



The table below describes the files that were selected to be included as part of this package.

Supplements, such as Figures and Illustrations, will appear as X number of Figures, X number of Illustrations, etc., rather than naming each one.

E489087-20230630-TestRecord
E489087-20230630-Description
Figure-6-Total
Illustration-23-Total

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TEST RECORD NO. 1

SAMPLES:

Samples of the Exit Sign, Models CR-7108R, CR-7108G, CR-7109G, CR-7109R as indicated below and constructed as described herein, was submitted by the manufacturer for examination and test.

GENERAL:

Tests conducted with specific models represent other models as tabulated in datasheet.

Tests conducted in accordance with UL 924, The Standard for Emergency Lighting and Power Equipment were considered representative of the same tests required by CSA C22.2 No.141.

Tests conducted with specific models represent other models as tabulated below:

Test Conducted	Model Tested	Represents Model	Rationale
EMERGENCY LIGHTING CONTROL FUNCTIONALITY (ELCF) TESTS	CR-7109R	All other models	Same Construction, same circuit diagram
BATTERY DISCHARGE TEST; LOW VOLTAGE, LIMITED ENERGY CIRCUIT DETERMINATION; OVERVOLTAGE WITHSTAND TEST; UNDERVOLTAGE RECHARGE CAPABILITY TEST; VOLTAGE SURGE TEST; DIELECTRIC VOLTAGE WITHSTAND TEST; COMPONENT BREAKDOWN TEST; TRANSFORMER DIELECTRIC WITHSTAND TEST; TRANSFORMER BURNOUT TEST; TRANSFORMER INSULATING MATERIALS TEST; SHORT TERM RECOVERY TEST; CYCLING TEST;	CR-7108R	All other models	
INPUT TEST; RATING (INPUT) and CHARGING MEANS TEST	CR-7108R CR-7108G	CR-7109R CR-7109G	
GROUNDING CONTINUITY TEST	CR-7108R CR-7109R	CR-7108G CR-7109G	

The following tests were conducted:

TESTS	Clause No.	
	UL 924	CSA C22.2 No. 141
LUMINANCE MEASUREMENT TEST:	43.3	-
NON-ENERGIZED CONTRAST DETERMINATION TEST:	43.4.1	-
EMERGENCY LIGHTING CONTROL FUNCTIONALITY ELCF	47, 23.3, 30.1	
BATTERY DISCHARGE TEST:	48	-
INPUT TEST:	49	-
LOW VOLTAGE, LIMITED ENERGY CIRCUIT DETERMINATION:	50	-
TEMPERATURE TEST:	52	7.5
OVERVOLTAGE WITHSTAND TEST:	53	-
UNDERVOLTAGE RECHARGE CAPABILITY TEST	54	-
VOLTAGE SURGE TEST:	55	-
DIELECTRIC VOLTAGE WITHSTAND TEST: (DIELECTRIC STRENGTH)	56	7.7
CONDUCTOR SECURENESS TEST:	60	-
GROUNDING CONTINUITY TEST	63	
COMPONENT BREAKDOWN TEST:	66	8.4.4
TRANSFORMER DIELECTRIC WITHSTAND TEST:	SD4.1	-
TRANSFORMER BURNOUT TEST:	SD6.2	-
TRANSFORMER INSULATING MATERIALS TEST:	SD7.2	-
SHORT CIRCUIT TEST - (AT ROOM TEMPERATURE)	22.2.1	
SHORT CIRCUIT TEST(At 55C):	22.2.1	
ABNORMAL CHARGING TESTS:	22.2.1	
FORCED DISCHARGE TEST	22.2.1	
GENERAL TEST NOTE FOR CSA	-	7.1 / 7.2 / 7.3
RATING (INPUT) AND CHARGING MEANS TEST:	-	7.4 / 7.9
SHORT-TERM RECOVERY TEST:	-	7.8
CYCLING TEST:	-	7.10
MINIMUM EXTREME VOLTAGE TEST:	-	7.12.1, 7.12.2

Continue

TESTS	Clause No.	
	UL 924	CSA C22.2 No. 141
SECURITY OF KNOCKOUTS TEST:	64	
RESISTANCE TO IMPACT TEST:	10.2	
MOLD STRESS RELIEF DISTORTION TEST:	10.2	
MECHANICAL SUPPORT STATIC LOAD TEST	69	

## 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	Revision Date
UL 924	Emergency Lighting and Power Equipment	10 <sup>th</sup>	2022-12-14
CSA C22.2 No. 141-15	Unit Equipment for Emergency Lighting	5 <sup>th</sup>	June 2015 (Reaffirmed 2020)

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## 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 UL Listing Mark on such products which comply with UL's Follow-Up Service Procedure and any other application requirements of UL LLC. The Listing Mark of UL LLC on the product, or the UL symbol on the product and the Listing Mark 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.

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File E489087

Project 4790804088

June 30, 2023

REPORT

On

EMERGENCY LIGHTING AND POWER EQUIPMENT

NINGBO CHANGRONG LIGHTING & ELECTRONICS TECHNOLOGY CO LTD  
ZHEJIANG, China

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## DESCRIPTION

## PRODUCT COVERED:

EXIT Signs

USL, CNL, Models see below RATINGS TABLE for details.

## 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.

## RATINGS TABLE:

Model Designation	Input Ratings				Emergency Output Rating		Emergency Run Time	Recharge Time
	Vac	Hz	Amps (mA)	Watts	<u>Integral</u>	<u>Remote</u>	Minutes	Hours
CR-7108R CR-7108G	120- 347	50/60	30	4	(8)LEDS	NA	120	24
CR-7109R CR-7109G	120- 347	50/60	30	4	(8)LEDS	NA	120	24

## NOTES:

The total output load rating for any equipment is the sum of its integral and remote ratings. A remote output rating of "NA" signifies a unit has NO provisions for remote loads.

<u>Model Designation</u>	<u>Battery Life Expectancy (in years)</u>
CR-7108R CR-7108G	4
CR-7109R CR-7109G	4

## NOMENCLATURE:

They are designated:

CR-7008    -    R  
          I            II

I - Series Type

II - Version of Legend

Version of Legend	Description
R	EXIT letter with red color
G	EXIT letter with Green color

## CONSTRUCTION DETAILS:

GENERAL - These requirements, in conjunction with applicable requirements in the Section General, apply to all products covered by this report unless the individual product descriptions specify otherwise.

1. SPACINGS - The following min spacings shall be maintained throughout the equipment:

Min spacing required, in inches(mm) between uninsulated live parts and -		0 - 50 V rms (a)	51 - 150 V rms (a)	151-300 V rms (a)	301-600 V rms (a)
Uninsulated Live parts Of opposite Polarity	Through Air:	1/16 (b) (1.6)	1/8 (c) (3.2)	1/4 (6.4)	3/8 (9.5)
	Over Surface:	1/16 (b) (1.6)	1/4 (6.4)	3/8 (9.5)	1/2 (12.7)
Uninsulated, grounded Dead metal other than Enclosure, or exposed Dead metal that is isolated (insulated)	Through Air:	1/16 (b) (1.6)	1/8 (c) (3.2)	1/4 (6.4)	3/8 (9.5)
	Over Surface:	1/16 (b) (1.6)	1/4 (6.4)	3/8 (9.5)	1/2 (12.7)
Wall of the Metal enclosure, Including conduit And/or armored Cable fittings (d)	Through Air:	1/4 (6.4)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)
	Over Surface:	1/4 (6.4)	1/2 (12.7)	1/2 (12.7)	1/2 (12.7)

- (a) For peak and battery voltages, multiply applicable rms voltage by the square root of 2.
- (b) The spacing between installation-wiring terminals of opposite polarity and between a wiring terminal and a grounded dead metal part shall not be less than 1/8 in (3.2mm) through air and 1/4 in (6.4mm) over surface.
- (c) The spacing between installation-wiring terminals of opposite polarity and between a wiring terminal and a grounded dead metal part shall not be less than 1/4 in (6.4mm).
- (d) A metal piece attached to a metal enclosure is considered to be a part of the enclosure if deformation of enclosure is likely to reduce spacings.

## and Report

2. SPACINGS ON PRINTED CIRCUIT BOARDS - The spacings between tracks on a printed wiring board shall be as specified by their individual descriptions. Spacings between live parts on any PCB and any other live or dead metal parts shall comply with the SPACINGS table.
3. CORROSION PROTECTION - All iron and steel parts shall be suitably painted or plated to resist corrosion. All battery compartments housing wet cell batteries shall be coated with an acid resistant paint.
4. MOUNTING OF PARTS - All components are secured and prevented from loosening or turning by rivets and/or screws, lock washers and/or nuts or locknuts. All mounting hardware is metal unless otherwise specified.
5. TOLERANCES - All dimensions are nominal, unless otherwise defined in this report.
6. INSULATING TUBING - If employed, and unless otherwise described, shall be R/C Tubing, Electrical (YDPU2) or Tubing, Processed (YDRY2), rated min. 105°C, 600V, with a minimum recovered wall thickness of 1/32 in (0.8mm).
7. CIRCUIT BREAKERS - When employed and mounted vertically, the switch shall be in the "ON" position when up.
8. INSTALLATION AND INTERNAL WIRING - Unless otherwise described in report:
  - a) All installation wiring shall be R/C Appliance Wiring Material (AVLV2), min 18 AWG, having thermoplastic insulation not less than 1/16 in (0.38mm) thick, rated min 105°C, 300 VAC. All other internal wiring shall also be rated min 105°C, 300 VAC, unless otherwise described.
  - b) Installation leads shall be long enough to extend 6 in (152mm) past the center of the equipment's junction box pattern. If conduit knockouts are the only wiring means provided, then the leads shall have at least 6 in (152mm) of free length.
  - c) All internal wiring shall be terminated by one of the following methods:
    1. Listed crimp-on closed-loop pressure terminal connectors
    2. Listed crimp-on spade-type pressure terminal connectors with upturned ends
    3. R/C (RFWV2) crimp-on quick-connect type terminals
    4. Solder connections which are mechanically secured before soldering, or splices be made with Listed fixture type splicing connectors, insulated pressure cable connectors, or equivalent.
  - d) All internal wiring shall be routed away from sharp edges and moving parts and secured every 3 in (76.2mm).

## EXIT LEGENDS AND DIRECTIONAL INDICATORS:

1. EXIT LEGEND - As outlined below in inches (mm). The letter height may be larger only if ALL the other dimensions increase proportionately:

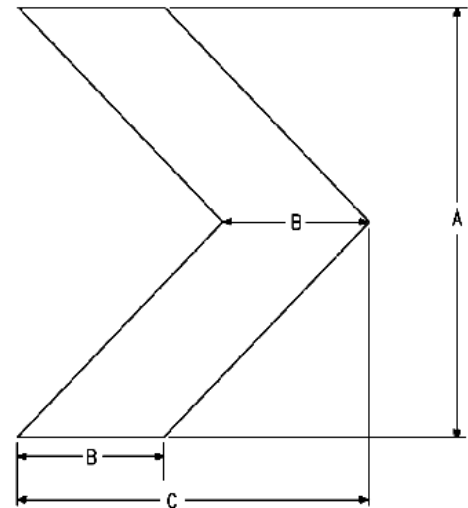
Letter height:	6 (152.4)
Letter width (except I):	Min 2 (50.8)
Letter stroke:	Min 3/4 (19.1)
Spacing between letters:	Min 3/8 (9.5)

2. DIRECTIONAL INDICATORS - When provided, they shall be:

- of the "Chevron" type: < and/or > ,
- positioned on either side of the legend,
- centered vertically with respect to the legend,
- spaced at least 3/8 inch (10mm) from the nearest legend character,
- conform to the following dimensions in inches (mm):

A - Height:	1.25 (31.8)
B - Horiz Stroke:	0.42 (10.6)
C - Width:	1.04 (26.5)

The dimensions may be larger than those stated above, but ONLY if so described in this report.



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## MARKINGS:

The word "CAUTION" shall appear in capital letters no less than 1/8 inch (3.2mm) high wherever the word is required unless otherwise specified.

Product markings, instruction manuals, and other literature for the equipment shall not claim that it can be used in any way that conflicts with the markings and instructions specified in this report.

When a marking is required to be visible after installation, the marking shall be on the exterior surface at a location where it will be visible after the equipment is installed or on the inside of a door or cover. A marking that becomes visible when a cover or trim of the enclosure, a lamp lens, a diffuser, or a similar part is removed, without disassembling or removing a component or device, is considered visible after installation.

The following markings, in conjunction with those in the Section General, shall be permanently marked on each unit in a location that is readily visible after installation and during routine maintenance:

These markings apply to all units, except as follows:

- (U) - Required only on units with UL Mark
- (C) - Required only on units with c-UL Mark

All units shall be marked as follows:

- a) Listee's (or Recognized Company's) name or trademark
- b) A distinctive catalog number
- c) A date code, as specified in the Section General
- d) Rated voltage and frequency
- e) Amperes or watts for equipment with power factor of 0.9 or greater
- f) Amperes or BOTH watts and power factor for all other equipment.  
Power factor is assumed to be lagging unless marked leading.
- g) Number of phases or wires (if other than single phase)

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Units provided with batteries, and/or with provisions for field battery wiring, shall be marked to specify the rated emergency operating time, as noted in the RATINGS section of this report.

(U) Equipment provided with batteries, and/or with provisions for field battery wiring, shall be marked "CAUTION: Replace battery with \_\_\_\_\_ part number \_\_\_\_\_". The first blank is to be filled with the manufacturer's ID and the second with the catalog designation, as described in this report. This marking shall be located on the unit where visible during battery replacement. A marking that appears only on the battery is not sufficient.

(U) "CAUTION - see instruction manual for installation, operating, and maintenance instructions" or equivalent.

Installation wiring terminal and leads shall be identified to indicate intended connections. Color-coding is considered sufficient for leads.

Proper mounting position shall be marked on each unit, unless it is obvious without the marking.

All exposed components, such as pilot lights, switches, meters, etc., shall be clearly marked as to their function.

(C) Units shall have a permanent marking adjacent to the battery identifying the replacement battery type.

(C) The battery compartment shall be marked with the following:

CAUTION: REPLACE BATTERY ONLY WITH \_\_\_\_\_

ATTENTION: REMPLACER LA BATTERIE UNIQUEMENT PAR UNE BATTERIE \_\_\_\_\_

(C) The battery shall be permanently marked with the model number and the month and year of its replacement date. The replacement date shall be the date of manufacture of the battery plus its design life expectancy, as specified by this report.

ADDITIONAL MARKINGS (AMBIENT TEMPERATURES):

Equipment that has been investigated and found suitable for use in extended ambient conditions is permitted to be marked "Suitable for use in 0 °C to 40 °C ambient temperatures", or equivalent, with the blanks filled in with the minimum and maximum permitted temperatures based on the tests conducted.

ADDITIONAL MARKINGS (DAMP LOCATION EQUIPMENT):

General - These additional markings shall be visible after installation.

"Suitable for use in damp locations"

## INSTRUCTION MANUAL:

## Safety Instructions:

An instruction manual shall be provided with all equipment. The manual shall include the following safety instructions verbatim.

The instructions "IMPORTANT SAFEGUARDS", "READ AND FOLLOW ALL SAFETY INSTRUCTIONS", and "SAVE THESE INSTRUCTIONS" shall be printed in block letters, not less than 3/16 inch (4.8mm) high. For all other instructions, upper case letters shall be at least 1/12 inch (2.1mm) high and lower case letters shall be at least 1/16 inch (1.6mm) high:

## IMPORTANT SAFEGUARDS

When using electrical equipment, basic safety precautions should always be followed including the following:

## READ AND FOLLOW ALL SAFETY INSTRUCTIONS.

- Do not use outdoors.
- Do not mount near gas or electric heaters.
- Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
- The use of accessory equipment not recommended by the manufacturer may cause an unsafe condition.
- Do not use this equipment for other than its intended use.

## SAVE THESE INSTRUCTIONS

Other instructions:

The manual shall include instructions for installation, operation, and maintenance recommended by the manufacturer. The instructions shall warn the user that all servicing should be performed by qualified personnel.

Models CR-7108R, CR-7108G, CR-7109R, CR-7109G - Figs. 1 Thru. 7

Fig. No.	Description
Fig. 1	Overall view of CR-7108R, CR-7108G, CR-7109R and CR-7109G (From left to right and up to down)
Fig. 2	Internal view of CR-7108R and CR-7109R (From left to right)
Fig. 3	Overall view of Canopy Assembly
Fig. 4	Disassembly view of CR-7108R, also represents CR-7108G
Fig. 5	Disassembly view of CR-7109R, also represents CR-7109G
Fig. 6	Overall view of Main Printed Circuit Board
Fig. 7	Overall view of LED Printed Circuit Board

General - Figs. 1 to 7 illustrate the overall views and internal view. The general design, shape and arrangement shall be as illustrated except where variations are specifically described. All dimensions are nominal, unless otherwise described.

1. Canopy Assembly - Assembly used for mounting. Refer to Fig. 3 for details. Consists of the following.

- a. Crossbar - Corrosion protected steel, min 1.5 mm thick; provided with two threaded openings for securement to canopy, four openings for mounting screw passage and openings for lead passage; secured to canopy by two screws. see ILL. 1 for detailed dimensions.
- b. Canopy - R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y)(a), rated 5VA, 120°C, min 2.5 mm thick, provided with opening for lead passage; Provided two channels for engagement of Main Housings. see ILL. 2 for detailed dimensions.

2. Enclosure - Consists of three parts, Main housings, and two end covers, secured together by screws.

Main Housings - made of aluminum, measured 1.0mm, provided with integral channels/ projection for engagement of components and lead routing. For CR-7108R, CR-7108G see ILL. 3, ILL. 3A, for detailed dimensions. For CR-7109R, CR-7109G see ILL. 4, ILL. 4A, for detailed dimensions.

End Covers - Two provided, R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y)(a), rated 5VA, 120 C, min 2.5 mm thick., Secured to main housing by screws; One provided with openings for engagement of LED indicator light and test switch. For CR-7108R, CR-7108G see ILL. 11, ILL. 11A, ILL. 11B. for detailed dimensions. For CR-7109R, CR-7109G end covers consists of two parts. Cover and shrapnel. cover details see ILL. 12, ILL. 12A. Shrapnel is made of stainless steel, measured 0.5 mm thick, see ILL. 6 for details.

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3. LED PWB Enclosure for CR-7108R, CR-7108G - Hold LED PWB, Consists of three parts, one can and two adjust parts, secured together by physical, the can made of aluminum, measured 1.0mm thick. see ILL. 5 for details. The adjust parts consists of two parts, shrapnel and rotary knob. shrapnel made of stainless steel, measured 0.5mm thick. see ILL. 6 for details. Rotary knob - R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y)(a), rated 5VA, 120 C, min 2.5 mm thick, secured to can by physical fit, the adjust parts can be adjusted 0-180 degree, see ILL. 7 for detailed dimensions.
4. Legend Plate - Constructed of clear plastic, R/C (QMFZ2), rated minimum HB, 80°C, measured 8.0 mm thick, with fluorescent red (for model CR-7108R, CR-7109R) or green (for model CR-7108G, CR-7109G). EXIT hold and secured to LED PWB enclosure by physical fit. see ILL. 8 for detailed dimensions.
5. LED Printed Circuit Board - R/C (ZPMV2), rated V-0, 90°C. Overall measures 284 mm by 16.5 mm, see ILL. 9 for trace layout.

LED for model CR-7108R, CR-7109R - Red Version. (8) Hangzhou Qiguang Electronic Technology Co LTD, type 504FRWD-F10, each rated 20mA, 1.9-2.4V; soldered to LED PCB such that normal 27 mm spacing is maintained between adjacent LEDs.

LED for model CR-7108G, CR-7109G - Green Version. (8) Shenzhen Hongdali New Energy Materials Co LTD, type 5G2CH/503, each rated 20mA, 3.0-3.4V; soldered to LED PCB such that normal 27 mm spacing is maintained between adjacent LEDs.

