

# NL Series Installation Manual



## APPLICATION

The NL luminaire is an industrial-grade product suitable for harsh and hazardous locations. Installation areas include indoor, outdoor, and in wet locations. Frequent exposure to moisture, dirt, corrosion, vibration, and rough usage is common for this product family. Furthermore, the NL fixtures have certifications for use on marine vessels inside, outside, and in other severely wet saltwater environments. Models including "-HZ-" are certified for use in hazardous location areas.

### UL Listing Numbers:

Nemalux General Location: E477827  
Nemalux Hazardous Location: E477829

NL luminaires are suitable for use in the following areas as defined by the National Electrical Code (NEC) and the Canadian Electrical Code (CEC):

### Standards that apply to all models:

UL 1598, UL 1598A and UL8750;  
CSA C22.2 No. 250.0 and CSA C22.2 No. 250.13

### Standards that apply only to Hazardous Location models (NL-X-X-XX-XX-HZ-XX):

UL 844, CSA C22.2 No. 137

### Hazardous Location Certification:

Class I, Division 2, Groups ABCD;  
Class II, Division 2, Groups FG;  
Class III;  
Class I, Zone 2, Group IIC;  
(See chart below for T-Codes)

### Housing:

Copper-free extruded and die-cast aluminum with polycarbonate lens

### Input Voltage:

Based on luminaire suffix in table below:  
Suffix - AC: 120-277VAC | Suffix - HV: 347-480VAC

### Inrush Current:

NL2-S/H (AC): 120V: 25A / 230uS Peak / >50% Duration 277V: 54A / 85uS  
NL2-X (AC): 120V: 31A / 210uS Peak / >50% Duration 277V: 74A / 200uS  
NL4-S (AC): 120V: 25A / 230uS Peak / >50% Duration 277V: 54A / 85uS  
NL4-H/X (AC): 120V: 31A / 210uS Peak / >50% Duration 277V: 74A / 200uS  
  
NL2-S/H (HV): 347V: 45A / 90uS Peak / >50% Duration 480V: 68A / 100uS  
NL2-X (HV): 347V: 59.2A / 97uS Peak / >50% Duration 480V: 74A / 79uS  
NL4-S (HV): 347V: 45A / 90uS Peak / >50% Duration 480V: 68A / 100uS  
NL4-H/X (HV): 347V: 59.2A / 97uS Peak / >50% Duration 480V: 74A / 79uS

## APPLICATION CONT.

### Electrical Ratings:

General Location models (NL-X-X-XX-XX-GN-XX):

MODEL	INPUT VOLTAGE	RATED WATTAGE [Watts]	RATED VOLTAGE [Volts]	FREQUENCY [Hz]	AMBIENT TEMP. RANGE [°C]
NL2S	AC	36	120-277	50/60	-40 to 50
	BB	36	120-277	50/60	-40 to 50
	HV	36	347-480	50/60	-40 to 50
NL2H	AC	52	120-277	50/60	-40 to 53
	BB	52	120-277	50/60	-40 to 50
	HV	52	347-480	50/60	-40 to 53
NL2X	AC	69	120-277	50/60	-40 to 50
	HV	69	347-480	50/60	-40 to 50
NL4S	AC	85	120-277	50/60	-40 to 50
	BB	85	120-277	50/60	-40 to 50
	HV	85	347-480	50/60	-40 to 50
NL4H	AC	105	120-277	50/60	-40 to 45
	HV	105	347-480	50/60	-40 to 45
NL4X	AC	135	120-277	50/60	-40 to 35
	HV	135	347-480	50/60	-40 to 35

Hazardous Location models (NL-X-X-XX-XX-HZ-XX):

