

Product Family: **JOY**

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**JOY** is a new family of single **Ø16.1 mm TIR-lenses** for offices, shop, and architectural lighting.

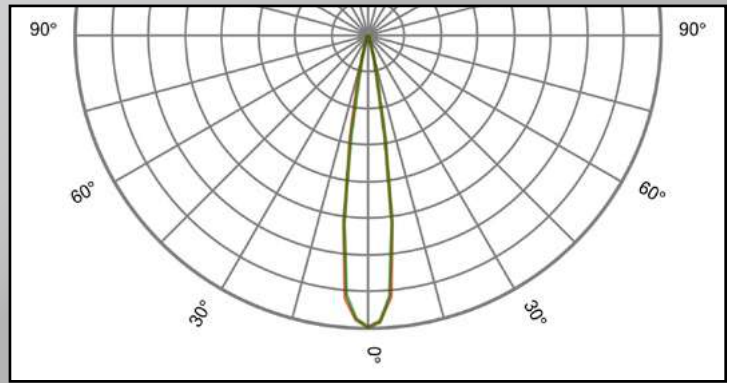
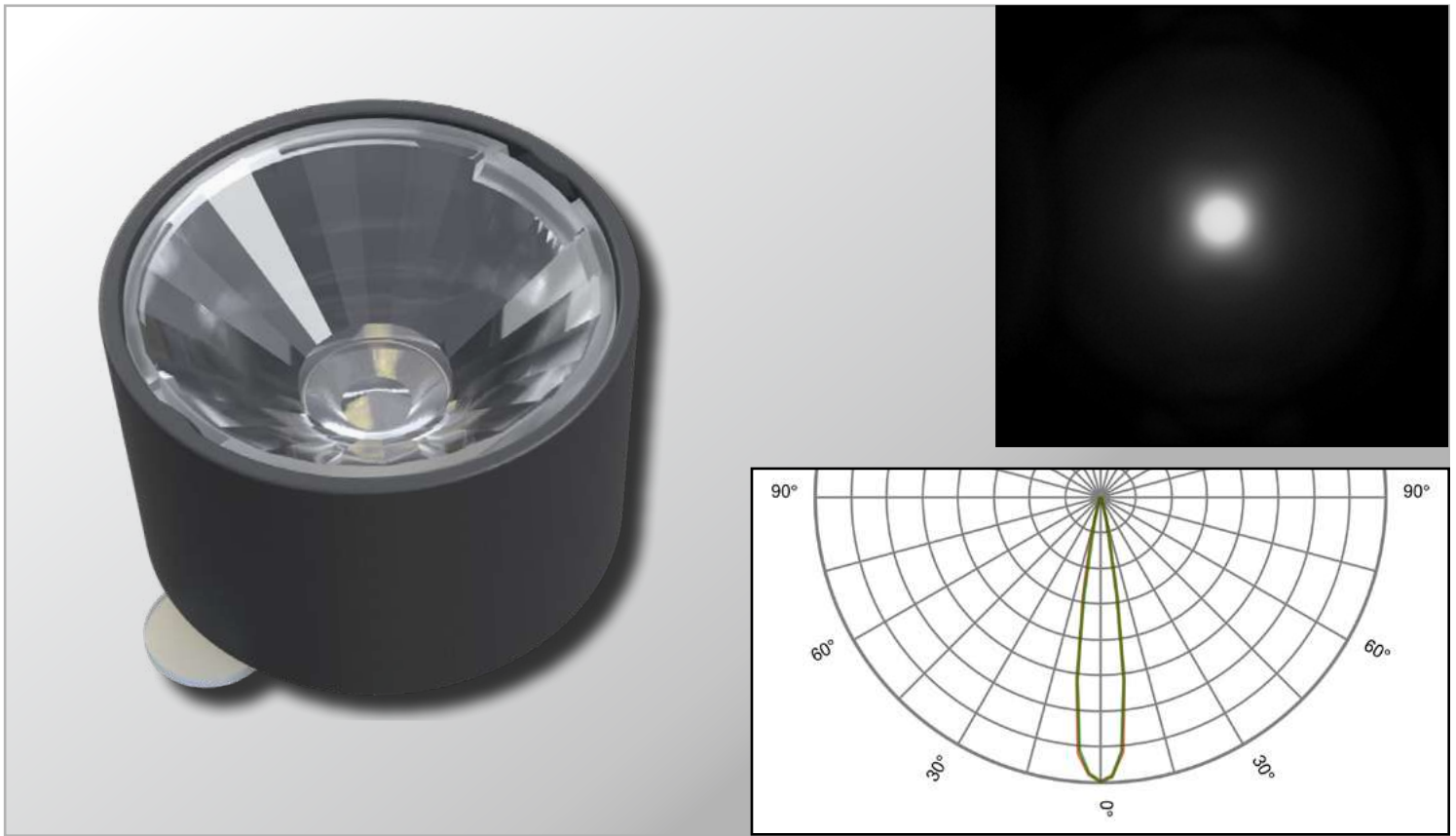
Compatible with up to 5050 size LED packages. Made of **PMMA**.

They work perfectly within  $-40^{\circ}$  to  $+90^{\circ}$  temperature range.

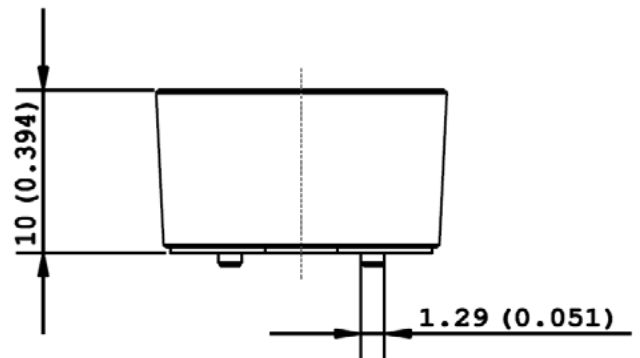
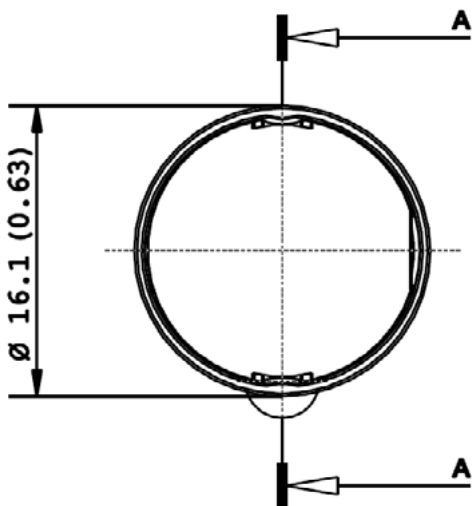
High Lighting efficiency and excellent light distribution guaranteed. **JOY** can be used individually or configured in multiple parts to create the perfect lighting fixture for your application, as linear lighting rows or in configurations of different shape and width. These optics are easily assembled by **adhesive tape fixing**.

