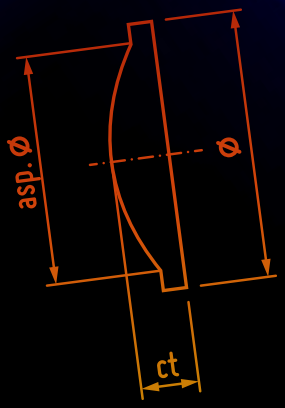
B&M OPTIK

excellence in optics

Optical components

Overview catalogue

Edition 16



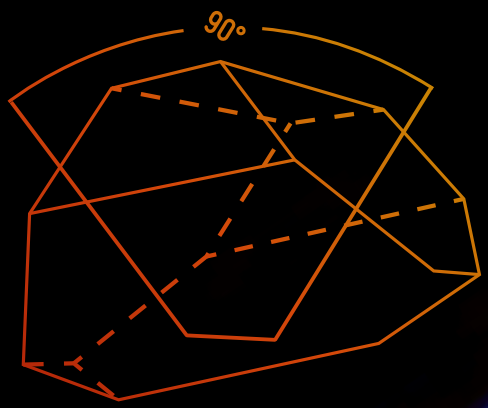


Table of contents

Overview catalogue

Contents

Topic ..... Page

Company 4
Information about our product range 5
Production of moulded lenses 6
Standard specifications for moulded lenses 7
Production of ground and polished lenses 8
Production of injection-moulded plastics 9
Lens coatings 10
Sample lenses 11

Moulded lenses 12
Aspherical lenses 13
Plano-convex lenses 17
Biconvex lenses 18
Cylindrical lenses 18
Freeform lenses 19
Array lenses 19

Polished lenses 20
Plano-convex lenses 21
Biconvex lenses 22
Plano-concave lenses 23
Biconcave lenses 24
Cylindrical lenses 24
Fused Silica lenses 25
Achromatic lenses (doublets) 26

Topic ..... Page

Plastic lenses 28
Round 29
Plano-convex, square 29
Cylindrical lenses 29
Double lenses 29

Prisms and plano-optics 30
Prisms/beam splitters/wedges/windows 31
Laser protection glass 33

Filters 34
Glass colour filters 35
Heat absorption filters 36
Plastic colour filters 36
Heat reflection filters 37

AR coatings and mirror coatings 38
AR coatings 39
Mirrors / beam splitter mirrors / concave mirrors 42

LED optics 44
Glass LED optics 45
DimToWarm / Tunable White 47
LED Zoom Modules scaLED 48
LED cases 51
Set of samples 52

Company

As long as there is something better, good isn't good enough.

excellence in optics

We, B&M Optik GmbH, are a medium-sized company with our headquarters in Limburg/Lahn. Since our founding in 1991, we have earned ourselves a good reputation as a reliable and valued manufacturer of optical elements and components.

As an owner-managed company with tradition and experience, we know how important it is to respond individually to customer requirements. For this reason, we devote particular attention to co-operation with our customers. We also offer the highest quality in all areas – from the product through individual advice to quick reaction times when it comes to solving the customer's particular problem.

We not only live up to this aspiration, we attempt to exceed it. Day after day. Always in our customers' interest.

You too can get to know our innovative products, technologies and skills. We are happy to provide support even in the development phase of your project. Because we know that the sooner we work hand in hand, the quicker a technically and commercially perfect solution will be found for you.

We look forward to impressing you with our products.

Information about our product range

Optical components

Scope of delivery

- Our production ranges from simple moulded condenser optics to high precision quality optics.
- Here, we start from a diameter of 3 mm and only stop at 300 mm.
- We supply individual parts up to unlimited series: loose components, mounted optics and complete assemblies.
- We handle all optical glass, fused silica glass and crystal materials for ground and polished lenses.
- Production of moulded components made from the glass types LIBA2000+, F2, F4GT, K10P, TRITAN, Simax and coloured glass is currently possible.
- Tempering and mirror coatings can be applied on our own machines upon request.

Delivery prices

Before we can talk about prices, both the scope of delivery and the quality must be discussed because the manufacturing technology and thus the amount of work depends on this.

However, you can be sure in every calculation that we want you to become and remain our customer.

Production of moulded lenses

Technology

Moulds

Admittedly, the moulding of hot glass to form optical elements isn't new technology. However, the quality of the product has been significantly improved through constant development of the technology and methods.

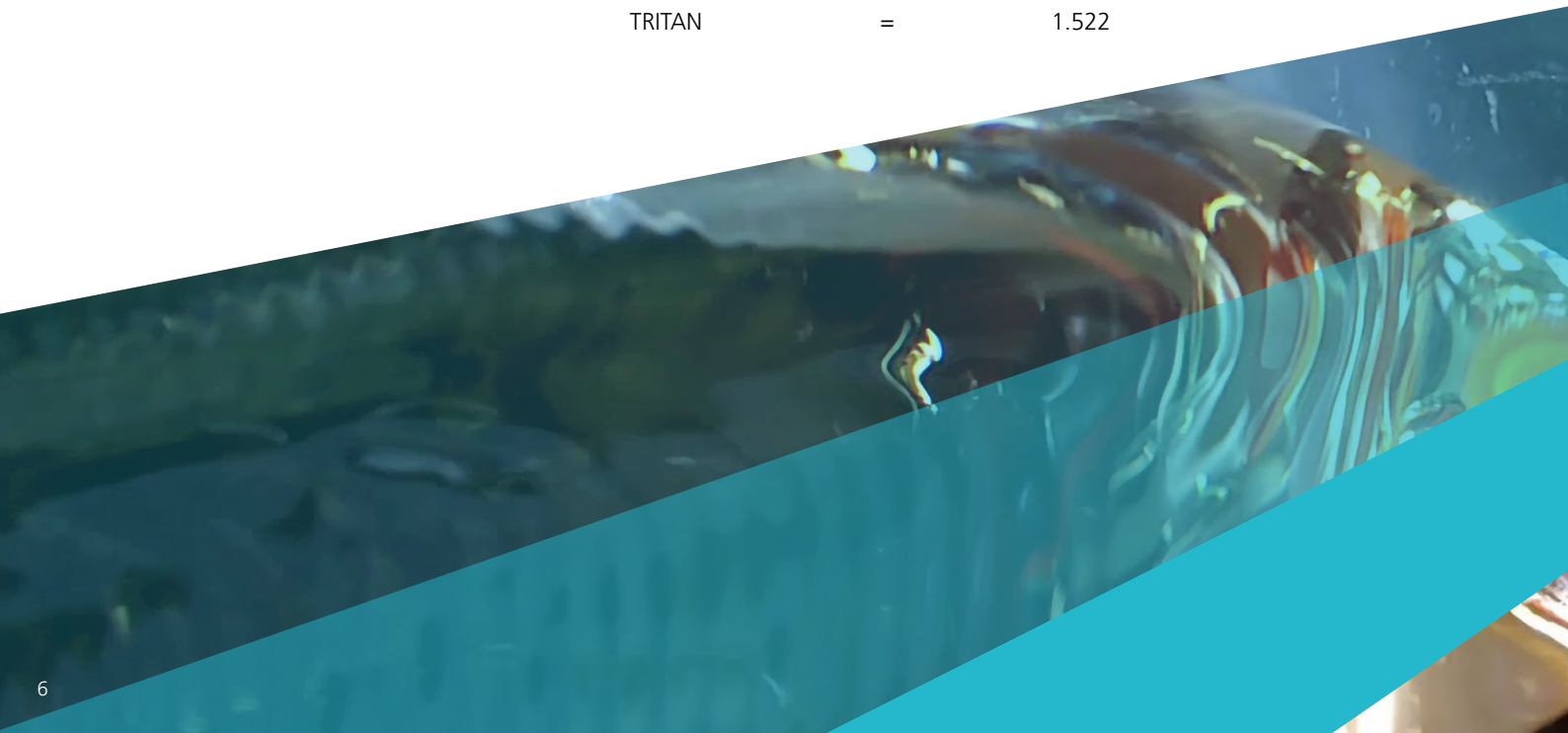
At B&M Optik, we use glass rods or gobs as the starting material, which is partially heated to the right temperature and then pressed into the mould. In order to achieve the end product, the opposite side of the moulded surface is ground and polished. For parts which are finish-moulded on both sides, the edge is simply rounded. This moulding process is significantly less time-consuming, and therefore more cost-effective, than the production of the same optical elements in a ground and polished design.

The variety of forms which a moulded optical part can take (e.g. edgings, openings, notches, double lenses, arrays, freeform lenses) are another upside. This often cannot be produced or are difficult to produce using conventional production technology. Lenses can be used as condenser optics in lightning systems and in sensor technology. They are often better suited for use in extreme operating conditions than conventional elements. Such surfaces are referred to as finish moulded.

In addition to our standard range (see page 12-19), we are also happy to provide you with a quote according to your specifications.

glass types for moulded components

		Refractive index at nd 587.6 nm
LIBA2000+	=	1.520
F2	=	1.620
F4GT	=	1.620
SIMAX	=	1.474
K10P	=	1.585
TRITAN	=	1.522



Standard specifications

for moulded lenses

Standard specifications	up to Ø 30.00 mm	from Ø 30.00 mm
Ø (tolerance)	+0/-0.2 mm	+0/-0.3 mm
Center thickness (tolerance)	±0.2 mm	±0.3 mm
Focal length, one side moulded (tolerance)	±5%	±5%
Focal length, both sides moulded (tolerance)	±7%	±7%
Bubbles and inclusions	1/ 3x0.4	1/ 3x0.4
Surface form tolerance, moulded side	3/ tool controlled	3/ tool controlled
Surface form tolerance, polished side	3/ 10 (5)	3/ 10 (5)
Centering	4/ 25’	4/ 25’
Surface, moulded side	5/ 3 x 0.4; E 0.2	5/ 5 x 0.63; E 0.4
Surface, polished side	5/ 3 x 0.25; E 0.2	5/ 5 x 0.25; E 0.4

Standard specifications

If an optical drawing lacks specifications for dimensions, tolerances and material defects, general tolerances according DIN 10110-11 apply. It is possible to adapt these to suit your specifications.

Production of ground and polished lenses

Technology

Grinding and polishing

In order to guarantee consistent, verifiable quality, we are guided by the German industry standards (DIN) for the production and final inspection of our optical components. The tolerances are defined in DIN ISO 10110. You can give details of your requests according to these standards.

Production is monitored by interferometer. The final inspection can equally be done by interferometer. Naturally, the stipulated quality is decisive for pricing.

In general, we produce items in this sector based on orders. A few types are continuously produced and we have listed these parts. Furthermore, we also have a wide range of samples which are particularly helpful for new developments and small batches. You will find these on www.bm-optik.de/en/products/samples

Since our range of products is constantly expanding, please contact us directly with your problem. We are sure to find an optimal solution for you.

Production of injection-moulded plastics

Technology

The injection moulding process is used to produce plastic lenses. With this process, moulded parts which can be used immediately can be profitably produced in large volumes. For this purpose, the appropriate type of plastic is placed in an injection unit and injected into an injection moulding tool using an injection moulding machine. The forming tools used here are diamond cut. The hollow space, the cavity of the tool determines the shape and surface structure of the finished part. There is almost no limit to the type of surface which can be chosen for the component.

Plastic lenses are predominantly used in medical devices, cars, sensors and industrial measurement technology, and in mechanical engineering.

In addition to our standard range (see page 29), we are also happy to provide you with a quote according to your specifications.

Lens coatings

Technology

Coatings

In our factory in Pirna, coatings are applied on four systems. These are mirror and anti-reflection coatings in the wavelength ranges desired in each case. We also offer special coatings such as laser protection coatings, dielectric mirror coatings and beam splitters, for example.

Almost all types of glass can be used as substrates, while taking into account the material properties in the design of the coating, of course.

Our modern ultrasound washing plant ensures the careful cleaning which is a prerequisite for high-quality coatings. Sensitive glass types are cleaned manually by specialist personnel.

We are happy to supply optically treated parts with coatings as well as offering contract coating services. Here, the dimensions of the parts and the number of layers required affect the price and delivery time. Thanks to the inclusion of a multitude of different substrates, each coating batch can be optimally, and thus economically, used.

Sample optics

more than 2,000 types in stock for your research and development

Find our range of sample optics on our website!

We stock a wide range of sample parts. These stretch from moulded glass lenses through to high-quality ground and polished optics.

Thanks to constant expansion and updating, you can access more than 2,000 different types.

Our range

approx. 580 different plano-convex lenses
approx. 380 different biconvex lenses
approx. 180 different aspherical lenses
approx. 320 different windows/filters
approx. 120 different plane and concave mirrors
approx. 160 different cylindrical lenses
approx. 130 different plastic lenses/filters
approx. 60 different achromatic lenses
approx. 60 different prisms
approx. 100 different concave lenses/menisci

Also ...

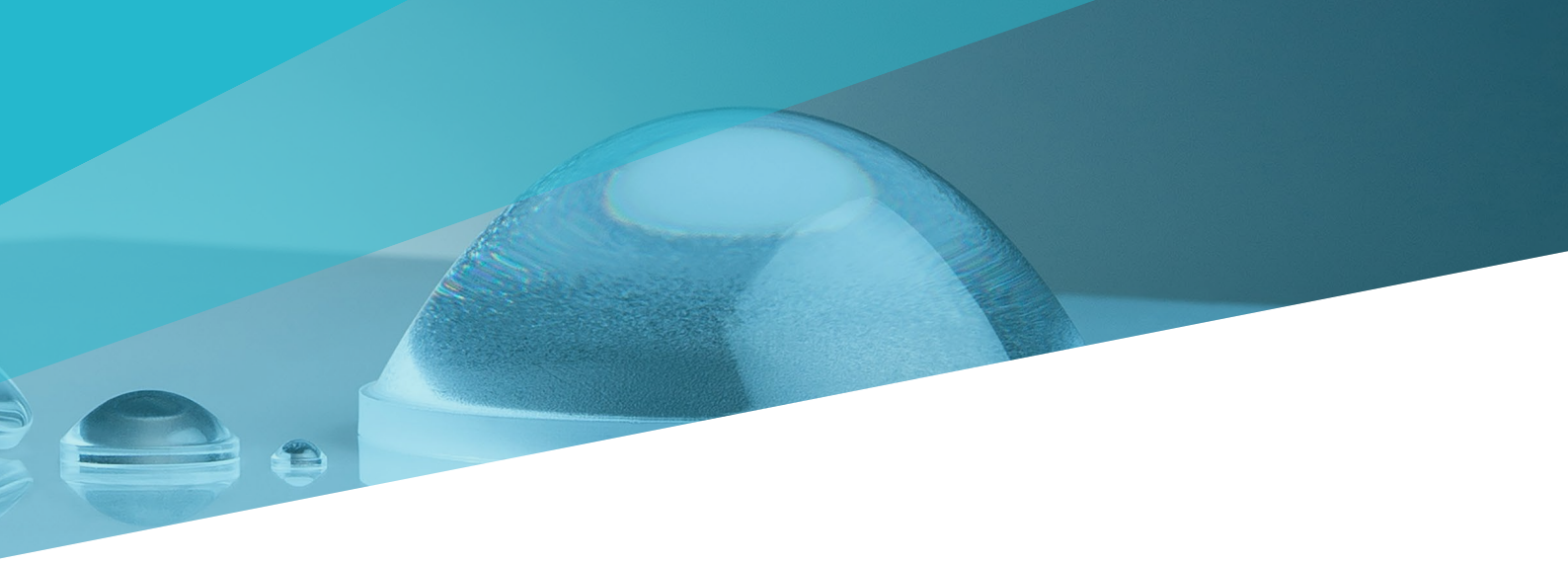
You can also find beam splitters, balls, light conductor rods and much more

Please see the detailed list on our website
www.bm-optik.de/en/products/samples

If you still can't find the type you're looking for, please let us know.

