

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



Scaled data based on original data using  
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions  
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P833562

Luminaire Tested: **TTN-D2-740-U-MQ-CG-UPL3**

Issue Date: 5/15/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P833562  
REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G3-2308-121-4) AND  
Test Lab: INNOVATION CENTER  
Issue Date: 5/15/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: McGRAW-EDISON  
Catalog Number: TTN-D2-740-U-MQ-CG-UPL3  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT  
4000K, 70 CRI LEDS AND MEDIUM DISTRIBUTION WITH CLEAR GLASS  
Light Source: -  
Ballast/Driver: -

**Summary**

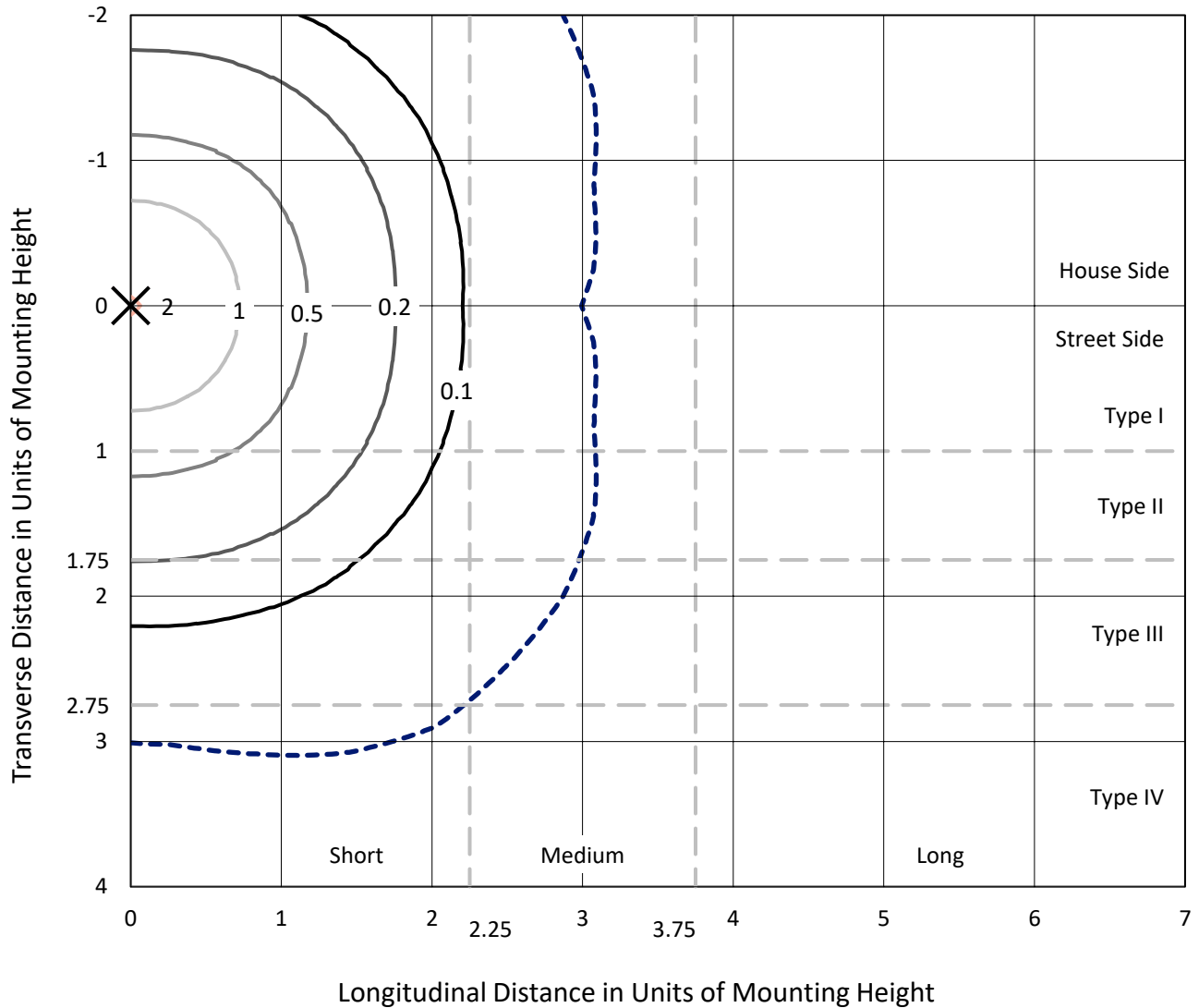
Lumens per Lamp: N/A  
Luminaire Lumens: 6172.6 lumens  
Efficiency: N/A  
Efficacy: 124.7 lumens/watt  
Luminous Opening: Vertical Cylinder (Dia: 0.71' x H: 0.1')  
IES Classification: Type V - Short  
BUG Rating: B2 - U4 - G1  
  