MODEL	INPUT VOLTAGE	RATED WATTAGE [Watts]	RATED VOLTAGE [Volts]	FREQUENCY [Hz]	AMBIENT TEMP. RANGE [°C]	T-CODES (Class I Division 2)	T-CODES (Class II Division 2)
NL2S	AC	36	120-277	50/60	-40 to 55	T4A	T4
	HV	36	347-480	50/60	-40 to 54	T4A	T4
NL2H	AC	52	120-277	50/60	-40 to 55	T4A	T4
	HV	52	347-480	50/60	-40 to 54	T4A	T4
NL2X	AC	70	120-277	50/60	-40 to 52	T5	T4
	HV	82	347-480	50/60	-40 to 46	T5	T4A
NL4S	AC	85	120-277	50/60	-40 to 55	T4A	T4A
	HV	90	347-480	50/60	-40 to 54	T4A	T4A
NL4H	AC	105	120-277	50/60	-40 to 54	T4A	T4A
	HV	109	347-480	50/60	-40 to 52	T4A	T4A

### Connections:

2 x 3/4" NPT Conduit | Black: Line | White: Neutral/Line 2 | Green: Ground

*Optional: Violet (Purple): 0-10V Dimming (+) | Grey: 0-10V Dimming (-)*

For connections use wire rated to a minimum of 90°C. Class 1 wiring only.

Dimming control wires must be rated 300V minimum for luminaires with suffix AC, 600V minimum for luminaires with suffix HV.


End-to-end or daisy-chain wiring must use #12AWG conductors and the total circuit load must not exceed 1200W.

### Temperature Range:

See above Electrical Ratings chart


### Ingress Protection:

IP66 | Suitable For wet locations. Marine outside type (salt water).


**WARNING / ATTENTION**

To avoid the risk of fire, explosion, or electric shock, this product should be installed, inspected, and maintained by a qualified electrician only, in accordance with all applicable electrical codes.

Éviter tout risque d'incendie, d'explosion ou d'électrocution, ce produit doit être installé, inspecté et entretenu par un électricien qualifié uniquement, conformément à tous codes électriques applicables.


**WARNING / ATTENTION**

To reduce the risk of electric shock, disconnect the luminaire from the supply circuit before opening for installation and servicing. Keep tightly closed when in operation.

Pour réduire le risque de choc électrique débranchez le luminaire du circuit d'alimentation avant l'ouverture pour l'installation et l'entretien. Gardez hermétiquement fermé pendant le fonctionnement.


**WARNING ATTENTION**

Potential Electrostatic Charging Hazard  
Risque potentiel de charge électrostatique

Avoid electrostatic discharge:  
• Clean exterior lens surface with damp cloth only  
• Éviter les décharges électrostatiques: nettoyer la surface extérieure de la lentille uniquement avec un chiffon humide

## SURFACE/CEILING & SUSPENDED MOUNT INSTALLATION (Ordered Separately)

If using a different mounting accessory, refer to the corresponding page.

### INSTALLATION STEPS

#### STEP 1.

Inspect shipping package and contents to ensure no damage has occurred during shipping.

#### STEP 2.

Install mounting brackets:

##### A) Fixed Mount (Standard Brackets):

Loosen mounting brackets pre-installed on the back of the luminaire. Slide brackets outwards until mounting holes are 735mm apart for NL2 models or 1332mm apart for NL4 models. Tighten provided 1/4-20 nut to a torque of 8 N-m (70 in-lbs). Fasten to a flat surface using a minimum of one M6 or 1/4-20 fastener and washer per side (not provided). For installations subject to vibration of rough usage, a minimum of two fasteners per side are required. The mounting bracket is keyed for ease of installation.

##### Alternate Fixed Mounting:

A minimum of two 1/4-20 carriage bolts may be used to flush mount the luminaire. Insert head of carriage bolt into central opening and slide to desired mounting location.

##### B) Suspension Mounting:

Remove fixed mounting brackets and associated fastener hardware from luminaire. Connect two anchors to each end-cap using the integral mounting holes as shown. Suspension hardware (not provided) must be rated for a minimum of 135 lbs.

