

Application Note

MOON

MOON is an optical system providing exclusive solution when compactness, zoom feature, color mixing and perfect cut-off are required. Any highlight or spot light application will benefit from this innovative solution.

Product description

As a light guide technology based system, **MOON** consists of two references :

MOON G : Assembled part containing silicone light guide and two-parts holder.



MOON L : Imaging lens



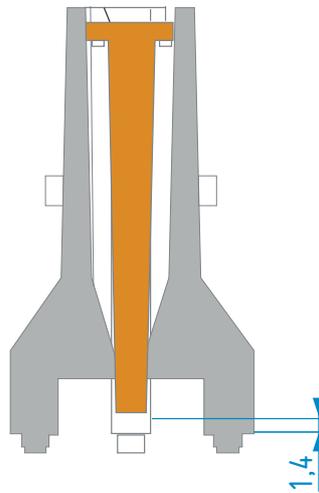
Optical principal

A LED injects light on the base of the light guide. Multiple reflections among the light guide length ensure a perfect light homogeneity on the output surface. The image of the output surface is projected by the lens to create the beam.

LED compatibility and assembly

MOON is recommended to be integrated with high power flat top LED. As the light guide technology is capable of color/chip emission mixing, single or multi chip, white or RGBW references can be used. The input part of the light guide has been designed to fit with up to total 4 mm² LES. Using bigger LES might impact efficacy as a significant part of the light will not be collected by the light guide.

To ensure the best possible light collection in the light guide, a distance of 0.1 mm is recommended between the LED and the light guide input. The **MOON G** holder has been designed to fit LED presenting a 1.3 mm thickness thus presenting a 1.4 mm difference between the PCB surface and the light guide input. When using a LED with a lower thickness, it is recommended to create routed areas on the PCB surface to compensate the difference.



Lens distance range

MOON beam angle will vary while adjusting distance between **MOON G** light guide output and **MOON L** lens input. This range has to be kept between 1.95 mm (wide beam) and 8.45 mm (narrow beam).

1.95mm corresponds to **MOON G** and **MOON L** in mechanical contact.

8.45mm corresponds to a 6.5 mm distance between the top of **MOON G** and bottom of **MOON L**.

