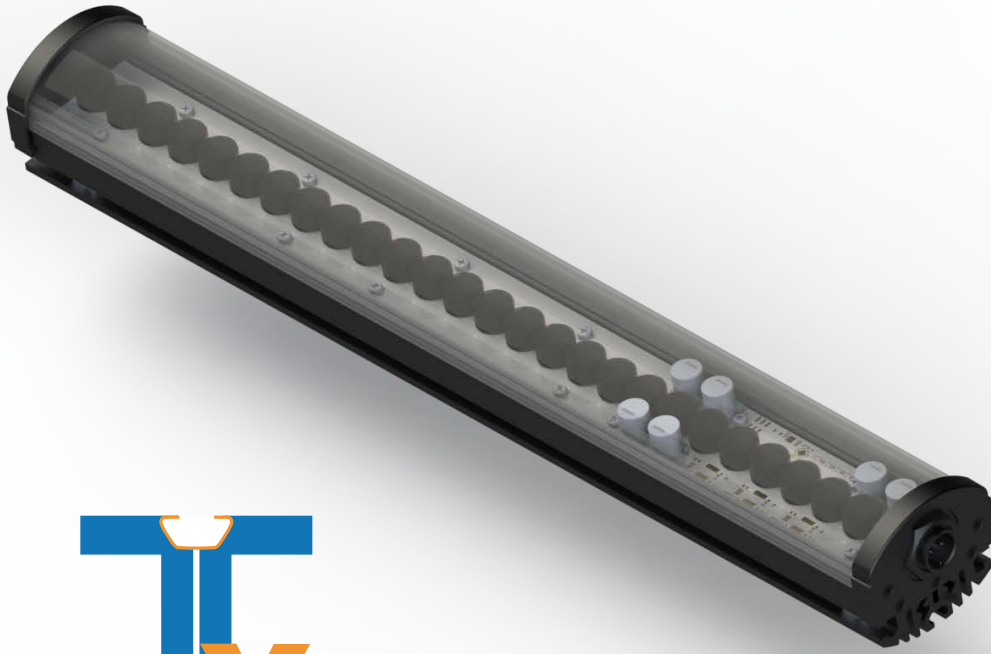


TX BR3 Series Bar Light



Advanced Performance for Machine Vision
Inspection, Measurement, and Gauging

The TX Series Difference

The TX BR3 Series bar lights provide superior performance for the most demanding machine vision applications. Utilizing bright, and highly uniform, LED's these lights implement state-of-the-art driver technology that delivers instant start-up and flicker-free operation and can be used both in DC continuous operation, or with 8x optical, pulse-follow strobing.

- ◆ Best for high-contrast, high-accuracy inspection.
- ◆ New, state-of-the-art driver and microchip - continuous DC with 8x optical strobe all-in-one
- ◆ Maximum installation flexibility with T-slot L-brackets
- ◆ High-uniformity and brightness
- ◆ Multispectral and Hyperspectral options

Features

- Visible, UV, IR, SWIR, Single-Color, Multispectral, Hyperspectral
- Smart driver with continuous DC operation, dimming, and strobe capability.
- Available in 150 mm increments up to 3+ meters!
- Options for IP67, multiple lens types, diffusers and polarizers



TABLE 1: PART NUMBER KEY

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

Family	Model	Active Length	Color	Diffuser/Cover	Polarizer	Lens	Driver	IP Rating	Connector
TXBR	XX	XX	XXXXXX	XXXX	XX	XX	X	XX	XXX
	3A - ULC compatible	List number of 25mm segments. Available in 75 mm	W (White, 6500K) R (Red 630nm) G (Green 530nm) B (Blue 470nm) RGB (Red Green Blue)	Blank for D300* CC13 - Clear cover w/ diffuser *D300 - standard UV pass / diffuser	Blank for no polarizer P0* P9*	L12 L16 L30 L50	Blank for default U - ULC	Blank for no IP rating. IP - IP67	Blank for 8 - pin M12 DE - Dual Connector
	3B - continuous w/ dimming								
	3C - continuous w/ pulse follow	increments, i.e. 3, 6, 9, 12, etc.	UV395 UV365 IR940 IR850						
	4A - IP-rated ULC compatible		IR05 (SWIR 1050) IR20 (SWIR 1200) IR30 (SWIR 1300) IR45 (SWIR 1450) IR55 (SWIR 1550) IR65 (SWIR 1650)		*P0 - film perpendicular to long heatsink *P9 - film parallel to long heatsink *Polarizer requires CC13 cover		**NOTE 2		*NOTE 1
	4B - IP-rated continuous w/ dimming								
	4C - IP-rated continuous w/ pulse follow								