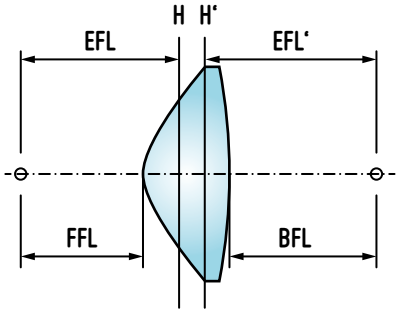
Moulded Lenses

Aspherical lenses
Plano-convex lenses
Biconvex lenses
Cylindrical lenses
Arrays
Freeform lenses



Aspherical lenses

Moulded lenses



Moulded aspherical lenses

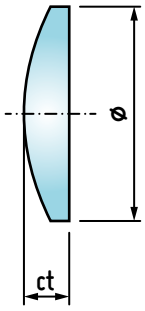
Aspherical surfaces perform the task of minimising the aperture error invariably found in any lens. In comparison with a spherical lens with a comparable diameter and focal length, aspherical lenses have a lower aperture error. Under certain conditions it is possible to improve image defects such as coma, distortion and astigmatism. Since grinding, as for spherical surfaces, is not possible on conventional machines, the aspherical lenses are moulded. We recommend limiting the use of moulded lenses to condenser optics and simple lighting systems. The lenses must be designed such that demoulding is possible: lenses can be supplied in an angular design with offset step and in an array form version, for example.

Production specifications

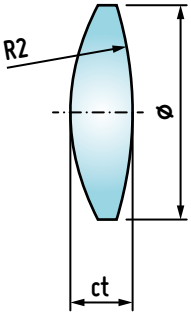
· Aspherical side moulded, flat side ground and polished
· Aspherical side moulded, spherical side optionally moulded or ground and polished
· Custom-made products: centre, mounted, coated

All specifications in mm

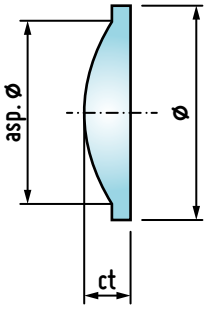
Aspherical lenses
moulded



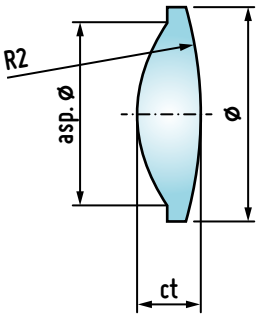
Type a



Type b



Type c



Type d

Ø	EFL	ca	ct.	material	R2	FFL	BFL	type	item-no.	your notes
2,00	6,00	2,00	1,05	F2	flat	6,00	5,32	a	A.3108.0203	
3,77	3,70	3,77	5,30	LIBA2000+	flat	3,70	0,20	a	A.0439.03771Li	
5,00	4,20	5,00	2,20	LIBA2000+	flat	4,20	2,76	a	A.0379.0501Li	
5,00	4,20	5,00	2,20	LIBA2000+	flat	4,20	2,76	a	A.6619.0501LI	
5,00	3,10	5,00	2,00	F2	flat	3,10	1,90	a	A.2856.0510	
5,00	3,70	5,00	2,00	LIBA2000+	flat	3,70	2,40	a	A.2856.0501Li	
5,00	3,30	5,00	2,00	K10P	flat	3,30	2,00	a	A.2856.0501K10P	
5,00	4,00	4,40	2,00	LIBA2000+	flat	4,00	2,69	a	A.4479.0501Li	
6,30	18,10	6,30	1,52	LIBA2000+	flat	18,10	17,10	a	A.4179.0632Li	
6,30	9,00	6,30	1,70	LIBA2000+	flat	9,00	7,88	a	A.4149.0632Li	
6,40	6,30	6,40	1,70	LIBA2000+	flat	6,30	5,18	a	A.1789.0641Li	
6,80	6,00	6,80	2,80	LIBA2000+	flat	6,00	4,23	a	A.2825.0681Li	
6,80	5,70	6,80	2,80	LIBA2000+	flat	5,70	3,90	a	A.3191.0681Li	
6,80	6,30	6,80	2,80	LIBA2000+	flat	6,30	4,50	a	A.0219.0681Li	
6,88	7,30	6,88	4,00	LIBA2000+	flat	7,30	4,70	a	A.3111.0681Li	
7,65	7,30	7,65	4,00	LIBA2000+	flat	7,30	4,70	a	A.3110.07651Li	
7,90	5,70	7,90	2,40	F2	flat	5,70	4,22	c	A.0499.0791	
7,90	5,70	6,50	2,40	K10P	flat	5,70	4,20	c	A.6299.0791K10P	
7,90	6,00	6,50	2,40	K10P	flat	6,00	4,50	c	A.0499.0791K10P	
7,90	6,00	6,60	3,15	LIBA2000+	flat	6,00	3,90	a	A.2619.0791Li	
8,00	7,80	8,00	3,35	B270	flat	7,80	5,60	a	A.2791.0802	
8,50	7,40	8,50	4,00	LIBA2000+	flat	7,40	4,77	a	A.3062.0851Li	
9,00	9,50	9,00	4,00	LIBA2000+	flat	9,50	6,87	a	A.0409.0901Li	
9,40	7,70	7,95	2,70	F2	flat	7,70	6,03	c	A.3058.0941	
9,40	8,20	7,95	2,70	K10P	flat	8,20	6,50	c	A.3058.0941K10P	
9,90	7,80	9,90	4,00	LIBA2000+	flat	7,80	5,20	a	A.2791.0991Li	
10,00	6,60	10,00	5,00	LIBA2000+	flat	6,60	3,31	a	A.3369.1002Li	
10,50	9,40	10,50	3,80	F2	flat	9,40	7,10	a	A.0869.1051	
11,00	12,30	11,00	5,00	LIBA2000+	flat	12,30	8,96	a	A.3359.1101Li	
12,00	12,50	12,00	4,50	LIBA2000+	flat	12,50	9,50	a	A.5692.1201Li	
12,00	13,80	12,00	4,50	SIMAX	flat	13,80	10,70	a	A.5692.1201SI	
12,00	10,40	12,00	5,50	LIBA2000+	25,00	9,20	6,00	b	A.2965.1201Li	
12,00	7,50	12,00	5,50	LIBA2000+	12,70	6,39	4,56	b	A.2771.1201Li x	
12,00	10,50	12,00	6,00	LIBA2000+	25,00	9,20	5,70	b	A.3041.1201Li x	
12,00	10,50	12,00	5,00	LIBA2000+	15,70	9,35	8,10	b	A.0249.1201Li x	
13,00	7,40	13,00	6,30	LIBA2000+	16,14	6,59	4,05	b	A.1489.1301Li	
13,16	14,80	13,16	5,70	LIBA2000+	85,00	14,46	11,31	b	A.9212.13161Li	
15,00	8,25	15,00	8,70	LIBA2000+	27,30	7,30	2,30	a	A.4829.1501LI	
16,00	10,80	16,00	8,00	F2	flat	10,80	5,86	a	A.1839.1601	
16,00	11,40	16,00	8,00	K10P	flat	11,40	6,40	a	A.1839.1601K10P	
16,00	15,00	16,00	6,00	LIBA2000+	flat	15,00	11,06	a	A.2831.1601Li	
18,00	13,50	18,00	7,40	LIBA2000+	flat	13,50	8,64	a	A.2873.1801Li	
18,00	15,50	18,00	7,40	LIBA2000+	flat	15,50	10,64	a	A.2985.1802Li	
18,00	8,00	15,00	6,30	F2	flat	8,00	4,11	c	A.0679.1801	
18,00	14,20	18,00	8,00	LIBA2000+	flat	14,20	8,94	a	A.2089.1801Li	
19,20	17,00	19,20	7,20	LIBA2000+	flat	17,00	12,27	a	A.2029.1921Li	
19,80	11,00	19,80	10,20	LIBA2000+	17,70	8,83	5,35	b	A.1869.1981Li	
20,00	16,00	20,00	8,00	LIBA2000+	80,00	15,45	11,12	b	A.0059.2001Li x	
20,00	16,00	20,00	12,30	LIBA2000+	25,00	13,30	9,53	b	A.0069.2001Li x	

Aspherical lenses
moulded

All specifications in mm

Ø	EFL	ca	ct.	material	R2	FFL	BFL	type	item-no.	your notes
20,00	17,50	20,00	8,30	LIBA2000+	117,50	17,08	12,35	b	A.0239.2001Li x	
20,00	16,40	20,00	6,40	LIBA2000+	44,97	15,30	11,30	b	A.1959.2001Li	
20,00	11,10	19,80	10,90	LIBA2000+	17,70	8,90	4,90	b	A.3779.2001Li x	
20,00	25,65	20,00	6,70	LIBA2000+	80,00	24,91	21,87	b	A.3529.2001Li	
22,40	18,00	22,40	10,20	LIBA2000+	flat	18,00	11,20	a	A.2869.2242Li	
24,00	15,40	24,00	8,90	F4GT	flat	15,40	9,91	a	A.4889.2401F4GT	
24,00	18,00	24,00	10,40	LIBA2000+	flat	18,00	11,20	a	A.2869.2401Li	
24,00	20,00	24,00	10,40	SIMAX	flat	20,00	12,90	a	A.2869.2401SI	
24,35	22,50	24,35	9,20	LIBA2000+	30,00	20,14	18,39	b	A.0229.24351Li x	
26,00	19,50	26,00	9,05	LIBA2000+	42,00	18,06	14,63	b	A.2911.2601Li	
26,00	25,00	26,00	8,50	LIBA2000+	flat	25,00	19,41	a	A.2890.2601Li	
26,00	27,50	26,00	8,50	LIBA2000+	flat	27,50	21,91	a	A.2984.2601Li	
26,27	23,50	26,27	10,00	LIBA2000+	127,6	22,87	17,40	b	A.0512.26271 x	
26,50	18,00	24,00	10,90	LIBA2000+	flat	18,00	10,80	c	A.6229.2651LI	
27,80	28,60	27,80	7,50	F2	63,00	27,30	25,12	b	A.0019.2781	
28,00	38,00	28,00	7,50	LIBA2000+	flat	38,00	33,07	a	A.1699.2801Li	
29,90	34,10	29,90	9,40	LIBA2000+	51,30	31,96	29,79	b	A.3539.2991Li	
30,00	17,50	27,95	14,00	LIBA2000+	24,00	14,00	10,40	d	A.2920.3001Li x	
30,00	26,90	30,00	10,00	LIBA2000+	flat	26,90	20,73	a	A.4879.3001Li	
31,50	27,50	31,50	12,30	LIBA2000+	flat	27,50	19,42	a	A.2895.3152Li	
32,00	35,00	32,00	10,00	LIBA2000+	flat	35,00	28,43	a	A.0339.3201Li	
32,25	32,00	32,25	9,90	LIBA2000+	flat	32,00	25,49	a	A.3289.32251Li	
34,00	24,70	31,60	14,00	LIBA2000+	80,00	23,30	16,50	d	A.2896.3401Li	
34,00	27,50	31,60	12,30	LIBA2000+	flat	27,50	19,42	c	A.2895.3401Li	
35,00	27,50	31,60	15,00	LIBA2000+	flat	27,50	17,64	c	A.2841.3501Li	
40,00	28,50	36,00	15,00	LIBA2000+	flat	28,50	18,60	c	A.1999.4002Li	
40,00	31,30	36,00	15,00	SIMAX	flat	31,30	21,10	c	A.1999.4001SI	
44,35	36,00	44,35	16,00	LIBA2000+	260,00	35,24	26,03	b	A.0259.44352Li	
45,00	42,00	43,00	15,70	LIBA2000+	flat	42,00	31,68	c	A.3023.4501Li	
46,60	63,60	46,60	9,75	LIBA2000+	flat	63,60	57,19	a	A.0269.4661Li	
50,00	40,00	50,00	19,00	TRITAN	flat	40,00	27,51	a	A.1559.5001TR	
51,90	34,00	49,00	23,70	TRITAN	flat	34,00	18,42	c	A.7039.5191TR	
57,00	37,80	57,00	23,70	LIBA2000+	260,00	36,62	22,94	b	A.2659.5701Li	
63,00	53,00	63,00	23,25	LIBA2000+	flat	53,00	37,70	a	A.4049.6301Li	
65,00	65,00	48,00	19,90	LIBA2000+	flat	48,00	34,90	a	A.4489.6501LI	
66,00	130,00	60,00	9,50	SIMAX	flat	130,0	123,55	a	A.3269.6601	
68,00	51,50	68,00	27,25	TRITAN	flat	51,50	33,60	a	A.6259.6801Tr	
73,00	53,00	70,50	32,40	TRITAN	flat	53,00	31,7	c	A.4709.7301Tr	

x blank pressed on both sides

All specifications in mm

Aspherical lenses
moulded and textured on aspherical side

Ø	EFL	ca	ct.	material	R2	FFL	BFL	texture	type	item-no.	your notes
24,00	18,10	24,00	11,50	LIBA2000+	flat	18,10	10,40	medium	a	A.6709.2401LI	
52,00	34,60	52,00	32,20	TRITAN	flat	34,60	19,40	medium	a	A.6739.5201TR	

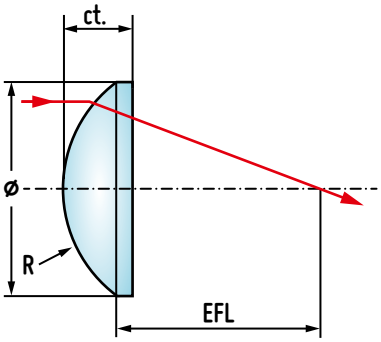
All specifications in mm

Aspherical lenses
moulded and textured on plano side / spherical side

Ø	EFL	ca	ct.	material	R2	FFL	BFL	texture	type	item-no.	your notes
20,00	11,00	19,80	10,90	LIBA2000+	17,70	8,68	4,86	rough	a	A.3829.2001Li	
24,00	18,00	24,00	11,50	LIBA2000+	flat	18,00	10,44	medium	a	A.4569.2401Li	
26,00	27,50	26,00	9,00	LIBA2000+	flat	27,50	21,59	medium	a	A.4559.2601Li	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	smooth	c	A.6499.2651LI	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	medium	c	A.6509.2651LI	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	rough	c	A.6519.2651LI	
28,10	19,40	28,10	11,80	LIBA2000+	101,00	18,60	12,10	medium	b	A.5259.2811Li	
30,00	11,80	30,00	8,00	LIBA2000+	-40,00	11,09	6,79	fresnel	c	Y.3939.3001	
35,00	27,50	31,60	16,20	LIBA2000+	300,00	27,50	17,60	smooth	c	A.4389.3501	
35,00	27,50	31,60	13,70	LIBA2000+	flat	27,50	18,50	medium	c	A.6699.3501LI	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	smooth	c	A.1999.4003Li	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	medium	c	A.4819.4001Li	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	rough	c	A.4809.4001Li	
45,00	37,00	45,00	16,50	LIBA2000+	flat	37,00	26,20	rough	a	A.3599.4501Li	
46,60	63,60	46,60	11,50	LIBA2000+	flat	63,60	56,00	medium	a	A.6689.4661LI	
46,60	63,60	46,60	11,50	LIBA2000+	flat	63,60	56,00	rough	a	A.4949.4661LI	
50,00	37,00	46,00	15,40	LIBA2000+	flat	37,00	26,90	smooth	c	A.5769.5001Li	
50,00	40,00	49,55	20,00	LIBA2000+	flat	40,00	27,10	smooth	c	A.6349.5001Li	
51,90	30,20	48,00	24,20	K10P	flat	30,20	14,90	medium	c	A.5389.5191K10P	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	smooth	c	A.4609.5191Tr	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	medium	c	A.5389.5191Tr	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	rough	c	A.4789.5191Tr	
60,00	48,00	56,00	22,00	TRITAN	flat	48,00	33,50	smooth	c	A.6659.6001TR	
60,00	48,00	56,00	22,00	TRITAN	flat	48,00	33,50	medium	c	A.6679.6001TR	
65,00	53,00	63,00	23,50	TRITAN	flat	53,00	37,50	medium	c	A.5149.6501TR	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	smooth	c	A.4629.7002Tr	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	medium	c	A.5209.7001Tr	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	rough	c	A.6529.7001TR	

