

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: P400679

Luminaire Tested: **TT-D6-735-U-WQ**

Issue Date: 5/19/2020

Test Information

Test Method: LM-79-08
Report Number: P400679
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-473-14)
Test Lab: INNOVATION CENTER
Issue Date: 5/19/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: TT-D6-735-U-WQ
Description: TOPTIER LED PARKING GARAGE LUMINAIRE
3500K, 70 CRI LEDS AND WIDE DISTRIBUTION
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11848 lumens
Efficiency: N/A
Efficacy: 112.6 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short - Semi-Cutoff
BUG Rating: B4 - U0 - G3

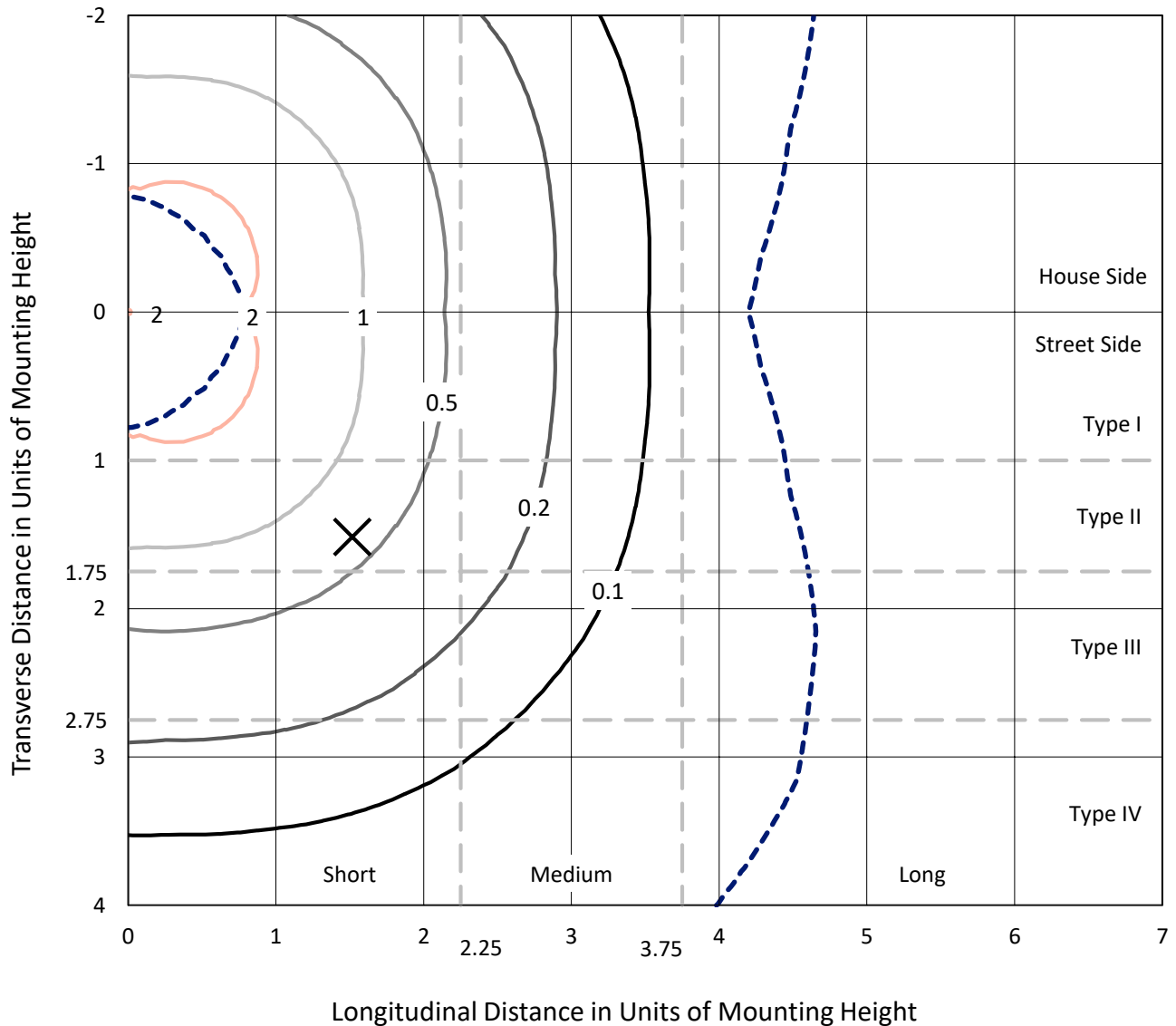
Input Watts (W): 105.2
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P400679
 CATALOG NUMBER: TT-D6-735-U-WQ