***NOTE 1** - Due to increasing current ratings as the TXBR product length increases, some configurations will require multiple connectors to source power to the light. Please see the below length requirements for these configurations by product type:

TXBR_B: Length up to 45 = (1x) M12

TXBR_B: Length greater than 45, but less than 60 = (2x) M12

TXBR_B: Length equal to 60, but less than 69 = (1x) Multi-con or flying leads

TXBR_B: Length equal to, or greater than 69 = (2x) Multi-con or flying leads

TXBR_C: Length up to 30 = (1x) M12

TXBR_C: Length greater than 30, but less than 60 = (2x) M12

TXBR_C: Length equal to 60, but less than 69 = (1x) Multi-con or flying leads

TXBR_C: Length equal to, or greater than 69 = (2x) Multi-con or flying leads

****NOTE 2** - When selecting the ULC Driver, the M12 connector changes from an A-code to a T-code. See wiring information on page 5.

ULC-Version (A/U VERSION)

ULC-2	UNIVERSAL LED CONTROLLER, TWO-CHANNEL, WITH ULC-2 CONNECTORS Note: Requires 24VDC power supply, 6. 7 A, to run at full capability
CAB-FM12TU-3M (1 channel)*	3 METER EXTENSION CABLE, FEMALE M12 T-CODE 4-PIN TO ONE ULC CONNECTOR, LED POS ON PIN 1 &2, LED NEG ON PINS 3&4
CAB-FM12TU-3M (2channel)*	3-METER EXTENSION CABLE, FEMALE M12 T-CODE 4-PIN TO TWO ULC CONNECTOR, LED POS CHAN A&B ON PINS 1&2 . LED NEG CHAN A&B ON PINS 3&4

*Also available in 5M, 10M, 15M cables

DC WITH STROBE (C VERSION)

CAB-CX2P6SFL-3M	3 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
CAB-CX2P6SFL-5M	5 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
CAB-CX2P6SFL-10M	10 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
CAB-CX2P6SFL-15M	15 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS

MOUNTING - BRACKET KIT

KIT-TXMB-01	QUANTITY (2) END CAP SWIVEL MOUNTING BRACKET KIT, W/ PRINTED ANGULAR SCALE
KIT-TXMB-02	QUANTITY (2) SLIDE SWIVEL MOUNTING BRACKET KIT, W/ PRINTED ANGULAR SCALE
KIT-TXMB-03	QUANTITY (2), M6 STUD MOUNTING BENT BRACKET KIT
KIT-TXMB-04	QUANTITY (3), JOINING PLATE BRACKET KIT



General	
Operating Temperature:	0-40°C, 90% RH, non-condensing
Storage Temperature:	0-70°C, 90% RH, non-condensing
Compliance:	RoHs, CE, IEC 62471
Photobiological Risk Factor:	RISK GROUP 1 455, 530, 625, 850, W
Electrical	
Input Power:	24VDC+/-5%
0-10V Dimming Control:	Off: 0V Turn-on Threshold: 0.95V 100% Intensity: 10V Max Allowance Voltage: 24V Input Impedance: 14kΩ
Trigger Input (5 KHz Max. Trigger Rate)*:	PNP Voltage Enable > 2.4V NPN Voltage Enable < 0.9V Min Trigger Pulse: 10 μs Trigger Turn-on Delay: 10 μs Trigger Turn-off Delay: 20 μs Input Impedance: 14kΩ
<i>*Note: Information above applies only to units designated with a trigger.</i>	
Overdrive:	Output: 8x Pulse Width: < 2ms Duty Cycle: < 10%
Mechanical	
Weight:	0.1kg/25mm of length Ex: TXBR3-24 = .1 x 24 = 2.4 kg

Light Operation (1C versions):

Continuous Mode: The light will illuminate, at full intensity, when 24VDC is applied to the +24V line, 10-24VDC is applied to the 0-10V dimming line, and a continuous voltage > 2.4VDC (up to 24V max) is applied to the trigger line.

