

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: HALO

Report Number: P798558

Luminaire Tested: **LTSS4069FS1EWHR-930**

Issue Date: 04/03/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P798558  
Test Lab: ETA Testing Technology(A2)  
Issue Date: 04/03/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: LTSS4069FS1EWHR-930  
Description: 4 inch 90 CRI COLOR TUNING RECESSED DOWNLIGHT with DRIVER ON BOARD AND SMOOTH SPRAY TRIM  
Light Source: 3000K CCT, 90 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

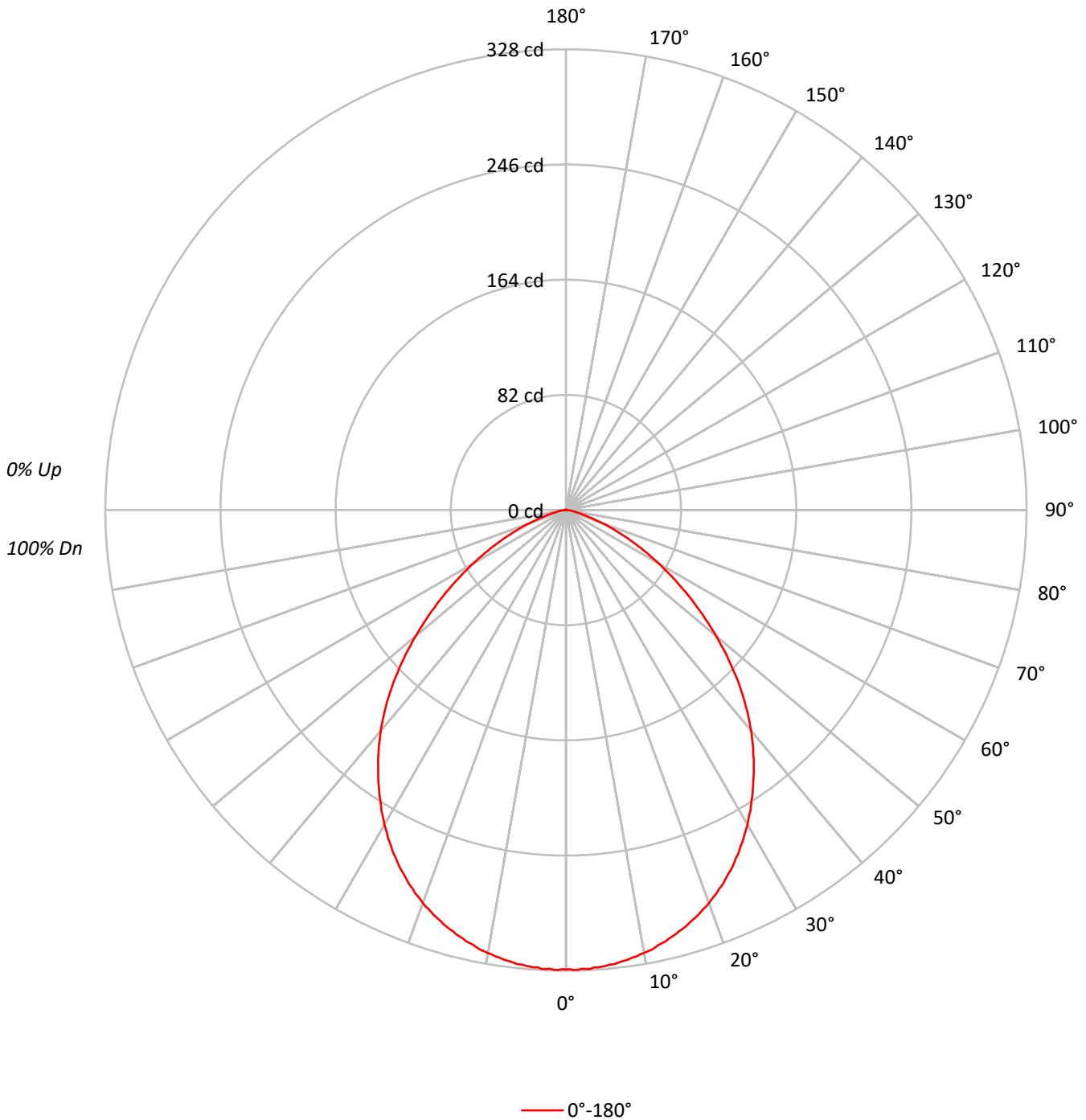
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 689.5 lumens  
Efficiency: N/A  
Efficacy: 88.4 lumens/watt  
Spacing Criteria (0/90/45): 1.18 / 1.18 / 1.26  
Luminous Opening: Circular (Dia: 0.3' x H: 0')  
CIE Type: Direct

Input Watts (W): 7.8  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): 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: 25 FT

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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100			100
1	111	107	103	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88			88
2	102	95	90	85	100	94	88	84	90	86	82	87	83	80	84	81	78	76			76
3	94	85	78	73	92	84	77	72	81	75	71	78	74	70	76	72	68	66			66
4	87	77	69	63	85	75	68	63	73	67	62	71	65	61	69	64	60	58			58
5	81	69	61	55	79	68	61	55	66	59	54	64	58	54	62	57	53	51			51
6	75	63	55	49	73	62	54	49	60	53	48	59	52	48	57	52	47	46			46
7	70	57	49	44	68	57	49	44	55	48	43	54	48	43	52	47	43	41			41
8	65	53	45	39	64	52	44	39	51	44	39	49	43	39	48	43	39	37			37
9	61	49	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33			33
10	57	45	38	33	56	44	37	32	43	37	32	43	36	32	42	36	32	30			30

**AVERAGE LUMINANCE (cd/sqm):**

	0°
0°	49810
5°	49802
10°	49512
15°	48982
20°	48275
25°	47130
30°	45489
35°	43314
40°	40771
45°	37429
50°	33095
55°	28328
60°	23329
65°	18052
70°	12600
75°	7413
80°	4999
85°	3494



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	30.9	4.5
10°-20°	87.6	12.7
20°-30°	128.8	18.7
30°-40°	145.4	21.1
40°-50°	133.4	19.3
50°-60°	95.6	13.9
60°-70°	50.2	7.3
70°-80°	14.8	2.2
80°-90°	2.4	0.4
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.1	0.0
120°-130°	0.1	0.0
130°-140°	0.1	0.0
140°-150°	0.1	0.0
150°-160°	0.1	0.0
160°-170°	0.1	0.0
170°-180°	0.0	0.0
0°-30°	247.3	35.9
0°-40°	392.7	57.0
0°-60°	621.7	90.2
0°-90°	689.1	99.9
90°-120°	0.1	0.0
90°-150°	0.3	0.0
90°-180°	0.0	0.0
0°-180°	689.5	100.0

