

## DESCRIPTION

The Navion™ roadway LED luminaire combines world class optical performance, energy efficiency, and outstanding versatility to meet the requirements of any roadway application. Patented AccuLED Optics™ technology delivers unparalleled uniformity and budget-beating operating costs for municipal streets and highways. UL/cUL listed for wet locations, IP66 enclosure rating available.

<b>Catalog #</b>		<b>Type</b>
<b>Project</b>		
<b>Comments</b>		<b>Date</b>
<b>Prepared by</b>		

## SPECIFICATION FEATURES

### Construction

Heavy-duty cast aluminum housing and door with extruded aluminum heat sink. Tool-less entry, hinged removable power tray door for easy maintenance. 3G vibration rated.

### Optics

Choice of 16 patented, high-efficiency AccuLED Optics. The optics are precisely designed to shape the distribution maximizing efficiency and application spacing. AccuLED Optics create consistent distributions with the scalability to meet customized application requirements. Offered standard in 4000K (+/- 275K) CCT and minimum 70 CRI. Optional 6000K CCT and 3000K CCT. For the ultimate level of spill light control, an optional house side shield accessory is available. The house side shield is designed to seamlessly integrate with the SL2, SL3, SL4 or AFL optics.

### Electrical

LED drivers are mounted to the removable die-cast aluminum door for optimal heat sinking and ease of maintenance. 120-277V 50/60Hz, 347V 60Hz or 480V 60Hz operation. 10kV UL 1449 surge protection standard. Thermal management incorporates both conduction and convection to transfer heat rapidly away from the LED source for optimal efficiency and light output. Ambient operating temperature from -40°C to 40°C; 50°C ambient capability available. Standard three-position tunnel type compression terminal block. Greater than 90% lumen maintenance expected at 60,000 hours. Light squares are IP66 enclosure rated. Available in standard 1A drive current and optional 530mA and 700mA drive currents.

### Mounting

Four-bolt/two-bracket slipfitter with cast-in pipe stop and 2.5° leveling steps. Fixed-in-place bird guard seals around 1-1/4" or 2" mounting arms.

### Finish

Housing and cast parts finished in five-stage super TGIC polyester powder coat paint, 2.5 mil nominal thickness for superior protection against fade and wear. Heat sink is anodized aluminum. Consult your Eaton's Cooper Lighting business representative for a complete selection of standard colors.

### Warranty

Five-year warranty.



## NVN NAVION

1-6 Light Squares  
LED

ROADWAY LUMINAIRE



### CERTIFICATION DATA

UL/cUL Wet Location Listed  
ISO 9001  
IP66 Light Squares  
3G Vibration Rated  
ARRA Compliant  
DesignLights Consortium® Qualified\*

### ENERGY DATA

Electronic LED Driver  
>0.9 Power Factor  
<20% Total Harmonic Distortion  
120-277V/50 & 60 Hz,  
347V/60 Hz, 480V/60 Hz  
-40°C Minimum Temperature  
+40°C Ambient Temperature Rating

### EPA

Effective Projected Area (Sq. Ft.):

(Fixture Only)

- 1 Square 0.89
- 2 Square's 1.0
- 3 Square's 1.2
- 4 Square's 1.2
- 6 Square's 1.4

(Fixture with AI Arm)

- 1 Square 1.2
- 2 Square's 1.3
- 3 Square's 1.5
- 4 Square's 1.5
- 6 Square's 1.7

### SHIPPING DATA

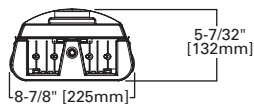
Approximate Net Weight:  
1 Square 17 lbs. (7.7 kgs.)  
2 Square's 22 lbs. (10.0 kgs.)  
3 Square's 26 lbs. (11.8 kgs.)  
4 Square's 31 lbs. (14.1 kgs.)  
6 Square's 36 lbs. (16.3 kgs.)



