Streetworks

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.

Catalog #	NVN-AF-04-D-U-T3-10K-4N7-AP-WISDOT	Type	LED D
Project	WisDOT		
Comments		Date	11-03-2017
Prepared by	Bob Ebbert		

1050mA drive current

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 3000K, 5000K and 6000K CCT. For the ultimate level of spill light control, an optional house side shield accessory is available and can be field or factory installed. 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. 480V is compatible for use with 480V Wye systems only. 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 600mA, 800mA and 1200mA drive currents (nominal).

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 lighting representative at Eaton for a complete selection of standard colors.

Warranty
Five-year warranty.

NVN NAVION

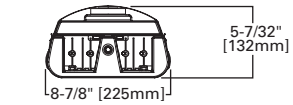
1-6 Light Squares

LED

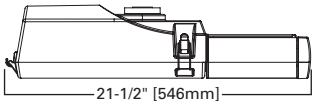
ROADWAY LUMINAIRE

DIMENSIONS

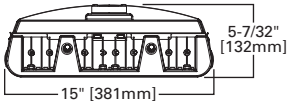
1, 2 or 3 Light Squares



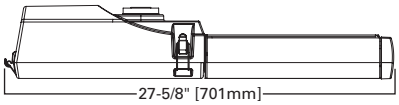
1 Light Square



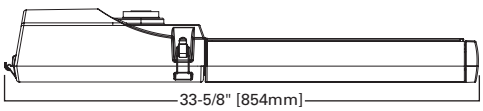
4 or 6 Light Squares



2 or 4 Light Squares



3 or 6 Light Squares



CERTIFICATION DATA
UL/cUL Wet Location Listed
ISO 9001
IP66 Light Squares
3G Vibration Rated

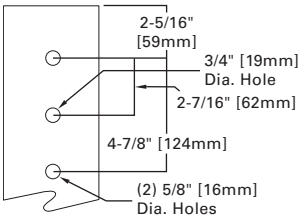
ENERGY DATA
Electronic LED Driver
>0.9 Power Factor
<20% Total Harmonic Distortion
120-277V 50/60 Hz,
347V 60 Hz, 480V 60 Hz
-40°C Minimum Temperature
+40°C Ambient Temperature Rating

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.)

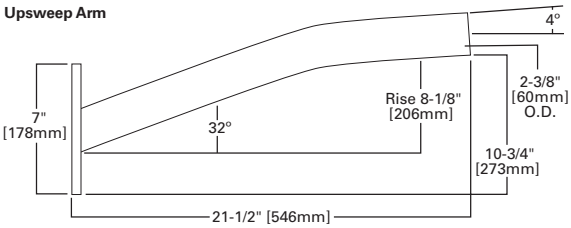
ARM DRILLING

TYPE "M"



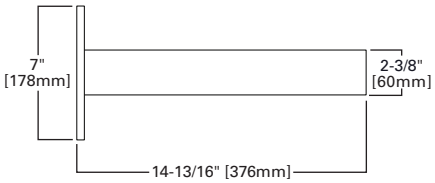
OPTIONAL ARM

Upsweep Arm

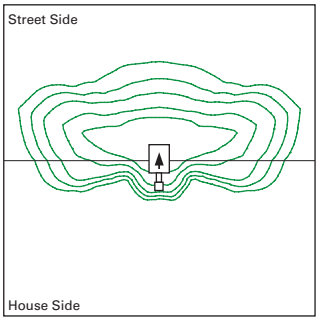


OPTIONAL ARM

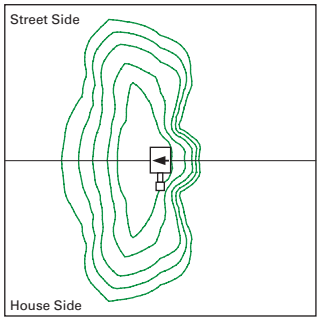
15" Straight Arm



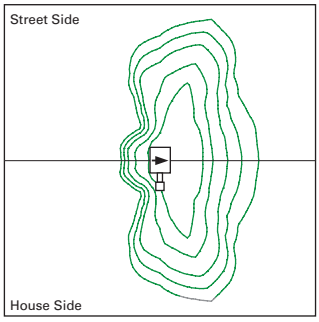
OPTIC ORIENTATION



Standard



Optics Rotated Left @ 90° (L90)