**CANDELA DISTRIBUTION:**

	0°	Flux
0°	327	
5°	326	31
15°	311	88
25°	280	129
35°	233	145
45°	174	133
55°	107	96
65°	50	50
75°	13	15
85°	2	2
90°	0	0
95°	0	0
105°	0	0
115°	0	0
125°	0	0
135°	0	0
145°	0	0
155°	0	0
165°	0	0
175°	0	0
180°	0	0



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**CANDELA DISTRIBUTION (FULL):**

0°	
0°	327.1
0.5°	326.9
1°	327.6
1.5°	327.5
2°	326.8
2.5°	327.1
3°	327.2
3.5°	326.3
4°	326.4
4.5°	326.2
5°	325.8
5.5°	325.2
6°	325.2
6.5°	324.6
7°	323.8
7.5°	323.5
8°	323.0
8.5°	322.1
9°	321.7
9.5°	320.8
10°	320.2
10.5°	319.5
11°	319.0
11.5°	317.9
12°	316.6
12.5°	316.0
13°	315.2
13.5°	313.8
14°	313.0
14.5°	312.0
15°	310.7
15.5°	309.6
16°	308.6
16.5°	307.4
17°	305.9
17.5°	304.8
18°	303.6
18.5°	302.1
19°	300.4
19.5°	299.4
20°	297.9
20.5°	296.0
21°	294.5
21.5°	293.2
22°	291.0



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**CANDELA DISTRIBUTION (continued):**

	0°
22.5°	289.6
23°	288.0
23.5°	285.9
24°	283.9
24.5°	282.2
25°	280.5
25.5°	278.2
26°	276.0
26.5°	274.3
27°	272.2
27.5°	269.6
28°	267.7
28.5°	265.5
29°	262.9
29.5°	260.8
30°	258.7
30.5°	255.9
31°	253.4
31.5°	251.3
32°	248.6
32.5°	245.9
33°	243.5
33.5°	241.0
34°	238.2
34.5°	235.6
35°	233.0
35.5°	230.2
36°	227.4
36.5°	224.9
37°	222.3
37.5°	219.2
38°	216.6
38.5°	213.9
39°	210.7
39.5°	208.0
40°	205.1
40.5°	202.1
41°	199.0
41.5°	196.1
42°	193.0
42.5°	189.7
43°	186.8
43.5°	183.3
44°	180.1
44.5°	176.9



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**CANDELA DISTRIBUTION (continued):**

	0°
45°	173.8
45.5°	170.2
46°	166.9
46.5°	163.5
47°	160.2
47.5°	156.5
48°	153.5
48.5°	149.9
49°	146.4
49.5°	143.2
50°	139.7
50.5°	136.2
51°	133.0
51.5°	129.6
52°	126.1
52.5°	123.0
53°	119.6
53.5°	116.2
54°	113.1
54.5°	110.0
55°	106.7
55.5°	103.5
56°	100.4
56.5°	97.2
57°	94.2
57.5°	91.3
58°	88.1
58.5°	85.2
59°	82.3
59.5°	79.4
60°	76.6
60.5°	73.8
61°	70.9
61.5°	68.2
62°	65.6
62.5°	62.8
63°	60.2
63.5°	57.6
64°	55.1
64.5°	52.5
65°	50.1
65.5°	47.7
66°	45.3
66.5°	43.0
67°	40.7





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**CANDELA DISTRIBUTION (continued):**

	0°
67.5°	38.5
68°	36.3
68.5°	34.3
69°	32.3
69.5°	30.3
70°	28.3
70.5°	26.3
71°	24.5
71.5°	22.7
72°	21.0
72.5°	19.5
73°	17.9
73.5°	16.4
74°	15.0
74.5°	13.8
75°	12.6
75.5°	11.5
76°	10.5
76.5°	9.6
77°	8.8
77.5°	8.1
78°	7.5
78.5°	7.0
79°	6.5
79.5°	6.1
80°	5.7
80.5°	5.3
81°	4.9
81.5°	4.5
82°	4.1
82.5°	3.8
83°	3.4
83.5°	3.1
84°	2.7
84.5°	2.4
85°	2.0
85.5°	1.7
86°	1.4
86.5°	1.1
87°	0.8
87.5°	0.5
88°	0.3
88.5°	0.1
89°	0.0
89.5°	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°
90°	0.0
90.5°	0.0
91°	0.0
91.5°	0.0
92°	0.0
92.5°	0.0
93°	0.0
93.5°	0.0
94°	0.0
94.5°	0.0
95°	0.0
95.5°	0.0
96°	0.0
96.5°	0.0
97°	0.0
97.5°	0.0
98°	0.0
98.5°	0.0
99°	0.0
99.5°	0.0
100°	0.0
100.5°	0.0
101°	0.0
101.5°	0.0
102°	0.0
102.5°	0.0
103°	0.0
103.5°	0.0
104°	0.0
104.5°	0.0
105°	0.0
105.5°	0.0
106°	0.0
106.5°	0.0
107°	0.0
107.5°	0.0
108°	0.0
108.5°	0.0
109°	0.0
109.5°	0.0
110°	0.0
110.5°	0.0
111°	0.0
111.5°	0.0
112°	0.0



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**CANDELA DISTRIBUTION (continued):**

	0°
112.5°	0.0
113°	0.0
113.5°	0.0
114°	0.0
114.5°	0.0
115°	0.0
115.5°	0.0
116°	0.0
116.5°	0.0
117°	0.0
117.5°	0.0
118°	0.0
118.5°	0.1
119°	0.1
119.5°	0.1
120°	0.1
120.5°	0.1
121°	0.1
121.5°	0.1
122°	0.1
122.5°	0.1
123°	0.1
123.5°	0.1
124°	0.1
124.5°	0.1
125°	0.1
125.5°	0.1
126°	0.1
126.5°	0.1
127°	0.1
127.5°	0.1
128°	0.1
128.5°	0.1
129°	0.1
129.5°	0.1
130°	0.1
130.5°	0.1
131°	0.1
131.5°	0.1
132°	0.1
132.5°	0.1
133°	0.1
133.5°	0.1
134°	0.1
134.5°	0.1



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**CANDELA DISTRIBUTION (continued):**

	0°
135°	0.1
135.5°	0.1
136°	0.1
136.5°	0.1
137°	0.1
137.5°	0.1
138°	0.1
138.5°	0.1
139°	0.1
139.5°	0.1
140°	0.1
140.5°	0.1
141°	0.1
141.5°	0.1
142°	0.1
142.5°	0.1
143°	0.1
143.5°	0.1
144°	0.1
144.5°	0.1
145°	0.1
145.5°	0.1
146°	0.1
146.5°	0.1
147°	0.1
147.5°	0.1
148°	0.1
148.5°	0.1
149°	0.1
149.5°	0.1
150°	0.1
150.5°	0.1
151°	0.1
151.5°	0.1
152°	0.1
152.5°	0.1
153°	0.1
153.5°	0.1
154°	0.1
154.5°	0.1
155°	0.2
155.5°	0.2
156°	0.2
156.5°	0.2
157°	0.2



