

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: P880155

Luminaire Tested: **EMM2-HTN-VA2-735-U-RW**

Issue Date: 10/01/2024



**Test Information**

Test Method: LM-79-08  
Report Number: P880155  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 10/01/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: EMM2-HTN-VA2-735-U-RW  
Description: EPIC MODERN TALL HOUSING 2W 70CRI 3500K VISUAL COMFORT FIXTURE w/  
RECTANGULAR WIDE DISTRIBUTION OPTIC  
Light Source: (1) 3500K CCT, 70 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

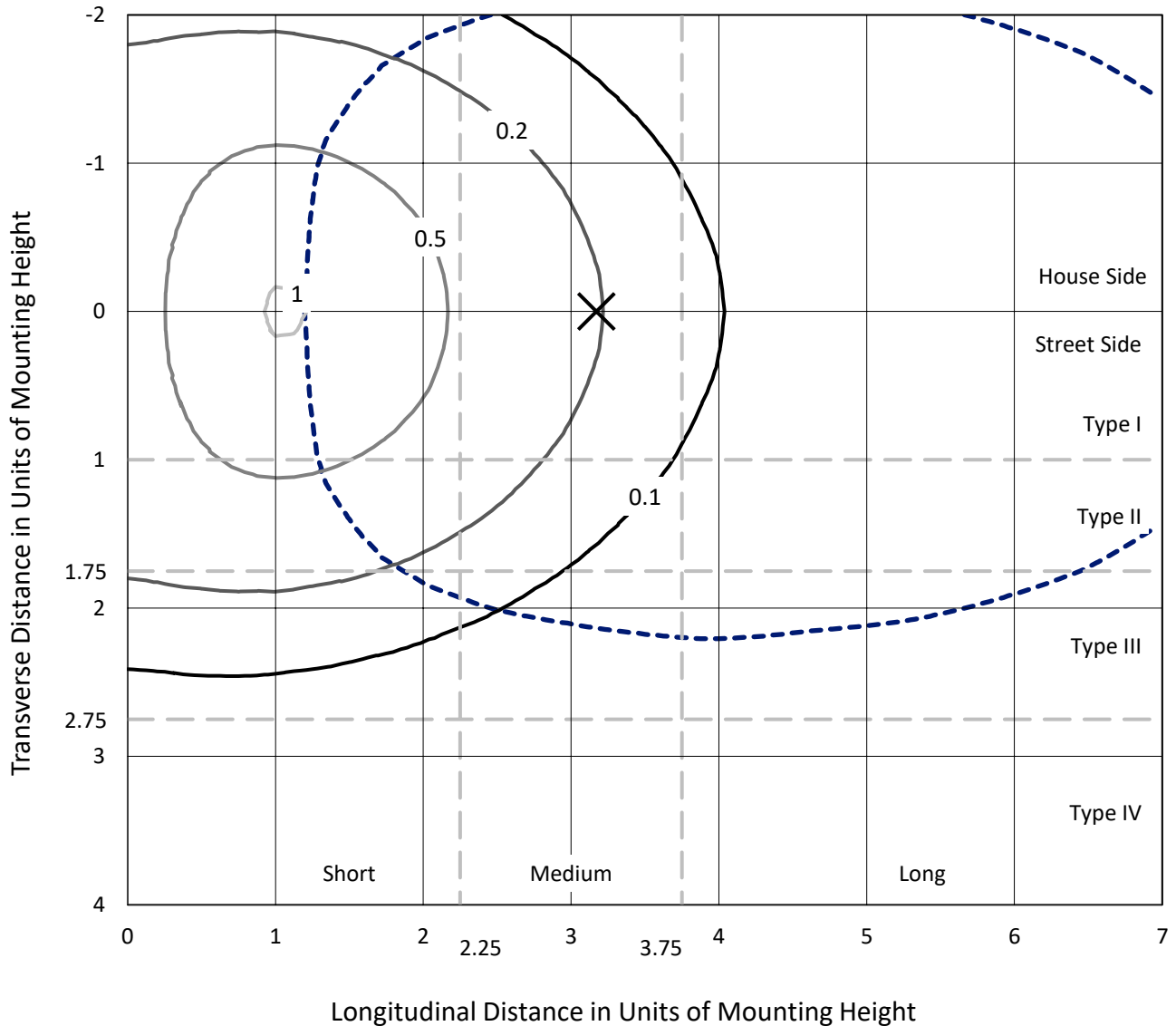
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3240.4 lumens  
Efficiency: N/A  
Efficacy: 83.9 lumens/watt  
Luminous Opening: Circular (Dia: 1.12' x H: 0')  
IES Classification: Type III - Short  
BUG Rating: B2 - U0 - G2  
  
