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: P832628

Luminaire Tested: **TTN-D2-740-U-RW-CG**

Issue Date: 5/14/2024

Report Generated By 670246001

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:	P832628
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-14)
Test Lab:	INNOVATION CENTER
Issue Date:	5/14/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D2-740-U-RW-CG
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE
	4000K, 70 CRI LEDS AND RECTANGULAR DISTRIBUTION WITH CLEAR GLASS
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	4834 lumens
Efficiency:	N/A
Efficacy:	113.7 lumens/watt
Luminous Opening:	Circular (Dia: 0.71' x H: 0')
IES Classification:	Type II - Short
BUG Rating:	B2 - 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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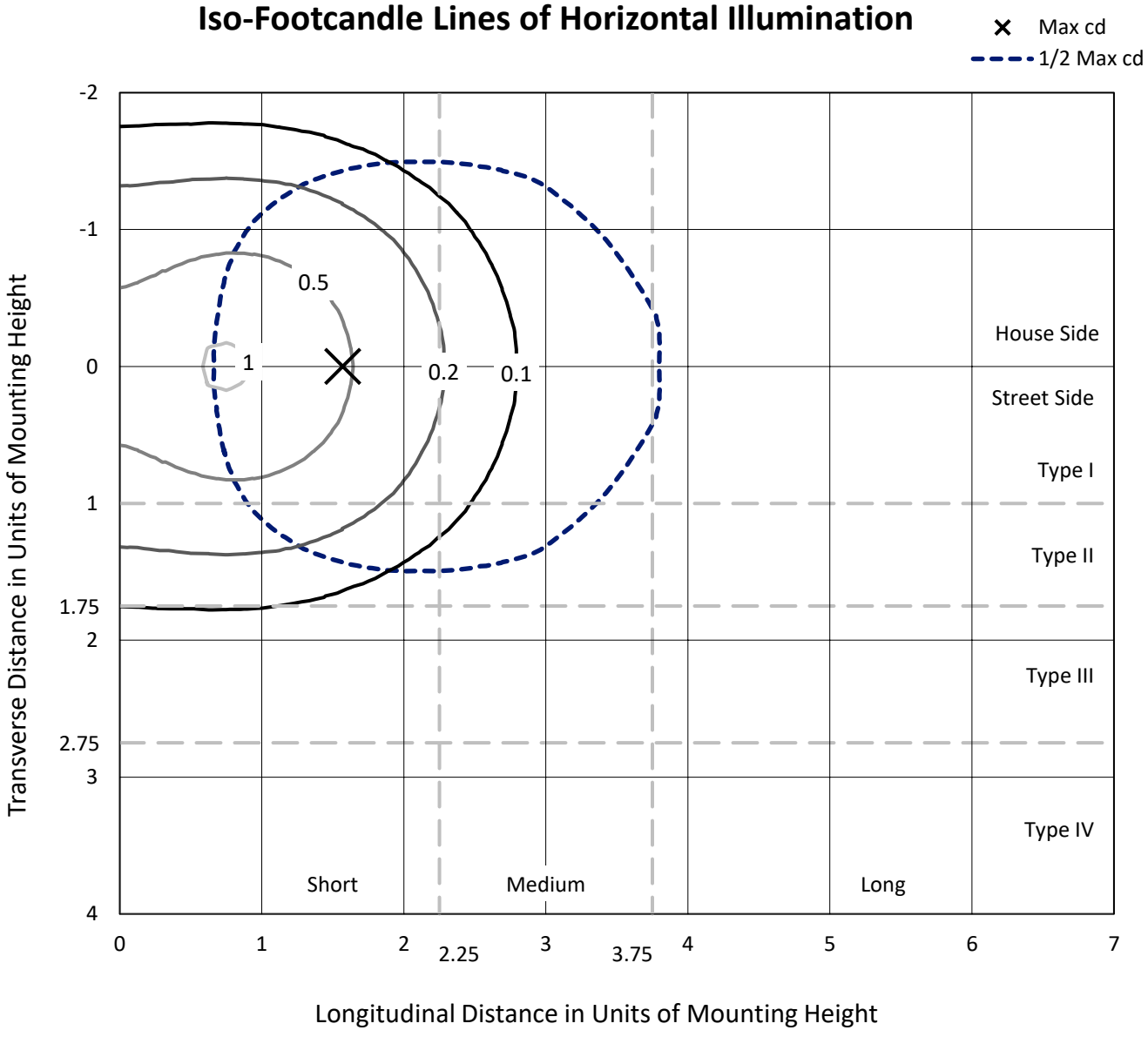
Scaled Data Report

