

# SSC

## Carclo Technical Plastics

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982

03 November  
2009



**carclo**  
technical plastics

# Seoul Semiconductor P4 20 & 26.5mm Range



anglia



**Carclo Technical Plastics**

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982

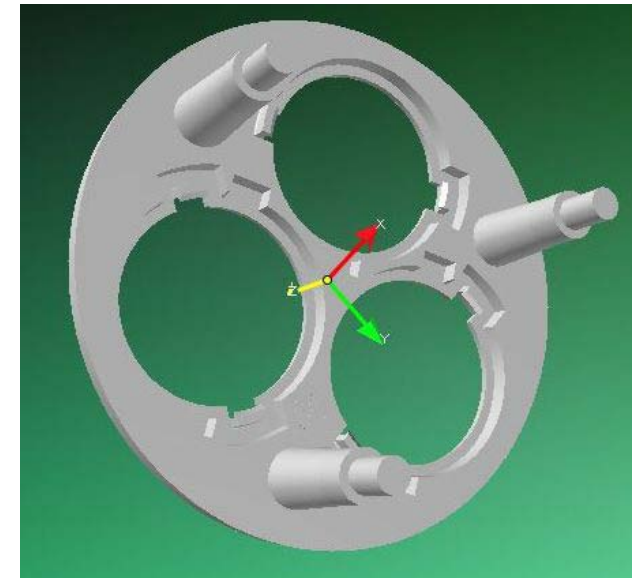


# Seoul Semiconductor P4<sup>®</sup> 20mm range

Part No.	Description	FWHM#	EFF	Cd/lm
10003	Plain Tight beam Optic	9.5	87.7%	12.5
10138	Frosted Narrow beam Optic	15.4	82%	4.41
10003/15	Ripple medium Optic	27.3	89%	3.4
10139	Frosted Medium beam Optic	23.8	80%	2.46
10003/25	Ripple Wide optic	41.4	88%	1.6
10140	Frosted Wide beam Optic	31.8	82%	2.5
10170	Wide reflector	80.9	92%	0.82
10003/L25	Elliptical beam Optic	44 X 15	81%	2.1
10192	Elliptical 90degbeam Optic r	14 X 49	81%	2.13
10034	Fibre Lens	Optimised for coupling 0.5NA bundles of 8 - 12mm diameter		

Part No.	Colour	Description
10363	Black	Round SSC P4
10364	White	Round SSC P4
10365	Clear	Round SSC P4
10273	White	50mm Triple holder long leg
10283	White	50 mm Triple holder short leg
10293	Black	50 mm Triple holder Long leg
10303	Black	50 mm Triple holder short leg

#Full Width Half Maximum i.e. total viewing angle  
White LED measured

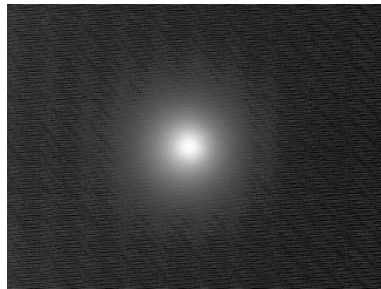


# Seoul Semiconductor P4® 26.5mm range

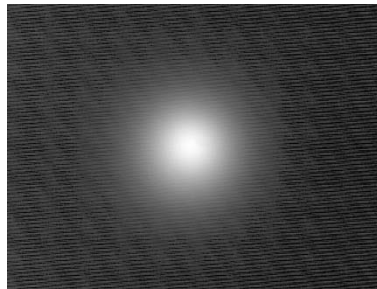
Part No.	Description	Cool White		
		FWHM#	EFF	Cd/lm
10048	Plain Tight	89.1%	6.96*6.95	26.98
10124	Frosted Narrow	85.5%	11.73*11.55	12.37
10108	Medium Frosted	84.2%	22.62*22.27	3.75
10260	Frosted Wide	83.3%	32.96*33.33	2.23
10049	Elliptical	85.5%	43.45*8.64	5.12
10224	Elliptical Orthogonal*	86%	10.18*47.64	4.43
10234	Elliptical Ramp Optic	87%	45*8.3	5.61

Part No.	Colour	Description
10076	Black	With stake able legs
10077	White	With stake able legs
10111	Black	0.8mm legs
10112	White	0.8mm legs

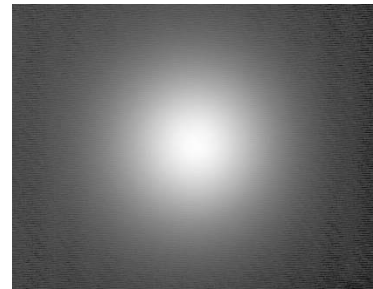
#Full Width Half Maximum i.e. total viewing angle  
White LED measured