6. Main Printed Circuit Board - Located in PWB holder, Consist of below components. Refer to Ill. 10 for bill of material, circuit diagram and PCB trace layout; Secured within channels of main housing by physical fit. Connected to battery, LED PWB, LED Indicator, test switch by connectors and internal wiring R/C (AVLV2, AVLV8) AWM leads, rated min 22 AWG, 300V, 80°C.
  - a. Printed Circuit Board - R/C (ZPMV2), ANSI Grade FR-4, rated V-0, 105°C. Overall measures 95.5 mm by 31.5 mm.
  - b. Conformal Coating - R/C (QMJU2), rated minimum 105°C, with ANSI Type FR-4 to match the ANSI Grade of the PCB applied to. Applied to the trace side of the PWB in accordance with the recognition.
  - c. LED Indicator - (Red Version) - Rated 1.8-2.4V forward voltage, 20mA; integral leads mechanically secured and connected to PCB by connector. LED maintained within opening in main housing.

- d. Test Switch - R/C (WOYR2/8) SHIN CHIN INDUSTRIAL CO LTD (E67774), Cat. No. R13-502A. Momentary type, normally open, rated 250V, 1.5A, 85°C, mechanically secured within enclosure and connected in series ungrounded supply.
- e. Wire Connector - Four provided. R/C (ECBT2), CN, ZHEJIANG HONGXING ELECTRICAL CO LTD (E228500), Type HX2500X-YYY Housing, HX2500X-YYY Wafer, rated 3 A, 250 V, 85°C, for battery connection, LED PWB, LED Indicator, Test switch connection, mechanically secured and soldered to PCB.

Connector Item	Function
LED PWB connection (P1)	Connected LED PWB to Main Printed Circuit Board.
Test switch connection (P2)	Connected Test switch to Main Printed Circuit Board.
LED Indicator connection (P3)	Connected LED Indicator to Main Printed Circuit Board.
Battery connection (P4)	Connected Battery to Main Printed Circuit Board.

- f. Fuse (F1) - (JDYX2/8), DONGGUAN ANLU ELECTRONICS TECHNOLOGY CO LTD (E365174), Type AST/ASF, rated 400V, 1A, mechanically secured and soldered to PCB.

Alternate - (JDYX/7), same as above.

Fuse (F2) - (JDYX2/8), AEM COMPONENTS (SUZHOU) CO LTD (E232989), Type MF2410F, rated 250V, 1A, soldered to PCB on battery circuit.

Alternate - (JDYX/7), same as above.

- g. Varistor(MOV1)- R/C (VZCA2), CN, ANEN HOLDING (CHINA) LIMITED (E488728), type AN07D561K, AN-07D561K, AN07D-561K, 07D561K, ANEN-07D561K, ANEN07D-561K, ANEN07D561K, 07D-561K, SPD type 5, rated 350Vac, 130°C
- h. Isolator(U1) - R/C (FPQU2/8), rated isolation voltage 5000 Vac min., operating temperature 100°C minimum. Bridging primary to secondary.
- I. supply wire - R/C (AVLV2/8), rated min. 18 AWG, rated minimum 600 V. 90°C, white color is neutral, black color is line.
- j. Capacitors - All electrolytic capacitors should meet the temperature resistance of 105°C. Refer to ILL.10 for details.

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Winding devices - See below for details.

No.	Item	CCN	Manufacturer (File Number)	Part Number	Rating	(F)IG (I)LL
1	Transformer (TR1)	-	-	-	Rated 3.4mH.	I-13
1.1	Core	-	-	-	Ferrite, 13 mm by 13mm by 6 mm overall.	
1.2	Bobbin	QMFZ2, QMFZ8	Various	Various	Phenolic, 0.71 mm thick minimum, rated V-0, 150°C.	
1.3	Primary Winding (N1, N2)	OBMW2	Various	Various	Enamel copper wire, rated min. 130°C. N1: 154 T x 0.15 mm x 1 P N2: 13 T x 0.15 mm x 1 P	
1.4	Secondary Winding (N3)	OBJT2	Furukawa Electric Co., Ltd. (E206440)	TEX-E, TEX-EA	Triple Insulated Wire, rated 130°C, 1410Vpeak. N3: 16 T x 0.25 mm x 1 P	
1.5	Tape (Blue color)	OANZ2	SHEN ZHEN XINHUAHUI ELECTRONIC MATERIALS CO LTD (E328315)	HMT	PET tape, 0.05 mm thick per layer, 9 layers provided, 130°C.	
1.5 .1	Tape (Yellow color)	OANZ2	SHEN ZHEN XINHUAHUI ELECTRONIC MATERIALS CO LTD (E328315)	HMT803	PET tape, 0.05 mm thick per layer, 3 layers provided, 130°C.	
1.6	Solder	-	-	-	-	
1.7	Varnish- thermosetting	OBOR2	Various	Various	Rated min. 130°C.	

7. BATTERY HOLDER for CR-7109R and CR-7109G - located in enclosure, R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y) (a), rated V-0, 120 C, min 1.0 mm thick, details see ILL.14.
8. PWB Holder for CR-7109R and CR-7109G - located in enclosure, R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y) (a), rated V-0, 120 C, min 1.0 mm thick, details see ILL.15.
9. BATTERY HOLDER AND PWB Holder - CR-7108R and CR-7108G, R/C (QMFZ2), ZHEN JIANG CHI MEI CHEMICAL CO LTD (E194560), Cat. No. PC-6600(Y) (a), rated V-0, 120 C, min 1.0 mm thick, details see ILL.16.
10. Bonding pad - CR-7108R and CR-7108G, made of metal, Used to connect the ground wire, secured to Battery Holder AND PWB Holder by physical fit. Details see ILL .17.
11. Battery - Nickel cadmium type, consisting of four cells, connection in series. Each cell rated 1.2V, 300mAh, R/C (BBET2), JYH Technology Co., Ltd (MH46886), type 2/3AAA300. Total 4.8V, 300mAh, connected with PWB by lead wiring and connector.

12. See Ill. 18 and Ill. 19 for installation instruction.
13. Grounding wire - R/C (AVLV2/8) AWM, min. 18AWG, rated minimum 600V, 90°C, min. 152 mm long pigtail, with insulation color green or green with a yellow strip. For CR-7108R and CR-7108G, secured to Bonding pad by screw; for CR-7109R and CR-7109G, secured to Main Housing by rivet.

Figure-1 Page-1



Figure-2 Page-1



Figure-3 Page-1

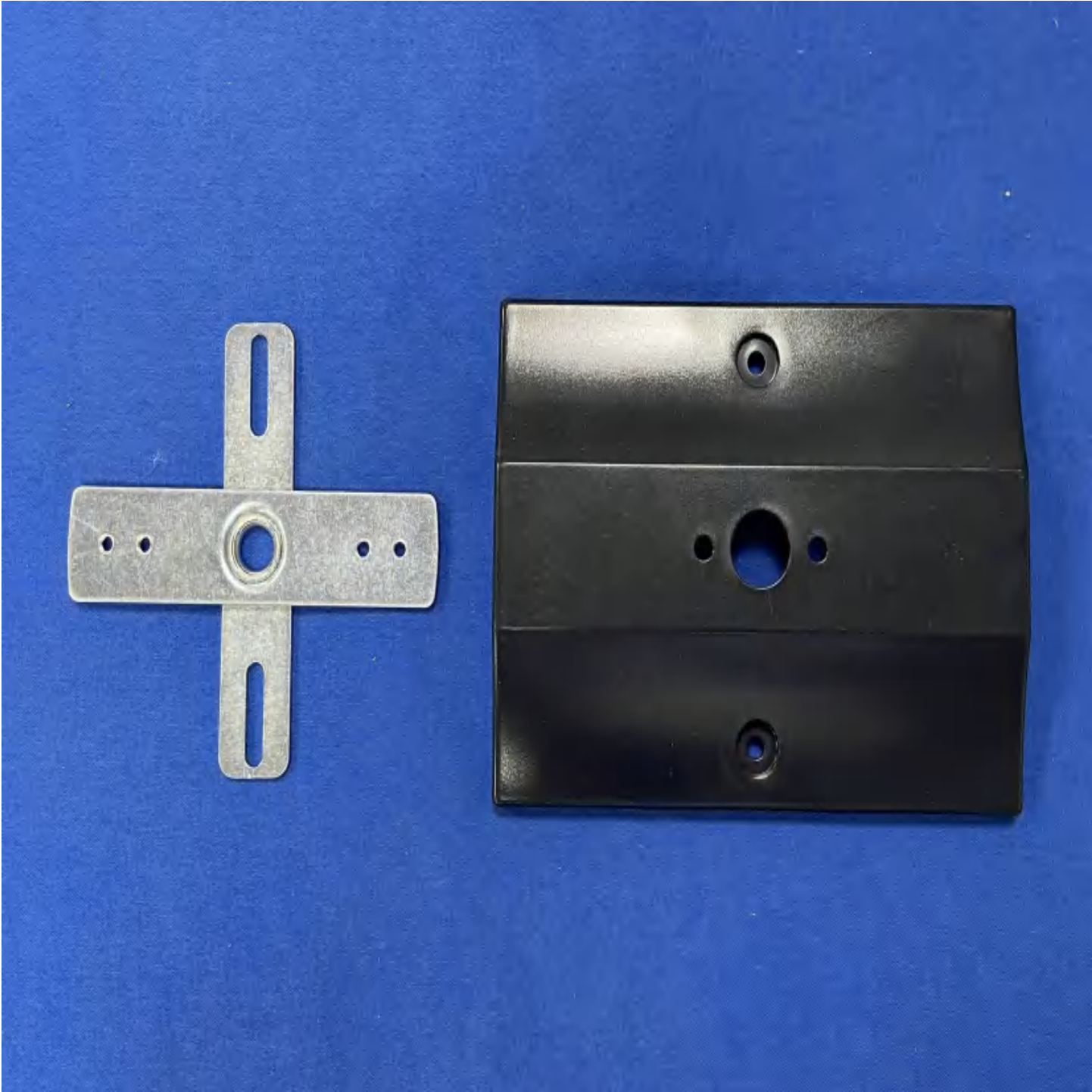


Figure-4 Page-1

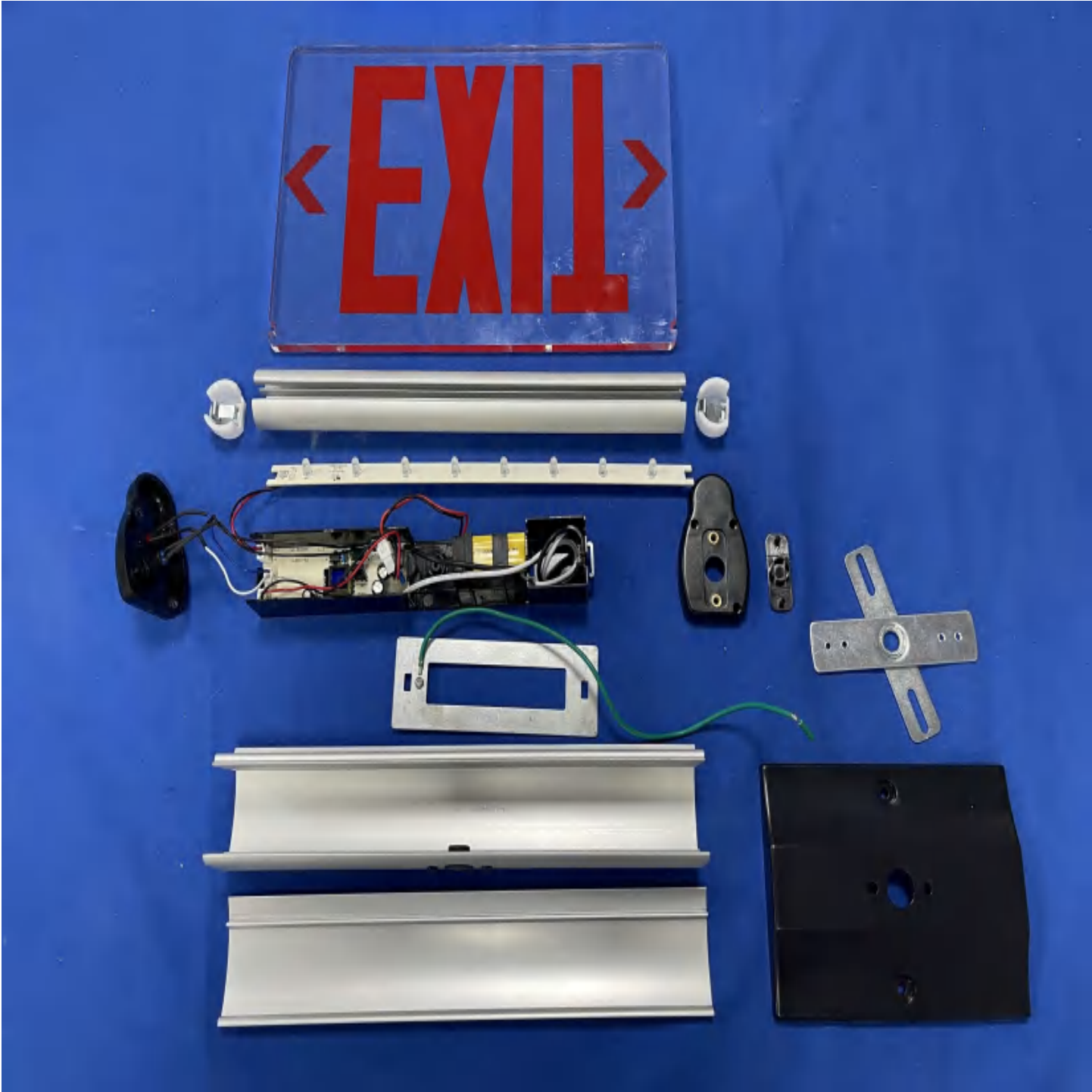
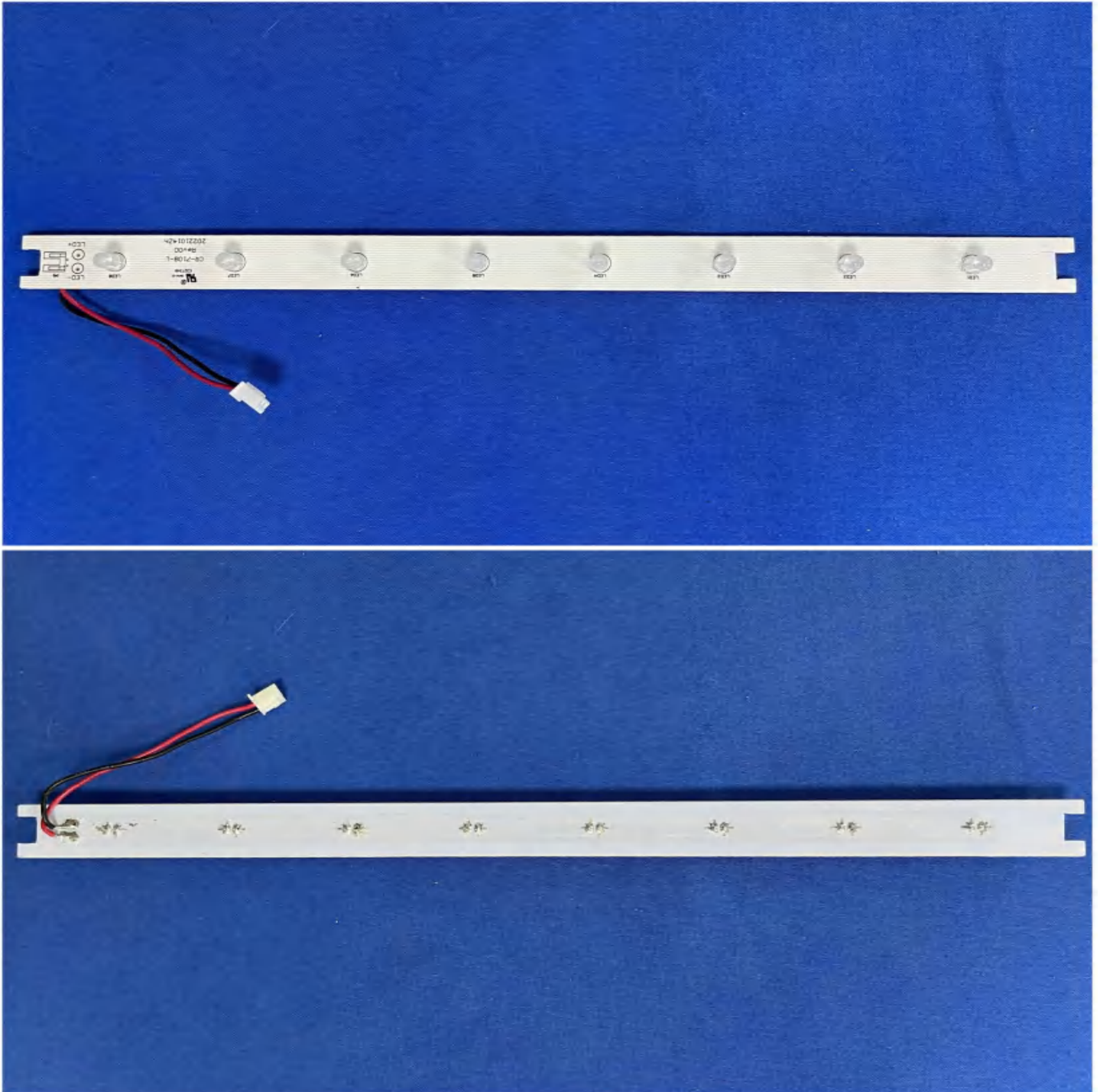


Figure-5 Page-1

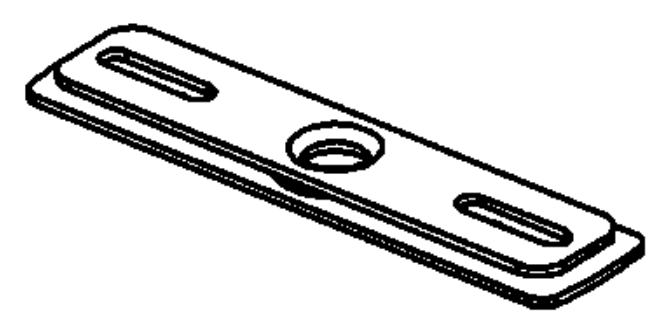
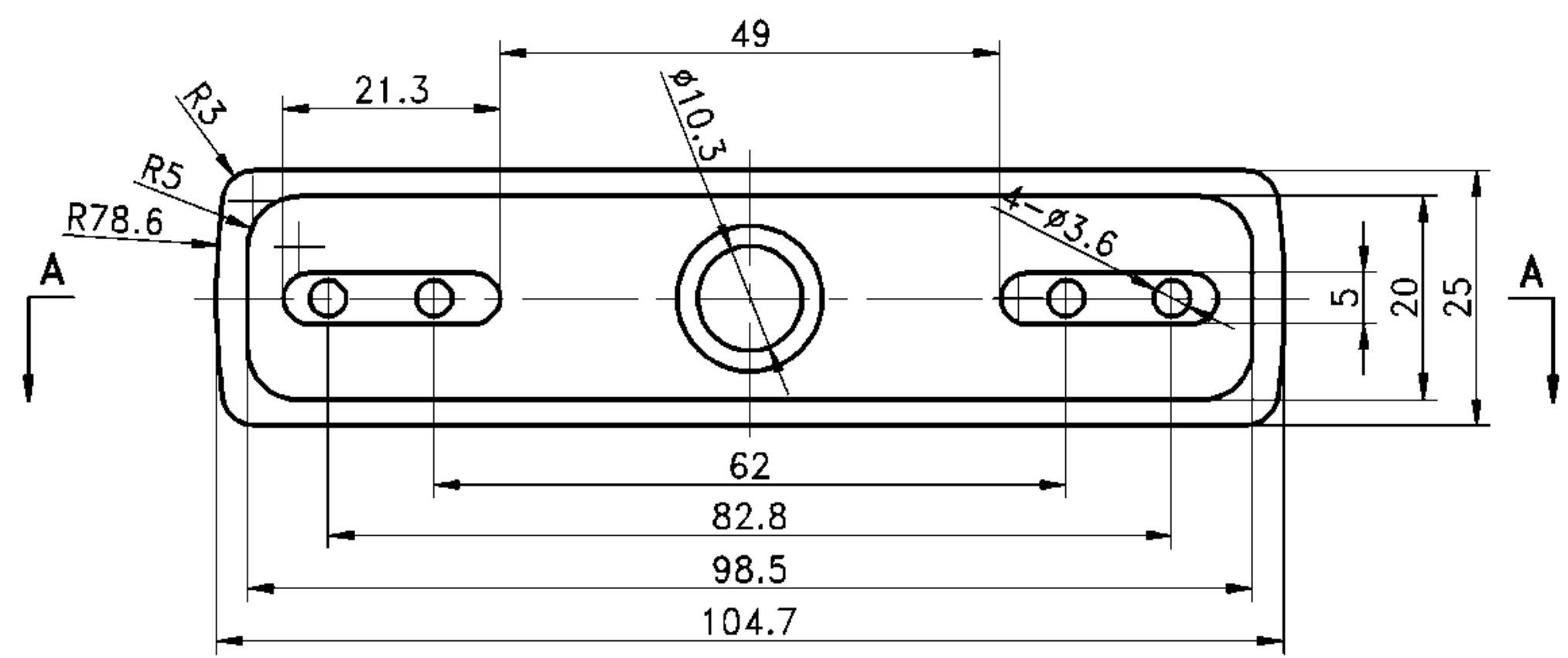


