

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: P823350

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

Issue Date: 4/16/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P823350  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/16/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TTN-D1-830-U-WQ  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE  
3000K, 80 CRI LEDS AND WIDE DISTRIBUTION  
Light Source: -  
Ballast/Driver: -

**Summary**

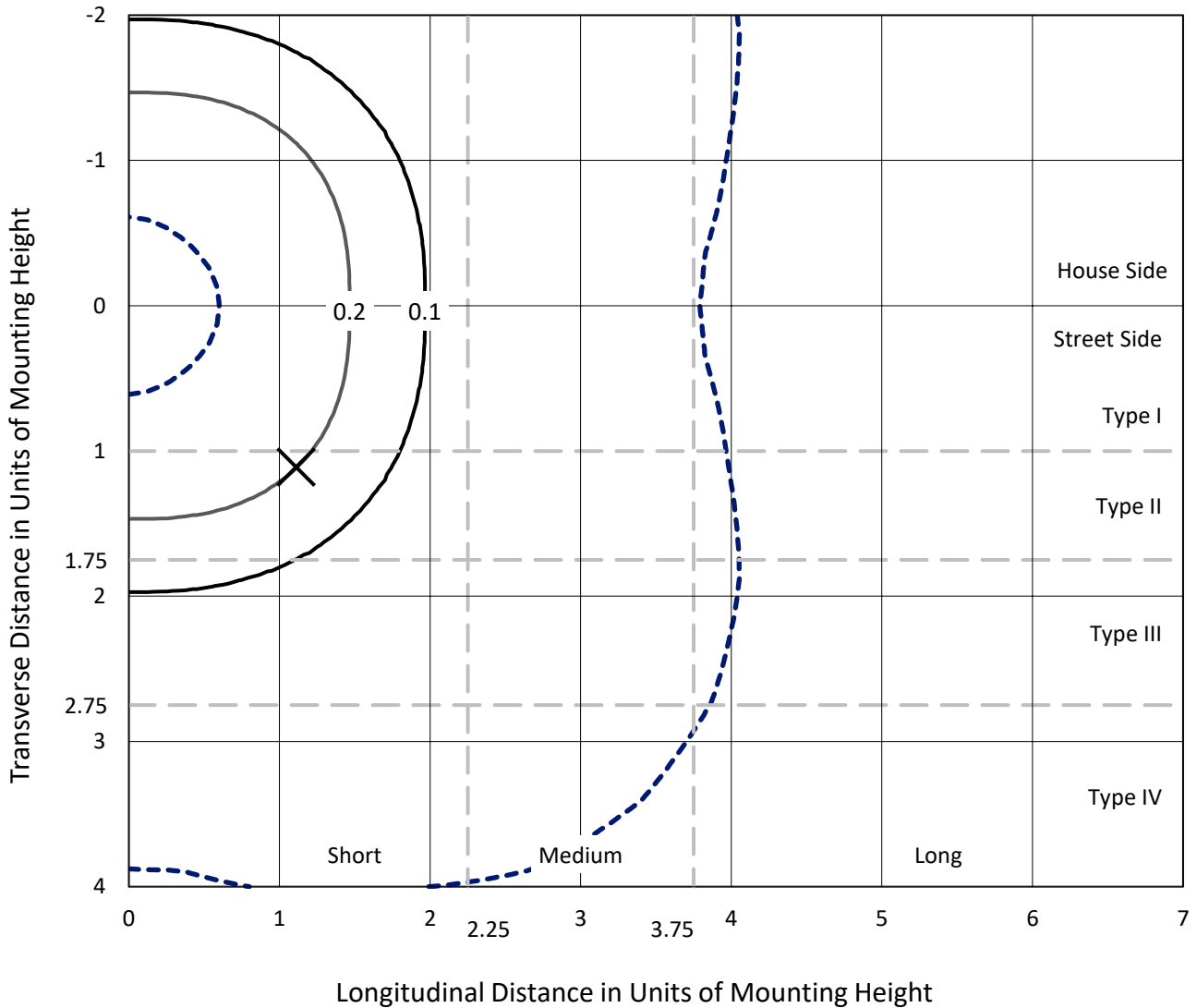
Lumens per Lamp: N/A  
Luminaire Lumens: 3011 lumens  
Efficiency: N/A  
Efficacy: 114.1 lumens/watt  
Luminous Opening: Circular (Dia: 0.71' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 26.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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: P823350  
 CATALOG NUMBER: TTN-D1-830-U-WQ