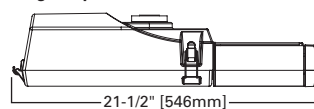
ADW140427  
2015-01-12 17:20:28

## DIMENSIONS

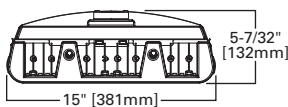
### 1, 2 or 3 Light Squares



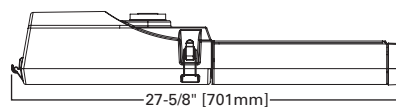
### 1 Light Square



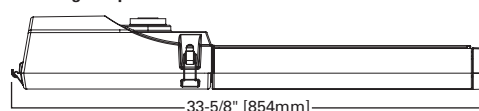
### 4 or 6 Light Squares



### 2 or 4 Light Squares

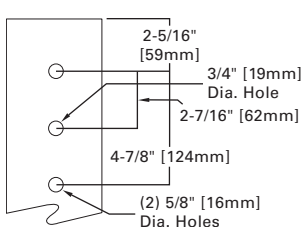


### 3 or 6 Light Squares



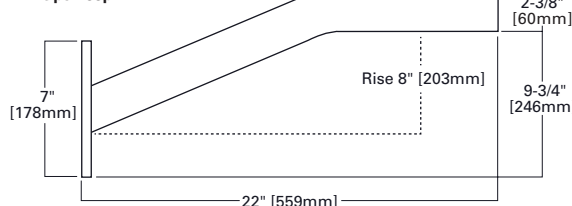
## ARM DRILLING

### TYPE "M"

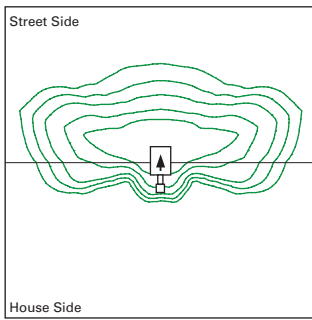


## OPTIONAL ARM

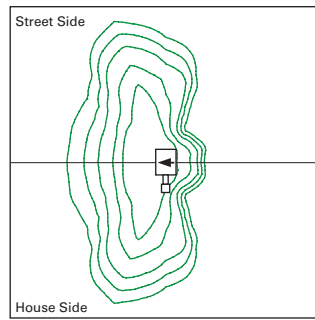
### 22" Upsweep Arm



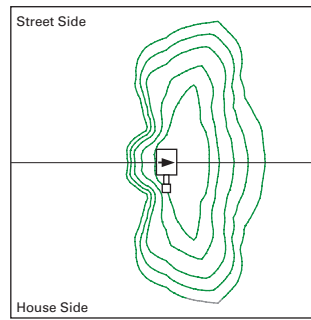
**OPTIC ORIENTATION**



**Standard**



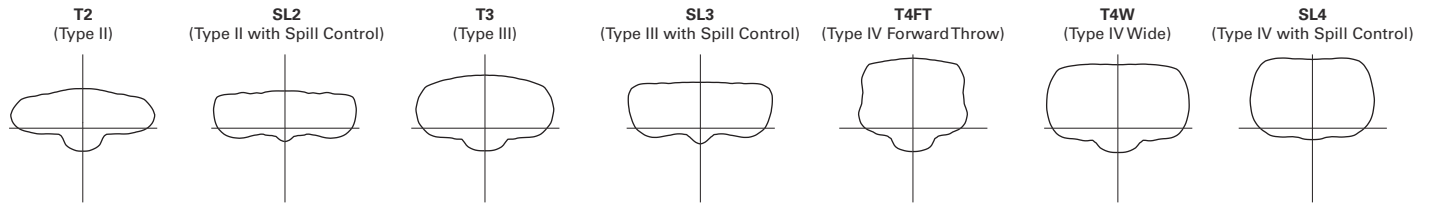
**Optics Rotated Left @ 90° (L90)**



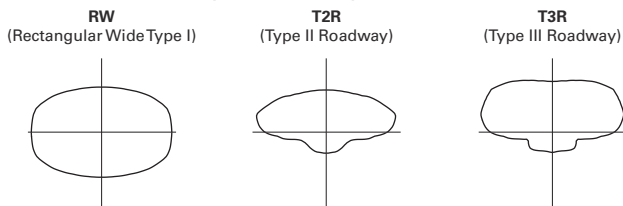
**Optics Rotated Right @ 90° (R90)**

**OPTICAL DISTRIBUTIONS**

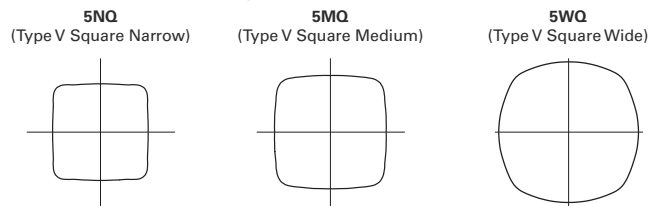
**Asymmetric Area Distributions**



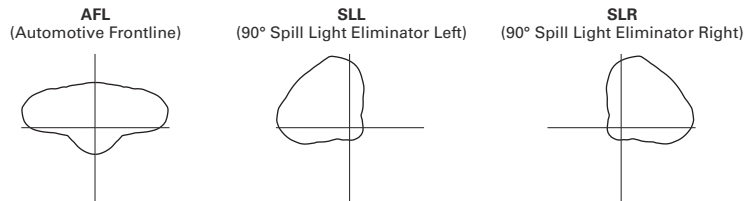
**Asymmetric Roadway Distributions**



**Symmetric Distributions**



**Specialized Distributions**



**NOMINAL POWER AND LUMENS (1A)**

Number of Light Squares	1	2	3	4	6	
Drive Current	1A	1A	1A	1A	1A	
Nominal Power (Watts)	56	107	157	213	315	
Input Current @ 120V (A)	0.47	0.9	1.31	1.79	2.64	
Input Current @ 208V (A)	0.28	0.51	0.74	1.02	1.48	
Input Current @ 240V (A)	0.25	0.45	0.65	0.9	1.3	
Input Current @ 277V (A)	0.23	0.41	0.59	0.82	1.18	
<b>Optics</b>						
T2	Lumens	5,155	10,278	15,285	20,587	30,396
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4
T2R	Lumens	5,519	11,004	16,364	22,040	32,542
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4
T3	Lumens	5,268	10,504	15,620	21,038	31,062
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4
T3R	Lumens	5,357	10,680	15,883	21,392	31,585
	BUG Rating	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G4	B3-U0-G4
T4FT	Lumens	5,308	10,584	15,739	21,198	31,299
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5
T4W	Lumens	5,205	10,376	15,431	20,784	30,686
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5
SL2	Lumens	5,163	10,294	15,309	20,619	30,444
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4
SL3	Lumens	5,260	10,487	15,595	21,004	31,013
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4
SL4	Lumens	5,024	10,017	14,897	20,064	29,625
	BUG Rating	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4	B2-U0-G5
5NQ	Lumens	5,414	10,795	16,053	21,621	31,923
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B5-U0-G2
