

UL-LL & UL-CLL



Wavelengths from 1050nm to 1650nm are now offered in the Metaphase Line Light and Collimated Line Light. Short-wave infrared technology provides the necessary contrast to illuminate test objects that visible and ultraviolet light cannot provide.

The SWIR Line Light is the latest design in the Metaphase family of LED lights for line scan. Its narrow, structured beam delivers high intensity and concentrated light for the narrow field of view of a traditional line scan camera. The high intensity and uniformity allows the SWIR Line Light to be used as front light to inspect for material defects, angled to obtain an off-axis effect to highlight surface defects, or it may be placed beneath the object for a backlight effect to inspect for holes, voids, or contaminants.



Available Wavelengths



Broadband IR

is available for the SWIR Line Light. The SWIR Line Light can be configured with any combination of these six available wavelengths.

Utilizing a full rod focal lens, the SWIR Line Light provides a tight structured beam of light for up to 12 inches (30.48 cm). The optimal working distance is 5 inches (12.7 cm). High uniformity ($\pm 10\%$) makes the SWIR Line Light ideal for front and back lighting line scan applications.

SPECIFICATIONS

Power Source:	24VDC $\pm 5\%$
Cable (Standard):	10 ft. (3 m) with flying leads
Housing:	Black Anodized Aluminum
Ambient Temperature:	-20°C to 40°C

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SWIR Line Lights							
				Cable(s)			
MODEL*	Overall Length Inches / cm	Lens Length Inches / cm	Weight lbs/Kg	Qty	Lgth	Description	Max. Current @24VDC
UL-LL209	7.0 / 17.8	6.25 / 15.9	3.2 / 1.45	2	10ft	18 AWG, 4 Conductor and 24 AWG, 8 Conductor	2.0A max.
UL-LL309	12.0 / 30.5	11.25 / 28.6	5.4 / 2.45				2.5A max.
UL-LL409	17.0 / 43.2	16.25 / 41.3	7.7 / 3.49				3.0A max.
UL-LL509	22.0 / 55.9	21.25 / 54.0	10.0 / 4.54				3.5A max.
UL-LL609	27.0 / 68.6	26.25 / 66.7	12.2 / 5.53			16 AWG, 4 Conductor and 24 AWG, 8 Conductor	4.0A max.
UL-LL709	32.0 / 81.3	31.25 / 79.4	14.5 / 6.58				4.5A max.
UL-LL809	37.0 / 94.0	36.25 / 92.1	16.7 / 7.57				5.0A max.
UL-LL909	42.0 / 106.7	41.25 / 104.8	18.9 / 8.57				5.5A max.
UL-LL1009	47.0 / 119.4	46.25 / 117.5	21.2 / 9.62				6.0A max.
UL-LL1109	52.0 / 132.1	51.25 / 130.2	23.5 / 10.6				6.5A max.
SWIR Collimated Line Lights							
				Cable(s)			
MODEL*	Overall Length Inches / cm	Lens Length Inches / cm	Weight lbs/Kg	Qty	Lgth	Description	Max. Current @24VDC
UL-CLL209	7.0 / 17.8	5.0 / 12.7	3.2 / 1.45	2	10ft	18 AWG, 4 Conductor and 24 AWG, 8 Conductor	2.0A max.
UL-CLL309	12.0 / 30.5	10.0 / 25.4	5.4 / 2.45				2.5A max.
UL-CLL409	17.0 / 43.2	15.0 / 38.1	7.7 / 3.49				3.0A max.
UL-CLL509	22.0 / 55.9	20.0 / 50.8	10.0 / 4.54				3.5A max.
UL-CLL609	27.0 / 68.6	25.0 / 63.5	12.2 / 5.53			16 AWG, 4 Conductor and 24 AWG, 8 Conductor	4.0A max.
UL-CLL709	32.0 / 81.3	30.0 / 76.2	14.5 / 6.58				4.5A max.
UL-CLL809	37.0 / 94.0	35.0 / 88.9	16.7 / 7.57				5.0A max.
UL-CLL909	42.0 / 106.7	40.0 / 101.6	18.9 / 8.57				5.5A max.
UL-CLL1009	47.0 / 119.4	45.0 / 114.3	21.2 / 9.62				6.0A max.
UL-CLL1109	52.0 / 132.1	50.0 / 127.0	23.5 / 10.6				6.5A max.

