

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: P1445237

Luminaire Tested: TPTN-VA0-830-U-DL-GM

Issue Date: 05/21/2026

Test Information

Test Method: LM-79-2024
Report Number: P1445237
Test Lab: INNOVATION CENTER(G1)
Issue Date: 5/21/2026
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: MCGRAW-EDISON
Catalog Number: TPTN-VA0-830-U-DL-GM
Description: TOPTIER NANO SPIDER MOUNT VISUAL COMFORT LED LUMINAIRE 9W 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: 719.8 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Luminous Opening: Circular (Dia: 0.71' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

Input Watts (W): 8.7
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): 29.6%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT

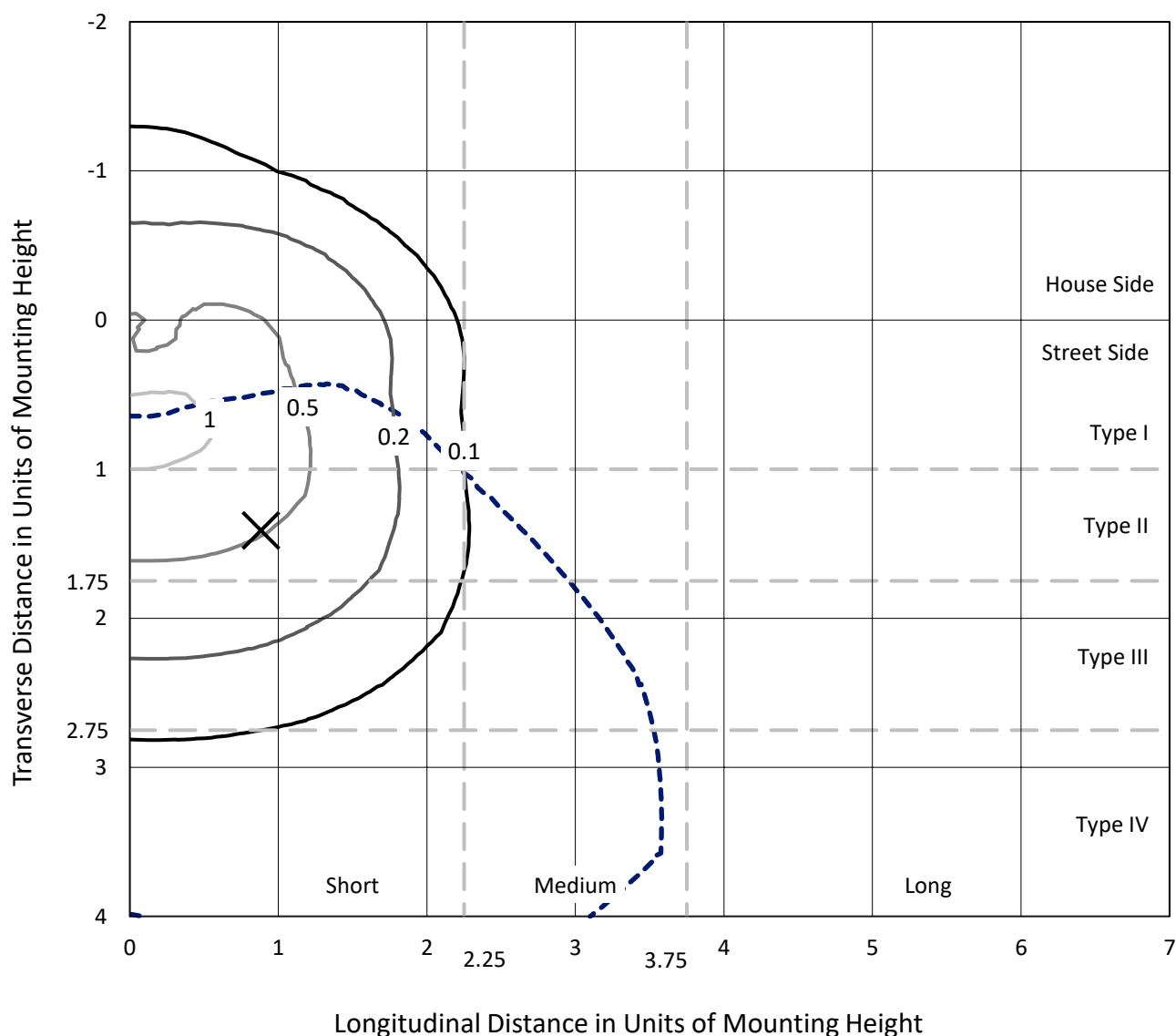
REPORT NUMBER: P1445237

CATALOG NUMBER: TPTN-VA0-830-U-DL-GM