REPORT NUMBER: P832628
CATALOG NUMBER: TTN-D2-740-U-RW-CG

Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 1 fc
Type II - Short - N/A

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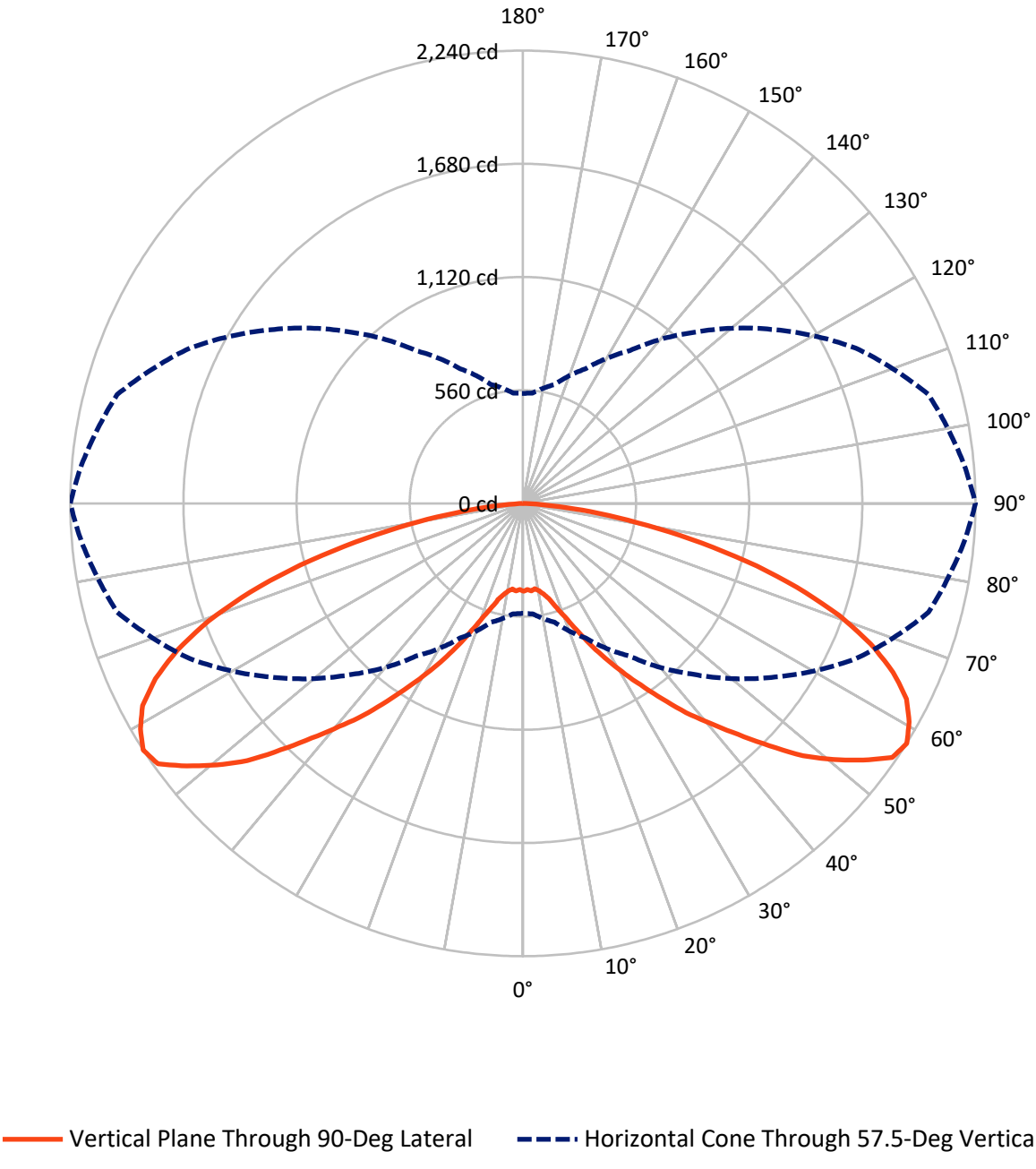
Luminous Intensity Polar Plot



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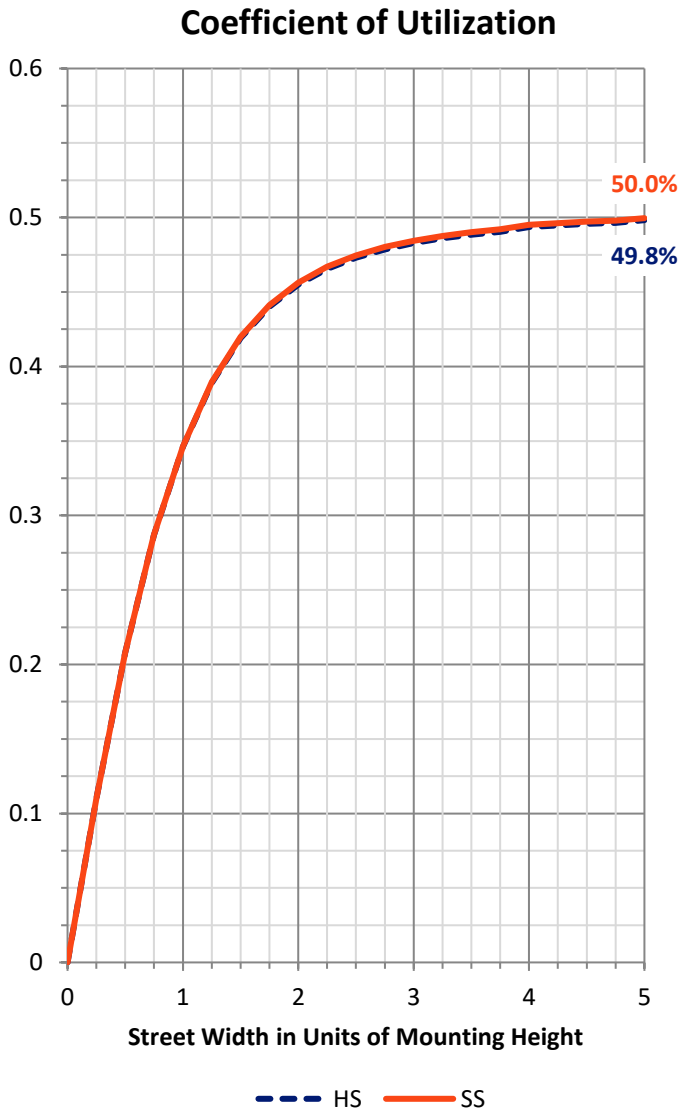
REPORT NUMBER: P832628
CATALOG NUMBER: TTN-D2-740-U-RW-CG

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2417.0	0.0	2417.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2417.0	0.0	2417.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	4834.0	0.0	4834.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.4	0.9
10°-20°	133.6	2.8
20°-30°	284.3	5.9
30°-40°	523.9	10.8
40°-50°	843.6	17.5
50°-60°	1141.8	23.6
60°-70°	1110.2	23.0
70°-80°	645.9	13.4
80°-90°	109.2	2.3
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°	4834.0	100.0
0°-180°	4834.0	100.0



