

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: P880333

Luminaire Tested: **EMM2-HSN-VA6-730-U-WQ**

Issue Date: 10/01/2024



Test Information

Test Method: LM-79-08
Report Number: P880333
Test Lab: INNOVATION CENTER(G3)
Issue Date: 10/01/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HSN-VA6-730-U-WQ
Description: EPIC MODERN SHORT HOUSING 6W 70CRI 3000K VISUAL COMFORT FIXTURE w/
TYPE V WIDE DISTRIBUTION OPTIC
Light Source: (1) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

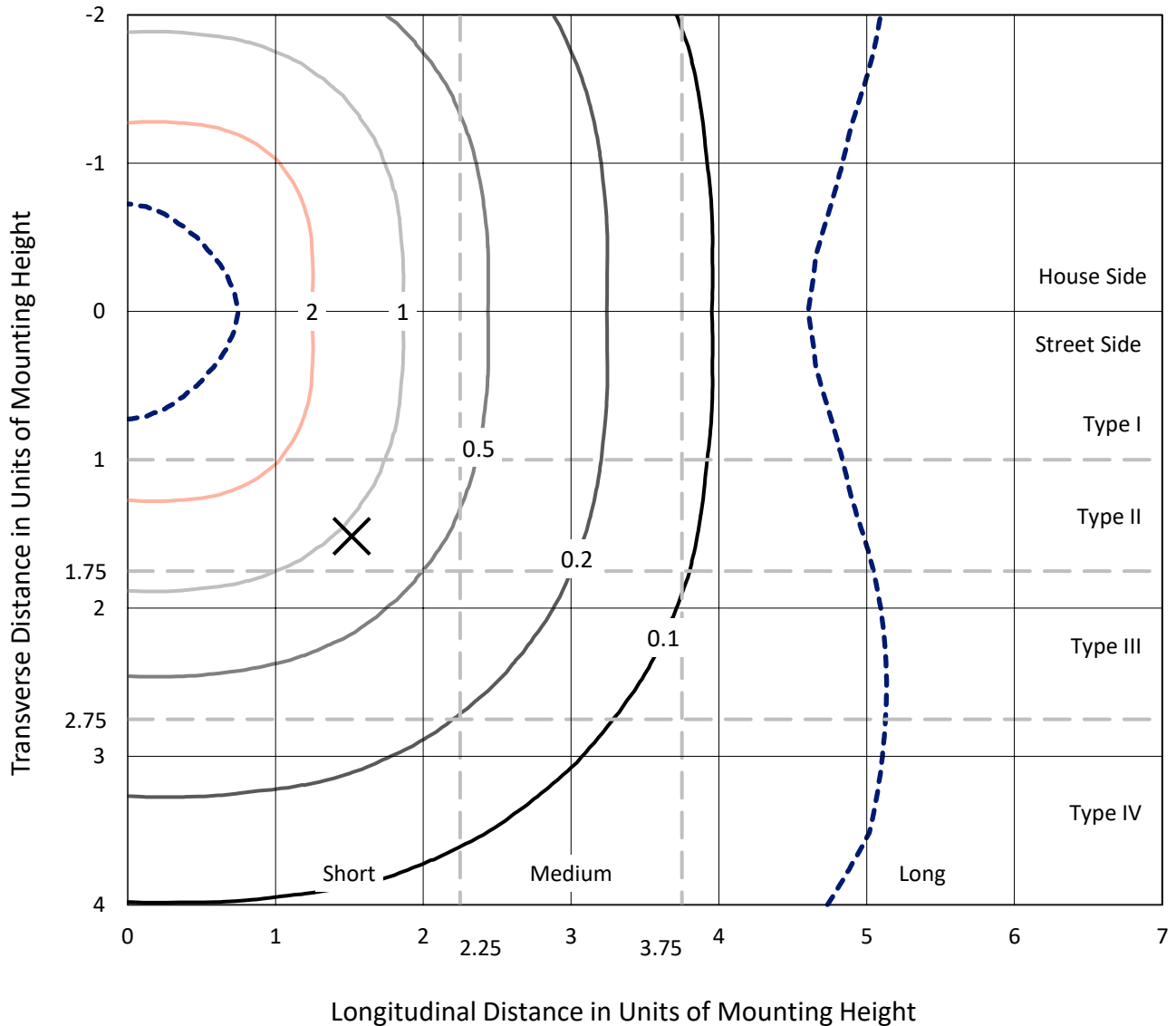
Lumens per Lamp: N/A
Luminaire Lumens: 9988 lumens
Efficiency: N/A
Efficacy: 94.2 lumens/watt
Luminous Opening: Circular (Dia: 1.12' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G3

