
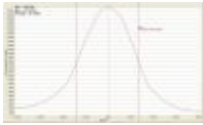





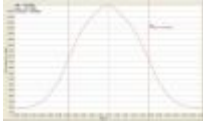

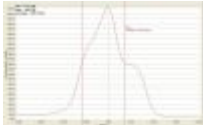

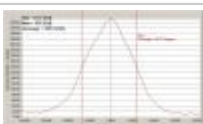

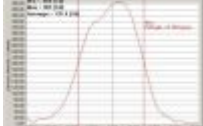





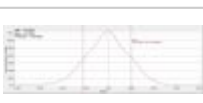




20.0MM RIPPLE MEDIUM TIR

Status	Production
Part no.	10003/15
Drawing no.	60347
Product type	Optic
Type	TIR
Pieces	1
Diameter	20.0
Height	9.90
Beam	Ripple Medium
Flange	Yes
Files	Customer drawing (PDF) Customer 3D model (.igs)



LEDs & Performances	Eff.	FWHM	Cd/lm	Spot	Cross-section	Files
Cree XP-G XLamp® White	85.7%	28.8	4.3			10003-15_cree_xpg_white_250408.ies
Cree MX-6 XLamp® White	89.5%	27.5	3.8			10003-15_cree_MX6_white_250408.ies
SSC Z1 White	83.8%	29.1	2.9			10003-15_Seoul_Z1_white_250408.ies
Osram Plus W5AM Dragon Cool White	86.3%	17.8	6.4			10003-15_Osram_Dragon_PLus_CoolWhite_250408.Idt 10003-15_Osram_Dragon_PLus_CoolWhite_250408.ies
SSC P4 Cool White	89.0%	27.3	3.4			10003-15_Seoul_P4_Cool_White_250408.ies
Osram SSL 80 degree Oslon Ultra White	85.6%	28.6	5.2			10003-15_Oslon_wht_250408.Idt 10003-15_Oslon_wht_250408.ies
Nichia NCSL 119-H3 Top Emitting Warm White	87.4%	28	5.1			10003-15_Nichia_119_WarmWhite_250408.ies
SSC Z5 Cool White	87.8%	23.9	6.7			10003-15_Seoul_Z5_white_250408.ies
LedEngin 3W White	84.1%	28.8	3.1			10003-15_LedEngin_3W_white_250408.ies
LedEngin 5W White	84.1%	29.0	3.2			10003-15_LedEngin_5W_white_250408.ies

Luminus Devices SST-50 White	84.8%	26.3	3.3			10003-15_Luminus_SST50_White_250408.ies
Everlight Shuen Warm White	85.0%	29.1	4.3			10003-15_Shuen_wwht_250408.ies
Everlight Shuen Cool White	85.4%	29.4	3.6			10003-15_Shuen_cwht_250408.ies
Avago Jade Cool White	90.7%	28.3	3.9			10003-15_Avago_Jade_cool white_250408.ies
Lumileds C Luxeon Cool White	85.2%	17.8	6.7			10003-15_Luxeon C_white_250408.ies
SSC P4 Version 7 Cool White	83.7%	25.7	4.0			10003-15_Seoul_New_P4_Pure_White_250408.ies
Cree XM-L White	85.0%	31.0	3.4			10003-15_Cree_XM-L_white_31-01-11.ies
Cree XM-L - EZW Warm White	84.3%	28.9	3.2			10003-15_Cree_XM-L - EZW_warm white_200511.ies
Cree XP-C White	86.4%	15	7.7			10003-15_Cree_XP-C_white_270611.ies
Osram SSL 150 degree Oslon Neutral White	86.9%	20.8	6.4			10003-15_Oslon 150_neutral white_280711.ies
SSC Z5P pure white	%	21.2	6.8			10003-15_Z5P_pure white_280911.ies

