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: P833240

Luminaire Tested: **TTN-D1-750-U-RW-UPL2**

Issue Date: 5/15/2024

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:	P833240
	REPORT IS FROM IESNA LM-79-08 TEST DATA - UPLIGHT (G3-2308-121-4) AND
Test Lab:	INNOVATION CENTER
Issue Date:	5/15/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line:	McGRAW-EDISON
Catalog Number:	TTN-D1-750-U-RW-UPL2
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
	5000K, 70 CRI LEDS AND RECTANGULAR DISTRIBUTION
Light Source:	-
Ballast/Driver:	-

Summary

Lumens per Lamp:	N/A
Luminaire Lumens:	3863.7 lumens
Efficiency:	N/A
Efficacy:	125.0 lumens/watt
Luminous Opening:	Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification:	Type II - Short
BUG Rating:	B2 - U4 - G2

Input Watts (W):	30.9
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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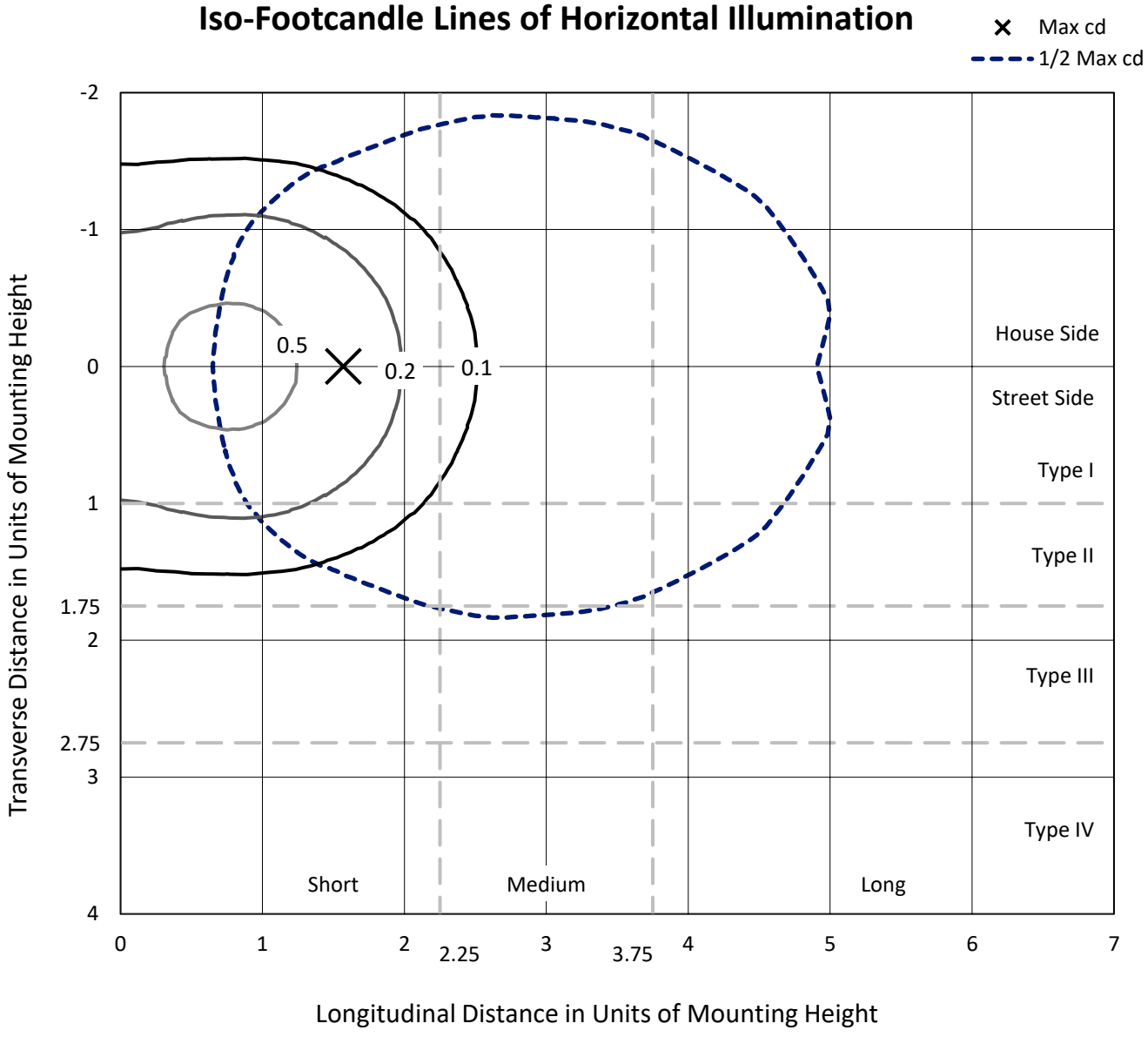
REPORT NUMBER: P833240
CATALOG NUMBER: TTN-D1-750-U-RW-UPL2

Iso-Footcandle Lines of Horizontal Illumination



Based on 25 foot mounting height. Maximum calculated value = 0.7 fc
Type II - Short - N/A

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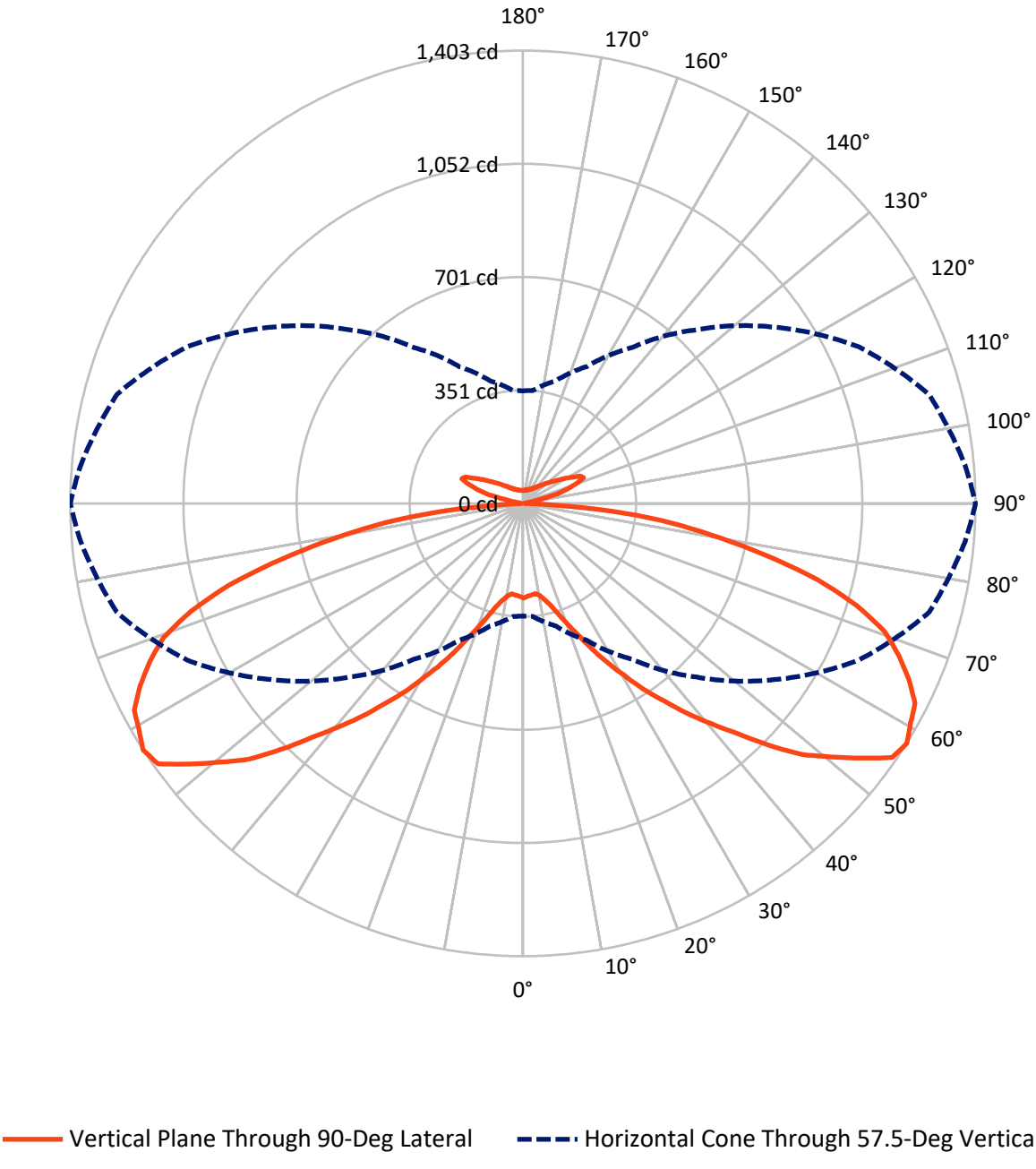
Luminous Intensity Polar Plot