5MQ	Lumens	5,609	11,183	16,630	22,398	33,071
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4
5WQ	Lumens	5,479	10,924	16,246	21,881	32,307
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4
SLL/SLR	Lumens	4,652	9,274	13,792	18,576	27,427
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G3	B2-U0-G4	B3-U0-G4
RW	Lumens	5,382	10,730	15,957	21,492	31,732
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3
AFL	Lumens	5,396	10,759	16,000	21,550	31,818
	BUG Rating	B1-U0-G1	B2-U0-G1	B2-U0-G2	B3-U0-G2	B3-U0-G3

\* Nominal data for 4000K CCT.

**NOMINAL POWER AND LUMENS (700MA)**

Number of Light Squares	1	2	3	4	6	
Drive Current	700mA	700mA	700mA	700mA	700mA	
Nominal Power (Watts)	38	72	105	138	210	
Input Current @ 120V (A)	0.32	0.59	0.86	1.14	1.72	
Input Current @ 208V (A)	0.21	0.36	0.51	0.67	1.02	
Input Current @ 240V (A)	0.19	0.32	0.45	0.59	0.9	
Input Current @ 277V (A)	0.2	0.29	0.40	0.51	0.80	
<b>Optics</b>						
T2	Lumens	3,768	7513	11,172	15,047	22,217
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3
T2R	Lumens	4,034	8,043	11,961	16,109	23,785
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3
T3	Lumens	3,851	7,677	11,417	15,377	22,704
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4
T3R	Lumens	3,916	7,806	11,609	15,636	23,086
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4
T4FT	Lumens	3,880	7,736	11,504	15,494	22,877
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4
T4W	Lumens	3804	7,584	11,279	15,191	22,429
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4
SL2	Lumens	3,774	7,524	11,190	15,071	22,252
	BUG Rating	B1-U0-G1	B1-U0-G2	2-U0-G2	B2-U0-G3	B3-U0-G4
SL3	Lumens	3,845	7,665	11,399	15,352	22,668
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4
SL4	Lumens	3,672	7,322	10,888	14,665	21,653
	BUG Rating	B1-U0-G2	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4
5NQ	Lumens	3,957	7,890	11,733	15,803	23,333
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5MQ	Lumens	4,100	8,174	12,155	16,371	24,172
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3
5WQ	Lumens	4,005	7,985	11,874	15,993	23,614
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3
SLL/SLR	Lumens	3,400	6,779	10,081	13,577	20,047
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4
RW	Lumens	3,934	7,843	11,663	15,709	23,194
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2
AFL	Lumens	3,944	7,864	11,695	15,751	23,256
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G1	B2-U0-G2	B3-U0-G2