Beam angle available: **Narrow, Medium, Wide and Extra Wide**

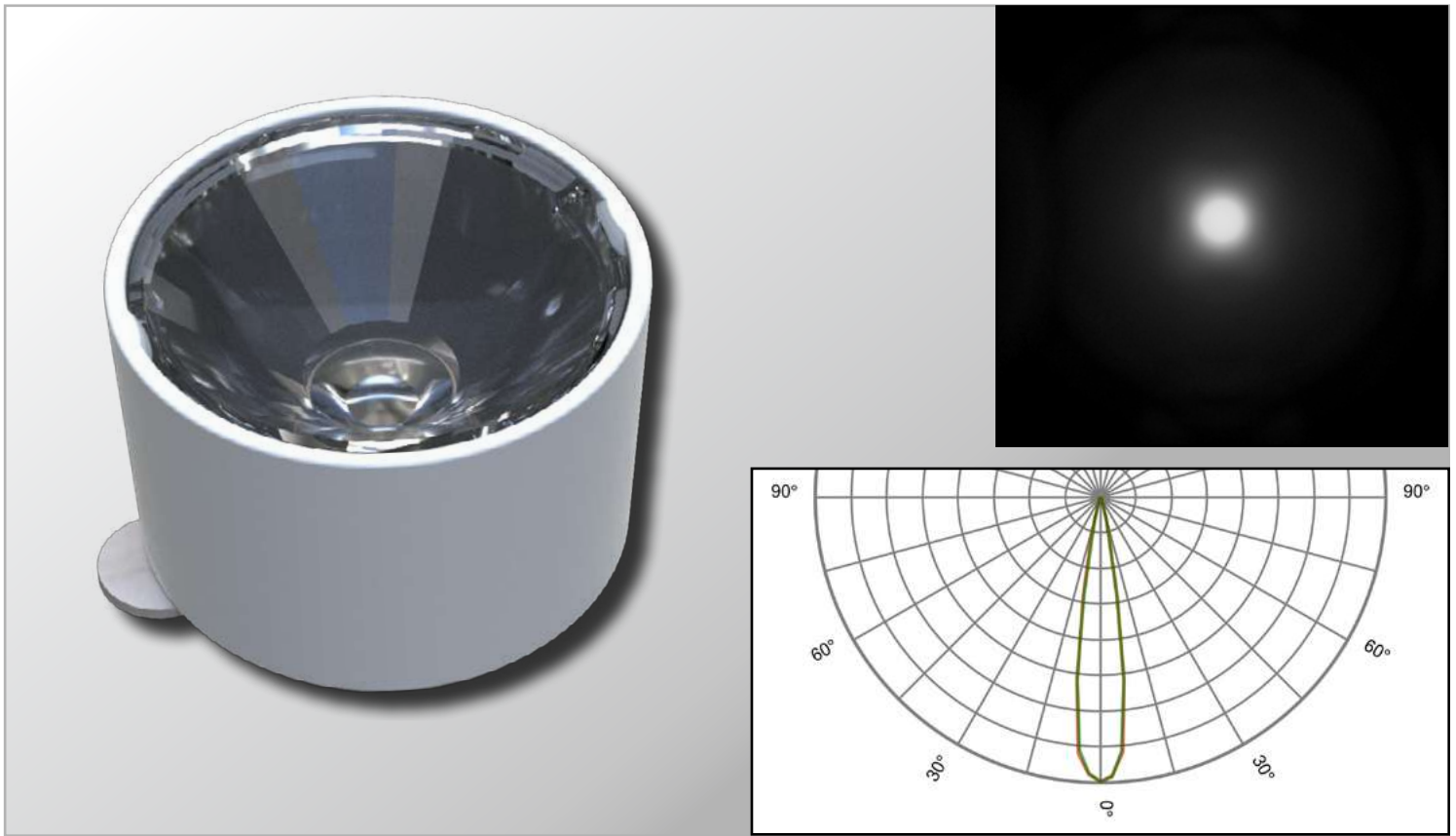
**JOY/NA01SA - Narrow Beam - TIR Lens - Black Holder**



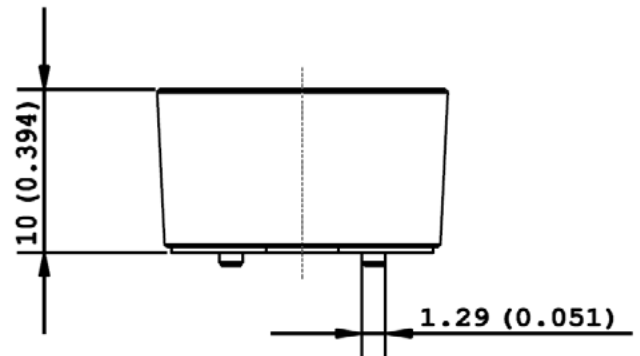
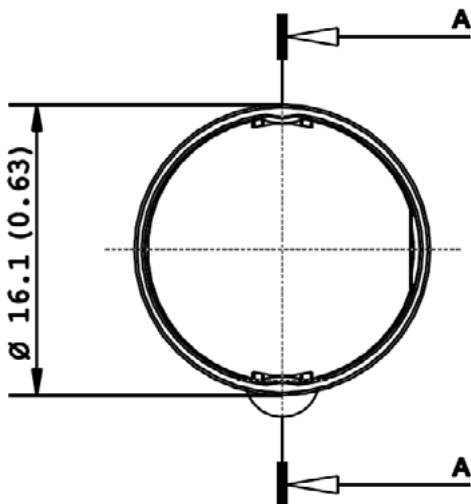
Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC BLACK	<ul style="list-style-type: none"> <li>Full angle at 50% from maximum: ~ 15°</li> <li>Full angle at 10% from maximum: ~ 30°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