Figure-7 Page-1

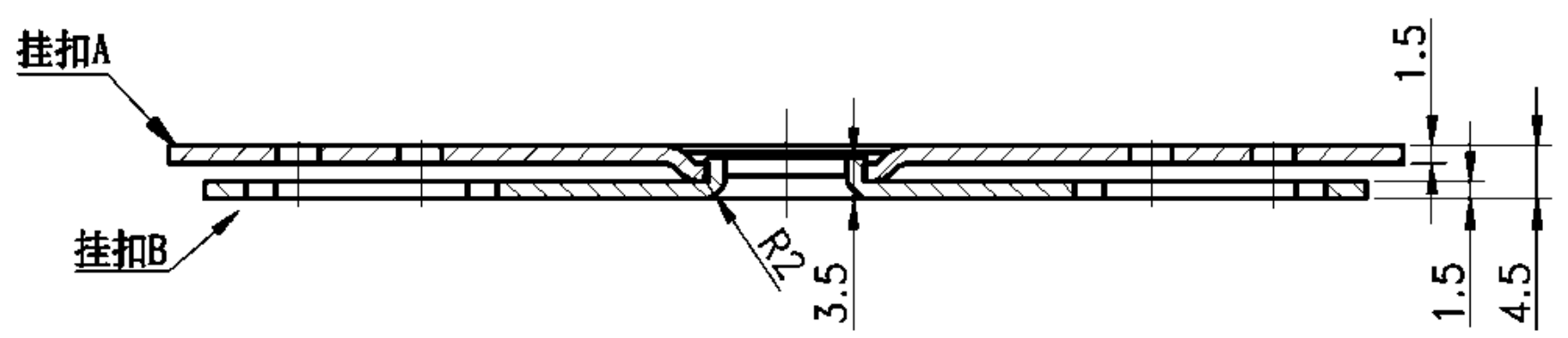


The following Page(s) are related to Illustration-1. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1	2	3	4	5	6							
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000	编号	描述/修改内容	制图	日期
GB1804-M	±0.1	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2	▽			



3D VIEW



SEC:A-A

技术要求:

1. 产品表面不可有毛刺, 飞边, 等不良现象.
2. 未注R=0.5mm, 未注脱模斜度为1°.
3. 未注尺寸请参考3D图档, 曲面部分请以实配为准.
4. 挂扣A、B之间可进行360度自由旋转,

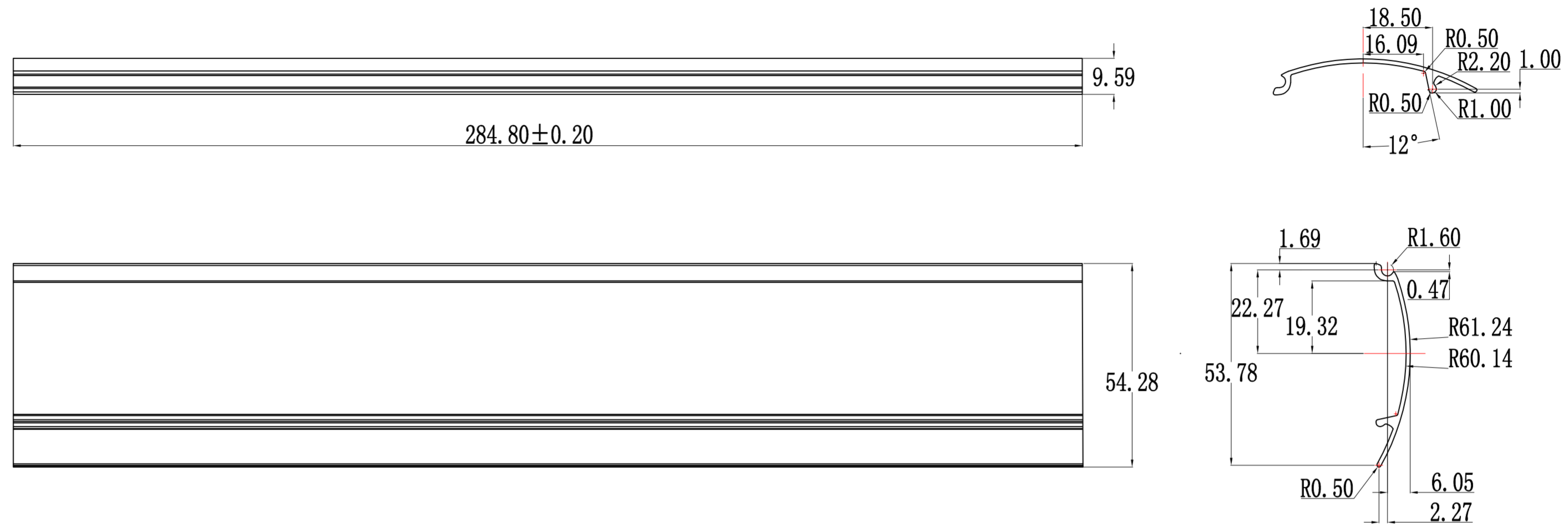
图档名称	零件图	文件编号				版本	
产品型号		零件名称	CR-7007 五金挂扣	材质	铁	表面处理	镀白锌
比例	1:1	单位	mm	第 1 页 共 1 页		未注公差	
绘制	孙于威/2019.07.29	审核		批准		GB1804-M	
宁波长荣光电科技有限公司						A4	

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



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

1			2			3			4		5		6	
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容			制图	日期
GB1804-M	± 0.05	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2						

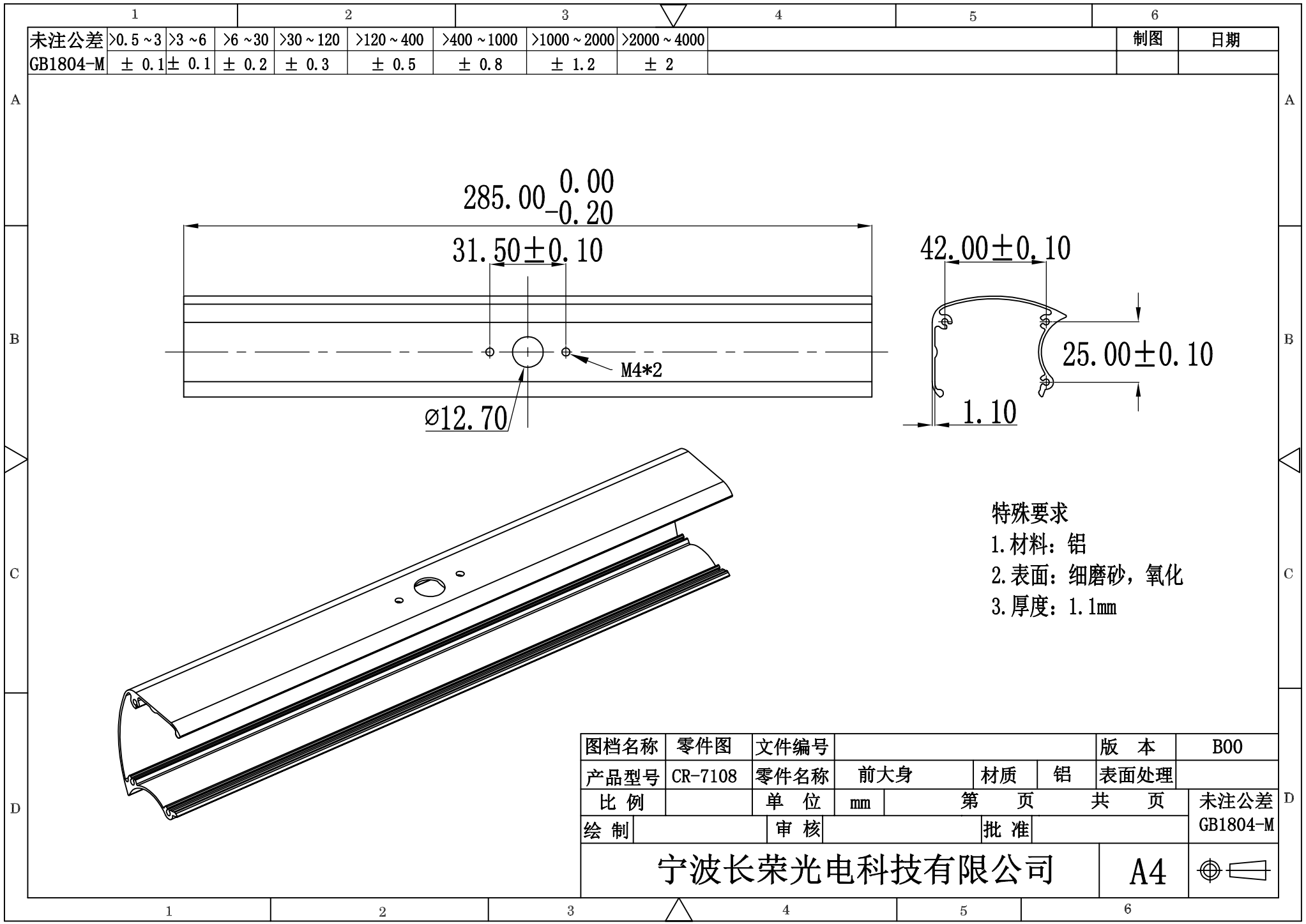


技术要求:

1. 表面氧化处理
2. 表面无毛刺
3. 各公差尺寸必须精准
4. 总长度尺寸必须短于上大身
5. 与上大身的配装尺寸必须精准

图档名称	零件图	文件编号					版本	B00
产品型号	CR-7108	零件名称	上大身	材质	铝	表面处理	氧化	
比例		单位	mm	第 页	共 页	未注公差		
绘制		审核		批准		GB1804-M		
宁波长荣光电科技有限公司						A4		

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



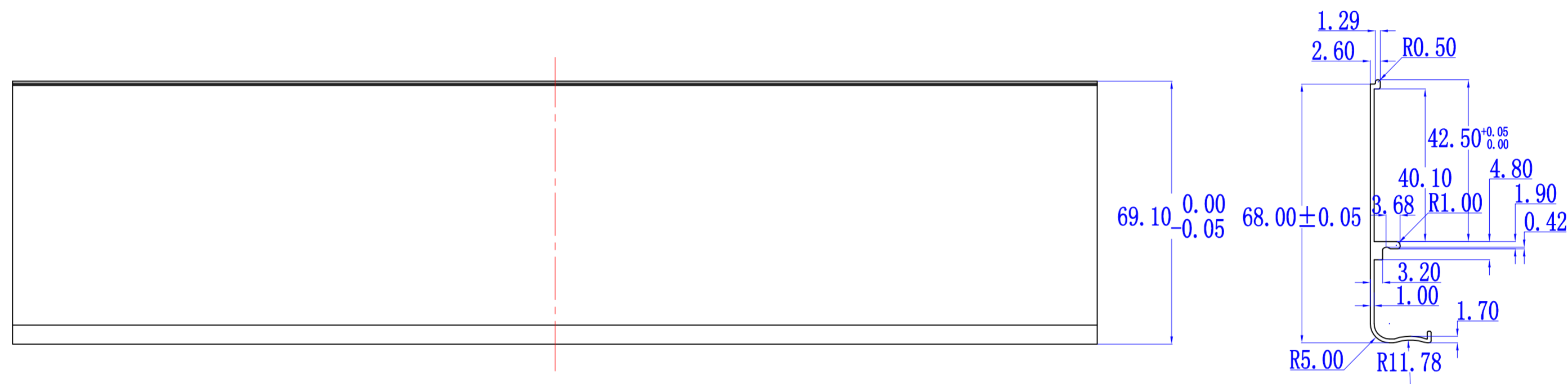
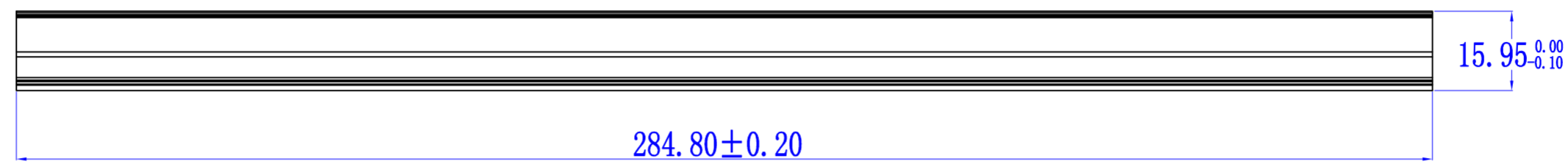
1	2	3	4	5	6					
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2		

- 特殊要求
1. 材料: 铝
  2. 表面: 细磨砂, 氧化
  3. 厚度: 1.1mm

图档名称	零件图	文件编号				版本	B00
产品型号	CR-7108	零件名称	前大身	材质	铝	表面处理	
比例		单位	mm	第 页	共 页	未注公差	D
绘制		审核		批准		GB1804-M	
宁波长荣光电科技有限公司						A4	

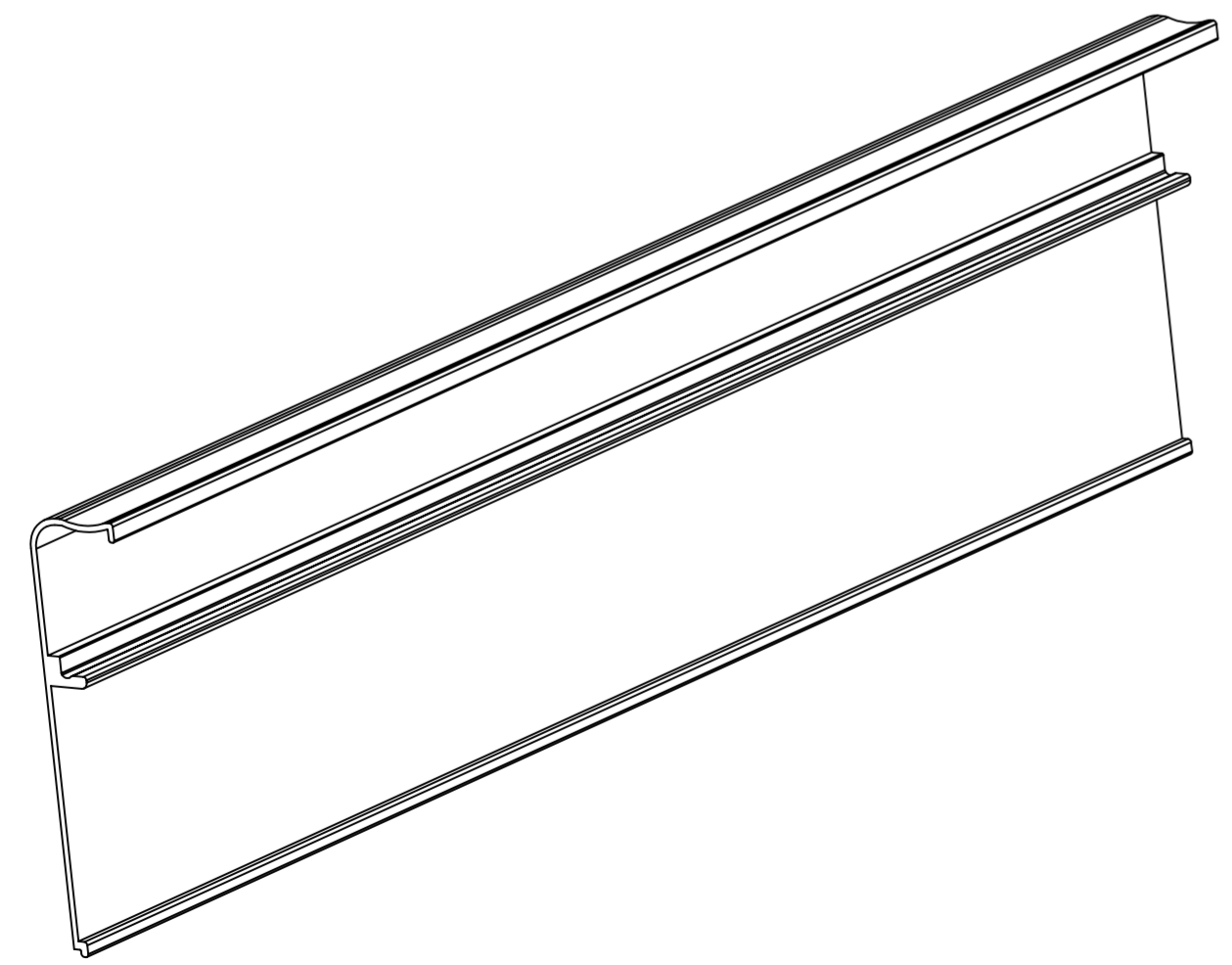
The following Page(s) are related to Illustration-4. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1		2			3				4	5		6	
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000	编号	描述/修改内容		制图	日期
GB1804-M	±0.05	±0.1	±0.2	±0.3	±0.5	±0.8	±1.2	±2					



技术要求:

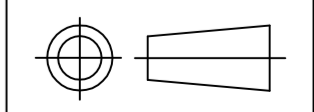
1. 表面拉丝处理
2. 表面无毛刺
3. 各公差尺寸必须精准
4. 总长度尺寸必须短于下大身
5. 与下大身的配装尺寸必须精准



图档名称	零件图	文件编号					版本	B00
产品型号	CR-7109	零件名称	上大身	材质	铝	表面处理	拉丝	
比例		单位	mm	第 页	共 页	未注公差		
绘制		审核		批准		GB1804-M		

