

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: G2-2108-353-6

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

Test Date: 9/27/2021

Test Information

Test Method: LM-79-08
Report Number: G2-2108-353-6
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-C
Description: LUXESCAPE OUTDOOR ARCHITECTURAL LUMINAIRE
NARROW BAND AMBER LEDS AND TYPE III OPTIC, CANTILEVER MOUNT
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 912.6 lumens
Efficiency: N/A
Efficacy: 26.8 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

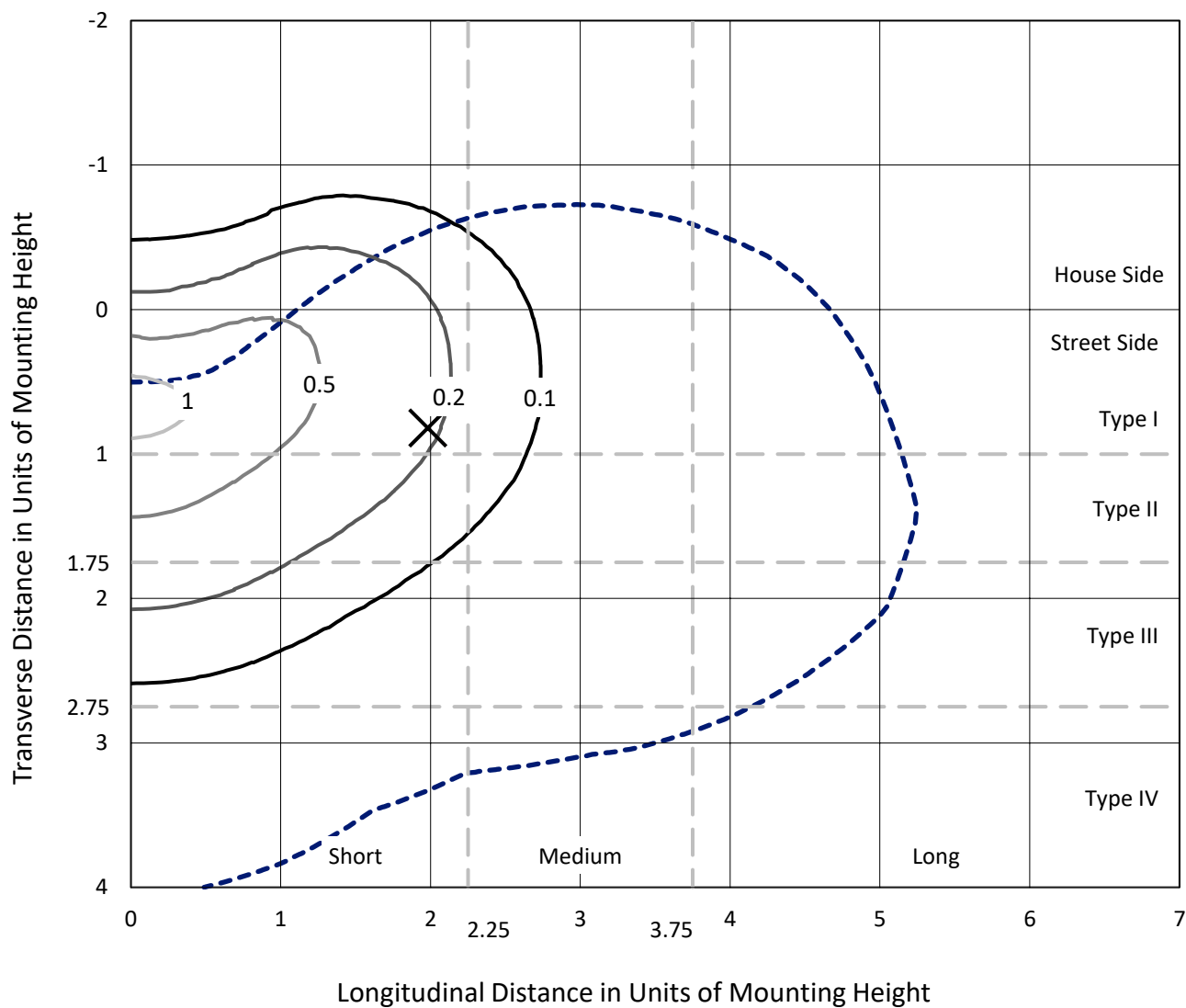


REPORT NUMBER: G2-2108-353-6
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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd

