**Test Report issued under the responsibility of:**

# TEST REPORT
## BS 1363-1: 2016 + A1: 2018
## 13 A Plugs, socket-outlets, adaptors and connection units – Part 1: Specification for rewireable and non-rewireable 13 A fused plugs

| | |
|---|---|
| **Report Number.....:** | **SP2408161P01** |
| Date of issue.....: | 2024-08-28 |
| Total number of pages.....: | 12 |
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| Tested by (name + signature).....: | Robert Duan<br>Project handler |
| Checked by (name + signature).....: | Eric Liu<br>Reviewer |
| Applicant's name.....: | XY POWER SUPPLY LIMITED |
| Address.....: | Baodong Road, Shao Yang Economic Developmet zone.422200 shaoyang city, Hunan Province, china |
| Manufacturer's name.....: | XING YUAN ELECTRONICS CO., LTD |
| Address.....: | No. 33 Yanwo Vilage Road, Shipai Town, Dongguan City, Guangdong Province, P.R. China |
| Factory's name.....: | XING YUAN ELECTRONICS CO., LTD |
| Address.....: | No. 33 Yanwo Vilage Road, Shipai Town, Dongguan City, Guangdong Province, P.R. China |
| Test specification: | |
| Standard.....: | BS 1363-1:2016+A1:2018 |
| Test procedure.....: | Test report |
| Non-standard test method.....: | N/A |

**General disclaimer:**

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

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

| | |
|---|---|
| Test item description..... : | LED Gdriver |
| Trade Mark.....: | |
| Model/Type reference..... : | XY24LR-xxxyyyVH-EW, XY24LR-xxxyyyVH-ET, XY24LQ-xxXyyyVH-EW, XY24LR-xxxyyyVH-BT |
| Ratings.....: | Input: 220-240V~, 50/60Hz, 0.4A |

| TEST ITEM PARTICULARS: | |
|---|---|
| Degree of protection..... | IPX0 |
| Class of insulation..... | Class II |
| Proof tracking index (PTI) ..... | 175 |

| POSSIBLE TEST CASE VERDICTS: | |
|---|---|
| - test case does not apply to the test object..... | N/A |
| - test object does meet the requirement..... | P (Pass) |
| - test object does not meet the requirement..... | F (Fail) |
| Testing..... | |
| Date of receipt of test item..... | 2024-08-08 |
| Date (s) of performance of tests..... | 2024-08-08 to 2024-08-28 |

**GENERAL REMARKS:**

1. This test report shall not be reproduced except in full without the written approval of the testing laboratory.
2. The test results presented in this report relate only to the item(s) tested.
3. "(see remark #)" refers to a remark appended to the report.
   "(see appended table)" refers to a table appended to the report.
4. Throughout this report a point “.” is used as the decimal separator
5. When determining the test conclusion, the Measurement Uncertainly of test has been considered.
6. This report suitable for UK plug portion on Direct Plug-in Appliance only.
7. Bottom enclosure is fixed to top enclosure by ultrasonic welding.
8. Attachment document: - Attachment 1: Photo document. (1 page)

