

MB-BL

The MetaBright Series is a high performance and uniform light source for silhouetting and transmissive applications. Using a full array LED layout, we can pack more LEDs per square inch to provide greater intensity, uniformity and performance. The MetaBright Backlight Series is available with a wide variety of LED colors and sizes including White, Red, Green, Blue, IR, UVS, UVL and RGB with independent color control.



FEATURES

- Low-profile backlight for applications with strict spatial limitations
- Streamline design allows for maximum active area
- Edge to edge backlight (full array of LEDs)
- Very high intensity with $\pm 5\%$ uniformity
- High Density Precision Chip Technology (HDPCT)
- Custom sizes available
- Optional Constant Current driver with 0-10VDC intensity control (-Z option)
- Flicker free performance and instant start up with Metaphase analog driver technology

WAVELENGTHS

Order ID	Description / nanometers
W	White (6000K), Nominal
R	Red / 630nm
G	Green / 530nm
B	Blue / 470nm
IR850	Infrared / 850nm
IR880	Infrared / 880nm
IR940	Infrared / 940nm
UV365	Ultraviolet Short / 365nm
UV395	Ultraviolet Long / 395nm
RGB	Red-Green-Blue

GENERAL SPECIFICATIONS

Power Source:	24VDC $\pm 5\%$
Cable (Standard):	10-foot cable with flying leads
Housing:	Black Anodized Aluminum
Ambient Temp:	-20°C to 40°C
Lifetime Expectancy:	75,000 hours (except UV)

For other IR wavelengths, see our SWIR Backlights

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MetaBright Area Backlights										
MODEL*	Overall Width and Length Inches (cm)	Height Inches (cm)	Active Area Inches (cm)	Weight lbs (kg)	Cable QTY	Cable Length	AWG/ Conductors	Typical Current (Amps)		
								White	IR, UVS, UVL	
MB-BL105 (1x1)	1.90 x 2.50 (4.83 x 6.35)	.70 (1.79)	1.00 x 1.00 (2.54 x 2.54)	.15 (.068)	1	10ft	24/4	0.1	0.1	
MB-BL205 (2x2)	3.00 x 3.75 (7.62 x 9.52)	.77 (1.96)	1.97 x 1.97 (5.00 x 5.00)	.34 (.154)				0.2	0.2	
MB-BL305 (2x4)	3.75 x 5.75 (9.52 x 14.60)	.74 (1.88)	1.97 x 3.94 (5.00 x 10.0)	.65 (.295)				0.5	0.6	
MB-BL4x4 (4x4)	6.16 x 6.95 (15.65 x 17.65)	.82 (2.08)	4.00 x 4.00 (10.16 x 10.16)	1.3 (.590)				0.5	0.6	
MB-BL410 (5x5)	6.16 x 6.95 (15.65 x 17.65)	.83 (2.10)	5.00 x 5.00 (12.70 x 12.70)	1.4 (.635)				0.6	0.8	
MB-BL510 (5x10)	7.25 x 13.00 (18.42 x 33.02)	.82 (2.07)	5.00 x 10.0 (12.70 x 25.40)	2.8 (1.27)				1.1	1.3	
MB-BL5x17	7.00 x 20.88 (17.78 x 53.02)	.94 (2.40)	5.00 x 17.00 (12.70 x 43.18)	4.4 (2.00)				1.7	2.0	
MB-BL5x20	7.25 x 23.93 (18.42 x 60.78)	.94 (2.40)	5.00 x 20.00 (12.70 x 50.80)	5.2 (2.36)				1.8	2.0	
MB-BL5x35	7.00 x 36.00 (17.78 x 91.44)	1.40 (3.56)	5.12 x 35.00 (13.02 x 88.90)	7.6 (3.45)			3.1	3.5		
MB-BL6x4 (4x6)	5.41 x 8.65 (13.74 x 21.97)	.83 (2.10)	4.00 x 6.00 (10.16 x 15.24)	1.4 (.635)			24/4	18/6	0.6	0.8
MB-BL6x6	7.41 x 8.65 (18.82 x 21.97)	.83 (2.10)	6.00 x 6.00 (15.24 x 15.24)	1.7 (.771)					0.7	0.9
MB-BL6x10	7.62 x 13.63 (19.36 x 34.62)	.78 (1.98)	6.50 x 10.00 (16.51 x 25.40)	3.1 (1.41)					1.5	1.8
MB-BL6x12	7.50 x 15.43 (19.05 x 39.18)	.81 (2.07)	6.00 x 12.00 (15.24 x 30.48)	3.5 (1.59)					1.5	1.8
MB-BL6x20	7.50 x 23.86 (19.05 x 60.59)	.94 (2.38)	6.00 x 20.00 (15.24 x 50.80)	5.2 (2.36)					2.2	2.5
MB-BL8x32	13.60 x 37.48 (34.54 x 95.19)	1.01 (2.56)	8.38 x 32.25 (15.24 x 30.48)	17.7 (8.00)					4.0	4.5
MB-BL610 (10x10)	13.00 x 13.17 (33.02 x 33.45)	.81 (2.06)	10.00 x 10.00 (25.40 x 25.40)	4.8 (2.18)					2.4	3.0
MB-BL10x12	13.18 x 15.00 (33.46 x 38.10)	.81 (2.07)	10.00 x 12.00 (25.40 x 30.48)	6.1 (2.77)					2.7	3.2
MB-BL10x16	15.22 x 21.22 (38.66 x 53.90)	1.01 (2.56)	10.00 x 16.00 (25.40 x 40.64)	10.6 (4.81)			3.2	3.6		
MB-BL10x20	15.22 x 25.22 (38.66 x 64.06)	1.01 (2.56)	10.00 x 20.00 (25.40 x 50.80)	12.3 (5.58)			3.4	3.8		
MB-BL10x52	11.00 x 53.75 (27.94 x 136.5)	1.12 (2.84)	10.00 x 51.75 (25.40 x 131.4)	19.0 (8.60)			4.3	5.0		
MB-BL12x12	14.88 x 15.00 (37.78 x 38.10)	.88 (2.22)	12.00 x 12.00 (30.48 x 30.48)	7.1 (3.22)	2.7	3.2				

