

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: P868739

Luminaire Tested: **EMM2-HTN-SA1A-730-U-T5W**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868739
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-SA1A-730-U-T5W
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 40W 70CRI 3000K
FITXURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source: (10) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

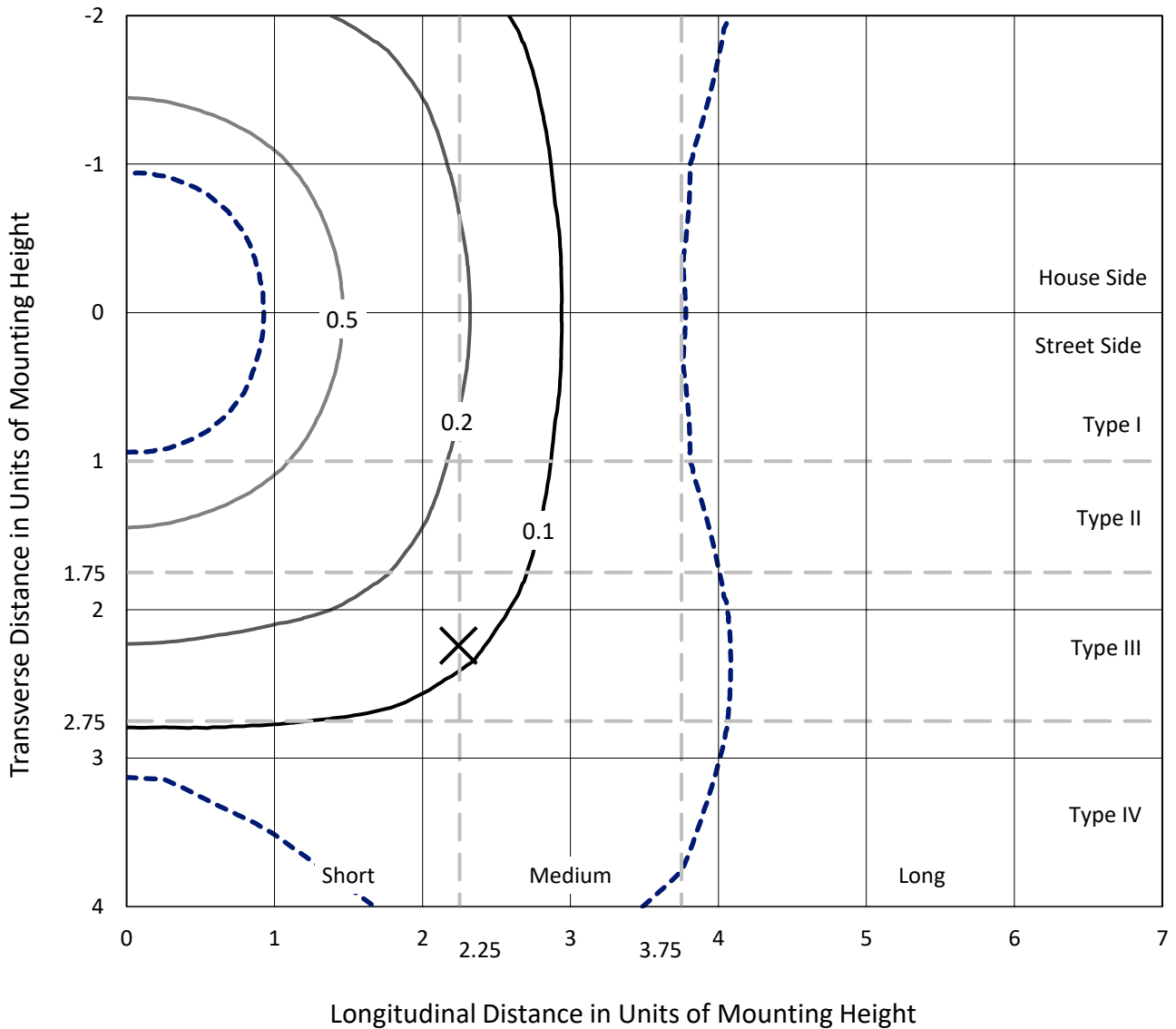
Lumens per Lamp: N/A
Luminaire Lumens: 4827.7 lumens
Efficiency: N/A
Efficacy: 147.2 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G1

Input Watts (W): 32.8
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.76%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P868739
 CATALOG NUMBER: EMM2-HTN-SA1A-730-U-T5W