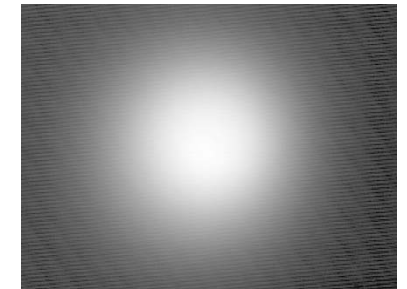
10048



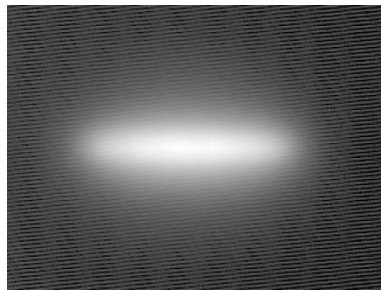
10124



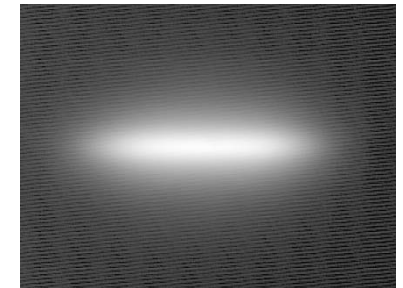
10108



10260



10049 & 10224



10234

# Seoul Semiconductor P4 other Optics



anglia



## Carclo Technical Plastics

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

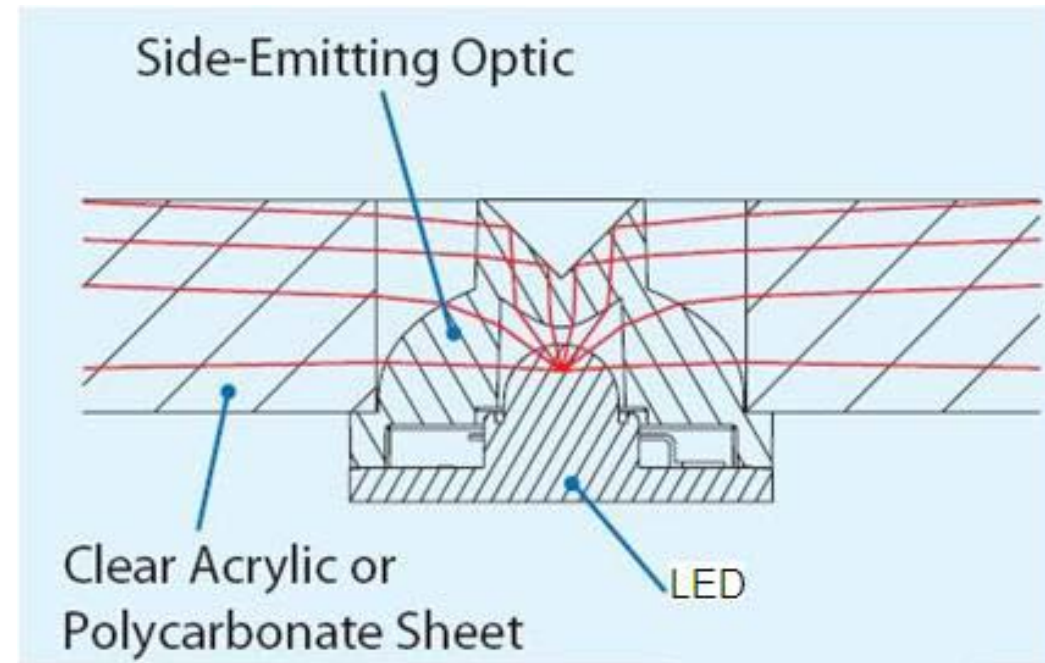
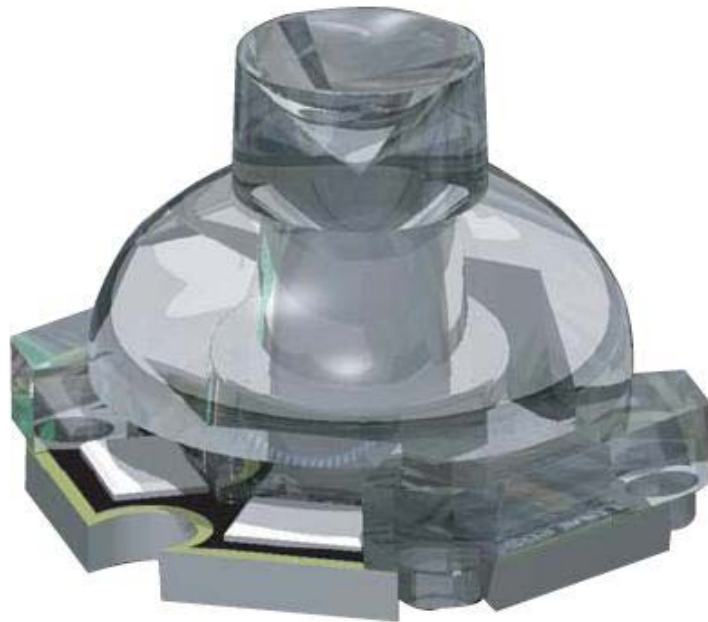
Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982



# Side Emitters for Seoul Semiconductor P4<sup>®</sup>

Part No.	Description	FWHM#	EFF	Cd/lm
10040	Side emitter for P4 Star board			

#Full Width Half Maximum i.e. total viewing angle  
White LED measured



# 60mm Optic for the Seoul Semiconductor P4®

Part no.	Description	FWHM	EFF	Cd/l
10144	60mm Optic			
10144+10145	60mm Optic and Spreader			

#Full Width Half Maximum i.e. total viewing angle  
White LED measured



- We have a holder Part number 10146 which holds the optic 10144 and the spreader lens 10145 in the correct place

- This can be brought as a built up assembly of Optic 10144 and holder 10146 under part number 10147

- **New Part 10158 is the same beam angle as the 10144 and the look is the same but due to using a AL coating the efficiency is reduced by about 8% but with big part price savings**



# Bubble Optics

## Ultra wide

This is a new design and the start of our range of 'Bubble Optics' these optics produce a very wide but even beam on a flat surface idea for wide area lighting designed for the SSC P4



anglia



YEG Components



**Carclo Technical Plastics**

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982

The Carclo logo, featuring a stylized green triangle above the word "carclo" in a lowercase, sans-serif font, with "technical plastics" written below it.

