

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

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Peachtree City, GA 30269

Scaled data based on original data using
LM-79-2024 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: McGRAW-EDISON

Report Number: P1445238

Luminaire Tested: TPTN-VA1-830-U-DL-GM

Issue Date: 05/21/2026

Test Information

Test Method: LM-79-2024
Report Number: P1445238
Test Lab: INNOVATION CENTER(G1)
Issue Date: 5/21/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: MCGRAW-EDISON
Catalog Number: TPTN-VA1-830-U-DL-GM
Description: TOPTIER NANO SPIDER MOUNT VISUAL COMFORT LED LUMINAIRE 27W 80CRI 3000K w/
DRIVE LANE TYPE IV DISTRIBUTION OPTIC
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2116.8 lumens
Efficiency: N/A
Efficacy: 79.3 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

Input Watts (W): 26.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): 11.9%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

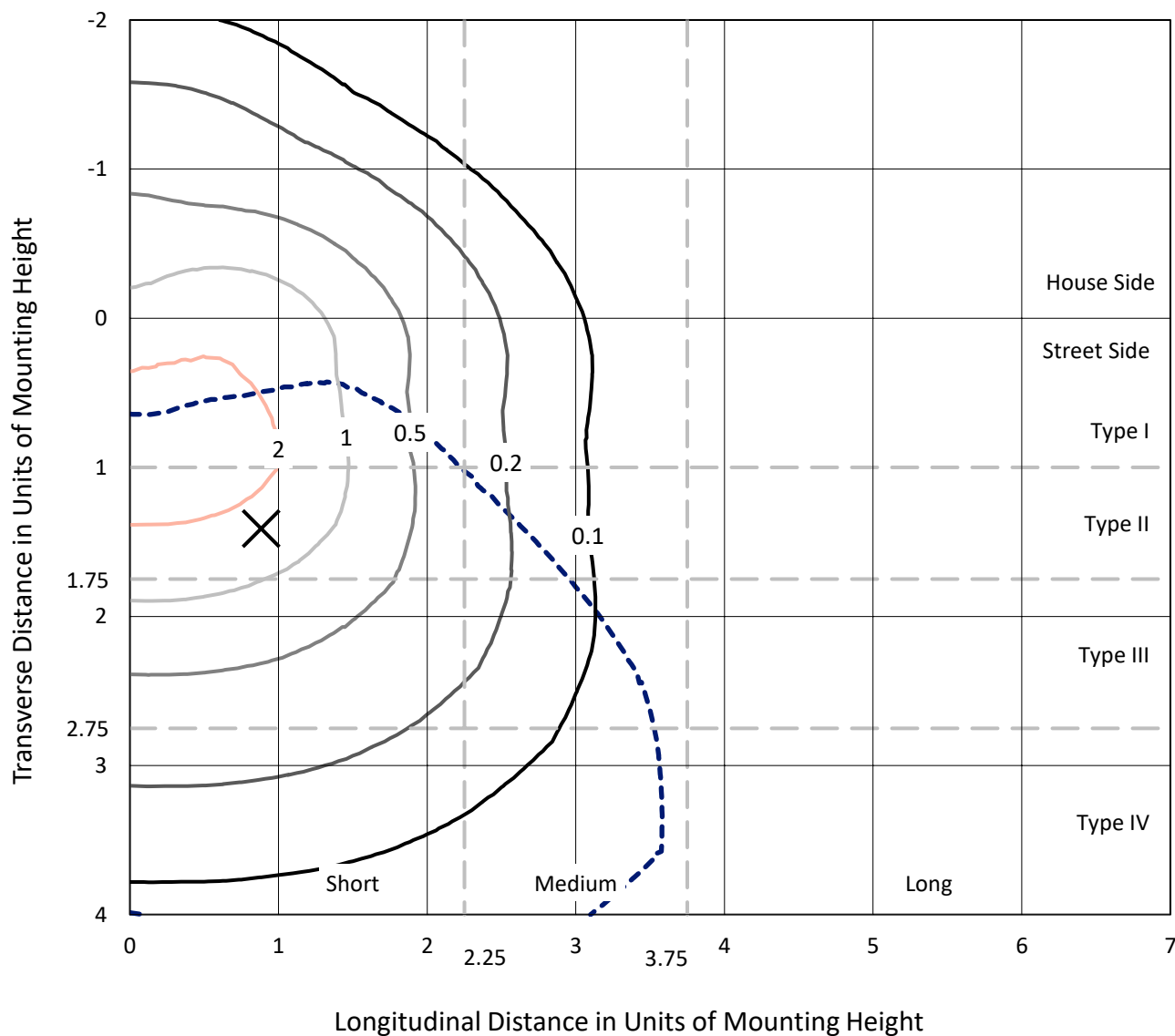
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CATALOG NUMBER: TPTN-VA1-830-U-DL-GM

Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd



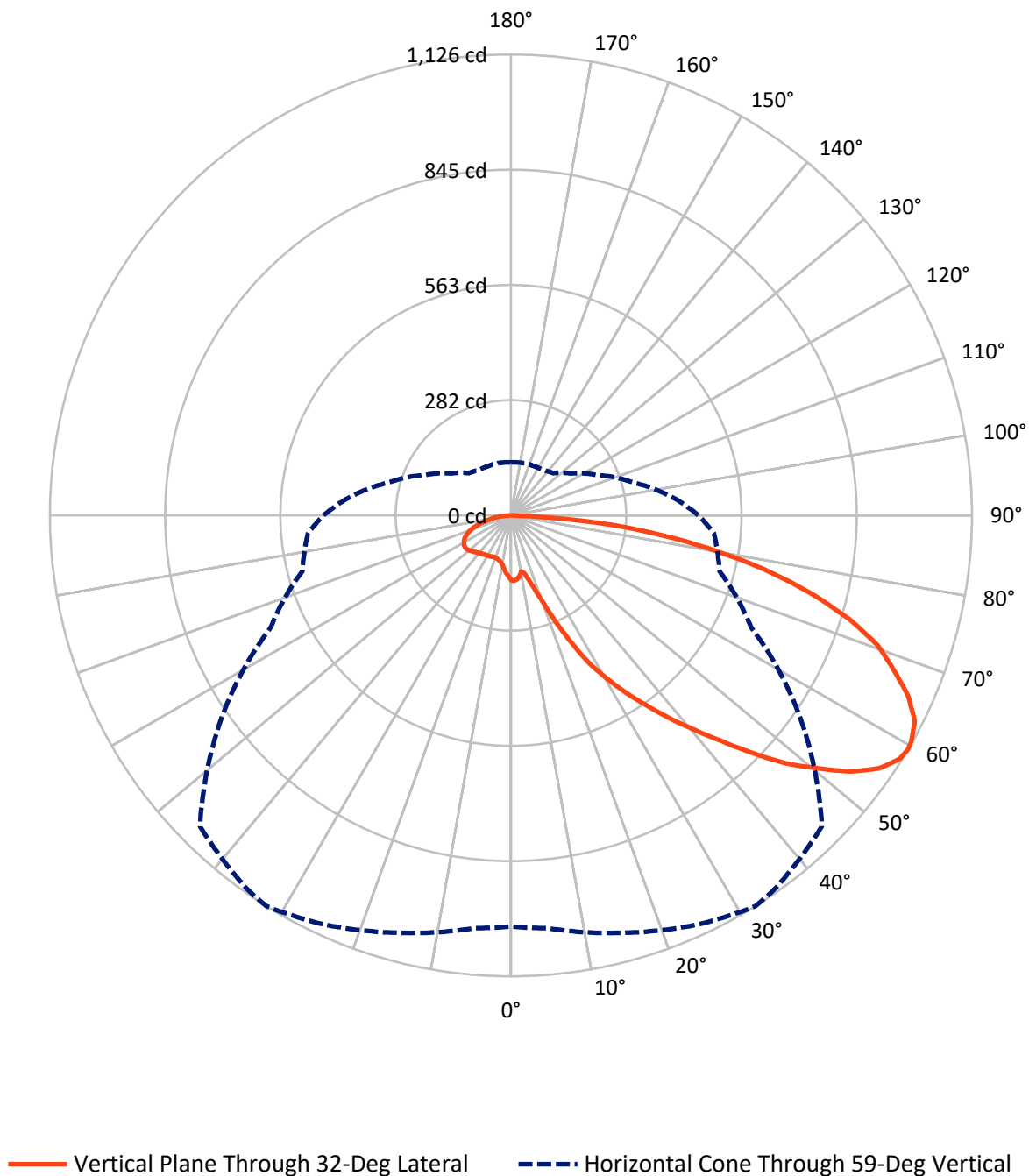
Based on 10 foot mounting height. Maximum calculated value = 3.4 fc

