

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: G2-2108-353-3

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

Test Date: 9/28/2021

Test Information

Test Method: LM-79-08
Report Number: G2-2108-353-3
Test Lab: COOPER LIGHTING SOLUTIONS
Test Date: 9/28/2021
Issue Date: 9/28/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: LXS-VA1-AMB-U-AST-A
Description: LUXESCAPE OUTDOOR ARCHITECTURAL LUMINAIRE
NARROW BAND AMBER LEDS AND TYPE IV OPTIC, ARM MOUNT
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 944.9 lumens
Efficiency: N/A
Efficacy: 27.8 lumens/watt
Luminous Opening: Circular (Dia: 1.67' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

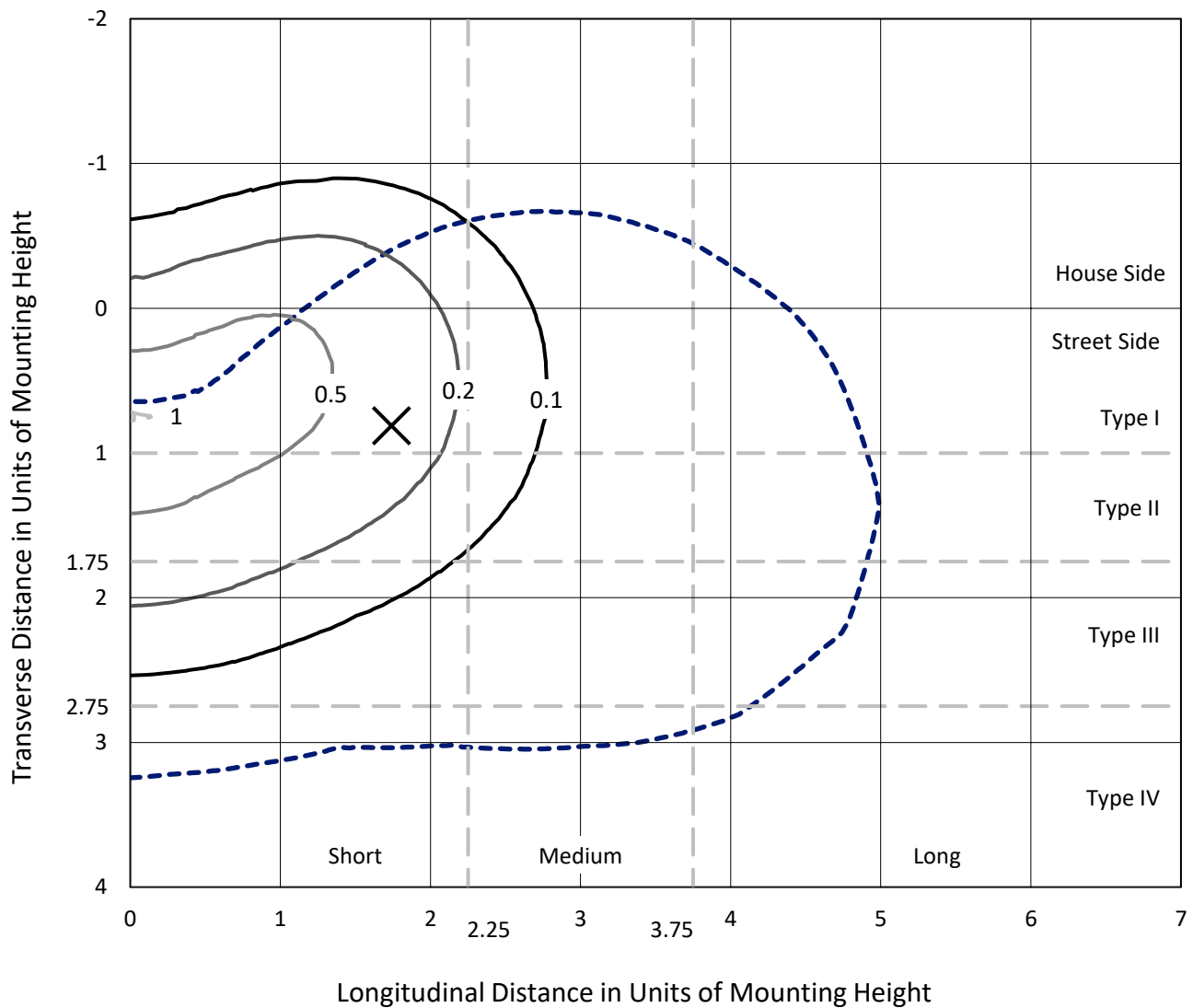
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