Iso-Footcandle Lines of Horizontal Illumination

× Max cd

--- 1/2 Max cd

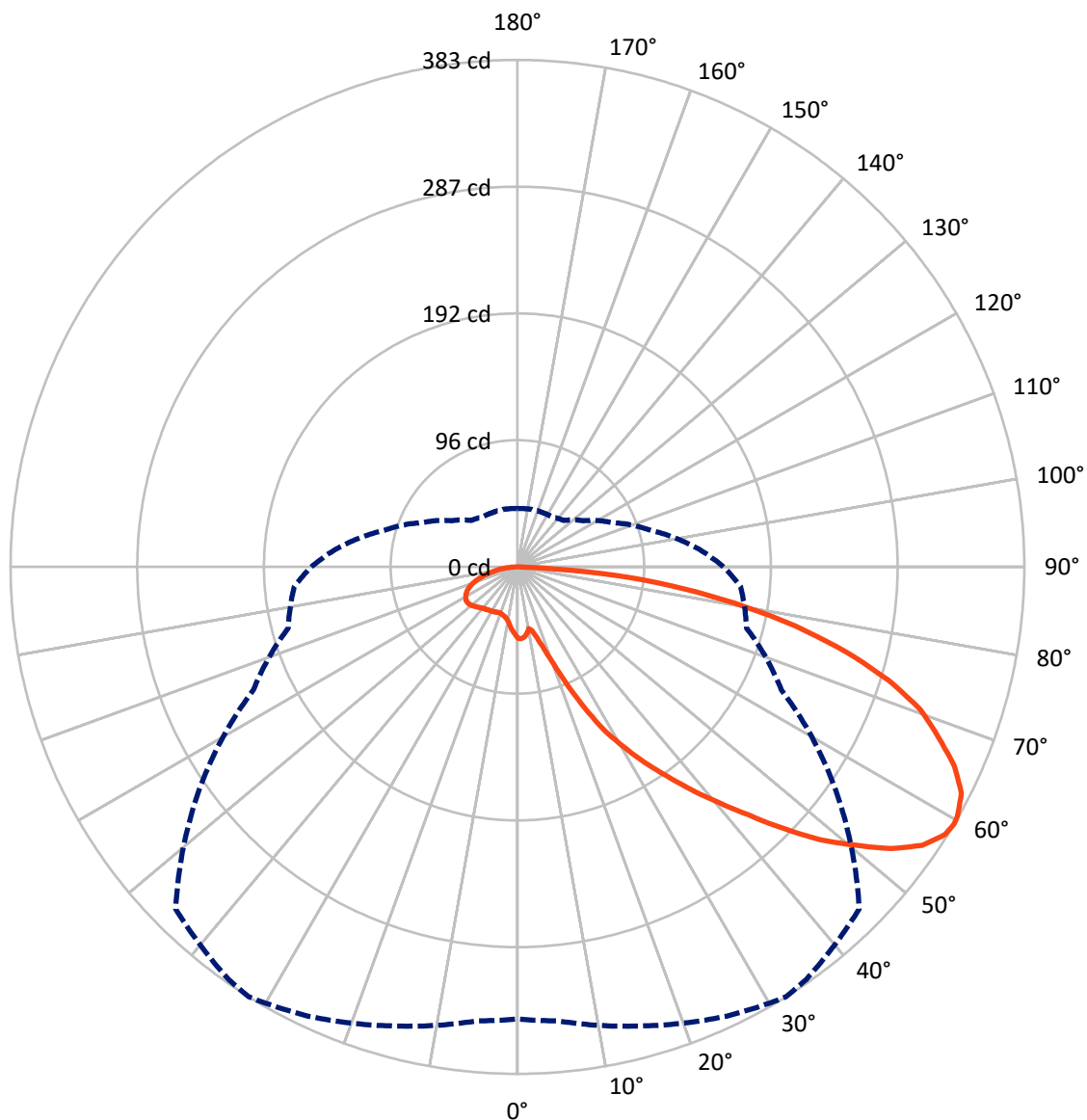


Based on 10 foot mounting height. Maximum calculated value = 1.1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 32-Deg Lateral - - - Horizontal Cone Through 59-Deg Vertical

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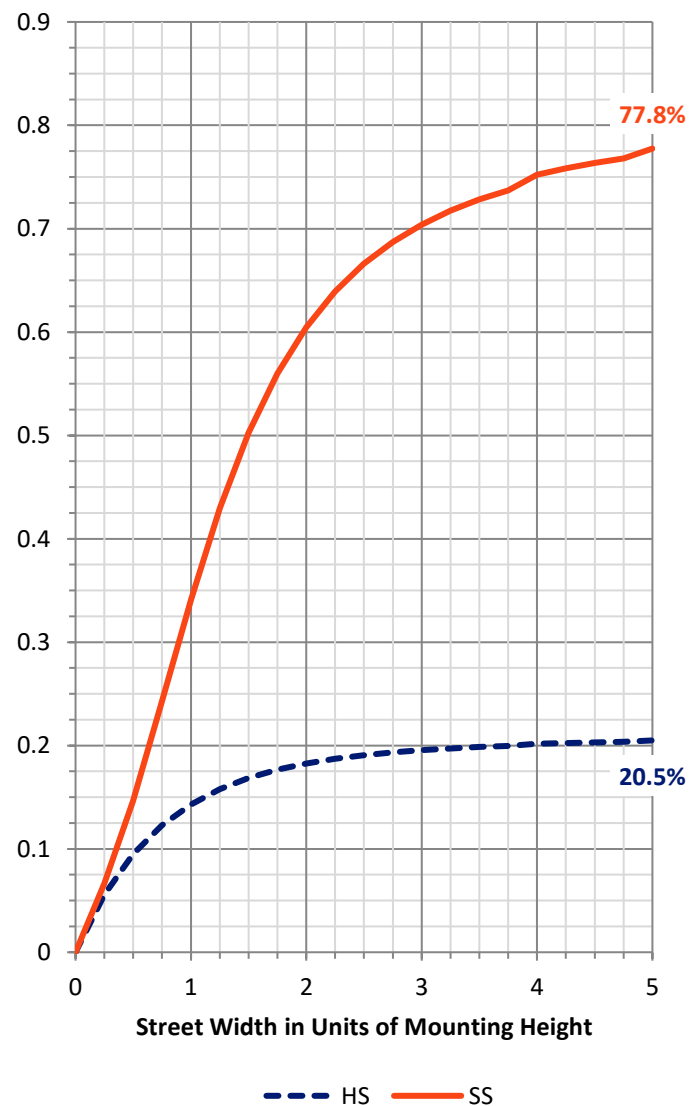
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	149.7	0.0	149.7
	% Fixture	20.8	0.0	20.8
Street Side	Lumens	570.1	0.0	570.1
	% Fixture	79.2	0.0	79.2
Total	Lumens	719.8	0.0	719.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	4.7	0.7
10°-20°	14.2	2.0
20°-30°	34.9	4.8
30°-40°	68.5	9.5
40°-50°	113.9	15.8
50°-60°	160.8	22.3
60°-70°	168.9	23.5
70°-80°	121.8	16.9
80°-90°	32.2	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°	719.8	100.0
0°-180°	719.8	100.0