Input Watts (W): 106
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 5%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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 CATALOG NUMBER: EMM2-HSN-VA6-730-U-WQ

Iso-Footcandle Lines of Horizontal Illumination

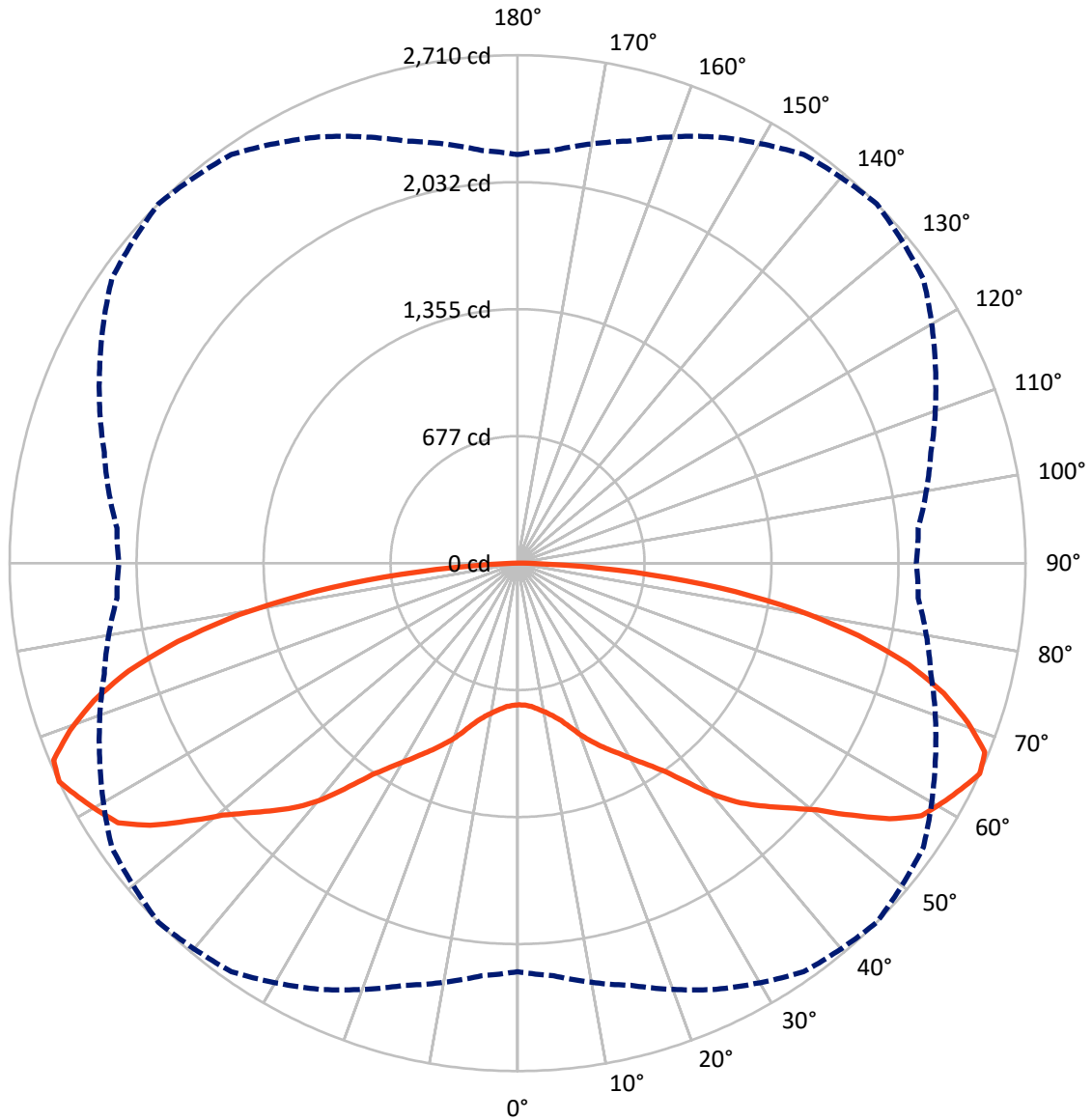
× Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 3.6 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4994.0	0.0	4994.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4994.0	0.0	4994.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	9988.0	0.0	9988.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.7	0.7
10°-20°	251.3	2.5
20°-30°	504.9	5.1
30°-40°	854.7	8.6
40°-50°	1366.3	13.7
50°-60°	1973.4	19.8
60°-70°	2376.3	23.8
70°-80°	1968.7	19.7
80°-90°	617.7	6.2
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°	9988.0	100.0
0°-180°	9988.0	100.0