REPORT NUMBER: G2-2108-353-3
 CATALOG NUMBER: LXS-VA1-AMB-U-AST-A

Iso-Footcandle Lines of Horizontal Illumination

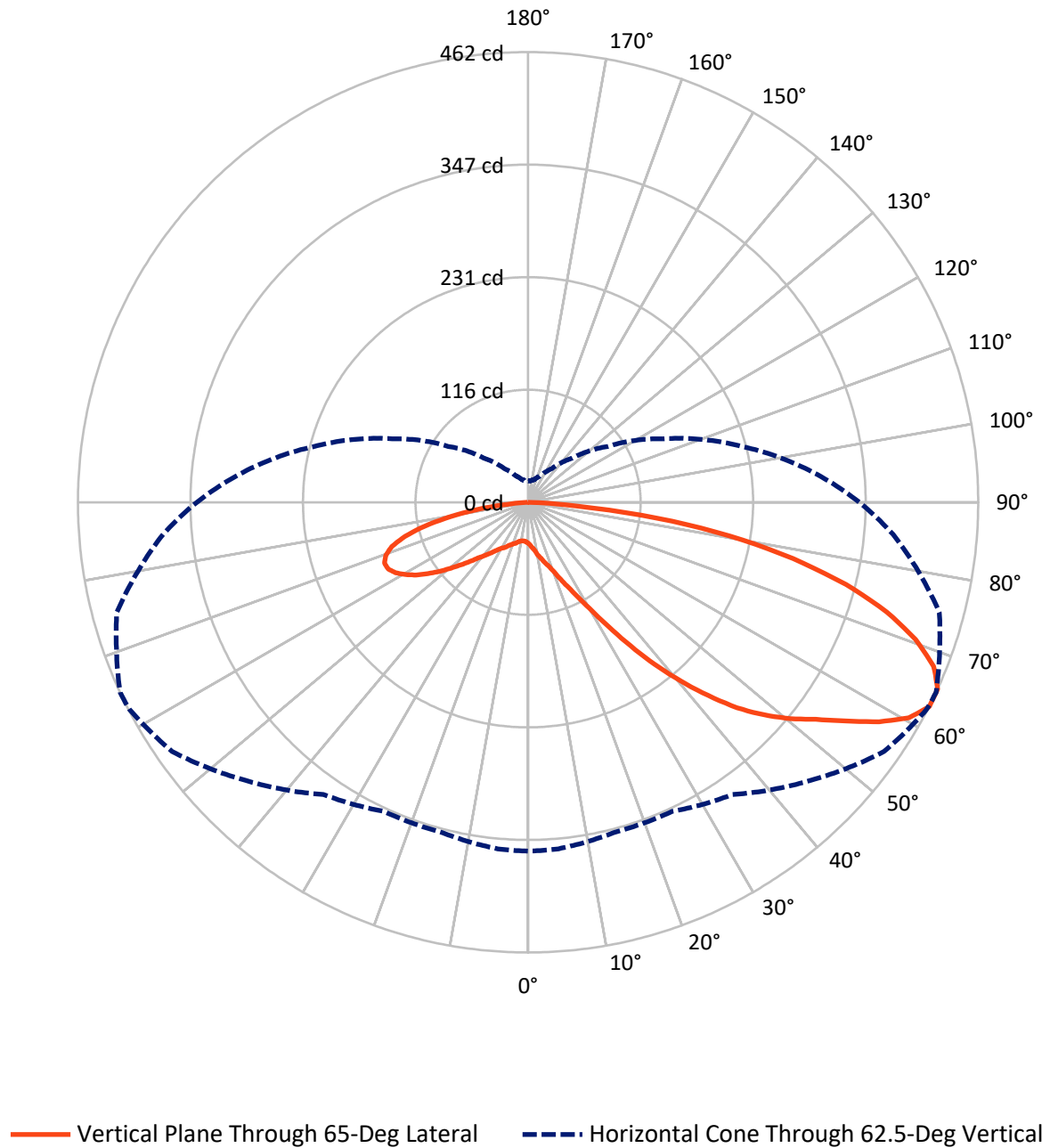
✕ Max cd
 - - - 1/2 Max cd



Based on 12 foot mounting height. Maximum calculated value = 1 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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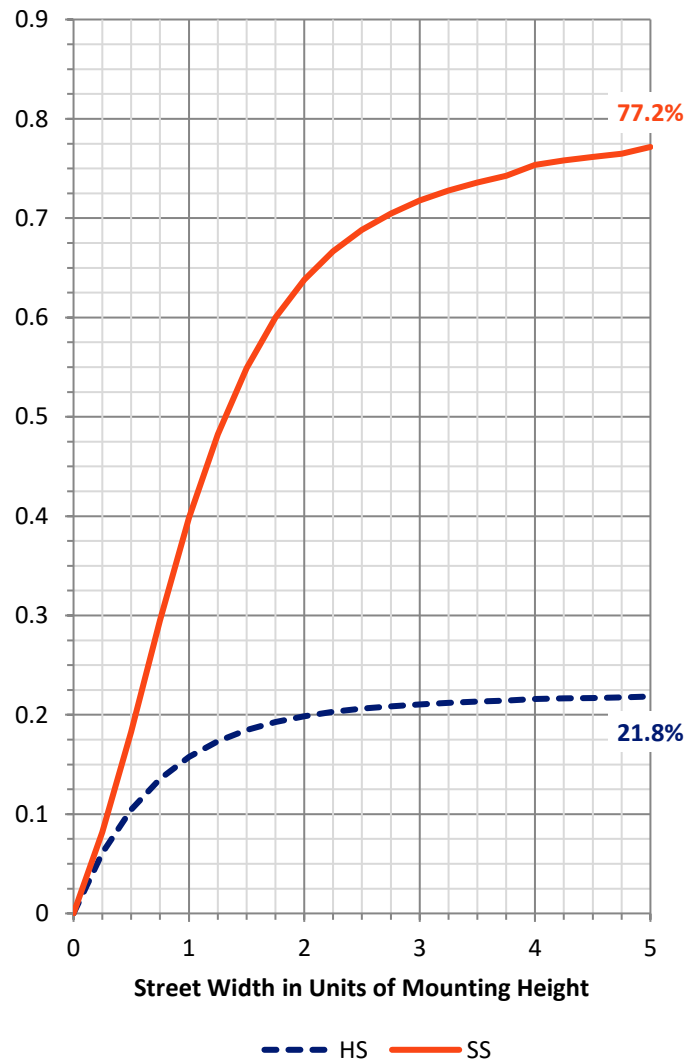
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	208.0	0.0	208.0
	% Fixture	22.0	0.0	22.0
Street Side	Lumens	737.0	0.0	737.0
	% Fixture	78.0	0.0	78.0
Total	Lumens	944.9	0.0	944.9
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	4.3	0.5
10°-20°	15.2	1.6
20°-30°	35.4	3.7
30°-40°	80.2	8.5
40°-50°	140.9	14.9
50°-60°	205.5	21.7
60°-70°	240.8	25.5
70°-80°	181.2	19.2
80°-90°	41.4	4.4
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°	944.9	100.0
0°-180°	944.9	100.0

