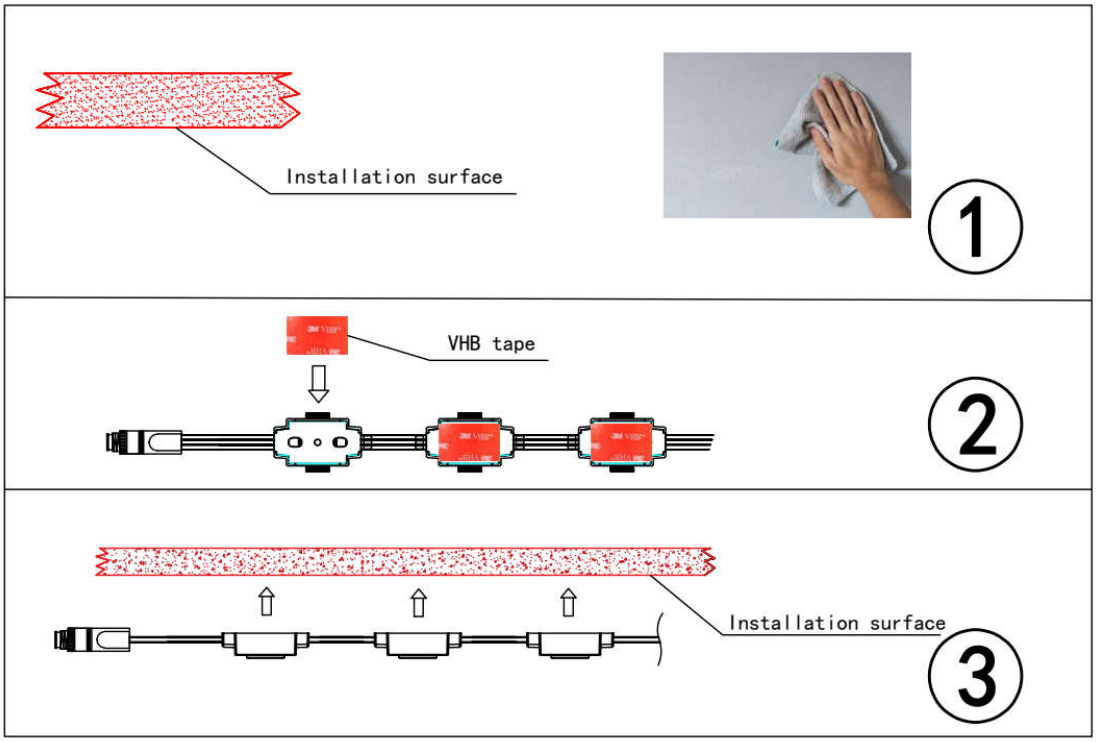


◆ Step 1: Fix the aluminum slot lower cover in the installation position with fixing screws.

◆ Step 2: Rotate the light source horizontally at a 35 degree angle to the aluminum groove. After the four limit cards of the light source are inserted into the aluminum groove, rotate clockwise to the horizontal direction.

◆ Step 3: Snap the aluminum groove cover that has already installed the light source into the lower cover of the aluminum groove, and tighten the docking connector.

◆ **Installation method using tape**



Step 1: Use a dry cloth to clean the dust on the installation surface.

Step 2: Apply VHB double-sided tape to the back of the lamp.

Step 3: Apply the adhesive tape to the installation surface of the lamp, and press the lamp firmly to make it adhere to the installation surface.

CAUTION: The mounting means provided with this luminaire has not been evaluated for reliability. If installed where failure of the mounting means could cause injury to persons or damage to property below, supplemental means of securement should be considered.

TEST RECORD NO. 1

SAMPLES:

Samples of Class 2 Luminaries, surface mounted as indicated below and constructed as described within this report, were submitted by the manufacturer for examination and test.

models HR-DGY-25-RGBW-48V HR-DGY-30-RGBW-12V.

GENERAL:

The following tests were conducted:			
TEST	STANDARD	CODE (See Below)	CLAUSE
INPUT:	UL 8750 CSA 250.13	S	8.2 9.2
NORMAL TEMPERATURE TEST – CLASS 2 AND EXPOSED BARE CONDUCTOR LUMINAIRES:	UL 2108 CSA 250.2	S	60 15, 15.1.102
MOUNTING MEANS TEST:	UL 2108	OS	SEC. 64
MOUNTING MEANS FAILURE TEST	UL 2108	OS	SEC. 65
LUMINAIRE COMPONENT FAULT TEST	UL 2108 CSA 250.2	S	66 16.103.3
S = Same test. C = Combined test (identified by the test names of two or more similar tests in multiple standards) to represent the worst-case parameters of the similar tests. OS = Testing requirements come from one standard only. MS = One of the two or more standards identified is more severe and the more severe one is indicated by underlining.			

Test Record Summary:

The results of this investigation, including construction review and testing, indicate that the products evaluated comply with the applicable requirements in the standards noted below and, therefore, such products are judged eligible to bear UL’s Mark as described on the Conclusion Page of this Report.

Standard	Title	Edition or Publication Date	Latest Revision Date
UL 2108	Low Voltage Lighting Systems	2nd Edition	04/18/2023
CSA C22.2 No. 250.2-20	Lighting Systems	1st Edition	January 2020

CONCLUSION

Samples of the products covered by this Report have been found to comply with the requirements covering the category and the products are found to comply with UL's applicable requirements. The description and test result in this Report are only applicable to the sample(s) investigated by UL and does not signify UL certification or that the product(s) described are covered under UL's Follow-Up Service Program. When covered under UL's Follow-Up Service Program, the manufacturer is authorized to use the Certification Mark of UL on such products which comply with UL's Follow-Up Service Procedure and any other applicable requirements of UL LLC. The Certification Mark of UL on the product, or the UL symbol on the product and the Certification Mark of UL on the smallest unit container in which the product is packaged, is the only method to identify products investigated by UL to published requirements and manufactured under UL's Listing and Follow-Up Service.

Report by:	Reviewed by
Vicky Wu	Tracy Huang
Senior Project Engineer	Senior Project Engineer