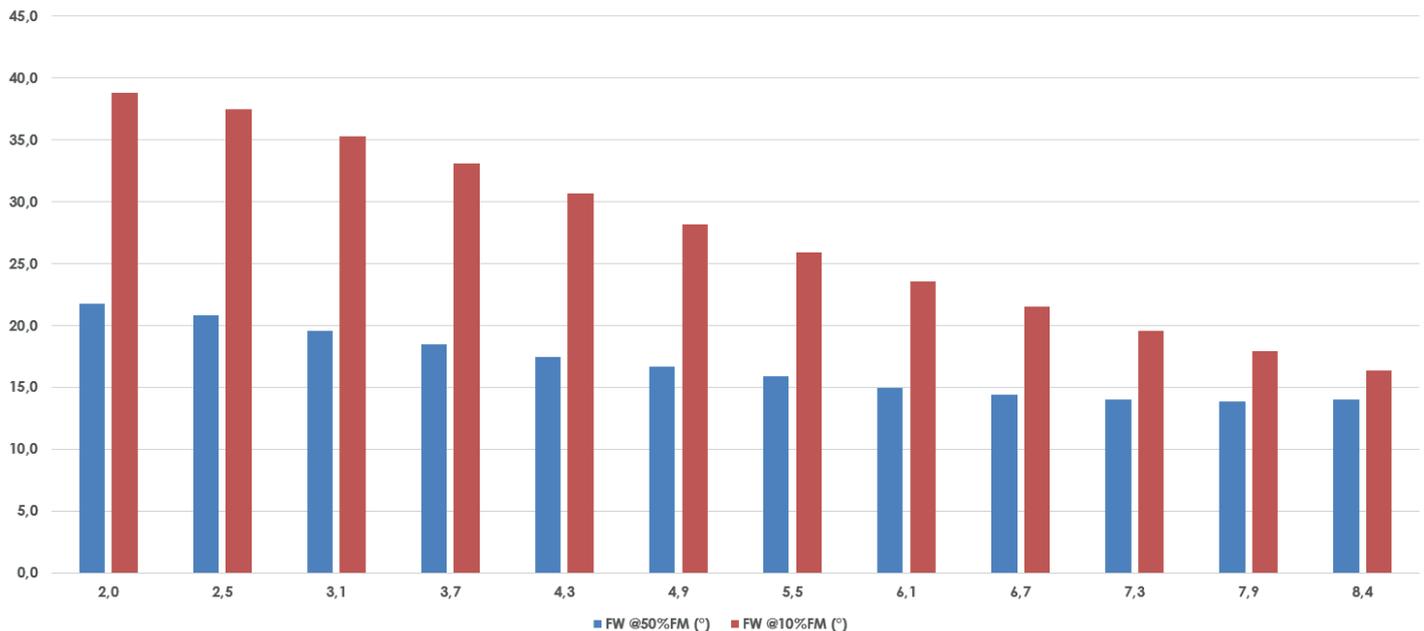


Wide Beam

Narrow Beam

Beam angle vs distance

Beam Angle (°) vs Distance (mm)



Silicone parts handling

In order to avoid fingerprint marks on the silicone part, it is recommended to wear gloves while working on the parts assembly in the final product.

Part number

Guide + Holder assembly is the **MOON G** CC-EE-DD-FF.

Available reference is **MOON G 02-04-14-RO**.

