

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: P543132

Luminaire Tested: **TT-D7-735-U-WQ**

Issue Date: 6/22/2021

Test Information

Test Method: LM-79-08
Report Number: P543132
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2012-100-4)
Test Lab: INNOVATION CENTER
Issue Date: 6/22/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: TT-D7-735-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: 14997 lumens
Efficiency: N/A
Efficacy: 120.3 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G3

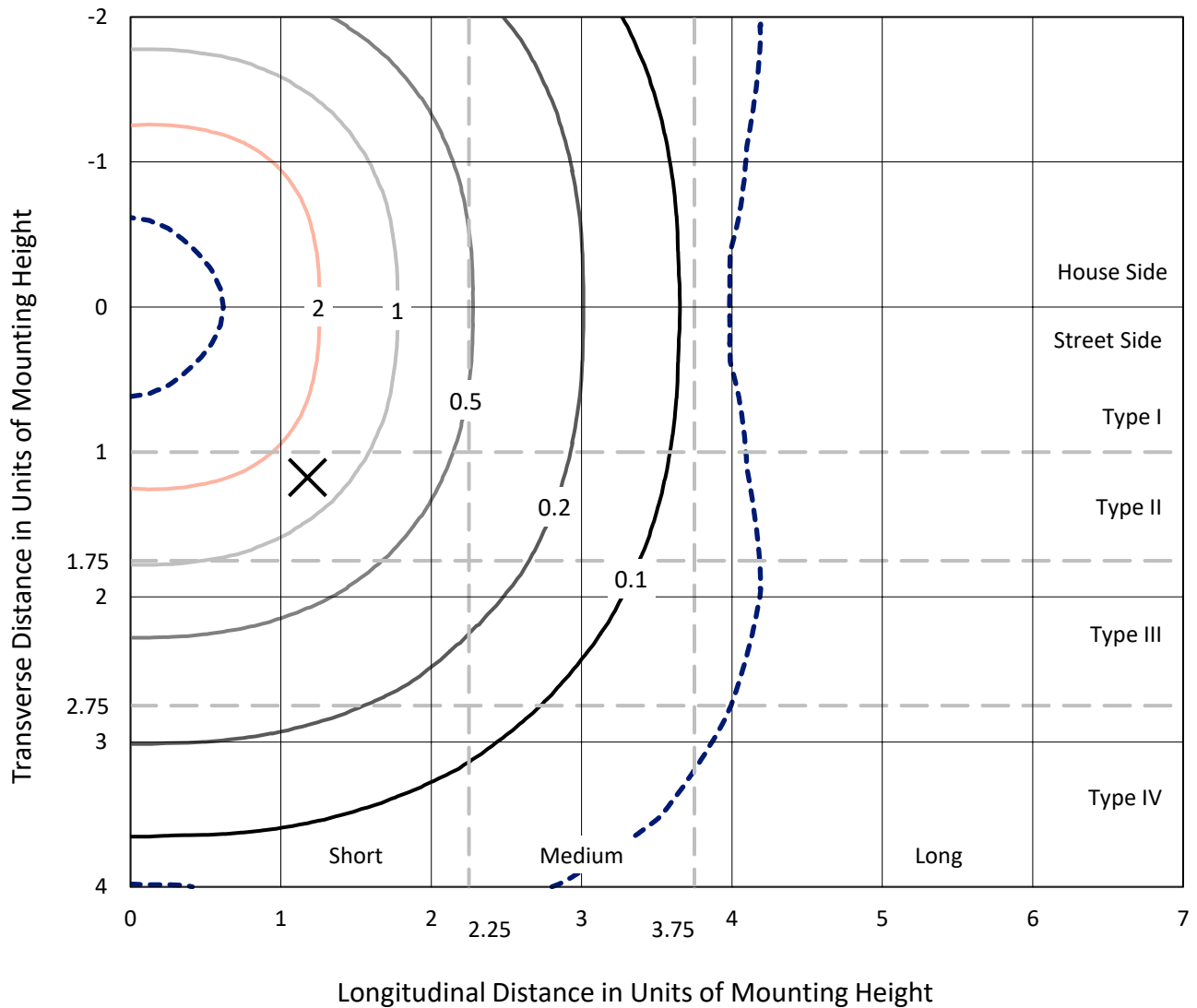
Input Watts (W): 124.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: P543132
 CATALOG NUMBER: TT-D7-735-U-WQ