### Iso-Footcandle Lines of Horizontal Illumination

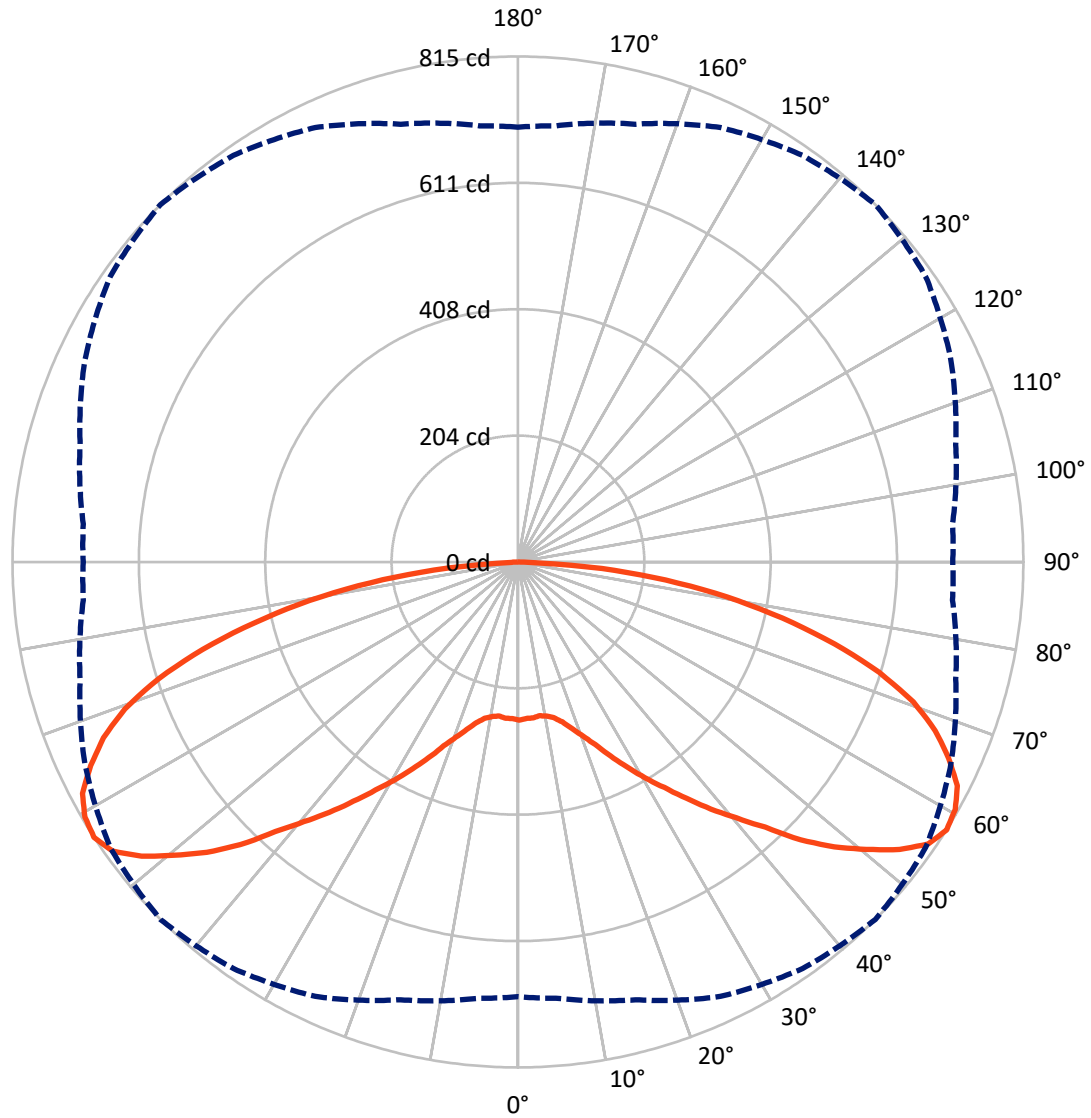
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.4 fc  
 Type V - Short - N/A

REPORT NUMBER: P823350  
CATALOG NUMBER: TTN-D1-830-U-WQ

### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral    - - - Horizontal Cone Through 57.5-Deg Vertical