\* Nominal data for 4000K CCT.

**NOMINAL POWER AND LUMENS (530MA)**

Number of Light Squares	1	2	3	4	6	
Drive Current	530mA	530mA	530mA	530mA	530mA	
Nominal Power (Watts)	30	54	80	105	159	
Input Current @ 120V (A)	0.25	0.45	0.66	0.86	1.32	
Input Current @ 208V (A)	0.17	0.28	0.39	0.51	0.78	
Input Current @ 240V (A)	0.17	0.25	0.35	0.45	0.7	
Input Current @ 277V (A)	0.19	0.24	0.32	0.40	0.64	
<b>Optics</b>						
T2	Lumens	3,011	6,002	8,926	12,022	17,750
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3
T2R	Lumens	3,223	6,426	9,556	12,871	19,004
	BUG Rating	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G3
T3	Lumens	3,077	6,134	9,122	12,286	18,140
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3
T3R	Lumens	3,128	6,237	9,275	12,492	18,445
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G2	B2-U0-G3
T4FT	Lumens	3,100	6,180	9,191	12,379	18,278
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3
T4W	Lumens	3,039	6,060	9,011	12,137	17,920
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G2	B3-U0-G3
SL2	Lumens	3,015	6,012	8,940	12,041	17,778
	BUG Rating	B1-U0-G1	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G3
SL3	Lumens	3,072	6,124	9,107	12,266	18,110
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3
SL4	Lumens	2,934	5,850	8,699	11,717	17,300
	BUG Rating	B0-U0-G1	B1-U0-G2	B1-U0-G3	B1-U0-G3	B2-U0-G4
5NQ	Lumens	3,162	6,304	9,374	12,626	18,642
	BUG Rating	B1-U0-G0	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
5MQ	Lumens	3,275	6,530	9,711	13,080	19,312
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2
5WQ	Lumens	3,200	6,380	9,487	12,778	18,866
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3
SLL/SLR	Lumens	2,716	5,416	8,054	10,848	16,017
	BUG Rating	B1-U0-G1	B1-U0-G2	B1-U0-G2	B2-U0-G3	B2-U0-G3
RW	Lumens	3,143	6,266	9,318	12,551	18,531
	BUG Rating	B2-U0-G1	B3-U0-G1	B3-U0-G1	B3-U0-G2	B4-U0-G2
AFL	Lumens	3,151	6,283	9,344	12,585	18,581
	BUG Rating	B1-U0-G1	B1-U0-G1	B1-U0-G1	B2-U0-G2	B2-U0-G2

\* Nominal data for 4000K CCT.

**LUMEN MULTIPLIER**

Ambient Temperature	Lumen Multiplier
0°C	1.02
10°C	1.01
25°C	1.00
40°C	0.99
50°C	0.97

**LUMEN MAINTENANCE**

Ambient Temperature	TM-21 Lumen Maintenance (60,000 Hours)	Theoretical L70 (Hours)
25°C	> 94%	> 350,000
40°C	> 93%	> 250,000
50°C	> 90%	> 170,000

