

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: P868753

Luminaire Tested: **EMM2-HTN-SA1A-750-U-T5W**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868753
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: EMM2-HTN-SA1A-750-U-T5W
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 40W 70CRI 5000K
FIXTURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source: (10) 5000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

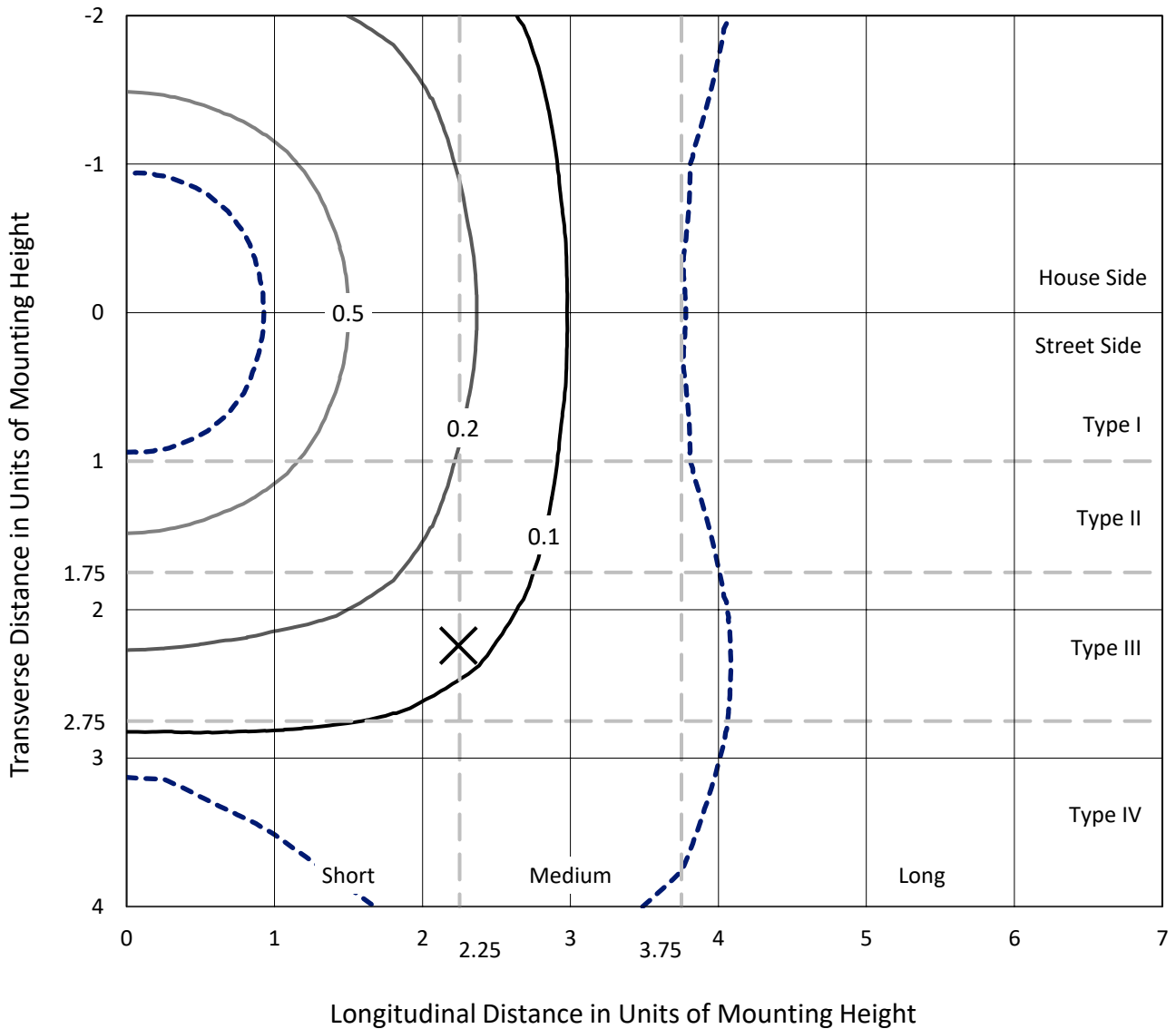
Lumens per Lamp: N/A
Luminaire Lumens: 5051.9 lumens
Efficiency: N/A
Efficacy: 154.0 lumens/watt
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G1

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: P868753
 CATALOG NUMBER: EMM2-HTN-SA1A-750-U-T5W

