

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: G2-2108-353-11

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

Test Date: 9/28/2021

Test Information

Test Method: LM-79-08
Report Number: G2-2108-353-11
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-S
Description: LUXESCAPE OUTDOOR ARCHITECTURAL LUMINAIRE
NARROW BAND AMBER LEDS AND TYPE IV OPTIC, SPIDER MOUNT
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 867.7 lumens
Efficiency: N/A
Efficacy: 25.5 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

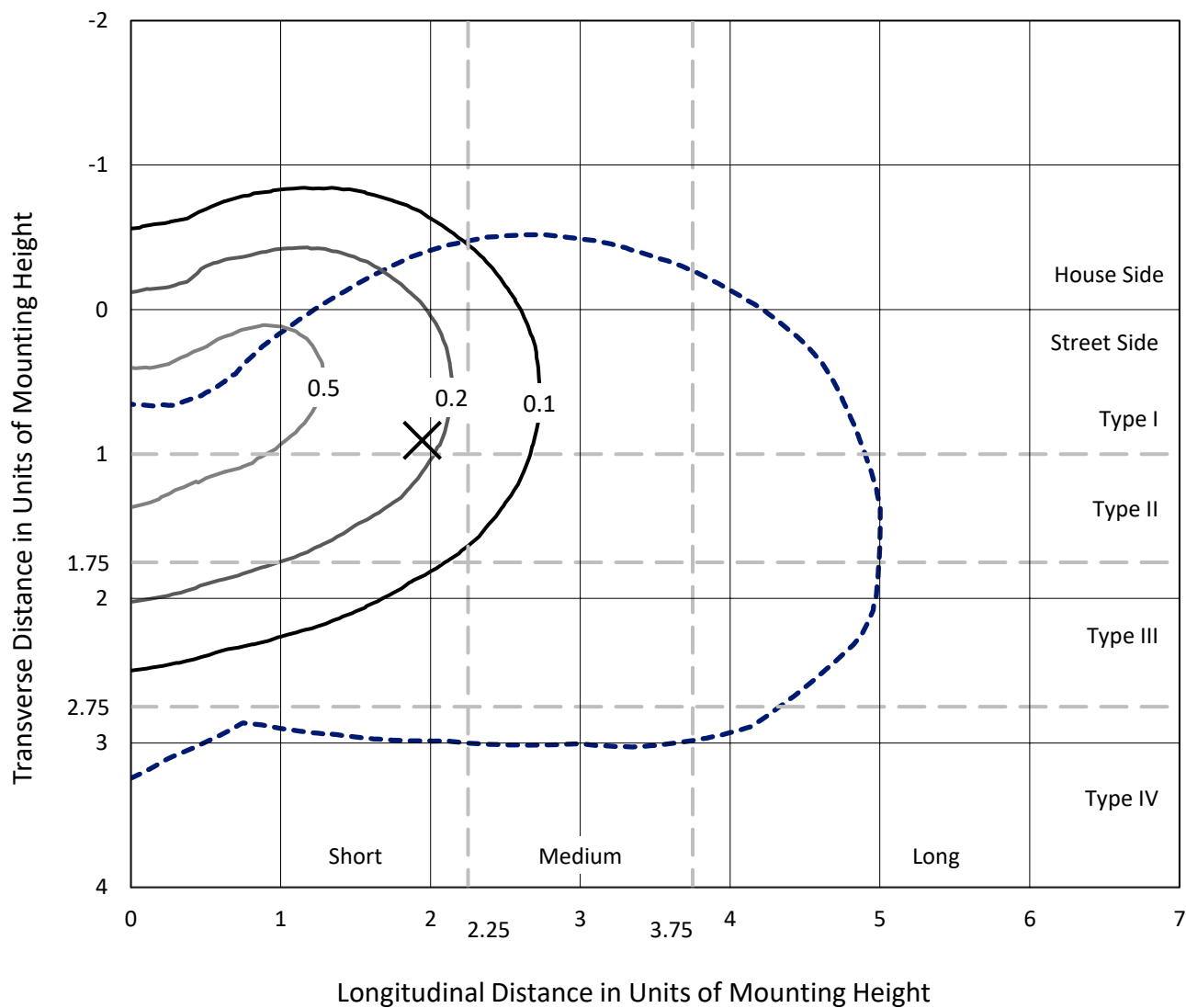


REPORT NUMBER: G2-2108-353-11
 CATALOG NUMBER: LXS-VA1-AMB-U-AST-S

Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

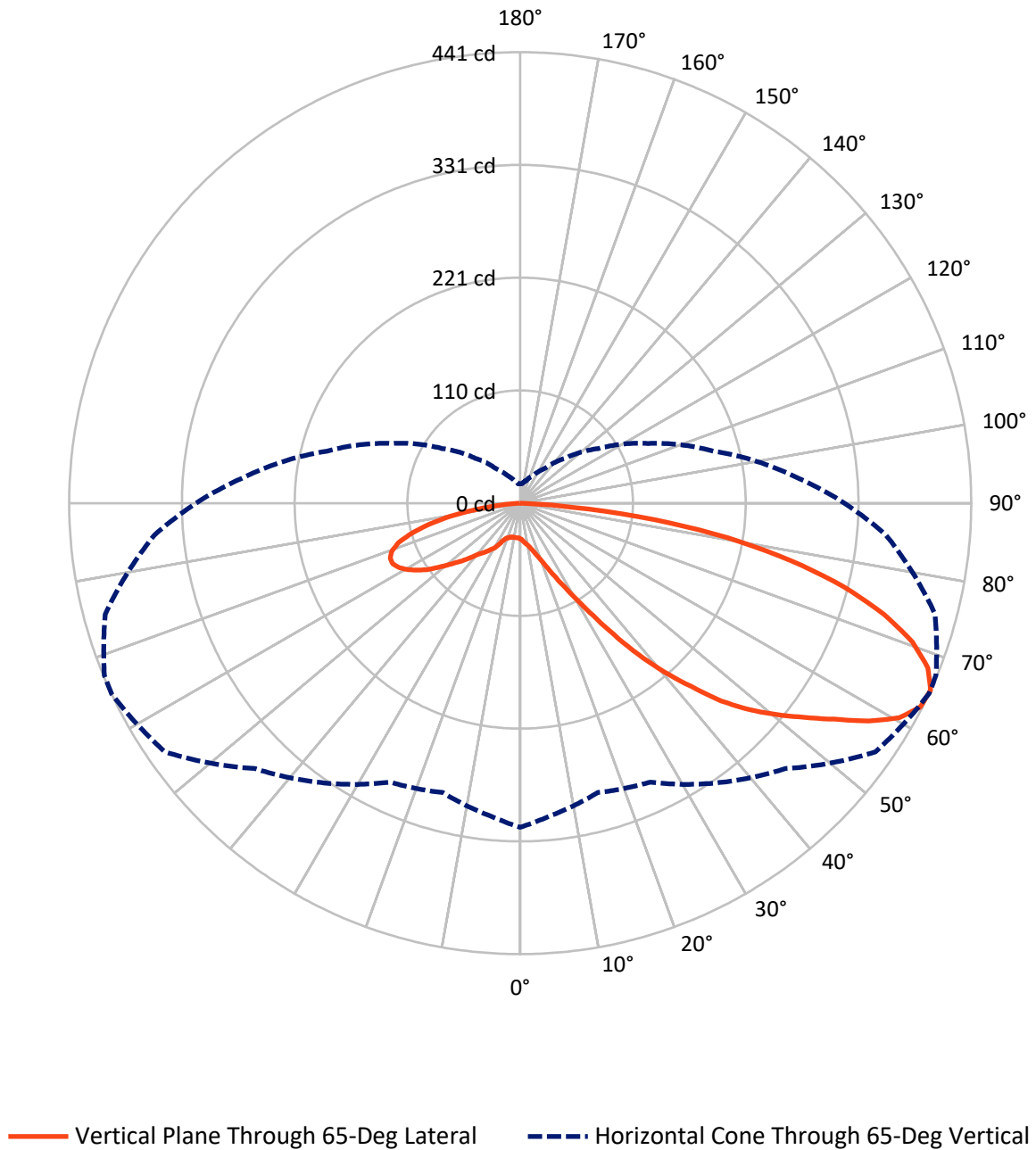