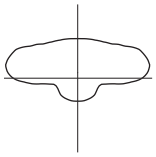


Optics Rotated Right @ 90° (R90)

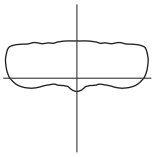
OPTICAL DISTRIBUTIONS

Asymmetric Area Distributions

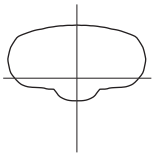
T2
(Type II)



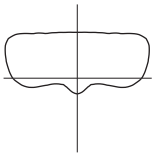
SL2
(Type II with Spill Control)



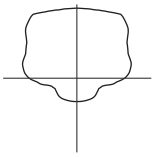
T3
(Type III)



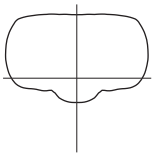
SL3
(Type III with Spill Control)



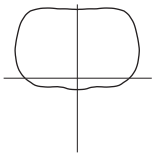
T4FT
(Type IV Forward Throw)



T4W
(Type IV Wide)

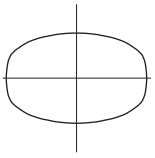


SL4
(Type IV with Spill Control)

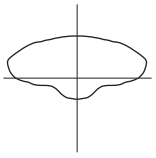


Asymmetric Roadway Distributions

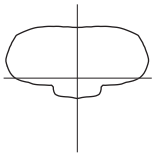
RW
(Rectangular Wide Type I)



T2R
(Type II Roadway)

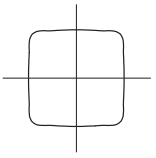


T3R
(Type III Roadway)

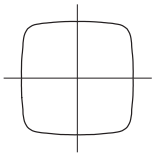


Symmertric Distributions

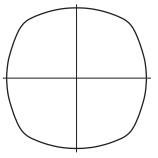
5NQ
(Type V Square Narrow)



5MQ
(Type V Square Medium)

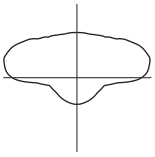


5WQ
(Type V Square Wide)

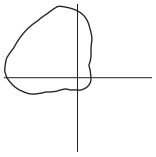


Specialized Distributions

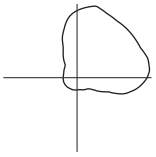
AFL
(Automotive Frontline)



SLL
(90° Spill Light Eliminator Left)



SLR
(90° Spill Light Eliminator Right)



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

Drive Current	Ambient Temperature	TM-21Lumen Maintenance (60,000 Hours)	Projected L70 (Hours)
Up to 1A	Up to 50°C	> 95%	416,000
1.2A	Up to 40°C	> 90%	205,000

Eaton
1121 Highway 74 South
Peachtree City, GA 30269
P: 770-486-4800
www.eaton.com/lighting

Powering Business Worldwide

NOMINAL POWER LUMENS (1A)

