

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: INVUE

Report Number: G2-2108-353-2

Luminaire Tested: **LXS-VA1-AMB-U-ASW-A**

Test Date: 9/27/2021

Test Information

Test Method: LM-79-08
Report Number: G2-2108-353-2
Test Lab: COOPER LIGHTING SOLUTIONS
Test Date: 9/27/2021
Issue Date: 9/27/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: LXS-VA1-AMB-U-ASW-A
Description: LUXESCAPE OUTDOOR ARCHITECTURAL LUMINAIRE
NARROW BAND AMBER LEDS AND TYPE III OPTIC, ARM MOUNT
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 935.7 lumens
Efficiency: N/A
Efficacy: 27.5 lumens/watt
Luminous Opening: Circular (Dia: 1.67' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

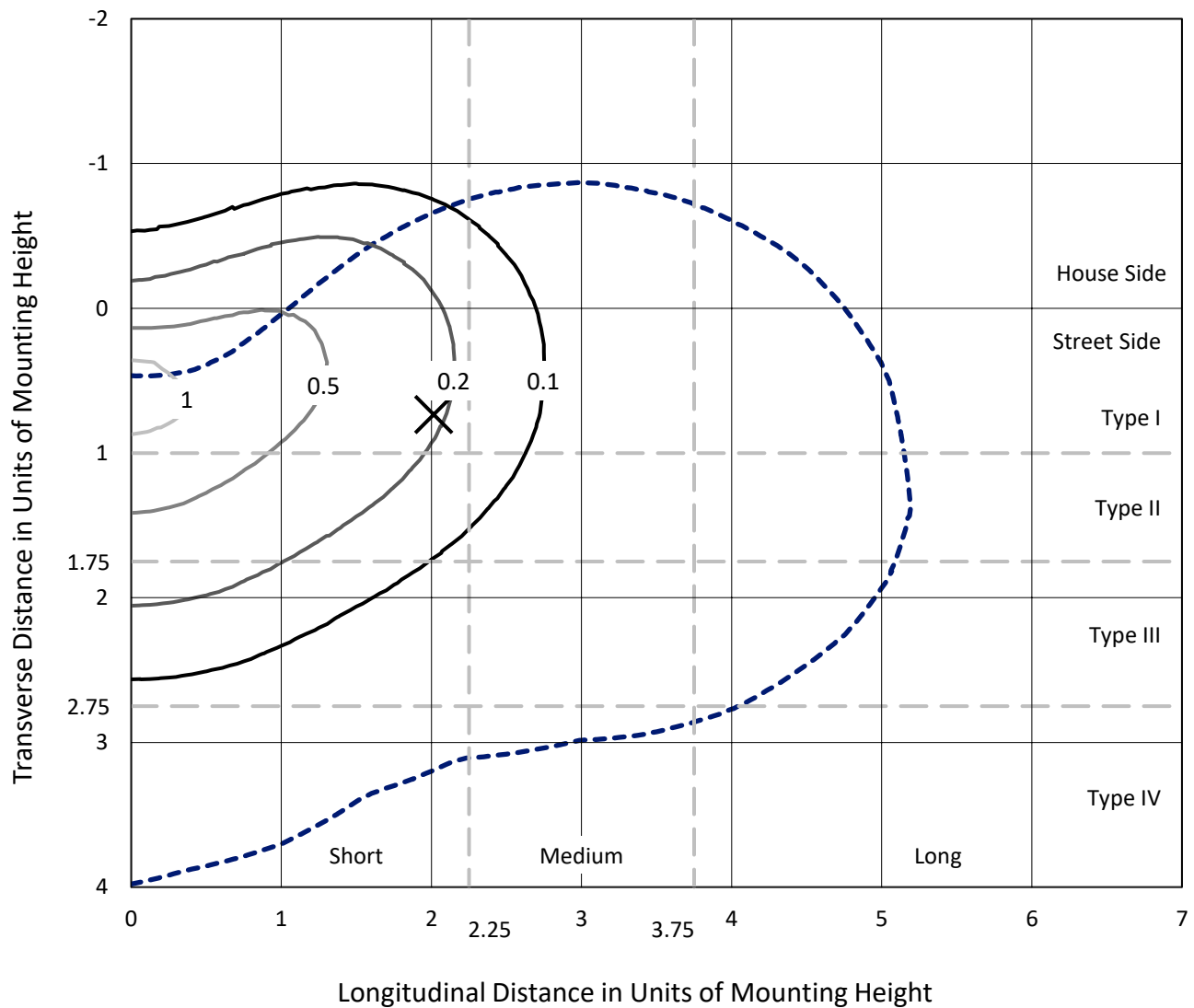
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: G2-2108-353-2
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Iso-Footcandle Lines of Horizontal Illumination

