



Standard Optics Range

Highlights



Who we are

Established in 1948, GAGGIONE's corporate and primary manufacturing facilities are in Montréal La Cluse within the Northern Rhone-Alps region of France, located between Lyon and Geneva, at the heart of one of the main European industrial cross-roads.

We continue our dedication to successfully producing the highest quality optical solutions for LED and other light applications since introducing the world's first collimator for the Barracuda LED in 1996.

GAGGIONE applies its extensive experience and resources to provide comprehensive design, development and manufacturing capabilities for the production of custom-made optical parts and systems.

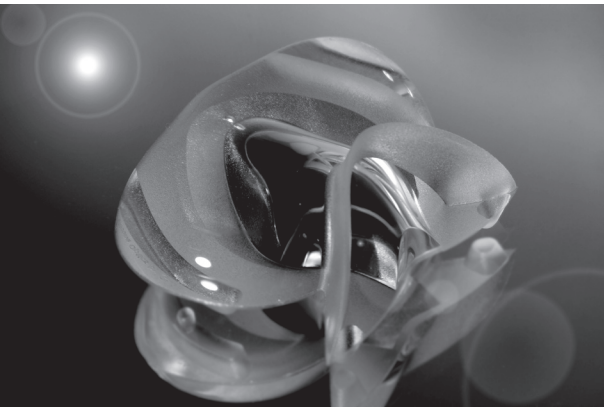
Quality and production consistency are the results of highly educated optic designers along with our pre-production and tooling team, generations of know-how optimized with great technology such as diamond machining equipment to realize mold inserts; and naturally a production shop of the highest precision injection process machines, operators and ISO 9001 certification.

GAGGIONE also operates strategic alliance and sister company relationships with SURCOTEC in Geneva, Switzerland, QUADRATEC in Quebec, Canada and OPTICA in Bangalore, India. SURCOTEC provides high-end surface analysis and treatment including silver and gold metallization, UV coating and texture finishing. Our QUADRATEC and OPTICA operations provide general and optical grade injection facilities.

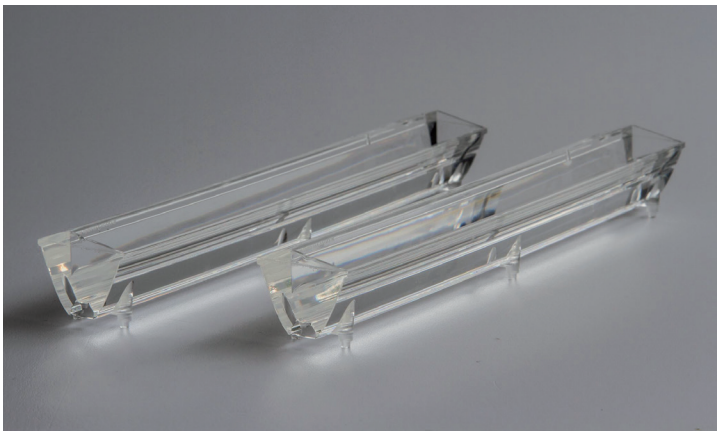
The standard range of optics is the fruit of long experience in the custom optical components business. It has developed naturally in the face of constantly changing market demands and fast time-to-market, and continues to be one of the exciting businesses GAGGIONE serves in shaping our customer's light.

GAGGIONE PRODUCTS

Collimators



Silicone optics



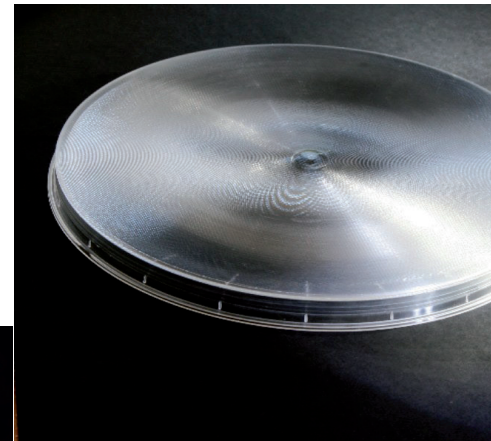
GAGGIONE PRODUCTS



Clusters



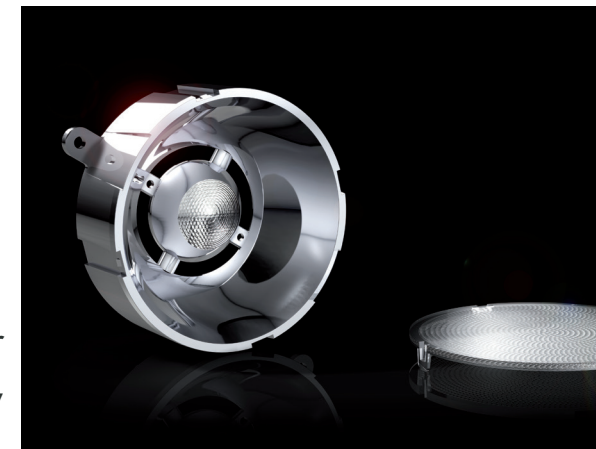
Lenses



Fresnel lenses



Hybrid-reflector
family



LLC22

LLC22 is the new 16mm diameter PMMA collimator range.