**ORDERING INFORMATION**

Sample Number: NVN-AE-01-E-U-T3R-10K-4-AP

Product Family <sup>1</sup>	Light Engine	Number of Light Squares <sup>2</sup>	Driver	Voltage	Distribution	Surge Protection
NVN=Navion	AE=1A Drive Current	01=1 02=2 03=3 04=4 06=6	E=Non-Dimming D=Dimming (0-10V) <sup>3</sup>	U=Universal (120-277V) 8=480V <sup>4</sup> 9=347V	T2=Type II T2R=Type II Roadway T3=Type III T3R=Type III Roadway T4FT=Type IV Forward Throw T4W=Type IV Wide 5NQ=Type V Narrow 5MQ=Type V Square Medium 5WQ=Type V Square Wide SL2=Type II w/Spill Control SL3=Type III w/Spill Control SL4=Type IV w/Spill Control SLL=90° Spill Light Eliminator Left SLR=90° Spill Light Eliminator Right RW=Rectangular Wide Type I AFL=Automotive Frontline	10K=Cooper 10kV Surge Module (Standard) X=Driver Surge Protection Only <sup>5</sup>
<b>Options (Add as Suffix)</b>						
2L=Two Circuits <sup>6</sup> 7030=70 CRI / 3000K <sup>7</sup> 7060=70 CRI / 6000K <sup>7</sup> 530=Drive Current Factory Set to 530mA <sup>8,9</sup> 700=Drive Current Factory Set to 700mA <sup>8,9</sup> 4=NEMA Twistlock Photocontrol Receptacle 4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle <sup>10</sup> IP66=IP66 Rated HA=50°C High Ambient L90=Optics Rotated 90° Left R90=Optics Rotated 90° Right				MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height <sup>11</sup> MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height <sup>11</sup> MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height <sup>11</sup> MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height <sup>12</sup> MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height <sup>12</sup> MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height <sup>12</sup> K=Level Indicator AI=Site Arm Included <sup>13</sup> LCF=Light Square Trim Plate Painted to Match Housing HSS=Factory Installed House Side Shield <sup>14</sup> DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens for 8'-16' Mounting Heights <sup>15,16</sup> DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens for 16'-40' Mounting Heights <sup>15,16</sup>		
<b>Color</b>				<b>Accessories (Order Separately)</b>		
AP=Grey (Standard) BZ=Bronze BK=Black DP=Dark Platinum GM=Graphite Metallic WH=White				OA/RA1016=NEMA Photocontrol - Multi-Tap OA/RA1027=NEMA Photocontrol - 480V OA/RA1201=NEMA Photocontrol - 347V OA/RA1013=Photocontrol Shorting Cap OA/RA1014=NEMA Photo Control - 120V OA1223=10kV Surge Module Replacement FSIR-100=Wireless Configuration Tool for Motion Sensor <sup>17</sup> LS/HSS=Field Installed House Side Shield <sup>18</sup>		

**Notes:**

- DesignLights Consortium® Qualified. Refer to [www.designlights.org](http://www.designlights.org) Qualified Products List under Family Models for details.
- Standard 4000K CCT and nominal 70 CRI.
- Must specify 4N7 option.
- Not recommended for use with un-grounded, delta configured systems.
- Consult factory for driver surge protection values.
- Low-level output varies by number of light squares specified. Consult factory. Requires two or more light squares. No terminal block with 2L options.
- Use dedicated IES files for 3000K and 6000K when performing layouts. These files are published on the Navion luminaire product page on the website.
- 1 Amp standard. Use dedicated IES files for 530mA and 700mA when performing layouts. These files are published on the Navion luminaire product page on the website.
- Not available with any MS/DIM or DIMRF options.
- Only available with dimming driver.
- Sensor mounted externally. Must specify dimming driver. Consult factory for more information.
- Sensor mounted externally. Available in 2, 3, 4 or 6 Light Square configurations. Replace "X" with number of Light Squares in low output mode. For ON/OFF operation, replace "X" with "0". Maximum two Light Squares in low output mode. Not available with dimming driver. No terminal block with bi-level operation.
- 22" upsweep arm. Round pole adapter included.
- Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
- LumaWatt wireless sensors are factory installed and require network components RF-EM1, RF-GW1 and RF-ROUT1 in appropriate quantities. See [www.cooperlighting.com](http://www.cooperlighting.com) for LumaWatt application information.
- LumaWatt wireless system is not available with 4N7 (Not needed) or with FADC, 530mA, 700mA or 2L options.
- This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your Eaton's Cooper Lighting business representative for additional details.
- One required for each light square.