

## NERLITE® LALL™-47x47 Large Area LED Lights Custom Models

**Description:** LALL™-47x47 Large Area LED Lights deliver very high intensity, non-diffused area illumination to flood large (≥12" square) areas with light. Their enclosures are designed for NEMA 4X and IP-64 compliance to address applications where equipment wash down is a requirement. LALL-47x47 units are passively cooled (no fans) for quiet, non-disruptive operation. Their adjustable mounting bracket supports installation to horizontal, vertical, or angled planes and provides virtually limitless light aiming options.

**Applications:** Dark-field (creating shadows and reflection) or bright-field lighting for diffused surfaces; Illumination of large areas for robot guidance; Food processing and packaging; Package sorting; Clean room illumination.

Model #	Description
010-655002	LALL-47x47, R1 LED-ND10, CC, 3.0M (9.8 ft.) AMP Connector Cbl.
010-655004	LALL-47x47, R1 LED-ND10, CC, 8.0M (26.2 ft.) AMP Connector Cbl.
010-655005	LALL-47x47, R1 LED-ND10, CC, 18.3M (60.0 ft.) AMP Connector Cbl.
010-655012	LALL-47x47, W1 LED-ND10, CC, 3.0M (9.8 ft.) AMP Connector Cbl.
010-655093	LALL-47x47, I1 LED-ND10, CC, 3.0M (9.8 ft.) Flying Leads Cbl.

Description Key Example

LALL-00x00, RxLED-NDxx, CC

Family Designation	Array Size (mm -approx.)	Color: R-Red W-White B-Blue G-Green C-Cyan A-Amber	Source: x(Watt) LEDs	LED Lens (degrees)	Power Source: CC-Current Control
				Light Delivery: D-Diffused ND- Non-Diffused F-Focused P-Polarized	



### Illumination & Electrical:

**Lighting Technique:** Area Array  
**Active Area:** 47 mm x 47 mm (1.85 in. x 1.85 in.)  
**Light Characteristics:**

Source	Color (nm)	Exp. Life	Max. Current <sup>1,3</sup>	
			Continuous	Stroke <sup>2,3</sup>
LED	Red (625)	50k hrs.	0.35 A	0.47 A peak
LED	White - 5500 Kelvin	50k hrs.	0.35 A	0.47 A peak
LED	IR (850)	50k hrs.	0.70 A	1 A peak

<sup>1</sup> When using PPxxx Controllers, controller supply voltage must be at least 1 volt higher than load voltage of light: 14.04 VDC for red models; 15.96 VDC for white models; 9.60 VDC for IR models.

<sup>2</sup> Maximum pulse width = 1ms, maximum frequency = 60Hz

<sup>3</sup> Exceeding max. current, pulse width or frequency voids product warranty.

**CE Conformity:** Pending

### Mechanical:

**L x W x H (mm/in.):** 69.9 mm x 50.8 mm x 69.9 mm (2.75 in. x 2.00 in. x 2.75 in.)  
**Mounting:** (2) 2.4 mm [.09 in.] and (1) 6.4 mm [.25 in.] thru holes  
**Housing Material:** Black Anodized Aluminum  
**Weight:** 454 grams (16 oz.)