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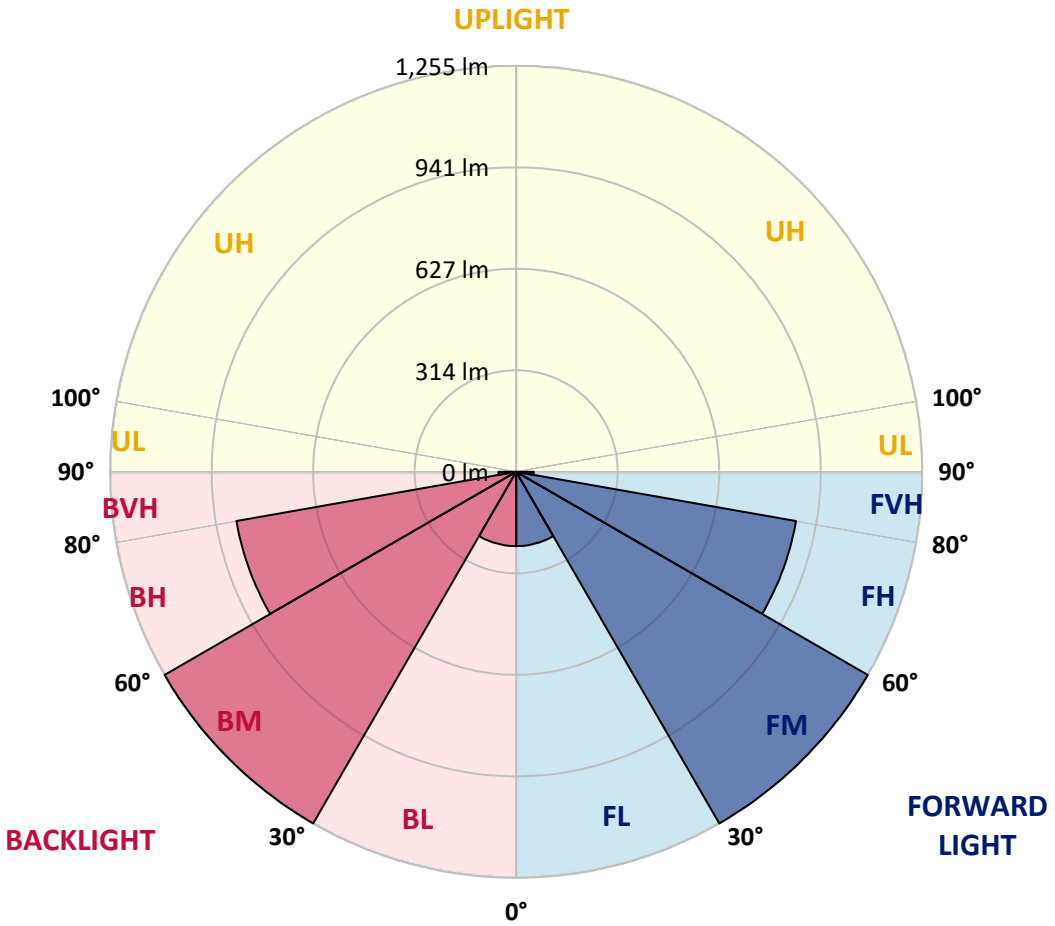
Scaled Data Report

REPORT NUMBER: P832628
CATALOG NUMBER: TTN-D2-740-U-RW-CG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	229.6	4.8			
FM	(30°-60°)	1254.7	26.0			
FH	(60°-80°)	878.1	18.2			G1/1800
FVH	(80°-90°)	54.6	1.1			G1/100
BL	(0°-30°)	229.6	4.8	B1/500		
BM	(30°-60°)	1254.7	26.0	B2/2500		
BH	(60°-80°)	878.1	18.2	B2/1000		G2/1000
BVH	(80°-90°)	54.6	1.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2
Type II Short



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CATALOG NUMBER: TTN-D2-740-U-RW-CG

