

UL-CLL

Using Metaphase's proprietary optics, the UL-Collimated Line Light works like a traditional line light but can project its light at a lower divergence angle. This helps keep a tight, structured beam of light at longer working distances, possibly many meters away while delivering high intensity light and for applications where you cannot have the light close to the object or web. These features are useful for creating clearances for robotics, imaging high tunnel ceilings, creating distances from hot objects or applications requiring precise backlight imaging. The UL-Collimated Line Light is a great tool for any line scan or machine vision lighting application.



FEATURES

- Proprietary collimated lens for low divergence angle
- High intensity, over 1.5 million Lux
- Lens options for various beam widths and working distances
- Lengths range from 5 inches to 120 inches
- High Uniformity using Metaphase's unique diffuser technology
- 24Z version has a built-in Constant Current Driver(s) with 0-10VDC Intensity Control
- Compatible with DDC-3 and ILD-35 Dimmers
- Compliance: ETL listed (UL compliant), CE and RoHS.

APPLICATIONS

- Geometry measurements of long targets
- Direct position measurement
- Web inspection (foil, plastic film, PCBs, glass, paper, web converting, etc.)
- Printed circuit board inspection
- Long working distance applications such as tunnels, rails, or ceiling inspections
- Tube or bottle inspection
- Quality control in food, chemicals, and textile industry
- Fabrics
- Solar Cells

GENERAL SPECIFICATIONS

Power Source:	24VDC \pm 5%
Cable (Standard):	10-foot cable with flying leads
Housing:	Black Anodized Aluminum
Ambient Temp:	-20°C to 40°C
Lifetime Expectancy:	75,000 hours (except UV)

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UL Collimated Line Lights														
MODEL	Overall Length Inches / cm	Lens Length Inches / cm	Weight lbs/Kg	Quantity	Cable(s)			*Typical Current (Amps) @24VDC						
					Length	AWG/ Conductors	WHITE	RED	GREEN	BLUE	IR850	UV365	UV395	
UL-CLL209	5.90 / 14.98	5.0 / 12.7	1.4 / .635	1	10ft	18/4	0.7	0.7	0.7	0.7	0.8	0.9	0.8	
UL-CLL309	10.94 / 27.80	10.0 / 25.4	2.6 / 1.18	2		18/4(1) 24/4(1)	1.5	1.4	1.3	1.4	1.7	1.8	1.5	
UL-CLL409	16.00 / 40.64	15.0 / 38.1	3.8 / 1.72				2.3	2.3	2.0	2.0	2.4	2.7	2.3	
UL-CLL509	21.06 / 53.50	20.0 / 50.8	5.0 / 2.27				3.0	3.0	2.7	2.8	3.2	3.6	3.0	
UL-CLL609	26.17 / 66.48	25.0 / 63.5	6.2 / 2.81				3.8	3.7	3.4	3.5	3.9	4.6	3.9	
UL-CLL709	31.20 / 79.25	30.0 / 76.2	7.4 / 3.36				4.6	4.6	4.2	4.2	4.8	5.5	5.7	
UL-CLL809	36.30 / 92.20	35.0 / 88.9	9.4 / 4.26				5.5	5.5	4.9	5.0	5.6	6.6	5.5	
UL-CLL909	42.03 / 106.8	40.0 / 101.6	12.2 / 5.53			6.3	6.3	5.7	5.8	6.4	7.6	6.4		
UL-CLL1009	47.03 / 119.5	45.0 / 114.3	15.0 / 6.80			7.2	7.2	6.4	6.5	7.4	8.6	7.3		
UL-CLL1109	52.03 / 132.2	50.0 / 127.0	17.7 / 8.03			8.1	8.1	7.2	7.3	8.3	9.7	8.2		
UL-CLL1209	57.03 / 144.9	55.0 / 139.7	20.0 / 9.07			9.0	9.0	8.0	8.2	9.2	10.8	9.1		
UL-CLL1309	62.03 / 157.6	60.0 / 152.4	21.7 / 9.84			9.9	9.9	8.8	9.0	10.1	12.0	10.0		
UL-CLL1409	67.03 / 170.3	65.0 / 165.1	23.5 / 10.7			10.8	10.8	9.6	9.8	10.9	13.2	11.0		
UL-CLL1509	72.03 / 183.0	70.0 / 177.8	25.2 / 11.4	3		20ft	16/4(2) 24/4(1)	11.8	11.8	10.5	10.7	12.0	14.4	12.0
UL-CLL1609	77.03 / 195.7	75.0 / 190.5	28.5 / 12.9					12.8	12.8	11.4	11.6	13.0	15.7	13.0
UL-CLL1709	82.03 / 208.4	80.0 / 203.2	31.2 / 14.2					13.9	13.9	12.3	12.5	14.1	17.1	13.9
UL-CLL1809	87.03 / 221.1	85.0 / 215.9	34.0 / 15.4				14.9	14.9	13.2	13.4	15.0	18.5	15.0	
UL-CLL1909	92.03 / 233.8	90.0 / 228.6	36.8 / 16.7				16.0	16.0	14.1	14.4	16.3	20.0	16.2	
UL-CLL2009	97.03 / 246.5	95.0 / 241.3	38.9 / 17.6		17.2		17.2	15.1	15.4	17.2	21.6	17.3		
UL-CLL2109	102.03 / 259.1	100.0 / 254.0	44.8 / 20.3		16/6(2) 24/4(1)	18.4	18.4	16.1	16.5	18.6	23.0	18.6		
UL-CLL2209	107.03 / 271.9	105.0 / 266.7	48.1 / 21.8			19.5	19.4	17.3	17.6	19.6	24.5	19.4		
UL-CLL2309	112.03 / 284.6	110.0 / 279.4	51.5 / 23.4			20.6	20.6	18.4	18.6	20.7	26.1	20.6		
UL-CLL2409	117.03 / 297.3	115.0 / 292.1	56.0 / 25.4			21.8	21.8	19.5	19.7	22.2	27.7	22.0		
UL-CLL2509	122.03 / 310.0	120.0 / 304.8	61.0 / 27.7			23.0	23.0	20.8	21.0	23.3	29.2	23.1		