Iso-Footcandle Lines of Horizontal Illumination

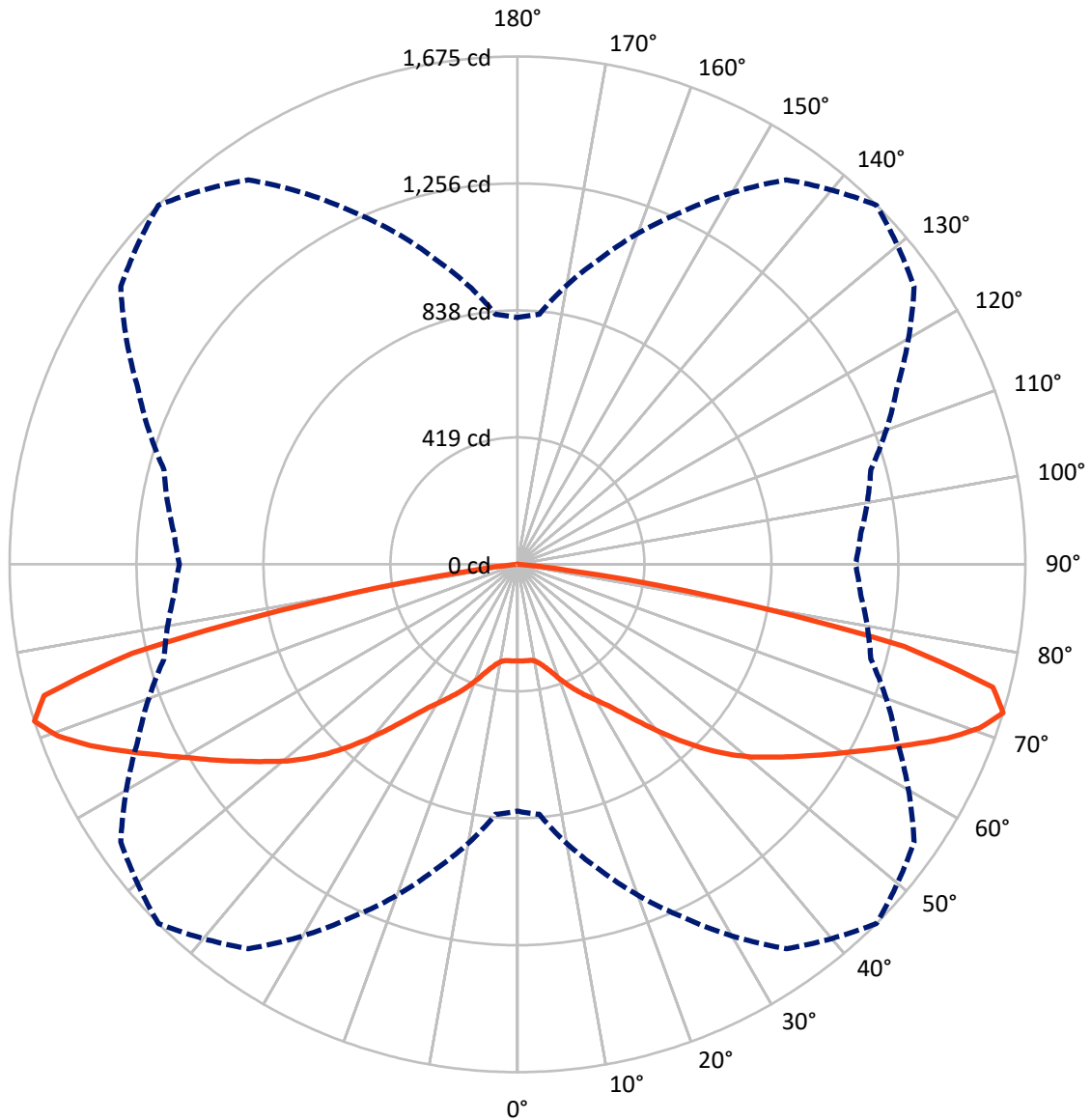
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 0.9 fc
 Type V - Short - N/A

REPORT NUMBER: P868739
CATALOG NUMBER: EMM2-HTN-SA1A-730-U-T5W

Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

REPORT NUMBER: P868739
 CATALOG NUMBER: EMM2-HTN-SA1A-730-U-T5W

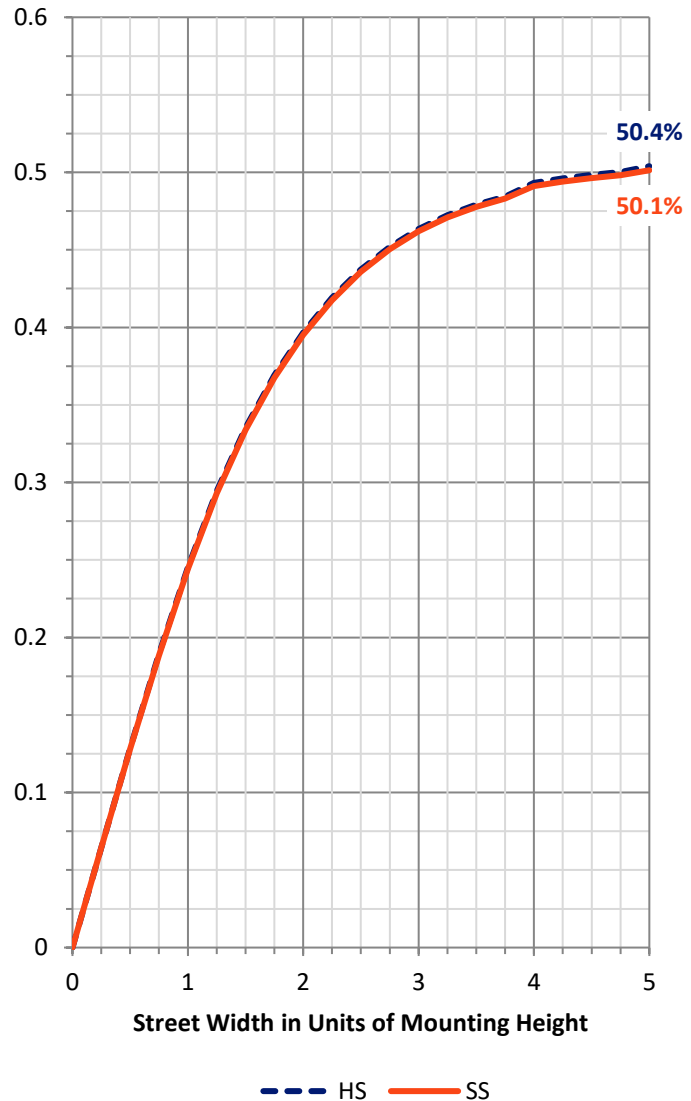
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2413.8	0.0	2413.8
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2413.8	0.0	2413.8
	% Fixture	50.0	0.0	50.0
Total	Lumens	4827.7	0.0	4827.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.5	0.6
10°-20°	101.9	2.1
20°-30°	210.3	4.4
30°-40°	387.2	8.0
40°-50°	680.9	14.1
50°-60°	987.5	20.5
60°-70°	1287.3	26.7
70°-80°	1070.1	22.2
80°-90°	71.8	1.5
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°	4827.7	100.0
0°-180°	4827.7	100.0



