

Signify Classified - Internal
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: P833335

Luminaire Tested: **TTN-D1-830-U-WQ-SG-UPL1**

Issue Date: 5/15/2024

Test Information

Test Method: LM-79-08
Report Number: P833335
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-D1-830-U-WQ-SG-UPL1
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE WITH UPLIGHT
3000K, 80 CRI LEDS AND WIDE DISTRIBUTION WITH SOLITE GLASS
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3098.9 lumens
Efficiency: N/A
Efficacy: 106.9 lumens/watt
Luminous Opening: Vertical Cylinder (Dia: 0.71' x H: 0.1')
IES Classification: Type V - Short
BUG Rating: B1 - U3 - G1

Input Watts (W): 29
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

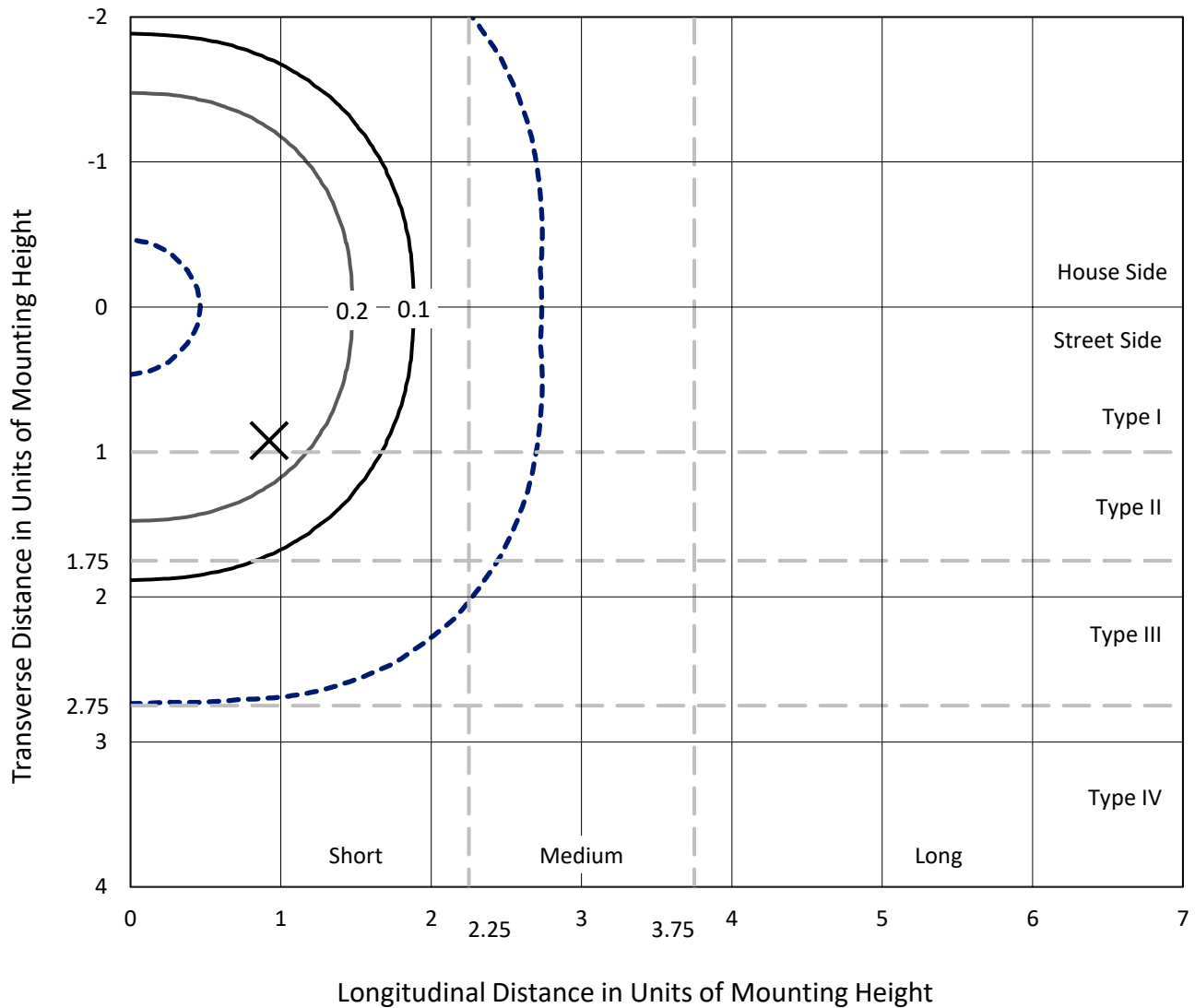


REPORT NUMBER: P833335

CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

Iso-Footcandle Lines of Horizontal Illumination

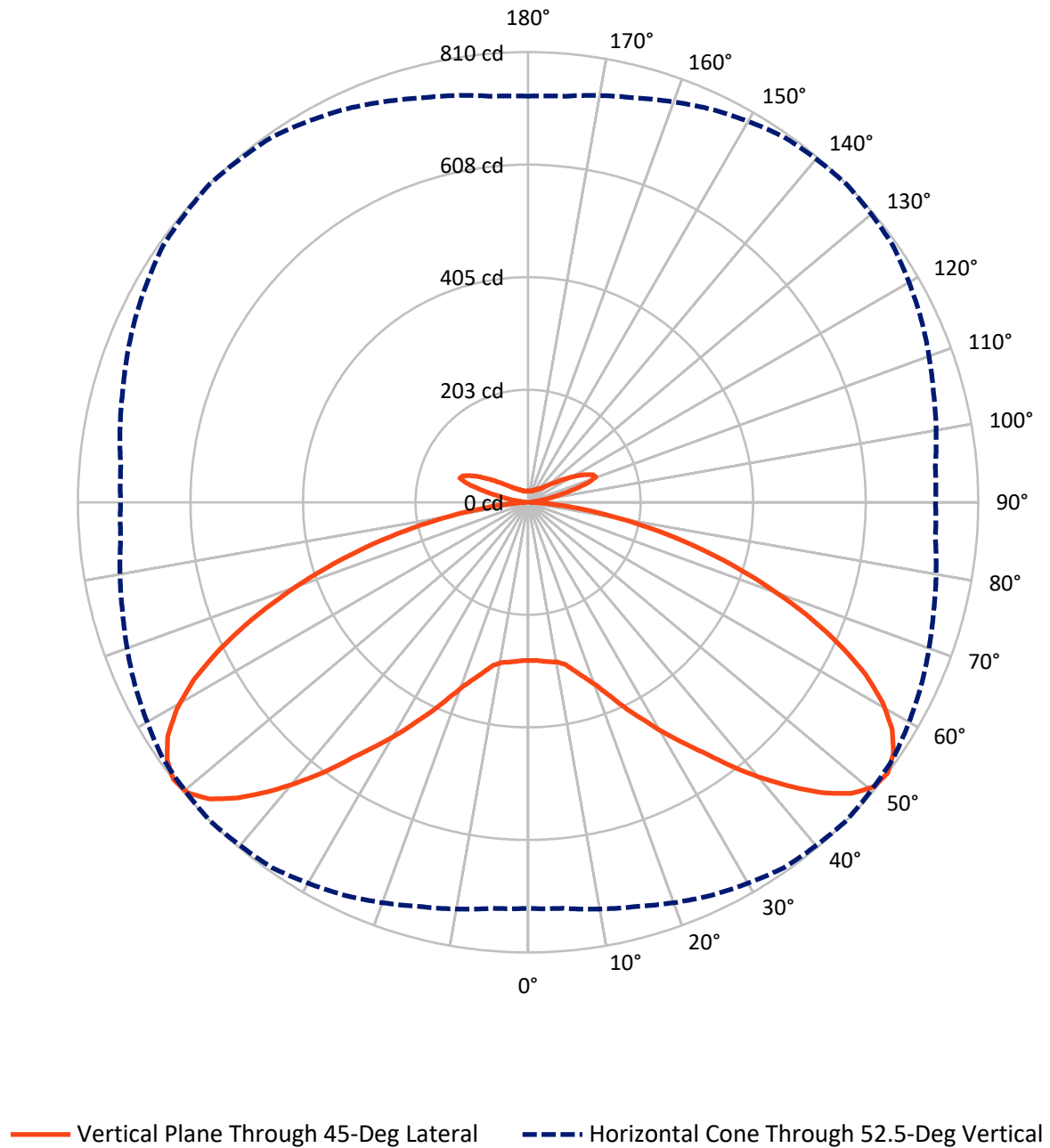