**carclo**  
technical plastics



# Ultra Wide Angle Optics

## Optics for Producing uniform illuminance over wide areas

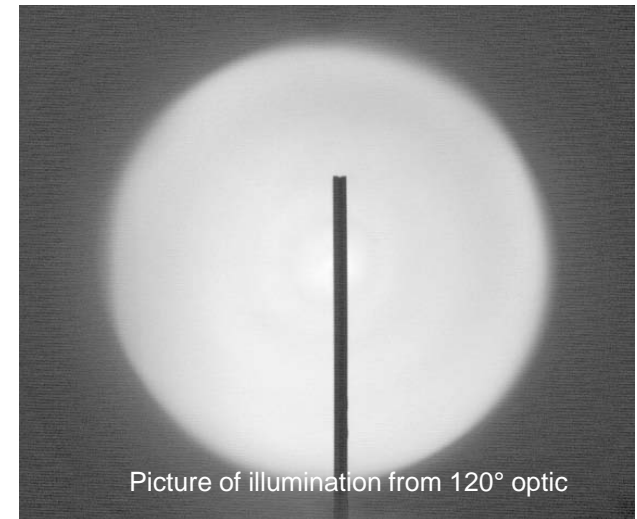
Carclo Ultra Wide Angle Optics are designed to meet the needs of Luminaire designers who need to efficiently light wide areas with very even illumination. These optics are suitable for applications such as emergency lighting, emergency lighting, parking facility illumination and many other general illumination areas.

These optics work by re-mapping the light output from the Led to the far-field. Their hemi-spherical outer shape has given rise to their generic name “Bubble optics”.

Mounted at 2.5m (~8 ft.) the 120° optic will evenly illuminate an area 8m (~26 ft.) in diameter, the 130° optic will illuminate a 10m (~33 ft.) diameter.

## Features

- Beam widths of 120 deg FWHM (Part No. 10403) and 130 deg FWHM (Part No. 10406)
- Greater than 90% efficiency.
- Optimised for Led's with Lambertian 1.5 x 1.5 mm emitting area.
- One piece design SSC P4 and needs a holder to mount to the board.
- Manufactured in lens grade polycarbonate with UL certification.
- Suitable for continuous operation up to 120 °C.



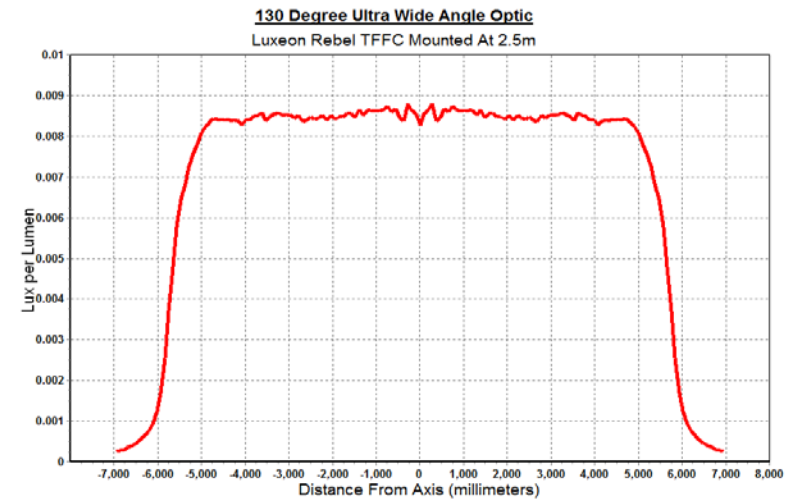
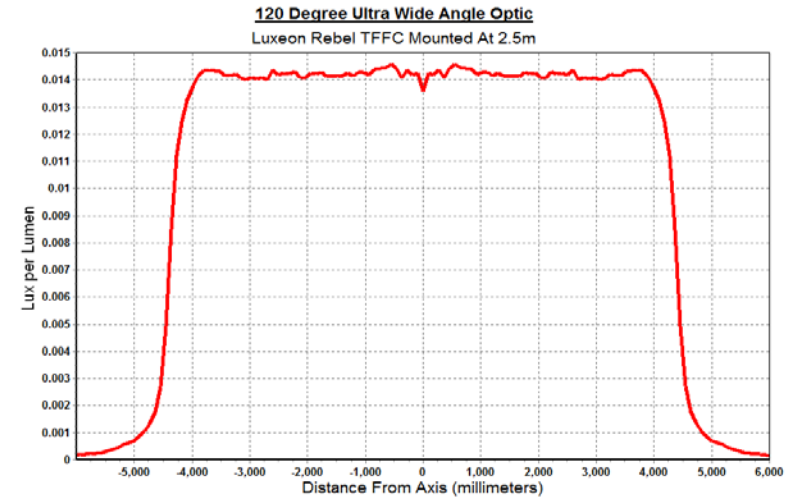
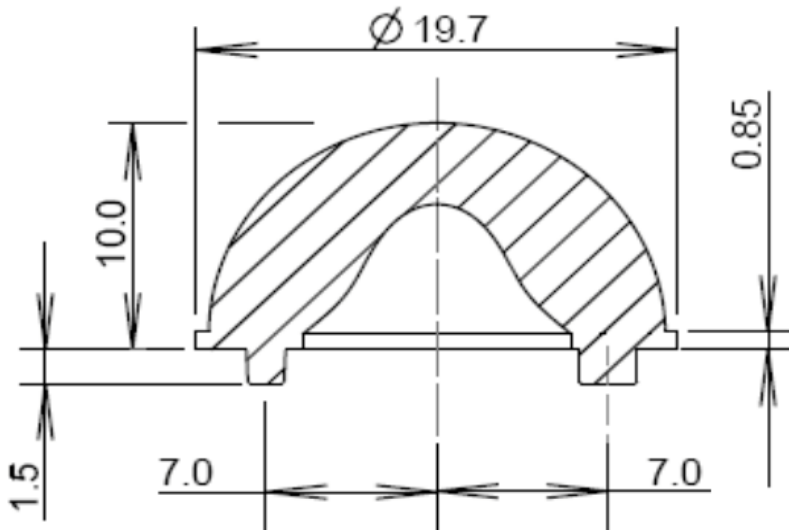
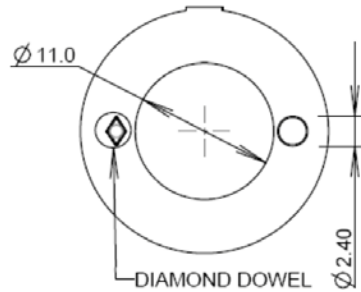
Picture of illumination from 120° optic