Type IV - Short - N/A

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Luminous Intensity Polar Plot



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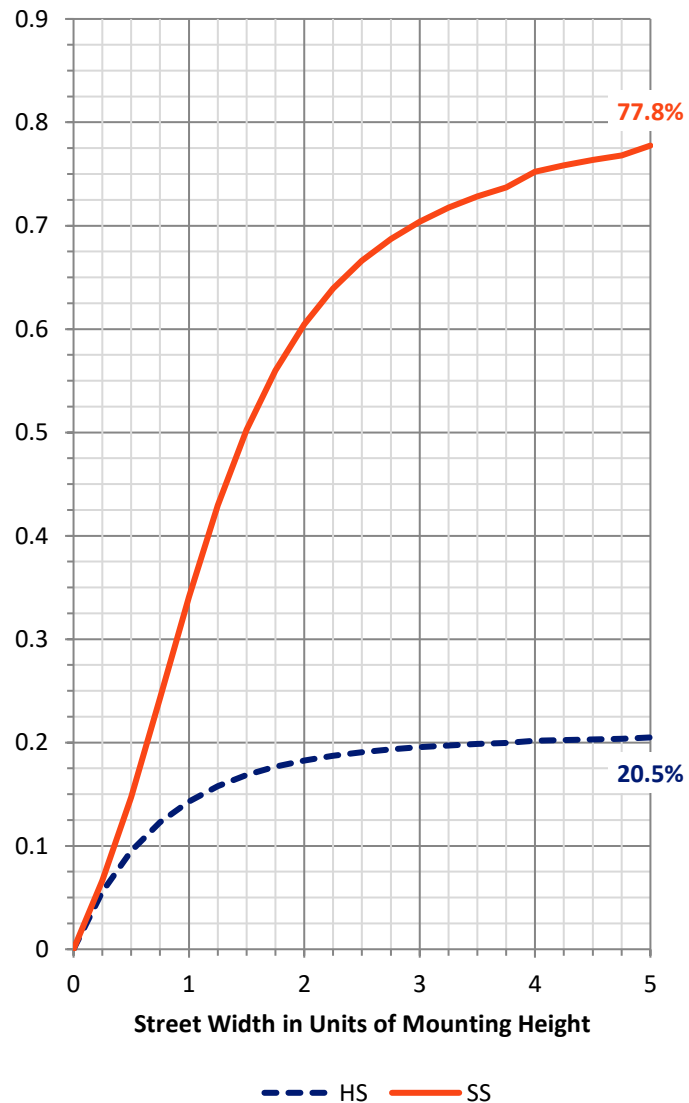
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	440.2	0.0	440.2
	% Fixture	20.8	0.0	20.8
Street Side	Lumens	1676.6	0.0	1676.6
	% Fixture	79.2	0.0	79.2
Total	Lumens	2116.8	0.0	2116.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	13.8	0.7
10°-20°	41.8	2.0
20°-30°	102.6	4.8
30°-40°	201.4	9.5
40°-50°	334.9	15.8
50°-60°	472.8	22.3
60°-70°	496.6	23.5
70°-80°	358.2	16.9
80°-90°	94.8	4.5
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°	2116.8	100.0
0°-180°	2116.8	100.0