### Environmental:

**Max. Operating Humidity:** 95% non-condensing  
**Operating Temp.:** 40°C (104°F)  
**Storage Temp.:** 50°C (122°F)

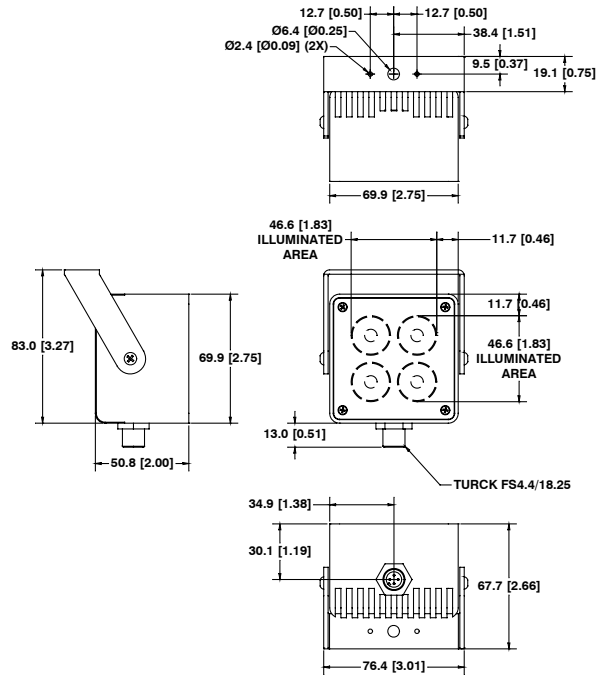
### Installation Options:<sup>1</sup>

Part #	Description	Used on Models
NER-BA10-0AS0	PP600, 2 Chnl. CC Cntrl, 24VDC, Push Button <sup>2</sup>	w/Flying Leads
NER-BA10-0AT0	PP610, 2 Chnl. CC Cntrl, 24VDC, PB/RS232 <sup>2</sup>	w/Flying Leads
NER-BA00-0AA0	DSP60, 24VDC, 2.5A, DIN Mount Power Supply	PP6xx, LC-50/100
NER-BA00-0AB0	DSP100, 24VDC, 4.2A DIN Mount Power Supply	PP6xx, LC-50/100
NER-DA00-0AB0	AC Power Cord, US, 1.8 M (6.0 ft.)	DIN Mount PS
NER-DA00-0AC0	AC Power Cord, EU, 2.5 M (8.2 ft.)	DIN Mount PS
NER-DA00-0AD0	AC Power Cord, UK, 2.0 M (6.6 ft.)	DIN Mount PS
010-503400	CCPS, 0.35A CC Drvr, 110VAC US, Fixed Output <sup>3</sup>	w/AMP Connector
010-503402	CCPS, 0.35A CC Drvr, 230VAC EU, Fixed Output <sup>3</sup>	w/AMP Connector
NER-BA10-0AB0	LC-50, 0.70A CC Drvr, 24VDC, Fixed Output <sup>2</sup>	w/Flying Leads
NER-BA10-0AK0	LC-100, 0.70A CC Drvr, 24VDC, Variable Output <sup>2</sup>	w/Flying Leads

<sup>1</sup> Constant Current (CC) driver or controller required; choose one from above.

<sup>2</sup> LC-xxx and PP6xx CC drivers & controllers require a DC power supply; choose one from above.

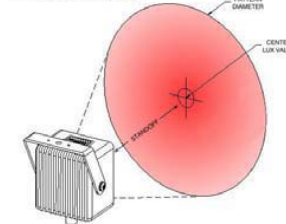
<sup>3</sup> CCPS (model #s 010-503400 & 01-0503402) is suitable for use in operator based visual inspection applications only. CCPS is not recommended for machine vision applications due to output fluctuations (ripple) imperceptible to the eye but detected in some machine vision applications.



### Cables/Connectors:

Model #	Cable	Length	Connector	Lead/Pin #1	Lead/Pin #2
010-655002	Detachable; supplied with light	3.0 M (9.8 ft.)	AMP 173977-2	V+	V-
010-655012	Detachable; supplied with light	3.0 M (9.8 ft.)	AMP 173977-2	V+	V-
010-655004	Detachable; supplied with light	8.0 M (26.2 ft.)	AMP 173977-2	V+	V-
010-655005	Detachable; supplied with light	18.3 M (60.0 ft.)	AMP 173977-2	V+	V-
All Others	Detachable; supplied with light	3.0 M (9.8 ft.)	n/a: Flying Lead	V+	V-

LALL-47x47 FOV/LUX:



### LALL-47x47 Illumination Properties

Standoff	White LED	Red LED
	Lux Value (Center)	Lux Value (Center)
3'	1210	1320
6'	330	420
9'	180	210
12'	120	140



When provided, affix peel and stick eye safety warning labels to a system location visible to system operators and supporting personnel.