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.5 fc
 Type V - Short - N/A

REPORT NUMBER: P833335
CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

Luminous Intensity Polar Plot



REPORT NUMBER: P833335

CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

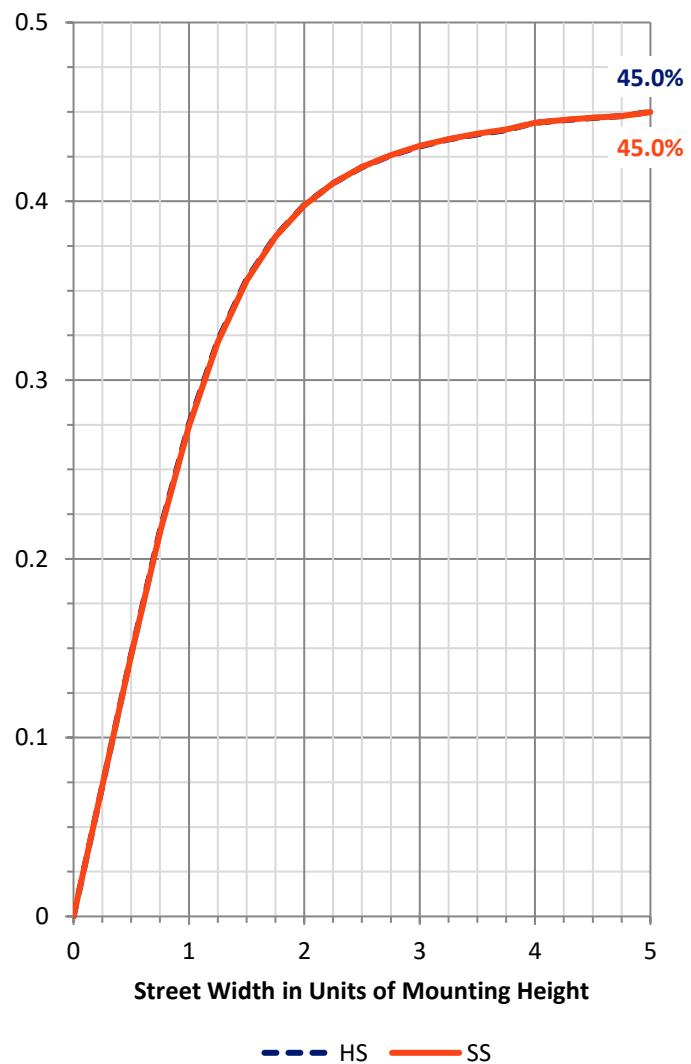
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1401.7	147.7	1549.4
	% Fixture	45.2	4.8	50.0
Street Side	Lumens	1401.7	147.7	1549.4
	% Fixture	45.2	4.8	50.0
Total	Lumens	2803.4	295.5	3098.9
	% Fixture	90.5	9.5	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	27.5	0.9
10°-20°	90.5	2.9
20°-30°	190.9	6.2
30°-40°	348.7	11.3
40°-50°	555.2	17.9
50°-60°	671.3	21.7
60°-70°	564.4	18.2
70°-80°	299.2	9.7
80°-90°	55.7	1.8
90°-100°	6.6	0.2
100°-110°	67.0	2.2
110°-120°	98.0	3.2
120°-130°	56.9	1.8
130°-140°	30.1	1.0
140°-150°	17.9	0.6
150°-160°	11.0	0.4
160°-170°	6.0	0.2
170°-180°	2.0	0.1
0°-90°	2803.4	90.5
0°-180°	3098.9	100.0