Iso-Footcandle Lines of Horizontal Illumination

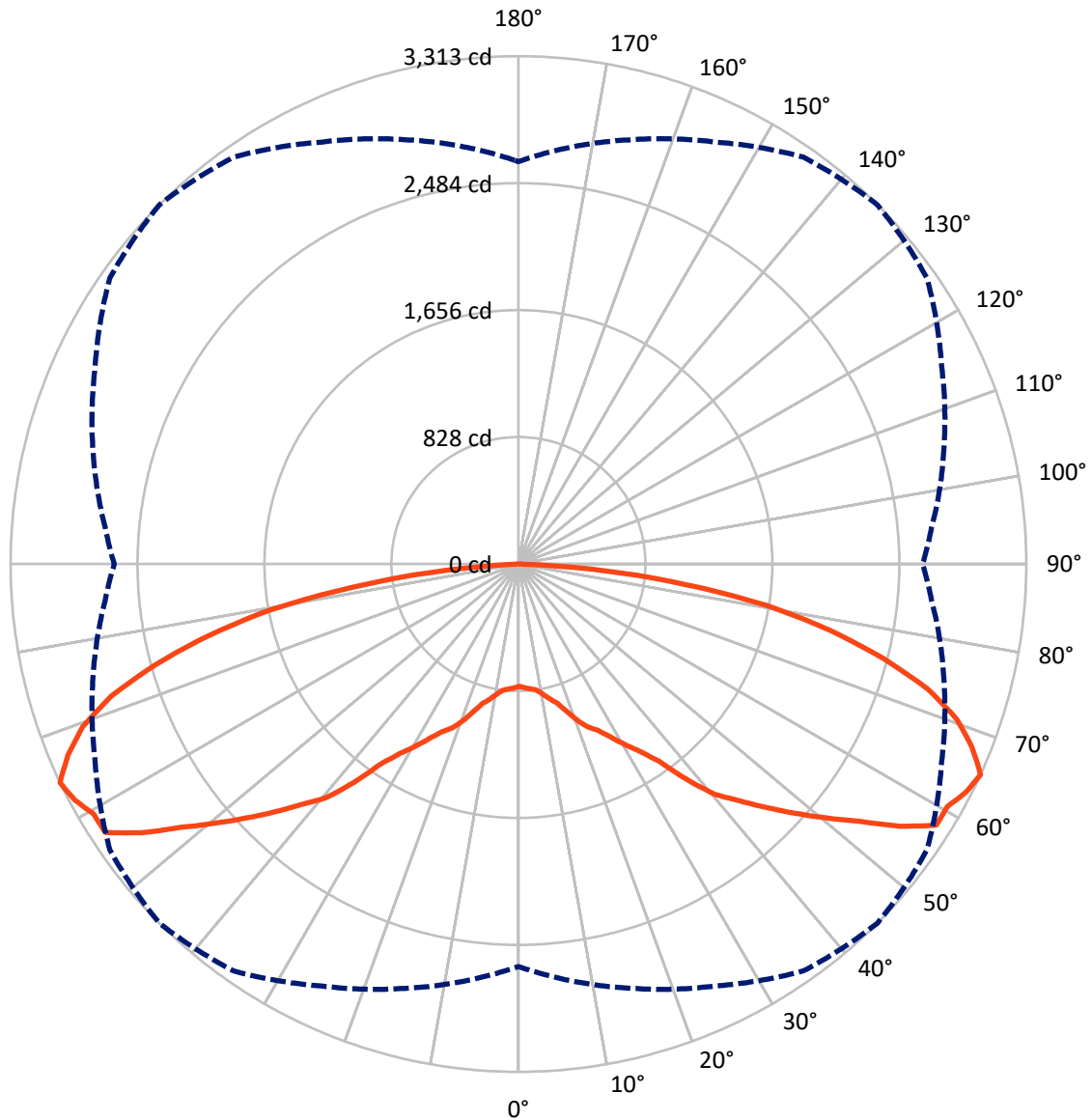
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.3 fc
 Type V - Short - Semi-Cutoff