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	434.9	434.9	434.9	434.9	434.9	434.9	434.9	434.9	434.9	434.9	*434.9*
2.5°	434.9	434.9	434.9	434.9	430.6	430.6	430.6	426.2	426.2	426.2	*426.2*
5°	434.9	434.9	434.9	439.3	439.3	439.3	434.9	434.9	434.9	434.9	*434.9*
7.5°	434.9	439.3	439.3	434.9	434.9	430.6	430.6	430.6	426.2	426.2	*426.2*
10°	434.9	434.9	434.9	434.9	430.6	430.6	434.9	434.9	439.3	439.3	*439.3*
12.5°	430.6	430.6	434.9	434.9	434.9	439.3	448.0	452.3	456.7	461.0	*461.0*
15°	434.9	434.9	439.3	443.6	448.0	456.7	469.7	482.8	491.5	495.8	*491.5*
17.5°	434.9	439.3	443.6	452.3	465.4	478.4	500.2	517.6	535.0	539.3	*543.7*
20°	443.6	443.6	448.0	465.4	487.1	508.9	539.3	569.8	591.5	600.2	*600.2*
22.5°	448.0	452.3	456.7	478.4	513.2	548.0	591.5	626.3	656.8	674.2	*678.5*
25°	461.0	461.0	469.7	500.2	543.7	595.9	652.4	704.6	743.7	765.5	*769.8*
27.5°	469.7	474.1	487.1	526.3	582.8	648.1	726.3	787.2	835.1	861.2	*865.5*
30°	478.4	482.8	508.9	552.4	622.0	700.2	791.6	869.9	930.8	961.2	*965.6*
32.5°	491.5	495.8	526.3	574.1	656.8	752.4	856.8	952.5	1039.5	1065.6	*1069.9*
35°	504.5	508.9	543.7	600.2	695.9	804.6	926.4	1039.5	1143.9	1178.7	*1187.4*
37.5°	517.6	521.9	556.7	626.3	735.0	861.2	1004.7	1139.5	1252.6	1300.5	*1313.5*
40°	530.6	535.0	574.1	652.4	774.2	922.1	1087.3	1235.2	1365.7	1422.2	*1430.9*
42.5°	539.3	543.7	587.2	674.2	813.3	978.6	1174.3	1339.6	1478.8	1552.7	*1561.4*
45°	552.4	556.7	604.6	704.6	848.1	1043.8	1257.0	1457.0	1618.0	1700.6	*1709.3*
47.5°	561.1	565.4	617.6	722.0	887.3	1104.7	1344.0	1561.4	1752.8	1839.8	*1865.9*
50°	565.4	569.8	626.3	739.4	913.4	1148.2	1413.5	1665.8	1870.2	1979.0	*1992.0*
52.5°	565.4	574.1	630.7	752.4	930.8	1187.4	1470.1	1752.8	1983.3	2105.1	*2109.4*
55°	561.1	565.4	626.3	748.1	939.5	1204.8	1509.2	1805.0	2061.6	2179.0	*2218.2*
57.5°	*543.7*	*548.0*	*608.9*	*735.0*	*922.1*	*1196.1*	*1500.5*	*1818.0*	*2079.0*	*2192.1*	*2239.9*
60°	517.6	526.3	582.8	704.6	896.0	1165.6	1474.4	1791.9	2052.9	2192.1	*2196.4*
62.5°	487.1	491.5	548.0	665.5	856.8	1117.8	1426.6	1739.7	1992.0	2135.5	*2131.2*
65°	443.6	448.0	495.8	617.6	787.2	1026.4	1330.9	1657.1	1874.6	2026.8	*2013.8*
67.5°	395.8	400.1	443.6	552.4	704.6	926.4	1200.4	1517.9	1709.3	1865.9	*1857.2*
70°	343.6	343.6	382.7	474.1	617.6	813.3	1056.9	1335.3	1526.6	1657.1	*1661.5*
72.5°	282.7	282.7	317.5	395.8	517.6	682.8	891.6	1139.5	1296.1	1409.2	*1417.9*
75°	221.8	217.5	247.9	313.2	408.8	543.7	704.6	917.7	1039.5	1148.2	*1143.9*
77.5°	156.6	156.6	174.0	226.2	295.8	404.5	521.9	691.5	774.2	865.5	*848.1*
80°	100.0	100.0	108.7	147.9	195.7	269.7	343.6	469.7	526.3	595.9	*574.1*
82.5°	52.2	47.8	56.5	78.3	104.4	147.9	191.4	274.0	300.1	352.3	*334.9*
85°	17.4	17.4	17.4	26.1	39.1	56.5	73.9	117.4	121.8	156.6	*143.5*
87.5°	4.3	0.0	0.0	4.3	4.3	4.3	4.3	13.0	13.0	26.1	*17.4*
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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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

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

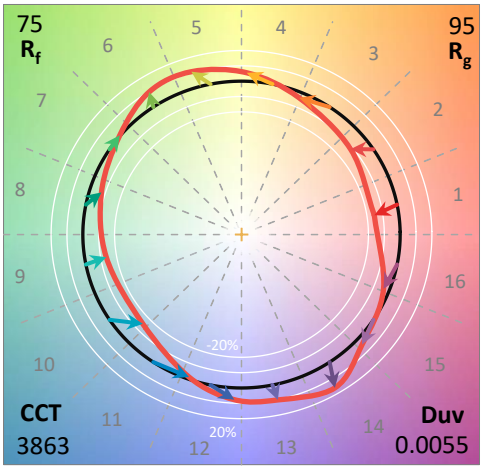
Test Information

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



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

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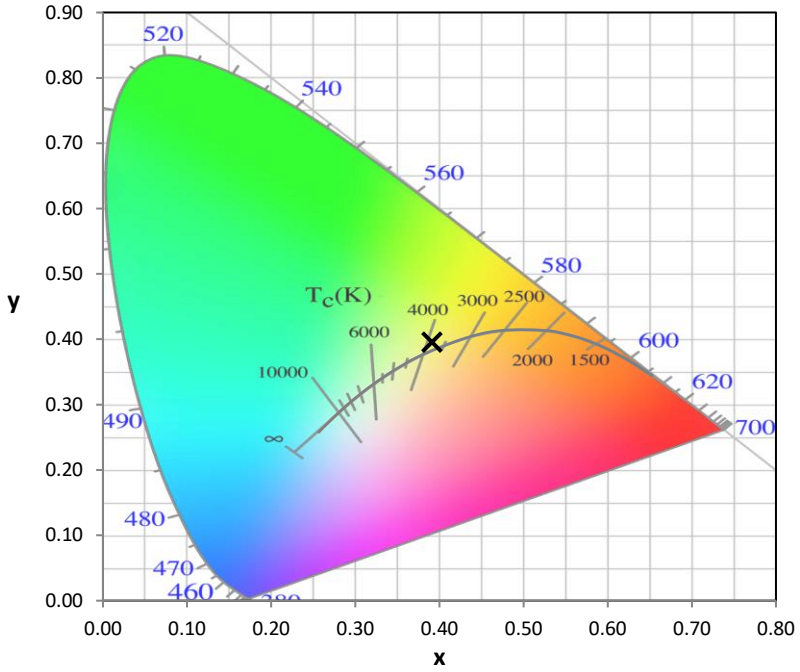
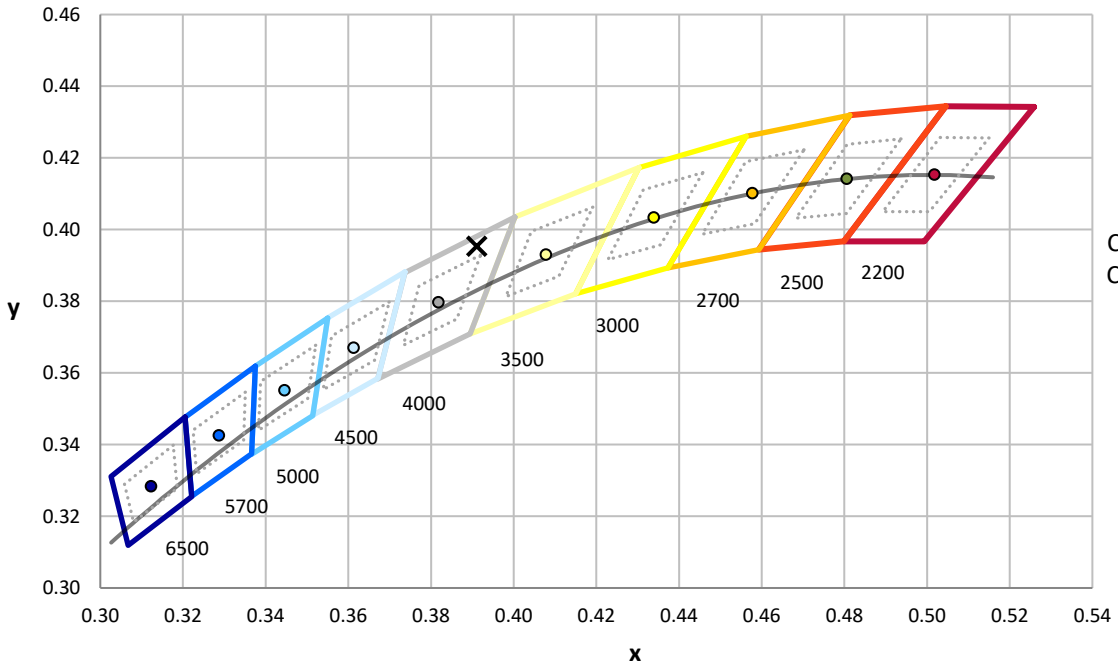
CIE 1931 Chromaticity Diagram



