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: P400677

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

Issue Date: 5/19/2020

Report Generated By E9970913

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

Scaled Data Report

Test Information

Test Method:	LM-79-08
Report Number:	P400677
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1908-473-16)
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-MQ
Description:	TOPTIER LED PARKING GARAGE LUMINAIRE
	3500K, 70 CRI LEDS AND MEDIUM DISTRIBUTION
Light Source:	-
Ballast/Driver:	ELECTRONIC DRIVER

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	12526 lumens
Efficiency:	N/A
Efficacy:	119.1 lumens/watt
Luminous Opening:	Circular (Dia: 1.12' x H: 0')
IES Classification:	Type V - Short - Semi-Cutoff
BUG Rating:	B3 - 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

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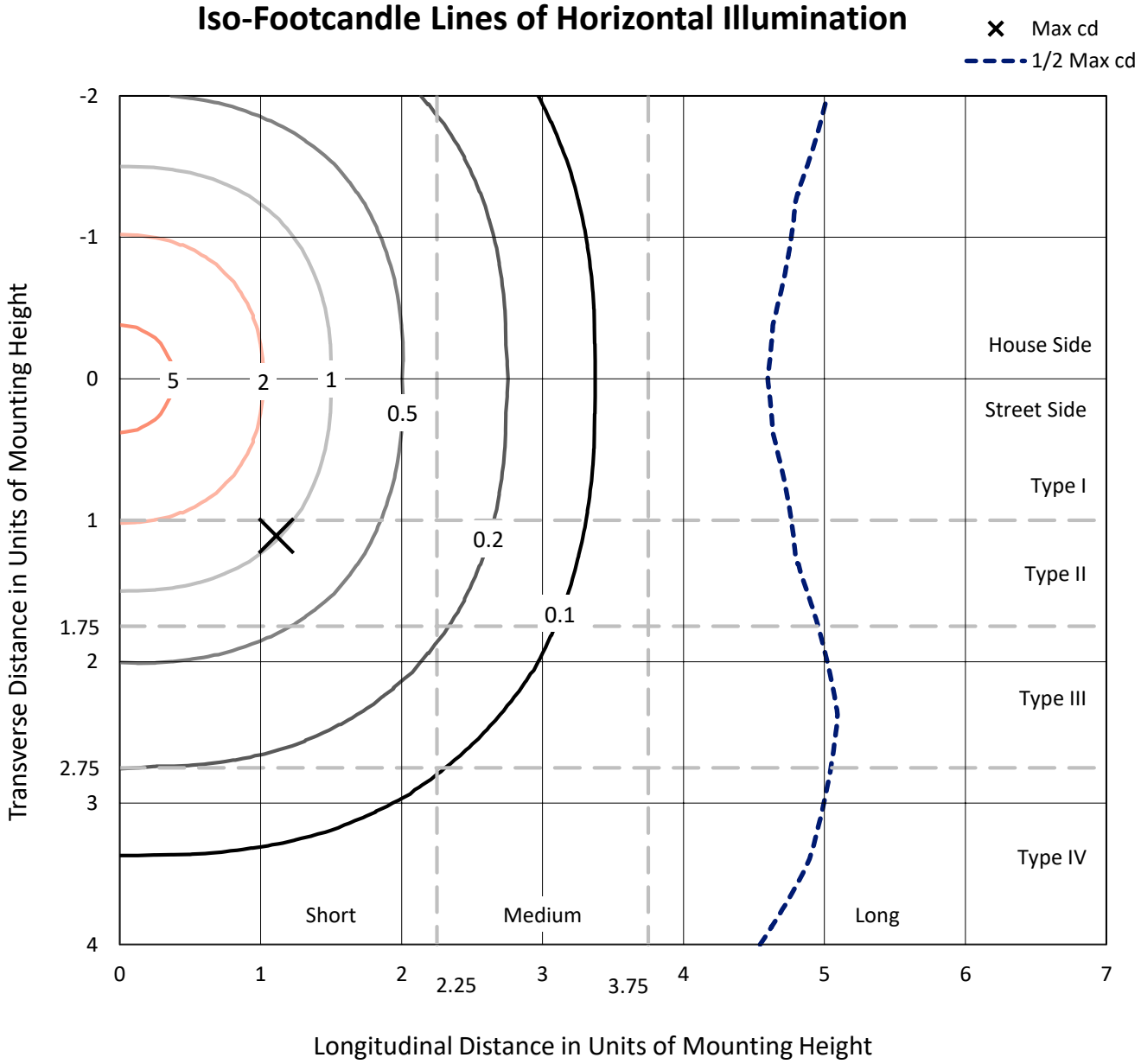
Scaled Data Report

REPORT NUMBER: P400677
CATALOG NUMBER: TT-D6-735-U-MQ

Iso-Footcandle Lines of Horizontal Illumination



Based on 20 foot mounting height. Maximum calculated value = 6.2 fc
Type V - Short - Semi-Cutoff