REPORT NUMBER: P400679
CATALOG NUMBER: TT-D6-735-U-WQ

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

REPORT NUMBER: P400679

CATALOG NUMBER: TT-D6-735-U-WQ

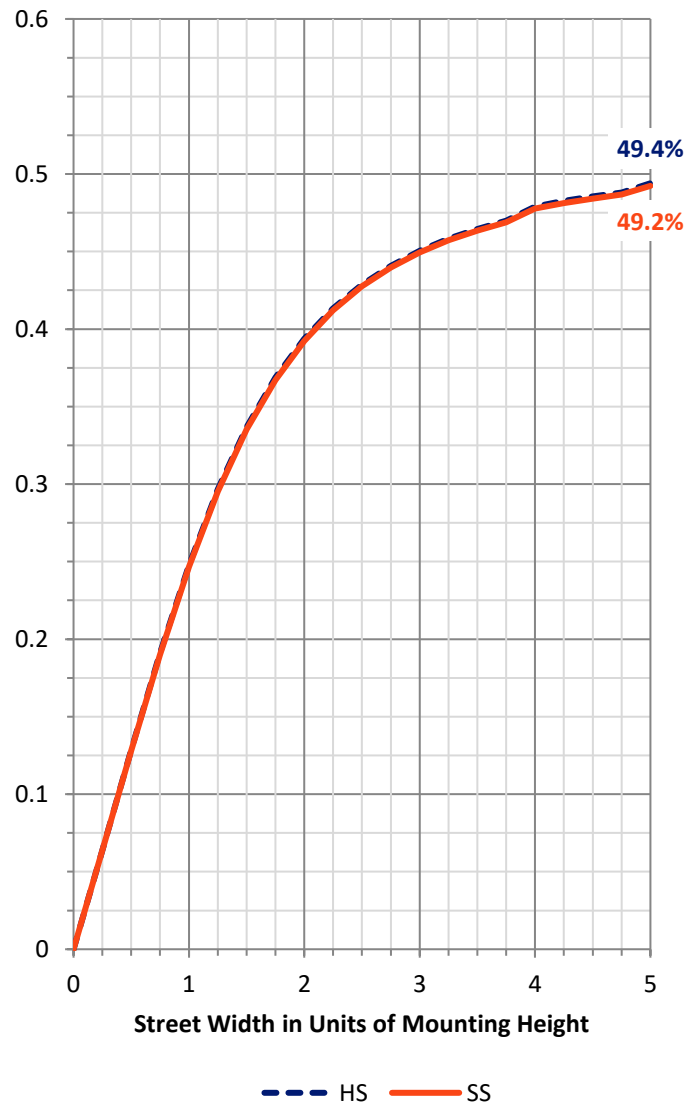
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5924.0	0.0	5924.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	5924.0	0.0	5924.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	11848.0	0.0	11848.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	79.5	0.7
10°-20°	273.5	2.3
20°-30°	561.6	4.7
30°-40°	997.7	8.4
40°-50°	1681.8	14.2
50°-60°	2480.9	20.9
60°-70°	2911.6	24.6
70°-80°	2268.4	19.1
80°-90°	593.0	5.0
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°	11848.0	100.0
0°-180°	11848.0	100.0