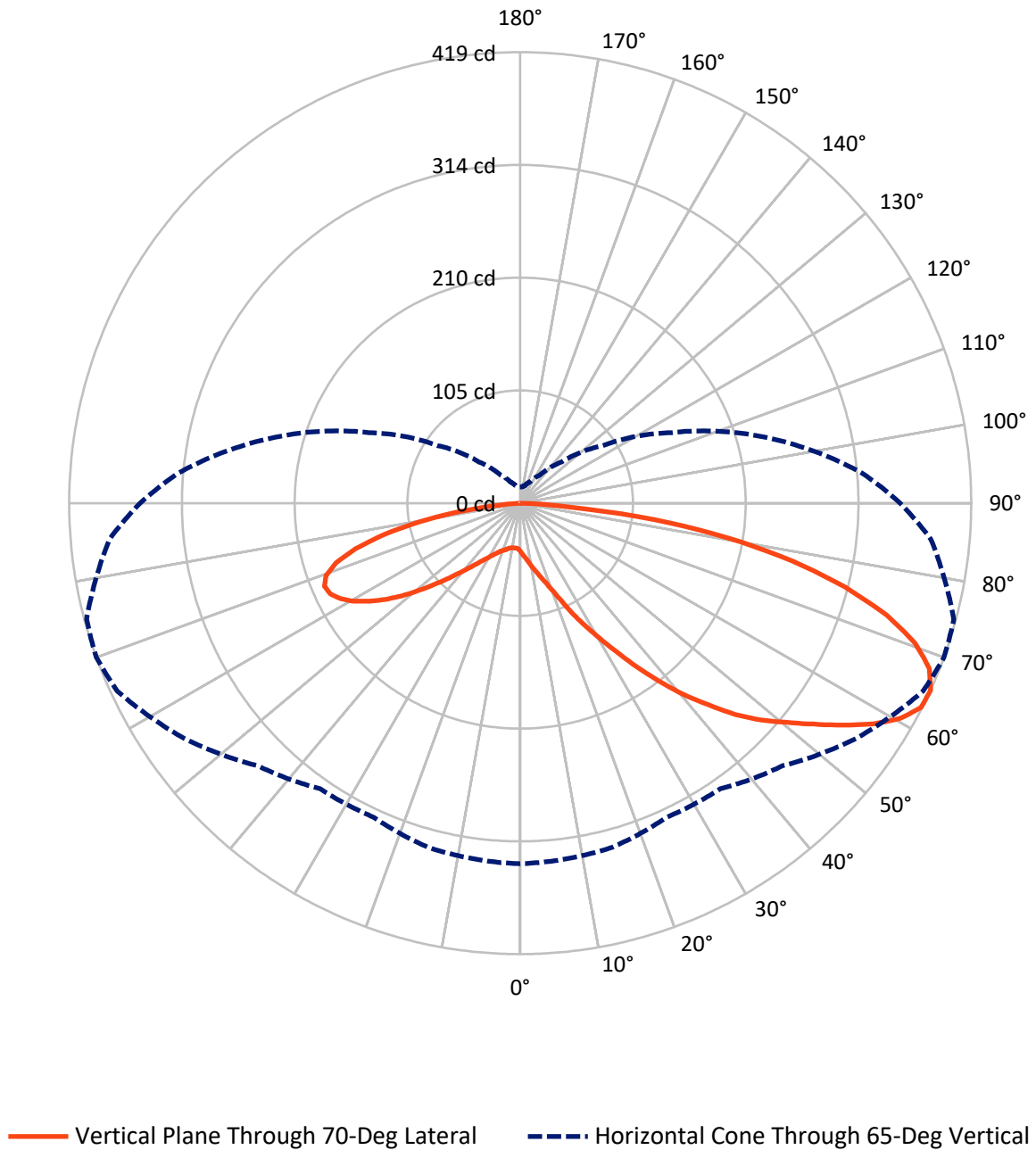
✕ Max cd
 - - - 1/2 Max cd



Based on 12 foot mounting height. Maximum calculated value = 1.2 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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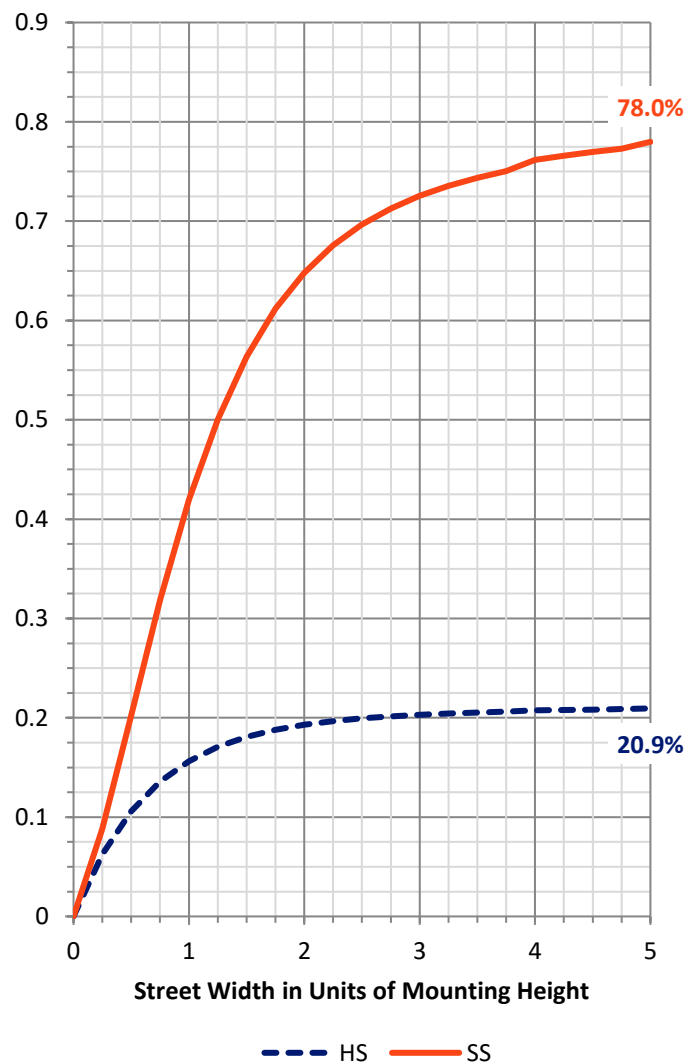
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	197.1	0.0	197.1
	% Fixture	21.1	0.0	21.1
Street Side	Lumens	738.6	0.0	738.6
	% Fixture	78.9	0.0	78.9
Total	Lumens	935.7	0.0	935.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	4.7	0.5
10°-20°	19.0	2.0
20°-30°	45.9	4.9
30°-40°	87.9	9.4
40°-50°	139.8	14.9
50°-60°	196.9	21.0
60°-70°	227.6	24.3
70°-80°	173.6	18.6
80°-90°	40.2	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°	935.7	100.0
0°-180°	935.7	100.0