#### STEP 3.

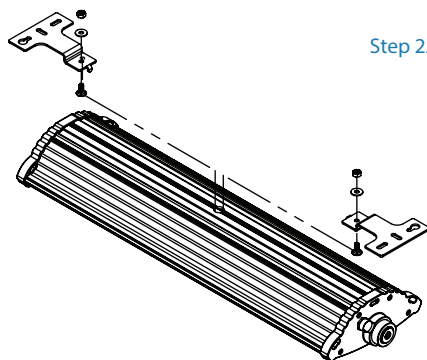
Open NL lens using a 3mm hex tool.

##### Note:

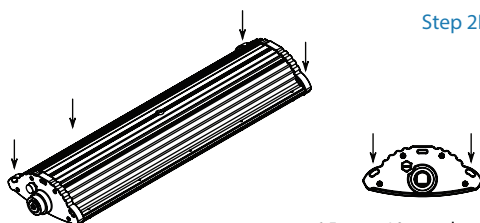
Screws are captive and will remain attached to the Lens for ease of reinstall and to prevent loss of fasteners.



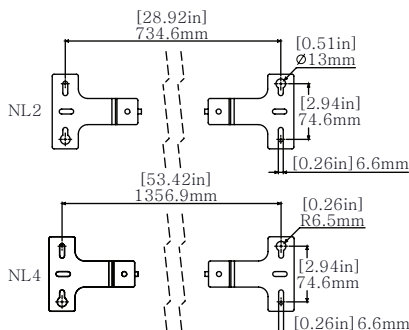
Step 2A



Step 2B



6.5mm x 10 mm slots for suspension hardware.



## STEP 4.

Remove the reflector covering the wiring cavity closest to the open NPT entry. Loosen four M4 fasteners holding the reflector in place and pinch to line up keyed slots with fasteners during removal.

## STEP 5.

For convenience, spring cage wire connectors have been provided. 12-28AWG solid or stranded wire with a strip length of 8-10mm (0.35-0.39") is supported. If user wiring requires it, the connectors may be replaced by an alternate listed connector.

Make wiring connections.

A) For single-entry use: Wire using an open NPT entry. Refer to NEC/CEC codes and follow all applicable local standards. See the wiring diagram on Page 5.

B) For end-to-end wiring: Remove all reflectors. Remove the NPT blank from the closed end using a 3/8" hex tool. Make wiring connections to provided splice connectors as shown in the wiring diagram. As shown, conductors from the far side must be run through the channel between the AC separator and the case. All wiring methods must be in accordance with NEC/CEC codes and all local standards and acceptable for the installation location. For hazardous location models (NL-X-X-XX-XX-XX-HZ-XX) and their installation, all wiring methods must be in accordance with NEC/CEC codes and all local standards and must be acceptable for the hazardous installation location.

C) For the Class 1 dimming control circuit, the wires must be rated to a 300V minimum for luminaire models with the suffix AC and a 600V minimum rated wire for luminaires with the suffix HV. For 0-10V analog dimming control, connect Violet (+) and Gray (-) to 0-10VDC control wiring:

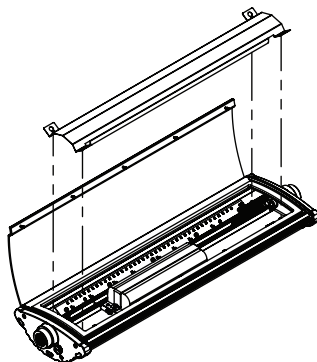
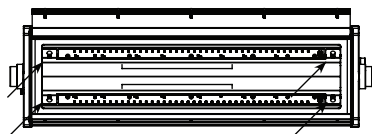
- Dimming controls must be certified and suitable for the classification of the area of their installation.
- The 0-10V dimming circuit can be wired as Class 1 or Class 2 circuit.
- The LED Driver will source a maximum of 250µA for control needs.
- The 0-10V controller must sink current from LED driver control leads.
- 10V = maximum output, 0V = minimum output

