

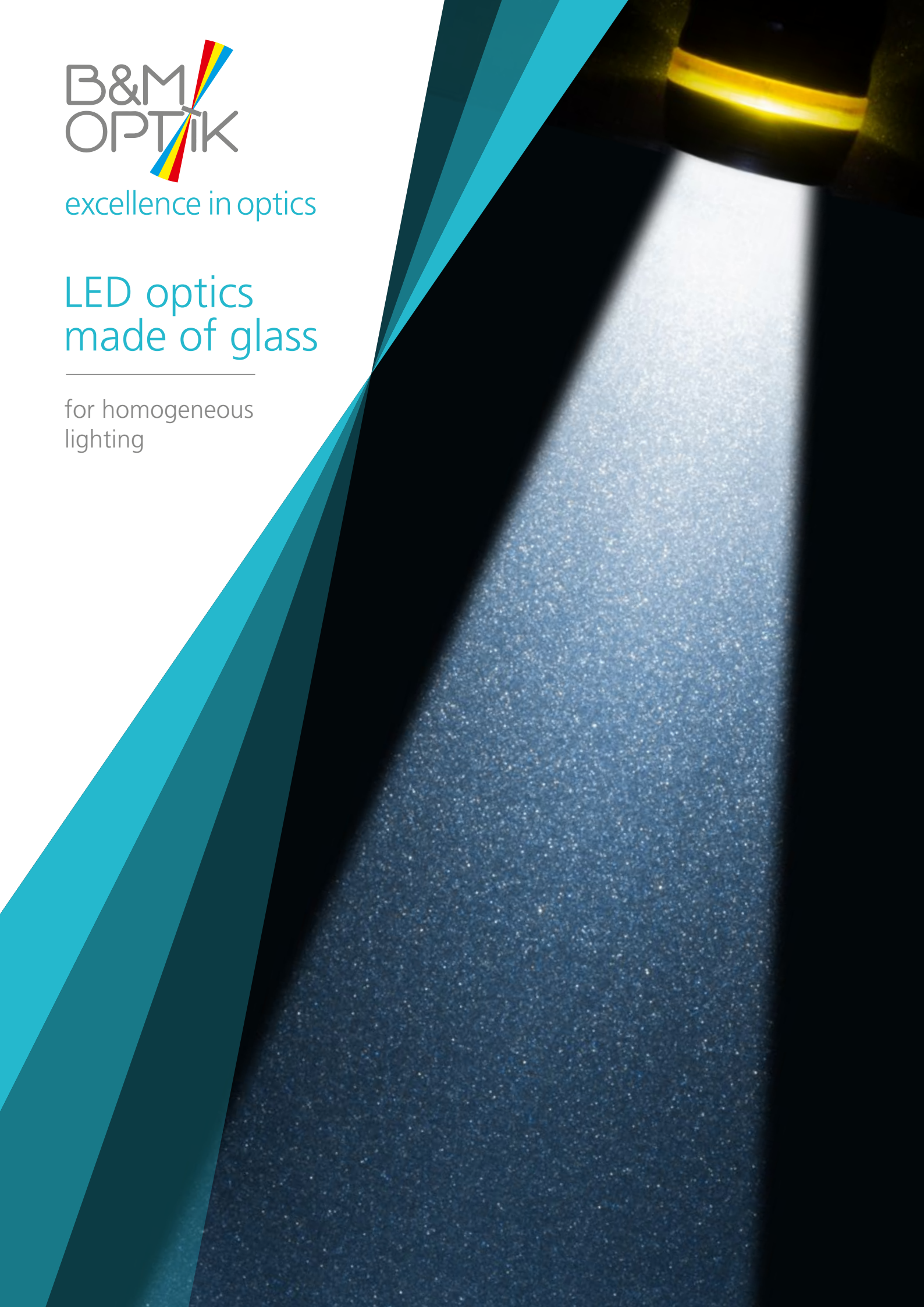


excellence in optics

## LED optics made of glass

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for homogeneous  
lighting





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

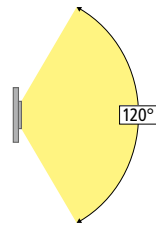
# LED optics made of glass

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

## LEDs in comparison

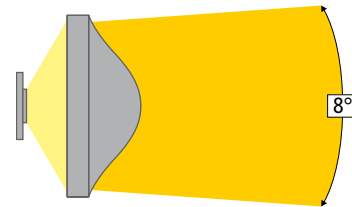
### LED without optics

120° beam angle



### LED with B&M glass optics

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



## 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 op-

tics (with high efficiency and homogeneous illumination). Of course, the angle can be determined by changing the distance between the lens and the LED.

