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: P823389

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

Issue Date: 4/16/2024

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:	P823389
	TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-10)
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-RW
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE
	4000K, 70 CRI LEDS AND RECTANGULAR DISTRIBUTION
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	5155 lumens
Efficiency:	N/A
Efficacy:	121.3 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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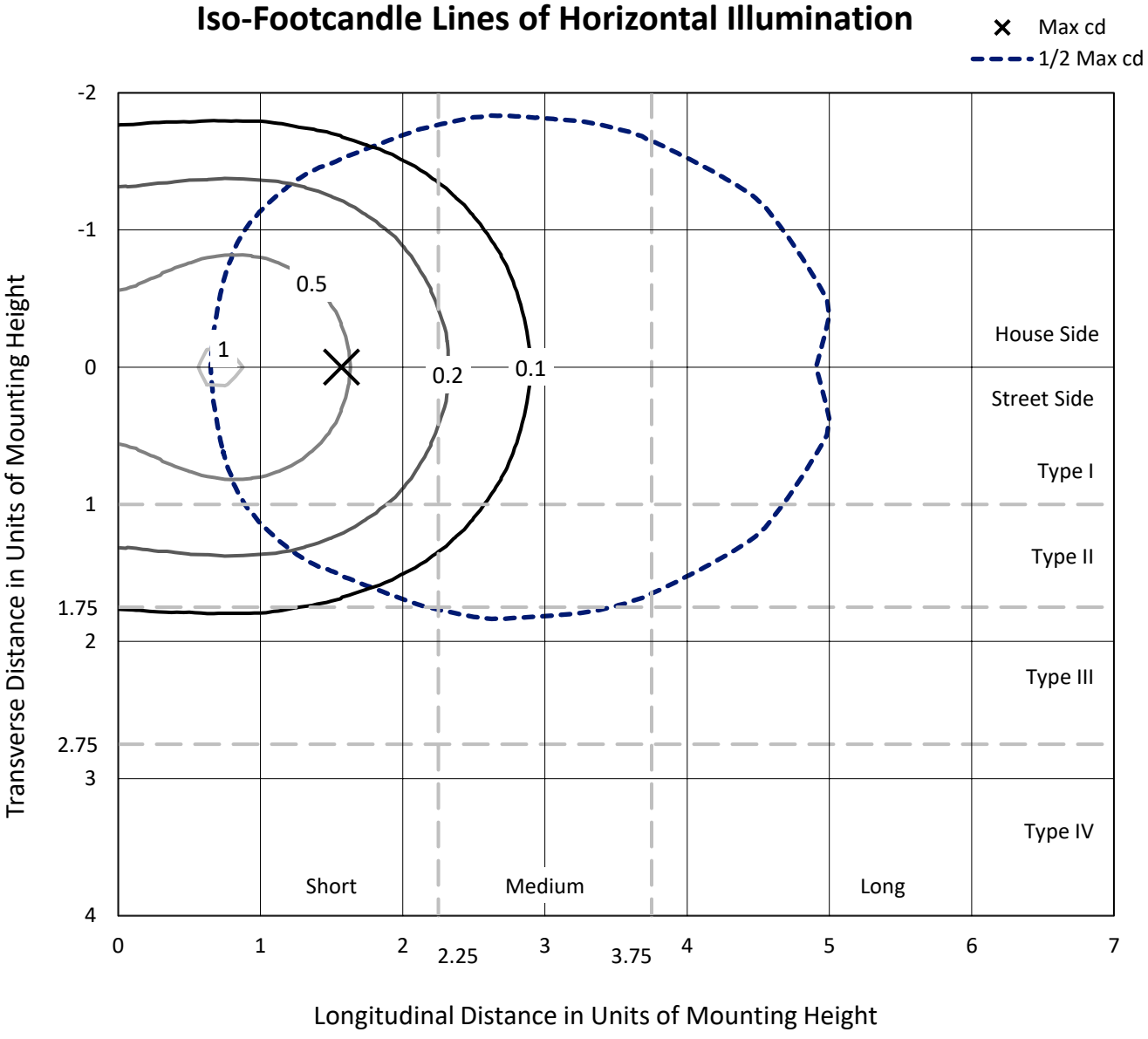
Scaled Data Report

