

# CERTIFICATE OF COMPLIANCE

**Certificate Number** 20151216-E472943  
**Report Reference** E472943-20141215  
**Issue Date** 2015-DECEMBER-16

**Issued to:** BENDER & WIRTH GMBH & CO  
VOLMESTRASSE 161  
58566 KIERSPE GERMANY

**This is to certify that  
representative samples of**

COMPONENT - SOLID-STATE LIGHTING BASES,  
HOLDERS AND CONNECTORS

USR – CNR: Component, LED Solid State Lighting Holders.  
Series 4XX and 5XX.

Where “XX” can be alphanumeric digits identifying the  
shape and the overall dimension of the holder.

Have been investigated by UL in accordance with the  
Standard(s) indicated on this Certificate.

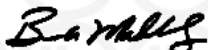
**Standard(s) for Safety:** UL 8754 & CAN/ULC-S8754 Standard for Holders, Bases,  
and Connectors for Solid-State (LED) Light Engines and  
Arrays

**Additional Information:** See the UL Online Certifications Directory at  
[www.ul.com/database](http://www.ul.com/database) for additional information

Only those products bearing the UL Certification Mark should be considered as being covered by UL's  
Certification and Follow-Up Service.

Recognized components are incomplete in certain constructional features or restricted in performance  
capabilities and are intended for use as components of complete equipment submitted for investigation rather  
than for direct separate installation in the field. The final acceptance of the component is dependent upon its  
installation and use in complete equipment submitted to UL LLC.

Look for the UL Certification Mark on the product.



Bruce Mahrenholz, Director North American Certification Program

UL LLC

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contact a local UL Customer Service Representative at <http://ul.com/aboutul/locations/>



## DESCRIPTION

## PRODUCT COVERED:

USR - CNR: Component, LED Solid State Lighting Holders. Series 4XX and 5XX.

Where "XX" can be alphanumeric digits identifying the shape and the overall dimension of the holder.

## GENERAL:

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These devices are LED holders for use with LED Arrays (COBs).

Series 4XX are intended for use for use with LED Light Engines with separate drivers. It is intended for indoor and outdoor use in signs, appliances and luminaires, when installed in accordance with the manufacturer's instructions.

## HOLDER FOR HIGH TEMPERATURE:

\*The maximum holder operating temperature is indicated by a T symbol and 3-digits, show on catalogue. **For example**, T250 shall indicate that the holder maximum limit temperature is 250°C.

## ELECTRICAL RATINGS:

Max 80 Vdc, 10 A, max T250

Max 150 Vdc, 10 A, max T250

Max 450 Vdc, 10 A, max T250

**For alternate constructions (Fig. 4 and 5) are max. 9 A and T120 for USR and 6 A and T120 for CNR.**

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

USR indicates compliance with United States Standard for Standard for Holders, Bases, and Connectors for Solid-State (LED) Light Engines and Arrays, UL 8754, and the United States country specific requirements.

CNR indicates this product was investigated under the United States and Canadian (Bi-National) Standard for Holders, Bases, and Connectors for Solid-State (LED) Light Engines and Arrays, CAN/ULC-S8754, and the Canadian country-specific requirements.

For use only in complete equipment where the acceptability of the combination is determined by Underwriters Laboratories Inc.

Conditions of Accessibility - When installed in the end-use product, consideration shall be given to the following:

1. These holders shall be operated within an enclosure as required by the end product investigation.
2. These holders shall be used within their established electrical **ratings, also depending on Connector ratings used.**
3. These LED holders are only suitable for use with LEDs powered by a LED driver or power supply.
4. The leads optionally employed shall be solid wire or solder dipped stranded rated 18 to 24 AWG.
5. The suitability of the lead voltage and temperature rating shall be determined in the end use.
6. Temperatures on these holders shall not exceed 250°C.
7. The surface adjacent to the mounting surface is open and provides no clearance between the mounting surface and the contacts. If the end-product mounting surface is conductive, compliance with electrical spacing requirements shall be determined in the end product investigation. If require to be mounted over a Recognized insulation pad in order to guarantee the minimum creepage and clearance between contacts and mounting surface. The suitability of the insulation pad must be verified in the end use.
8. The suitability of the lead ampacity and acceptance of such wires shall be determined in the end use application.
9. **For models provided with PWB: The temperatures on these holders shall not exceed 120°C in the end use application.**
10. **For models provided with PWB: The electrical spacing between cooper traces of opposite polarity in the PWB shall be minimum as shown in the table below:**

