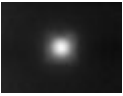
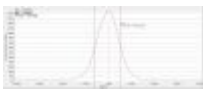
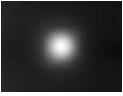
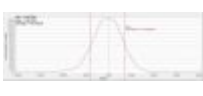


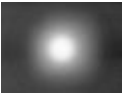


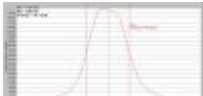


















10.0MM NARROW SPOT TIR

Status	Production
Part no.	10412
Drawing no.	60483
Product type	Optic
Type	TIR
Pieces	1
Diameter	10.0
Height	6.00
Beam	Narrow Spot
Flange	Yes
Files	Customer 3D model (.igs) Customer drawing (PDF)



LEDs & Performances	Eff.	FWHM	Cd/lm	Spot	Cross-section	Files
Lumileds Rebel Luxeon White	89.6%	18.4	6.5			10412_Rebel_White_250408.ies
Cree XP-E XLamp White	91.8%	16.5	9.3			10412_cree_xpe_white_250408.ies
Cree XP-G XLamp White	91.0%	24	4.6			10412_cree_xpg_white_250408.ies
Osram SSL 80 degree Oslon Ultra White	89.2%	18.8	8.0			10412_Oslon_wht_250408.ltd 10412_Oslon_wht_250408.ies
Nichia NCSL 119-H3 Top Emitting Warm White	84.6%	16.2	7.5			10412_Nichia_119_Warm_White_250408.ies
SSC Z5 Z - Power Cool White	86.5%	16.1	11.3			10412_Seoul_Z5_white_250408.ies
Everlight Shuen Warm White	87.5%	21.8	4.8			10412_Shuen_wwht_250408.ies
Everlight Shuen Cool White	86.2%	20.9	4.6			10412_Shuen_cwht_250408.ies
Lumileds C Luxeon Cool White	85.9%	14.2	12.6			10412_Luxeon C_white_250408.ies
Lumileds Rebel ES Luxeon Cool White	88.3%	23.5	4.6			10412_Luxeon_Rebel_ES_cool_white_040311.ies

Cree XP-C XLamp White	91.7%	10.7	21.0			10412_Cree_XP-C_white_220611.ies
Osram SSL 150 degree Oslon Neutral White	90.0%	15.1	12.0			10412_Oslon_150_neutral white_260711.ies
SSC Z5P Z - Power Pure White	87.9%	18.5	7.9			10412_Z5P_purewhite_290911.ies
Samsung 3535 White	92.9%	22.5	5.8			10412_Samsung_3535_cool white_181011.ies
Cree XB-D XLamp Warm White	89.7%	19.5	7.1			10412_CREE_XBD_200212.ies
Cree XT-E XLamp Cool White	89.0%	23.25	5.0			10412_CREE_XTE_200212.ies
SSC Z5M Z - Power White	%	21.9	5.7			10412_SeoulZ5M_warm white_250612.ies
Lumileds R Luxeon	88.3%	23.5	4.6			10412_Luxeon_R_cool_white_040311.ies
Cree XPG-Gen2 XLamp Warm White	%	23.0	5.8			10412_XPG-Gen2_170712.ies
Nichia 219 Warm White	%	22.6	4.7			10mm_10412_Nichia_219_120213.ies
LG 3535 Cool White	%	23	5.5			10412_LEMWA33X70GW00_Cold white_130412.ies
Lumileds T Luxeon	88.3%	23.4	4.6			10412_Luxeon_T_140513.ies
Cree XPE-2 XLamp Cool White	%	16.2	11.2			10412 Plain Tight_Cree XPE2_23052013.ies

Carclo Optics endeavours to continuously improve and renew its products; for this reason the technical data and contents of this catalogue may undergo variations without prior notice. For correct and up to date information, Carclo suggest using the Opticselect tool on our website <http://www.carclo-optics.com>.
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General Instruction - Optics & Holders

Handling instructions

- Do not handle or install lenses without wearing gloves, skin oils may damage the lens or the light transmission.
- Clean lenses with a mild soap and water and dry with a clean soft cloth.
- Do not use any commercial solvents on lenses.
- Mount holders with low Odour epoxies and allow time for them to out gas to stop lenses fogging.