REPORT NUMBER: P823389
CATALOG NUMBER: TTN-D2-740-U-RW

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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REPORT NUMBER: P823389
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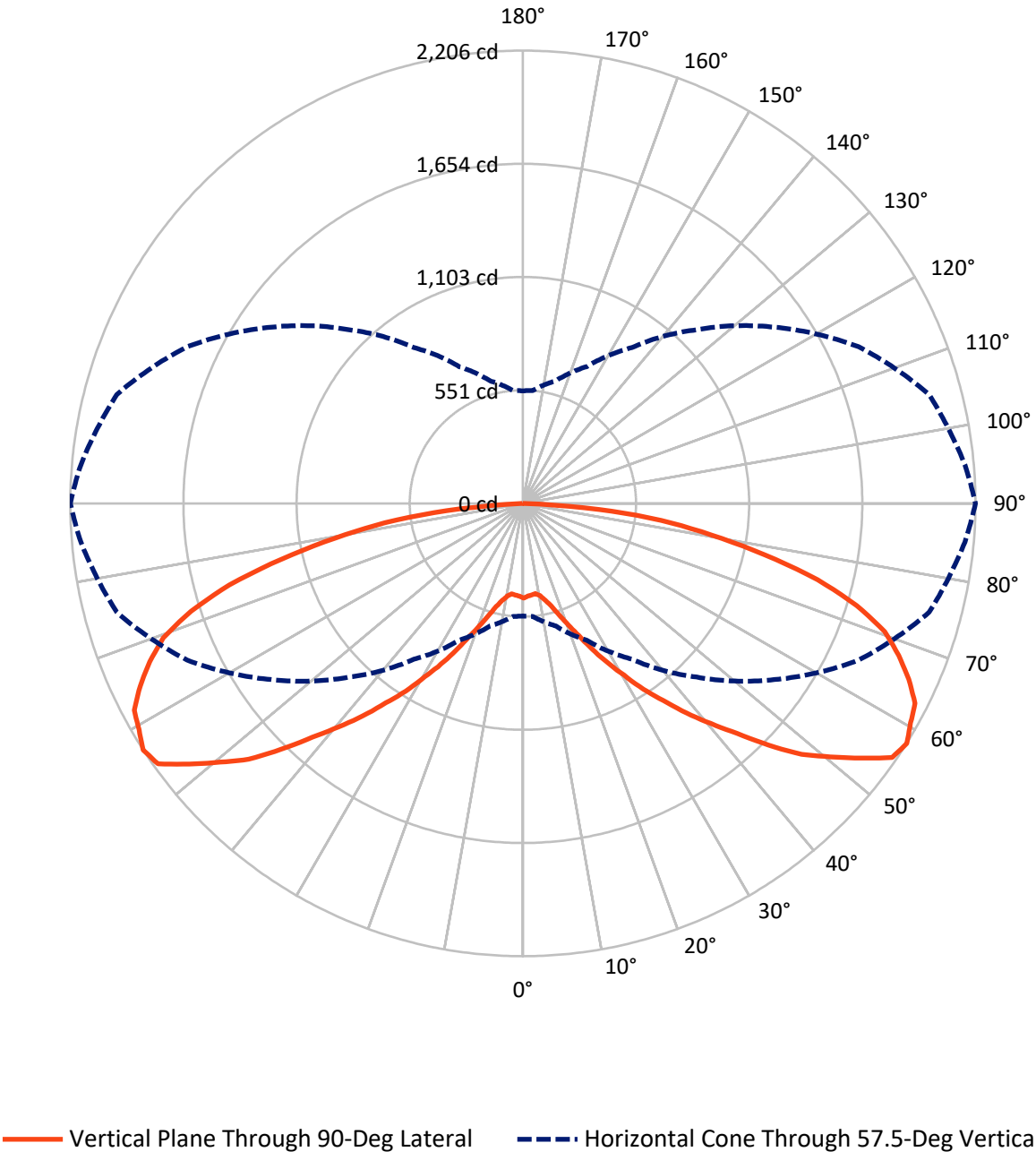
Luminous Intensity Polar Plot



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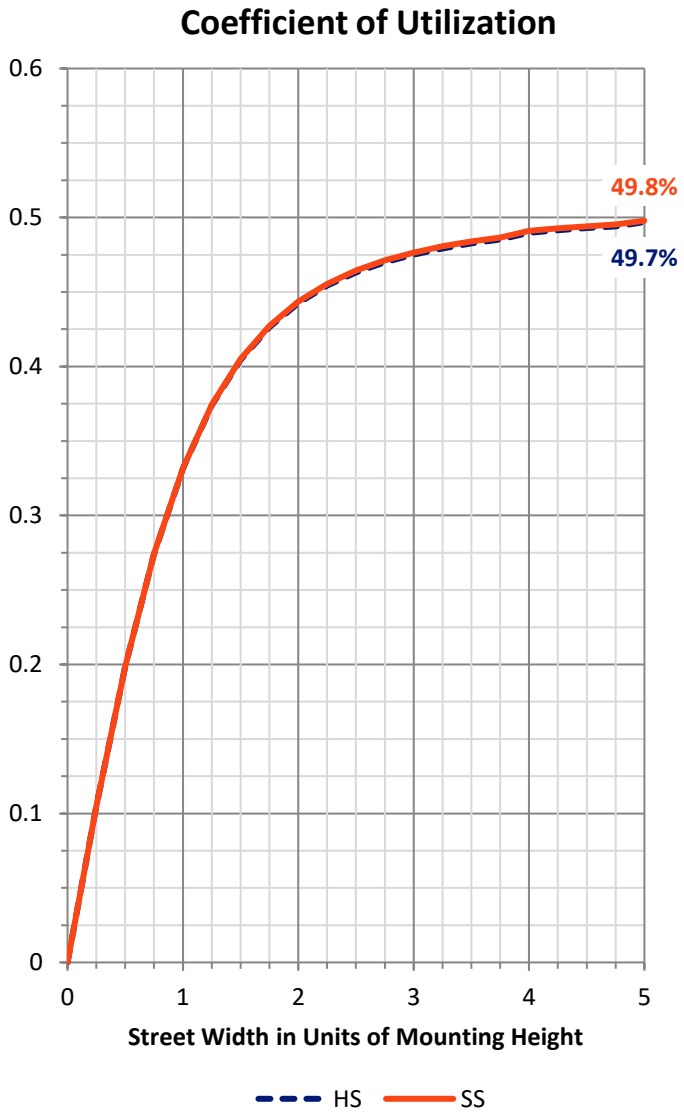
REPORT NUMBER: P823389
CATALOG NUMBER: TTN-D2-740-U-RW

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2577.5	0.0	2577.5
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2577.5	0.0	2577.5
	% Fixture	50.0	0.0	50.0
Total	Lumens	5155.0	0.0	5155.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	43.2	0.8
10°-20°	138.2	2.7
20°-30°	288.4	5.6
30°-40°	517.3	10.0
40°-50°	826.5	16.0
50°-60°	1131.6	22.0
60°-70°	1167.2	22.6
70°-80°	830.0	16.1
80°-90°	212.5	4.1
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°	5155.0	100.0
0°-180°	5155.0	100.0



