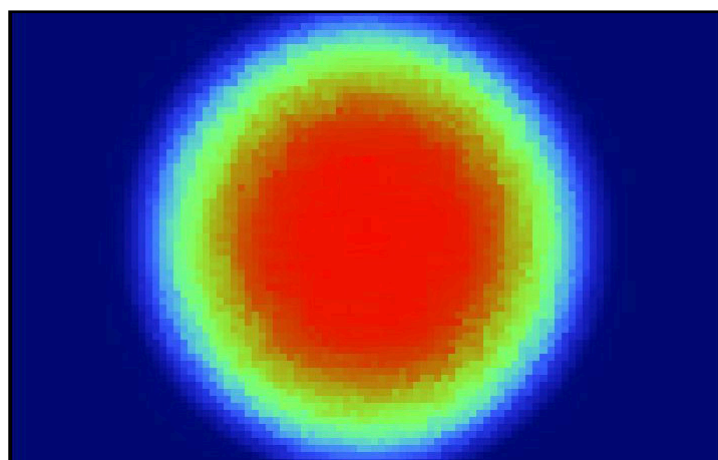
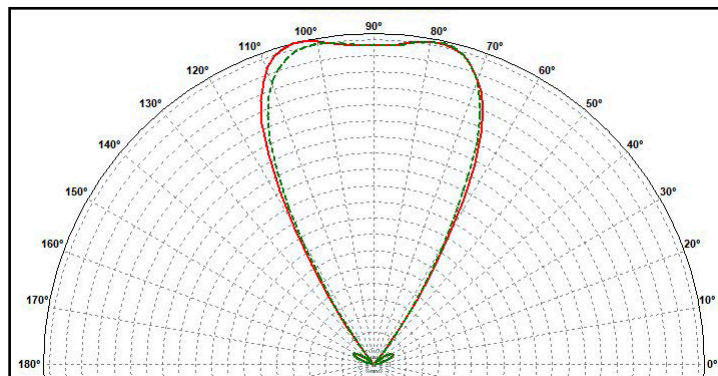
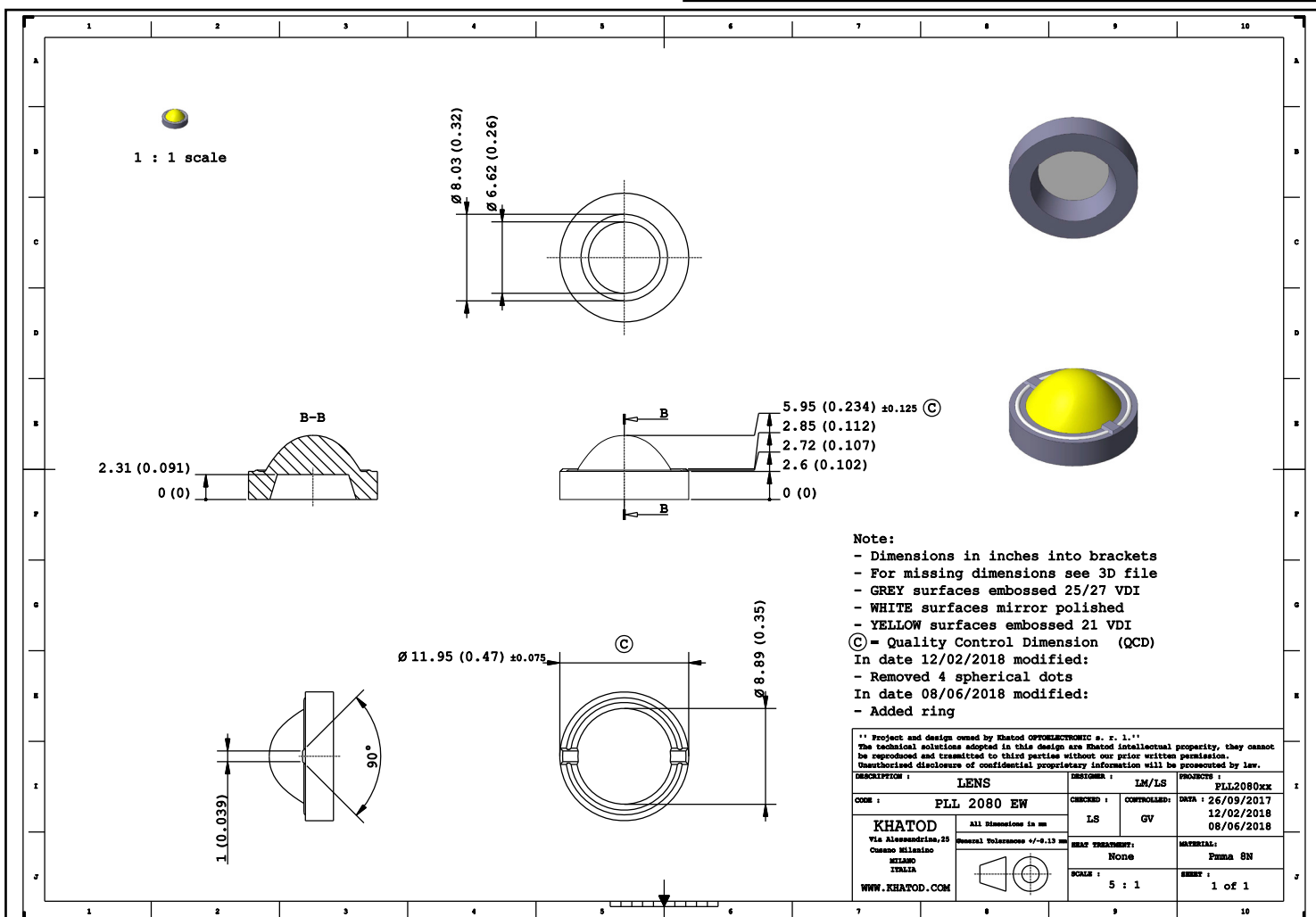