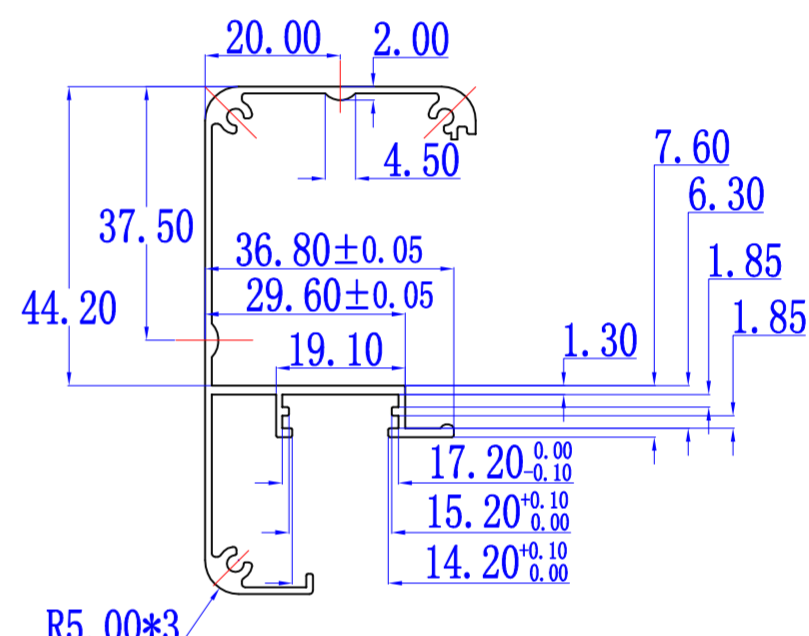
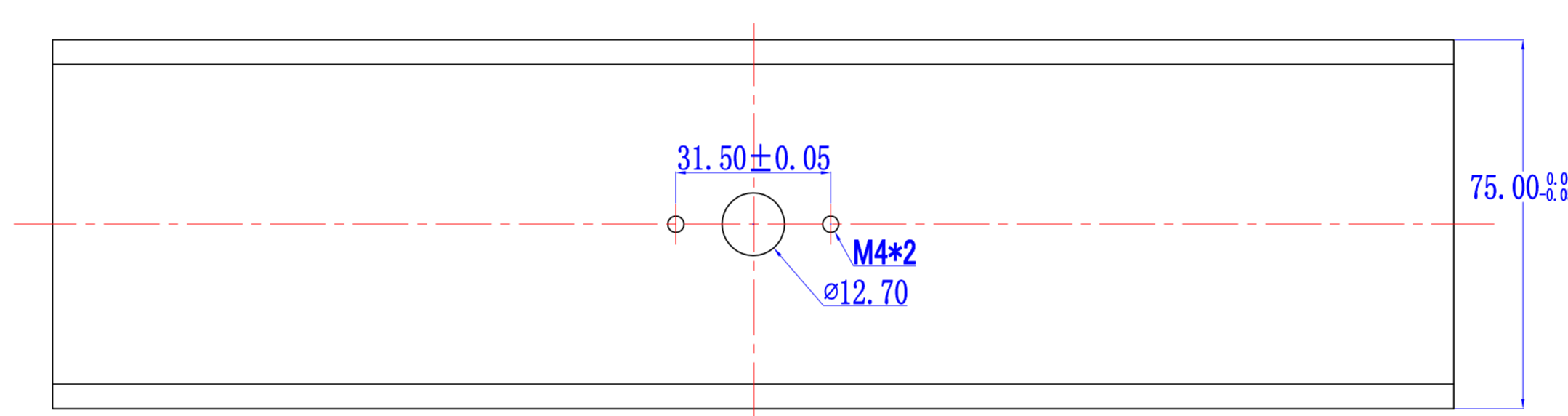
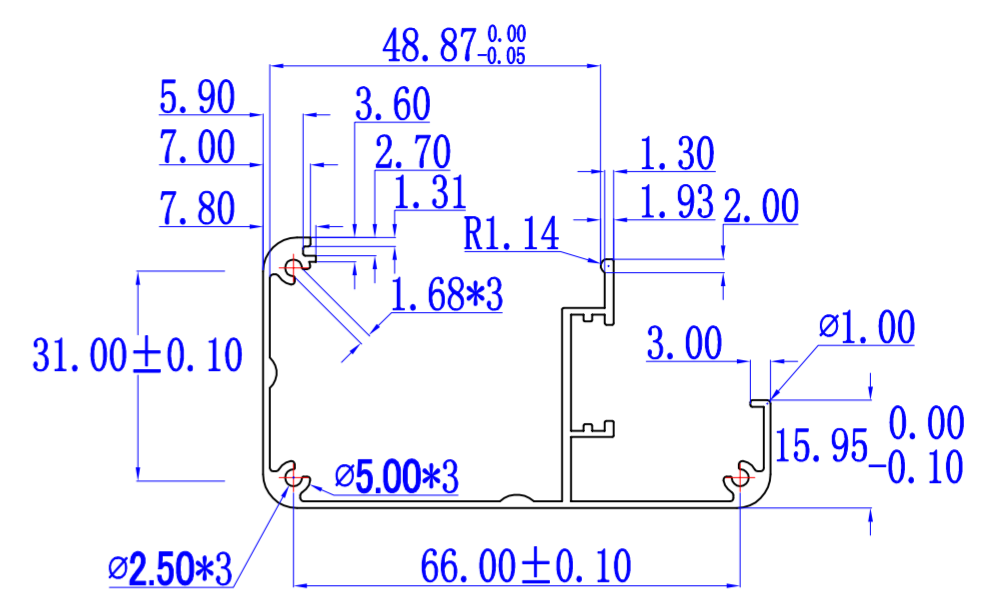
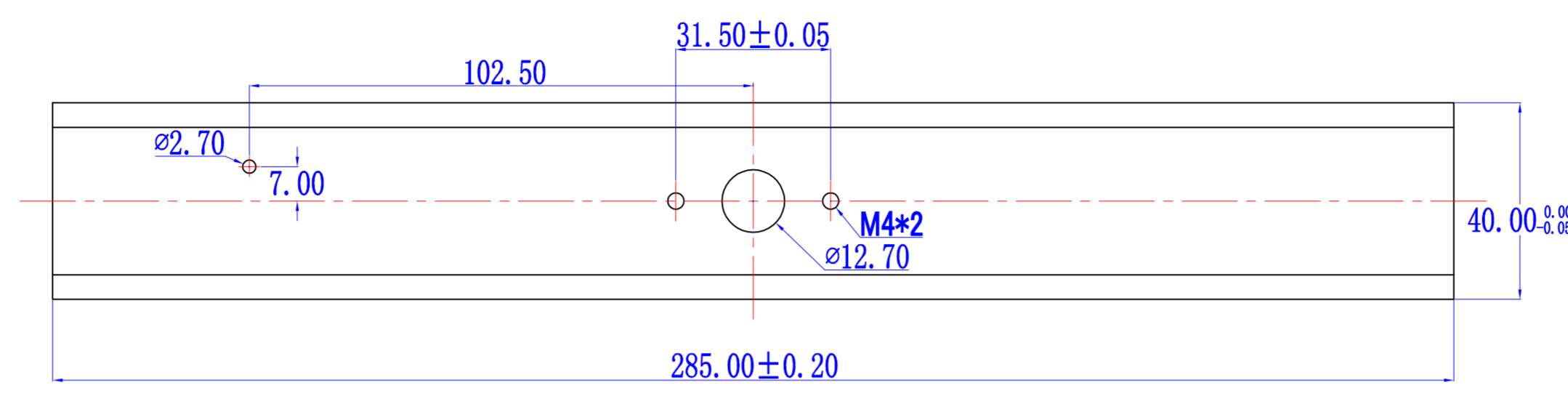
宁波长荣光电科技有限公司

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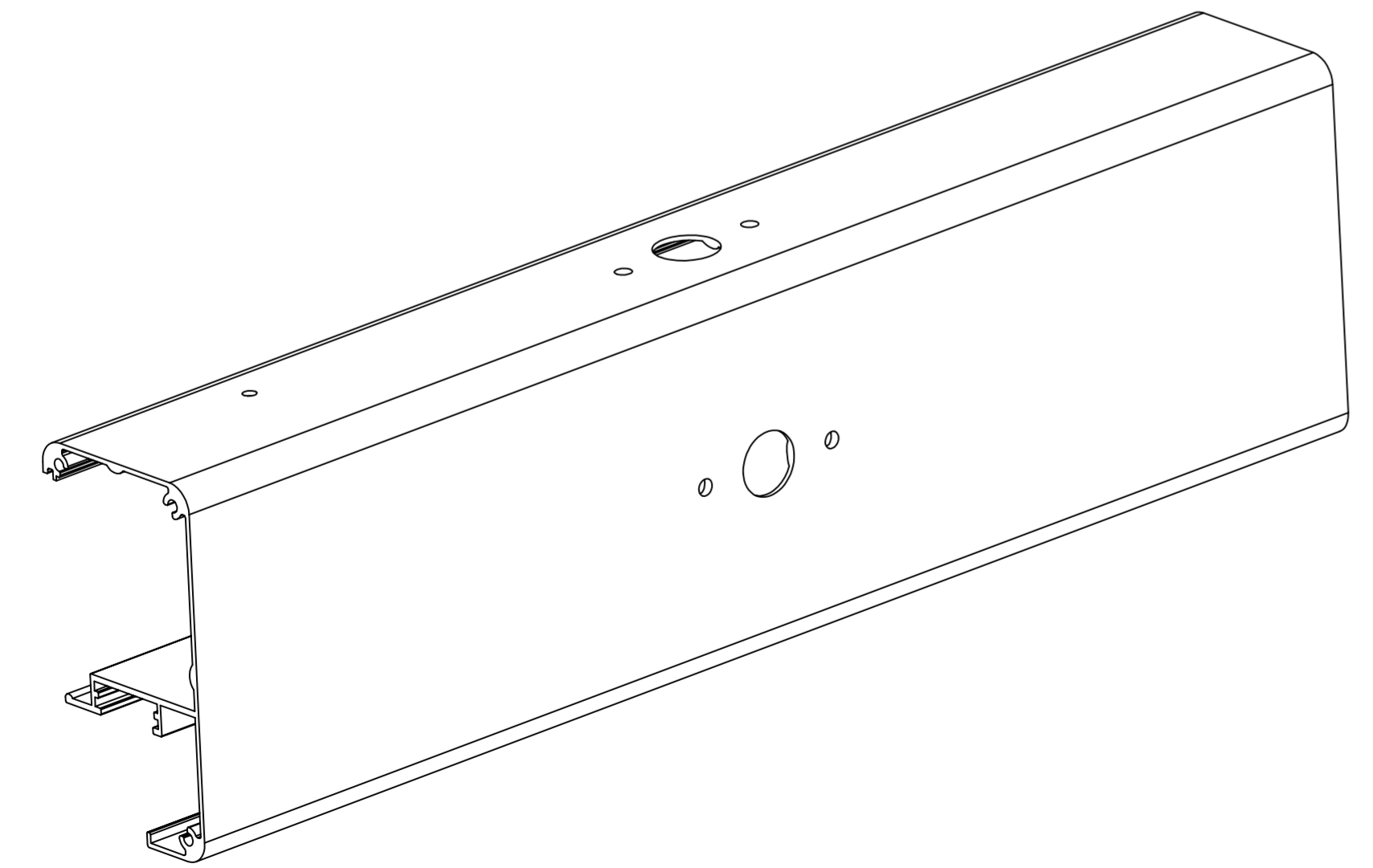


The following Page(s) are related to Illustration-4A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1		2		3		4		5		6		
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容	制图	日期
GB1804-M	± 0.05	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2				



- 技术要求:
1. 表面拉丝处理
  2. 表面无毛刺
  3. 各公差尺寸必须精准
  4. 总长度尺寸必须长于上大身
  5. 与上大身的配装尺寸必须精准



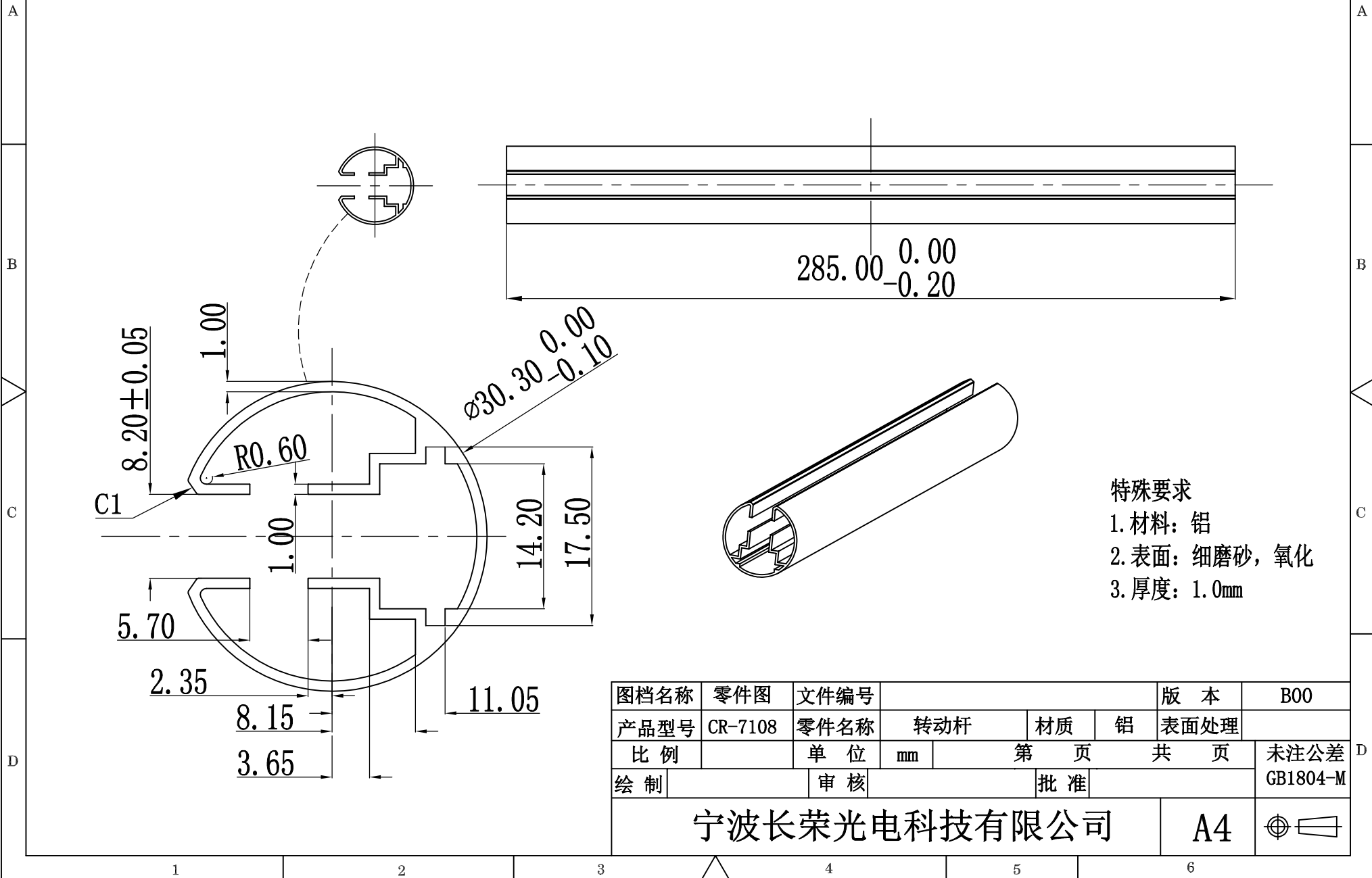
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产品型号	CR-7109	零件名称	下大身	材质	铝	表面处理	拉丝	
比例		单位	mm	第 页	共 页	未注公差		
绘制		审核		批准		GB1804-M		

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

1	2	3	4	5	6	制图	日期			
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000		
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2		

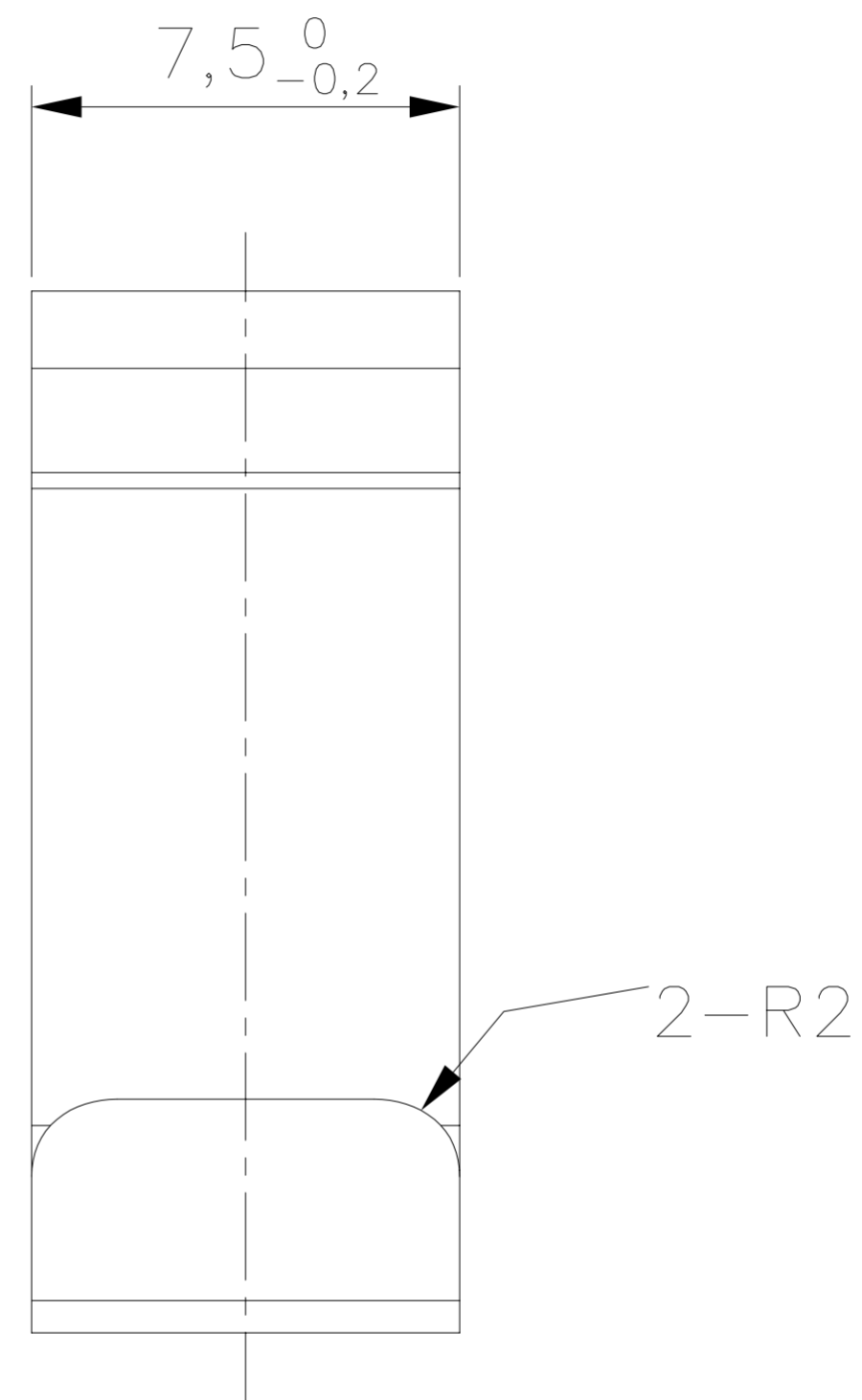
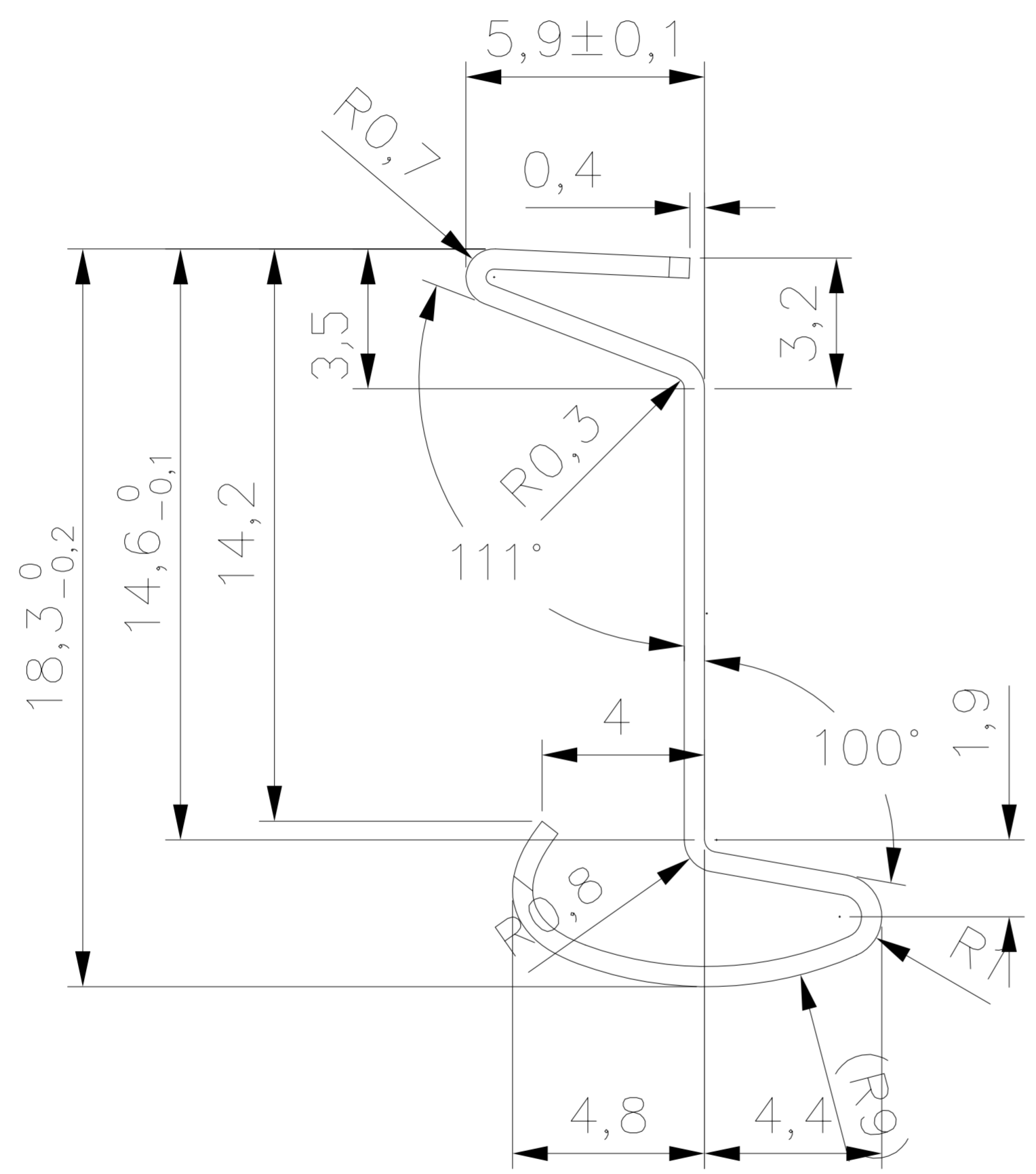