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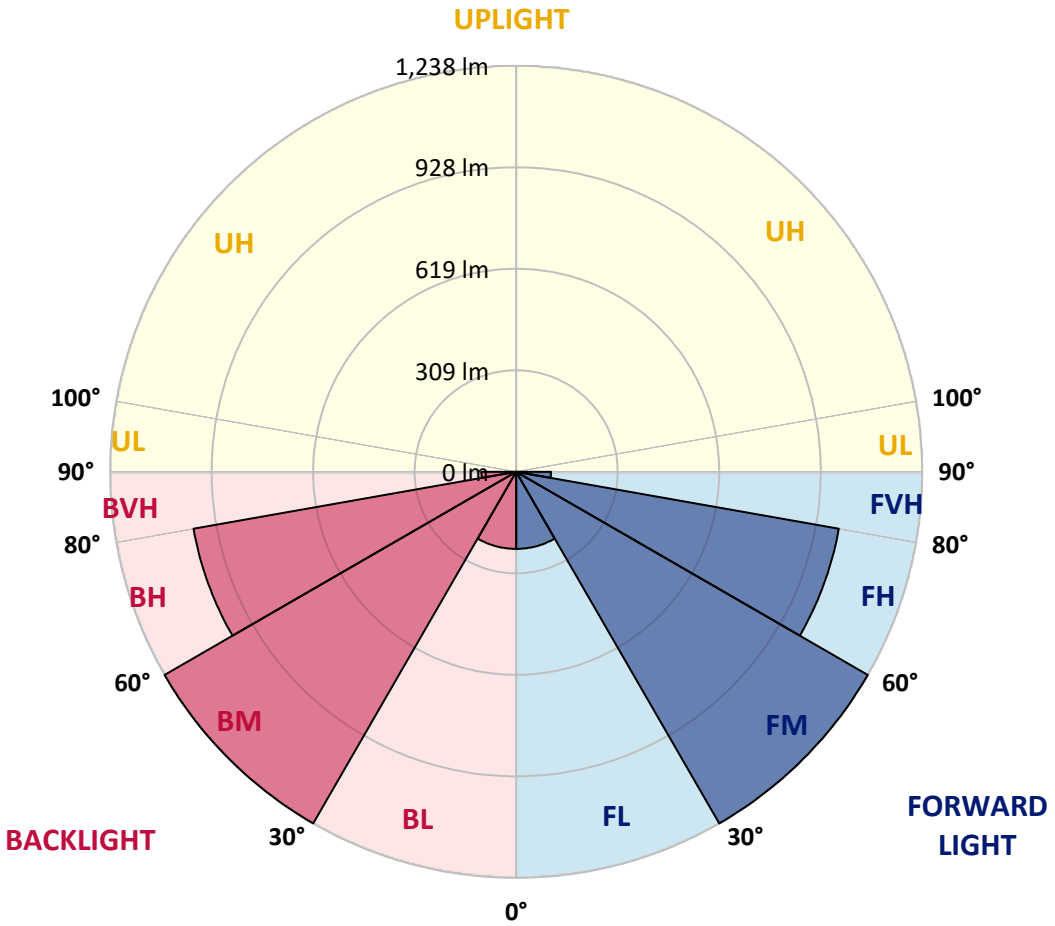
Scaled Data Report

REPORT NUMBER: P823389
CATALOG NUMBER: TTN-D2-740-U-RW

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	235.0	4.6			
FM	(30°-60°)	1237.7	24.0			
FH	(60°-80°)	998.6	19.4			G1/1800
FVH	(80°-90°)	106.2	2.1			G2/225
BL	(0°-30°)	235.0	4.6	B1/500		
BM	(30°-60°)	1237.7	24.0	B2/2500		
BH	(60°-80°)	998.6	19.4	B2/1000		G2/1000
BVH	(80°-90°)	106.2	2.1			G2/225
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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REPORT NUMBER: P823389
CATALOG NUMBER: TTN-D2-740-U-RW

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	461.1	*461.1*
2.5°	461.1	461.1	456.8	456.8	456.8	452.4	452.4	452.4	452.4	448.1	*452.4*
5°	461.1	461.1	461.1	461.1	456.8	452.4	452.4	452.4	448.1	448.1	*448.1*
7.5°	456.8	456.8	456.8	456.8	452.4	448.1	448.1	448.1	443.7	443.7	*443.7*
10°	452.4	456.8	452.4	452.4	448.1	448.1	452.4	452.4	456.8	456.8	*456.8*
12.5°	448.1	448.1	448.1	452.4	452.4	456.8	465.5	474.2	478.5	482.9	*482.9*
15°	448.1	448.1	452.4	456.8	465.5	474.2	487.2	500.3	509.0	517.7	*517.7*
17.5°	448.1	448.1	452.4	465.5	478.5	495.9	517.7	535.1	552.5	565.5	*569.9*
20°	448.1	448.1	456.8	474.2	500.3	526.4	556.8	582.9	609.0	630.8	*630.8*
22.5°	452.4	456.8	465.5	487.2	526.4	565.5	604.7	643.8	674.3	700.4	*700.4*
25°	461.1	461.1	474.2	509.0	556.8	609.0	665.6	713.5	752.6	787.4	*787.4*
27.5°	465.5	469.8	487.2	530.7	591.6	656.9	735.2	791.8	844.0	874.4	*878.8*
30°	474.2	478.5	504.6	548.1	622.1	704.8	796.1	874.4	931.0	961.4	*970.1*
32.5°	478.5	482.9	517.7	569.9	652.5	748.3	852.7	952.7	1031.0	1065.8	*1078.9*
35°	491.6	495.9	530.7	591.6	687.4	796.1	917.9	1035.4	1126.7	1170.2	*1178.9*
37.5°	504.6	509.0	543.8	613.4	722.2	848.3	987.5	1122.4	1226.8	1279.0	*1296.4*
40°	513.3	517.7	556.8	639.5	761.3	904.9	1065.8	1213.7	1331.2	1396.5	*1409.5*
42.5°	526.4	530.7	574.2	661.3	796.1	961.4	1148.5	1313.8	1440.0	1513.9	*1531.3*
45°	539.4	543.8	591.6	687.4	835.3	1022.3	1231.1	1431.3	1574.8	1661.8	*1679.2*
47.5°	552.5	556.8	609.0	713.5	874.4	1083.2	1318.2	1535.7	1709.7	1792.3	*1827.1*
50°	556.8	565.5	617.7	730.9	900.5	1135.4	1392.1	1640.1	1822.8	1931.5	*1940.2*
52.5°	561.2	569.9	626.4	743.9	922.3	1174.6	1453.0	1727.1	1940.2	2070.8	*2062.1*
55°	565.5	565.5	626.4	743.9	931.0	1200.7	1496.5	1783.6	2018.6	2123.0	*2183.9*
57.5°	*548.1*	*552.5*	*617.7*	*735.2*	*926.6*	*1196.3*	*1496.5*	*1805.4*	*2049.0*	*2162.1*	*2205.6*
60°	526.4	535.1	596.0	713.5	909.2	1183.3	1487.8	1796.7	2062.1	2183.9	*2170.8*
62.5°	495.9	513.3	565.5	683.0	883.1	1152.8	1474.8	1774.9	2031.6	2157.8	*2144.7*
65°	461.1	478.5	526.4	652.5	826.6	1078.9	1405.2	1731.4	1948.9	2092.5	*2066.4*
67.5°	426.3	439.4	487.2	600.3	761.3	1000.6	1313.8	1635.7	1831.5	1988.1	*1975.0*
70°	387.2	391.5	439.4	539.4	696.1	922.3	1226.8	1500.9	1727.1	1844.5	*1870.6*
72.5°	339.3	339.3	387.2	474.2	617.7	817.9	1109.3	1348.6	1561.8	1661.8	*1701.0*
75°	278.4	282.8	321.9	400.2	517.7	700.4	944.0	1187.6	1366.0	1470.4	*1483.5*
77.5°	217.5	221.9	252.3	317.6	417.6	565.5	778.7	970.1	1139.8	1231.1	*1205.0*
80°	156.6	161.0	182.7	230.6	308.9	422.0	600.3	770.0	891.8	965.8	*931.0*
82.5°	95.7	100.1	113.1	143.6	195.8	274.1	408.9	535.1	630.8	691.7	*678.7*
85°	47.9	47.9	56.6	65.3	82.7	121.8	195.8	269.7	343.7	387.2	*374.1*
87.5°	8.7	13.1	13.1	13.1	13.1	8.7	13.1	13.1	13.1	21.8	*8.7*
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