#### PLL2080EW - 60° FWHM

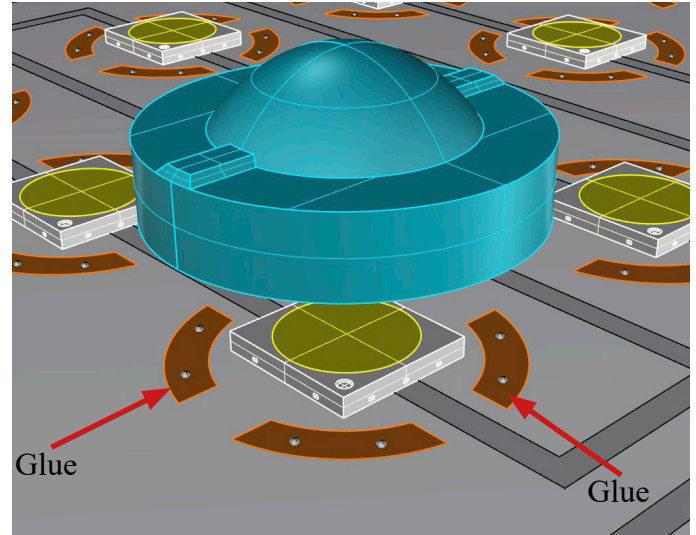
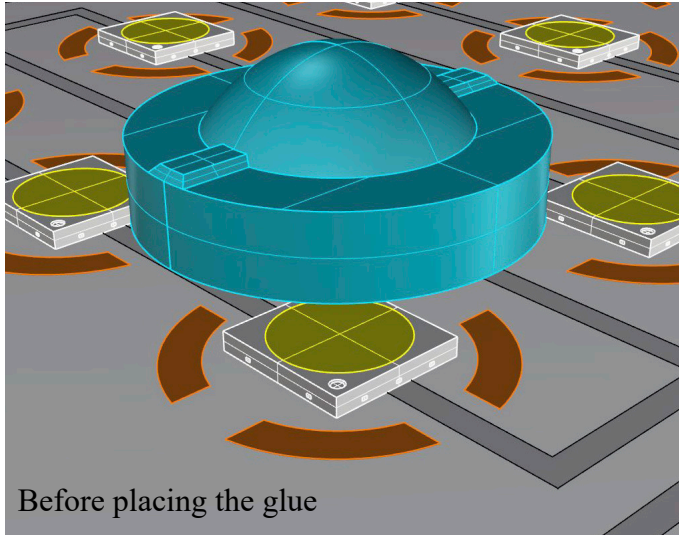


- Material = PMMA Clear - **Non-yellowing, 10-year guarantee\*\***
- Full angle C0-C180 at 50% from maximum: ~ 60°
- Full angle C0-C180 at 10% from maximum: ~ 114°
- The light spots here represented refer to tests carried out with a single Mid Power LED, 5.0x5.0mm size, ~ 550 lm



## ASSEMBLING REELENSES

The PLL2080xx Series – REELENSES – are single microlenses available as tape & reel packaging for automated manufacturing processes typical of the most popular Pick and Place Machines for SMD Components. The PLL2080xx Series are designed to provide the correct positioning, alignment and gluing of the lenses with the LEDs. The lenses do not need any special precaution for centering and gluing. The flat bottom perfectly matches the corresponding sections on the PCB so helping a correct glue setting and sealing. When properly installed, the flat bottom of the lens should be in contact with the top of the PCB to provide proper height alignment.