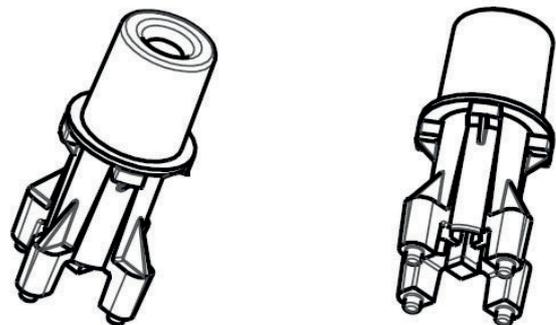
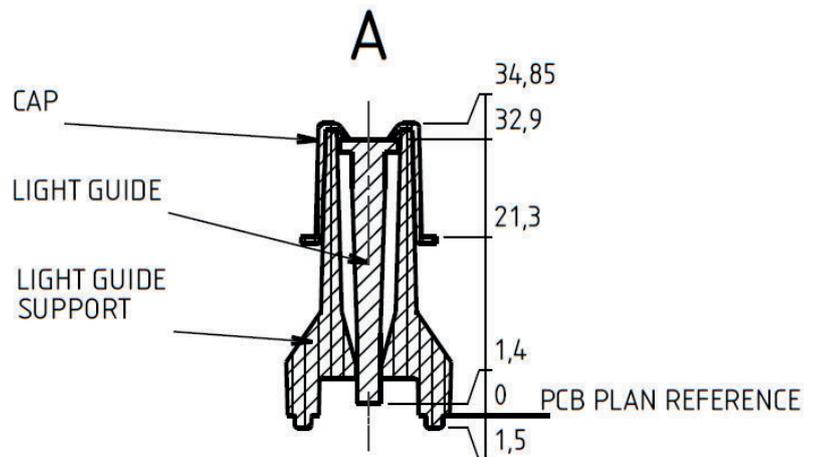
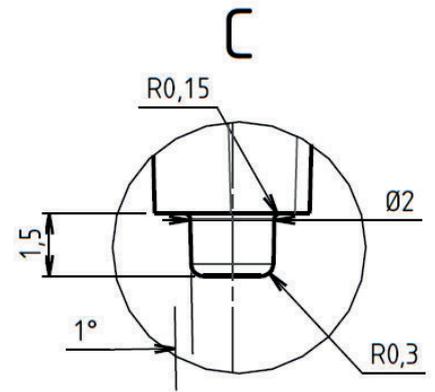
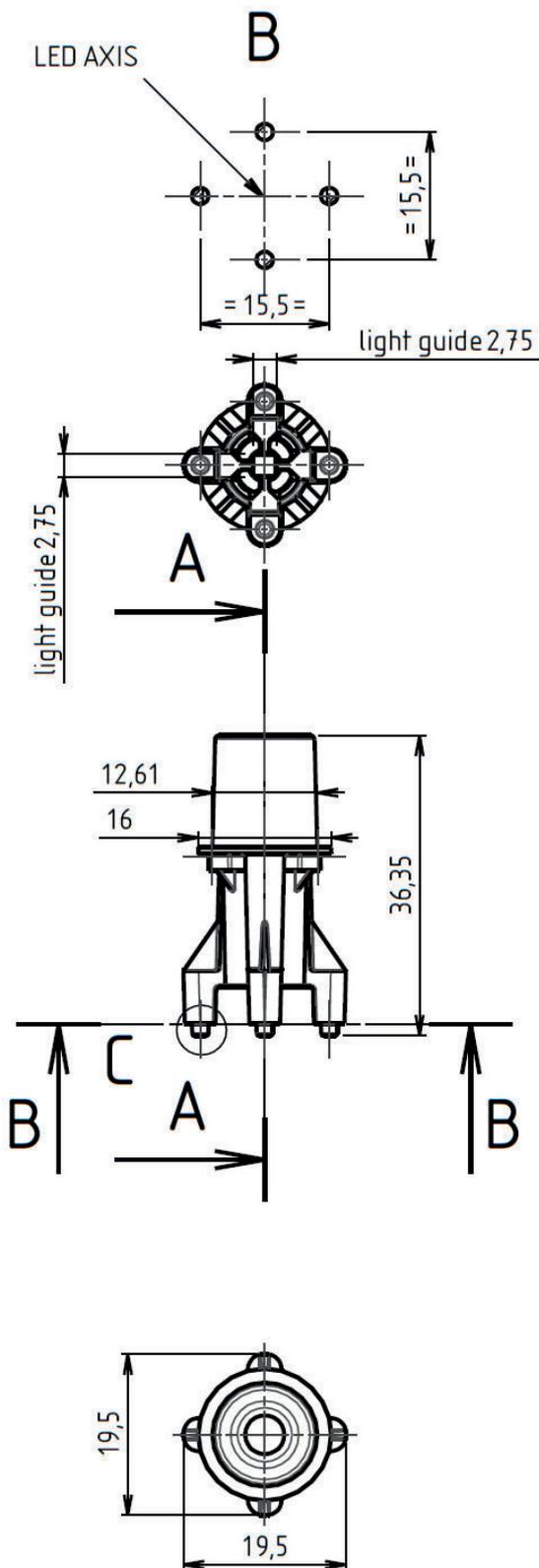
| G | CC | EE | DD | FF |
|-------|--------------------------------|--|--|--|
| Guide | Color: 01 white 02 black | Light guide input surface in mm ² | Distance between guide input and PCB surface in 1/10th of mm | Guide output shape: RO for round, SQ for square, TR for triangle |

Projection Lens is the **MOON L** DD-FF-T-M .

Available reference is **MOON L 22-16-C-7**.