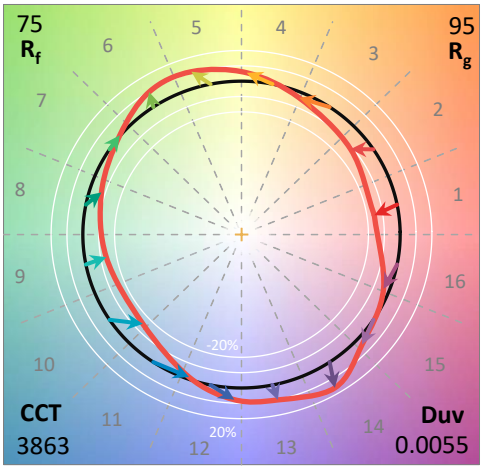
Test Information

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

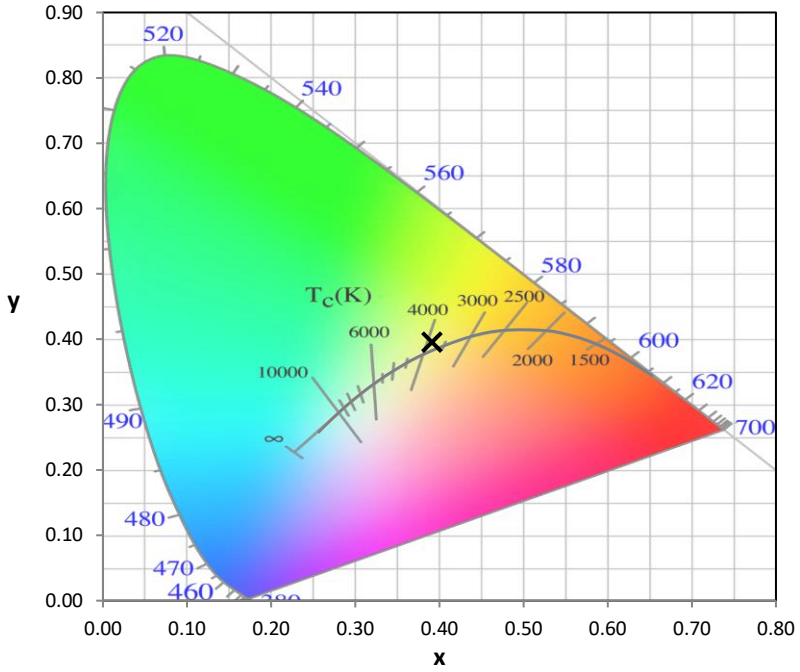
Stabilization Time:	37M
Operation Time:	1H 37M
Sphere Temperature (°C):	25.0

REPORT NUMBER: SP1-2411-284-2

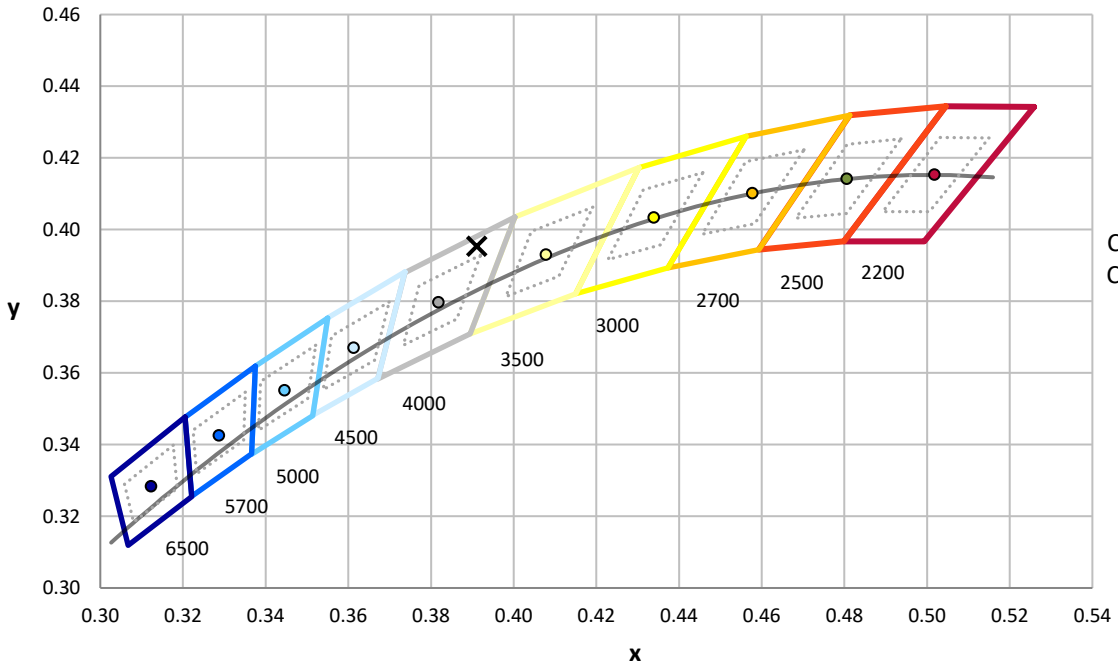
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-2