Disclaimer - Optics & Holders

Please note that flow lines, weld lines, surface scratches and small black or white inclusions within the lenses are acceptable if the optical performance of the lens is within the specification described below:

For optics that have FWHMs of 20 degrees or less, the general tolerance is +/-2 degrees OR the tolerances stated below - whichever is the greater.

For all optics except Rippled and Frosted;

- FWHM = Datasheet Value +/-10%.

For all Rippled and Frosted Optics;

- FWHM = Datasheet Value +/-20%

For all Optics;

- Efficiency = Datasheet Value +infinity / -10%

The yellowing / browning of polycarbonate lenses and holders can occur due to the natural ageing process and exposure to heat and UV and as such is not covered by Carclo's warranty.

General Instruction - Taped Holders

Click here to view the 3M Technical Data Sheet

- When assembling the pre-taped holder onto the mating surface, the application must be made straight and square, so that the tape bonds consistently with mating surface. Assembly at an angle might cause an imperfect bond to the mating surface.
- Remember to ascertain the compatibility of the different substrates with the tape, as humidity and temperature fluctuations will weaken it's adhesive.
- To obtain optimum adhesion, the bonding surfaces must be clean, dry, free from grease and dirt and must be well unified.
- Some typical surface cleaning solvents are isopropyl alcohol or heptane. *
- ** If cleaning of PCB or LED surfaces is required, please follow strictly the cleaning instructions recommended by your PCB and/or LED manufacturer - this is important to note, as cleaning in some circumstances can damage LEDs or other electronic components on the PCB. Please also note that optical components should not be cleaned using any chemicals - only a micro fibre cloth should be used to remove fingerprints or other traces from handling.*
- ** Carefully read and follow the manufacturer's precautions and directions for use when working with solvents. These cleaning recommendations may not be compliant with the rules of certain Air Quality Management Districts in California; consult applicable rules before use.*

Bond strength is dependent upon the amount of adhesive-to-surface contact developed. Firm application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), will assist the adhesive in developing intimate contact with the bonding surface.

Ideal tape application temperature range is 70°F to 100°F (21°C to 38°C). Initial tape application to surfaces at temperatures below 50°F (10°C) is not recommended because the adhesive becomes too firm to adhere readily. However, once properly applied, low temperature holding is generally satisfactory.

During assembly the optic when placed on the PCB should be firmly held for 1-5 seconds to ensure the best possible bond. The tape will reach its final strength in 72 hours, dependent on the material and ambient conditions.

Carclo Optics 103 Buckingham Ave, Slough, Berkshire, SL1 4PF ENGLAND

We request that the customer ensures (and fully tests) the suitability and sufficiency of the bond in his product. For example, mechanical stress,

Tel: 44 (0)1753 575011 Fax: 44 (0)1753 811359

vibration and holes on the surface of the circuit board can weaken the strength of the tape.

Disclaimer - Taped Holders

Shelf Life - There is 1 year expected shelf life from the date of purchase direct from Carclo.

All Carclo lenses supplied with tape use the same high strength double-coated tape (unless otherwise mentioned in the datasheet). This tape is specifically selected for this application.

These tapes generally work well together with PCBs and LEDs on the market. The customer must take the necessary measures to ensure complete compatibility with their particular application, product, PCB, LED and/or other components.

Testing and verifying of the adhesives and their combinations is the responsibility of the customer.

The customer is solely responsible for evaluating the application of double sided tape to Carclo Holders and the adhesion of double sided tape holders to determine whether such double-sided tape is fit for a particular purpose and suitable for the users method of application. The selection of double-sided tape in the adhesion of double sided tape holders is not covered by Carclo's warranty.

Carclo cannot take responsibility for the results obtained by others whose methods we cannot control. It is always the customer's responsibility to determine the adhesive's suitability for their product and to take precautions for protection of property and persons against any hazards that may be involved in the handling and use of adhesives. Carclo disclaims all warranties, including warranties of merchantability or suitability for a particular purpose, arising from use of any adhesive product. Carclo disclaims any liability for consequential or incidental damages of any kind, including lost profits.

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