

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: P823390

Luminaire Tested: **TTN-D2-740-U-WQ**

Issue Date: 4/16/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P823390  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/16/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TTN-D2-740-U-WQ  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE  
4000K, 70 CRI LEDS AND WIDE DISTRIBUTION  
Light Source: -  
Ballast/Driver: -

**Summary**

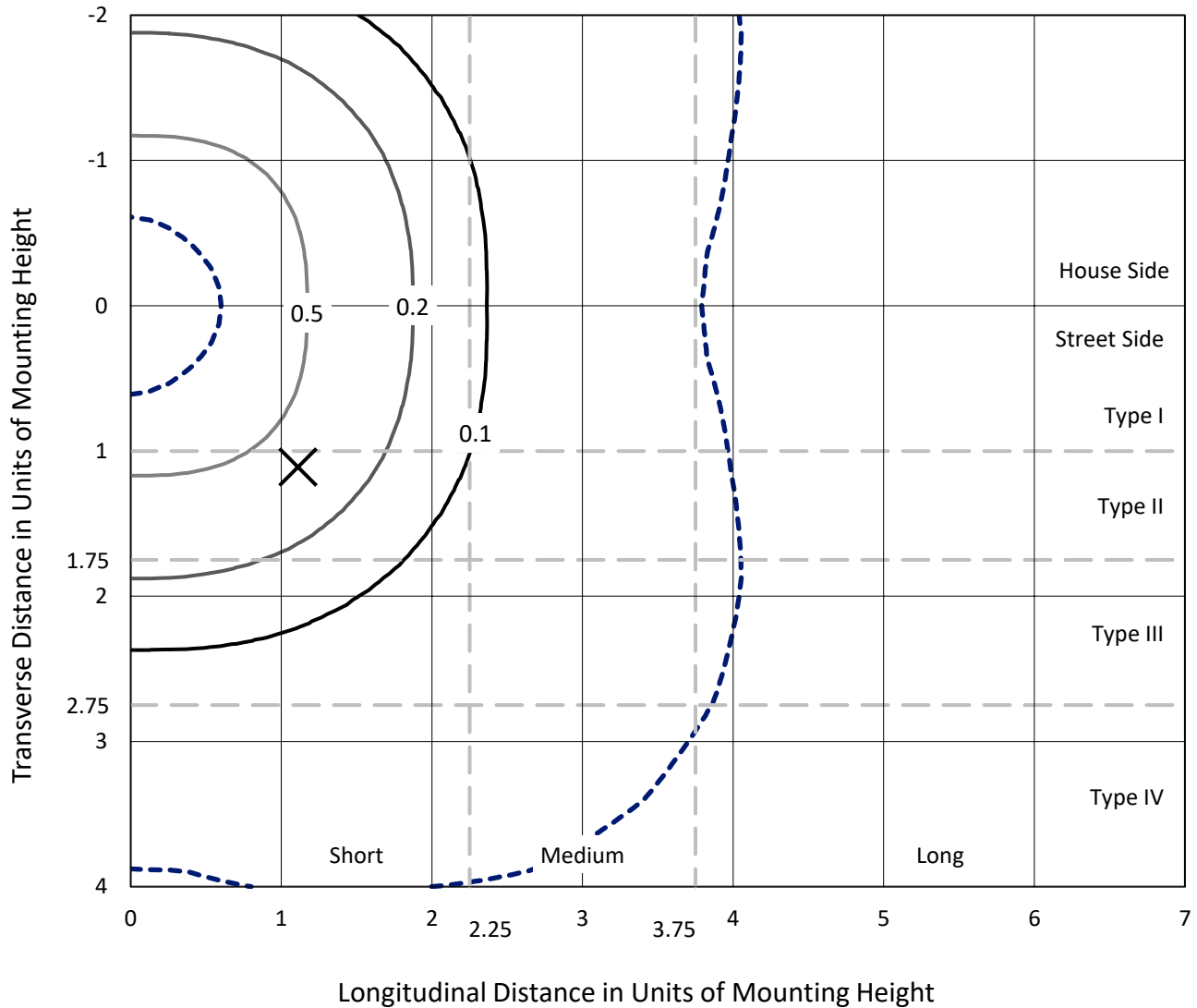
Lumens per Lamp: N/A  
Luminaire Lumens: 5286 lumens  
Efficiency: N/A  
Efficacy: 124.4 lumens/watt  
Luminous Opening: Circular (Dia: 0.71' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B3 - U0 - G2  
  