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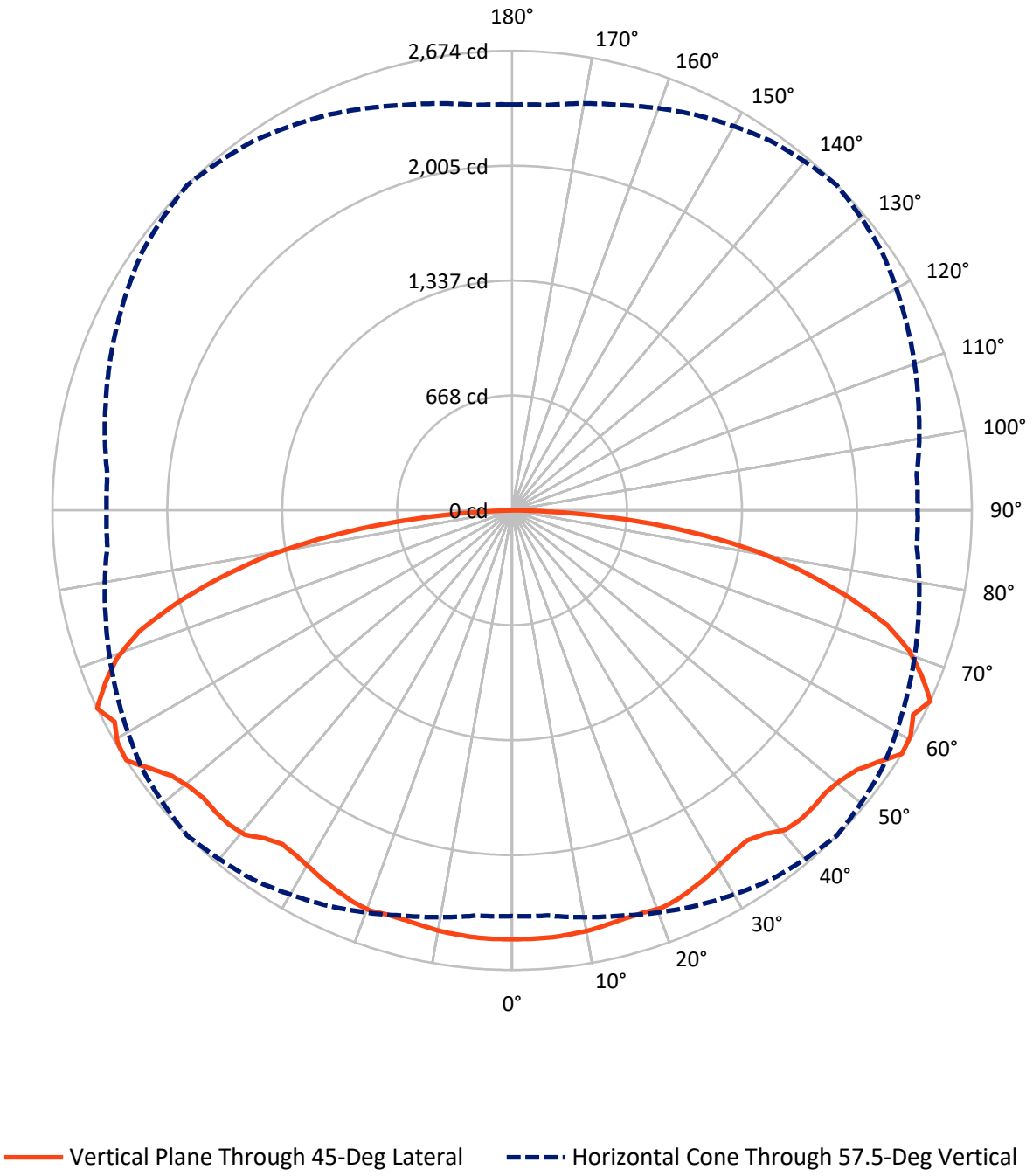
CATALOG NUMBER: TT-D6-735-U-MQ

Luminous Intensity Polar Plot



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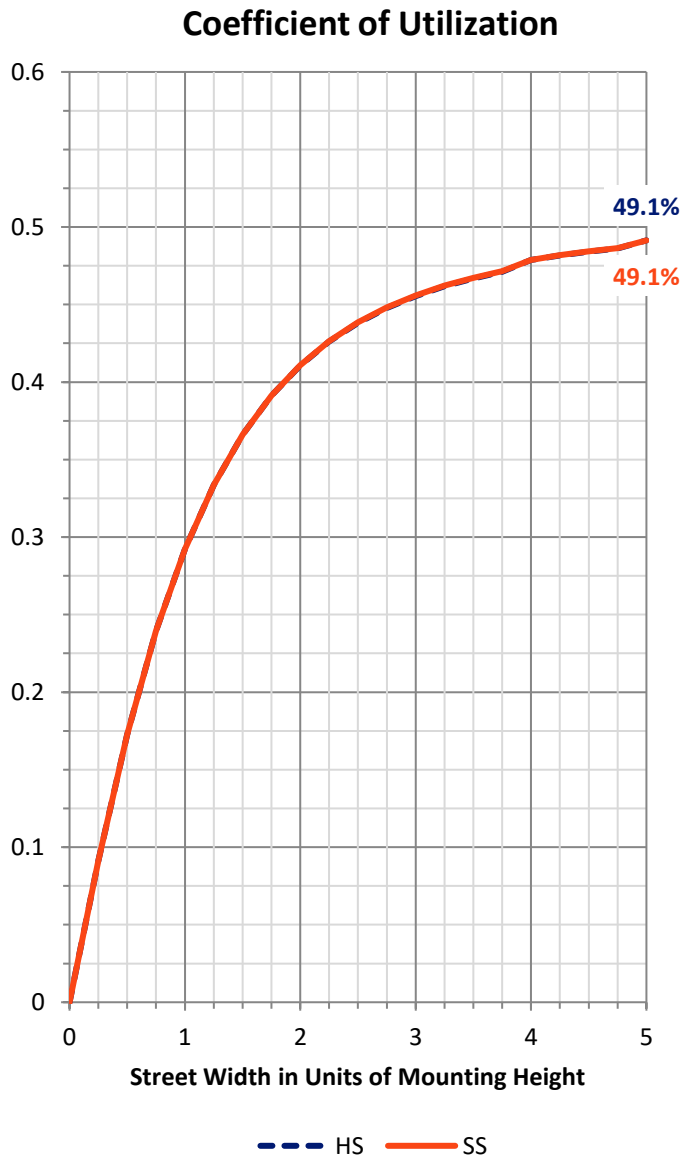
REPORT NUMBER: P400677
CATALOG NUMBER: TT-D6-735-U-MQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	6263.0	0.0	6263.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	6263.0	0.0	6263.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	12526.0	0.0	12526.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	237.7	1.9
10°-20°	699.2	5.6
20°-30°	1123.6	9.0
30°-40°	1483.3	11.8
40°-50°	1855.8	14.8
50°-60°	2207.3	17.6
60°-70°	2394.1	19.1
70°-80°	1905.6	15.2
80°-90°	619.4	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°	12526.0	100.0
0°-180°	12526.0	100.0



