

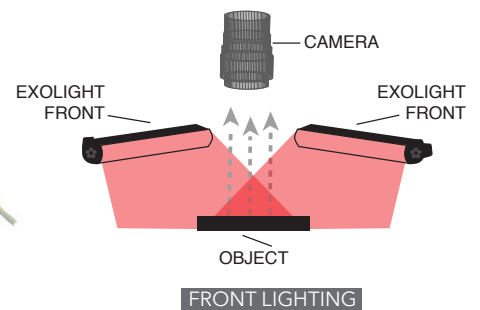
EXOLIGHT™

Linear Illuminator

MetaBright™ Series

The Metaphase Exolight™ is the most efficient and economical LED replacement technology available for the fluorescent tube. The Metaphase Exolight™ is best applied where a highly intense, yet widely diffused light beam is required. Metaphase's isotropic plastic micro-lens diffusers shape the isotropic illumination unique to the ExoLight™. Isotropic lensing produces extremely even illumination and minimizes specular reflection (hot spots/glare) inherent with LEDs. The Exolight™ is "tube-like" in form and mimics the softly diffused output of fluorescent fixtures like no other ordinarily diffused LED fixture can. These fixtures produce higher power and more stable output than fluorescents while featuring the long lifetime expectancy and low cost of ownership of LEDs. Solid-state performance ensures 75,000-hour lifetime expectancy for each of our lighting systems.

Exolights™ are available in a large selection of wavelengths including Multi-Spectral



PRODUCT FEATURES

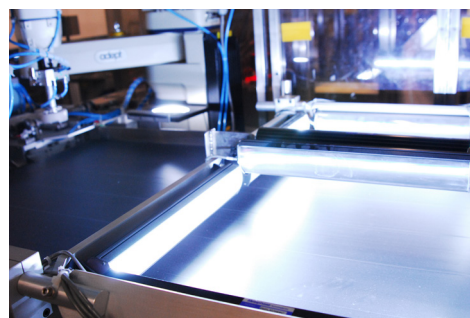
- Built-in constant current driver(s) with 0-10V intensity control
- Continuous and Strobe with power boosting versions available
- Compatible with DDC-3 and ILD-35 intensity controllers.
- More stable than and outperforms fluorescent tubes by 3x
- Polarizer lens option to further reduce hot spots and glare
- 24VDC version requires no special controllers
- Features a clamping style tilt bracket to allow easy positioning from 0-180°
- CE, RoHS compliant
- Compact robust packaging, no glass
- Available wavelengths



Exolights™ feature a clamping style tilt bracket to allow easy positioning from 0-180°. Locking knob feature also available.

PRODUCT APPLICATIONS

- Machine Vision & Automation
- Packaging inspection such as absence & presence of product
- Work bench illumination
- Automotive component inspection
- Coiled steel pin-hole detection
- Pick & place
- Sorting facilities / Bar code reading



PRODUCT SPECIFICATIONS

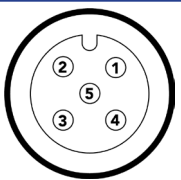
Power Source	24VDC +/- 5%
Cable (Typical)	10 foot (3 m) cable with flying leads or M12 male connector with 19" cable
Housing	Black Anodized Aluminum
Operating Temperature	-20° C to 40° C
Lifetime Expectancy	75,000 Hours
Intensity	Varies by Model
Compliance	CE, RoHS
Intensity Control	0-10V intensity control built in. Compatible with optional DDC-3 and ILD-35-24-L Dimmers
IP Rating	IP50