Coefficient of Utilization



REPORT NUMBER: G2-2108-353-3

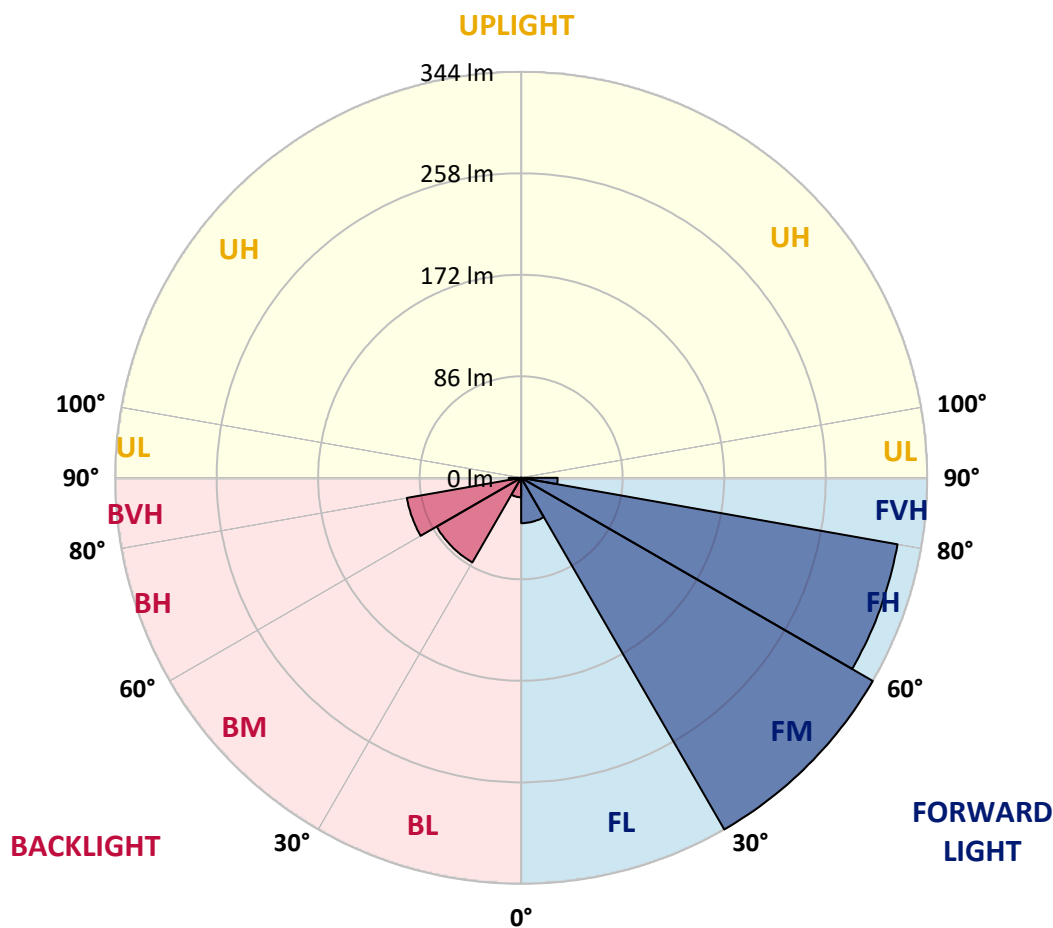
CATALOG NUMBER: LXS-VA1-AMB-U-AST-A

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	38.4	4.1			
FM	(30°-60°)	343.9	36.4			
FH	(60°-80°)	323.7	34.3			G0/660
FVH	(80°-90°)	30.9	3.3			G1/100
BL	(0°-30°)	16.5	1.7	B0/110		
BM	(30°-60°)	82.7	8.8	B0/220		
BH	(60°-80°)	98.3	10.4	B0/110		G0/110
BVH	(80°-90°)	10.5	1.1			G1/100
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



REPORT NUMBER: G2-2108-353-3

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	42	42	42	42	42	42	42	42	42	42	42
2.5°	47	47	46	46	46	45	45	44	44	44	43
5°	52	51	51	51	50	49	48	47	47	46	44
7.5°	57	56	56	56	55	54	53	51	50	48	46
10°	62	62	61	61	59	58	57	55	55	52	49
12.5°	68	68	68	67	65	64	61	60	59	55	52
15°	75	75	74	73	72	70	67	64	64	60	55
17.5°	85	84	83	82	80	78	74	71	69	65	59
20°	98	97	95	93	89	86	83	78	76	71	64
22.5°	112	111	109	107	102	97	93	87	86	78	70
25°	133	131	128	123	117	112	104	99	97	87	76
27.5°	151	152	149	145	135	130	119	113	111	97	85
30°	183	181	176	170	163	152	142	131	129	111	95
32.5°	229	225	217	205	193	183	169	156	152	128	108
35°	271	270	258	242	223	213	198	186	181	152	124
37.5°	293	292	286	271	252	241	228	216	211	179	143
40°	309	308	301	291	280	270	257	246	241	208	166
42.5°	317	317	314	305	300	293	286	277	271	237	190
45°	325	324	318	317	312	314	312	304	301	267	216
47.5°	336	335	328	320	324	331	334	329	326	295	242
50°	337	335	333	326	333	344	352	351	349	320	267
52.5°	353	349	342	339	342	358	372	373	370	344	293
55°	384	381	371	356	362	382	398	401	396	369	315
57.5°	382	381	375	366	377	401	425	428	425	395	336
60°	372	370	364	364	376	408	441	450	449	421	358
62.5°	358	357	350	350	366	405	446	461	462	437	376
65°	334	331	329	330	350	392	438	459	462	442	385
67.5°	303	302	304	307	328	372	421	444	449	434	383
70°	273	270	271	278	300	344	390	417	422	412	367
72.5°	236	235	237	243	265	307	355	379	385	379	339
75°	202	201	203	207	228	265	308	331	337	333	297
77.5°	167	167	165	168	186	219	256	272	278	274	244
80°	128	127	124	126	140	166	194	205	210	205	180
82.5°	84	83	82	82	91	110	126	134	134	129	113
85°	30	30	33	34	37	42	48	50	50	48	40
87.5°	0	0	0	0	0	0	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-AST-A