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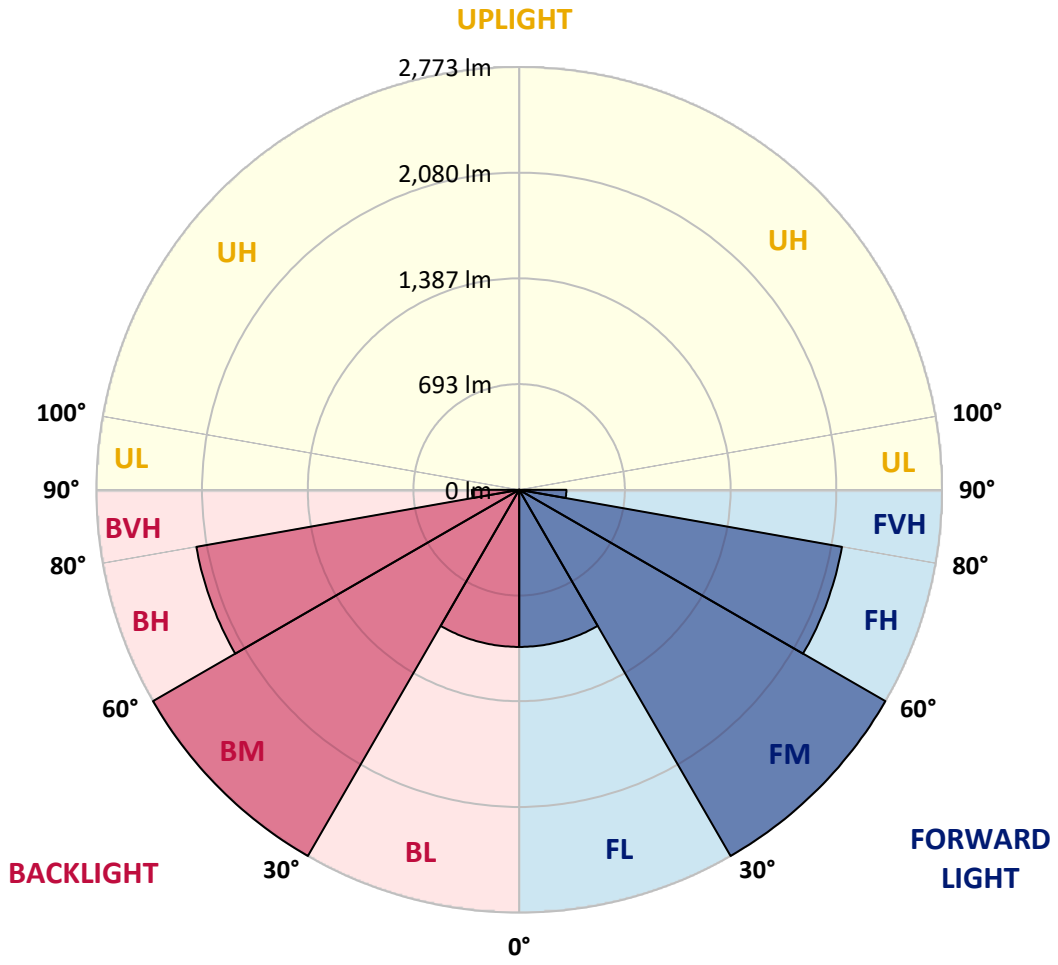
REPORT NUMBER: P400677
CATALOG NUMBER: TT-D6-735-U-MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	1030.3	8.2			
FM	(30°-60°)	2773.2	22.1			
FH	(60°-80°)	2149.8	17.2			G2/5000
FVH	(80°-90°)	309.7	2.5			G3/500
BL	(0°-30°)	1030.3	8.2	B3/2500		
BM	(30°-60°)	2773.2	22.1	B3/5000		
BH	(60°-80°)	2149.8	17.2	B3/2500		G2/5000
BVH	(80°-90°)	309.7	2.5			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3
Type V Short