SINGLE COLOR EXOLIGHTS

MODEL	LENS * LENGTH inches (cm)	WEIGHT ±10% lbs (Kg)	CABLE(S)			TYPICAL CURRENT (Amps) @24VDC						
			QTY	LENGTH	DESCRIPTION	WHITE	RED	GREEN	BLUE	IR	UVL	UVS
ISO-2	2.86 in (7.26 cm)	0.4 (0.18)	1	10ft	24AWG 4 CONDUCTOR	.20	.10	.25	.25	.20	.20	.20
ISO-4	4.10 in (10.4 cm)	0.8 (0.36)				.20	.10	.25	.25	.20	.20	.20
ISO-8	8.00 in (20.3 cm)	1.3 (0.59)				.40	.30	.50	.50	.40	.40	.40
ISO-14	13.93 in (35.4 cm)	2.1 (0.95)				.80	.60	.90	.90	.90	.80	.80
ISO-19	19.00 in (48.3 cm)	2.7 (1.22)				.90	.70	1.0	1.0	.90	.90	.90
ISO-23	22.81 in (57.9 cm)	3.2 (1.45)				1.1	.80	1.2	1.1	1.2	1.1	1.1
ISO-30	30.50 in (77.5 cm)	3.9 (1.77)			1.5	1.1	1.5	1.5	1.5	1.5	1.5	
ISO-34	34.00 in (86.4 cm)	4.3 (1.95)			1.7	1.2	1.8	1.7	1.8	1.7	1.7	
ISO-48	45.75 in (116.2 cm)	6.0 (2.72)			2.2	1.6	2.3	2.3	2.3	2.2	2.2	
ISO-53	53.00 in (134.6 cm)	6.6 (2.98)			2.6	1.9	2.7	2.7	2.7	2.6	2.6	
ISO-57	57.75 in (146.7 cm)	7.0 (3.18)			3.0	2.2	3.1	3.0	3.1	3.0	3.0	
ISO-60	60.50 in (153.7 cm)	7.5 (3.40)			3.0	2.2	3.1	3.0	3.1	3.0	3.0	
ISO-63	63.25 in (160.7 cm)	8.1 (3.67)			3.1	2.3	3.2	3.1	3.2	3.1	3.1	
ISO-68	68.00 in (172.7 cm)	8.9 (4.04)			3.3	2.5	3.5	3.4	3.5	3.3	3.3	
ISO-71	71.50 in (181.6 cm)	9.36 (4.26)	3.5	2.6	3.7	3.6	3.7	3.5	3.5			
ISO-89	89.00 in (226.1 cm)	11.6 (5.26)	2	20ft each from opposing ends of light	18AWG 6 CONDUCTOR	4.2	3.1	4.5	4.4	4.5	4.2	4.2
ISO-96	96.50 in (245.1 cm)	12.4 (5.62)				4.8	3.5	5.0	5.0	5.0	4.8	4.8
ISO-100	100.00 in (254.0 cm)	12.9 (5.85)				4.8	3.5	5.0	5.0	5.0	4.8	4.8
ISO-114	114.00 in (289.6 cm)	13.5 (6.12)				5.7	4.2	6.0	5.9	6.0	5.7	5.7
ISO-119	119.00 in (302.3 cm)	14.1 (6.40)				5.9	4.3	6.2	6.1	6.2	5.9	5.9

*Custom lengths available

WIRING DIAGRAM (4 Conductor)		WIRING DIAGRAM (6 Conductor)		M12	
WIRE COLOR	FUNCTION	WIRE COLOR	FUNCTION	PIN#	FUNCTION
RED	+24VDC	RED, ORANGE	+24VDC	1	+24VDC
GREEN	SIGNAL GROUND	GREEN	SIGNAL GROUND	2	0-10VDC INTENSITY CONTROL
BLACK	GROUND (24V RTN)	BLACK, BLUE	GROUND (24V RTN)	3	GROUND (24V RTN)
WHITE	0-10VDC INTENSITY CONTROL	WHITE	0-10VDC INTENSITY CONTROL	4	SIGNAL GROUND
When not using intensity control, connect the 0-10V control line to +24VDC and Signal Ground to Ground (24V RTN)				5	NOT USED (Optional)



NOTE: The M12 connector option is not recommended for lights rated in excess of 4 amps max current. Contact Metaphase for additional quick disconnect options.

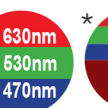
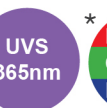
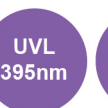
SINGLE COLOR EXOLIGHTS with ULC-2 CONTROLLER