Iso-Footcandle Lines of Horizontal Illumination

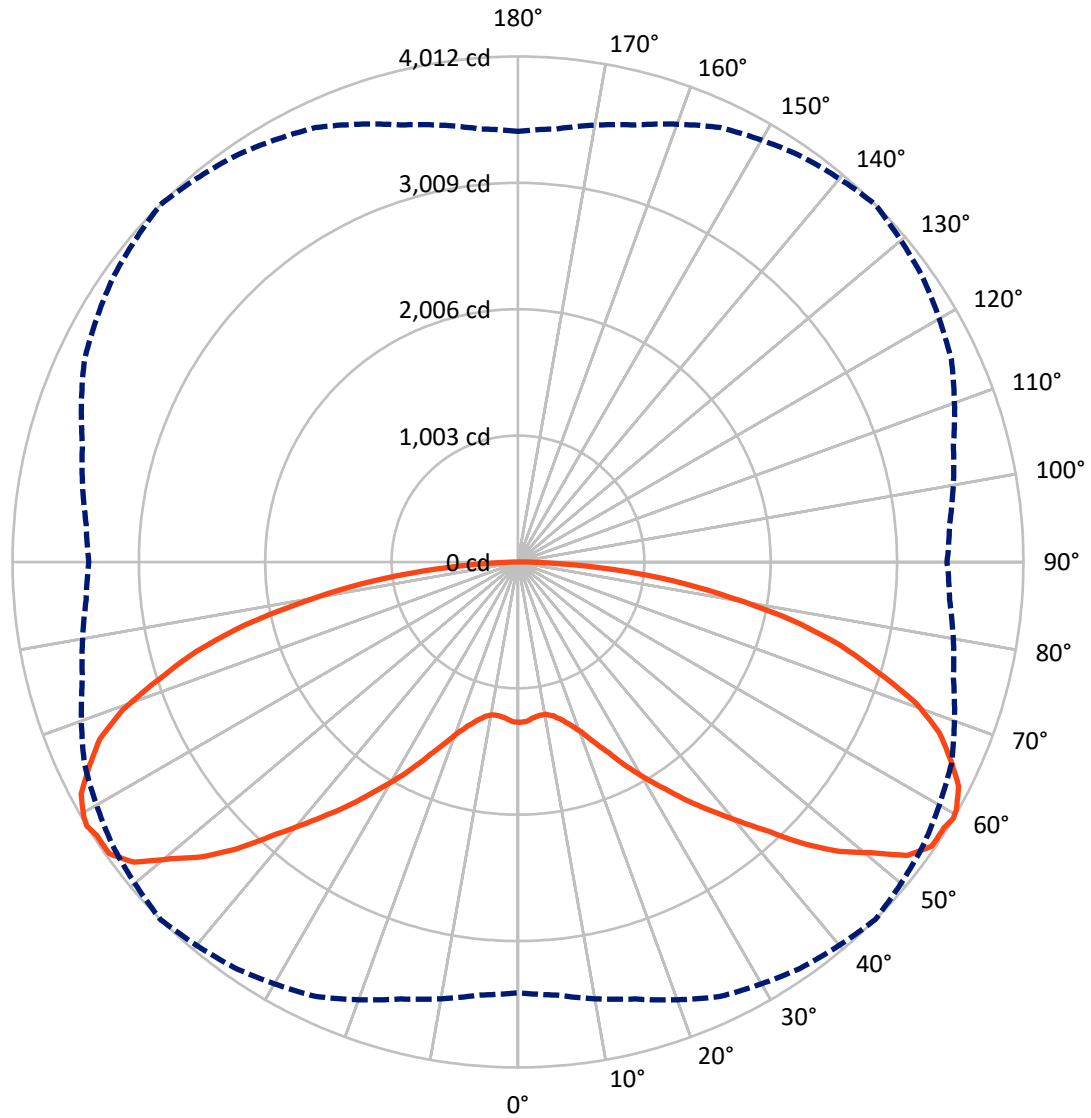
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.2 fc
 Type V - Short - N/A