Input Watts (W): 42.5  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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



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 CATALOG NUMBER: TTN-D2-740-U-WQ

### Iso-Footcandle Lines of Horizontal Illumination

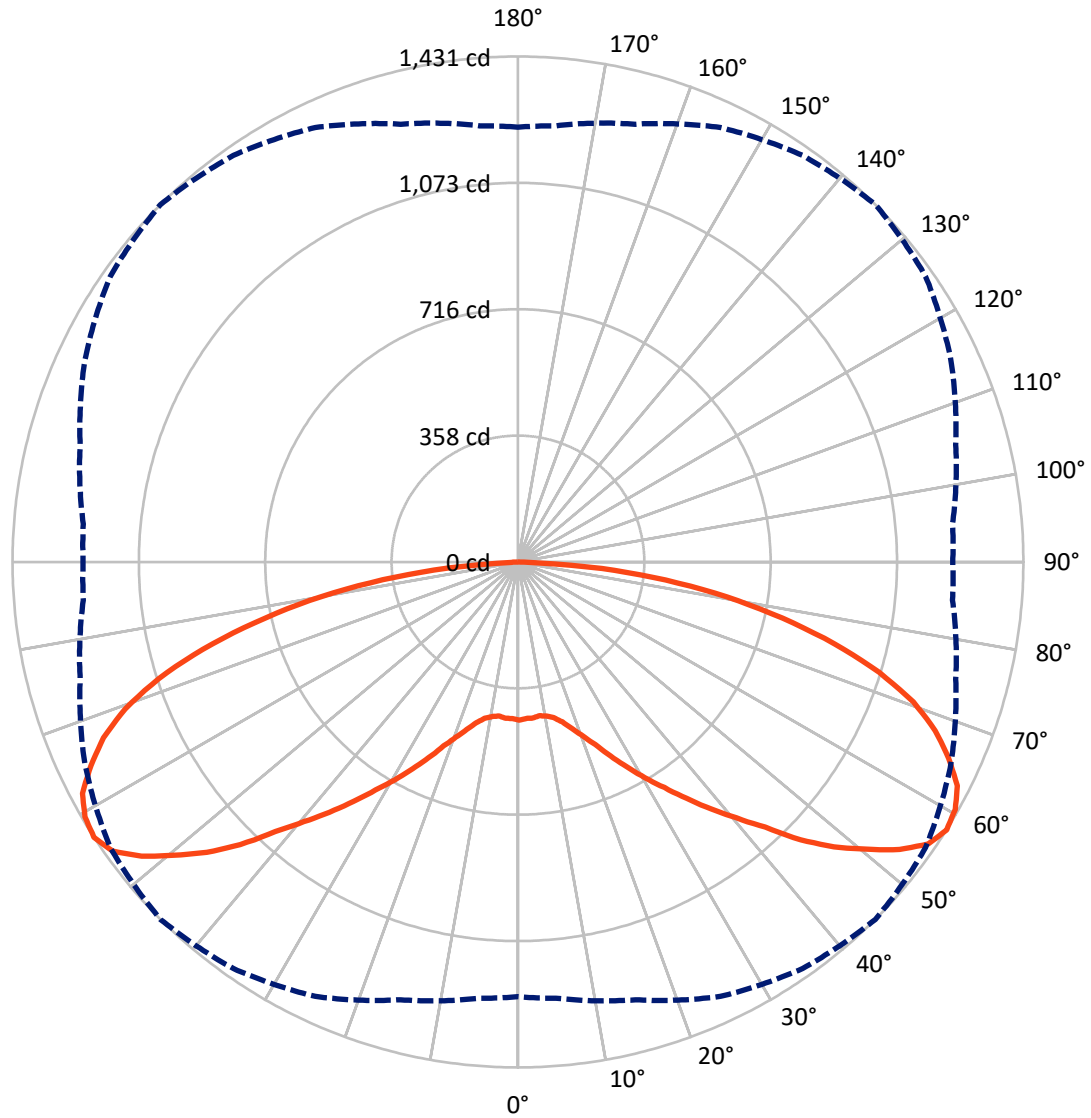
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.7 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