| BS 1363-1:2016+A1:2018 | | | |
|---|---|---|---|
| **Clause** | **Requirement – Test** | **Result – Remarks** | **Verdict** |
| 12 | Construction of Plugs | | P |
| 12.1 | Disposition of pins | The dispositions of the pins were shown as specified | P |
| 12.2 | Dimensions | (See appended table) | P |
| 12.2.1 | Gauging test according to figure 5, the plug portion shall enter the gauge fully with a force less than 10N | Applied force: 4.0N | P |
| | In the case of adaptors with ISODs, the test given in 13.8 of BS 1363-2:2016 shall be applied and the maximum withdrawal force from a socket-outlet conforming to BS 1363-2:2016 shall not exceed 36N | Applied force: 8.0N | P |
| 12.3 | Distance of pins from periphery | Measured distance: min. 9.81mm | P |
| 12.7 | Fixing of cover | | N/A |
| 12.9 | Construction of pins | Complied. | P |
| 12.9.1 | All exposed surfaces of the adaptor plug pins shall be smooth and free from burrs or sharp edges and other irregularities. | Complied. | P |
| 12.9.2 | Those surfaces of the non-solid plug pins which are visible when the plug is correctly assembled shall be free of apertures. | | N/A |
| 12.9.3 | All seams and joints of non-solid pins shall be closed over their entire length. | | P |
| 12.9.3.1 | Conformity shall be checked by inspection and in case of doubt by the following test.<br>Push a steel test probe of 0.2 mm diameter into all seams and joints. Check that the test probe does not enter into any seam or joint to a depth greater than the thickness of the material from which the plug pin is formed. | | P |
| 12.9.4.1 | For solid pins, applying a force 1100N on the pin according to figure 32. | Complied. After being subjected to a force of 1100N for L, N pin, the pin portion could fit the relevant gauge. | P |
| 12.9.4.2 | For non-solid pins, conformity shall be checked by the following test.<br>1) Applying a force 800N on the pin according to Figure 32. 50 times without impact.<br>2) Separate specimens applying a force 1100N on the pin according to Figure 32. | | N/A |
| 12.9.4.3 | For ISOD, applying a force 400N on the pin according to figure 32. | Complied. After being subjected to a force of 400N for ISOD pin, the pin portion could fit the relevant gauge. | P |

| BS 1363-1:2016+A1:2018 | | | |
|---|---|---|---|
| **Clause** | **Requirement – Test** | **Result – Remarks** | **Verdict** |
| 12.9.5 | Plugs with nickel plated brass pins, non-solid pins and/or ISODs shall not cause excessive wear to socket contacts or shutters of socket-outlets in accordance with BS 1363-2:2016. For plugs with nickel plated brass pins and/or non-solid pins conformity shall be checked by 12.9.5.1. For plugs with ISODs conformity shall be checked by 12.9.5.2. | The socket-outlet show no sign of damage that would impair further use.<br>The plugs show no damage and conform to the dimensional requirements of 12.2.<br>The shutters of the socket-outlet operate satisfactorily and the socket contacts shall be safely shielded. | P |
| 12.9.5.1 | Adaptors with nickel plated brass pins and/or non-solid pins shall not cause excessive wear to socket contacts or shutters of sockets-outlets | | P |
| 12.9.5.2 | Adaptors with ISOD shall not cause excessive wear to socket contacts or shutters of sockets-outlets.<br>One type of socket-outlet shall preferably have a shutter-operating ramp of metal. | | P |
| 12.9.6.1 | 1 Nm torque test on the opposite two directions according to figure 33 | Complied. After the test, the pin portion could fit the relevant gauge. | P |
| 12.11 | The adaptors were tested as specified in the standard. After being placed in an oven at 70°C for 1 hour, each pin of the samples was subjected for 60 sec. to a pull of 100N in the oven. | Complied. After the above test, no plug pin was detached and the plug pins could fit the relevant gauge. | P |
| 12.12 | The degree of flexibility of mounting of the plug pins was checked according to 12.12.1 | Measured value: Max. 1° (test on each sources of enclosure, max. value measured) (limit: Max. 3° 30'). | P |
| 12.13 | Suitable means shall be provided for withdrawing the plug without subjecting the flexible cable to stress. | | P |
| 12.16 | Line and neutral plug pin shall be fitted with insulating sleeves. The dimensions of the pin and sleeve shall fall within the specific limit. | Complied. Both line and neutral pins were fitted with insulating sleeves. | P |
| 12.17.1 | Plug pin sleeve shall be compliance with 12.17.2 to 12.17.4 | Complied. | P |
| 12.17.2 | Electric strength test applied between the metal part of plug pin and the sleeve (1250±30V) | Complied. No breakdown or flashover occurs. | P |
| 12.17.3 | Abrasion test for plug pin sleeve<br>The plug pin sleeves were subjected to 20000 movements of abrasion as specified in the standard. | Complied. After the test, the sleeves showed no damage that impaired further use and could satisfy the electric strength test in 12.17. 2 | P |
| 12.17.4 | Resistance to deformation<br>The plug pins with sleeves were placed in a heating cabinet at 200°C and tested according to the standard for 120min. | Complied. After the tests, the thicknesses of sleeve of plug pins (line and neutral pins) remaining at the impression point were reduced by less than14.3%. | P |