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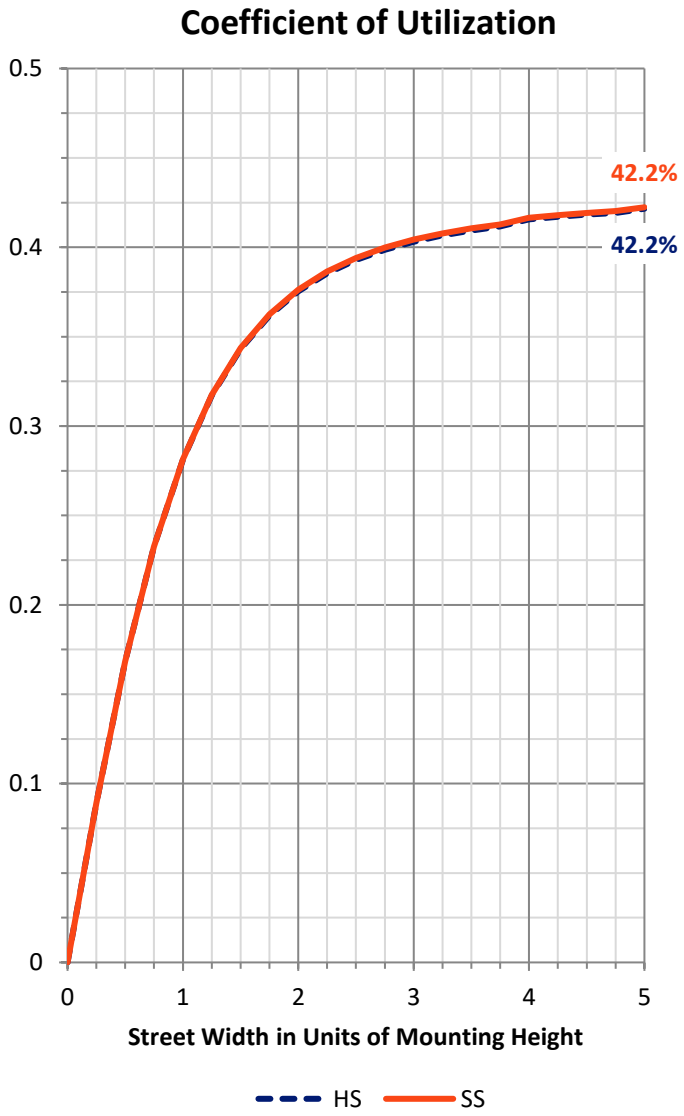
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1639.4	292.5	1931.8
	% Fixture	42.4	7.6	50.0
Street Side	Lumens	1639.4	292.5	1931.8
	% Fixture	42.4	7.6	50.0
Total	Lumens	3278.8	584.9	3863.7
	% Fixture	84.9	15.1	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.5	0.7
10°-20°	87.9	2.3
20°-30°	183.4	4.7
30°-40°	328.9	8.5
40°-50°	525.6	13.6
50°-60°	719.5	18.6
60°-70°	742.2	19.2
70°-80°	527.8	13.7
80°-90°	135.9	3.5
90°-100°	13.1	0.3
100°-110°	132.7	3.4
110°-120°	194.0	5.0
120°-130°	112.6	2.9
130°-140°	59.7	1.5
140°-150°	35.4	0.9
150°-160°	21.8	0.6
160°-170°	11.9	0.3
170°-180°	3.9	0.1
0°-90°	3278.8	84.9
0°-180°	3863.7	100.0



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REPORT NUMBER: P833240
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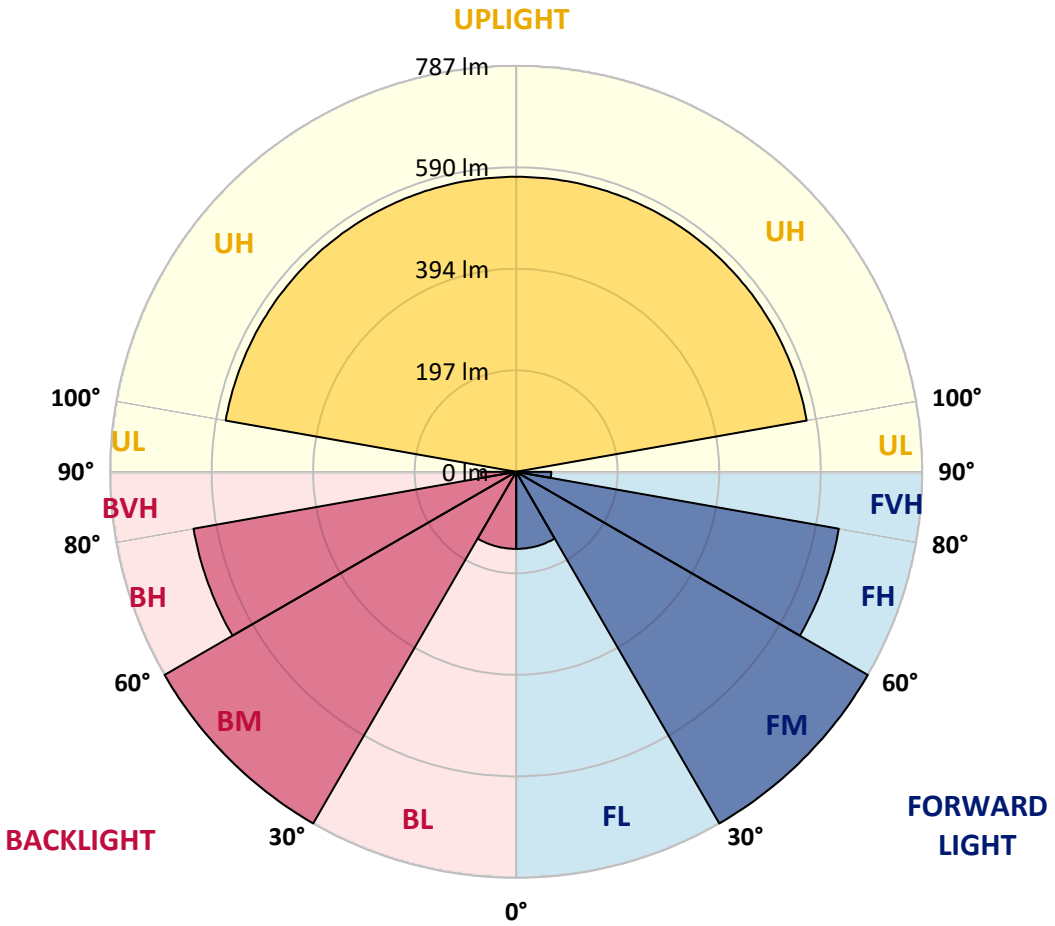
LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit B	U	G
FL	(0°-30°)	149.4	3.9			
FM	(30°-60°)	787.0	20.4			
FH	(60°-80°)	635.0	16.4			G0/660
FVH	(80°-90°)	67.9	1.8			G1/100
BL	(0°-30°)	149.4	3.9	B1/500		
BM	(30°-60°)	787.0	20.4	B1/1000		
BH	(60°-80°)	635.0	16.4	B2/1000		G2/1000
BVH	(80°-90°)	67.9	1.8			G1/100
UL	(90°-100°)	13.1	0.3		U2/50	
UH	(100°-180°)	571.8	14.8		U4/1000	

