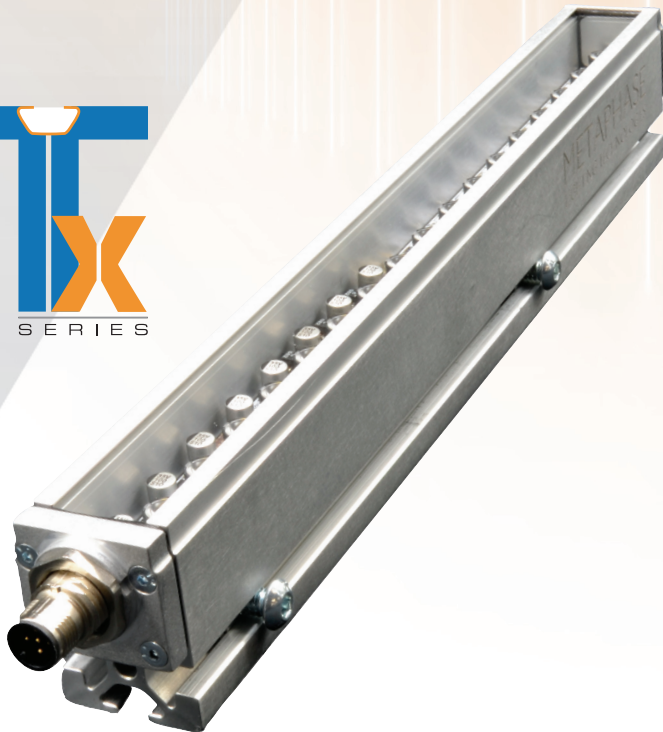


TX Series Barlight



Advanced Performance and Unlimited Flexibility for Machine Vision Inspection, Measurement and Gauging

The TX Barlight Difference

Demanding machine vision applications require superior illumination performance, and the TX Series of Barlights deliver impressive results.

The result is an unparalleled machine vision Barlight solution. High-performance design and an array of features and options facilitate application optimization to deliver exceptional results with maximum flexibility and minimal technical risk.

- ✓ Flexible form factor, multiple wavelengths and variable controls provide endless application options.
- ✓ Available in various wavelengths including R, G, B, RGB, W, UV365, UV395, IR850, IR940, SWIR, multispectral
- ✓ Standard DC with Strobe. Available with ULC-2 controller version
- ✓ Built-in strobing (Follow-Me trigger default)
- ✓ Daisy Chain up to six lights (Version 2A)

Features

- Easy mounting and flexible coupling with 3-side T-slot extrusion
- Low profile, narrow housing (33mm) for greater application flexibility
- Standard version: 24VDC with built-in follow-me strobe. ULC-2 compatibility (-U) version also available
- Standard version is also dimmable, with a high efficiency, constant current driver and built-in strobe
- Bulkhead 5-pin M12 A-code connector(s) for standard version; 4-pin M12 T-code for external driver version
- Optional polarizer in P0 and P90



TABLE 1: PART NUMBER KEY

Contact your Metaphase Sales representative for custom versions (intensity, uniformity, wavelengths, sizes, etc).

Example Part Number: TXBR1A-12-W-L20

| Family | Model ¹ | Length | Color ^{2,3} | | Driver ⁴ | Polarization ⁵ | Lens ⁶ | Diffuser ⁷ |
|--------|--------------------------|---------------------------|-------------------------|------------------|--|---------------------------|---------------------|-----------------------|
| TXBR | XX | XX | XXXXX | | X | XXX | XXX | XX |
| | 1A (Single Connector) | 12 (12x 25mm sections) | RGB (Red Green Blue) | IR850 (IR850) | Blank for Default (24VDC with follow-me trigger) | Blank for no polarizer | NL (No Lens) | Blank for Default |
| | 2A (Dual Connector) | | W (White, 6000K) | IR940 (IR940) | | P0 | L20 (20deg nominal) | CC (clear cover) |
| | | | IR05 (SWIR 1050) | | -U External drive | P90 | L35 (35deg nominal) | D2 (single matte) |
| | | | B (Blue 470nm) | IR45 (SWIR 1450) | | | | |
| | | | G (Green 530nm) | IR55 (SWIR 1550) | | | | |
| | | | R (Red 630nm) | IR65 (SWIR 1650) | | | | |
| | | | UV36 (UV365) | IR20 (SWIR 1200) | | | L45 (45deg nominal) | D4 (milky) |
| | | | UV39 (UV395) | IR30 (SWIR 1300) | | | | D5 (opal replacement) |

Note 1: Model 1A has a single connector; Model 2A has two connectors.
Both are available in either Standard (Default) or -U Versions (See Note 4).