Coefficient of Utilization



REPORT NUMBER: P1445237

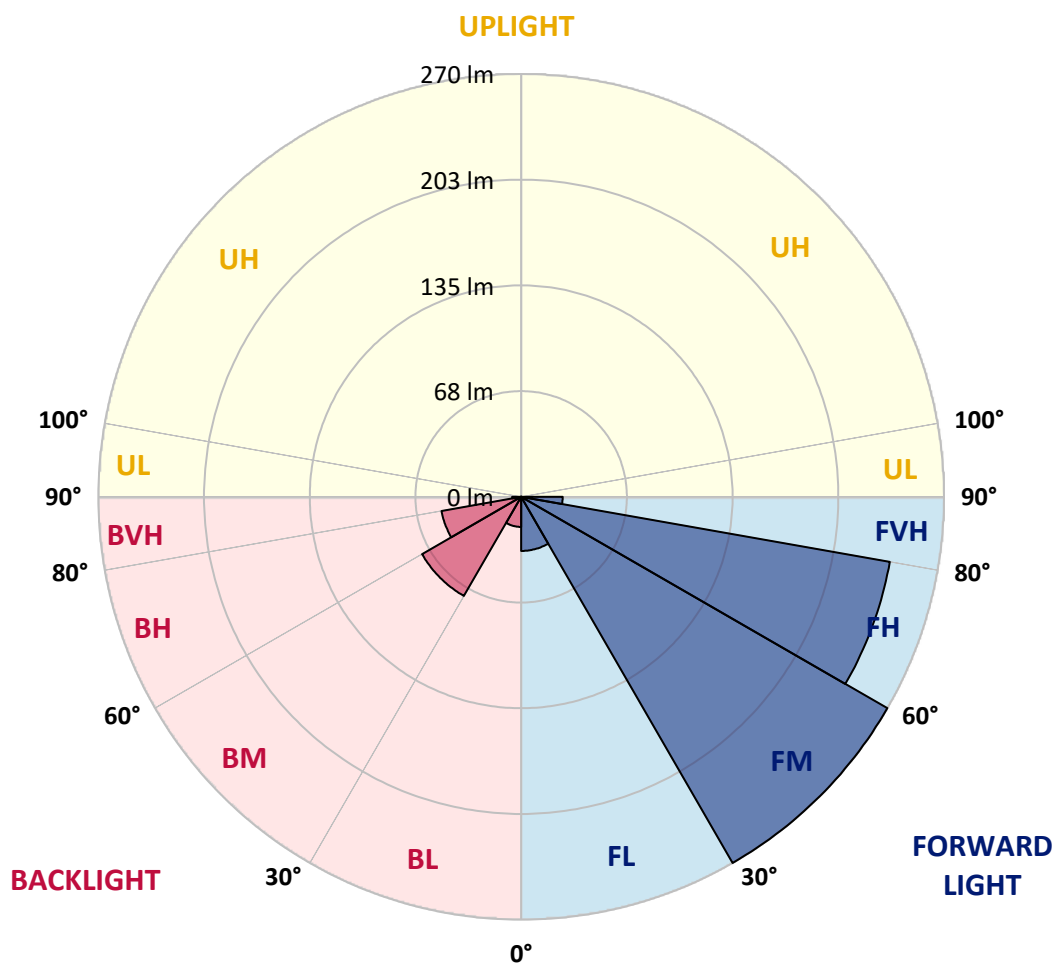
CATALOG NUMBER: TPTN-VA0-830-U-DL-GM

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	34.6	4.8			
FM	(30°-60°)	270.0	37.5			
FH	(60°-80°)	239.0	33.2			G0/660
FVH	(80°-90°)	26.5	3.7			G1/100
BL	(0°-30°)	19.2	2.7	B0/110		
BM	(30°-60°)	73.1	10.2	B0/220		
BH	(60°-80°)	51.6	7.2	B0/110		G0/110
BVH	(80°-90°)	5.7	0.8			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type IV Short



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CATALOG NUMBER: TPTN-VA0-830-U-DL-GM

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	32°	35°	45°	55°	65°	75°	85°
0°	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
2.5°	54.8	54.6	54.6	54.5	54.4	54.4	54.2	53.9	53.5	53.1	52.8
5°	54.2	54.1	53.8	53.7	53.4	53.2	53.0	52.4	52.1	52.3	52.3
7.5°	51.9	52.0	51.7	51.3	50.9	50.7	50.0	49.9	49.8	49.4	49.6
10°	51.4	51.6	50.3	48.9	47.4	46.9	46.3	46.4	47.3	47.8	48.4
12.5°	54.9	54.4	53.2	51.3	49.4	48.8	47.3	47.3	48.0	48.5	49.1
15°	60.2	60.1	58.8	57.3	55.6	54.9	52.1	50.9	51.0	51.4	51.9
17.5°	68.0	68.4	68.8	66.9	64.9	63.5	59.5	56.7	55.6	55.7	55.7
20°	81.9	82.0	83.0	81.3	78.3	76.3	69.9	64.8	62.3	61.7	61.4
22.5°	101.8	101.2	101.2	100.8	96.8	94.4	84.2	75.1	70.6	69.1	69.0
25°	124.8	124.6	125.1	123.0	117.8	116.1	102.0	88.6	80.6	78.4	76.7
27.5°	147.4	147.6	147.9	144.2	139.7	136.8	120.5	104.5	91.8	87.7	84.7
30°	168.6	169.3	165.7	160.4	157.2	153.6	136.0	117.2	102.2	95.2	92.3
32.5°	189.6	188.9	182.4	178.4	175.7	172.1	151.5	130.7	112.7	103.0	99.1
35°	210.1	208.1	199.9	196.0	193.8	190.7	170.3	144.6	123.0	110.8	106.1
37.5°	229.1	228.0	218.5	216.6	213.7	211.3	190.6	159.2	134.2	120.0	114.1
40°	246.9	247.0	240.2	237.0	234.1	231.9	211.3	174.5	145.7	129.4	123.0
42.5°	265.4	265.3	261.4	259.3	256.2	254.5	233.0	191.4	157.8	139.4	131.9
45°	282.8	284.0	284.3	283.0	281.8	280.3	259.6	211.0	172.1	149.6	141.7
47.5°	303.2	304.7	307.0	307.4	308.1	305.6	285.4	229.5	186.0	159.6	150.8
50°	318.4	319.9	327.0	329.2	330.5	329.3	309.9	249.5	198.5	169.0	157.9
52.5°	333.4	334.2	344.2	352.0	353.5	351.7	333.9	268.6	210.8	176.6	165.2
55°	342.3	343.5	356.5	368.0	371.2	370.5	354.8	281.9	218.3	181.8	169.7
57.5°	343.1	345.3	360.2	374.1	381.2	379.4	364.4	290.8	220.5	181.3	169.9
59°	341.6	344.2	359.1	374.4	383.0	380.4	365.3	293.5	220.1	179.3	169.2
60°	340.3	343.0	357.1	373.4	382.0	379.8	365.2	294.7	218.3	178.2	168.6
62.5°	332.8	337.4	351.4	365.9	376.5	377.7	362.4	295.3	214.5	174.6	165.7
65°	315.2	319.6	338.1	355.8	362.7	367.0	352.1	288.1	205.9	167.2	156.1
67.5°	293.1	296.8	314.9	338.1	343.0	346.9	337.8	273.7	194.9	152.9	144.3
70°	270.4	275.0	289.6	313.9	323.1	325.9	319.3	258.2	179.2	138.6	132.8
72.5°	240.0	243.7	261.1	283.6	293.2	296.7	291.4	237.4	159.3	124.1	118.7
75°	206.0	208.3	224.5	247.3	256.5	260.0	258.3	211.0	137.9	106.1	100.5
77.5°	165.0	170.0	183.5	201.7	214.8	215.5	215.3	178.9	113.4	83.6	81.6
80°	123.2	127.6	140.4	157.7	166.7	169.2	168.9	141.1	88.0	63.9	60.8
82.5°	78.0	80.8	94.1	108.0	117.5	119.7	122.2	101.9	61.3	42.4	38.8
85°	31.0	30.9	42.4	57.3	64.2	68.0	69.8	59.4	33.2	18.9	16.0
87.5°	2.2	2.4	2.9	3.6	3.8	4.0	4.6	5.8	4.6	4.0	2.1
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: P1445237