Related Holders & LEDs	Avago Jade Cool White	Cree MX-6 XLamp White	Cree XM-L - 3W Warm White	Cree XM-L White	Cree XP-C White	Cree XP-G XLamp White	Everlight Shuen Cool White	Everlight Shuen Warm White	Everlight 3W White	Everlight 5W White	Engin Luxeon Cool White	Engin Luxeon SST-50 White	Lumileds LuminiS Device Top Emitting Warm White	Nichia NSCL19-H3 Cool White	Osram Plus W5AM Dragon Cool White	Osram SSL 150 degree Neutra White	Osram SSL 80 degree Ultra White	SSC P4 Cool White	SSC P4 Version 7 Cool White	SSC Z1 White	SSC Z5 Cool White	SSC Z5P pure white	
10148 20.0mm Circular Black															✓								
10148-TS 20.0mm Self Adhesive (TS) Black															✓								
10149 20.0mm Circular Clear															✓								
10149-TS 20.0mm Self Adhesive (TS) Clear															✓								
10150 20.0mm Circular White															✓								
10150-TS 20.0mm Self Adhesive (TS) White															✓								
10273 50.0mm Triple White																		✓	✓				
10276 50.0mm Triple White															✓				✓	✓			
10283 50.0mm Triple White																		✓	✓				
10286 50.0mm Triple White															✓								
10293 50.0mm Triple Black																		✓	✓				
10296 50.0mm Triple Black															✓								
10303 50.0mm Triple Black																		✓	✓				
10306 50.0mm Circular Black															✓								
10363 20.0mm Circular Black																		✓	✓				
10363-TS 20.0mm Self Adhesive (TS) Black																		✓	✓				
10364 20.0mm Circular White																		✓	✓				
10364-TS 20.0mm Self Adhesive (TS) White																		✓	✓				
10365 20.0mm Circular Clear																		✓	✓				
10365-TS 20.0mm Self Adhesive (TS) Clear																		✓	✓				
10630 20.0mm Universal White																						✓	
10631 20.0mm Universal White	✓								✓					✓									
10632 20.0mm Universal White					✓		✓	✓			✓					✓	✓						✓
10634 20.0mm Universal White						✓																	
10637 20.0mm Universal White		✓																					
10650 20.0mm Universal White																							✓
10651 20.0mm Universal White	✓								✓					✓									
10652 20.0mm Universal White					✓		✓	✓			✓					✓	✓						✓
10654 20.0mm Universal White						✓																	
10657 20.0mm Universal White		✓																					
10670 20.0mm Universal White																							✓
10671 20.0mm Universal White	✓								✓					✓									
10672 20.0mm Universal White					✓		✓	✓			✓					✓	✓						✓
10674 20.0mm Universal White						✓																	
10677 20.0mm Universal White		✓																					

10690 20.0mm Universal Black																		✓
10691 20.0mm Universal Black	✓							✓			✓							
10692 20.0mm Universal Black				✓		✓	✓		✓			✓	✓					✓
10694 20.0mm Universal Black					✓													
10697 20.0mm Universal Black		✓																
10710 20.0mm Universal Black																		✓
10711 20.0mm Universal Black	✓							✓			✓							
10712 20.0mm Universal Black				✓		✓	✓		✓			✓	✓					✓
10714 20.0mm Universal Black					✓													
10717 20.0mm Universal Black		✓																
10730 20.0mm Universal Black																		✓
10731 20.0mm Universal Black	✓							✓			✓							
10732 20.0mm Universal Black				✓		✓	✓		✓			✓	✓					✓
10734 20.0mm Universal Black					✓													
10737 20.0mm Universal Black		✓																
47.313.5001.80 with 47.313.-320.80 20.0mm BJB Black																	✓	✓

Carclo Technical Plastics 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 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 the mating surface. Assembly should be made on a clean, flat, dry surface. Fitting application pressure and moderate heat, from 100°F (38°C) to 130°F (54°C), will assist the adhesive in penetrating the mating surface. 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 manufacturer's instructions. This is important as cleaning in some circumstances can damage components should low temperature holding is essential.*
- 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 applied, low temperature holding is generally satisfactory.
- * Carefully read and follow the manufacturer's precautions and may not be compliant with the rules of certain Air Quality Management.

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 Carclo Technical Plastics 103 Buckingham Ave, Slough, Berkshire, SL1 4PF ENGLAND
Tel: +44 (0)1753 575011 Fax: +44 (0)1753 811359

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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