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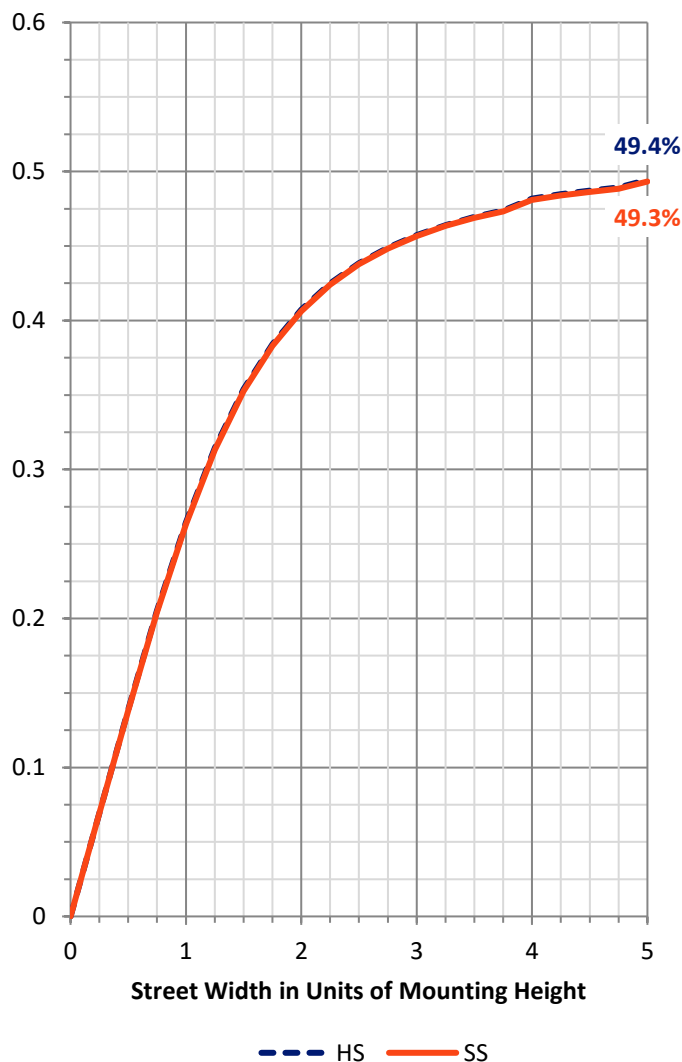
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2643.0	0.0	2643.0
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	2643.0	0.0	2643.0
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	5286.0	0.0	5286.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	42.1	0.8
10°-20°	134.4	2.5
20°-30°	282.0	5.3
30°-40°	511.6	9.7
40°-50°	834.0	15.8
50°-60°	1167.3	22.1
60°-70°	1218.6	23.1
70°-80°	870.7	16.5
80°-90°	225.3	4.3
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-90°	5286.0	100.0
0°-180°	5286.0	100.0