CATALOG NUMBER: TPTN-VA0-830-U-DL-GM

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9	53.9
2.5°	52.7	52.6	52.0	51.7	51.3	51.2	51.0	50.7	50.6	50.5	50.6
5°	51.9	51.9	51.3	50.9	49.9	49.2	48.5	47.5	46.9	46.4	46.3
7.5°	49.9	50.0	49.9	49.1	48.2	47.1	45.5	43.8	42.5	41.8	41.6
10°	48.2	48.5	48.4	47.8	46.4	44.6	42.5	40.3	38.4	37.1	37.0
12.5°	49.1	49.1	48.7	47.5	45.7	43.4	40.7	37.8	35.6	34.2	33.9
15°	51.9	51.6	50.3	48.5	45.7	42.8	39.6	36.3	33.6	32.1	32.0
17.5°	55.9	55.3	53.1	49.8	46.2	42.5	39.1	35.3	32.1	30.2	29.9
20°	61.2	59.9	56.4	51.4	47.0	42.8	38.5	34.3	31.1	28.9	28.4
22.5°	67.7	65.6	60.2	53.5	48.1	43.4	38.6	34.1	30.6	28.5	28.4
25°	74.5	71.7	64.5	56.0	49.4	43.8	38.8	34.6	31.1	29.6	29.3
27.5°	81.5	78.1	69.1	58.9	50.7	44.5	39.3	35.5	32.8	31.6	31.4
30°	88.3	83.8	73.1	61.4	52.1	44.9	39.8	35.5	33.6	32.7	32.5
32.5°	94.5	89.1	76.9	64.1	53.5	45.7	40.2	35.9	34.2	33.9	33.8
35°	101.2	95.4	80.8	66.3	54.9	46.4	40.6	36.3	35.0	35.0	35.0
37.5°	108.4	101.6	84.9	68.8	56.3	47.7	41.2	37.3	36.1	36.4	36.4
40°	116.1	108.3	89.3	71.5	57.6	48.4	41.6	38.2	37.3	37.5	37.7
42.5°	124.0	114.8	93.7	73.8	59.2	49.2	42.4	39.5	38.8	39.1	39.1
45°	132.1	121.8	97.9	76.3	60.6	50.0	43.4	40.9	40.3	40.5	40.5
47.5°	140.0	128.0	101.6	78.5	61.9	50.7	44.3	42.3	41.8	42.0	41.8
50°	146.7	133.5	105.0	80.2	63.1	51.4	45.5	43.7	43.4	43.1	43.0
52.5°	152.5	138.3	107.6	81.5	63.7	51.7	46.4	45.0	44.8	44.2	44.1
55°	155.7	140.6	108.3	81.7	63.3	51.4	46.7	45.7	45.5	44.8	44.8
57.5°	156.4	140.6	106.8	80.5	61.9	50.5	46.6	45.5	45.2	44.5	44.5
59°	155.7	139.7	105.4	79.1	60.8	49.6	46.0	45.2	44.8	44.2	44.2
60°	155.0	139.2	104.4	77.7	60.1	49.1	45.5	44.8	44.3	43.9	43.9
62.5°	152.0	136.0	101.8	74.1	57.7	47.0	44.2	43.8	43.5	43.1	43.0
65°	143.5	128.3	96.2	70.1	54.1	44.5	42.1	42.0	41.8	41.2	40.9
67.5°	133.5	118.9	88.1	64.9	49.5	41.6	39.6	39.6	39.1	38.5	38.6
70°	123.2	109.8	79.8	58.5	44.2	37.8	36.3	36.4	35.9	35.7	35.9
72.5°	109.5	97.0	70.6	50.7	38.8	33.5	32.3	32.7	32.5	32.4	32.4
75°	92.3	82.3	59.5	42.8	32.8	28.8	28.1	28.2	28.4	28.2	28.2
77.5°	75.2	66.9	47.1	33.8	26.0	23.2	23.1	23.8	23.9	23.8	23.9
80°	55.7	49.2	34.3	24.7	19.3	17.8	18.1	19.0	19.3	19.3	19.6
82.5°	35.9	30.9	22.2	16.0	12.9	12.5	13.3	14.3	14.7	14.7	14.7
85°	14.2	12.8	10.3	7.9	7.4	7.9	8.9	9.5	10.1	10.1	10.0
87.5°	0.8	2.1	3.2	3.2	3.2	3.5	3.5	3.6	3.8	3.6	3.6
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