<b>Voltage</b>	<b>50</b>	<b>150</b>	<b>300</b>	<b>450</b>
<b>Spacing</b>	<b>1.2</b>	<b>1.6</b>	<b>3.0</b>	<b>4.5</b>

11. **For models provided with PWB: If the end-product mounting surface is conductive, compliance with electrical spacing requirements shall be determined in the end product investigation. If require to be mounted over a Recognized insulation pad in order to guarantee the minimum creepage and clearance between contacts and mounting surface. The suitability of the insulation pad must be verified in the end use.**
12. **For models provided with PWB: The suitability of the ampacity cooper traces shall be determined in the end use application.**
13. **For models provided with PWB: Security of leads Test was not performed. This test shall be performed in the end use application if applicable.**

## MARKINGS:

Each device shall be marked plainly and permanently with the following:

- a. The manufacturer's name or trade name or trademark or other distinctive marking by which the organization responsible for the product may be identified.
- b. A distinctive catalog number or the equivalent.
- c. The electrical ratings. If not marked on product, electrical ratings shall appear on each carton or other container in which the device is packaged.

The Solid-state Assembly (CoB) holders may be molded in various color and shape.

Model No. 459

Fig. 1 - Ill. 1

Model No. 434

Fig. 2 - Ill. 2

Model No. 431

Fig. 3 - Ill. 3

General - Fig. 1 to 3 show overall views of examples of series 4XX.

1. Body - Made of mica. Composed min. two main pieces secured together by rivets. Overall dimension are shown in ill.1-3 but can be different. Provided with two or more openings pivot for mounting purpose.
- \*2. Contacts - min Two provided. Copper or copper alloy, **nickel, silver or gold** plated, min 0,15 mm thick; approx. dimension 5 by 7 by 1 mm; secured within compartment of Body by press fit.
3. Leads - Optional. min Two provided. R/C (AVLV2/CN), min 24 AWG up to 18 AWG, rated min. 70 V, 90°C, welded to contact.
4. Optical Interface Adaptor (optional) - R/C (QMFZ2/CN), rated min. HB, 130°C. Overall dimensions can be of different size and shape depend of the model. See Ill. 3a for detail for one example of the Series.

Series 4XX and 5XX (alternate construction)

FIG. 4, 4a, 5, 5a

ILL. 4, 4a, 5, 5a

General - Fig. 4 and 4a show overall views of a sample of Series 4XX. Fig. 5 and 5a show overall views of a sample of Series 5XX. This Series can be produced in any size following bellow requirements.

1. Body - Made of one layer of 1.2 mm thick mica. Overall dimensions are shown in ill. 4 and 5 for examples of the Series. Provided with two or more holes for mounting purpose.
- \*2. Contacts - **Min.** Two provided. Copper or copper alloy, **nickel, silver or gold** plated, min 0.15 mm thick. Overall dimensions as shown in ill. 4a. Soldered to PWB.
3. PWB - R/C (ZPMV2/CN), rated min. V-0, 130°C. 1 mm thick. Overall size may vary depend of the model application. Dimensions as shown in Ill. 4 and 5a for examples of the Series. Secured to Body by rivets.
4. Connector - R/C (ECBT2/8), manufactured by WAGO KONTAKTTECHNIK GMBH & CO KG, models 2059; rated min. 250 V, 3 A, models 2060; rated min 320V, 9 A or models 2065; rated min. 600 V, 9 A. Secured to PWB by Soldering.