The light can be dimmed by proportionally applying a voltage less than 10VDC to the 0-10VDC intensity control while the trigger input requirements are satisfied. User can toggle the light ON/OFF at DC level by turning ON/OFF the 0-10VDC control line.

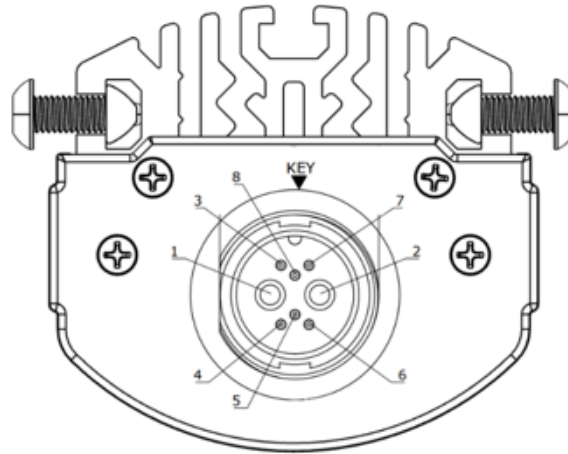
Strobe operation: Trigger input line uses a “follow me trigger” design where the light will strobe at 8x overdrive intensity when a pulse is applied to the trigger input for a duration between 2.5μs and 2ms, with a duty cycle less than 10%. For trigger pulses that have a duration longer than 2 ms, and/or duty cycle higher than 10%, the light will continue to strobe at 1X intensity (which is equivalent to continuous mode intensity). Strobe mode* also uses 0-10VDC control line where the light will be at FULL intensity when any voltage from 10-24VDC is applied to this control line and proportionally dimmer for voltages less than 10VDC.

**Note 1: 4x overdrive available only with dimming capability.*



NOTE: Refer to the wire diagram provided in light packaging for specific wiring configurations

FIGURE 1: Wiring diagram for Multi-Con-X connector



FACE VIEW
CONNECTOR ON
LIGHT

AWG12 PIN#	FUNCTION
2 (RED)	+24VDC
1 (BLACK)	GROUND
AWG26 PIN#	FUNCTION
4 (BLACK)	TRG in PNP/Rise
7 (WHITE)	0 - 10VDC INTENSITY CONTROL
8 (RED)	0 - 10VDC INTENSITY CONTROL
3 (YELLOW)	0 - 10VDC INTENSITY CONTROL
6 (ORANGE)	0 - 10VDC INTENSITY CONTROL
5 (BLUE)	0 - 10VDC INTENSITY CONTROL



M12A Bulkhead, 5-pos male TXBR3 Interface
Cable with M12A female connector

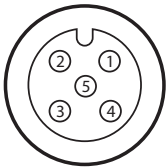
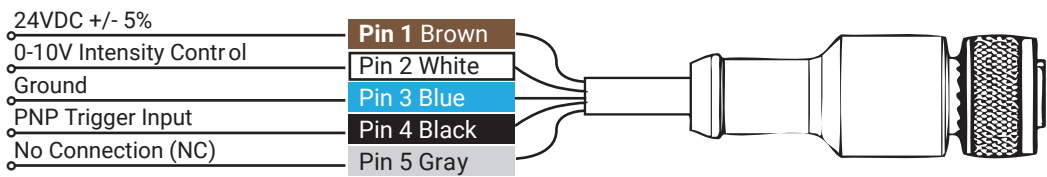
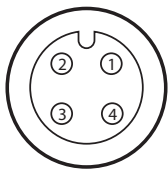