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MODEL*	Overall Width and Length Inches (cm)	Height Inches (cm)	Active Area Inches (cm)	Weight lbs (kg)	Cable QTY	Cable Length	AWG/ Conductors	Typical Current (Amps)	
								White	IR, UVS, UVL
MB-BL15x15	17.88 x 18.00 (45.40 x 45.72)	.88 (2.22)	15.00 x 15.00 (38.10 x 38.10)	9.7 (4.40)	1	10ft	18/6	4.5	5.1
MB-BL15x20	20.23 x 25.23 (51.38 x 64.08)	.95 (2.40)	15.00 x 20.00 (38.10 x 50.80)	15.3 (6.94)				5.9	6.9
MB-BL18x18	23.23 x 24.13 (59.00 x 61.28)	1.03 (2.61)	18.00 x 18.00 (45.72 x 45.72)	16.8 (7.62)				6.7	7.4
MB-BL20x25	24.75 x 29.75 (62.86 x 75.56)	1.25 (3.18)	20.00 x 25.00 (50.80 x 63.50)	22.0 (10.0)				7.6	8.5
MB-BL20x30	24.75 x 34.75 (62.86 x 88.26)	1.25 (3.18)	20.00 x 30.00 (50.80 x 76.20)	26.0 (11.8)				9.2	10.6

*Custom sizes and configurations available

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Wiring (4 conductors, flying leads)**	
Wire Color	Function
RED	+24VDC
WHITE	0-10VDC INTENSITY CONTROL
BLACK	GROUND (24V RTN)
GREEN	SIGNAL GROUND

Wiring (4 conductors, without Intensity Control)	
Wire Color	Function
RED	+24VDC
WHITE	+24VDC
BLACK	GROUND (24V RTN)
GREEN	GROUND (24V RTN)