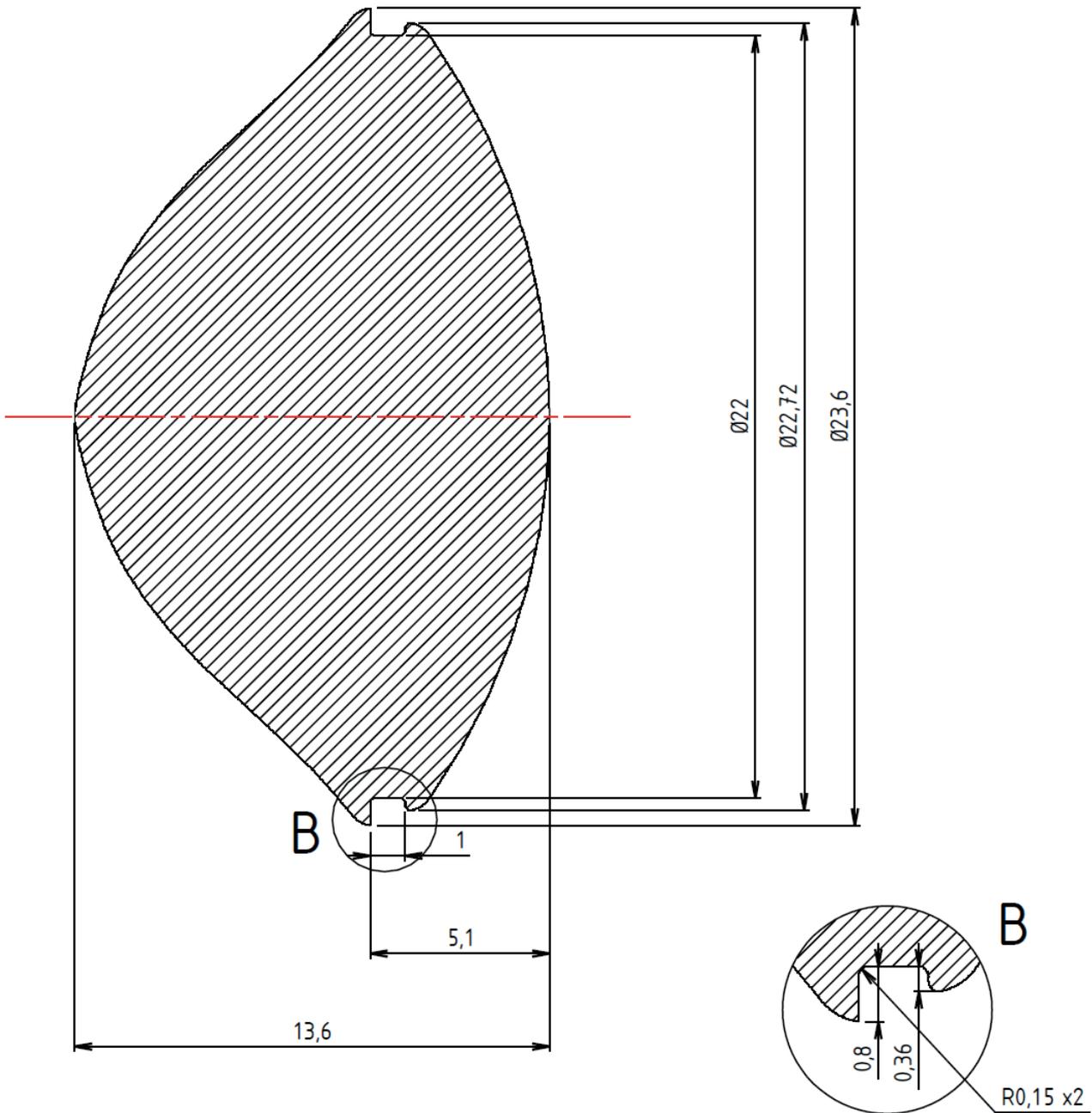
| L | DD | FF | T | M |
|------|----------------|--------------------------------|--|-------------------------|
| Lens | Diameter in mm | Focal distance in 1/10th of mm | Type: C for condenser, F for Fresnel,... | Material: 7 if silicone |

MOON G mechanical data



CAP: PA66 30% GF black
 LIGHT GUIDE SUPPORT : PA66 30% GF black
 LIGHT GUIDE: Silicone

MOON L mechanical data





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