## NOTE:

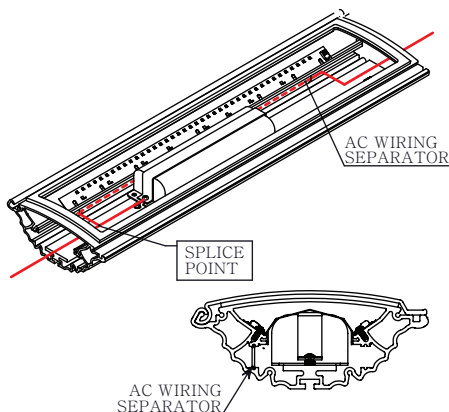
*To aid in assembly and protect against ingress, a petrolatum or soap-thickened mineral oil-based thread lubricant/sealant is necessary.*

*If the fixture has unused conduit openings, plug them to maintain the enclosure's integrity.*

## Step 4



## Step 5B



## NOTE:

*End-to-end or daisy-chain wiring must use #12AWG conductors and the total circuit load must not exceed 1200W.*

**STEP 6.**

Reinstall reflectors and close lens: Reflector fasteners should be tightened by hand to 5 in-lbs torque to prevent stripping of screw channel threads. Close the lens and reinstall the M4 socket head cap screws using a 3mm hex driver. To align the lens fasteners with tapped holes, press on the lens to compress the gasket and direct the fastener into the tapped hole using a 3mm hex driver. Torque lens fasteners to 1.7Nm (15 in-lbs).

For general location battery backup models (NL-X-X-XX-XX-XX-GN-BB):

Battery backup models are equipped with a test switch mounted to the end cap of the luminaire. An illuminated indicator (LED light) indicates that the battery is in charge mode when AC power is applied. It is recommended and required by applicable code to test emergency ballast to ensure proper system function; push the test switch for thirty (30) seconds every 30 days to ensure the emergency driver is functioning as LED light source illuminated. Conduct a ninety-minute (90) discharge test one time (1) per year; the LED light source should be illuminated for a minimum of ninety minutes (90).

**WARNING** for general location battery backup models (NL-X-X-XX-XX-XX-GN-BB) ( English):

- This luminaire is provided with a factory-installed emergency lighting battery pack.
  - This luminaire is provided with a factory-installed emergency lighting battery pack and must be serviced by a person familiar with the construction and operation of the product and the hazards involved
- DANGER:** Risk of shock disconnect all power and disable the battery pack power before servicing ballast replacement requires reconnection of wires that may be energized

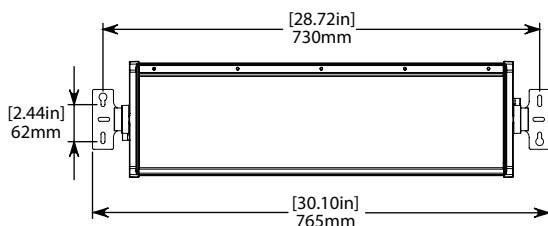
**ATTENTION** pour les modèles de batterie de secours à emplacement général (NL-X-X-XX-XX-XX-GN-BB)

- Ce luminaire est fourni avec une batterie d'éclairage de secours installée par le fabricant
- Ce luminaire est fourni avec une batterie d'éclairage de secours installée par le fabricant et doit être entretenu par une personne familière avec la construction et le fonctionnement du produit et les risques encourus.

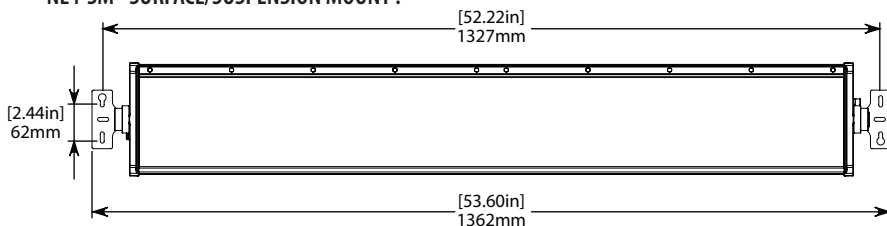
**ATTENTION:** Risque d'électrocution. Débranchez toute l'alimentation et désactivez l'alimentation de la batterie avant de procéder au remplacement du ballast, le remplacement nécessite la reconnexion des fils qui peuvent être sous tension.