Input Watts (W): 38.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: 0.99  
Total Harmonic Distortion (THDi): 7%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

REPORT NUMBER: P880155  
 CATALOG NUMBER: EMM2-HTN-VA2-735-U-RW

### Iso-Footcandle Lines of Horizontal Illumination

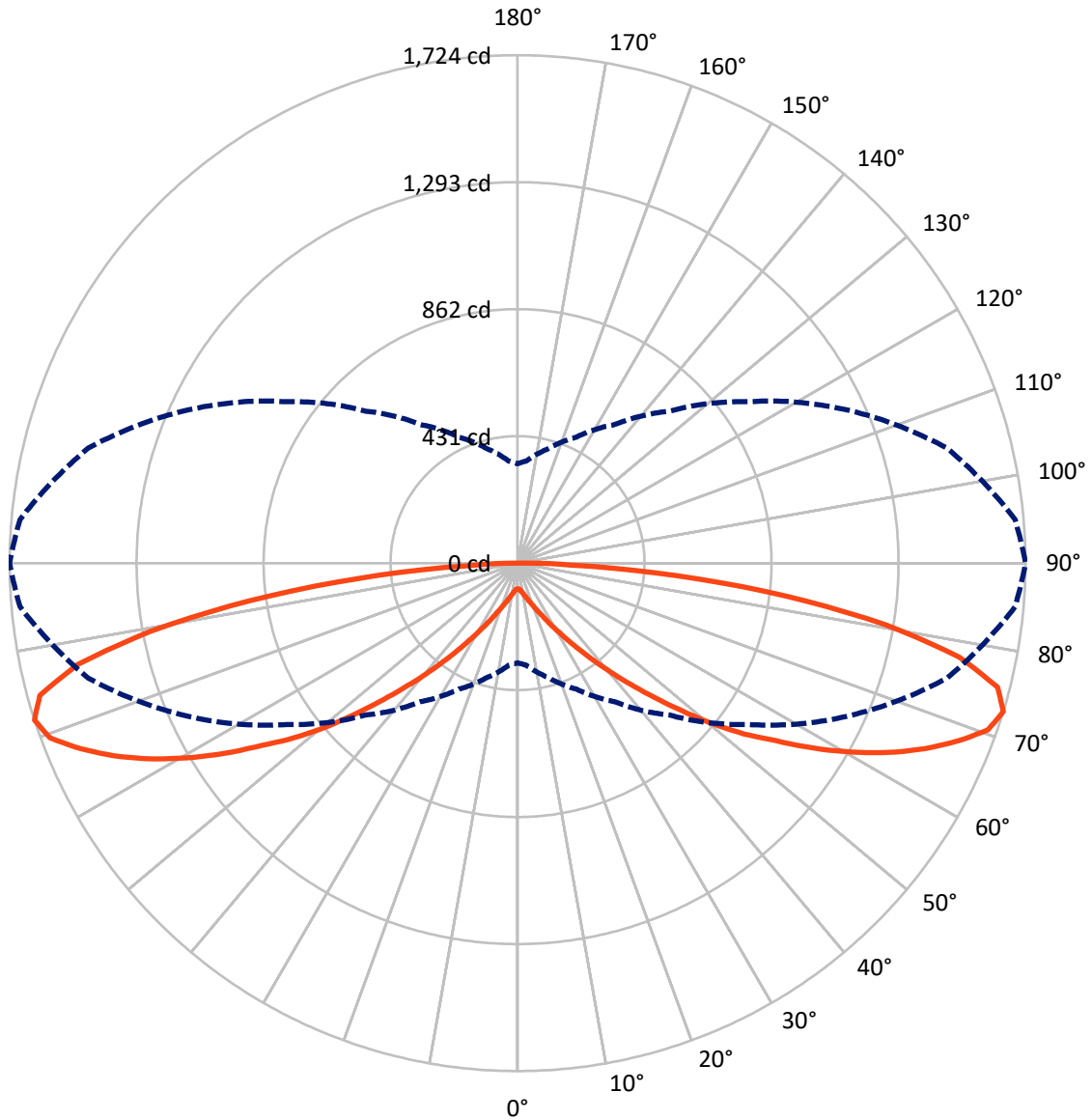
× Max cd  
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 1 fc  
 Type III - Short - N/A