--- 1/2 Max cd



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

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

Luminous Intensity Polar Plot



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

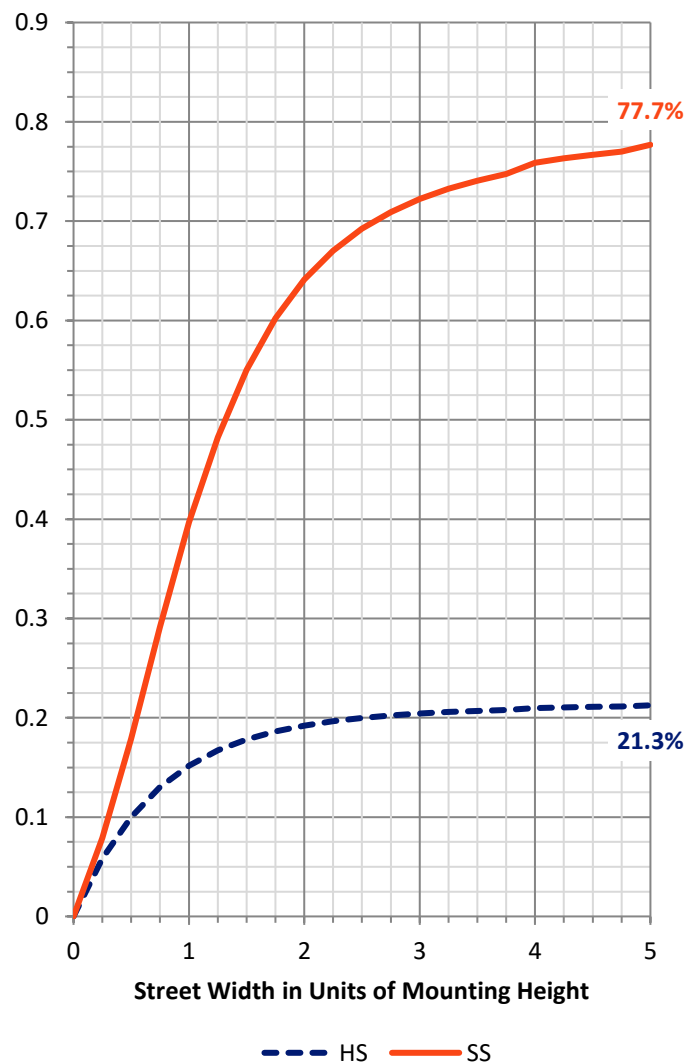
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	186.4	0.0	186.4
	% Fixture	21.5	0.0	21.5
Street Side	Lumens	681.3	0.0	681.3
	% Fixture	78.5	0.0	78.5
Total	Lumens	867.7	0.0	867.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	3.5	0.4
10°-20°	12.2	1.4
20°-30°	29.9	3.4
30°-40°	72.0	8.3
40°-50°	129.0	14.9
50°-60°	190.0	21.9
60°-70°	223.4	25.7
70°-80°	168.4	19.4
80°-90°	39.3	4.5
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°	867.7	100.0
0°-180°	867.7	100.0