REPORT NUMBER: P823350  
 CATALOG NUMBER: TTN-D1-830-U-WQ

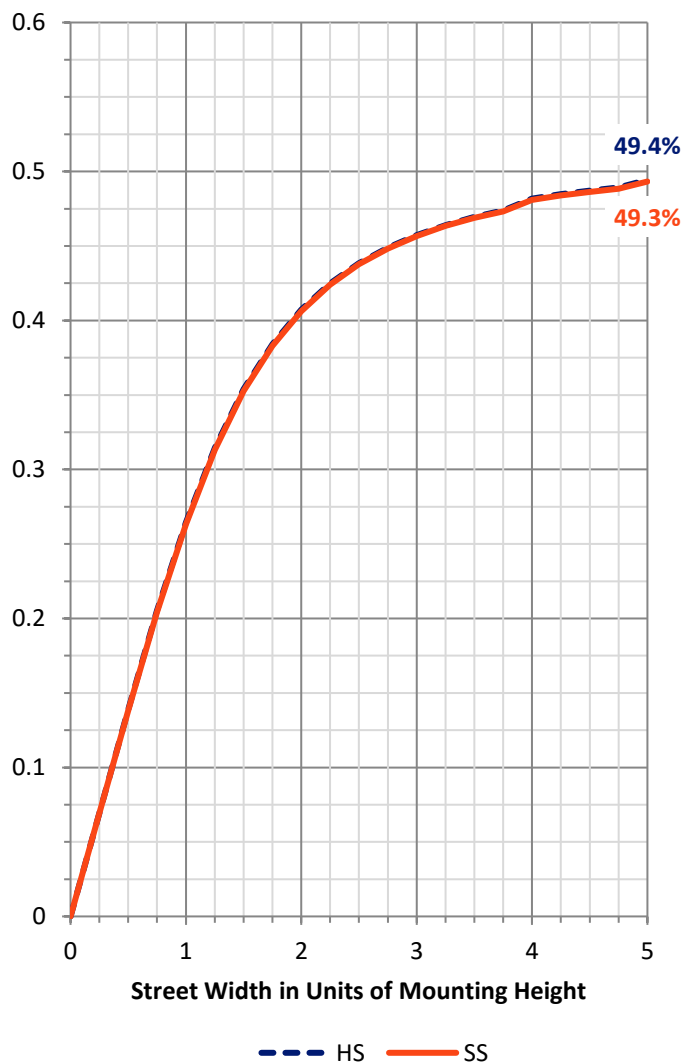
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1505.5	0.0	1505.5
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	1505.5	0.0	1505.5
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	3011.0	0.0	3011.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.0	0.8
10°-20°	76.5	2.5
20°-30°	160.6	5.3
30°-40°	291.4	9.7
40°-50°	475.0	15.8
50°-60°	664.9	22.1
60°-70°	694.2	23.1
70°-80°	496.0	16.5
80°-90°	128.3	4.3
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°	3011.0	100.0
0°-180°	3011.0	100.0

**Coefficient of Utilization**

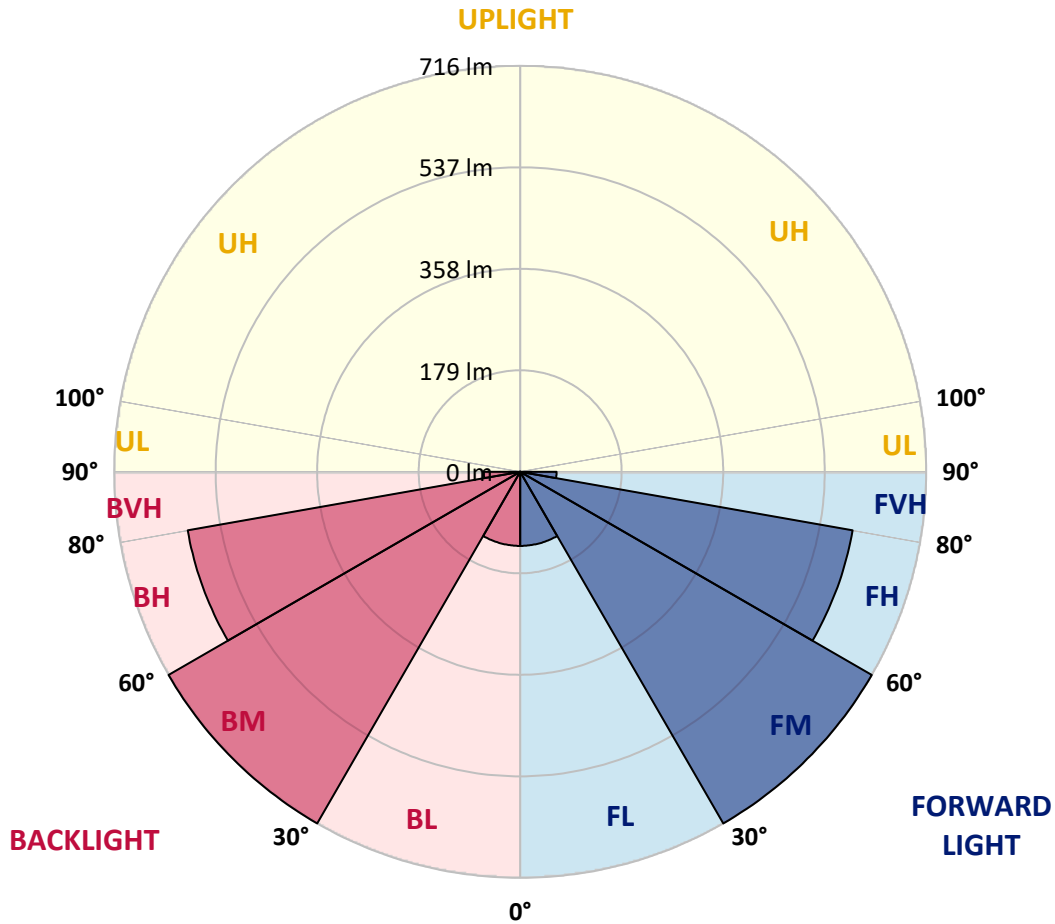


REPORT NUMBER: P823350  
 CATALOG NUMBER: TTN-D1-830-U-WQ

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	130.6	4.3			
FM (30°-60°)	715.7	23.8			
FH (60°-80°)	595.1	19.8			G0/660
FVH (80°-90°)	64.2	2.1			G1/100
BL (0°-30°)	130.6	4.3	B1/500		
BM (30°-60°)	715.7	23.8	B1/1000		
BH (60°-80°)	595.1	19.8	B2/1000		G0/660
BVH (80°-90°)	64.2	2.1			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G1**  
 Type V Short