| BS 1363-3:2016+A1:2018 | | | |
|---|---|---|---|
| **Clause** | **Requirement – Test** | **Result – Remarks** | **Verdict** |
| 13.10 | The total mass of the equipment with all specified connectors shall not exceed 800g. The torque exerted on socket shall not exceed 0.7 Nm | Measured torque: 0.02Nm max. | P |

| Additional test for adaptor with UK plug need to comply with IEC60950-1 & IEC 62368-1 (CB bulletin, IEC 60950-1:2005+A1:2009+A2:2013, clause 4.3.6, IEC62368-1:2014, clause G.4.2) | | | |
|---|---|---|---|
| **Clause** | **Requirement – Test** | **Result – Remarks** | **Verdict** |
| 22.2 | 75ºC ball pressure test to all parts of insulating material including ISOD | See appended table 22.2 | P |
| 23.2 | 750ºC GWT to<br>retain live parts in position including ISOD.<br>650ºC GWT to parts not necessary to retain live parts in position. | See appended table 23.2 | P |

| 22.2 | **TABLE: Ball-pressure test** | | | | | | |
|---|---|---|---|---|---|---|---|
| Specimen | | | | Ball-pressure test | | | |
| Part | Material | Material-thickness [mm] | Colour | [C°] | Measured [mm] | Required [mm] | Result |
| Enclosure /Plug holder (including ISOD) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 125 | 1.3 | < 2.0 | Pass |
| Enclosure /Plug holder (including ISOD) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 125 | 1.3 | < 2.0 | Pass |
| Enclosure /Plug holder (including ISOD) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 125 | 1.4 | < 2.0 | Pass |
| Supplementary information: -- | | | | | | | |