# Application notes

- Arrays of 19.7mm diameter Ultra wide optics should be placed no closer than 27mm between centres to avoid shading.
- Always use a very low vapour adhesive such as Loctite 3430 when mounting polycarbonate optics.



LED	120 deg	130 deg	Holder
SSC P4	10403	10406	10384



# Seoul Semiconductor P5II Range



CLOSE

## Carclo Technical Plastics

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982

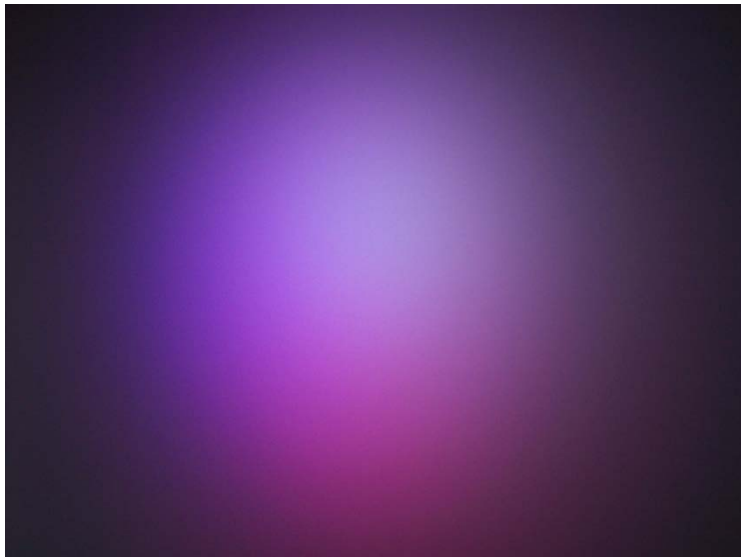


# Seoul Semiconductor P5II 20mm range

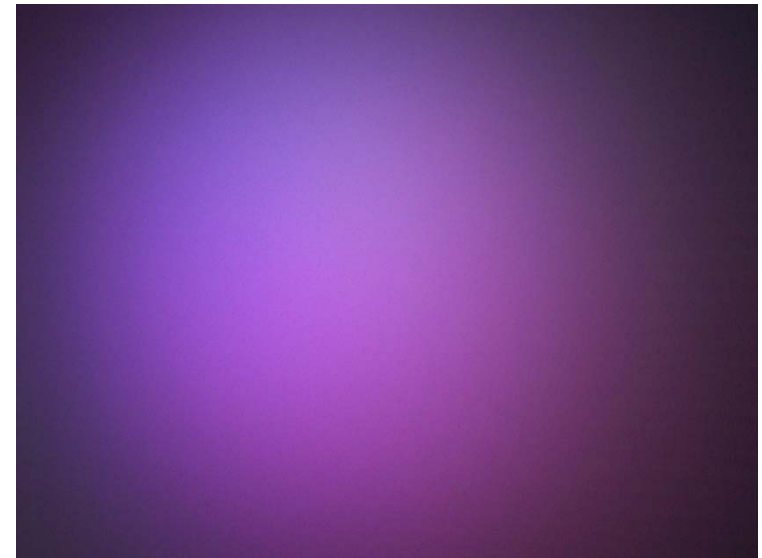
Part No.	Description	Cool White		
		FWHM#	EFF	Cd/lm
10199	Plain Tight	Very bad colour split		
10200	Medium Frosted	26.2	80.7%	2.62
10201	Frosted wide	34.4	76.4%	1.73
10202	Elliptical			
10203	Elliptical Orthogonal*			

Part No.	Colour	Description
	White	4.3mm leg
	White	2.0mm leg
	White	0.8mm leg
	Black	4.3mm leg
	Black	2.0mm leg
	Black	0.8mm leg