REPORT NUMBER: P880155  
CATALOG NUMBER: EMM2-HTN-VA2-735-U-RW

### Luminous Intensity Polar Plot



— Vertical Plane Through 90-Deg Lateral      - - - Horizontal Cone Through 72.5-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1620.2	0.0	1620.2
	% Fixture	50.0	0.0	50.0
<b>Street Side</b>	Lumens	1620.2	0.0	1620.2
	% Fixture	50.0	0.0	50.0
<b>Total</b>	Lumens	3240.4	0.0	3240.4
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	8.9	0.3
10°-20°	33.2	1.0
20°-30°	76.6	2.4
30°-40°	164.2	5.1
40°-50°	339.1	10.5
50°-60°	622.8	19.2
60°-70°	888.0	27.4
70°-80°	826.0	25.5
80°-90°	281.6	8.7
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°	3240.4	100.0
0°-180°	3240.4	100.0

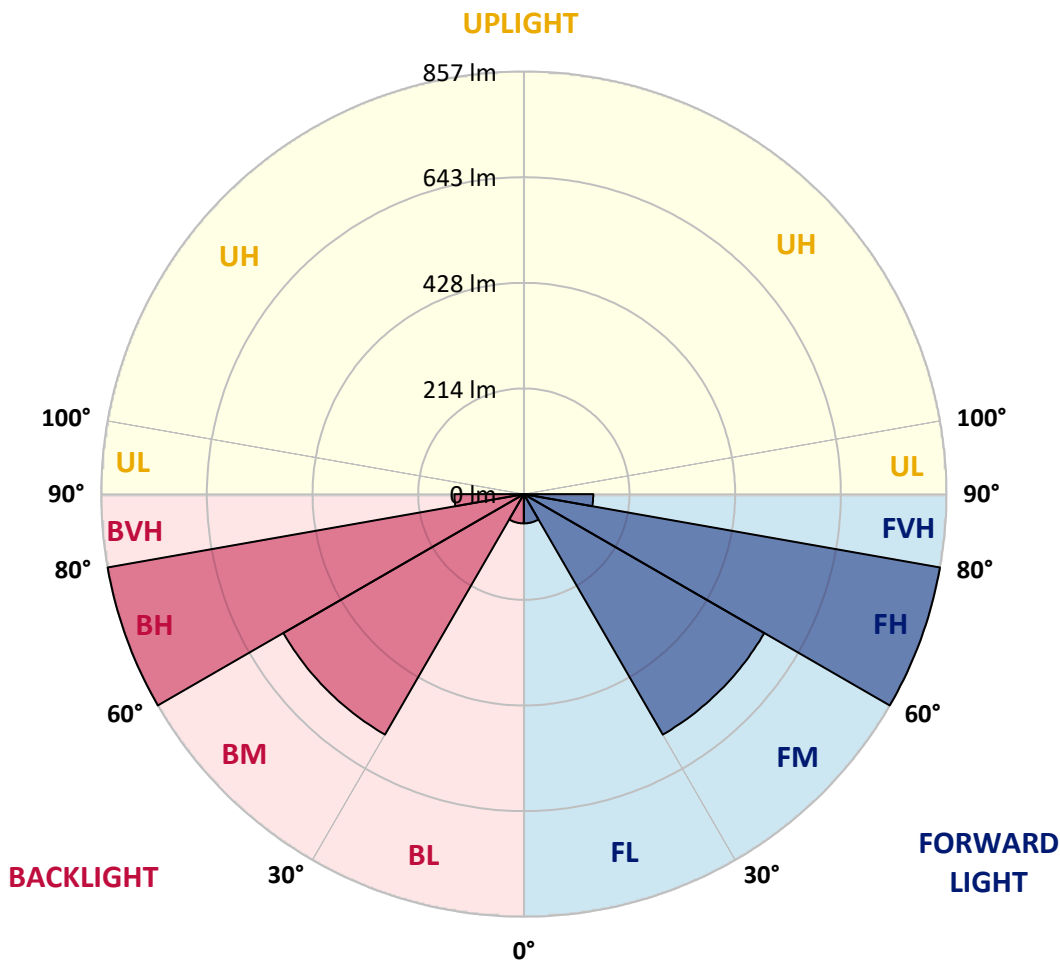


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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	59.4	1.8			
FM (30°-60°)	563.0	17.4			
FH (60°-80°)	857.0	26.4			G1/1800
FVH (80°-90°)	140.8	4.3			G2/225
BL (0°-30°)	59.4	1.8	B0/110		
BM (30°-60°)	563.0	17.4	B1/1000		
BH (60°-80°)	857.0	26.4	B2/1000		G2/1000
BVH (80°-90°)	140.8	4.3			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**  
 Type III Short





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CATALOG NUMBER: EMM2-HTN-VA2-735-U-RW

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2	87.2
2.5°	87.6	87.6	87.6	87.6	88.0	88.0	88.0	88.0	88.0	88.0	88.0
5°	88.9	88.9	88.9	89.3	90.1	90.5	90.9	90.9	91.3	91.3	91.3
7.5°	90.9	90.9	91.3	92.6	93.4	94.6	95.9	96.3	97.5	97.5	97.5
10°	93.8	93.8	94.6	95.9	97.9	100.4	102.4	104.1	104.9	105.3	105.7
12.5°	97.5	97.5	98.7	100.8	104.1	107.0	110.2	112.3	114.4	115.2	115.2
15°	102.0	102.0	103.7	106.5	110.2	114.4	118.9	122.6	125.5	126.7	127.1
17.5°	106.5	107.0	109.0	112.7	117.7	123.0	128.8	133.7	138.2	139.9	140.7
20°	112.3	112.3	114.8	119.7	125.9	133.3	141.1	147.7	153.4	156.7	157.1
22.5°	118.9	119.3	121.8	127.9	135.8	145.2	155.5	164.6	172.8	176.9	176.5