REPORT NUMBER: P400679

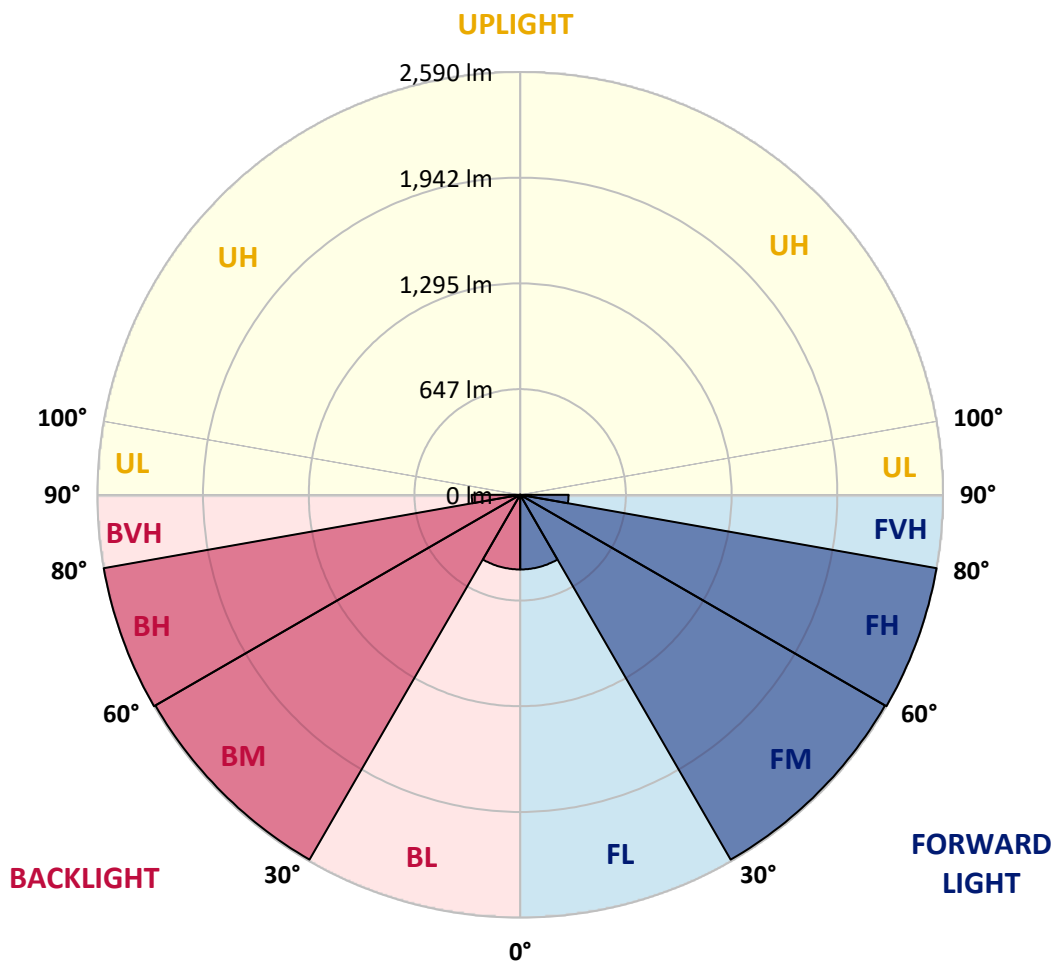
CATALOG NUMBER: TT-D6-735-U-WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	457.3	3.9			
FM	(30°-60°)	2580.2	21.8			
FH	(60°-80°)	2590.0	21.9			G2/5000
FVH	(80°-90°)	296.5	2.5			G3/500
BL	(0°-30°)	457.3	3.9	B1/500		
BM	(30°-60°)	2580.2	21.8	B3/5000		
BH	(60°-80°)	2590.0	21.9	B4/5000		G2/5000
BVH	(80°-90°)	296.5	2.5			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G3