FIGURE 2: TXBR3 INTERFACE CABLE, M12 5-PIN A-CODE FEMALE CONNECTOR



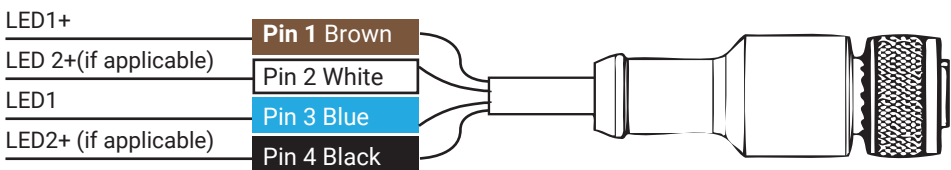
Note: For continuously ON @ full intensity connect 24VDC power supply to +24V , 0-10VDC and PNP trigger-in inputs.

FIGURE 3: CABLE COLOR CODE, M12T CONNECTOR



Pin	Function	Wire Color
1	LED1+	Brown
2	LED2+ (if applicable)	White
3	LED1	Blue
4	LED2+ (if applicable)	Black

FIGURE 4: TXBR3 INTERFACE CABLE WITH AN M12 4-PIN T-CODE FEMALE CONNECTOR



M12T Wiring				
Connector #1	Pin 1	Pin 2	Pin 3	Pin 4
1 Wavelength	LED+	LED+	LED 1–	LED–
2 Wavelengths	LED+	LED 2+	LED 1–	LED 2–
3 Wavelengths	LED+	LED 2+	LED 1–	LED 2–
4 Wavelengths	LED+	LED 2+	LED 1–	LED 2–