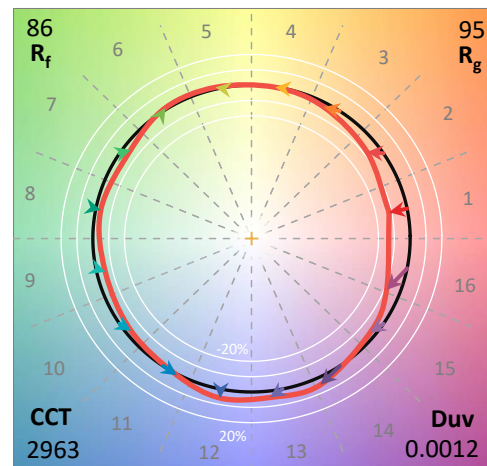
Test Information

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

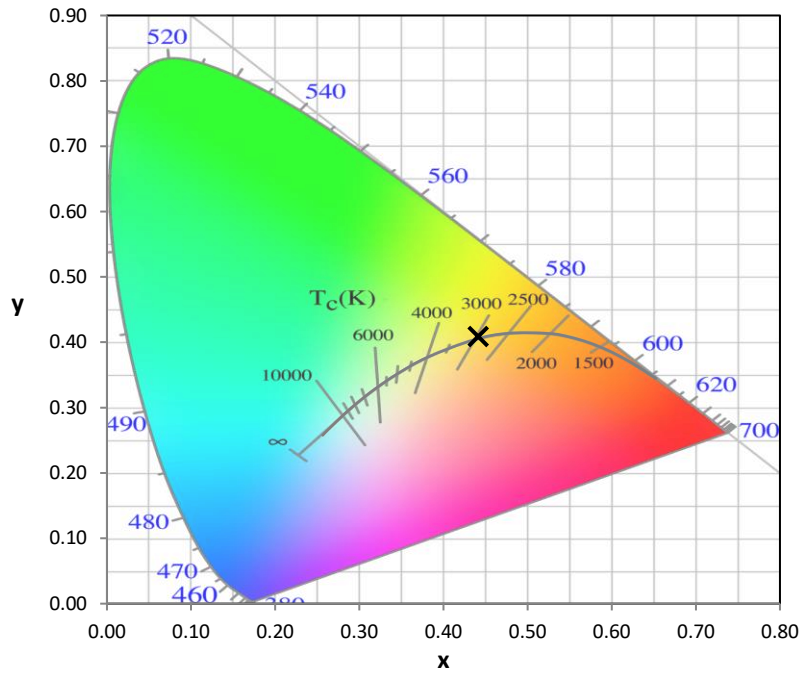
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

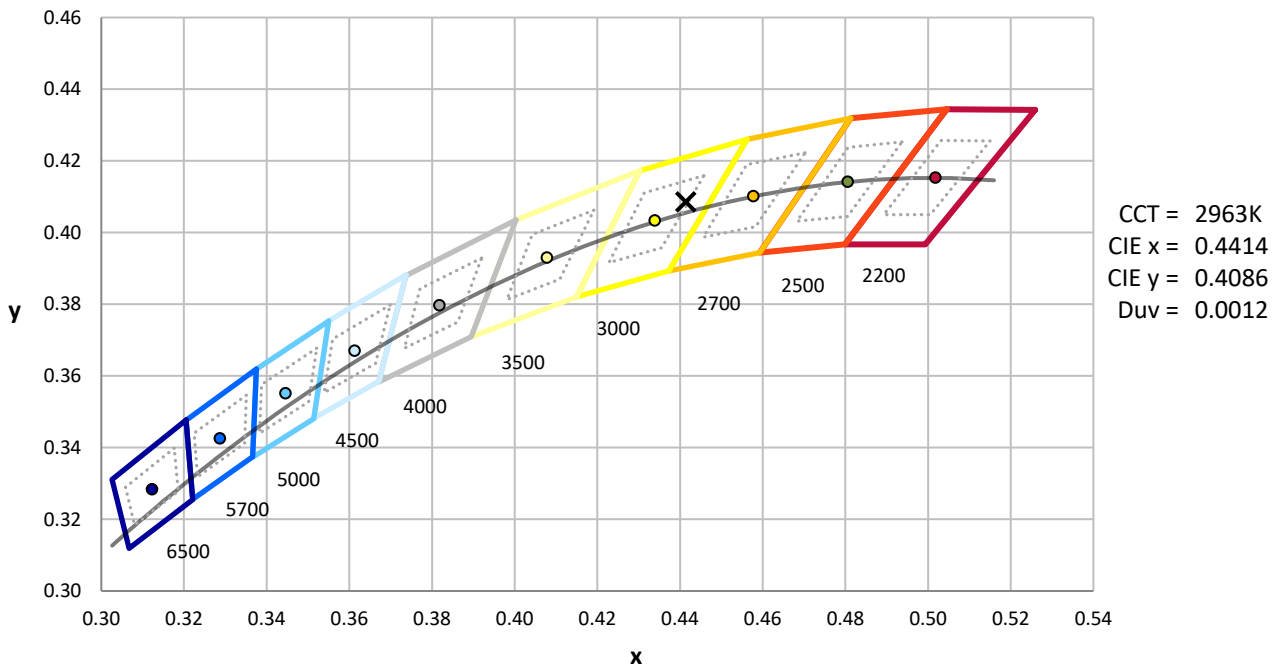
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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CIE 1931 Chromaticity Diagram



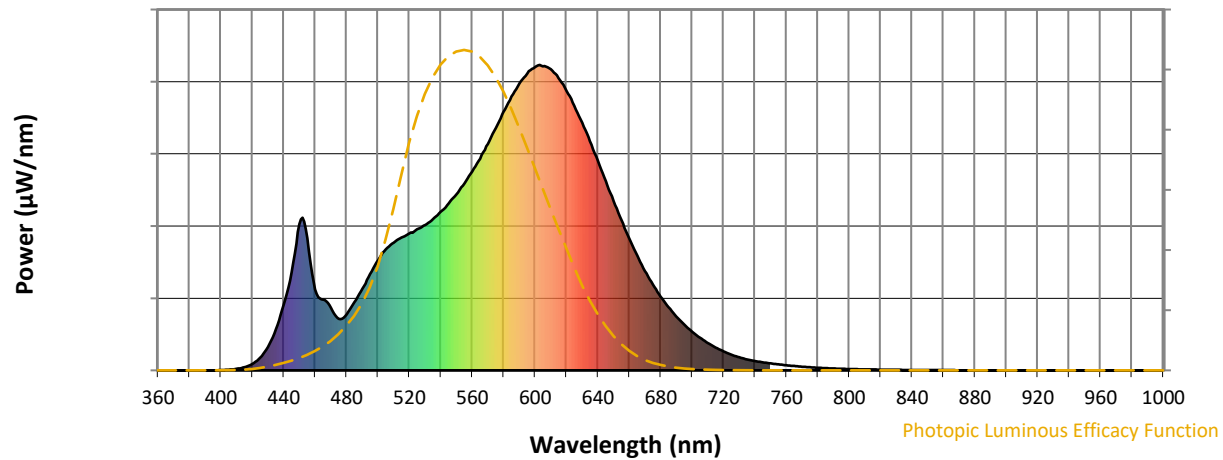
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength

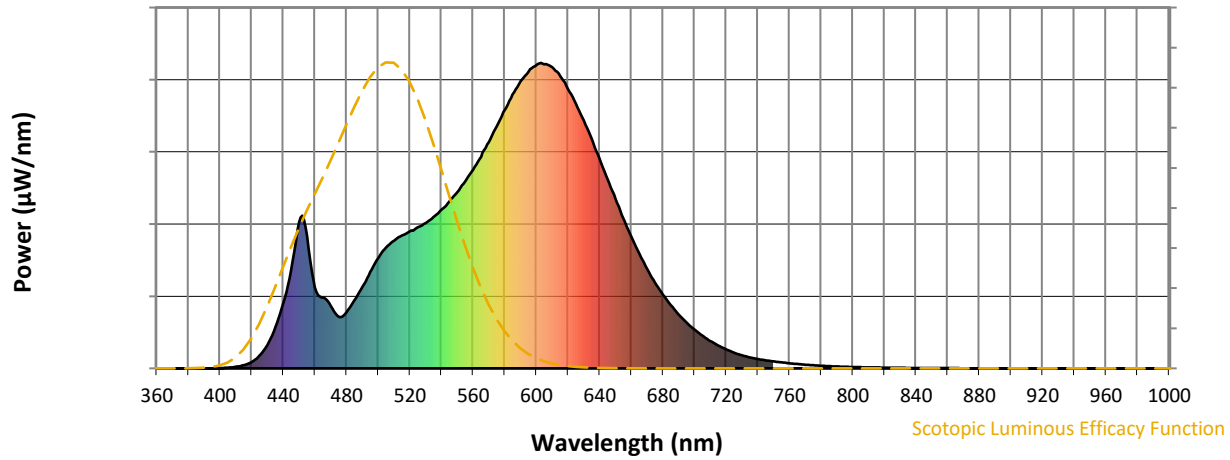


Photopic Lumens: NR

λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	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			

REPORT NUMBER: SP1-2411-284-4

Scotopic Flux vs. Wavelength



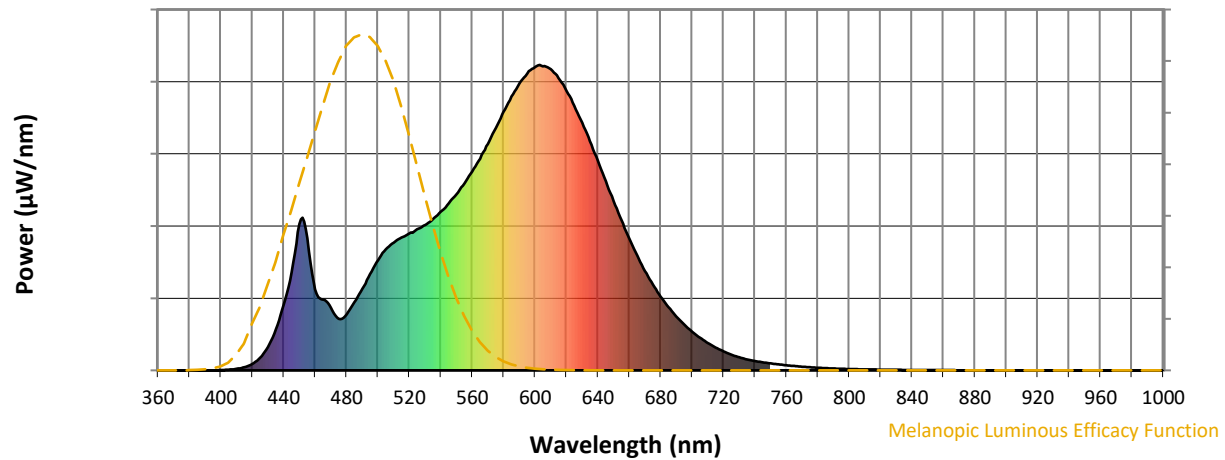
Scotopic Lumens: NR

S/P: 1.34

λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /nm	Lumens (Φ/nm)	λ (nm)	Power W ^λ /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

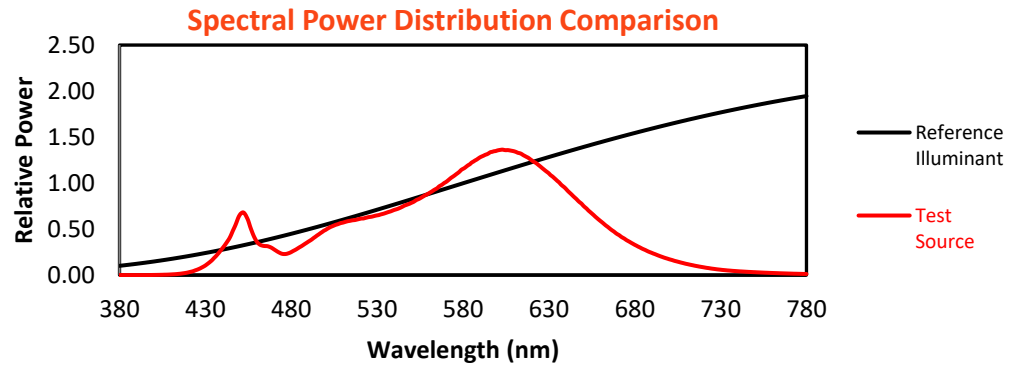
λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^{\wedge}/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	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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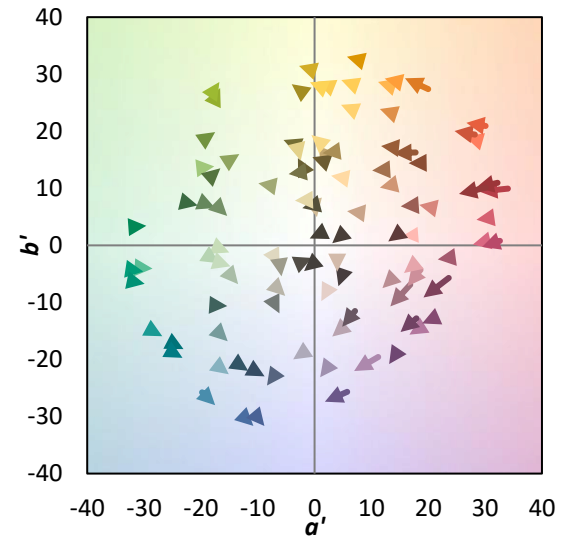
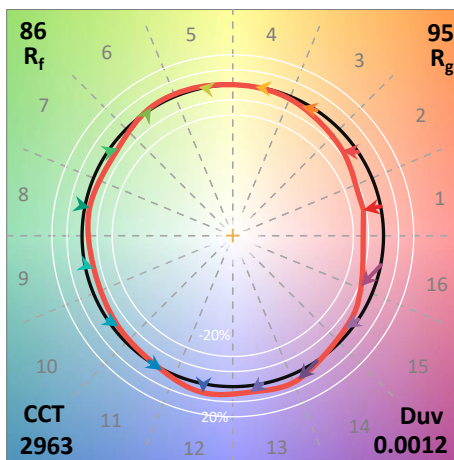
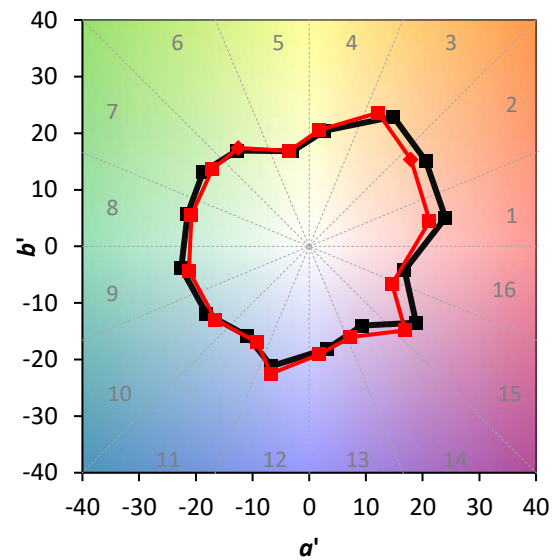
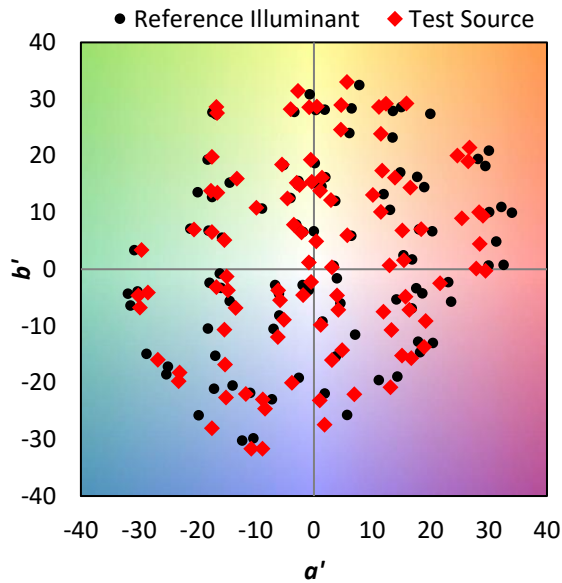
TM-30-18