REPORT NUMBER: P823350  
 CATALOG NUMBER: TTN-D1-830-U-WQ

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	255.2	255.2	255.2	255.2	255.2	255.2	255.2	255.2	255.2	255.2	255.2
2.5°	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7
5°	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7	252.7
7.5°	247.8	247.8	250.3	250.3	250.3	250.3	250.3	250.3	250.3	250.3	250.3
10°	247.8	247.8	250.3	250.3	252.7	252.7	252.7	250.3	250.3	247.8	247.8
12.5°	252.7	252.7	252.7	255.2	257.7	257.7	257.7	255.2	255.2	252.7	252.7
15°	260.2	262.7	262.7	265.1	267.6	267.6	267.6	265.1	265.1	262.7	262.7
17.5°	275.0	275.0	275.0	277.5	280.0	282.5	282.5	277.5	277.5	275.0	277.5
20°	289.9	292.4	292.4	294.9	297.3	299.8	297.3	294.9	292.4	292.4	292.4
22.5°	312.2	312.2	314.7	314.7	319.6	319.6	319.6	314.7	314.7	314.7	314.7
25°	337.0	337.0	339.5	341.9	346.9	346.9	344.4	339.5	339.5	339.5	341.9
27.5°	366.7	366.7	369.2	369.2	374.2	374.2	371.7	369.2	369.2	369.2	371.7
30°	394.0	394.0	398.9	401.4	403.9	403.9	403.9	398.9	398.9	396.5	396.5
32.5°	418.8	421.2	423.7	431.2	436.1	433.6	436.1	431.2	426.2	423.7	423.7
35°	446.0	448.5	453.5	460.9	468.3	468.3	468.3	460.9	455.9	451.0	453.5
37.5°	478.2	478.2	485.7	493.1	503.0	505.5	503.0	495.6	488.1	483.2	483.2
40°	512.9	512.9	520.4	527.8	540.2	542.7	540.2	530.3	520.4	517.9	517.9
42.5°	547.6	547.6	557.5	565.0	579.8	584.8	579.8	567.4	557.5	550.1	552.6
45°	584.8	587.3	599.7	614.5	631.9	639.3	631.9	617.0	602.1	587.3	587.3
47.5°	626.9	626.9	641.8	659.1	678.9	686.4	676.5	661.6	641.8	629.4	629.4
50°	654.2	656.6	676.5	698.8	723.5	728.5	721.1	698.8	676.5	659.1	656.6
52.5°	681.4	683.9	706.2	738.4	763.2	770.6	760.7	738.4	706.2	683.9	683.9
55°	698.8	703.7	728.5	763.2	790.4	802.8	788.0	763.2	726.0	701.2	698.8
57.5°	701.2	706.2	731.0	773.1	800.4	815.2	802.8	770.6	731.0	703.7	701.2
60°	696.3	698.8	723.5	768.1	800.4	810.3	800.4	765.7	721.1	698.8	693.8
62.5°	683.9	688.9	713.6	750.8	788.0	795.4	785.5	748.3	711.2	683.9	678.9
65°	644.3	649.2	686.4	723.5	755.8	763.2	755.8	723.5	683.9	644.3	639.3
67.5°	599.7	602.1	639.3	683.9	713.6	726.0	713.6	686.4	636.8	599.7	594.7
70°	552.6	555.0	584.8	631.9	661.6	676.5	664.1	634.3	582.3	550.1	547.6
72.5°	498.1	498.1	527.8	565.0	594.7	609.6	599.7	562.5	522.8	490.6	485.7
75°	423.7	426.2	458.4	485.7	517.9	527.8	517.9	488.1	451.0	418.8	413.8
77.5°	346.9	349.4	376.6	398.9	428.7	436.1	428.7	403.9	369.2	341.9	339.5
80°	262.7	265.1	287.4	307.3	332.0	341.9	334.5	309.7	282.5	257.7	250.3
82.5°	171.0	173.5	195.8	210.6	232.9	240.4	235.4	213.1	190.8	166.0	163.5
85°	76.8	79.3	99.1	111.5	128.9	136.3	131.3	111.5	94.2	71.9	66.9
87.5°	7.4	7.4	7.4	7.4	7.4	9.9	9.9	7.4	7.4	7.4	7.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
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: SP1-2411-284-4