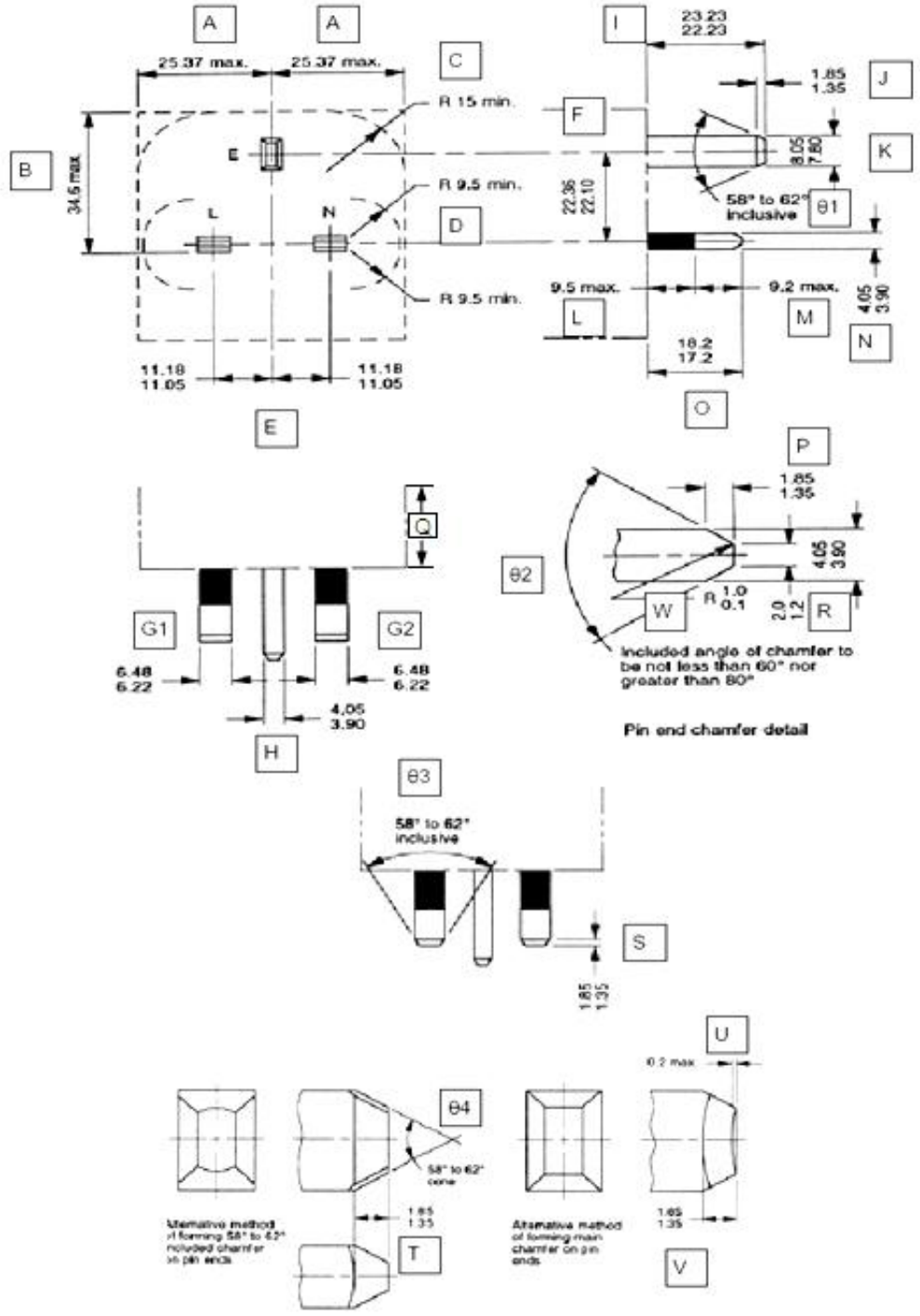
| 23.2 | **TABLE: Glow-wire-test [60 s]** | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| Specimen | | | | Flame | | | | | |
| Part | Material | Material-thickness [mm] | Colour | [°C] | Start [s] | End [s] | Height [mm] | Ignition of tissue paper | Result |
| Enclosure (Sample A) | Sabic Innovative Plastics US L L C | 2.5 | -- | 650 | 0 | 0 | 0 | No | Pass |
| Enclosure (Sample B) | SABICINNOVATIVEPLASTICS US L L C | 2.5 | -- | 650 | 0 | 0 | 0 | No | Pass |
| Enclosure (Sample C) | SABIC INNOVATIVE PLASTICS B V | 2.5 | -- | 650 | 0 | 0 | 0 | No | Pass |
| Plug portion (including ISOD) (Sample A) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 750 | 0 | 0 | 0 | No | Pass |
| Plug portion (including ISOD) (Sample B) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 750 | 0 | 0 | 0 | No | Pass |
| Plug portion (including ISOD) (Sample C) | SABIC INNOVATIVE PLASTICS US L L C/ 945 (GG) | 2.5 | -- | 750 | 0 | 0 | 0 | No | Pass |
| Supplementary information: -- | | | | | | | | | |