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**CANDELA DISTRIBUTION (continued):**

	0°
157.5°	0.2
158°	0.2
158.5°	0.2
159°	0.2
159.5°	0.2
160°	0.2
160.5°	0.2
161°	0.2
161.5°	0.2
162°	0.2
162.5°	0.2
163°	0.2
163.5°	0.2
164°	0.2
164.5°	0.2
165°	0.2
165.5°	0.2
166°	0.2
166.5°	0.2
167°	0.2
167.5°	0.2
168°	0.2
168.5°	0.2
169°	0.2
169.5°	0.2
170°	0.2
170.5°	0.2
171°	0.2
171.5°	0.2
172°	0.2
172.5°	0.2
173°	0.2
173.5°	0.2
174°	0.2
174.5°	0.2
175°	0.2
175.5°	0.2
176°	0.2
176.5°	0.2
177°	0.2
177.5°	0.2
178°	0.2
178.5°	0.2
179°	0.2
179.5°	0.2

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Scaled Data Report



TEST NUMBER: P798558  
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CANDELA DISTRIBUTION (continued):

0°  
180° | 0.2

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

HALO

Report Number: SP1-2401-294-2

Test Date: 03/08/2024

Luminaire Tested: LT4069FS1EWHR-3000K

Data in this report applies to families of products LT4069FS1EWHR-3000K.

This test was performed under the Supervised Manufacturer's Testing Program.  
The results of this test have not been influenced by sources from within Eaton or from external interests.

**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2401-294-2  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry: 4π  
 Issue Date: 03/08/2024  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: HALO  
 Catalog Number: **LT4069FS1EWHR-3000K**  
 Description: 4 INCH HALO LT 5CCT DOB .

**Spectral Parameters**

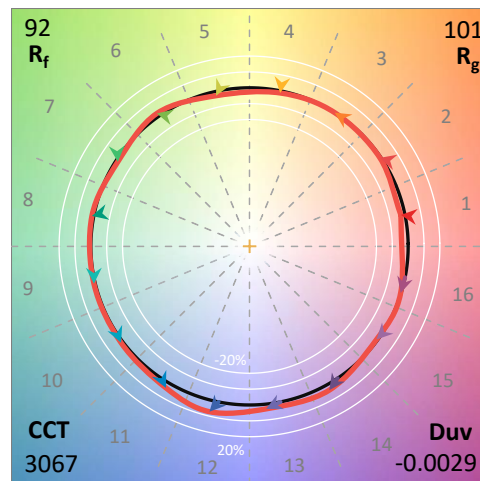
CCT (K): 3067  
 CIE u': 0.2493  
 CIE v': 0.5160  
 Duv: -0.0029  
 CIE x: 0.4281  
 CIE y: 0.3939  
 CIE z: 0.1780  
 Peak Wavelength (nm): 632  
 Dominant Wavelength (nm): 583  
 Purity: 47.1

CRI (Ra):	96.6		
R1:	97.7	R9:	84.5
R2:	98.6	R10:	98.3
R3:	96.8	R11:	95.9
R4:	98.6	R12:	83.9
R5:	98.4	R13:	98.0
R6:	94.2	R14:	96.4
R7:	94.9		
R8:	93.4		

Rf: 92.4  
 Rg: 101.1

**Test Conditions**

Stabilization Time: 10M  
 Operation Time: 12H  
 Room Temperature (°C) / RH%: 25.8/43%  
 Sphere Temperature (°C): 25.0





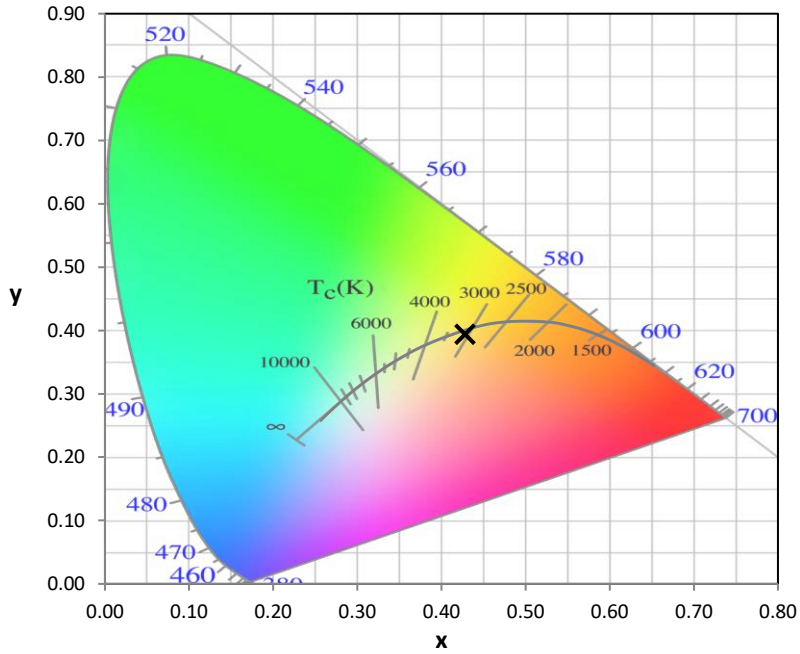
REPORT NUMBER: SP1-2401-294-2

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	2/12/2024	8/12/2024
Power Meter	XITRON 2801 IN0071	10/23/2023	10/23/2024
AC Power Source	CHROMA 61603 IN0063	10/24/2023	10/24/2024
DC Power Source	AGILENT E3634A IN0208	10/24/2023	10/24/2024
Sphere Thermometer	ONSET IN0085	10/24/2023	10/24/2024
Room Thermometer	ONSET IN0046	10/24/2023	10/24/2024