Plano-convex lenses

Moulded lenses



All specifications in mm

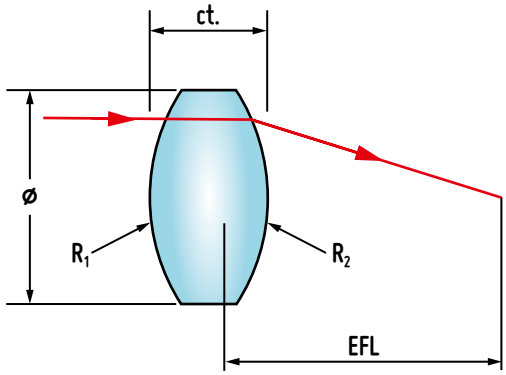
Ø / ca	EFL		-FFL	BFL	ct.	material	texture	item-no.	your notes
3,60	5,40	2,82	5,40	4,22	1,80	LIBA2000+	blank	P.2124.0361Li	
4,88	5,40	2,82	5,40	4,22	1,80	LIBA2000+	blank	P.2124.0481Li	
5,00	10,00	5,23	10,00	8,29	2,60	LIBA2000+	blank	P.3037.0501Li	
5,40	5,20	2,70	5,20	3,36	2,80	LIBA2000+	blank	P.2923.0542	
6,50	6,70	3,50	6,70	4,47	3,40	LIBA2000+	blank	P.2817.0651Li	
6,50	9,60	5,02	9,60	8,16	2,20	LIBA2000+	blank	P.2818.0651Li	
7,50	8,80	4,60	8,80	6,90	2,90	LIBA2000+	blank	P.0049.0751Li	
7,50	10,00	5,23	10,00	8,29	2,60	LIBA2000+	blank	P.3022.0751Li	
7,50	13,20	6,90	13,20	11,76	2,20	LIBA2000+	blank	P.2840.0751Li	
7,65	13,20	6,90	13,20	11,80	2,20	LIBA2000+	blank	P.3109.07651Li	
7,80	12,40	6,50	12,40	11,22	1,80	LIBA2000+	blank	P.2848.0781Li	
8,20	10,00	5,20	10,00	8,40	2,50	LIBA2000+	blank	P.2795.0821Li	
8,20	10,50	5,49	10,50	8,86	2,50	LIBA2000+	blank	P.0129.0821Li	
9,00	13,00	6,79	13,00	11,62	2,70	LIBA2000+	blank	P.2794.0901Li	
10,00	13,40	7,01	13,40	11,43	3,00	LIBA2000+	blank	P.2822.1001Li	
11,40	30,00	15,69	30,00	28,03	3,00	LIBA2000+	blank	P.7082.1141Li	
12,00	14,90	7,79	14,90	12,57	3,55	LIBA2000+	blank	P.2813.1201Li	
13,00	15,90	8,32	15,90	12,51	4,70	LIBA2000+	blank	P.2839.1301Li	
14,00	15,40	8,05	15,40	10,10	8,10	LIBA2000+	blank	P.2850.1401Li	
15,47	18,20	9,52	18,20	14,26	6,00	LIBA2000+	blank	P.0319.1541Li	
15,97	30,00	15,70	30,00	27,05	4,50	LIBA2000+	blank	P.2829.1591Li	
17,78	32,00	16,64	32,00	29,50	3,80	LIBA2000+	blank	P.2070.1771Li	
20,00	30,00	15,69	30,00	27,00	4,50	LIBA2000+	blank	P.2829.2001Li	
25,00	63,10	33,00	63,10	60,01	4,70	LIBA2000+	blank	P.2889.2501LI	
27,00	84,10	44,00	84,10	81,30	4,20	LIBA2000+	blank	P.2867.2701LI	
28,00	42,00	22,00	42,00	37,27	7,20	LIBA2000+	blank	P.1659.2801Li	
30,00	38,20	20,00	38,20	32,49	8,70	LIBA2000+	blank	P.2868.3002Li	
30,00	43,80	22,91	43,80	39,10	7,20	LIBA2000+	blank	P.2858.3001Li	
30,00	50,70	26,50	50,70	46,96	5,70	LIBA2000+	blank	P.2838.3004Li	
32,00	68,00	35,56	68,00	64,51	5,30	LIBA2000+	blank	P.3067.3201Li	
40,00	53,50	27,88	53,50	46,50	10,60	LIBA2000+	blank	P.2996.4001Li	
50,00	76,50	40,00	76,50	68,60	10,00	LIBA2000+	blank	P.1449.5001Li	
51,90 / 49,80	76,50	40,00	76,50	68,60	11,70	LIBA2000+	smooth	P.5019.5191Li	
51,90 / 49,80	76,50	40,00	76,50	68,60	11,70	LIBA2000+	medium	P.5419.5191Li	
51,90 / 49,80	76,50	40,00	76,50	68,60	11,70	LIBA2000+	rough	P.4859.5191Li	
62,00 / 58,00	76,50	40,00	76,50	66,30	15,50	TRITAN	medium	P.6719.6201TR	

Plano-convex lenses

- Radius side and edge moulded
  flat side ground and polished
  or
- both sides moulded and edge ground

Biconvex lenses

Moulded lenses



All specifications in mm

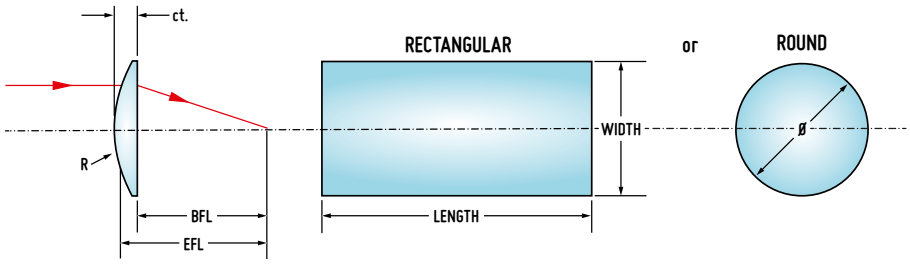
Biconvex lenses

Both sides moulded

Ø	EFL	R1=R2	FFL=BFL	ct.	material	item-no.	your notes
7,39	8,00	7,70	6,43	4,32	LIBA2000+	B.1159.0731LI	
7,80	7,00	6,50	5,28	4,60	LIBA2000+	B.2849.0781LI	
12,00	10,80	10,20	8,81	5,50	LIBA2000+	B.1189.1201Li	
17,10	17,80	17,39	15,46	6,67	LIBA2000+	B.2989.1711Li	
19,00	16,80	14,69	12,98	6,30	LIBA2000+	B.3030.1901Li	

Cylindrical lenses

Moulded lenses



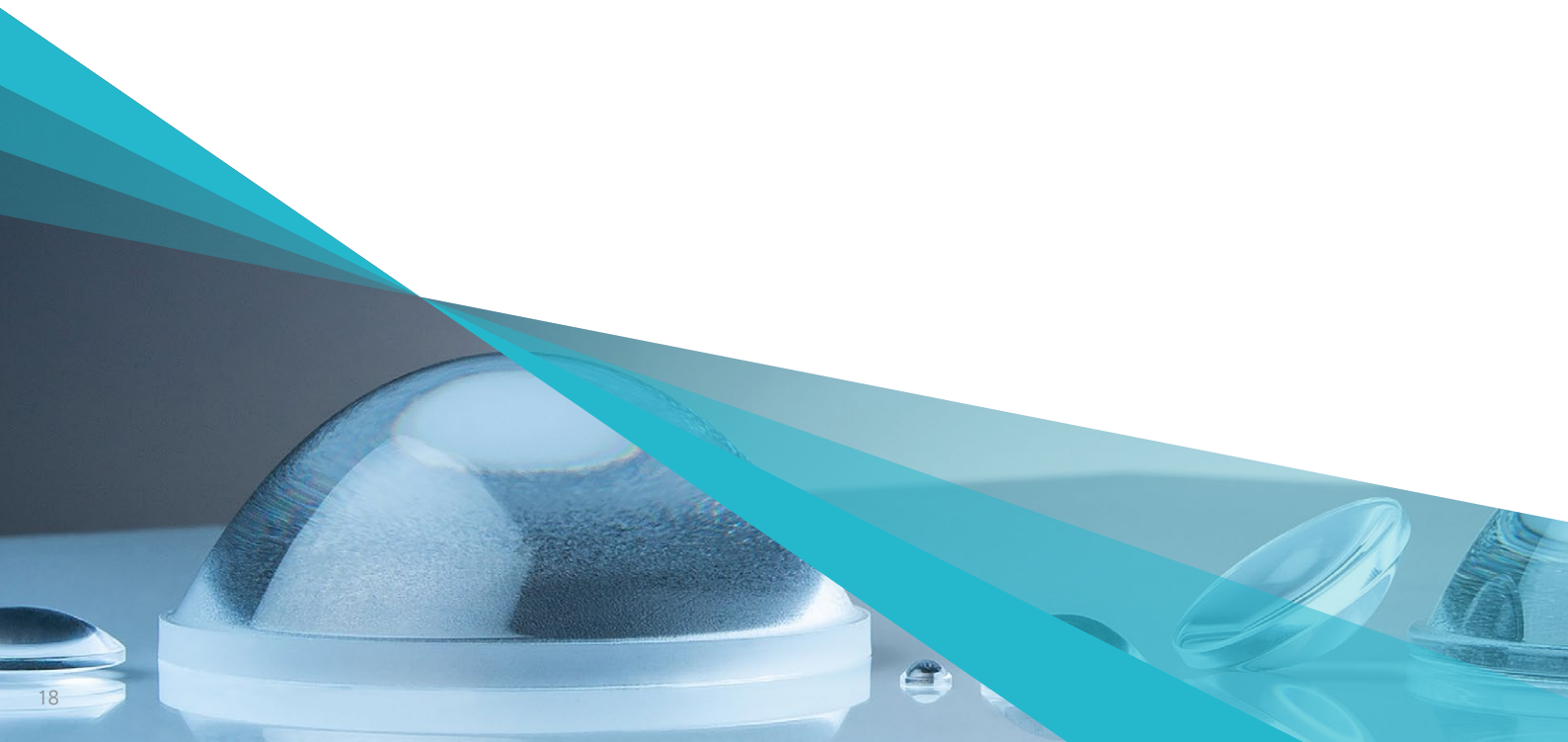
All specifications in mm

Cylindrical lenses

Moulded

flat side ground and polished

dimension	EFL	radius	BFL	ct.	material	item-no.	your notes
10,00 x 10,00	10,00	5,23	7,34	4,00	LIBA2000+	C.1369.1001Li	
50,00 x 22,00	21,70	11,30	16,44	8,00	LIBA2000+	C.0199.5001	
55,50 x 45,00	40,70	78,50/24,50	35,26	10,50	SIMAX	C.4449.5550	
60,00 x 17,00	25,00	13,08	22,13	4,36	LIBA2000+	C.3057.6001Li	



Freeform lenses

Freeform lenses are in this case lenses moulded from glass, having complex, rotationally asymmetric surfaces. These are manufactured by fabricating a new moulding tool to your specifications. The employed materials include LIBA2000+, F4GT, SIMAX, K10P, and also TRITAN. Please place an RFQ for your requested freeform lens by submitting a drawing and specifications. We will quote the required tooling with a corresponding delivery time of approx. 7–8 weeks and the first tool-based samples, including a first article inspection report according to your requirements.

Please use our contact form, our callback service or the hotline for your request for quotation.

Array lenses

Arrays are typically symmetrically arranged compound lenses that are moulded from glass, having a spherical, aspherical, or cylindrical surface. These are manufactured by fabricating a new moulding tool to your specifications. Materials such as LIBA2000+, F4GT, SIMAX and K10P and also TRITAN are typically used. Please place an RFQ for your lens array by submitting a drawing and specifications. We will gladly also assist you with the optical design and engineering design for your application. We will quote the required tooling with a corresponding delivery time of approx. 7–8 weeks and the first tool-based samples, including a first article inspection report according to your requirements.

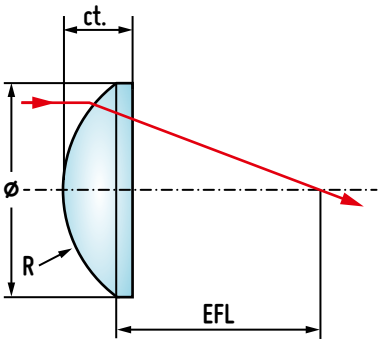
Please use our contact form, our callback the hotline for your request for quotation.

Polished Lenses

Plano-convex lenses
Biconvex lenses
Plano-concave lenses
Biconcave lenses
Cylindrical lenses
Fused silica lenses
Achromatic lenses (doublets)

Plano-convex lenses

Polished lenses



All specifications in mm

Ø	EFL	ct	Radius	material	item-no.	your notes
5,00	5,82	2,50	2,50	N-BK7	E.1073.0501	
6,00	15,00	2,00	7,99	B270	E.0110.0603	
6,00	18,00	1,40	9,30	B270	E.0110.0604	
6,00	21,00	1,42	10,86	B270	E.0110.0605	
6,00	10,06	1,94	5,26	B270	E.0110.0607	
6,00	30,00	1,30	15,59	N-BK7	E.0111.0601	
6,00	12,00	1,60	6,20	N-BK7	E.1073.0603	
7,50	13,29	2,50	6,95	B270	E.0110.0751	
8,20	10,00	2,60	5,23	B270	E.0110.0821	
8,90	12,38	2,70	6,40	N-BK7	E.0110.00894	
9,00	22,94	3,00	12,00	B270	E.0110.0903	
9,00	18,13	2,00	12,80	N-SF64	E.0110.0905	
9,00	13,51	2,60	9,09	N-SF5	E.0111.0903	
9,50	9,58	2,80	5,93	N-F2	E.0110.0951	
9,80	29,22	3,00	15,10	N-BK7	E.0110.0981	
10,00	25,00	3,30	12,99	N-BK7	E.0111.1010	
10,00	55,00	2,44	28,50	N-BK7	E.0110.10013	
10,30	16,20	3,75	8,47	B270	E.0110.1031	
12,00	12,00	4,00	7,58	N-F1	E.0110.1201	
12,00	18,00	3,00	9,30	B270	E.0110.1202	
12,00	29,80	2,20	15,59	B270	E.0110.1205	
12,00	15,30	5,00	7,99	B270	E.0110.1206	
12,00	74,57	2,50	38,99	B270	E.0110.1209	
12,00	48,37	2,50	25,00	N-BK7	E.0111.1203	
12,50	20,14	3,10	10,40	N-BK7	E.0111.1252	
12,50	25,14	2,60	12,99	N-BK7	E.0111.1253	
12,50	30,00	2,30	15,69	B270	E.0111.1257	
13,00	76,00	2,40	39,75	B270	E.0110.1303	