Note 2: (24VDC with follow-me trigger) or -U versions (ULC-2 compatible)

Note 3: Contact Metaphase Support for color combinations and other wavelengths.

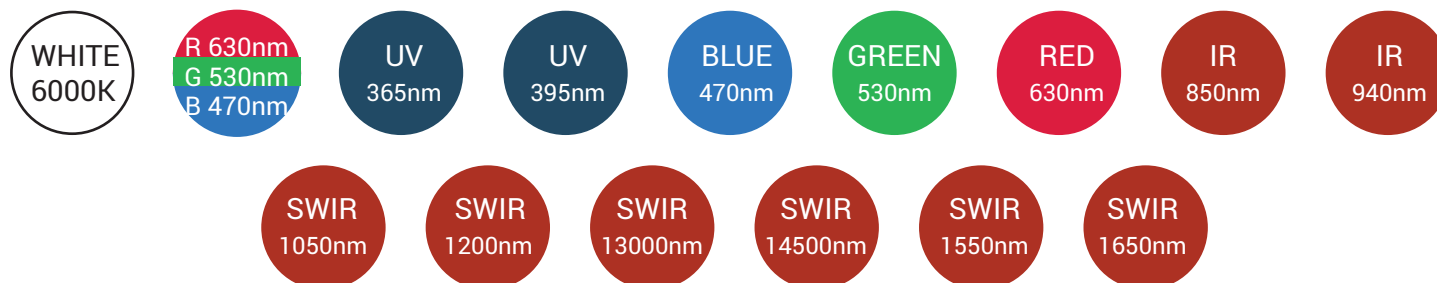
Note 4: Standard Versions (Default) have 24VDC with built-in follow-me strobe with 5-pin, M12 A-code connector(s).
External Drive Versions (-U) have 4-pin, M12 T code connector(s).

Note 5: P0 polarizer perpendicular to heat sink; P90 polarizer parallel to heat sink.

Note 6: Lens options available only for visible wavelengths.

Note 7: CC (clear cover) is the default for visible if lens selected, and for UV and SWIR.
D2 (single matte) is default for visible if no lens selected.
Lead times may be extended for non-default diffusers.

Available Wavelengths





| General | |
|---|------------------------------------|
| Operating Temperature | 0-40°C, 90% RH, non-condensing |
| Storage Temperature | 0-70°C, 90% RH, non-condensing |
| Compliance | RoHs, CE, IEC 62471 |
| IP Rating | IP64 |
| Photobiological Risk Factor | See Table on Page 5 |
| Warranty | 2 Years |
| Electrical | |
| Supply Voltage | 24VDC +/- 5% |
| Current | 0.7A x number of lights |
| Input Impedance | 10k Ω /number of barlights |
| DC Strobe (standard) version | |
| 0-10VDC Dimming Control | Off: 0V |
| Trigger Input | |
| NPN | <1V |
| PNP | >2.5V |
| Min. Trigger Pulse: | 25 μ sec |
| Max Trigger Rate: | 5kHz |
| Trigger Turn-on delay: | 5 μ sec |
| Trigger Turn-off delay: | 5 μ sec |
| Max. Pulse Width: | 2msec |
| Max. Duty Cycle | 10% (to protect light from damage) |
| Strobing Behavior | |
| Strobe intensity up to 8x maximum if pulse width < 2ms | |
| <i>Note 1: 0-10V must be connected to turn light on and to trigger.</i> | |
| <i>Note 2: Default state is "OFF". Trigger to "ON".</i> | |