Type V Short





REPORT NUMBER: P400679

CATALOG NUMBER: TT-D6-735-U-WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	797.4	797.4	797.4	797.4	797.4	797.4	797.4	797.4	797.4	797.4	797.4
2.5°	810.4	810.4	810.4	808.6	808.6	808.6	808.6	810.4	810.4	810.4	810.4
5°	829.1	829.1	825.4	821.6	817.9	817.9	819.8	821.6	823.5	827.2	827.2
7.5°	840.3	840.3	838.4	834.7	829.1	829.1	830.9	834.7	836.5	836.5	834.7
10°	855.2	857.0	862.6	864.5	860.8	860.8	862.6	864.5	860.8	855.2	855.2
12.5°	890.6	892.4	899.9	905.5	905.5	901.7	903.6	907.3	898.0	888.7	890.6
15°	940.9	940.9	942.7	948.3	944.6	940.9	944.6	946.5	940.9	939.0	942.7
17.5°	1007.9	1007.9	996.8	1006.1	1007.9	1006.1	1009.8	1000.5	994.9	1002.3	1006.1
20°	1080.6	1073.1	1067.6	1075.0	1089.9	1084.3	1091.8	1071.3	1065.7	1069.4	1071.3
22.5°	1127.2	1132.8	1136.5	1140.2	1160.7	1153.3	1160.7	1138.4	1134.6	1127.2	1121.6
25°	1183.1	1188.7	1211.0	1199.8	1212.9	1201.7	1211.0	1198.0	1205.4	1183.1	1183.1
27.5°	1246.4	1257.6	1270.6	1265.0	1281.8	1276.2	1281.8	1263.2	1265.0	1255.7	1252.0
30°	1332.1	1332.1	1328.4	1339.6	1369.4	1365.7	1367.5	1343.3	1326.5	1328.4	1335.8
32.5°	1417.8	1406.6	1412.2	1445.8	1464.4	1456.9	1460.7	1449.5	1412.2	1404.8	1410.4
35°	1497.9	1514.7	1527.7	1555.7	1581.8	1578.0	1576.2	1557.6	1533.3	1503.5	1494.2
37.5°	1622.8	1641.4	1676.8	1727.1	1773.7	1783.0	1758.8	1734.5	1678.7	1635.8	1613.4
40°	1786.7	1788.6	1829.6	1926.4	1969.3	1976.8	1963.7	1922.7	1837.0	1788.6	1786.7
42.5°	1930.2	1917.1	1984.2	2066.2	2105.3	2109.0	2099.7	2066.2	1984.2	1915.3	1928.3
45°	2042.0	2042.0	2122.1	2187.3	2250.6	2265.5	2248.8	2178.0	2123.9	2043.8	2038.2
47.5°	2144.4	2172.4	2239.4	2319.6	2409.0	2429.5	2409.0	2325.2	2233.9	2174.2	2142.6
50°	2267.4	2300.9	2349.4	2474.2	2574.8	2602.8	2572.9	2481.7	2349.4	2299.1	2280.4
52.5°	2410.9	2438.8	2515.2	2671.7	2746.2	2787.2	2763.0	2675.4	2518.9	2442.5	2427.6
55°	2582.3	2556.2	2675.4	2826.3	2964.2	3018.2	2969.8	2830.1	2694.0	2556.2	2582.3
57.5°	2669.8	2640.0	2807.7	2951.2	3143.1	3213.8	3154.2	2962.3	2807.7	2649.3	2668.0
60°	2677.3	2690.3	2817.0	3051.8	3184.0	3213.8	3195.2	3068.5	2822.6	2701.5	2666.1
62.5°	2654.9	2735.0	2843.1	3085.3	3204.5	3277.2	3213.8	3089.0	2854.3	2748.1	2656.8
65°	2625.1	2705.2	2865.4	3036.9	3239.9	3312.6	3253.0	3046.2	2872.9	2705.2	2636.3
67.5°	2572.9	2545.0	2742.5	2971.6	3148.6	3191.5	3154.2	2975.4	2740.6	2541.3	2578.5
70°	2407.1	2382.9	2552.4	2804.0	2973.5	3033.1	2988.4	2807.7	2556.2	2388.5	2410.9
72.5°	2161.2	2168.6	2332.6	2572.9	2755.5	2792.8	2768.6	2571.1	2341.9	2178.0	2148.2
75°	1874.3	1892.9	2049.4	2267.4	2433.2	2455.6	2431.3	2276.7	2047.5	1904.1	1865.0
77.5°	1540.8	1568.7	1695.4	1913.4	2023.3	2073.6	2034.5	1919.0	1704.7	1576.2	1537.1
80°	1194.2	1203.6	1293.0	1468.1	1613.4	1647.0	1609.7	1473.7	1304.2	1207.3	1179.3
82.5°	782.5	797.4	877.5	1011.7	1106.7	1097.4	1106.7	1000.5	886.8	793.7	747.1
85°	348.4	378.2	432.2	495.6	557.1	573.8	557.1	503.0	432.2	370.8	363.3
87.5°	24.2	27.9	33.5	35.4	39.1	29.8	29.8	29.8	26.1	29.8	24.2
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
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: SP1-2411-284-1

Test Date: 11/15/2024

Luminaire Tested: TTN-D0-735-U-WQ

Data in this report applies to families of products including TT-xx-735 and TTN-xx-735

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2411-284-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/15/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **TTN-D0-735-U-WQ**
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3500K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K): 3405
 CIE u': 0.2365
 CIE v': 0.5180
 Duv: 0.0036
 CIE x: 0.4148
 CIE y: 0.4038
 CIE z: 0.1814
 Peak Wavelength (nm): 596
 Dominant Wavelength (nm): 579
 Purity: 45.70672
 Rf: 76.6
 Rg: 95.4