**Coefficient of Utilization**

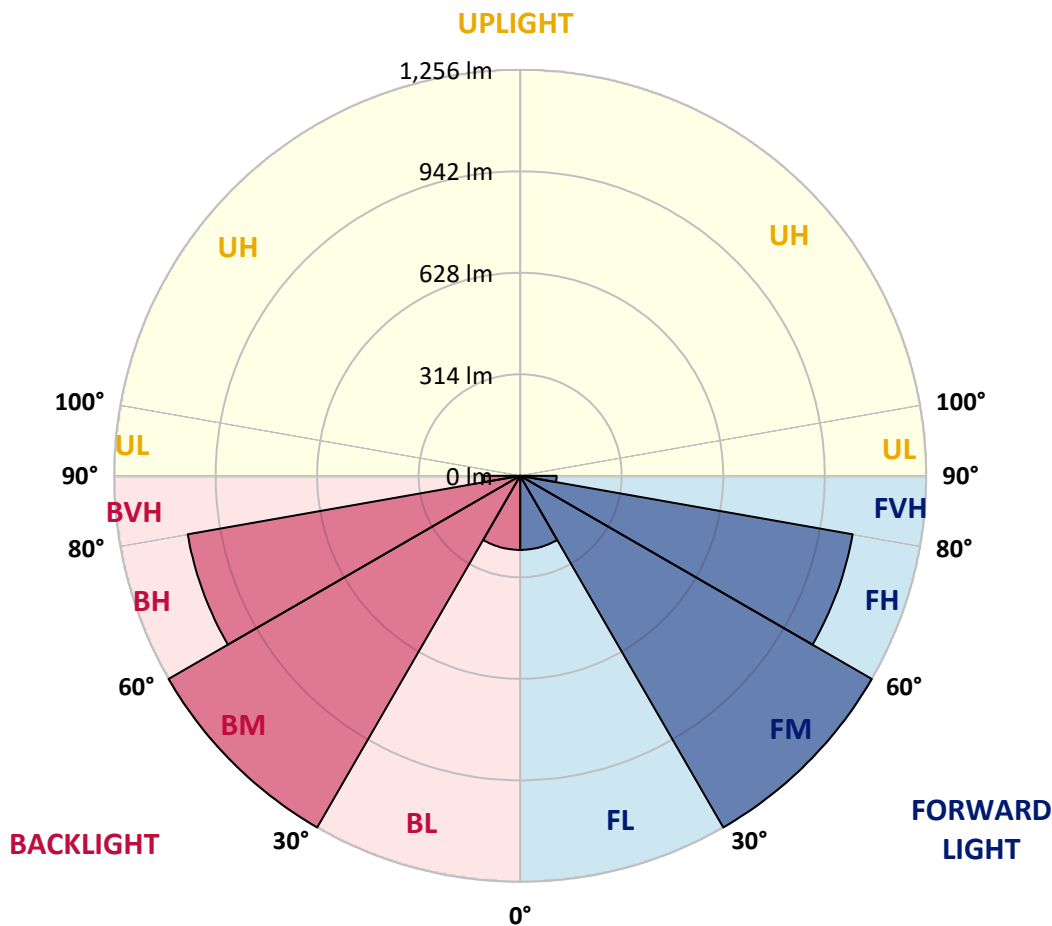


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	229.3	4.3			
FM (30°-60°)	1256.4	23.8			
FH (60°-80°)	1044.7	19.8			G1/1800
FVH (80°-90°)	112.7	2.1			G2/225
BL (0°-30°)	229.3	4.3	B1/500		
BM (30°-60°)	1256.4	23.8	B2/2500		
BH (60°-80°)	1044.7	19.8	B3/2500		G1/1800
BVH (80°-90°)	112.7	2.1			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G2**  
 Type V Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1	448.1
2.5°	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7
5°	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7	443.7
7.5°	435.0	435.0	439.4	439.4	439.4	439.4	439.4	439.4	439.4	439.4	439.4
10°	435.0	435.0	439.4	439.4	443.7	443.7	443.7	439.4	439.4	435.0	435.0
12.5°	443.7	443.7	443.7	448.1	452.4	452.4	452.4	448.1	448.1	443.7	443.7
15°	456.8	461.1	461.1	465.5	469.8	469.8	469.8	465.5	465.5	461.1	461.1
17.5°	482.9	482.9	482.9	487.2	491.6	495.9	495.9	487.2	487.2	482.9	487.2
20°	509.0	513.3	513.3	517.7	522.0	526.4	522.0	517.7	513.3	513.3	513.3
22.5°	548.1	548.1	552.5	552.5	561.2	561.2	561.2	552.5	552.5	552.5	552.5
25°	591.6	591.6	596.0	600.3	609.0	609.0	604.7	596.0	596.0	596.0	600.3
27.5°	643.8	643.8	648.2	648.2	656.9	656.9	652.5	648.2	648.2	648.2	652.5
30°	691.7	691.7	700.4	704.7	709.1	709.1	709.1	700.4	700.4	696.0	696.0
32.5°	735.2	739.5	743.9	756.9	765.6	761.3	765.6	756.9	748.2	743.9	743.9
35°	783.0	787.4	796.1	809.1	822.2	822.2	822.2	809.1	800.4	791.7	796.1
37.5°	839.6	839.6	852.6	865.7	883.1	887.4	883.1	870.0	857.0	848.3	848.3
40°	900.5	900.5	913.5	926.6	948.3	952.7	948.3	930.9	913.5	909.2	909.2