LLC22N is the sharpest available 16mm collimator based on our patented non chip imaging technology.

The LED chip will not be projected even with very small LES.

LLC22M/W/V/E are Medium, Wide, Very Large and Elliptical versions, being also capable of advanced color mixing.



9,6° FWHM

LLC22N

Narrow Version



24° FWHM

LLC22M

Medium Version



35° FWHM

LLC22W

Wide Version



52° FWHM

LLC22V

Very Large Version



17°-32° FWHM

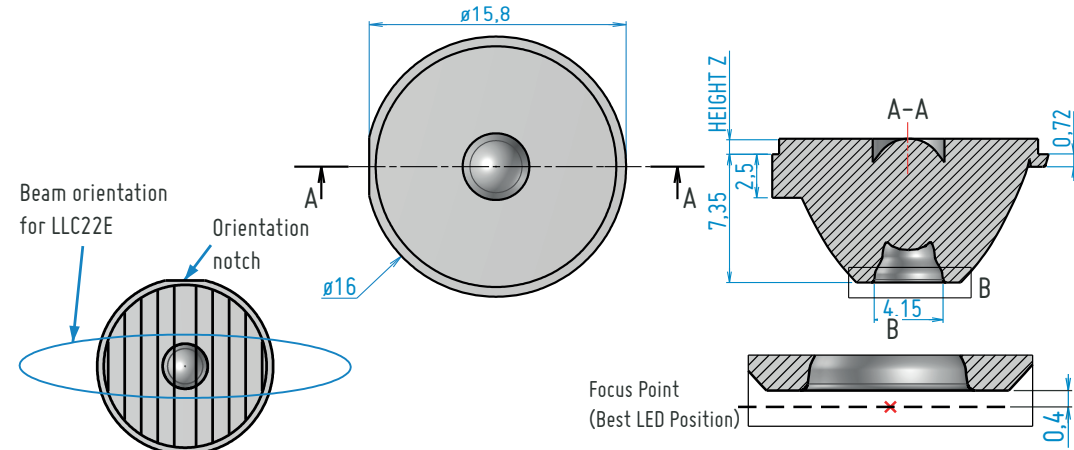
LLC22E

Elliptical Version



Compatibility Matrix

	CREE	OSRAM	NICHIA	CREE
	XQ-E HI	Oslon Compact CL	NCSWE17AT	XD16
LLC22N				
FWHM (°)	9.6	9.8	11.2	13.2
FWTM (°)	18.9	19.2	21.7	24.5
Efficacy (cd/lm)	18.7	19.1	14.9	10.1
	OSRAM	LUMILEDS	CREE	NICHIA
	Ostar Stage RGBW	Luxeon Z TW cluster	XP-E2	NF2W757G_MT
LLC22M				
FWHM (°)	23.8	28.8	24.5	25.0
FWTM (°)	44.6	56.1	44.1	48.0
Efficacy (cd/lm)	4.0	2.3	3.9	3.3
CCI*	7.3	1.4	-	3.0
LLC22W				
FWHM (°)	35.1	34.2	34.4	34.1
FWTM (°)	62.1	66.0	60.4	62.8
Efficacy (cd/lm)	1.9	1.6	2.1	1.9
CCI*	6.2	1.9	-	2.5
LLC22V				
FWHM (°)	52.3	54.4	56.1	53.6
FWTM (°)	79.4	83.8	82.0	82.5
Efficacy (cd/lm)	1.0	0.8	0.9	0.9
CCI*	10.5	2.3	-	4.2
LLC22E				
FWHM (°)	16.6 - 38.8	22.7 - 36.6	11.9 - 43.8	17.8 - 38.9
FWTM (°)	32.1 - 67.8	38.5 - 70.4	28.1 - 65.2	35.4 - 67.3
Efficacy (cd/lm)	3.3	2.6	4.0	3.2
CCI*	9.4	1.8	-	14.0



*CCI: Color Consistency Index, [more information](#)

LLC25 LLC25 series is a new color mixing 32mm diameter product range. Its “no chip imaging” characteristics allow combination with single or multi-chips RGBW, tunable white or standard white LED. It will provide color mixing capability but also a solution without chip image projection for high power single or multi-chip white LED.