Coefficient of Utilization



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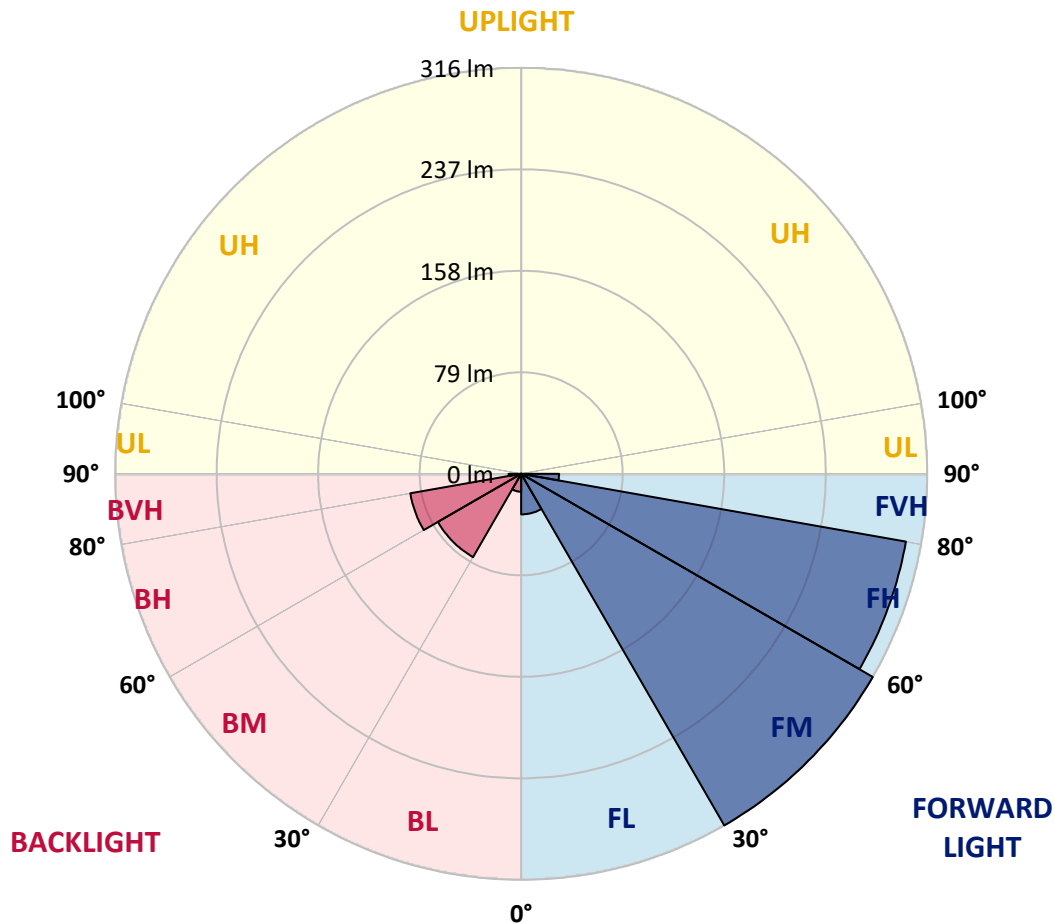
CATALOG NUMBER: LXS-VA1-AMB-U-AST-S

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	31.6	3.6			
FM	(30°-60°)	316.1	36.4			
FH	(60°-80°)	304.2	35.1			G0/660
FVH	(80°-90°)	29.5	3.4			G1/100
BL	(0°-30°)	14.0	1.6	B0/110		
BM	(30°-60°)	74.9	8.6	B0/220		
BH	(60°-80°)	87.7	10.1	B0/110		G0/110
BVH	(80°-90°)	9.9	1.1			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



REPORT NUMBER: G2-2108-353-11

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

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	67.5°	75°	85°
0°	35	35	35	35	35	35	35	35	35	35	35
2.5°	37	37	37	37	37	37	36	36	36	36	35
5°	41	41	40	40	40	39	39	38	38	37	36
7.5°	44	44	44	44	43	42	41	40	40	39	38
10°	48	48	48	47	46	45	44	42	42	41	39
12.5°	53	53	52	51	50	49	47	45	45	43	41
15°	59	59	58	56	55	54	51	49	48	46	43
17.5°	67	67	66	63	62	61	58	54	53	50	46
20°	78	77	76	73	71	70	66	60	59	55	50
22.5°	91	90	89	86	84	80	77	69	67	62	55
25°	113	112	109	103	98	95	88	80	78	70	62
27.5°	137	136	128	124	115	112	103	93	91	81	71
30°	169	166	154	145	142	132	124	110	107	95	81
32.5°	214	210	194	178	171	161	149	131	128	112	93
35°	253	249	233	213	202	190	176	158	155	135	108
37.5°	274	270	257	239	231	217	203	188	182	161	126
40°	288	287	274	257	256	244	230	217	211	189	148
42.5°	298	296	285	273	279	270	255	245	240	217	172
45°	306	303	289	286	292	291	282	276	271	245	196
47.5°	318	313	297	289	304	310	303	302	298	274	220
50°	319	314	301	294	314	322	322	325	323	298	244
52.5°	334	327	308	306	323	336	344	348	347	322	267
55°	365	356	333	322	344	358	373	373	372	346	291
57.5°	363	356	336	331	359	376	400	402	398	374	311
60°	354	346	325	330	359	383	420	426	422	398	332
62.5°	341	332	311	318	349	379	428	439	436	414	349
65°	317	308	293	301	334	367	424	441	440	420	359
67.5°	290	279	265	281	314	349	408	430	429	413	357
70°	257	246	235	254	285	323	381	407	407	393	343
72.5°	225	216	206	225	251	290	347	372	373	361	317
75°	192	183	175	192	215	249	303	327	327	316	278
77.5°	158	150	141	157	176	208	251	271	272	261	229
80°	121	113	106	119	134	161	191	206	206	196	172
82.5°	79	73	67	77	87	107	125	133	132	123	108
85°	27	24	25	32	36	44	47	50	47	47	41
87.5°	1	1	1	1	1	1	1	2	2	1	2
90°	0	0	0	0	0	0	0	0	0	0	0

