

# TX Series ISO



Advanced Performance for Machine Vision  
Inspection, Measurement, and Gauging

## The TX ISO Difference

The TX Series of Exolights provide superior performance for the most demanding machine vision applications. Utilizes a bright and highly uniform array of LEDs. State-of-the-art driver technology delivers instant start-up and flicker-free operation and can be used both in DC continuous operation or with 4x Optical, Pulse-Follow Strobe.

- ◆ Best for high-contrast, high-accuracy inspection.
- ◆ New, state-of-the-art driver and microchip - continuous DC with 4x Optical Strobe all-in-one
- ◆ Maximum installation flexibility with T-slot L-brackets
- ◆ High-uniformity and brightness provided by a full array of high-density LEDs
- ◆ Multispectral and Hyperspectral options

### Features

- Visible, UV, IR, SWIR, Single-Color, Multispectral, Hyperspectral
- Smart driver with continuous DC, dimming and follow-me strobe
- Available in 75mm increments from a few inches 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	Polarizer	Diffuser/Cover	Connector
TXISO	XX	XX	XXXXX	XXX	XX	
	1A (ULC compatible)	List number of 25mm segments.	W (White, 6000K) R (Red 630nm)	Blank if no polarizer P0*	Blank for default, default is D300 with UV pass	8-pin Multi-Con-S M12
	1C-continuous w/ pulse follow	Only available in 75mm increments, ie 03,06,09, 12, etc.	G (Green 530nm) B (Blue 470nm)	P9*	P0/P9 come with clear cover w/diffuser	*SEE NOTE
	2A - IP-rated ULC compatible		RGB (Red Green Blue)	*Polarizer requires clear cover	*Various other standard and custom diffusers available - Contact Sales Rep	
	2C-IP-rated continuous w/pulse follow		*Many other colors + color combinations - Contact Sales Rep			

Note - M12A connector comes standard on sizes 15 and below for C version. M12T comes standard on sizes 54 and below for single color and 27 and below for 2-color for A versions. Sizes greater than those listed above, or multicolor lights, come with 8-pin switchcraft Multi-Con-S.

#### ULC-Version (A/U VERSION)

ULC-2 Controller	ULC-2	UNIVERSAL LEO CONTROLLER, TWO-CHANNEL, WITH ULC-2 CONNECTORS <i>Note: Requires 24VDC power supply, 6.7 A, to run at full capability</i>
3m cable	CAB-FM12TU-3M -For 1 channel	3 METER EXTENSION CABLE, FEMALE M12 T -CODE 4-PIN TO ONE ULC CONNECTOR, LEO POS ON PIN 1 & 2, LED NEG ON PINS 3&4
3m cable	CAB-FM12T2U-3M-For 2channels	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

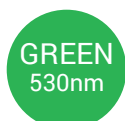
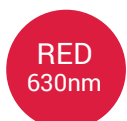
#### DC WITH STROBE (C VERSION)

3m cable	CAB-FM12FL-3M	3 METER EXTENSION CABLE, FEMALE M-12 A-CODE 5-PIN TO FLYING LEADS
3m cable	CAB-CX2P6SFL-3M	3 METER EXT CABLE, FEMALE CONXALL 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
5m cable	CAB-CX2P6SFL-5M	5 METER EXT CABLE, FEMALE CONXALL 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
10m cable	CAB-CX2P6SFL-1 OM	10 METER EXT CABLE, FEMALE CONXALL 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
15m cable	CAB-CX2P6SFL-15M	15 METER EXT CABLE, FEMALE CONXALL 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS

#### OPTIONAL SWIVEL BRACK

Bracket kit	KIT-TXMB-01	1 PAIR OF OPTIONAL T-SLOT MOUNTED SWIVEL BRACKETS
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#### Available Wavelengths



Note:  
Available in  
many more color  
combinations



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	Exempt Applicable Wavelengths: 455, 530, 625, 850, W
Electrical	
Supply Voltage	24VDC+/-5%
0-10V Dimming Control (TXBL TXCBL)	Off: 0V   Turn-on Threshold: 0.95V 100% Intensity: 10V Maximum allowance voltage: 24V
Trigger Input (5 KHz Max. Trigger Rate)	
NPN	Voltage Enable > 2.4V Voltage Disable < 0.9V
Min Trigger pulse	2.51µs
Trigger Turn-on delay	51µs
Trigger Turn-off delay	51µs