Views of the PLL2080xx Series showing the lens positioning onto the PCB. The lens alignment corresponds with the recesses of the PCB.

The PLL2080xx lenses are fastened to the PCB by placing a drop of glue in one or more of the PCB recesses where the lenses are positioned.

When properly attached, the lens alignment is well fixed into the PCB recesses and the flat bottom of the lens is in contact with the top of the PCB.

## VIDEO EXAMPLE



## Recommended UV Glue

Practicality and fast assembly of REELENSES, the PLL2080xx Series, are totally preserved also when the gluing operation is carried out. To this purpose, Khatod has chosen a zero-thickness glue, neutral color, temperatures resistant and ensuring fast application and post curing.

[DELO PHOTOBOND AD491](#) from DELO Company, leader in optical adhesives, is the glue chosen by Khatod for REELENSES. This special glue boasts post curing features in a wide UV range, from 320nm to 420nm. Also, as a single component glue, it does not require any special temperature compliance for storage.

Typical features:

### **DELO® PHOTOBOND® AD491**

UV- and light curing acrylate adhesive, high viscosity

#### **Base**

- modified urethane acrylate
- one-component, solvent-free

#### **Use**

- multi-purpose for interior plastic/plastic, glass/plastic and glass/glass bondings, e. g., bonding of glass into plastic frames or clips to glass
- combined light and UV curing also enables the curing of components which are difficult to transmit
- generally, the product is used in a temperature range of -40 °C up to +120 °C; related to the application, other limits may be more reasonable
- compliant with RoHS directive 2015/863/EU

#### **Processing**

- the adhesive is supplied ready for use
- the adhesive can be applied by dispensing
- the surfaces to be bonded must be dry as well as free of dust, grease and other contaminations
- dispensing valves and product-bearing elements must be carefully cleaned before use, residues of other products must be completely removed; DELOTHEN EP as well as acetone, isopropanol or a mixture of both are recommended to remove DELO PHOTOBOND residues
- for further information please refer to our instructions for use DELO PHOTOBOND and the brochure "Light Curing"

#### **Curing**

- with UV light or visible light in a wavelength range of 320 - 420 nm

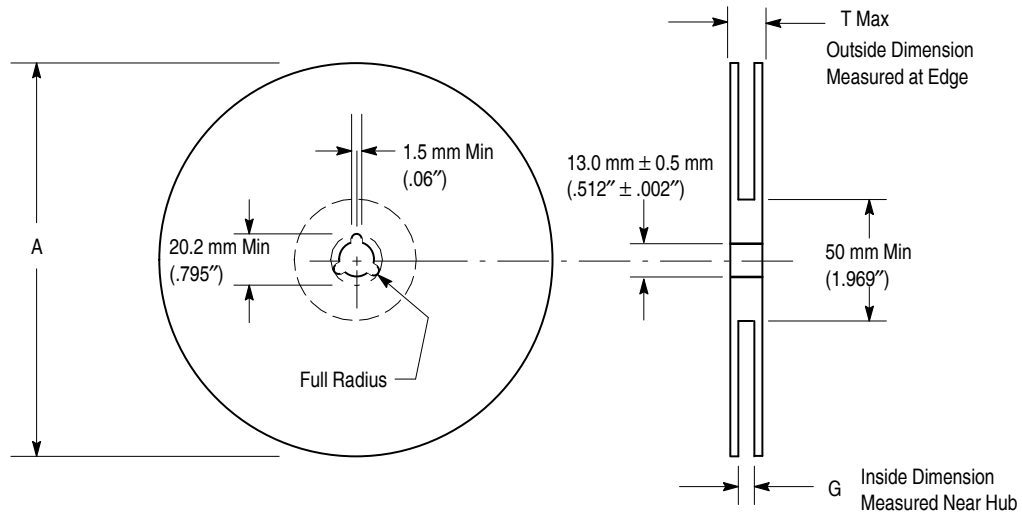
Note:

You can use other types of glue, as long as they have the same features of the recommended DELO PHOTOBOND AD491, by DELO company.

