



Technical Guide

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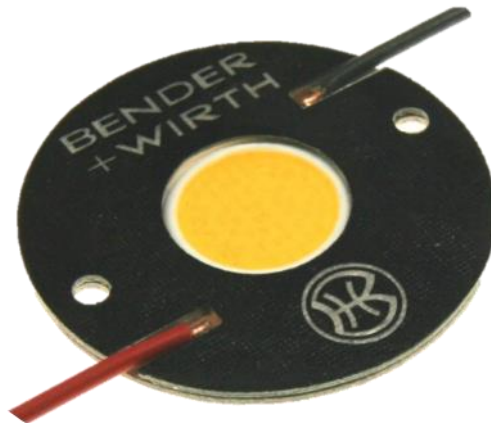
LED Holder Series 430

Release:

01.11

Release-Date:

2020-01-07



Please take note of the following instructions for the selection and assembling of the B+W LED Holder Series 430.

The information in this document is provided without liability and subject to change without notice.

1. Scope

The B+W LED Holder Series 430 offers a wide range of different standard COB holders together with the option to realize nearly unlimited customized versions.

This technical guide incorporates all important aspects of handling and assembling our holders appropriately and explains our encoding system.

Our customer service team will help you to identify (or create) the best solution for your application. Please feel free to contact us for any further questions or demands.

2. Safety instructions

B+W LED holders are designed for an optimal fixation of Chip on Board (COB) LED's. For the correct operation, handling, thermal management and electrical connection you have to follow the COB manufacturer's instructions.

The holder is part of an electrical circuit, therefore only trained personnel should handle them.

3. Certificates

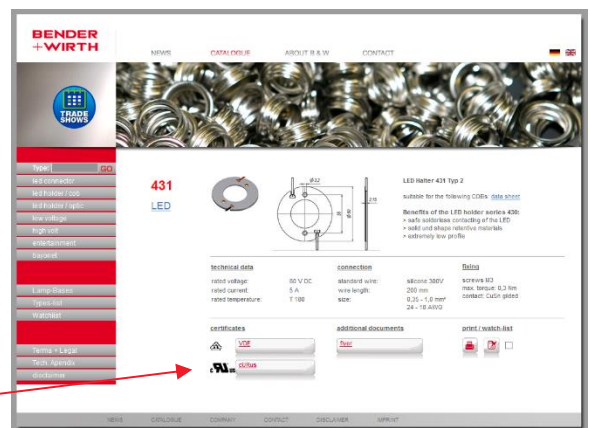
The complete B+W LED Holder Series 430 including all customized versions is certified according to:

- + UL 8754
- + CAN/ULC-S8754
- + DIN EN 60838-1



The original certificates of compliances are downloadable from our online catalogue.

- + VDE Certificate No. **40041342**
- + UL- File **E472943**



4. Encoding system

B+W developed a vast amount of customized holder versions, alongside a range of about 400 standard holders. This chapter will explain the encoding system and how to differentiate the holders.

4.1 Codes

Part No. **XXXXX**

Drawing No. **XXX** / **XXXXX** - **X**
 ↓ Article No. ↓ Part No. ↓ Index

Description **LED Holder** **XXX** **Type XX** **HV**
 ↓ Article No. ↓ Type ↓ High Voltage

4.2 Part Number

XXXXX

The part number is the legal order code. You find it on every offer, order acknowledgement and invoice in the first row.

4.3 Drawing Number

XXX / XXXXX - X

Each part number has an individual drawing number (1:1 relationship). It contains the article number, the part number itself and optionally an index. You find it on every offer, order acknowledgement and invoice in the second row (and, of course, on every drawing).

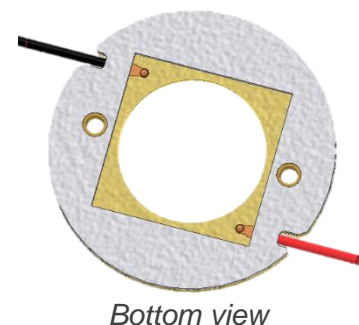
4.4 Article Number

XXX

The article number designates which COB is suitable for the selected holder. You find it within the drawing number and within the description.