Coefficient of Utilization



REPORT NUMBER: P1445238

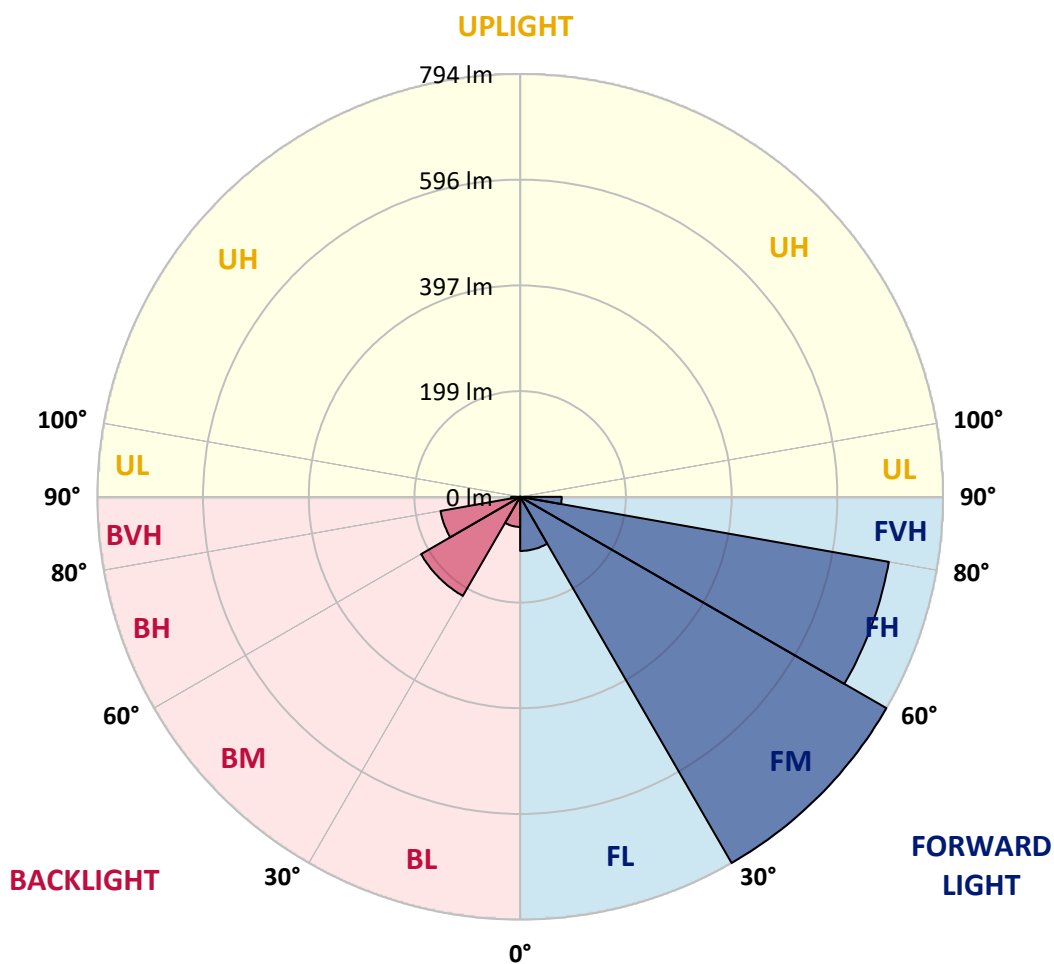
CATALOG NUMBER: TPTN-VA1-830-U-DL-GM

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	101.6	4.8			
FM	(30°-60°)	794.1	37.5			
FH	(60°-80°)	703.0	33.2			G1/1800
FVH	(80°-90°)	77.9	3.7			G1/100
BL	(0°-30°)	56.6	2.7	B0/110		
BM	(30°-60°)	215.0	10.2	B0/220		
BH	(60°-80°)	151.8	7.2	B1/500		G1/500
BVH	(80°-90°)	16.8	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type IV Short



REPORT NUMBER: P1445238

CATALOG NUMBER: TPTN-VA1-830-U-DL-GM

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	32°	35°	45°	55°	65°	75°	85°
0°	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6
2.5°	161.1	160.7	160.7	160.3	159.9	159.9	159.5	158.6	157.4	156.2	155.4
5°	159.5	159.0	158.2	157.8	157.0	156.6	155.8	154.1	153.3	153.7	153.7
7.5°	152.5	152.9	152.1	150.9	149.6	149.2	147.2	146.8	146.4	145.1	146.0
10°	151.3	151.7	148.0	143.9	139.4	137.8	136.1	136.6	139.0	140.6	142.3
12.5°	161.5	159.9	156.6	150.9	145.1	143.5	139.0	139.0	141.1	142.7	144.3
15°	177.0	176.6	172.9	168.4	163.5	161.5	153.3	149.6	150.0	151.3	152.5
17.5°	199.9	201.2	202.4	196.7	190.9	186.8	175.0	166.8	163.5	163.9	163.9
20°	240.8	241.2	244.1	239.2	230.2	224.5	205.7	190.5	183.2	181.5	180.7
22.5°	299.3	297.6	297.6	296.4	284.6	277.6	247.8	220.8	207.7	203.2	202.8
25°	367.1	366.3	368.0	361.8	346.3	341.4	300.1	260.4	237.1	230.6	225.7
27.5°	433.4	434.2	435.0	424.0	410.9	402.3	354.5	307.5	269.8	258.0	249.0
30°	495.9	498.0	487.3	471.8	462.4	451.8	399.9	344.7	300.5	280.1	271.5
32.5°	557.7	555.6	536.4	524.6	516.8	506.2	445.6	384.3	331.6	303.0	291.5
35°	617.8	612.0	587.9	576.5	569.9	560.9	500.8	425.2	361.8	325.9	312.0
37.5°	673.8	670.5	642.7	637.0	628.4	621.5	560.5	468.1	394.5	352.8	335.7
40°	726.1	726.5	706.5	697.1	688.5	682.0	621.5	513.1	428.5	380.6	361.8
42.5°	780.5	780.1	768.6	762.5	753.5	748.6	685.2	563.0	464.0	410.1	388.0
45°	831.6	835.3	836.1	832.4	828.7	824.2	763.3	620.6	506.2	439.9	416.6
47.5°	891.7	896.2	902.7	904.0	906.0	898.7	839.4	675.0	547.0	469.4	443.6
50°	936.3	940.8	961.6	968.2	971.8	968.6	911.3	733.9	583.8	497.2	464.5
52.5°	980.4	982.9	1012.3	1035.2	1039.7	1034.4	982.1	789.9	619.8	519.2	485.7
55°	1006.6	1010.3	1048.3	1082.2	1091.6	1089.6	1043.4	829.1	641.9	534.8	499.2
57.5°	1009.0	1015.6	1059.3	1100.2	1121.1	1115.8	1071.6	855.3	648.4	533.1	499.6
59°	1004.5	1012.3	1056.1	1101.0	1126.4	1118.6	1074.5	863.1	647.2	527.4	497.6
60°	1000.9	1008.6	1050.3	1098.2	1123.5	1117.0	1074.0	866.8	641.9	524.1	495.9
62.5°	978.8	992.3	1033.6	1076.1	1107.2	1110.8	1065.9	868.4	630.9	513.5	487.3
65°	926.9	939.9	994.3	1046.2	1066.7	1079.4	1035.6	847.1	605.5	491.8	459.1
67.5°	861.9	872.9	926.0	994.3	1008.6	1020.1	993.5	805.0	573.2	449.7	424.4
70°	795.2	808.7	851.6	923.2	950.2	958.3	939.1	759.2	527.0	407.6	390.5
72.5°	705.7	716.7	767.8	834.1	862.3	872.5	856.9	698.3	468.5	365.1	349.2
75°	605.9	612.5	660.3	727.3	754.3	764.5	759.6	620.6	405.6	312.0	295.6
77.5°	485.3	500.0	539.7	593.2	631.7	633.7	633.3	526.2	333.6	245.7	240.0
80°	362.2	375.3	412.9	463.6	490.2	497.6	496.8	415.0	258.8	188.1	178.7
82.5°	229.4	237.5	276.8	317.7	345.5	352.0	359.4	299.7	180.3	124.7	114.1
85°	91.2	90.8	124.7	168.4	188.9	199.9	205.2	174.6	97.7	55.6	47.0
87.5°	6.5	7.0	8.6	10.6	11.0	11.9	13.5	17.2	13.5	11.9	6.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