BUG Rating: B2-U4-G2
Type II Short



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REPORT NUMBER: P833240
CATALOG NUMBER: TTN-D1-750-U-RW-UPL2

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2
2.5°	293.2	293.2	290.5	290.5	290.5	287.7	287.7	287.7	287.7	284.9	287.7
5°	293.2	293.2	293.2	293.2	290.5	287.7	287.7	287.7	284.9	284.9	284.9
7.5°	290.5	290.5	290.5	290.5	287.7	284.9	284.9	284.9	282.2	282.2	282.2
10°	287.7	290.5	287.7	287.7	284.9	284.9	287.7	287.7	290.5	290.5	290.5
12.5°	284.9	284.9	284.9	287.7	287.7	290.5	296.0	301.5	304.3	307.1	307.1
15°	284.9	284.9	287.7	290.5	296.0	301.5	309.8	318.1	323.7	329.2	329.2
17.5°	284.9	284.9	287.7	296.0	304.3	315.4	329.2	340.3	351.3	359.6	362.4
20°	284.9	284.9	290.5	301.5	318.1	334.7	354.1	370.7	387.3	401.1	401.1
22.5°	287.7	290.5	296.0	309.8	334.7	359.6	384.5	409.4	428.8	445.4	445.4
25°	293.2	293.2	301.5	323.7	354.1	387.3	423.2	453.7	478.6	500.7	500.7
27.5°	296.0	298.8	309.8	337.5	376.2	417.7	467.5	503.5	536.7	556.0	558.8
30°	301.5	304.3	320.9	348.6	395.6	448.1	506.2	556.0	592.0	611.4	616.9
32.5°	304.3	307.1	329.2	362.4	414.9	475.8	542.2	605.8	655.6	677.7	686.0
35°	312.6	315.4	337.5	376.2	437.1	506.2	583.7	658.4	716.5	744.1	749.7
37.5°	320.9	323.7	345.8	390.1	459.2	539.4	628.0	713.7	780.1	813.3	824.4
40°	326.4	329.2	354.1	406.6	484.1	575.4	677.7	771.8	846.5	888.0	896.3
42.5°	334.7	337.5	365.2	420.5	506.2	611.4	730.3	835.4	915.7	962.7	973.7
45°	343.0	345.8	376.2	437.1	531.1	650.1	782.9	910.1	1001.4	1056.7	1067.8
47.5°	351.3	354.1	387.3	453.7	556.0	688.8	838.2	976.5	1087.2	1139.7	1161.9
50°	354.1	359.6	392.8	464.7	572.6	722.0	885.2	1042.9	1159.1	1228.2	1233.8
52.5°	356.9	362.4	398.4	473.0	586.5	746.9	924.0	1098.2	1233.8	1316.8	1311.2
55°	359.6	359.6	398.4	473.0	592.0	763.5	951.6	1134.2	1283.6	1350.0	1388.7
57.5°	348.6	351.3	392.8	467.5	589.2	760.7	951.6	1148.0	1302.9	1374.9	1402.5
60°	334.7	340.3	379.0	453.7	578.2	752.4	946.1	1142.5	1311.2	1388.7	1380.4
62.5°	315.4	326.4	359.6	434.3	561.6	733.1	937.8	1128.7	1291.9	1372.1	1363.8
65°	293.2	304.3	334.7	414.9	525.6	686.0	893.5	1101.0	1239.3	1330.6	1314.0
67.5°	271.1	279.4	309.8	381.8	484.1	636.3	835.4	1040.1	1164.6	1264.2	1255.9
70°	246.2	249.0	279.4	343.0	442.6	586.5	780.1	954.4	1098.2	1172.9	1189.5
72.5°	215.8	215.8	246.2	301.5	392.8	520.1	705.4	857.6	993.1	1056.7	1081.6
75°	177.0	179.8	204.7	254.5	329.2	445.4	600.3	755.2	868.6	935.0	943.3
77.5°	138.3	141.1	160.4	201.9	265.6	359.6	495.2	616.9	724.8	782.9	766.3
80°	99.6	102.4	116.2	146.6	196.4	268.3	381.8	489.6	567.1	614.1	592.0
82.5°	60.9	63.6	71.9	91.3	124.5	174.3	260.0	340.3	401.1	439.8	431.5
85°	30.4	30.4	36.0	41.5	52.6	77.5	124.5	171.5	218.5	246.2	237.9
87.5°	5.5	8.3	8.3	8.3	8.3	5.5	8.3	8.3	8.3	13.8	5.5
90°	5.0	5.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	5.0	5.0
92.5°	5.0	5.0	5.0	7.0	8.0	7.0	8.0	6.0	6.0	5.0	5.0
95°	6.0	6.0	7.0	9.0	11.0	12.0	12.0	7.0	7.0	6.0	6.0
97.5°	8.0	9.0	9.0	11.0	18.0	33.0	20.0	10.0	10.0	9.0	8.0
100°	13.0	14.0	14.0	25.0	53.0	71.1	51.0	26.0	19.0	14.0	14.0
102.5°	42.0	44.0	54.0	81.1	120.1	109.1	92.1	87.1	60.0	48.0	46.0
105°	107.1	106.1	114.1	135.1	168.1	165.1	152.1	138.1	119.1	110.1	110.1
107.5°	141.1	141.1	148.1	166.1	191.1	223.2	226.2	179.1	157.1	147.1	146.1
110°	159.1	159.1	165.1	180.1	213.2	258.2	256.2	221.2	194.1	181.1	179.1