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	42	42	42	42	42	42	42	42	42	42	42
2.5°	42	42	41	41	40	39	39	38	38	38	38
5°	43	43	41	40	39	37	36	36	35	35	35
7.5°	45	44	42	40	38	36	35	34	33	33	33
10°	47	46	43	40	38	36	34	33	32	31	31
12.5°	50	48	45	41	38	36	33	31	30	30	30
15°	53	51	46	42	39	35	32	30	29	28	29
17.5°	57	54	49	44	39	35	32	30	28	28	27
20°	61	58	51	45	40	35	32	29	27	26	26
22.5°	66	62	54	47	41	36	31	28	26	26	25
25°	71	67	57	49	42	36	31	28	26	25	25
27.5°	78	72	61	52	43	37	32	28	25	24	24
30°	86	79	65	54	45	37	32	27	25	24	24
32.5°	97	88	71	57	47	38	32	27	25	23	23
35°	110	98	77	61	49	39	32	27	25	23	23
37.5°	126	111	85	66	51	40	33	28	25	23	23
40°	145	126	94	71	54	42	34	28	25	23	23
42.5°	166	144	104	77	58	44	35	29	25	24	23
45°	189	165	118	85	62	47	36	29	26	24	24
47.5°	215	185	133	94	67	49	37	30	26	24	24
50°	238	207	150	104	72	52	38	30	26	24	24
52.5°	259	229	167	115	78	55	40	31	26	24	23
55°	283	249	183	126	84	58	41	31	26	23	23
57.5°	304	268	199	137	90	60	42	31	25	23	23
60°	324	286	213	146	96	63	42	31	25	23	23
62.5°	340	302	224	154	100	64	42	30	24	22	22
65°	348	311	231	159	103	65	42	29	23	21	21
67.5°	348	312	231	160	103	64	40	28	21	19	19
70°	335	301	224	156	100	61	38	26	20	18	17
72.5°	310	277	210	147	94	57	35	23	18	16	15
75°	273	244	187	131	84	51	31	20	15	14	14
77.5°	224	200	155	109	71	42	26	17	13	11	11
80°	166	150	116	81	54	33	20	13	10	9	9
82.5°	102	92	71	50	35	22	14	9	7	6	6
85°	38	32	28	21	16	11	8	5	4	4	3
87.5°	1	1	1	2	2	2	2	1	1	1	1
90°	0	0	0	0	0	0	0	0	0	0	0

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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

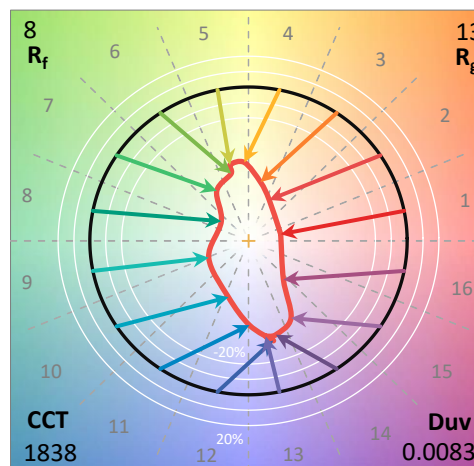
Test Information

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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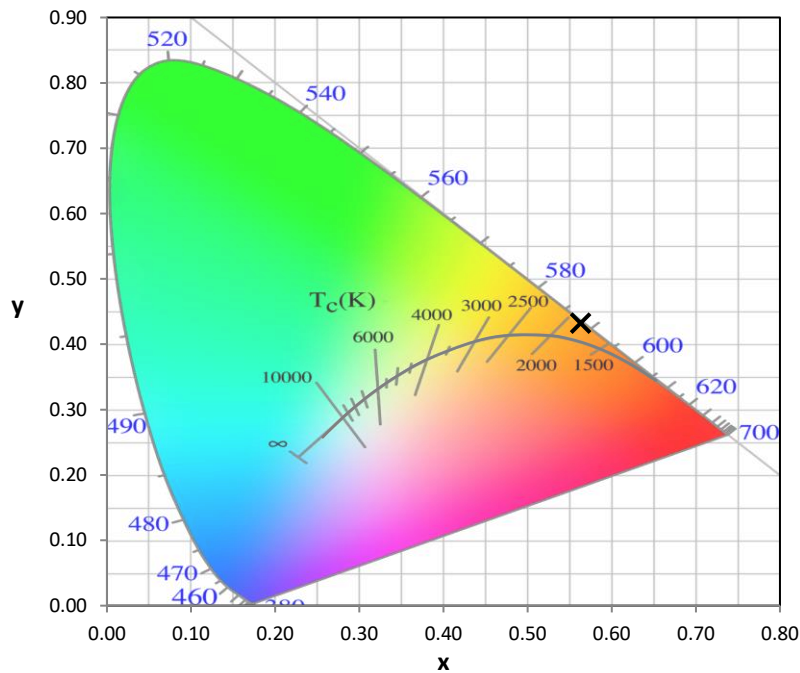