Iso-Footcandle Lines of Horizontal Illumination

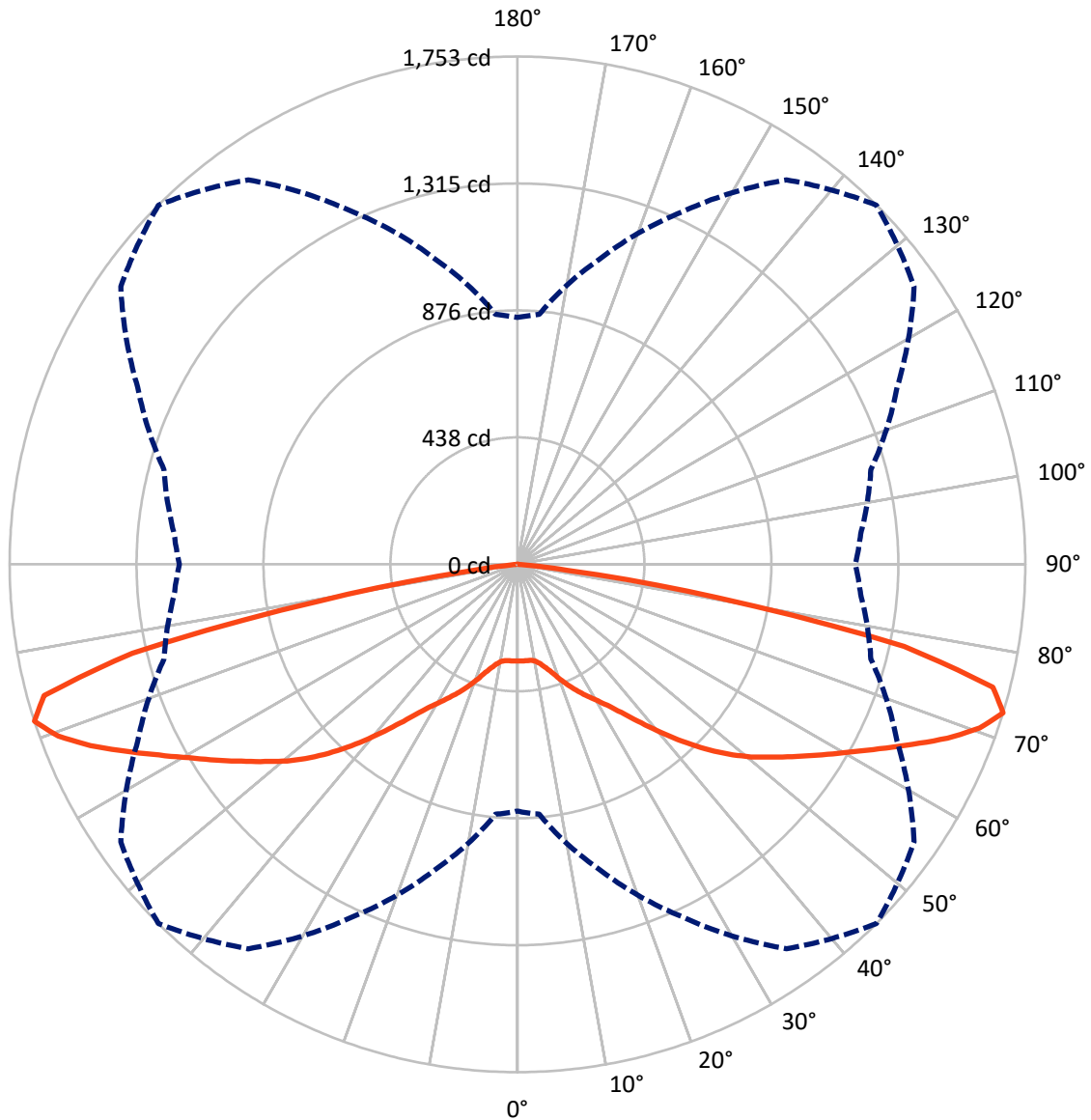
× Max cd
 - - - 1/2 Max cd



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

REPORT NUMBER: P868753
CATALOG NUMBER: EMM2-HTN-SA1A-750-U-T5W

Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2526.0	0.0	2526.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	2526.0	0.0	2526.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	5051.9	0.0	5051.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.0	0.6
10°-20°	106.7	2.1
20°-30°	220.1	4.4
30°-40°	405.2	8.0
40°-50°	712.5	14.1
50°-60°	1033.4	20.5
60°-70°	1347.1	26.7
70°-80°	1119.8	22.2
80°-90°	75.2	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°	5051.9	100.0
0°-180°	5051.9	100.0