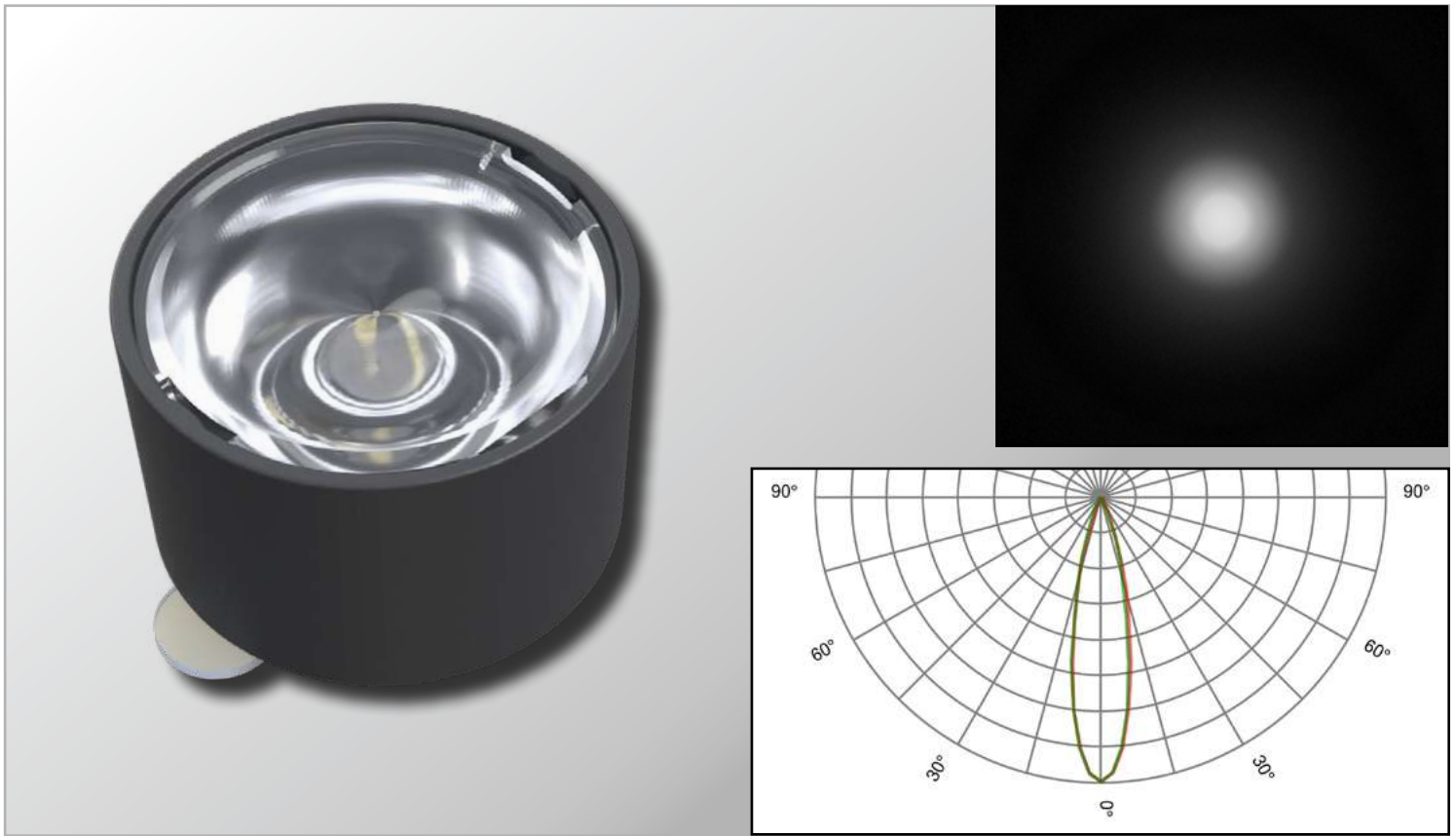
**JOY/NA02SA - Narrow Beam - TIR Lens - White Holder**



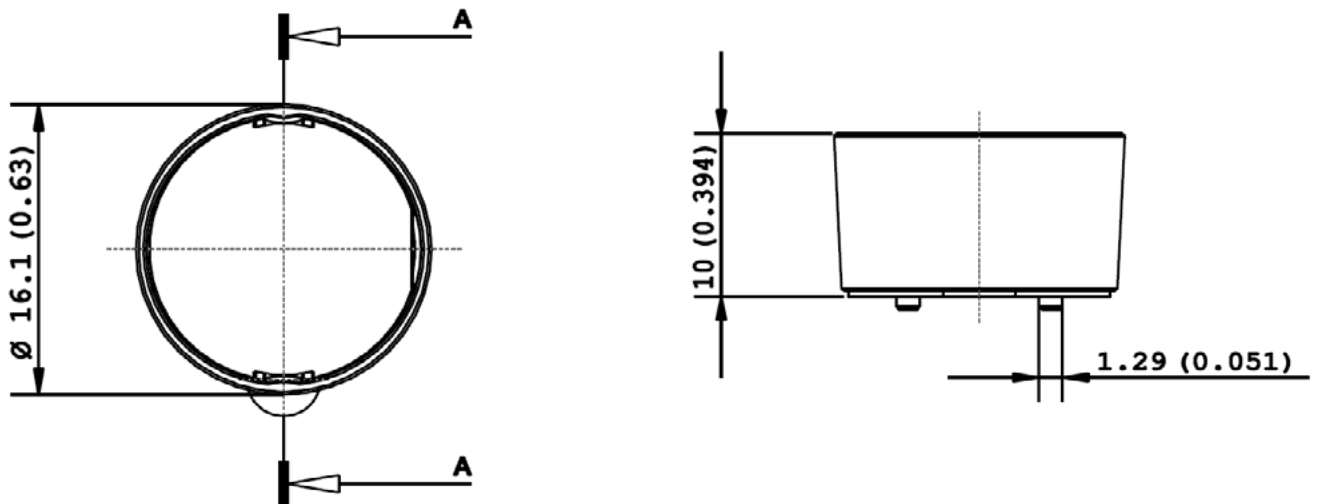
Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC WHITE	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 15°</li> <li>• Full angle at 10% from maximum: ~ 30°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