Input Watts (W): 49.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



REPORT NUMBER: P833562  
 CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

### Iso-Footcandle Lines of Horizontal Illumination

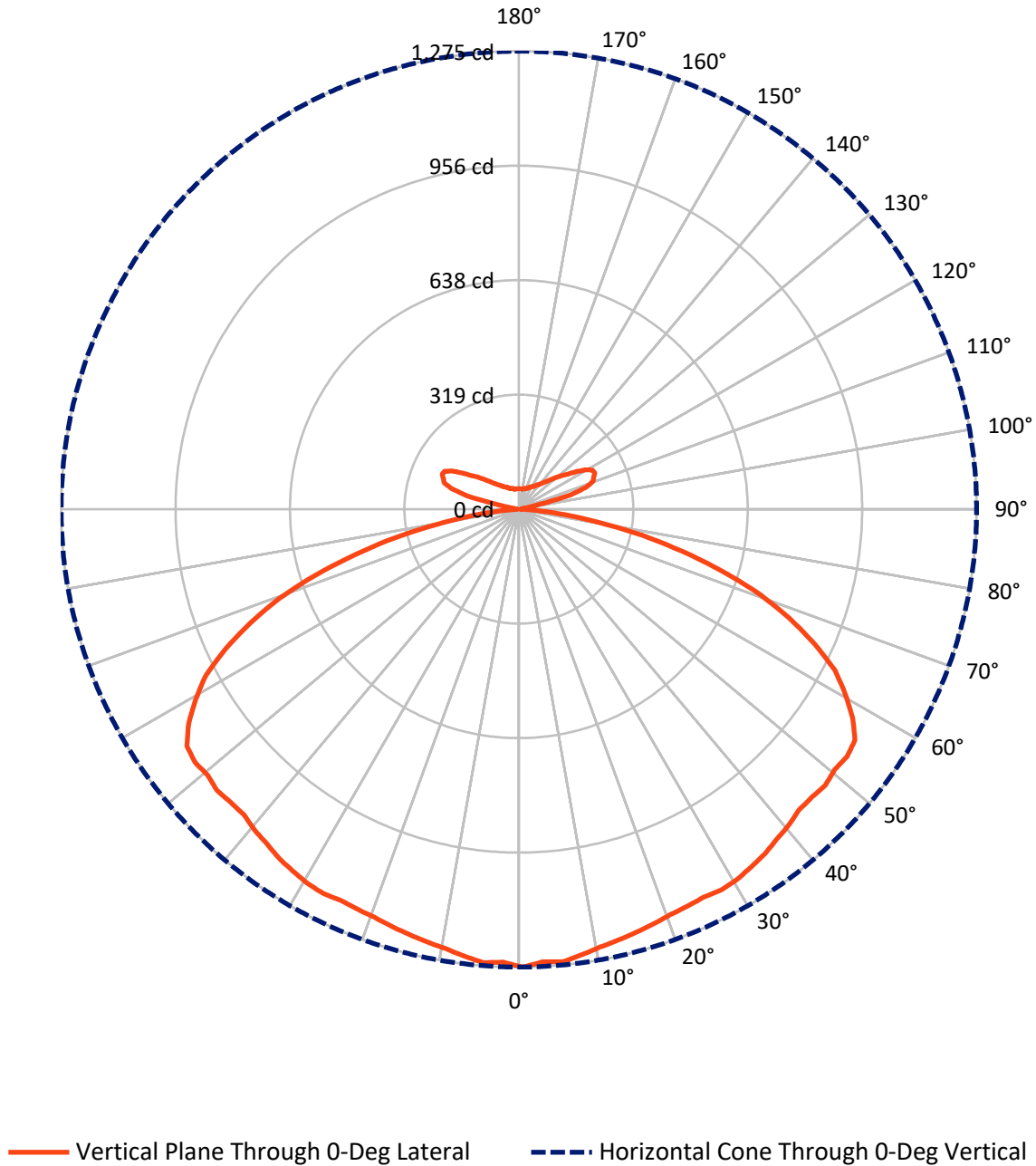
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2 fc  
 Type V - Short - N/A