Coefficient of Utilization



REPORT NUMBER: G2-2108-353-2

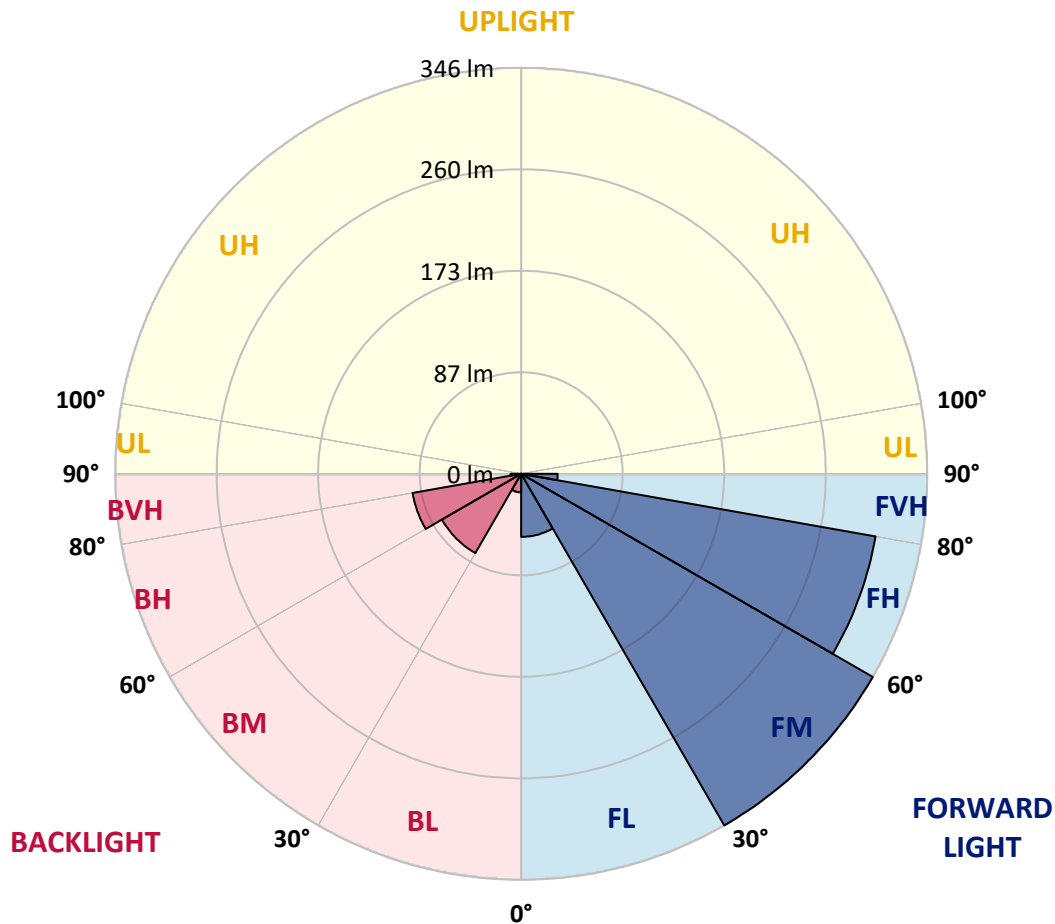
CATALOG NUMBER: LXS-VA1-AMB-U-ASW-A

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	53.8	5.8			
FM	(30°-60°)	346.5	37.0			
FH	(60°-80°)	307.1	32.8			G0/660
FVH	(80°-90°)	31.2	3.3			G1/100
BL	(0°-30°)	15.8	1.7	B0/110		
BM	(30°-60°)	78.1	8.4	B0/220		
BH	(60°-80°)	94.1	10.1	B0/110		G0/110
BVH	(80°-90°)	9.1	1.0			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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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	70°	75°	85°
0°	45	45	45	45	45	45	45	45	45	45	45
2.5°	53	53	52	52	51	51	50	49	48	47	46
5°	62	61	60	60	58	57	55	53	51	50	48
7.5°	72	72	70	69	66	64	61	57	55	54	50
10°	84	83	81	80	76	72	67	62	60	57	53
12.5°	99	98	95	92	87	82	76	68	65	62	55
15°	122	120	116	110	102	93	85	76	71	67	59
17.5°	156	154	147	135	122	109	96	85	78	73	63
20°	179	178	173	162	147	129	111	95	87	81	68
22.5°	196	195	191	182	169	150	129	109	99	91	75
25°	210	208	205	198	187	169	148	124	114	103	83
27.5°	225	223	220	212	202	187	168	141	129	117	93
30°	245	242	239	229	218	204	186	160	146	133	105
32.5°	281	276	266	250	235	221	205	181	165	152	120
35°	311	307	297	275	255	238	225	203	187	172	137
37.5°	325	322	314	297	275	256	245	225	210	194	157
40°	334	331	324	310	291	274	263	246	234	217	178
42.5°	339	337	330	318	303	289	281	269	256	240	200
45°	340	338	333	321	311	302	296	290	280	265	224
47.5°	343	340	337	328	318	311	310	309	301	289	246
50°	354	352	345	337	327	325	328	327	320	310	269
52.5°	361	359	352	342	337	339	347	349	341	332	293
55°	378	375	365	350	346	351	364	372	364	356	316
57.5°	378	375	367	354	349	359	379	392	387	380	339
60°	368	367	361	349	346	361	387	407	406	399	359
62.5°	354	352	350	337	338	357	389	415	418	413	375
65°	335	334	331	322	324	345	381	413	419	417	383
67.5°	312	312	309	301	303	328	367	402	410	410	380
70°	285	286	283	272	278	304	344	380	389	391	365
72.5°	255	251	249	241	246	273	312	349	356	360	338
75°	222	218	215	208	213	236	272	304	312	317	297
77.5°	186	183	177	170	175	196	227	253	259	261	242
80°	145	142	138	129	134	150	175	191	196	195	179
82.5°	100	97	94	86	90	101	117	124	125	121	111
85°	49	47	44	41	43	45	50	49	45	45	40
87.5°	1	1	1	1	1	1	1	1	1	1	1
90°	0	0	0	0	0	0	0	0	0	0	0

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CATALOG NUMBER: LXS-VA1-AMB-U-ASW-A

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	45	45	45	45	45	45	45	45	45	45	45
2.5°	45	45	43	42	42	41	40	40	39	39	39
5°	46	45	43	41	40	38	37	36	36	36	35
7.5°	48	46	43	41	38	37	35	34	33	33	33
10°	50	48	44	40	38	35	33	32	31	31	30
12.5°	52	50	45	40	37	34	32	30	29	29	29
15°	55	52	46	41	37	33	31	29	28	27	27
17.5°	59	55	48	42	37	33	30	28	27	26	26
20°	63	58	50	43	37	33	29	27	25	25	25
22.5°	69	62	52	44	38	33	29	26	24	24	23
25°	75	67	55	46	38	33	28	25	23	22	22
27.5°	83	74	59	48	39	33	28	25	22	21	21
30°	93	82	64	50	40	33	28	24	21	20	20
32.5°	105	91	70	53	42	34	27	23	21	20	19
35°	120	103	76	57	44	34	27	23	20	19	19
37.5°	137	117	85	61	46	35	28	23	20	19	19
40°	156	133	94	67	49	36	28	23	20	18	18
42.5°	176	151	106	73	52	38	29	23	20	18	18
45°	197	171	120	80	56	40	29	23	20	18	18
47.5°	219	192	135	89	60	41	30	23	20	18	18
50°	241	213	152	99	65	43	31	23	19	18	18
52.5°	265	234	170	110	70	46	32	23	19	18	18
55°	287	254	187	121	75	48	32	24	19	18	17
57.5°	309	276	203	131	80	50	33	23	19	17	17
60°	328	295	217	142	86	52	33	23	18	17	16
62.5°	344	310	228	150	90	54	33	22	18	16	16
65°	353	319	236	155	93	54	32	22	17	15	15
67.5°	352	319	238	157	93	53	31	20	16	14	14
70°	340	309	231	154	91	51	29	19	14	13	13
72.5°	315	287	216	144	86	47	27	17	13	11	11
75°	275	250	189	128	76	42	23	15	11	10	9
77.5°	224	203	155	105	64	35	19	12	9	8	8
80°	164	147	112	78	48	26	15	9	7	6	6
82.5°	97	86	66	47	30	17	10	6	5	4	4
85°	32	28	23	16	12	7	4	3	2	2	2
87.5°	0	0	0	1	1	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

Signify Classified - Internal
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LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

INVUE

Report Number: SP1-2201-507-1

Luminaire Tested: ARB-B1-LED-D1-T2-AMB

Test Date: 01/21/2022

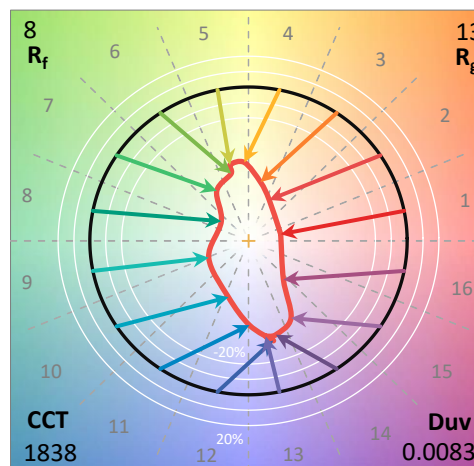
Test Information

Test Method: LM-79-08
 Report Number: SP1-2201-507-1
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 01/21/2022
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: INVUE
 Catalog Number: **ARB-B1-LED-D1-T2-AMB**
 Description: INVUE ARBOR AMBER

TESTED IN SITU. ARBOR OUTDOOR ARCHITECTURAL POST TOP. NARROW BAND AMBER LEDS AND TYPE II OPTIC, GRAPHITE METALLIC PAINTED FINISH. EACH LED BOARD AT 500MA.