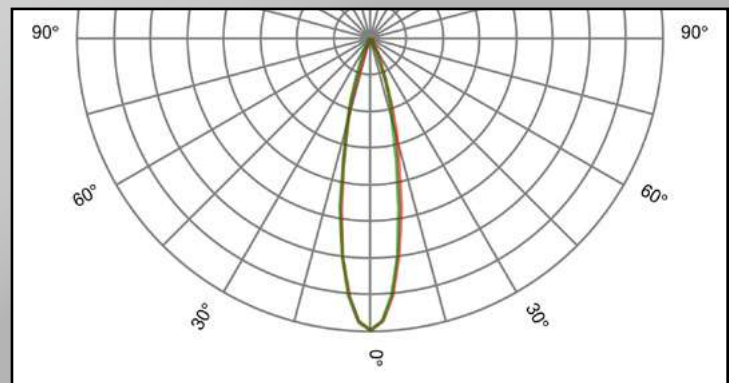
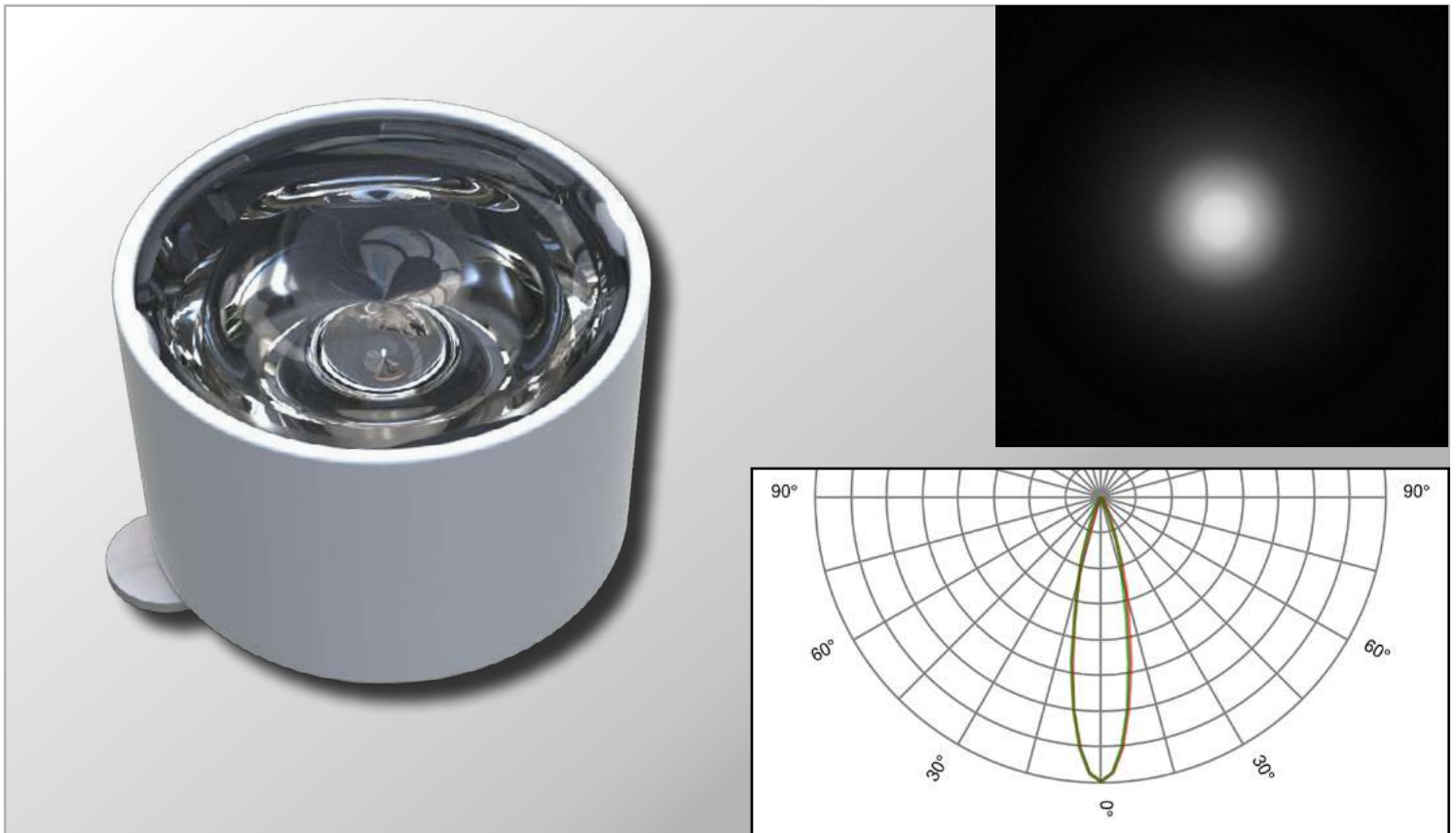
JOY/ME01SA - Medium Beam - TIR Lens - Black Holder



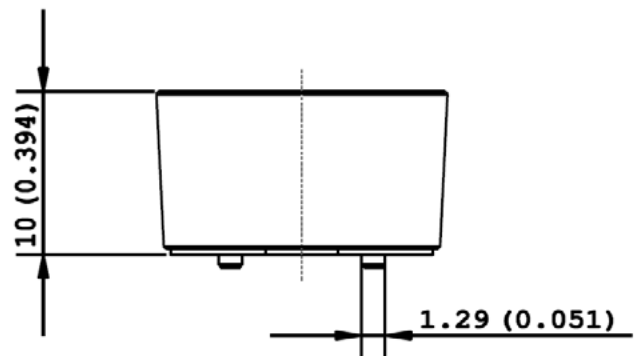
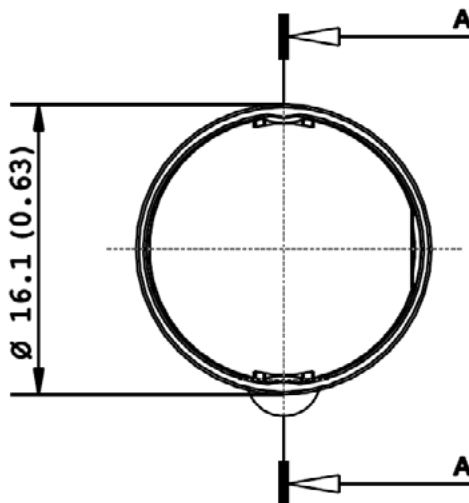
Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC BLACK	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 25°</li> <li>• Full angle at 10% from maximum: ~ 45°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