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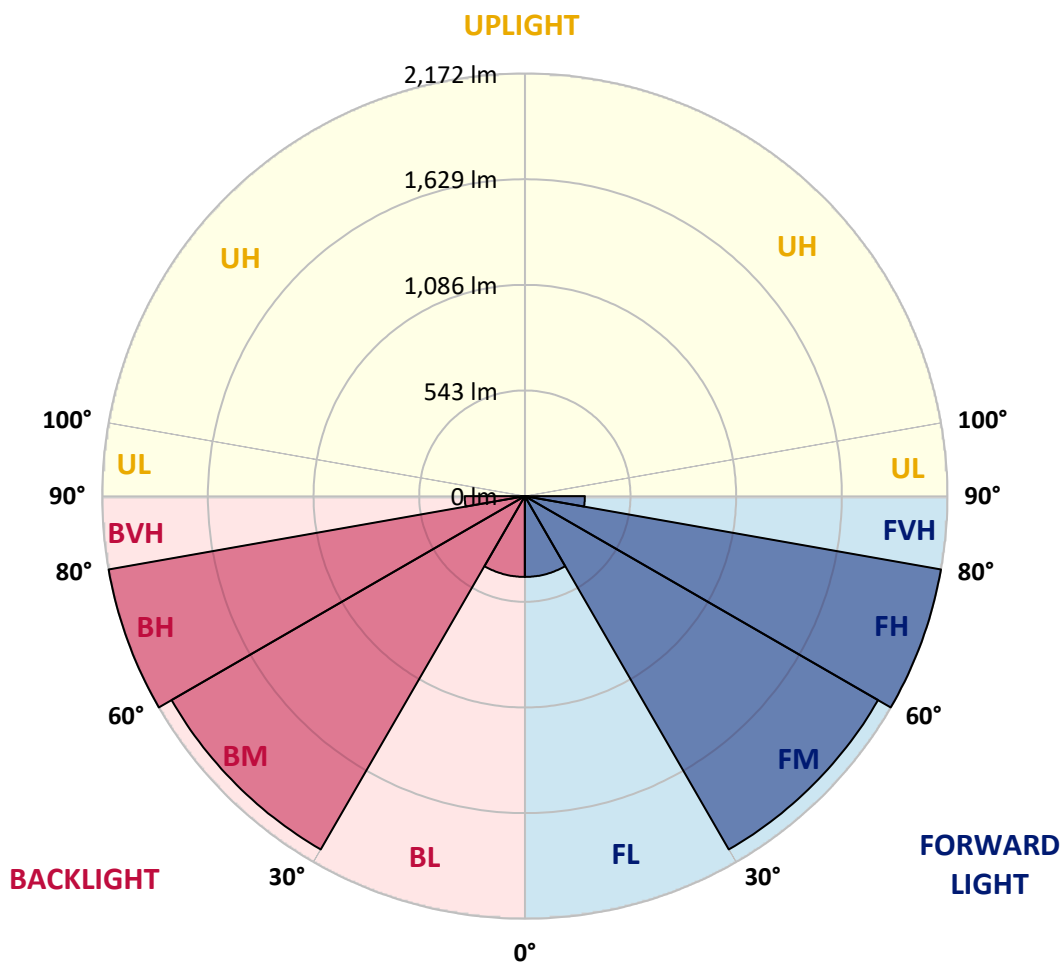
CATALOG NUMBER: EMM2-HSN-VA6-730-U-WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	415.5	4.2			
FM (30°-60°)	2097.2	21.0			
FH (60°-80°)	2172.5	21.8			G2/5000
FVH (80°-90°)	308.9	3.1			G3/500
BL (0°-30°)	415.5	4.2	B1/500		
BM (30°-60°)	2097.2	21.0	B2/2500		
BH (60°-80°)	2172.5	21.8	B3/2500		G2/5000
BVH (80°-90°)	308.9	3.1			G3/500
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type V Short