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REPORT NUMBER: P400677
CATALOG NUMBER: TT-D6-735-U-MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8
2.5°	2498.5	2496.7	2498.5	2496.7	2496.7	2494.8	2496.7	2496.7	2496.7	2496.7	2496.7
5°	2496.7	2494.8	2494.8	2496.7	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8	2494.8
7.5°	2489.2	2489.2	2491.1	2489.2	2489.2	2489.2	2489.2	2489.2	2489.2	2491.1	2491.1
10°	2483.6	2481.7	2483.6	2483.6	2481.7	2483.6	2481.7	2483.6	2483.6	2483.6	2483.6
12.5°	2476.2	2474.3	2476.2	2476.2	2474.3	2472.4	2474.3	2474.3	2476.2	2476.2	2476.2
15°	2463.1	2463.1	2466.8	2465.0	2465.0	2463.1	2466.8	2465.0	2463.1	2465.0	2465.0
17.5°	2453.8	2453.8	2457.5	2461.3	2461.3	2461.3	2461.3	2459.4	2455.7	2457.5	2453.8
20°	2455.7	2457.5	2459.4	2465.0	2468.7	2470.6	2470.6	2465.0	2459.4	2461.3	2459.4
22.5°	2450.1	2448.2	2450.1	2453.8	2459.4	2459.4	2459.4	2451.9	2450.1	2448.2	2448.2
25°	2427.7	2427.7	2431.4	2435.2	2438.9	2437.0	2438.9	2435.2	2431.4	2427.7	2427.7
27.5°	2401.6	2401.6	2407.2	2410.9	2414.7	2414.7	2412.8	2409.1	2407.2	2403.5	2401.6
30°	2375.5	2375.5	2381.1	2384.9	2390.5	2388.6	2388.6	2383.0	2377.4	2373.7	2373.7
32.5°	2347.6	2345.7	2351.3	2360.6	2368.1	2368.1	2368.1	2356.9	2349.5	2345.7	2343.9
35°	2323.4	2323.4	2330.8	2347.6	2356.9	2356.9	2353.2	2345.7	2329.0	2323.4	2323.4
37.5°	2315.9	2321.5	2342.0	2366.2	2384.9	2388.6	2383.0	2362.5	2340.1	2323.4	2317.8
40°	2340.1	2345.7	2371.8	2410.9	2438.9	2444.5	2438.9	2409.1	2370.0	2343.9	2342.0
42.5°	2343.9	2347.6	2379.3	2424.0	2450.1	2459.4	2450.1	2420.3	2377.4	2345.7	2343.9
45°	2330.8	2332.7	2370.0	2416.5	2448.2	2459.4	2448.2	2412.8	2368.1	2332.7	2330.8
47.5°	2314.1	2317.8	2358.8	2407.2	2446.3	2453.8	2444.5	2405.4	2355.1	2319.7	2314.1
50°	2301.0	2312.2	2349.5	2403.5	2450.1	2472.4	2450.1	2397.9	2347.6	2308.5	2301.0
52.5°	2308.5	2312.2	2360.6	2437.0	2500.4	2509.7	2498.5	2437.0	2356.9	2312.2	2306.6
55°	2330.8	2347.6	2399.8	2509.7	2567.5	2584.2	2560.0	2506.0	2401.6	2347.6	2330.8
57.5°	2360.6	2366.2	2440.8	2537.6	2623.4	2673.7	2625.2	2535.8	2446.3	2362.5	2358.8
60°	2336.4	2319.7	2412.8	2526.5	2642.0	2662.5	2634.5	2528.3	2409.1	2317.8	2334.6
62.5°	2271.2	2282.4	2358.8	2515.3	2595.4	2617.8	2588.0	2515.3	2355.1	2291.7	2265.6
65°	2219.0	2286.1	2370.0	2481.7	2610.3	2673.7	2612.2	2478.0	2373.7	2274.9	2213.5
67.5°	2146.4	2159.4	2284.3	2422.1	2537.6	2569.3	2535.8	2424.0	2273.1	2150.1	2159.4
70°	2023.4	2004.8	2131.5	2291.7	2401.6	2451.9	2405.4	2284.3	2125.9	2001.1	2017.8
72.5°	1820.3	1831.5	1948.9	2118.4	2232.1	2280.5	2233.9	2105.4	1945.2	1842.7	1831.5
75°	1607.9	1621.0	1734.6	1889.3	2004.8	2025.3	2012.2	1879.9	1738.3	1619.1	1607.9
77.5°	1365.7	1378.7	1471.9	1641.5	1710.4	1742.1	1714.1	1650.8	1468.2	1376.9	1362.0
80°	1097.4	1093.7	1175.7	1321.0	1406.7	1442.1	1406.7	1324.7	1171.9	1101.1	1076.9
82.5°	784.4	788.1	864.5	965.1	1047.1	1058.3	1041.5	974.4	857.1	797.4	763.9
85°	436.0	452.8	508.6	583.2	637.2	655.8	627.9	564.5	506.8	460.2	445.3
87.5°	104.3	113.7	132.3	167.7	188.2	206.8	188.2	175.1	124.8	113.7	104.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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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: SP1-2411-284-1

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

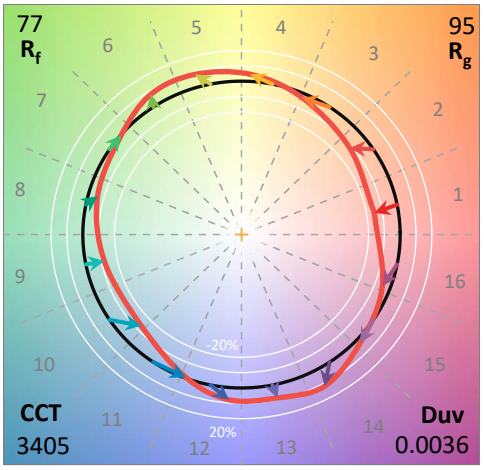
Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

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	CRI (Ra):	73.9		
CIE u':	0.2365	R1:	71.3	R9:	-18.0
CIE v':	0.5180	R2:	80.3	R10:	53.1
Duv:	0.0036	R3:	87.8	R11:	68.6
CIE x:	0.4148	R4:	73.2	R12:	42.6
CIE y:	0.4038	R5:	69.8	R13:	72.5
CIE z:	0.1814	R6:	71.8	R14:	92.7
Peak Wavelength (nm):	596	R7:	82.8	R15:	64.3
Dominant Wavelength (nm):	579	R8:	54.1		
Purity:	45.70672				
Rf:	76.6				
Rg:	95.4				