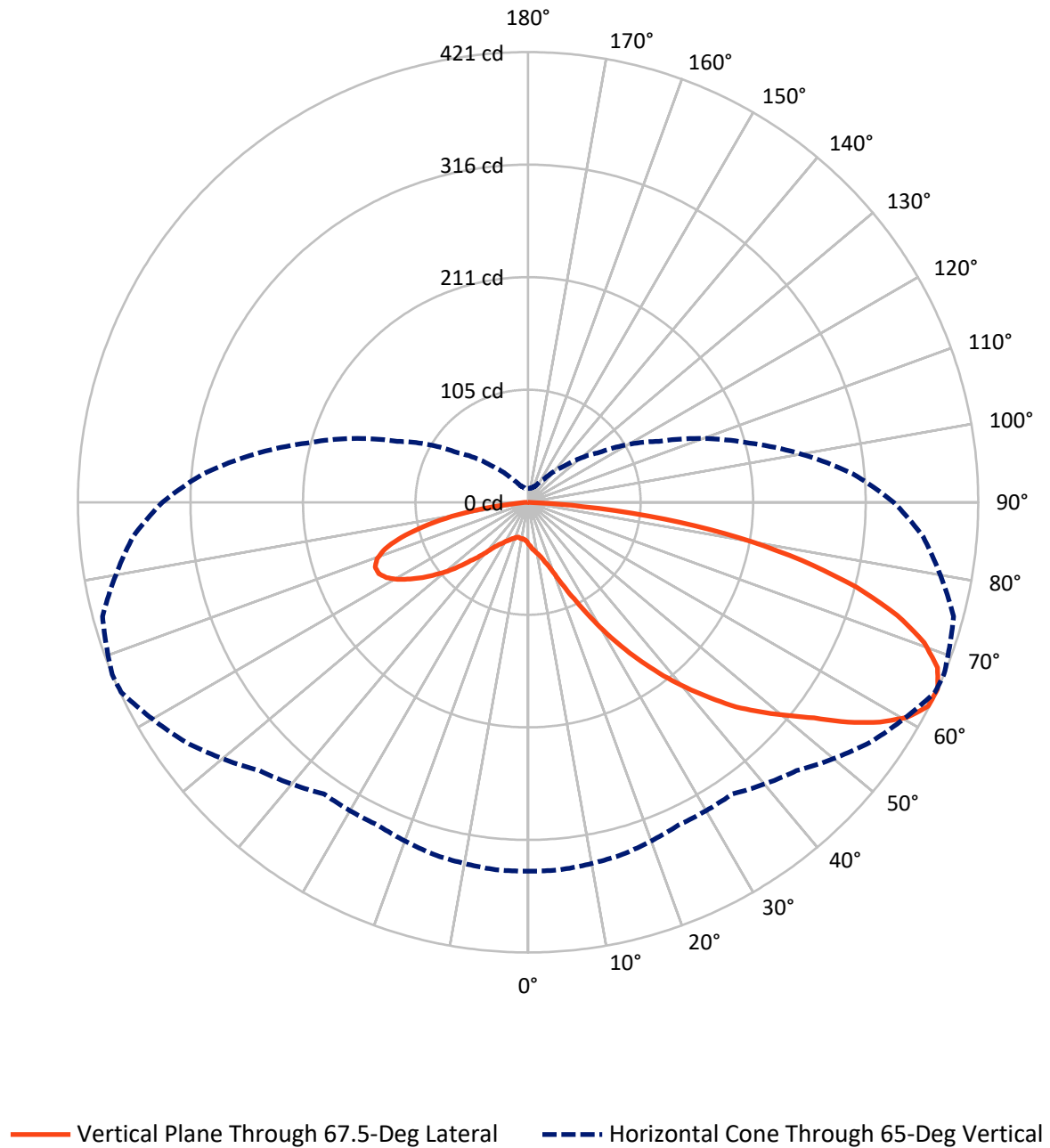
--- 1/2 Max cd



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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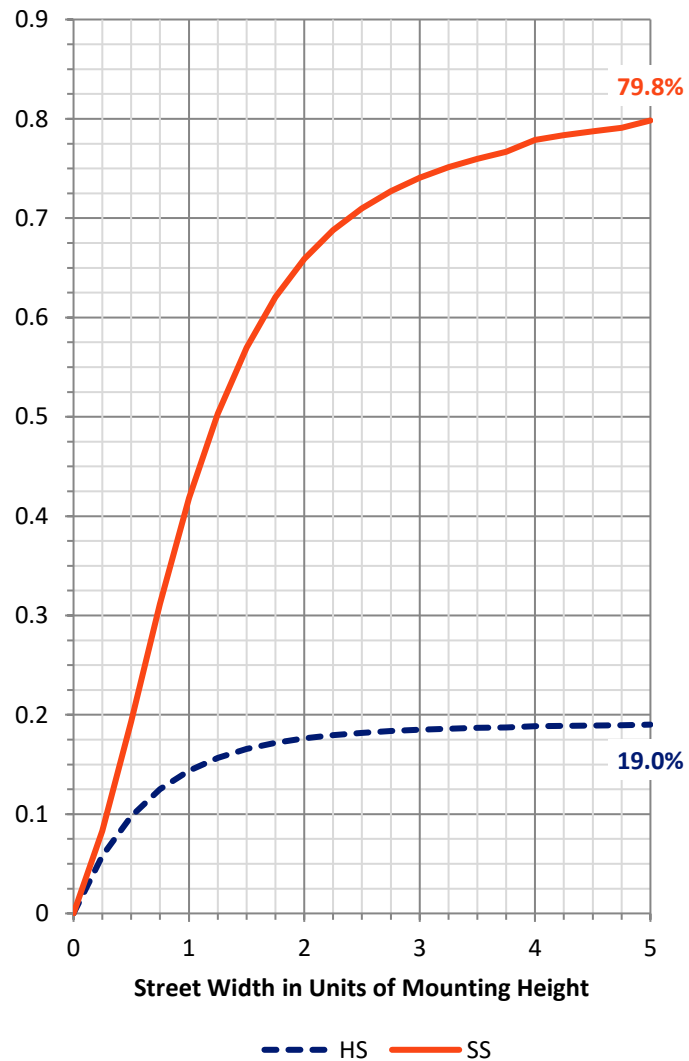
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	174.4	0.0	174.4
	% Fixture	19.1	0.0	19.1
Street Side	Lumens	738.2	0.0	738.2
	% Fixture	80.9	0.0	80.9
Total	Lumens	912.6	0.0	912.6
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	4.0	0.4
10°-20°	15.5	1.7
20°-30°	40.5	4.4
30°-40°	83.8	9.2
40°-50°	136.7	15.0
50°-60°	194.4	21.3
60°-70°	225.5	24.7
70°-80°	171.9	18.8
80°-90°	40.3	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°	912.6	100.0
0°-180°	912.6	100.0