## MOUNTING DIMENSIONS:

### NL2-SM - SURFACE/SUSPENSION MOUNT :

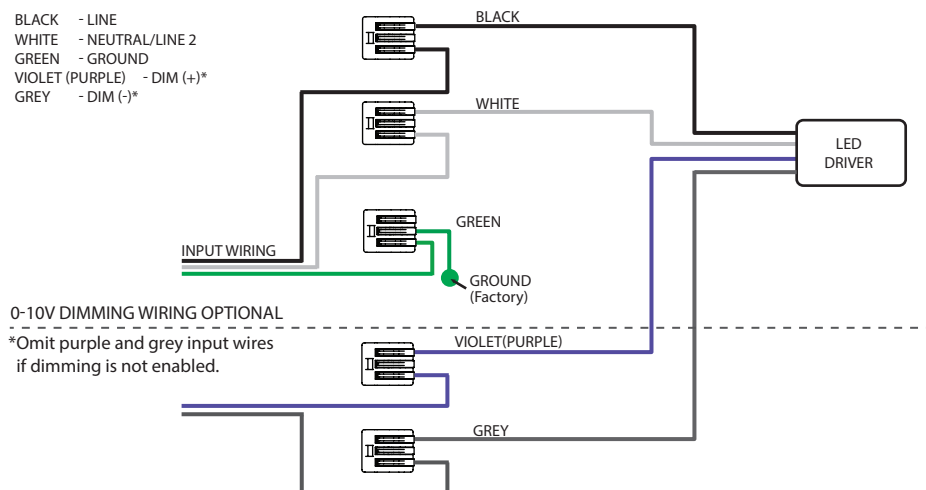


### NL4-SM - SURFACE/SUSPENSION MOUNT :



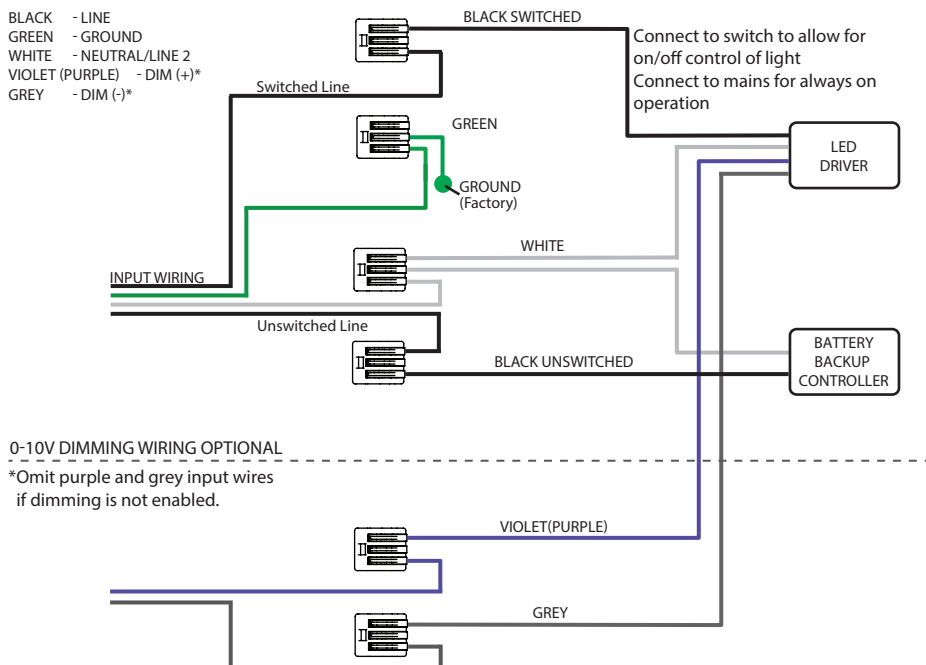
## WIRING DIAGRAM: AC (120-277VAC) & HV (347-480VAC) Models