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REPORT NUMBER: P833240
CATALOG NUMBER: TTN-D1-750-U-RW-UPL2

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	163.1	164.1	172.1	195.1	231.2	251.2	242.2	228.2	216.2	206.2	*204.2*
115°	169.1	169.1	178.1	200.2	220.2	228.2	218.2	207.2	199.2	195.1	*197.1*
117.5°	167.1	170.1	172.1	184.1	197.1	203.2	198.1	183.1	177.1	175.1	*172.1*
120°	155.1	155.1	157.1	163.1	170.1	173.1	171.1	161.1	156.1	155.1	*153.1*
122.5°	138.1	139.1	138.1	141.1	146.1	149.1	147.1	139.1	137.1	137.1	*135.1*
125°	121.1	121.1	120.1	122.1	125.1	124.1	125.1	121.1	120.1	120.1	*119.1*
127.5°	109.1	108.1	106.1	107.1	108.1	108.1	109.1	105.1	106.1	107.1	*106.1*
130°	97.1	97.1	95.1	95.1	95.1	93.1	95.1	93.1	94.1	95.1	*96.1*
132.5°	86.1	86.1	83.1	82.1	82.1	82.1	83.1	82.1	84.1	86.1	*86.1*
135°	77.1	77.1	74.1	75.1	75.1	74.1	75.1	74.1	76.1	77.1	*77.1*
137.5°	70.1	70.1	68.1	68.1	68.1	67.1	68.1	68.1	69.1	71.1	*72.1*
140°	64.0	64.0	63.0	63.0	62.0	63.0	63.0	63.0	64.0	65.0	*65.0*
142.5°	61.0	60.0	59.0	58.0	59.0	59.0	59.0	58.0	59.0	61.0	*61.0*
145°	56.0	56.0	55.0	55.0	55.0	56.0	55.0	55.0	56.0	56.0	*57.0*
147.5°	53.0	53.0	52.0	53.0	53.0	53.0	53.0	52.0	53.0	53.0	*54.0*
150°	52.0	51.0	50.0	51.0	51.0	50.0	50.0	50.0	50.0	51.0	*51.0*
152.5°	49.0	49.0	48.0	49.0	48.0	48.0	48.0	48.0	48.0	49.0	*50.0*
155°	47.0	47.0	46.0	47.0	47.0	47.0	47.0	47.0	47.0	47.0	*47.0*
157.5°	45.0	46.0	45.0	45.0	45.0	45.0	45.0	45.0	45.0	46.0	*46.0*
160°	44.0	44.0	44.0	44.0	43.0	43.0	43.0	44.0	44.0	44.0	*45.0*
162.5°	43.0	43.0	43.0	43.0	42.0	42.0	42.0	42.0	43.0	43.0	*44.0*
165°	43.0	42.0	42.0	42.0	41.0	41.0	41.0	41.0	42.0	43.0	*42.0*
167.5°	41.0	41.0	41.0	41.0	41.0	40.0	40.0	41.0	41.0	41.0	*42.0*
170°	41.0	41.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	*41.0*
172.5°	41.0	41.0	41.0	41.0	40.0	40.0	40.0	40.0	40.0	41.0	*41.0*
175°	41.0	41.0	41.0	41.0	40.0	40.0	40.0	41.0	41.0	41.0	*40.0*
177.5°	41.0	41.0	41.0	41.0	40.0	41.0	41.0	41.0	41.0	41.0	*41.0*
180°	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	41.0	*41.0*

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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: SP1-2411-284-3

Test Date: 11/21/2024

Luminaire Tested: TTN-D0-750-U-WQ

Data in this report applies to TT and TTN families of products

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

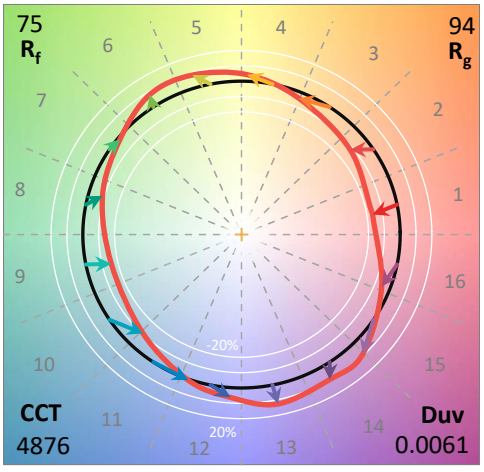
Test Information

Test Method:	LM-79-2019
Report Number:	SP1-2411-284-3
Test Lab:	COOPER LIGHTING SOLUTIONS
Photometer:	SP1 - 76IN SPHERE
Measurement Geometry:	4π
Issue Date:	11/21/2024
Manufacturer:	COOPER LIGHTING SOLUTIONS
Product Line:	MCGRAW EDISON
Catalog Number:	**TTN-D0-750-U-WQ**
Description:	TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 5000K, 70 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K):	4876
CIE u':	0.2086
CIE v':	0.4932
Duv:	0.0061
CIE x:	0.3502
CIE y:	0.3680
CIE z:	0.2818
Peak Wavelength (nm):	451
Dominant Wavelength (nm):	569
Purity:	15.51324
Rf:	74.6
Rg:	94.4

CRI (Ra):	72.6
R1:	69.5
R2:	77.0
R3:	82.2
R4:	72.6
R5:	69.3
R6:	67.6
R7:	83.7
R8:	58.6
R9:	-24.6
R10:	44.8
R11:	68.2
R12:	36.1
R13:	70.5
R14:	89.9
R15:	63.1



Test Conditions

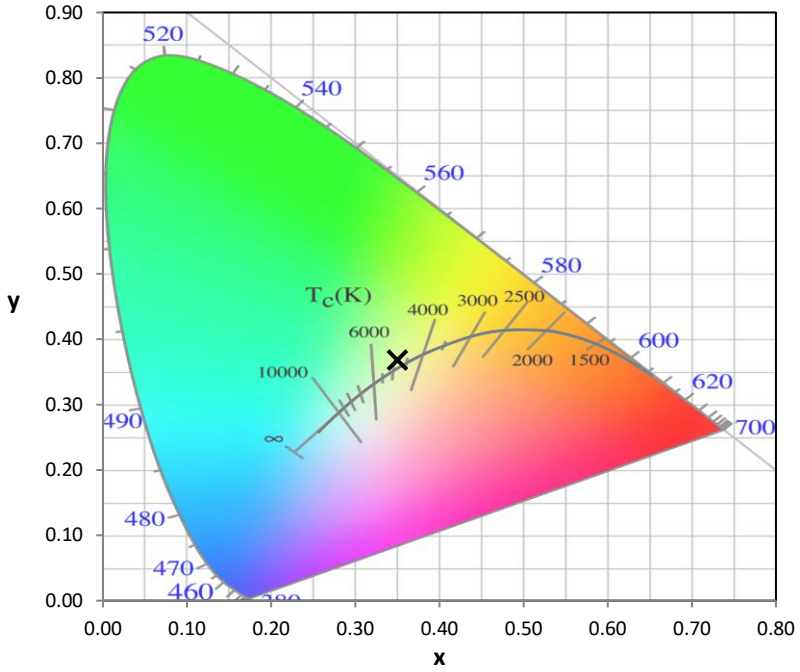
Stabilization Time:	51M
Operation Time:	1H 51M
Sphere Temperature (°C):	24.9