Coefficient of Utilization



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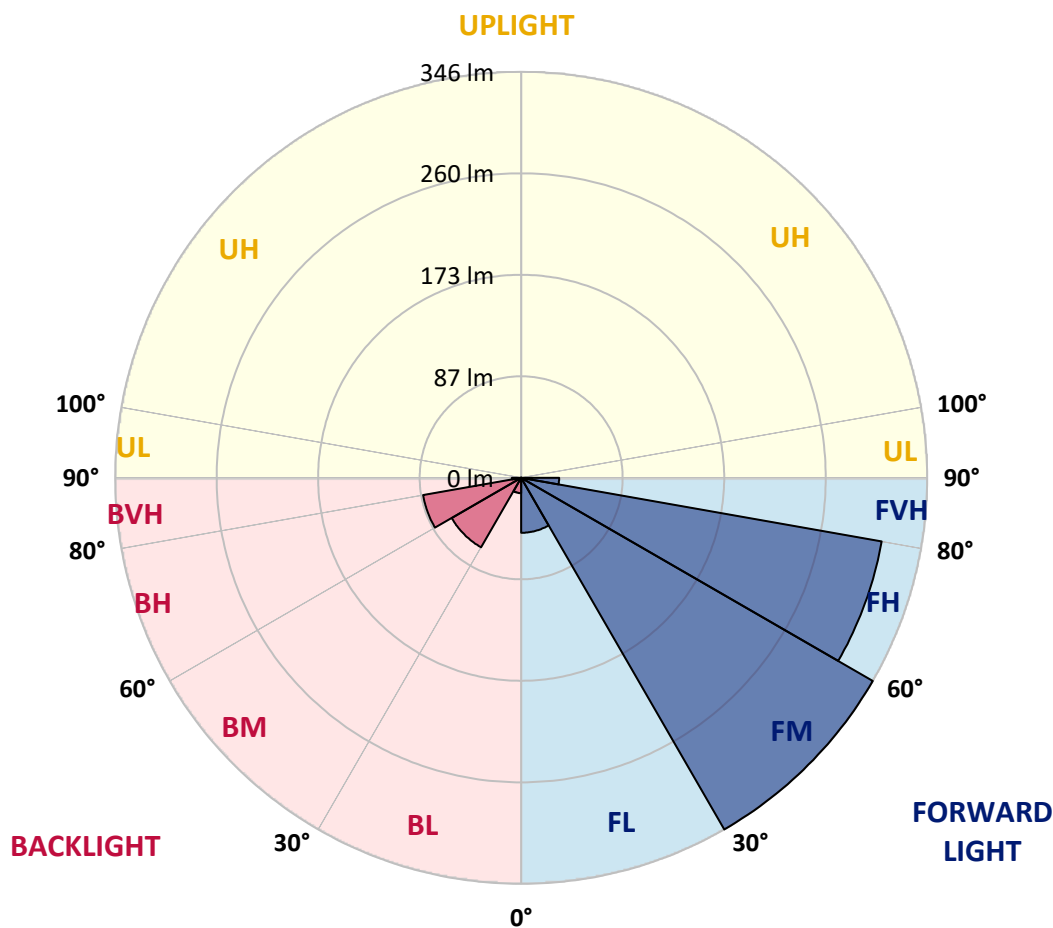
CATALOG NUMBER: LXS-VA1-AMB-U-ASW-C

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	46.9	5.1			
FM	(30°-60°)	346.5	38.0			
FH	(60°-80°)	312.4	34.2			G0/660
FVH	(80°-90°)	32.4	3.5			G1/100
BL	(0°-30°)	13.1	1.4	B0/110		
BM	(30°-60°)	68.5	7.5	B0/220		
BH	(60°-80°)	85.0	9.3	B0/110		G0/110
BVH	(80°-90°)	7.9	0.9			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°	67.5°	75°	85°
0°	39	39	39	39	39	39	39	39	39	39	39
2.5°	45	45	45	44	44	43	42	41	41	40	39
5°	52	52	51	51	49	48	46	44	44	42	40
7.5°	61	61	60	58	55	52	49	47	46	44	41
10°	71	71	69	65	61	57	53	49	49	46	42
12.5°	85	84	80	75	69	64	59	54	52	49	44
15°	105	103	97	89	80	72	66	59	57	52	46
17.5°	134	133	123	110	96	85	75	65	63	56	49
20°	159	158	150	138	121	106	89	76	72	63	53
22.5°	179	178	172	162	147	129	108	89	85	73	59
25°	196	195	189	180	168	151	130	106	100	85	66
27.5°	217	216	211	198	186	171	151	125	118	100	75
30°	242	242	236	223	205	190	171	146	139	118	89
32.5°	288	285	270	250	227	208	191	168	161	139	104
35°	320	318	305	279	252	228	211	190	183	160	122
37.5°	334	332	325	304	277	249	231	212	206	183	143
40°	343	342	334	320	297	271	251	233	228	205	165
42.5°	348	347	340	328	310	291	273	254	250	229	187
45°	350	349	344	331	320	307	292	276	273	252	210
47.5°	352	351	347	338	327	318	310	296	293	278	234
50°	365	364	357	348	337	334	330	318	313	298	257
52.5°	371	370	363	352	347	349	352	341	335	318	282
55°	389	387	376	361	355	361	372	367	363	343	305
57.5°	388	387	379	365	359	369	387	391	388	366	327
60°	379	378	373	360	357	371	397	410	408	389	348
62.5°	364	364	360	348	348	367	398	419	420	405	363
65°	345	345	341	333	333	355	391	420	421	412	371
67.5°	322	322	319	311	312	336	375	410	413	407	369
70°	294	294	292	284	286	311	352	388	393	391	355
72.5°	260	261	256	250	253	282	320	355	361	362	328
75°	227	226	222	215	220	242	278	312	317	319	290
77.5°	189	190	185	177	181	203	230	258	262	264	237
80°	147	147	144	135	138	157	178	195	200	199	175
82.5°	101	101	99	91	93	106	122	127	129	126	109
85°	49	49	49	44	45	47	55	49	51	46	41
87.5°	2	2	3	3	2	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-C