Summary

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

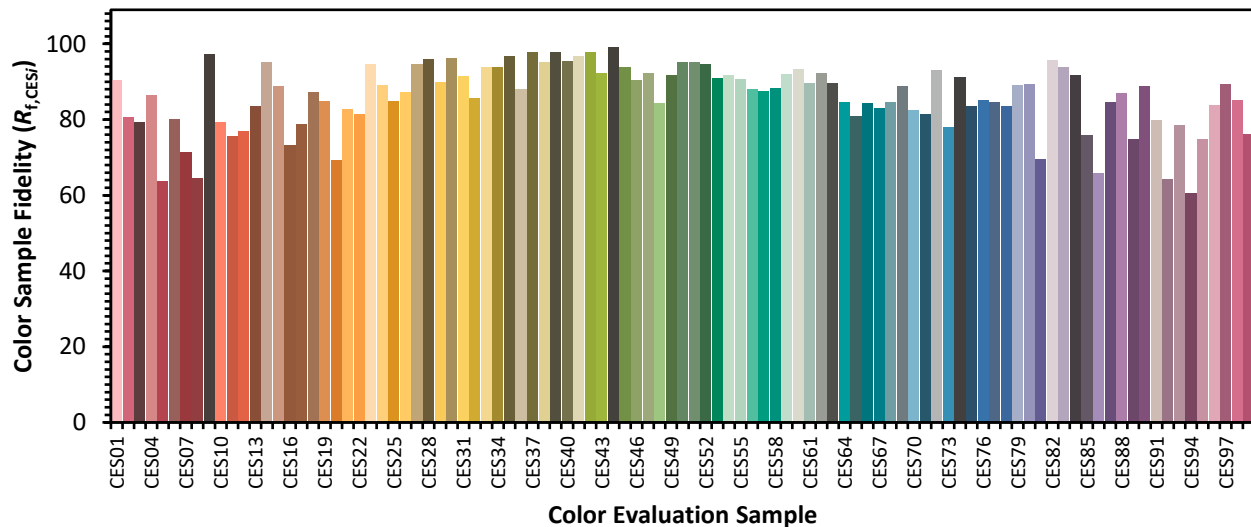


Color Vector Graphics

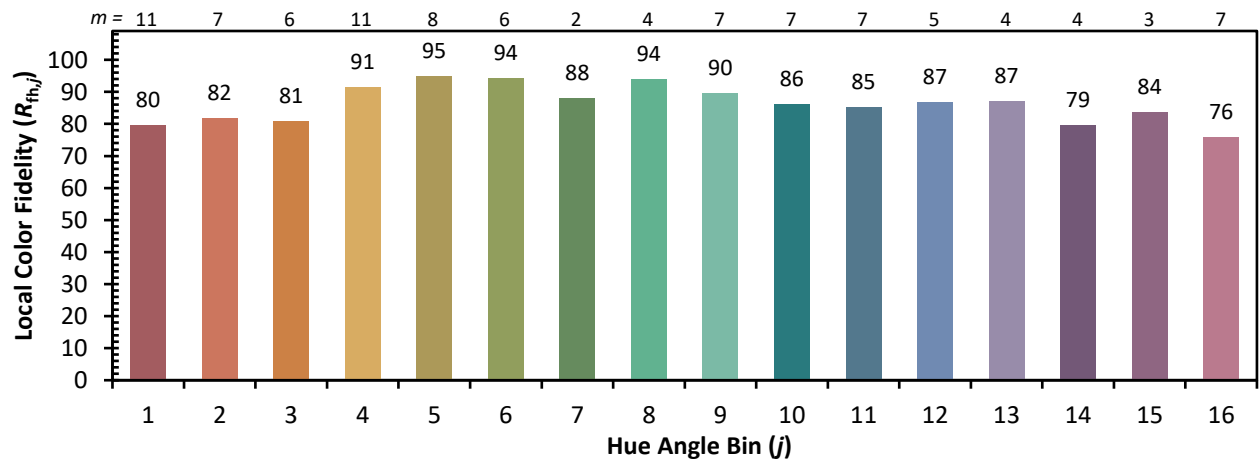
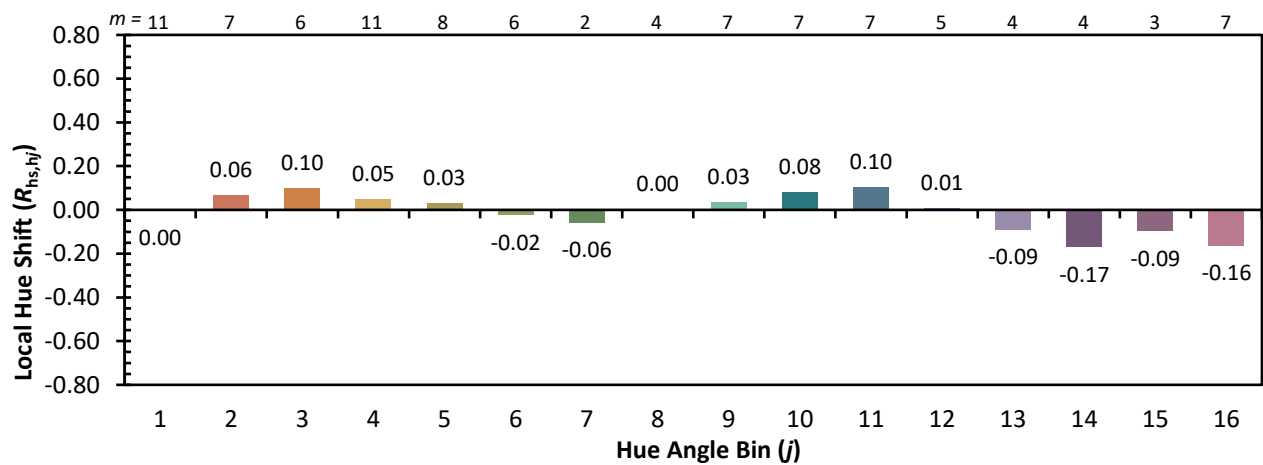
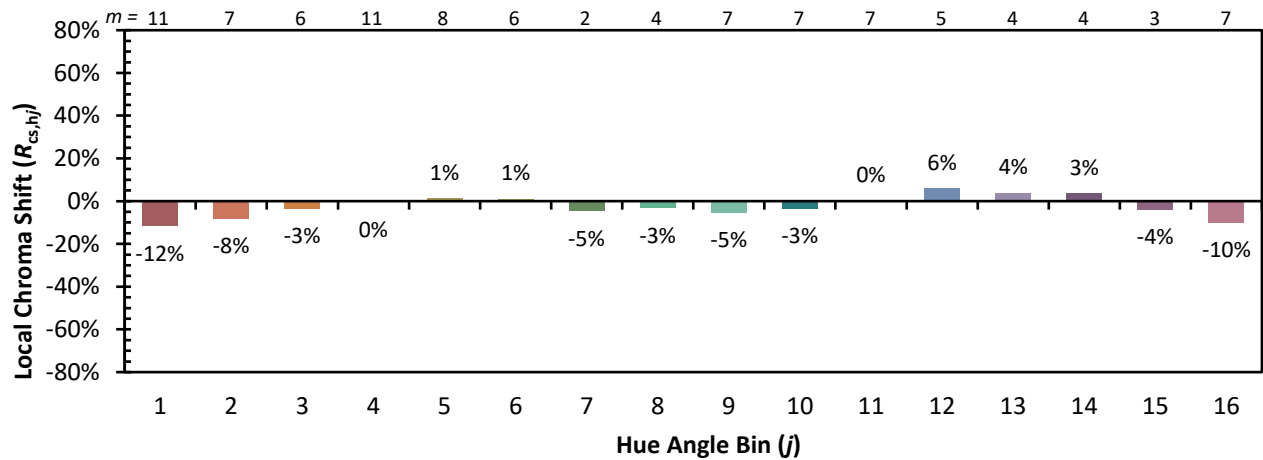