REPORT NUMBER: SP1-2411-284-3

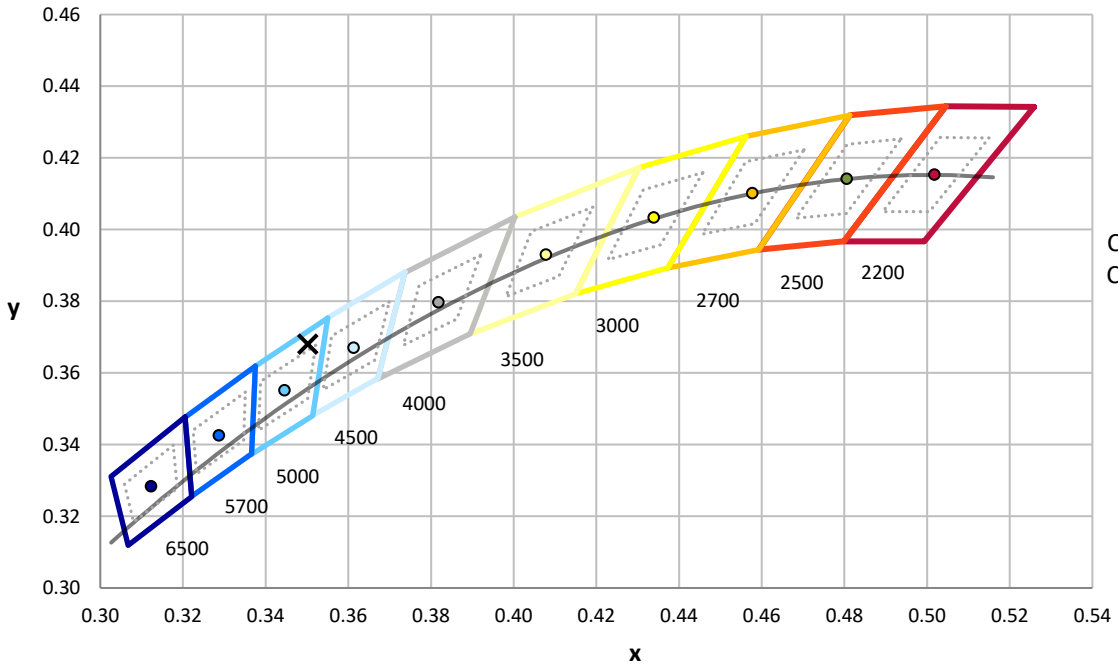
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-3

CIE 1931 Chromaticity Diagram



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

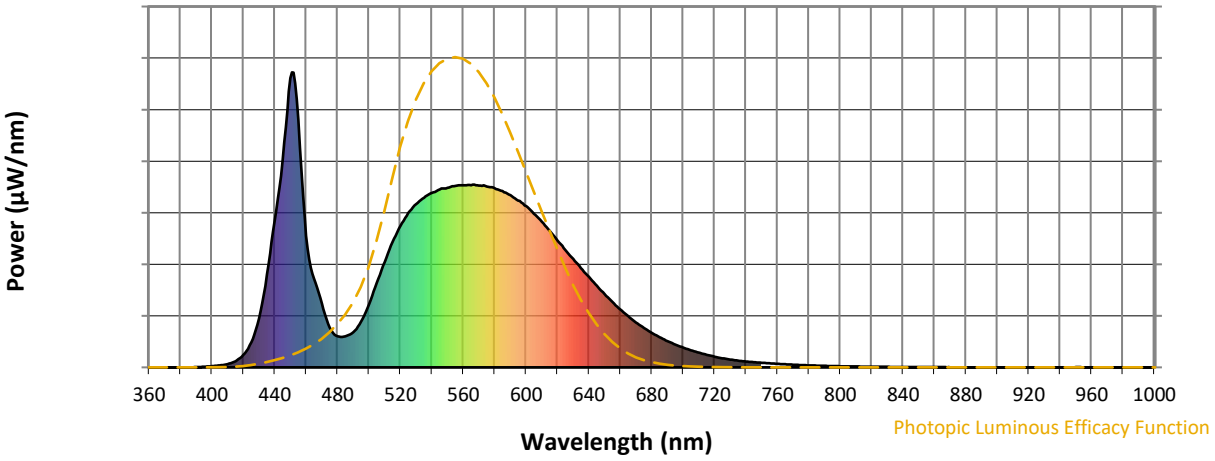


CCT = 4876K
CIE x = 0.3502
CIE y = 0.3680
Duv = 0.0061

Point lies inside the ANSI 5000K 7-step quadrangle

REPORT NUMBER: SP1-2411-284-3

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	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

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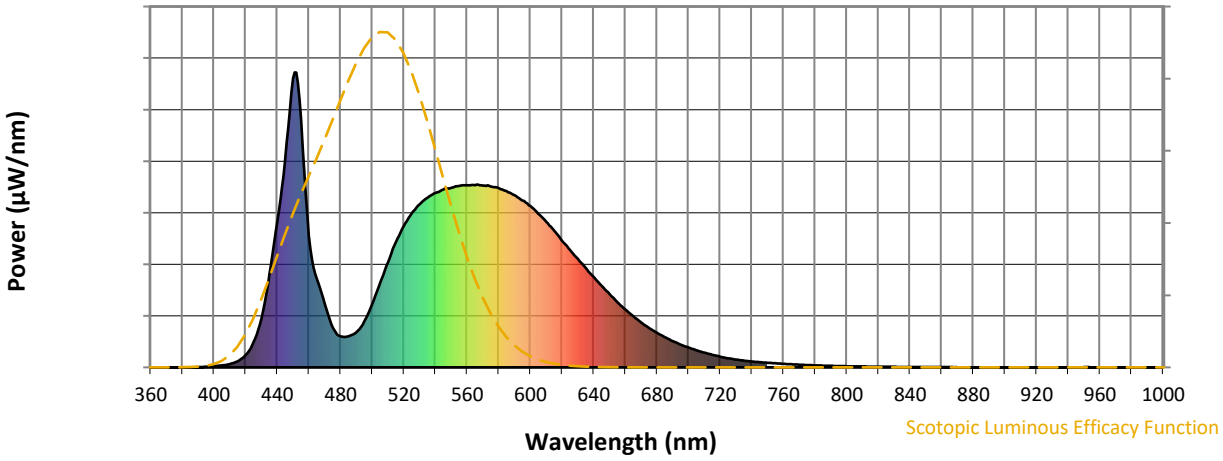
Scotopic Flux vs. Wavelength



Scotopic Lumens: NR **S/P: 1.74**

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	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