Wiring (6 conductors, flying leads)**	
Wire Color	Function
RED, BROWN	+24VDC
YELLOW	SIGNAL GROUND
BLACK, BLUE	GROUND (24V RTN)
ORANGE	0-10VDC INTENSITY CONTROL

When not using Intensity Control, connect the 0-10V control line to +24VDC and connect Signal Ground to Ground (24V RTN)

Wiring (6 conductors, without Intensity Control)	
Wire Color	Function
RED	+24VDC
BROWN	+24VDC
ORANGE	+24VDC
BLACK	GROUND (24V RTN)
BLUE	GROUND (24V RTN)
YELLOW	GROUND (24V RTN)

M12 (5 position male)**	
Pin #	Function
1	+24VDC
2	0-10VDC Intensity Control
3	GROUND (24V RTN)
4	SIGNAL GROUND
5	No Connection

The M12 connector option is not recommended for lights rated more than 4 amps

Wiring with ULC-2	
Wire Color	Function
RED, WHITE (+)	LED INPUT
BLACK, GREEN (-)	

Terminated within a 2 position ULC-2 output connector (Phoenix Contact P/N: BCP-508-2)

**Note: The 0-10VDC Intensity Control input can accept voltages from 0-24VDC where the light will operate at full intensity in the 10-24VDC range. The light is proportionally dimmer for any Intensity Control voltage less than 10VDC and the light is OFF at approximately 0V or not connected (floating).

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PART NUMBER KEY									
MODEL	LENGTH ID (inches)	-	WAVELENGTH	-	DRIVER* (most common)	-	CABLE LENGTH	-	CONN.** (most common)
MB-BL	XXXX	-	XXXXX	-	XXX-XXXXXX	-	XXX	-	XXXX
MB-BL	1x1 to 20x30 (See above chart)		W (White 6000K, Nominal) R (Red 630nm) G (Green 530nm) B (Blue 470nm) IR850 (Infrared 850nm) IR880 (Infrared 880nm) IR940 (Infrared 940nm) UV365 (UV Long 365nm) UV395 (UV Long 395nm) RGB (Red-Green-Blue)		24CV 24Z 24-ILZ 24-ILSXXX 24-ILD U¹ 24-ILZ3 24-ILD3 XXX=rate in μs Example: 250		5M 10M Length can be customized: ex.7M=7meters Select or leave blank for 3 meters		M12D^{1 2} BC^{1 3} Select or leave blank for flying leads
Example 1: MB-BL4x4-W-24CV Example 2: MB-BL12x12-R-24Z					¹ Not available in lights exceeding 4A input current ² Default cable length for an M12D connector is 19 inches ³ Default cable length for a Barrel Connector is 10 feet				

Contact Metaphase Technologies or your local representative for options such as custom diffusers, lenses, polarizers, IP-rated enclosures for harsh environments, higher intensity, custom wavelengths, higher uniformity, etc. Not all options are available for all lights.

[Link to *Driver Options Key / **Connector Options Key](#)

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Sample Model Number: **MB-BL6x12-W-24CV**

REVISIONS				
ZONE	REV.	DESCRIPTION	DATE	APPROVED
	A	REDRAWN IN SOLIDWORKS, KW	9/22/2011	
	B	REFORMATTED	10/14/2016	

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MATERIAL: Per BOM	INCHES (MM)		
FINISH: Black Anodize	±.005 (±.13) ±.010 (±.25) ±.005 (±.13) ANGLES ±1°		
TREATMENT: N/A		TITLE: Top Assembly BL6X12	USED ON: Per customer
Approval Signature	Date	SIZE: B	DRAWING NUMBER: BL6X12-1
		SCALE: 1:5	REV: A
			SHEET 1 OF 1

COMPLIANCE



CONTACT US

Contact Metaphase Technologies at **215-639-8699** or your local representative for additional details, options and customizations.