- 特殊要求
1. 材料: 铝
  2. 表面: 细磨砂, 氧化
  3. 厚度: 1.0mm

图档名称	零件图	文件编号				版本	B00
产品型号	CR-7108	零件名称	转动杆	材质	铝	表面处理	
比例		单位	mm	第 页	共 页	未注公差	GB1804-M
绘制		审核		批准			
宁波长荣光电科技有限公司						A4	

The following Page(s) are related to Illustration-6. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1		2			3			4		5		6	
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000	编号	描述/修改内容		制图	日期
GB1804-M	±0.1	±0.2	±0.3	±0.1	±0.5	±0.8	±1.2	±2	▽				



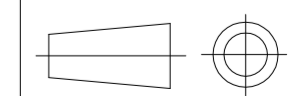
技术要求:

- 1、材质301不锈钢;
- 2、所有锐角倒R.5;

图档名称	零件图	文件编号			版本	T1	
产品型号	CR-7108	零件名称	弹片	材质	不锈钢	表面处理	原色
比例		单位	mm	第 页	共 页	未注公差	GB1804-M
绘制		审核		批准			

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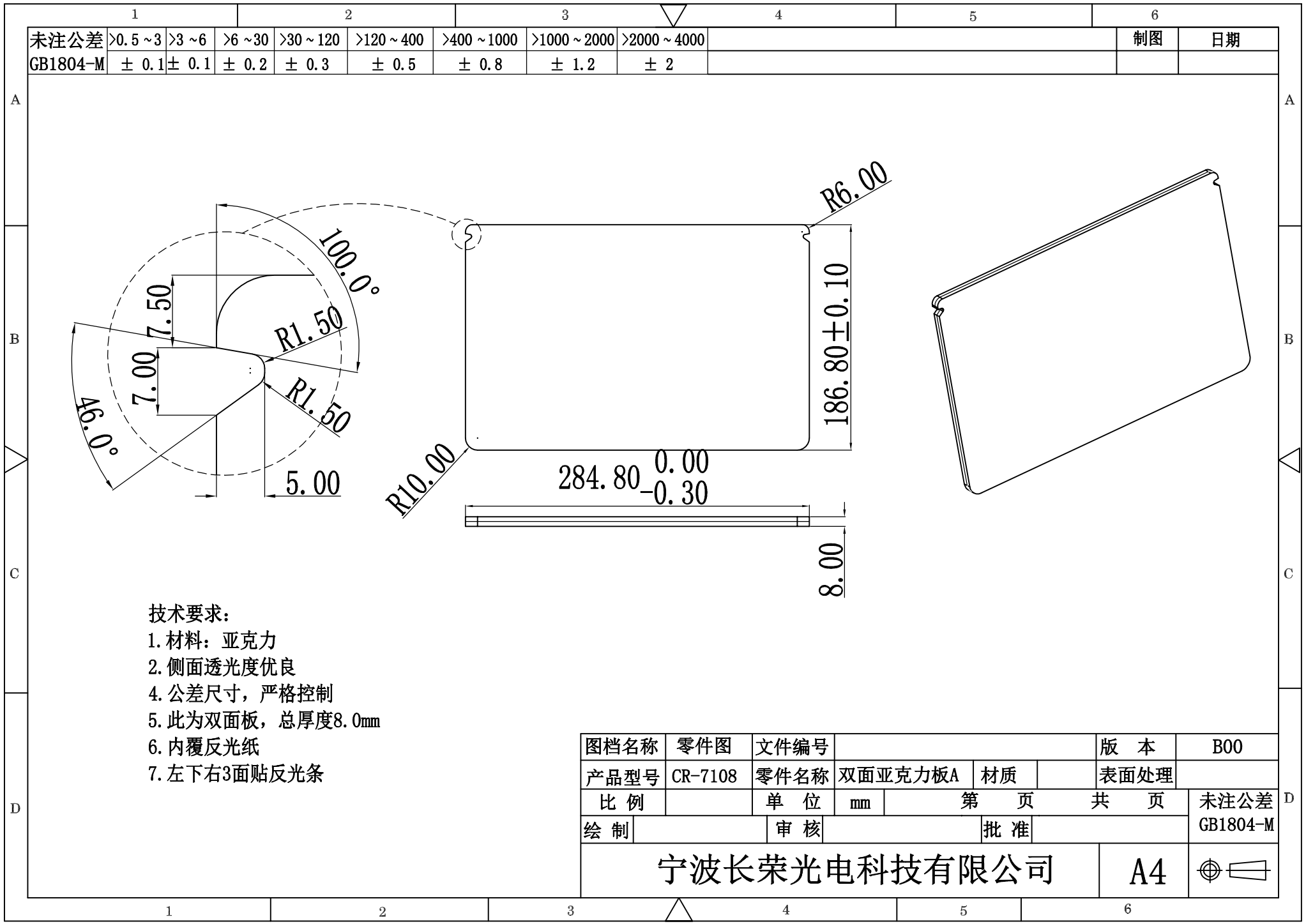
A4



The following Page(s) are related to Illustration-7. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



The following Page(s) are related to Illustration-8. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

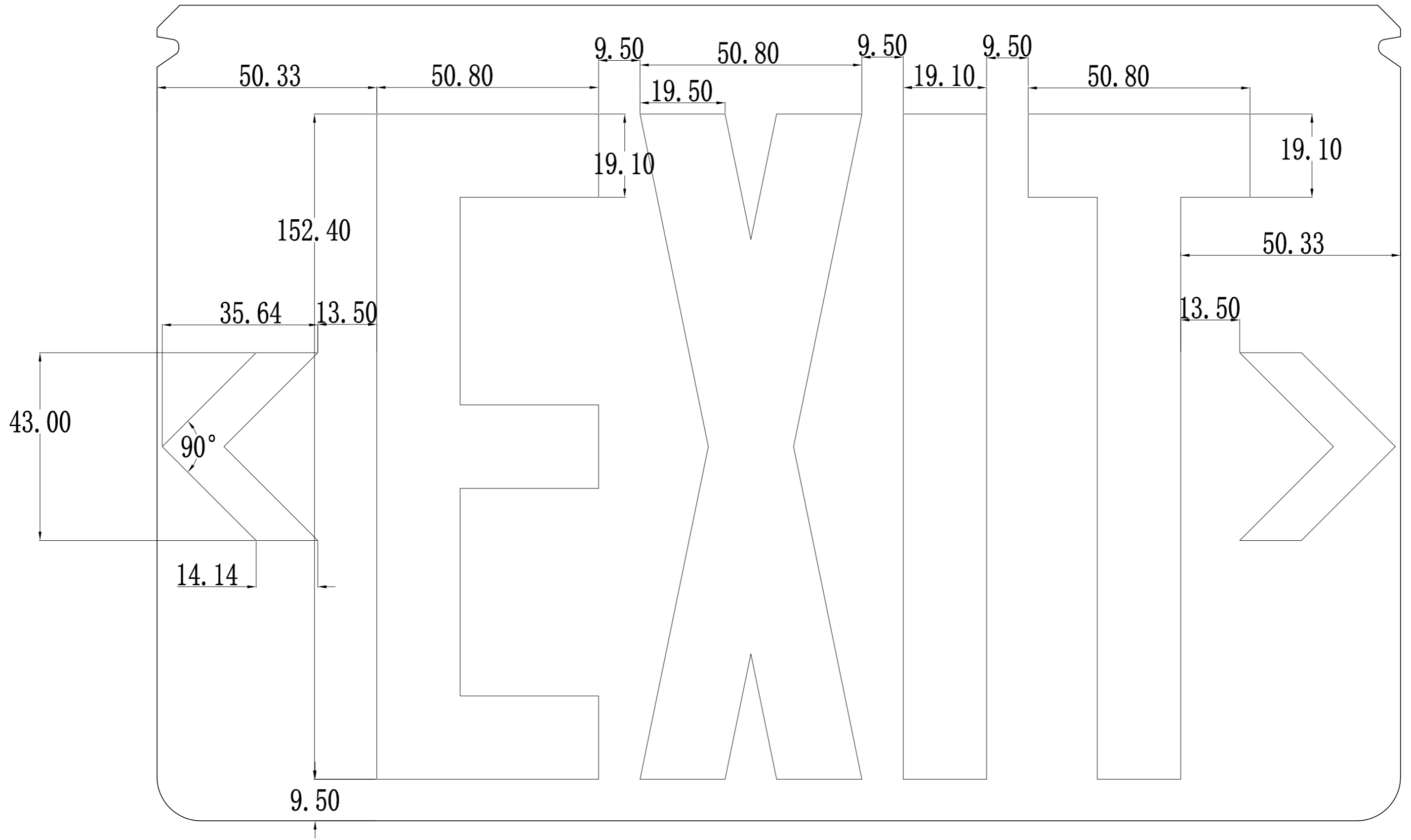


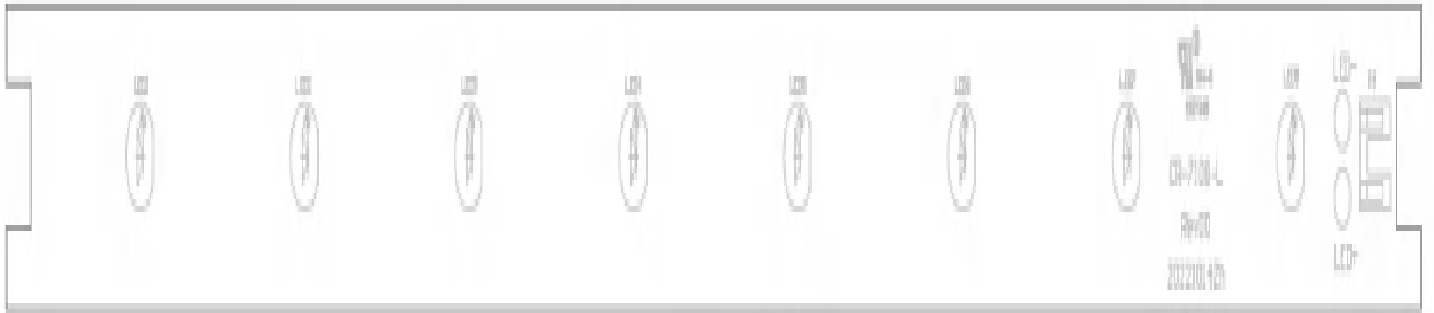
技术要求:

1. 材料: 亚克力
2. 侧面透光度优良
4. 公差尺寸, 严格控制
5. 此为双面板, 总厚度8.0mm
6. 内覆反光纸
7. 左下右3面贴反光条

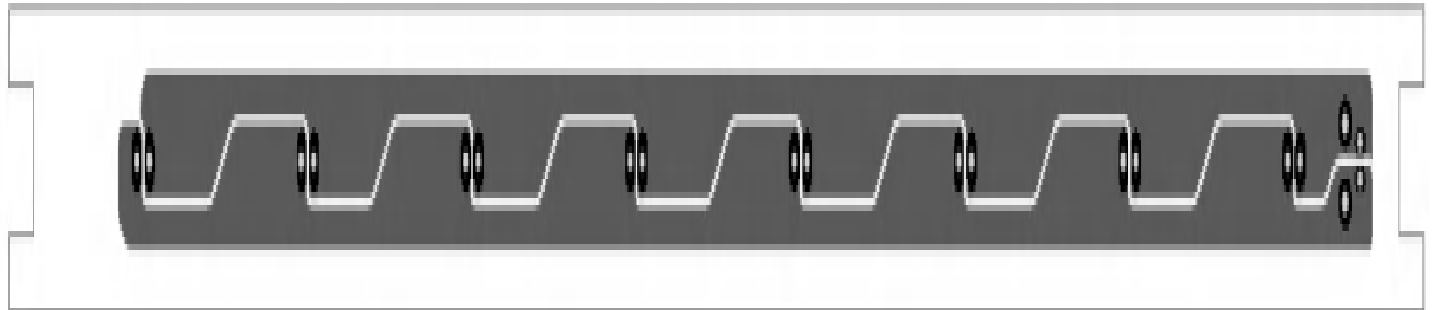
图档名称	零件图	文件编号			版本	B00
产品型号	CR-7108	零件名称	双面亚克力板A	材质	表面处理	
比例		单位	mm	第 页	共 页	未注公差
绘制		审核		批准		GB1804-M
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1	2	3	4	5	6						
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000		制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2			





Panel-C01 Single Side , Thru-hole.dwg  
S:\0620\916.591.dwg Scale:1

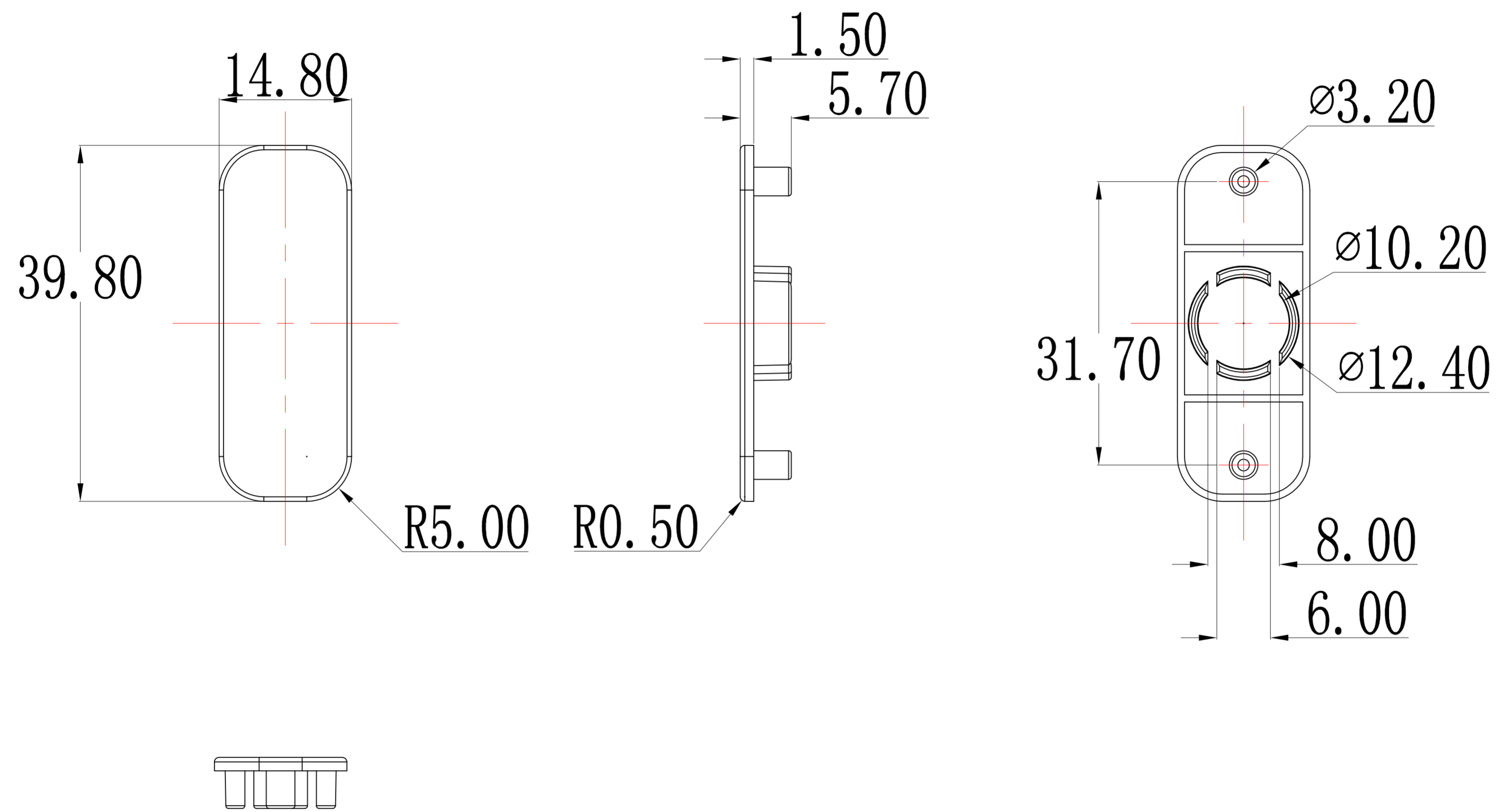


The following Page(s) are related to Illustration-11. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



The following Page(s) are related to Illustration-11A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

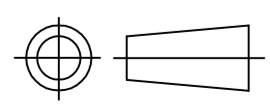
1		2			3				4	5		6	
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容		制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2					



图档名称	零件图	文件编号				版本	B00
产品型号	CR-7108	零件名称	小盖	材质	PC	表面处理	
比例		单位	mm	第 页	共 页	未注公差 GB1804-M	
绘制			审核			批准	

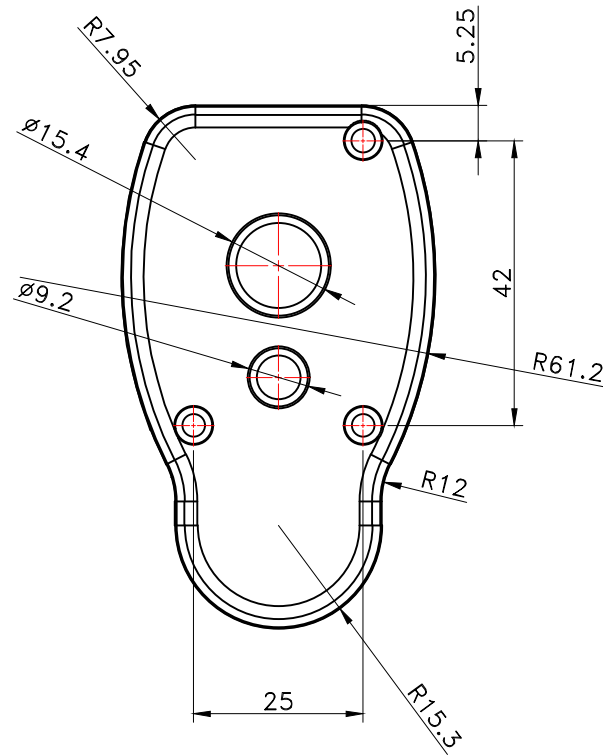
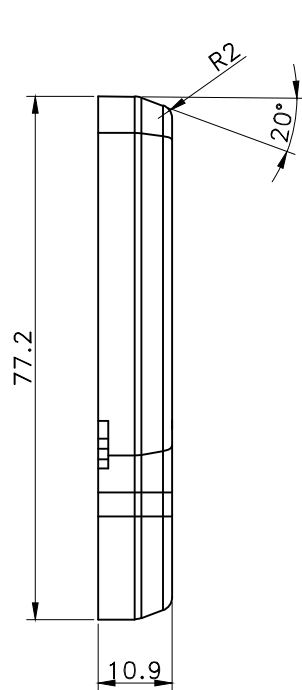
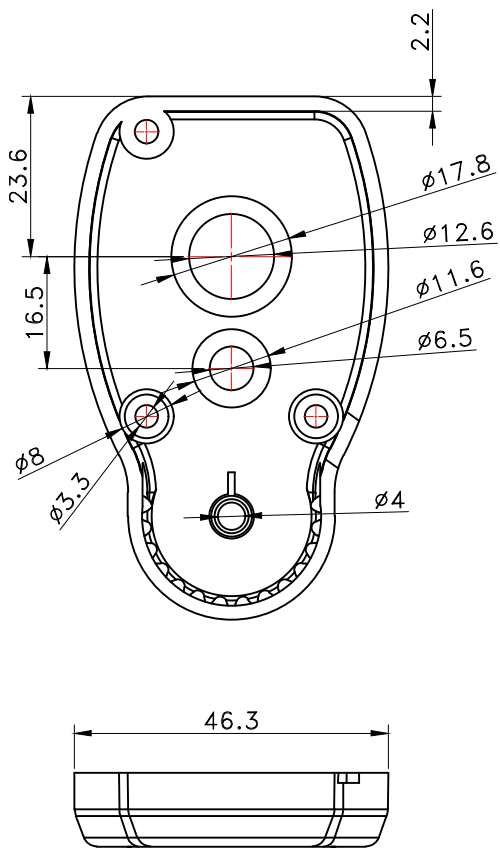
宁波长荣光电科技有限公司