REPORT NUMBER: P868739

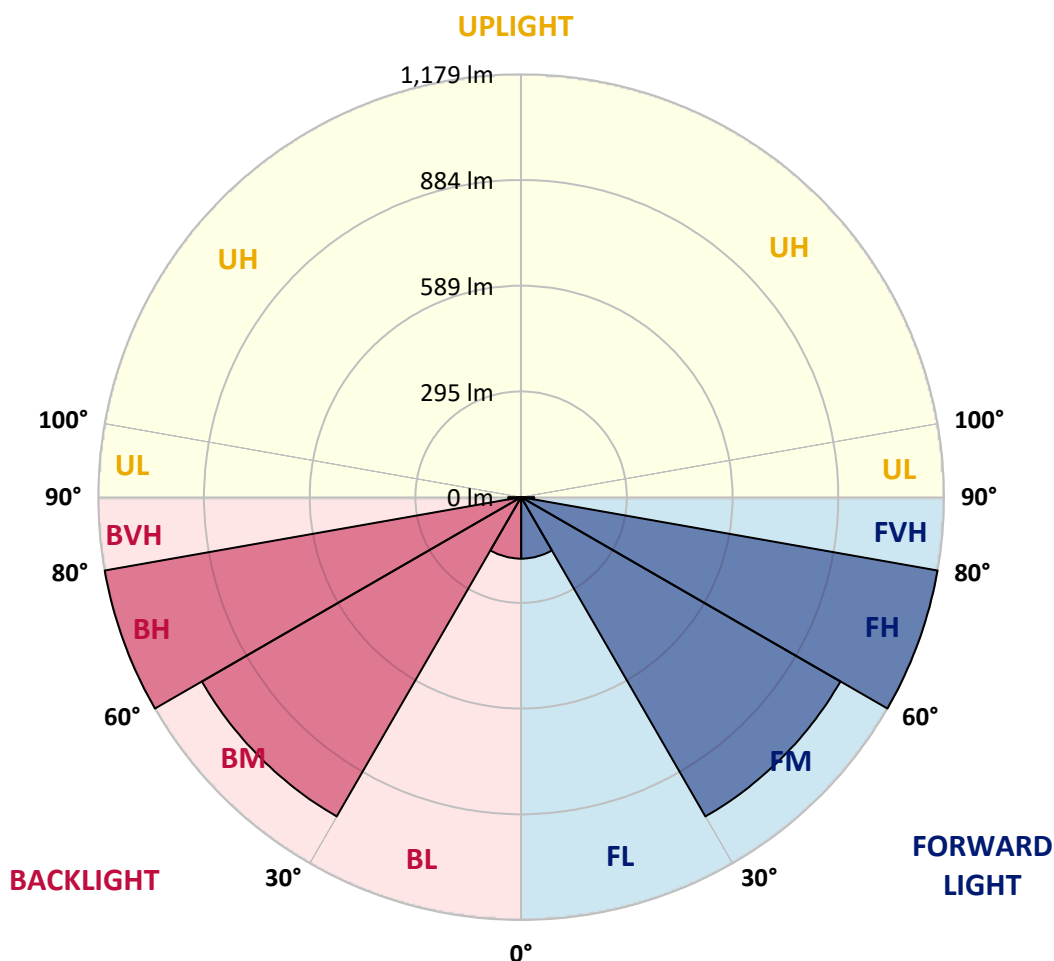
CATALOG NUMBER: EMM2-HTN-SA1A-730-U-T5W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	171.4	3.6			
FM	(30°-60°)	1027.8	21.3			
FH	(60°-80°)	1178.7	24.4			G1/1800
FVH	(80°-90°)	35.9	0.7			G1/100
BL	(0°-30°)	171.4	3.6	B1/500		
BM	(30°-60°)	1027.8	21.3	B2/2500		
BH	(60°-80°)	1178.7	24.4	B3/2500		G1/1800
BVH	(80°-90°)	35.9	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G1