REPORT NUMBER: P833562  
CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

### Luminous Intensity Polar Plot



REPORT NUMBER: P833562  
 CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

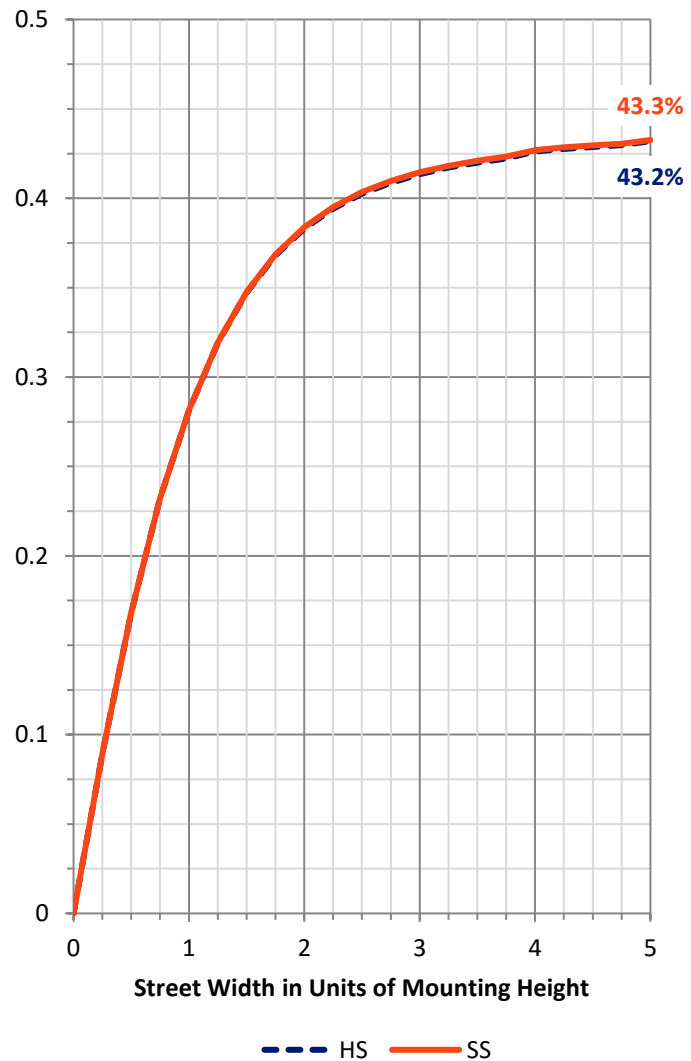
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2680.5	405.8	3086.3
	% Fixture	43.4	6.6	50.0
<b>Street Side</b>	Lumens	2680.5	405.8	3086.3
	% Fixture	43.4	6.6	50.0
<b>Total</b>	Lumens	5361.1	811.5	6172.6
	% Fixture	86.9	13.1	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	119.8	1.9
10°-20°	346.4	5.6
20°-30°	557.3	9.0
30°-40°	744.4	12.1
40°-50°	904.5	14.7
50°-60°	1050.9	17.0
60°-70°	969.6	15.7
70°-80°	567.6	9.2
80°-90°	100.5	1.6
90°-100°	18.1	0.3
100°-110°	184.1	3.0
110°-120°	269.1	4.4
120°-130°	156.2	2.5
130°-140°	82.7	1.3
140°-150°	49.1	0.8
150°-160°	30.3	0.5
160°-170°	16.5	0.3
170°-180°	5.4	0.1
0°-90°	5361.1	86.9
0°-180°	6172.6	100.0