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

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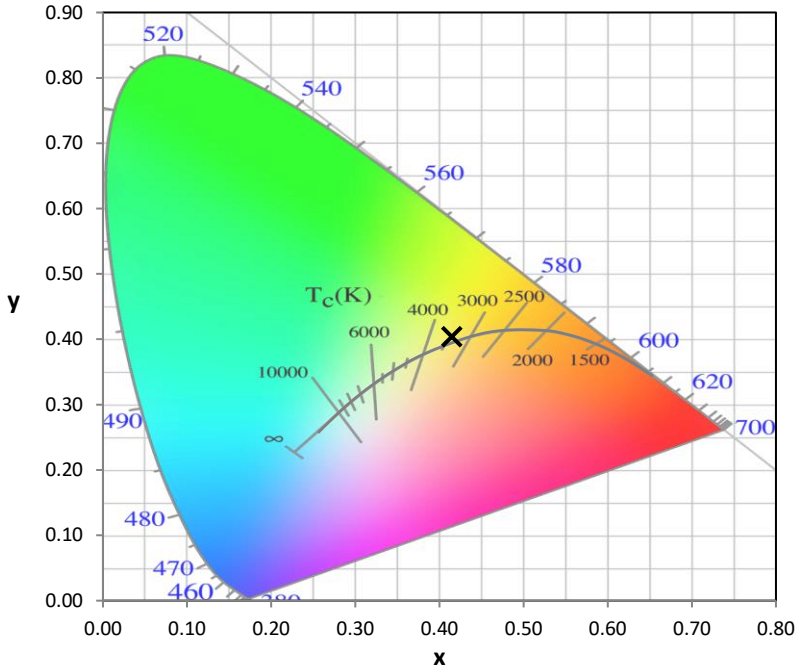
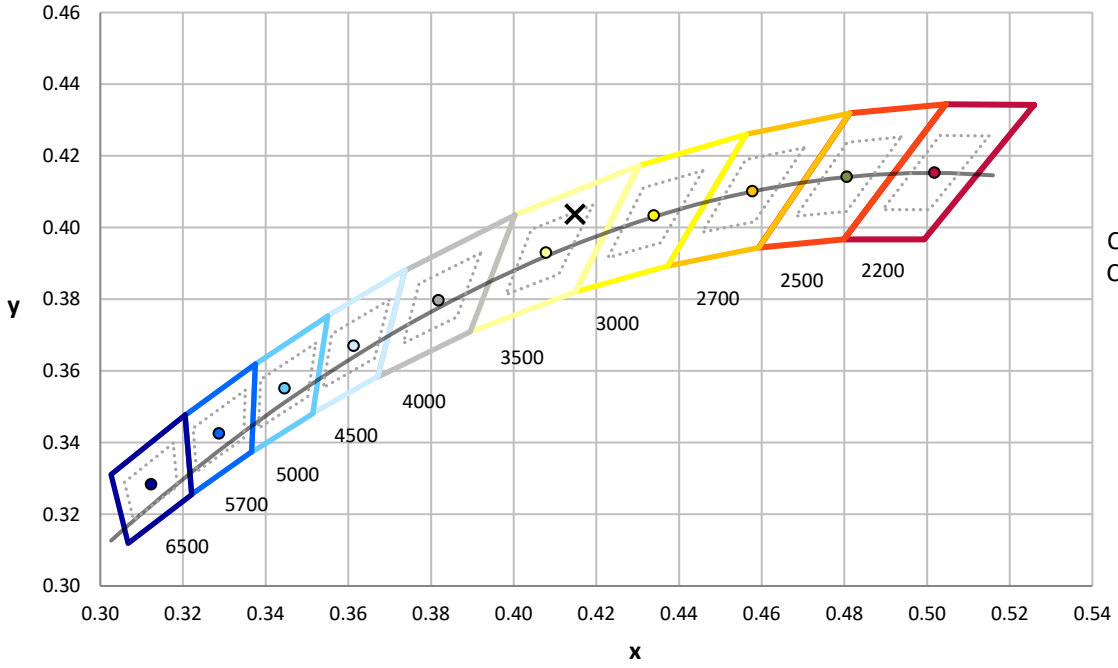
CIE 1931 Chromaticity Diagram



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



CCT = 3405K
CIE x = 0.4148
CIE y = 0.4038
Duv = 0.0036

Point lies inside the ANSI 3500K 4-step quadrangle

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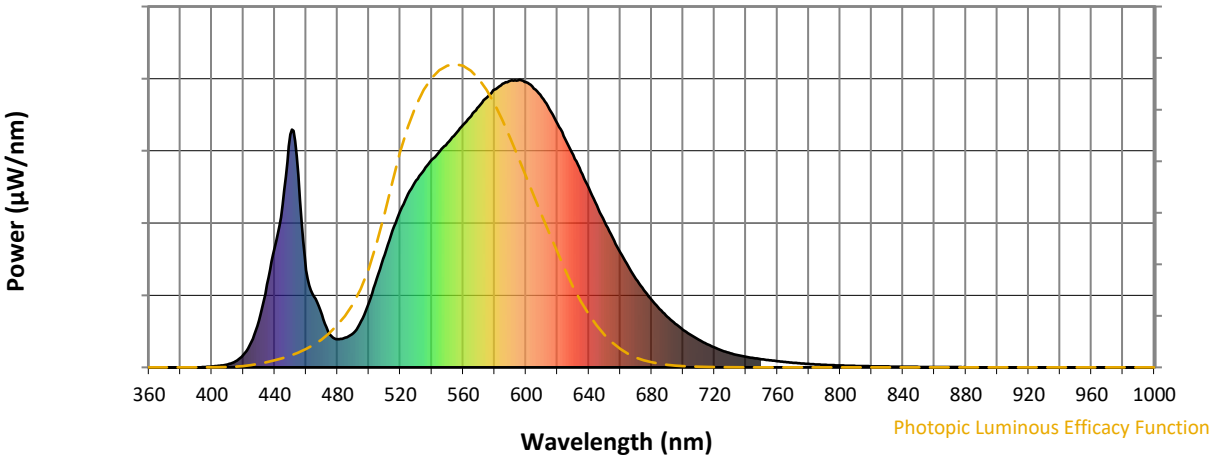
Photopic Flux vs. Wavelength