42.5°	961.4	961.4	978.8	991.8	1017.9	1026.6	1017.9	996.2	978.8	965.7	970.1
45°	1026.6	1031.0	1052.7	1078.8	1109.3	1122.3	1109.3	1083.2	1057.1	1031.0	1031.0
47.5°	1100.6	1100.6	1126.7	1157.1	1191.9	1205.0	1187.6	1161.5	1126.7	1104.9	1104.9
50°	1148.4	1152.8	1187.6	1226.7	1270.2	1278.9	1265.9	1226.7	1187.6	1157.1	1152.8
52.5°	1196.3	1200.6	1239.8	1296.3	1339.8	1352.9	1335.5	1296.3	1239.8	1200.6	1200.6
55°	1226.7	1235.4	1278.9	1339.8	1387.7	1409.4	1383.3	1339.8	1274.6	1231.1	1226.7
57.5°	1231.1	1239.8	1283.3	1357.2	1405.1	1431.2	1409.4	1352.9	1283.3	1235.4	1231.1
60°	1222.4	1226.7	1270.2	1348.5	1405.1	1422.5	1405.1	1344.2	1265.9	1226.7	1218.0
62.5°	1200.6	1209.3	1252.8	1318.1	1383.3	1396.4	1379.0	1313.7	1248.5	1200.6	1191.9
65°	1131.0	1139.7	1205.0	1270.2	1326.8	1339.8	1326.8	1270.2	1200.6	1131.0	1122.3
67.5°	1052.7	1057.1	1122.3	1200.6	1252.8	1274.6	1252.8	1205.0	1118.0	1052.7	1044.0
70°	970.1	974.4	1026.6	1109.3	1161.5	1187.6	1165.8	1113.6	1022.3	965.7	961.4
72.5°	874.4	874.4	926.6	991.8	1044.0	1070.1	1052.7	987.5	917.9	861.3	852.6
75°	743.9	748.2	804.8	852.6	909.2	926.6	909.2	857.0	791.7	735.2	726.5
77.5°	609.0	613.4	661.2	700.4	752.6	765.6	752.6	709.1	648.2	600.3	596.0
80°	461.1	465.5	504.6	539.4	582.9	600.3	587.3	543.8	495.9	452.4	439.4
82.5°	300.2	304.5	343.7	369.8	408.9	422.0	413.3	374.1	335.0	291.5	287.1
85°	134.9	139.2	174.0	195.8	226.2	239.3	230.6	195.8	165.3	126.2	117.5
87.5°	13.1	13.1	13.1	13.1	13.1	17.4	17.4	13.1	13.1	13.1	13.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab  
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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