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	39	39	39	39	39	39	39	39	39	39	39
2.5°	39	38	37	36	36	35	35	34	34	34	34
5°	39	38	37	35	34	33	32	32	31	31	31
7.5°	40	39	36	34	33	31	30	30	29	29	29
10°	41	39	36	34	32	30	29	28	27	27	27
12.5°	42	40	37	34	31	29	28	27	26	26	26
15°	43	41	36	33	30	28	27	25	24	24	24
17.5°	45	42	37	33	30	28	26	24	23	23	23
20°	49	45	39	34	30	28	25	23	22	22	22
22.5°	54	48	41	35	31	27	25	23	21	21	21
25°	59	53	43	36	31	27	24	22	20	20	20
27.5°	67	58	46	38	32	27	24	21	20	19	19
30°	76	65	50	39	32	27	24	21	19	18	18
32.5°	89	75	54	42	34	28	23	20	18	18	17
35°	104	87	60	44	35	28	23	20	18	17	17
37.5°	122	102	69	47	36	28	23	20	18	17	17
40°	141	119	79	53	37	29	23	20	18	17	17
42.5°	162	137	92	60	40	30	24	20	18	17	17
45°	184	157	105	67	44	31	24	20	18	17	16
47.5°	206	178	120	77	49	33	25	20	18	17	16
50°	228	199	136	87	54	34	25	20	17	17	16
52.5°	250	219	151	96	60	37	26	20	17	16	16
55°	275	239	167	106	65	40	26	20	17	16	16
57.5°	296	257	182	115	71	43	26	19	17	16	15
60°	317	280	195	124	76	45	26	19	16	15	15
62.5°	333	296	207	131	79	47	27	18	15	14	14
65°	342	305	214	135	81	48	27	17	14	13	13
67.5°	342	306	216	135	81	47	26	16	13	12	12
70°	330	297	210	131	78	45	25	14	12	11	11
72.5°	306	275	196	122	72	41	23	13	10	10	10
75°	268	240	173	107	63	36	20	11	9	8	8
77.5°	219	198	140	86	51	30	17	10	7	7	7
80°	162	144	102	63	36	22	13	7	5	5	5
82.5°	98	86	60	35	21	13	8	5	3	3	3
85°	36	31	20	9	6	4	3	2	2	1	1
87.5°	1	1	1	1	1	1	1	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

Signify Classified - Internal
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1121 Highway 74 South
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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

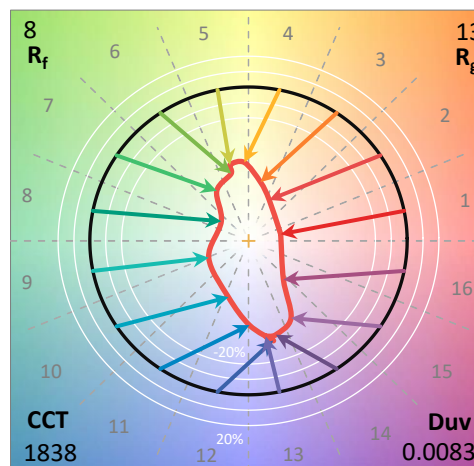
Test Information

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

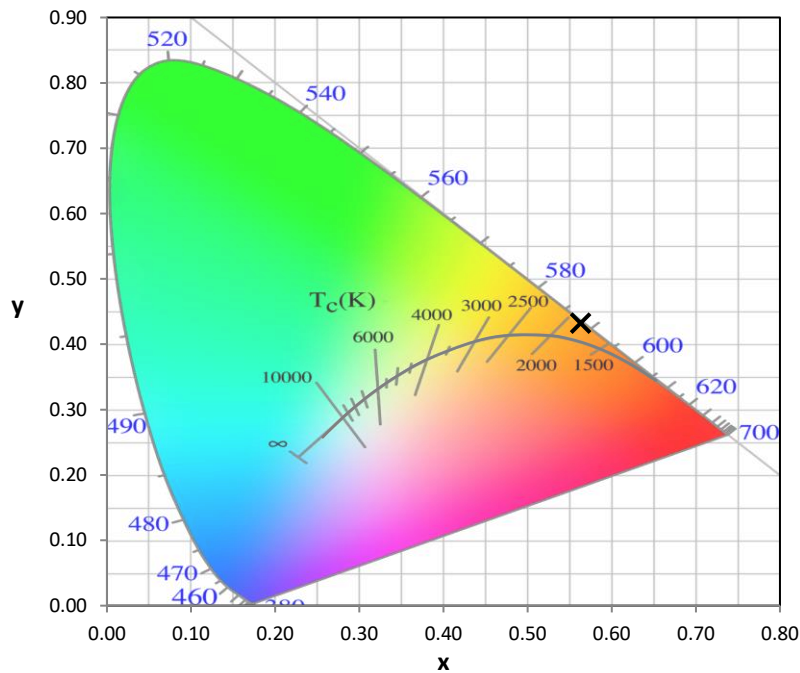
Stabilization Time: 164M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 24.2/26%
 Sphere Temperature (°C): 24.6

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

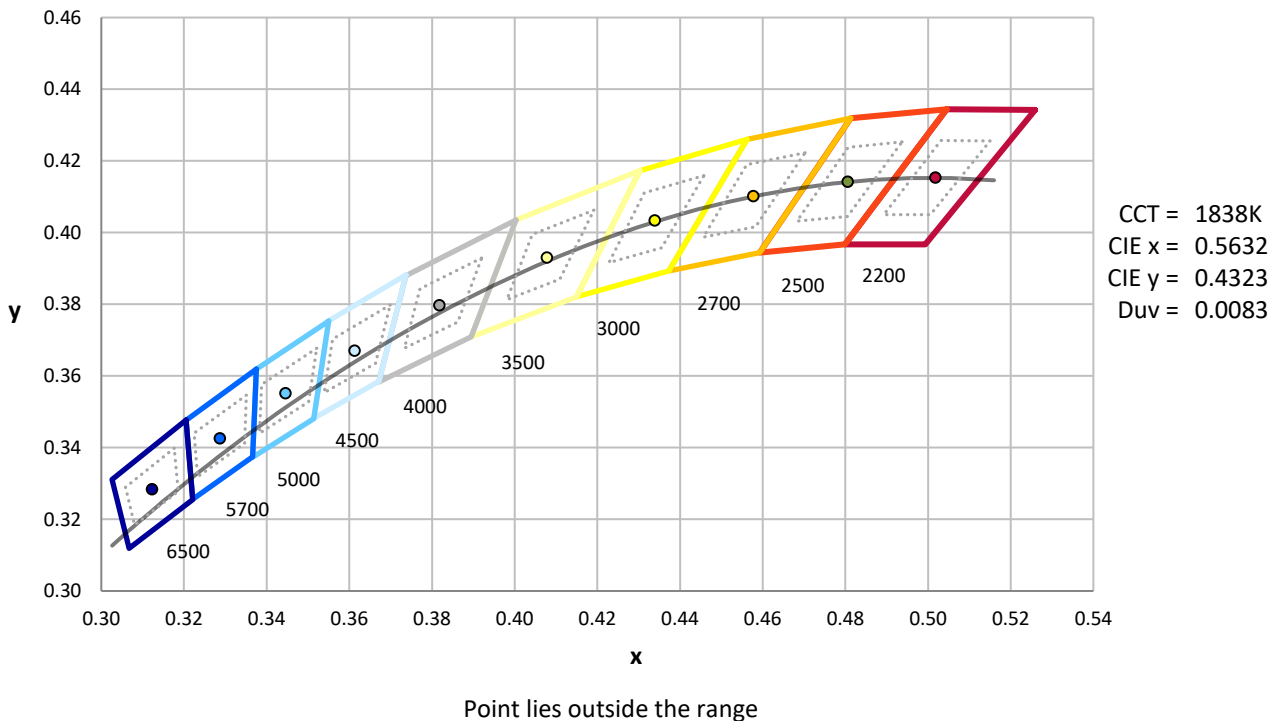
Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	8/3/2021	2/3/2022
Power Meter	XITRON 2801 IN0071	11/29/2021	11/29/2022
AC Power Source	CHROMA 61603 IN0063	11/29/2021	11/29/2022
DC Power Source	AGILENT E3634A IN0208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