CRI (Ra):	73.9		
R1:	71.3	R9:	-18.0
R2:	80.3	R10:	53.1
R3:	87.8	R11:	68.6
R4:	73.2	R12:	42.6
R5:	69.8	R13:	72.5
R6:	71.8	R14:	92.7
R7:	82.8	R15:	64.3
R8:	54.1		



Test Conditions

Stabilization Time: 38M
 Operation Time: 1H 38M
 Sphere Temperature (°C): 24.9

REPORT NUMBER: SP1-2411-284-1

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: SP1-2411-284-1

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-1

Photopic Flux vs. Wavelength



Photopic Lumens: NR

λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)	λ (nm)	Power W^{\wedge}/nm	Lumens (ϕ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

REPORT NUMBER: SP1-2411-284-1

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.33

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.47

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

Summary

$R_f = 76.6$
 $R_g = 95.4$
 $CIE R_a = 73.9$
 $R_g = -18.0$

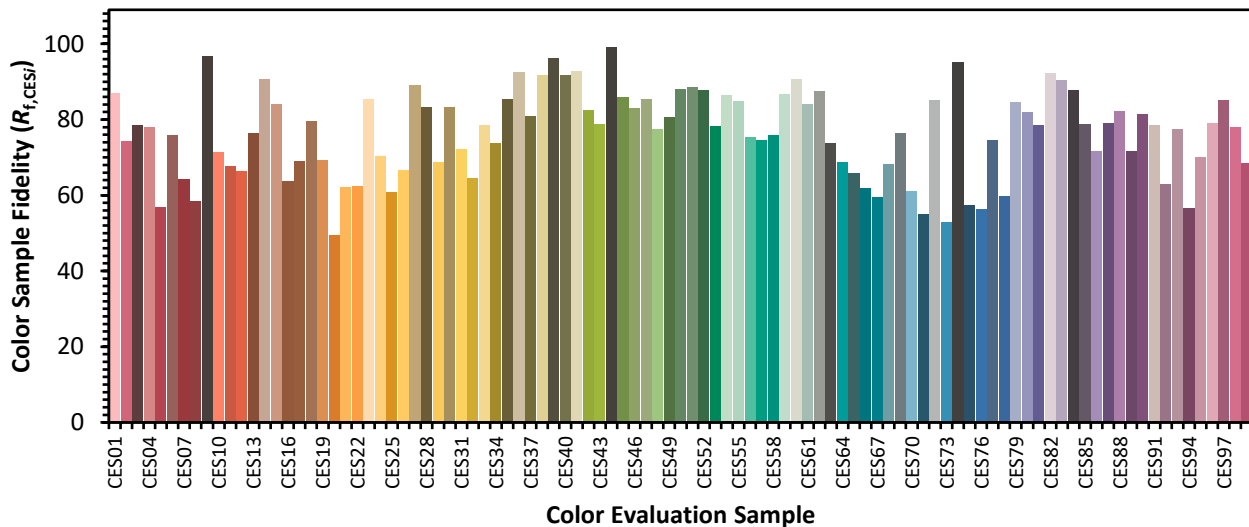


Color Vector Graphics

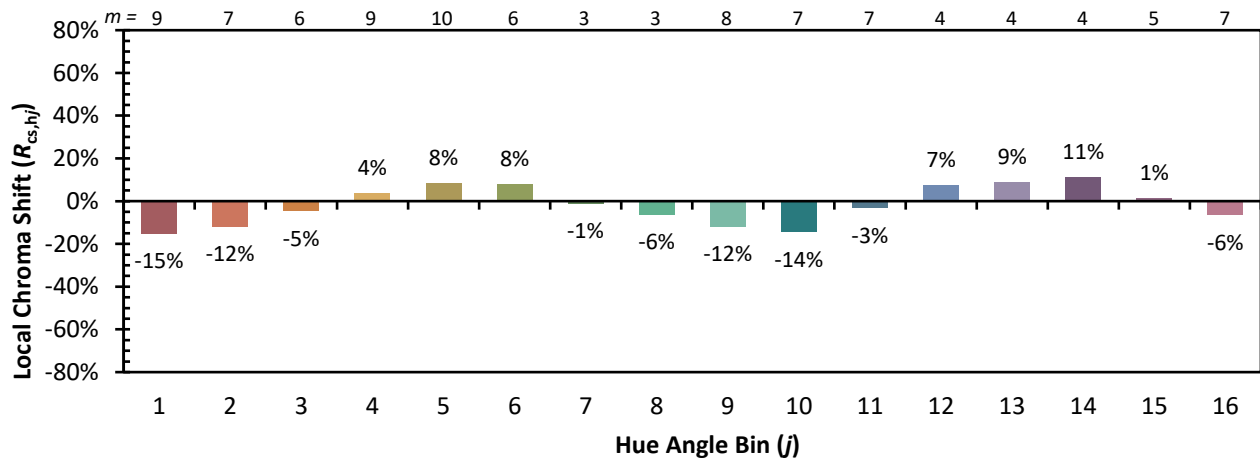


Individual Sample Fidelity Index ($R_{f,i}$)