REPORT NUMBER: P868753

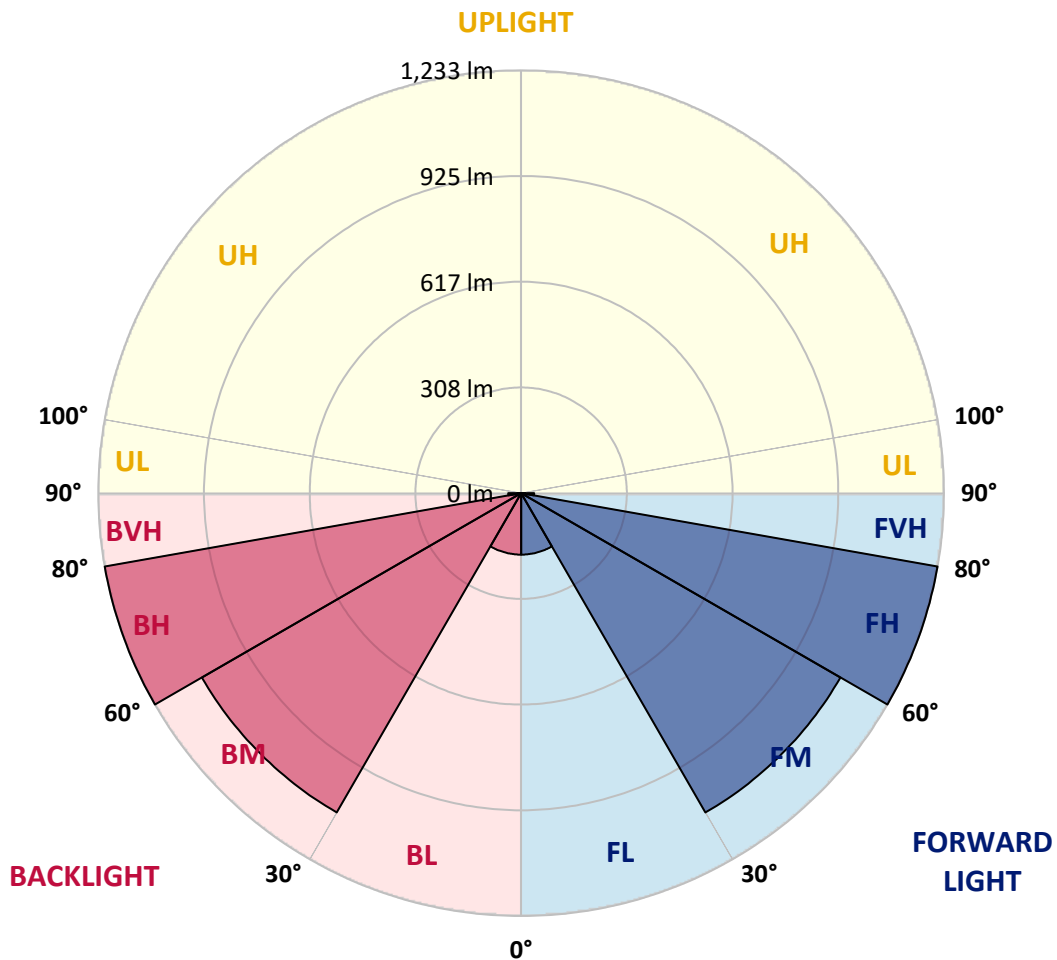
CATALOG NUMBER: EMM2-HTN-SA1A-750-U-T5W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	179.4	3.6			
FM (30°-60°)	1075.5	21.3			
FH (60°-80°)	1233.4	24.4			G1/1800
FVH (80°-90°)	37.6	0.7			G1/100
BL (0°-30°)	179.4	3.6	B1/500		
BM (30°-60°)	1075.5	21.3	B2/2500		
BH (60°-80°)	1233.4	24.4	B3/2500		G1/1800
BVH (80°-90°)	37.6	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