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CIE 1931 Chromaticity Diagram

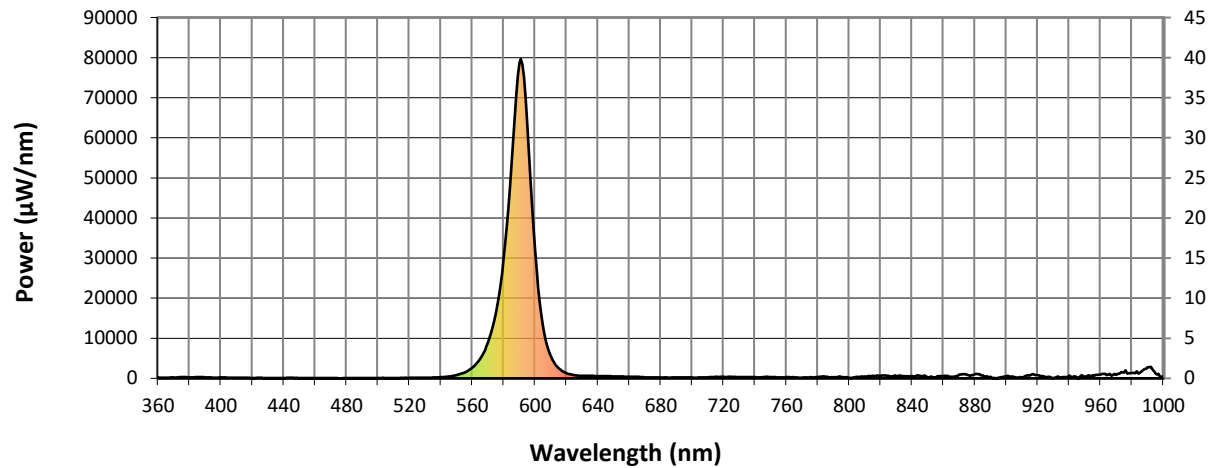


CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



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Photopic Flux vs. Wavelength

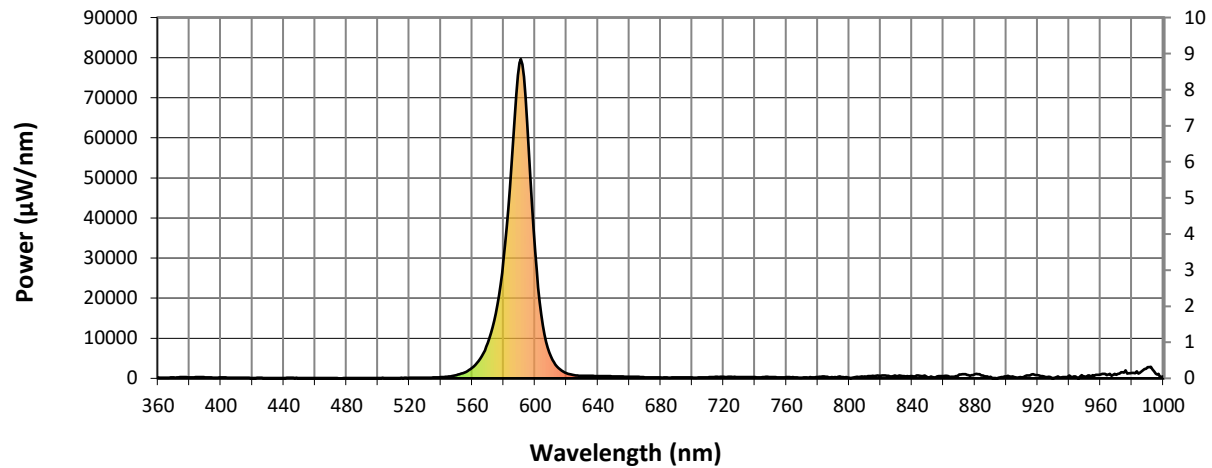


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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	232	NR	490	102	NR	620	1285	NR	750	361	NR	880	1054	NR
365	141	NR	495	91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

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Scotopic Flux vs. Wavelength



