

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 bright and highly uniform 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
- ◆ 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 75mm up to 3+ meters!
- Options for IP67, multiple lens types, diffusers and polarizers

TXISO Part Numbers and Sizes

TX Series
ISO

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	XX	XXXX	XXX	
	1A (ULC compatible)	List number of 25mm segments. Only available in 75mm increments, ie 03,06,09, 12, etc.	W (White, 6000K)	Blank if no polarizer	Blank for default D300*,	Blank OR M12	
	1B (cont w/ dimming)		R (Red 630nm)	P0*			*Polarizer requires clear cover
	1C-continuous w/ pulse follow		G (Green 530nm)	P9*	D300 is UV pass with diffuser. Leave blank if using D300		
	2A - IP-rated ULC compatible		B (Blue 470nm)		Enter CC13 if you select polarizer CC13 is clear cover with diffuser		
	2B (cont w/ dimming)		RGB (Red Green Blue)				
	2C-IP-rated continuous w/pulse follow		UV365 / UV395				
			IR850 /IR940				
		IR05 (SWIR 1050)	*P0 film perpendicular to long heatsink	*Various other standard and custom diffusers available - Contact Sales Rep			
		IR20 (SWIR 1200)					
		IR30 (SWIR 1300)					
		IR45 (SWIR 1450)	*P90 film parallel to long heatsink				
		IR55 (SWIR 1550)					
		IR65 (SWIR 1650)					

NOTE 1 - Connector options available may depend on length and/or model selected

ULC-Version (A/U VERSION)

ULC-2 Controller	ULC-2	UNIVERSAL LED 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, LED 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

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

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 MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
5m cable	CAB-CX2P6SFL-5M	5 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
10m cable	CAB-CX2P6SFL-10M	10 METER EXT CABLE, FEMALE MULTI-CON-X 2-PIN POWER, 6-PIN SIGNAL TO FLYING LEADS
15m cable	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, WITH PRINTED ANGULAR SCALE, ASSEMBLED
Bracket kit	KIT-TXMB-02	QUANTITY 2 SLIDE SWIVEL MOUNTING BRACKET, WITH PRINTED ANGULAR SCALE, ASSEMBLED
Bracket kit	KIT-TXMB-03	QUANTITY 2 M6-STUD MOUNTING BENT BRACKET, ASSEMBLY
Bracket kit	KIT-TXMB-04	QUANTITY 2 JOINING PLATE BRACKET, ASSEMBLY



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	
Input Power	24VDC+/-5% 320mA per 75mm segment
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.

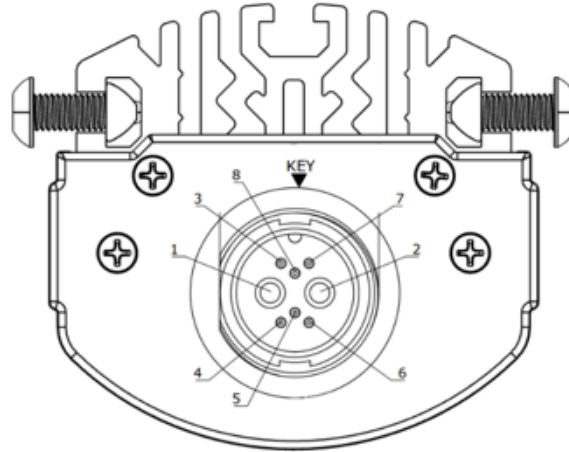
The light can be dimmed by proportionally be apply a voltage less than 10VDC to the 0-10VDC intensity control while the trigger input trigger requirements are satisfied. User can flash the light ON/OFF at DC level by turning ON/OFF the 0-10VDC control line gating.