CIE 1931 Chromaticity Diagram



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

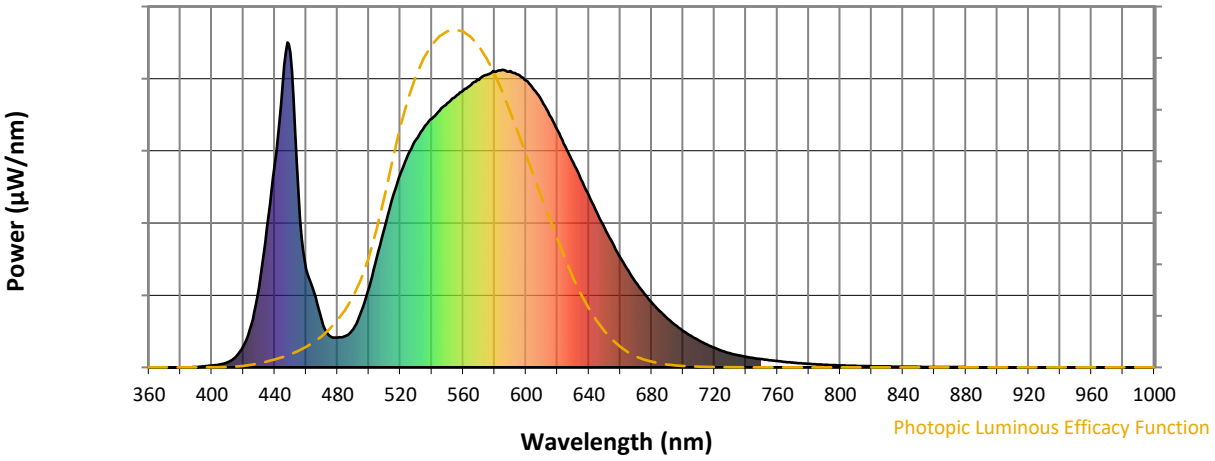


CCT = 3863K
CIE x = 0.3911
CIE y = 0.3954
Duv = 0.0055

Point lies inside the ANSI 4000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-2