**Critical components:**

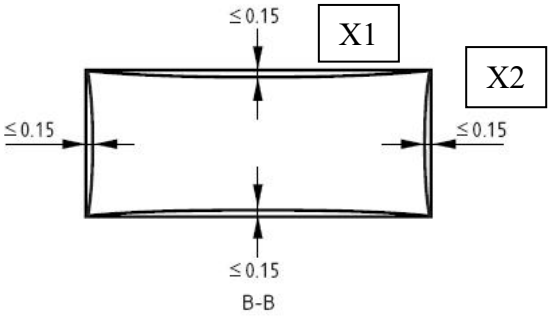
| Object/part no. | Manufacturer/ trademark | Type/model | Technical data | Standard | Mark(s) of conformity |
|---|---|---|---|---|---|
| Plastic enclosure | Sabic Innovative Plastics US L L C | FR60 (GG), 357M(f1)(w)(IC), 357U(f1)(w)(IC), 945(GG) | V-0, 125°C, min.1.5mm thickness | UL 94, UL 746 | UL E121562 |
| (Alternative) | SABICINNOVATIVEPLASTICS US L L C | FR60 (GG), 357M(f1)(w)(IC), 357U(f1)(w)(IC), 945(GG) | V-0, 125°C, min.1.5mm thickness | UL 94, UL 746 | UL E207780 |
| (Alternative) | SABIC INNOVATIVE PLASTICS B V | V3900WX(GG)(f1)(IA) V3901WX(GG)(f1)(IA) | V-0, 125°C, min.1.5mm thickness | UL 94, UL 746 | UL E45329 |
| Plug holder, UK plug ISOD and pin sleeve | SABIC INNOVATIVE PLASTICS US L L C | 943X(GG)(X) | V-0, 110°C | UL 94, UL 746 | UL E121562 |
| Metal material of plug pin | -- | -- | Copper content: 60-65% | -- | -- |

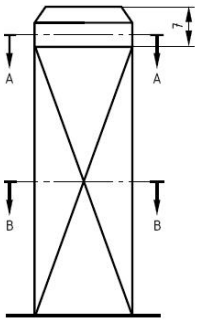
| Clause 12.2: Dimensions measurement | | | | |
|---|---|---|---|---|
| **Dimensions(mm)** | **Sample 1** | **Sample 2** | **Sample 3** | **Limit** |
| A | 24.84 | 24.85 | 24.83 | 25.37 max. |
| B | 32.49 | 32.48 | 32.47 | 34.6 max. |
| C | 1) | 1) | 1) | 15 min. |
| D | 9.81 | 9.82 | 9.81 | 9.5 min. |
| E (from L to E) | 11.08 | 11.09 | 11.08 | 11.05 - 11.18 |
| E (from N to E) | 11.08 | 11.08 | 11.09 | 11.05 - 11.18 |
| F | 22.13 | 22.13 | 22.14 | 22.10 - 22.36 |
| G1 | 6.28 | 6.29 | 6.27 | 6.22 – 6.48 |
| G2 | 6.28 | 6.27 | 6.29 | 6.22 – 6.48 |
| H | 3.99 | 4.00 | 3.99 | 3.90-4.05 |
| I | 22.66 | 22.65 | 22.66 | 22.23 – 23.23 |
| J | 1.38 | 1.38 | 1.39 | 1.35 – 1.85 |
| K | 7.97 | 7.98 | 7.97 | 7.80 – 8.05 |
| L (line) | 9.34 | 9.35 | 9.36 | 9.5 max. |
| L (neutral) | 9.34 | 9.33 | 9.32 | 9.5 max. |
| M (line) | 8.37 | 8.37 | 8.37 | 9.2 max. |
| M (neutral) | 8.38 | 8.38 | 8.41 | 9.2 max. |
| N (line) (sleeve) | 3.98 | 3.97 | 3.98 | 3.90 – 4.05 |
| N (neutral) (sleeve) | 3.98 | 3.98 | 3.97 | 3.90 – 4.05 |
| O (line) | 17.71 | 17.72 | 17.73 | 17.20 – 18.20 |
| O(neutral) | 17.72 | 17.71 | 17.73 | 17.20 – 18.20 |
| P(line) | 1.56 | 1.57 | 1.56 | 1.35 – 1.85 |
| P (neutral) | 1.56 | 1.56 | 1.57 | 1.35 – 1.85 |
| P(earth) | 1.38 | 1.38 | 1.39 | 1.35 – 1.85 |
| Q (line)(metal) | 3.94 | 3.94 | 3.95 | 3.90 – 4.05 |
| Q(neutral)(metal) | 3.94 | 3.95 | 3.94 | 3.90 – 4.05 |
| Q(earth)(metal) | -- | -- | -- | 3.90 – 4.05 |
| R(line) | 1.79 | 1.78 | 1.79 | 1.2 – 2.0 |
| R(neutral) | 1.79 | 1.79 | 1.78 | 1.2 – 2.0 |
| R(earth) | 1.78 | 1.77 | 1.76 | 1.2 – 2.0 |
| S (line/ neutral) | 1.56/1.56 | 1.57/1.56 | 1.56/1.57 | 1.35 – 1.85 |
| θ1 | 61.58° | 61.44° | 61.38° | 58°– 62° |
| θ2 (line/ neutral) | 67.55°/67.34° | 67.21°/67.46° | 67.68°/67.15° | 60°– 80° |
| (earth) | 73.48° | 73.62° | 73.53° | 60°– 80° |
| θ3 | 58.57° | 58.66° | 58.45° | 58°– 62° |
| X4 (for Castellated ISOD only) | N/A | N/A | N/A | 0.15 max |