BLACK - LINE  
 WHITE - NEUTRAL/LINE 2  
 GREEN - GROUND  
 VIOLET (PURPLE) - DIM (+)\*  
 GREY - DIM (-)\*



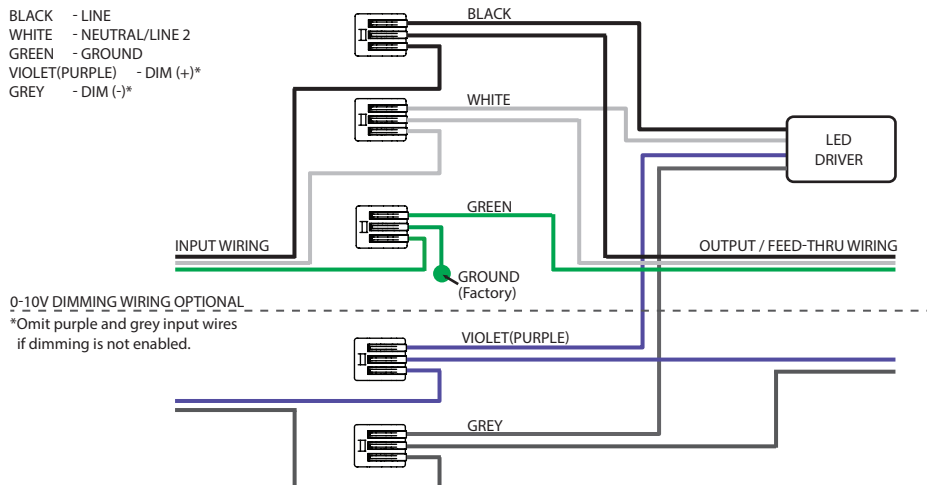
## WIRING DIAGRAM: BB (120-277VAC Battery Backup) Model

BLACK - LINE  
 GREEN - GROUND  
 WHITE - NEUTRAL/LINE 2  
 VIOLET (PURPLE) - DIM (+)\*  
 GREY - DIM (-)\*



## WIRING DIAGRAM: AC (120-277VAC) & HV (347-480VAC) Models – End-to-End Wiring

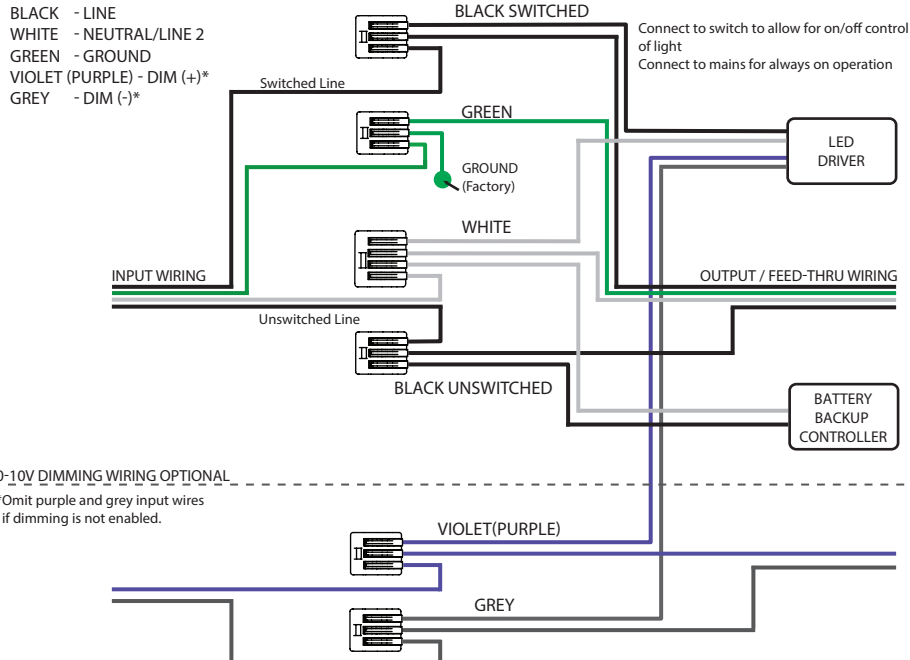
BLACK - LINE  
 WHITE - NEUTRAL/LINE 2  
 GREEN - GROUND  
 VIOLET(PURPLE) - DIM (+)\*  
 GREY - DIM (-)\*