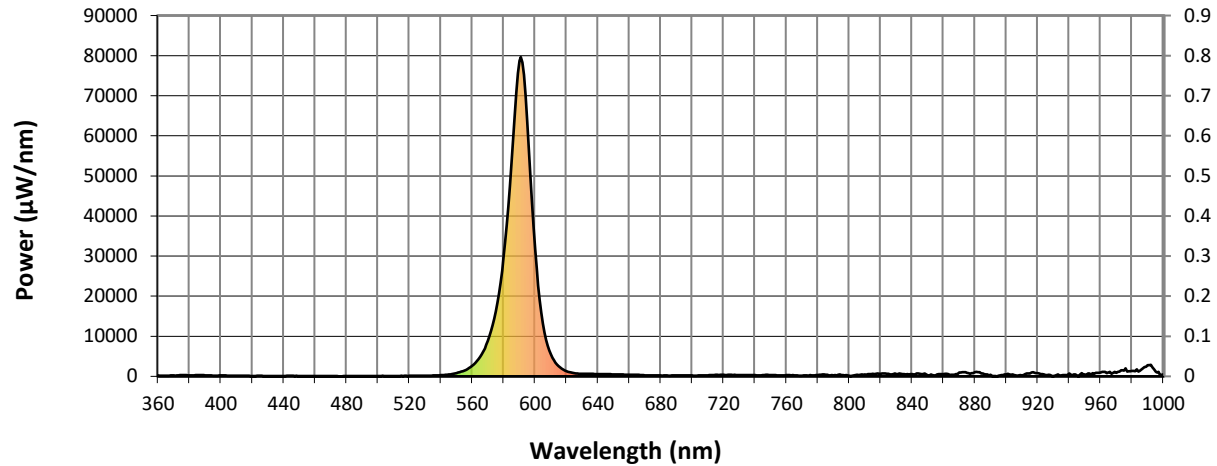
Scotopic Lumens: 236

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			

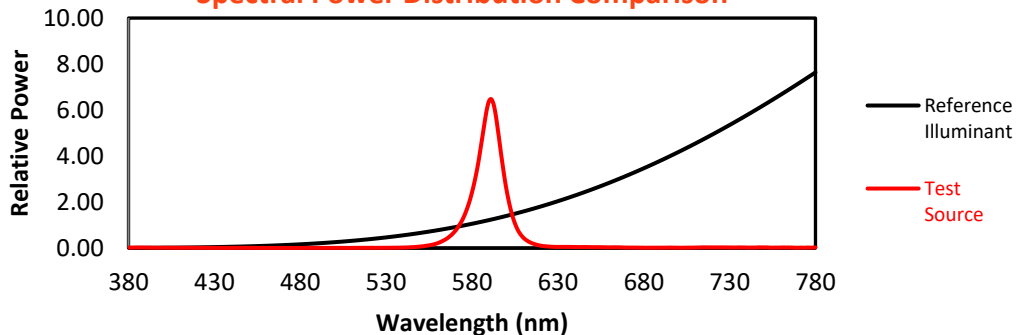
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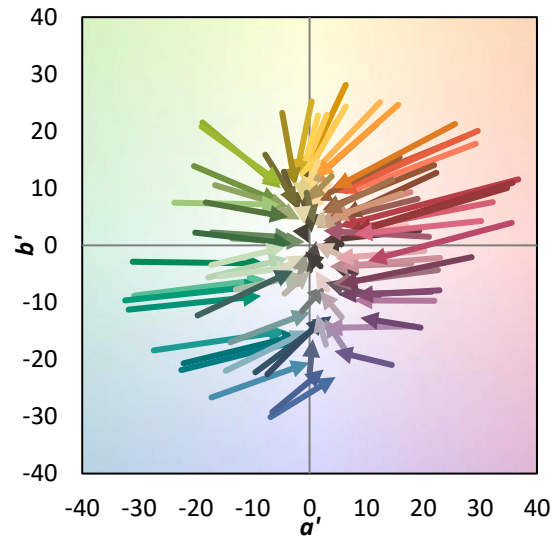
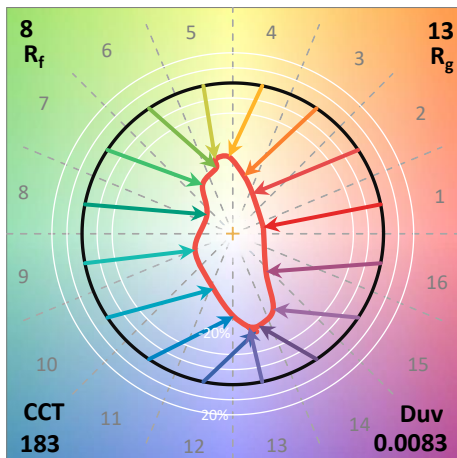
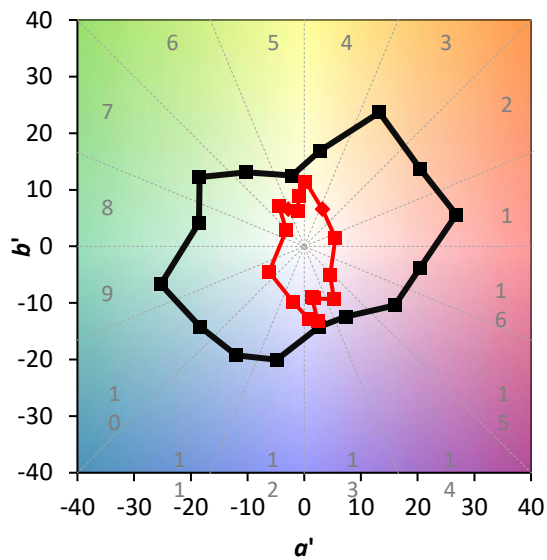
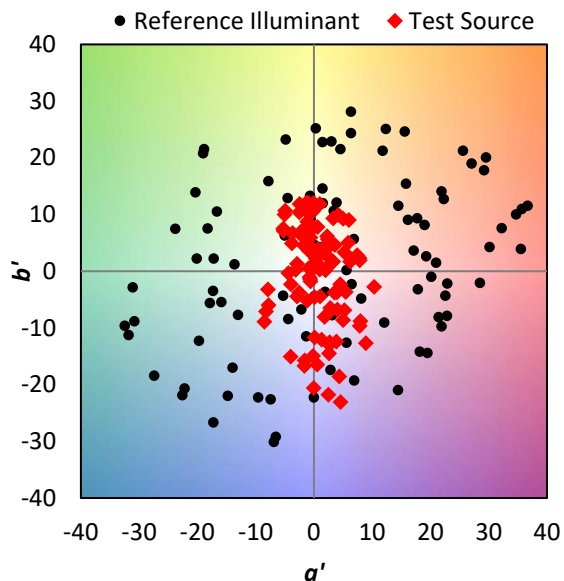
Summary