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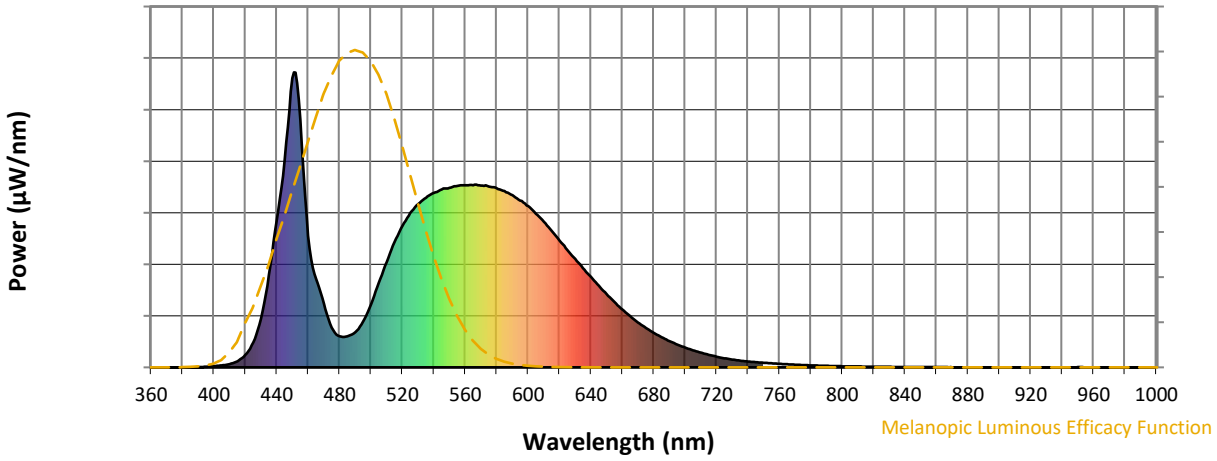
Melanopic Flux vs. Wavelength



Melanopic Lumens: NR **M/P: 3.51**

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	430	NR	750	16	NR	880	0	NR
365	0	NR	495	156	NR	625	398	NR	755	14	NR	885	0	NR
370	0	NR	500	214	NR	630	368	NR	760	12	NR	890	0	NR
375	0	NR	505	286	NR	635	336	NR	765	11	NR	895	0	NR
380	0	NR	510	357	NR	640	306	NR	770	9	NR	900	0	NR
385	0	NR	515	425	NR	645	276	NR	775	8	NR	905	0	NR
390	1	NR	520	480	NR	650	248	NR	780	7	NR	910	0	NR
395	2	NR	525	523	NR	655	221	NR	785	6	NR	915	0	NR
400	4	NR	530	554	NR	660	196	NR	790	5	NR	920	0	NR
405	7	NR	535	575	NR	665	173	NR	795	4	NR	925	0	NR
410	11	NR	540	592	NR	670	152	NR	800	4	NR	930	0	NR
415	21	NR	545	603	NR	675	133	NR	805	3	NR	935	0	NR
420	42	NR	550	609	NR	680	117	NR	810	3	NR	940	0	NR
425	85	NR	555	615	NR	685	102	NR	815	3	NR	945	0	NR
430	165	NR	560	617	NR	690	89	NR	820	2	NR	950	1	NR
435	316	NR	565	617	NR	695	77	NR	825	2	NR	955	0	NR
440	497	NR	570	616	NR	700	67	NR	830	2	NR	960	0	NR
445	702	NR	575	613	NR	705	58	NR	835	2	NR	965	0	NR
450	981	NR	580	607	NR	710	50	NR	840	1	NR	970	0	NR
455	840	NR	585	598	NR	715	43	NR	845	1	NR	975	0	NR
460	446	NR	590	583	NR	720	36	NR	850	1	NR	980	0	NR
465	300	NR	595	566	NR	725	31	NR	855	1	NR	985	0	NR
470	215	NR	600	546	NR	730	26	NR	860	1	NR	990	0	NR
475	135	NR	605	521	NR	735	23	NR	865	1	NR	995	0	NR
480	105	NR	610	494	NR	740	20	NR	870	1	NR	1000	0	NR
485	106	NR	615	463	NR	745	18	NR	875	0	NR			

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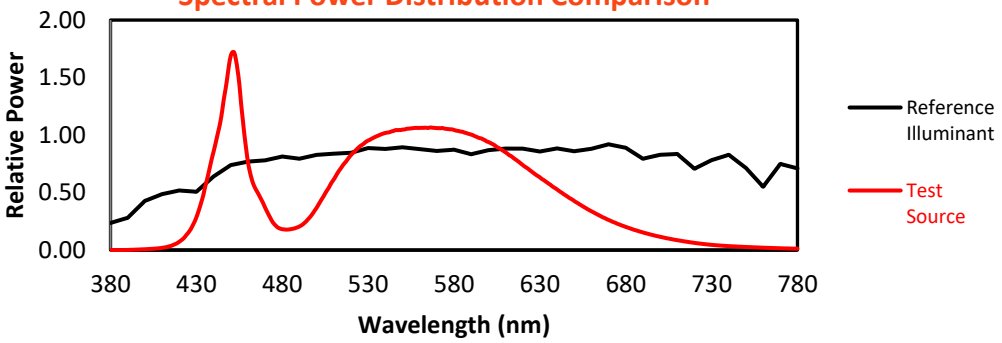
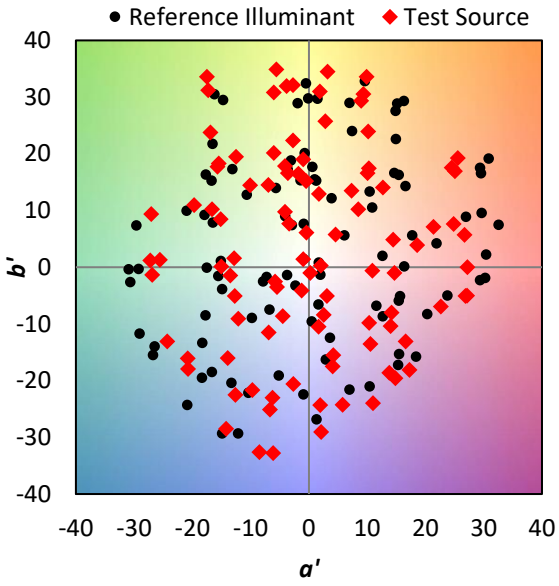
Summary

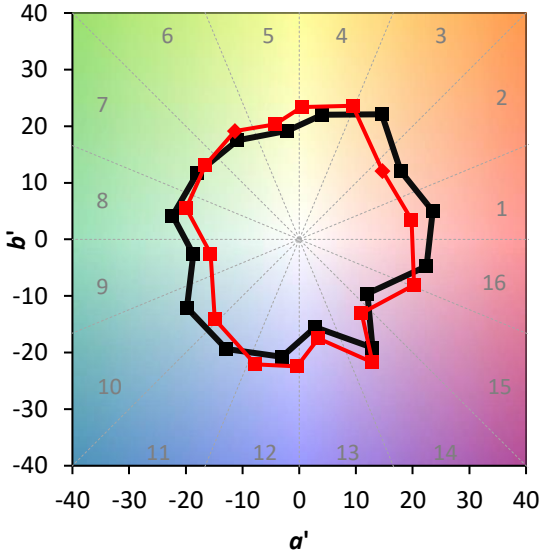
R_f = 74.6
R_g = 94.4
CIE R_a = 72.6
R_9 = -24.6