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  
 Rf: 86.1  
 Rg: 94.9

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



**Test Conditions**

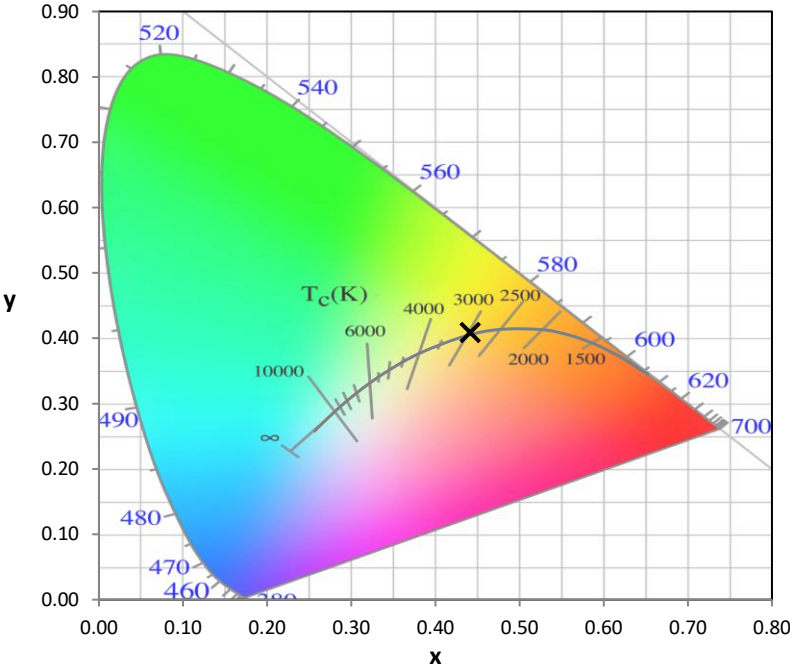
Stabilization Time: 37M  
 Operation Time: 1H 37M  
 Sphere Temperature (°C): 25.0

REPORT NUMBER: SP1-2411-284-4

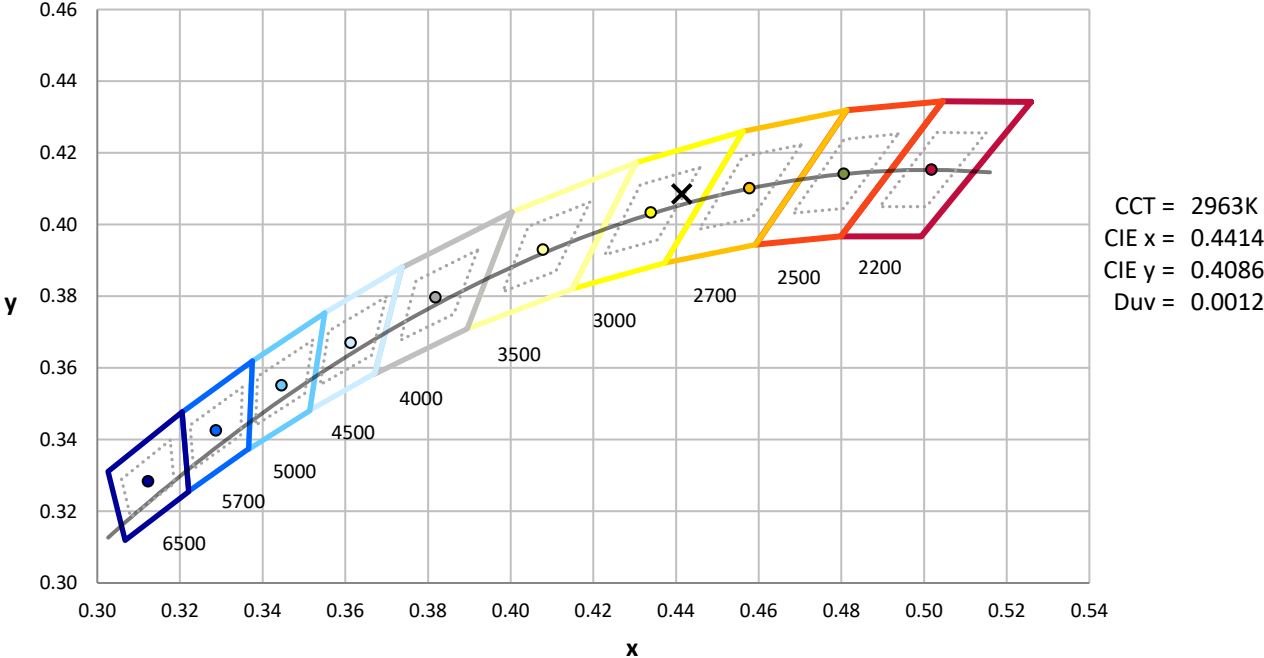
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