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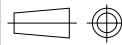


The following Page(s) are related to Illustration-11B. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1	2	3	4	5	6							
未注公差	>0.5~3	>3~6	>6~30	>30~120	>120~400	>400~1000	>1000~2000	>2000~4000	编号	描述/修改内容	制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2	▽			

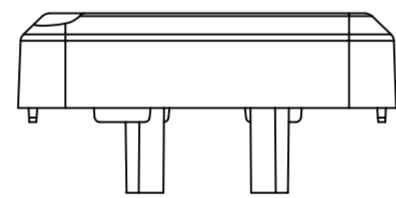
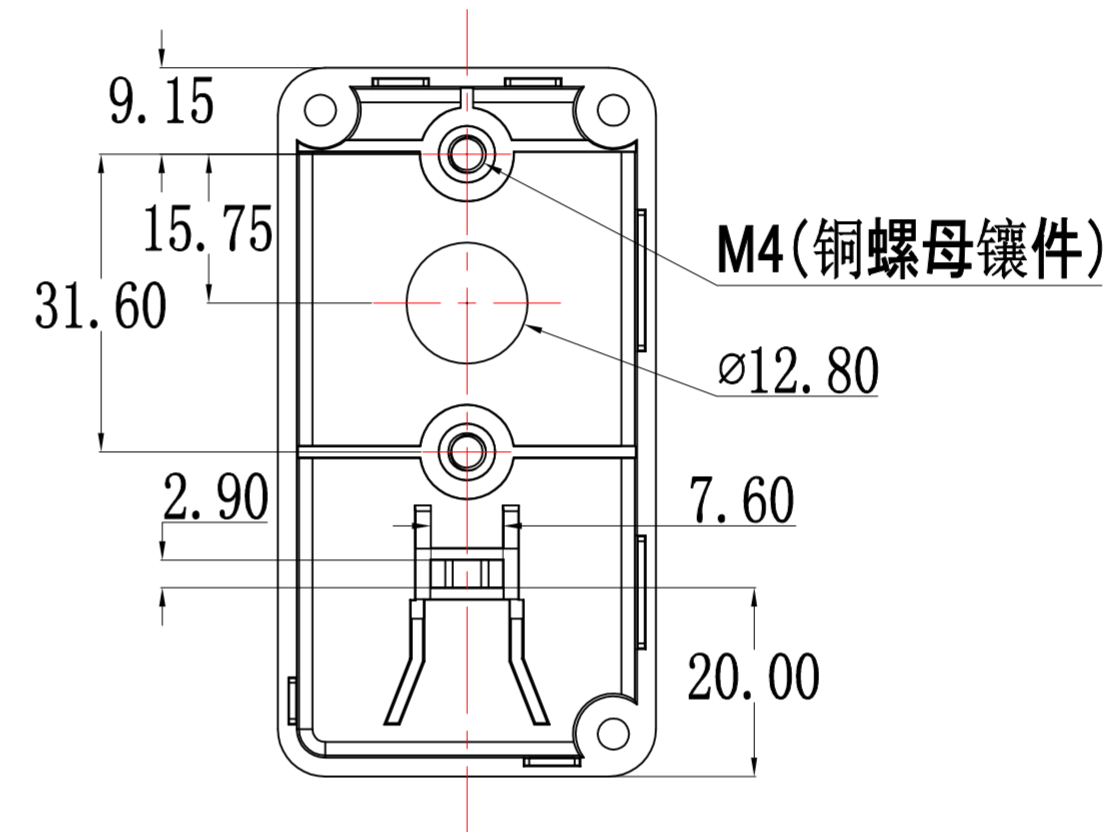
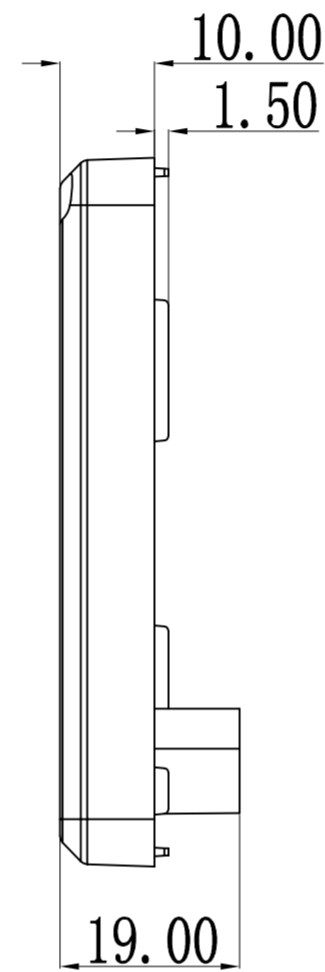
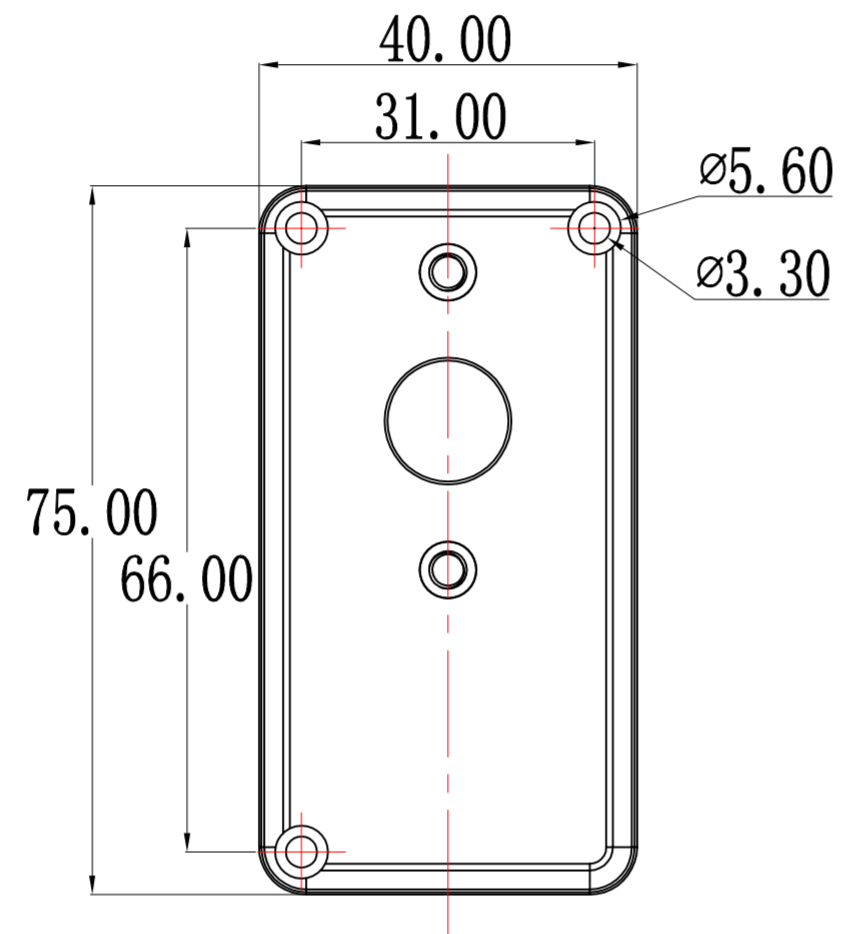


图档名称	零件图	文件编号		版本	B0
产品型号	CR-7108	零件名称	左盖	材质	PC
比例	1:1	单位	mm	第 1 页	共 1 页
绘制		审核		批准	
宁波长荣光电科技有限公司					A4



The following Page(s) are related to Illustration-12. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

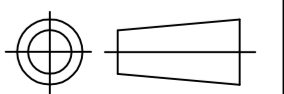
1		2		3		4		5		6		
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容	制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2				



图档名称	零件图	文件编号				版本	B00
产品型号	CR-7109	零件名称	右盖	材质	PC	表面处理	
比例		单位	mm	第 页	共 页	未注公差	
绘制		审核		批准		GB1804-M	

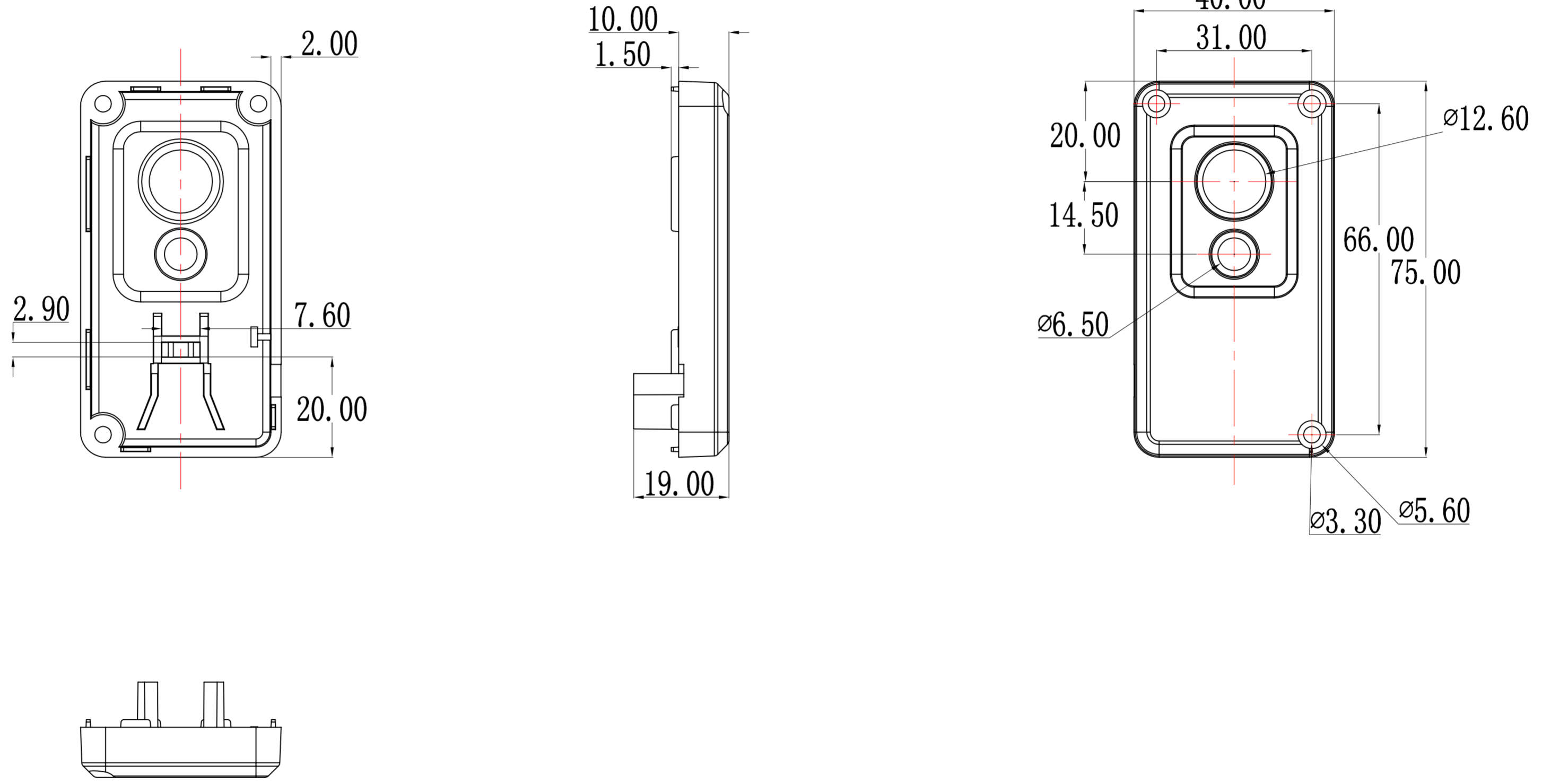
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The following Page(s) are related to Illustration-12A. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

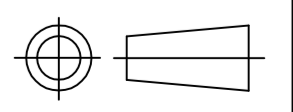
1			2			3			4		5		6	
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容			制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2						



图档名称	零件图	文件编号				版本	B00
产品型号	CR-7109	零件名称	左盖	材质	PC	表面处理	
比例		单位	mm	第 页	共 页	未注公差 GB1804-M	
绘制			审核	批准			

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# 中山市炫格电子有限公司

## 产品规格书

ZhongShan XuanGe Electronic technology co., Ltd

### PRODUCT SPECIFICATION

客户名称 (CUSTOMER) : Ningbo Changrong Lighting & Electronics

客户料号 (CUSTOMER P/N) : EE13-6-3.4mH

炫格料号 (XG PART NO) : XG-3190

品名规格 (DESCRIPTION) : EE13

发行版本 (XG REV) : A/0

发行日期 (ISSUING DATE) : 2023. 4. 28

Manufacturer Confirmation Column 制造商确认栏			
Confirmation Seal 确认印章	Draw By 制作	Checked By 审核	Approved By 批准
	Li Ning 李宁	Hu Pai 胡派	Chen Junyi 陈军毅
Customer Recognition Column 客户承认栏			
Recognition Seal 承认章	Examined By 检验	Checked By 审核	Approved By 批准

公司地址：中山市小榄镇高沙同兴西路2号二楼

ADDRESS : 2nd Floor, No. 2 Tongxing West Road, Gaosha, Xiaolan Town, Zhongshan City

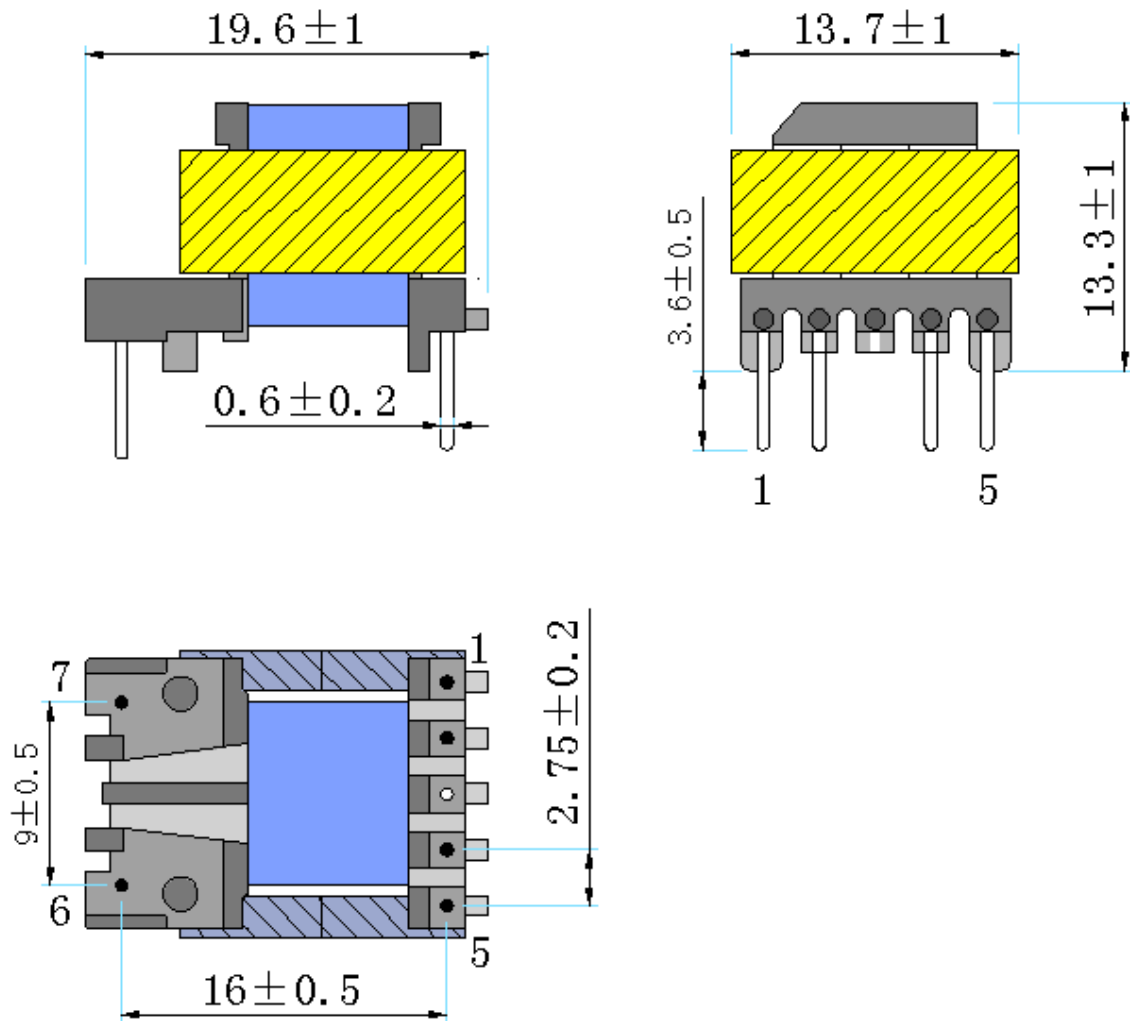
Tel : (电话) 0760-22139646

FAX : (传真) 0760-22219156

Http : //www.xuangedz.com



1. OUTLINE DIM. DWG (UNIT: mm) 外型尺寸图



NOTE:

- 1. Skeleton(骨架)PIN 3 NO;

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Hu Pai

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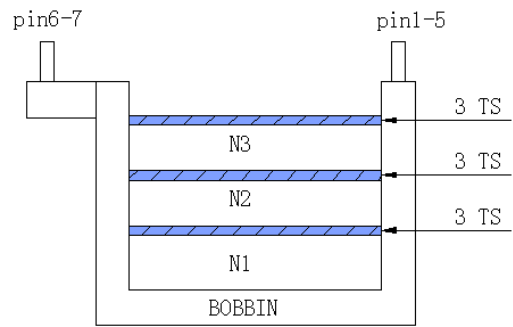
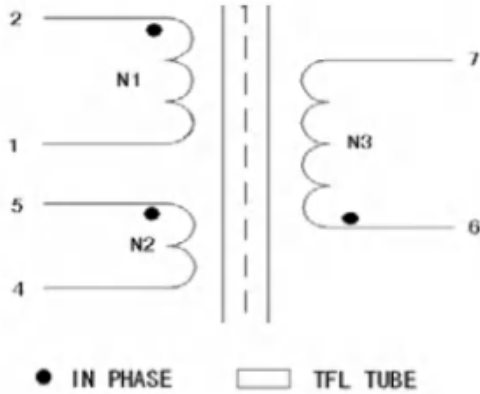
Li Ning