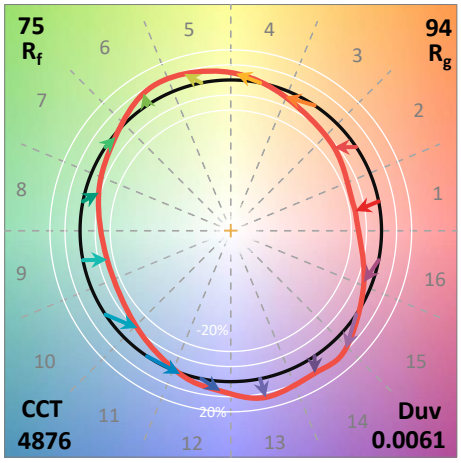
Spectral Power Distribution Comparison

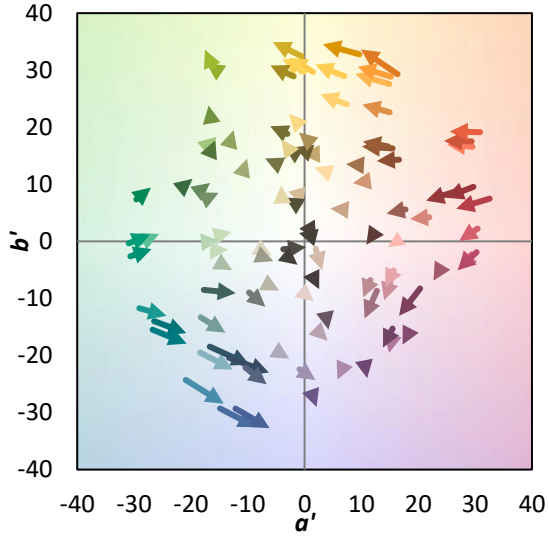


Color Vector Graphics









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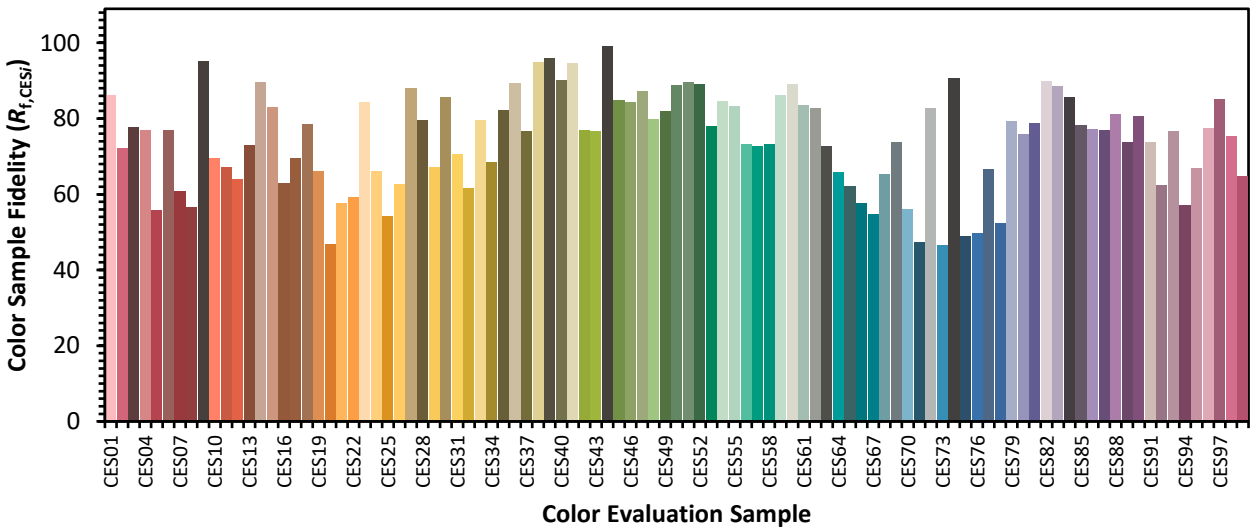
Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 63	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 78	CES78 = 52
CES04 = 69	CES29 = 67	CES54 = 85	CES79 = 79
CES05 = 46	CES30 = 86	CES55 = 83	CES80 = 76
CES06 = 50	CES31 = 70	CES56 = 73	CES81 = 79
CES07 = 39	CES32 = 62	CES57 = 73	CES82 = 90
CES08 = 38	CES33 = 80	CES58 = 73	CES83 = 89
CES09 = 29	CES34 = 69	CES59 = 86	CES84 = 86
CES10 = 72	CES35 = 82	CES60 = 89	CES85 = 78
CES11 = 55	CES36 = 89	CES61 = 83	CES86 = 77
CES12 = 61	CES37 = 77	CES62 = 83	CES87 = 77
CES13 = 41	CES38 = 95	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 66	CES89 = 74
CES15 = 70	CES40 = 90	CES65 = 62	CES90 = 81
CES16 = 46	CES41 = 95	CES66 = 58	CES91 = 74
CES17 = 49	CES42 = 77	CES67 = 55	CES92 = 62
CES18 = 55	CES43 = 77	CES68 = 65	CES93 = 77
CES19 = 71	CES44 = 99	CES69 = 74	CES94 = 57
CES20 = 64	CES45 = 85	CES70 = 56	CES95 = 67
CES21 = 85	CES46 = 84	CES71 = 47	CES96 = 77
CES22 = 77	CES47 = 87	CES72 = 83	CES97 = 85
CES23 = 91	CES48 = 80	CES73 = 46	CES98 = 75
CES24 = 90	CES49 = 82	CES74 = 91	CES99 = 65
CES25 = 71	CES50 = 89	CES75 = 49	