| Alternative chamfers on L and N pin | | | | |
|---|---|---|---|---|
| S (line) | N/A | N/A | N/A | 1.35-1.85 |
| S (neutral) | N/A | N/A | N/A | 1.35-1.85 |
| θ 3 (line) | N/A | N/A | N/A | 58º-62º |
| θ 3 (neutral) | N/A | N/A | N/A | 58º-62º |
| θ 4 (line) | 59.13 | 59.37 º | 59.75 º | 58º-62º |
| θ 4 (neutral) | 59.44 | 59.49 º | 59.65 º | 58º-62º |
| T (line) | 1.42 | 1.41 | 1.43 | 1.35-1.85 |
| T(neutral) | 1.41 | 1.40 | 1.42 | 1.35-1.85 |
| U (line) | N/A | N/A | N/A | 0.2 Max. |
| U(neutral) | N/A | N/A | N/A | 0.2 Max. |
| V (line) | N/A | N/A | N/A | 1.35-1.85 |
| V(neutral) | N/A | N/A | N/A | 1.35-1.85 |

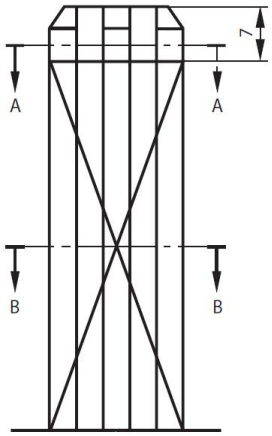

A
A
25.37 max.
25.37 max.
C
R 15 min.
R 9.5 min.
R 9.5 min.
B
34.6 max.
E
L
N
D
11.18
11.05
11.18
11.05
E
I
23.23
22.23
1.85
1.35
J
F
8.05
7.80
K
22.36
22.10
58° to 62° inclusive
θ1
9.5 max.
9.2 max.
4.05
3.90
L
M
N
18.2
17.2
O
P
1.85
1.35
Q
θ2
4.05
3.90
R 1.0 0.1
2.0
1.2
W
R
G1
G2
6.48
6.22
6.48
6.22
4.05
3.90
H
included angle of chamfer to be not less than 60° nor greater than 80°
Pin end chamfer detail
θ3
58° to 62° inclusive
S
1.85
1.35
U
0.2 max
θ4
58° to 62° cone
1.85
1.35
T
V
Alternative method of forming 58° to 62° included chamfer on pin ends
Alternative method of forming main chamfer on pin ends
1.85
1.35