Plano-convex lenses

Both sides ground and polished

Plano-convex lenses

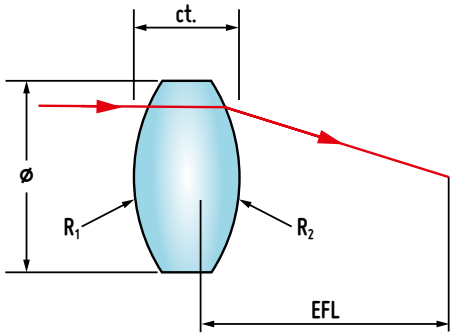
Both sides ground and polished

All specifications in mm

Ø	EFL	ct	Radius	material	item-no.	your notes
13,80	80,40	3,00	42,07	B270	E.0111.1382	
15,00	22,81	3,40	11,79	N-BK7	E.0110.1502	
15,97	49,70	2,60	25,97	B270	E.0110.1591	
17,95	26,60	4,10	14,09	B270	E.0110.1792	
18,00	40,00	4,97	20,67	N-BK7	E.0110.1803	
20,00	65,43	2,50	34,22	B270	E.0110.2002	
32,00	68,00	5,50	35,56	B270	E.0111.3201	
36,00	118,00	5,50	61,69	B270	E.0110.3603	
40,00	77,40	6,00	40,00	N-BK7	E.0110.4022	
50,00	100,00	8,00	52,30	B270	E.0111.5003	
60,00	107,07	11,00	56,00	Borofloat	E.0110.6006	
60,00	237,00	7,00	124,00	UV-W76	E.0350.6001	
75,00	150,00	12,00	80,00	H-K9L	E.0110.7502	
99,55	166,30	18,50	87,00	UV-W0891	E.0110.9982	
100,00	141,00	23,00	73,76	UV-W76	E.0350.10009	

Biconvex lenses

Polished lenses



Biconvex lenses

Both sides ground and polished

All specifications in mm

Ø	EFL	ct.	radius	material	item-no.	your notes
3,68	5,00	1,90	3,68/3,68	N-BK7	F.0101.0362	
6,00	5,00	5,50	5,26/5,26	B270	F.0110.0609	
7,75	12,59	2,80	14,09/14,09	B270	F.0110.0775	
9,50	14,05	4,00	29,91/17,10	N-LASF44	F.0111.0952	
10,00	11,93	2,80	19,60/13,40	N-LaK9	F.0111.10002	
10,00	10,20	3,50	10,03/10,03	B270	F.0111.1006	
10,00	11,16	3,50	11,04/11,04	B270	F.0111.1011	
11,92	15,03	3,64	15,07/15,07	B270	F.0110.1192	
12,00	14,10	3,50	14,12/14,12	B270	F.0110.1203	
12,00	14,72	3,60	14,72/14,72	B270	F.0110.1202	
12,00	10,79	5,50	10,25/10,25	B270	F.0110.1205	
12,50	21,72	3,00	31,05/17,00	N-BK7	F.0101.1253	
12,50	18,05	3,80	18,00/18,00	N-BK7	F.0110.1256	
13,45	18,00	4,00	18,10/18,10	B270	F.0110.1302	
14,00	27,84	3,77	28,12/28,12	N-BK7	F.0110.1402	
15,00	25,00	3,50	25,23/25,23	N-BK7	F.0110.1504	
17,00	16,05	5,00	26,80/14,73	N-F2	F.0111.1703	
18,00	200,00	2,50	137,60/413,20	N-BK7	F.0111.1803	
20,00	25,40	6,10	25,20/25,20	N-BK7	F.0110.2002	
20,00	35,15	4,30	36,00/36,00	N-BK7	F.0110.2006	

All specifications in mm

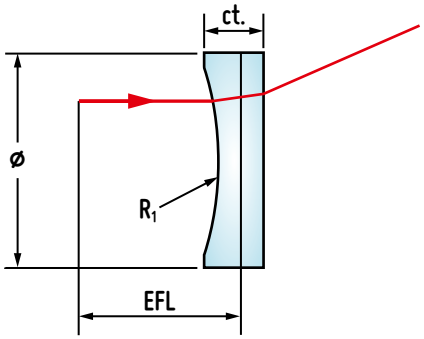
Biconvex lenses

Both sides ground and polished

Ø	EFL	ct.	radius	material	item-no.	your notes
20,00	29,02	7,00	44,34/21,44	N-BK7	F.0111.2005	
22,40	84,01	3,00	86,32/86,32	N-BK7	F.0110.2240	
22,40	23,00	8,80	22,43/22,43	B270	F.0110.2241	
22,40	70,24	3,50	72,03/72,03	N-BK7	F.0110.22411	
26,00	24,00	9,00	24,00/24,00	B270	F.0350.2601	
31,50	50,00	6,80	51,22/51,22	B270	F.0110.3151	
40,00	300,00	2,55	300,00/300,00	B270	F.0110.4001	
40,00	100,00	5,00	103,29/103,29	B270	F.0110.4002	
40,00	500,00	2,00	523,3/523,3	B270	F.0110.4003	
40,00	200,00	3,50	211,35/211,35	B270	F.0110.4004	
40,00	50,00	9,50	50,84/50,84	B270	F.0110.4006	
50,00	49,66	15,00	49,88/50,07	B270	F.0110.5004	
50,00	296,95	3,52	310,00/310,00	B270	F.0110.5005	
55,00	95,00	10,00	100,00/100,00	B270	F.0350.5501	
60,00	113,50	10,00	117,00/117,00	UV-W76	F.0351.6001	
61,90	229,00	8,00	523,00/156,00	UV-W0891	F.0350.6191	
75,00	300,00	8,50	300,00/300,00	B270	F.0110.7501	

Plano-concave lenses

Polished lenses



Plano-concave lenses

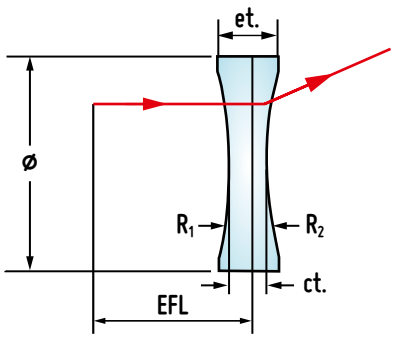
Both sides ground and polished

Please tell us your specifications.
We are happy to generate a quote for you.

Ø	EFL	ct.	Radius	material	item-no.	your notes
10,00	-19,60	2,00	-10,14	N-BK7	G.0110.1004	
25,00	-100,00	3,50	-51,68	N-BK7	G.0111.2503	
50,00	-382,40	6,00	-200,00	Borofloat	G.0110.5003	

Biconcave lenses

Polished lenses



All specifications in mm

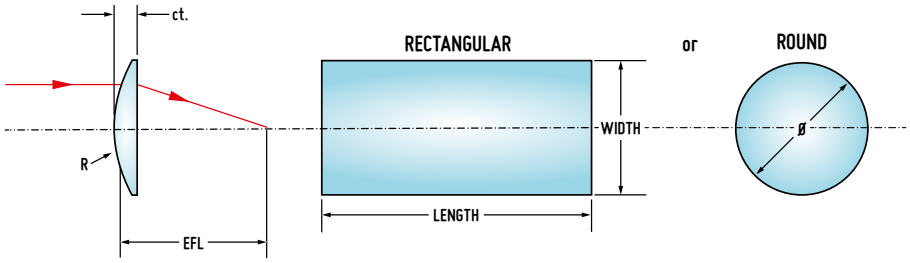
Biconcave lenses

Both sides ground and polished

Ø	EFL	R1/R2	ct.	material	item-no.	your notes
10,00	-8,60	-9,15/-15,00	1,50	N-SF2	H.0111.10006	
10,00	-19,80	-13,066/-207,643	0,99	N-F2	H.0111.1003	
11,90	-15,52	-37,93/-18,155	1,00	N-SF11	H.0111.1191	
15,00	-15,00	-15,00/-15,00	1,00	N-BK7	H.0110.1502	
18,00	-19,50	-44,425/-23,35	6,00	N-SF4	H.0100.1801	
20,00	-33,00	-31,26/-38,74	3,00	N-BK7	H.0110.2001	
25,40	-69,80	-183,61/-42,00	3,50	N-FK5	H.0111.2541	
40,00	-100,00	-105,17/-105,17	1,60	B270	H.0110.4001	
40,00	-50,00	-52,65/-52,65	2,00	N-BK7	H.0111.4001	
50,00	-100,56	-105,44/105,44	1,50	B270	H.0110.5002	

Cylindrical lenses

Polished lenses



All specifications in mm

Cylindrical lenses

Both sides ground and polished

dimension (lxw)	EFL	ct.	radius	material	item-no.	your notes
5,9 x 7,5	-150,00	2,20	-77,52	B270	Z.0104.0752	
Ø 6,0	16,00	2,00	8,26	N-BK7	Z.1073.0602	
8,0 x 4,0	5,80	2,67	3,00	N-BK7	Z.0139.0801	
9,0 x 7,0	7,40	5,50	3,50	Borosilikat	Z.0350.0710	
9,0 x 6,4	16,90	2,50	8,84	B270	Z.0350.0901	
13,0 x 6,4	14,32	2,00	7,40	B270	Z.0350.1302	
13,5 x 8,0	16,95	4,00	4,00	Duran	Z.0350.1351	
25,0 x 12,5	50,00	2,00	25,84	N-BK7	Z.1073.1252	
25,0 x 12,5	75,00	2,00	38,76	N-BK7	Z.1073.2503	
35,0 x 6,0	6,77	4,00	3,00	JGS1	Z.1073.0603	
50,0 x 25,0	25,00	11,03	12,96	N-BK7	Z.0350.5001	
60,0 x 50,0	150,00	6,00	77,52	N-BK7	Z.0920.6001	
100,0 x 79,5	157,00	17,00	82,43	B270	Z.0360.10001	
120,0 x 15,0	29,99	5,01	15,50	N-BK7	Z.0730.1501	
124,0 x 16,0	39,50	2,70	20,50	H-K9L	Z.0361.12401	

Fused silica lenses

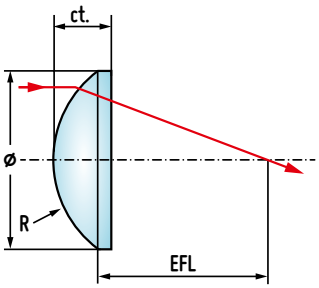
Polished lenses

All specifications in mm

Ø	EFL	R1 / R2	ct	material	item-no.	your notes
7,00	20,00	1,63	10,03	HPFS7980	E.0110.0700	
8,90	12,95	2,70	5,93	SQ1	E.0110.00896	
10,00	16,35	2,12	7,50	SK1300	E.0102.1001	
10,00	20,00	3,10	9,12	SQ1	E.0110.1015	
12,50	24,54	3,00	12,47	HPFS7980	E.0110.1250	
12,50	20,00	3,50	10,03	HPFS7980	E.0110.1254	
12,50	25,10	3,24	11,52	HPFS7980	E.0111.1212	
12,50	100,00	2,50	45,86	HPFS7980	E.0111.1215	
12,50	150,00	3,00	69,02	HPFS7980	E.0111.1216	
12,50	18,00	4,00	8,25	HPFS7980	E.0111.12513	
17,95	29,88	4,40	13,70	HPFS7980	E.0110.1791	
20,00	30,00	6,00	13,75	HPFS7980	E.0110.20010	
20,00	150,50	2,00	69,00	Silizium	E.0104.2003	
20,00	34,40	4,70	15,78	SQ1	E.0110.2004	
20,95	39,60	4,10	18,15	HPFS7980	E.0110.2092	
22,40	80,00	3,10	40,23	HPFS7980	E.0111.2242	
22,40	164,48	2,25	83,56	HPFS7980	E.0110.22411	
22,40	39,92	5,00	18,32	HPFS7980	E.0110.22416	
35,00	71,87	7,00	36,51	SQ1	E.0110.3507	

Fused silica plano-convex lenses

Both sides ground and polished

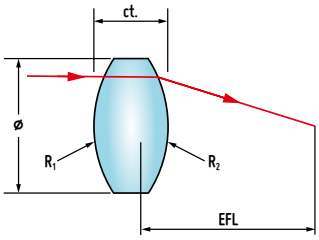


All specifications in mm

Ø	EFL	R1 / R2	ct	material	item-no.	your notes
6,80	8,80	7,50/7,50	2,75	SQ1	F.0100.0682	
7,50	10,10	8,70/8,70	3,50	SQ1	F.0100.07511	
7,40	9,30	5,00/23,00	3,30	SILUX	F.0110.0802	
8,00	8,74	8,88/8,88	3,00	HPFS7980	F.0110.0804	
10,00	11,00	11,04/11,04	3,40	HPFS7980	F.0110.1001	
10,00	10,55	9,00/9,00	4,00	HPFS7980	F.0111.1005	
10,00	10,03	8,25/8,25	5,40	HPFS7980	F.0111.1010	
10,90	9,90	9,29/9,29	5,00	HPFS7980	F.0110.1091	
12,50	15,59	15,84/15,84	3,80	HPFS7980	F.0110.1255	
12,70	12,70	10,86/10,86	5,30	SQ1	F.0110.1272	
14,95	18,00	17,97/17,97	4,00	HPFS7980	F.0110.14954	
15,00	25,00	22,25/22,25	4,60	SQ1	F.0110.1503	
17,00	13,86	14,09/14,09	7,00	SQ1	F.0110.1701	
18,00	16,00	13,40/13,40	8,00	SK1300	F.0110.1804	
25,00	26,80	23,01/23,01	9,40	SILUX	F.0110.2501	
30,00	26,00	23,99/23,99	12,00	SK1300	F.0110.3001	
30,00	29,51	22,48/45,00	9,50	SK1300	F.0110.3008	

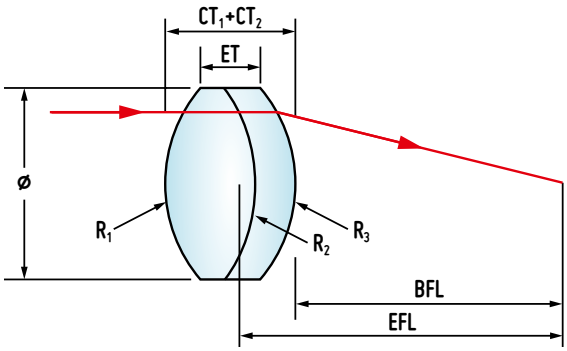
Fused silica biconvex lenses

Both sides ground and polished



Achromatic lenses (Doublets)

Linsen, poliert



All specifications in mm

Achromatic lenses (Doublets)

Ø	EFL	ct.	item-no.	your notes
6,00	9,96	3,00	J.0951.0601	
6,30	17,97	4,00	J.0951.0631	
8,00	23,70	4,25	J.0111.0803	
8,00	46,30	4,20	J.0111.0802	
9,00	18,00	5,20	J.0101.0902	
9,40	24,80	5,50	J.0951.0941	
9,50	-10,24	3,35	J.0111.0951	
9,50	92,14	4,51	J.0951.0951	
10,00	20,84	4,20	J.0110.1002	
10,00	22,40	4,00	J.0110.1001	
11,00	24,70	7,00	J.0111.1101	
12,00	20,56	4,00	J.0111.1203	
12,00	71,25	3,10	J.0111.1202	
12,00	107,70	6,44	J.0111.1201	
12,50	25,06	5,50	J.0871.1251	
14,00	-51,74	7,40	J.0951.1401	
14,00	-51,07	4,25	J.0951.1402	
14,00	42,30	5,40	J.0270.1402	
14,00	62,00	6,10	J.0271.1401	
15,00	104,56	8,00	J.0111.1502	
17,00	-101,46	5,57	J.0111.1701	
17,00	144,42	5,50	J.0111.1702	

All specifications in mm

Achromatic lenses
(Doublets)

Ø	EFL	ct.	item-no.	your notes
17,60	53,25	7,90	J.0111.1761	
18,00	45,00	9,54	J.0101.1803	
18,00	47,00	6,50	J.0101.1801	
18,80	109,10	7,50	J.0951.1881	
19,00	250,50	6,50	J.0111.1901	
19,00	300,31	5,50	J.0111.1902	
22,00	29,60	6,43	J.0111.2201	
25,00	46,00	11,00	J.0111.2502	
31,50	80,00	11,50	J.0101.3153	
40,00	350,00	7,00	J.0111.4001	
50,00	75,52	21,50	J.0361.5001	
110,00	244,00	34,00	J.0361.11001	

We are glad to receive your request for cementing parts acc. your specifications.