REPORT NUMBER: P833562

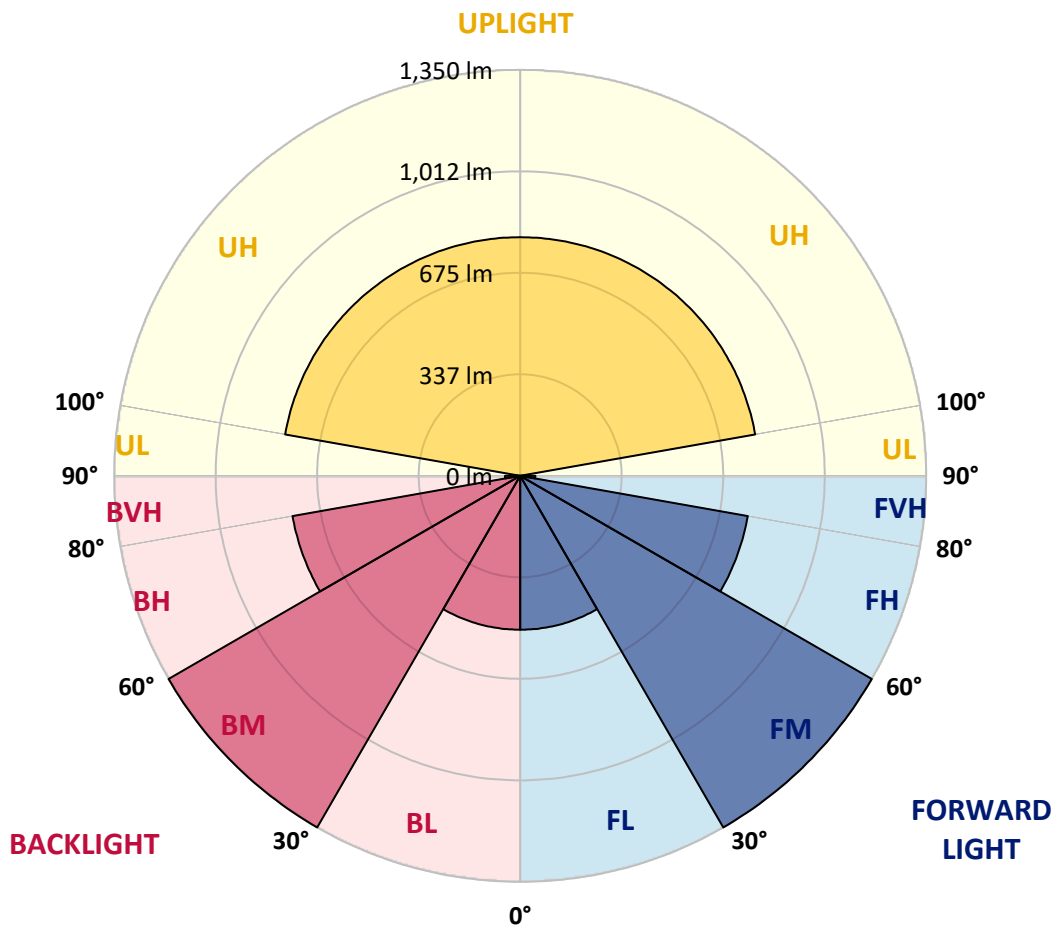
CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	511.7	8.3			
FM (30°-60°)	1349.9	21.9			
FH (60°-80°)	768.6	12.5			G1/1800
FVH (80°-90°)	50.3	0.8			G1/100
BL (0°-30°)	511.7	8.3	B2/1000		
BM (30°-60°)	1349.9	21.9	B2/2500		
BH (60°-80°)	768.6	12.5	B2/1000		G1/1800
BVH (80°-90°)	50.3	0.8			G1/100
UL (90°-100°)	18.1	0.3		U2/50	
UH (100°-180°)	793.4	12.9		U4/1000	