REPORT NUMBER: P543132
CATALOG NUMBER: TT-D7-735-U-WQ

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 59-Deg Vertical

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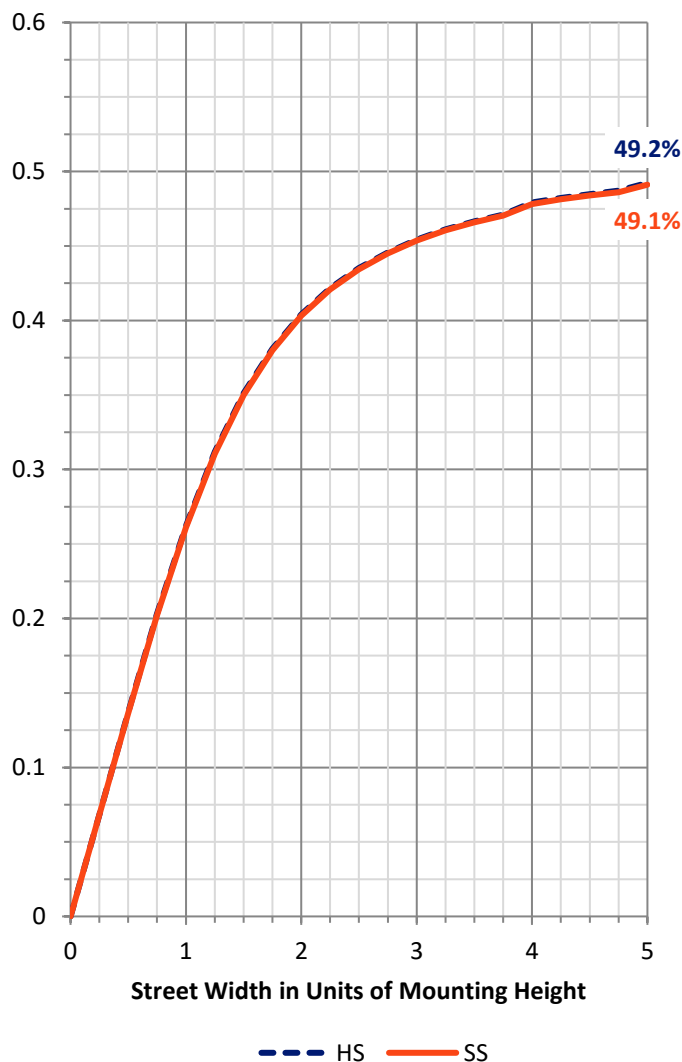
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	7498.5	0.0	7498.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	7498.5	0.0	7498.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	14997.0	0.0	14997.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	117.8	0.8
10°-20°	372.3	2.5
20°-30°	778.2	5.2
30°-40°	1431.5	9.5
40°-50°	2355.5	15.7
50°-60°	3286.1	21.9
60°-70°	3422.3	22.8
70°-80°	2494.0	16.6
80°-90°	739.3	4.9
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°	14997.0	100.0
0°-180°	14997.0	100.0

