

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. |

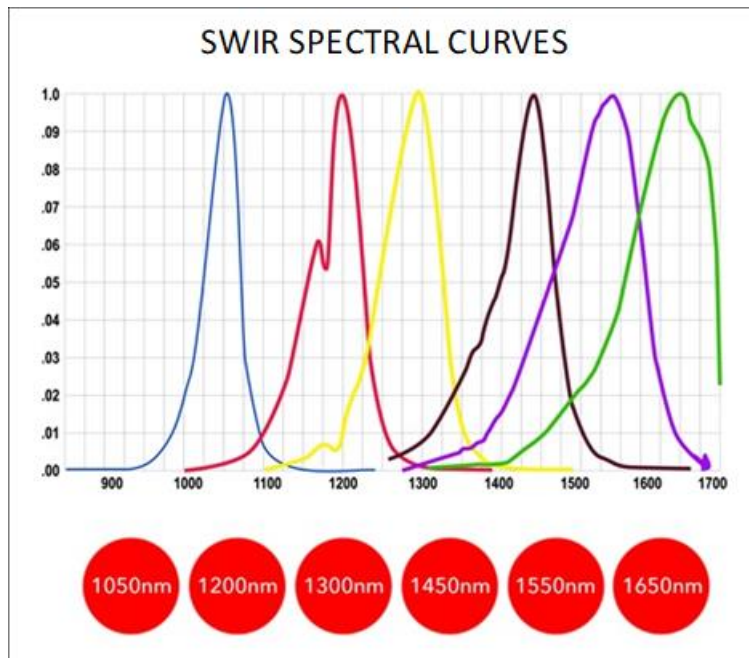
*Custom sizes and configuration are available

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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 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-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. | TITLE Top Assembly- 20" Line Light |
| MATERIAL: Per BOM | X .3 ±.005 .3XX ±.005 ANGLES ±1° | | USED ON Per customer |
| FINISH: Black Anodize | | | SIZE B DRAWING NUMBER UL-LL509-1 REV D |
| TREATMENT: N/A | | | SCALE 1:4 SHEET 1 OF 2 |

Approval Signature _____ Date / /

COMPLIANCE



CONTACT US

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