REPORT NUMBER: SP1-2201-507-1
CATALOG NUMBER: ARB-B1-LED-D1-T2-AMB

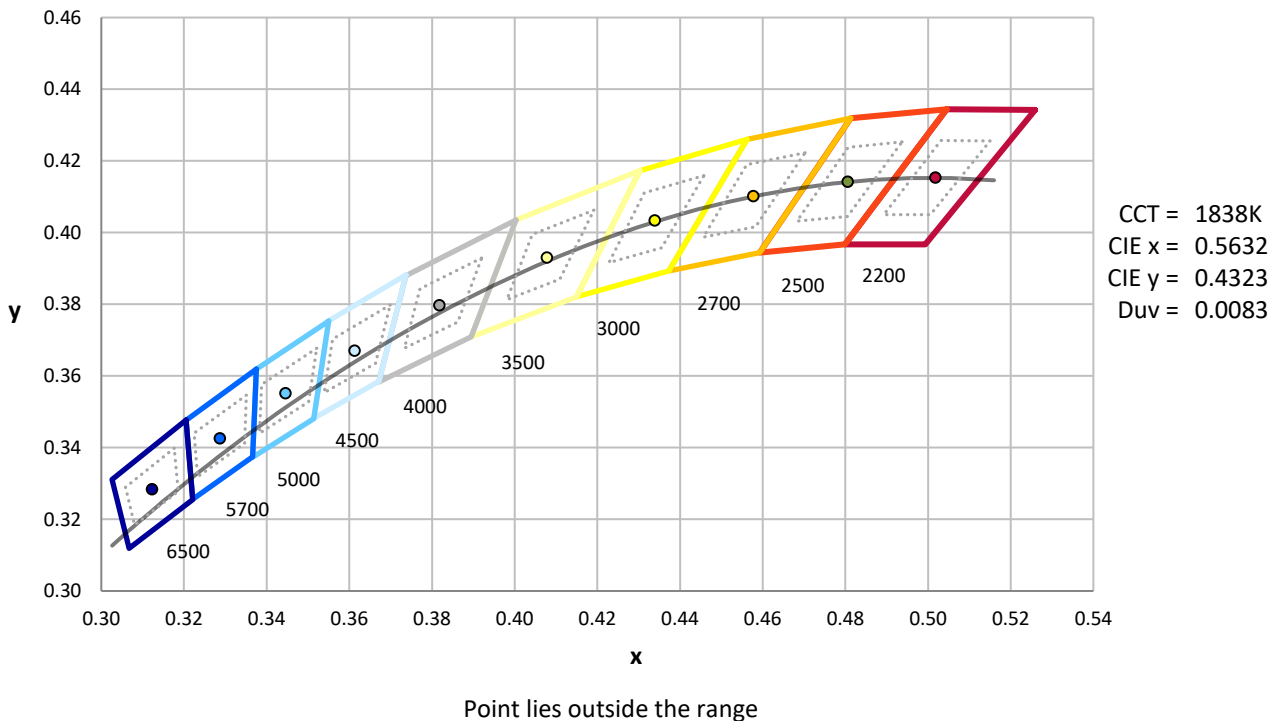
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/3/2021	2/3/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208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

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CIE 1931 Chromaticity Diagram

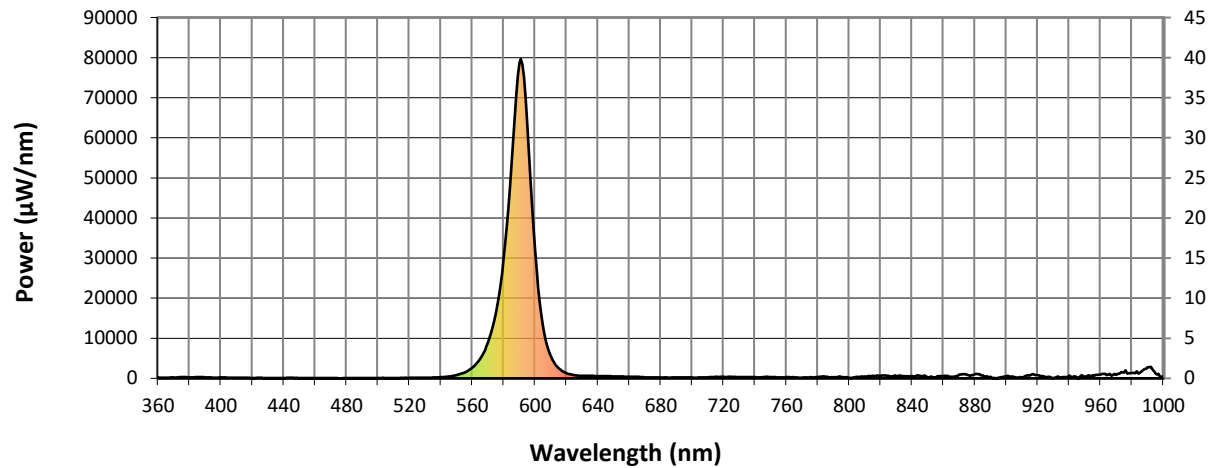


CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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Photopic Flux vs. Wavelength

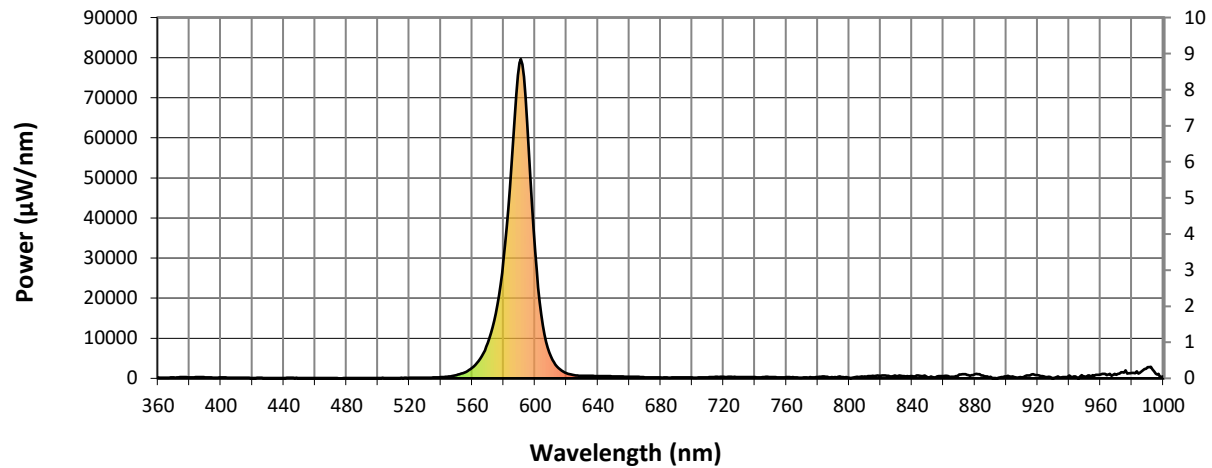


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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	232	NR	490	102	NR	620	1285	NR	750	361	NR	880	1054	NR
365	141	NR	495	91	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			