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

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	35	35	35	35	35	35	35	35	35	35	35
2.5°	35	35	34	34	33	33	33	33	32	32	32
5°	36	35	35	34	33	32	31	31	30	30	30
7.5°	37	37	35	34	33	32	31	30	29	29	29
10°	38	38	36	34	32	31	30	29	28	28	28
12.5°	40	39	37	34	32	31	29	28	27	27	27
15°	41	40	37	34	32	30	28	26	26	26	26
17.5°	44	42	39	35	32	29	27	26	25	25	24
20°	47	45	40	36	32	29	27	25	24	23	23
22.5°	52	49	43	37	32	30	27	25	23	23	23
25°	58	56	48	40	34	30	27	25	23	22	22
27.5°	65	61	53	45	37	31	27	24	23	22	22
30°	73	68	58	50	40	32	27	25	23	22	22
32.5°	83	76	63	53	44	34	28	25	23	22	21
35°	95	86	69	57	46	36	29	25	23	22	22
37.5°	110	97	76	61	48	39	30	24	23	22	22
40°	128	111	84	65	51	41	31	25	23	22	22
42.5°	147	127	93	71	55	43	33	26	23	22	22
45°	169	145	105	78	58	45	35	27	23	22	22
47.5°	192	163	118	85	63	48	37	28	23	22	22
50°	214	183	131	93	68	50	38	29	24	22	22
52.5°	235	203	145	102	73	53	39	30	24	22	22
55°	254	220	159	112	78	56	40	30	24	22	21
57.5°	275	236	172	120	83	58	41	31	24	21	21
60°	294	250	183	128	88	60	42	31	24	21	21
62.5°	309	265	192	134	91	62	42	31	24	20	20
65°	317	274	196	138	93	62	41	30	23	19	19
67.5°	317	275	196	138	93	61	40	28	22	18	17
70°	307	266	189	134	91	59	38	26	20	17	16
72.5°	283	245	175	125	85	55	35	24	18	15	15
75°	248	216	155	110	76	49	31	21	16	13	13
77.5°	206	179	127	91	63	41	26	18	14	12	12
80°	154	133	94	68	48	32	21	15	11	10	10
82.5°	96	82	57	42	32	22	15	11	9	8	8
85°	36	31	23	18	16	12	9	7	6	6	6
87.5°	1	1	2	2	3	3	3	3	3	3	3
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

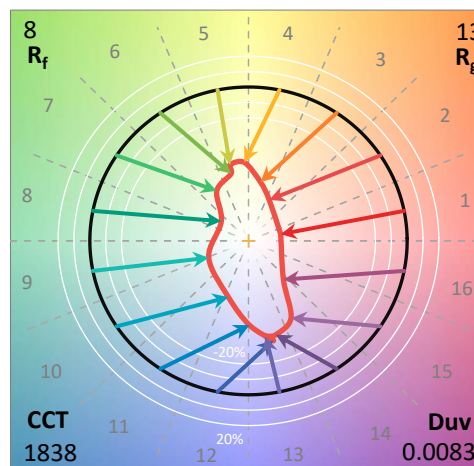
Test Information

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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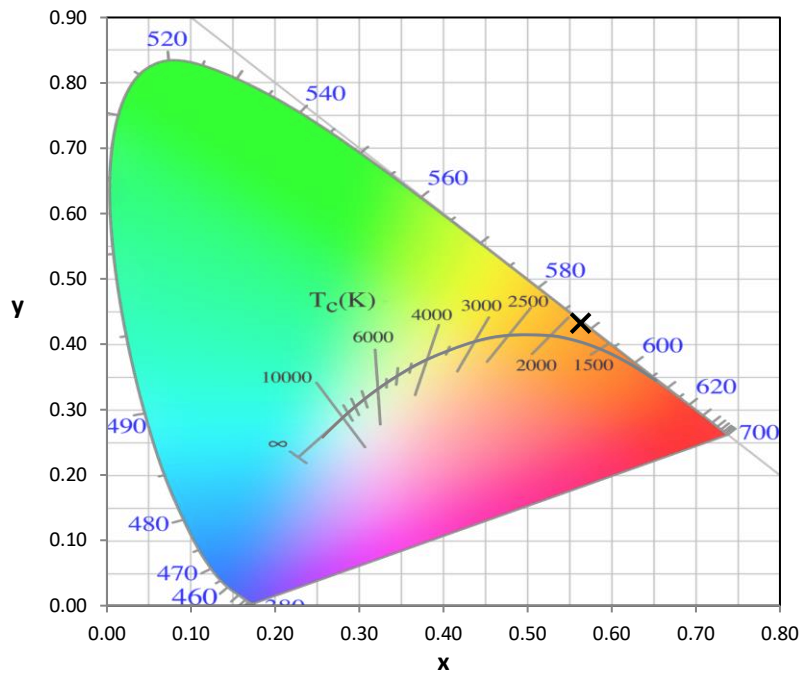


