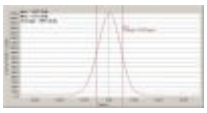
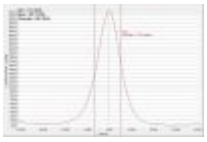
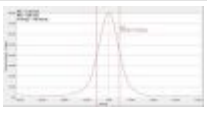
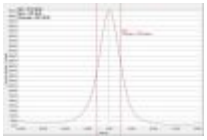
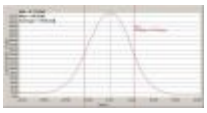
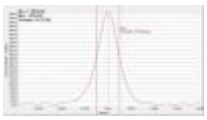
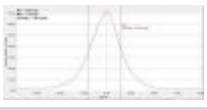
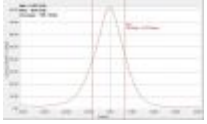
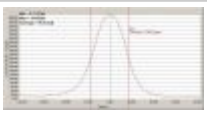
20.0MM NARROW SPOT TIR

Status	Production
Part no.	10194
Drawing no.	60431
Product type	Optic
Type	TIR
Pieces	1
Diameter	20.0
Height	9.90
Beam	Narrow Spot
Flange	No
Files	Customer 3D model (.igs) Customer drawing (PDF)

LEDs & Performances	Eff.	FWHM	Cd/lm	Spot	Cross-section	Files
Lumileds Rebel Luxeon White	87.0%	12	16.0			10194_rebel_white_250408.ies
Cree MC-E XLamp White	83.0%	24	4.5			10194_Cree_MCE_white_250408.ies
Cree XP-E XLamp White	86.9%	10.35	20.8			10194_cree_xpe_white_250408.ies
Osram Golden Dragon W5SG Dragon White	89.0%	13	11.0			10194_Dragon_W5SG_White_250408.ldt 10194_Dragon_W5SG_White_250408.ies
Osram Platinum Dragon W5SN Dragon White	88.0%	10.4	24.0			10194_PlatDragon_W5SN_wht_250408.ldt 10194_PlatDragon_W5SN_wht_250408.ies
Osram Golden Dragon W5SM Dragon White	89.0%	10	15.0			10194_Dragon_W5SM_White_250408.ldt 10194_Dragon_W5SM_White_250408.ies
SSC A2 Acrich White	85.3%	22.6	5.3			10194_seoul_Acriche2000_cWhite_250408.ies
Nichia NFSW 036 Top Emitting Cool White	88.2%	9	19.8			10194_Nichia_036_CoolWhite_250408.ies
Nichia 083 Top Emitting Cool White	85.3%	14	8.4			10194_Nichia_083_CoolWhite_250408.ies
Nichia NS3W 183T Top Emitting White	88.4%	13.4	9.5			10194_Nichia_183_White_250408.ies
SSC P5-II RGB	90.0%	17.4	6.6			10194_seoul_P5_RGB_250408.ies

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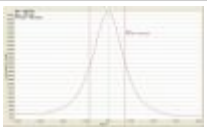
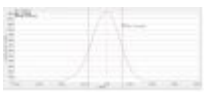
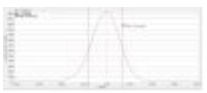
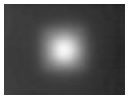
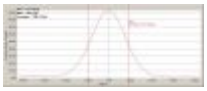
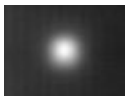
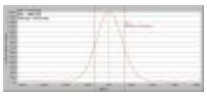
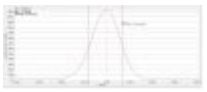
Samsung WH5 White	88.3%	15.7	7.1			10194_Sunnix Samsung_SLHNN WH5_cWhite_250408.ies
Lumileds Rebel ES Luxeon Cool White	84.4%	14	13.3			10194_Luxeon_Rebel_ES_cool_white_040311.ies
Lumileds R Luxeon	84.4%	14	13.3			10194_Luxeon_R_cool_white_040311.ies
Cree XM-L XLamp White	82.9%	18	8.5			20mm 10194_XML_10165_11012013.ies
LG 3535 Cool White	85.4%	13.35	14.9			10194_LEMWA33X70GW00_Cold white_130412.ies
Stanley 6J White	86.8%	27.1	4.8			10194 Narrow Frosted_Stanley 6J cool white_140312_1.ies
Lumileds T Luxeon	84.4%	14	13.3			10194_Luxeon T_14052013.ies