NOTE: End-to-end or daisy-chain wiring must use #12AWG conductors and the total circuit load must not exceed 1200W.

## WIRING DIAGRAM: BB (120-277VAC Battery Backup) Model – End-to-End Wiring

BLACK - LINE  
 WHITE - NEUTRAL/LINE 2  
 GREEN - GROUND  
 VIOLET (PURPLE) - DIM (+)\*  
 GREY - DIM (-)\*



NOTE: End-to-end or daisy-chain wiring must use #12AWG conductors and the total circuit load must not exceed 1200W.

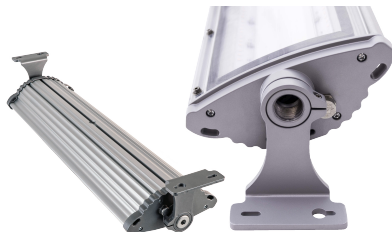
## NL-AM – ANGLE ADJUSTABLE MOUNT INSTALLATION (Ordered Separately)

If using a different mounting accessory, refer to the corresponding page.

This NL-AM kit is intended for UL-listed NL luminaires, as marked on the luminaire nameplate.

### Accessory Package Contents

NL-AM	QTY	PART NAME
	2	NL SWIVEL BRACKET
	2	M4 x 0.7 x 16mm SOCKET HEAD CAP



## INSTALLATION STEPS

### STEP 1.

Inspect the shipping package and its contents to ensure no damage occurred during shipping.

### STEP 2.

Loosen M4 socket head cap screws on swivel brackets using a 3mm hex tool. Slide the bracket onto the cylindrical boss on the end caps and loosely tighten it.

### STEP 3.

Mount luminaire using two M6 or ¼-20 fasteners and washers per side (not provided).

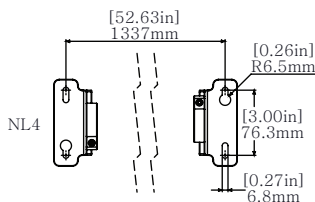
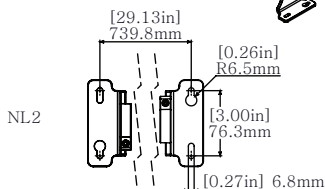
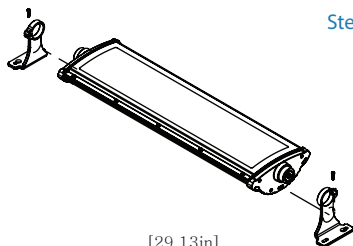
### STEP 4.

The mounting bracket is keyed for ease of installation. Aim luminaire to desired angle and tighten M4 socket head cap screw on swivel brackets to a torque of 1.7Nm (15 in-lbs).

### STEP 5.

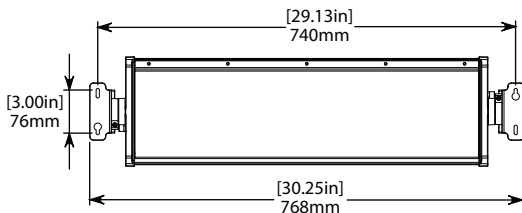
Continue installation with STEP 4 on PAGE 4.

Step 2



## MOUNTING DIMENSIONS:

### NL2-AM - ANGLE ADJUSTABLE MOUNT (NL-AM) :



### NL4-AM - ANGLE ADJUSTABLE MOUNT (NL-AM) :