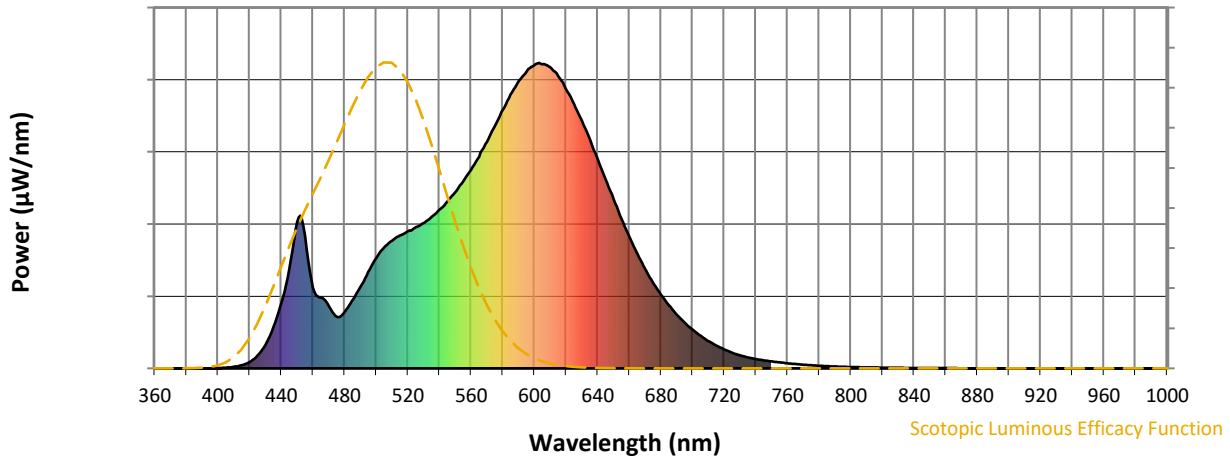


**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /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 <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /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**



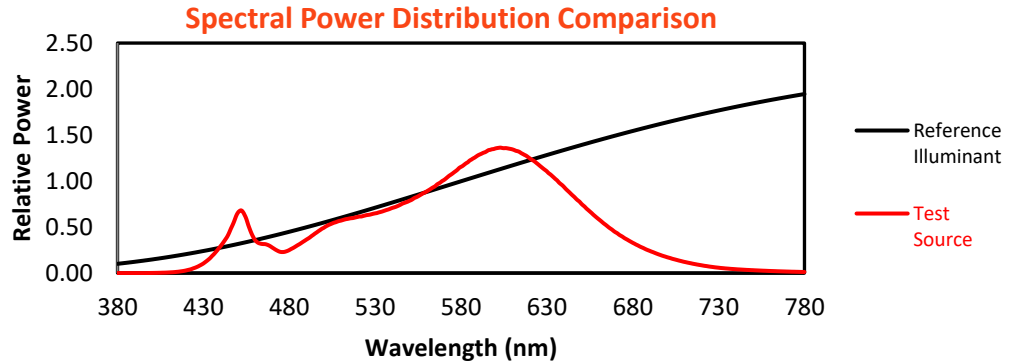
**Melanopic Lumens: NR**

**M/P: 2.58**

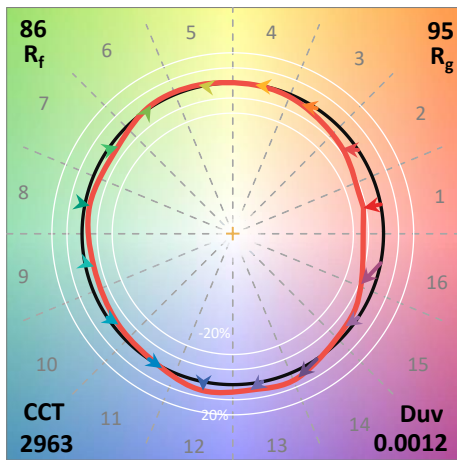
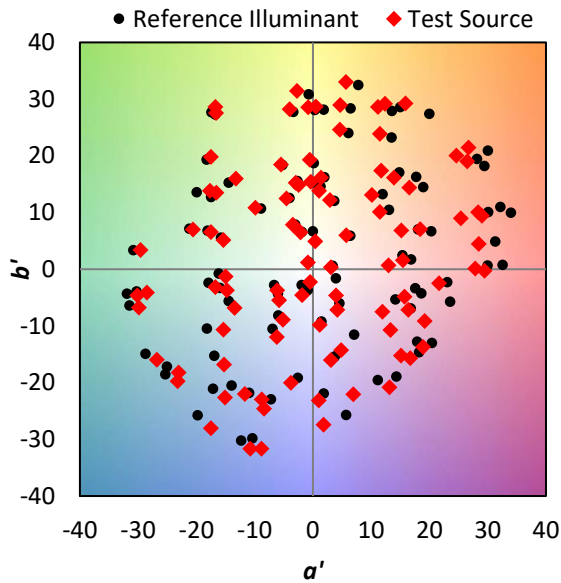
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	267	NR	620	915	NR	750	23	NR	880	0	NR
365	0	NR	495	315	NR	625	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			