Coefficient of Utilization



REPORT NUMBER: P833335

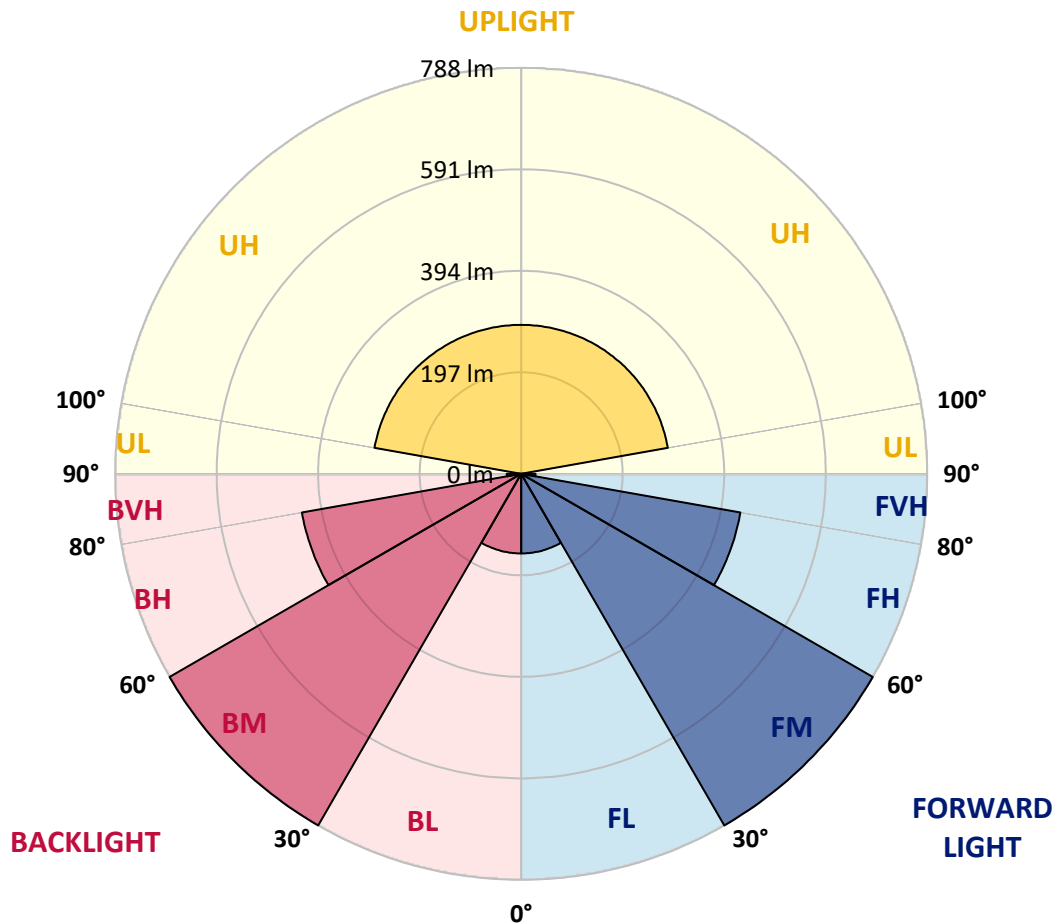
CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	154.4	5.0			
FM	(30°-60°)	787.6	25.4			
FH	(60°-80°)	431.8	13.9			G0/660
FVH	(80°-90°)	27.9	0.9			G1/100
BL	(0°-30°)	154.4	5.0	B1/500		
BM	(30°-60°)	787.6	25.4	B1/1000		
BH	(60°-80°)	431.8	13.9	B1/500		G0/660
BVH	(80°-90°)	27.9	0.9			G1/100
UL	(90°-100°)	6.6	0.2		U1/10	
UH	(100°-180°)	288.9	9.3		U3/500	

BUG Rating: B1-U3-G1

Type V Short



REPORT NUMBER: P833335

CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0
2.5°	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0	285.0
5°	287.5	287.5	285.0	287.5	287.5	287.5	287.5	287.5	287.5	287.5	287.5
7.5°	287.5	287.5	287.5	289.9	289.9	289.9	289.9	287.5	287.5	287.5	287.5
10°	292.4	292.4	292.4	292.4	292.4	292.4	292.4	292.4	292.4	292.4	292.4
12.5°	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8	299.8
15°	312.2	312.2	312.2	312.2	314.7	314.7	314.7	312.2	312.2	312.2	312.2
17.5°	327.1	327.1	329.6	329.6	332.1	332.1	332.1	329.6	327.1	329.6	327.1
20°	349.4	349.4	349.4	351.9	354.4	354.4	354.4	349.4	349.4	349.4	349.4
22.5°	374.2	374.2	374.2	376.7	379.1	379.1	379.1	374.2	374.2	374.2	374.2
25°	403.9	403.9	403.9	406.4	408.9	411.4	411.4	406.4	403.9	403.9	401.4
27.5°	433.7	433.7	438.6	441.1	443.6	443.6	443.6	438.6	436.1	436.1	436.1
30°	468.3	468.3	473.3	475.8	480.7	480.7	480.7	473.3	470.8	468.3	468.3
32.5°	500.6	503.0	508.0	513.0	517.9	517.9	520.4	510.5	505.5	503.0	503.0
35°	535.3	537.7	542.7	550.1	555.1	557.6	560.0	550.1	542.7	540.2	540.2
37.5°	574.9	577.4	584.8	592.2	602.2	607.1	609.6	594.7	582.3	577.4	577.4
40°	619.5	622.0	629.4	639.3	649.2	654.2	656.7	641.8	629.4	624.5	622.0
42.5°	656.7	661.6	669.1	683.9	693.8	701.3	701.3	683.9	669.1	661.6	661.6
45°	691.4	696.3	708.7	723.6	738.5	745.9	743.4	726.1	708.7	698.8	696.3
47.5°	718.6	723.6	738.5	755.8	775.6	783.1	780.6	760.8	738.5	726.1	723.6
50°	733.5	736.0	753.3	778.1	797.9	805.4	800.4	780.6	755.8	738.5	736.0
52.5°	731.0	733.5	753.3	780.6	802.9	810.3	802.9	780.6	755.8	736.0	733.5
55°	716.2	718.6	738.5	768.2	790.5	797.9	790.5	768.2	740.9	721.1	718.6
57.5°	688.9	691.4	711.2	740.9	765.7	773.1	763.2	738.5	711.2	691.4	691.4
60°	649.2	651.7	671.5	703.8	726.1	733.5	721.1	701.3	674.0	651.7	649.2
62.5°	597.2	597.2	619.5	651.7	671.5	681.5	669.1	646.8	622.0	597.2	599.7
65°	535.3	532.8	555.1	584.8	607.1	614.6	602.2	582.3	557.6	535.3	535.3
67.5°	470.8	470.8	488.2	513.0	532.8	540.2	527.8	510.5	490.7	470.8	470.8
70°	401.4	401.4	413.8	438.6	456.0	460.9	453.5	436.1	418.8	401.4	401.4
72.5°	332.1	329.6	342.0	361.8	376.7	381.6	374.2	364.3	344.4	332.1	332.1
75°	262.7	260.2	267.6	285.0	297.4	302.3	294.9	287.5	272.6	262.7	262.7
77.5°	195.8	193.3	200.7	215.6	223.0	225.5	220.5	215.6	203.2	195.8	195.8
80°	133.8	131.3	136.3	146.2	153.6	153.6	151.2	148.7	138.8	133.8	136.3
82.5°	79.3	76.8	81.8	89.2	94.2	91.7	91.7	89.2	81.8	79.3	79.3
85°	34.7	32.2	34.7	39.6	44.6	42.1	42.1	42.1	37.2	34.7	34.7
87.5°	5.0	5.0	5.0	7.4	9.9	7.4	7.4	7.4	5.0	5.0	5.0
90°	2.5	2.5	3.0	3.0	3.0	3.0	3.0	3.0	3.0	2.5	2.5
92.5°	2.5	2.5	2.5	3.5	4.0	3.5	4.0	3.0	3.0	2.5	2.5
95°	3.0	3.0	3.5	4.5	5.6	6.1	6.1	3.5	3.5	3.0	3.0
97.5°	4.0	4.5	4.5	5.6	9.1	16.7	10.1	5.1	5.1	4.5	4.0
100°	6.6	7.1	7.1	12.6	26.8	35.9	25.8	13.1	9.6	7.1	7.1
102.5°	21.2	22.2	27.3	40.9	60.7	55.1	46.5	44.0	30.3	24.3	23.3
105°	54.1	53.6	57.6	68.2	84.9	83.4	76.8	69.8	60.2	55.6	55.6
107.5°	71.3	71.3	74.8	83.9	96.6	112.7	114.2	90.5	79.4	74.3	73.8
110°	80.4	80.4	83.4	91.0	107.7	130.4	129.4	111.7	98.1	91.5	90.5