Type V Short





REPORT NUMBER: P868739

CATALOG NUMBER: EMM2-HTN-SA1A-730-U-T5W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	318.7	318.7	318.7	318.7	318.7	318.7	318.7	318.7	318.7	318.7	318.7
2.5°	317.7	318.2	318.2	318.2	318.7	319.2	319.7	320.2	321.2	321.7	321.7
5°	319.2	318.7	318.2	319.2	319.2	319.2	319.7	320.2	320.2	320.2	320.7
7.5°	317.7	318.2	317.7	317.7	319.2	319.7	319.2	318.7	318.7	319.2	319.2
10°	323.2	322.7	322.2	322.2	323.7	324.2	323.7	323.2	323.2	324.2	324.2
12.5°	335.7	336.7	333.7	333.7	335.7	336.7	335.2	334.7	335.2	336.2	336.2
15°	355.2	354.7	352.7	350.7	352.7	354.2	352.2	351.2	351.7	354.2	352.2
17.5°	376.8	377.3	375.3	373.2	374.8	376.8	373.7	371.2	371.7	372.7	371.7
20°	400.8	400.3	399.8	399.8	402.8	405.3	400.8	394.8	393.3	392.3	392.3
22.5°	418.3	419.8	420.3	424.8	431.8	434.3	428.3	420.3	414.3	411.3	409.3
25°	445.8	444.3	443.3	448.3	458.8	463.3	455.8	444.8	438.8	438.3	439.8
27.5°	470.8	470.8	472.8	477.8	487.8	492.3	485.8	474.8	471.8	471.8	470.3
30°	503.3	501.8	503.8	512.3	519.8	522.8	517.3	509.8	507.3	507.3	504.8
32.5°	541.4	541.9	544.9	550.4	557.9	558.4	556.4	552.9	551.4	549.9	552.4
35°	599.4	599.4	598.4	602.4	604.4	605.4	606.4	604.9	604.9	604.9	602.9
37.5°	671.4	667.4	666.9	663.4	660.9	663.4	667.9	673.0	677.0	674.5	673.5
40°	743.0	741.0	735.0	729.5	727.5	728.5	734.0	744.5	749.0	749.0	753.0
42.5°	820.0	816.0	808.5	802.0	796.5	798.0	803.0	816.0	826.1	830.6	828.6
45°	889.1	885.6	878.1	872.1	868.1	867.6	874.1	882.6	896.1	900.1	903.1
47.5°	948.1	945.6	939.1	933.1	934.6	935.1	937.1	944.6	955.6	961.1	960.6
50°	996.2	994.2	988.2	990.7	994.7	998.7	996.2	1001.2	1008.2	1010.7	1012.7
52.5°	1040.2	1037.2	1033.2	1037.7	1048.2	1056.2	1057.7	1054.2	1056.2	1057.7	1056.2
55°	1083.7	1080.2	1079.2	1087.2	1103.2	1118.2	1116.7	1106.7	1104.2	1101.2	1099.7
57.5°	1119.2	1116.7	1120.7	1134.3	1165.3	1185.3	1178.8	1155.8	1145.8	1138.8	1136.8
60°	1141.8	1141.3	1150.3	1181.8	1228.8	1256.8	1246.3	1206.8	1184.3	1177.8	1174.8
62.5°	1153.8	1154.3	1170.3	1226.3	1301.4	1339.4	1320.9	1260.3	1225.3	1218.8	1219.8
65°	1164.8	1163.3	1184.3	1263.8	1379.9	1431.5	1406.4	1324.9	1273.9	1260.8	1260.8
67.5°	1172.8	1174.3	1205.8	1301.4	1456.5	1530.0	1493.5	1393.4	1325.9	1306.4	1303.9
70°	1071.7	1086.2	1184.8	1326.4	1517.0	1617.1	1569.0	1435.5	1327.9	1272.4	1266.8
72.5°	814.0	827.6	1040.7	1281.9	1548.0	1675.1	1597.1	1381.9	1206.8	1136.3	1115.2
75°	536.9	546.4	775.5	1119.7	1462.0	1620.1	1454.5	1190.3	950.1	858.6	864.1
77.5°	239.2	269.7	494.3	873.6	1204.3	1303.9	1109.2	812.0	580.4	491.3	481.8
80°	100.1	109.6	186.6	465.8	698.0	667.9	472.3	272.2	173.1	134.6	130.1
82.5°	29.0	30.0	37.0	80.6	142.1	167.1	100.6	51.0	48.5	38.5	35.5
85°	2.0	2.0	3.0	5.0	7.0	11.5	13.0	15.0	17.0	14.5	14.5
87.5°	1.0	1.0	1.0	1.5	1.5	2.0	1.5	1.5	1.5	1.5	1.5
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: SP1-2407-157-4

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-730-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-730-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/20/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-SA-40-730-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3057
 CIE u': 0.2487
 CIE v': 0.5199
 Duv: -0.0002
 CIE x: 0.4326
 CIE y: 0.4020
 CIE z: 0.1654
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 50.50735
 Rf: 74.6
 Rg: 94