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



CCT = 3863K
CIE x = 0.3911
CIE y = 0.3954
Duv = 0.0055

Point lies inside the ANSI 4000K 7-step quadrangle

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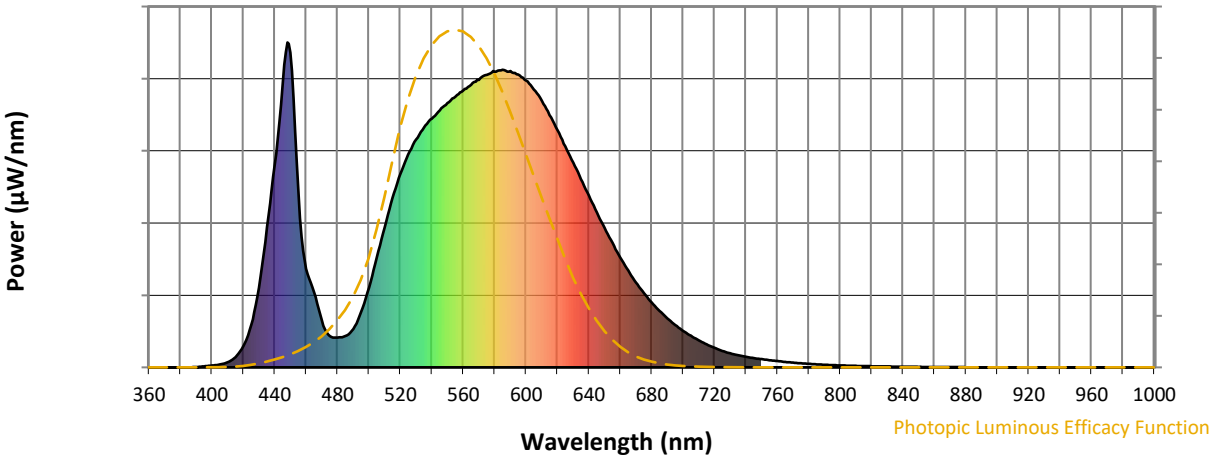
Photopic Flux vs. Wavelength

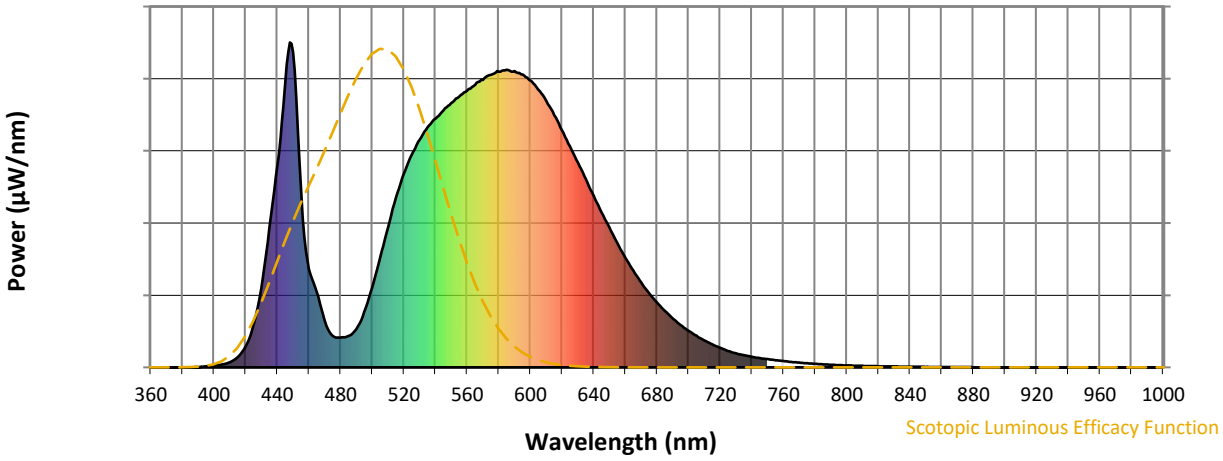


Photopic Lumens: NR

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	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