REPORT NUMBER: P833335

CATALOG NUMBER: TTN-D1-830-U-WQ-SG-UPL1

CANDELA DISTRIBUTION (continued):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
112.5°	82.4	82.9	86.9	98.6	116.8	126.9	122.3	115.3	109.2	104.1	103.1
115°	85.4	85.4	90.0	101.1	111.2	115.3	110.2	104.6	100.6	98.6	99.6
117.5°	84.4	85.9	86.9	93.0	99.6	102.6	100.1	92.5	89.5	88.5	86.9
120°	78.4	78.4	79.4	82.4	85.9	87.5	86.4	81.4	78.9	78.4	77.3
122.5°	69.8	70.3	69.8	71.3	73.8	75.3	74.3	70.3	69.3	69.3	68.2
125°	61.2	61.2	60.7	61.7	63.2	62.7	63.2	61.2	60.7	60.7	60.2
127.5°	55.1	54.6	53.6	54.1	54.6	54.6	55.1	53.1	53.6	54.1	53.6
130°	49.0	49.0	48.0	48.0	48.0	47.0	48.0	47.0	47.5	48.0	48.5
132.5°	43.5	43.5	42.0	41.5	41.5	41.5	42.0	41.5	42.5	43.5	43.5
135°	38.9	38.9	37.4	37.9	37.9	37.4	37.9	37.4	38.4	38.9	38.9
137.5°	35.4	35.4	34.4	34.4	34.4	33.9	34.4	34.4	34.9	35.9	36.4
140°	32.4	32.4	31.8	31.8	31.3	31.8	31.8	31.8	32.4	32.9	32.9
142.5°	30.8	30.3	29.8	29.3	29.8	29.8	29.8	29.3	29.8	30.8	30.8
145°	28.3	28.3	27.8	27.8	27.8	28.3	27.8	27.8	28.3	28.3	28.8
147.5°	26.8	26.8	26.3	26.8	26.8	26.8	26.8	26.3	26.8	26.8	27.3
150°	26.3	25.8	25.3	25.8	25.8	25.3	25.3	25.3	25.3	25.8	25.8
152.5°	24.8	24.8	24.3	24.8	24.3	24.3	24.3	24.3	24.3	24.8	25.3
155°	23.8	23.8	23.3	23.8	23.8	23.8	23.8	23.8	23.8	23.8	23.8
157.5°	22.7	23.3	22.7	22.7	22.7	22.7	22.7	22.7	22.7	23.3	23.3
160°	22.2	22.2	22.2	22.2	21.7	21.7	21.7	22.2	22.2	22.2	22.7
162.5°	21.7	21.7	21.7	21.7	21.2	21.2	21.2	21.2	21.7	21.7	22.2
165°	21.7	21.2	21.2	21.2	20.7	20.7	20.7	20.7	21.2	21.7	21.2
167.5°	20.7	20.7	20.7	20.7	20.7	20.2	20.2	20.7	20.7	20.7	21.2
170°	20.7	20.7	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.7
172.5°	20.7	20.7	20.7	20.7	20.2	20.2	20.2	20.2	20.2	20.7	20.7
175°	20.7	20.7	20.7	20.7	20.2	20.2	20.2	20.7	20.7	20.7	20.2
177.5°	20.7	20.7	20.7	20.7	20.2	20.7	20.7	20.7	20.7	20.7	20.7
180°	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7	20.7

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 TT and TTN families of products

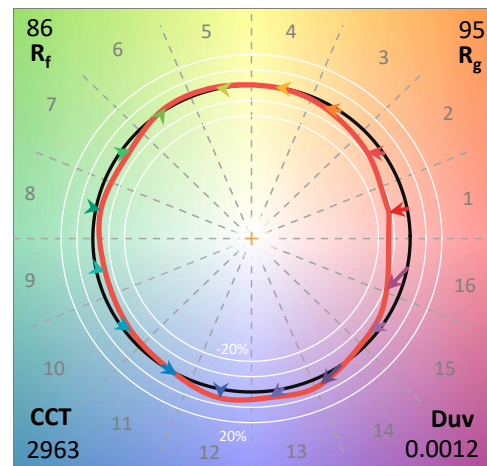
Test Information

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

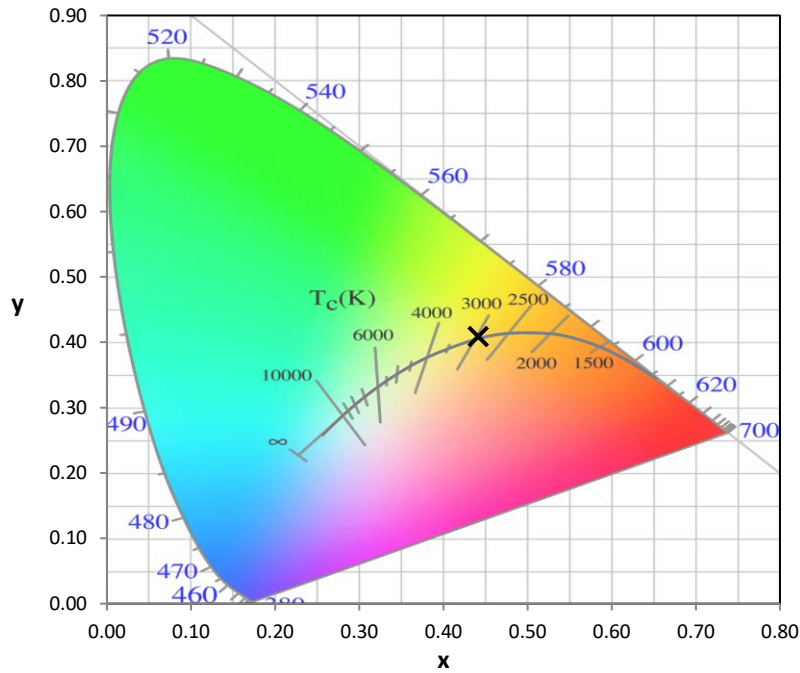
Stabilization Time: 37M
 Operation Time: 1H 37M
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