Coefficient of Utilization



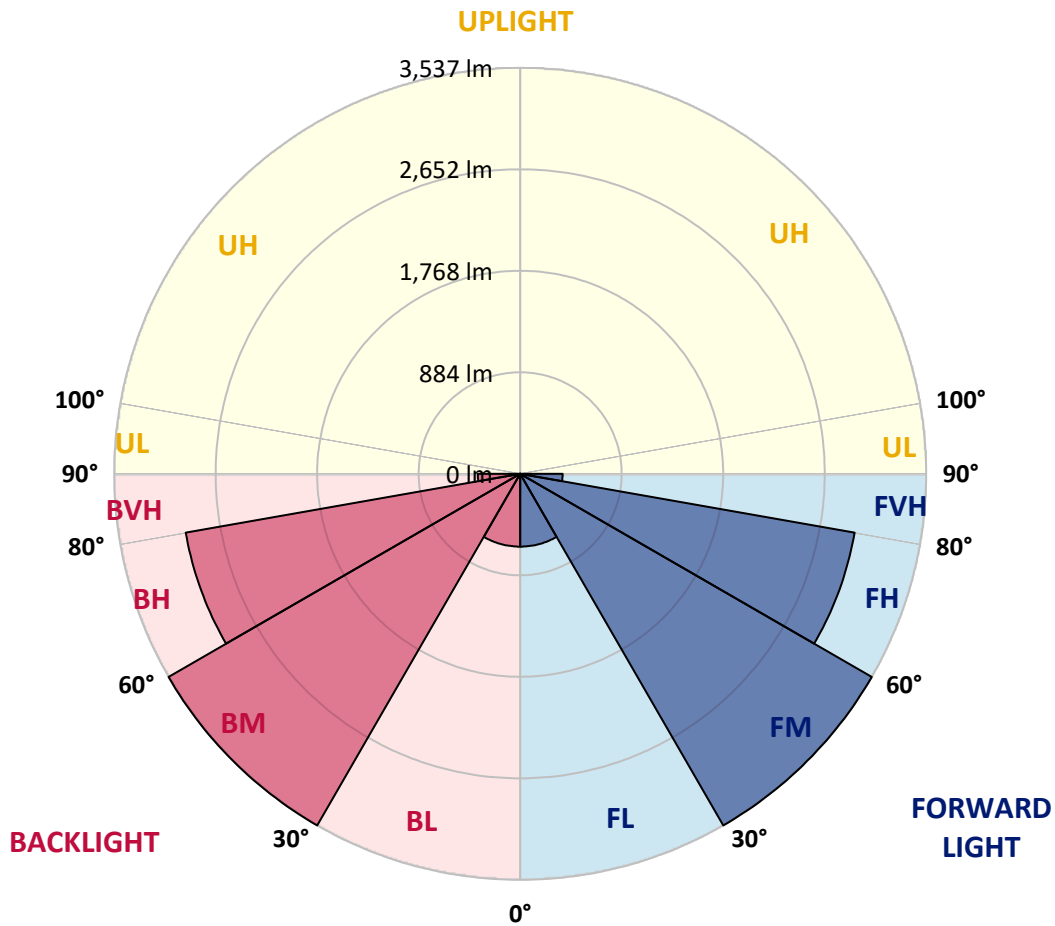
REPORT NUMBER: P543132
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	634.2	4.2			
FM (30°-60°)	3536.5	23.6			
FH (60°-80°)	2958.1	19.7			G2/5000
FVH (80°-90°)	369.7	2.5			G3/500
BL (0°-30°)	634.2	4.2	B2/1000		
BM (30°-60°)	3536.5	23.6	B3/5000		
BH (60°-80°)	2958.1	19.7	B4/5000		G2/5000
BVH (80°-90°)	369.7	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