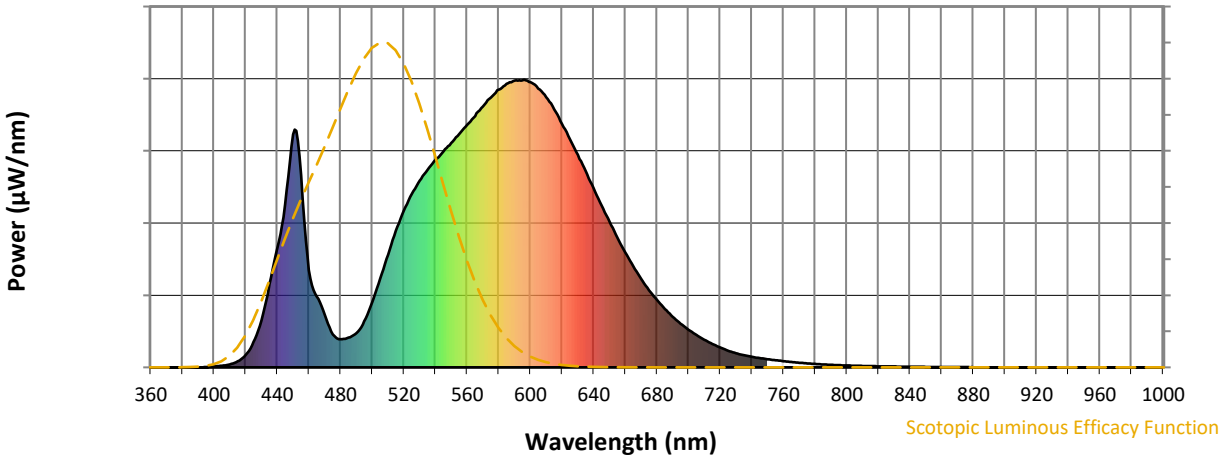


Photopic Lumens: NR

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

Scotopic Flux vs. Wavelength

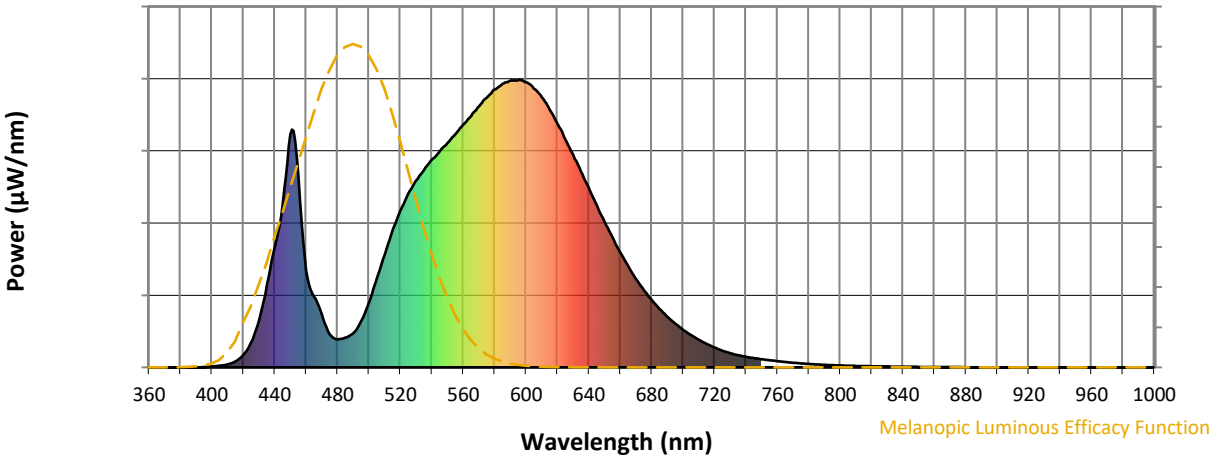


Scotopic Lumens: NR **S/P: 1.33**

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			

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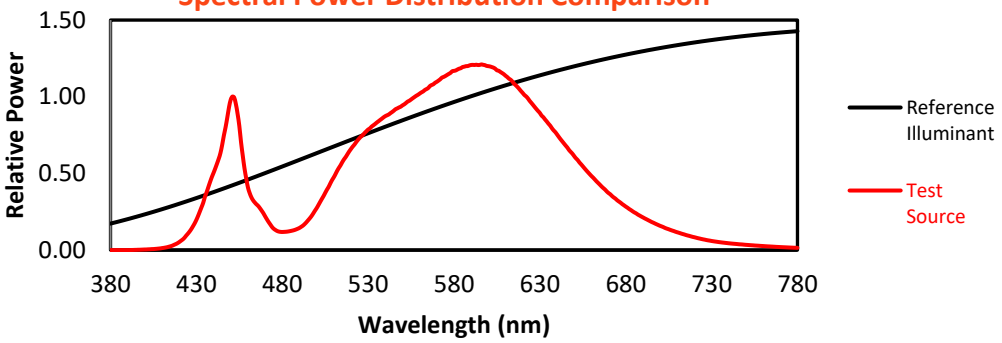
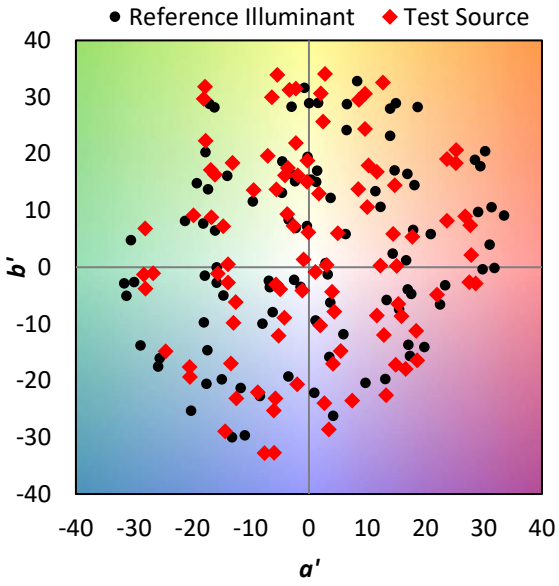
Summary

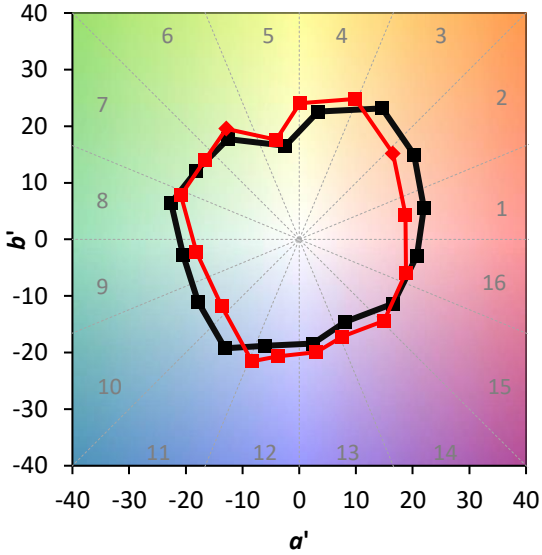
R_f = 76.6
R_g = 95.4
CIE R_a = 73.9
R_9 = -18.0