REPORT NUMBER: P1445238

CATALOG NUMBER: TPTN-VA1-830-U-DL-GM

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6	158.6
2.5°	155.0	154.5	152.9	152.1	150.9	150.5	150.0	149.2	148.8	148.4	148.8
5°	152.5	152.5	150.9	149.6	146.8	144.7	142.7	139.8	137.8	136.6	136.1
7.5°	146.8	147.2	146.8	144.3	141.9	138.6	133.7	128.8	125.1	123.1	122.2
10°	141.9	142.7	142.3	140.6	136.6	131.2	125.1	118.6	112.8	109.2	108.8
12.5°	144.3	144.3	143.1	139.8	134.5	127.6	119.8	111.2	104.7	100.6	99.8
15°	152.5	151.7	148.0	142.7	134.5	125.9	116.5	106.7	98.9	94.4	94.0
17.5°	164.4	162.7	156.2	146.4	135.7	125.1	114.9	103.8	94.4	88.7	87.9
20°	179.9	176.2	166.0	151.3	138.2	125.9	113.3	101.0	91.6	85.0	83.4
22.5°	199.1	193.0	177.0	157.4	141.5	127.6	113.7	100.2	89.9	83.8	83.4
25°	219.1	211.0	189.7	164.8	145.1	128.8	114.1	101.8	91.6	87.1	86.3
27.5°	239.6	229.8	203.2	173.4	149.2	130.8	115.7	104.3	96.5	92.8	92.4
30°	259.6	246.5	215.1	180.7	153.3	132.1	116.9	104.3	98.9	96.1	95.7
32.5°	278.0	262.1	226.1	188.5	157.4	134.5	118.2	105.5	100.6	99.8	99.4
35°	297.6	280.5	237.5	195.0	161.5	136.6	119.4	106.7	103.0	103.0	103.0
37.5°	318.9	298.9	249.8	202.4	165.6	140.2	121.0	109.6	106.3	107.1	107.1
40°	341.4	318.5	262.5	210.1	169.3	142.3	122.2	112.4	109.6	110.4	110.8
42.5°	364.7	337.7	275.6	217.1	174.2	144.7	124.7	116.1	114.1	114.9	114.9
45°	388.4	358.2	287.8	224.5	178.3	147.2	127.6	120.2	118.6	119.0	119.0
47.5°	411.7	376.6	298.9	231.0	181.9	149.2	130.4	124.3	123.1	123.5	123.1
50°	431.3	392.5	308.7	235.9	185.6	151.3	133.7	128.4	127.6	126.7	126.3
52.5°	448.5	406.8	316.4	239.6	187.3	152.1	136.6	132.5	131.6	130.0	129.6
55°	457.9	413.3	318.5	240.4	186.0	151.3	137.4	134.5	133.7	131.6	131.6
57.5°	460.0	413.3	314.0	236.7	181.9	148.4	137.0	133.7	132.9	130.8	130.8
59°	457.9	410.9	309.9	232.6	178.7	146.0	135.3	132.9	131.6	130.0	130.0
60°	455.9	409.3	307.0	228.5	176.6	144.3	133.7	131.6	130.4	129.2	129.2
62.5°	446.9	399.9	299.3	217.9	169.7	138.2	130.0	128.8	128.0	126.7	126.3
65°	421.9	377.4	282.9	206.1	159.0	130.8	123.9	123.5	123.1	121.0	120.2
67.5°	392.5	349.6	259.2	190.9	145.6	122.2	116.5	116.5	114.9	113.3	113.7
70°	362.2	323.0	234.7	172.1	130.0	111.2	106.7	107.1	105.5	105.1	105.5
72.5°	322.2	285.4	207.7	149.2	114.1	98.5	94.9	96.1	95.7	95.3	95.3
75°	271.5	242.0	175.0	125.9	96.5	84.6	82.6	83.0	83.4	83.0	83.0
77.5°	221.2	196.7	138.6	99.4	76.5	68.3	67.9	69.9	70.3	69.9	70.3
80°	163.9	144.7	101.0	72.8	56.8	52.3	53.2	56.0	56.8	56.8	57.6
82.5°	105.5	90.8	65.4	47.0	38.0	36.8	39.2	42.1	43.3	43.3	43.3
85°	41.7	37.6	30.3	23.3	21.7	23.3	26.2	27.8	29.8	29.8	29.4
87.5°	2.5	6.1	9.4	9.4	9.4	10.2	10.2	10.6	11.0	10.6	10.6
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: SP1-2411-284-4

Test Date: 11/22/2024

Luminaire Tested: TTN-D0-830-U-WQ

Data in this report applies to families of products including TTN-D0-830-U-WQ

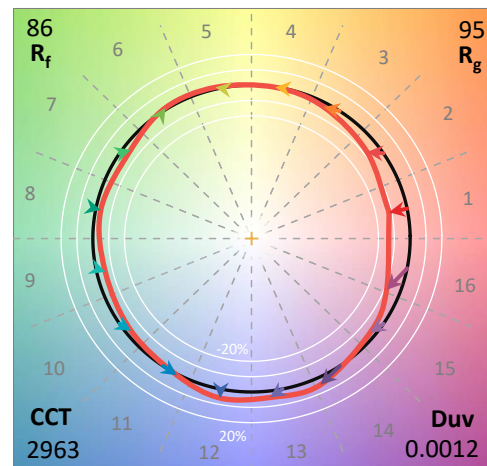
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2411-284-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 11/22/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: MCGRAW EDISON
 Catalog Number: **TTN-D0-830-U-WQ**
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3000K, 80 CRI LEDS AND WIDE DISTRIBUTION

Spectral Parameters

CCT (K): 2963
 CIE u' : 0.2515
 CIE v' : 0.5238
 Duv: 0.0012
 CIE x: 0.4414
 CIE y: 0.4086
 CIE z: 0.1501
 Peak Wavelength (nm): 603
 Dominant Wavelength (nm): 582
 Purity: 55.12798
 R_f: 86.1
 R_g: 94.9

CRI (Ra): 82.9
 R1: 81.4
 R2: 91.9
 R3: 95.2
 R4: 81.6
 R5: 82.3
 R6: 91.4
 R7: 82.0
 R8: 57.2
 R9: 3.9
 R10: 82.5
 R11: 82.3
 R12: 76.5
 R13: 83.9
 R14: 97.8
 R15: 72.6



Test Conditions

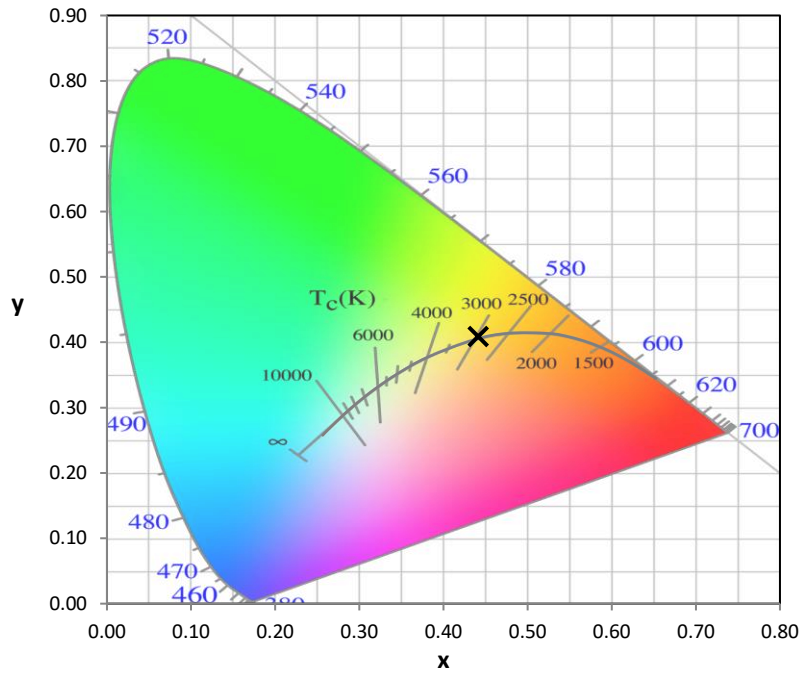
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