Important dimensions are the outside dimensions, the acceptable thickness of the COB's and specific contact point positions (see yellow marked area on the bottom view picture).

Currently available versions are listed in our online catalogue.



4.5 Description

LED Holder **XXX** Type **XX** HV

You find the description on every offer, order acknowledgement and invoice in the third row. It contains the article number, the type and optionally the high voltage mark.

4.5.1 Article Number

LED Holder **XXX** Type **XX** HV

See above (chapter 4.4)

4.5.2 Type / Typ

LED Holder **XXX** **Type XX** HV

The type defines shape and fixing points of a holder (see yellow marked area on the top view picture). Types can be classified by single numbers or by a letter combined with number:

Type 1, 2, 3, 4 ...

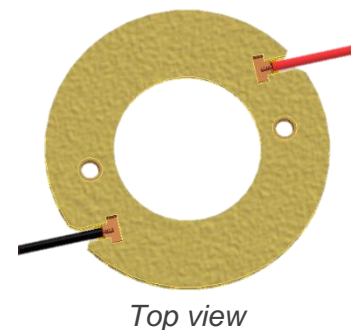
- + holder without specific optical interface

Type A1, K1, L5 ...

- + holder designed for optical or thermal systems

HV

- + Holders marked with "HV" are appropriate for high voltage up to 150/450V DC. Specification is shown on the drawing.



5. Handling

Most of our holders are equipped with wires which are welded to the contacts.

- + Please avoid mechanical stress onto the wires or contacts (for e.g. pushing or pulling of the wires) during unpacking and assembling.
- + The holders should stay within the original package in a dry and tempered location until assembling.

Of course all handling instructions of the COB supplier have to be followed as well.

6. Assembly instructions

Due to the high performance material B+W LED Holders create a constant pressure onto the COB, even at high temperatures where other materials yield. This ensures an optimal thermal connection.

6.1 Thermal Interface Material (TIM)

The additional use of a Thermal Interface Material (TIM) reduces the thermal resistance.

B+W LED Holders can be used with the following TIM's:

- + **Paste** (must be applied finely)
- + **Graphite pads**
- + **Silicon pads** (mostly used for insulated applications / HV versions)
- + **Phase change material** (must be very thin to get the optimal performance)

The optimal thermal functionality always depends on different parameters. The component combination should be tested with cautiousness.

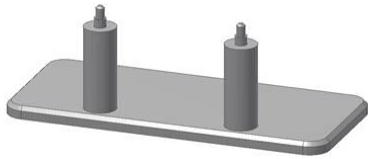
6.2 Assembly

6.2.1 Flipped / Upside Down Assembly

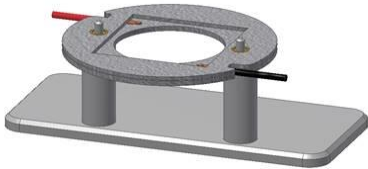
Standard B+W LED holders provide no clipping mechanic for COB modules, therefore a flipped / upside down assembly is recommended. It differs slightly depending on the chosen thermal interface material.

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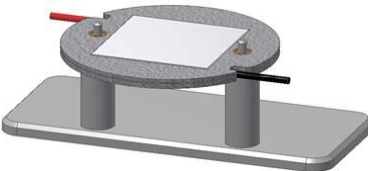
LED HOLDER SERIES 430



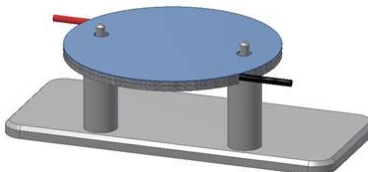
use a simple pilot tool
size and design depends on your application



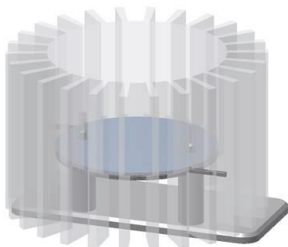
Step 1
set our holder on the pilot tool



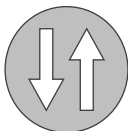
Step 2
put the LED in the holder, note the polarity



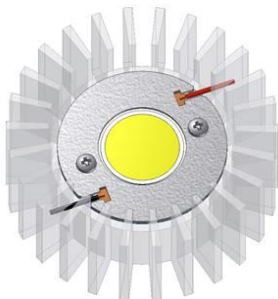
Step 3
place the TIM
(with self-sticking TIM, the package can be removed from the pilot tool after this step)



Step 4
set the heat sink on top



Step 5
keep pilot tool and heatsink together and flip the complete package upside down



Step 6
just remove pilot tool and install the screws to complete the assembling
max torque is 0,3Nm

6.2.2 Assembly via Clip-In Function

The new COB Clip-In function was presented at the 2018's Light + Building the first time.