### 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.

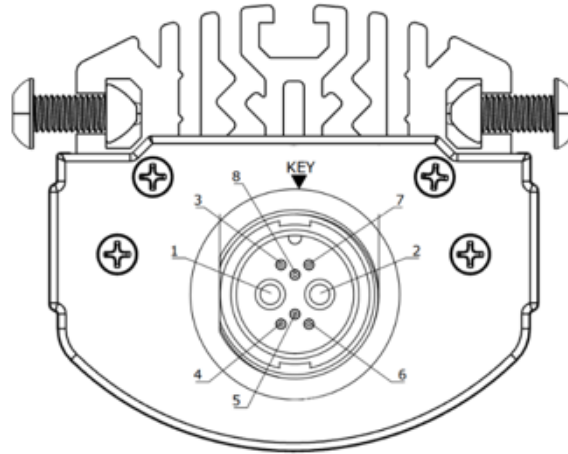
The light can be dimmed by proportionally be apply a voltage less than 10VDC to the 0-10VDC intensity control while the trigger input trigger requirements are satisfied. User can flash the light ON/OFF at DC level by turning ON/OFF the 0-10VDC control line gating.

**Strobe operation:** Trigger input line uses a “follow me trigger” design where the light will strobe at 4X overdrive intensity when >1.39VDC pulse is applied to the trigger input for a duration between 2.5us and 2ms, with a duty cycle less than 10%. For trigger pulses that have duration longer than 2 msec 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: Refer to wire digram provided in light packaging for specific wiring configurations

FIGURE 1: Wiring diagram for Switchcraft 8-pin Multi-Con-S connector



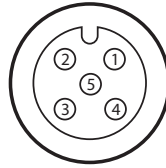
FACE VIEW  
CONNECTOR ON  
LIGHT

SW AWG12 PIN#	FUNCTION
2 (RED)	+24VDC
1 (BLACK)	GROUND (24V RTN)
SW 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

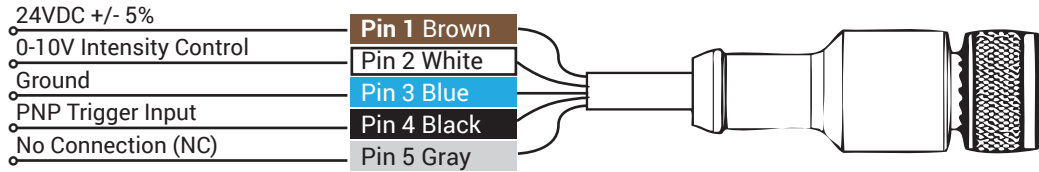
**TXISO Wiring - M12 A-code & M12 T-code**  
**M12 4-pin T-Code Bulkhead**



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

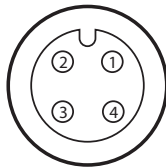


**FIGURE 2: TXFD INTERFACE CABLE, M12 5-PIN A-CODE FEMALE CONNECTOR**



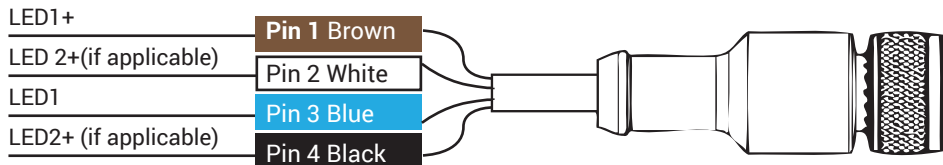
Note: For continuously ON @ full intensity connect 24VDC power supply to +24V , 0-10VDC and PNP trigger-in inputs.

**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: TXISO 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-
Connector #2				
1 Wavelength				
2 Wavelengths				
3 Wavelengths	LED 3+	NC	LED 3-	NC
4 Wavelengths	LED 3+	LED 4+	LED 3-	LED 4-



FIGURE 13: TXISO DIMENSIONS TOP VIEW | RIGHT VIEW  
in[mm]