Photopic Flux vs. Wavelength

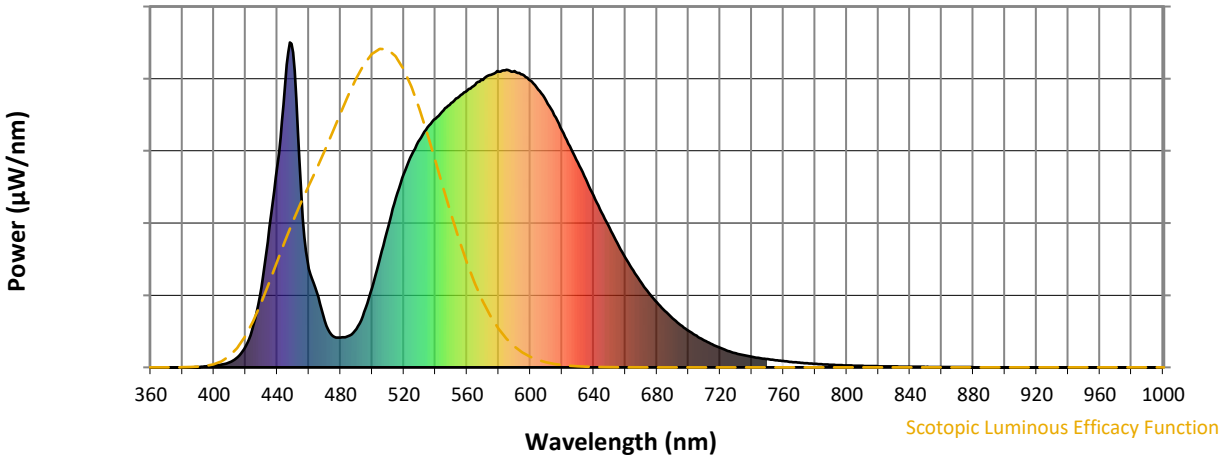


Photopic Lumens: NR

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

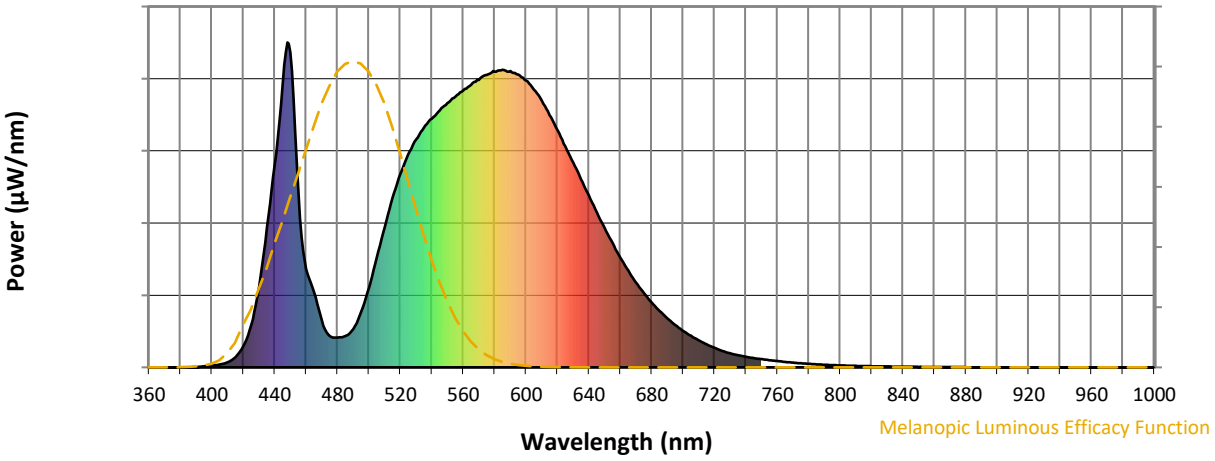


Scotopic Lumens: NR **S/P: 1.45**

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			

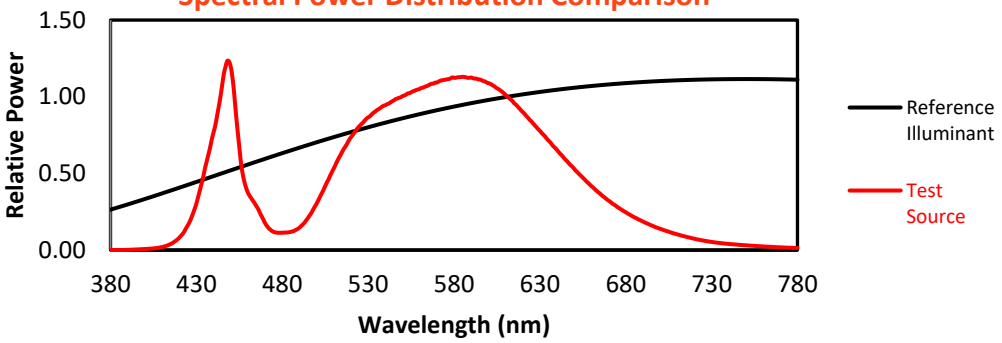
REPORT NUMBER: SP1-2411-284-2

TM-30-18

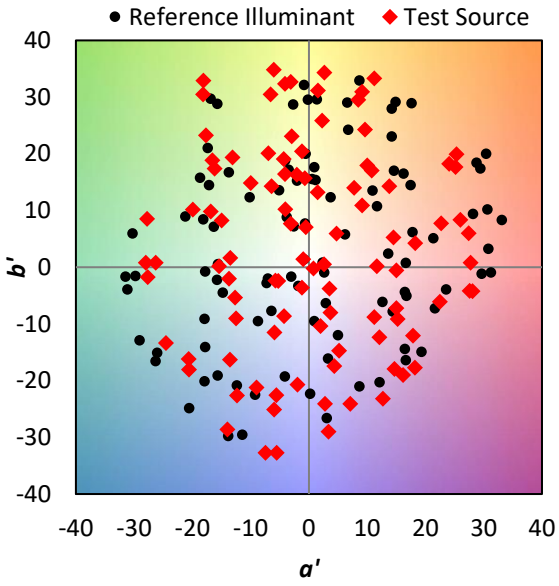
Summary

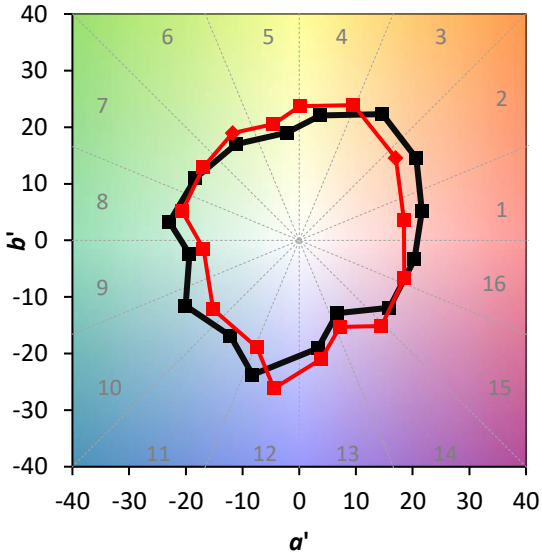
R_f = 74.7
R_g = 95.4
CIE R_a = 71.9
R_9 = -23.5