The operating principle is very simple: The Clip-In tool has small extensions on the bottom, which grab through fitting holes in the holder. Now, the COB can be fixed between these extensions. As soon as the holder is screwed down onto the heat sink, the tool releases again.



The Clip-In function is optionally available for all COB holders from Bender + Wirth. It simplifies the assembly of luminaires and light engines a lot. The assembly tool shown here has a handle to further simplify the positioning.

If you are interested in this assembly method, please don't hesitate to contact us.

6.3 Fixing screws

The standard holders are equipped with internal rivets. Do only use screws with a flat bottom face. Do not use screws with a conical / tapering bottom face. They can damage the rivet:

Internal (standard) rivet



As an option there are different special rivets available where conical screws can be used:

Round-head rivet / Flat-head rivet



The special counter-sunk screw B+W 45634 has a very small head diameter to minimize the total height.

The maximum fixing torque for all screws is 0,3 Nm. We recommend to use a torque screw driver to ensure the correct fixing.

7. Electrical Connection

7.1 Contacts

The contacts are made of CuSn with gilded contact areas.

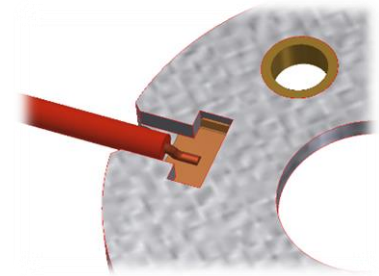
7.2 Contact pads of the COB

For the best performance the contact pads at the COBs must be gilded. Tinned contact pads are not acceptable due to possible oxidation.

7.3 Connection leads

Most of our holders are delivered with connection leads. The wires are welded to the contacts for the optimal electrical performance and best mechanical fixing.

The standard wires are listed on the next page. The wires are UL and VDE certified.



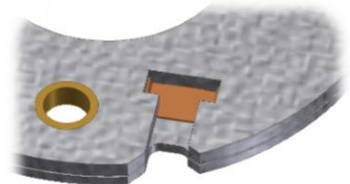
7.4 Wire ends

The standard holder version includes semi stripped wire ends. Other options are available on request.

7.5 Solder connection

Optionally, the holders can be manufactured without wires, but with installed blank contacts. You can solder your specific wire onto the contact by not exceeding 450°C / 3s with a standard soldering device.

The soldering process should be finished before assembling the COB to avoid any overheating of the COB.



8. Technical details and standard ratings

rated voltage:	80 V DC (optionally 150 / 450V DC)
rated current:	5 A (optionally 10A)
rated operating temperature:	T180 (optionally T200 or UL rated T250)
standard connection leads:	SiF 0,35 mm ² /AWG 22, 300V 150°C SiF 0,5 mm ² /AWG 20, 300V 150°C SiF 1,0 mm ² /AWG 18, 300V 150°C PVC 0,35 mm ² /AWG 22, 300V 105°C PVC 0,5 mm ² /AWG 20, 300V 105°C
fixing:	screw M3
max. torque:	0,3 Nm
material:	mica
contact material:	CuSn gilded

9. Disclaimer

This technical guide was created to provide guidance in customer applications for the LED holder series 430 of Bender + Wirth. Bender + Wirth assumes no responsibility regarding the completeness and accuracy of the contents, as well as the suitability of the systems for a particular purpose.

Bender + Wirth is in no way liable to third parties for direct or indirect consequential damages arising directly or indirectly from the use of this document.

It is the responsibility of the customer to ensure that the design meets all the necessary requirements and safety certifications that are needed for its intended use.

10. Contact

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