Individual Sample Fidelity Index ($R_{f,i}$)

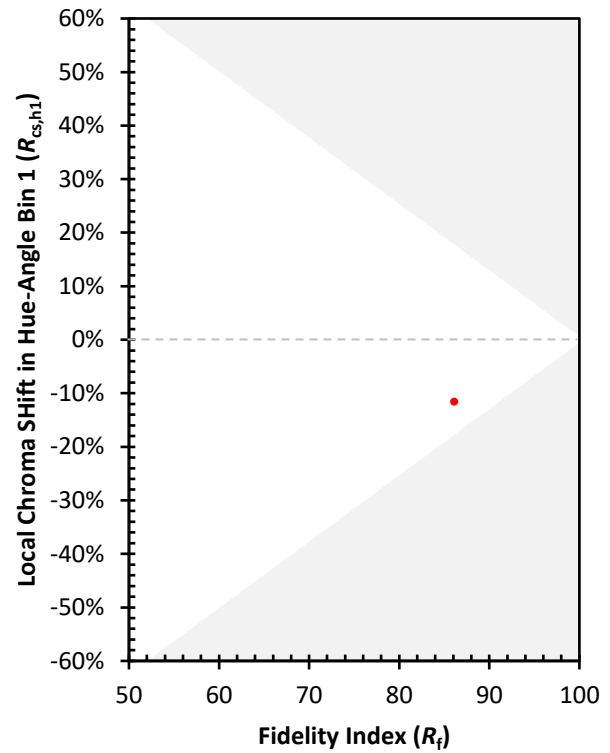
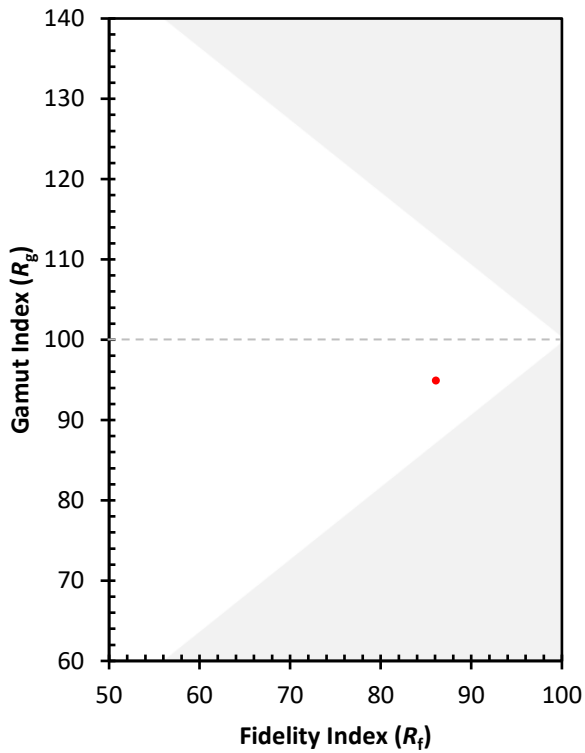
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82 = 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)