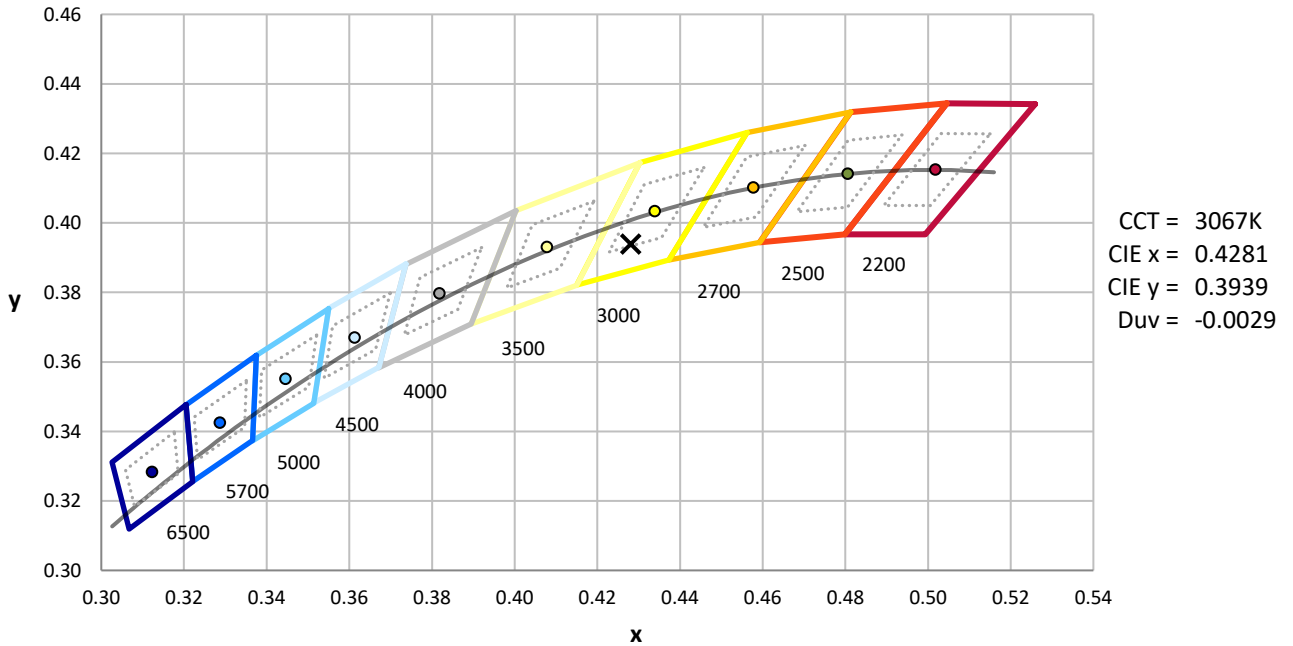
Sample Number	Condition	Description
2401-294-LM1	Good	LT4069FS1EWHR

REPORT NUMBER: SP1-2401-294-2

CIE 1931 Chromaticity Diagram



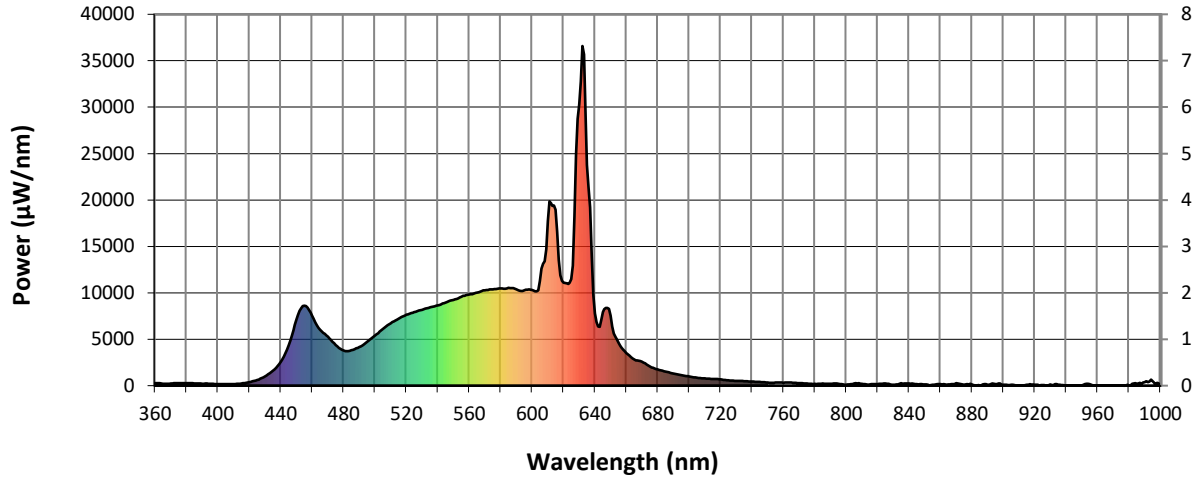
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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**Photopic Flux vs. Wavelength**