Compatibility Matrix

	OSRAM	LUMILEDS	NICHIA	CREE
LLC25N	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	11.5	12.9	7.9	11.3
FWTM (°)	20.8	22.7	15.9	22.3
Efficacy (cd/lm)	18.3	15.5	33.6	16.5
CCI*	6.0	16.5	-	-
LLC25C	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	14.9	16.8	11.3	15.1
FWTM (°)	27.9	31.4	23.1	29.6
Efficacy (cd/lm)	10.6	8.1	16.6	9.1
CCI*	4.0	10.7	-	-
LLC25G	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	15.0	16.3	12.4	15.6
FWTM (°)	30.6	32.7	28.4	32.9
Efficacy (cd/lm)	8.5	7.1	10.4	7.3
CCI*	3.4	3.9	-	-
LLC25M	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	21.5	20.8	19.7	21.2
FWTM (°)	42.1	41.6	38.5	42.2
Efficacy (cd/lm)	3.9	4.0	4.8	4.0
CCI*	2.9	6.3	-	-
LLC25W	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	30.7	32.3	31.5	31.6
FWTM (°)	58.5	60.3	57.9	60.0
Efficacy (cd/lm)	2.2	1.8	2.3	2.1
CCI*	3.2	6.3	-	-
LLC25V	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	57.5	55.0	55.2	56.9
FWTM (°)	79.6	78.0	78.0	81.7
Efficacy (cd/lm)	0.9	1.0	1.0	1.0
CCI*	6.8	7.0	-	-
LLC25E	Ostar Stage RGBW	Luxeon Z RGBW	NCSWE17AT	XHP35.2 HI
FWHM (°)	11.1 – 33.9	12.9 – 33.2	8.5 – 34.4	12.8 – 33.9
FWTM (°)	20.0 – 51.2	22.5 – 53.2	15.9 – 48.4	23.5 – 52.8
Efficacy (cd/lm)	6.6	5.5	8.4	5.6
CCI*	4.4	9.3	-	-

*CCI: Color Consistency Index, [more information](#)



11° FWHM

LLC25N

Narrow Version



21° FWHM

LLC25M

Medium Version



11°-34° FWHM

LLC25E

Elliptical Version



15° FWHM

LLC25C

Color Version



31° FWHM

LLC25W

Wide Version



15° FWHM

LLC25G

Wall Grazing Version

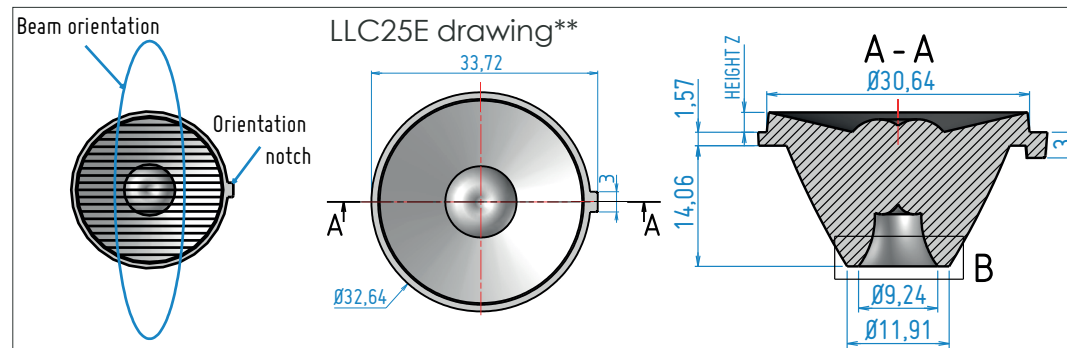
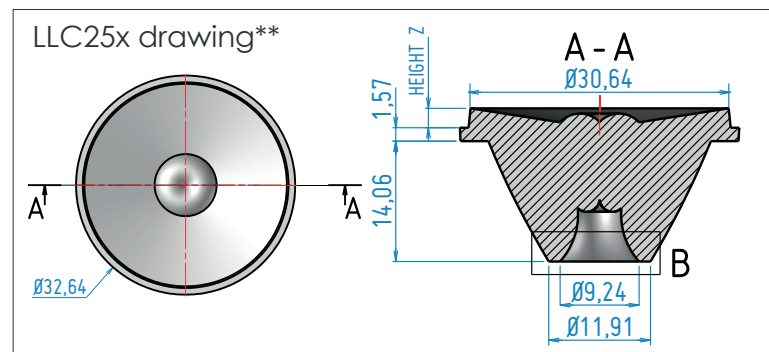


58° FWHM

LLC25V

Very Large Version

In order to improve the mechanical integration of this range, we developed a new **version without sprue**, except for the **LLC25E** which has a **Poka Yoke** system.



**For more details, please refer to the 2D drawings on [our website](#).

LLC59

Based on our knowledge in stage lighting applications, GAGGIONE is proud to present a new 45mm diameter color mixing collimator range. Based on our patented technology, six references are available.