MODEL	LENS * LENGTH inches (cm)	WEIGHT ±10% lbs (Kg)	CABLE(S)			INPUT CURRENT / STROBE CURRENT(Amps)							
			QTY	LENGTH	DESCRIPTION	WHITE	RED	GREEN	BLUE	IR	UVL	UVS	
ISO-2	2.86 in (7.26 cm)	0.4 (0.18)	1	10ft	24AWG 4 CONDUCTOR	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	
ISO-4	4.10 in (10.4 cm)	0.8 (0.36)				.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5	.5/2.5
ISO-8	8.00 in (20.3 cm)	1.3 (0.59)				1.0/10	1.0/10	1.0/10	1.0/10	1.0/10	1.0/10	1.0/10	1.0/10
ISO-14	13.93 in (35.4 cm)	2.1 (0.95)				1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13
ISO-19	19.00 in (48.3 cm)	2.7 (1.22)				1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13	1.5/13
ISO-23	22.81 in (57.9 cm)	3.2 (1.45)				1.5/15	1.5/15	1.5/15	1.5/15	1.5/15	1.5/15	1.5/15	1.5/15
ISO-30	30.50 in (77.5 cm)	3.9 (1.77)				18AWG 4 CONDUCTOR	2.0/18	2.0/18	2.0/18	2.0/18	2.0/18	2.0/18	2.0/18
ISO-34	34.00 in (86.4 cm)	4.3 (1.95)			2.2/20		2.2/20	2.2/20	2.2/20	2.2/20	2.2/20	2.2/20	2.2/20
ISO-48	45.75 in (116.2 cm)	6.0 (2.72)			2.7/25		2.7/25	2.7/25	2.7/25	2.7/25	2.7/25	2.7/25	2.7/25
ISO-53	53.00 in (134.6 cm)	6.6 (2.98)			3.0/25		3.0/25	3.0/25	3.0/25	3.0/25	3.0/25	3.0/25	3.0/25
ISO-57	57.75 in (146.7 cm)	7.0 (3.18)			3.3/27		3.3/27	3.3/27	3.3/27	3.3/27	3.3/27	3.3/27	3.3/27
ISO-60	60.50 in (153.7 cm)	7.5 (3.40)			3.6/27		3.6/27	3.6/27	3.6/27	3.6/27	3.6/27	3.6/27	3.6/27
ISO-63	63.25 in (160.7 cm)	8.1 (3.67)			3.8/30		3.8/30	3.8/30	3.8/30	3.8/30	3.8/30	3.8/30	3.8/30
ISO-68	68.00 in (172.7 cm)	8.9 (4.04)			4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	
ISO-71	71.50 in (181.6 cm)	9.36 (4.26)	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30	4.0/30			
ISO-89	89.00 in (226.1 cm)	11.6 (5.26)	2	20ft each from opposing ends of light									
ISO-96	96.50 in (245.1 cm)	12.4 (5.62)											
ISO-100	100.00 in (254.0 cm)	12.9 (5.85)											
ISO-114	114.00 in (289.6 cm)	13.5 (6.12)											
ISO-119	119.00 in (302.3 cm)	14.1 (6.40)											

*Custom lengths available

SINGLE COLOR with ULC-2 (4 Conductor)	
WIRE COLOR	FUNCTION
RED, WHITE (+) BLACK, GREEN (-)	LED INPUT
Terminated within a 2 position BCP-508-2 connector to interface with ULC-2, "LED Output"	

PRODUCT WAVELENGTH



*Note: Multispectral Custom Wavelengths Available

MULTISPECTRAL EXOLIGHTS / with ULC-2 CONTROLLER

MODEL	LENS * LENGTH inches (cm)	WEIGHT ±10% lbs (Kg)	CABLE(S)			RGB I _A (Amps)	RGB w/ULC-2 I _A /STRB (Amps)	DESCRIPTION	RGBIR I _A (Amps)	RGBIR w/ULC-2 I _A /STRB (Amps)		
			QTY	LENGTH	DESCRIPTION							
ISO-2	2.86 in (7.26 cm)	0.4 (0.18)	1	10ft	24AWG 6 CONDUCTOR	0.5	.8/5.0	22AWG 10 CONDUCTOR	.5	.7/5.0		
ISO-4	4.10 in (10.4 cm)	0.8 (0.36)				0.6	1.0/10		.5	1.0/10		
ISO-8	8.00 in (20.3 cm)	1.3 (0.59)				1.0	1.5/20		1.0	1.5/20		
ISO-14	13.93 in (35.4 cm)	2.1 (0.95)				1.5	2.0/20		1.8	2.0/20		
ISO-19	19.00 in (48.3 cm)	2.7 (1.22)			2	20ft each from opposing ends of light	18AWG 6 CONDUCTOR	2.0	3.0/30	18AWG 6 CONDUCTOR (2 CABLES)	2.1	3.0/30
ISO-23	22.81 in (57.9 cm)	3.2 (1.45)						2.3	4.0/30		3.0	4.0/30
ISO-30	30.50 in (77.5 cm)	3.9 (1.77)						3.3			3.3	
ISO-34	34.00 in (86.4 cm)	4.3 (1.95)						3.5			3.5	
ISO-48	45.75 in (116.2 cm)	6.0 (2.72)						4.8			4.5	
ISO-53	53.00 in (134.6 cm)	6.6 (2.98)						5.4			5.0	
ISO-57	57.75 in (146.7 cm)	7.0 (3.18)	6.1				6.0					
ISO-60	60.50 in (153.7 cm)	7.5 (3.40)	6.2				6.2					
ISO-63	63.25 in (160.7 cm)	8.1 (3.67)	6.4				6.2					
ISO-68	68.00 in (172.7 cm)	8.9 (4.04)	7.1				7.0					
ISO-71	71.50 in (181.6 cm)	9.36 (4.26)	7.3		7.3							
ISO-89	89.00 in (226.1 cm)	11.6 (5.26)	Contact Metaphase for possible custom order options			Contact Metaphase for possible custom order options						
ISO-96	96.50 in (245.1 cm)	12.4 (5.62)										
ISO-100	100.00 in (254.0 cm)	12.9 (5.85)										
ISO-114	114.00 in (289.6 cm)	13.5 (6.12)										
ISO-119	119.00 in (302.3 cm)	14.1 (6.40)										