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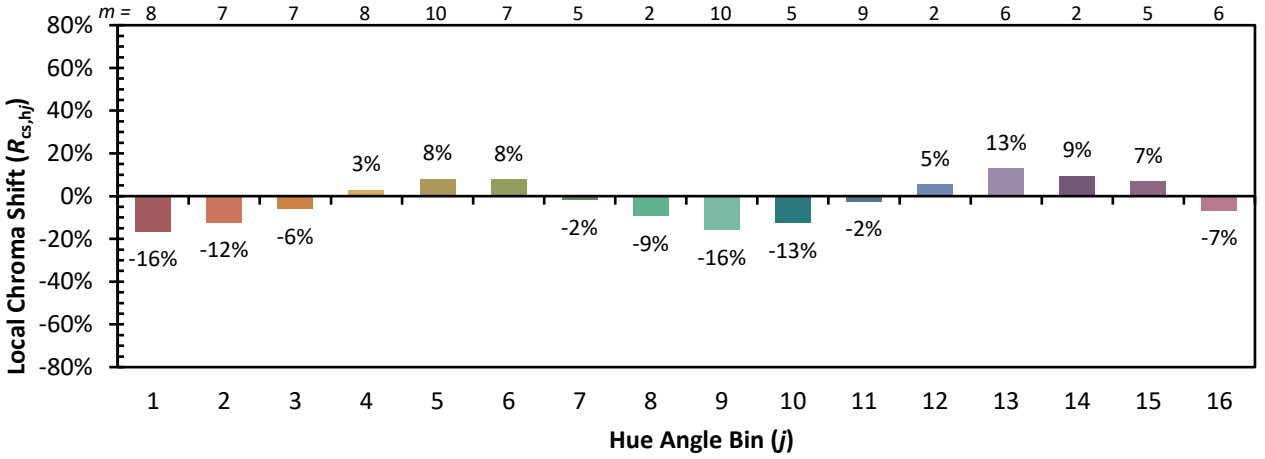
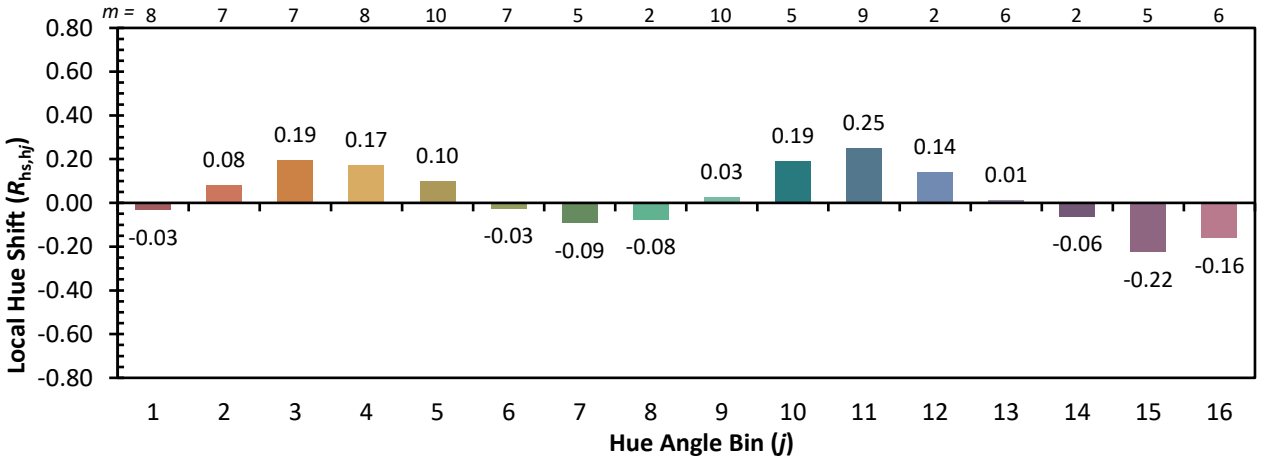
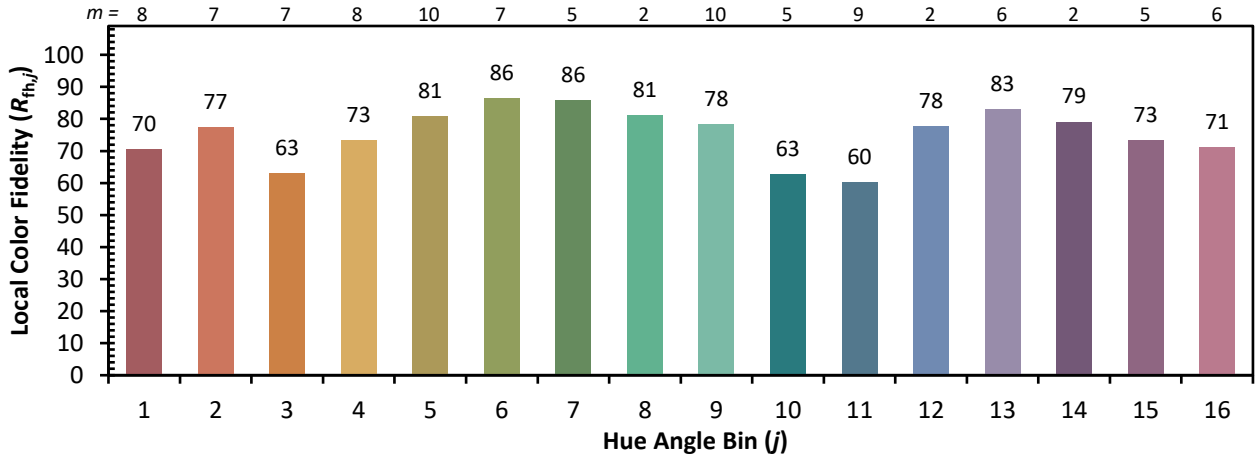
Color Rendition by Hue-Angle Bin







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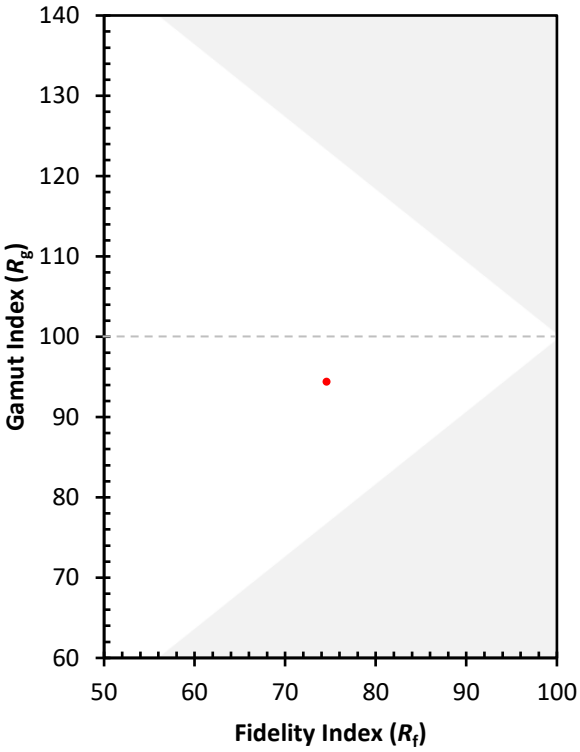
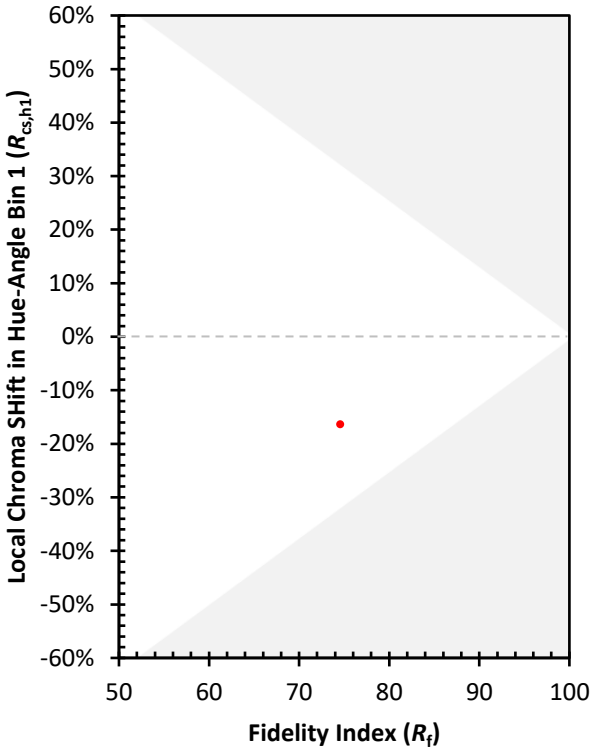
Measure Comparisons





(END OF REPORT)