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

Spectral Power Distribution Comparison



Color Vector Graphics

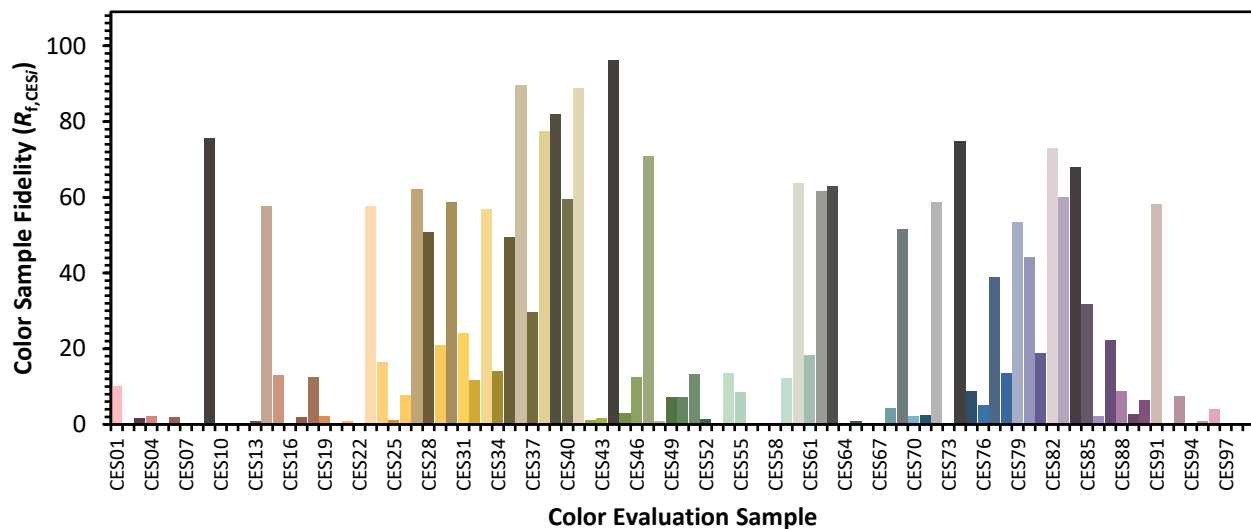


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Individual Sample Fidelity Index ($R_{f,i}$)