CRI (Ra):	71.7		
R1:	68.1	R9:	-34.8
R2:	82.0	R10:	58.5
R3:	93.5	R11:	62.5
R4:	67.5	R12:	47.5
R5:	67.2	R13:	70.7
R6:	74.9	R14:	96.4
R7:	77.4	R15:	60.0
R8:	43.1		



Test Conditions

Stabilization Time: 21M
 Operation Time: 1H 21M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-4

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

REPORT NUMBER: SP1-2407-157-4

CIE 1931 Chromaticity Diagram



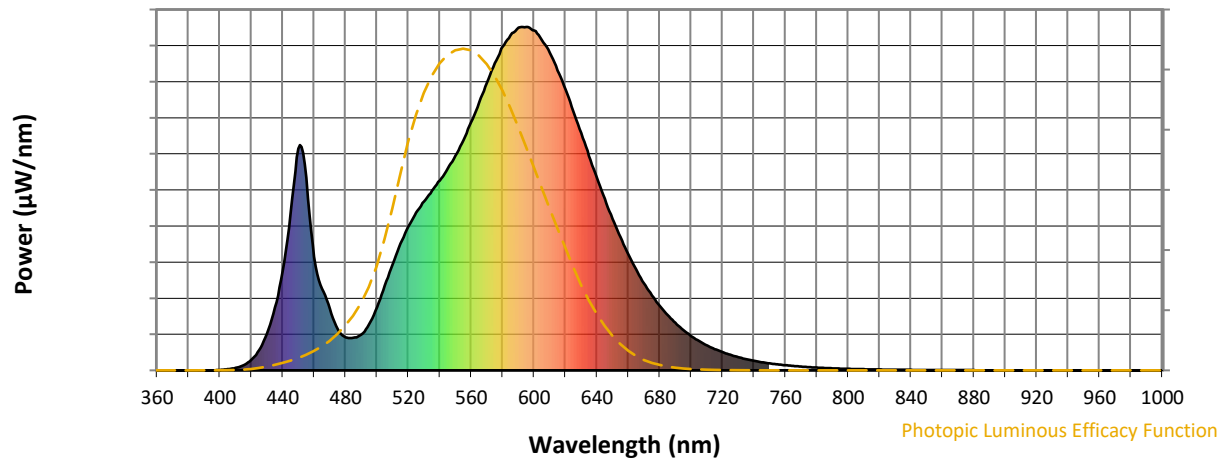
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-4