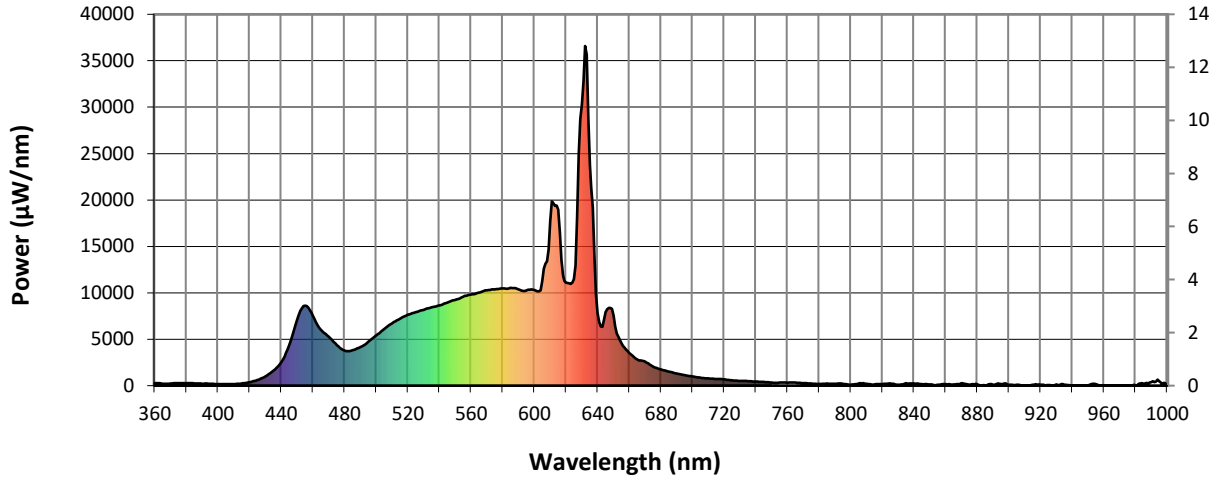


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λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)
360	275	NR	490	4160	NR	620	11095	NR	750	326	NR	880	141	NR
365	192	NR	495	4705	NR	625	11468	NR	755	329	NR	885	28	NR
370	225	NR	500	5405	NR	630	30287	NR	760	318	NR	890	107	NR
375	267	NR	505	6088	NR	635	23784	NR	765	338	NR	895	177	NR
380	262	NR	510	6708	NR	640	7786	NR	770	272	NR	900	110	NR
385	248	NR	515	7195	NR	645	7907	NR	775	228	NR	905	106	NR
390	208	NR	520	7633	NR	650	7530	NR	780	189	NR	910	0	NR
395	213	NR	525	7908	NR	655	4629	NR	785	227	NR	915	92	NR
400	156	NR	530	8179	NR	660	3515	NR	790	206	NR	920	80	NR
405	165	NR	535	8435	NR	665	2809	NR	795	199	NR	925	67	NR
410	167	NR	540	8662	NR	670	2575	NR	800	92	NR	930	123	NR
415	233	NR	545	8962	NR	675	2055	NR	805	221	NR	935	90	NR
420	369	NR	550	9240	NR	680	1743	NR	810	214	NR	940	0	NR
425	615	NR	555	9581	NR	685	1513	NR	815	143	NR	945	0	NR
430	1001	NR	560	9804	NR	690	1296	NR	820	168	NR	950	43	NR
435	1603	NR	565	10020	NR	695	1138	NR	825	224	NR	955	157	NR
440	2527	NR	570	10279	NR	700	993	NR	830	88	NR	960	0	NR
445	4326	NR	575	10362	NR	705	841	NR	835	267	NR	965	20	NR
450	7104	NR	580	10482	NR	710	771	NR	840	232	NR	970	0	NR
455	8611	NR	585	10544	NR	715	726	NR	845	153	NR	975	12	NR
460	7538	NR	590	10380	NR	720	680	NR	850	146	NR	980	20	NR
465	6028	NR	595	10280	NR	725	569	NR	855	112	NR	985	205	NR
470	5257	NR	600	10304	NR	730	517	NR	860	162	NR	990	382	NR
475	4382	NR	605	11273	NR	735	481	NR	865	130	NR	995	489	NR
480	3793	NR	610	17743	NR	740	431	NR	870	263	NR	1000	0	NR
485	3810	NR	615	18962	NR	745	401	NR	875	104	NR			

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Scotopic Flux vs. Wavelength



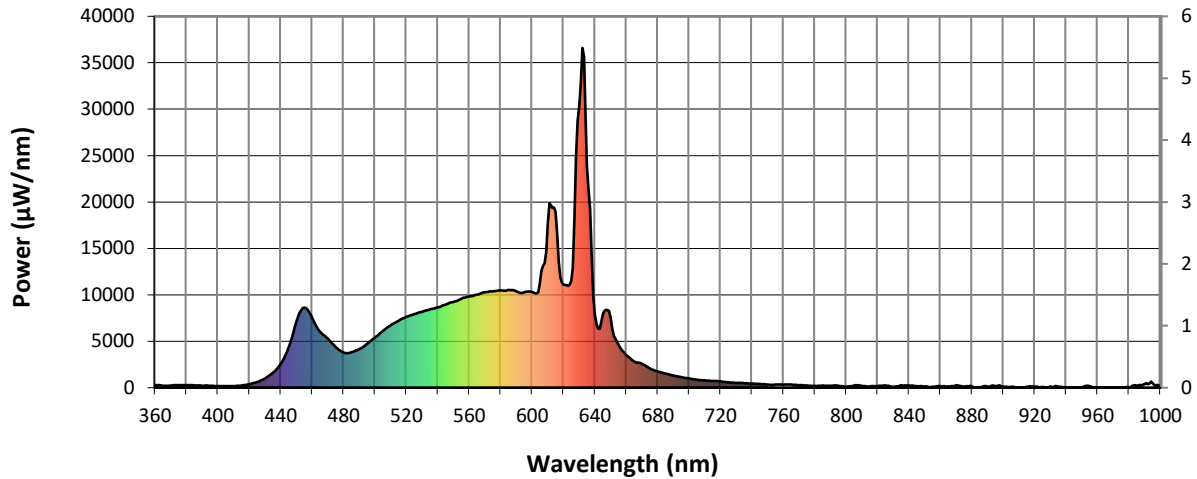
Scotopic Lumens: 1069

S/P: 1.51

$\lambda$ (nm)	Power ( $\mu\text{W}/\text{nm}$ )	Lumens ( $\phi/\text{nm}$ )	$\lambda$ (nm)	Power ( $\mu\text{W}/\text{nm}$ )	Lumens ( $\phi/\text{nm}$ )	$\lambda$ (nm)	Power ( $\mu\text{W}/\text{nm}$ )	Lumens ( $\phi/\text{nm}$ )	$\lambda$ (nm)	Power ( $\mu\text{W}/\text{nm}$ )	Lumens ( $\phi/\text{nm}$ )	$\lambda$ (nm)	Power ( $\mu\text{W}/\text{nm}$ )	Lumens ( $\phi/\text{nm}$ )
360	275	NR	490	4160	NR	620	11095	NR	750	326	NR	880	141	NR
365	192	NR	495	4705	NR	625	11468	NR	755	329	NR	885	28	NR
370	225	NR	500	5405	NR	630	30287	NR	760	318	NR	890	107	NR
375	267	NR	505	6088	NR	635	23784	NR	765	338	NR	895	177	NR
380	262	NR	510	6708	NR	640	7786	NR	770	272	NR	900	110	NR
385	248	NR	515	7195	NR	645	7907	NR	775	228	NR	905	106	NR
390	208	NR	520	7633	NR	650	7530	NR	780	189	NR	910	0	NR
395	213	NR	525	7908	NR	655	4629	NR	785	227	NR	915	92	NR
400	156	NR	530	8179	NR	660	3515	NR	790	206	NR	920	80	NR
405	165	NR	535	8435	NR	665	2809	NR	795	199	NR	925	67	NR
410	167	NR	540	8662	NR	670	2575	NR	800	92	NR	930	123	NR
415	233	NR	545	8962	NR	675	2055	NR	805	221	NR	935	90	NR
420	369	NR	550	9240	NR	680	1743	NR	810	214	NR	940	0	NR
425	615	NR	555	9581	NR	685	1513	NR	815	143	NR	945	0	NR
430	1001	NR	560	9804	NR	690	1296	NR	820	168	NR	950	43	NR
435	1603	NR	565	10020	NR	695	1138	NR	825	224	NR	955	157	NR
440	2527	NR	570	10279	NR	700	993	NR	830	88	NR	960	0	NR
445	4326	NR	575	10362	NR	705	841	NR	835	267	NR	965	20	NR
450	7104	NR	580	10482	NR	710	771	NR	840	232	NR	970	0	NR
455	8611	NR	585	10544	NR	715	726	NR	845	153	NR	975	12	NR
460	7538	NR	590	10380	NR	720	680	NR	850	146	NR	980	20	NR
465	6028	NR	595	10280	NR	725	569	NR	855	112	NR	985	205	NR
470	5257	NR	600	10304	NR	730	517	NR	860	162	NR	990	382	NR
475	4382	NR	605	11273	NR	735	481	NR	865	130	NR	995	489	NR
480	3793	NR	610	17743	NR	740	431	NR	870	263	NR	1000	0	NR
485	3810	NR	615	18962	NR	745	401	NR	875	104	NR			