FIGURE 5: TXBR3 DIMENSIONS TOP VIEW | RIGHT VIEW

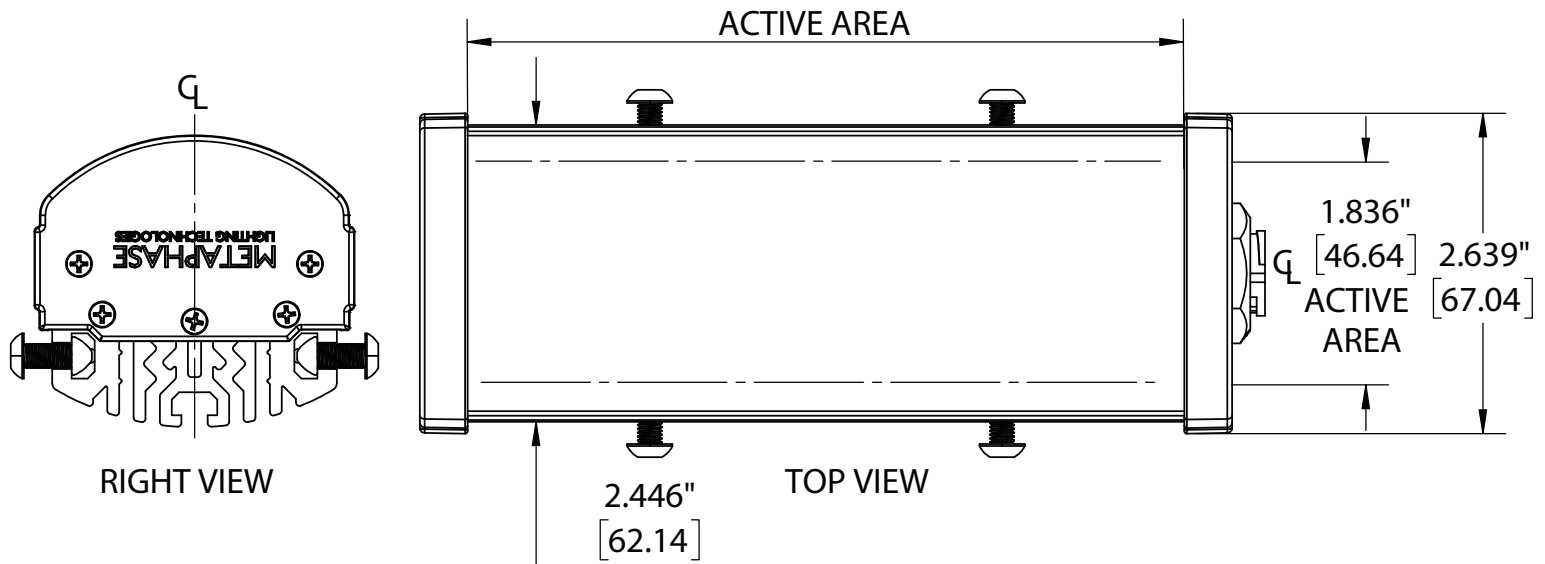
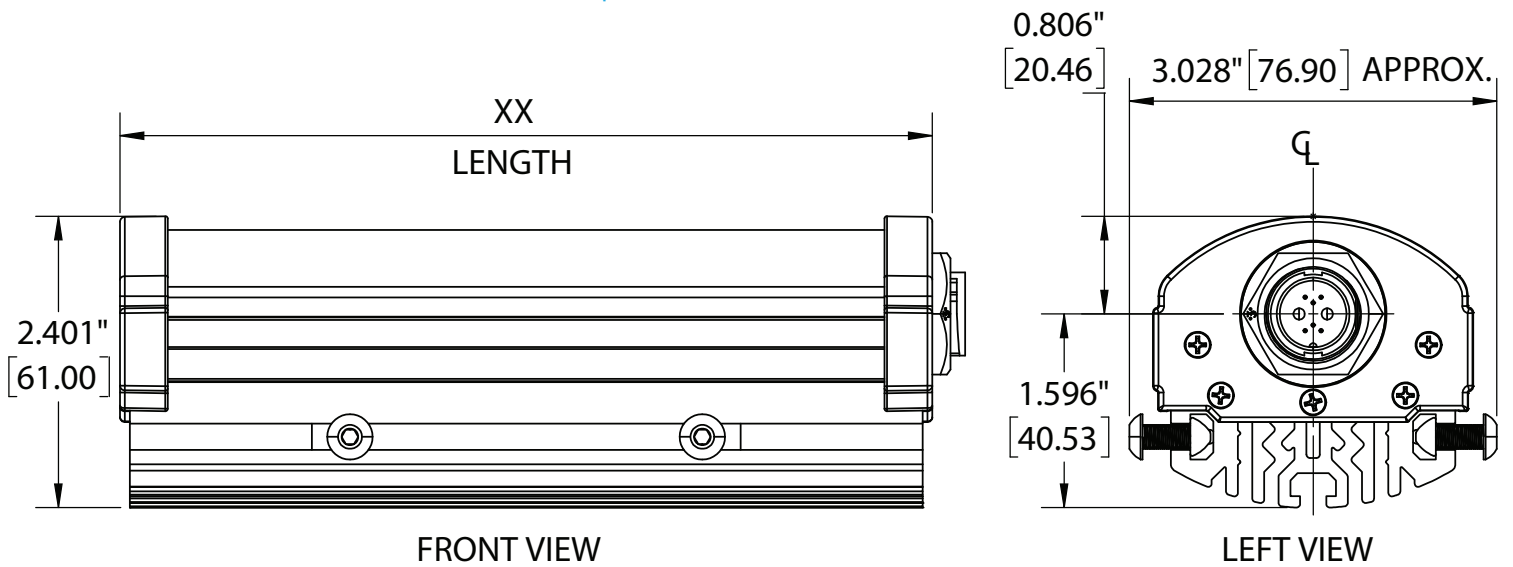