**Summary**

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

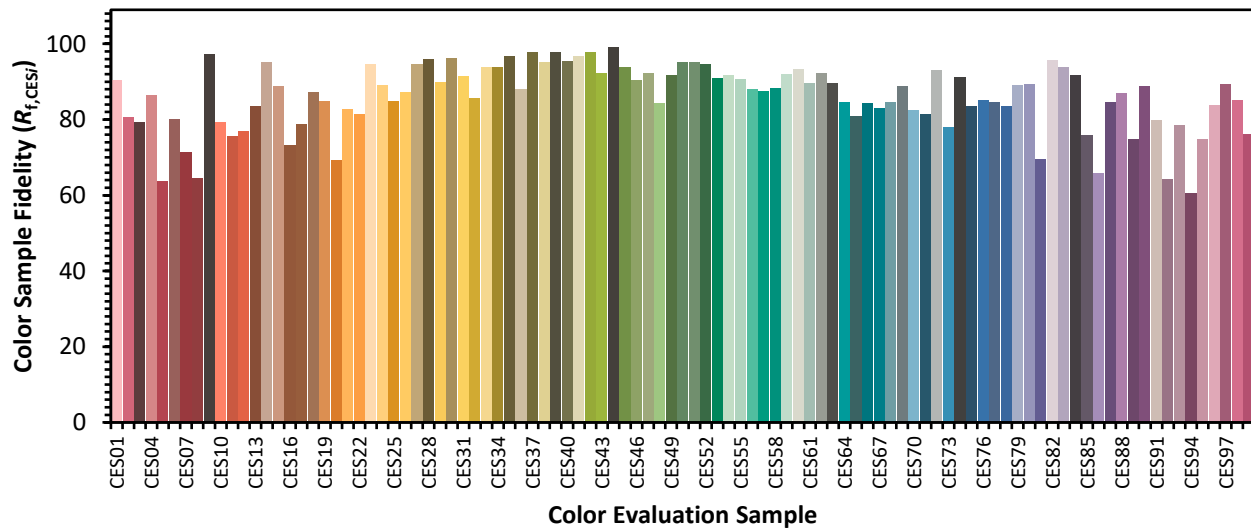


**Color Vector Graphics**



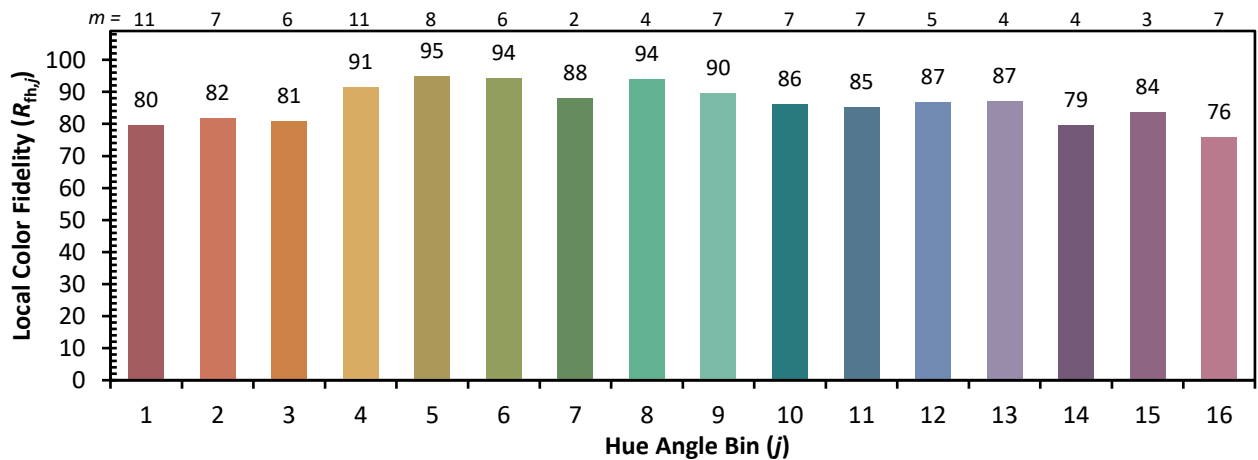
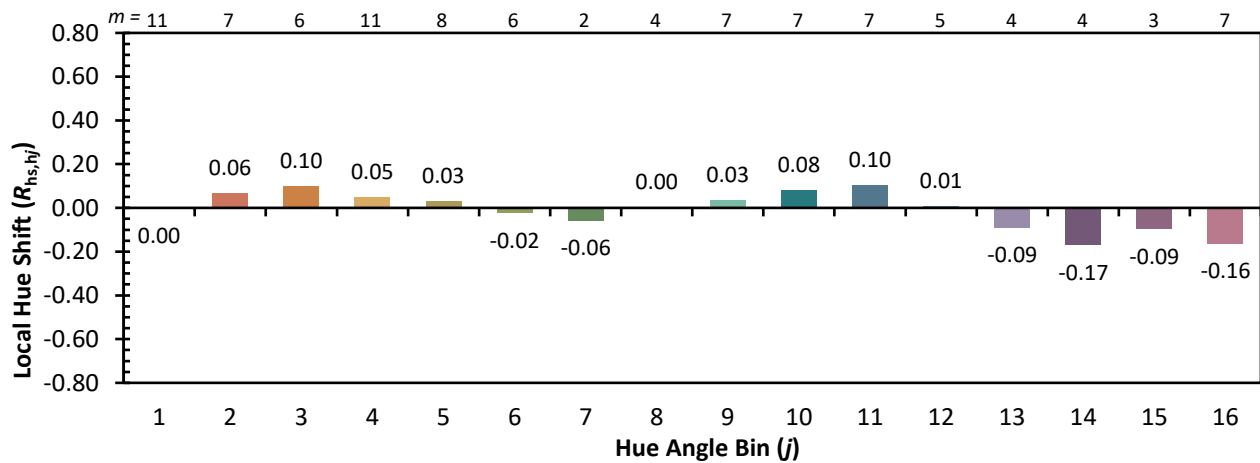
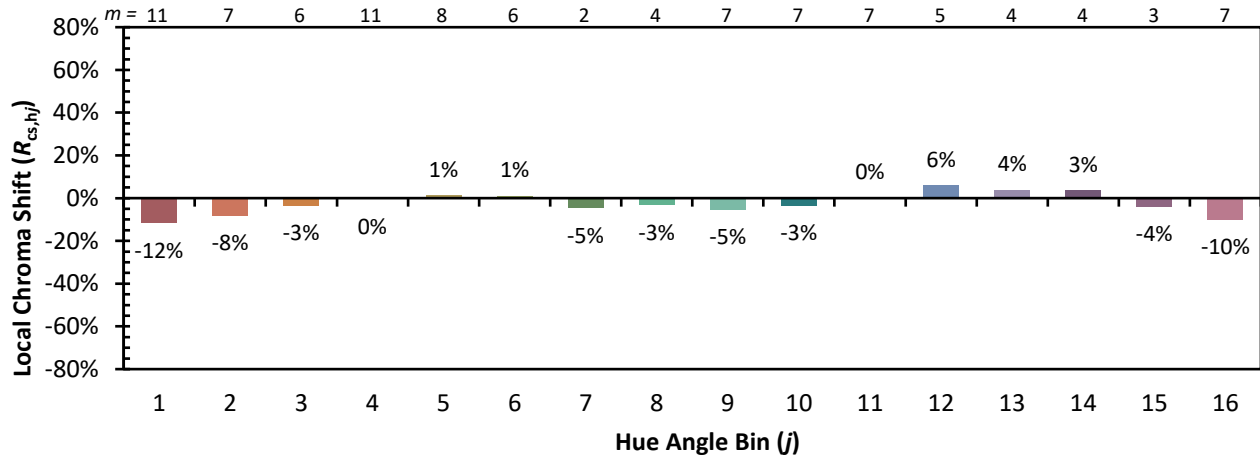
Individual Sample Fidelity Index ( $R_{f,i}$ )