Plastic lenses

Made from Plexiglas 7N (nd 1.491) or other materials

All specifications in mm

Round
Plastic lenses

Ø	EFL	type	item-no.	your notes
6,28	17,50	aspherical	K.1091.06281	
7,40	4,60	bi-aspherical	K.0120.0741	
7,40	7,20	biconvex	K.0180.0741	
7,40	58,00	plano-convex	K.0180.0742	
8,40	5,10	biconvex	K.0120.0841	
10,00	63,00	plano-convex	K.0140.1001	
10,00	23,00	aspherical	K.0120.1001	
10,00	27,60	plano-convex	K.0180.1000	
11,90	11,00	biconvex	K.0180.1191	
12,00	12,23	aspherical+radius	K.0140.1201	
12,90	14,50	aspherical+radius	K.0120.1291	
14,90	25,00	biconvex	K.0180.1491	
15,00	34,80	plano-convex	K.0180.1501	
19,00	34,80	plano-convex	K.0180.1901	
21,00	51,30	plano-convex	K.0180.2102	
22,40	27,00	biconvex	K.0180.2103	
21,90	21,60	biconvex	K.0180.2101	
22,00	20,00	biconvex	K.0180.2201	
22,40	25,00	biconvex	K.0180.2241	
22,40	30,00	biconvex	K.0180.2242	
24,50	65,00	plano-convex	K.0180.2451	
27,00	80,00	plano-convex	K.0180.2701	
30,00	30,46	biconvex	K.0109.3001	
48,00	34,70	aspherical	K.0180.4801	
49,50	57,00	aspherical	K.0180.4951	
52,00	31,60	aspherical	K.0180.5201	
52,00	68,00	plano-convex	K.0180.5202	
110,00	333,00	biconvex	K.0180.1001	

Plano-convex, square
Plastic lenses

dimension mm	EFL	item-no.	your notes
54,00 x 40,00	90,90	K.0180.5402	

Cylindrical lenses
Plastic lenses

dimension mm	EFL	item-no.	your notes
53,6 x 15,8	41,9	K.0180.5301	

Double lenses
Plastic lenses

dimension mm	EFL	mm	item-no.	your notes
17,60 x 9,40	15,10	asphärisch	K.0180.1761	
28,09 x 15,24	22,70	11,15	K.0180.2801	
44,20 x 22,10	37,50	18,45	K.0180.4421	

Prisms and plano-optics

Prisms
Beam splitters
Wedges
Windows
Protective glass for laser welding facilities

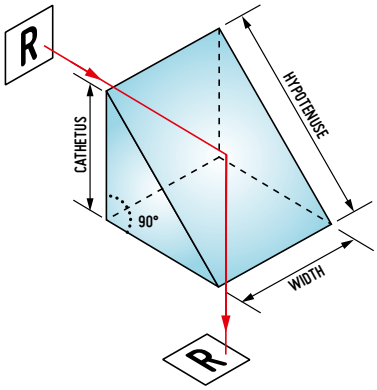
Prisms/beam splitters wedges/windows

Prisms and plano-optics

· Made from all types of optical glass, coated on request
· Surface quality up to 5/3 x 0.063; flatness up to lambda/10 (always depending on the material and dimensions)

All specifications in mm

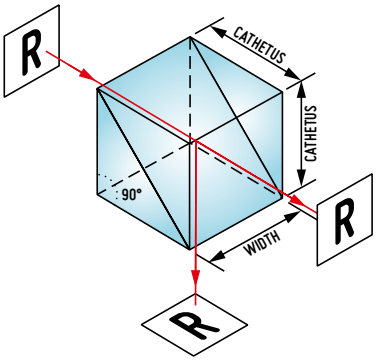
90° prisms



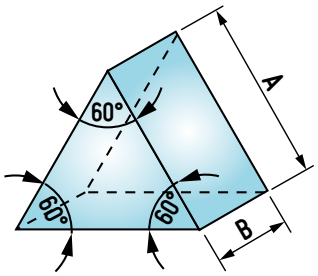
dimensions
5,00 x 5,00
7,00 x 7,00
10,00 x 10,00
12,70 x 12,70
15,00 x 15,00
16,50 x 16,50
20,00 x 20,00
25,00 x 25,00
25,40 x 25,40
30,00 x 30,00
40,00 x 40,00
50,00 x 50,00

· From all types of optical glass, fused-silica and zerodur from 5,0 mm, coated on request
· Surface-quality 60-40; 40-20; surface-accuracy lambda/2; lambda/4
· 90° angle starts from ±30''

Beam splitter cubes

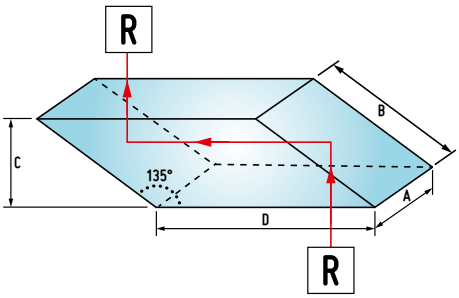


60° prisms



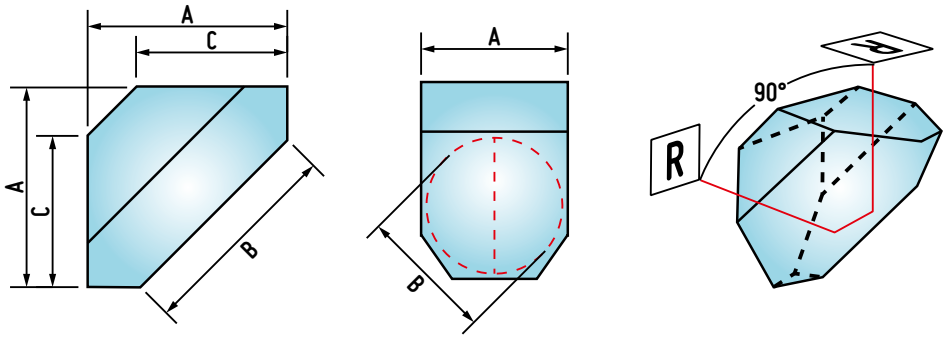
60° angle ±3'

Rhomboid prisms



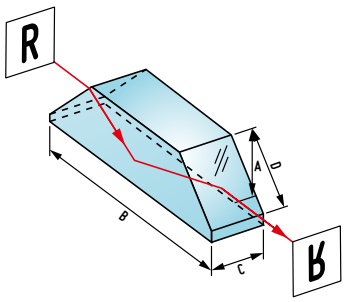
Angle accuracy ± 3 min.

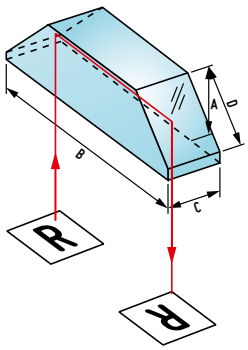
Roof prims



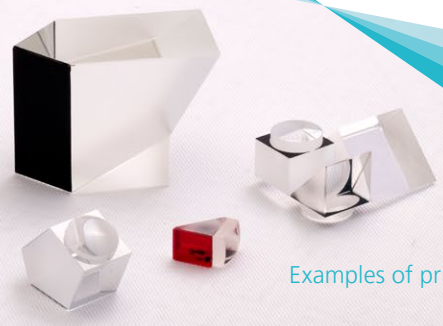
Angle accuracy
Roof angle ± 3 sec.

Dove prisms



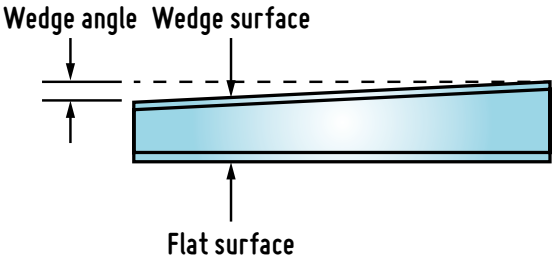


Angle accuracy ± 3 min.

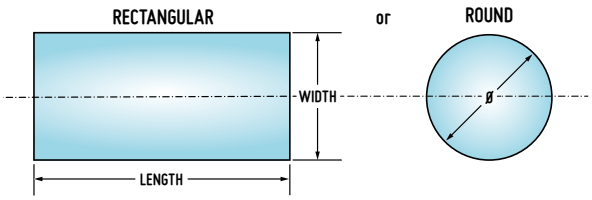


Examples of prism groups

Optical wedges



Windows



Upon request

- Plano-optical round, square, any shapes
- made from all types of optical glass
- Surface quality according to your specifications – From laser quality to the simple, untreated surface. AR coatings on request. Coating produced in-house on our own equipment.

Protective glass for laser welding facilities

A window which is used during laser welding in order to protect the laser is considered to be a wear part.

An attractive price-quality ratio and rapid delivery times are therefore of particular interest.

- Ground and polished on both sides
- Bevelled on both sides 0.1 – 0.3 mm x 45°

Standard dimensions e.g. Ø 50.8 mm or Ø 55.0 mm, any round or square shape is possible.

With coating

We are also happy to offer this protective glass with coatings:

For example:
Both sides R < 0.3% for 1064 nm and T ≥ 97/ for 450 – 650 nm, i = 0° - 14°

Please tell us your specifications – we look forward to receiving your request!
We are happy to send you free samples of our stock items.
You can thus no-bindingly verify our quality.

Filters

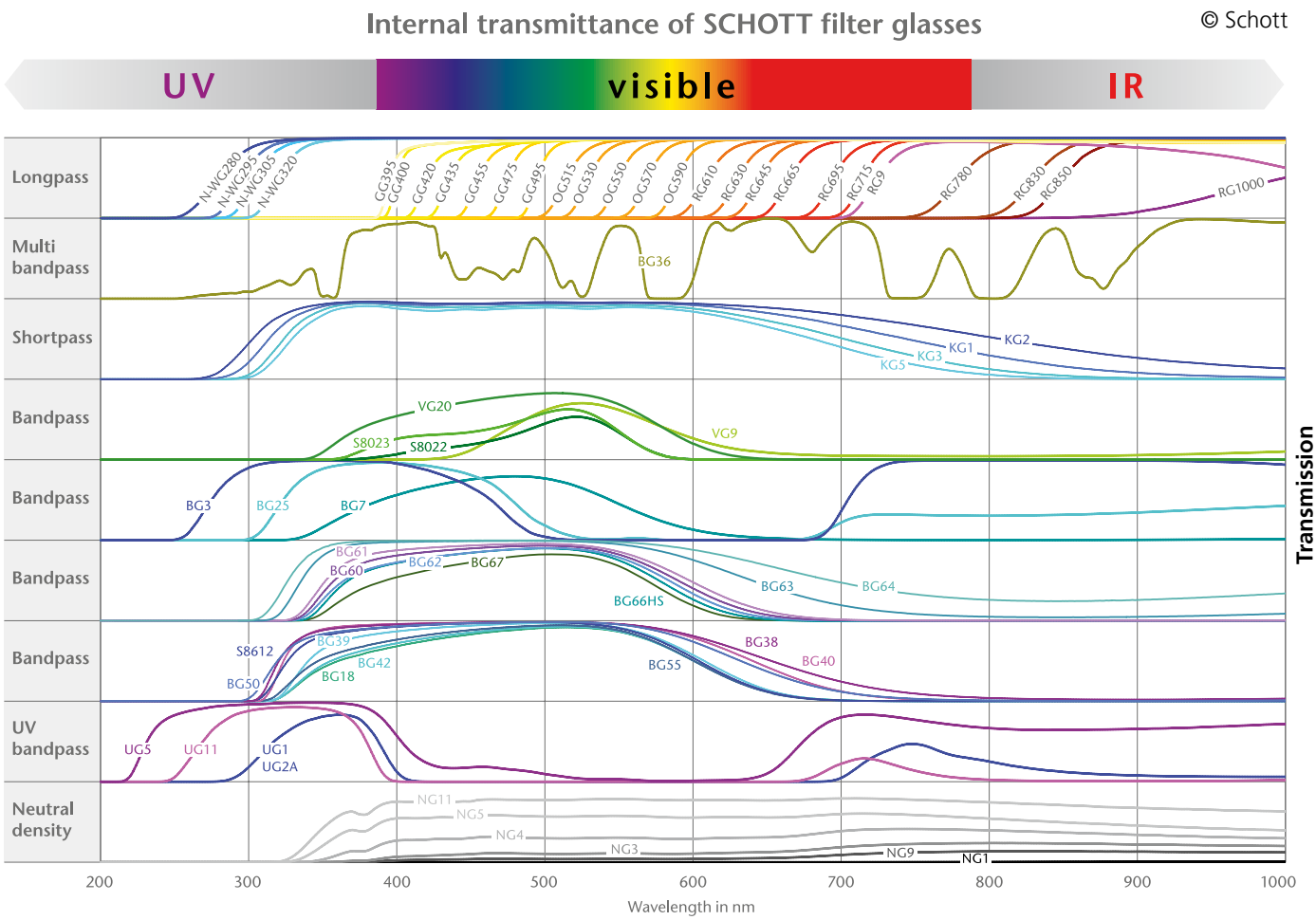
Colour filters from glass
Heat absorption filters
Colour filters from plastic
Heat reflection filters

Glass colour filters

Filters

Schott glass filters in round and square forms

Tempered or coated on request.



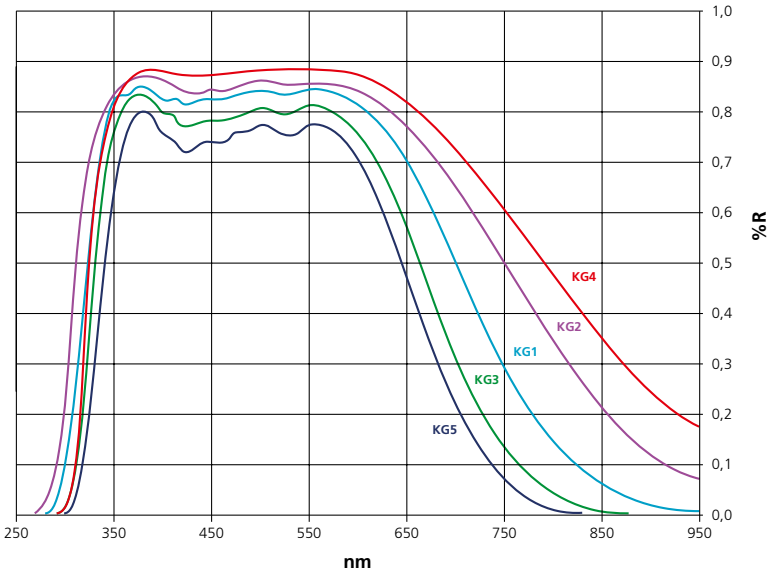
Other types upon request

Heat absorption filters

Filters

Linear transmission

at a thickness of 3.0 mm



(KG glass with absorption in the IR range) tempered or coated on request

Plastic colour filters

Filters

Plastic colour filters

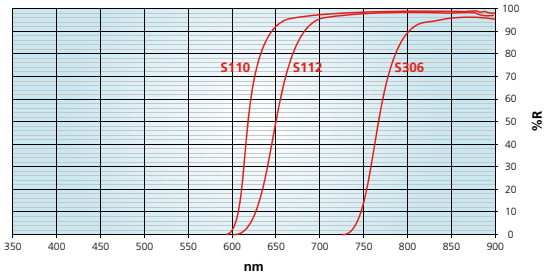
Acrylic

Thicknesses:
0.5 mm/0.8 mm/1.0 mm/1.5 mm/
2.0 mm/2.5 mm/3.0 mm/4.0mm

Thickness tolerances ± 0.2 mm

- Various types of filter such as IR filters and diffusion filters
- Any dimensions you want up to max. 1500 mm x 100 mm
- With AR or hard finish coating as required

Filter transmittance characteristics



Other types upon request

Heat reflection filters

Filters

Heat reflection filters are permeable to light radiation. Through reflection of IR radiation, the proportion of heat in light is reduced.