**WARNINGS:** For safe use of this product, observe the following warnings:



**Handling:** Surfaces hot during and after operation, avoid contact.



**Service:** No user serviceable parts inside, contact supplier for service.



**Eye Safety:** Products containing LEDs fall under the IEC standard for laser product safety (IEC 60825-1). Please refer to the IEC classifications and categorization of NERLITE products below for safe operation.



**IEC Laser Safety Class Definitions pertinent to NERLITE LED products:**

IEC Class Code	Definition
1	Considered as safe to eye and skin under all reasonably foreseeable conditions of operation.
1M	Considered as safe to eye and skin under all reasonably foreseeable conditions of operation, provided they are not viewed with magnifying optics of any kind.
2	Will not cause permanent eye damage under all reasonably foreseeable conditions of operation, provided that any exposure may be terminated by the blink reflex of the eye. Since this assumes the eye can detect this radiation, the wavelength range is limited to visible light (400nm to 700nm).



**IEC Laser Safety Class Codes of NERLITE LED Machine Vision Illuminators**

IEC Class Code	NERLITE Products (Refer to Model Descriptions)
1	R LED, W LED, G LED, I LED
1M	U LED
2	B LED, B1 LED, B3 LED, R1 LED, R3 LED, W1 LED, W3 LED, G1 LED, G3 LED, I1 LED, DUAL AXIS LIGHTS containing I LED



**Training:** Customers are encouraged to document their unique application and instruct employees on procedures to limit exposure to LED radiation. The documentation and instruction should include but not necessarily be limited to:

- Operational overview of equipment including LED lighting.
- Need for personal protection (e.g. protective eyewear, UV protective eyewear)
- Understanding hazard controls (e.g. warning signs)
- Bio-effects of LED radiation upon the eyes and skin (refer to <http://www.icnirp.de/documents/led.pdf> for the International Commission on Non-ionizing Radiation Protection's statement on "LEDS and Laser Diodes: Implications for Hazard Assessment")



**General LED Precautions:**

These devices contain visible and non-visible LEDs – Light Emitting Diodes.



**WARNING – RISK OF DISCOMFORT:**

Observation of the Class 1 and 2 code definitions are substantial for eye protection.



**Flashing LED Precautions:**

This device contains LEDs – Light Emitting Diodes – that are flashing (aka strobing or pulsing) during operation.



**WARNING – RISK OF DISCOMFORT:**

Flashing (aka strobing or pulsing) lights have been known to cause discomfort in people; you can prevent this by taking precautions during use.



**Ultra Violet (UV) LED Precautions:**

This device contains UV Light LEDs – Ultra Violet Light Emitting Diodes. The LED during operation radiates intense UV light.



**WARNING – RISK OF CORNEA AND LENS DAMAGE:**

Viewing the LED output with certain optical instruments (for example: eye loupes, magnifiers and microscopes) within a distance of 100 mm may pose an eye hazard. During operation, these LEDs radiate UV light, requiring that precautions must be taken to prevent looking directly at the UV light with unprotected eyes. Do not look directly, or through an optical system, into the UV light. When there is a possibility to receive a reflection of light, protect your eyes by using UV light protective glasses so that light will not reach eyes directly.



**Blue LED Precautions:**

This device contains Blue LEDs – Blue Light Emitting Diodes.



**WARNING – RISK OF RETINAL DAMAGE:**

During operation, these LEDs radiate Blue light, requiring that precautions must be taken to prevent looking directly at the Blue light with unprotected eyes. Eye protection from visible "blue light" LED radiation can be provided by normal aversion responses (e.g. looking away from light source, blink reflex).



**Infra Red (IR) LED Precautions:**

This device contains IR LEDs – IR Light Emitting Diodes.



**WARNING – THERMAL HAZARD: RISK OF LENS DAMAGE:**

During operation, these LEDs radiate non-visible thermal energy. Eye hazards are dependent upon brightness of the source and since IR LED output is non-visible, precautions must be taken to prevent looking toward the output of the LED assembly.