JOY/ME02SA - Medium Beam - TIR Lens - White Holder

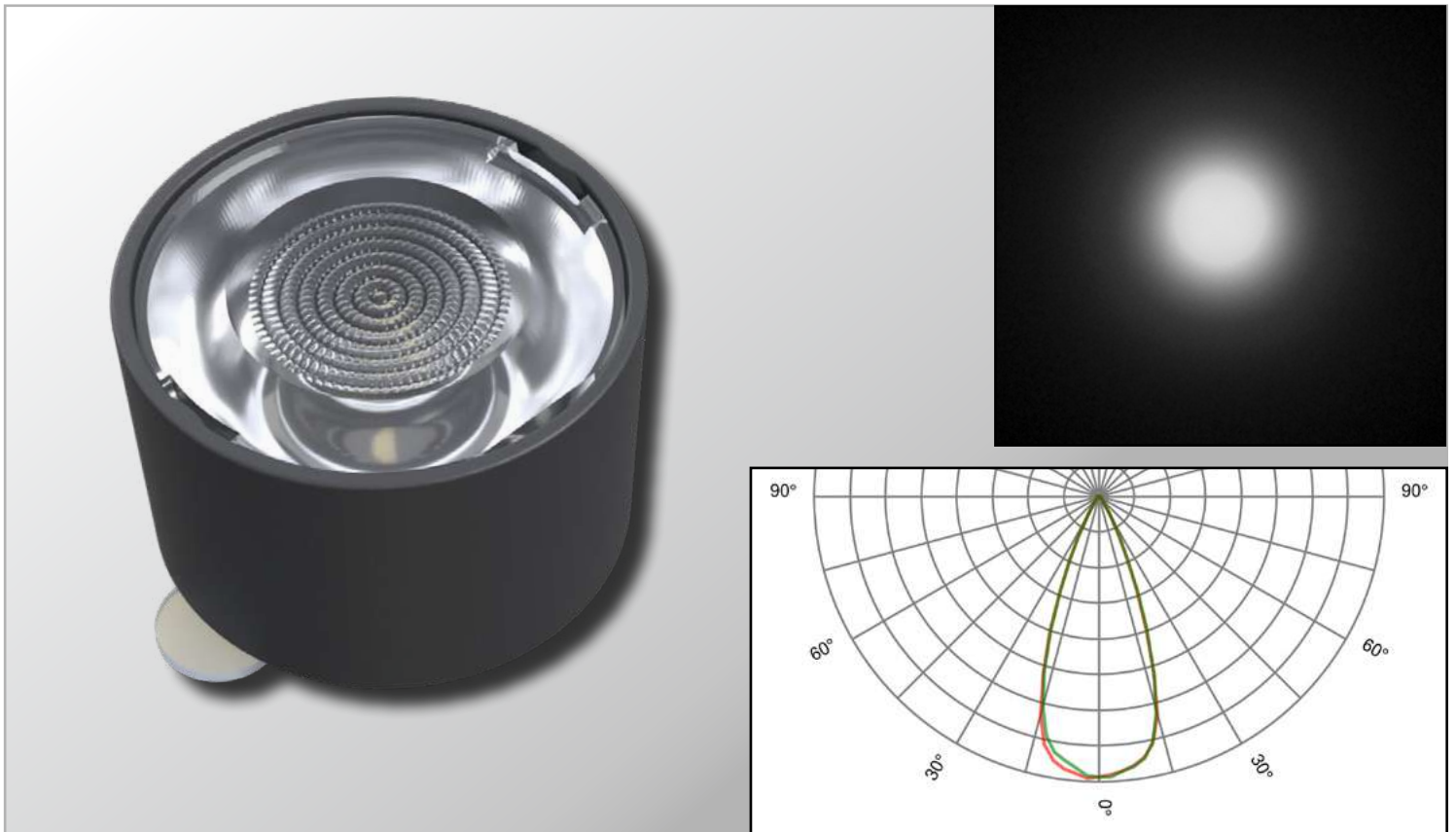


Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC WHITE	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 25°</li> <li>• Full angle at 10% from maximum: ~ 45°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES

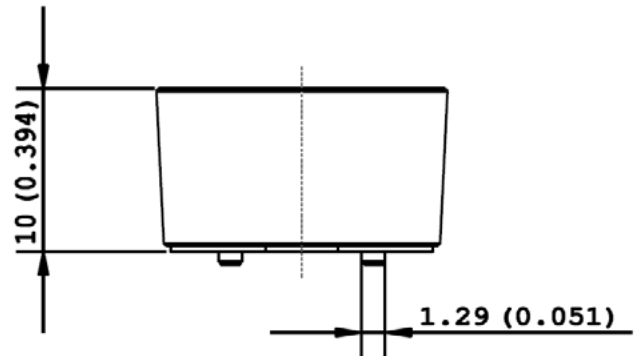
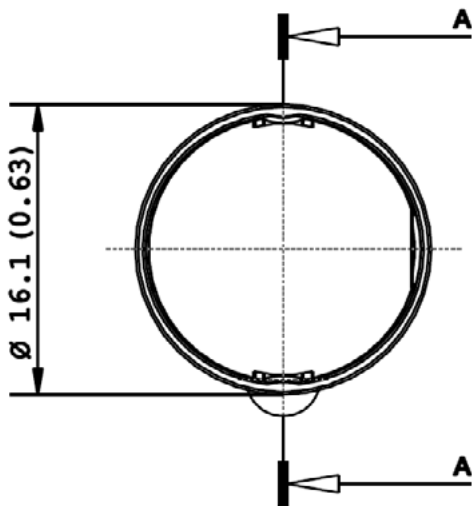




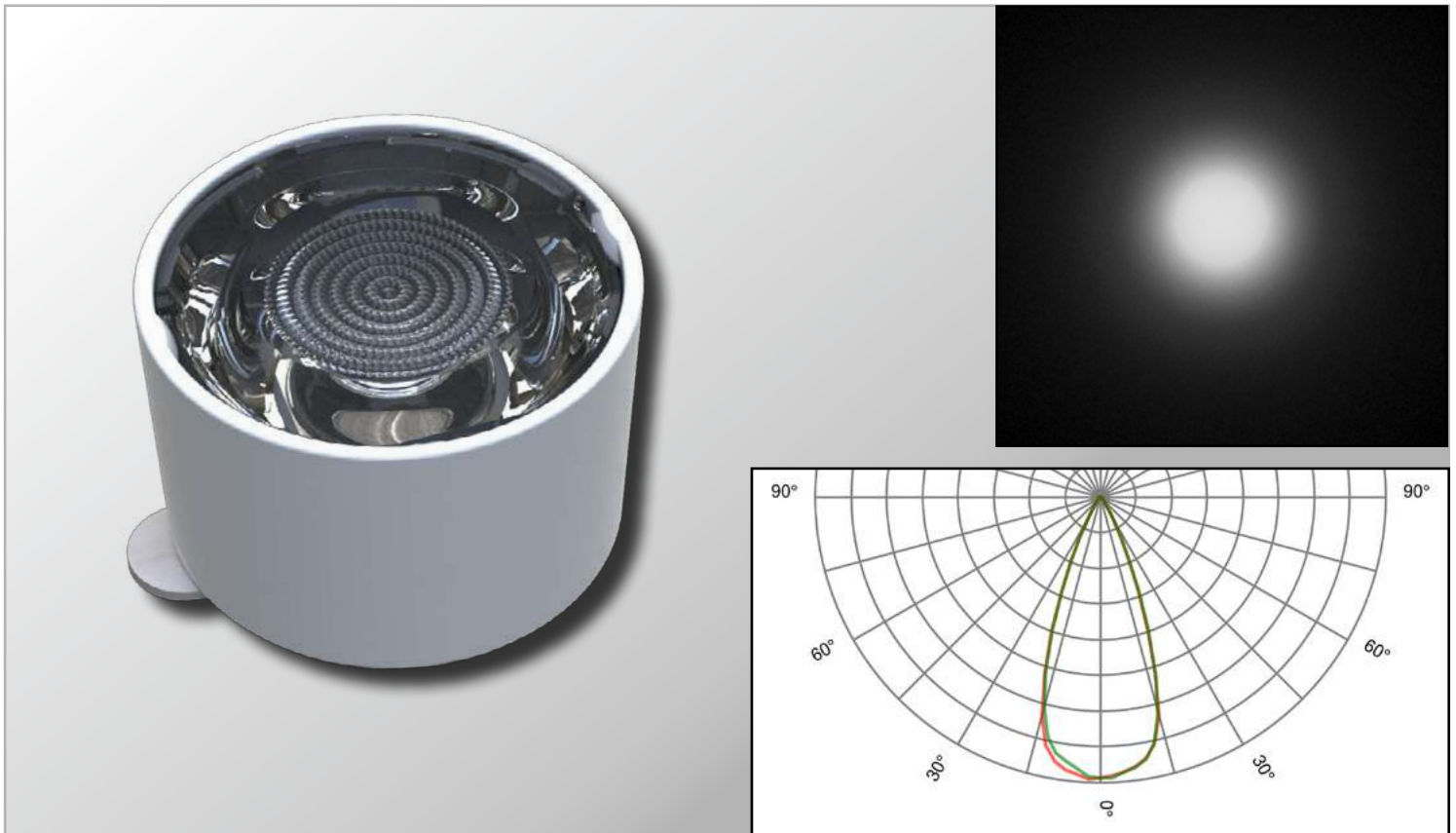
JOY/WI01SA - Wide Beam - TIR Lens - Black Holder



