

MB-TBL

The Thin Backlight Series is a high performance and uniform light source for silhouetting and transmissive applications. With a housing thickness of less than 11mm and edge-to-edge lighting, the thin backlight series helps maximize illumination area in tight spaces. Using a Full Array LED layout, we can pack more LEDs per square inch to provide greater intensity, uniformity and performance. The Thin Backlight Series is available with a wide variety of LED colors and sizes including White, Red, Green, Blue, IR, UVS and UVL with active areas ranging from 1"x1" (25mm x 25mm) to 5"x10" (127mm x 254mm).



FEATURES

- Extremely 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 (or IRN)	Infrared / 850nm
IR880 (or IRL)	Infrared / 880nm
IR940	Infrared / 940nm
UV365 (or UVS)	Ultraviolet Short / 365nm
UV395 (or UVL)	Ultraviolet Long / 395nm

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)

MB-TBL

Thin Backlights									
MODEL*	Overall Width and Length Inches (cm)	Height Inches (cm)	Active Area Inches (cm)	Weight lbs (grams)	Cable QTY	Cable Length	AWG/ Conductors	Maximum Input Current (Amps)	
								Visible	IR, UVS, UVL
MB-TBL1x1	1.27 x 1.82 (3.231 x 4.633)	.39 (.99)	1.21 x 1.24 (3.07 x 3.15)	.10 (45)	1	10ft	24/4 or 18/2	0.25	0.35
MB-TBL1x3	1.12 x 4.14 (2.845 x 10.52)	.40 (1.016)	1.09 x 3.50 (2.758 x 8.887)	.15 (68)				0.35	0.45
MB-TBL1x4	1.12 x 5.33 (2.845 x 13.54)	.40 (1.016)	0.97 x 4.60 (2.454 x 11.68)	.20 (91)				0.37	0.46
MB-TBL1x7	1.36 x 7.70 (3.450 x 19.56)	.40 (1.016)	1.15 x 6.90 (2.921 x 17.53)	.35 (159)				0.46	0.57
MB-TBL2x2	2.42 x 3.00 (6.147 x 7.620)	.42 (1.070)	2.35 x 2.71 (5.669 x 6.883)	.20 (91)				0.35	0.45
MB-TBL2x7	2.82 x 7.19 (7.163 x 18.26)	.39 (.99)	2.35 x 7.12 (5.970 x 18.10)	.70 (318)				0.88	1.05
MB-TBL2x8	2.82 x 8.33 (7.163 x 21.15)	.39 (.99)	2.35 x 8.26 (5.970 x 20.98)	.80 (363)				0.91	1.14
MB-TBL3x3	3.60 x 4.13 (9.144 x 10.49)	.42 (1.070)	3.53 x 3.56 (8.970 x 9.040)	.45 (204)				0.75	0.90
MB-TBL3x5	3.80 x 5.83 (9.639 x 14.82)	.42 (1.070)	3.61 x 5.06 (9.167 x 12.85)	.75 (340)				0.90	1.00
MB-TBL4x4	4.25 x 4.76 (10.80 x 12.08)	.44 (1.110)	4.10 x 4.20 (10.32 x 10.64)	.80 (363)				0.95	1.10
MB-TBL4x5	4.17 x 4.81 (10.59 x 12.22)	.42 (1.070)	3.60 x 4.75 (9.140 x 12.07)	1.0 (454)				1.10	1.25
MB-TBL5x5	5.33 x 6.22 (13.53 x 15.80)	.42 (1.070)	5.26 x 5.33 (13.37 x 13.53)	1.25 (567)				1.18	1.30
MB-TBL5x10	6.22 x 10.33 (15.80 x 26.23)	.42 (1.070)	5.34 x 10.26 (13.56 x 26.07)	2.50 (1134)				1.24	1.38

*Custom sizes 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)

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).

