

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: P823323

Luminaire Tested: **TTN-D1-735-U-MQ**

Issue Date: 4/16/2024

**Test Information**

Test Method: LM-79-08  
Report Number: P823323  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2312-254-8)  
Test Lab: INNOVATION CENTER  
Issue Date: 4/16/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: MCGRAW-EDISON  
Catalog Number: TTN-D1-735-U-MQ  
Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE  
3500K, 70 CRI LEDS AND MEDIUM DISTRIBUTION  
Light Source: -  
Ballast/Driver: -

**Summary**

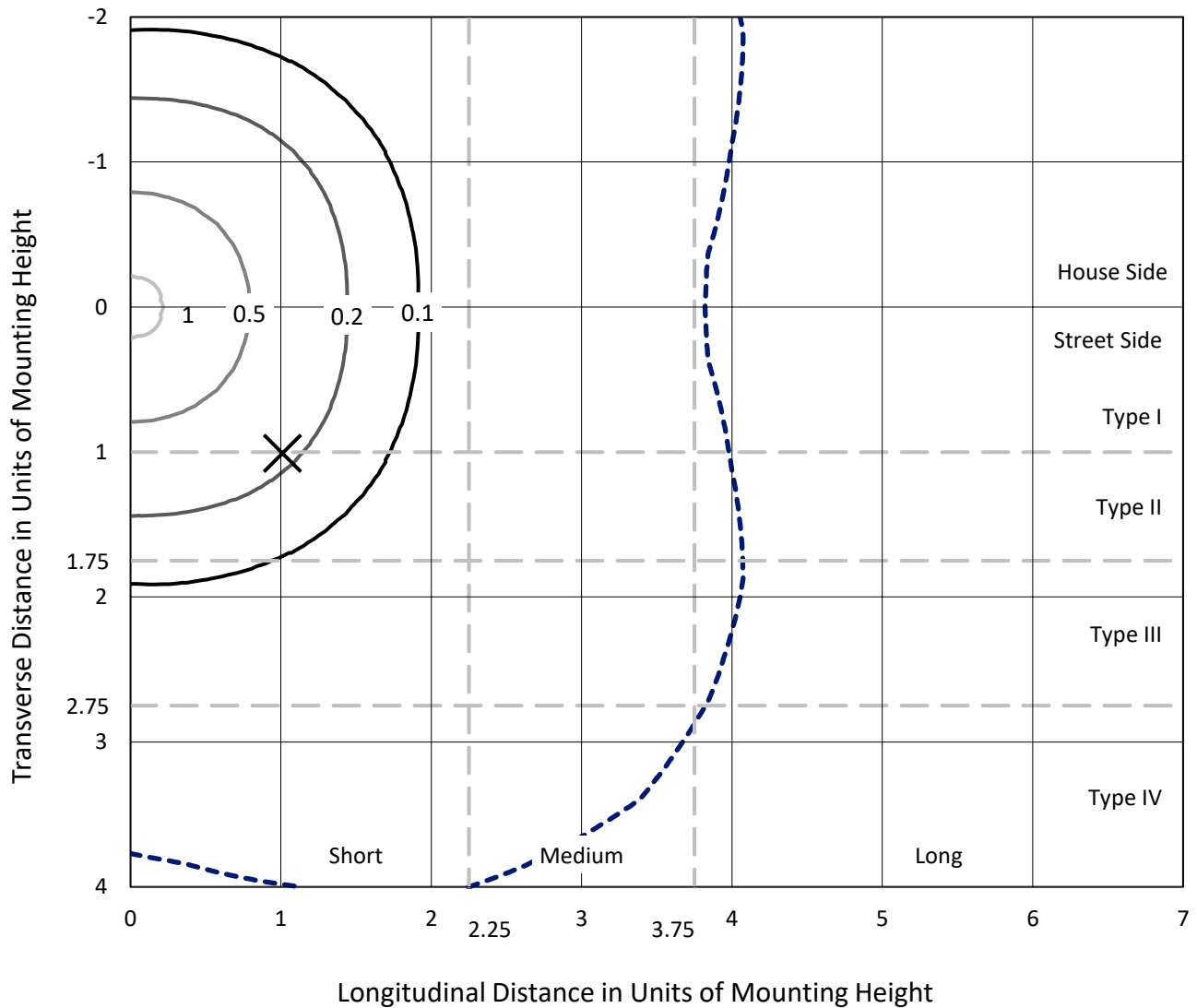
Lumens per Lamp: N/A  
Luminaire Lumens: 3341 lumens  
Efficiency: N/A  
Efficacy: 126.6 lumens/watt  
Luminous Opening: Circular (Dia: 0.71' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B2 - U0 - G1  
  
Input Watts (W): 26.4  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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: P823323  
 CATALOG NUMBER: TTN-D1-735-U-MQ