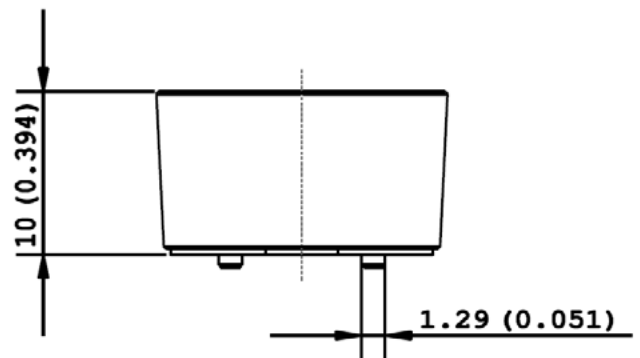
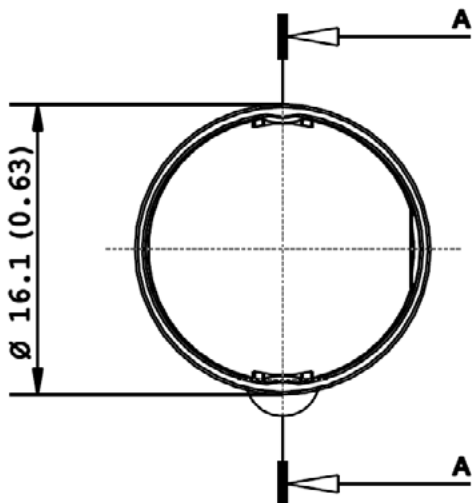
Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC BLACK	<ul style="list-style-type: none"> <li>Full angle at 50% from maximum: ~ 40°</li> <li>Full angle at 10% from maximum: ~ 60°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



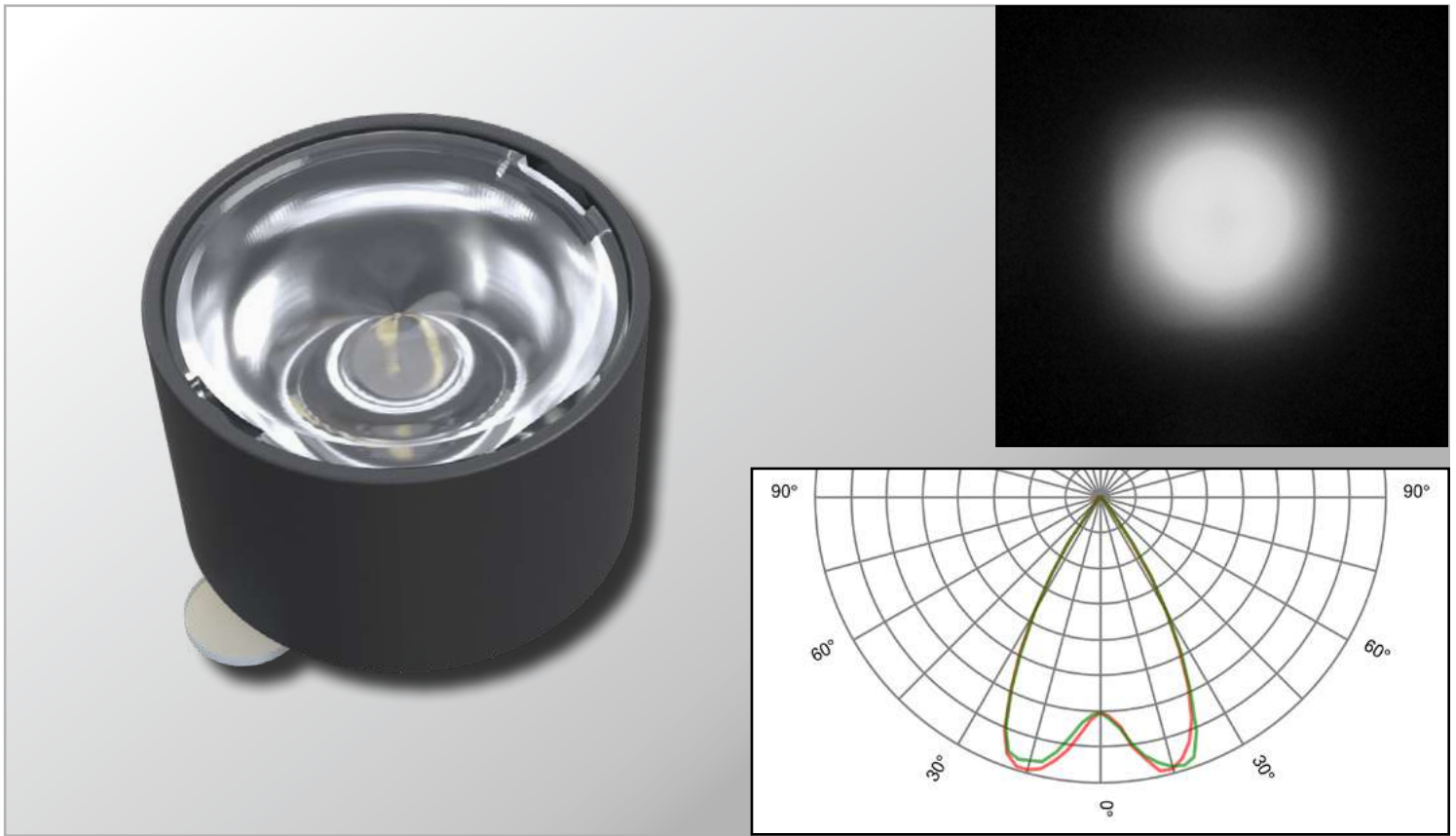
JOY/WI02SA - Wide Beam - TIR Lens - White Holder



