

## Ring Lights

### MB-RL

The Metaphase near axial Ring Lights offer high intensity, shadow-less illumination with five times the lifetime over fluorescents. The MetaBright™ near axial Ring Lights are built with high density LEDs that create bright illumination of surfaces for a wide spectrum of inspection purposes.

These Ring Lights are specially designed to project an even 360° overlapping ring of light from camera to lens. In most front lighting applications, the near axial Ring Light is a simple, low cost solution to camera lighting.

The near axial Ring Light is machined from a solid block of 6061-T6 aluminum and employs Metaphase's proprietary thermal management technology to dissipate internal die temperature.



#### FEATURES

- Homogenous light output that provides high intensity ON-axis illumination
- Rugged design with thermally potted LEDs
- LED thermal management for stable performance
- Ideal for solder joint and electronic component inspection
- Flicker free performance and instant start up with Metaphase analog driver technology
- An ideal light with many applications including, label Identification, part markings, surface inspection etc.
- Built-in Constant Current Driver with 0 – 10VDC intensity control, compatible with DDC-3 and ILD-35 Dimmers

#### WAVELENGTHS

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

#### GENERAL SPECIFICATIONS

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

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MetaBright RING LIGHTS							
MODEL*	Inside Diameter Inches (cm)	Outside Diameter Inches (cm)	Weight lbs (grams)	Cable QTY	Cable Length	Cable Description	Maximum Input Current @24VDC
MB-RL101	1.0 (2.5)	3.0 (7.6)	.31 (146)	1	10ft	24 AWG 4 Wire	0.3A
MB-RL201	2.0 (5.1)	4.0 (10.2)	.77 (350)				0.6A
MB-RL201M46	1.61 (4.1)	5.77 (14.66)	1.2 (544)				0.75A
MB-RL207	2.0 (5.1)	5.15 (13.09)	.83 (376)				0.75A
MB-RL301	2.56 (6.51)	5.74 (14.58)	.92 (417)				0.75A
MB-RL307 (IP69K)	2.56 (6.51)	5.79 (14.71)	1.0 (455)	12 pos bulkhead conn.			
MB-RL20001	7.874 (20.0)	11.563 (29.37)		1	10ft	24 AWG 4 Wire	
MB-RL23001	9.055 (23.0)	12.744 (32.37)					
MB-RL30001	11.811 (30.0)	15.500 (39.37)					

\*Custom sizes and configurations available

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).

**MB-RL**

PART NUMBER KEY													
MODEL	SIZE ID/OD	-	WAVELENGTH	-	DRIVER* (most common)	-	POLARIZER	-	DIFFUSER	-	CABLE LENGTH	-	CONN.** (most Common)
MB-RL	XXX	-	XXXXX	-	XXXXX	-	XXX	-	XX	-	XXX	-	XXXX
<b>MB-RL</b>	<b>101</b> (1.0"/3.0") <b>201</b> (2.0"/4.0") <b>201M46</b> (1.6"/5.77") <b>207</b> (2.0"/5.15") <b>301</b> (2.5"/5.74") <b>307</b> (2.56"/5.79") <b>20001</b> (200mm/294mm) <b>23001</b> (230mm/324mm) <b>30001</b> (300mm/394mm)	<b>W</b> (White 6000K, Nominal) <b>R</b> (Red 630nm) <b>G</b> (Green 530nm) <b>B</b> (Blue 470nm) <b>IR850</b> (Infrared 850nm) <b>IR940</b> (Infrared 940nm) <b>UV365</b> (UV Short 365nm) <b>UV395</b> (UV Long 395nm)	<b>24Z</b> <b>24-ILSXXX</b> <b>24-ILD</b> <b>U<sup>1</sup></b>	<b>POLO</b> (0°)	<b>CC</b> (Clear Cover) <b>D2</b> (Single Matte) <b>D3</b> (TIR/SLK) <b>D4</b> (Milky White) <b>D5</b> (Double Matte)	<b>5M</b> <b>10M</b>  Length can be customized: ex.7M=7meters	<b>M12D<sup>1 2</sup></b> <b>BC<sup>1 3</sup></b>						
			<b>RGB</b> (Red-Blue-Green)					<b>24-ILD3</b>  XXX=rate in μs Example: 250	Select or leave blank for no polarizer	Select one	Select or leave blank for 3 meters	Select or leave blank for flying leads	
Example 1: <b>MB-RL201-W-24Z-D2</b> Example 2: <b>MB-RL23001-UV395-24Z-CC</b>							<sup>1</sup> Not available in lights exceeding 4A input current <sup>2</sup> Default cable length for an M12D connector is 19 inches <sup>3</sup> 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.

**MB-RL**

Sample Model Number: **MB-RL301-W-24Z-D2**

**REVISIONS**

REV.	DESCRIPTION	DATE	APPROVED
D	REDRAWN	7/29/2013	

COOLING FINS  
CLEAR LENS  
MOUNTING HOLES M4X0.7 - 6H THRU  
POWER CABLE: 24 AWG Stranded; 2 conductor w/ flying leadwire ends; 10' Lg. -.19" OD  
VIEW B-B  
STRAIN RELIEF  
MOUNTING HOLES M4X0.7 - 6H THRU 3 HOLES LOCATED 120° APART  
SEE SHEET 2 FOR EXPLODED VIEW AND BOM.

Dimensions:  $\phi 5.740$  [145.80], .125 [3.18], .500 [12.70], 1.069 [27.15], 1.472 [37.39],  $\phi 2.564$  [65.13], 1.443 [36.65]

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QUANTITY:	Per order	TOLERANCE/FINISH UNLESS OTHERWISE SPECIFIED INCHES (MM)	THIS DOCUMENT IS THE PROPERTY OF METAPHASE TECHNOLOGIES, INC. WHOM MAY LOAN IT. SUBJECT TO RETURN UPON DEMAND. IT INCLUDES CONFIDENTIAL & PROPRIETARY INFORMATION WHICH MAY NOT BE DISCLOSED TO ANY THIRD PARTY, AND/OR USED FOR ANY PURPOSE CONTRARY TO ITS INTENDED USE, WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF METAPHASE TECHNOLOGIES, INC.										
MATERIAL:	Per BOM												
FINISH:	See note	<table border="1"> <tr> <td>X</td> <td>X</td> <td>.XX</td> <td>.XXX</td> <td>125 (V)R0.05</td> </tr> <tr> <td>[±.75]</td> <td>[±.25]</td> <td>[±.010]</td> <td>[±.13]</td> <td>[0.3-2.54]</td> </tr> </table>	X	X	.XX	.XXX	125 (V)R0.05	[±.75]	[±.25]	[±.010]	[±.13]	[0.3-2.54]	TITLE: Top Assy.; 5" Ring Light USED ON: Per customer SIZE: B DRAWING NUMBER: RL301-1 SCALE: 1:2 SHEET 1 OF 1
X	X	.XX	.XXX	125 (V)R0.05									
[±.75]	[±.25]	[±.010]	[±.13]	[0.3-2.54]									
TREATMENT:	N/A	ANGLES ±1°	REV: D										

Approval Signature: \_\_\_\_\_ Date: / /

COMPLIANCE



CONTACT US

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