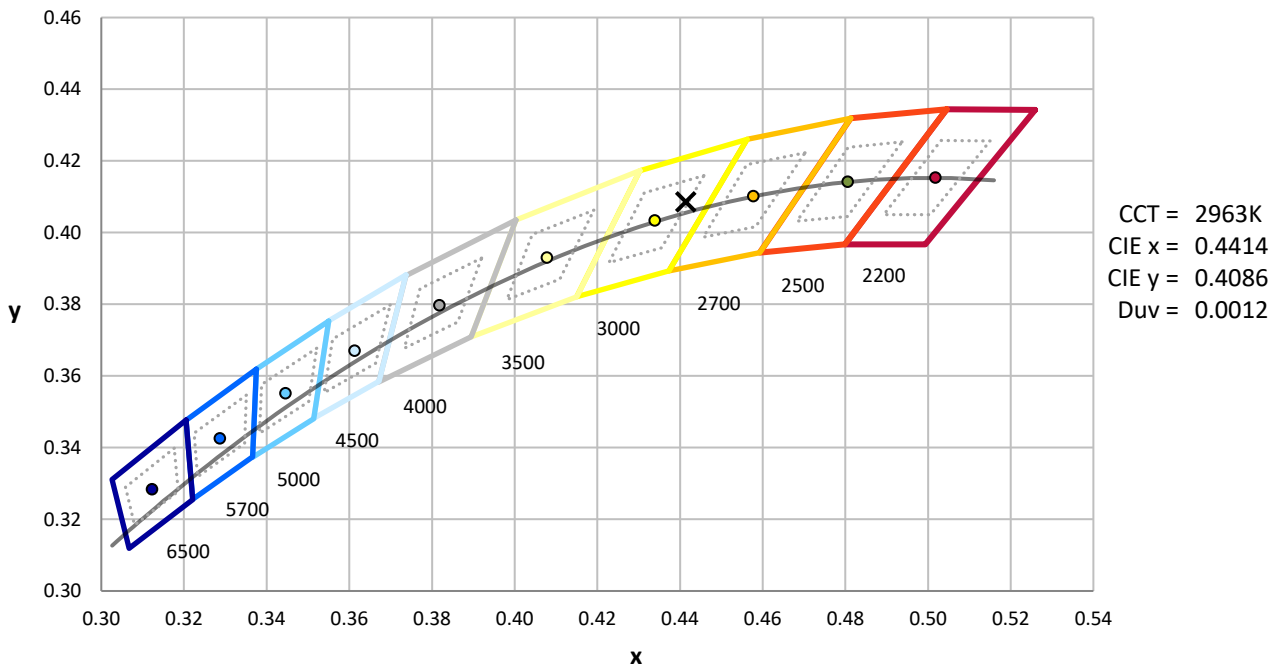
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

REPORT NUMBER: SP1-2411-284-4

CIE 1931 Chromaticity Diagram



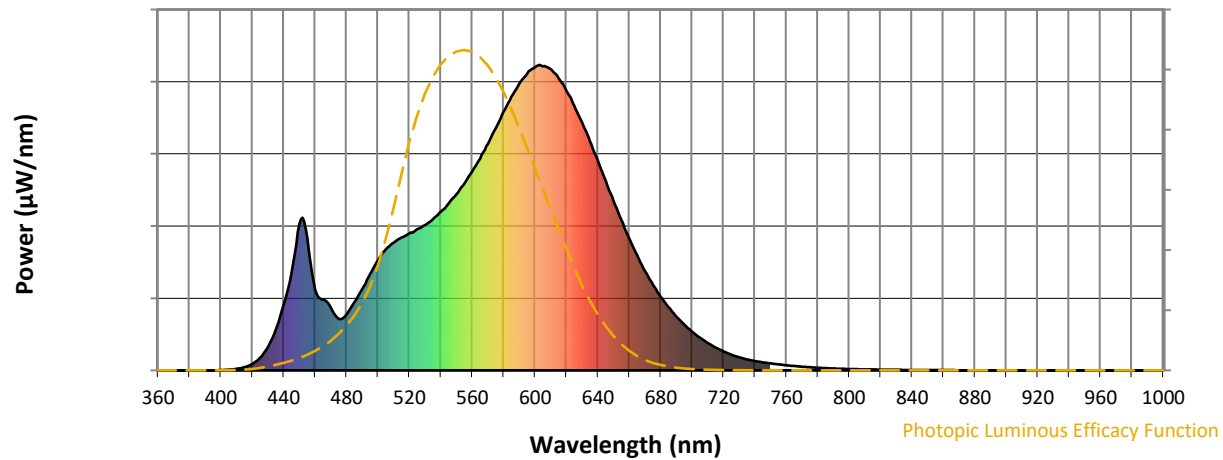
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2411-284-4