Number of Light Squares		1	2	3	4	5	6
Nominal Power (Watts)		59	113	166	225	279	333
Input Current @ 120V (A)		0.51	1.02	1.53	2.03	2.55	3.06
Input Current @ 208V (A)		0.29	0.56	0.82	1.11	1.37	1.64
Input Current @ 240V (A)		0.26	0.48	0.71	0.96	1.19	1.41
Input Current @ 277V (A)		0.23	0.42	0.61	0.83	1.03	1.23
Input Current @ 347V (A)		0.17	0.32	0.50	0.64	0.82	1.00
Input Current @ 480V (A)		0.14	0.24	0.37	0.48	0.61	0.75
Optics							
T2	4000K/5000K Lumens	5,980	11,922	17,731	23,881	29,433	35,259
	3000K Lumens	5,293	10,553	15,695	21,139	26,054	31,211
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G4
T2R	4000K/5000K Lumens	6,402	12,765	18,982	25,566	31,510	37,749
	3000K Lumens	5,667	11,300	16,803	22,631	27,893	33,415
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4
T3	4000K/5000K Lumens	6,111	12,185	18,119	24,404	30,078	36,032
	3000K Lumens	5,409	10,786	16,039	21,602	26,625	31,896
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5
T3R	4000K/5000K Lumens	6,214	12,389	18,424	24,815	30,585	36,639
	3000K Lumens	5,501	10,967	16,309	21,966	27,074	32,433
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5
T4FT	4000K/5000K Lumens	6,157	12,277	18,257	24,590	30,307	36307
	3000K Lumens	5,450	10,868	16,161	21,767	26,828	32,139
	BUG Rating	B1-U0-G2	B2-U0-G2	B2-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5
T4W	4000K/5000K Lumens	6,038	12,036	17,900	24,109	29,715	35,596
	3000K Lumens	5,345	10,654	15,845	21,341	26,304	31,510
	BUG Rating	B1-U0-G2	B2-U0-G2	B3-U0-G3	B3-U0-G4	B3-U0-G5	B3-U0-G5
SL2	4000K/5000K Lumens	5,989	11,941	17,758	23,918	29,479	35,315
	3000K Lumens	5,301	10,570	15,719	21,172	26,095	31,261
	BUG Rating	B1-U0-G2	B2-U0-G3	B3-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5
SL3	4000K/5000K Lumens	6,102	12,165	18,090	24,365	30,030	35,975
	3000K Lumens	5,401	10,768	16,013	21,568	26,583	31,845
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5
SL4	4000K/5000K Lumens	5,828	11,620	17,281	23,274	28,686	34,365
	3000K Lumens	5,159	10,286	15,297	20,602	25,393	30,420
	BUG Rating	B1-U0-G2	B1-U0-G3	B2-U0-G4	B2-U0-G4	B2-U0-G5	B3-U0-G5
5NQ	4000K/5000K Lumens	6,280	12,522	18,621	25,080	30,912	37,031
	3000K Lumens	5,559	11,084	16,483	22,201	27,363	32,780
	BUG Rating	B2-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G2	B5-U0-G3
5MQ	4000K/5000K Lumens	6,506	12,972	19,291	25,982	32,023	38,362
	3000K Lumens	5,759	11,483	17,076	22,999	28,347	33,958
	BUG Rating	B3-U0-G1	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G4	B5-U0-G4
5WQ	4000K/5000K Lumens	6,356	12,672	18,845	25,382	31,284	37,476
	3000K Lumens	5,626	11,217	16,682	22,468	27,693	33,174
	BUG Rating	B3-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3	B5-U0-G4	B5-U0-G4
SLL/SLR	4000K/5000K Lumens	5,396	10,758	15,999	21,548	26,558	31,815
	3000K Lumens	4,777	9,523	14,162	19,074	23,509	28,163
	BUG Rating	B1-U0-G2	B2-U0-G3	B2-U0-G3	B3-U0-G4	B3-U0-G4	B3-U0-G5
RW	4000K/5000K Lumens	6,243	12,447	18,510	24,931	30,727	36,809
	3000K Lumens	5,526	11,018	16,385	22,069	27,200	32,583
	BUG Rating	B3-U0-G1	B3-U0-G2	B4-U0-G2	B4-U0-G2	B5-U0-G3	B5-U0-G3
AFL	4000K/5000K Lumens	6,259	12,480	18,560	24,998	30,810	36,909
	3000K Lumens	5,540	11,047	16,429	22,128	27,273	32,672
	BUG Rating	B1-U0-G1	B2-U0-G2	B2-U0-G2	B3-U0-G2	B3-U0-G3	B3-U0-G3

* Nominal data for 70 CRI.

ORDERING INFORMATION

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

Product Family [1]	Light Engine	Number of Light Squares [2]	Driver	Voltage	Distribution	Surge Protection
NVN=Navion	**AF** 1050mA	**01**=1 **02**=2 **03**=3 **04**=4 **06**=6	**E**=Non-Dimming **D**=Dimming (0-10V) [3]	**U**=Universal (120-277V) **8**=480V [4] **9**=347V [5]	**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 [6]

Options (Add as Suffix)

2L=Two Circuits [7]
7030=70 CRI / 3000K [8]
7050=70 CRI / 5000K [8]
7060=70 CRI / 6000K [8]
8030=80 CRI / 3000K [8]
600=Drive Current Factory Set to 615mA [9, 10]
800=Drive Current Factory Set to 800mA [9, 10]
1200=Drive Current Set to 1.2mA
4=NEMA Twistlock Photocontrol Receptacle
4N7=NEMA 7-PIN Twistlock Photocontrol Receptacle [11]
IP66=IP66 Rated
HA=50°C High Ambient [12]
L90=Optics Rotated 90° Left
R90=Optics Rotated 90° Right
CE=CE Marking [13]