REPORT NUMBER: SP1-2201-507-1

Scotopic Flux vs. Wavelength



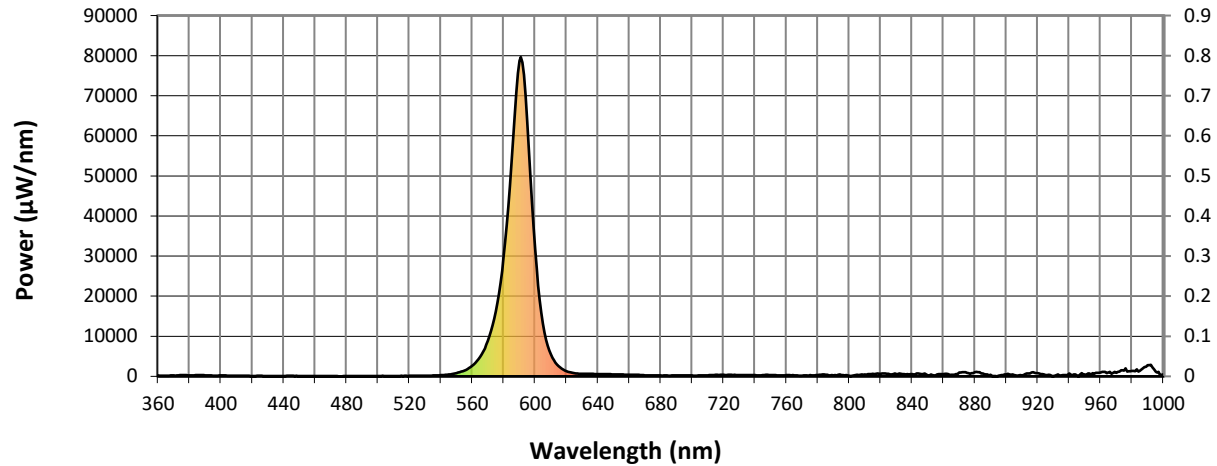
Scotopic Lumens: 236

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			

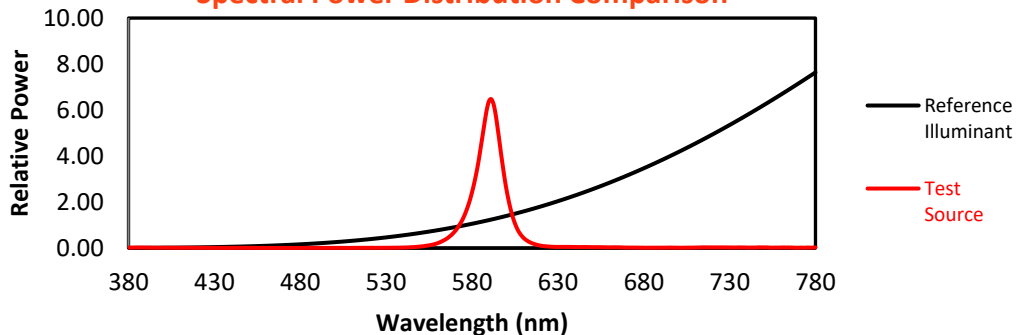
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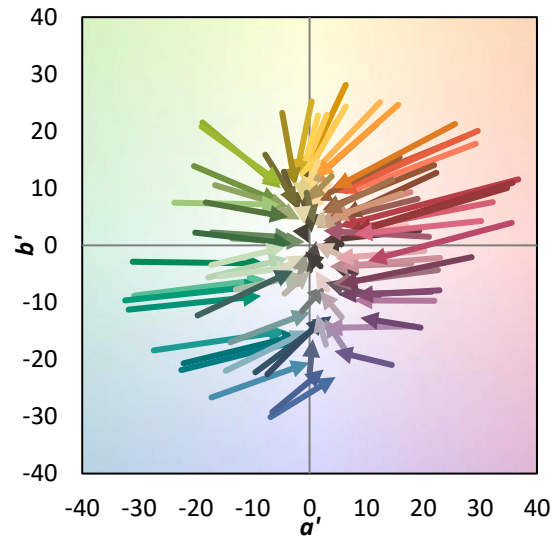
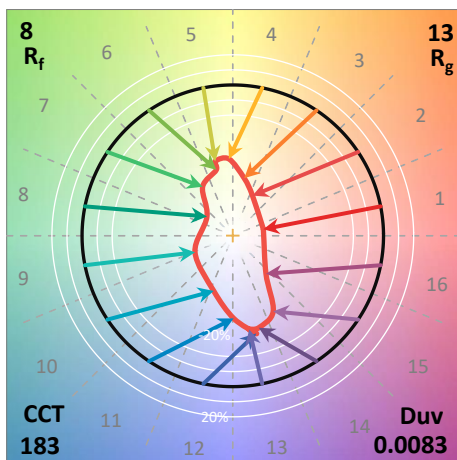
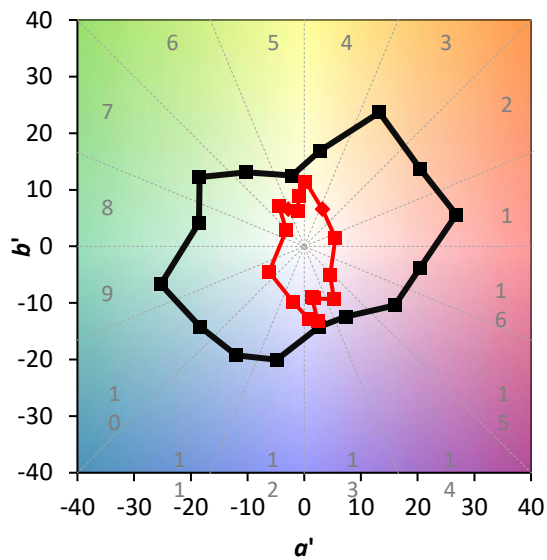
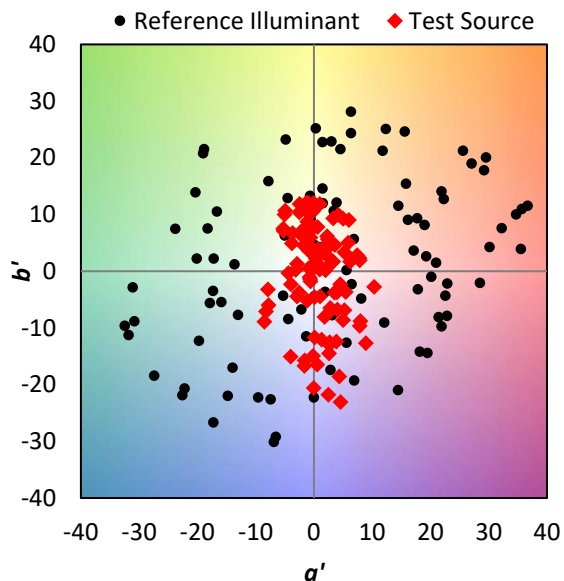
Summary