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 CATALOG NUMBER: TT-D7-735-U-WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0	1273.0
2.5°	1266.2	1266.9	1266.9	1267.6	1266.9	1267.6	1266.2	1265.5	1264.8	1265.5	1264.8
5°	1236.8	1238.8	1238.8	1240.9	1241.6	1243.6	1242.3	1241.6	1239.5	1238.8	1238.2
7.5°	1216.3	1217.0	1219.0	1223.1	1226.5	1229.3	1228.6	1225.8	1222.4	1219.7	1219.0
10°	1215.6	1214.9	1217.0	1220.4	1227.2	1229.3	1228.6	1223.8	1221.1	1219.0	1219.0
12.5°	1237.5	1236.8	1239.5	1244.3	1253.2	1253.2	1254.6	1247.0	1241.6	1240.2	1240.2
15°	1280.5	1278.5	1285.3	1289.4	1299.7	1299.7	1300.4	1291.5	1285.3	1283.3	1283.3
17.5°	1338.7	1336.6	1344.1	1351.0	1361.2	1361.9	1362.6	1353.0	1344.8	1341.4	1342.8
20°	1413.9	1411.1	1418.0	1427.5	1441.9	1441.2	1440.5	1431.0	1420.7	1416.6	1418.0
22.5°	1506.8	1510.3	1520.5	1533.5	1551.3	1554.0	1549.9	1536.9	1521.9	1515.7	1516.4
25°	1619.6	1623.1	1635.4	1655.9	1679.8	1679.1	1676.4	1657.3	1635.4	1626.5	1628.5
27.5°	1757.1	1759.1	1777.6	1798.8	1831.6	1835.0	1828.9	1798.8	1776.2	1758.4	1756.4
30°	1894.5	1897.2	1915.0	1945.8	1981.3	1990.2	1973.1	1944.4	1915.0	1895.9	1892.4
32.5°	2044.2	2050.4	2066.8	2096.9	2144.0	2148.8	2138.6	2097.5	2064.0	2047.0	2046.3
35°	2191.9	2200.8	2224.0	2265.7	2314.3	2331.4	2308.1	2265.7	2226.1	2193.9	2190.5
37.5°	2355.3	2366.9	2391.5	2445.5	2494.1	2510.5	2489.3	2442.1	2386.7	2358.7	2356.0
40°	2512.5	2531.0	2576.8	2633.6	2691.0	2705.3	2690.3	2627.4	2568.6	2530.3	2505.7
42.5°	2684.1	2695.8	2749.1	2835.9	2893.4	2925.5	2889.9	2831.8	2747.7	2693.0	2687.6
45°	2879.0	2915.2	2960.4	3064.3	3159.3	3194.9	3157.3	3058.1	2952.2	2908.4	2883.1
47.5°	3060.9	3088.2	3165.5	3283.7	3397.9	3431.4	3394.5	3280.3	3153.8	3080.7	3056.1
50°	3211.3	3249.6	3328.2	3483.4	3583.2	3626.3	3576.4	3475.2	3320.7	3240.7	3211.3
52.5°	3354.8	3397.9	3495.7	3649.5	3810.9	3869.7	3807.4	3637.9	3486.1	3384.9	3343.9
55°	3432.1	3471.8	3577.7	3780.1	3946.2	3985.2	3940.8	3769.2	3568.1	3458.8	3420.5
57.5°	3444.4	3477.2	3608.5	3822.5	3947.6	3985.9	3944.9	3812.9	3596.9	3465.6	3433.5
59°	3418.4	3449.9	3590.7	3804.0	3929.1	4011.9	3926.4	3795.8	3578.4	3439.6	3406.1
60°	3402.7	3432.8	3564.7	3777.4	3911.4	3996.8	3908.6	3770.5	3550.4	3423.9	3389.7
62.5°	3324.1	3352.1	3524.4	3711.7	3859.4	3926.4	3855.3	3704.9	3513.5	3343.2	3305.6
65°	3172.3	3186.0	3350.7	3536.0	3730.2	3770.5	3724.0	3534.0	3337.1	3176.4	3156.6
67.5°	3004.8	3022.6	3164.1	3367.8	3551.7	3605.8	3542.2	3367.1	3153.8	3009.6	2987.0
70°	2733.4	2751.8	2941.2	3115.6	3264.6	3348.0	3248.9	3110.1	2930.3	2746.4	2714.2
72.5°	2470.8	2479.7	2614.4	2819.5	2999.3	2982.9	2980.9	2816.8	2604.2	2483.1	2468.8
75°	2128.3	2133.1	2290.3	2460.6	2625.3	2643.1	2600.1	2457.2	2278.7	2131.0	2129.0
77.5°	1759.1	1773.5	1880.8	2039.4	2165.2	2225.4	2151.6	2047.6	1869.9	1774.8	1762.5
80°	1353.7	1371.5	1480.9	1607.3	1716.0	1720.8	1705.8	1618.3	1471.3	1373.5	1359.2
82.5°	935.3	953.7	1050.1	1144.5	1249.8	1255.2	1238.2	1154.7	1041.3	957.2	943.5
85°	516.9	533.3	598.9	671.4	756.8	756.8	732.9	684.4	592.1	538.7	525.8
87.5°	87.5	88.9	129.2	169.6	246.1	254.3	231.8	185.3	136.1	106.7	97.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