Photopic Flux vs. Wavelength

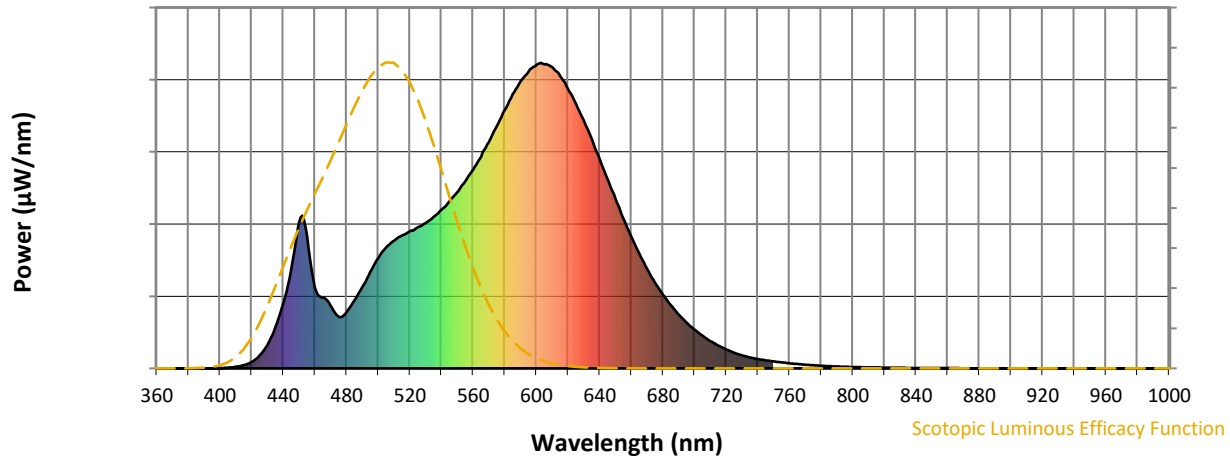


Photopic Lumens: NR

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



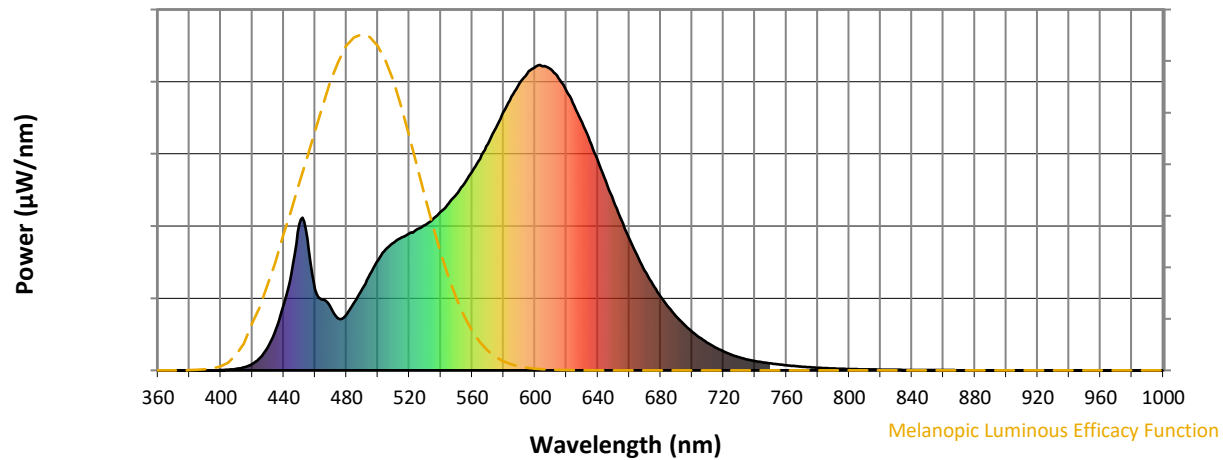
Scotopic Lumens: NR

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			

REPORT NUMBER: SP1-2411-284-4

Melanopic Flux vs. Wavelength


Melanopic Lumens: NR
M/P: 2.58

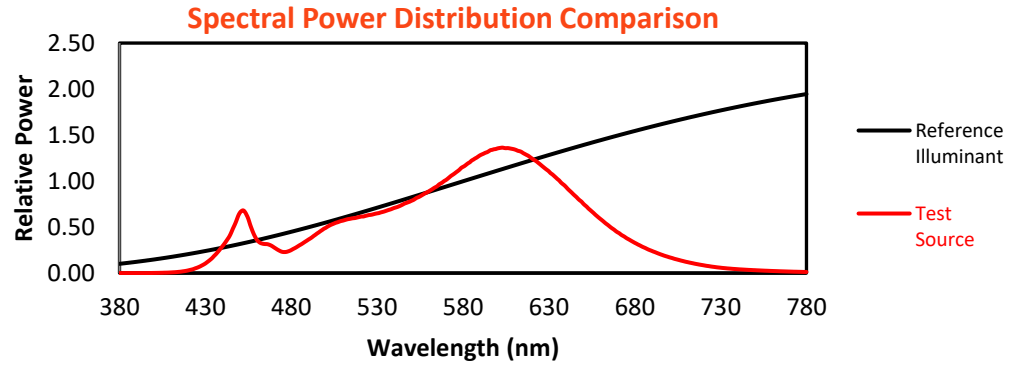
λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)	λ (nm)	Power $\text{W}^\wedge/\text{nm}$	Lumens (ϕ/nm)
360	0	NR	490	267	NR	620	915	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			

REPORT NUMBER: SP1-2411-284-4

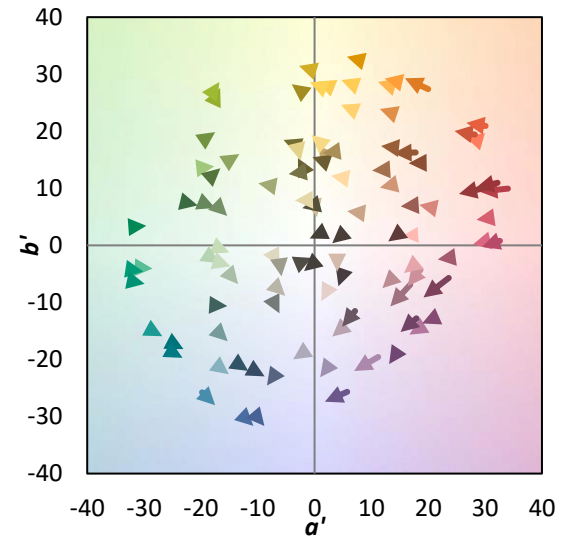
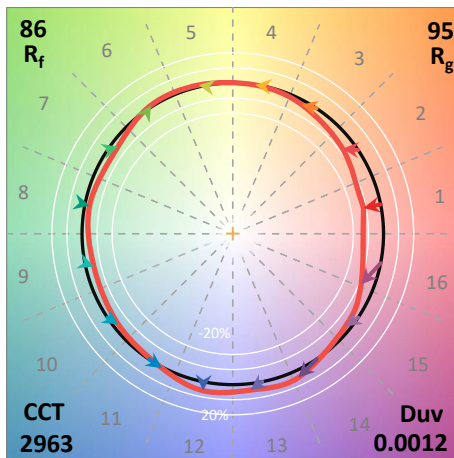
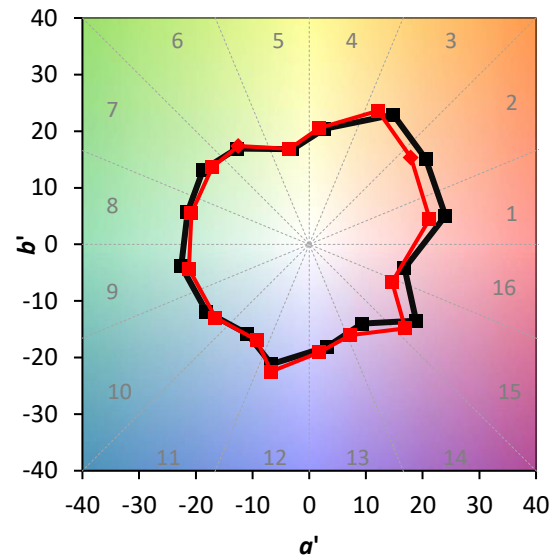
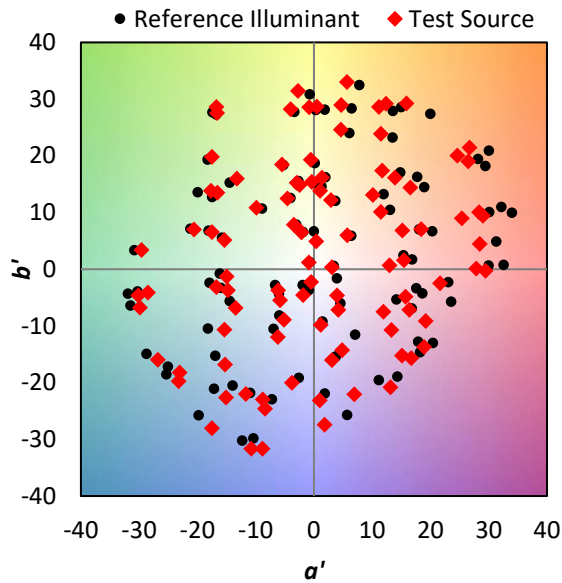
TM-30-18