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**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: 422.7**

**M/P: 0.6**

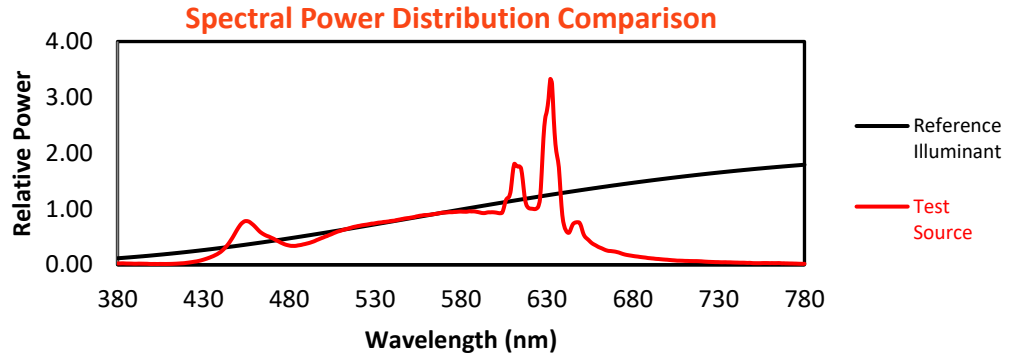
λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)	λ (nm)	Power (µW/nm)	Lumens (φ/nm)
360	275	NR	490	4160	NR	620	11095	NR	750	326	NR	880	141	NR
365	192	NR	495	4705	NR	625	11468	NR	755	329	NR	885	28	NR
370	225	NR	500	5405	NR	630	30287	NR	760	318	NR	890	107	NR
375	267	NR	505	6088	NR	635	23784	NR	765	338	NR	895	177	NR
380	262	NR	510	6708	NR	640	7786	NR	770	272	NR	900	110	NR
385	248	NR	515	7195	NR	645	7907	NR	775	228	NR	905	106	NR
390	208	NR	520	7633	NR	650	7530	NR	780	189	NR	910	0	NR
395	213	NR	525	7908	NR	655	4629	NR	785	227	NR	915	92	NR
400	156	NR	530	8179	NR	660	3515	NR	790	206	NR	920	80	NR
405	165	NR	535	8435	NR	665	2809	NR	795	199	NR	925	67	NR
410	167	NR	540	8662	NR	670	2575	NR	800	92	NR	930	123	NR
415	233	NR	545	8962	NR	675	2055	NR	805	221	NR	935	90	NR
420	369	NR	550	9240	NR	680	1743	NR	810	214	NR	940	0	NR
425	615	NR	555	9581	NR	685	1513	NR	815	143	NR	945	0	NR
430	1001	NR	560	9804	NR	690	1296	NR	820	168	NR	950	43	NR
435	1603	NR	565	10020	NR	695	1138	NR	825	224	NR	955	157	NR
440	2527	NR	570	10279	NR	700	993	NR	830	88	NR	960	0	NR
445	4326	NR	575	10362	NR	705	841	NR	835	267	NR	965	20	NR
450	7104	NR	580	10482	NR	710	771	NR	840	232	NR	970	0	NR
455	8611	NR	585	10544	NR	715	726	NR	845	153	NR	975	12	NR
460	7538	NR	590	10380	NR	720	680	NR	850	146	NR	980	20	NR
465	6028	NR	595	10280	NR	725	569	NR	855	112	NR	985	205	NR
470	5257	NR	600	10304	NR	730	517	NR	860	162	NR	990	382	NR
475	4382	NR	605	11273	NR	735	481	NR	865	130	NR	995	489	NR
480	3793	NR	610	17743	NR	740	431	NR	870	263	NR	1000	0	NR
485	3810	NR	615	18962	NR	745	401	NR	875	104	NR			

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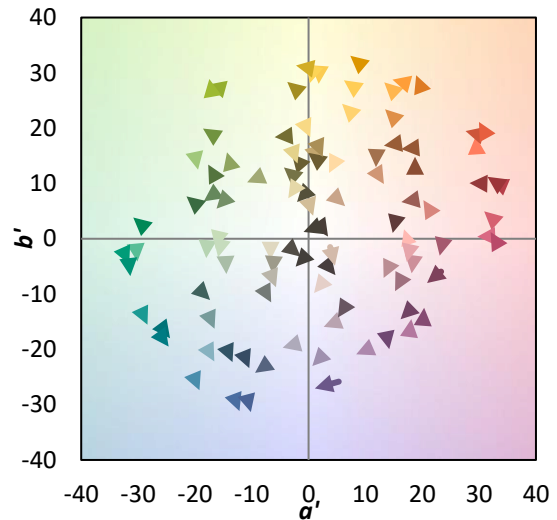
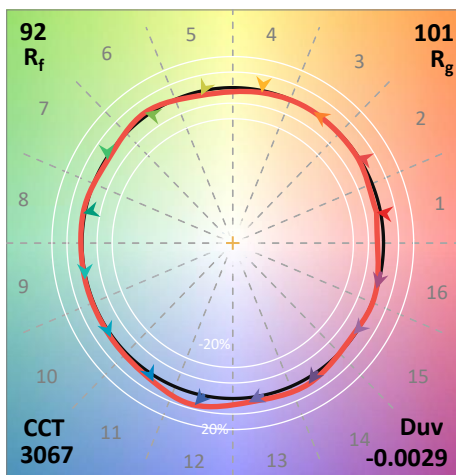
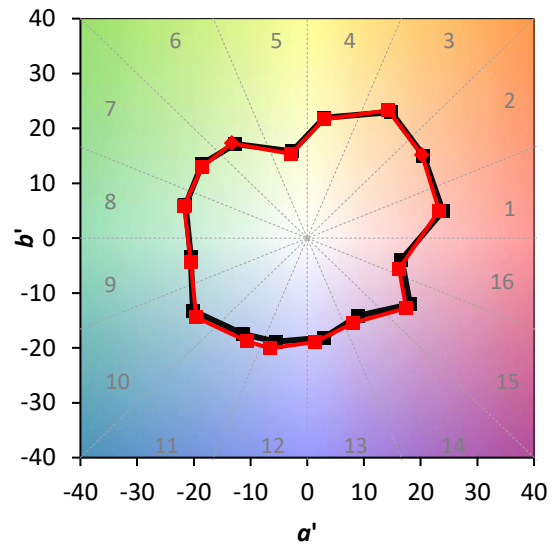
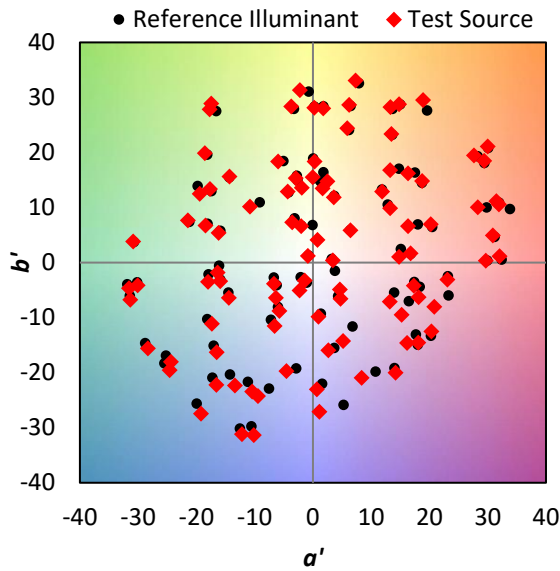
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**Summary**