### Iso-Footcandle Lines of Horizontal Illumination

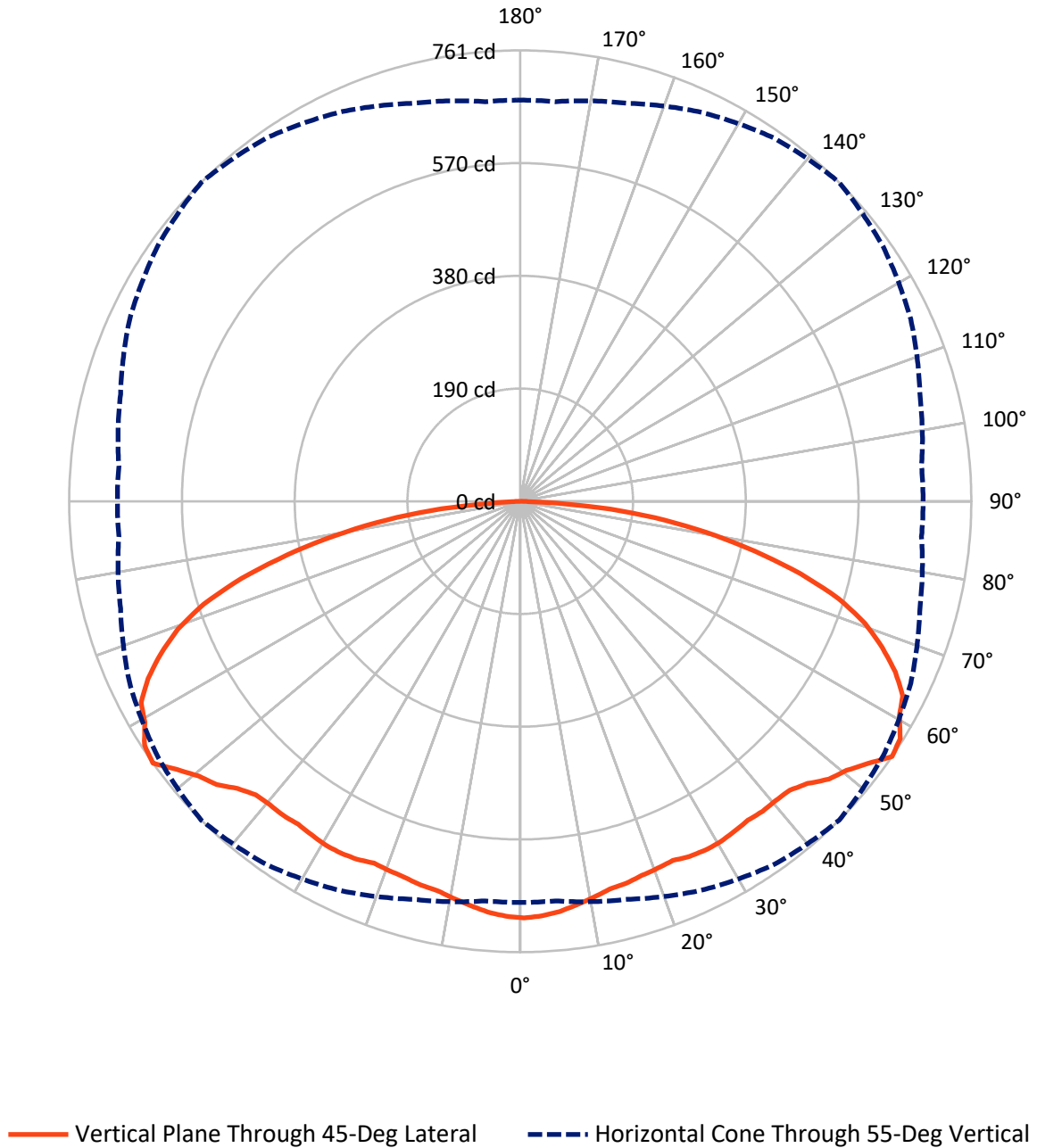
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.1 fc  
 Type V - Short - N/A

REPORT NUMBER: P823323  
CATALOG NUMBER: TTN-D1-735-U-MQ

### Luminous Intensity Polar Plot



REPORT NUMBER: P823323

CATALOG NUMBER: TTN-D1-735-U-MQ

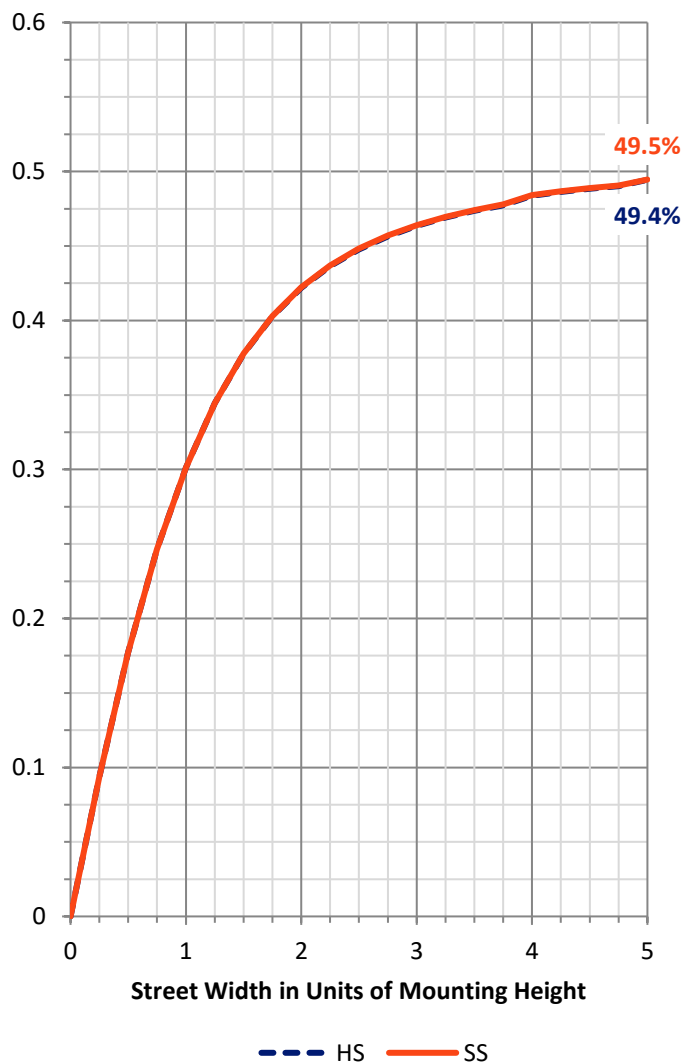
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1670.5	0.0	1670.5
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	1670.5	0.0	1670.5
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	3341.0	0.0	3341.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	65.8	2.0
10°-20°	188.9	5.7
20°-30°	305.3	9.1
30°-40°	413.1	12.4
40°-50°	517.4	15.5
50°-60°	634.1	19.0
60°-70°	635.6	19.0
70°-80°	458.7	13.7
80°-90°	122.3	3.7
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°	3341.0	100.0
0°-180°	3341.0	100.0