6.1° FWHM

LLC59U

Ultra Narrow Version



6,5° FWHM

LLC59N

Narrow Version



9,3° FWHM

LLC59C

Narrow Color Version



24° FWHM

LLC59M

Medium Version



32° FWHM

LLC59W

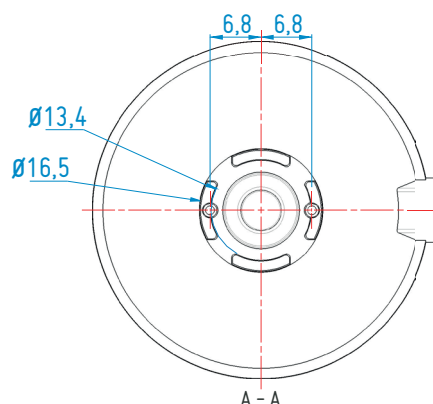
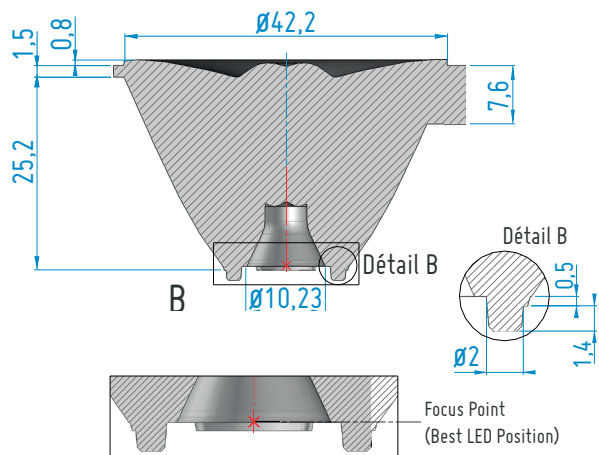
Wide Version



6,4°-33° FWHM

LLC59E

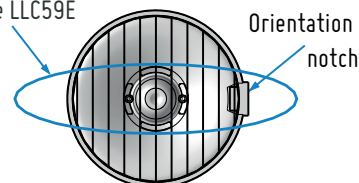
Elliptical Version



Compatibility Matrix

	OSRAM	LUMILEDS	LED ENGINE	CREE
LLC59U	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	6.1	8.1	6.3	7.2
FWTM (°)	10.5	14.5	12.2	12.8
Efficacy (cd/lm)	70.6	38.1	56.8	47.0
CCI*	9.6	19.2	11.2	-
LLC59N	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	6.5	7.6	7.1	7.6
FWTM (°)	12.0	14.1	13.6	14.1
Efficacy (cd/lm)	58.7	42.0	46.4	40.2
CCI*	5.9	17.3	8.9	-
LLC59C	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	9.3	11.7	10.7	10.3
FWTM (°)	17.9	21.6	20.3	19.9
Efficacy (cd/lm)	27.8	17.5	19.8	21.1
CCI*	4.8	12.3	5.4	-
LLC59M	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	24.0	24.1	25.1	25.2
FWTM (°)	40.5	41.6	42.5	42.7
Efficacy (cd/lm)	4.6	4.3	4.2	4.1
CCI*	2.3	6.0	3.1	-
LLC59W	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	31.8	32.2	31.9	33.0
FWTM (°)	57.7	58.2	57.8	60.1
Efficacy (cd/lm)	2.3	2.2	2.2	2.1
CCI*	3.2	5.5	4.1	-
LLC59E	Ostar Stage RGBW	Luxeon Z RGBW	LZ4	XHP35.2 HI
FWHM (°)	6.4 - 32.8	8.2 - 31.3	8.0 - 33.5	7.6 - 33.4
FWTM (°)	11.7 - 41.3	14.6 - 43.7	14.6 - 45.0	14.0 - 43.9
Efficacy (cd/lm)	13.4	10.2	9.7	10.6
CCI*	6.8	13.2	6.2	-

Beam orientation of the LLC59E



*CCI: Color Consistency Index, [more information](#)



LLC79

The LLC79 45mm diameter silicone collimator range has been designed to provide the advantages of LLC66 within a smaller form factor. Designed for demanding requirements, LLC79 range provides high homogeneity with great cut-off beams for high power LED and also 6mm and 9mm COB.

The holder assembled with the Narrow, Medium, Color or Wide version is compatible with the LLH66Bx0x bases. It allows a very easy and fast product design compatible with many different COB holders. A LLH66B6 base is also available for PCB mounted high power LED. The Zoom version LLC79Z7 is available with the same mechanical attachment system as the LLC66Z7.



7° FWHM

LLC79N7

Narrow Version



12° FWHM

LLC79C7

Color Version



27° FWHM

LLC79M7

Medium Version



38° FWHM

LLC79W7

Wide Version



15°-37° FWHM

LLC79Z7

Zoom Version

MECHANICAL SYSTEM for LLC79x7 and LLC66x7 series

Two parts [mechanical holding system](#) consisting in five base options for various COB interface manufacturers and one universal assembled collimator and cage holder set.