25°	125.5	125.9	129.6	137.0	146.9	160.0	173.2	185.1	196.2	201.2	201.2
27.5°	133.3	133.7	138.2	146.9	160.0	176.5	193.8	211.0	222.1	229.5	232.0
30°	142.7	143.2	148.5	159.6	174.8	195.4	218.4	240.7	255.5	266.2	266.6
32.5°	153.0	153.9	160.4	173.2	192.9	218.9	247.6	275.2	295.8	309.4	308.9
35°	167.0	167.8	176.9	191.3	215.1	246.0	281.0	318.4	342.3	357.9	359.5
37.5°	181.4	183.1	193.3	212.3	241.1	278.1	322.1	364.1	399.4	413.8	418.0
40°	198.3	199.9	212.7	235.7	269.0	316.3	370.6	422.1	462.8	482.5	485.4
42.5°	217.6	220.5	235.3	262.0	304.0	358.7	422.1	485.4	536.8	562.8	561.1
45°	245.2	247.6	266.6	296.6	343.9	406.9	483.8	563.2	618.7	648.7	648.3
47.5°	271.5	274.8	297.4	335.3	390.0	463.2	553.7	644.2	708.0	741.3	747.1
50°	298.7	303.2	332.0	374.4	439.3	529.0	630.6	727.7	805.1	846.2	856.1
52.5°	344.7	348.8	379.3	423.7	493.2	592.4	709.2	818.2	903.8	947.4	963.4
55°	376.0	382.6	421.2	476.8	555.8	660.7	789.0	914.9	1011.6	1054.4	1063.4
57.5°	386.3	393.3	439.8	508.5	606.4	732.7	872.5	1007.5	1112.4	1170.4	1184.8
60°	386.7	395.3	445.5	520.0	631.1	783.3	947.0	1107.0	1225.9	1289.7	1302.0
62.5°	399.9	409.7	463.2	532.7	643.4	806.7	997.6	1191.3	1337.0	1401.6	1415.1
65°	414.7	426.2	483.0	560.3	671.4	831.8	1029.7	1252.2	1436.9	1512.2	1518.8
67.5°	399.4	409.3	469.0	549.2	664.8	836.7	1052.3	1290.1	1497.0	1606.0	1611.4
70°	374.4	384.6	441.4	514.6	628.2	799.3	1026.4	1290.1	1532.4	1669.4	1694.0
72.5°	337.7	348.0	401.9	471.8	573.9	729.0	954.4	1230.8	1508.1	1694.9	1723.7
75°	292.9	302.4	352.1	415.9	505.2	645.4	849.9	1118.1	1413.5	1647.6	1682.1
77.5°	244.4	253.0	295.4	346.8	422.5	547.1	722.4	965.1	1248.1	1487.9	1532.8
80°	192.1	200.8	233.2	273.6	334.4	429.9	575.1	776.3	1021.0	1221.8	1265.8
82.5°	144.0	148.1	171.1	200.3	239.4	310.2	417.1	573.9	756.9	900.9	920.7
85°	90.5	94.2	109.8	130.0	153.4	190.5	257.1	351.3	457.4	538.5	539.7
87.5°	28.0	32.5	37.4	49.4	56.4	67.9	81.5	114.8	151.0	190.5	178.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269