**Coefficient of Utilization**



REPORT NUMBER: P823323

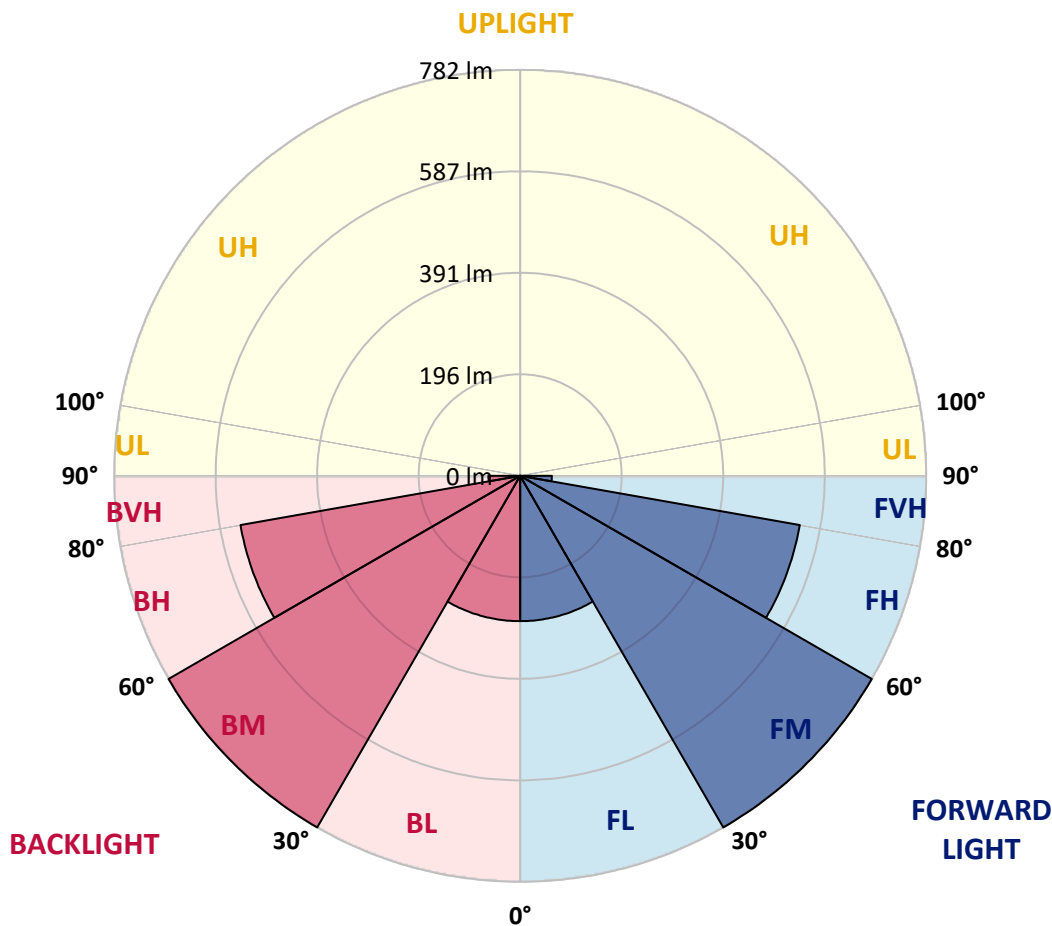
CATALOG NUMBER: TTN-D1-735-U-MQ

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

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	280.0	8.4			
FM (30°-60°)	782.3	23.4			
FH (60°-80°)	547.1	16.4			G0/660
FVH (80°-90°)	61.1	1.8			G1/100
BL (0°-30°)	280.0	8.4	B1/500		
BM (30°-60°)	782.3	23.4	B1/1000		
BH (60°-80°)	547.1	16.4	B2/1000		G0/660
BVH (80°-90°)	61.1	1.8			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





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	702.9	702.9	702.9	702.9	702.9	702.9	702.9	702.9	702.9	702.9	702.9
2.5°	700.3	700.3	700.3	697.7	700.3	700.3	700.3	700.3	700.3	700.3	700.3
5°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1
7.5°	687.2	687.2	687.2	687.2	687.2	687.2	687.2	687.2	687.2	687.2	687.2
10°	676.7	676.7	676.7	676.7	679.3	679.3	679.3	679.3	676.7	676.7	676.7
12.5°	668.8	668.8	668.8	671.4	671.4	671.4	671.4	671.4	671.4	671.4	668.8
15°	666.2	666.2	666.2	666.2	668.8	668.8	668.8	668.8	666.2	666.2	666.2
17.5°	661.0	661.0	661.0	663.6	663.6	663.6	663.6	663.6	661.0	661.0	661.0
20°	655.7	655.7	658.3	658.3	661.0	661.0	661.0	658.3	658.3	655.7	658.3
22.5°	655.7	655.7	655.7	658.3	658.3	658.3	658.3	655.7	655.7	655.7	655.7
25°	655.7	655.7	658.3	661.0	661.0	663.6	661.0	658.3	655.7	655.7	655.7
27.5°	658.3	658.3	661.0	663.6	663.6	666.2	663.6	661.0	658.3	658.3	658.3
30°	658.3	658.3	661.0	663.6	663.6	666.2	663.6	661.0	658.3	658.3	658.3
32.5°	653.1	655.7	658.3	661.0	663.6	663.6	663.6	661.0	658.3	655.7	655.7
35°	650.5	653.1	655.7	658.3	661.0	661.0	661.0	658.3	655.7	653.1	653.1
37.5°	647.8	647.8	653.1	655.7	658.3	663.6	661.0	655.7	653.1	650.5	650.5
40°	645.2	647.8	650.5	655.7	658.3	663.6	661.0	655.7	650.5	647.8	647.8
42.5°	645.2	645.2	650.5	655.7	661.0	666.2	663.6	658.3	650.5	647.8	645.2
45°	647.8	650.5	658.3	668.8	674.1	679.3	676.7	668.8	655.7	650.5	647.8
47.5°	658.3	661.0	668.8	679.3	692.4	700.3	692.4	679.3	668.8	661.0	658.3
50°	663.6	666.2	679.3	692.4	710.8	713.4	710.8	692.4	679.3	666.2	666.2
52.5°	674.1	674.1	689.8	713.4	729.1	734.4	729.1	716.0	689.8	676.7	674.1
55°	676.7	676.7	695.1	723.9	747.5	760.6	747.5	726.5	697.7	679.3	679.3
57.5°	661.0	666.2	689.8	718.7	747.5	755.4	747.5	721.3	692.4	668.8	666.2
60°	642.6	650.5	671.4	705.5	726.5	734.4	729.1	705.5	674.1	650.5	647.8
62.5°	624.2	634.7	658.3	684.6	716.0	723.9	716.0	684.6	658.3	634.7	624.2
65°	584.9	595.4	629.5	661.0	689.8	695.1	692.4	661.0	629.5	595.4	590.1
67.5°	545.6	553.4	577.0	626.9	650.5	658.3	653.1	624.2	579.6	553.4	550.8
70°	503.6	511.5	532.4	579.6	603.3	616.4	605.9	579.6	532.4	511.5	508.8
72.5°	448.5	459.0	482.6	524.6	548.2	561.3	550.8	524.6	482.6	456.4	451.1
75°	382.9	390.8	419.7	453.8	477.4	487.8	480.0	456.4	419.7	390.8	388.2
77.5°	312.1	320.0	346.2	380.3	393.4	403.9	396.0	377.7	346.2	320.0	317.4
80°	236.1	243.9	267.5	293.8	306.9	317.4	309.5	291.1	267.5	243.9	241.3
82.5°	154.7	162.6	183.6	204.6	217.7	228.2	220.3	202.0	186.2	162.6	160.0
85°	65.6	73.4	91.8	112.8	123.3	133.8	125.9	110.2	91.8	76.1	73.4
87.5°	5.2	7.9	7.9	10.5	7.9	13.1	7.9	7.9	7.9	7.9	7.9
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  
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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: SP1-2411-284-1