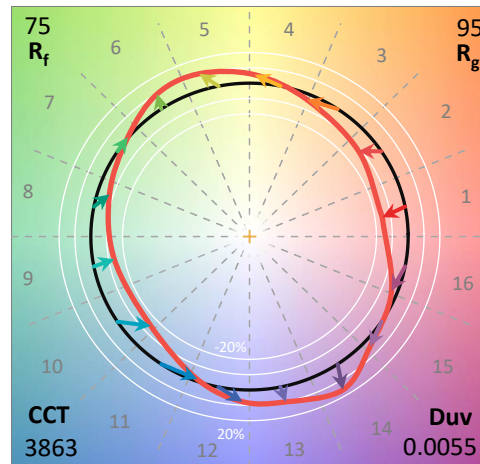
**Test Information**

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

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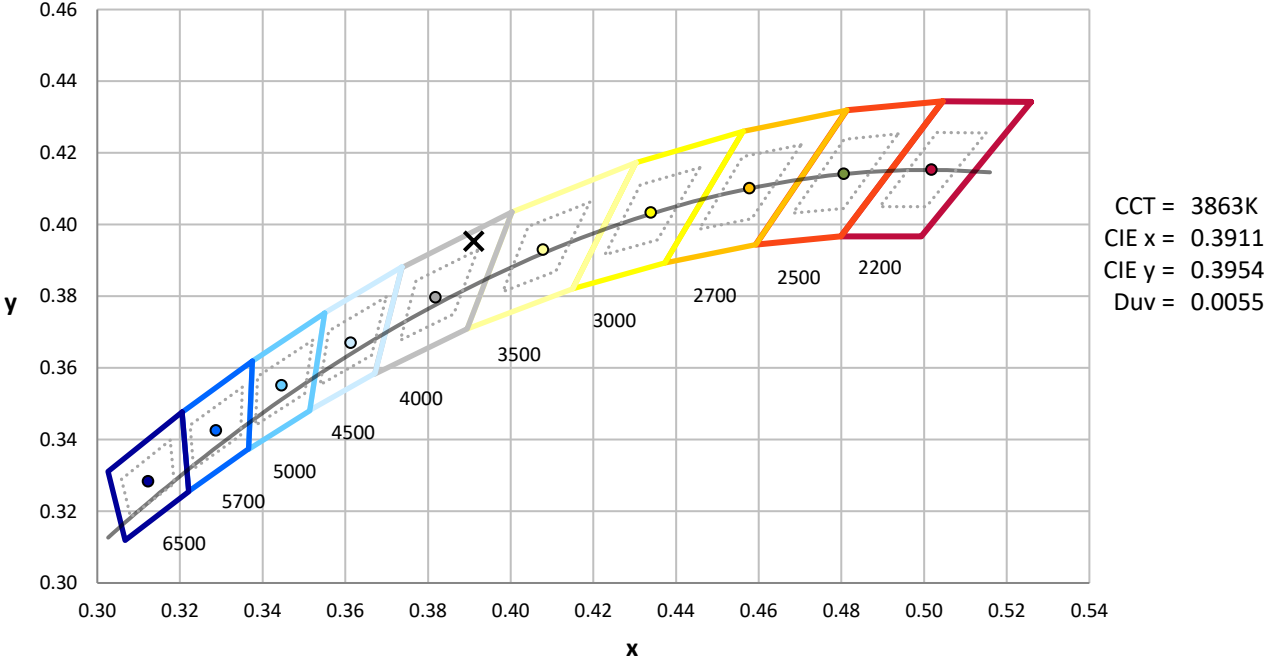
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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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

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**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			

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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			

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Melanopic Flux vs. Wavelength