Photopic Flux vs. Wavelength

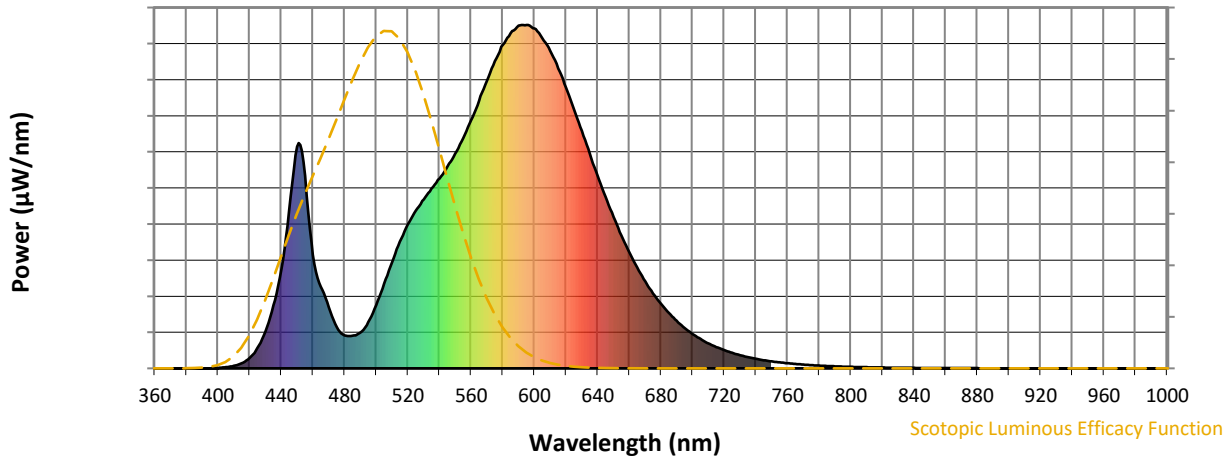


Photopic Lumens: NR

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	104	NR	620	818	NR	750	20	NR	880	1	NR
365	0	NR	495	135	NR	625	755	NR	755	17	NR	885	0	NR
370	0	NR	500	184	NR	630	691	NR	760	15	NR	890	0	NR
375	0	NR	505	247	NR	635	625	NR	765	13	NR	895	0	NR
380	0	NR	510	309	NR	640	561	NR	770	11	NR	900	0	NR
385	0	NR	515	369	NR	645	499	NR	775	9	NR	905	0	NR
390	0	NR	520	419	NR	650	441	NR	780	8	NR	910	0	NR
395	0	NR	525	460	NR	655	388	NR	785	7	NR	915	0	NR
400	1	NR	530	492	NR	660	338	NR	790	6	NR	920	0	NR
405	3	NR	535	524	NR	665	294	NR	795	5	NR	925	0	NR
410	7	NR	540	553	NR	670	253	NR	800	4	NR	930	0	NR
415	15	NR	545	588	NR	675	218	NR	805	4	NR	935	0	NR
420	31	NR	550	625	NR	680	188	NR	810	3	NR	940	0	NR
425	60	NR	555	670	NR	685	161	NR	815	3	NR	945	0	NR
430	107	NR	560	723	NR	690	139	NR	820	3	NR	950	0	NR
435	183	NR	565	780	NR	695	118	NR	825	2	NR	955	0	NR
440	289	NR	570	837	NR	700	100	NR	830	2	NR	960	0	NR
445	460	NR	575	894	NR	705	85	NR	835	2	NR	965	0	NR
450	646	NR	580	942	NR	710	73	NR	840	1	NR	970	0	NR
455	561	NR	585	976	NR	715	62	NR	845	1	NR	975	0	NR
460	331	NR	590	998	NR	720	53	NR	850	1	NR	980	0	NR
465	238	NR	595	1000	NR	725	45	NR	855	1	NR	985	0	NR
470	178	NR	600	990	NR	730	39	NR	860	1	NR	990	0	NR
475	120	NR	605	962	NR	735	33	NR	865	1	NR	995	0	NR
480	96	NR	610	925	NR	740	28	NR	870	1	NR	1000	0	NR
485	95	NR	615	873	NR	745	24	NR	875	1	NR			

REPORT NUMBER: SP1-2407-157-4

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.23

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	104	NR	620	818	NR	750	20	NR	880	1	NR
365	0	NR	495	135	NR	625	755	NR	755	17	NR	885	0	NR
370	0	NR	500	184	NR	630	691	NR	760	15	NR	890	0	NR
375	0	NR	505	247	NR	635	625	NR	765	13	NR	895	0	NR
380	0	NR	510	309	NR	640	561	NR	770	11	NR	900	0	NR
385	0	NR	515	369	NR	645	499	NR	775	9	NR	905	0	NR
390	0	NR	520	419	NR	650	441	NR	780	8	NR	910	0	NR
395	0	NR	525	460	NR	655	388	NR	785	7	NR	915	0	NR
400	1	NR	530	492	NR	660	338	NR	790	6	NR	920	0	NR
405	3	NR	535	524	NR	665	294	NR	795	5	NR	925	0	NR
410	7	NR	540	553	NR	670	253	NR	800	4	NR	930	0	NR
415	15	NR	545	588	NR	675	218	NR	805	4	NR	935	0	NR
420	31	NR	550	625	NR	680	188	NR	810	3	NR	940	0	NR
425	60	NR	555	670	NR	685	161	NR	815	3	NR	945	0	NR
430	107	NR	560	723	NR	690	139	NR	820	3	NR	950	0	NR
435	183	NR	565	780	NR	695	118	NR	825	2	NR	955	0	NR
440	289	NR	570	837	NR	700	100	NR	830	2	NR	960	0	NR
445	460	NR	575	894	NR	705	85	NR	835	2	NR	965	0	NR
450	646	NR	580	942	NR	710	73	NR	840	1	NR	970	0	NR
455	561	NR	585	976	NR	715	62	NR	845	1	NR	975	0	NR
460	331	NR	590	998	NR	720	53	NR	850	1	NR	980	0	NR
465	238	NR	595	1000	NR	725	45	NR	855	1	NR	985	0	NR
470	178	NR	600	990	NR	730	39	NR	860	1	NR	990	0	NR
475	120	NR	605	962	NR	735	33	NR	865	1	NR	995	0	NR
480	96	NR	610	925	NR	740	28	NR	870	1	NR	1000	0	NR
485	95	NR	615	873	NR	745	24	NR	875	1	NR			

REPORT NUMBER: SP1-2407-157-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.27

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	104	NR	620	818	NR	750	20	NR	880	1	NR
365	0	NR	495	135	NR	625	755	NR	755	17	NR	885	0	NR
370	0	NR	500	184	NR	630	691	NR	760	15	NR	890	0	NR
375	0	NR	505	247	NR	635	625	NR	765	13	NR	895	0	NR
380	0	NR	510	309	NR	640	561	NR	770	11	NR	900	0	NR
385	0	NR	515	369	NR	645	499	NR	775	9	NR	905	0	NR
390	0	NR	520	419	NR	650	441	NR	780	8	NR	910	0	NR
395	0	NR	525	460	NR	655	388	NR	785	7	NR	915	0	NR
400	1	NR	530	492	NR	660	338	NR	790	6	NR	920	0	NR
405	3	NR	535	524	NR	665	294	NR	795	5	NR	925	0	NR
410	7	NR	540	553	NR	670	253	NR	800	4	NR	930	0	NR
415	15	NR	545	588	NR	675	218	NR	805	4	NR	935	0	NR
420	31	NR	550	625	NR	680	188	NR	810	3	NR	940	0	NR
425	60	NR	555	670	NR	685	161	NR	815	3	NR	945	0	NR
430	107	NR	560	723	NR	690	139	NR	820	3	NR	950	0	NR
435	183	NR	565	780	NR	695	118	NR	825	2	NR	955	0	NR
440	289	NR	570	837	NR	700	100	NR	830	2	NR	960	0	NR
445	460	NR	575	894	NR	705	85	NR	835	2	NR	965	0	NR
450	646	NR	580	942	NR	710	73	NR	840	1	NR	970	0	NR
455	561	NR	585	976	NR	715	62	NR	845	1	NR	975	0	NR
460	331	NR	590	998	NR	720	53	NR	850	1	NR	980	0	NR
465	238	NR	595	1000	NR	725	45	NR	855	1	NR	985	0	NR
470	178	NR	600	990	NR	730	39	NR	860	1	NR	990	0	NR
475	120	NR	605	962	NR	735	33	NR	865	1	NR	995	0	NR
480	96	NR	610	925	NR	740	28	NR	870	1	NR	1000	0	NR
485	95	NR	615	873	NR	745	24	NR	875	1	NR			