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CATALOG NUMBER: EMM2-HSN-VA6-730-U-WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9	755.9
2.5°	759.0	759.0	759.0	759.0	759.0	759.0	759.0	759.0	759.0	759.0	759.0
5°	771.2	771.2	771.2	768.1	768.1	768.1	771.2	771.2	771.2	771.2	771.2
7.5°	786.4	786.4	786.4	786.4	786.4	786.4	783.4	783.4	783.4	783.4	786.4
10°	807.8	810.8	810.8	807.8	807.8	807.8	804.7	804.7	807.8	807.8	804.7
12.5°	838.2	838.2	838.2	838.2	835.2	835.2	835.2	835.2	835.2	835.2	835.2
15°	871.8	871.8	871.8	871.8	871.8	871.8	871.8	871.8	868.7	865.7	865.7
17.5°	914.5	911.4	917.5	914.5	920.5	923.6	917.5	914.5	911.4	908.4	905.3
20°	966.3	969.3	975.4	978.5	981.5	984.6	975.4	972.4	966.3	963.2	960.2
22.5°	1027.2	1027.2	1033.3	1033.3	1039.4	1039.4	1036.4	1027.2	1021.1	1021.1	1018.1
25°	1079.1	1082.1	1088.2	1088.2	1094.3	1094.3	1091.2	1085.1	1076.0	1069.9	1066.9
27.5°	1133.9	1133.9	1137.0	1146.1	1149.2	1149.2	1146.1	1137.0	1124.8	1118.7	1118.7
30°	1185.7	1188.8	1191.8	1204.0	1210.1	1213.2	1201.0	1191.8	1176.6	1170.5	1170.5
32.5°	1246.7	1246.7	1252.8	1271.1	1280.2	1283.3	1271.1	1255.8	1237.6	1225.4	1225.4
35°	1313.8	1310.7	1329.0	1347.3	1368.6	1368.6	1359.5	1335.1	1307.7	1292.4	1289.4
37.5°	1402.2	1405.2	1423.5	1457.0	1490.6	1490.6	1481.4	1438.7	1408.3	1380.8	1374.7
40°	1505.8	1508.8	1542.4	1582.0	1618.6	1630.8	1612.5	1569.8	1518.0	1478.4	1475.3
42.5°	1594.2	1606.4	1639.9	1694.8	1731.4	1749.7	1722.2	1673.4	1615.5	1569.8	1560.7
45°	1679.5	1691.7	1734.4	1792.3	1838.0	1850.2	1825.9	1767.9	1700.9	1652.1	1646.0
47.5°	1758.8	1771.0	1813.7	1889.9	1938.6	1950.8	1929.5	1862.4	1780.1	1731.4	1725.3
50°	1832.0	1859.4	1911.2	1993.5	2063.6	2069.7	2039.2	1960.0	1874.6	1807.6	1798.4
52.5°	1932.5	1944.7	2017.9	2127.6	2206.9	2234.3	2185.5	2100.2	1975.2	1896.0	1880.7
55°	2054.5	2060.6	2139.8	2267.8	2371.5	2408.1	2347.1	2237.4	2094.1	2014.8	2002.6
57.5°	2124.6	2152.0	2243.5	2380.6	2493.4	2542.2	2484.3	2341.0	2200.8	2100.2	2072.8
60°	2155.1	2182.5	2283.1	2447.7	2569.6	2600.1	2557.4	2417.2	2234.3	2121.5	2103.2
62.5°	2185.5	2213.0	2313.6	2493.4	2612.3	2655.0	2587.9	2462.9	2264.8	2155.1	2130.7
65°	2179.4	2209.9	2331.9	2508.6	2661.1	2709.8	2642.8	2459.9	2283.1	2145.9	2127.6
67.5°	2118.5	2145.9	2273.9	2469.0	2636.7	2688.5	2615.3	2426.3	2228.2	2088.0	2066.7
70°	1996.6	2030.1	2155.1	2368.4	2523.9	2548.3	2493.4	2322.7	2115.4	1966.1	1938.6
72.5°	1832.0	1865.5	1993.5	2213.0	2334.9	2377.6	2316.6	2170.3	1960.0	1807.6	1783.2
75°	1636.9	1658.2	1777.1	1984.4	2115.4	2155.1	2109.3	1950.8	1737.5	1615.5	1588.1
77.5°	1408.3	1438.7	1545.4	1719.2	1822.8	1859.4	1816.7	1703.9	1505.8	1402.2	1380.8
80°	1106.5	1143.1	1240.6	1371.7	1481.4	1508.8	1472.3	1350.3	1225.4	1112.6	1088.2
82.5°	798.6	807.8	896.2	990.7	1073.0	1088.2	1060.8	993.7	862.6	786.4	752.9
85°	417.6	429.8	493.8	563.9	615.7	624.9	612.7	539.5	496.9	426.7	399.3
87.5°	94.5	97.5	115.8	128.0	155.5	152.4	161.6	128.0	121.9	100.6	88.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-176-3