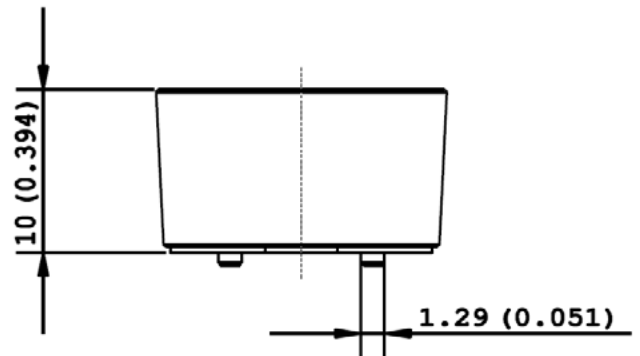
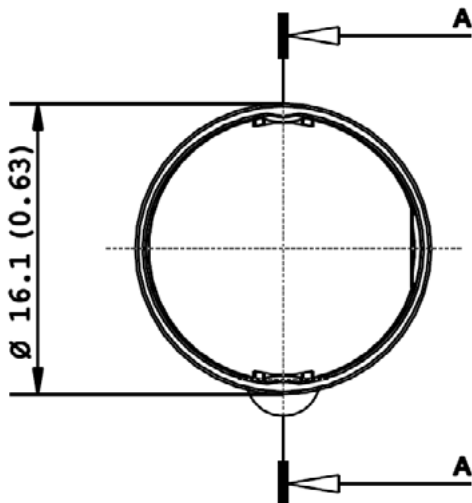
Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC WHITE	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 40°</li> <li>• Full angle at 10% from maximum: ~ 60°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



**JOY/EW01SA - Extra Wide Beam - TIR Lens - Black Holder**

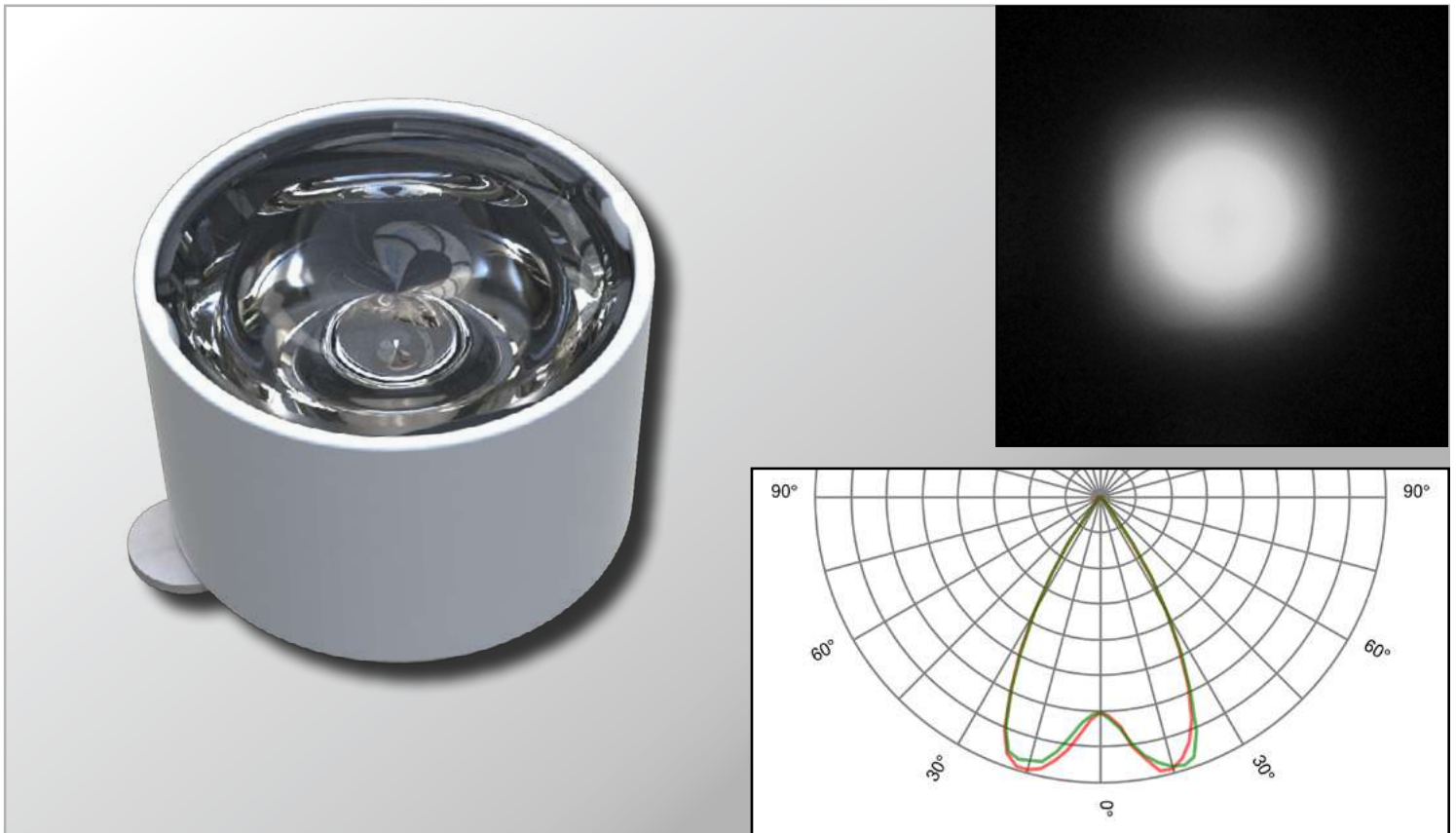


Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC BLACK	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 55°</li> <li>• Full angle at 10% from maximum: ~ 75°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES