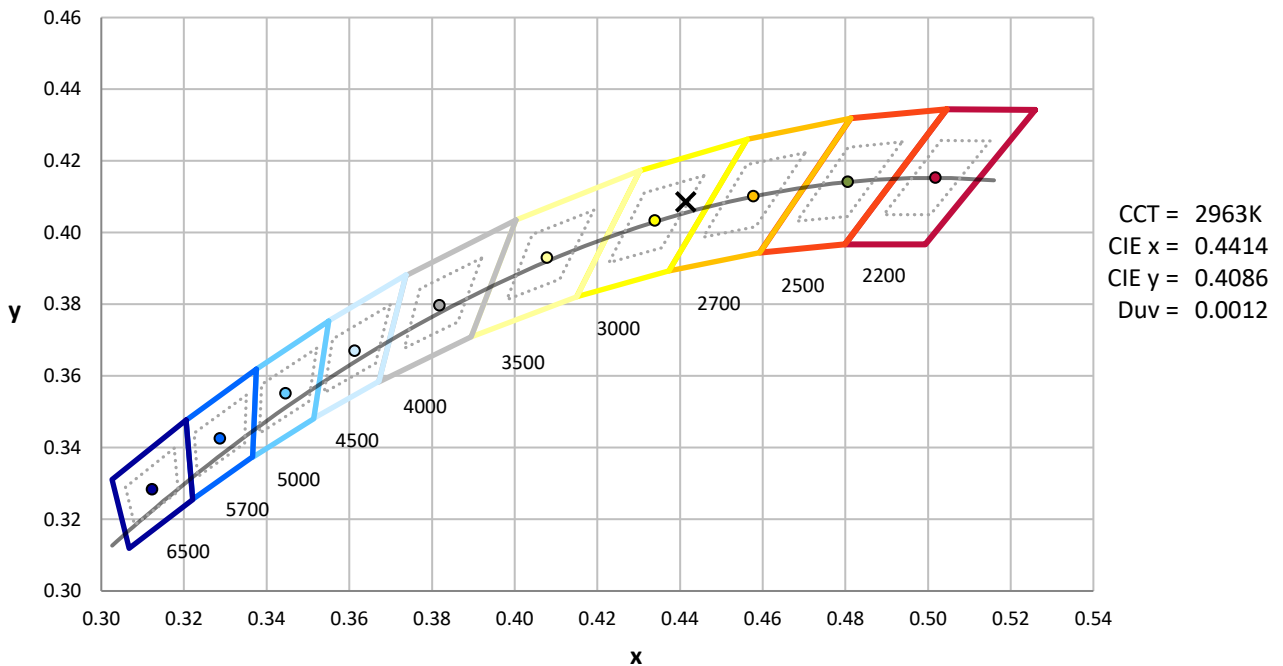
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



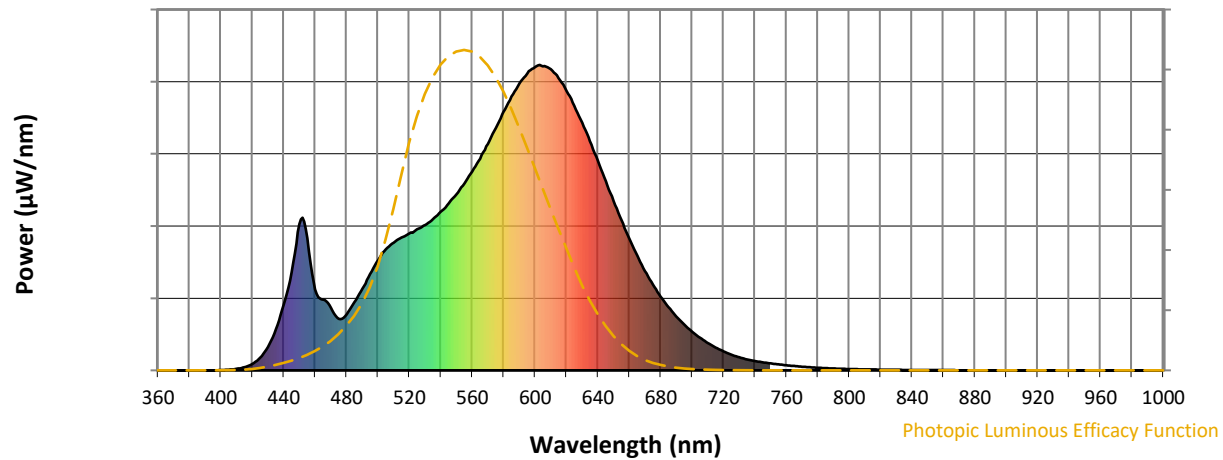
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

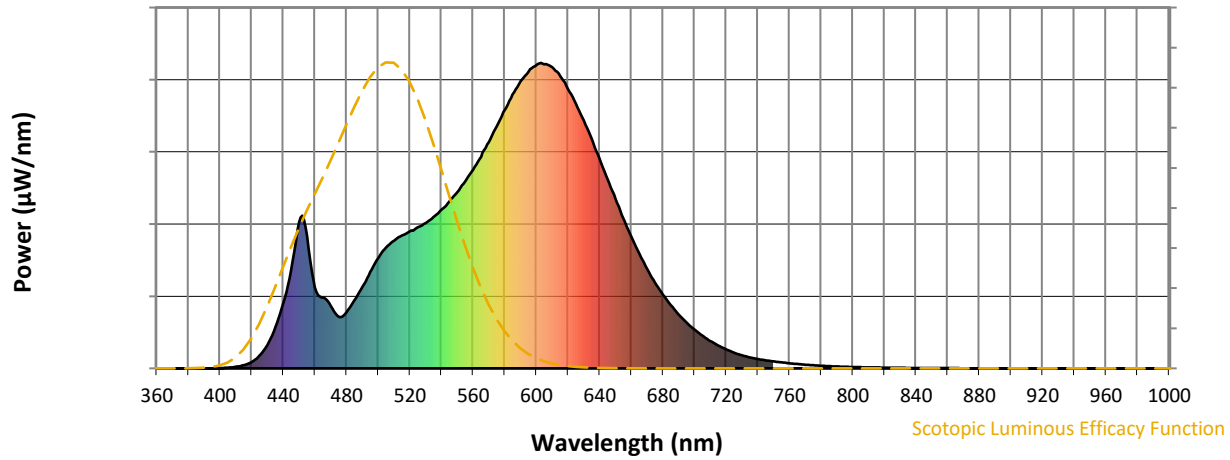


Photopic Lumens: NR

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	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