LLS66x02 or LLS79x02 Black holder
LLS66x00 or LLS79x00 Clear holder



Compatibility Matrix

LLC79N7

FWHM (°)
FWTM (°)
Efficacy (cd/lm)
CCI*

CITIZEN	OSRAM	BRIDGELUX	NICHIA	CREE
CLU700	OSLON SQUARE FLAT	VESTA 6 TW	NCSWE17AT	XHP35.2 HI
15.3	4.7	14.2	4.4	7.5
27.5	9.3	25.2	8.1	13.5
10.2	83.0	12.5	110.9	39.6
-	-	4.2	-	-

LLC79C7

FWHM (°)
FWTM (°)
Efficacy (cd/lm)
CCI*

CLU700	OSLON SQUARE FLAT	VESTA 6 TW	NCSWE17AT	XHP35.2 HI
15.4	11.3	16.5	10.4	12.2
28.4	20.4	30.7	19.0	22.5
9.9	16.5	8.6	20.8	14.6
-	-	1.2	-	-

LLC79M7

FWHM (°)
FWTM (°)
Efficacy (cd/lm)
CCI*

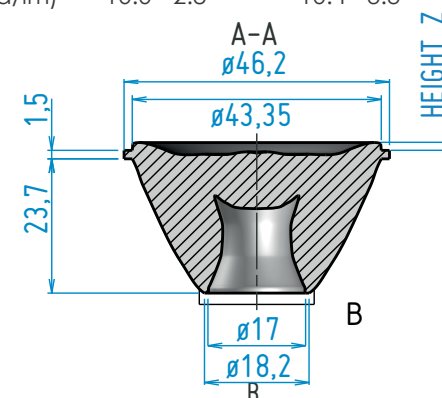
CLU700	OSLON SQUARE FLAT	VESTA 6 TW	NCSWE17AT	XHP35.2 HI
24.8	27.7	25.1	26.6	27.4
43.6	42.7	45.9	41.2	42.7
4.2	3.6	3.9	4.2	3.8
-	-	1.2	-	-

LLC79W7

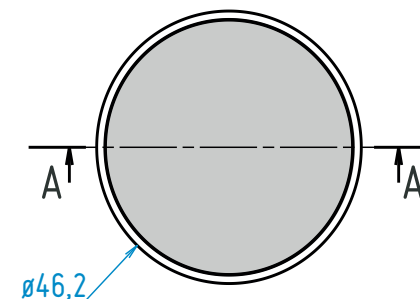
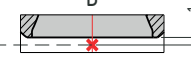
FWHM (°)
FWTM (°)
Efficacy (cd/lm)
CCI*

CLU700	OSLON SQUARE FLAT	VESTA 6 TW	NCSWE17AT	XHP35.2 HI
34.4	38.2	35.9	36.5	37.6
60.4	62.1	63.3	58.5	60.8
2.1	1.7	1.8	1.9	1.8
-	-	1.3	-	-

	CITIZEN	CITIZEN	BRIDGELUX	LUMINUS	NICHIA
LLC79Z7	CLU700	CLU701	V4 HD	CXM 6	NVNWS007Z_V1
FWHM (°)	15.5 - 29.1	15.1 - 26.6	12.0 - 33.1	15.1 - 28.1	15.2 - 37.0
FWTM (°)	27.2 - 49.6	27.2 - 47.4	22.4 - 47.9	30.1 - 51.4	26.1 - 54.5
Efficacy (cd/lm)	10.0 - 2.8	10.4 - 3.3	14.6 - 2.5	9.2 - 2.7	10.8 - 1.9



Focus Point
(Best LED Position)



*CCI: Color Consistency Index, [more information](#)

LLC66

GAGGIONE developed the LLC66 67mm diameter silicone collimator range to match market requirements with 6 beam angle options: LLC66N7 Narrow version, LLC66M7 Medium version, LLC66W7 Wide version, LLC66L7 Large version, LLC66V7 Very Large version and LLC66Z7 Zoomable, based on the same patented technology.