#Full Width Half Maximum i.e. total viewing angle  
White LED measured



10201



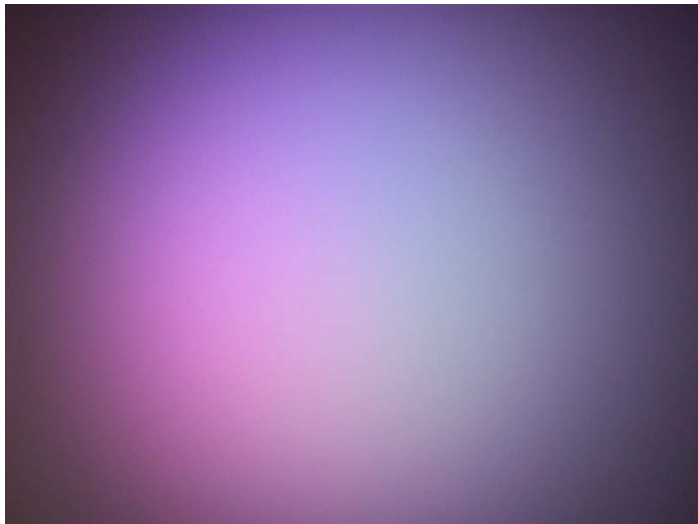
10202

# Seoul Semiconductor P5II 26.5mm range

Part No.	Description	Cool White		
		FWHM#	EFF	Cd/lm
	Plain Tight			
	Medium Frosted			
10394	Frosted wide	34.4	77.1%	2.08
10395	Elliptical	41 X 22.7	83%	3.77
	Elliptical Orthogonal*			

Part No.	Colour	Description
	White	4.3mm leg
	White	2.0mm leg
	White	0.8mm leg
	Black	4.3mm leg
	Black	2.0mm leg
	Black	0.8mm leg

#Full Width Half Maximum i.e. total viewing angle  
White LED measured



10394

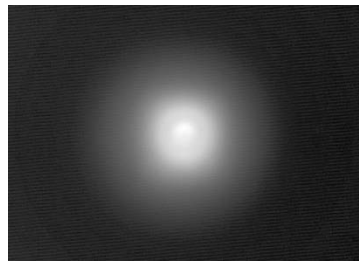
# Seoul Semiconductor Z1 20mm range

Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10003	Plain Tight	16.99*18.18	87.1%	6.4
10138	Frosted Narrow	20.50*22.12	84.9%	4.4
10003/15	Ripple Medium	30.05*28.23	83.8%	2.9
10139	Medium Frosted	27.26*28.09	81.0%	2.8
10003/25	Ripple Wide	39.20*36.61	79.0%	1.9
10140	Wide Frosted	43.45*43.38	76.4%	1.4
10003/L25	Elliptical	43.86*20.16	81.0%	2.8
10192	Elliptical Orthogonal*	46.01*22.28	83.3%	2.6

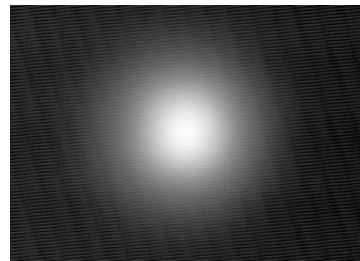


Part No.	Colour	Description
10636	White	4.3mm leg
10656	White	2.0mm leg
10676	White	0.8mm leg
10696	Black	4.3mm leg
10716	Black	2.0mm leg
10736	Black	0.8mm leg

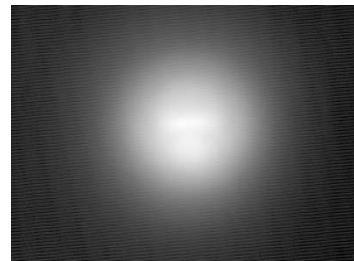
#Full Width Half Maximum i.e. total viewing angle  
White LED measured



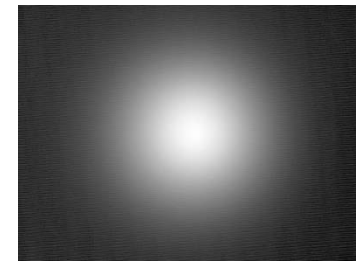
10003



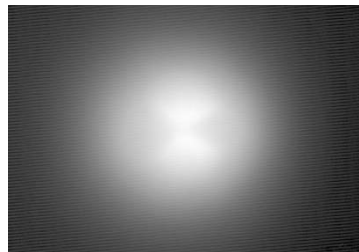
10138



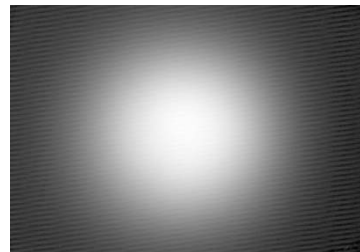
10003/15



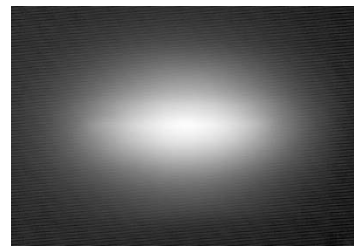
10139



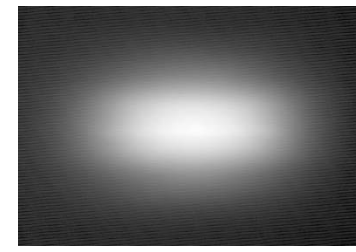
10003/25



10140



10003/L25



10192



10003



10003/L25

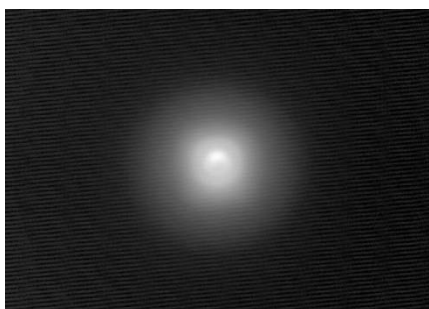
# Seoul Semiconductor Z1 26.5mm range

Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10048	Plain Tight	11.27* 11.09	87.8%	11.8
10124	Frosted Narrow	15.91* 16.49	83.7%	7.0
10108	Medium Frosted	26.07* 25.72	81.0%	3.2
10260	Frosted Wide	42.77* 42.98	79.7%	1.5
10049	Elliptical	42.22* 15.11	83.4%	3.7
10224	Elliptical Orthogonal*	47.07* 17.06	83.8%	3.1
10234	Elliptical Ramp Optic	44.25* 14.96	84.1%	3.6