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	

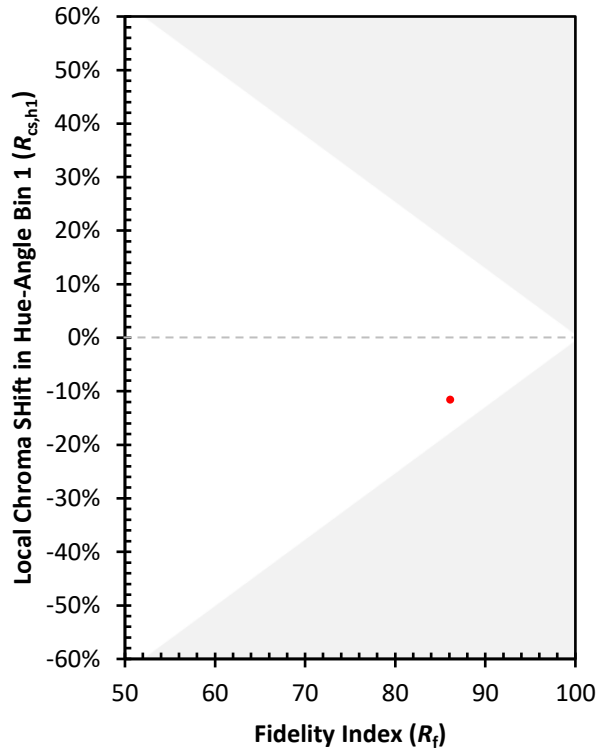
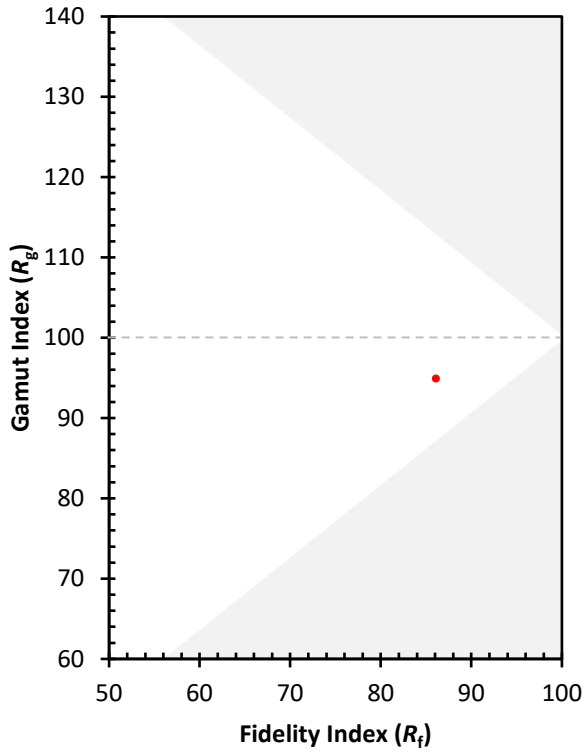




Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)