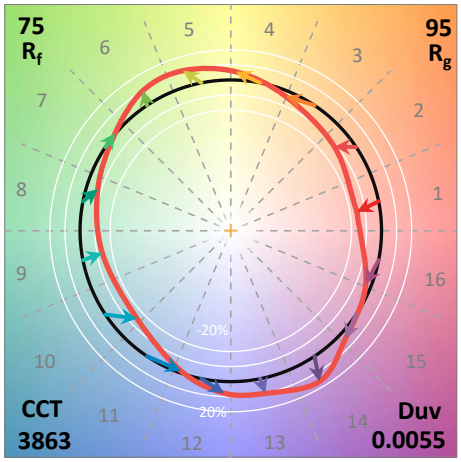
Spectral Power Distribution Comparison

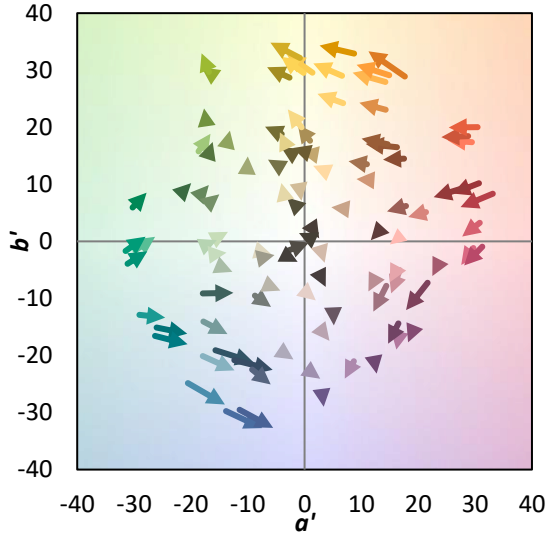


Color Vector Graphics







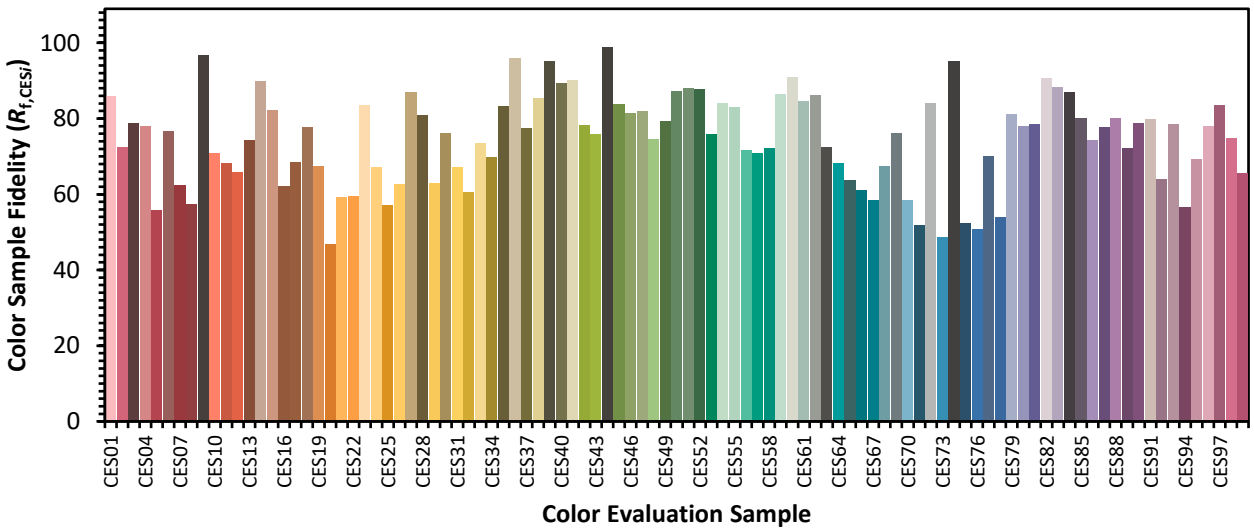


REPORT NUMBER: SP1-2411-284-2

TM-30-18

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

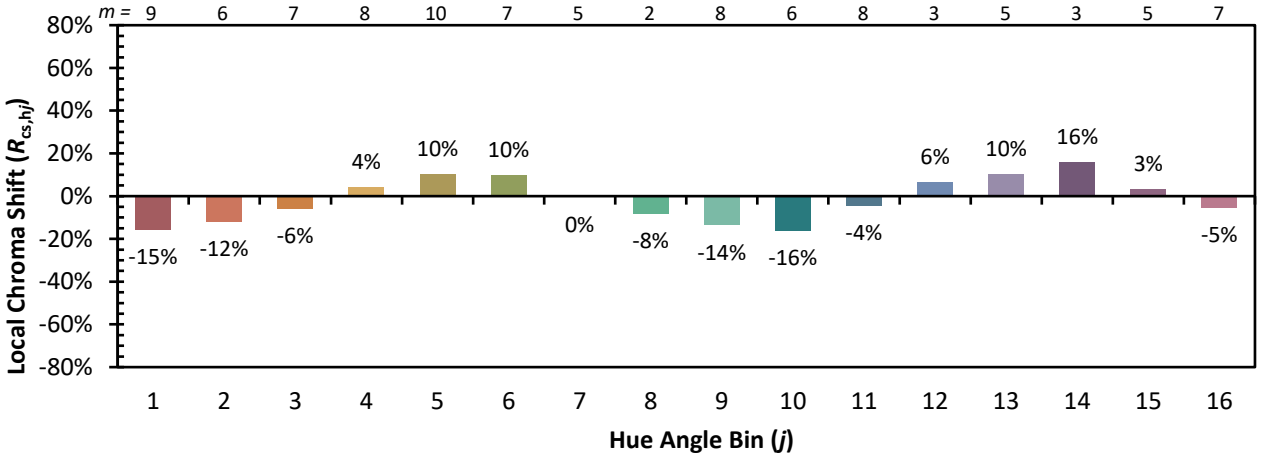
CES01 = 85	CES26 = 63	CES51 = 88	CES76 = 51
CES02 = 61	CES27 = 87	CES52 = 88	CES77 = 70
CES03 = 30	CES28 = 81	CES53 = 76	CES78 = 54
CES04 = 70	CES29 = 63	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 76	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 67	CES56 = 72	CES81 = 79
CES07 = 40	CES32 = 61	CES57 = 71	CES82 = 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	