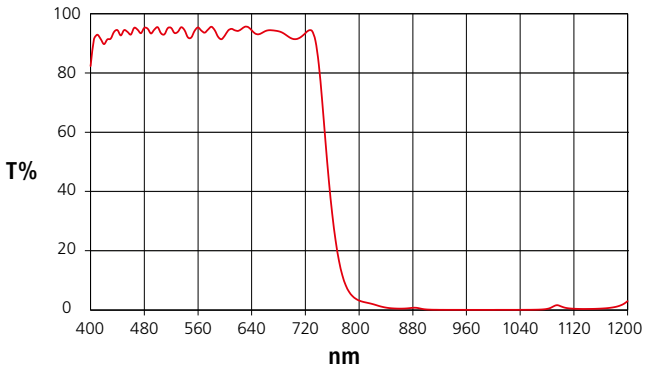
· Coating temperatureresistant up to 400 °C
· Dimensions upon request.

Properties and technical specifications

IR-2 filter

i = 0°
Principle curves

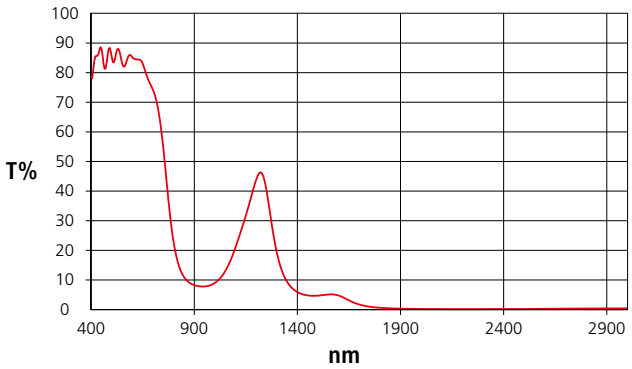
Tavg >/= 90%
from 400–700 nm
Ravg >/= 98%
from 800–1150 nm



IR-4 filter

i = 0°
Principle curves

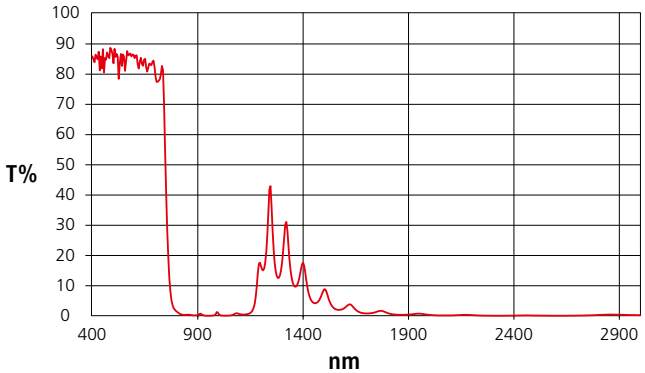
Tavg >/= 85%
from 425–680 nm
Ravg >/= 85%
from 900–2500 nm



IR-5 filter

i = 0°
Principle curves

Tavg >/= 80%
from 425–680 nm
Ravg >/= 92%
from 800–2500 nm



AR coatings and mirror coatings

AR coatings

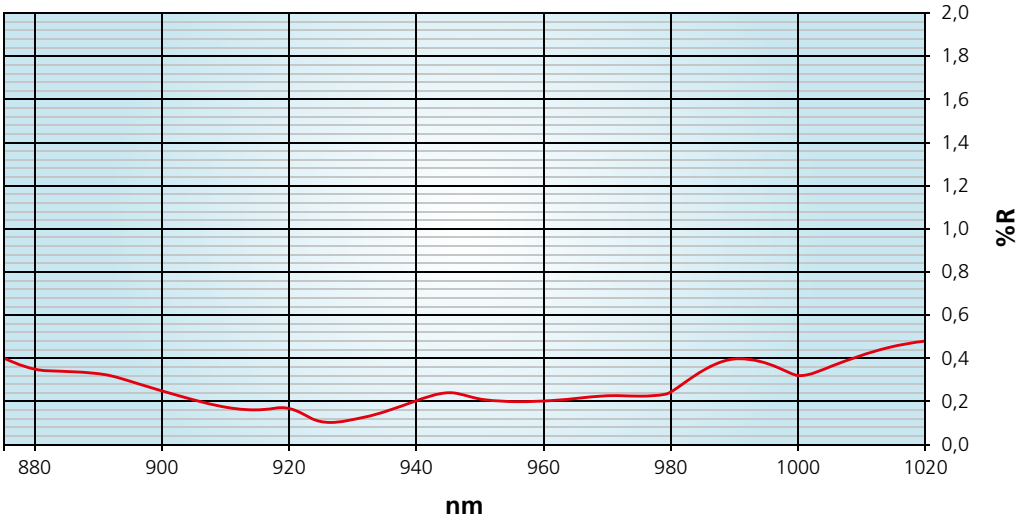
AR coatings and mirror coatings

Anti-reflection coatings reduce the reflection of glass surfaces. Increased light transmission and a reduction in imaging errors in the desired wavelength range. All types of mineral glass can be used as substrates, provided that the material properties are taken into account in the design of the coating, of course.

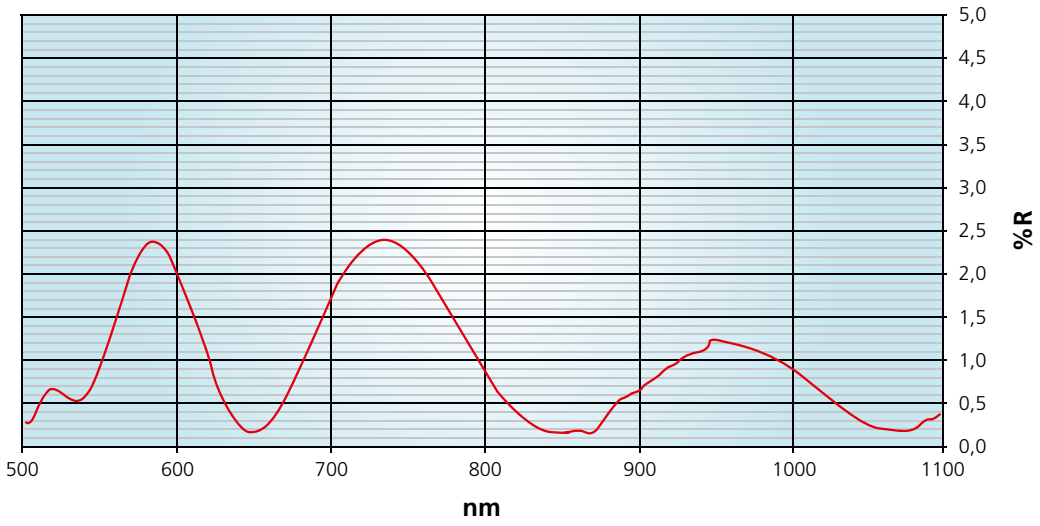
Properties

We have assorted a few example curves below.
We would be glad to receive your enquiry.

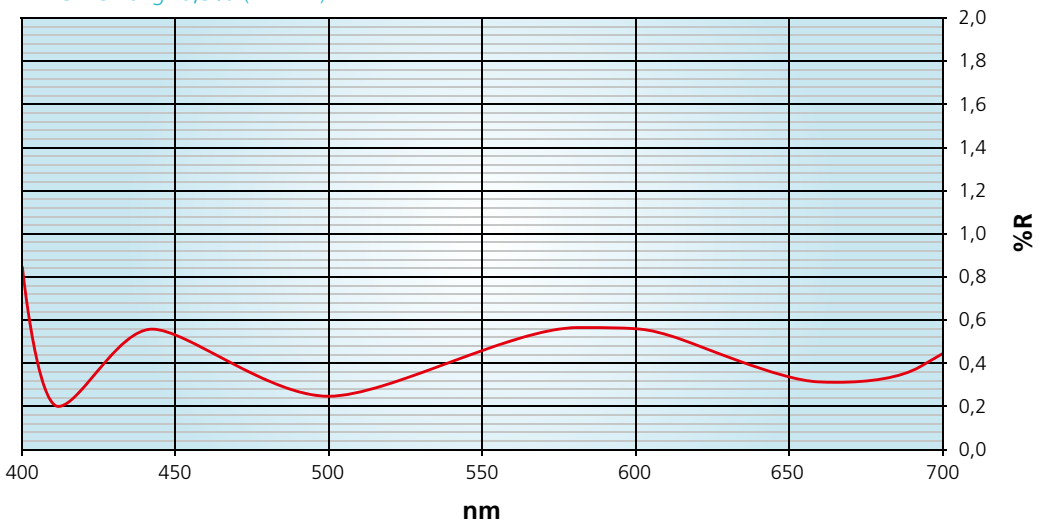
AR @ vis + IR R<0,5% (V9.125)



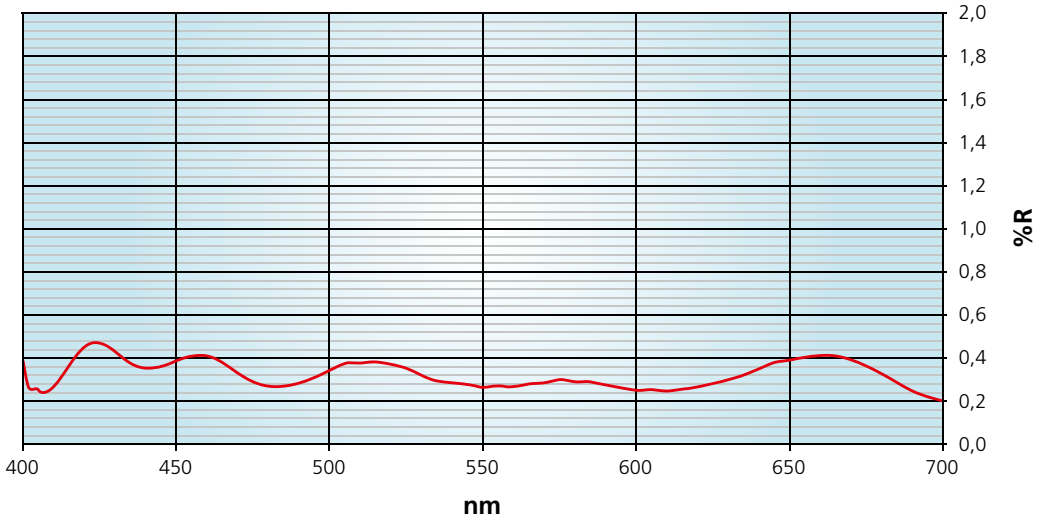
AR @ 540 nm, 635-655 nm, 800-890 nm, 1060 nm; R<0,5% (P067



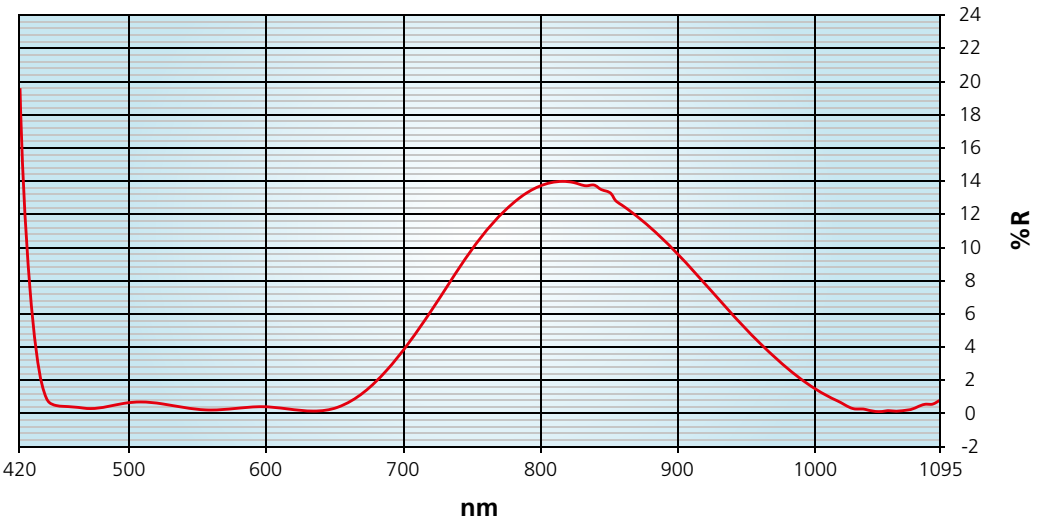
AR @ vis Ravg<0,5% (V11.47)



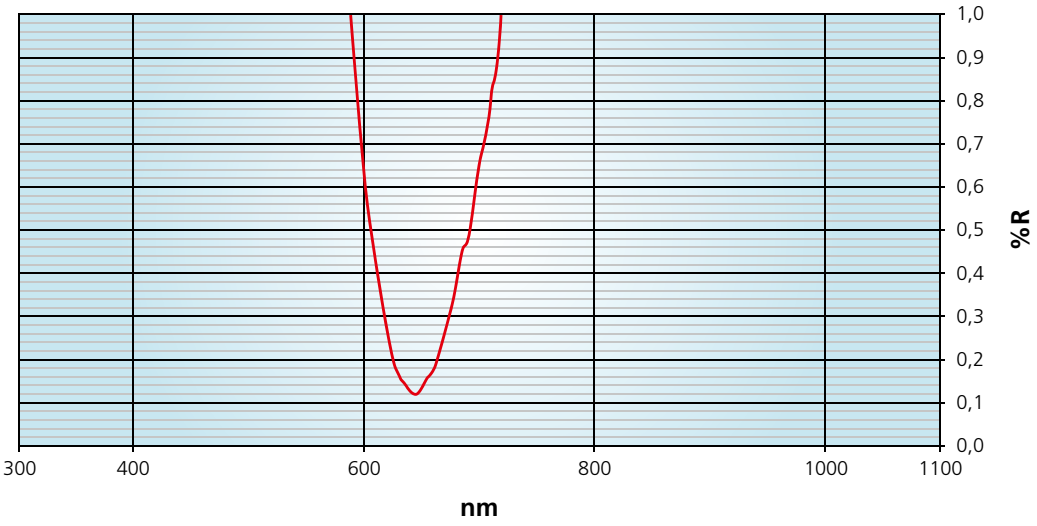
AR @ 400nm–700nm R<0,5% (P11.339)



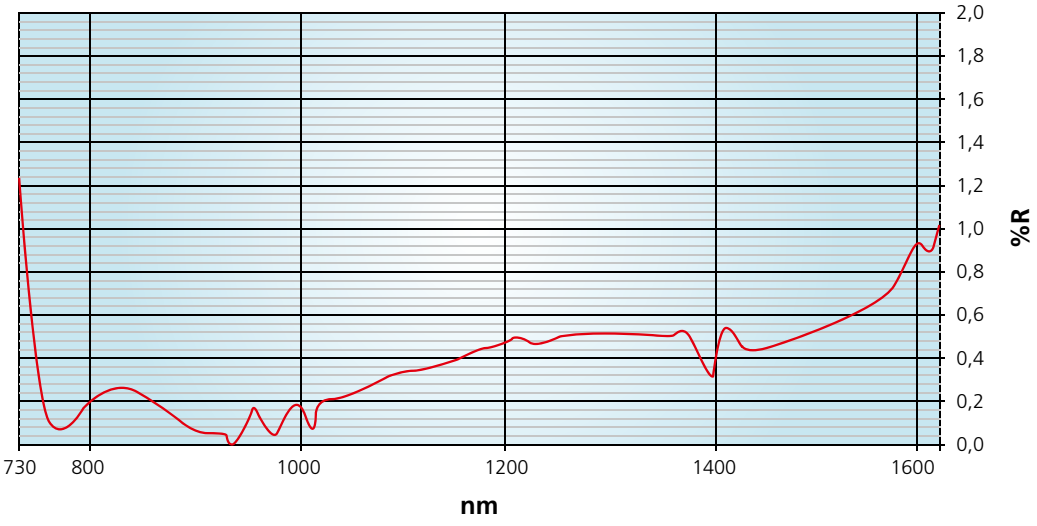
AR @ 450nm–650nm + 1030nm–1060nm (V9.63)



AR @ 650 nm R<0,2% (V11.27c)



AR @ 750 nm - 1550 nm R<1,0% (P064)



Mirrors / Beam splitter mirrors / Concave mirrors

Components for redirecting light with individually adjustable reflection and transmission properties.