$R_f = 92.4$   
 $R_g = 101.1$   
 CIE  $R_a = 96.6$   
 $R_9 = 84.5$



**Color Vector Graphics**

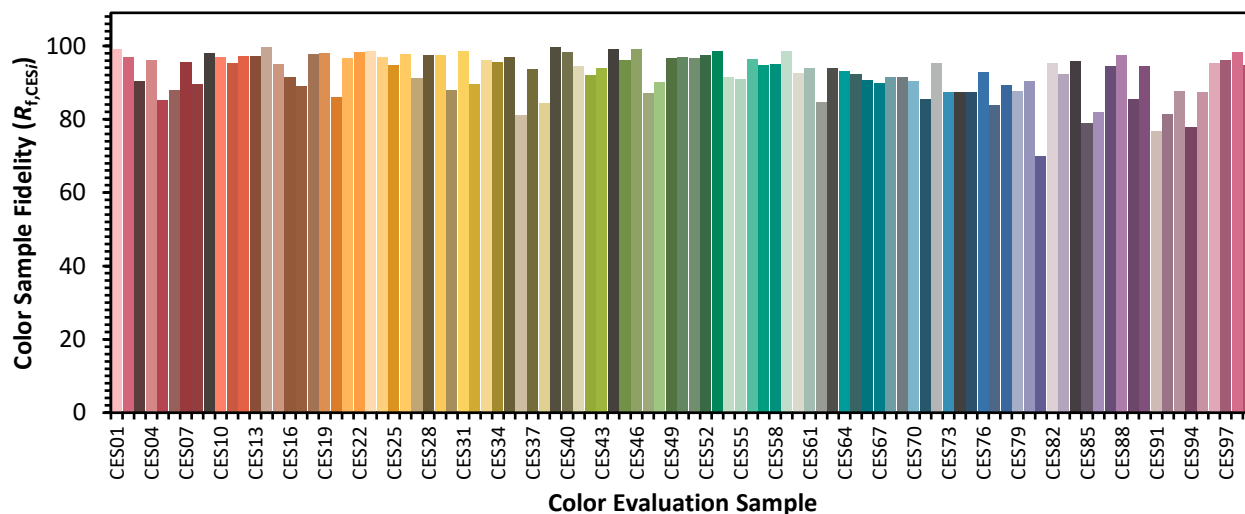


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**Individual Sample Fidelity Index ( $R_{f,i}$ )**