10° FWHM

LLC66N7

Narrow Version



20° FWHM

LLC66M7

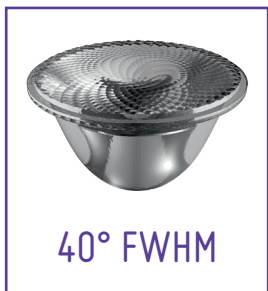
Medium Version



30° FWHM

LLC66W7

Wide Version



40° FWHM

LLC66L7

Large Version



50° FWHM

LLC66V7

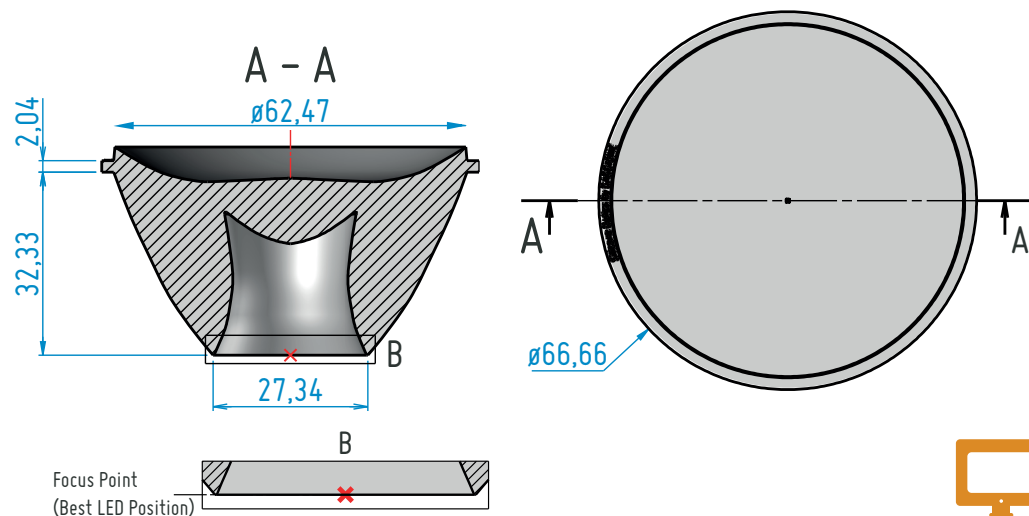
Very Large Version



10°-30° FWHM

LLC66Z7

Zoom Version



Compatibility Matrix

	CITIZEN	CITIZEN	LUMINUS	LUMILEDS	CREE
LLC66N7	CLU702	CLU711	CXM-4	LUXEON MZ	XHP70.2
FWHM (°)	10.8	13.7	7.8	6.3	12.0
FWTM (°)	18.5	22.8	15.5	10.8	20.1
Efficacy (cd/lm)	21.1	14.0	33.4	62.2	18.3
LLC66M7	CLU702	CLU711	CXM-4	LUXEON MZ	XHP70.2
FWHM (°)	22.0	19.9	21.4	22.9	20.1
FWTM (°)	36.5	36.1	33.4	32.0	34.7
Efficacy (cd/lm)	5.4	6.0	6.1	6.1	6.4
LLC66W7	CLU702	CLU711	CXM-4	LUXEON MZ	XHP70.2
FWHM (°)	34.7	30.8	33.3	33.6	30.2
FWTM (°)	55.7	53.0	51.7	51.1	52.0
Efficacy (cd/lm)	2.2	2.4	2.4	2.5	2.6
	CITIZEN	CREE	XICATO	LUMINUS	BRIDGELUX
LLC66L7 (LES≥13mm)	CLU731	CXA1830	XTM19	CVM-18	VER013
FWHM (°)	39.1	37.7	35.1	38.9	41.1
FWTM (°)	60.5	59.4	60.0	66.1	63.5
Efficacy (cd/lm)	1.7	1.8	1.9	1.7	1.6
LLC66V7 (LES≥13mm)	CLU731	CXA1830	XTM19	CVM-18	VER013
FWHM (°)	54.3	54.9	50.7	43.1	53.5
FWTM (°)	80.9	82.1	79.6	75.9	80.1
Efficacy (cd/lm)	0.9	0.9	1.0	1.2	0.9
LLC66Z7 (LES≤9mm)	CLU701	CLU711	CXB1310	CXB1520	NVNWS007Z_V1
FWHM (°)	10.0 - 21.2	14.4 - 18.9	10.2 - 21.2	14.0 - 17.4	10.2 - 22.5
FWTM (°)	17.8 - 44.6	22.8 - 45.5	17.8 - 44.2	22.6 - 42.4	17.7 - 44.5
Efficacy (cd/lm)	24.8 - 4.1	16.0 - 4.7	24.4 - 4.2	13.3 - 4.7	24.7 - 4.1

LLC76

LLC76 67mm diameter silicone collimator range is an evolution of the LLC66 silicone collimator range. It provides all of the beam quality benefits of the LLC66 introducing an innovative snap-in interface.