Summary

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

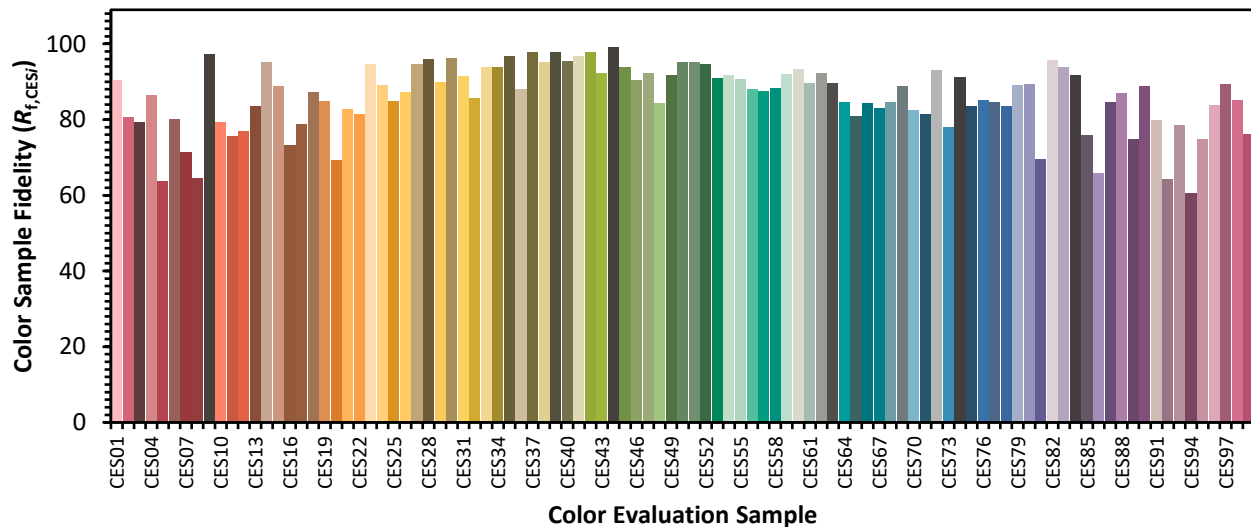


Color Vector Graphics

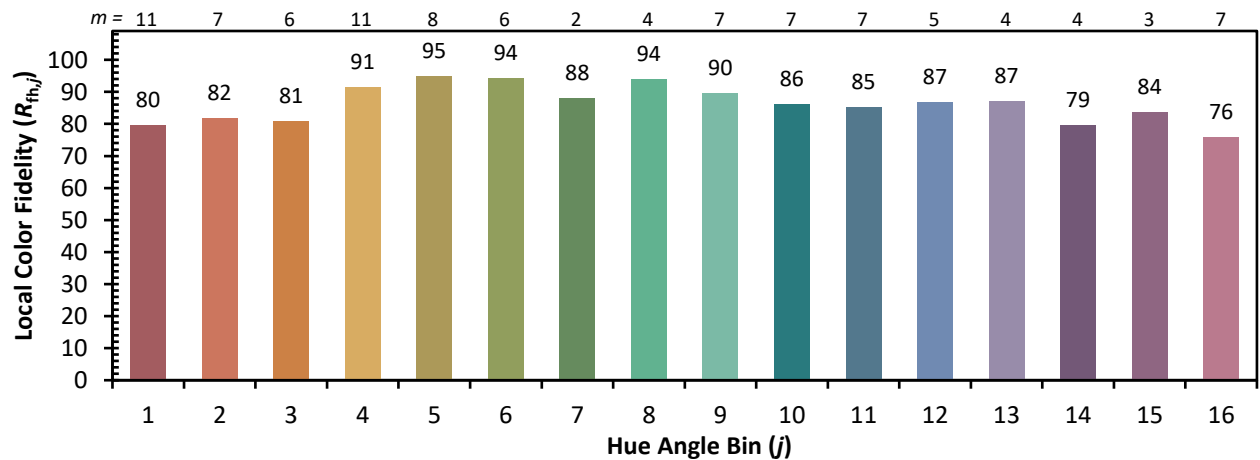
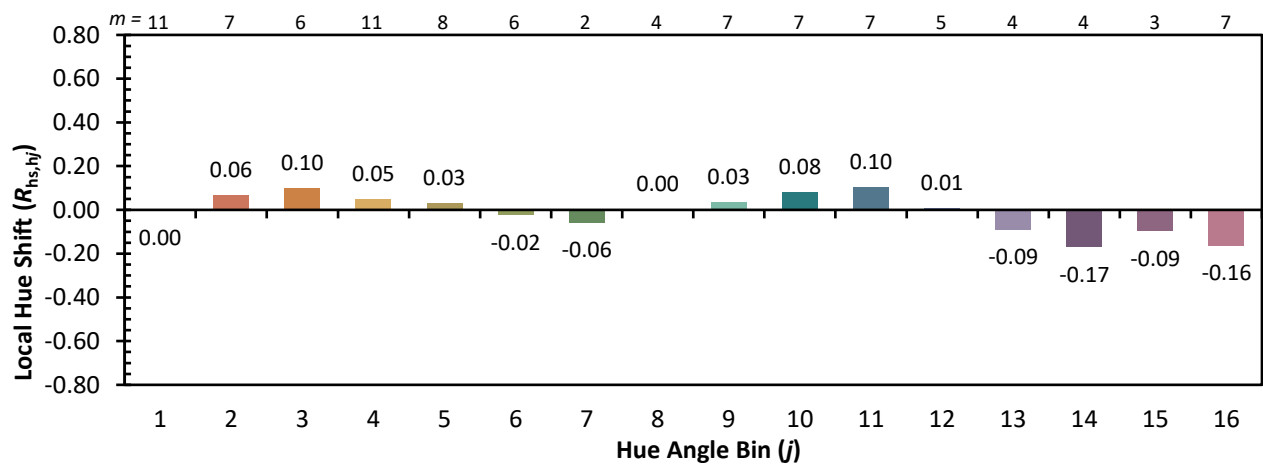
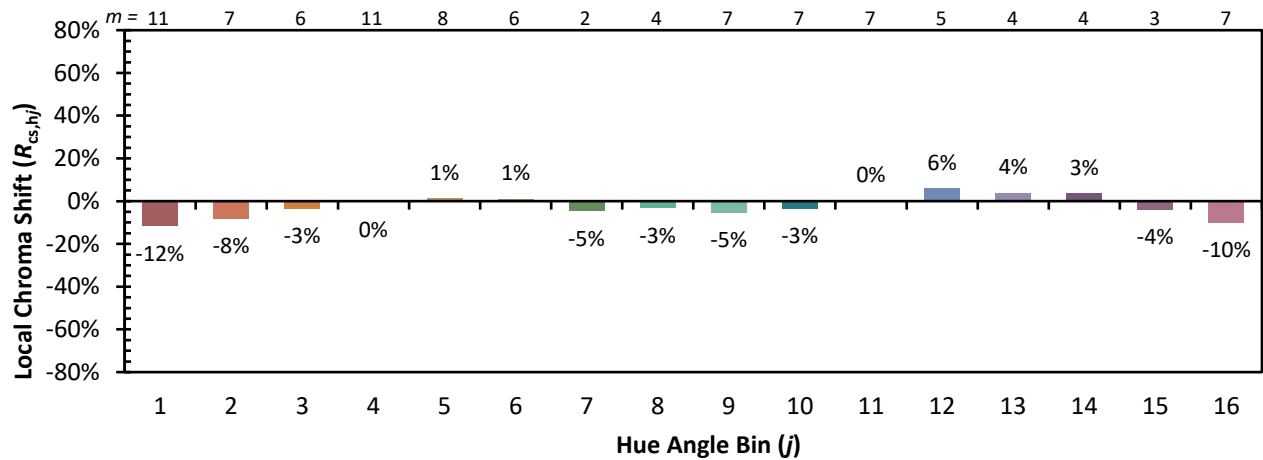


Individual Sample Fidelity Index ($R_{f,i}$)

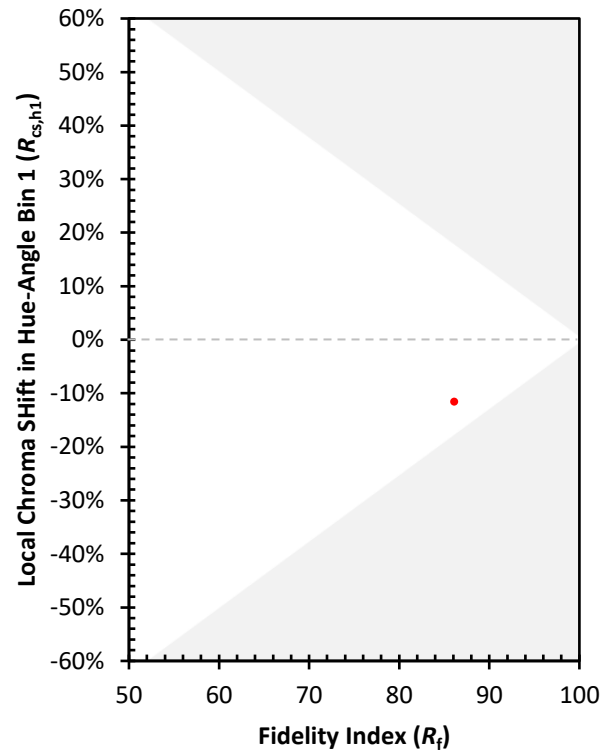
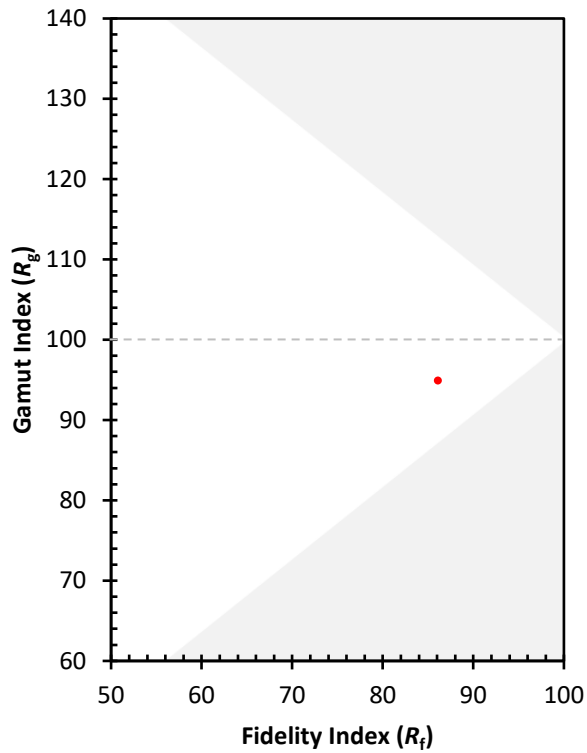
CES01 = 86	CES26 = 87	CES51 = 95	CES76 = 85
CES02 = 63	CES27 = 95	CES52 = 95	CES77 = 85
CES03 = 31	CES28 = 96	CES53 = 91	CES78 = 83
CES04 = 70	CES29 = 90	CES54 = 92	CES79 = 89
CES05 = 50	CES30 = 96	CES55 = 91	CES80 = 89
CES06 = 51	CES31 = 92	CES56 = 88	CES81 = 70
CES07 = 42	CES32 = 86	CES57 = 87	CES82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