Test Date: 11/15/2024

Luminaire Tested: TTN-D0-735-U-WQ

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



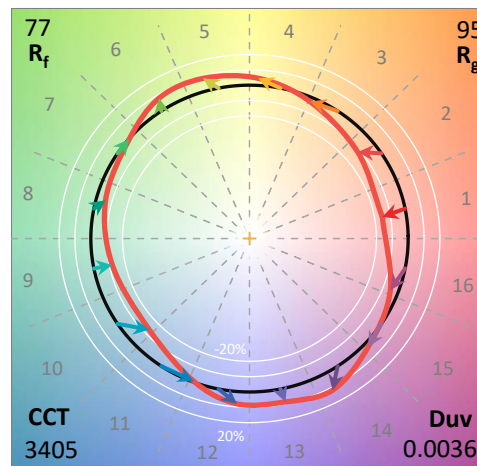
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2411-284-1  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 11/15/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: MCGRAW EDISON  
 Catalog Number: **TTN-D0-735-U-WQ**  
 Description: TOPTIER NANO LED PARKING GARAGE LUMINAIRE. 3500K, 70 CRI LEDS AND WIDE DISTRIBUTION

**Spectral Parameters**

CCT (K): 3405  
 CIE u': 0.2365  
 CIE v': 0.5180  
 Duv: 0.0036  
 CIE x: 0.4148  
 CIE y: 0.4038  
 CIE z: 0.1814  
 Peak Wavelength (nm): 596  
 Dominant Wavelength (nm): 579  
 Purity: 45.70672  
 Rf: 76.6  
 Rg: 95.4

CRI (Ra):	73.9		
R1:	71.3	R9:	-18.0
R2:	80.3	R10:	53.1
R3:	87.8	R11:	68.6
R4:	73.2	R12:	42.6
R5:	69.8	R13:	72.5
R6:	71.8	R14:	92.7
R7:	82.8	R15:	64.3
R8:	54.1		



**Test Conditions**

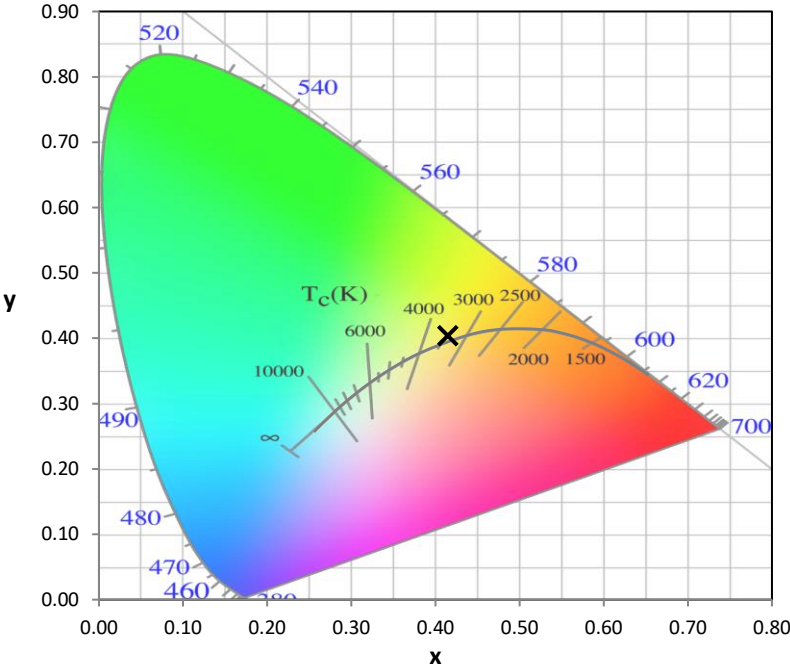
Stabilization Time: 38M  
 Operation Time: 1H 38M  
 Sphere Temperature (°C): 24.9

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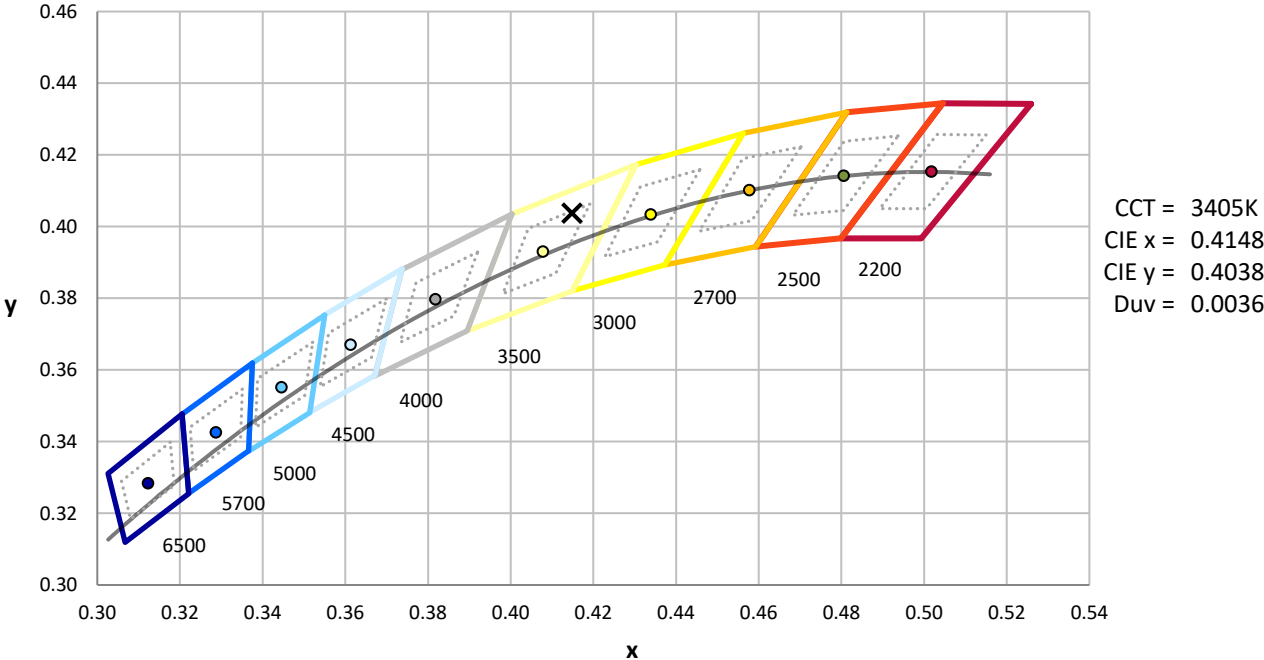
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/22/2024	10/22/2025
DC Power Source	IN0208	10/22/2024	10/22/2025
Sphere Thermometer	IN0085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