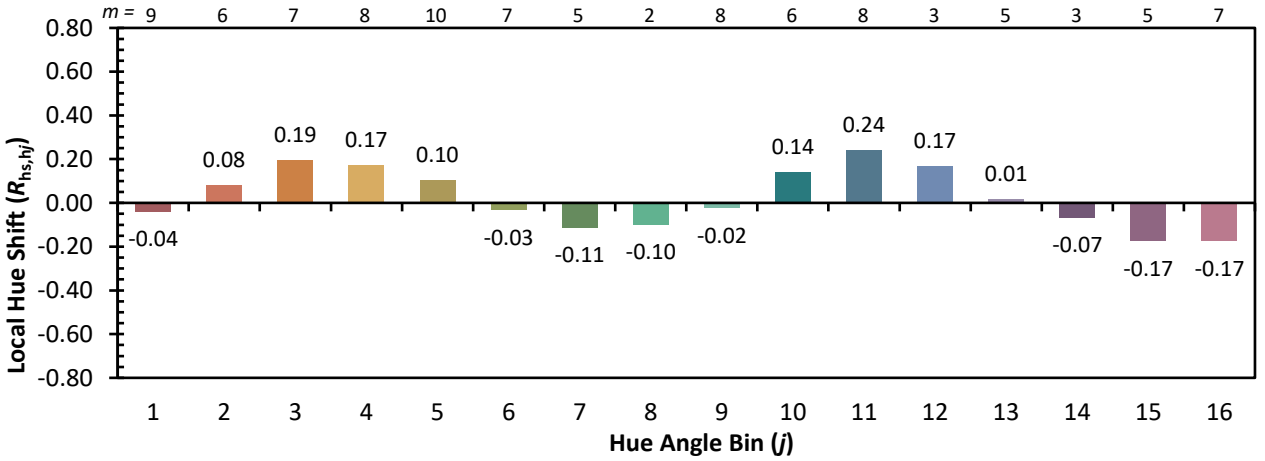


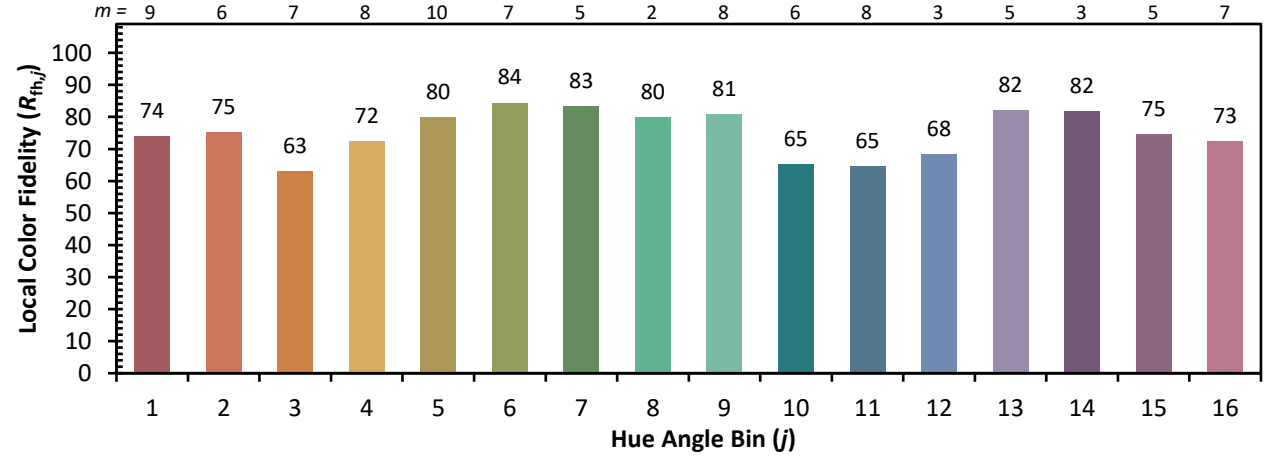
REPORT NUMBER: SP1-2411-284-2

TM-30-18

Color Rendition by Hue-Angle Bin



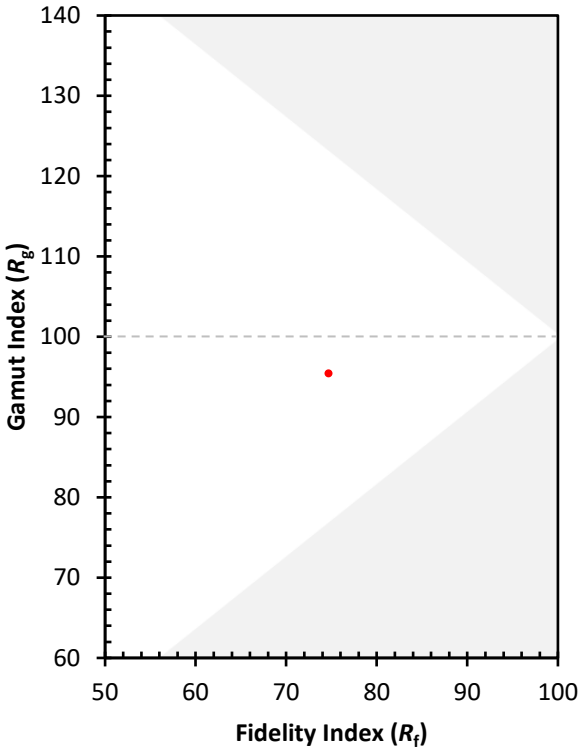


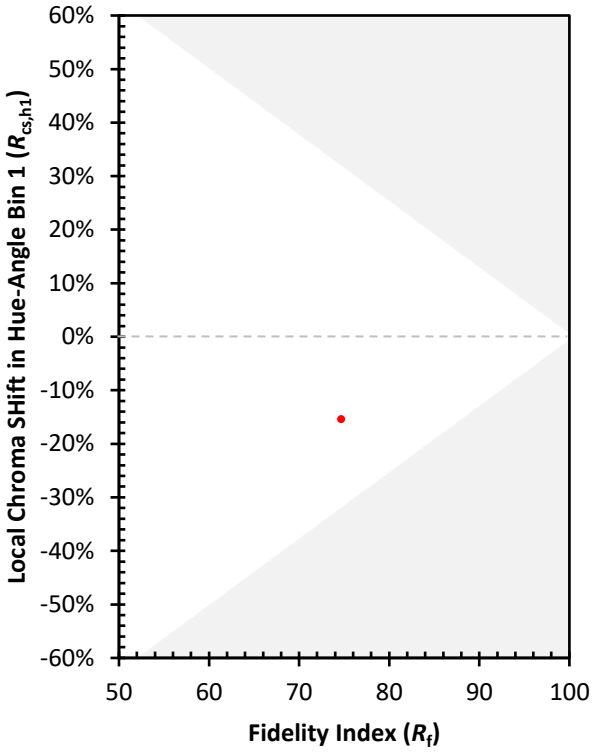


REPORT NUMBER: SP1-2411-284-2

TM-30-18

Measure Comparisons





(END OF REPORT)