**BUG Rating: B2-U4-G1**

Type V Short





REPORT NUMBER: P833562

CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1	1275.1
2.5°	1262.1	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4
5°	1266.4	1266.4	1266.4	1266.4	1262.1	1262.1	1262.1	1262.1	1262.1	1266.4	1266.4
7.5°	1253.4	1253.4	1253.4	1253.4	1253.4	1249.0	1253.4	1253.4	1253.4	1253.4	1253.4
10°	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3	1240.3
12.5°	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1231.6	1227.3	1227.3
15°	1222.9	1222.9	1222.9	1222.9	1227.3	1227.3	1222.9	1222.9	1222.9	1222.9	1222.9
17.5°	1214.2	1214.2	1214.2	1214.2	1218.6	1218.6	1218.6	1214.2	1214.2	1214.2	1214.2
20°	1205.5	1205.5	1205.5	1205.5	1209.9	1209.9	1209.9	1209.9	1209.9	1205.5	1205.5
22.5°	1201.1	1201.1	1201.1	1201.1	1205.5	1205.5	1205.5	1205.5	1201.1	1201.1	1201.1
25°	1196.8	1201.1	1201.1	1201.1	1205.5	1209.9	1209.9	1205.5	1201.1	1196.8	1196.8
27.5°	1201.1	1201.1	1201.1	1205.5	1205.5	1209.9	1209.9	1205.5	1201.1	1201.1	1201.1
30°	1196.8	1196.8	1196.8	1201.1	1205.5	1209.9	1205.5	1205.5	1201.1	1196.8	1196.8
32.5°	1188.1	1188.1	1192.4	1196.8	1201.1	1201.1	1201.1	1196.8	1192.4	1188.1	1188.1
35°	1179.4	1179.4	1179.4	1183.7	1192.4	1192.4	1192.4	1188.1	1183.7	1179.4	1175.0
37.5°	1166.3	1170.7	1170.7	1179.4	1183.7	1188.1	1183.7	1179.4	1170.7	1166.3	1166.3
40°	1157.6	1157.6	1162.0	1170.7	1179.4	1179.4	1175.0	1170.7	1162.0	1157.6	1157.6
42.5°	1144.6	1144.6	1153.3	1162.0	1175.0	1175.0	1170.7	1162.0	1153.3	1144.6	1144.6
45°	1144.6	1144.6	1153.3	1170.7	1179.4	1188.1	1179.4	1170.7	1153.3	1144.6	1140.2
47.5°	1148.9	1148.9	1157.6	1179.4	1196.8	1205.5	1192.4	1175.0	1157.6	1148.9	1144.6
50°	1140.2	1144.6	1162.0	1183.7	1205.5	1209.9	1205.5	1179.4	1162.0	1140.2	1140.2
52.5°	1144.6	1144.6	1166.3	1201.1	1222.9	1231.6	1222.9	1201.1	1162.0	1140.2	1140.2
55°	1135.9	1131.5	1162.0	1201.1	1236.0	1253.4	1236.0	1201.1	1157.6	1131.5	1127.2
57.5°	1096.7	1096.7	1135.9	1175.0	1218.6	1227.3	1214.2	1175.0	1131.5	1096.7	1088.0
60°	1044.5	1048.8	1088.0	1131.5	1170.7	1175.0	1166.3	1131.5	1088.0	1048.8	1035.8
62.5°	987.9	996.6	1035.8	1079.3	1127.2	1135.9	1122.8	1079.3	1027.1	1001.0	979.2
65°	905.2	918.3	961.8	1009.7	1061.9	1057.5	1057.5	1005.3	966.1	922.6	900.9
67.5°	813.8	826.9	857.3	922.6	966.1	961.8	957.4	922.6	857.3	826.9	813.8
70°	713.7	722.4	752.9	818.2	857.3	861.7	848.6	813.8	752.9	731.1	709.4
72.5°	596.2	600.6	644.1	696.3	735.5	731.1	726.8	696.3	639.7	618.0	591.9
75°	470.0	474.4	513.5	561.4	591.9	587.5	583.2	561.4	513.5	487.4	465.7
77.5°	352.5	348.2	387.3	422.1	439.6	443.9	435.2	417.8	383.0	361.2	348.2
80°	230.7	226.3	261.1	287.2	300.3	300.3	295.9	282.9	256.8	239.4	230.7
82.5°	130.6	126.2	148.0	165.4	178.4	174.1	169.7	161.0	148.0	134.9	126.2
85°	47.9	47.9	60.9	69.6	78.3	78.3	74.0	69.6	56.6	52.2	47.9
87.5°	4.4	4.4	8.7	13.1	13.1	13.1	8.7	8.7	4.4	4.4	4.4
90°	6.9	6.9	8.3	8.3	8.3	8.3	8.3	8.3	8.3	6.9	6.9
92.5°	6.9	6.9	6.9	9.7	11.1	9.7	11.1	8.3	8.3	6.9	6.9
95°	8.3	8.3	9.7	12.5	15.3	16.7	16.7	9.7	9.7	8.3	8.3
97.5°	11.1	12.5	12.5	15.3	25.0	45.8	27.8	13.9	13.9	12.5	11.1
100°	18.0	19.4	19.4	34.7	73.6	98.6	70.8	36.1	26.4	19.4	19.4
102.5°	58.3	61.1	75.0	112.5	166.6	151.3	127.7	120.8	83.3	66.6	63.9
105°	148.6	147.2	158.3	187.4	233.3	229.1	211.0	191.6	165.2	152.7	152.7
107.5°	195.8	195.8	205.5	230.5	265.2	309.6	313.8	248.5	218.0	204.1	202.7
110°	220.8	220.8	229.1	249.9	295.7	358.2	355.4	306.8	269.4	251.3	248.5