DATE

2023. 4. 28

2. SCHEMATIC: (原理图)

3. WINDING STRUCTURE: (结构图)



4. WINDING ORDER (绕线顺序)

NO	S-F	WIRE SIZE	URNS	PIN1 DIRECTION	INSULATED TAPE	REMARK
N1	2--1	2UEW $\Phi$ 0.15 $\times$ 1P	154	外顺/不交叉 outward/non intersecting	8.3mm/3TS/Blue	密绕 Dense winding
N2	5--4	2UEW $\Phi$ 0.15 $\times$ 1P	13	外顺/不交叉 outward/non intersecting	8.3mm/3TS/Blue	居中密绕 Centered and dense winding
N3	7--6	TEX $\Phi$ 0.25 $\times$ 1P	16	内顺/不交叉 Inner smooth/non intersecting	8.3mm/3TS/Blue	密绕 Dense winding

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# 中山市炫格电子有限公司

CUSTOMER P/N: EE13-3.4mH

XG PART NO : XG-3190

ZhongShan XuanGe Electronic technology co., Ltd

DESCRIPTION : EE13

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## NOTE:

1. When winding N3, PIN1-5 faces inside the machine, while other windings PIN1-5 face outside the machine, winding clockwise.  
(1. 绕 N3 时 PIN1-5 朝机台内, 其他绕组 PIN1-5 朝机台外, 顺时针方向绕制。)
2. The winding is uniform and flat, and cannot be stacked. N3 lifting and retracting wires hang protruding points on the framework.  
(2. 绕线均匀平整, 不可堆积, N3 起收线挂骨架凸点。)
3. Magnetic core needs to be ground with air gap, CORE TAPE: 5.5mm \* 3TS yellow.  
(3. 磁芯需磨气隙, CORE TAPE:5.5mm\*3TS 黄色。)
4. The insulation tape is blue inside and yellow outside.  
(4. 绝缘胶带为内蓝外黄。)
5. The product requires vacuum immersion.  
(5. 产品需真空含浸。)
6. Place a layer of tape at the end of each winding line and then wrap it at a right angle.  
(6. 每绕组线尾垫一层胶带后直角收线。)

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中山市炫格电子有限公司

CUSTOMER P/N: EE13-3.4mH

XG PART NO : XG-3190

ZhongShan XuanGe Electronic technology co., Ltd

DESCRIPTION : EE13

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5. ELECTRIC CHARACTERICS (电性参数)

NO	TEST ITEM	MEASURE	RESULT	TEST CONDITION	TEST EQUIPMENT
1	L	2-1	3.4 mH±7%	1KHZ, 0.3V	CH3250
		5-4	24.6 uH±15%		
		6-7	38 uH±15%		
2	LK	2-1	100uH MAX (SHORT OTHER PINS)	10KHZ, 0.3V	
3	DCR	2-1	3.9Ω MAX	AT 25°C	
		5-4	210mΩ MAX		
		6-7	210mΩ MAX		
4	Q 值	2-1	5.0 Min	1KHZ, 0.3V	
		5-4	0.7 Min		
		6-7	1.0 Min		
5	IR	P-S	100MΩ Min	DC500V/60S	MF2511
		P、S-C			
6	HI-POT	P-S	AC 3.3KV	5mA 3S	CS2670E
		P-C	AC 1.2KV		
		S-C	AC 1.0KV		
7	TR	N1:N2:N3	154:13:16	20KHZ, 1V	CH3250
8	INS CLASS	CLASS B			

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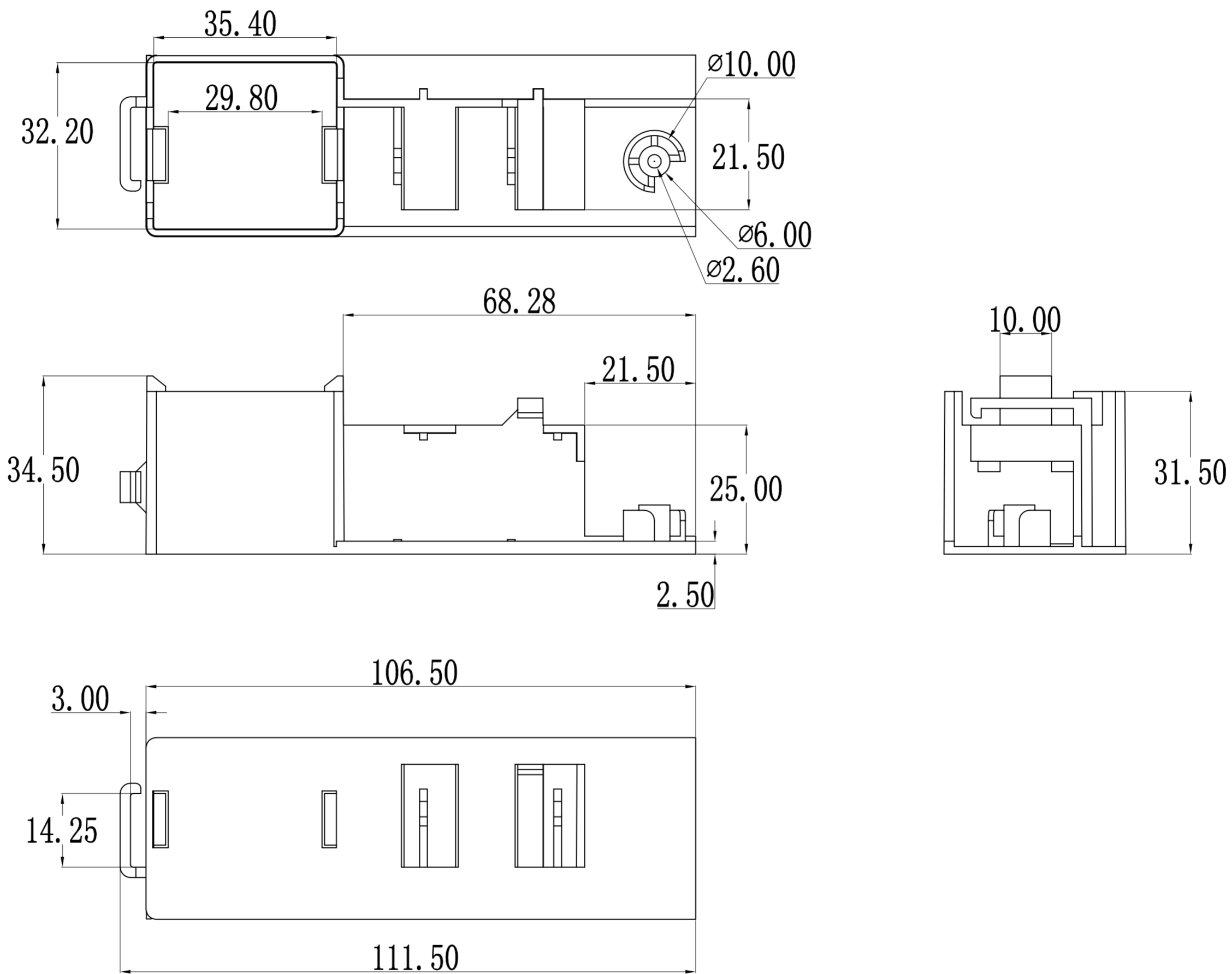
Hu Pai

Li Ning

2023.4.28

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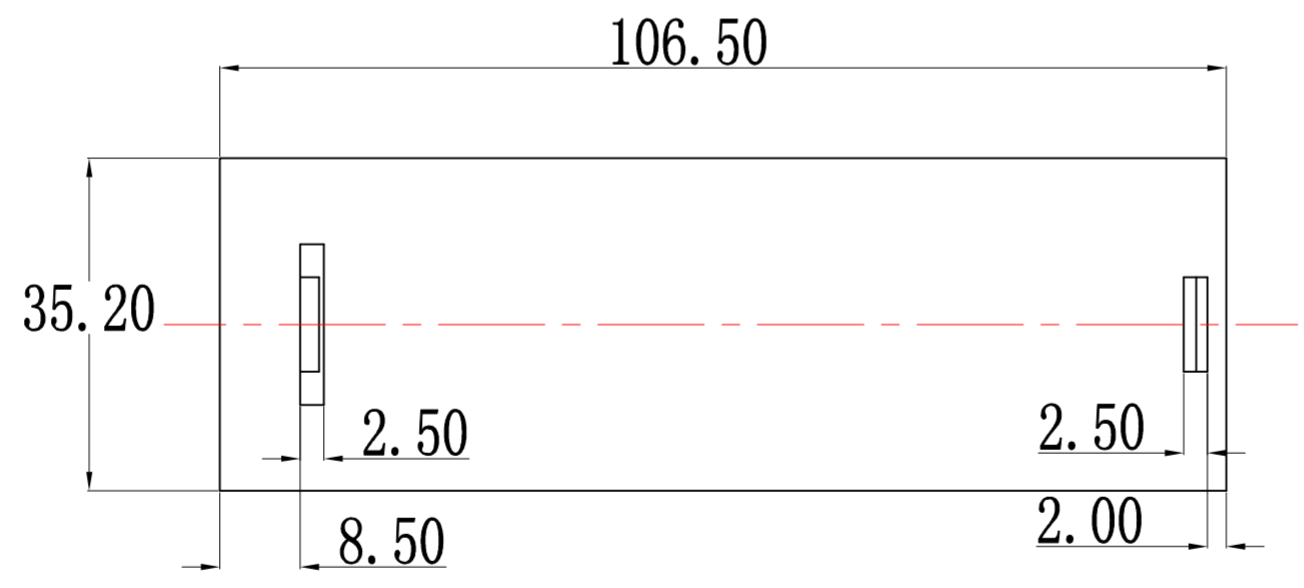
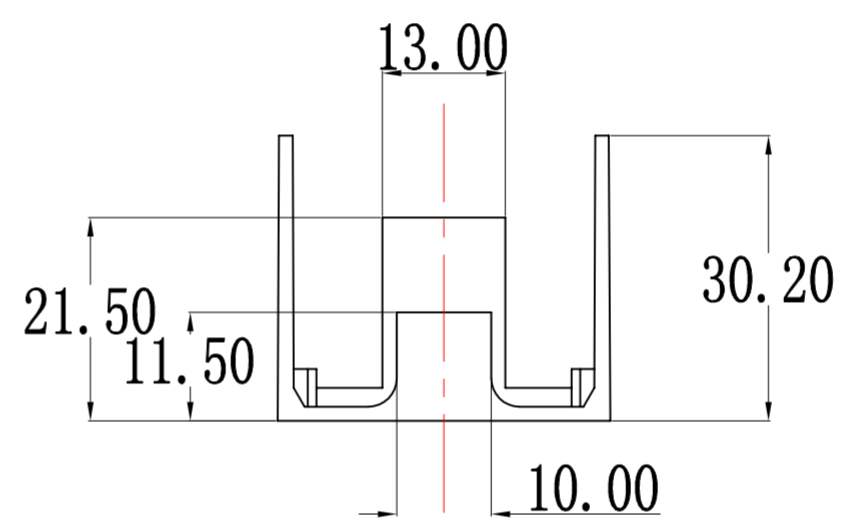
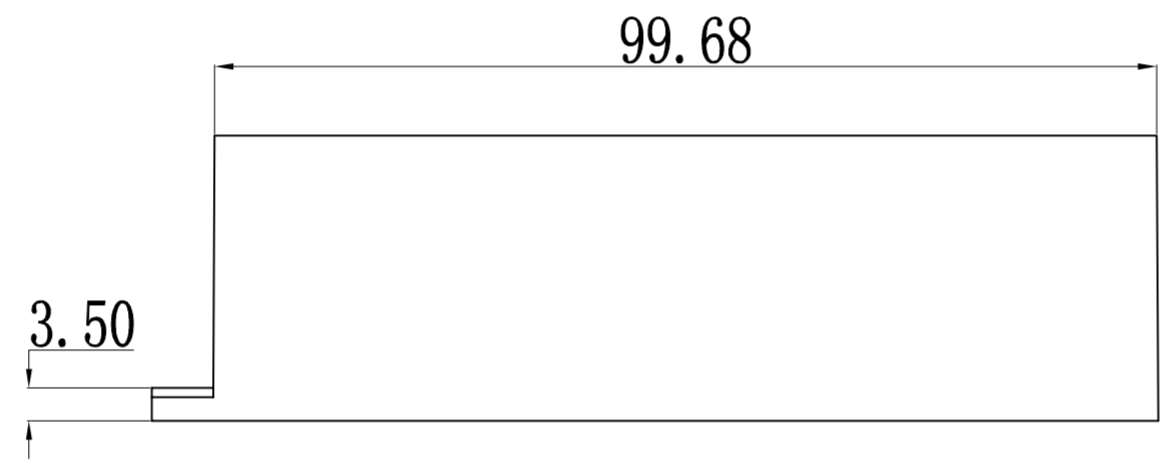
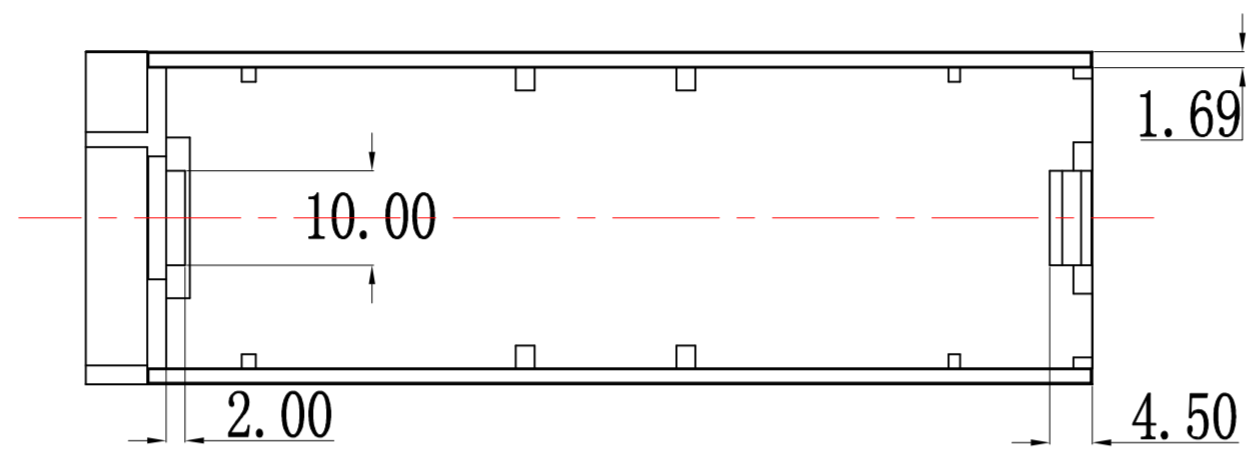
1		2			3				4		5		6	
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容			制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2						



图档名称	零件图	文件编号				版本	B00
产品型号	CR-7109	零件名称	电池架	材质	PC	表面处理	
比例		单位	mm	第 页	共 页	未注公差 GB1804-M	
绘制	审核		批准				
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The following Page(s) are related to Illustration-15. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

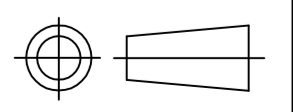
1		2			3				4	5		6	
未注公差	>0.5 ~ 3	>3 ~ 6	>6 ~ 30	>30 ~ 120	>120 ~ 400	>400 ~ 1000	>1000 ~ 2000	>2000 ~ 4000	编号	描述/修改内容		制图	日期
GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2					



图档名称	零件图	文件编号					版本	B00
产品型号	CR-7109	零件名称	线路板架	材质	PC	表面处理		
比例		单位	mm	第 页	共 页	未注公差		
绘制	审核		批准		GB1804-M			

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The following Page(s) are related to Illustration-16. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

1		2		3		4		5		6		
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A

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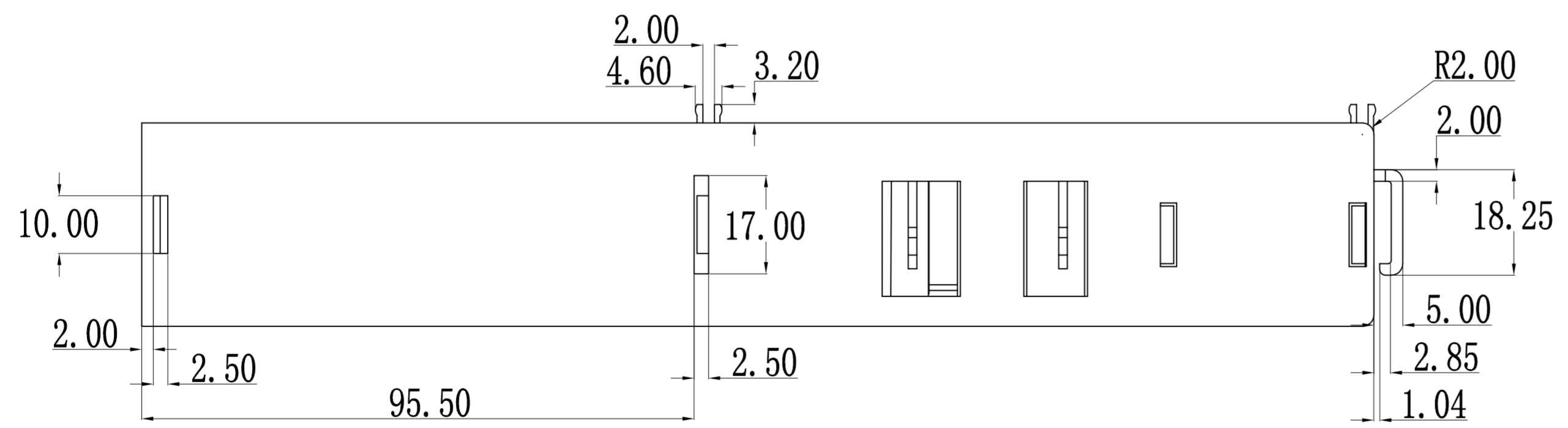
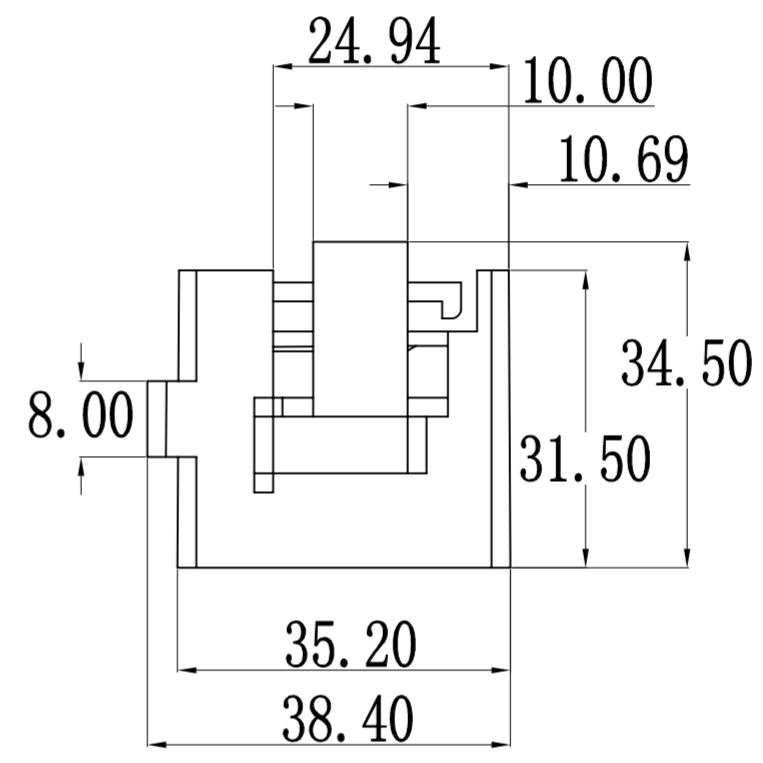
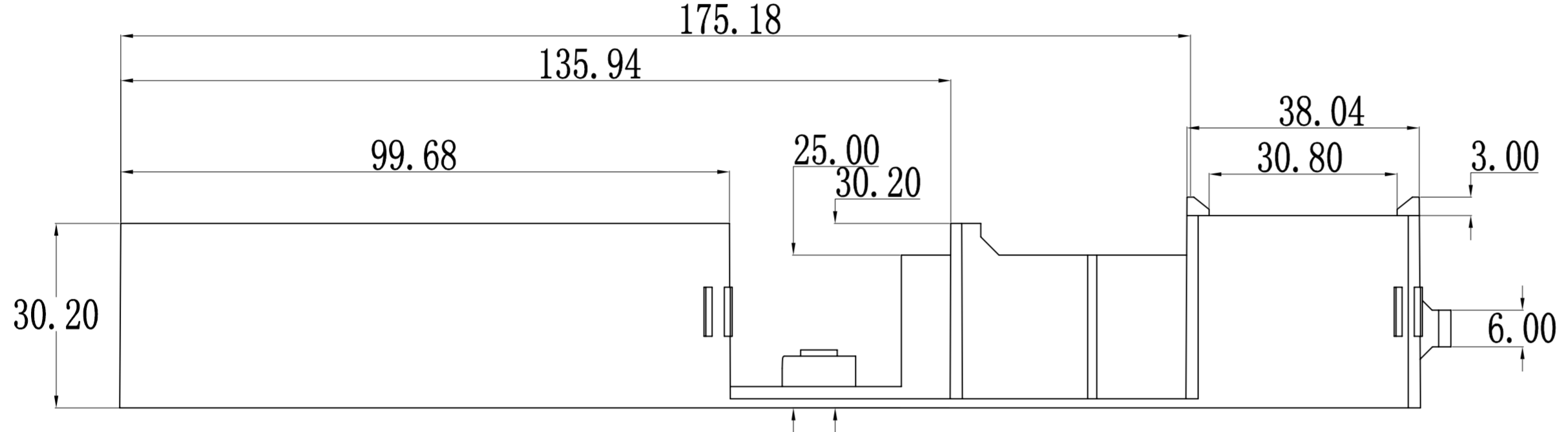
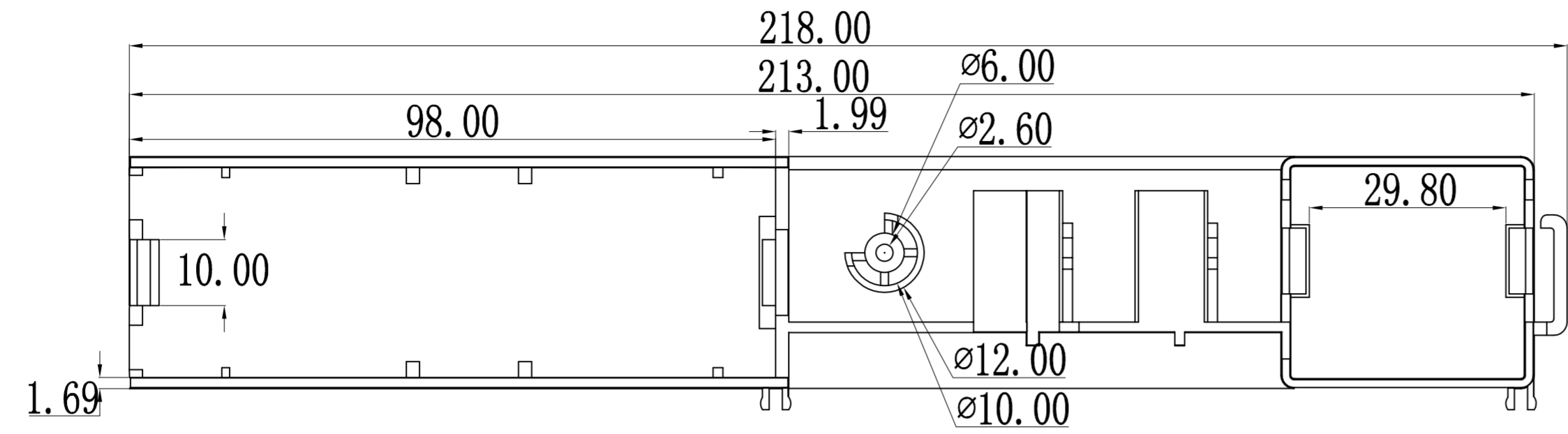
D