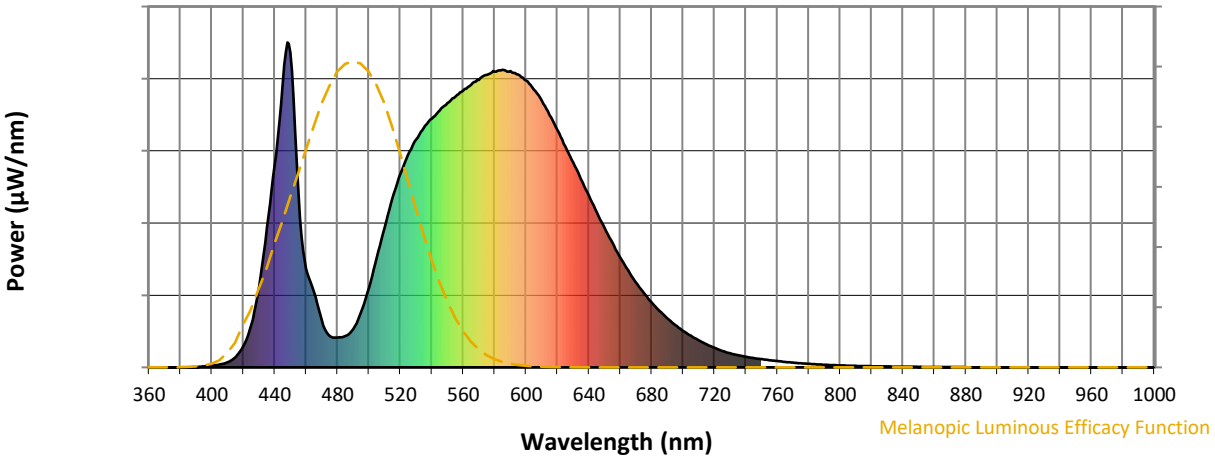


Scotopic Lumens: NR **S/P: 1.45**

λ (nm)	Power W^/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	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^/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	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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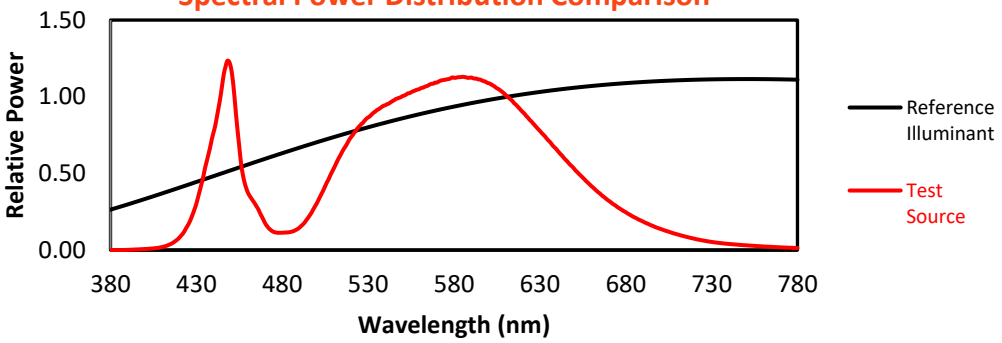
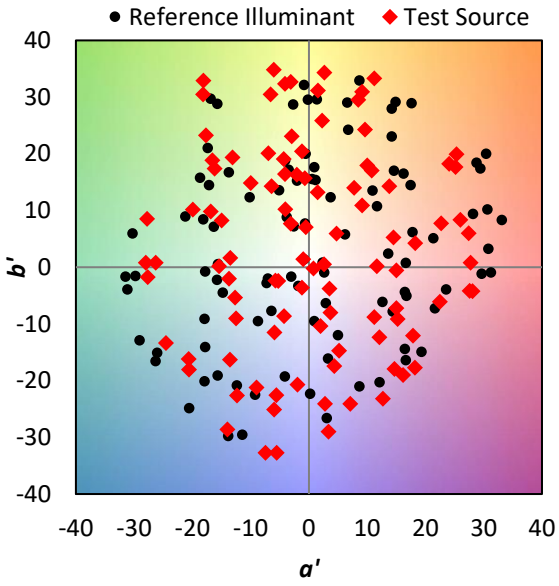
Summary

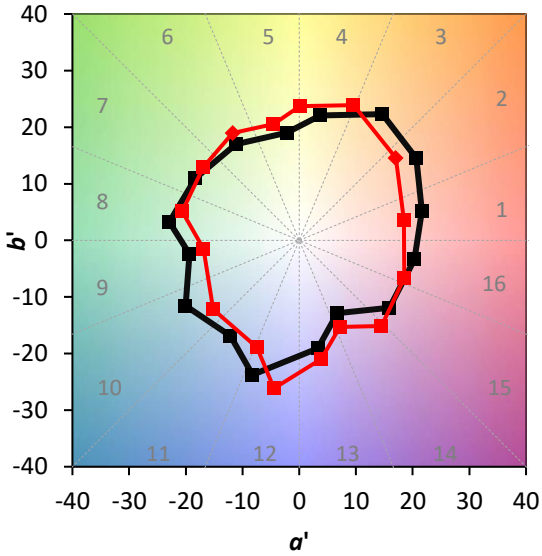
R_f = 74.7
R_g = 95.4
CIE R_a = 71.9
R_9 = -23.5