9° FWHM

LLC76N7

Narrow Version



21° FWHM

LLC76M7

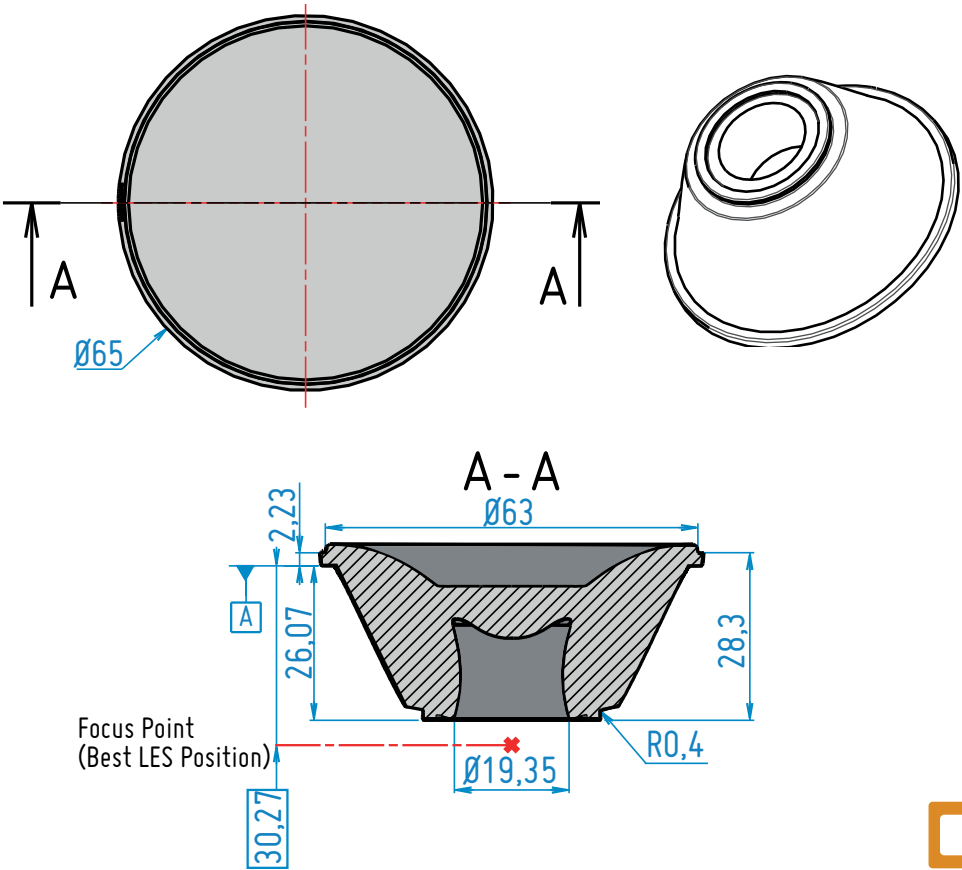
Medium Version



34° FWHM

LLC76W7

Wide Version



Compatibility Matrix

	CITIZEN	CITIZEN	XICATO	CREE	LUMILEDS
LLC76N7	CLU702	CLU711	XOB09	XHP35.2 HD	LUXEON COB 1202 HD
FWHM (°)	9.8	13.4	12.6	6.5	9.9
FWTM (°)	18.1	22.2	22.3	11.9	17.7
Efficacy (cd/lm)	20.0	11.7	11.0	40.6	22.1
LLC76M7	CLU702	CLU711	XOB09	XHP35.2 HD	LUXEON COB 1202 HD
FWHM (°)	23.0	22.5	21.0	14.3	21.5
FWTM (°)	36.7	39.2	37.0	36.5	35.1
Efficacy (cd/lm)	4.8	4.5	4.3	6.1	5.6
LLC76W7	CLU702	CLU711	XOB09	XHP35.2 HD	LUXEON COB 1202 HD
FWHM (°)	36.6	36.2	31.9	28.9	34.7
FWTM (°)	58.2	61.5	55.0	56.0	55.4
Efficacy (cd/lm)	1.8	1.7	1.8	2.3	2.0

LLH76B4 base for LLC76 series

GAGGIONE created a snapped-in holder ring allowing a very fast and reliable attachment of the optics to the interface.



UFO

Ultra Flat Optic (UFO) is a new design and a new technology of PMMA lenses. It allows slim fixtures design.

UF045Z 45mm diameter and UF067Z 67mm diameter are adjustable beam versions. They both allow an extended zoom ratio combined with a state of the art beam homogeneity in any position and come with an easy to implement mechanical solution.

UF045A 45mm diameter is an asymmetric lens designed for ceiling recessed fixtures. It provides homogeneous beam, allowing to get from the bottom to the top of most walls, having no market equivalent.

Asymmetric version



[Download IES file](#)