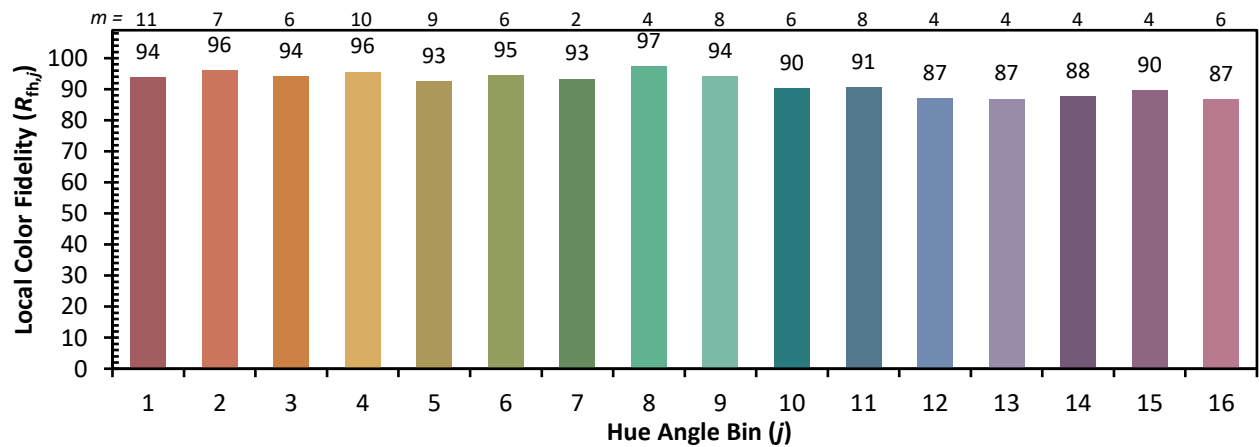
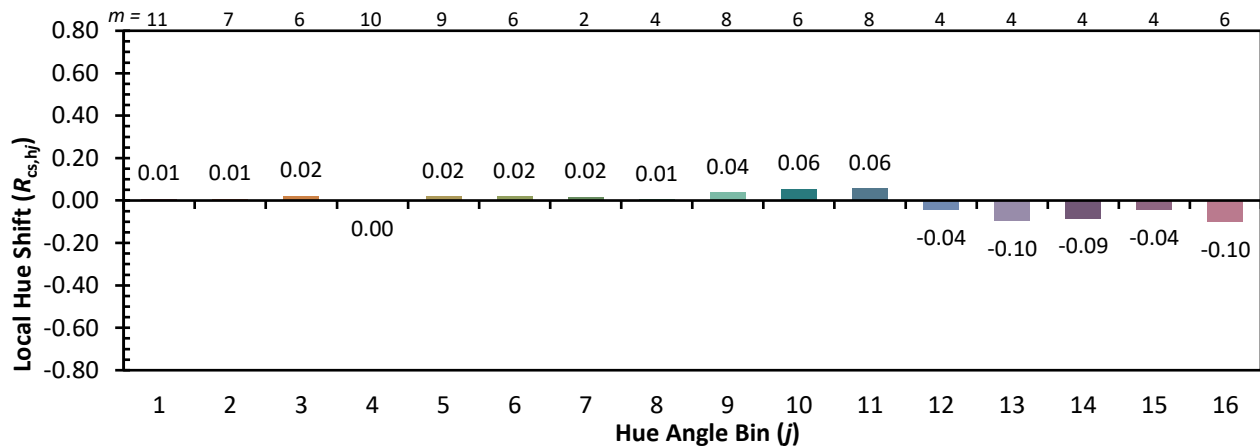
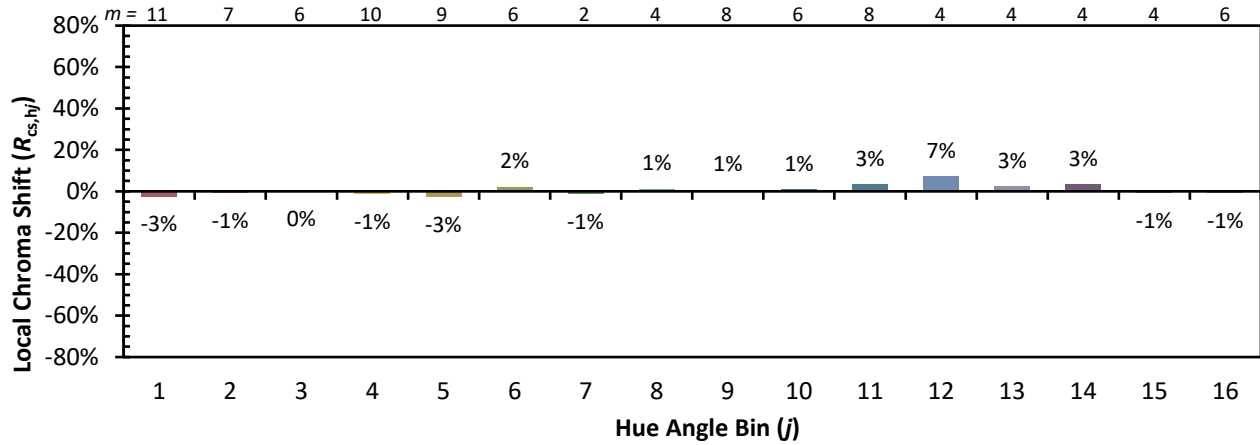
CES01 = 86	CES26 = 98	CES51 = 97	CES76 = 93
CES02 = 63	CES27 = 91	CES52 = 98	CES77 = 84
CES03 = 32	CES28 = 97	CES53 = 99	CES78 = 89
CES04 = 70	CES29 = 97	CES54 = 92	CES79 = 88
CES05 = 51	CES30 = 88	CES55 = 91	CES80 = 90
CES06 = 51	CES31 = 99	CES56 = 96	CES81 = 70
CES07 = 44	CES32 = 90	CES57 = 95	CES82 = 95
CES08 = 43	CES33 = 96	CES58 = 95	CES83 = 92
CES09 = 29	CES34 = 95	CES59 = 99	CES84 = 96
CES10 = 76	CES35 = 97	CES60 = 93	CES85 = 79
CES11 = 58	CES36 = 81	CES61 = 94	CES86 = 82
CES12 = 65	CES37 = 94	CES62 = 85	CES87 = 94
CES13 = 44	CES38 = 84	CES63 = 94	CES88 = 97
CES14 = 74	CES39 = 100	CES64 = 93	CES89 = 85
CES15 = 72	CES40 = 98	CES65 = 92	CES90 = 94
CES16 = 48	CES41 = 94	CES66 = 91	CES91 = 77
CES17 = 50	CES42 = 92	CES67 = 90	CES92 = 81
CES18 = 57	CES43 = 94	CES68 = 91	CES93 = 88
CES19 = 72	CES44 = 99	CES69 = 91	CES94 = 78
CES20 = 67	CES45 = 96	CES70 = 90	CES95 = 87
CES21 = 86	CES46 = 99	CES71 = 85	CES96 = 95
CES22 = 79	CES47 = 87	CES72 = 95	CES97 = 96
CES23 = 91	CES48 = 90	CES73 = 87	CES98 = 98
CES24 = 90	CES49 = 97	CES74 = 87	CES99 = 95
CES25 = 71	CES50 = 97	CES75 = 87	



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Color Rendition by Hue-Angle Bin

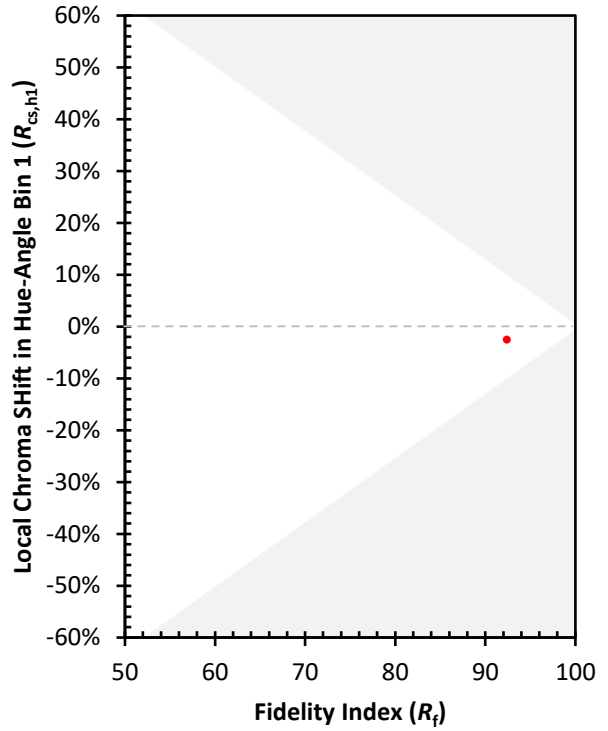
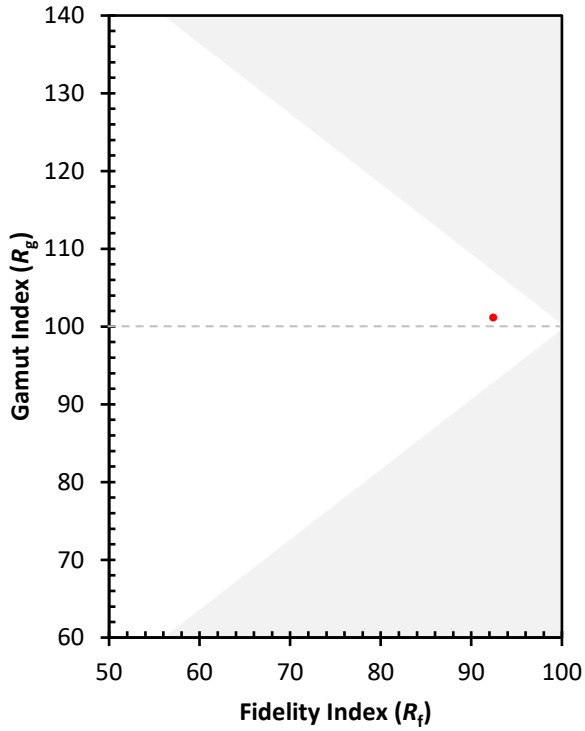




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Measure Comparisons



(END OF REPORT)