Spectral Parameters

CCT (K):	1838	CRI (Ra):	-25.2		
CIE u':	0.3190	R1:	-44.1	R9:	-415.1
CIE v':	0.5510	R2:	45.5	R10:	16.1
Duv:	0.0083	R3:	23.9	R11:	-105.6
CIE x:	0.5632	R4:	-72.5	R12:	-27.5
CIE y:	0.4323	R5:	-46.4	R13:	-25.8
CIE z:	0.0045	R6:	27.4	R14:	48.6
Peak Wavelength (nm):	591	R7:	-2.2		
Dominant Wavelength (nm):	588	R8:	-133.0		
Purity:	99.4				
Rf:	8				
Rg:	12.7				



Test Conditions

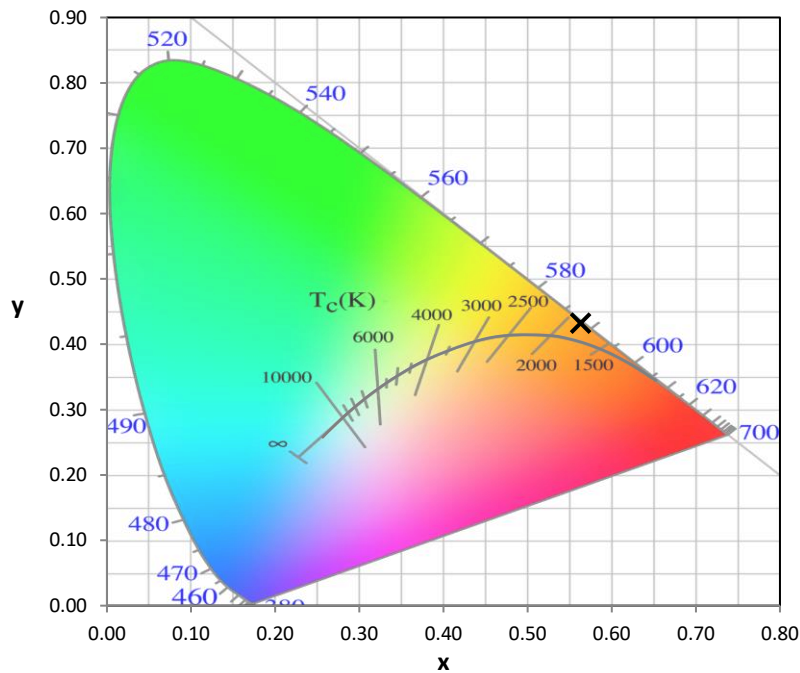
Stabilization Time: 164M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.2/26%
 Sphere Temperature (°C): 24.6

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CATALOG NUMBER: ARB-B1-LED-D1-T2-AMB

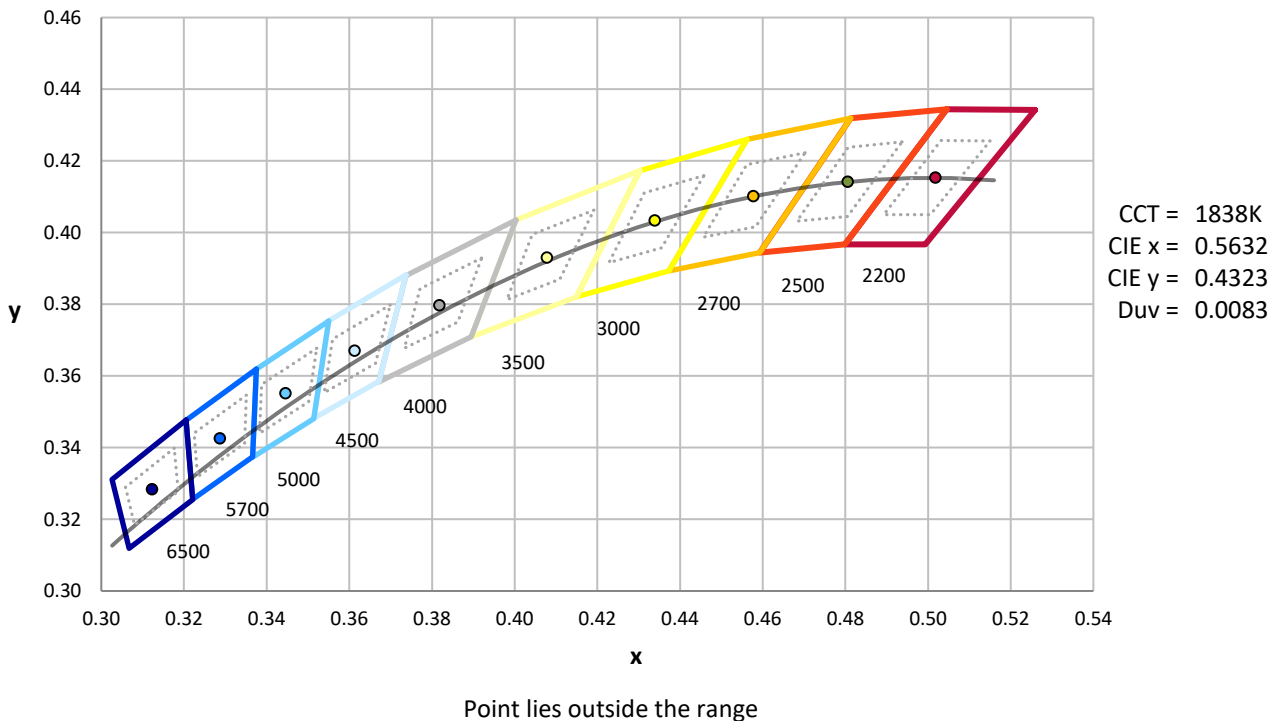
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/3/2021	2/3/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208	11/29/2021	11/29/2022
Sphere Thermometer	ONSET IN0085	11/29/2021	11/29/2022
Room Thermometer	ONSET IN0046	11/29/2021	11/29/2022

REPORT NUMBER: SP1-2201-507-1

CIE 1931 Chromaticity Diagram

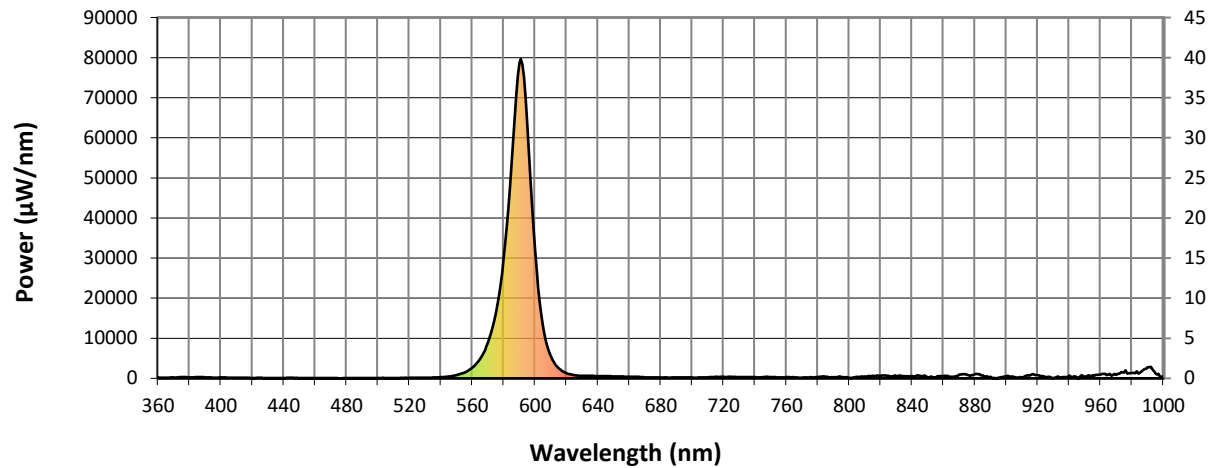


CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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Photopic Flux vs. Wavelength