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**CIE 1931 Chromaticity Diagram**



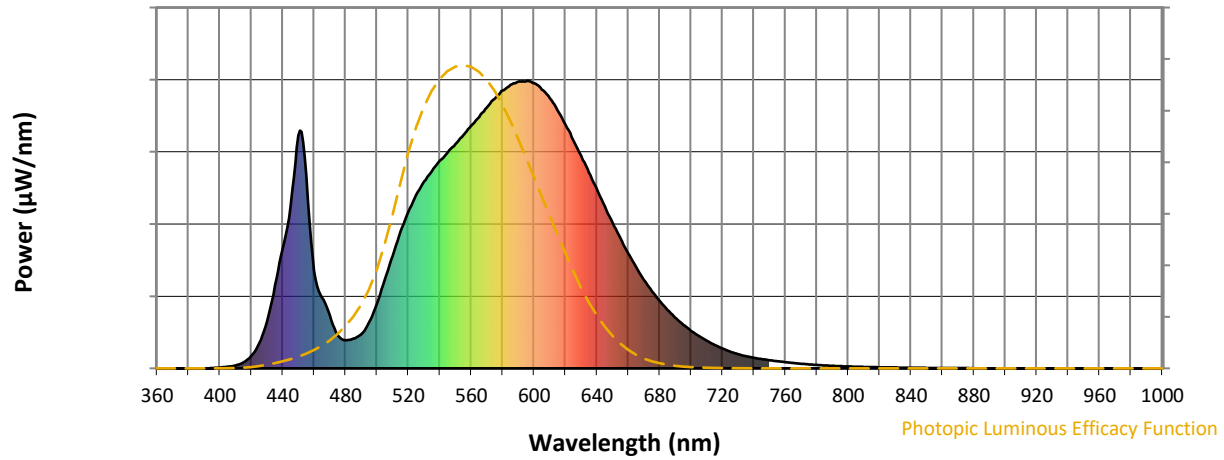
**CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles**



Point lies inside the ANSI 3500K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

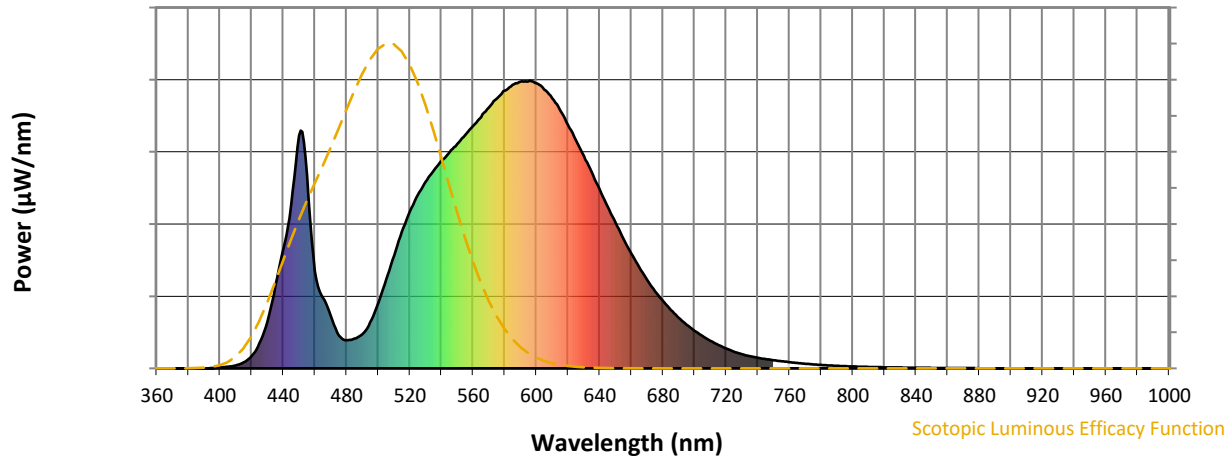


**Photopic Lumens: NR**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

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**Scotopic Flux vs. Wavelength**



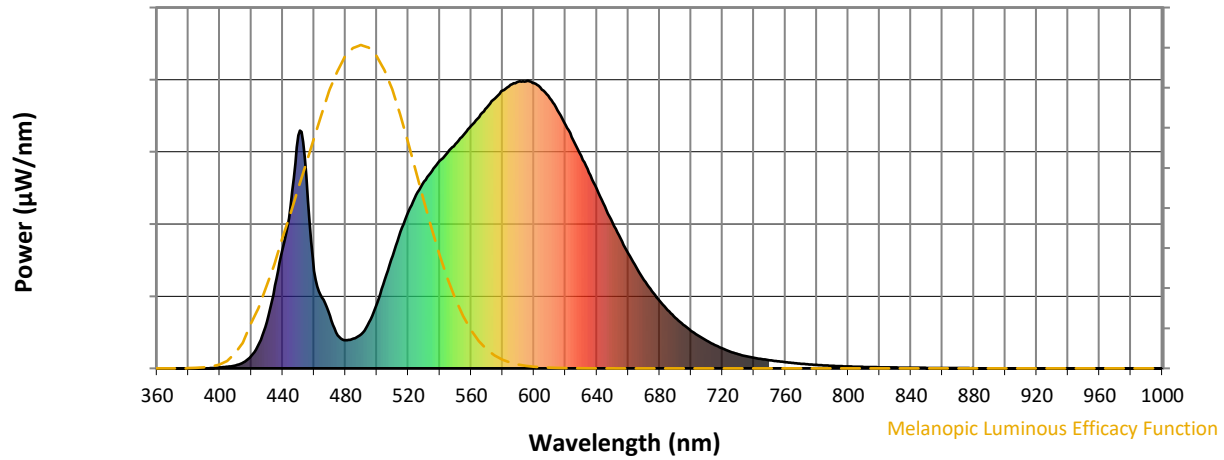
**Scotopic Lumens: NR**

**S/P: 1.33**

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	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