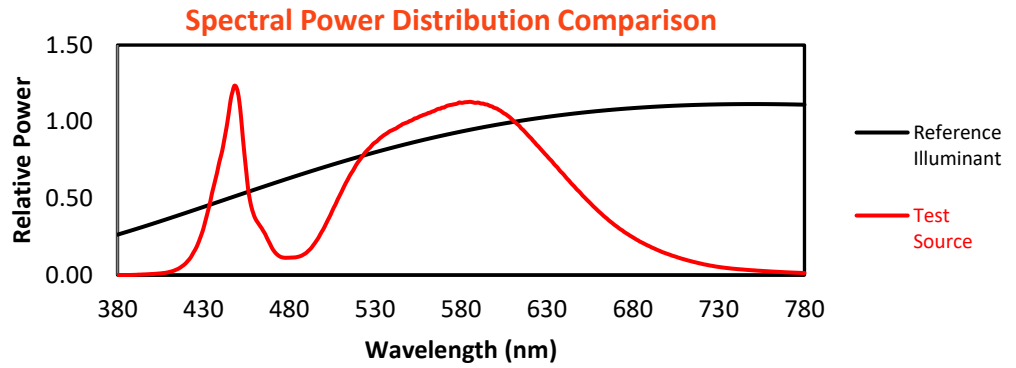
Melanopic Lumens: NR

M/P: 2.72

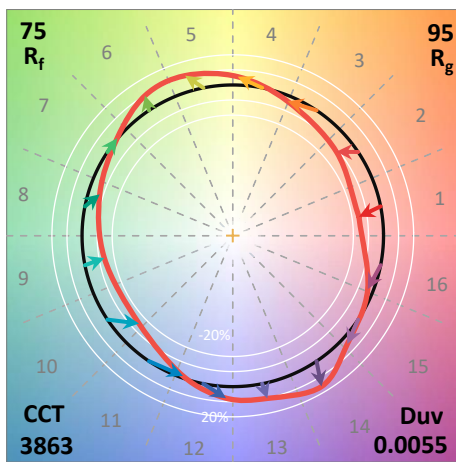
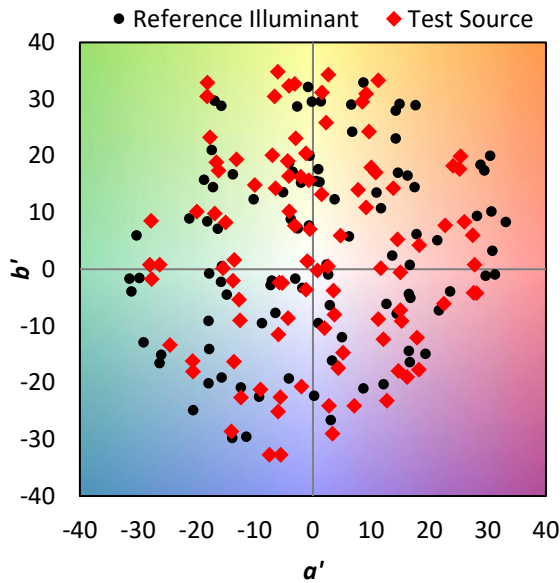
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	118	NR	620	730	NR	750	25	NR	880	1	NR
365	0	NR	495	170	NR	625	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  $R_a = 71.9$   
 $R_g = -23.5$