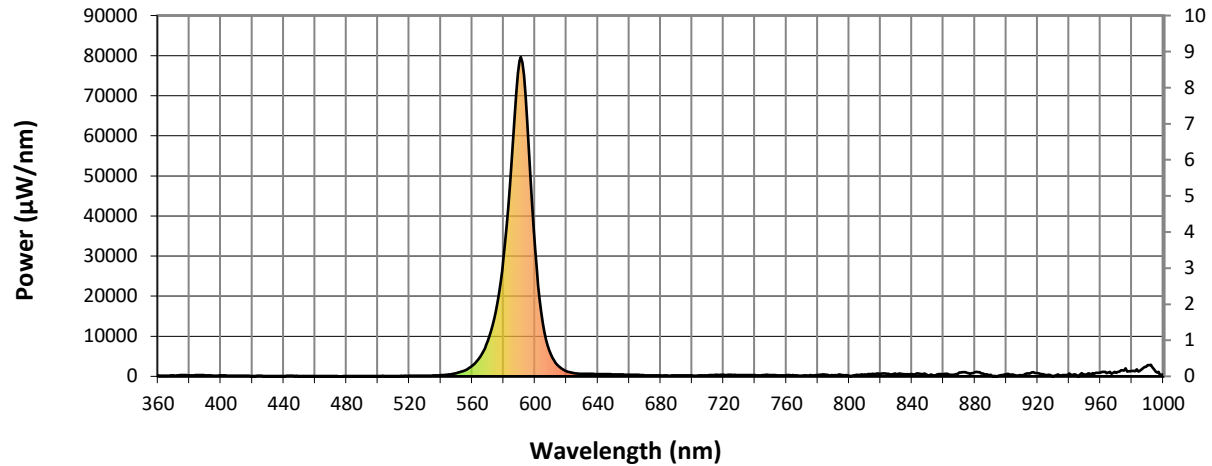


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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	232	NR	490	102	NR	620	1285	NR	750	361	NR	880	1054	NR
365	141	NR	495	91	NR	625	794	NR	755	226	NR	885	743	NR
370	221	NR	500	109	NR	630	604	NR	760	303	NR	890	375	NR
375	314	NR	505	95	NR	635	625	NR	765	277	NR	895	132	NR
380	237	NR	510	92	NR	640	568	NR	770	149	NR	900	509	NR
385	296	NR	515	131	NR	645	573	NR	775	286	NR	905	284	NR
390	260	NR	520	132	NR	650	495	NR	780	359	NR	910	225	NR
395	190	NR	525	133	NR	655	464	NR	785	390	NR	915	726	NR
400	227	NR	530	175	NR	660	397	NR	790	276	NR	920	800	NR
405	169	NR	535	205	NR	665	409	NR	795	342	NR	925	345	NR
410	152	NR	540	294	NR	670	281	NR	800	177	NR	930	77	NR
415	171	NR	545	475	NR	675	262	NR	805	373	NR	935	233	NR
420	121	NR	550	833	NR	680	208	NR	810	500	NR	940	730	NR
425	135	NR	555	1466	NR	685	193	NR	815	602	NR	945	259	NR
430	90	NR	560	2623	NR	690	213	NR	820	681	NR	950	510	NR
435	92	NR	565	4872	NR	695	267	NR	825	615	NR	955	800	NR
440	87	NR	570	8896	NR	700	218	NR	830	529	NR	960	959	NR
445	129	NR	575	16191	NR	705	234	NR	835	526	NR	965	925	NR
450	75	NR	580	29728	NR	710	280	NR	840	531	NR	970	863	NR
455	88	NR	585	53245	NR	715	393	NR	845	627	NR	975	1444	NR
460	76	NR	590	78694	NR	720	370	NR	850	248	NR	980	1342	NR
465	74	NR	595	63659	NR	725	376	NR	855	262	NR	985	1396	NR
470	87	NR	600	31696	NR	730	324	NR	860	579	NR	990	2816	NR
475	37	NR	605	13208	NR	735	359	NR	865	439	NR	995	1223	NR
480	77	NR	610	5473	NR	740	294	NR	870	923	NR	1000	487	NR
485	97	NR	615	2571	NR	745	300	NR	875	874	NR			

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Scotopic Flux vs. Wavelength