| Optical | |
|--|--|
| Light Source | LED |
| Intensity | 109,000 Lux (480mW/m ²) |
| Available Wavelengths | |
| White (CCT = 6000k) | |
| UV 365, UV 395 | |
| Blue 470, Green 530, Red 630 | |
| IR850, IR940 | |
| SWIR: 1050, 1200, 1300, 1450, 1550, 1650 | |
| Available Color Combinations | |
| Select either 1 or 3 available wavelengths, | |
| Lifetime | Visible L70 = 75,000 hours |
| <i>Intensity reference is WHITE CCT = 6000K and narrow lens.</i> | |
| <i>Please see page 5 for maximum intensities of other wavelengths.</i> | |
| Mechanical (all units metric) | |
| Housing | Clear anodized aluminum |
| Mounting | (4) T-nuts per 12-inch barlight included |
| Outside Dimensions (OD) | |
| See Drawings on PAGE 6 (Single Connect and Multi-connector) | |
| Active Area Designation | 305mm Long, 21mm wide |
| Dimensional Units | Metric (including all fasteners) |
| Weight (Kg) (per 12-inch barlight) | |
| 1. Single connector: 710g, 1.57 lbs. | |
| 2. Double connector: 720g, 1.59 lbs. | |
| Connector | Bulk Head male 5-pin M12A (Standard) 4-pin M12T-code (-U version) |



M12 5-pin A-Code Bulkhead connector

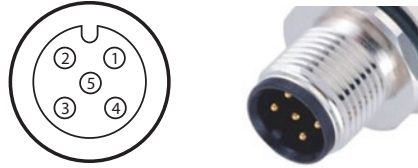
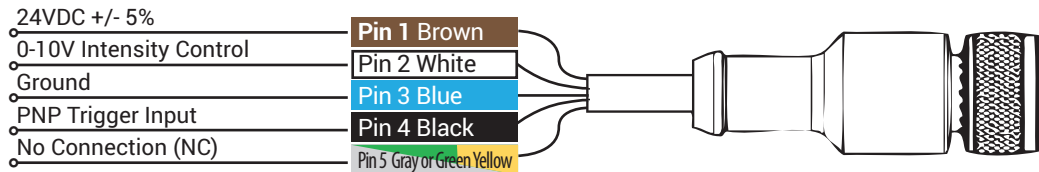


FIGURE 1A: TXBR INTERFACE CABLE, M12 5-PIN A-CODE FEMALE CONNECTOR, CONFIGURED FOR PNP TRIGGER



See Table 1 "Part Number Key" for Cable Part Number by length.

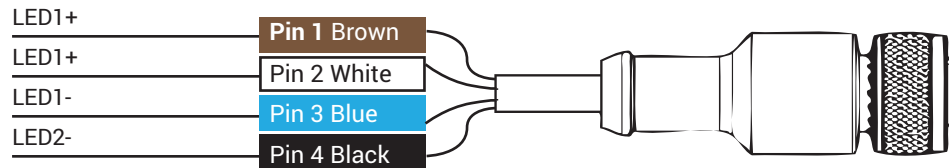
Note: For No Dimming control, connect 0-10V intensity control to 24VDC (maximum intensity without control). For continuously ON @ full intensity connect 24VDC power supply to +24V , 0-10VDC and PNP trigger-in inputs.