Front surface mirrors / Beam splitter mirrors:

Properties and technical specifications

The reflection intensity and centroid wavelengths can be determined using a dielectric protective coating.

Coating is temperatureresistant up to 250 °C
Substrate: all types of optical glasses, any shapes

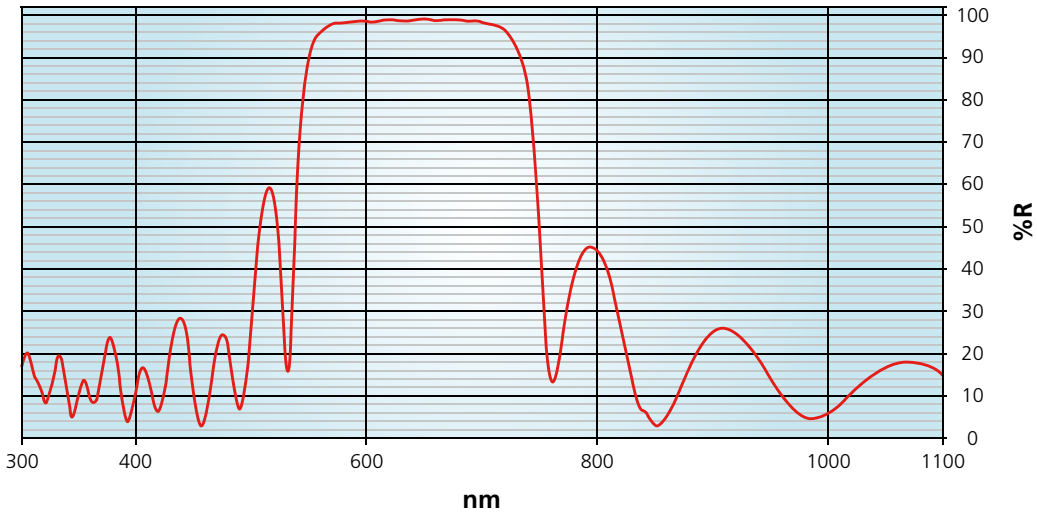
We have assorted a few example curves below,
we are happy to adapt these to suit your specifications.
We look forward to receiving your enquiry.

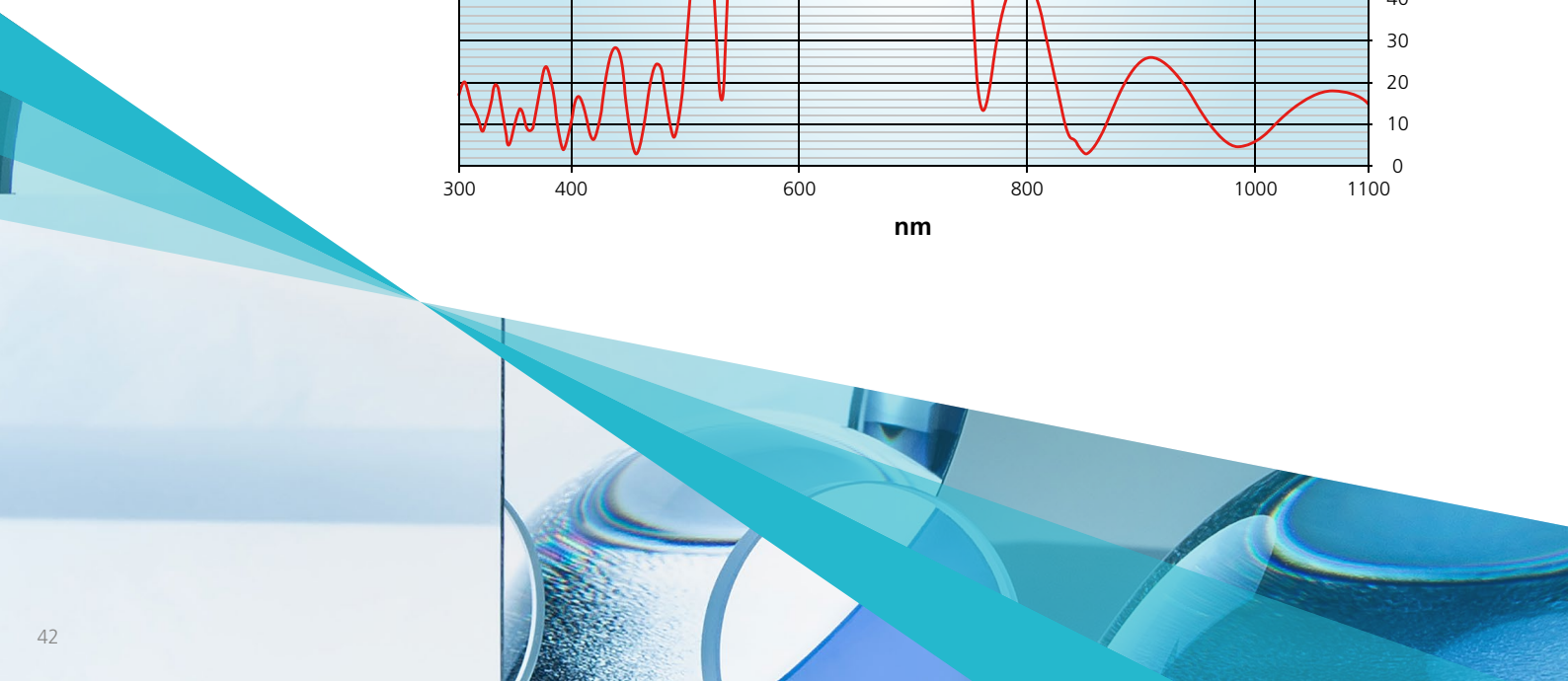
Concave Mirrors

Spherical concave mirrors

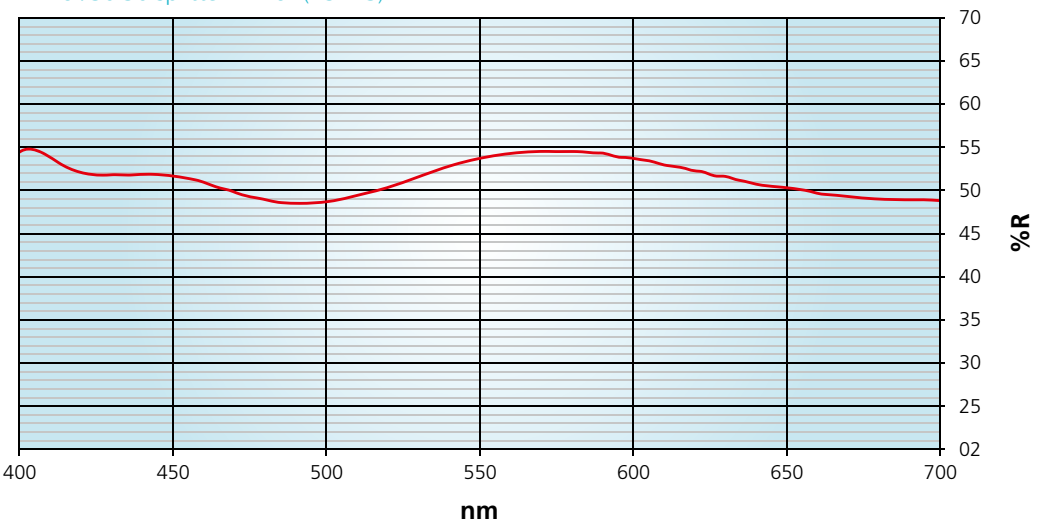
Parabolic mirrors, moulded

Dieletric mirror @ 600-700 nm R>95% (V9.100)

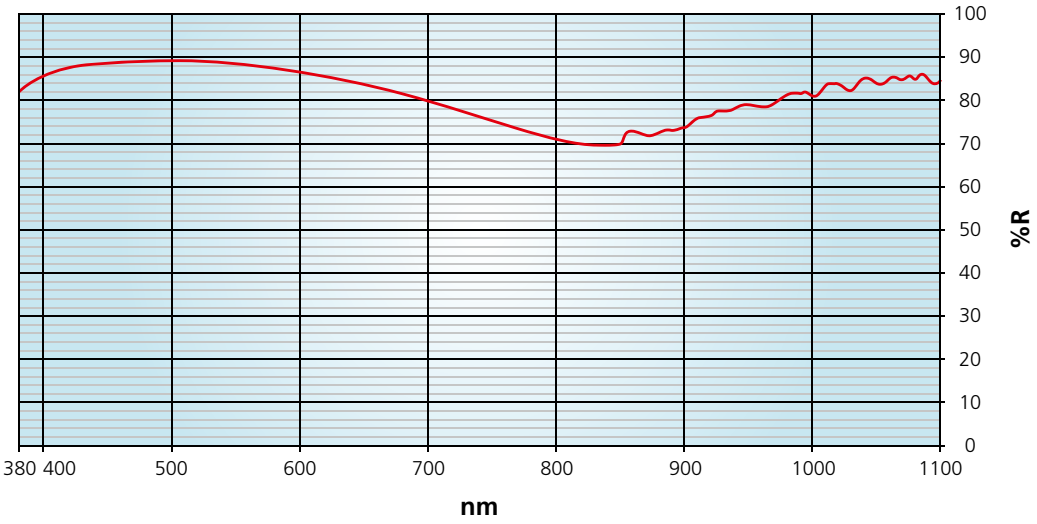




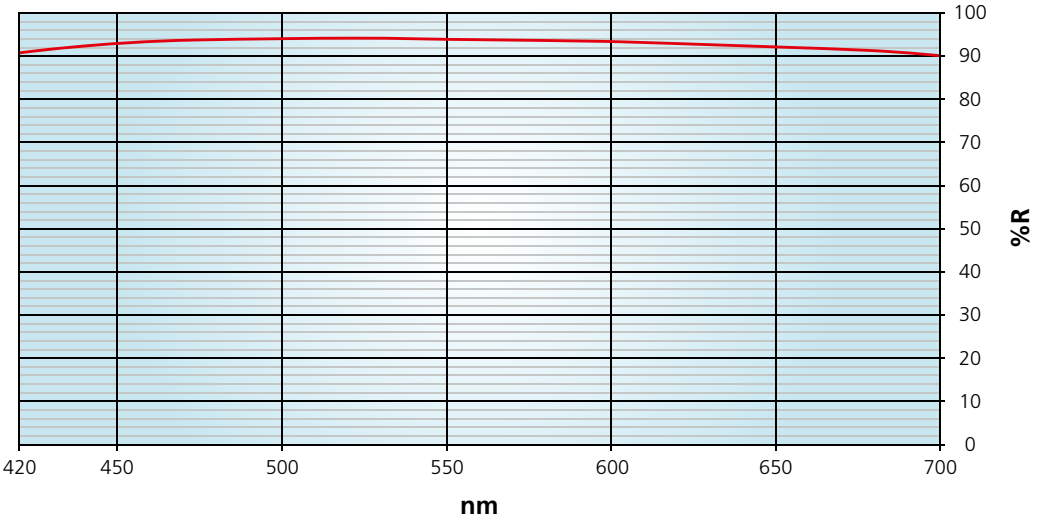
Mirror/50:50 splitter mirror (V9.113)



Mirror @ vis R>80% (B9.159)



Mirror @ vis R>90% (B9.159+V9.104)



LED optics

Glass LED optics
DimToWarm (D2W), Tunable White
LED Zoom Modules
LED cases
Set of samples

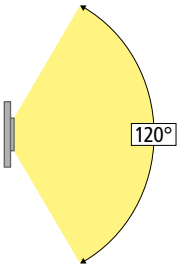
Glass LED optics

B&M Optik GmbH offers standard optics for all LED types

LEDs in comparison

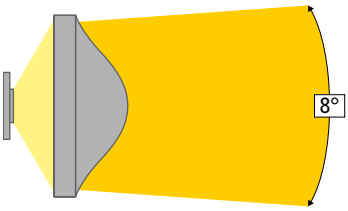
LED without optic

120° beam angle



LED with B&M glass optic

Reduction of the beam angle to 8° and up to 20 times the intensity with homogeneous illumination



Our advantages for you

- Any change to the beam angle only with an optic (8° - 60°)
- Homogeneous illumination with no colour effects
- Avoidance of dice formation through special surface textures
- Standard aspherical lenses for all LEDs available on the market
- Longevity of the optics even with negative external influences
- No heat generation problems with high-power LEDs
- Attractive, high-quality glass materials
- Easy to adapt for customerspecific applications
- Low tooling costs for moulded glass lenses to customer specifications

Lenses with texture

The lenses with textured surfaces replace any diffusing lenses which may be installed and prevent the associated light loss.

We offer these textures in three versions:

smooth

medium

rough

For a video with all the details, please refer to our website
https://www.bm-optik.de/en/products/led-optics

Beam focusing (secondary optics)

Our moulded glass spheres are suitable for all types of LEDs (e.g. high-power LEDs with extensive dice or normal LEDs with just one dice). The natural 120° beam angle of an LED can readily be reduced to less than 8° with one of our optics (with high efficiency and homogeneous illumination). Of course, the angle can be determined by changing the distance between the lens and the LED.

RGB LED light mixes

For all RGB LEDs, we offer the perfect lenses for achieving dynamic light colour changes. Just like common 4-chip LEDs, large-scale RGB applications can also be homogeneously mixed.