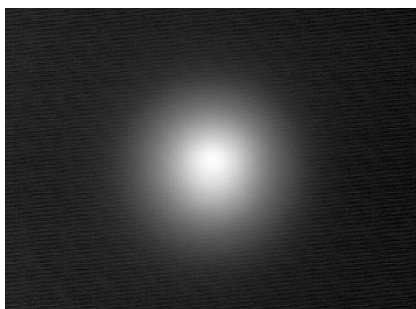


Part No.	Colour	Description
10446	White	4.3mm leg
10456	White	2.0mm leg
10466	White	0.8mm leg
10476	Black	4.3mm leg
10486	Black	2.0mm leg
10496	Black	0.8mm leg

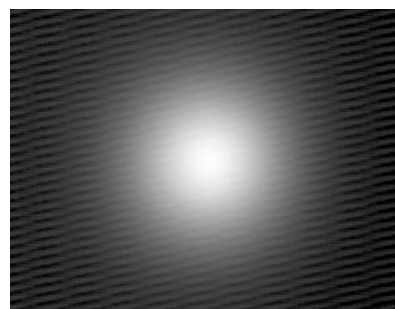
#Full Width Half Maximum i.e. total viewing angle  
White LED measured



10048



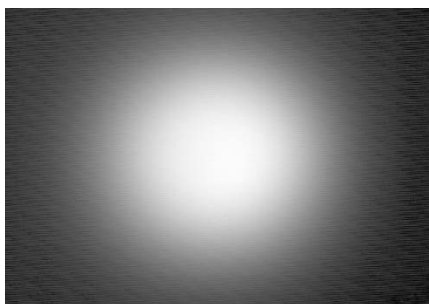
10124



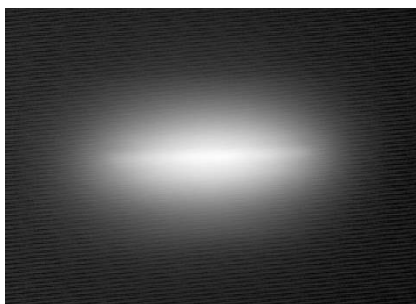
10108



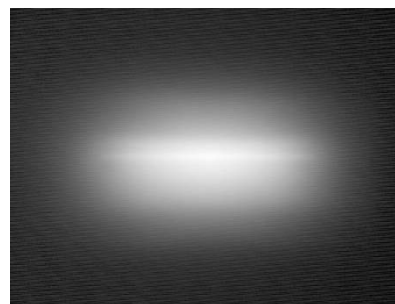
10049



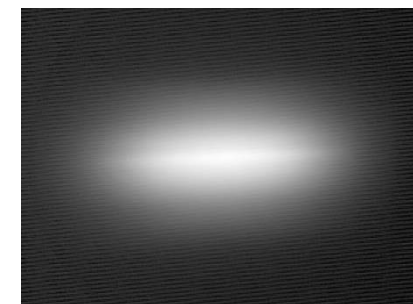
10260



10049



10224



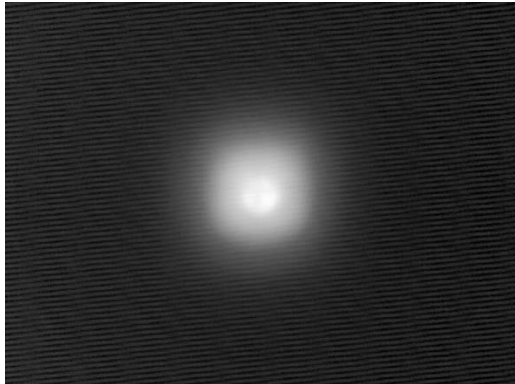
10234

# Seoul Semiconductor P7 30mm range

Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10754	Plain Spot lens	14.04*14.02	89.0%	12.7
10755	Plain Front lens			
10756	Narrow Frosted			
10757	Medium Frosted			
10758	Wide Frosted			
10759	Elliptical			
10760	Elliptical Orthogonal*			

Part No.	Colour	Description
10764	White	17.7mm

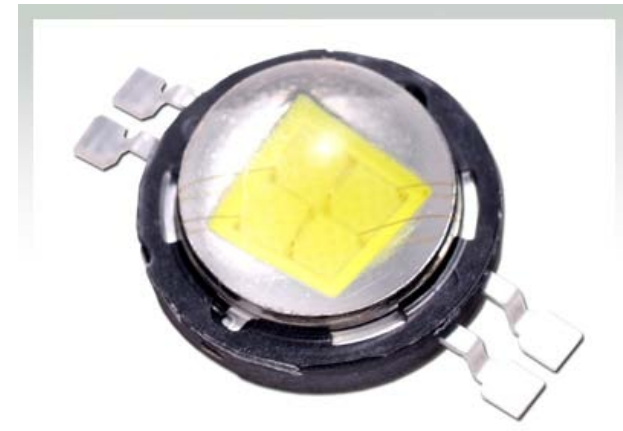
#Full Width Half Maximum i.e. total viewing angle  
White LED measured