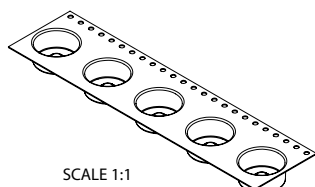
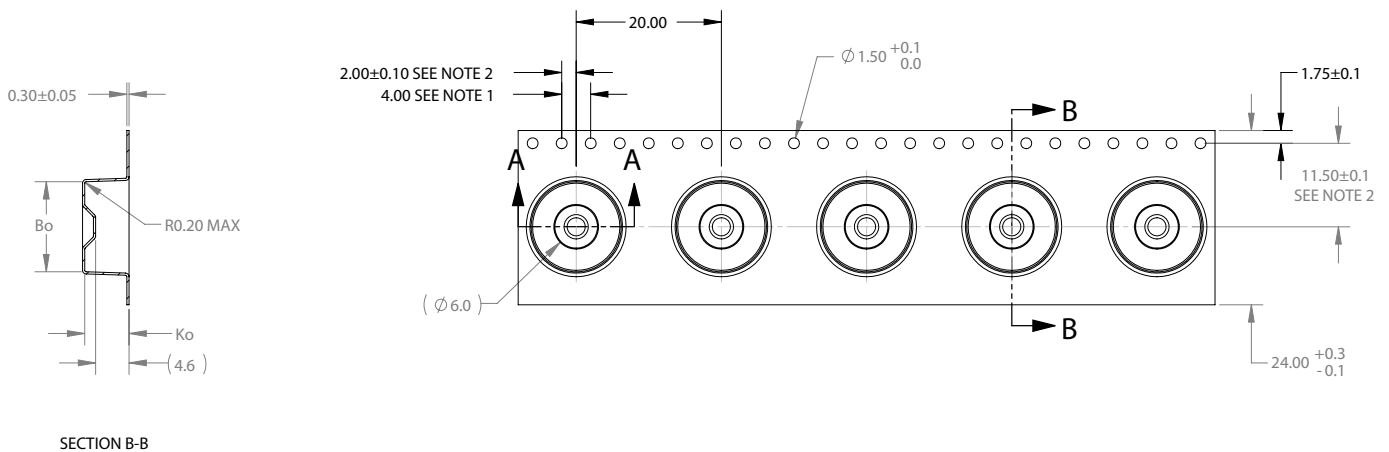
The glue must not damage or affect the material the optics are made of.

## TAPE & REEL Packaging

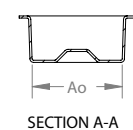
PLL2080 lenses are available in Tape & Reel packaging. Each reel holds 800 lenses, and is individually bagged. The reels are supplied in boxes, 11 reels per box.



Size	A Max	G	T Max
24 mm	360 mm (14.173")	24.4 mm + 2.0 mm, -0.0 (.961" + .070", -0.00)	30.4 mm (1.197")



SCALE 1:1



	DIM	$\pm$
Ao	12.40	0.1
Bo	12.40	0.1
Ko	6.10	0.1

### NOTES:

- 10 SPROCKET HOLE PITCH CUMULATIVE TOLERANCE  $\pm 0.2$
- POCKET POSITION RELATIVE TO SPROCKET HOLE MEASURED AS TRUE POSITION OF POCKET, NOT POCKET HOLE.
- Ao AND Bo ARE MEASURED ON A PLANE AT A DISTANCE "R" ABOVE THE BOTTOM OF THE POCKET.

Packaging

Item	Quantity	Total Lens	Size (L*W*H)	G.W.
Tape Reel	800pcs per Tape Reel	800 pcs	Ø 15 Inc	550 g
Outer Box	11 Tape Reel per Outer Box	8.800 pcs	44*38*45 cm	7.3 Kg



800 Lenses / Tape Reel



11 Tape Reel / Outer Box



## Materials

Material	Top
PMMA 8N **	-40°...80°C
For further information please visit Evonik website	

\*\*

PLL2080xx Series is made of the same material used to produce PLEXIGLAS® Solar which guarantees it will show no yellowing for 10 years.

Yellowness Index (YI) according to the test standards for Arizona/Florida outdoor exposure testing:

- YI 6 under hot/dry conditions
- YI 8 under hot/wet conditions

## Notes:

- Intensity (I) and illuminance (E) data are normalized by 1000 lm
- 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 shall Khatod be liable for any direct, indirect, punitive, incidental, special, consequential damages, or any damages whatsoever arising out of or connected with the use or misuse of the product. Khatod shall not have any obligation with respect to the product or any part thereof, whether based on contract, tort, strict liability or otherwise. Buyer assumes all risks and liability from use of the product. The laws of Milan, Italy govern this product warranty and liability and you hereby consent to the exclusive jurisdiction and venue of courts in Milan, Italy in all disputes arising out of or relating to the use of this product. Production, marketing, distribution, sale of these products as well as their possible modifications and variations are only exclusive right of Khatod Optoelectronic. No company can perform any of these actions without written permission released by Khatod Optoelectronic. The information contained in this document is proprietary of Khatod Optoelectronic and may change without notice.

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