Summary

$R_f = 74.6$
 $R_g = 94$
 $CIE R_a = 71.7$
 $R_9 = -34.8$

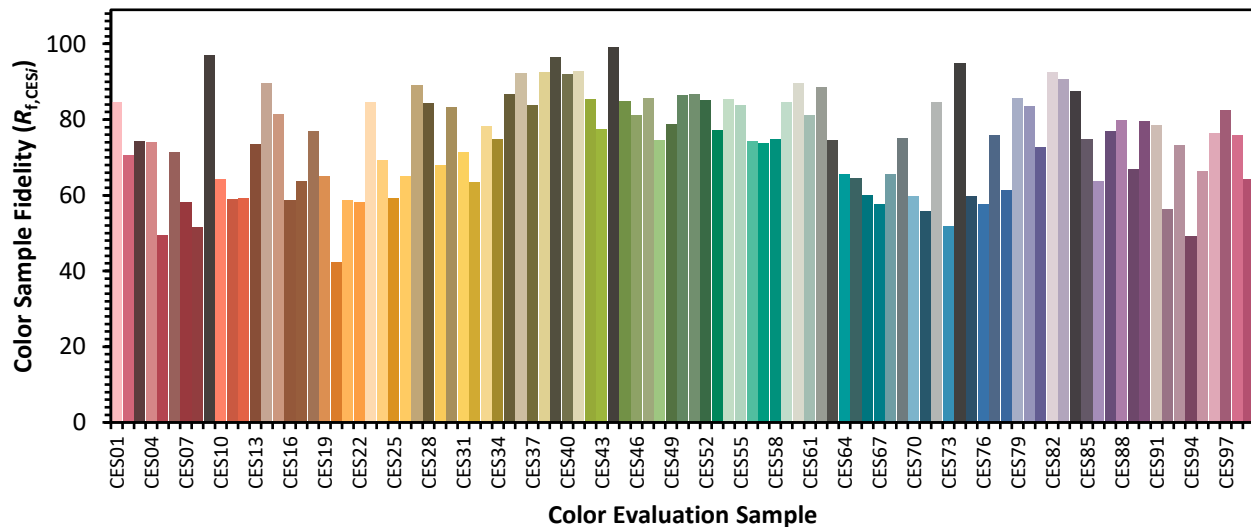


Color Vector Graphics

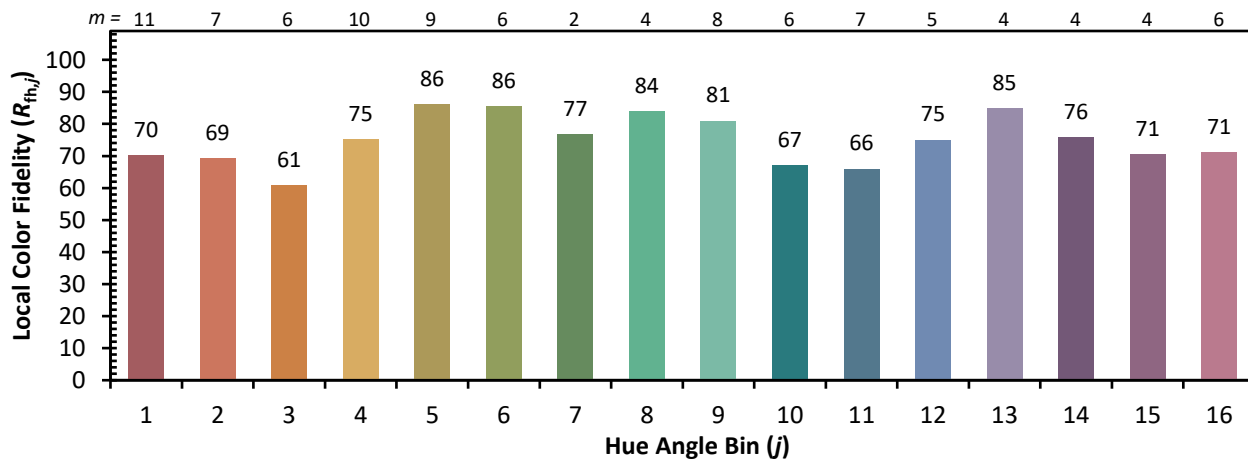


Individual Sample Fidelity Index ($R_{f,i}$)