*Custom lengths available Note: I_A= Input Current

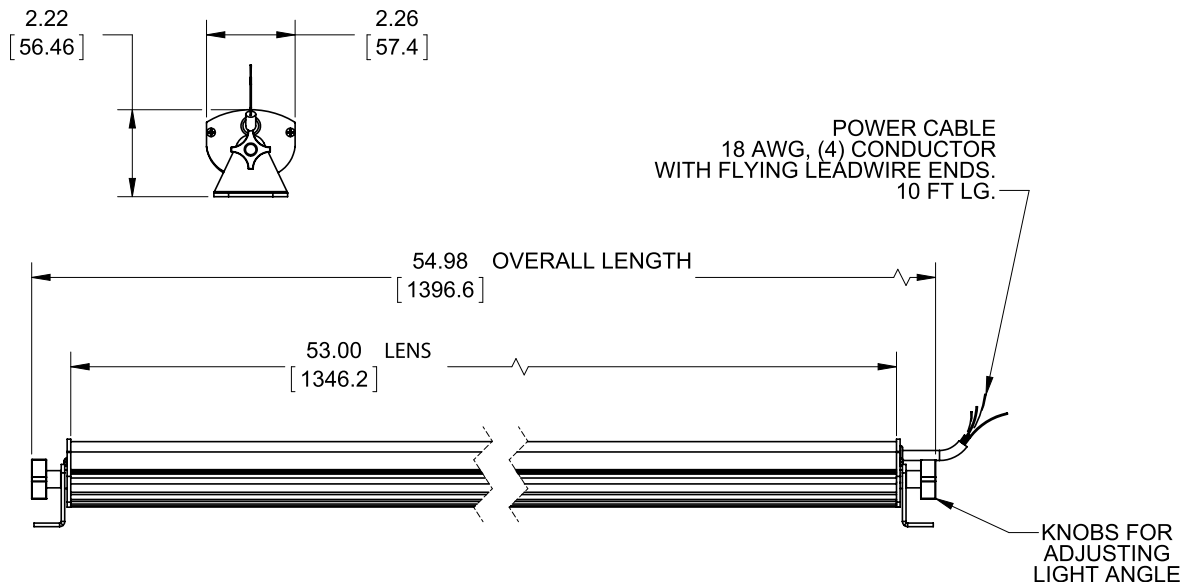
RGB (6 Conductor)		RGB with ULC-2 (6 Conductor)		RGBIR (10 Conductor)		RGBIR with ULC-2 (10 Conductor)		
WIRE COLOR	FUNCTION	WIRE COLOR	FUNCTION	WIRE COLOR	FUNCTION	WIRE COLOR	FUNCTION	
BROWN	+24VDC	RED (+) BLACK (-)	LED INPUT, RED	WHITE WHITE/BLACK	+24VDC	RED (+) RED/BLACK (-)	LED INPUT, RED	
BLACK	GROUND (24V RTN)	GREEN (+) WHITE (-)	LED INPUT, GREEN	BLACK	GROUND (24V RTN)	GREEN (+) GREEN/BLACK (-)	LED INPUT, GREEN	
WHITE	SIGNAL GROUND	BLUE (+) ORANGE (-)	LED INPUT, BLUE	RED/BLACK GREEN/BLACK ORANGE/BLACK	SIGNAL GROUND	BLUE (+) BLACK (-)	LED INPUT, BLUE	
RED	0-10VDC RED INTENSITY CONTROL	Terminated within a 2 position BCP-508-2 connector to inter- face with ULC-2, "LED Output"		RED	0-10VDC RED INTENSITY CONTROL	ORANGE (+) ORANGE/BLACK (-)	LED INPUT, IR	
GREEN	0-10VDC GREEN INTENSITY CONTROL			GREEN	0-10VDC GREEN INTENSITY CONTROL	WHITE WHITE/BLACK	NO CONNECTION	
BLUE	0-10VDC BLUE INTENSITY CONTROL			BLUE	0-10VDC BLUE INTENSITY CONTROL	Terminated within a 2 position BCP-508-2 connector to interface with ULC-2, "LED Output"		
When not using intensity control, connect the 0-10V control line to +24VDC and Signal Ground to Ground (24V RTN)				ORANGE	0-10VDC IR INTENSITY CONTROL			