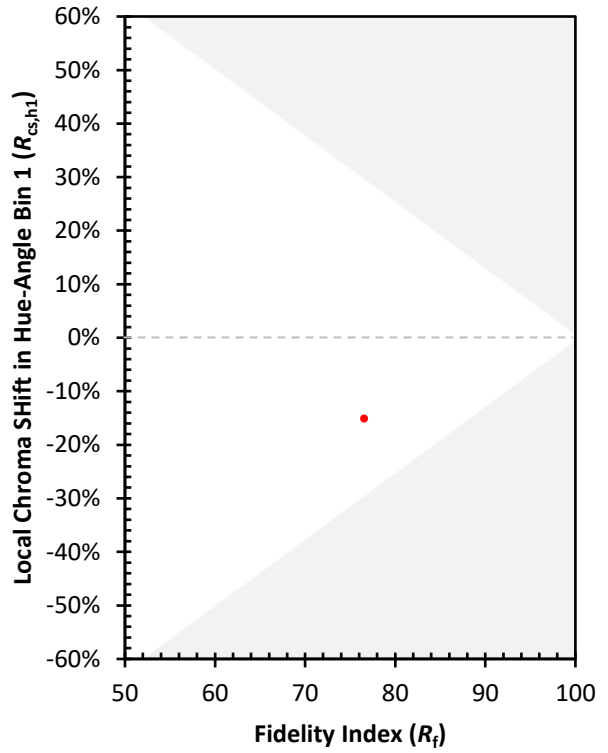
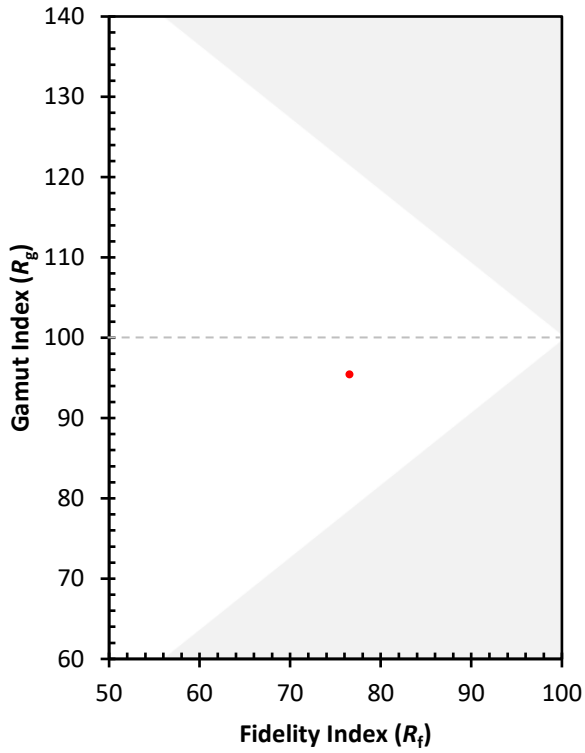
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 92
CES08 = 40	CES33 = 78	CES58 = 76	CES83 = 90
CES09 = 29	CES34 = 74	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 86	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 93	CES61 = 84	CES86 = 72
CES12 = 64	CES37 = 81	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 92	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 92	CES65 = 66	CES90 = 82
CES16 = 47	CES41 = 93	CES66 = 62	CES91 = 79
CES17 = 50	CES42 = 83	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 79	CES68 = 68	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 86	CES70 = 61	CES95 = 70
CES21 = 86	CES46 = 83	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 85	CES72 = 85	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 53	CES98 = 78
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 68
CES25 = 72	CES50 = 88	CES75 = 57	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)