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

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ



**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2407-176-4  
 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-30-735-U-WQ**  
 Description: EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE

**Spectral Parameters**

CCT (K): 3348  
 CIE u': 0.2384  
 CIE v': 0.5184  
 Duv: 0.0030  
 CIE x: 0.4177  
 CIE y: 0.4036  
 CIE z: 0.1787  
 Peak Wavelength (nm): 593  
 Dominant Wavelength (nm): 580  
 Purity: 46.5223  
 Rf: 75.8  
 Rg: 95.8

CRI (Ra):	73.4		
R1:	70.8	R9:	-19.2
R2:	79.9	R10:	52.5
R3:	87.6	R11:	68.0
R4:	72.6	R12:	42.6
R5:	69.3	R13:	72.0
R6:	71.3	R14:	92.6
R7:	82.1	R15:	63.8
R8:	53.3		



**Test Conditions**

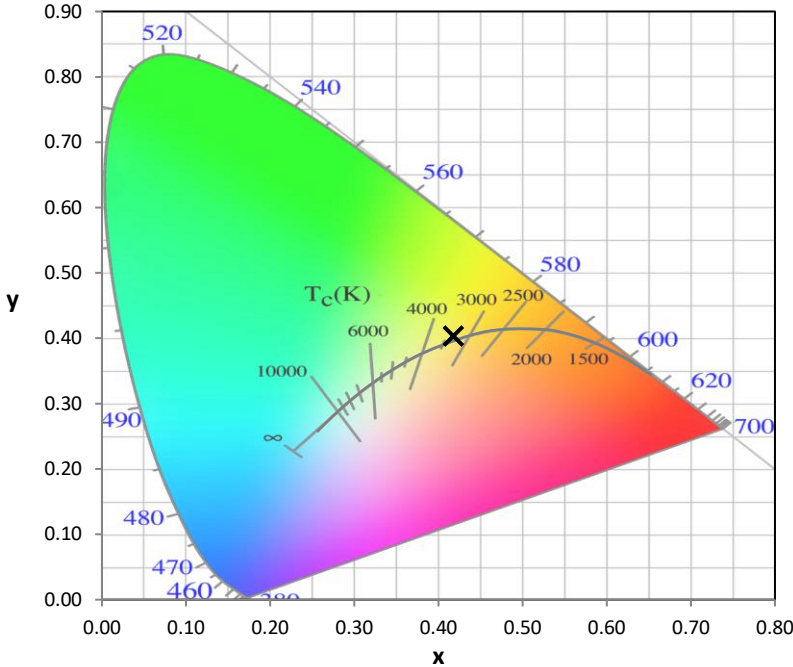
Stabilization Time: 30M  
 Operation Time: 1H 30M  
 Sphere Temperature (°C): 25.2

REPORT NUMBER: SP1-2407-176-4

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 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