REPORT NUMBER: SP1-2201-507-1
CATALOG NUMBER: ARB-B1-LED-D1-T2-AMB

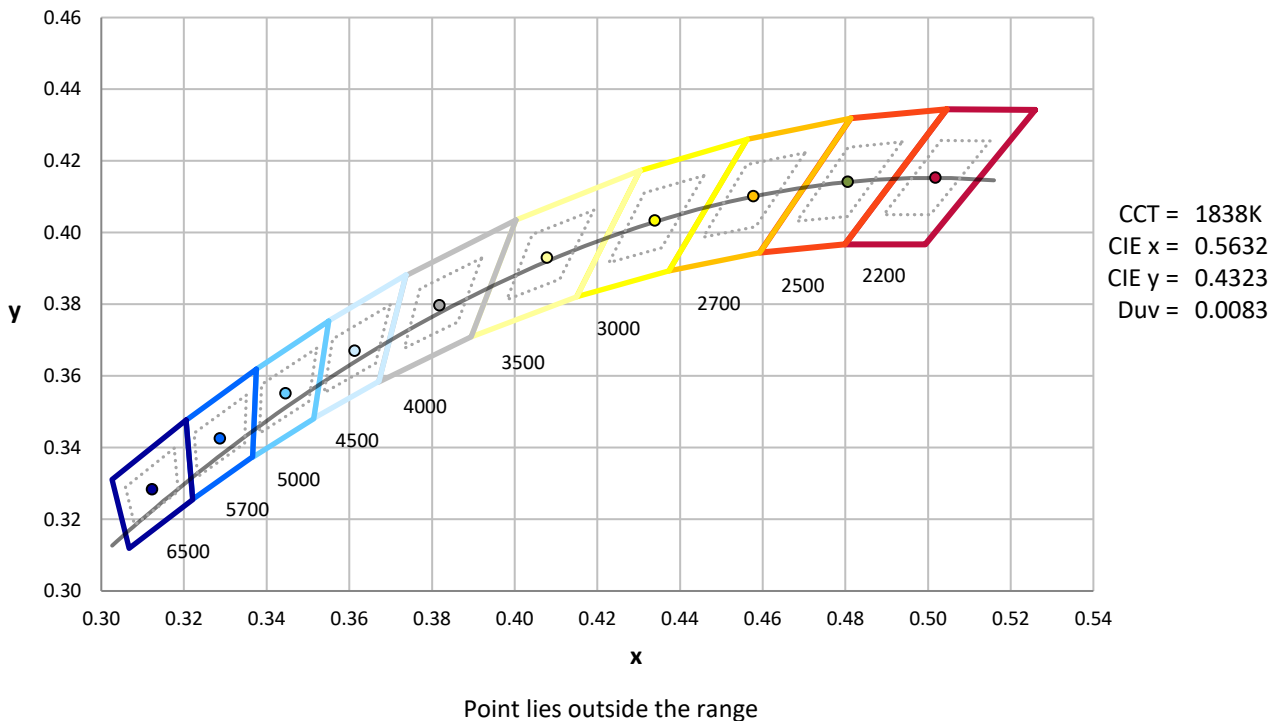
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/3/2021	2/3/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208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

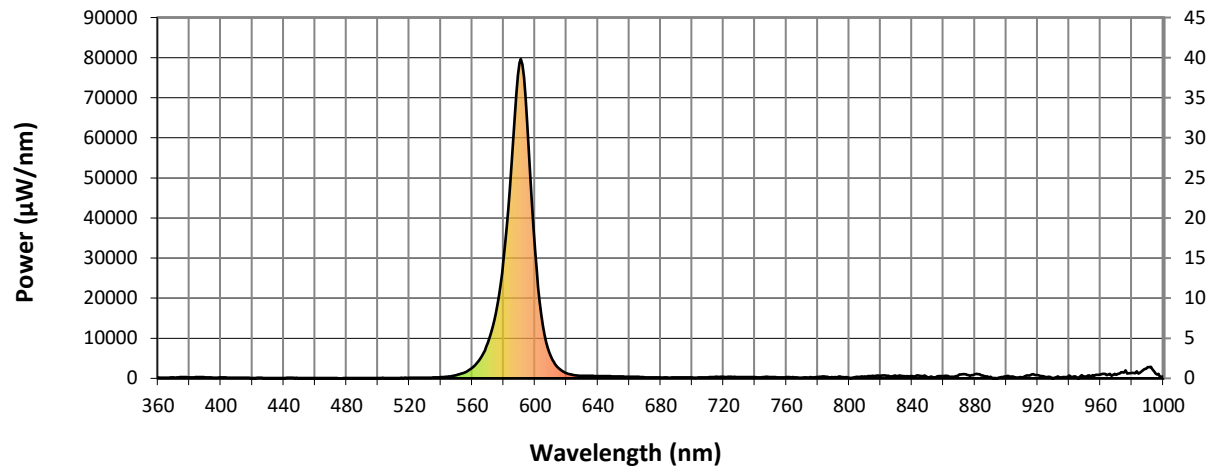


CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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Photopic Flux vs. Wavelength