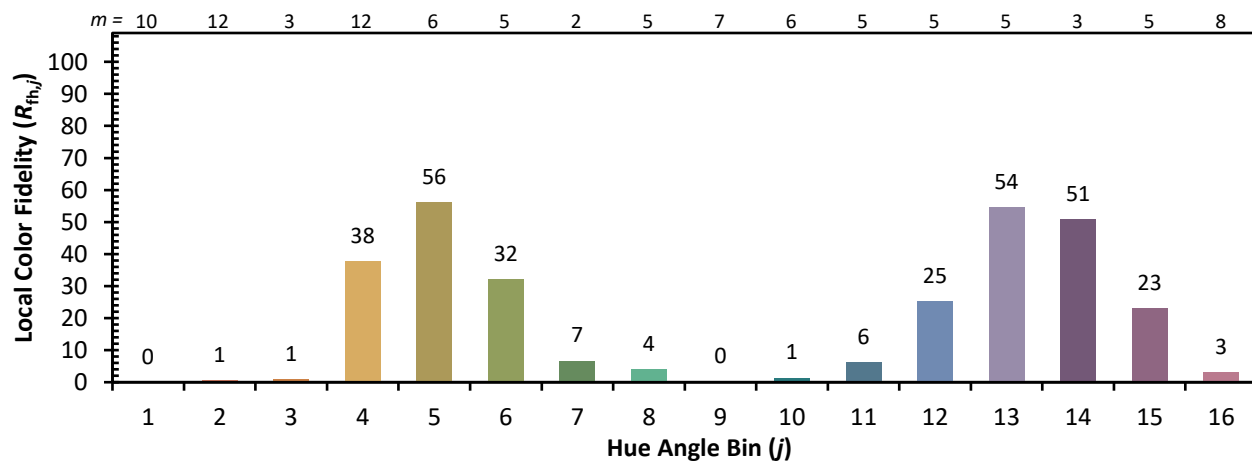
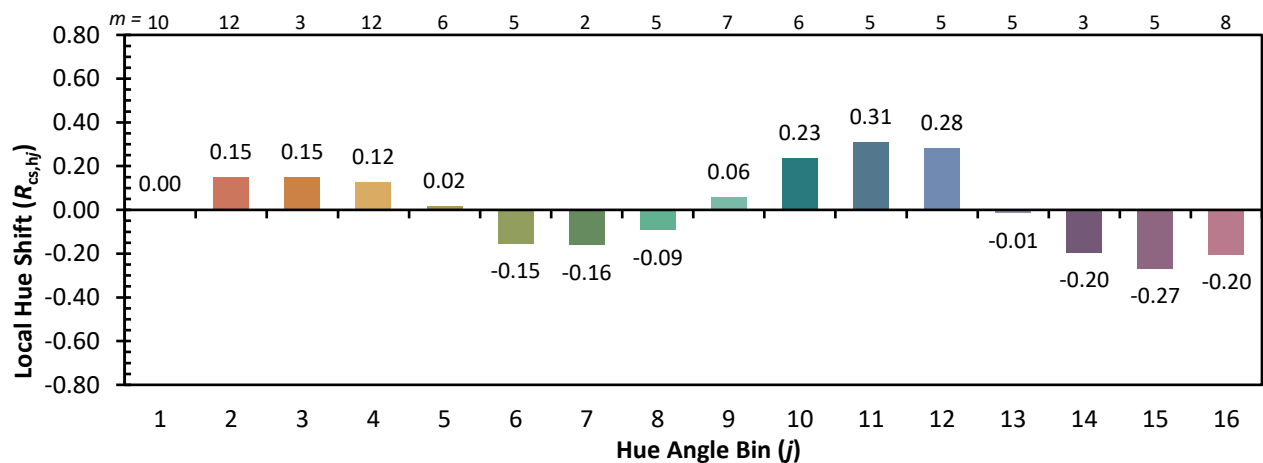
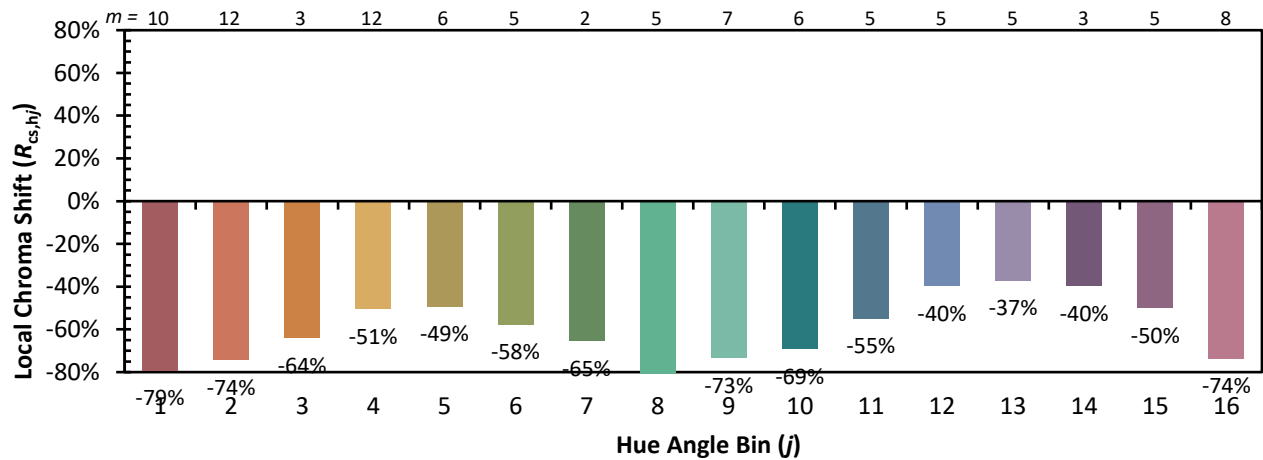
CES01 = 89	CES26 = 8	CES51 = 13	CES76 = 5
CES02 = 66	CES27 = 62	CES52 = 1	CES77 = 39
CES03 = 30	CES28 = 51	CES53 = 0	CES78 = 14
CES04 = 76	CES29 = 21	CES54 = 14	CES79 = 53
CES05 = 50	CES30 = 59	CES55 = 9	CES80 = 44
CES06 = 55	CES31 = 24	CES56 = 0	CES81 = 19
CES07 = 37	CES32 = 12	CES57 = 0	CES82 = 73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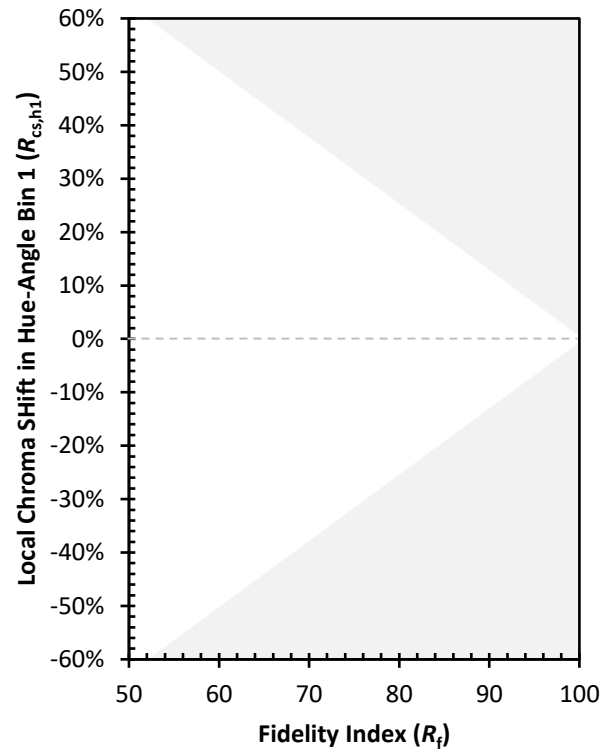
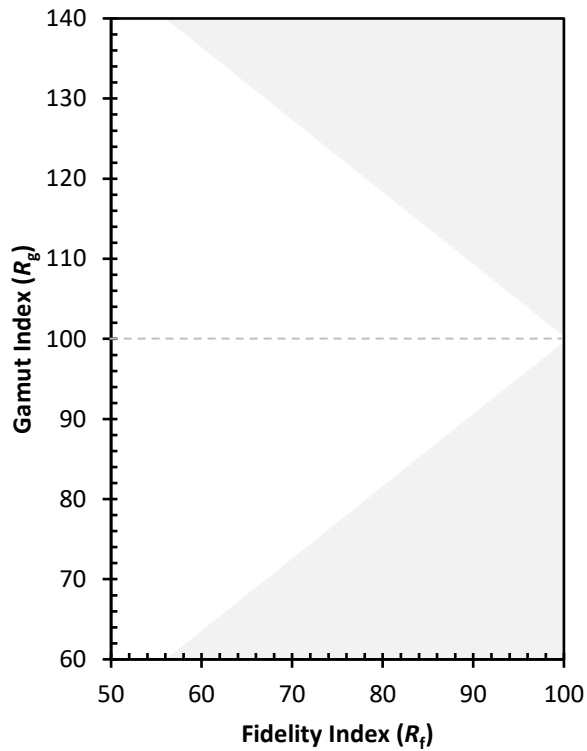
Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)