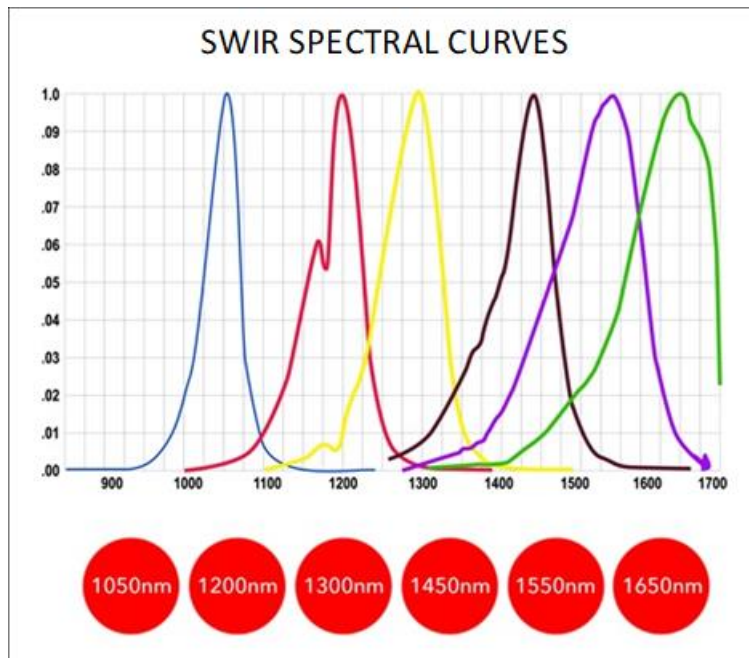
*Custom sizes and configuration are available

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Cable#1 Wiring (4 conductor)	
Wire Color	Function
RED	+24VDC
WHITE	+24VDC
BLACK	GROUND (24V RTN)
GREEN	Signal Ground

Cable#2 Wiring (8 conductor)	
Wire Color	Function
BROWN	IR1050, 0-10V Intensity Control
ORANGE	IR1200, 0-10V Intensity Control
BLUE	IR1300, 0-10V Intensity Control
GREEN	IR1450, 0-10V Intensity Control
BROWN-white	IR1550, 0-10V Intensity Control
ORANGE-white	IR1650, 0-10V Intensity Control
BLUE-white	No Connection
GREEN-white	No Connection

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	LENGTH ID (inches)	-	WAVELENGTH	-	DRIVER* (most common)	-	POLARIZER	-	COVER	-	CABLE LENGTH
UL_LL	XXXX	-	XXXXX	-	XXX	-	XXXX	-	XX	-	XXX
UL-LL UL-CLL	209 to 1109		W (White 6000K, Nominal) IR05 (Infrared 1050nm) IR20 (Infrared 1200nm) IR30 (Infrared 1300nm) IR45 (Infrared 1450nm) IR55 (Infrared 1550nm) IR65 (Infrared 1650nm)		24Z 24-ILSXXX XXX=rate in μs 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-LL509-IR05IR20IR30IR45IR55-24Z											
Example 2: UL-CLL909-IR20IR30IR45IR55IR65-24Z											

When ordering the Backlight version diffuser, add a B designator before LL. Example: **UL-BLL509-IR05IR20IR30IR45IR55-24Z**

Lens Allocation: Quartz Convergence Lens (UX-LL) / Quartz Collimated Lens (UX-CLL)

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.

Link to *Driver Options Key / **Connector Options Key

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Sample Part Number: **UL-LL509-IR05IR20IR30IR45IR55-24Z**

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	1/28/2014	
B	CHANGED LENGTH	3/18/2015	
C	ADDED M2 HOLES FOR FUTURE COVERS, ADDED LOGO	1/26/2016	
D	CHANGED LOGO SIZE	10/23/2016	

21.25 LENS [539.8] 1.10 LENS [27.9]

22.00 [558.8] 10.00 [254] 6.00 [152.4] 3.12 [79.2]

1.85 [47] 4.25 [108]

MOUNTING HOLES 2X ϕ .34 [8.7] THRU ALL

POWER CABLE 16 AWG Stranded, 6 conductor flying leads 10' Cut length

HEAT SINK

SEE SHEET 2 FOR EXPLODED VIEW

Metaphase Technologies, Inc. 211 Sinclair Road, Suite 100, Bristol, PA. 19007 215-639-8699 Fax 215-639-0977

QUANTITY: Per order	TOLERANCE/FINISH UNLESS OTHERWISE SPECIFIED INCHES (MM)	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.
MATERIAL: Per BOM	X .3 ±.005 [1.78] .3 ±.010 [1.27] .005 ±.005	TITLE: Top Assembly- 20" Line Light USED ON: Per customer DRAWING NUMBER: UL-LL509-1 SCALE: 1:4 SHEET 1 OF 2
FINISH: Black Anodize	ANGLES ±1°	
TREATMENT: N/A		

Approval Signature _____ Date / /

COMPLIANCE



CONTACT US

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

Contact us for further information

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