REPORT NUMBER: SP1-2411-284-4

Scotopic Flux vs. Wavelength



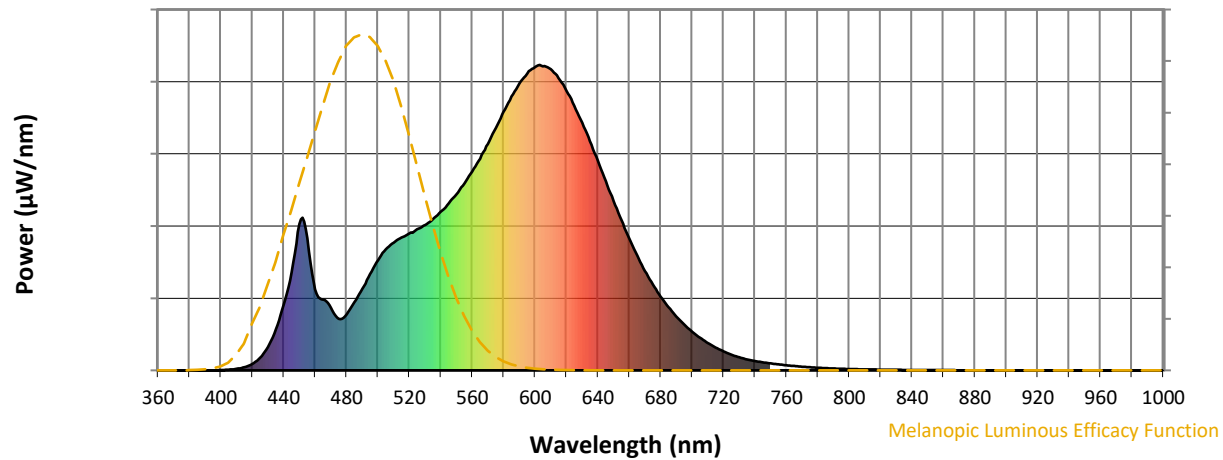
Scotopic Lumens: NR

S/P: 1.34

λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.58

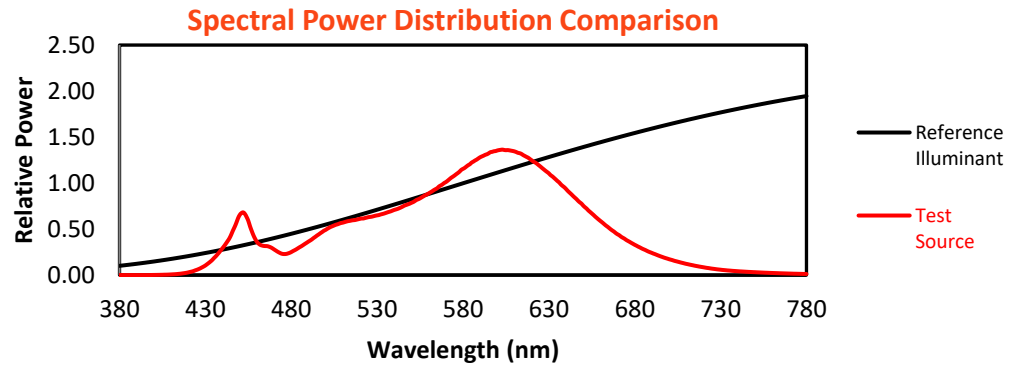
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	866	NR	755	20	NR	885	0	NR
370	0	NR	500	360	NR	630	811	NR	760	17	NR	890	0	NR
375	0	NR	505	396	NR	635	750	NR	765	14	NR	895	0	NR
380	0	NR	510	418	NR	640	686	NR	770	12	NR	900	0	NR
385	0	NR	515	435	NR	645	619	NR	775	10	NR	905	0	NR
390	0	NR	520	448	NR	650	554	NR	780	9	NR	910	0	NR
395	0	NR	525	462	NR	655	491	NR	785	7	NR	915	0	NR
400	1	NR	530	476	NR	660	431	NR	790	6	NR	920	0	NR
405	2	NR	535	495	NR	665	376	NR	795	5	NR	925	0	NR
410	5	NR	540	520	NR	670	325	NR	800	4	NR	930	0	NR
415	10	NR	545	547	NR	675	280	NR	805	4	NR	935	0	NR
420	21	NR	550	576	NR	680	241	NR	810	3	NR	940	0	NR
425	42	NR	555	612	NR	685	207	NR	815	3	NR	945	0	NR
430	77	NR	560	651	NR	690	176	NR	820	2	NR	950	0	NR
435	135	NR	565	693	NR	695	149	NR	825	2	NR	955	0	NR
440	215	NR	570	741	NR	700	127	NR	830	2	NR	960	0	NR
445	321	NR	575	793	NR	705	107	NR	835	2	NR	965	0	NR
450	479	NR	580	847	NR	710	89	NR	840	1	NR	970	0	NR
455	432	NR	585	897	NR	715	75	NR	845	1	NR	975	0	NR
460	265	NR	590	940	NR	720	62	NR	850	1	NR	980	0	NR
465	231	NR	595	971	NR	725	51	NR	855	1	NR	985	0	NR
470	204	NR	600	993	NR	730	43	NR	860	1	NR	990	0	NR
475	168	NR	605	996	NR	735	36	NR	865	1	NR	995	0	NR
480	183	NR	610	986	NR	740	31	NR	870	1	NR	1000	0	NR
485	223	NR	615	957	NR	745	26	NR	875	0	NR			

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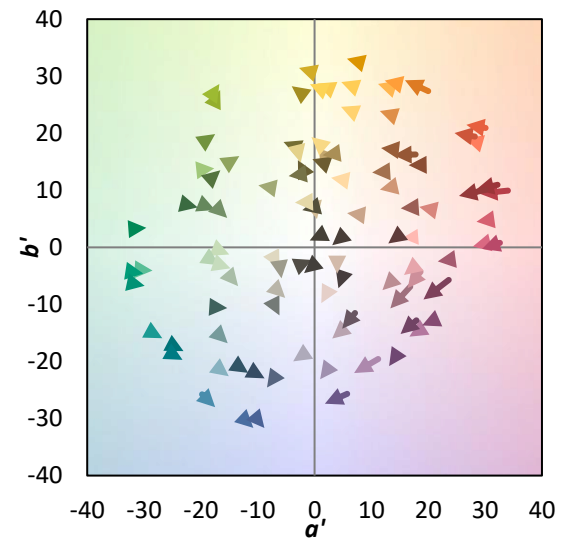
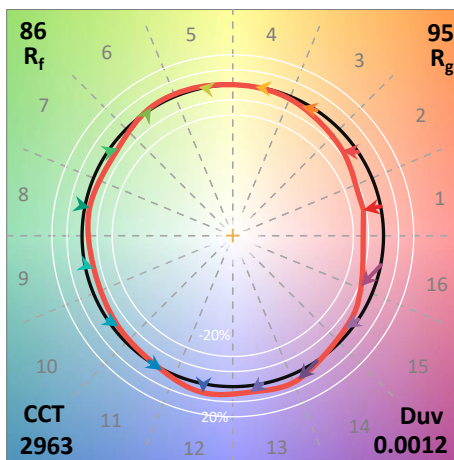
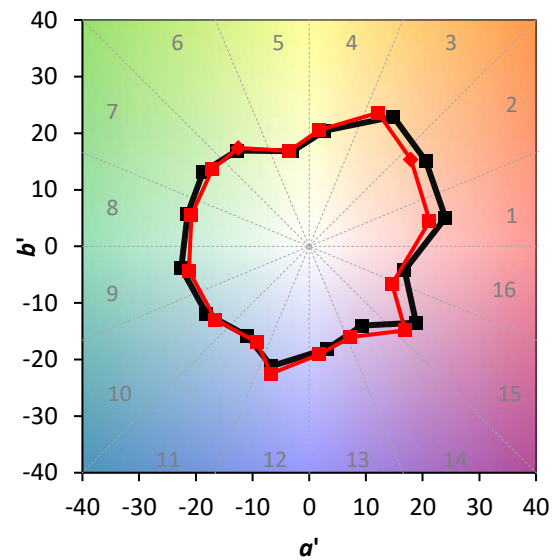
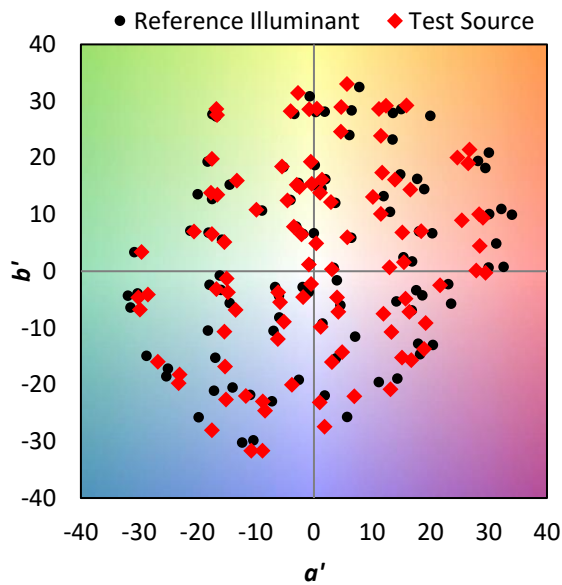
TM-30-18