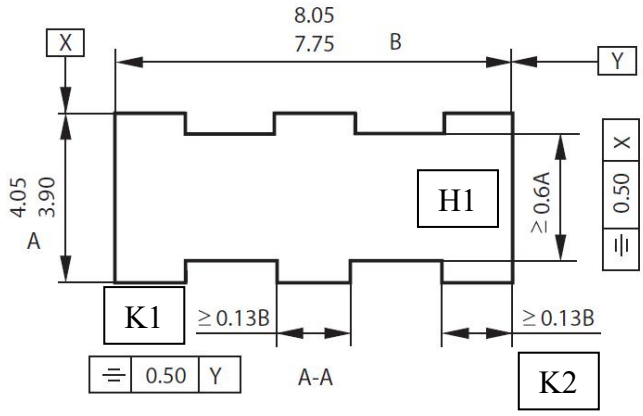
Solid ISOD




Castellated ISOD



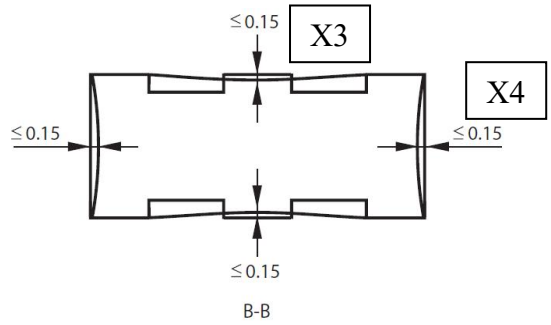



Figure 1 Overall view

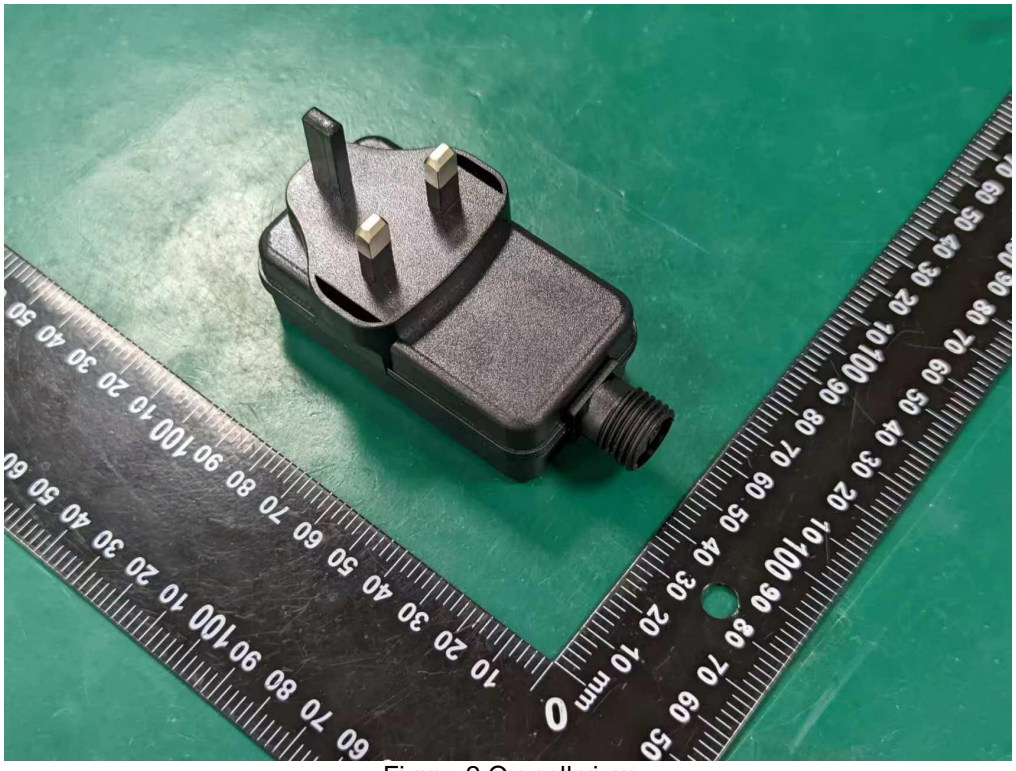


Figure 2 Overall view