MS/DIM-L08=Motion Sensor for Dimming Operation, Maximum 8' Mounting Height [14]
MS/DIM-L20=Motion Sensor for Dimming Operation, 9' - 20' Mounting Height [14]
MS/DIM-L40=Motion Sensor for Dimming Operation, 21' - 40' Mounting Height [14]
MS/X-L08=Bi-Level Motion Sensor, Maximum 8' Mounting Height [15]
MS/X-L20=Bi-Level Motion Sensor, 9' - 20' Mounting Height [15]
MS/X-L40=Bi-Level Motion Sensor, 21' - 40' Mounting Height [15]
K=Level Indicator
AI=Site Arm Included [16]
A15=Arm Included (15" Straight Arm) [17]
LCF=Light Square Trim Plate Painted to Match Housing
HSS=Factory Installed House Side Shield [18]
DIMRF-LW=LumaWatt Wireless Sensor, Wide Lens for 8' - 16' Mounting Heights [19, 20]
DIMRF-LN=LumaWatt Wireless Sensor, Narrow Lens for 16' - 40' Mounting Heights [19, 20]
AHD145=After Hours Dim, 5 Hours [21]
AHD245=After Hours Dim, 6 Hours [21]
AHD255=After Hours Dim, 7 Hours [21]
AHD355=After Hours Dim, 8 Hours [21]

Color

AP=Grey (Standard)
BZ=Bronze
BK=Black
DP=Dark Platinum
GM=Graphite Metallic
WH=White

Accessories (Order Separately)

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 [22]
LS/HSS=Field Installed House Side Shield [23]
A15=15" Straight Arm [16]

NOTES:
1. Customer is responsible for engineering analysis to confirm pole and fixture compatibility for all applications. Refer to our white paper WP513001EN for additional support information.
2. Standard 1A drive current. Standard 4000K CCT and nominal 70 CRI.
3. Must specify 4N7 option.
4. Only for use with 480V Wye systems. Per NEC, not for use with ungrounded systems, impedance grounded systems or corner grounded systems (commonly known as Three Phase Three Wire Delta, Three Phase High Leg Delta and Three Phase Corner Grounded Delta systems).
5. Requires the use of an internal step down transformer when combined with sensor options. Not available with sensor at 1200mA. Not available in combination with the HA high ambient and sensor options at 1A.
6. Consult factory for driver surge protection values.
7. Low-level output varies by number of light squares specified. Consult factory. Requires two or more light squares. No terminal block with 2L options.
8. Use dedicated IES files for 3000K, 5000K and 6000K when performing layouts. These files are published on the Navion luminaire product page on the website.
9. 1 Amp standard. Use dedicated IES files for 600mA, 800mA and 1200mA when performing layouts. These files are published on the Navion luminaire product page on the website.
10. Not available with any MS/DIM or DIMRF options.
11. Only available with dimming driver.
12. Not available with 1200mA.
13. CE is not available with the 1200mA, DIMRF, MS, MS/X, MS/DIM, 4 or 4N7 options. Available in 120-277V only.
14. Sensor mounted externally. Must specify dimming driver. Consult factory for more information.
15. 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.
16. 22" upsweep arm. Round pole adapter included.
17. Round pole adapter and mounting hardware inlcued, "M" drilling pattern.
18. Only for use with SL2, SL3, SL4 and AFL distributions. The Light Square trim plate is painted black when the HSS option is selected.
19. LumaWatt wireless sensors are factory installed and require network components RF-EM-1, RF-GW-1 and RF-ROUT-1 in appropriate quantities. See www.eaton.com/lighting for LumaWatt application information.
20. LumaWatt wireless system is not available with 4N7 (Not needed) or with 600mA, 800mA or 2L options.
21. Requires the use of 4 or 4N7 photocontrol receptacle with photocontrol accessory. See After Hours Dim supplemental guide for additional information.
22. This tool enables adjustment of parameters including high and low modes, sensitivity, time delay, cutoff and more. Consult your lighting representative at Eaton for more information.
23. One required for each light square.

WISDOT = With special WisDOT exterior label (which includes standard ANSI exterior label information) for type A fixture, safety cable on power door and OA/RA1013 shorting cap installed.