Summary

$R_f = 86.1$
 $R_g = 94.9$
 $CIE R_a = 82.9$
 $R_9 = 3.9$

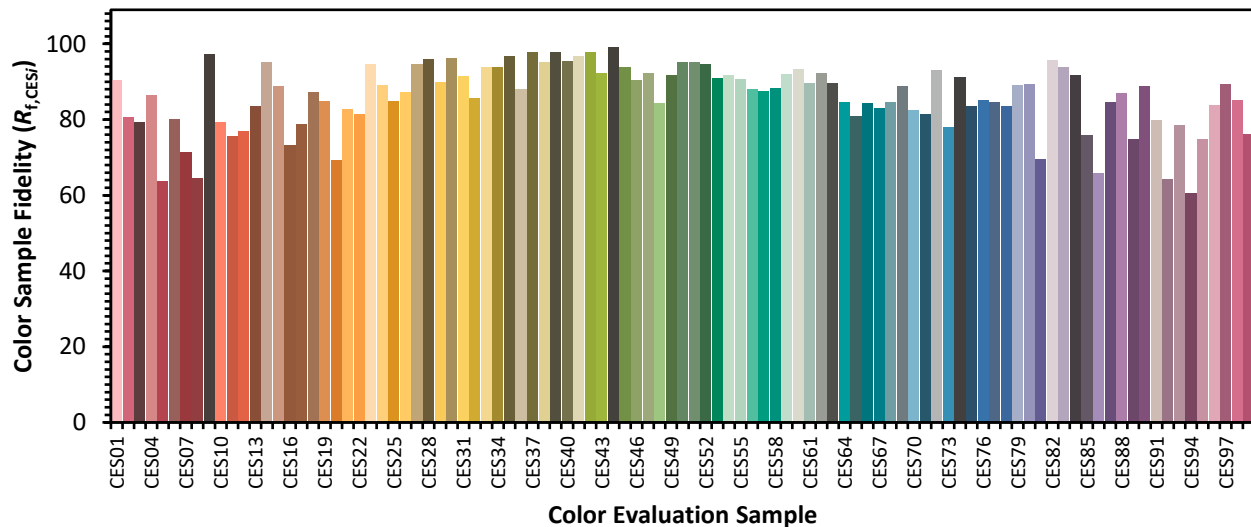


Color Vector Graphics

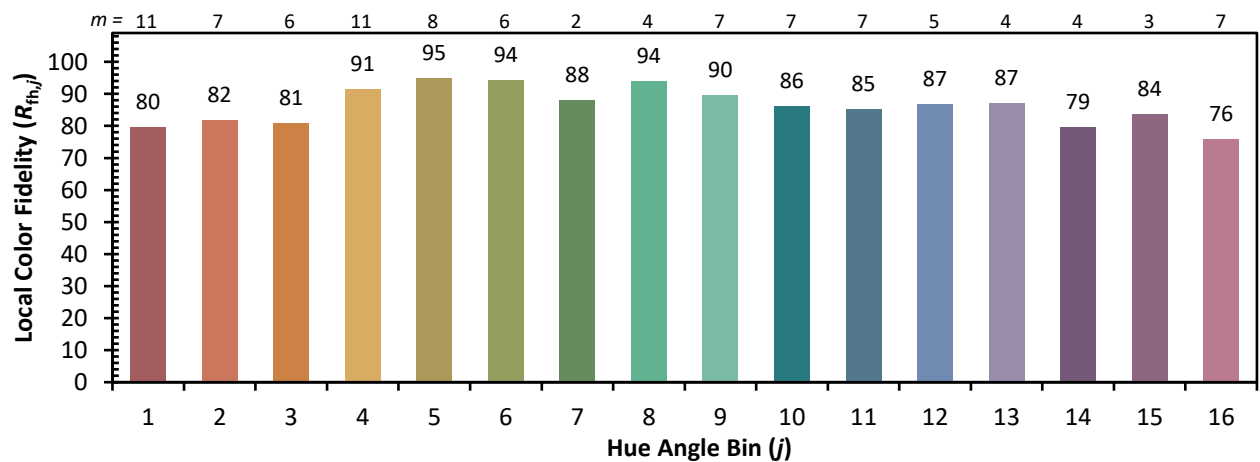
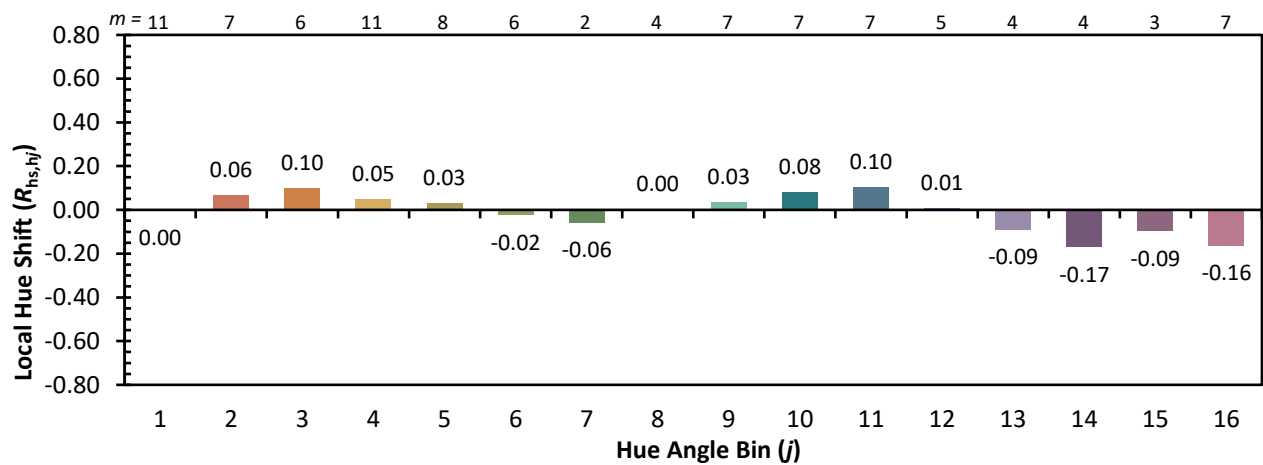
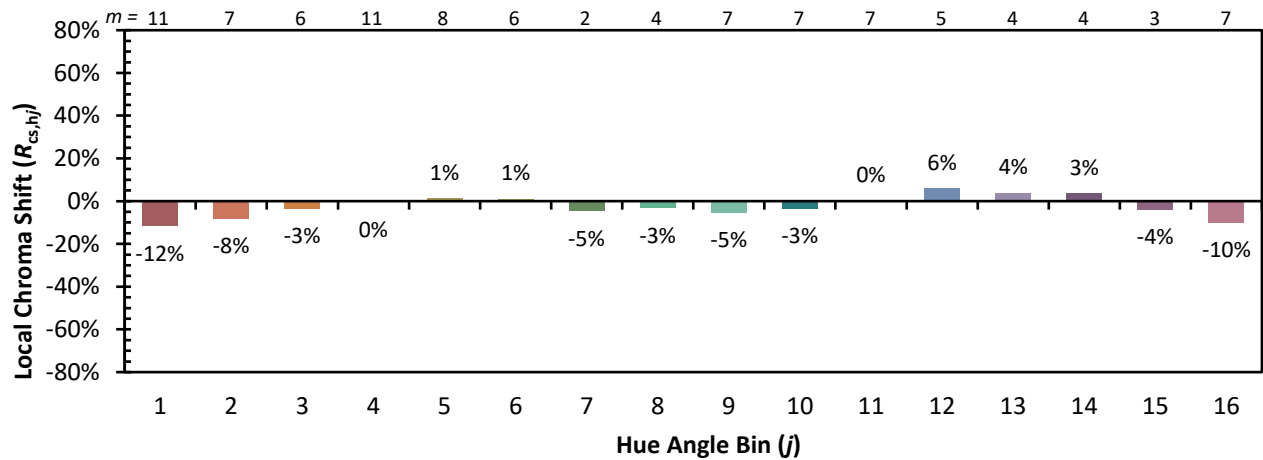