REPORT NUMBER: P833562

CATALOG NUMBER: TTN-D2-740-U-MQ-CG-UPL3

**CANDELA DISTRIBUTION (continued):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	226.3	227.7	238.8	270.7	320.7	348.5	336.0	316.6	299.9	286.0	283.2
115°	234.6	234.6	247.1	277.7	305.5	316.6	302.7	287.4	276.3	270.7	273.5
117.5°	231.9	236.0	238.8	255.5	273.5	281.8	274.9	254.1	245.8	243.0	238.8
120°	215.2	215.2	218.0	226.3	236.0	240.2	237.4	223.5	216.6	215.2	212.4
122.5°	191.6	193.0	191.6	195.8	202.7	206.9	204.1	193.0	190.2	190.2	187.4
125°	168.0	168.0	166.6	169.4	173.6	172.2	173.6	168.0	166.6	166.6	165.2
127.5°	151.3	149.9	147.2	148.6	149.9	149.9	151.3	145.8	147.2	148.6	147.2
130°	134.7	134.7	131.9	131.9	131.9	129.1	131.9	129.1	130.5	131.9	133.3
132.5°	119.4	119.4	115.2	113.9	113.9	113.9	115.2	113.9	116.6	119.4	119.4
135°	106.9	106.9	102.7	104.1	104.1	102.7	104.1	102.7	105.5	106.9	106.9
137.5°	97.2	97.2	94.4	94.4	94.4	93.0	94.4	94.4	95.8	98.6	100.0
140°	88.9	88.9	87.5	87.5	86.1	87.5	87.5	87.5	88.9	90.2	90.2
142.5°	84.7	83.3	81.9	80.5	81.9	81.9	81.9	80.5	81.9	84.7	84.7
145°	77.8	77.8	76.4	76.4	76.4	77.8	76.4	76.4	77.8	77.8	79.1
147.5°	73.6	73.6	72.2	73.6	73.6	73.6	73.6	72.2	73.6	73.6	75.0
150°	72.2	70.8	69.4	70.8	70.8	69.4	69.4	69.4	69.4	70.8	70.8
152.5°	68.0	68.0	66.6	68.0	66.6	66.6	66.6	66.6	66.6	68.0	69.4
155°	65.3	65.3	63.9	65.3	65.3	65.3	65.3	65.3	65.3	65.3	65.3
157.5°	62.5	63.9	62.5	62.5	62.5	62.5	62.5	62.5	62.5	63.9	63.9
160°	61.1	61.1	61.1	61.1	59.7	59.7	59.7	61.1	61.1	61.1	62.5
162.5°	59.7	59.7	59.7	59.7	58.3	58.3	58.3	58.3	59.7	59.7	61.1
165°	59.7	58.3	58.3	58.3	56.9	56.9	56.9	56.9	58.3	59.7	58.3
167.5°	56.9	56.9	56.9	56.9	56.9	55.5	55.5	56.9	56.9	56.9	58.3
170°	56.9	56.9	55.5	55.5	55.5	55.5	55.5	55.5	55.5	55.5	56.9
172.5°	56.9	56.9	56.9	56.9	55.5	55.5	55.5	55.5	55.5	56.9	56.9
175°	56.9	56.9	56.9	56.9	55.5	55.5	55.5	56.9	56.9	56.9	55.5
177.5°	56.9	56.9	56.9	56.9	55.5	56.9	56.9	56.9	56.9	56.9	56.9
180°	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9	56.9



Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

MCGRAW EDISON

Report Number: SP1-2411-284-2

Test Date: 11/20/2024

Luminaire Tested: TTN-D0-740-U-WQ

Data in this report applies to TT and TTN families of products

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2411-284-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 11/20/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **TTN-D0-740-U-WQ**  
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 4000K, 70 CRI LEDS AND WIDE DISTRIBUTION

**Spectral Parameters**

CCT (K): 3863  
 CIE u': 0.2247  
 CIE v': 0.5111  
 Duv: 0.0055  
 CIE x: 0.3911  
 CIE y: 0.3954  
 CIE z: 0.2136  
 Peak Wavelength (nm): 448  
 Dominant Wavelength (nm): 577  
 Purity: 36.03443  
 Rf: 74.7  
 Rg: 95.4

CRI (Ra):	71.9		
R1:	69.4	R9:	-23.5
R2:	76.9	R10:	45.4
R3:	83.3	R11:	68.7
R4:	72.7	R12:	38.7
R5:	68.4	R13:	70.0
R6:	67.5	R14:	90.3
R7:	82.0	R15:	62.1
R8:	55.3		



**Test Conditions**

Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-2

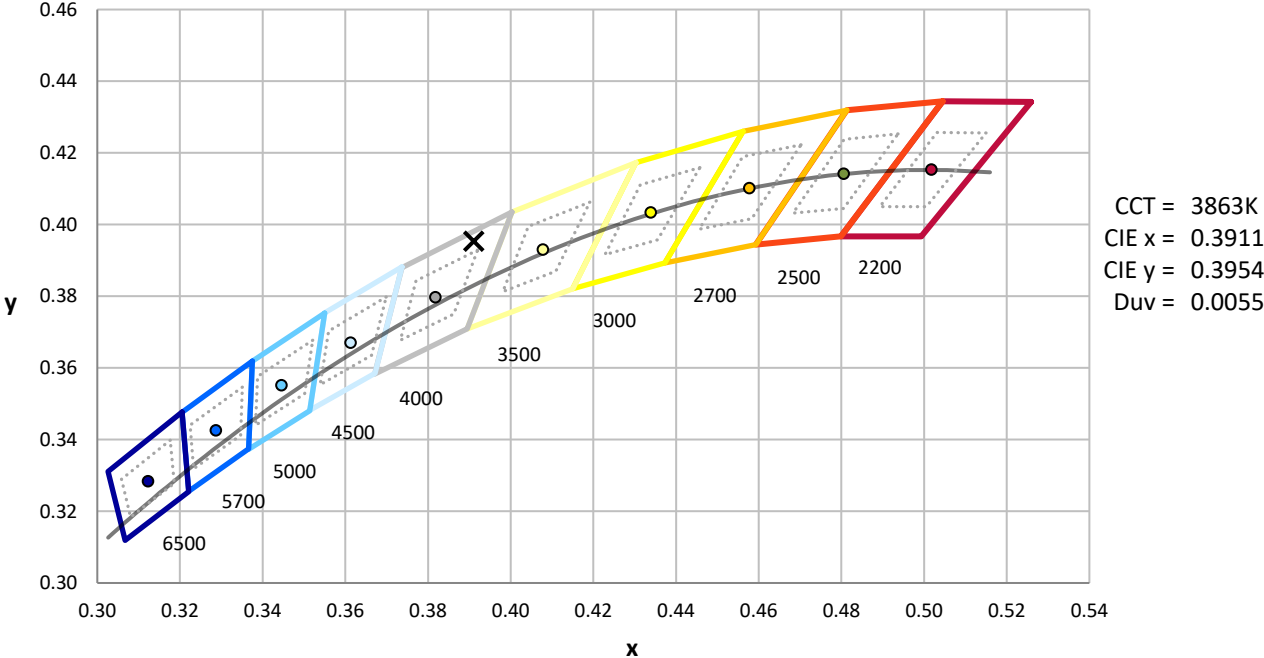
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085	10/22/2024	10/22/2025
Room Thermometer	IN0046	10/22/2024	10/22/2025