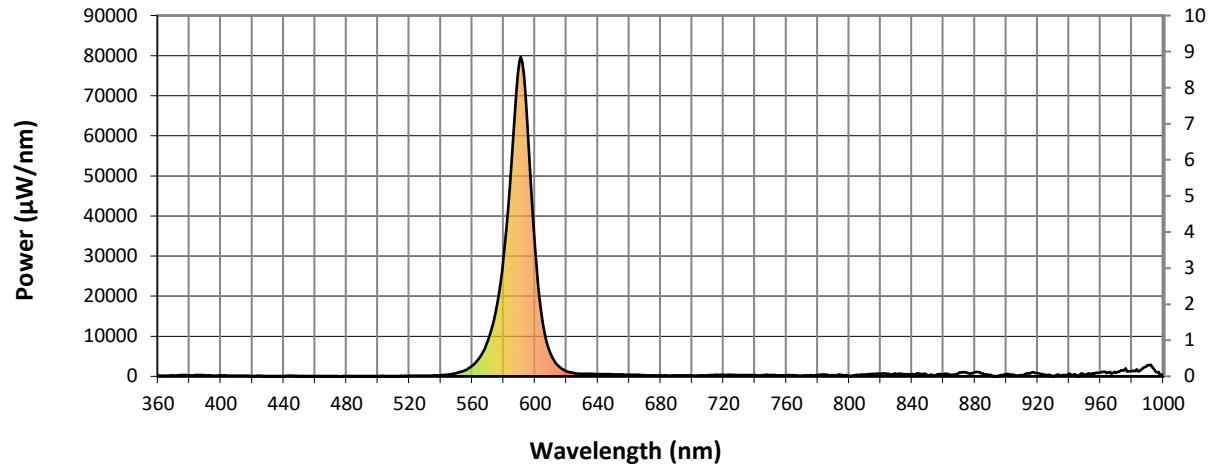


#####

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



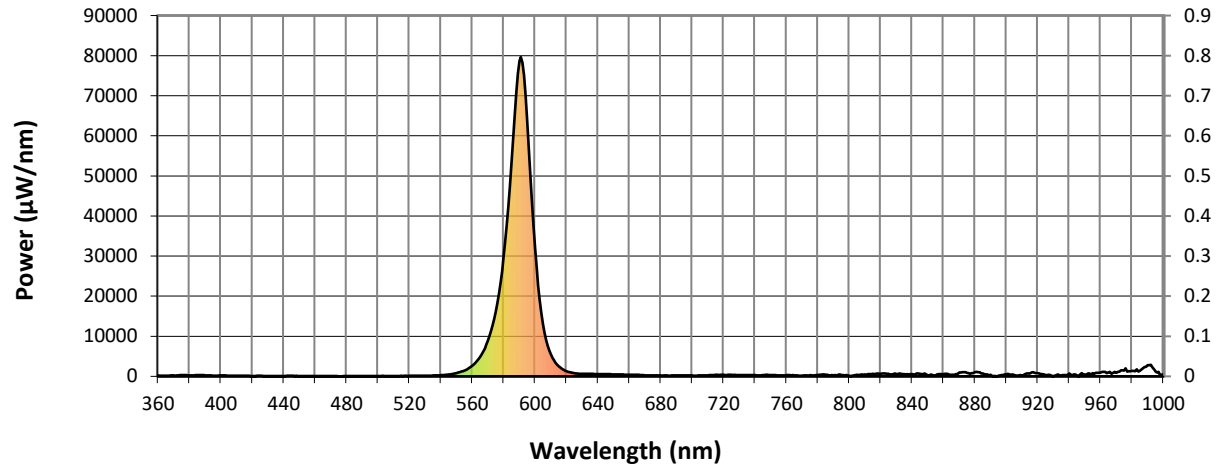
Scotopic Lumens: 236

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			

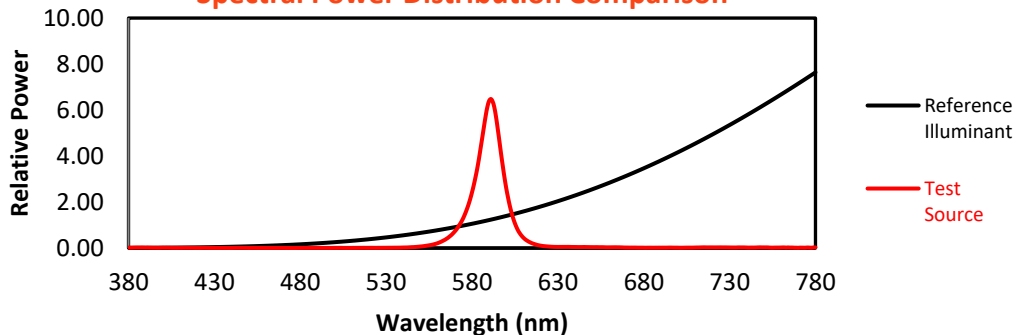
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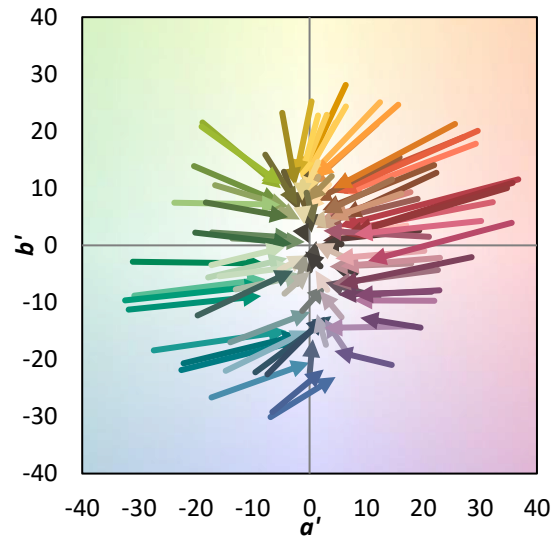
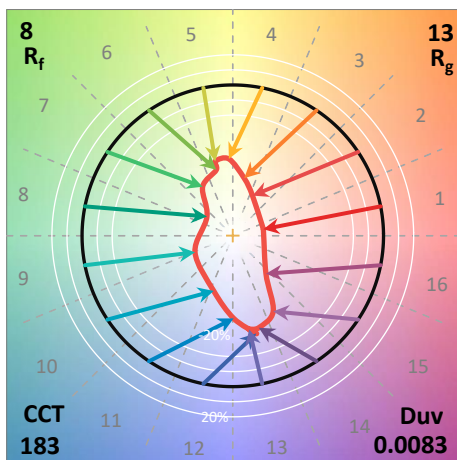
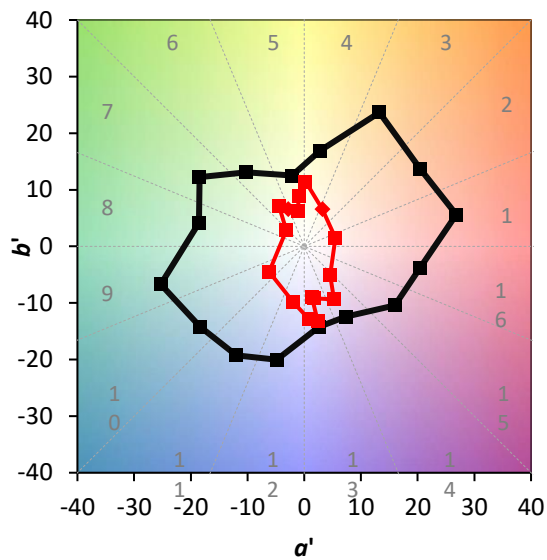
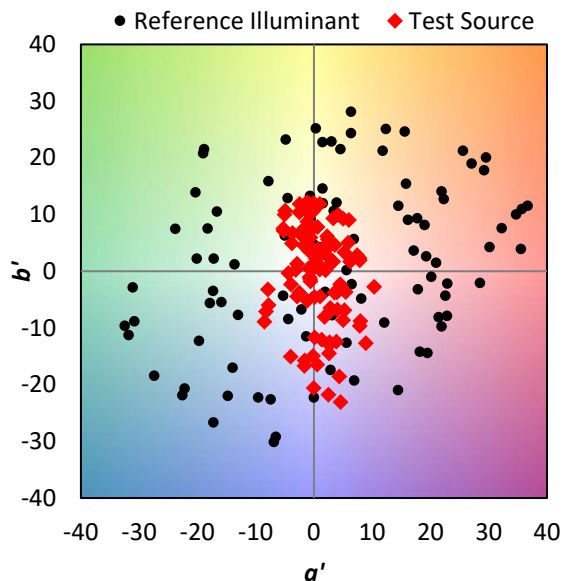
Summary