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-730-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-730-U-WQ

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-176-3
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 09/27/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-VA-30-730-U-WQ**
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

Spectral Parameters

CCT (K): 2986
 CIE u': 0.2503
 CIE v': 0.5248
 Duv: 0.0022
 CIE x: 0.4413
 CIE y: 0.4112
 CIE z: 0.1476
 Peak Wavelength (nm): 596
 Dominant Wavelength (nm): 582
 Purity: 55.87534
 Rf: 73.2
 Rg: 95.9

CRI (Ra):	71.3		
R1:	68.5	R9:	-25.2
R2:	79.2	R10:	51.0
R3:	88.4	R11:	63.6
R4:	69.4	R12:	39.8
R5:	66.3	R13:	69.9
R6:	70.0	R14:	92.9
R7:	80.1	R15:	61.4
R8:	48.3		



Test Conditions

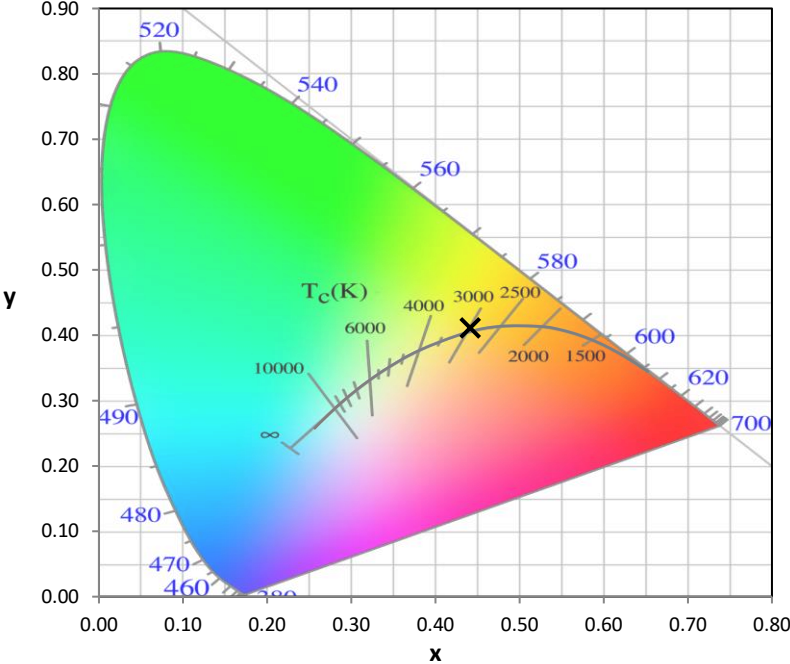
Stabilization Time: 27M
 Operation Time: 1H 27M
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-176-3

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	6/18/2024	12/18/2024
Power Meter	INXT2011004	2/8/2024	2/8/2025
AC Power Source	IN0063	10/24/2023	10/24/2024
DC Power Source	IN0208	10/24/2023	10/24/2024
Sphere Thermometer	IN0085	10/24/2023	10/24/2024
Room Thermometer	IN0046	10/24/2023	10/24/2024

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CIE 1931 Chromaticity Diagram



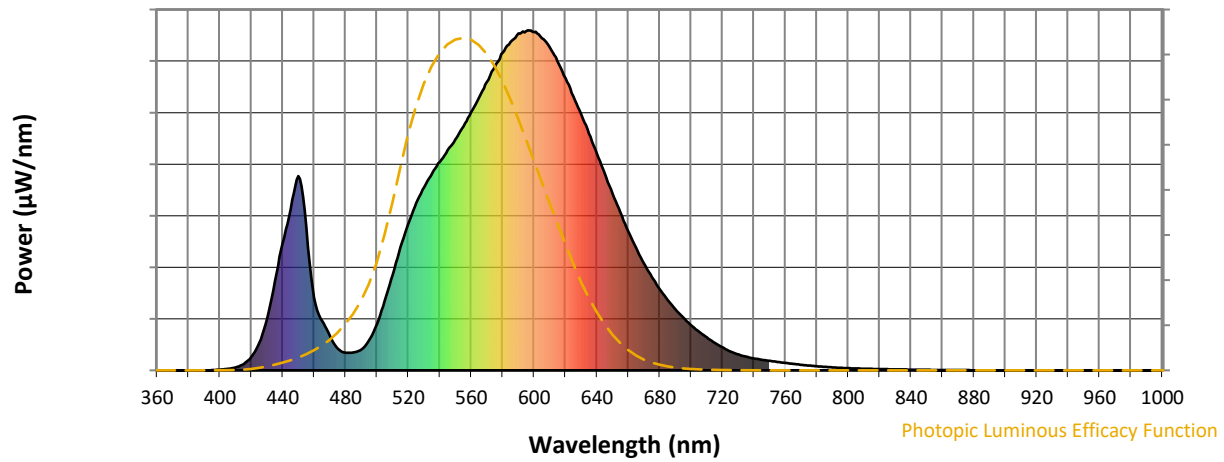
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