REPORT NUMBER: SP1-2411-284-2

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-2

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-2

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.45**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.72

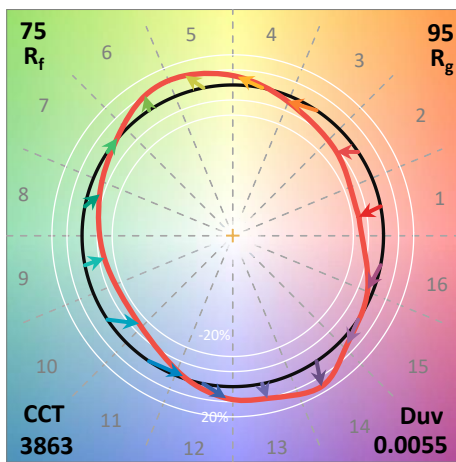
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	680	NR	755	22	NR	885	0	NR
370	0	NR	500	245	NR	630	630	NR	760	19	NR	890	0	NR
375	0	NR	505	338	NR	635	579	NR	765	17	NR	895	0	NR
380	0	NR	510	431	NR	640	529	NR	770	14	NR	900	0	NR
385	0	NR	515	521	NR	645	477	NR	775	13	NR	905	0	NR
390	1	NR	520	596	NR	650	429	NR	780	11	NR	910	0	NR
395	3	NR	525	655	NR	655	383	NR	785	9	NR	915	0	NR
400	6	NR	530	701	NR	660	338	NR	790	8	NR	920	0	NR
405	9	NR	535	739	NR	665	298	NR	795	7	NR	925	0	NR
410	16	NR	540	766	NR	670	261	NR	800	6	NR	930	0	NR
415	32	NR	545	791	NR	675	228	NR	805	5	NR	935	0	NR
420	65	NR	550	813	NR	680	200	NR	810	5	NR	940	0	NR
425	131	NR	555	833	NR	685	173	NR	815	4	NR	945	0	NR
430	245	NR	560	852	NR	690	151	NR	820	3	NR	950	0	NR
435	432	NR	565	870	NR	695	130	NR	825	3	NR	955	0	NR
440	622	NR	570	885	NR	700	112	NR	830	3	NR	960	0	NR
445	870	NR	575	900	NR	705	97	NR	835	2	NR	965	0	NR
450	969	NR	580	911	NR	710	83	NR	840	2	NR	970	0	NR
455	544	NR	585	916	NR	715	71	NR	845	2	NR	975	0	NR
460	304	NR	590	912	NR	720	60	NR	850	1	NR	980	0	NR
465	231	NR	595	901	NR	725	51	NR	855	1	NR	985	0	NR
470	142	NR	600	882	NR	730	43	NR	860	1	NR	990	0	NR
475	96	NR	605	855	NR	735	37	NR	865	1	NR	995	0	NR
480	92	NR	610	820	NR	740	32	NR	870	1	NR	1000	0	NR
485	96	NR	615	776	NR	745	29	NR	875	1	NR			