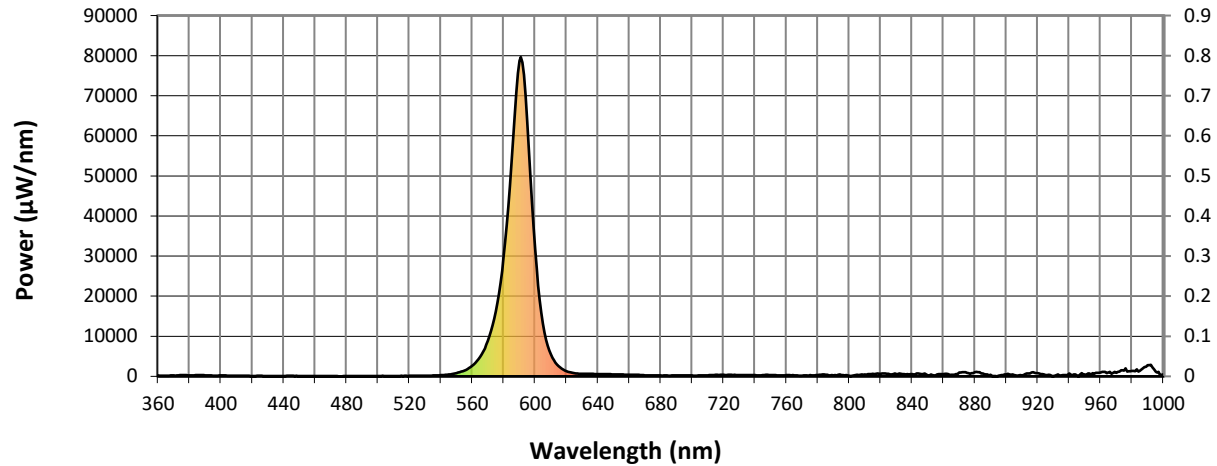
Scotopic Lumens: 236

S/P: 0.29

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	232	NR	490	102	NR	620	1285	NR	750	361	NR	880	1054	NR
365	141	NR	495	91	NR	625	794	NR	755	226	NR	885	743	NR
370	221	NR	500	109	NR	630	604	NR	760	303	NR	890	375	NR
375	314	NR	505	95	NR	635	625	NR	765	277	NR	895	132	NR
380	237	NR	510	92	NR	640	568	NR	770	149	NR	900	509	NR
385	296	NR	515	131	NR	645	573	NR	775	286	NR	905	284	NR
390	260	NR	520	132	NR	650	495	NR	780	359	NR	910	225	NR
395	190	NR	525	133	NR	655	464	NR	785	390	NR	915	726	NR
400	227	NR	530	175	NR	660	397	NR	790	276	NR	920	800	NR
405	169	NR	535	205	NR	665	409	NR	795	342	NR	925	345	NR
410	152	NR	540	294	NR	670	281	NR	800	177	NR	930	77	NR
415	171	NR	545	475	NR	675	262	NR	805	373	NR	935	233	NR
420	121	NR	550	833	NR	680	208	NR	810	500	NR	940	730	NR
425	135	NR	555	1466	NR	685	193	NR	815	602	NR	945	259	NR
430	90	NR	560	2623	NR	690	213	NR	820	681	NR	950	510	NR
435	92	NR	565	4872	NR	695	267	NR	825	615	NR	955	800	NR
440	87	NR	570	8896	NR	700	218	NR	830	529	NR	960	959	NR
445	129	NR	575	16191	NR	705	234	NR	835	526	NR	965	925	NR
450	75	NR	580	29728	NR	710	280	NR	840	531	NR	970	863	NR
455	88	NR	585	53245	NR	715	393	NR	845	627	NR	975	1444	NR
460	76	NR	590	78694	NR	720	370	NR	850	248	NR	980	1342	NR
465	74	NR	595	63659	NR	725	376	NR	855	262	NR	985	1396	NR
470	87	NR	600	31696	NR	730	324	NR	860	579	NR	990	2816	NR
475	37	NR	605	13208	NR	735	359	NR	865	439	NR	995	1223	NR
480	77	NR	610	5473	NR	740	294	NR	870	923	NR	1000	487	NR
485	97	NR	615	2571	NR	745	300	NR	875	874	NR			

REPORT NUMBER: SP1-2201-507-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: 31.6

S/P: 0.04

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	232	NR	490	102	NR	620	1285	NR	750	361	NR	880	1054	NR
365	141	NR	495	91	NR	625	794	NR	755	226	NR	885	743	NR
370	221	NR	500	109	NR	630	604	NR	760	303	NR	890	375	NR
375	314	NR	505	95	NR	635	625	NR	765	277	NR	895	132	NR
380	237	NR	510	92	NR	640	568	NR	770	149	NR	900	509	NR
385	296	NR	515	131	NR	645	573	NR	775	286	NR	905	284	NR
390	260	NR	520	132	NR	650	495	NR	780	359	NR	910	225	NR
395	190	NR	525	133	NR	655	464	NR	785	390	NR	915	726	NR
400	227	NR	530	175	NR	660	397	NR	790	276	NR	920	800	NR
405	169	NR	535	205	NR	665	409	NR	795	342	NR	925	345	NR
410	152	NR	540	294	NR	670	281	NR	800	177	NR	930	77	NR
415	171	NR	545	475	NR	675	262	NR	805	373	NR	935	233	NR
420	121	NR	550	833	NR	680	208	NR	810	500	NR	940	730	NR
425	135	NR	555	1466	NR	685	193	NR	815	602	NR	945	259	NR
430	90	NR	560	2623	NR	690	213	NR	820	681	NR	950	510	NR
435	92	NR	565	4872	NR	695	267	NR	825	615	NR	955	800	NR
440	87	NR	570	8896	NR	700	218	NR	830	529	NR	960	959	NR
445	129	NR	575	16191	NR	705	234	NR	835	526	NR	965	925	NR
450	75	NR	580	29728	NR	710	280	NR	840	531	NR	970	863	NR
455	88	NR	585	53245	NR	715	393	NR	845	627	NR	975	1444	NR
460	76	NR	590	78694	NR	720	370	NR	850	248	NR	980	1342	NR
465	74	NR	595	63659	NR	725	376	NR	855	262	NR	985	1396	NR
470	87	NR	600	31696	NR	730	324	NR	860	579	NR	990	2816	NR
475	37	NR	605	13208	NR	735	359	NR	865	439	NR	995	1223	NR
480	77	NR	610	5473	NR	740	294	NR	870	923	NR	1000	487	NR
485	97	NR	615	2571	NR	745	300	NR	875	874	NR			

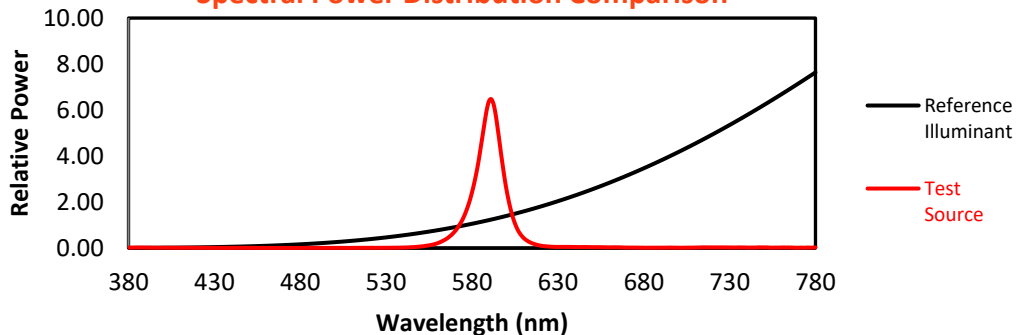
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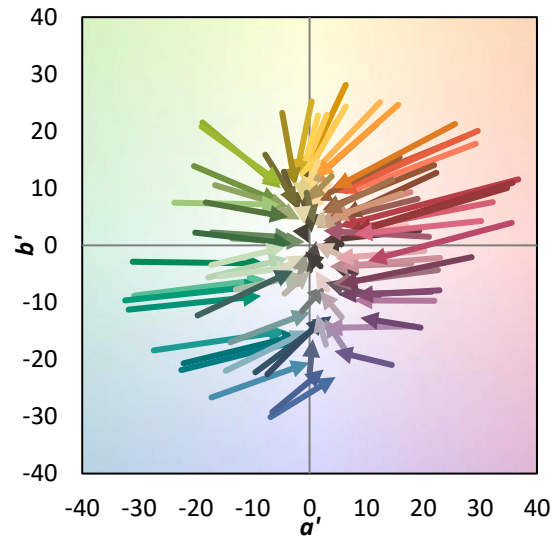
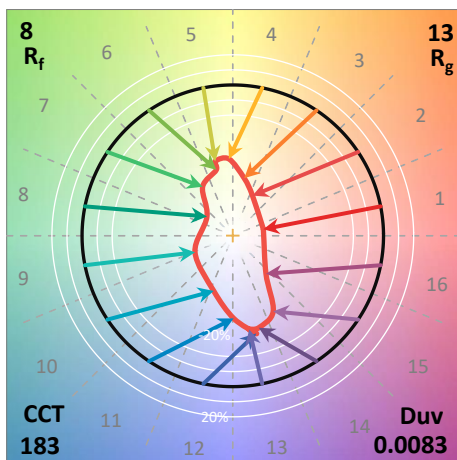
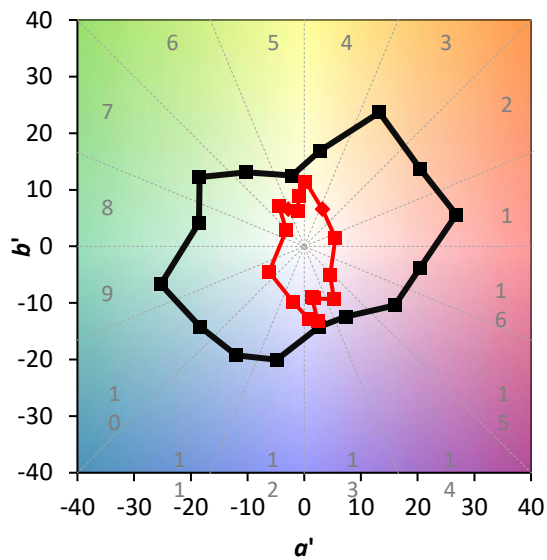
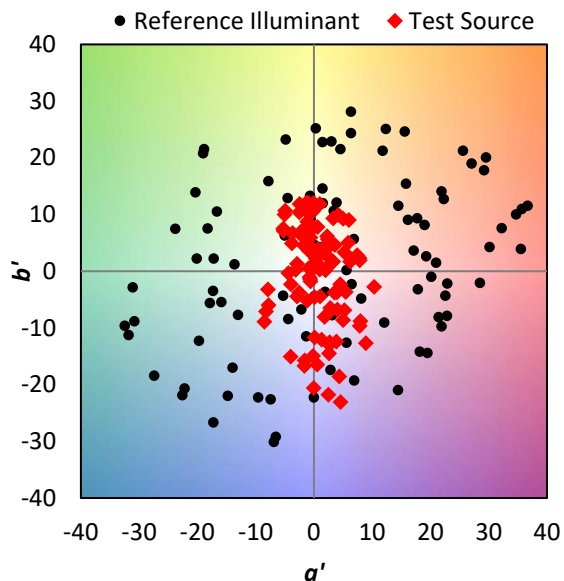
Summary