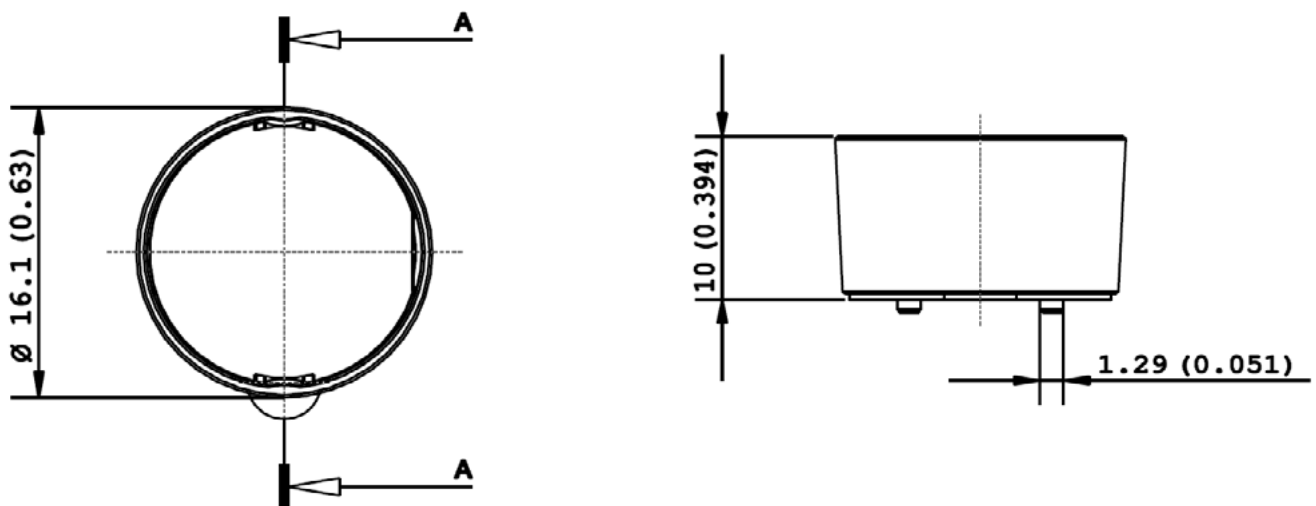




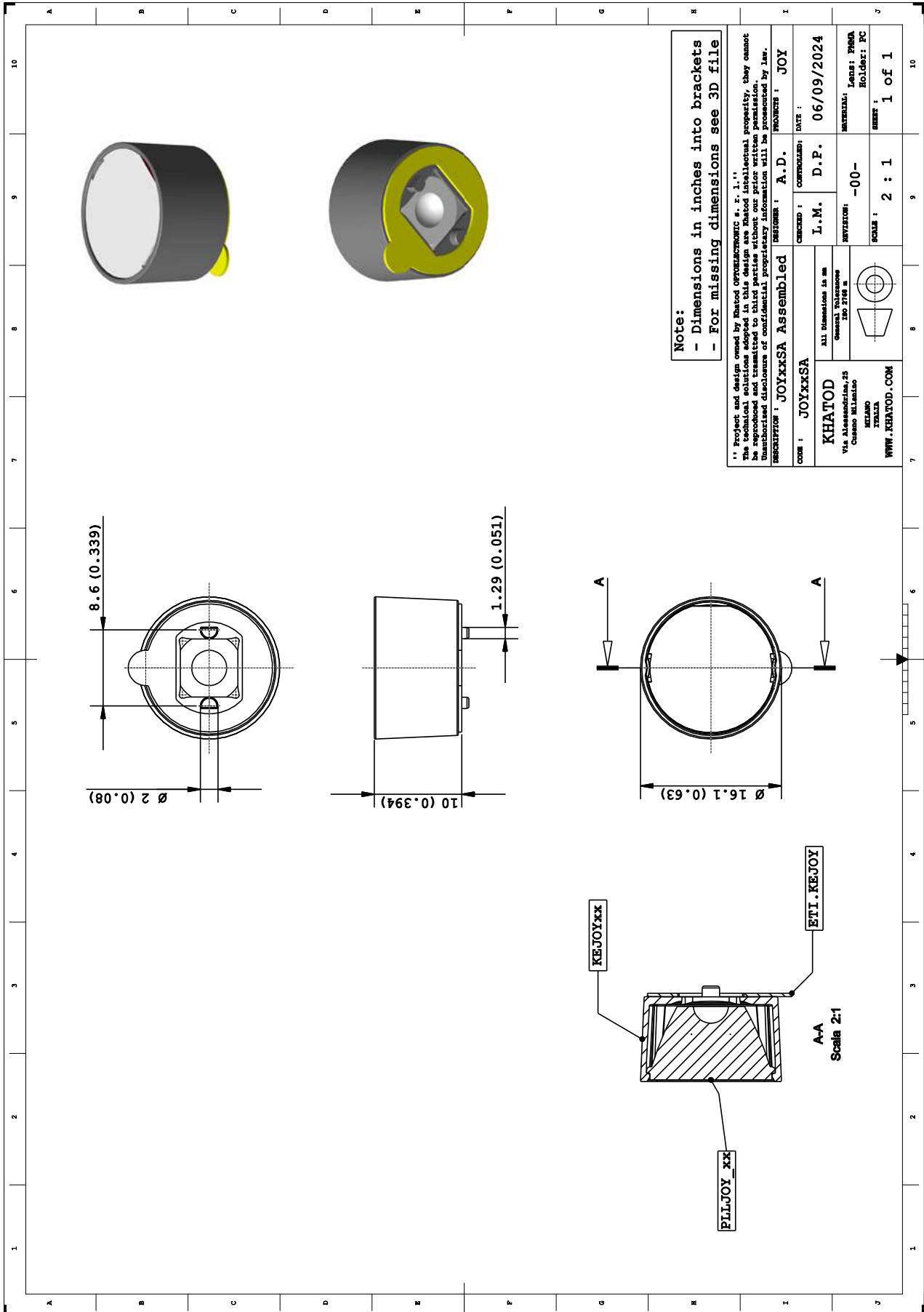
JOY/EW02SA - Extra Wide Beam - TIR Lens - White Holder



Dimensions	Type of fixing	Material	Beams	LED
16.10mm diameter- 10.00mm height	Self-adhesive tape	Lens: PMMA Holder: PC WHITE	<ul style="list-style-type: none"> <li>• Full angle at 50% from maximum: ~ 55°</li> <li>• Full angle at 10% from maximum: ~ 75°</li> </ul>	Tested with 3535 LED with dome and 2mm <sup>2</sup> LES



Mechanical Drawing



## Materials

Material	Temperatures
PMMA	-40° / + 90°C
• Temperature resistance: long-term exposure	-40° / + 85°C
• Temperature resistance: short exposure	up to + 90°C

### Notes:

- The optical values shown are the result of optical simulations carried out with LIGHTTOOLS, ASAP and ZEMAX software systems. The optical simulations are carried out on the basis of the typical values provided in the LED manufacturers' official datasheets. The photometric analysis has been carried out on physical samples. On request, by supplying your PCB, we can provide the measurement photometric file.

## Use and Maintenance

- DO NOT HANDLE OR INSTALL LENSES WITHOUT WEARING GLOVES, SKIN OILS MAY DAMAGE LENS OR LIGHT TRANSMISSION;
- CLEAN LENSES WITH MILD SOAP AND WATER AND A SOFT CLOTH;
- DO NOT USE ANY COMMERCIAL CLEANING SOLVENTS ON LENSES.

## Disclaimer

Please note that flow lines and weld lines on the external surfaces of the lenses are acceptable if the optical performance of the lens is within the specifications.

Should you require further information, please contact Khatod for advice. All lens testing must be subject to identical conditions as Khatod test condition. Khatod Optoelectronic, Milan, Italy, manufactures lenses for LEDs. Any other use of the lens shall void our liability and warranty. The lenses are an inert component to be used in the manufacture of various products. Our warranty and liability are limited only to the manufacture of the lens. You may not modify, copy, distribute reproduce, license or alter the lens and related materials of Khatod. Khatod does not warrant against damages or defects arising out of the use or misuse of the products; against defects or damage arising from improper installation, or against defects in the product or in its components. No warranty of any kind, expressed or implied, is made regarding the safety of the products. The entire risk as to the quality or performance of the product is with the buyer. In no event

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