**Summary**

$R_f = 74.7$   
 $R_g = 95.4$   
 $CIE R_a = 71.9$   
 $R_g = -23.5$



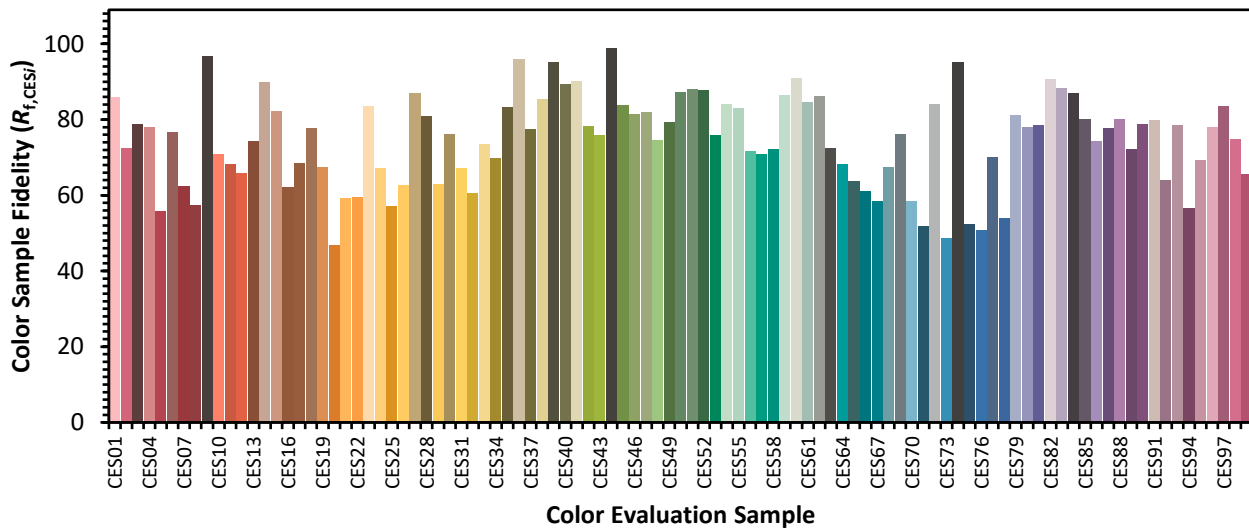
**Color Vector Graphics**



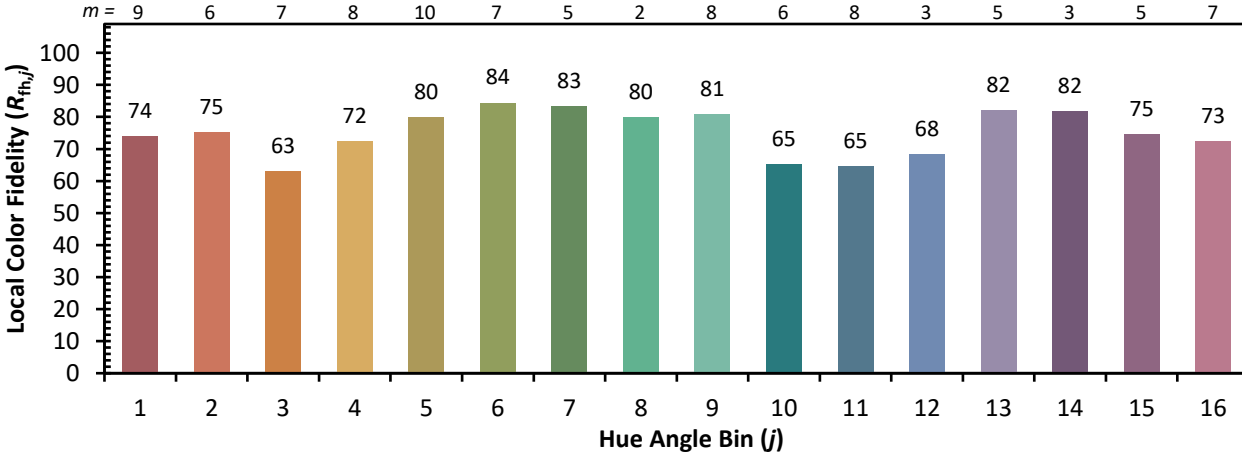


**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 91
CES08 = 39	CES33 = 73	CES58 = 72	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 83	CES60 = 91	CES85 = 80
CES11 = 57	CES36 = 96	CES61 = 85	CES86 = 74
CES12 = 63	CES37 = 77	CES62 = 86	CES87 = 78
CES13 = 42	CES38 = 85	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 95	CES64 = 68	CES89 = 72
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 79
CES16 = 46	CES41 = 90	CES66 = 61	CES91 = 80
CES17 = 49	CES42 = 78	CES67 = 58	CES92 = 64
CES18 = 56	CES43 = 76	CES68 = 67	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 76	CES94 = 57
CES20 = 65	CES45 = 84	CES70 = 58	CES95 = 69
CES21 = 86	CES46 = 81	CES71 = 52	CES96 = 78
CES22 = 78	CES47 = 82	CES72 = 84	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 79	CES74 = 95	CES99 = 66
CES25 = 72	CES50 = 87	CES75 = 52	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)