## Line management

Streaks of light can be generated with our cylindrical lenses.

We have a wide range of standard lenses.

## RGB-LED light mixing

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.

## Cylindrical lenses for LEDs

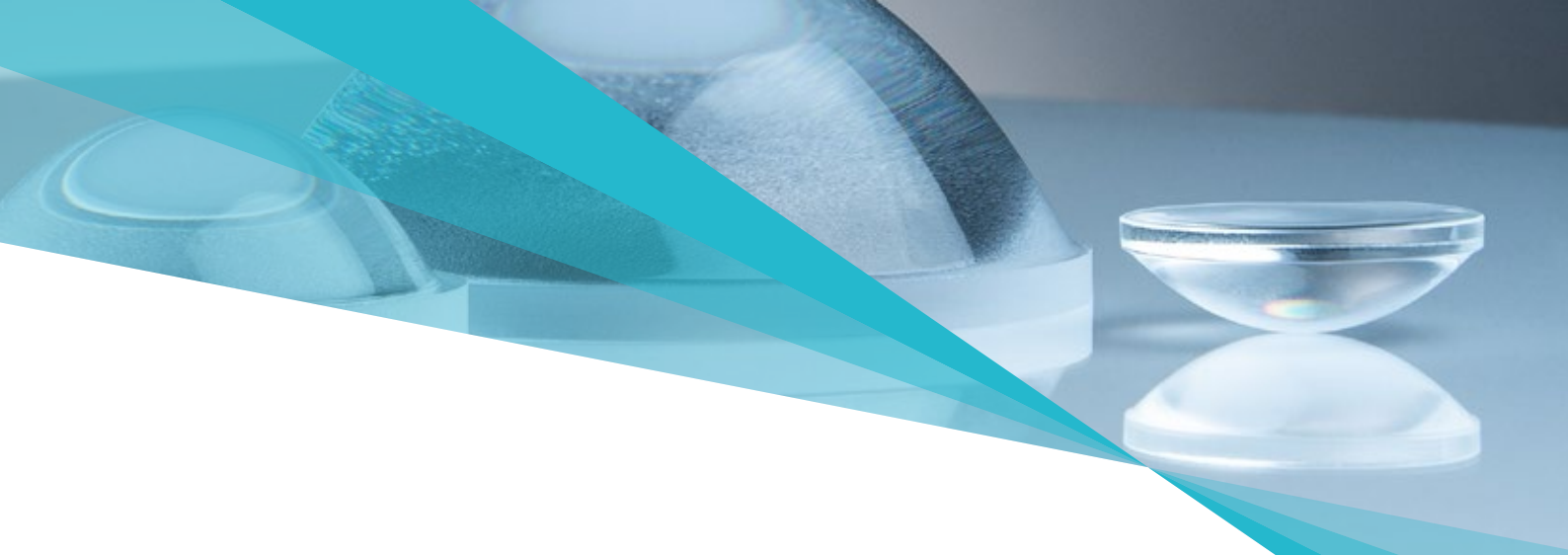
e.g. in focal lengths of 8.0 mm, 10.0 mm, 14.0 mm, 20.0 mm, 25.0 mm. Here, the width always corresponds to the focal length.

The length can be freely chosen up to max. 250 mm. We look forward to receiving your enquiry (see page 17).

## Lens arrays

Our arrays are used to combine several LEDs into one light beam.

For us, all designs are possible - according to customer requirements.



All values in mm

Ø	EFL	asp.Ø	ct.	Glass	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	9,91	15,40	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	
51,90	34,00	49,00	23,70	LIBA2000+	Flat	34,00	18,42	blank	A.0910.5192Li	
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	
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	
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	
68,00	51,50	68,00	25,80	LIBA2000+	Flat	51,50	34,54	blank	A.0910.6801	
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	

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

Special lenses for homogeneous imaging and prevention of dice formation



## LED case

Request free individual sample optics or check our range of offers in well-arranged cases. We would be pleased to assist you in innovative approaches and new developments.



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



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## 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

We are happy to present our developments to you in person, on site or invite you to visit our business premises.

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

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