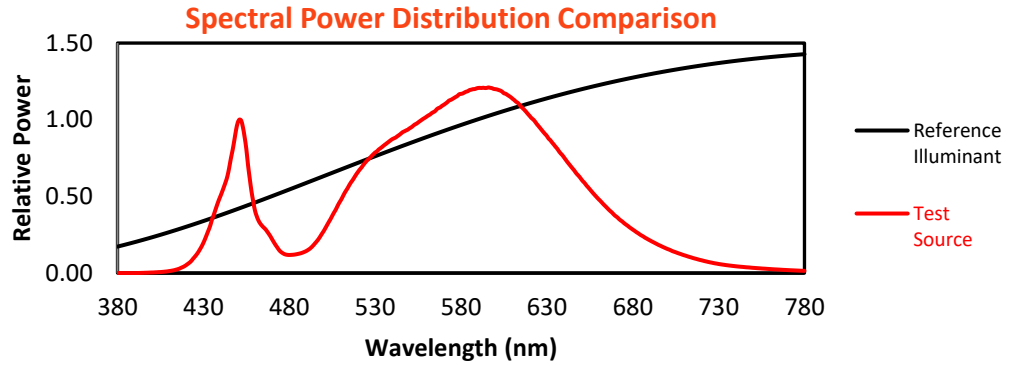
Melanopic Lumens: NR

M/P: 2.47

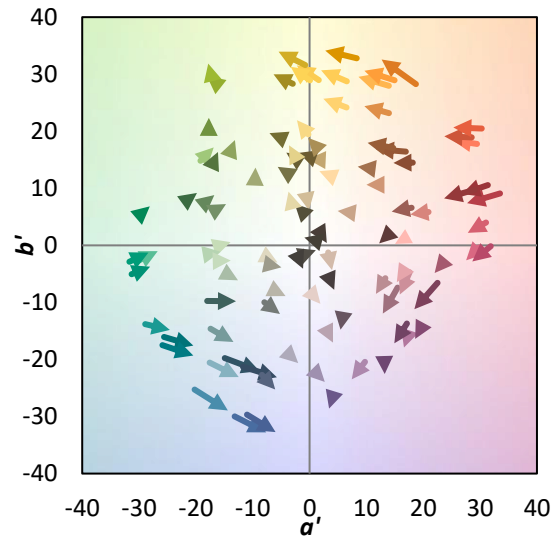
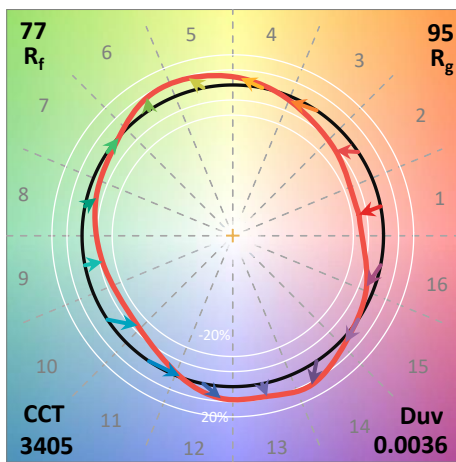
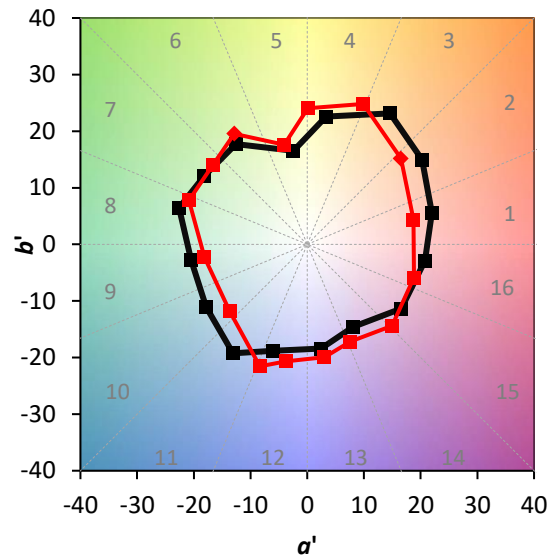
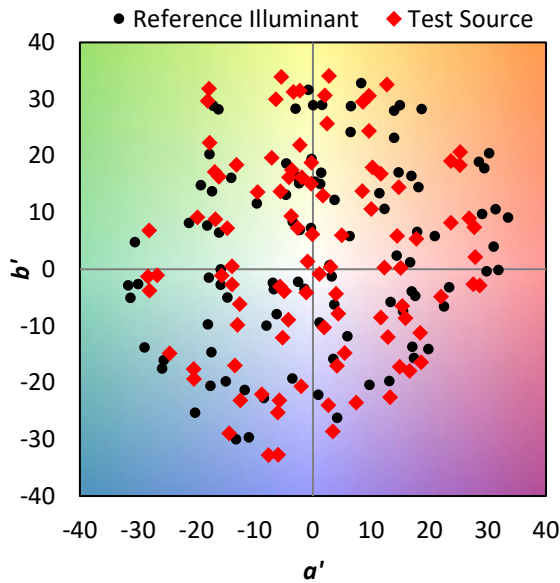
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	119	NR	620	846	NR	750	28	NR	880	1	NR
365	0	NR	495	160	NR	625	793	NR	755	25	NR	885	0	NR
370	0	NR	500	225	NR	630	739	NR	760	22	NR	890	0	NR
375	0	NR	505	308	NR	635	681	NR	765	19	NR	895	0	NR
380	0	NR	510	392	NR	640	623	NR	770	16	NR	900	0	NR
385	0	NR	515	474	NR	645	563	NR	775	14	NR	905	0	NR
390	0	NR	520	545	NR	650	506	NR	780	12	NR	910	0	NR
395	1	NR	525	603	NR	655	451	NR	785	10	NR	915	0	NR
400	3	NR	530	649	NR	660	399	NR	790	9	NR	920	0	NR
405	5	NR	535	687	NR	665	352	NR	795	8	NR	925	0	NR
410	11	NR	540	721	NR	670	307	NR	800	6	NR	930	0	NR
415	21	NR	545	751	NR	675	268	NR	805	6	NR	935	0	NR
420	43	NR	550	779	NR	680	234	NR	810	5	NR	940	0	NR
425	88	NR	555	811	NR	685	203	NR	815	4	NR	945	0	NR
430	163	NR	560	843	NR	690	176	NR	820	4	NR	950	0	NR
435	288	NR	565	873	NR	695	152	NR	825	3	NR	955	0	NR
440	416	NR	570	907	NR	700	131	NR	830	3	NR	960	0	NR
445	566	NR	575	938	NR	705	112	NR	835	3	NR	965	0	NR
450	810	NR	580	965	NR	710	96	NR	840	2	NR	970	0	NR
455	669	NR	585	986	NR	715	81	NR	845	2	NR	975	0	NR
460	338	NR	590	997	NR	720	69	NR	850	2	NR	980	0	NR
465	246	NR	595	997	NR	725	58	NR	855	1	NR	985	0	NR
470	182	NR	600	991	NR	730	49	NR	860	1	NR	990	0	NR
475	115	NR	605	968	NR	735	42	NR	865	1	NR	995	0	NR
480	97	NR	610	939	NR	740	37	NR	870	1	NR	1000	0	NR
485	103	NR	615	896	NR	745	32	NR	875	1	NR			