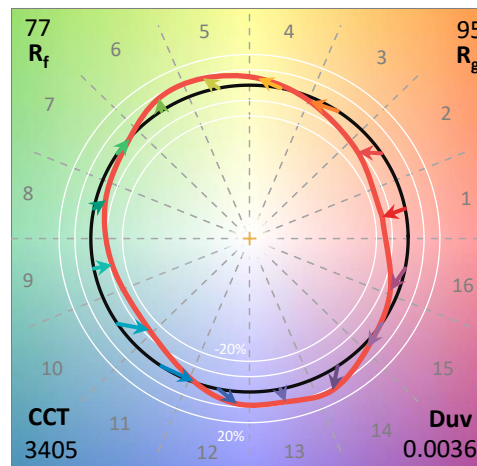
Test Information

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			

REPORT NUMBER: SP1-2411-284-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.47

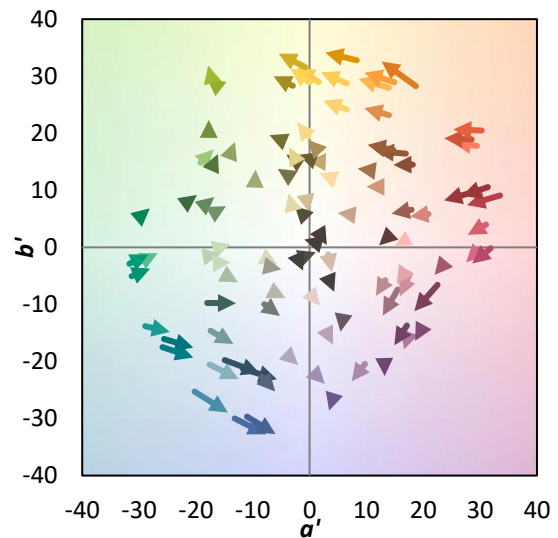
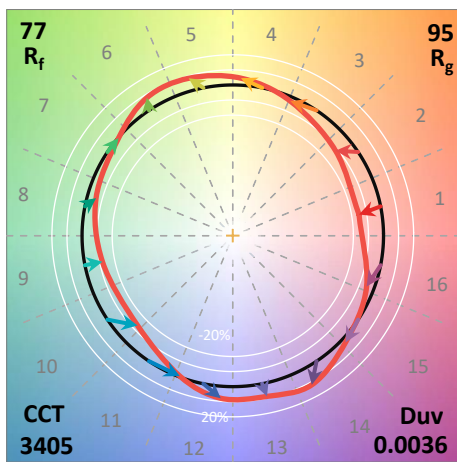
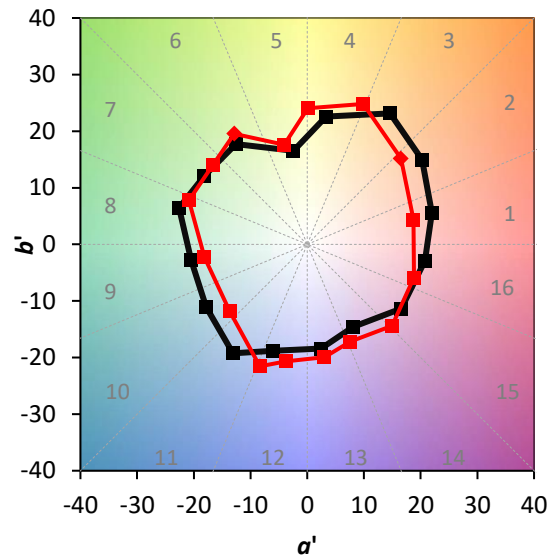
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	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