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

Spectral Power Distribution Comparison



Color Vector Graphics

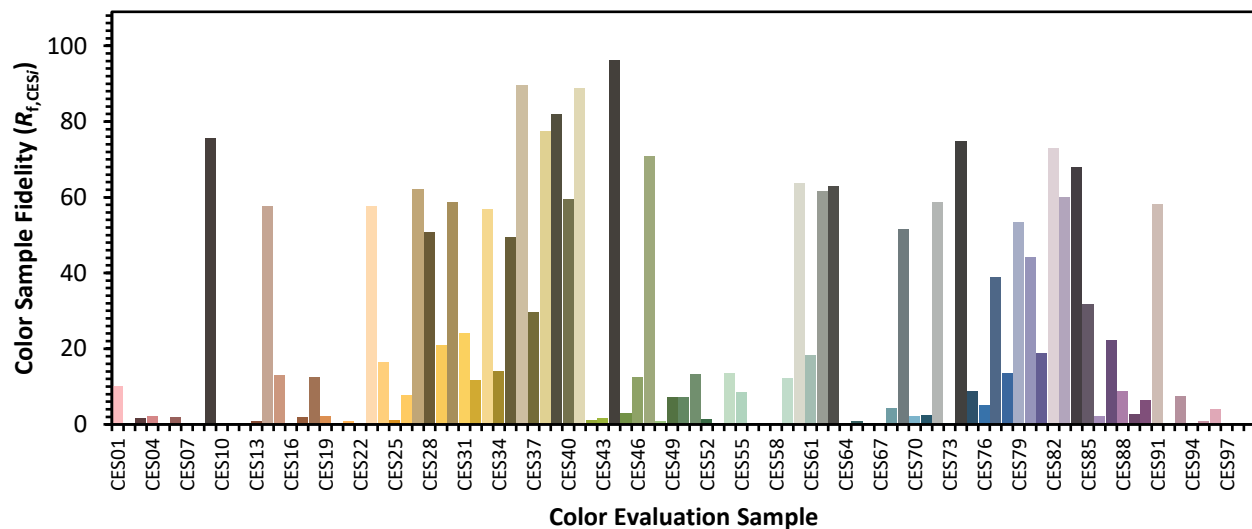


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Individual Sample Fidelity Index ($R_{f,i}$)