10754



# Seoul Semiconductor Acriche Range



CLOSE X

## Carclo Technical Plastics

111 Buckingham Avenue, Slough, Berkshire SL1 4PF ENGLAND / 600 Depot Street Latrobe PA. 15650 USA

Web: [www.carclo-optics.com](http://www.carclo-optics.com) e-mail: [sales@carclo-optics.com](mailto:sales@carclo-optics.com)

Tel UK: 0044 (0) 1753 575011 Tel USA 00 (1) 724 539 6982

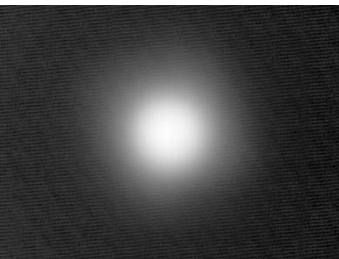


# Seoul Semiconductor Acriche A2 20mm range

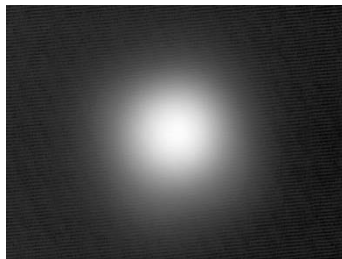
Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10193	Plain Tight	20.81*20.62	87.5%	5.85
10194	Frosted Narrow	22.78*22.43	85.3%	5.26
10208	Ripple Medium	29.18*28.84	84.4%	3.75
10195	Medium Frosted	27.86*27.51	80.3%	3.06
10209	Ripple Wide	41.56*41.10	79.1%	1.88
10196	Wide Frosted	36.82*34.77	74.5%	1.85
10197	Elliptical	45.08*20.62	83.1%	3.06
10198	Elliptical Orthogonal*	44.95*20.47	83.2%	3.03
10170	wide angle reflector			

Part No.	Colour	Description
10643	White	4.3mm leg
10663	White	2.0mm leg
10683	White	0.8mm leg
10703	Black	4.3mm leg
10723	Black	2.0mm leg
10743	Black	0.8mm leg

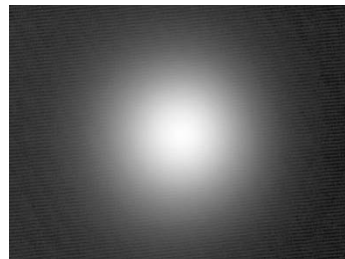
#Full Width Half Maximum i.e. total viewing angle  
White LED measured



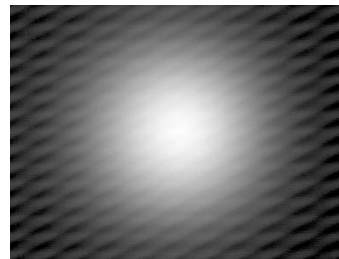
10193



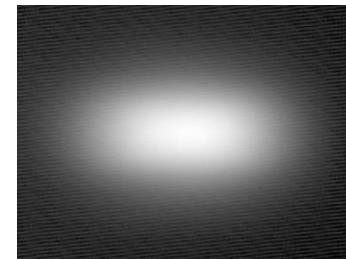
10194



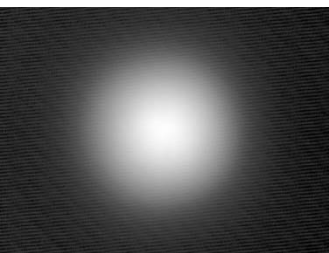
10195



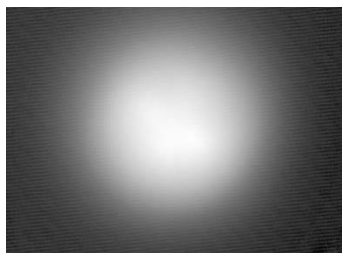
10196



10197 & 10198



10208



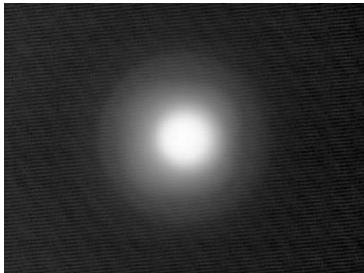
10193

# Seoul Semiconductor Acriche A2 26.5mm range

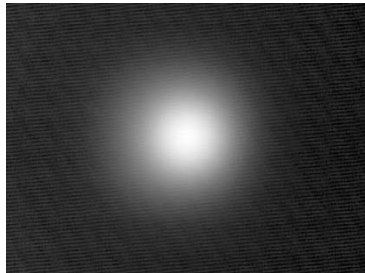
Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10391	Plain Tight	16.22*16.04	85.1%	11.57
10392	Frosted Narrow	18.06*17.88	80.5%	7.74
10393	Medium Frosted	26.07*25.43	76.6%	2.33
10394	Frosted Wide	29.33*28.66	78.3%	3.23
10395	Elliptical	45 X 16.50	80.6%	3.45
10396	Elliptical Orthogonal*	16.5 X 45	80.6%	3.45

#Full Width Half Maximum i.e. total viewing angle  
White LED measured

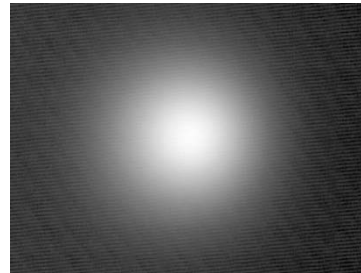
Part No.	Colour	Description
10449	White	4.3mm leg
10459	White	2.0mm leg
10469	White	0.8mm leg
10479	Black	4.3mm leg
10489	Black	2.0mm leg
10499	Black	0.8mm leg