UF045A

Zoom versions



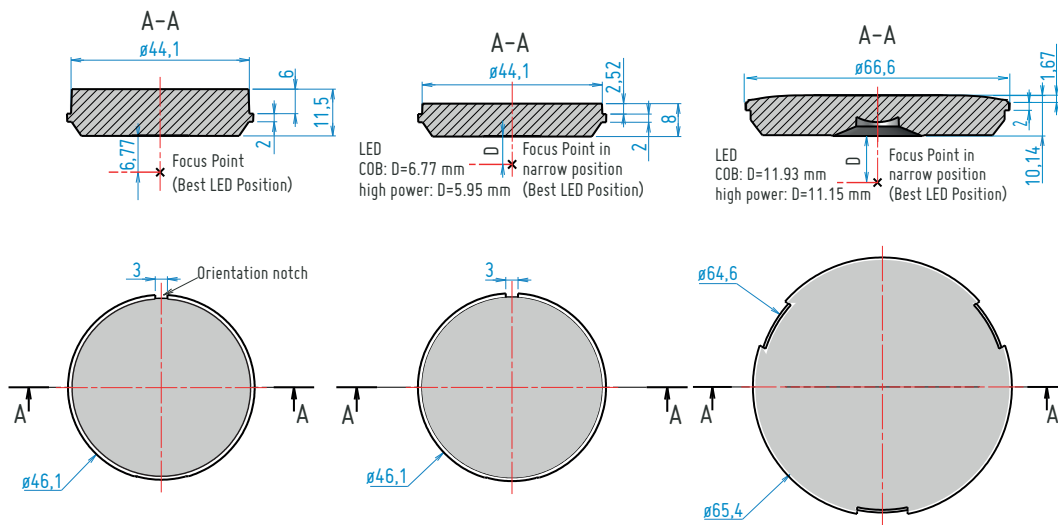
13°-48° FWHM

UF045Z



11°-50° FWHM

UF067Z

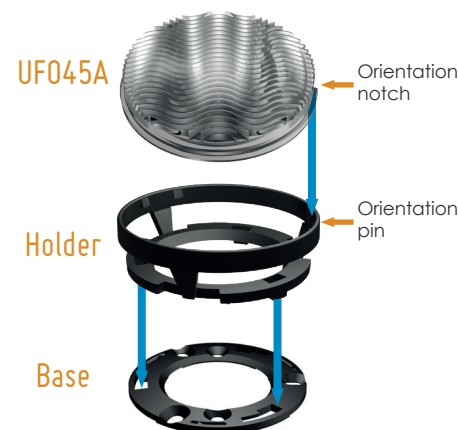


Compatibility Matrix

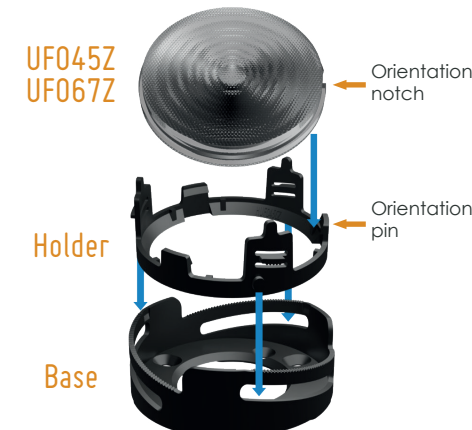
	BRIDGELUX	CITIZEN	CREE	LUMILEDS	OSRAM
UF045A	VESTA 6 TW	CLU7B2	XHP35.2 HD	LUXEON MZ	OSLON SQUARE FLAT
FWHM (°)					
FWTM (°)					
Efficacy (cd/lm)					
CCI*					
UF045Z	VESTA 6 TW	CLU7B2	XHP35.2 HI	LUXEON MZ	OSLON SQUARE FLAT
FWHM (°)	17.4 - 43.9	14.1 - 35.7	13.9 - 35.2	13.6 - 48.2	11.8 - 34.4
FWTM (°)	32.9 - 66.0	25.2 - 52.3	24.7 - 51.0	24.4 - 65.8	22.5 - 51.2
Efficacy (cd/lm)	6.1 - 1.5	9.7 - 2.3	9.5 - 2.4	10.4 - 1.3	12.1 - 2.5
CCI*	2.3	-	-	-	-
UF067Z	VESTA 6 TW	CLU7B2	XHP35.2 HI	LUXEON MZ	OSLON SQUARE FLAT
FWHM (°)	13.9 - 44.1	12.2 - 36.5	12.2 - 35.6	11.3 - 50.3	11.3 - 34.5
FWTM (°)	25.6 - 60.1	22.3 - 50.4	22.4 - 48.9	21.6 - 65.7	21.7 - 49.1
Efficacy (cd/lm)	9.4 - 1.7	11.3 - 2.4	10.8 - 2.4	13.4 - 1.4	12.2 - 2.8
CCI*	1.3	-	-	-	-

Mechanical system

Asymmetric

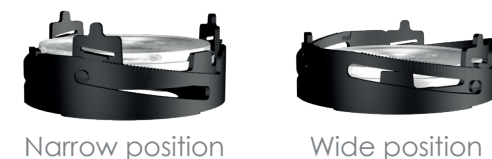


Zoom



Distance between narrow and wide positions

UF045Z: 6 mm
UF067Z: 9 mm



*CCI: Color Consistency Index, [more information](#)

Available in clear & black

CUSTOM SOLUTION

A custom made solution is the right choice for a customer not finding the standard optic in the GAGGIONE's off-the-shelf portfolio. Based on customer's specifications and requirements, GAGGIONE is able to design the complete optical system and deliver the appropriated lens, collimator, diffuser, light guide or other optic to work with the requirement.

Our experience includes applications in the field of general lighting, street and area lighting, transportation industry or other applications requiring us to shape the light a certain way.

But creating a specific light distribution is not the only reason to decide for a custom design. More and more companies understand the strategic value and show the interest to invest in their own solution to achieve cost savings. In this growing market, reducing the bill of materials as well of time of assembly is critical to bringing competitiveness and delivering to the market fast.

Optics are playing a more impactful role than before and are bringing many opportunities for integration of functionality and increasing lifetime value. In the end, a single part if well designed optimized can help reduce the bill of materials, simplify stock management, and shorten assembly time resulting in lower overall cost.

Not only do custom optics help reduce the complexity of the system; they are also the solution for a better performance efficiency and market distinction and recognition.

Having your own optical system is a differentiation by design and provides greater potential for increased performance of the end product. Leveraging a partner with solid experience and proven reputation is the solution GAGGIONE serves in Shaping Your Light.





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