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

Spectral Power Distribution Comparison



Color Vector Graphics

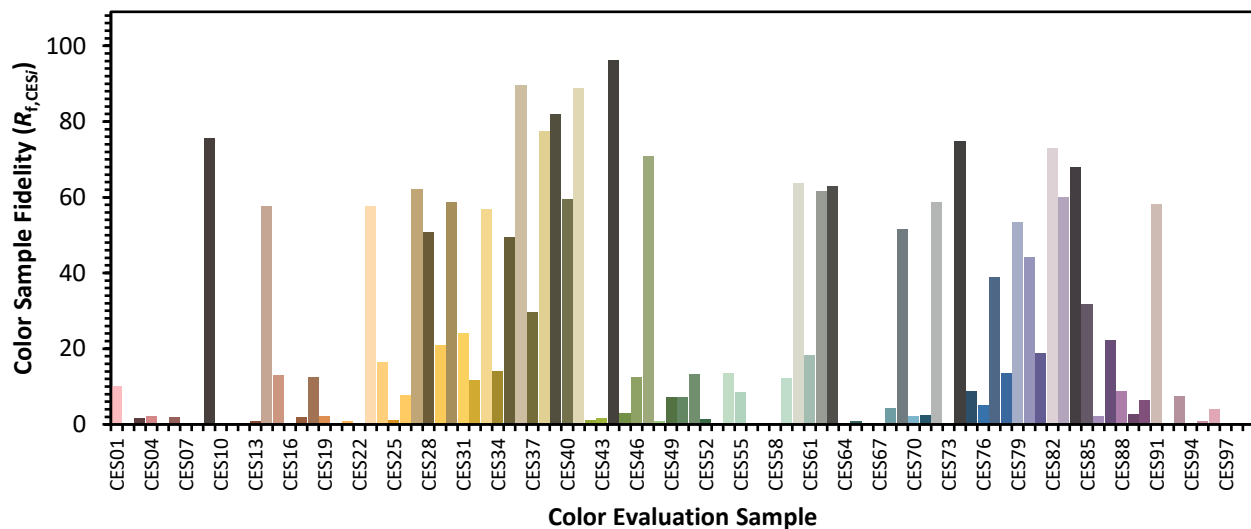


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Individual Sample Fidelity Index ($R_{f,i}$)