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Photopic Flux vs. Wavelength



Photopic Lumens: NR

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.15

λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.01

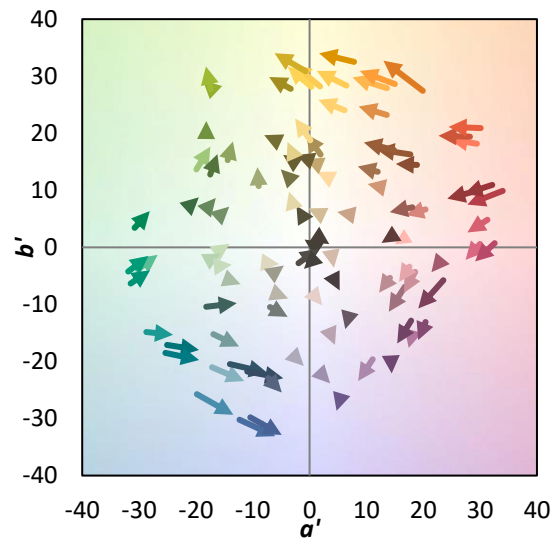
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	61	NR	620	859	NR	750	28	NR	880	0	NR
365	0	NR	495	88	NR	625	807	NR	755	25	NR	885	0	NR
370	0	NR	500	137	NR	630	753	NR	760	22	NR	890	0	NR
375	0	NR	505	205	NR	635	697	NR	765	19	NR	895	0	NR
380	0	NR	510	281	NR	640	637	NR	770	16	NR	900	0	NR
385	0	NR	515	363	NR	645	578	NR	775	14	NR	905	0	NR
390	0	NR	520	432	NR	650	520	NR	780	12	NR	910	0	NR
395	1	NR	525	492	NR	655	463	NR	785	10	NR	915	0	NR
400	2	NR	530	539	NR	660	409	NR	790	9	NR	920	0	NR
405	4	NR	535	579	NR	665	359	NR	795	8	NR	925	0	NR
410	9	NR	540	613	NR	670	315	NR	800	6	NR	930	0	NR
415	18	NR	545	648	NR	675	274	NR	805	6	NR	935	0	NR
420	39	NR	550	680	NR	680	239	NR	810	5	NR	940	0	NR
425	81	NR	555	717	NR	685	207	NR	815	4	NR	945	0	NR
430	151	NR	560	759	NR	690	180	NR	820	4	NR	950	0	NR
435	263	NR	565	803	NR	695	155	NR	825	3	NR	955	0	NR
440	375	NR	570	848	NR	700	133	NR	830	3	NR	960	0	NR
445	474	NR	575	892	NR	705	114	NR	835	3	NR	965	0	NR
450	571	NR	580	933	NR	710	97	NR	840	2	NR	970	0	NR
455	421	NR	585	966	NR	715	81	NR	845	2	NR	975	0	NR
460	214	NR	590	991	NR	720	67	NR	850	2	NR	980	0	NR
465	146	NR	595	998	NR	725	55	NR	855	1	NR	985	0	NR
470	101	NR	600	995	NR	730	47	NR	860	1	NR	990	0	NR
475	64	NR	605	977	NR	735	40	NR	865	1	NR	995	0	NR
480	52	NR	610	949	NR	740	35	NR	870	1	NR	1000	0	NR
485	53	NR	615	908	NR	745	31	NR	875	1	NR			