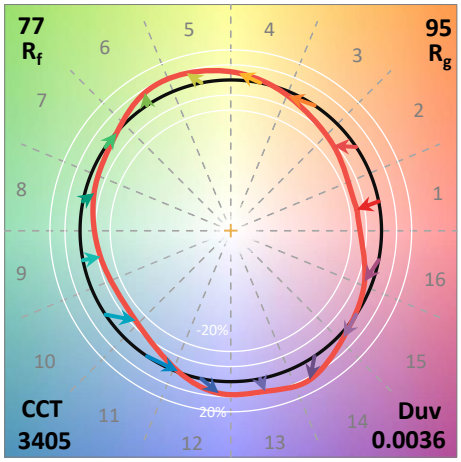
Spectral Power Distribution Comparison

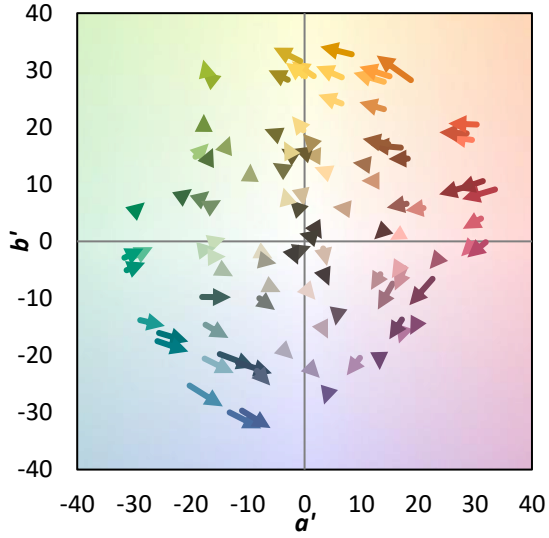


Color Vector Graphics









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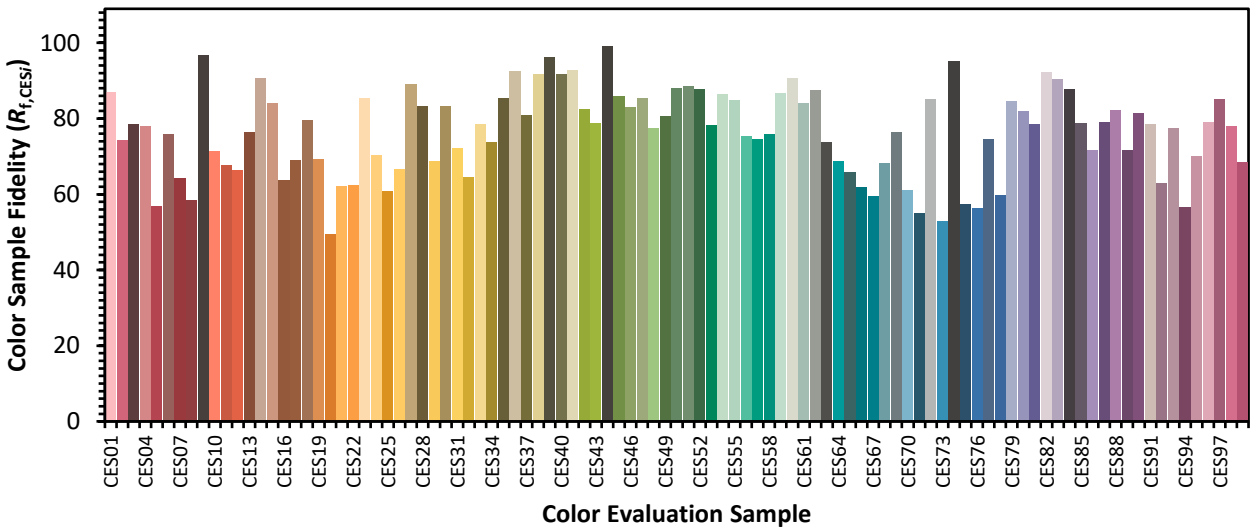
Individual Sample Fidelity Index ($R_{f,i}$)