A

B

C

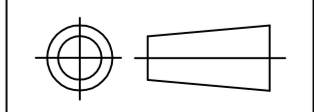
D



图档名称	零件图	文件编号				版本	B00
产品型号	CR-7108	零件名称	电池架	材质	PC	表面处理	
比例		单位	mm	第 页	共 页	未注公差	
绘制		审核		批准		GB1804-M	

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1

2

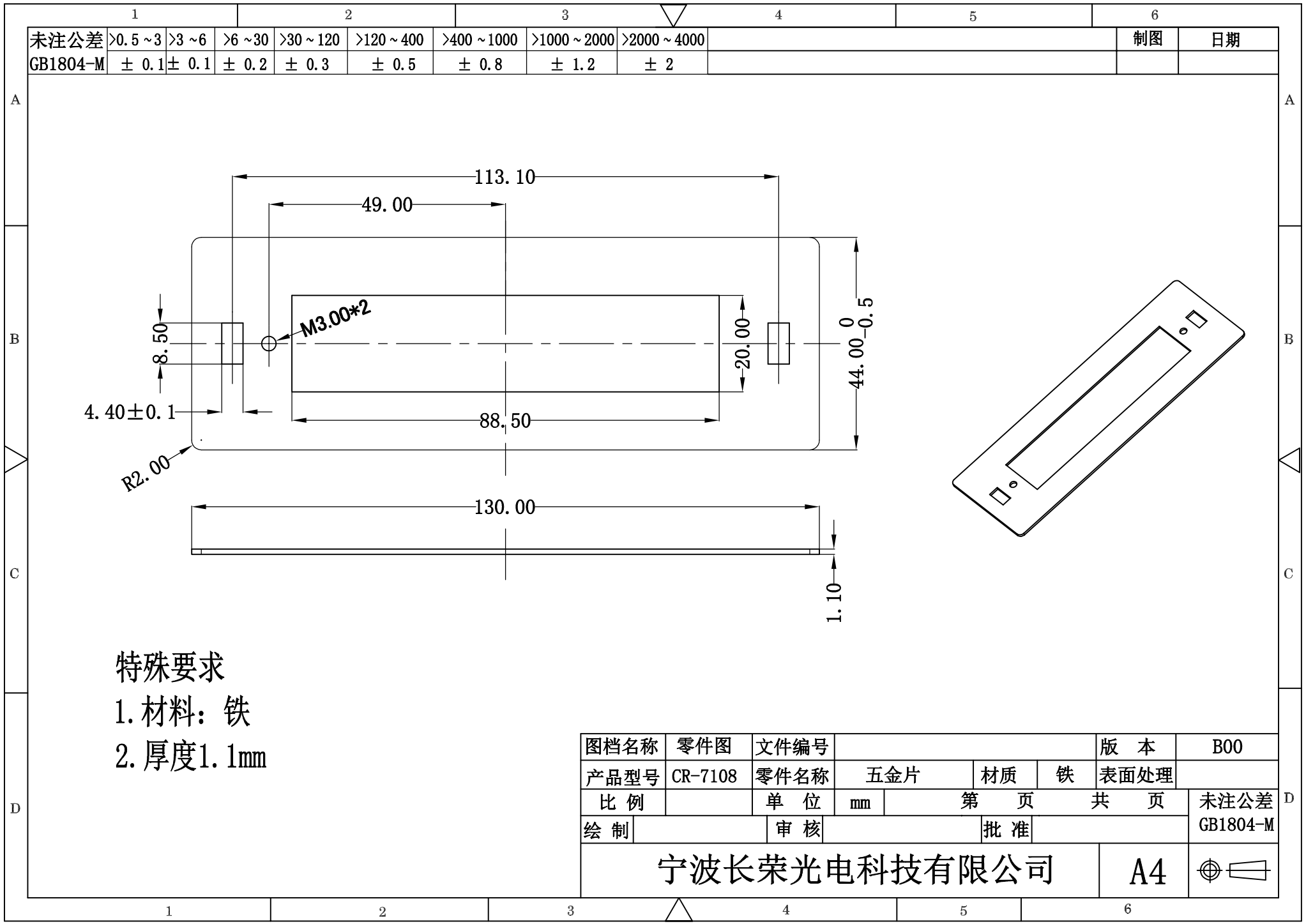
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The following Page(s) are related to Illustration-17. The next supplement, if applicable, will be identified with a new Supplement Page Heading.



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GB1804-M	± 0.1	± 0.1	± 0.2	± 0.3	± 0.5	± 0.8	± 1.2	± 2				

特殊要求

1. 材料: 铁
2. 厚度1.1mm

图档名称	零件图	文件编号				版本	B00
产品型号	CR-7108	零件名称	五金片	材质	铁	表面处理	
比例		单位	mm	第 页	共 页	未注公差	D
绘制		审核		批准		GB1804-M	
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The following Page(s) are related to Illustration-18. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

# INSTALLATION INSTRUCTIONS FOR EMERGENCY LIGHTING

## Package Contents

Part	Description	Quantity
1	Emergency Lighting	1
2	Hardware Kit	1



## Warnings and Cautions

### IMPORTANT SAFEGUARDS

### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. Review the diagrams thoroughly before beginning.
2. All electrical connections must be in accordance with local codes, ordinances and the National Electric code.
3. Disconnect power at fuse or circuit breaker before installing or servicing.
4. Do not use outdoors.
5. Do not mount in hazardous locations, or near gas or electric heaters.
6. Do not let power cords touch hot surface.
7. Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
8. The use of accessory equipment not recommend by the manufacturer may cause an unsafe condition.
9. Do not use this equipment for other than intended use.
10. All servicing should be performed by qualified personnel only.
11. Allow battery to charge for 24 hours before first use.

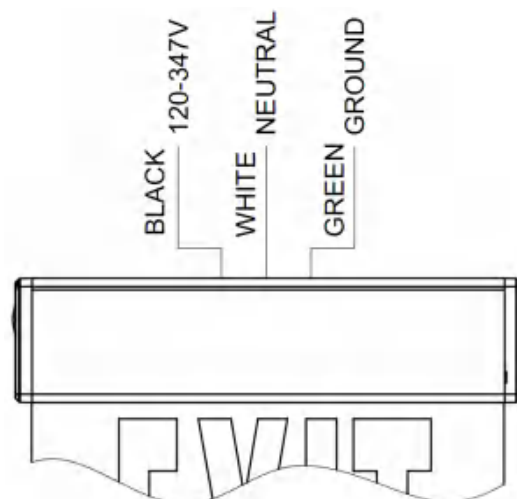
### SAVE THESE INSTRUCTIONS

#### ELECTRIAL CONNECTIONS

Make the proper AC wire connections.

Connect the black, white and green wires  
to the building utility.

Use standard wires nuts to connect to wires.



# Mounting Instructions (NOTE: First turn off electricity.)

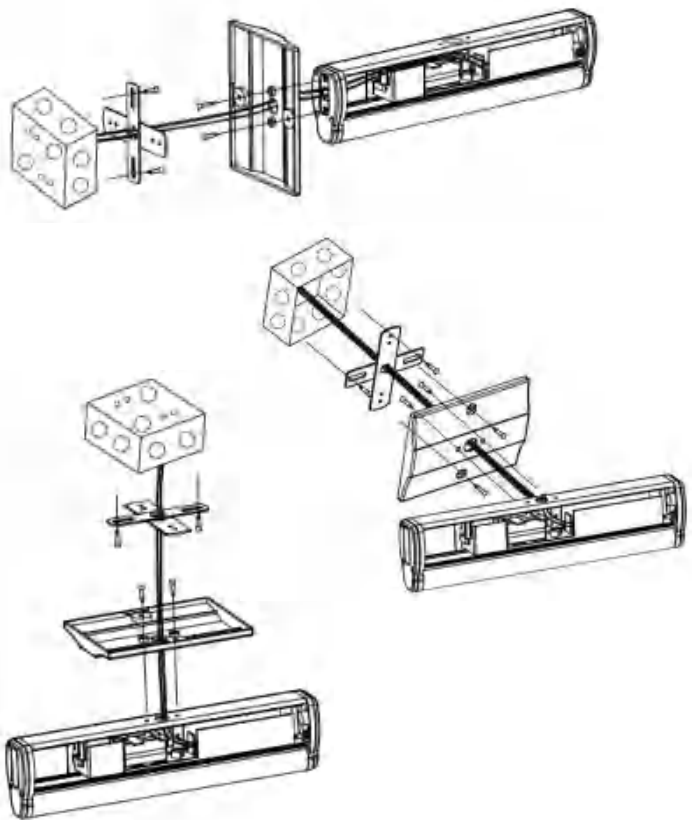
Choose mounting configuration (end, top or back mount). Plug remaining holes with the appropriate color plugs.

1. Secure canopy bracket to ceiling or wall.
2. Open the housing cover.
3. Secure housing and canopy with screws (see mounting configuration).
4. Feed the AC input leads (black, white and green) through the housing and canopy's center hole. Connect AC input leads to AC power supply leads.
5. Secure canopy into canopy bracket with 1-1/2" long #8-32 screws, then connect the battery.
6. Connect battery only after continuous AC power can be provided to the unit.
7. Snap housing cover into place.
8. Apply chevron directional indicators as required. Remove application templates when finished.



## End Mount

1. Secure canopy to end plate of fixture with (2) 3/4" #10-24 screws (included).
2. Run connection wires through large hole.
3. Make electrical connections and mount canopy to junction box using (2) 1-1/2" #8-32 screws (included).

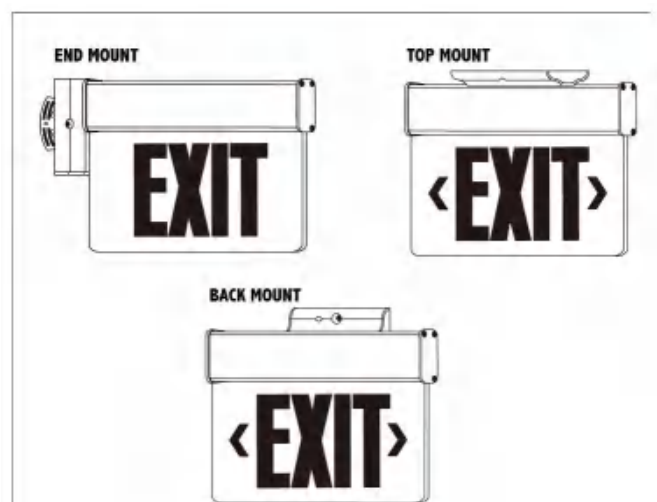


## Top Mount

1. Secure canopy to top of fixture using 3/4" #8-32 screw and hex nut, and 1/2" center hole with threaded nipple and hex nuts (included).
2. Run connection wires through threaded nipple.
3. Make electrical connections and mount canopy to junction box using (2) 1-1/2" #8-32 screws (included).

## Back Mount

1. Mount canopy to junction box using (2) 1-1/2" #8-32 screws.
2. Run connection wires through large hole in center of canopy.
3. Secure fixture to canopy with (2) 3/4" #10-24 screws (included) by going directly into mounting holes.
4. Make electrical connections

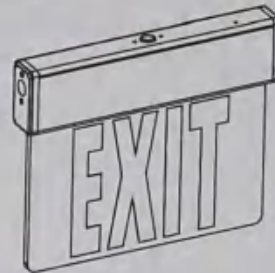


The following Page(s) are related to Illustration-19. The next supplement, if applicable, will be identified with a new Supplement Page Heading.

# INSTALLATION INSTRUCTIONS FOR EMERGENCY LIGHTING

## Package Contents

Part	Description	Quantity
1	Emergency Lighting	1
2	Hardware Kit	1



## Warnings and Cautions

### IMPORTANT SAFEGUARDS

#### READ AND FOLLOW ALL SAFETY INSTRUCTIONS

1. Review the diagrams thoroughly before beginning.
2. All electrical connections must be in accordance with local codes, ordinances and the National Electric code.
3. Disconnect power at fuse or circuit breaker before installing or servicing.
4. Do not use outdoors.
5. Do not mount in hazardous locations, or near gas or electric heaters.
6. Do not let power cords touch hot surface.
7. Equipment should be mounted in locations and at heights where it will not be subjected to tampering by unauthorized personnel.
8. The use of accessory equipment not recommend by the manufacturer may cause an unsafe condition.
9. Do not use this equipment for other than intended use.
10. All servicing should be performed by qualified personnel only.
11. Allow battery to charge for 24 hours before first use.

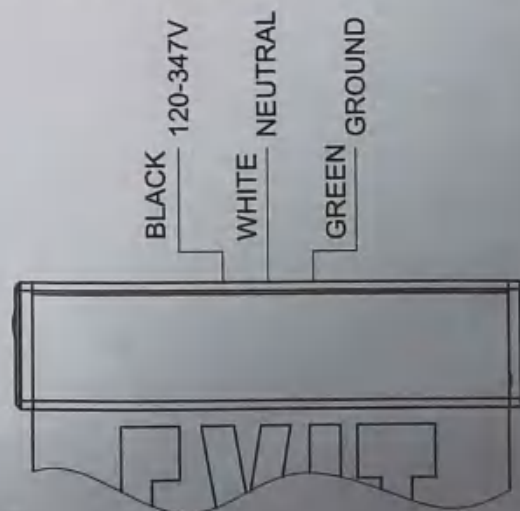
### SAVE THESE INSTRUCTIONS

#### ELECTRIAL CONNECTIONS

Make the proper AC wire connections.

Connect the black, white and green wires  
to the building utility.

Use standard wires nuts to connect to wires.



## Mounting Instructions (NOTE: First turn off electricity.)

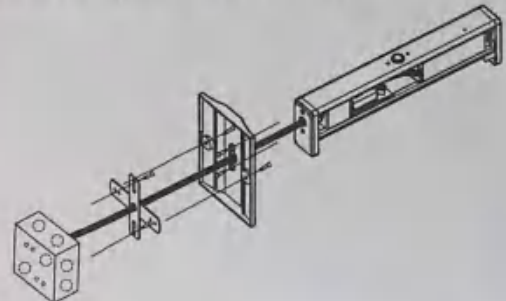
Choose mounting configuration (end, top or back mount). Plug remaining holes with the appropriate color plugs.

1. Secure canopy bracket to ceiling or wall.
2. Open the housing cover.
3. Secure housing and canopy with screws (see mounting configuration).
4. Feed the AC input leads (black, white and green) through the housing and canopy's center hole. Connect AC input leads to AC power supply leads.
5. Secure canopy into canopy bracket with 1-1/2" long #8-32 screws, then connect the battery.
6. Connect battery only after continuous AC power can be provided to the unit.
7. Snap housing cover into place.
8. Apply chevron directional indicators as required. Remove application templates when finished.



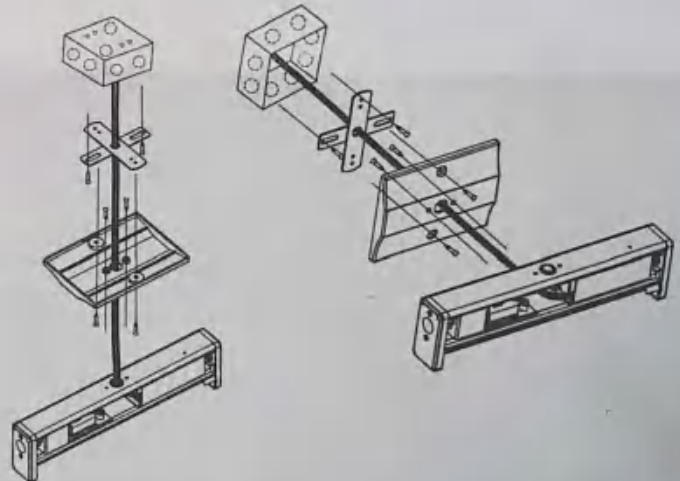
### End Mount

1. Secure canopy to end plate of fixture with (2) 3/4" #10-24 screws (included).
2. Run connection wires through large hole.
3. Make electrical connections and mount canopy to junction box using (2) 1-1/2" #8-32 screws (included).



### Top Mount

1. Secure canopy to top of fixture using 3/4" #8-32 screw and hex nut, and 1/2" center hole with threaded nipple and hex nuts (included).
2. Run connection wires through threaded nipple.
3. Make electrical connections and mount canopy to junction box using (2) 1-1/2" #8-32 screws (included).



### Back Mount

1. Mount canopy to junction box using (2) 1-1/2" #8-32 screws.
2. Run connection wires through large hole in center of canopy.
3. Secure fixture to canopy with (2) 3/4" #10-24 screws (included) by going directly into mounting holes.
4. Make electrical connections