Summary

$R_f = 73.2$
 $R_g = 95.9$
 $CIE R_a = 71.3$
 $R_g = -25.2$



Color Vector Graphics

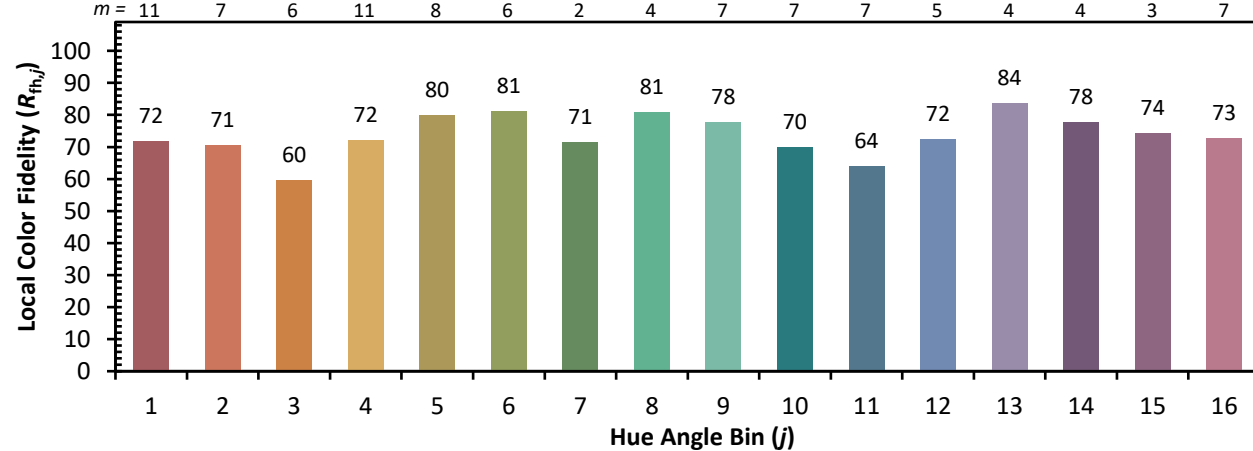
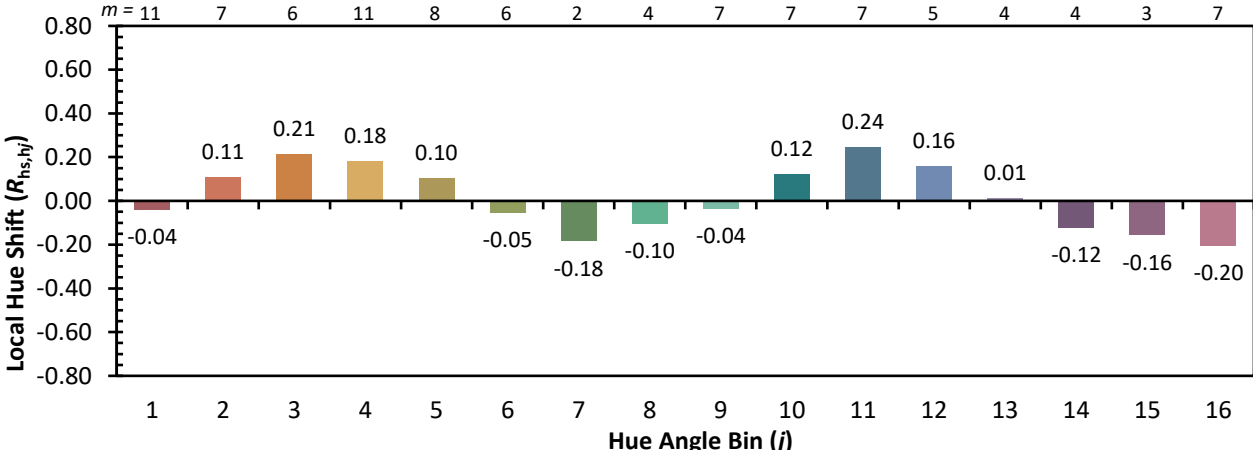
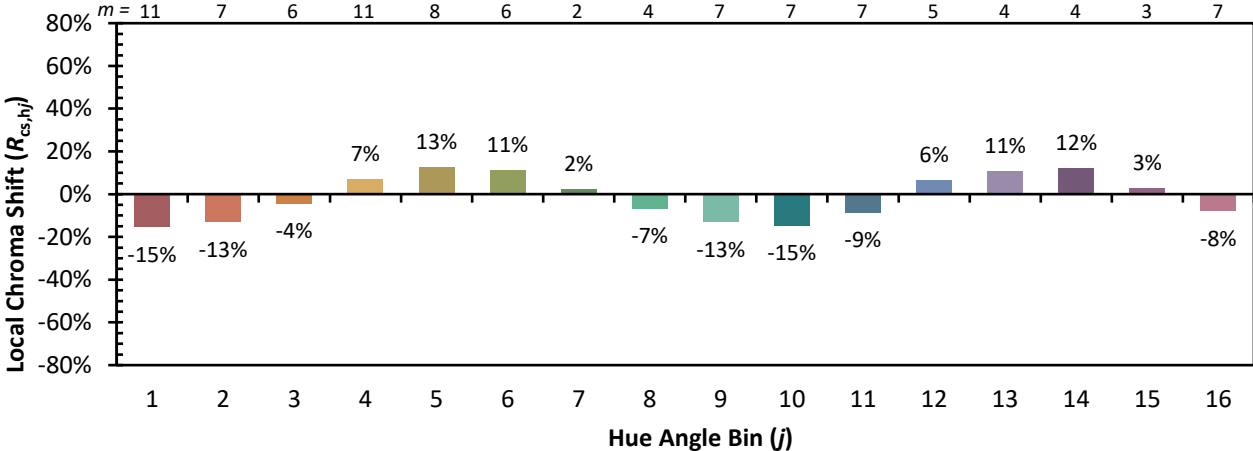