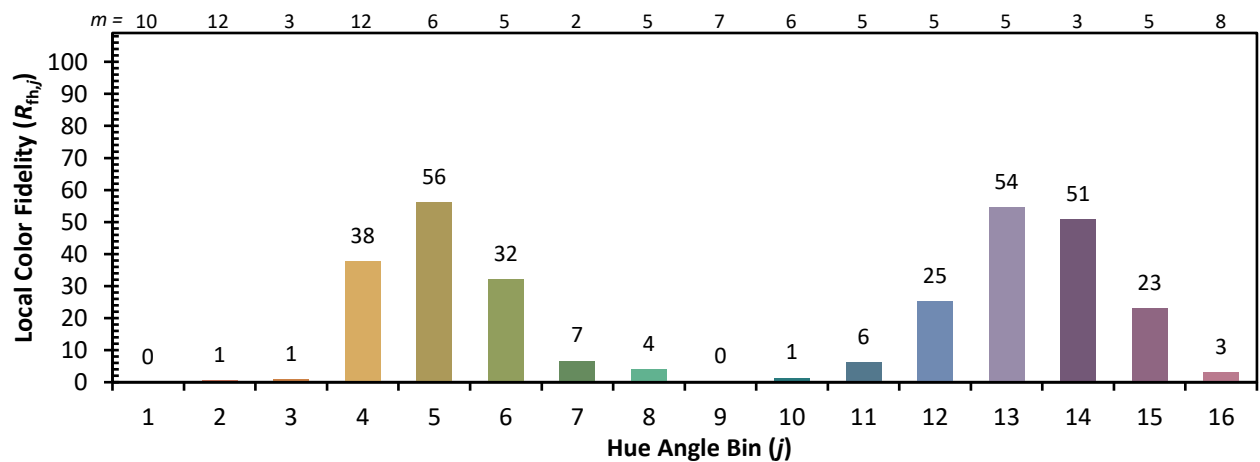
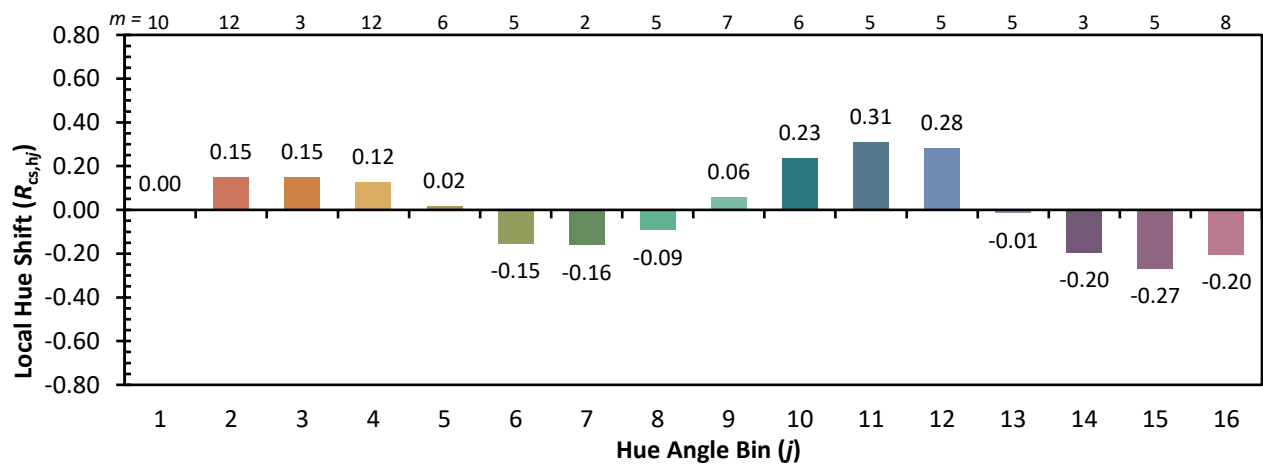
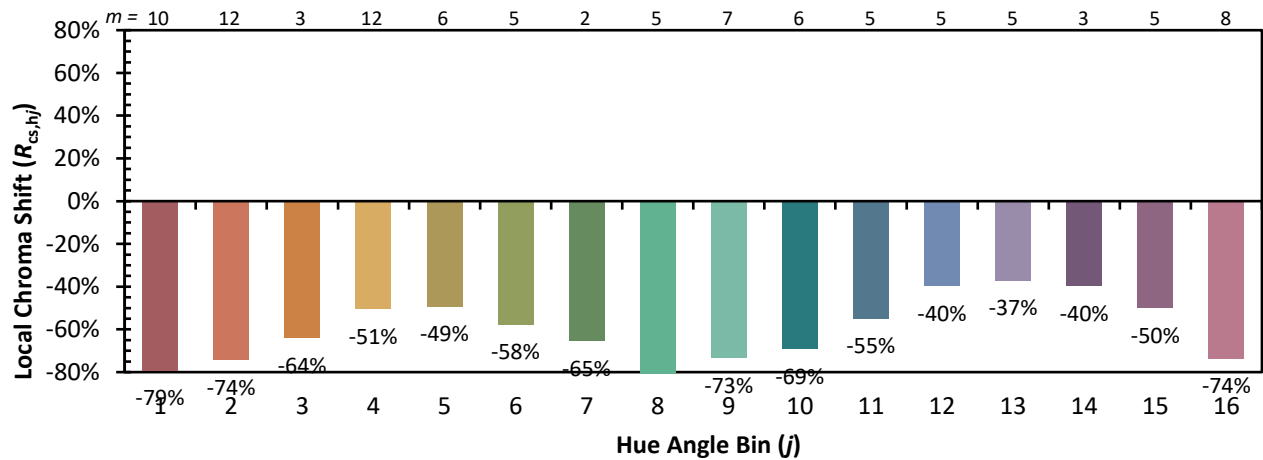
CES01 = 89	CES26 = 8	CES51 = 13	CES76 = 5
CES02 = 66	CES27 = 62	CES52 = 1	CES77 = 39
CES03 = 30	CES28 = 51	CES53 = 0	CES78 = 14
CES04 = 76	CES29 = 21	CES54 = 14	CES79 = 53
CES05 = 50	CES30 = 59	CES55 = 9	CES80 = 44
CES06 = 55	CES31 = 24	CES56 = 0	CES81 = 19
CES07 = 37	CES32 = 12	CES57 = 0	CES82 = 73
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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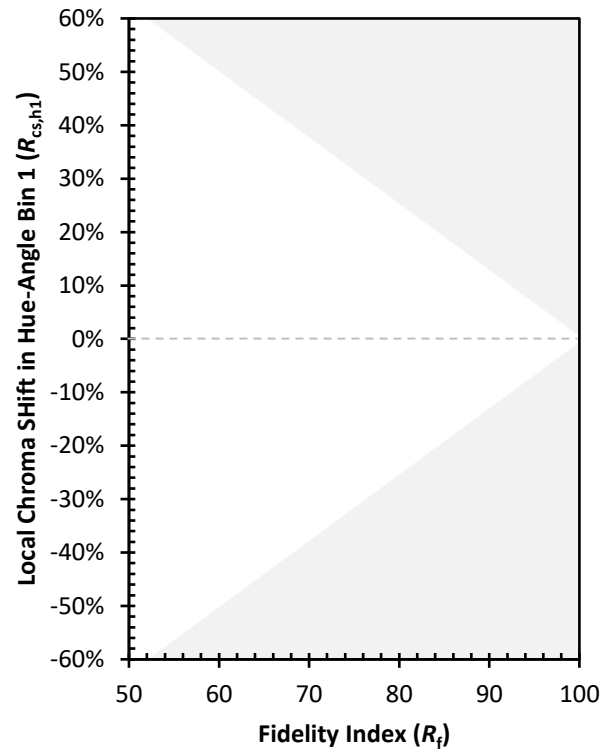
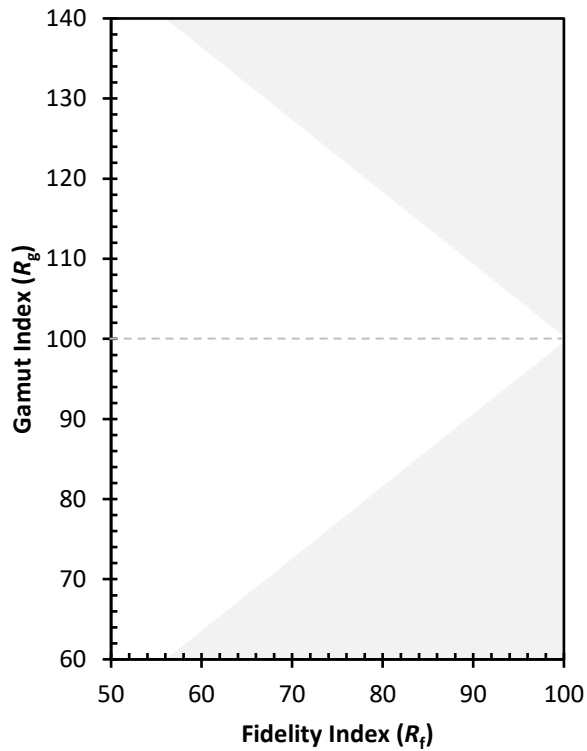
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)