Connector: M12T-code External Driver ((ULC-2(U)) Version

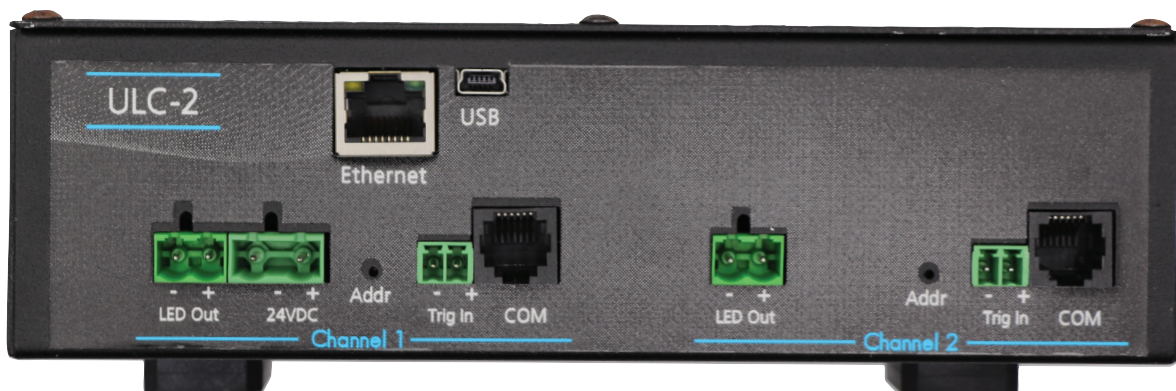
M12 4-pin T-Code Bulkhead connector



FIGURE 1B: TXBR INTERFACE CABLE WITH AN M12 4-PIN T-CODE FEMALE CONNECTOR



ULC-2 CONTROLLER



TXBAR12S SINGLE CONNECTOR

FIGURE 2: TXBL/ TXCBL DIMENSIONS TOP VIEW



**TX Series
Barlight**

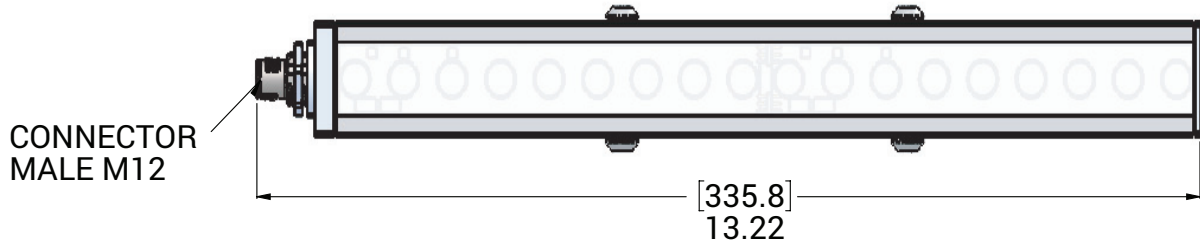
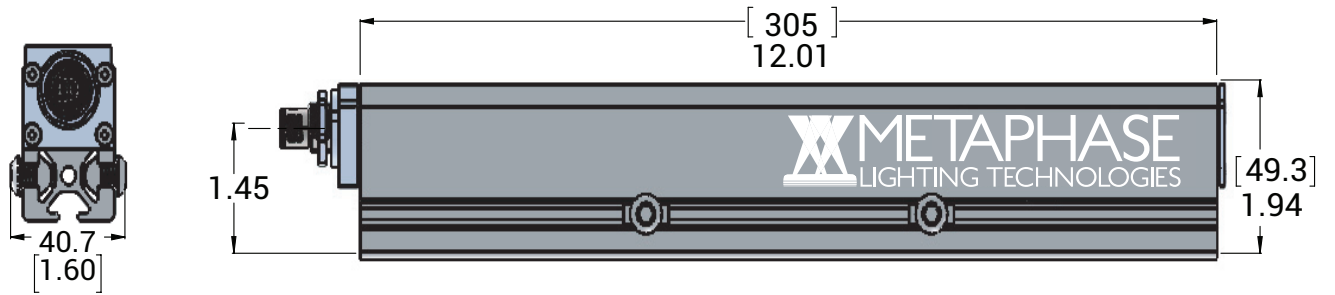