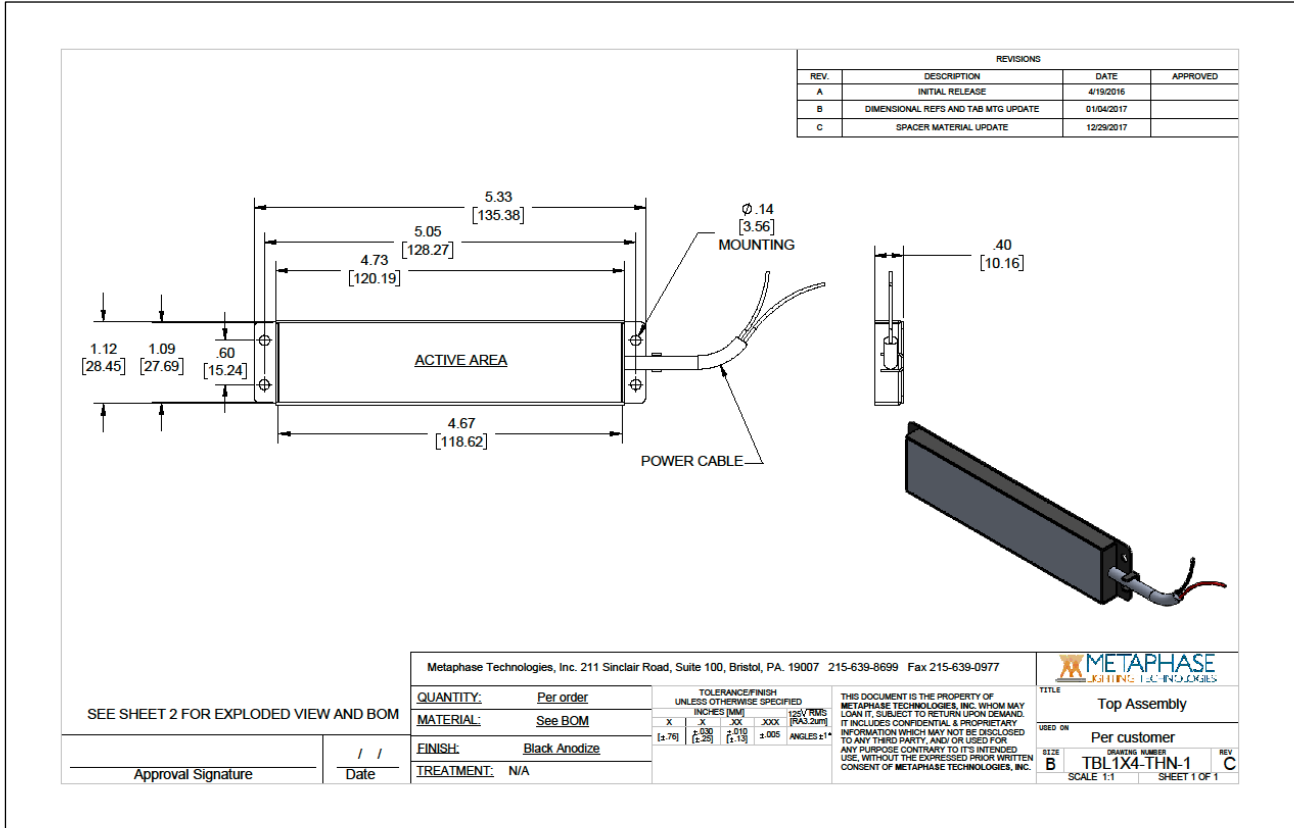
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MODEL NUMBER KEY							
MODEL	-	SIZE	WAVELENGTH	-	OPTION 1	-	OPTION 2
MB-TBL	-	XxX	XXX	-	XXX	-	X-XXX
MB-TBL	1x1	W (White 6000K, Nominal)			24 (+24VDC, standard)	Z (0-10V Intensity Control)	
	1x3	R (Red 630nm)					
	1x4	G (Green 530nm)					
	1x7	B (Blue 470nm)					
	2x2	IR850 (or IRN) (Infrared 850nm)					
	2x7	IR880 (or IRL) (Infrared 880nm)					
	2x8	IR940 (Infrared 940nm)			U (ULC-2 interface) KEY (Keyence Controller) ILD (In Line Dimmer) ILS (In Line Strobe)	T (M12 Connector)	
	3x3	UV365 (or UVS) (UV Short 365nm)					
	3x5	UV395 (or UVL) (UV Long 395nm)					
	4x4						
	4x5						
	5x5						
5x10		XXX (Custom code)					

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.

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Sample Model Number: **MB-TBL1x4-W-24-Z**



COMPLIANCE



CONTACT US

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