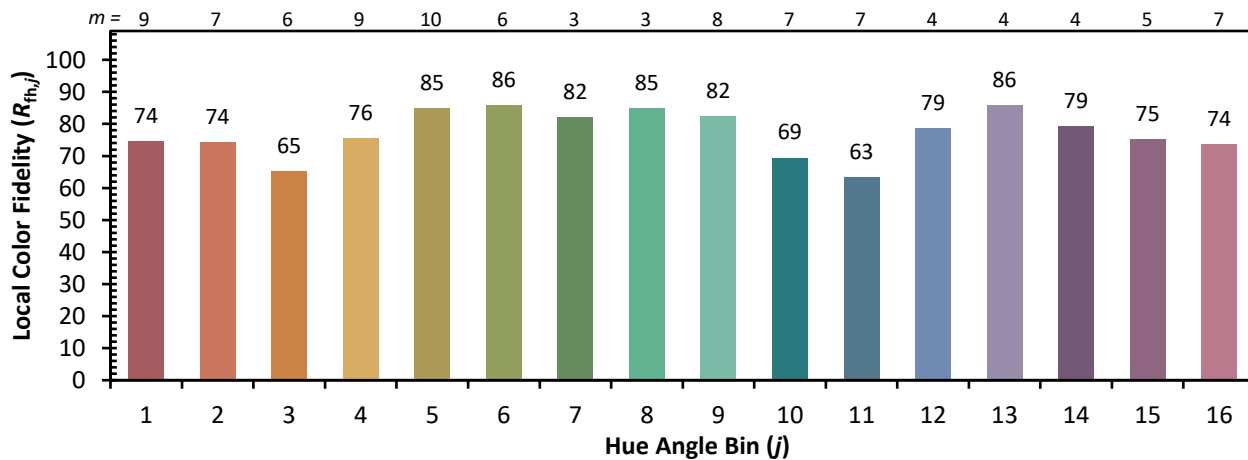


Individual Sample Fidelity Index ($R_{f,i}$)

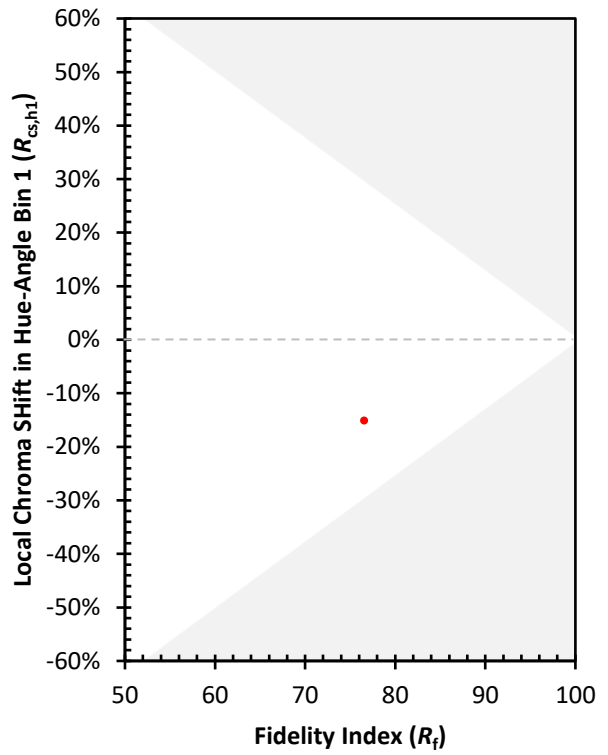
CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 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)