**Summary**

$R_f = 76.6$   
 $R_g = 95.4$   
 $CIE R_a = 73.9$   
 $R_g = -18.0$

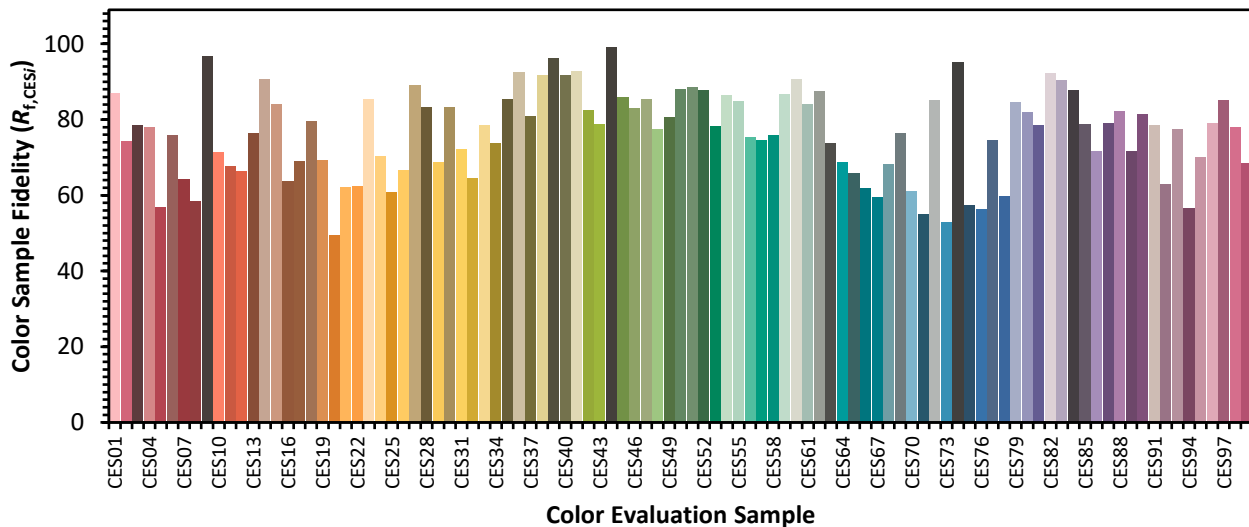


**Color Vector Graphics**



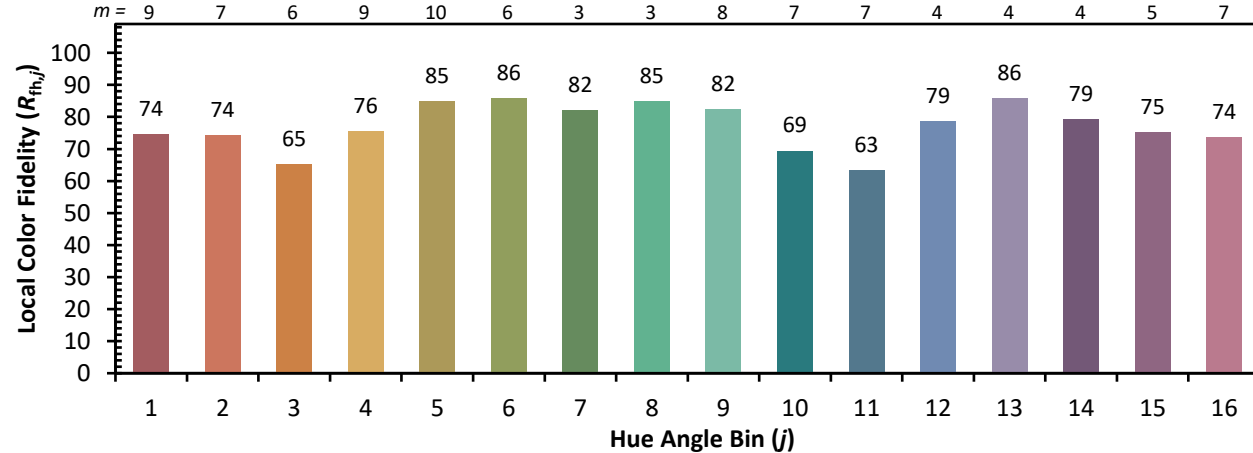
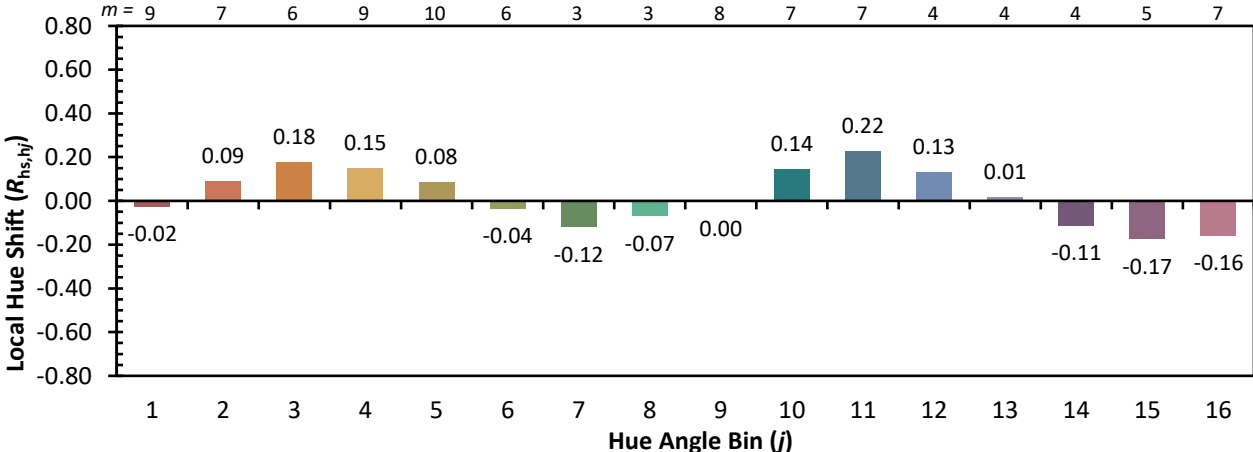
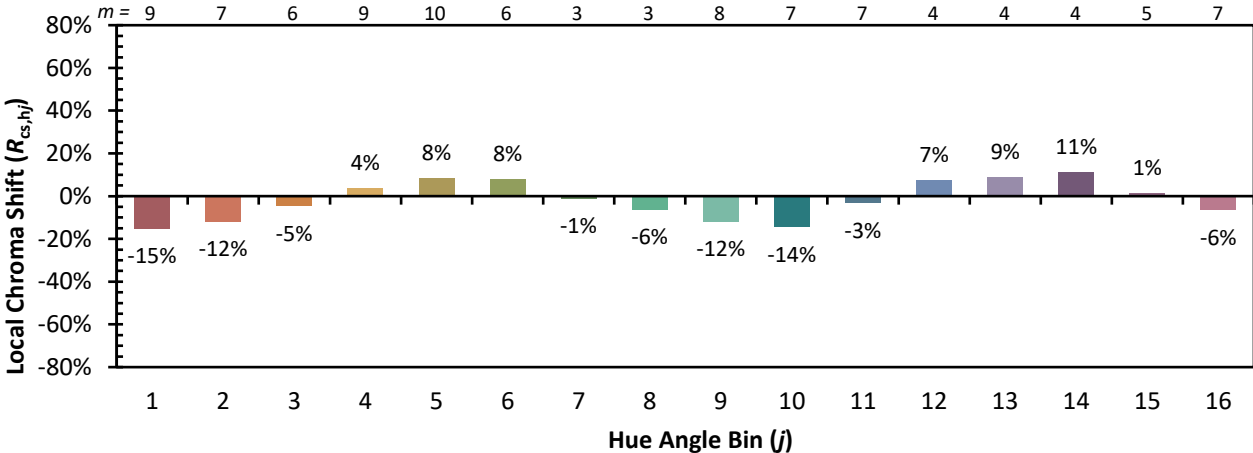
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 86	CES26 = 67	CES51 = 88	CES76 = 56
CES02 = 62	CES27 = 89	CES52 = 88	CES77 = 75
CES03 = 31	CES28 = 83	CES53 = 78	CES78 = 60
CES04 = 70	CES29 = 69	CES54 = 86	CES79 = 85
CES05 = 48	CES30 = 83	CES55 = 85	CES80 = 82
CES06 = 51	CES31 = 72	CES56 = 75	CES81 = 78
CES07 = 41	CES32 = 65	CES57 = 75	CES82 = 92
CES08 = 40	CES33 = 78	CES58 = 76	CES83 = 90
CES09 = 29	CES34 = 74	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 86	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 93	CES61 = 84	CES86 = 72