**Scotopic Flux vs. Wavelength**



**Scotopic Lumens: NR**

**S/P: 1.31**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

REPORT NUMBER: SP1-2407-176-4

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

**M/P: 2.4**

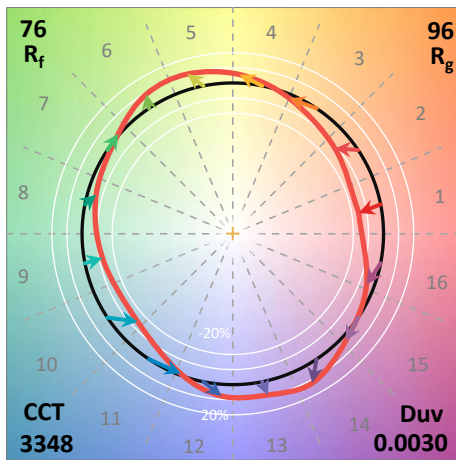
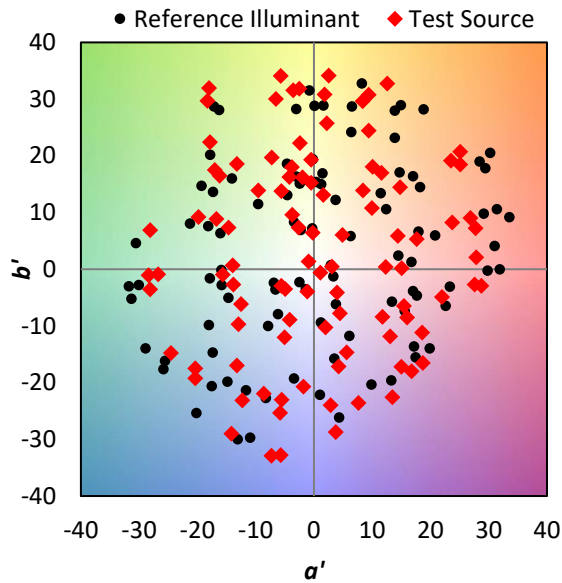
λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	110	NR	620	844	NR	750	28	NR	880	0	NR
365	0	NR	495	150	NR	625	792	NR	755	25	NR	885	0	NR
370	0	NR	500	214	NR	630	737	NR	760	22	NR	890	0	NR
375	0	NR	505	293	NR	635	683	NR	765	19	NR	895	0	NR
380	0	NR	510	376	NR	640	625	NR	770	16	NR	900	0	NR
385	0	NR	515	458	NR	645	566	NR	775	14	NR	905	0	NR
390	0	NR	520	526	NR	650	509	NR	780	12	NR	910	0	NR
395	1	NR	525	584	NR	655	453	NR	785	10	NR	915	0	NR
400	3	NR	530	631	NR	660	401	NR	790	9	NR	920	0	NR
405	5	NR	535	671	NR	665	353	NR	795	8	NR	925	0	NR
410	10	NR	540	704	NR	670	308	NR	800	7	NR	930	0	NR
415	21	NR	545	737	NR	675	269	NR	805	6	NR	935	0	NR
420	44	NR	550	766	NR	680	235	NR	810	5	NR	940	0	NR
425	90	NR	555	797	NR	685	204	NR	815	4	NR	945	0	NR
430	171	NR	560	832	NR	690	177	NR	820	4	NR	950	0	NR
435	305	NR	565	866	NR	695	152	NR	825	3	NR	955	0	NR
440	455	NR	570	901	NR	700	131	NR	830	3	NR	960	0	NR
445	615	NR	575	933	NR	705	112	NR	835	3	NR	965	0	NR
450	771	NR	580	963	NR	710	96	NR	840	2	NR	970	0	NR
455	579	NR	585	984	NR	715	80	NR	845	2	NR	975	0	NR
460	313	NR	590	1000	NR	720	67	NR	850	2	NR	980	0	NR
465	221	NR	595	999	NR	725	55	NR	855	1	NR	985	0	NR
470	156	NR	600	990	NR	730	46	NR	860	1	NR	990	0	NR
475	103	NR	605	968	NR	735	40	NR	865	1	NR	995	0	NR
480	89	NR	610	937	NR	740	35	NR	870	1	NR	1000	0	NR
485	93	NR	615	893	NR	745	31	NR	875	1	NR			