FIGURE 3: TXBR DIMENSIONS SIDE VIEW



TXBAR12A DUAL CONNECTOR

FIGURE 4: TXBL/ TXCBL DIMENSIONS TOP VIEW

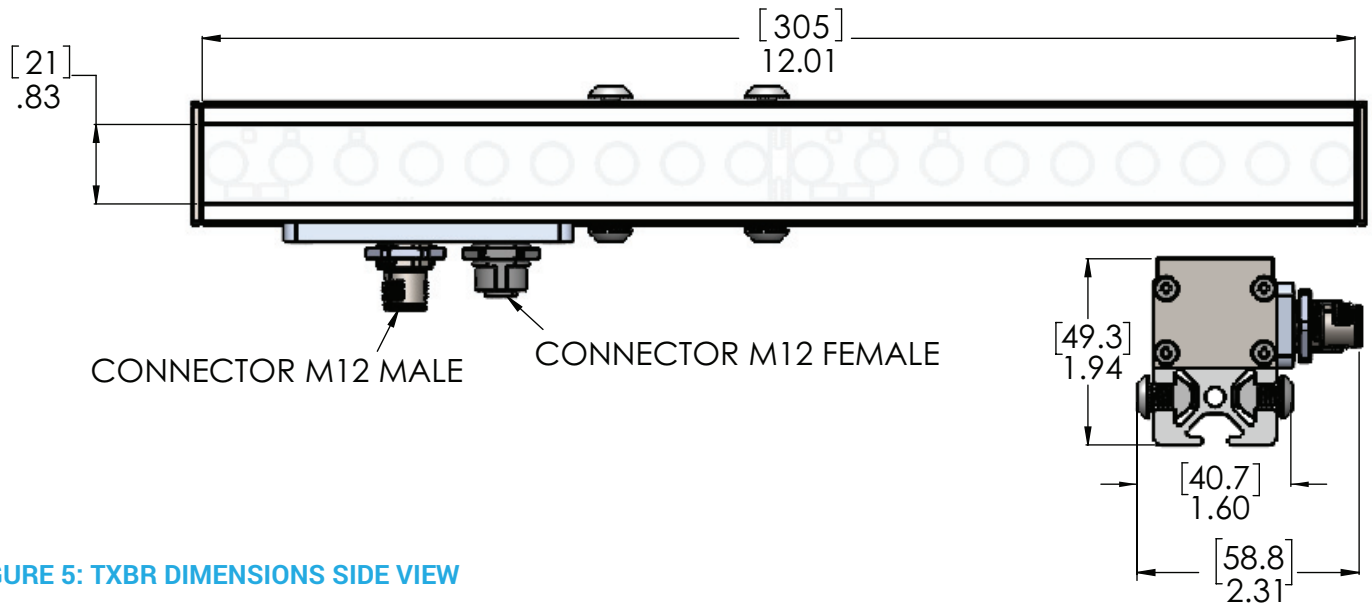
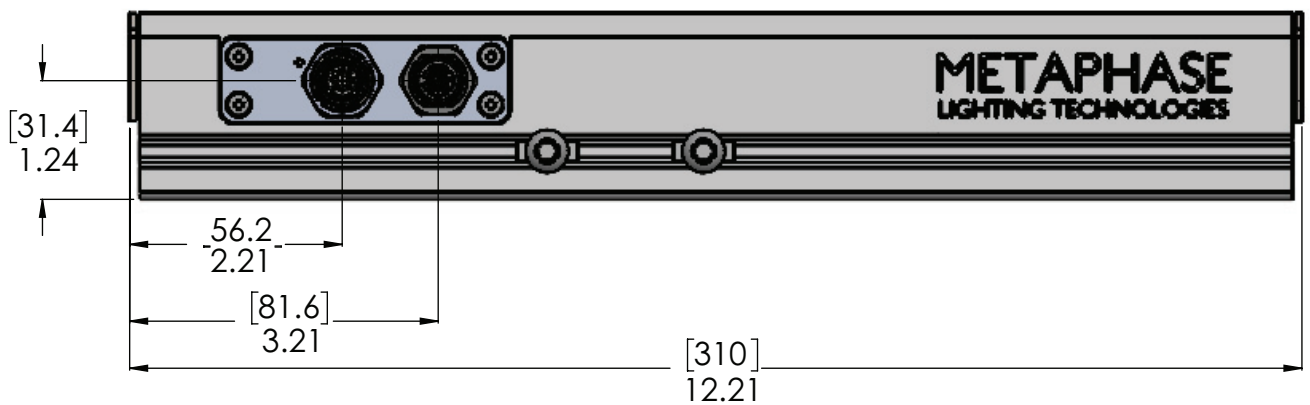


FIGURE 5: TXBR DIMENSIONS SIDE VIEW





For nearly three decades, Metaphase Technologies has been developing products that implement “The Quality of Light” through engineering and manufacture of cutting-edge LED illuminators for machine vision, military, and specialty lighting applications.

We’re proud of our demonstrated expertise with engineering flexible lighting solutions that have facilitated integration into thousands of vision systems.

Throughout the world, Metaphase clients enjoy the enhanced automation and image capture benefits of our patent-pending breakthroughs in uniform diffuse high brightness and ultra-brightness LED illumination.

First to implement built-in, constant current drivers across multiple product lines, Metaphase continues to synergize cutting-edge LED lighting & control technologies that streamline innovation and increases return on investment.

Made in the USA for nearly 30 years, our versatile designs are continuously updated to incorporate the latest advances in LEDs, thermal management, optics, and electronic technologies to meet the challenging needs of today’s global automation and scientific marketplace.

Contact us to see how Metaphase can help with your cutting-edge lighting needs.



200 Rittenhouse Circle, West Unit 7, Bristol, PA 19007 USA
+1-215-639-8699 www.metaphase-tech.com