$R_f = 8$
 $R_g = 12.7$
 CIE $R_a = -25.2$
 $R_g = -415.1$

Spectral Power Distribution Comparison



Color Vector Graphics

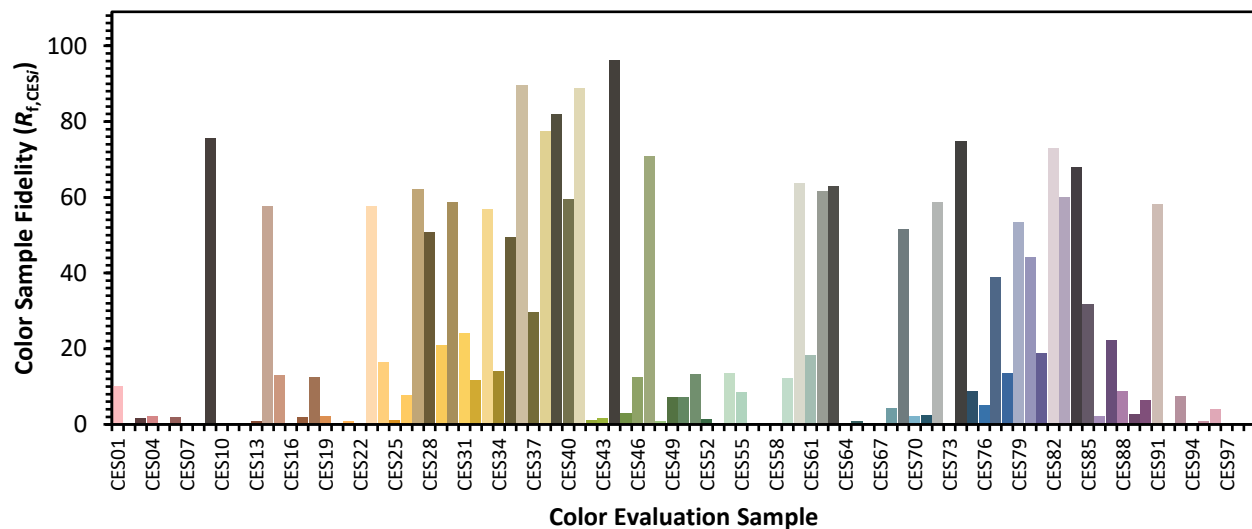


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Individual Sample Fidelity Index ($R_{f,i}$)