CES12 = 64	CES37 = 81	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 92	CES63 = 74	CES88 = 82
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 92	CES65 = 66	CES90 = 82
CES16 = 47	CES41 = 93	CES66 = 62	CES91 = 79
CES17 = 50	CES42 = 83	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 79	CES68 = 68	CES93 = 77
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 86	CES70 = 61	CES95 = 70
CES21 = 86	CES46 = 83	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 85	CES72 = 85	CES97 = 85
CES23 = 92	CES48 = 78	CES73 = 53	CES98 = 78
CES24 = 91	CES49 = 81	CES74 = 95	CES99 = 68
CES25 = 72	CES50 = 88	CES75 = 57	

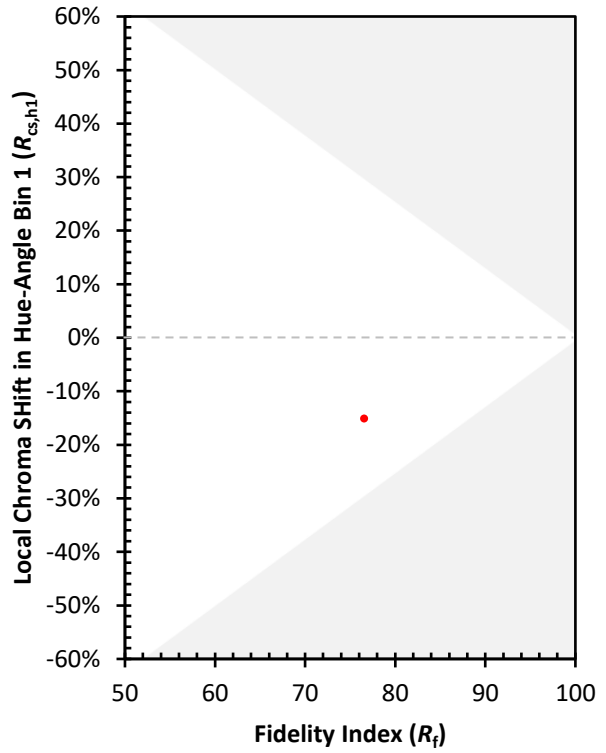
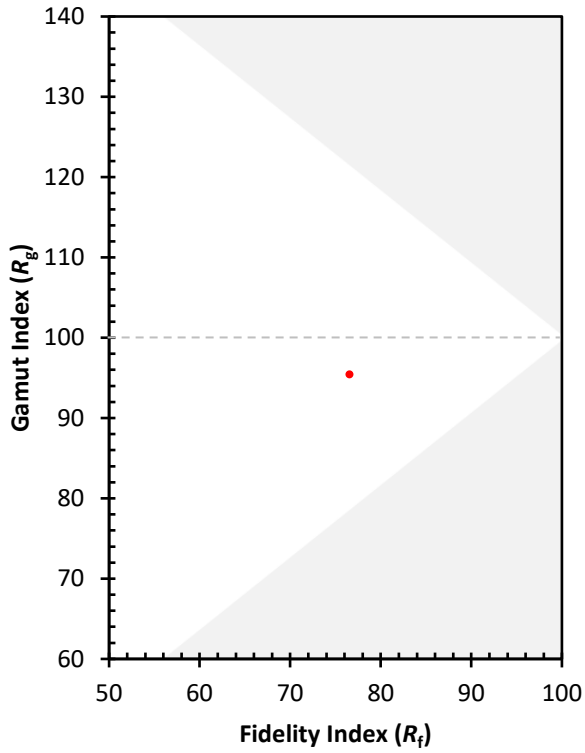




Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)