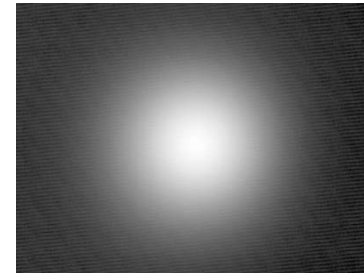
10391



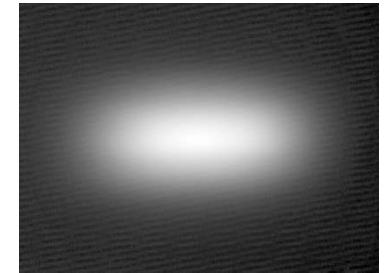
10392



10393



10394

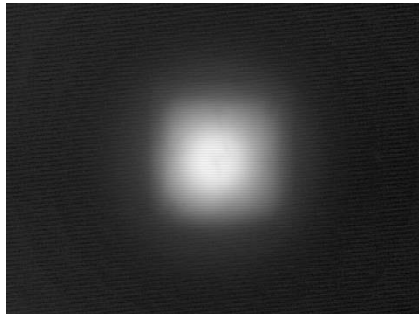


10395 & 10396

# Seoul Semiconductor Acriche A3000 30mm range

Part No.	Description	White		
		FWHM#	EFF	Cd/lm
10754	Plain Spot lens	18.26*18.07	89.4%	7.9
10755	Plain Front lens			
10756	Narrow Frosted			
10757	Medium Frosted			
10758	Wide Frosted			
10759	Elliptical			
10760	Elliptical Orthogonal*			

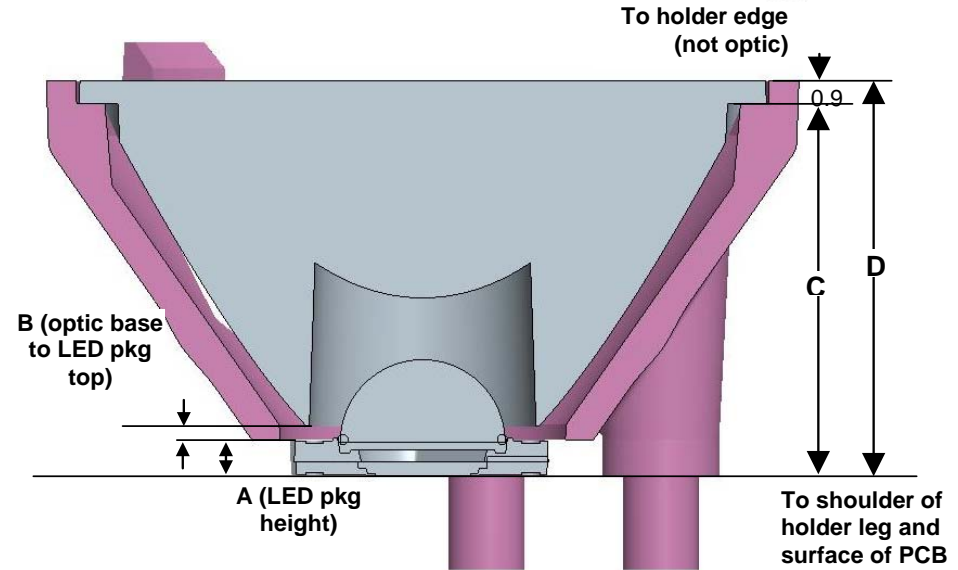
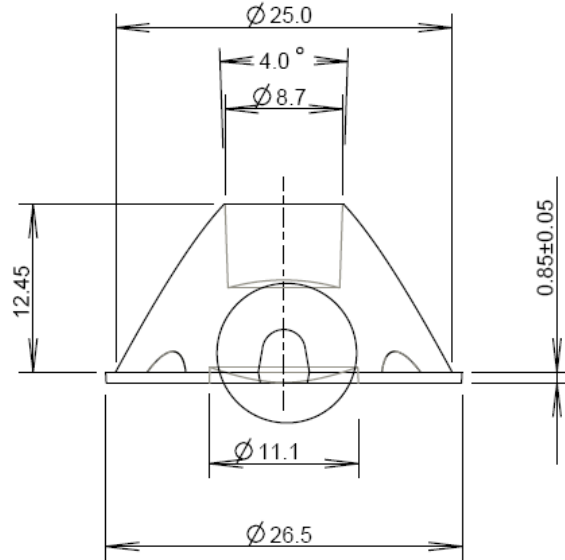
Part No.	Colour	Description
10764	White	17.7mm



10754

# 26.5mm Holder details

Part No.	TYPE
10391	Plain Tight
10392	Narrow Frosted
10393	Medium Frosted
10394	Wide Frosted
10395	Elliptical
10396	Elliptical Ortho



## Notes:

1. CARCLO multi-chip holder compatible with LED package mounted on 19.9mm (across flats) star board, otherwise drill holes on PCB for location pegs on legs. Refer to Drawing 60475 for hole separation
2. The multichip holder leg height includes an extra 1.0mm for the AcuLED since only a 13mm (across flats) star board is available. The CARCLO holder reaches over the AcuLED star board so that the holder sits directly on the PCB (and not the star board).

# 26.5mm Holder location holes