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1 Cable Wiring	
Wire Color	Function
RED	+24VDC
GREEN	SIGNAL GROUND
BLACK	GROUND (24 RTN)
WHITE	0-10VDC Intensity Control

2 Cable Wiring			
Wire Color	Function	Wire Color	Function
RED	+24VDC	RED	No Connection
GREEN	GROUND (24V RTN)	GREEN	SIGNAL GROUND
BLACK	GROUND (24 RTN)	BLACK	No Connection
WHITE	+24VDC	WHITE	0-10VDC Intensity Control

3 Cable Wiring (4 conductor power cables)					
Wire Color	Function	Wire Color	Function	Wire Color	Function
RED	+24VDC	RED	+24VDC	RED	No Connection
GREEN	GROUND (24V RTN)	GREEN	GROUND (24V RTN)	GREEN	SIGNAL GROUND
BLACK	GROUND (24V RTN)	BLACK	GROUND (24V RTN)	BLACK	No Connection
WHITE	+24VDC	WHITE	+24VDC	WHITE	0-10VDC Intensity Control

3 Cable Wiring (6 conductor power cables)					
Wire Color	Function	Wire Color	Function	Wire Color	Function
RED	+24VDC	RED	+24VDC	RED	No Connection
BROWN	+24VDC	BROWN	+24VDC	GREEN	SIGNAL GROUND
ORANGE	+24VDC	ORANGE	+24VDC	BLACK	No Connection
BLACK	GROUND (24V RTN)	BLACK	GROUND (24V RTN)	WHITE	0-10VDC Intensity Control
BLUE	GROUND (24V RTN)	BLUE	GROUND (24V RTN)		
YELLOW	GROUND (24V RTN)	YELLOW	GROUND (24V RTN)		

M12 (5 position male)	
Pin #	Function
1	+24VDC
2	0-10VDC Intensity Control
3	GROUND (24V RTN)
4	SIGNAL GROUND
5	No Connection
The M12 connector option is not recommended for lights rated more than 4 amps	

ULC-2 Wiring	
Wire Color	Function
RED, WHITE (+)	LED INPUT
BLACK, GREEN (-)	
Terminated within a 2 position ULC-2 output connector (Phoenix Contact P/N: BCP-508-2)	

Note: The 0-10VDC Intensity Control input can accept voltages from 0-24VDC where the light will operate at full intensity in the 10-24VDC range. The light is proportionally dimmer for any Intensity Control voltage less than 10VDC and the light is OFF at approximately 0V or not connected (floating).