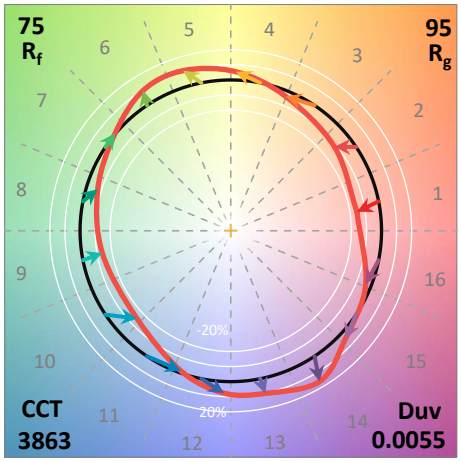
Spectral Power Distribution Comparison

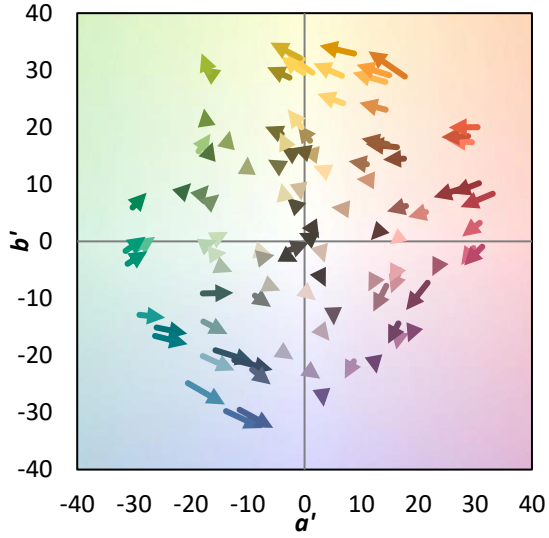


Color Vector Graphics









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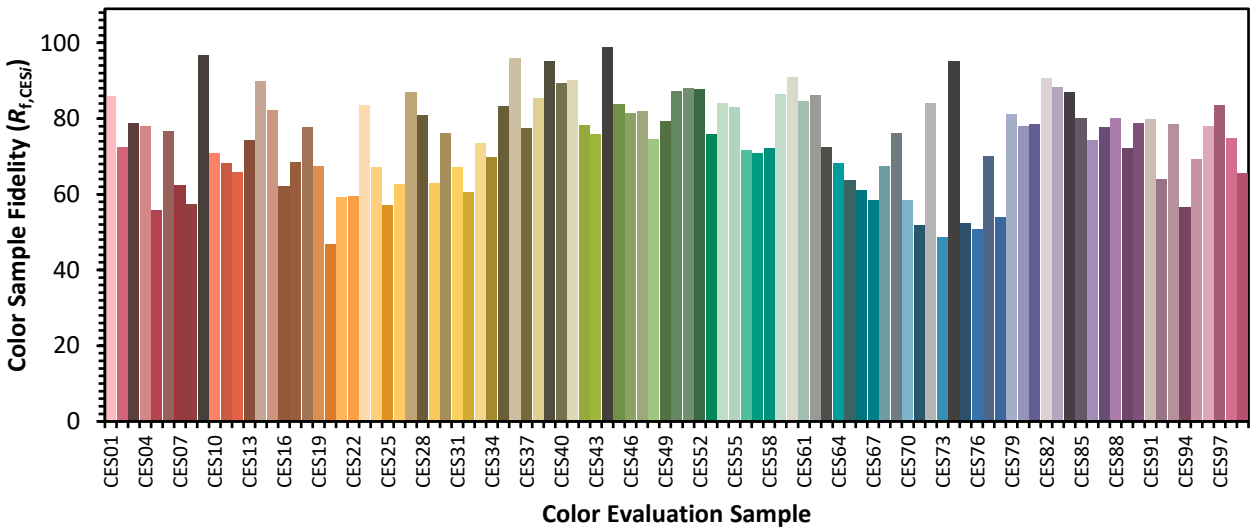
Individual Sample Fidelity Index ($R_{f,i}$)