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 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 TXISO Interface
Cable with M12A female connector

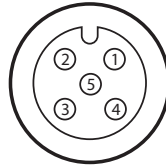
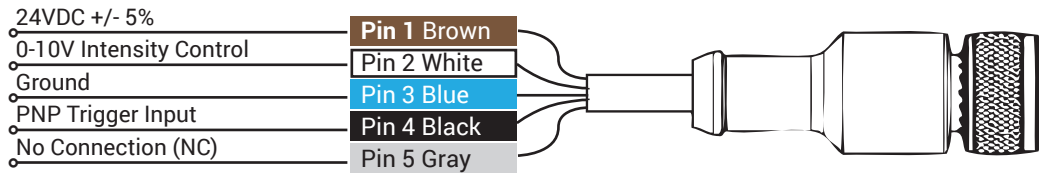
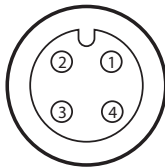


FIGURE 2: TXISO INTERFACE CABLE, M12 5-PIN A-CODE FEMALE CONNECTOR



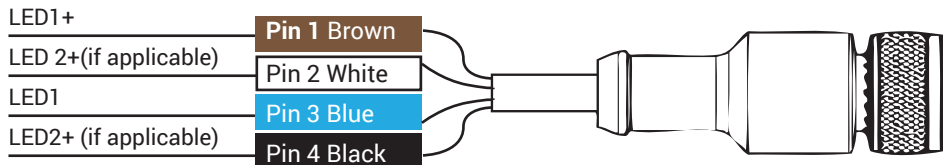
Note: For continuously ON @ full intensity connect 24VDC power supply to +24V , 0-10VDC and PNP trigger-in inputs.