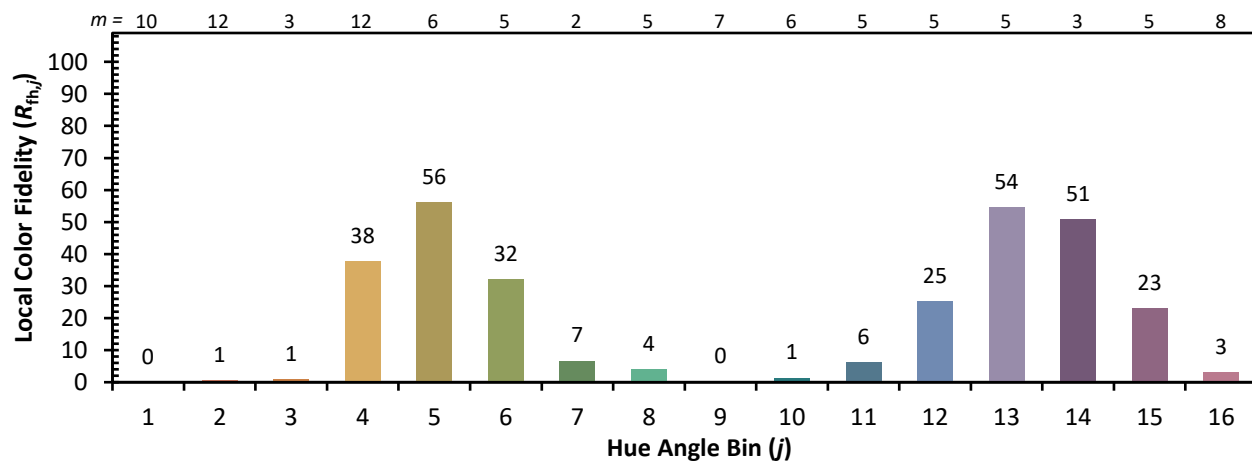
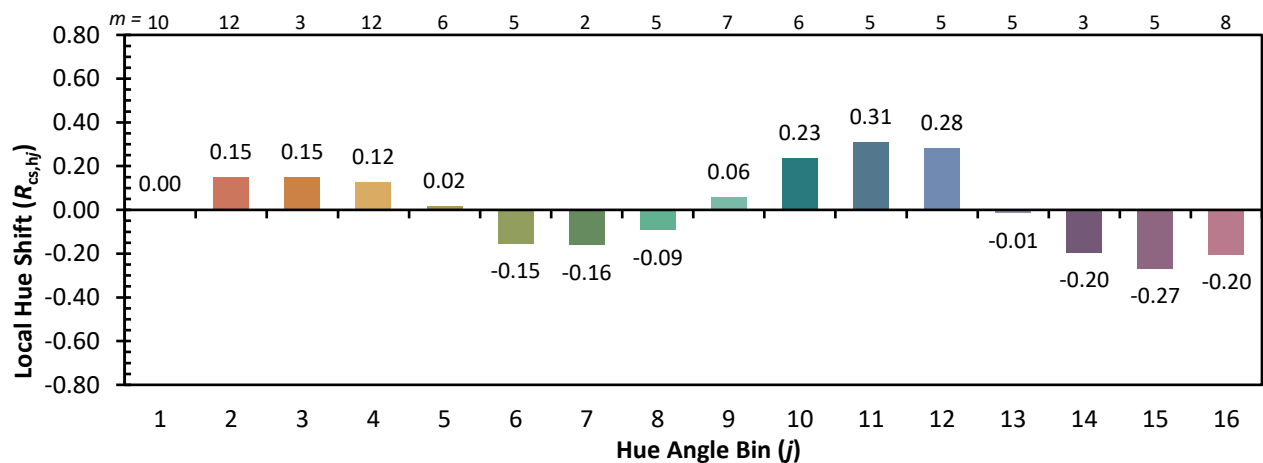
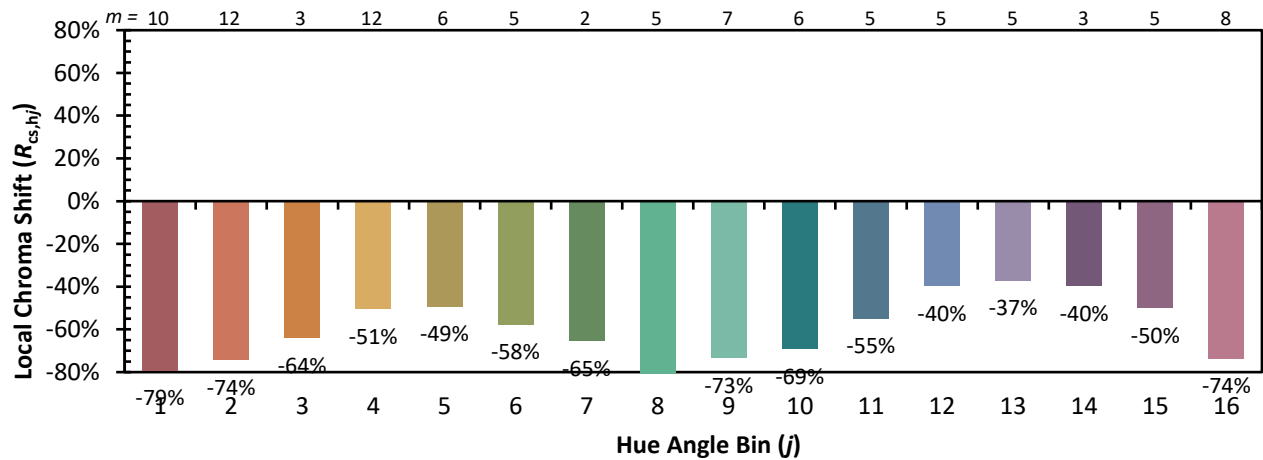
CES01 = 89	CES26 = 8	CES51 = 13	CES76 = 5
CES02 = 66	CES27 = 62	CES52 = 1	CES77 = 39
CES03 = 30	CES28 = 51	CES53 = 0	CES78 = 14
CES04 = 76	CES29 = 21	CES54 = 14	CES79 = 53
CES05 = 50	CES30 = 59	CES55 = 9	CES80 = 44
CES06 = 55	CES31 = 24	CES56 = 0	CES81 = 19
CES07 = 37	CES32 = 12	CES57 = 0	CES82 = 73
CES08 = 36	CES33 = 57	CES58 = 0	CES83 = 60
CES09 = 29	CES34 = 14	CES59 = 12	CES84 = 68
CES10 = 84	CES35 = 49	CES60 = 64	CES85 = 32
CES11 = 68	CES36 = 90	CES61 = 18	CES86 = 2
CES12 = 72	CES37 = 30	CES62 = 62	CES87 = 22
CES13 = 43	CES38 = 78	CES63 = 63	CES88 = 9
CES14 = 76	CES39 = 82	CES64 = 0	CES89 = 3
CES15 = 72	CES40 = 60	CES65 = 1	CES90 = 7
CES16 = 47	CES41 = 89	CES66 = 0	CES91 = 58
CES17 = 55	CES42 = 1	CES67 = 0	CES92 = 0
CES18 = 58	CES43 = 2	CES68 = 4	CES93 = 7
CES19 = 79	CES44 = 96	CES69 = 52	CES94 = 0
CES20 = 68	CES45 = 3	CES70 = 2	CES95 = 1
CES21 = 93	CES46 = 13	CES71 = 2	CES96 = 4
CES22 = 85	CES47 = 71	CES72 = 59	CES97 = 0
CES23 = 93	CES48 = 1	CES73 = 0	CES98 = 0
CES24 = 95	CES49 = 7	CES74 = 75	CES99 = 0
CES25 = 78	CES50 = 7	CES75 = 9	



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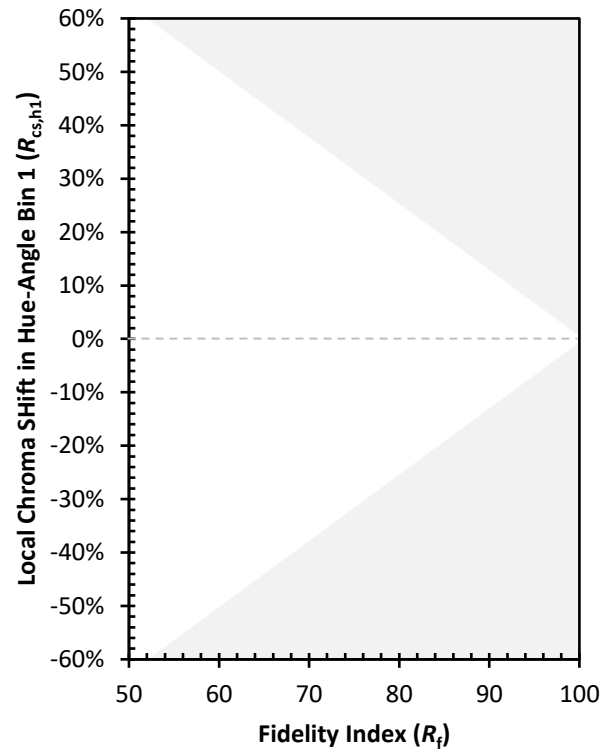
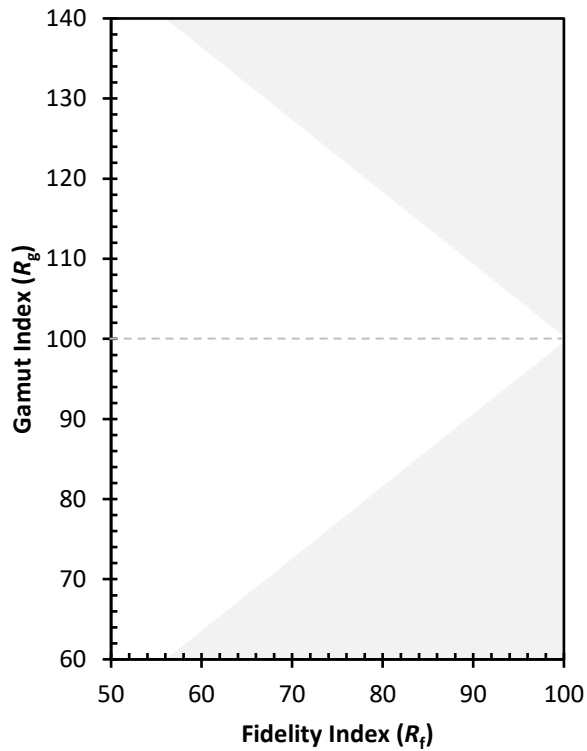
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)