All specifications in mm

Special lenses

for homogeneous imaging and prevention of dice formation

Ø	EFL	ca	ct.	material	R2	FFL	BFL	texture	item-no.	your notes
5,00	3,70	5,00	2,00	LIBA2000+	flat	3,70	2,40	blank	A.2856.0501Li	
5,00	3,30	5,00	2,00	K10P	flat	3,30	2,00	blank	A.2856.0501K10P	
7,90	6,00	6,50	2,40	K10P	flat	6,00	4,50	blank	A.0499.0791K10P	
9,90	7,80	9,90	4,00	LIBA2000+	flat	7,80	5,20	blank	A.2791.0991Li	
16,00	11,40	16,00	8,00	K10P	flat	11,40	6,40	blank	A.1839.1601K10P	
16,00	15,00	16,00	6,00	LIBA2000+	flat	15,00	11,06	blank	A.2831.1601Li	
18,00	13,50	18,00	7,40	LIBA2000+	flat	13,50	8,64	blank	A.2873.1801Li	
20,00	11,00	19,80	10,90	LIBA2000+	17,70	8,68	4,86	rough	A.3829.2001Li	
24,00	15,40	24,00	8,90	F4GT	flat	15,40	9,91	blank	A.4889.2401F4GT	
24,00	18,00	24,00	10,40	LIBA2000+	flat	18,00	11,20	blank	A.2869.2401Li	
24,00	18,00	24,00	11,70	LIBA2000+	flat	18,00	10,44	medium	A.4569.2401Li	
26,00	27,50	26,00	8,50	LIBA2000+	flat	27,50	21,91	blank	A.2984.2601Li	
26,00	27,50	26,00	9,00	LIBA2000+	flat	27,50	21,59	medium	A.4559.2601Li	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	smooth	A.6499.2651LI	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	medium	A.6509.2651LI	
26,50	18,00	24,00	11,40	LIBA2000+	flat	18,00	10,50	rough	A.6519.2651LI	
30,00	11,80	30,00	8,00	LIBA2000+	-40,00	11,09	6,79	fresnel	Y.3939.3001	
35,00	27,50	31,60	15,00	LIBA2000+	flat	27,50	17,64	blank	A.2841.3501Li	
35,00	27,50	31,60	16,20	LIBA2000+	300,00	27,50	17,60	smooth	A.4389.3501	
35,00	27,50	31,60	13,70	LIBA2000+	flat	27,50	18,50	medium	A.6699.3501LI	
40,00	28,50	36,00	15,00	LIBA2000+	flat	28,50	18,60	blank	A.1999.4002Li	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	smooth	A.1999.4003Li	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	medium	A.4819.4001Li	
40,00	28,50	36,00	17,70	LIBA2000+	flat	28,50	16,90	rough	A.4809.4001Li	
45,00	37,00	45,00	16,50	LIBA2000+	flat	37,00	26,20	rough	A.3599.4501Li	
50,00	37,00	46,00	15,40	LIBA2000+	flat	37,00	26,90	smooth	A.5769.5001Li	
50,00	40,00	49,55	20,00	LIBA2000+	flat	40,00	27,10	smooth	A.6349.5001Li	
50,00	40,00	50,00	19,00	TRITAN	flat	40,00	27,51	blank	A.1559.5001TR	
51,90	34,00	49,00	23,70	TRITAN	flat	34,00	18,42	blank	A.7039.5191TR	
51,90	30,20	48,00	24,20	K10P	flat	30,20	14,90	medium	A.5389.5191K10P	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	smooth	A.4609.5191Tr	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	medium	A.5389.5191Tr	
51,90	34,00	48,00	24,20	TRITAN	flat	34,00	18,10	rough	A.4789.5191Tr	
51,90	76,50	49,80	11,70	LIBA2000+	flat	76,50	68,60	smooth	P.5019.5191Li	
51,90	76,50	49,80	11,70	LIBA2000+	flat	76,50	68,60	medium	P.5419.5191Li	
51,90	76,50	49,80	11,70	LIBA2000+	flat	76,50	68,60	rough	P.4859.5191Li	
60,00	48,00	56,00	22,00	TRITAN	flat	48,00	33,50	smooth	A.6659.6001TR	
60,00	48,00	56,00	22,00	TRITAN	flat	48,00	33,50	medium	A.6679.6001TR	
62,00	76,50	58,00	11,70	TRITAN	flat	76,50	66,30	medium	P.6719.6201TR	
65,00	65,00	48,00	19,90	LIBA2000+	flat	48,00	34,90	blank	A.4489.6501LI	
65,00	53,00	63,00	23,50	TRITAN	flat	53,00	37,50	medium	A.5149.6501TR	

Ø	EFL	ca	ct.	material	R2	FFL	BFL	texture	item-no.	your notes
68,00	51,50	68,00	27,25	TRITAN	flat	51,50	33,60	blank	A.6259.6801Tr	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	smooth	A.4629.7002Tr	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	medium	A.5209.7001Tr	
70,00	51,50	68,00	30,00	TRITAN	flat	51,50	31,80	rough	A.6529.7001TR	
73,00	53,00	70,50	32,40	TRITAN	flat	53,00	31,7	blank	A.4709.7301Tr	

Special lenses
for homogeneous imaging and prevention of dice formation

Line management

Streaks of light can be generated with our cylindrical lenses.

We have a wide range of standard lenses.

Cylindrical lenses
for LEDs

e.g. in focal lengths of 8.0 mm, 10.0 mm, 14.0 mm, 20.0 mm, 25.0 mm. Here, the width always corresponds to the focal length. The length can be freely chosen up to max. 250 mm. We look forward to receiving your enquiry (see page 17).

We also offer plastic optics for special applications according to your specifications or calculations.

DimToWarm (D2W), Tunable White

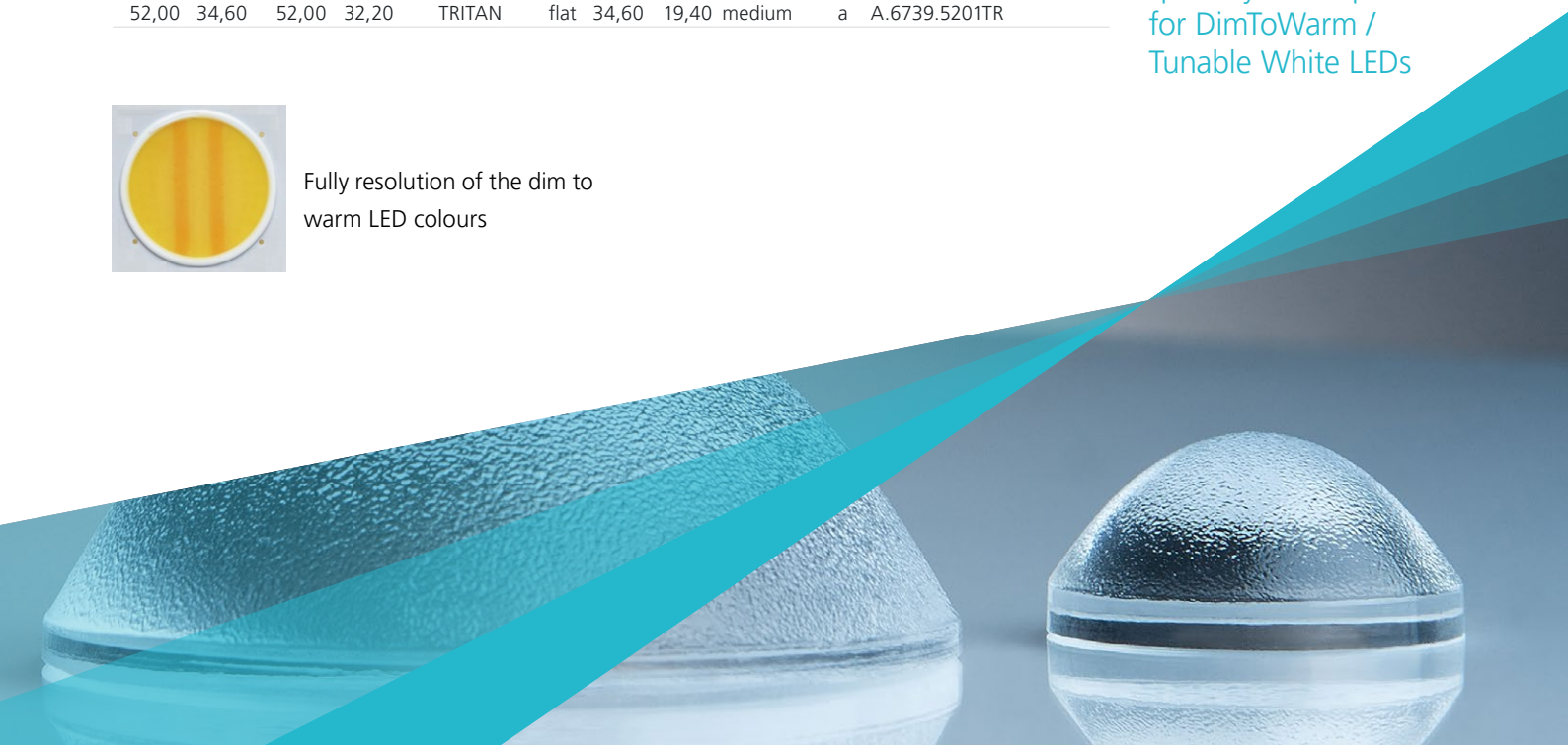
DimToWarm / Tunable White means that the light temperature (specified in Kelvin) of the light source can be changed. LEDs from this category consist of a combination of LES with cold and warm white components, which are controlled according to the desired color temperature.

All specifications in mm

Ø	EFL	ca	ct.	material	R2	FFL	BFL	texture	type	item-no.	your notes
24,00	18,10	24,00	11,50	LIBA2000+	flat	18,10	10,40	medium	a	A.6709.2401LI	
52,00	34,60	52,00	32,20	TRITAN	flat	34,60	19,40	medium	a	A.6739.5201TR	

LED optics
specially developed for DimToWarm / Tunable White LEDs

Fully resolution of the dim to warm LED colours



LED Zoom Module / scaLED

You have the LED, we have the perfectly matching zoom module. scaLED's are available in a wide range of options and configurations. In addition to off-the-shelf items, it is also possible to customize zoom modules to your products and to your designs.

scaLED D24/D48

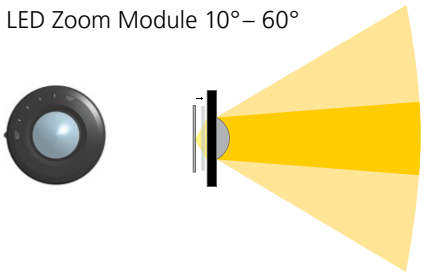
with aspherical glass lenses

Zoom-Module	scaLED D24	scaLED D48	Your notes
LED Optics with D	26.5 mm	51.9 mm	
Front face texture	medium	medium	
Zoom beam angle	10° – 60°	8° – 60°	
for LEDs with LES	up to 4 mm	from 4 – 6 mm	
Efficiencies	> 90 %	> 90 %	
Built-in Ø	49 mm	69 mm	
Aperture Ø	51 mm	76 mm	

scaLEDs in comparison

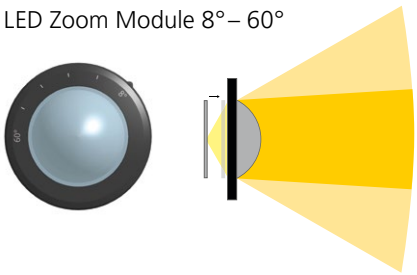
scaLED D24

LED Zoom Module 10°– 60°



scaLED D48

LED Zoom Module 8°– 60°



Our advantages for you

- beam angle continuously adjustable between 8° (10°)and 60°
- flexible use as zoom between 8° (10°) and 60°
- uniform illumination without color effects
- no heat development issues
- the textured front face of the aspherical lens avoids dice imaging
- optics have long service life even with negative influence factors

LED cases

We offer you selections of optics in 3 variants, always ready to hand in neat cases.

All specifications in mm

LED assortment Case 1

Ø 16.0 – Ø 30.0 mm
+ cylindrical

110,00 Euro

Type	Ø	EFL	BFL	ct.	Texture	Item no.	Your notes
Aspherical	16,00	15,00	11,10	6,00	blank	A.2831.1601Li	
Aspherical	18,00	13,50	8,64	7,40	blank	A.2873.1801Li	
Aspherical	24,00	18,00	11,17	10,40	blank	A.2869.2401Li	
Aspherical	26,00	27,50	21,92	8,50	blank	A.2984.2601Li	
Aspherical	24,00	18,00	10,44	11,50	medium	A.4569.2401Li	
Aspherical	26,00	27,50	21,59	9,00	medium	A.4559.2601Li	
Cylindrical	60,00 x 17,00	25,00	21,63	5,10	blank	C.3057.6001Li	
Plano-convex	20,00	30,00	26,91	4,50	blank	P.2829.2001Li	
Plano-convex	30,00	43,80	22,91	7,20	blank	P.2858.3001Li	

LED assortment Case 2

Ø 35,0 – Ø 70,0 mm (item-no. X.0000.0005)

170,00 Euro

Type	Ø	EFL	BFL	ct.	Texture	Item no.	Your notes
Aspherical	35,00	27,50	17,65	15,00	blank	A.2841.3501Li	
Aspherical	35,00	27,50	17,65	16,24	smooth	A.4389.3501	
Aspherical	40,00	28,50	18,65	15,00	blank	A.1999.4002Li	
Aspherical	40,00	28,50	18,65	18,40	smooth	A.1999.4003Li	
Aspherical	45,00	37,00	26,16	16,50	rough	A.3599.4501Li	
Aspherical	51,90	34,00	18,44	23,70	blank	A.0910.5192Li	
Aspherical	51,90	34,00	18,42	24,00	smooth	A.4609.5191Tr	
Aspherical	68,00	51,50	34,54	25,80	blank	A.0910.6801	
Aspherical	70,00	51,50	34,54	29,00	smooth	A.4629.7002Tr	
Plano-convex	40,00	53,50	46,34	10,60	blank	P.2996.4001Li	
Plano-convex	50,00	76,50	69,93	10,00	blank	P.1449.5001Li	

LED assortment Case 3

Ø 16,0 – Ø 70,0 mm (item-no. X.0000.0006)

250,00 Euro

Type	Ø	EFL	BFL	ct.	Texture	Item no.	Your notes
Aspherical	16,00	15,00	11,10	6,00	blank	A.2831.1601Li	
Aspherical	18,00	13,50	8,64	7,40	blank	A.2873.1801Li	
Aspherical	24,00	18,00	11,17	10,40	blank	A.2869.2401Li	
Aspherical	26,00	27,50	21,92	8,50	blank	A.2984.2601Li	
Aspherical	24,00	18,00	10,44	11,50	medium	A.4569.2401Li	
Aspherical	26,00	27,50	21,59	9,00	medium	A.4559.2601Li	
Aspherical	35,00	27,50	17,65	15,00	blank	A.2841.3501Li	
Aspherical	35,00	27,50	17,65	16,24	smooth	A.4389.3501	
Aspherical	40,00	28,50	18,65	15,00	blank	A.1999.4002Li	
Aspherical	40,00	28,50	18,65	18,40	smooth	A.1999.4003Li	
Aspherical	45,00	37,00	26,16	16,50	rough	A.3599.4501Li	
Aspherical	51,90	34,00	18,44	23,70	blank	A.0910.5192Li	
Aspherical	51,90	34,00	18,42	24,00	smooth	A.4609.5191Tr	
Aspherical	68,00	51,50	34,54	25,80	blank	A.0910.6801	
Aspherical	70,00	51,50	34,54	29,00	smooth	A.4629.7002Tr	
Plano-convex	20,00	30,00	26,91	4,50	blank	P.2829.2001Li	
Plano-convex	30,00	43,80	22,91	7,20	blank	P.2858.3001Li	
Plano-convex	40,00	53,50	46,34	10,60	blank	P.2996.4001Li	
Plano-convex	50,00	76,50	69,93	10,00	blank	P.1449.5001Li	

Set of samples

Profit by the purchase of a discounted pack of lenses of your choice. You decide – with our support if you wish – which lenses from our very large range of moulded optics you would like to test. In this way, you can put together your own perfectly matching range of components.

Sample pack of moulded optics with Ø smaller than 50,0 mm	
5 moulded optics with Ø < 50,0 mm	40,00 Euro
10 moulded optics with Ø < 50,0 mm	90,00 Euro

Sample pack of moulded optics with Ø bigger than 50,0 mm	
5 moulded optics with > 50,0 mm	70,00 Euro
10 moulded optics with Ø > 50,0 mm	130,00 Euro

excellence in optics

B&M Optik GmbH
Am Fleckenberg 20 · D–65549 Limburg
Telefon +49 (0) 64 31 98 60-0 · Telefax +49 (0) 64 31 98 60-20
www.bm-optik.de · office.limburg@bm-optik.de

www.bm-optik.de