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PART NUMBER KEY											
MODEL	SIZE	-	WAVELENGTH	-	DRIVER* (most common)	-	POLARIZER	-	COVER	-	CABLE LENGTH
UL-CLL	XXXX	-	XXXXXX	-	XXX-XXXXXX	-	XXXX	-	XX	-	XXX
UL-CLL	209 to 2509		W (White 6000K, Nominal) R (Red 630nm) G (Green 530nm) B (Blue 470nm) IR850 (Infrared 850nm) IR880 (Infrared 880nm) IR940 (Infrared 940nm) UV365 (UV Short 365nm) UV395 (UV Long 395nm) RGB (Red-Green-Blue) RGBIR850 (Red-Green-Blue-IR850) IR05 (Infrared 1050nm) IR20 (Infrared 1200nm) IR30 (Infrared 1300nm) IR45 (Infrared 1450nm) IR55 (Infrared 1550nm) IR65 (Infrared 1650nm)		24Z 24Z-TRG 24-ILD U¹ 24-ILSXXX XXX=rate in μ s Example: 250		POLO Must use CC with Polarizer Select or leave blank for no polarizer		CC Select or leave blank for no cover		5M 10M Length can be customized: ex.7M=7meters Select or leave blank for 3 meters
Example 1: UL-CLL609-W-24-ILD					¹ Not available in lights exceeding 4A input current						
Example 2: UL-CLL1509-WIR45-24Z											

When ordering the Backlight version diffuser, add a B designator before CLL. Example: **UL-BCLL609-W-24-ILD**

Contact Metaphase Technologies or your local representative for options such as custom diffusers, lenses, polarizers, IP-rated enclosures for harsh environments, higher intensity, custom wavelengths, higher uniformity, etc. Not all options are available for all lights.

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Sample Model Number: **UL-CLL609-W-24Z**

REVISIONS

REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	2/23/2013	
B	METAPHASE LOGO ADDED TO SIDE PLATE - M2 HOLES ADDED TO FIXTURE TO MOUNT OPTIONAL CLEAR COVER ASSY.	4/18/2016	
C	CHANGED LOGO SIZE	11/7/2016	

Dimensions: .93 [23.62] LENS, 25.00 LENS [635], 27.00 [685.80], 2.42 [61.41], 3.75 [95.15], 8.50 [215.90], 10.00 [254], 1.50 [38.10], 1.87 [47.62]

2X MOUNTING HOLES 2X ϕ .33 [8.43] THRU ALL

METAPHASE LIGHTING TECHNOLOGIES

POWER CABLE 16 AWG Stranded; 6 conductor w/ flying leadwire ends; 10' Lg.

HEAT SINK

SEE SHEET 2 FOR EXPLODED VIEW AND BOM.

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QUANTITY: Per order	TOLERANCE/FINISH UNLESS OTHERWISE SPECIFIED	THIS DOCUMENT IS THE PROPERTY OF METAPHASE TECHNOLOGIES, INC. WHOM MAY LOAN IT. SUBJECT TO RETURN UPON DEMAND. IT INCLUDES CONFIDENTIAL & PROPRIETARY INFORMATION WHICH MAY NOT BE DISCLOSED TO ANY THIRD PARTY, AND OR USED FOR ANY PURPOSE CONTRARY TO ITS INTENDED USE. WITHOUT THE EXPRESSED PRIOR WRITTEN CONSENT OF METAPHASE TECHNOLOGIES, INC.	TITLE Top Assy - 25" Col. Line Light
MATERIAL: Per BOM	INCHES (MM) 1/25V (FRS) [RA3.2UM]		USED ON Per customer
FINISH: Clear/Black Anodize	X .X .XX .XXX [±.75] [±.50] [±.15] ±.005	ANGLE: ±1°	SIZE B
TREATMENT: N/A			DRAWING NUMBER UX-CLL609-1
Approval Signature	Date		SCALE 1:2 SHEET 1 OF 3

COMPLIANCE



CONTACT US

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