PART NUMBER KEY							
MODEL	LENGTH ID (inches)	WAVELENGTH	DRIVER* (most common)	POLARIZER	CABLE LENGTH	CONN.** (most Common)	
ISO	XXX	XXXXX	XXX-XXXXXX	XXXX	XXX	XXXX	
ISO	2 through 119 (See above chart)	W (White 6000K, Nominal) R (Red 630nm) G (Green 530nm) B (Blue 470nm) IR850 (Infrared 850nm) IR940 (Infrared 940nm) UV365 (UV Long 365nm) UV395 (UV Long 395nm) RGB (Red-Green-Blue)	24Z 24Z-TRG 24-ILSXXX 24-ILD U¹ XXX=rate in μ s Example: 250	POLO Select or leave blank for no polarizer	5M 10M Length can be customized: ex.7M=7meters Select or leave blank for 3 meters	M12D^{1 2} BC³ Select or leave blank for flying leads	
Example 1: ISO-19-W-24Z Example 2: ISO-71-G-24Z-TRG				¹ Not available in lights exceeding 4A input current ² Default cable length for an M12D connector is 19 inches			

Condition	NPN Input Lead	PNP Input Lead	Result
NPN mode	<.9VDC	N/A (float)	Enables Light
PNP mode	N/A (float)	>2.5VDC	Enables Light
No Inputs	No Connection	No Connection	Light is Disabled

Note: When the Light is Enabled it is controlled by the 0-10VDC Intensity Control. For maximum intensity, tie the 0-10VDC Intensity Control line to +24 VDC and connect the Signal Ground line to 24V RTN.

Sample Part Number: ISO-53-W-24Z



ULC-2

Metaphase Technologies' Universal LED Controller provides independent, constant-current control of two LED loads up to 4 amps continuous DC or a maximum output power of 60 Watts per channel. In Pulse (Strobe) Mode, the ULC-2 is capable of output currents up to 40 amps. The ULC-2 is capable of driving LED forward voltages between 3V and 20V. Pulsewidths are adjustable down to 2 microseconds and external trigger rates up to 50kHz. The ULC-2 may be remotely controlled over Ethernet using the Metaphase Windows software MetaBOSS. Additionally, user-adjustments of the ULC-2 are provided by way of a user-friendly LCD interface. Up to five preset configurations per channel may be saved and recalled to meet the changing demands of today's applications.



DIMMING CONTROLLERS

ILD-35-24-L

Analog power dimming for use with Exolight Series Lights - Features a ten turn precision lock-in knob.



In Line Dimmer (Analog)

DDC-3

Metaphase Technologies' Digital Dimming Controller (DDC-3) provides 0-10V dimming voltage control of three independent LED loads in increments of 0.1V. The DDC-3 may be remotely controlled over Ethernet using Metaphase Technologies' MetaBOSS Windows software or by third-party programs using the DDC-3's Ethernet and USB Commands. Additionally, user-adjustments of the DDC-3 are provided by way of a user-friendly LCD interface.



Digital Dimming Controller

WARRANTY INFORMATION

▶ Metaphase will repair or replace, without charge, f.o.b. shipping point, any parts proven to Metaphase's satisfaction and upon Metaphase's examination to have been defective in material or workmanship when furnished to the original purchaser. Deterioration or wear caused by abuse, maintenance neglect, improper use, abrasive action or excessive heat shall not constitute defects. Equipment and accessories not of Metaphase's manufacture are warranted only to the extent that they are warranted by the manufacturers, and this warranty is applicable only if the defect was the result of normal use, application and service, and is void if the product or any part hereof was tampered with, repaired or altered by any person other than the factory or authorized repair station.

COMPANY CONTACT INFORMATION

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

COMPLIANCE



IEC
62417

For more information please contact:



BOCK OPTONICS INC.
14 Steinway Blvd., Unit 7
Toronto, Ontario M9W 6M6

Tel: (416) 674-2804
sales@bockoptronics.ca
www.bockoptronics.ca