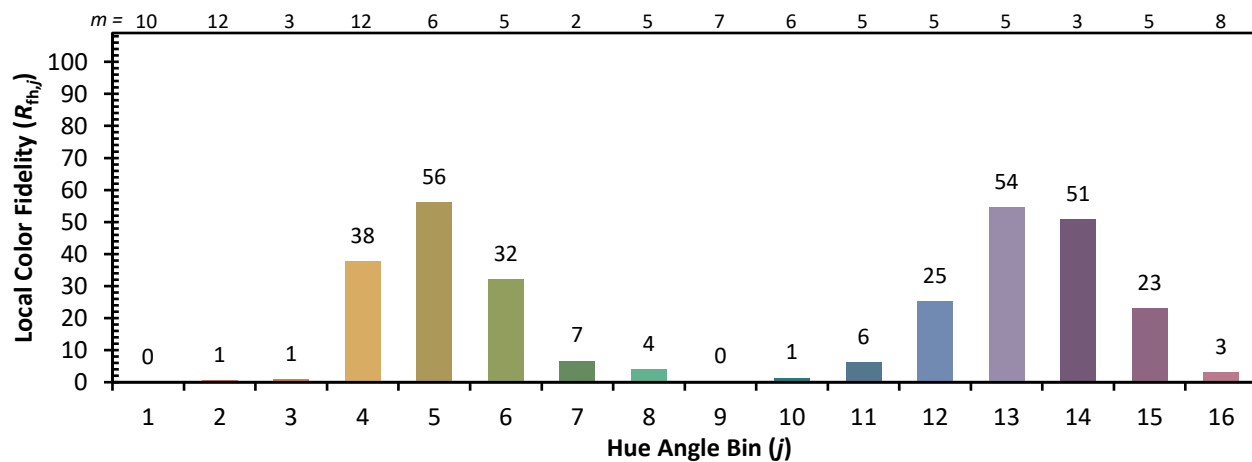
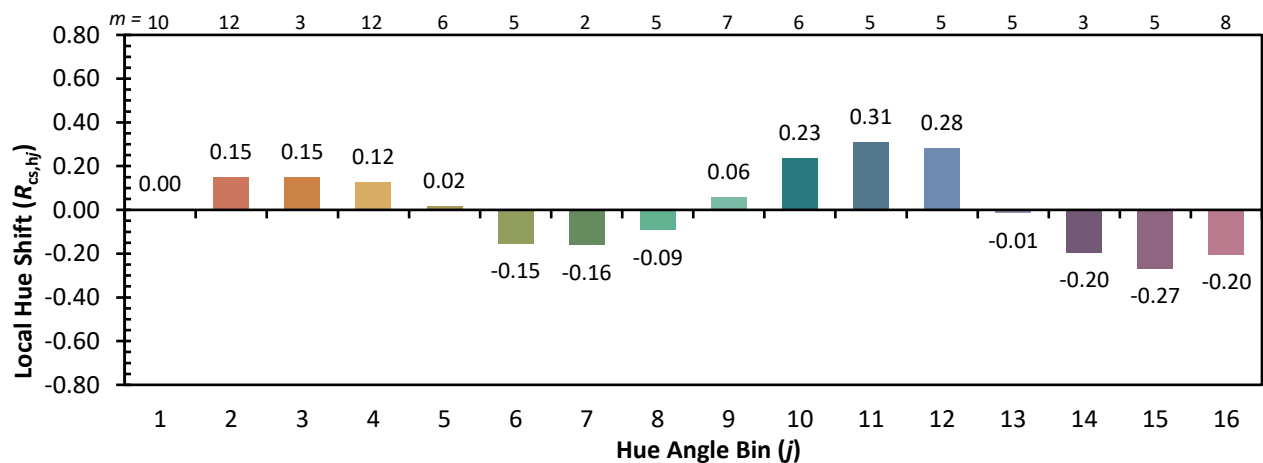
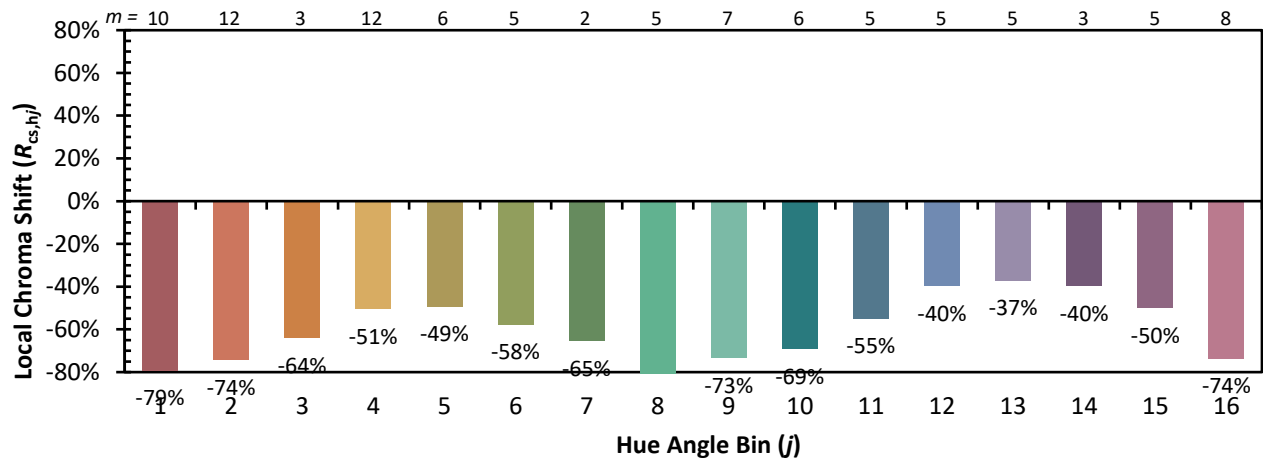
CES01 = 89	CES26 = 8	CES51 = 13	CES76 = 5
CES02 = 66	CES27 = 62	CES52 = 1	CES77 = 39
CES03 = 30	CES28 = 51	CES53 = 0	CES78 = 14
CES04 = 76	CES29 = 21	CES54 = 14	CES79 = 53
CES05 = 50	CES30 = 59	CES55 = 9	CES80 = 44
CES06 = 55	CES31 = 24	CES56 = 0	CES81 = 19
CES07 = 37	CES32 = 12	CES57 = 0	CES82 = 73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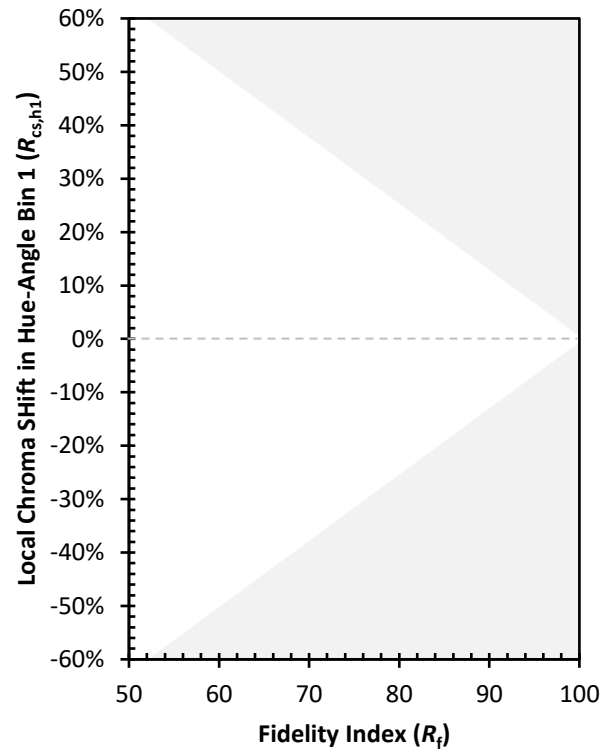
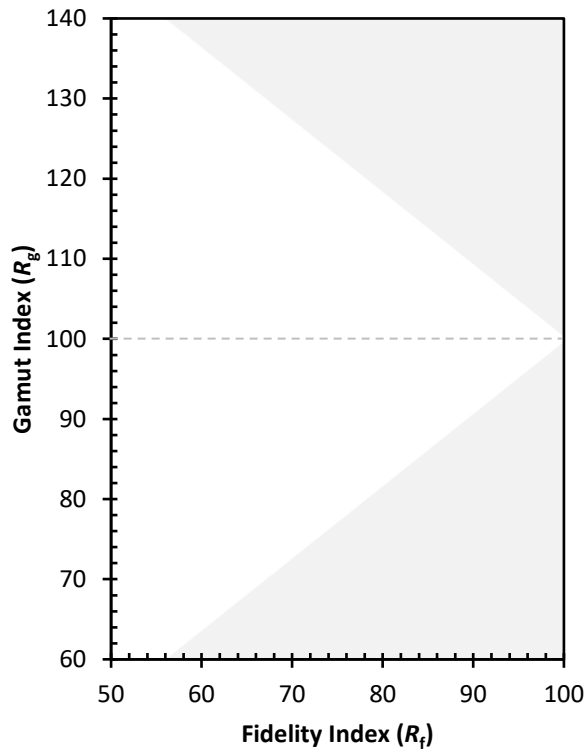
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)