FIGURE 6: TXBR3 DIMENSIONS FRONT VIEW | LEFT VIEW



Mounting Kits

TXBR3 Mounting Kit Options



TX Series
BR3

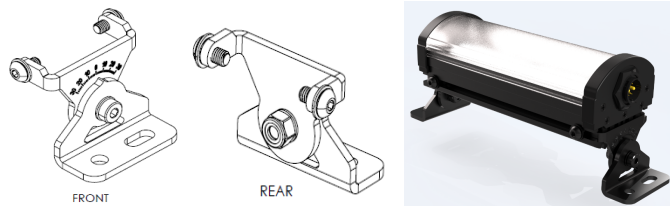


MOUNTING BRACKET KIT

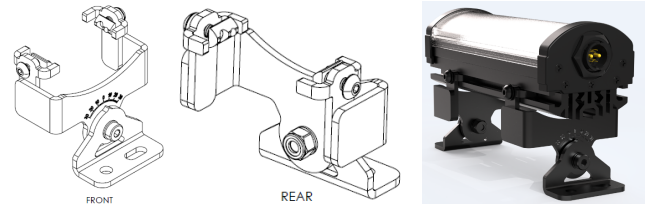
Part Number	Description
KIT-TXMB-01	QUANTITY (2) END CAP SWIVEL BRACKET KIT W/ PRINTED ANGULAR SCALE
KIT-TXMB-02	QUANTITY (2) SLIDE SWIVEL BRACKET KIT W/ PRINTED ANGULAR SCALE
KIT-TXMB-03	QUANTITY (2) M6 STUD BENT BRACKET KIT
KIT-TXMB-04	QUANTITY (3) JOINING PLATE BRACKET KIT

***NOTE** - All T-nut mounting hardware requires the use of a #3 hex key. On KIT-TXMB-01 and KIT-TXMB-02 a #4 hex key is required for the angle adjustment hardware. **Hex keys are not included with the above mounting kits.**

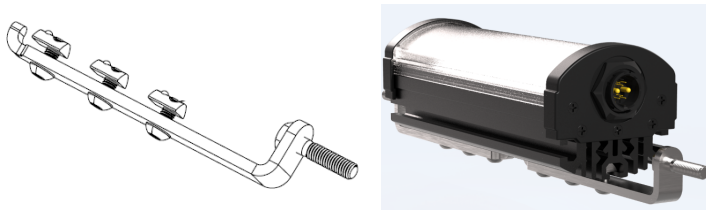
KIT-TXMB-01



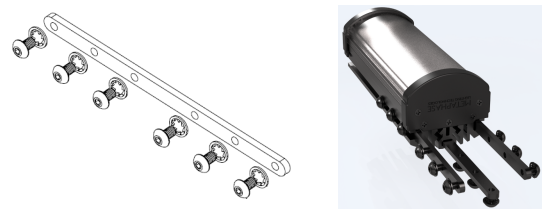
KIT-TXMB-02



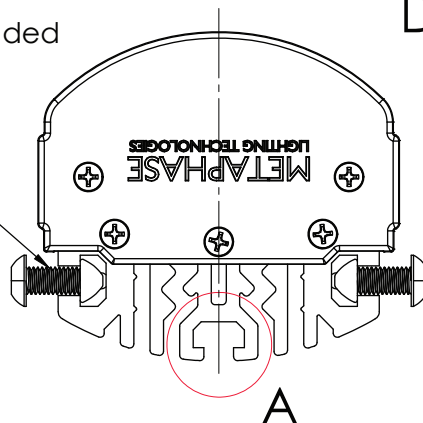
KIT-TXMB-03



KIT-TXMB-04

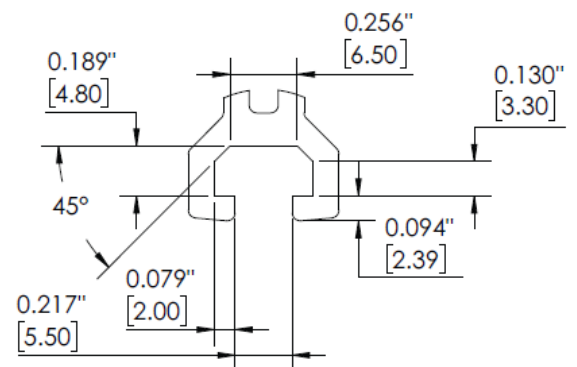


T-Slotted Framing
Drop-in Spring Loaded
Ball Nut, M5
Thread Size-
MC#5537T007



DETAIL A:

SCALE 2 : 1





For nearly two 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 engineering flexible lighting solutions that have facilitated integration into thousands of vision systems designs.

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.



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