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	



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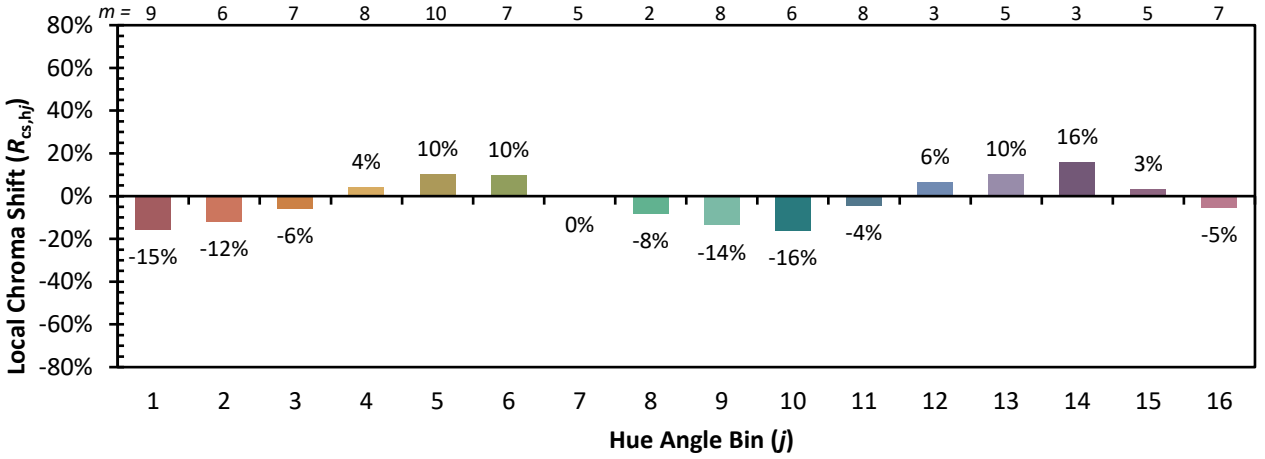
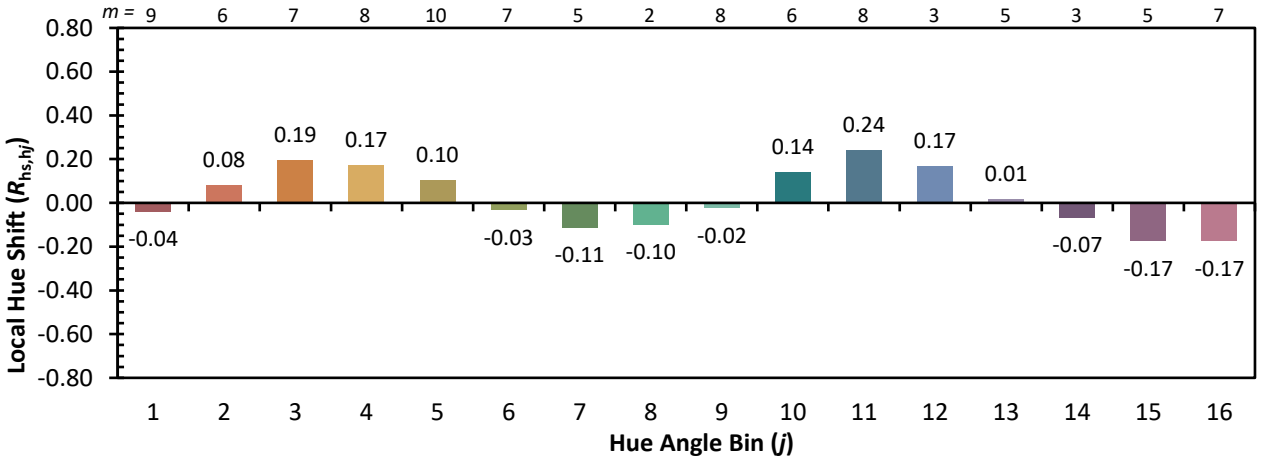
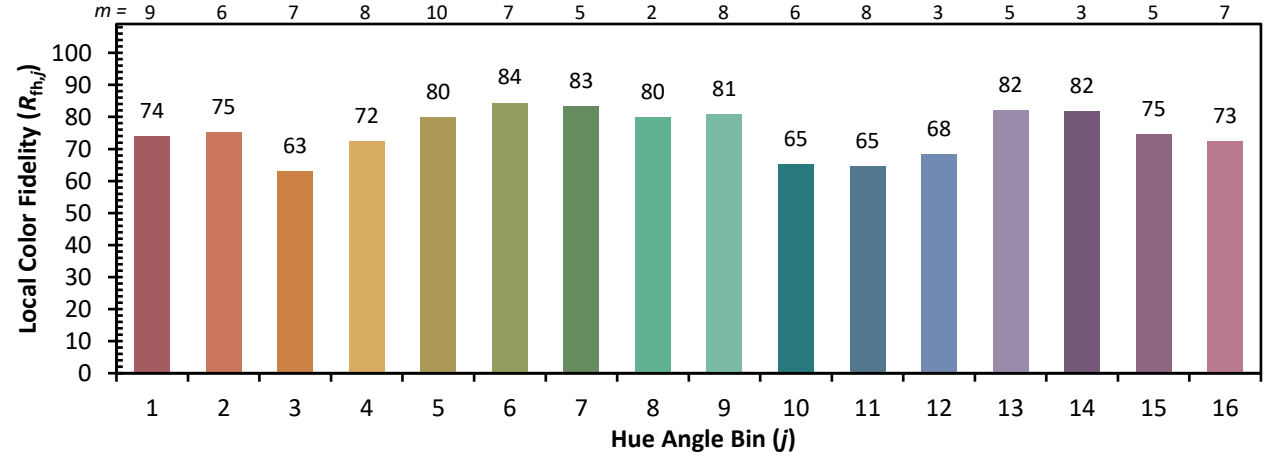
Color Rendition by Hue-Angle Bin







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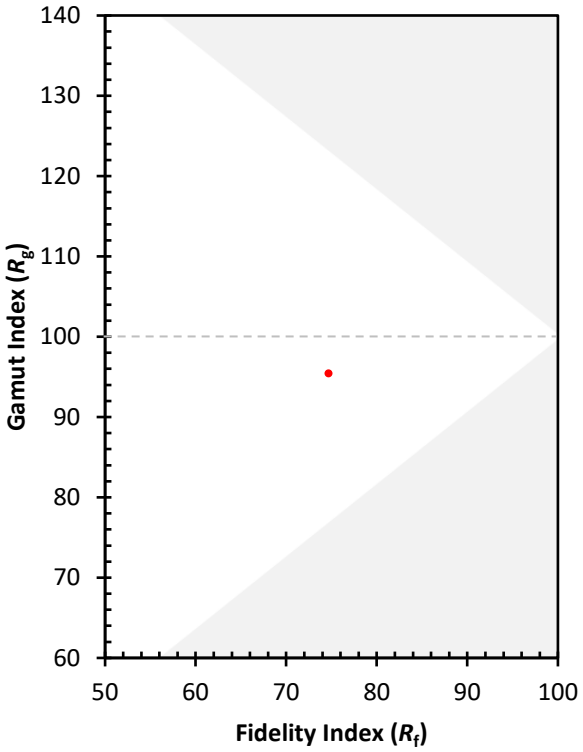
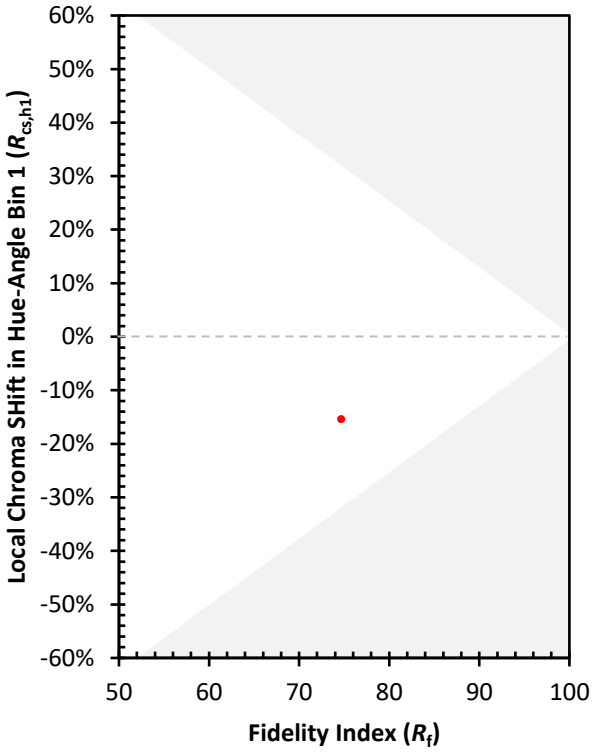
Measure Comparisons





(END OF REPORT)