Individual Sample Fidelity Index ($R_{f,i}$)

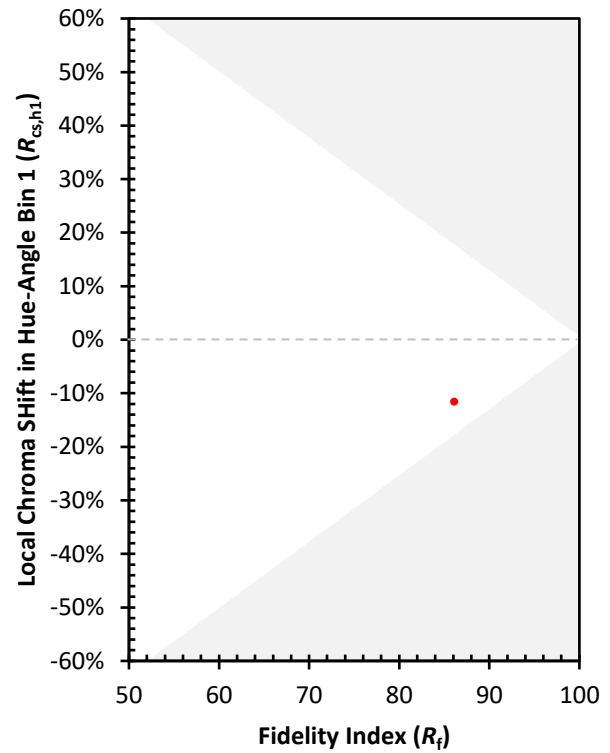
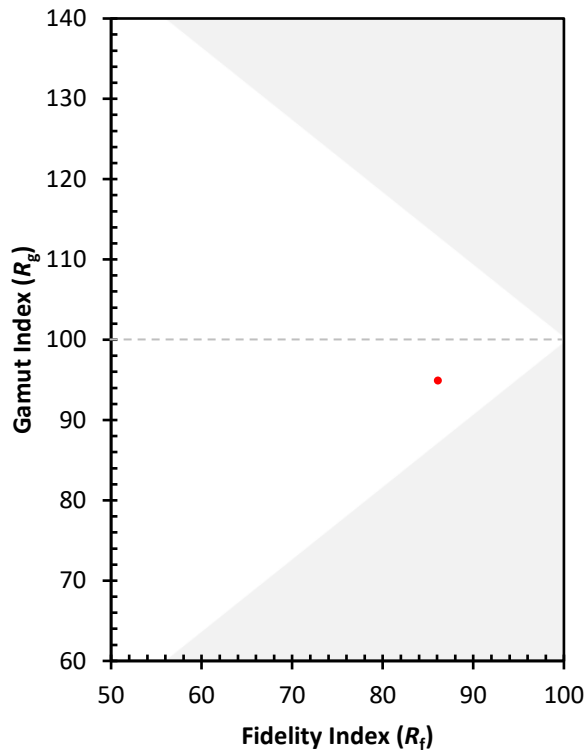
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82 = 96
CES08 = 41	CES33 = 94	CES58 = 88	CES83 = 94
CES09 = 29	CES34 = 94	CES59 = 92	CES84 = 92
CES10 = 76	CES35 = 97	CES60 = 93	CES85 = 76
CES11 = 59	CES36 = 88	CES61 = 90	CES86 = 66
CES12 = 65	CES37 = 98	CES62 = 92	CES87 = 85
CES13 = 44	CES38 = 95	CES63 = 90	CES88 = 87
CES14 = 74	CES39 = 98	CES64 = 85	CES89 = 75
CES15 = 72	CES40 = 96	CES65 = 81	CES90 = 89
CES16 = 48	CES41 = 97	CES66 = 84	CES91 = 80
CES17 = 50	CES42 = 98	CES67 = 83	CES92 = 64
CES18 = 57	CES43 = 92	CES68 = 85	CES93 = 79
CES19 = 72	CES44 = 99	CES69 = 89	CES94 = 61
CES20 = 67	CES45 = 94	CES70 = 83	CES95 = 75
CES21 = 87	CES46 = 91	CES71 = 81	CES96 = 84
CES22 = 79	CES47 = 92	CES72 = 93	CES97 = 89
CES23 = 92	CES48 = 84	CES73 = 78	CES98 = 85
CES24 = 91	CES49 = 92	CES74 = 91	CES99 = 76
CES25 = 72	CES50 = 95	CES75 = 84	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)