Individual Sample Fidelity Index ($R_{f,i}$)

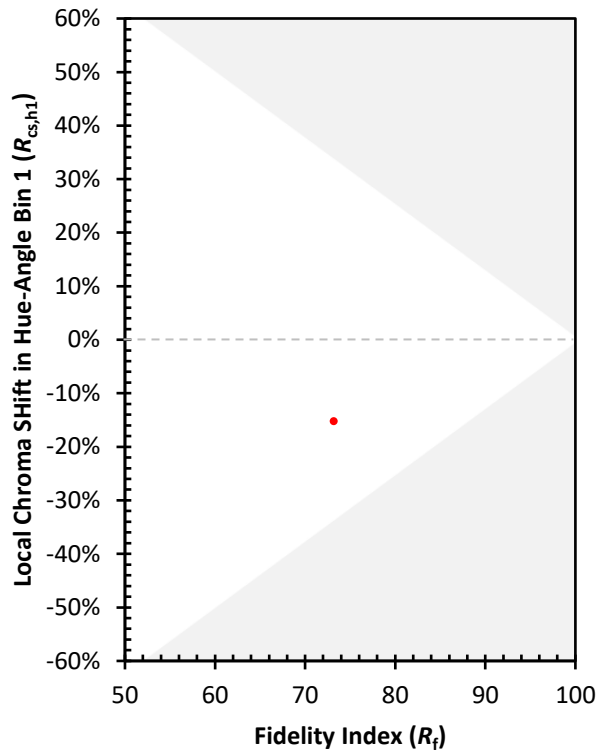
CES01 = 86	CES26 = 61	CES51 = 84	CES76 = 51
CES02 = 62	CES27 = 85	CES52 = 84	CES77 = 74
CES03 = 31	CES28 = 82	CES53 = 73	CES78 = 56
CES04 = 71	CES29 = 59	CES54 = 84	CES79 = 83
CES05 = 49	CES30 = 71	CES55 = 82	CES80 = 81
CES06 = 51	CES31 = 63	CES56 = 70	CES81 = 75
CES07 = 41	CES32 = 57	CES57 = 69	CES82 = 92
CES08 = 40	CES33 = 69	CES58 = 71	CES83 = 88
CES09 = 29	CES34 = 70	CES59 = 85	CES84 = 88
CES10 = 76	CES35 = 84	CES60 = 91	CES85 = 79
CES11 = 59	CES36 = 98	CES61 = 83	CES86 = 67
CES12 = 65	CES37 = 78	CES62 = 87	CES87 = 77
CES13 = 43	CES38 = 79	CES63 = 71	CES88 = 78
CES14 = 74	CES39 = 94	CES64 = 66	CES89 = 68
CES15 = 71	CES40 = 89	CES65 = 64	CES90 = 76
CES16 = 47	CES41 = 87	CES66 = 59	CES91 = 86
CES17 = 50	CES42 = 80	CES67 = 57	CES92 = 63
CES18 = 56	CES43 = 73	CES68 = 66	CES93 = 77
CES19 = 73	CES44 = 99	CES69 = 75	CES94 = 53
CES20 = 66	CES45 = 81	CES70 = 58	CES95 = 70
CES21 = 87	CES46 = 77	CES71 = 54	CES96 = 78
CES22 = 79	CES47 = 77	CES72 = 84	CES97 = 82
CES23 = 92	CES48 = 68	CES73 = 49	CES98 = 75
CES24 = 91	CES49 = 74	CES74 = 98	CES99 = 65
CES25 = 73	CES50 = 83	CES75 = 56	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)