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	



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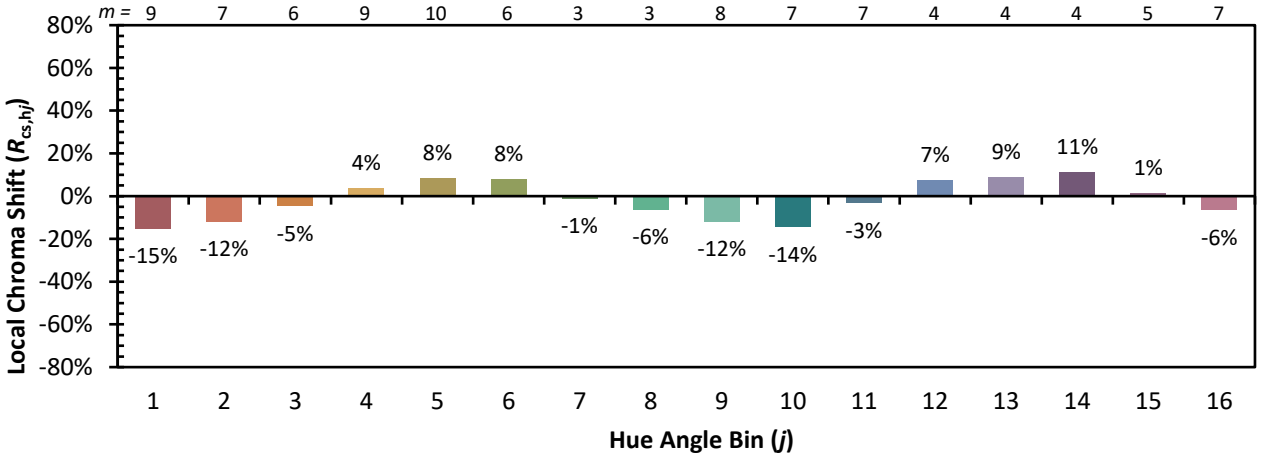
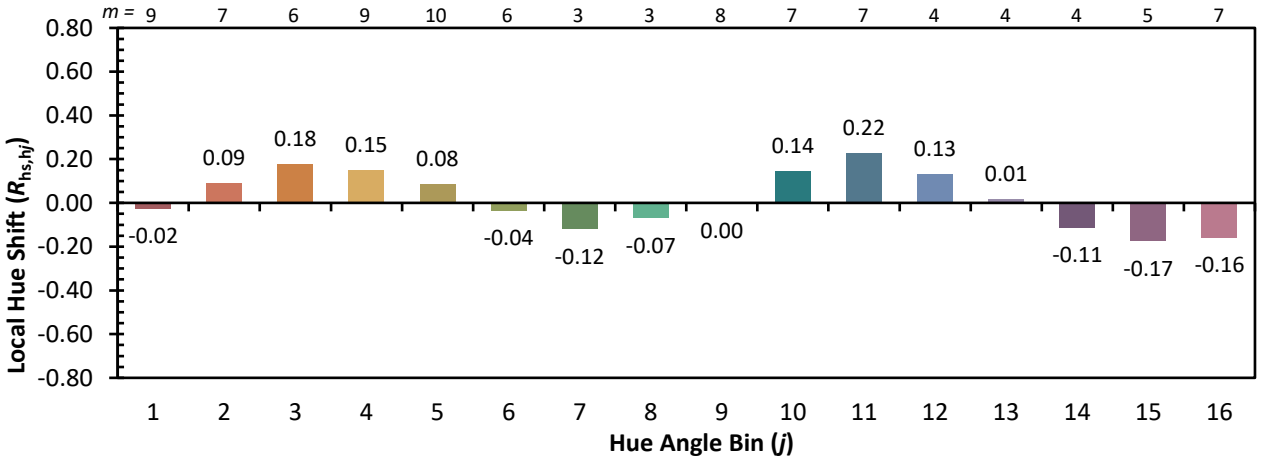
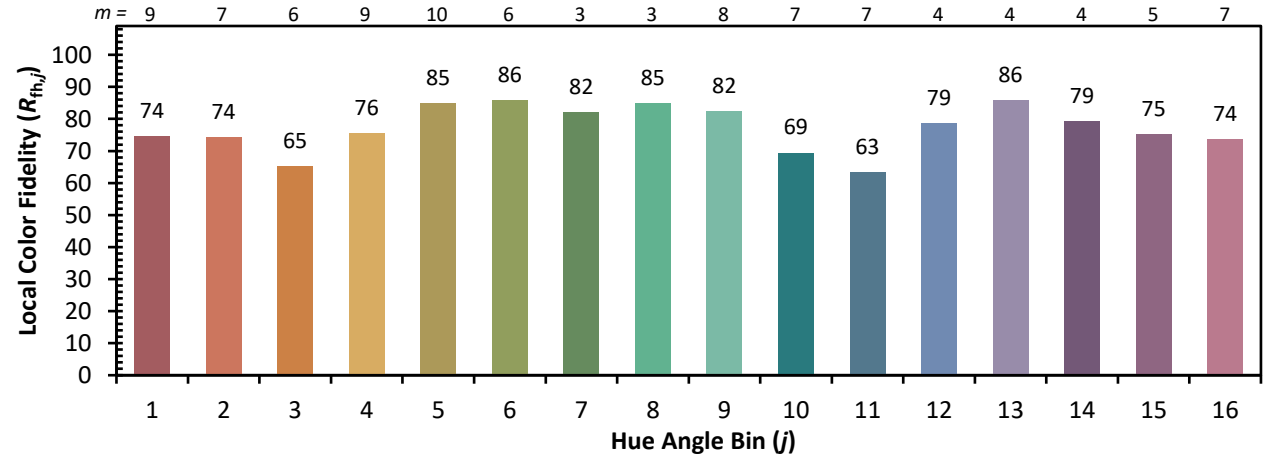
Color Rendition by Hue-Angle Bin







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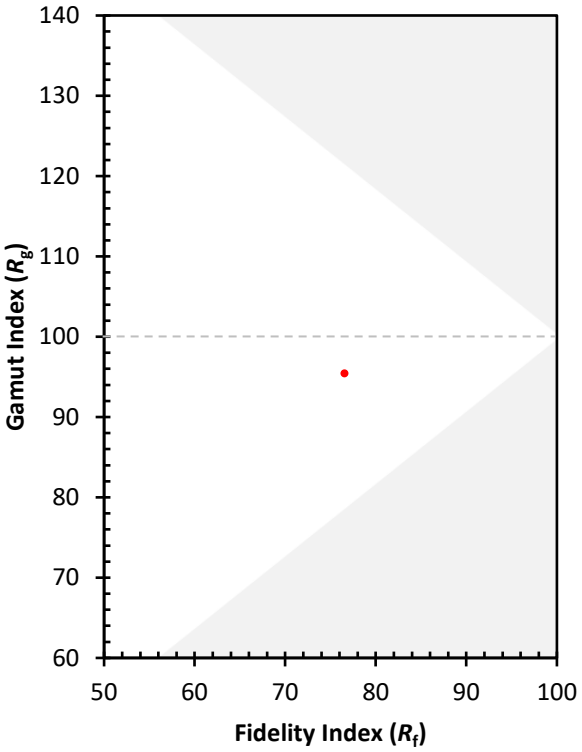
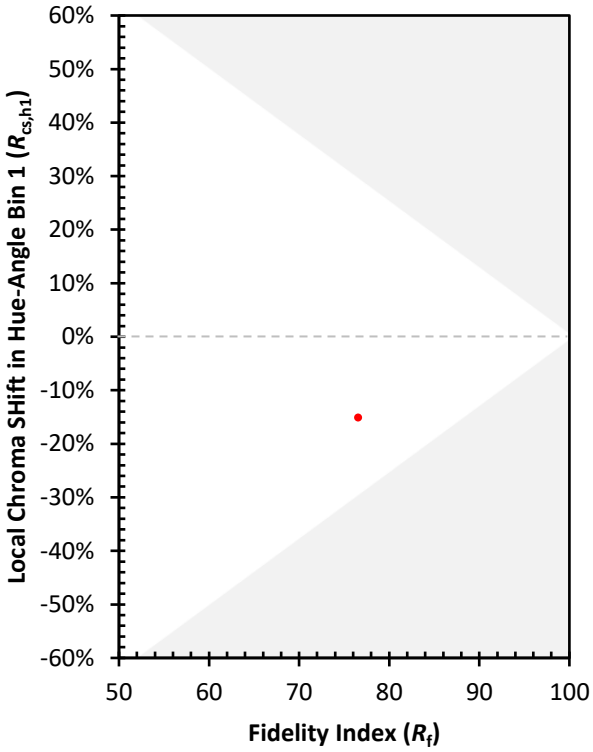
Measure Comparisons





(END OF REPORT)