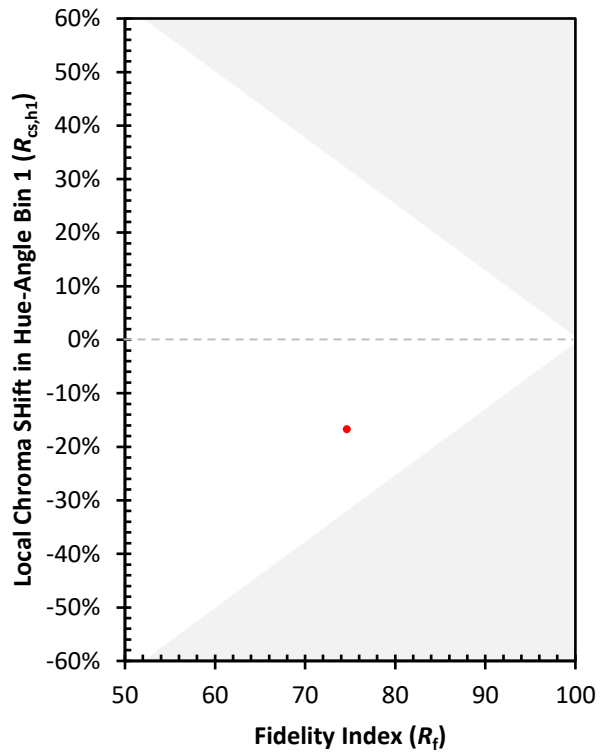
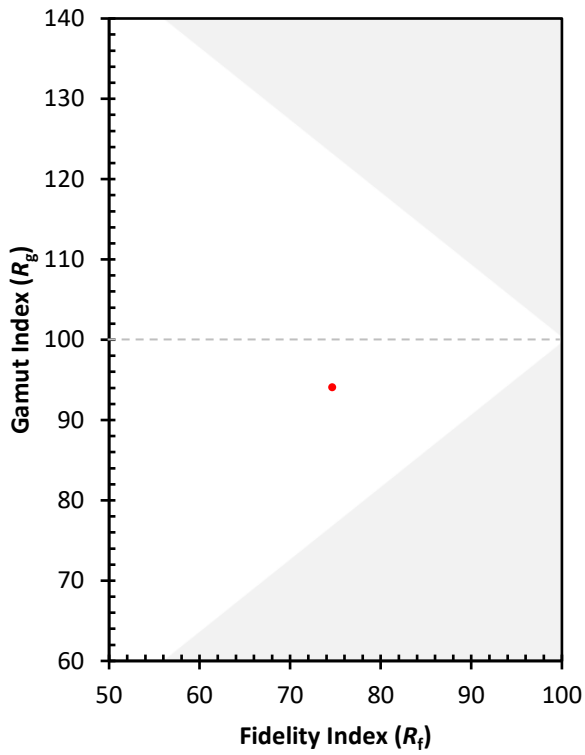
CES01 = 86	CES26 = 65	CES51 = 87	CES76 = 58
CES02 = 62	CES27 = 89	CES52 = 85	CES77 = 76
CES03 = 31	CES28 = 84	CES53 = 77	CES78 = 61
CES04 = 71	CES29 = 68	CES54 = 85	CES79 = 86
CES05 = 49	CES30 = 83	CES55 = 84	CES80 = 83
CES06 = 51	CES31 = 71	CES56 = 74	CES81 = 73
CES07 = 41	CES32 = 64	CES57 = 74	CES82 = 93
CES08 = 40	CES33 = 78	CES58 = 75	CES83 = 91
CES09 = 29	CES34 = 75	CES59 = 85	CES84 = 88
CES10 = 76	CES35 = 87	CES60 = 90	CES85 = 75
CES11 = 59	CES36 = 92	CES61 = 81	CES86 = 64
CES12 = 65	CES37 = 84	CES62 = 89	CES87 = 77
CES13 = 43	CES38 = 92	CES63 = 75	CES88 = 80
CES14 = 74	CES39 = 96	CES64 = 65	CES89 = 67
CES15 = 71	CES40 = 92	CES65 = 64	CES90 = 80
CES16 = 47	CES41 = 93	CES66 = 60	CES91 = 78
CES17 = 50	CES42 = 86	CES67 = 58	CES92 = 56
CES18 = 56	CES43 = 77	CES68 = 66	CES93 = 73
CES19 = 73	CES44 = 99	CES69 = 75	CES94 = 49
CES20 = 66	CES45 = 85	CES70 = 60	CES95 = 66
CES21 = 87	CES46 = 81	CES71 = 56	CES96 = 76
CES22 = 79	CES47 = 86	CES72 = 85	CES97 = 82
CES23 = 92	CES48 = 75	CES73 = 52	CES98 = 76
CES24 = 91	CES49 = 79	CES74 = 95	CES99 = 64
CES25 = 73	CES50 = 86	CES75 = 60	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)