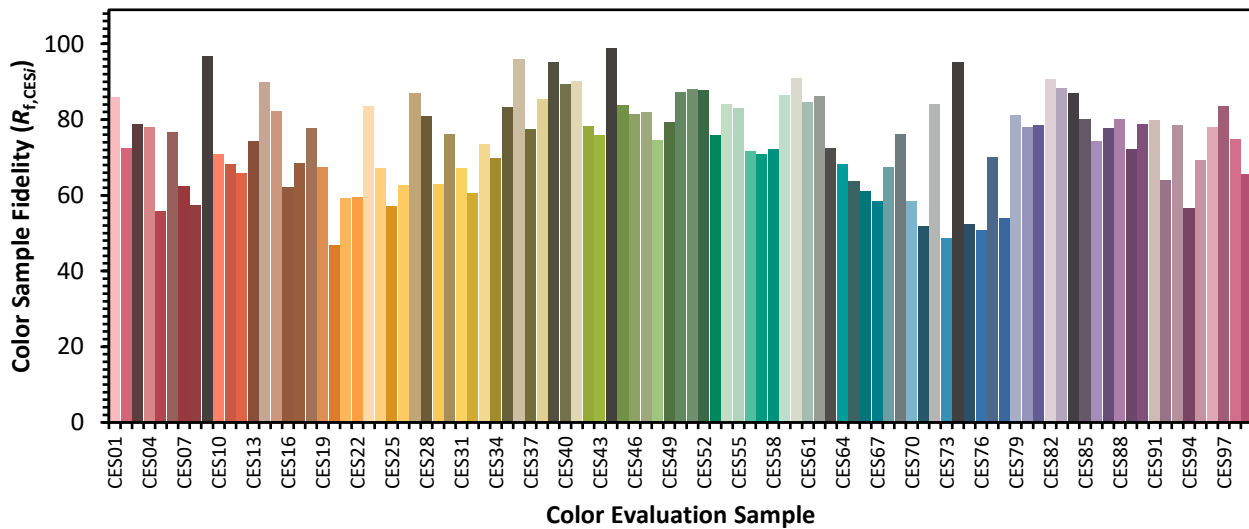


**Color Vector Graphics**



**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	

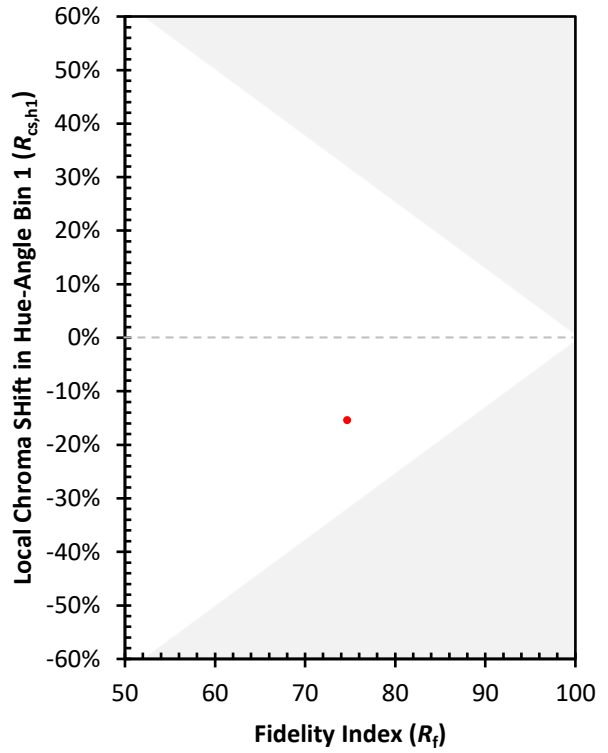
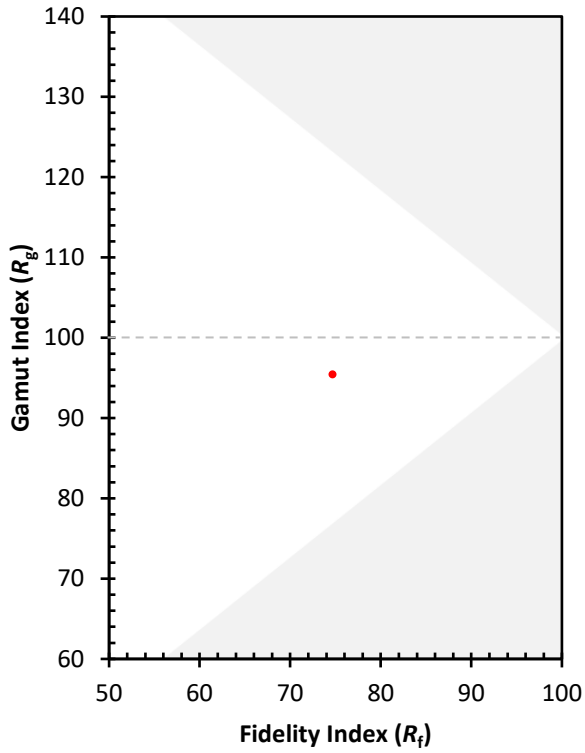




Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)