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-



FIGURE 5: TXISO DIMENSIONS TOP VIEW | RIGHT VIEW

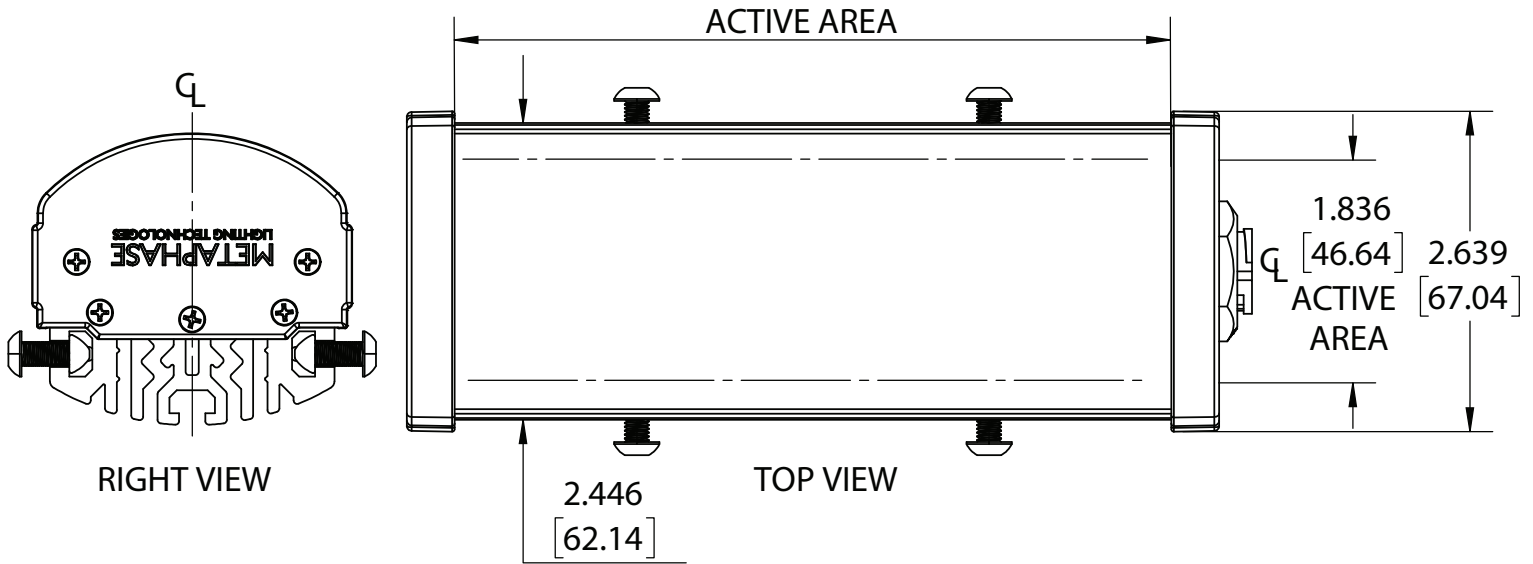
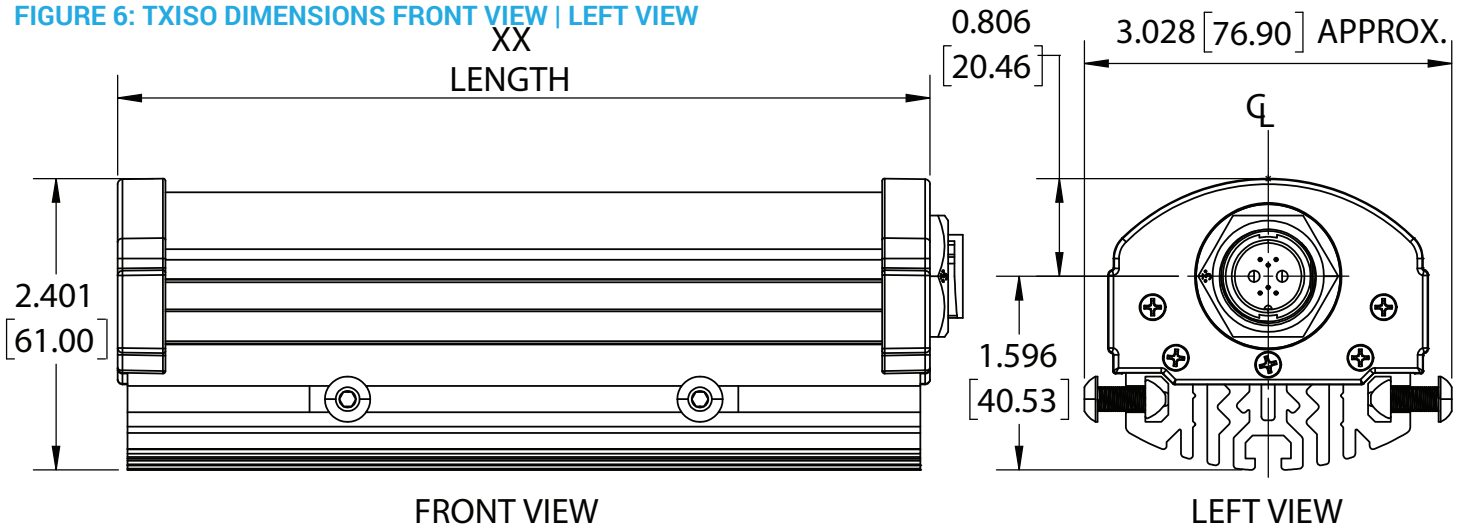
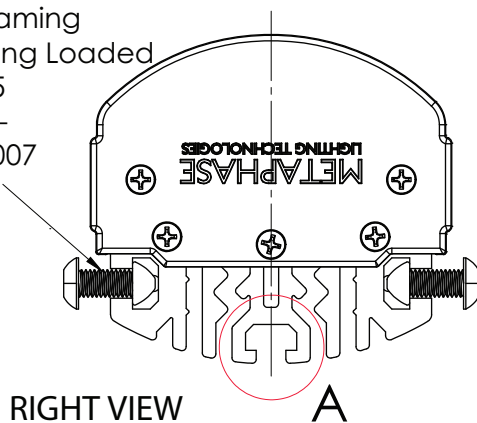


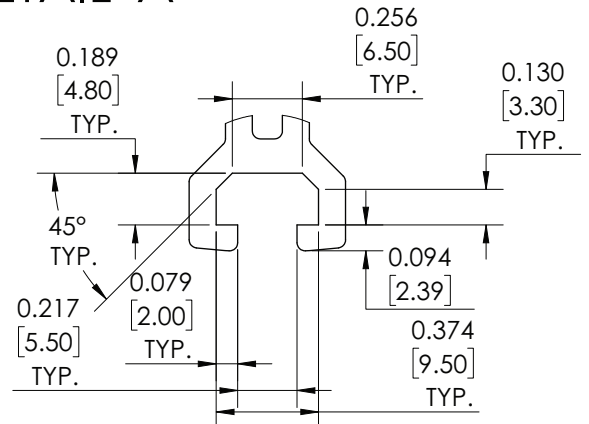
FIGURE 6: TXISO DIMENSIONS FRONT VIEW | LEFT VIEW



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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