Related Holders & LEDs	Cree MC-E XLamp White	Cree XM-L XLamp White	Cree XP-E XLamp White	LG 3535 Cool White	Lumileds R Luxeon	Lumileds Rebel ES Luxeon Cool White	Lumileds Rebel Luxeon White	Lumileds T Luxeon	Nichia 083 Top Emitting Cool White	Nichia NFSW 036 Top Emitting Cool White	Nichia NS3W 183T Top Emitting White	Osram Golden Dragon W5SG Dragon White	Osram Golden Dragon W5SM Dragon White	Osram Platinum Dragon W5SN Dragon White	Samsung WH5 White	SSC A2 Acrich White	Stanley 6J White
10148 20.0mm Round - Flat Bottom Black												✓	✓	✓			
10148-TS 20.0mm Round - Flat Bottom Black												✓	✓	✓			
10149 20.0mm Round - Flat Bottom Clear												✓	✓	✓			
10149-TS 20.0mm Round - Flat Bottom Clear												✓	✓	✓			
10150 20.0mm Round - Flat Bottom White												✓	✓	✓			
10150-TS 20.0mm Round - Flat Bottom White												✓	✓	✓			
10235 20.0mm Round - Flat Bottom Black					✓	✓	✓										
10235-TS 20.0mm Round - Flat Bottom Black					✓	✓	✓										
10236 20.0mm Round - Flat Bottom White					✓	✓	✓										
10236-TS 20.0mm Round - Flat Bottom White					✓	✓	✓										
10237 20.0mm Round - Flat Bottom Clear					✓	✓	✓										
10237-TS 20.0mm Round - Flat Bottom Clear					✓	✓	✓										
10276 50.0mm Triple - Locator Pins White	✓											✓	✓	✓			
10278 50.0mm Triple - Locator Pins White									✓								
10279 50.0mm Triple - Locator Pins White			✓			✓	✓			✓							
10286 50.0mm Triple - Locator Pins White	✓											✓	✓	✓			

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10288 50.0mm Triple - Locator Pins White									✓							
10289 50.0mm Triple - Locator Pins White			✓			✓	✓			✓						
10296 50.0mm Triple - Locator Pins Black	✓											✓	✓	✓		
10298 50.0mm Triple - Locator Pins Black									✓							
10299 50.0mm Triple - Locator Pins Black			✓			✓	✓			✓						
10306 50.0mm Round - Flat Bottom Black	✓											✓	✓	✓		
10308 50.0mm Triple - Locator Pins Black									✓							
10309 50.0mm Triple - Locator Pins Black			✓			✓	✓			✓						
10431 20.0mm Hexagonal - Locator Pins Black						✓	✓									
10432 20.0mm Hexagonal - Locator Pins Clear						✓	✓									
10433 20.0mm Hexagonal - Locator Pins White						✓	✓									
10434 20.0mm Hexagonal - Locator Pins Black						✓	✓									
10435 20.0mm Hexagonal - Locator Pins Clear						✓	✓									
10436 20.0mm Hexagonal - Locator Pins White						✓	✓									
10566 20.0mm Round - Flat Bottom Black			✓							✓						
10566-TS 20.0mm Round - Flat Bottom Black			✓							✓						
10567 20.0mm Round - Flat Bottom White			✓							✓						
10567-TS 20.0mm Round - Flat Bottom White			✓							✓						
10568 20.0mm Round - Flat Bottom Clear			✓							✓						
10568-TS 20.0mm Round - Flat Bottom Clear			✓							✓						
10615 20.0mm Round - Flat Bottom Black		✓							✓							
10615-TS 20.0mm Round - Flat Bottom Black		✓							✓							
10616 20.0mm Round - Flat Bottom Clear		✓							✓							
10616-TS 20.0mm Round - Flat Bottom Clear		✓							✓							
10617 20.0mm Round - Flat Bottom White		✓							✓							
10617-TS 20.0mm Round - Flat Bottom White		✓							✓							
10631 20.0mm Round - Locator Pins White																
10633 20.0mm Round - Locator Pins White		✓														✓
10634 20.0mm Round - Locator Pins White			✓	✓												
10636 20.0mm Round - Locator Pins White								✓								
10638 20.0mm Round - Locator Pins White											✓					
10651 20.0mm Round - Locator Pins White																
10653 20.0mm Round - Locator Pins White		✓														✓
10654 20.0mm Round - Locator Pins White			✓	✓												

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10656 20.0mm Round - Locator Pins White								✓									
10658 20.0mm Round - Locator Pins White											✓						
10671 20.0mm Round - Locator Pins White																	
10673 20.0mm Round - Locator Pins White		✓															✓
10674 20.0mm Round - Locator Pins White			✓	✓													
10676 20.0mm Round - Locator Pins White								✓									
10678 20.0mm Round - Locator Pins White											✓						
10691 20.0mm Round - Locator Pins Black																	
10693 20.0mm Round - Locator Pins Black		✓															✓
10694 20.0mm Round - Locator Pins Black			✓	✓													
10696 20.0mm Round - Locator Pins Black								✓									
10698 20.0mm Round - Locator Pins Black											✓						
10711 20.0mm Round - Locator Pins Black																	
10713 20.0mm Round - Locator Pins Black		✓															✓
10714 20.0mm Round - Locator Pins Black			✓	✓													
10716 20.0mm Round - Locator Pins Black								✓									
10718 20.0mm Round - Locator Pins Black											✓						
10731 20.0mm Round - Locator Pins Black																	
10733 20.0mm Round - Locator Pins Black		✓															✓
10734 20.0mm Round - Locator Pins Black			✓	✓													
10736 20.0mm Round - Locator Pins Black								✓									
10738 20.0mm Round - Locator Pins Black											✓						
47.313.1101.80 with 47.313.-320.80 20.0mm BJB® Black												✓	✓	✓			
47.313.2401.80 with 47.313.320.80 20.0mm BJB® Black						✓	✓										
47.313.5201.80 with 47.313.-320.80 20.0mm BJB® Black			✓														

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.

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

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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