**Summary**

$R_f = 75.8$   
 $R_g = 95.8$   
 $CIE R_a = 73.4$   
 $R_9 = -19.2$



**Color Vector Graphics**



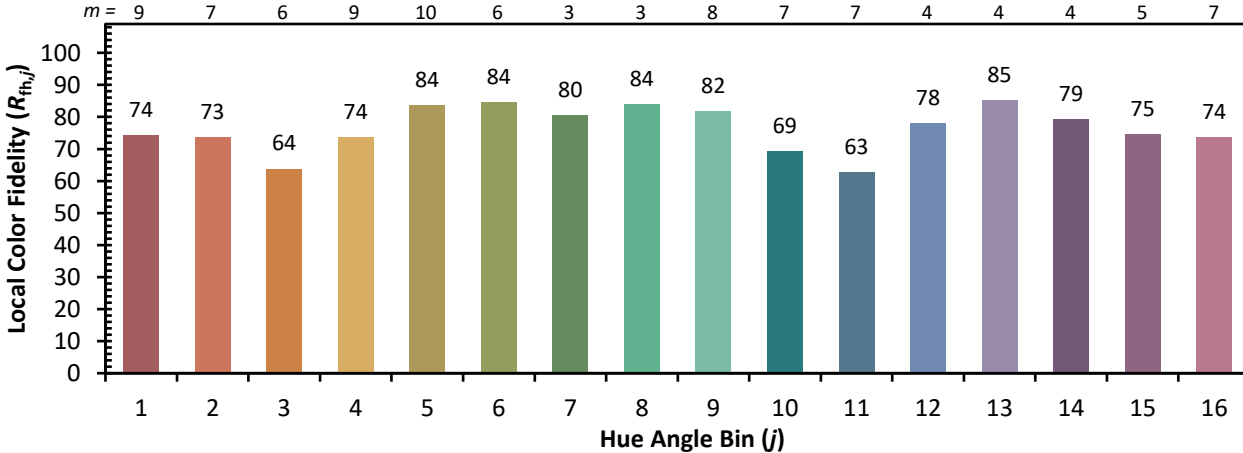
**Individual Sample Fidelity Index ( $R_{f,i}$ )**

CES01 = 86	CES26 = 65	CES51 = 88	CES76 = 55
CES02 = 62	CES27 = 88	CES52 = 87	CES77 = 74
CES03 = 31	CES28 = 83	CES53 = 77	CES78 = 58
CES04 = 70	CES29 = 66	CES54 = 86	CES79 = 84
CES05 = 48	CES30 = 79	CES55 = 84	CES80 = 81
CES06 = 51	CES31 = 69	CES56 = 74	CES81 = 78
CES07 = 41	CES32 = 62	CES57 = 73	CES82 = 92
CES08 = 40	CES33 = 75	CES58 = 75	CES83 = 89
CES09 = 29	CES34 = 73	CES59 = 87	CES84 = 88
CES10 = 75	CES35 = 85	CES60 = 91	CES85 = 79
CES11 = 58	CES36 = 95	CES61 = 84	CES86 = 71
CES12 = 64	CES37 = 80	CES62 = 88	CES87 = 79
CES13 = 43	CES38 = 88	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 69	CES89 = 71
CES15 = 71	CES40 = 91	CES65 = 66	CES90 = 80
CES16 = 47	CES41 = 91	CES66 = 62	CES91 = 81
CES17 = 50	CES42 = 81	CES67 = 60	CES92 = 63
CES18 = 56	CES43 = 77	CES68 = 68	CES93 = 78
CES19 = 72	CES44 = 99	CES69 = 76	CES94 = 56
CES20 = 65	CES45 = 85	CES70 = 60	CES95 = 70
CES21 = 87	CES46 = 82	CES71 = 55	CES96 = 79
CES22 = 79	CES47 = 83	CES72 = 85	CES97 = 84
CES23 = 92	CES48 = 75	CES73 = 52	CES98 = 77
CES24 = 91	CES49 = 79	CES74 = 96	CES99 = 68
CES25 = 72	CES50 = 87	CES75 = 57	





Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)