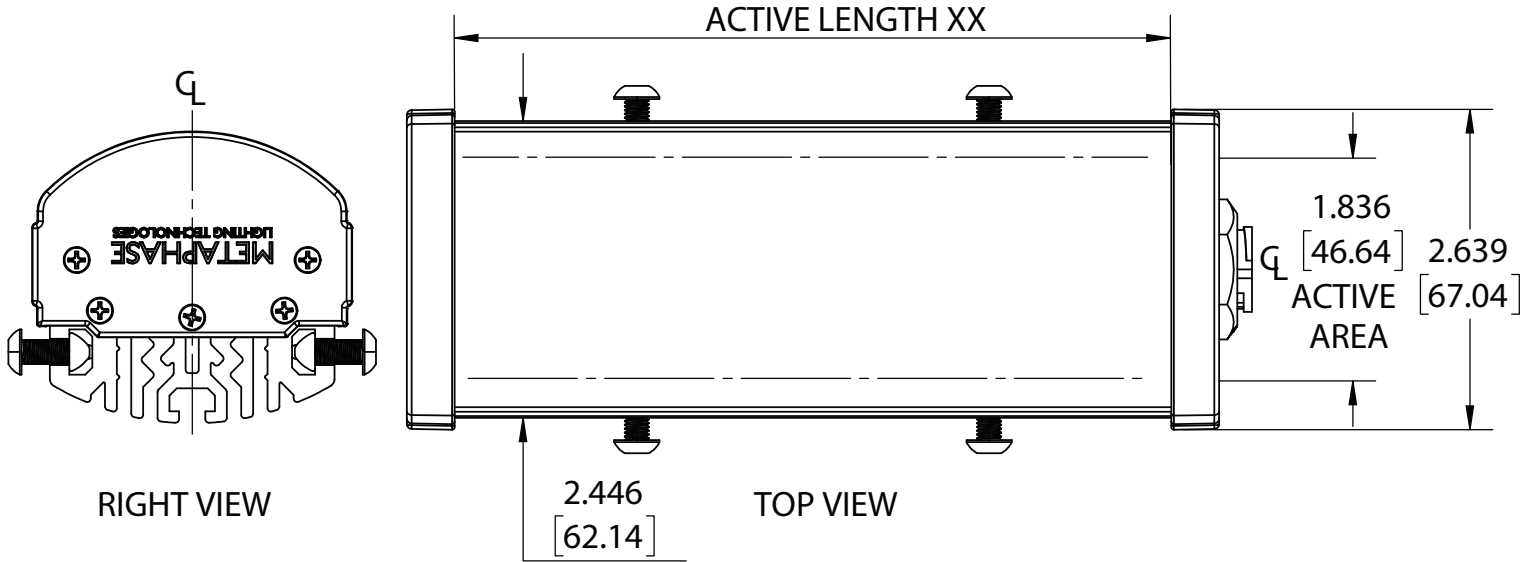
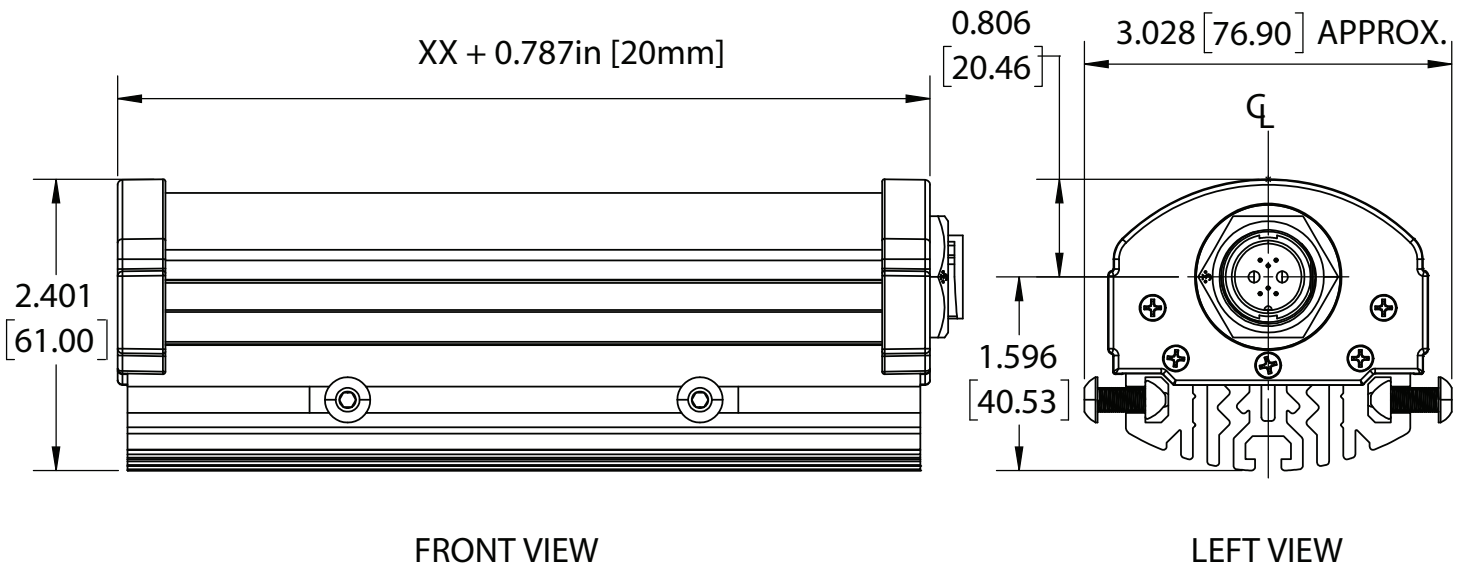


FIGURE 14: TXISO DIMENSIONS FRONT VIEW | LEFT VIEW  
in[mm]





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.

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

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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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