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CATALOG NUMBER: EMM2-HTN-SA1A-750-U-T5W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	333.5	333.5	333.5	333.5	333.5	333.5	333.5	333.5	333.5	333.5	333.5
2.5°	332.5	333.0	333.0	333.0	333.5	334.0	334.6	335.1	336.1	336.7	336.7
5°	334.0	333.5	333.0	334.0	334.0	334.0	334.6	335.1	335.1	335.1	335.6
7.5°	332.5	333.0	332.5	332.5	334.0	334.6	334.0	333.5	333.5	334.0	334.0
10°	338.2	337.7	337.2	337.2	338.8	339.3	338.8	338.2	338.2	339.3	339.3
12.5°	351.3	352.4	349.2	349.2	351.3	352.4	350.8	350.3	350.8	351.8	351.8
15°	371.7	371.2	369.1	367.0	369.1	370.7	368.6	367.5	368.1	370.7	368.6
17.5°	394.2	394.8	392.7	390.6	392.2	394.2	391.1	388.5	389.0	390.1	389.0
20°	419.4	418.9	418.3	418.3	421.5	424.1	419.4	413.1	411.5	410.5	410.5
22.5°	437.7	439.3	439.8	444.5	451.8	454.5	448.2	439.8	433.5	430.4	428.3
25°	466.5	464.9	463.9	469.1	480.1	484.8	477.0	465.5	459.2	458.6	460.2
27.5°	492.7	492.7	494.8	500.0	510.5	515.2	508.4	496.9	493.7	493.7	492.2
30°	526.7	525.1	527.2	536.1	544.0	547.1	541.4	533.5	530.9	530.9	528.3
32.5°	566.5	567.0	570.2	575.9	583.8	584.3	582.2	578.5	577.0	575.4	578.0
35°	627.2	627.2	626.2	630.4	632.5	633.5	634.6	633.0	633.0	633.0	630.9
37.5°	702.6	698.4	697.9	694.3	691.6	694.3	699.0	704.2	708.4	705.8	704.7
40°	777.5	775.4	769.1	763.4	761.3	762.3	768.1	779.1	783.8	783.8	788.0
42.5°	858.1	853.9	846.1	839.3	833.5	835.1	840.3	853.9	864.4	869.1	867.0
45°	930.4	926.7	918.9	912.6	908.4	907.9	914.7	923.6	937.7	941.9	945.0
47.5°	992.2	989.6	982.7	976.5	978.0	978.6	980.6	988.5	1000.0	1005.8	1005.3
50°	1042.4	1040.3	1034.1	1036.7	1040.9	1045.0	1042.4	1047.7	1055.0	1057.6	1059.7
52.5°	1088.5	1085.4	1081.2	1085.9	1096.9	1105.3	1106.8	1103.2	1105.3	1106.8	1105.3
55°	1134.1	1130.4	1129.3	1137.7	1154.5	1170.2	1168.6	1158.1	1155.5	1152.4	1150.8
57.5°	1171.2	1168.6	1172.8	1186.9	1219.4	1240.3	1233.5	1209.5	1199.0	1191.6	1189.6
60°	1194.8	1194.3	1203.7	1236.7	1285.9	1315.2	1304.2	1262.9	1239.3	1232.5	1229.3
62.5°	1207.4	1207.9	1224.6	1283.3	1361.8	1401.6	1382.2	1318.9	1282.2	1275.4	1276.5
65°	1218.9	1217.3	1239.3	1322.5	1444.0	1497.9	1471.8	1386.4	1333.0	1319.4	1319.4
67.5°	1227.3	1228.8	1261.8	1361.8	1524.1	1601.1	1562.9	1458.1	1387.5	1367.0	1364.4
70°	1121.5	1136.7	1239.8	1388.0	1587.5	1692.2	1641.9	1502.1	1389.6	1331.4	1325.7
72.5°	851.9	866.0	1089.0	1341.4	1619.9	1752.9	1671.2	1446.1	1262.9	1189.0	1167.0
75°	561.8	571.7	811.5	1171.8	1529.9	1695.3	1522.0	1245.6	994.3	898.4	904.2
77.5°	250.3	282.2	517.3	914.2	1260.2	1364.4	1160.8	849.8	607.3	514.1	504.2
80°	104.7	114.7	195.3	487.4	730.4	699.0	494.3	284.8	181.2	140.8	136.1
82.5°	30.4	31.4	38.7	84.3	148.7	174.9	105.2	53.4	50.8	40.3	37.2
85°	2.1	2.1	3.1	5.2	7.3	12.0	13.6	15.7	17.8	15.2	15.2
87.5°	1.0	1.0	1.0	1.6	1.6	2.1	1.6	1.6	1.6	1.6	1.6
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: SP1-2407-157-6

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-750-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-750-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-6
 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-40-750-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 5094
 CIE u': 0.2082
 CIE v': 0.4867
 Duv: 0.0032
 CIE x: 0.3430
 CIE y: 0.3564
 CIE z: 0.3006
 Peak Wavelength (nm): 451
 Dominant Wavelength (nm): 568
 Purity: 9.86439
 Rf: 73.7
 Rg: 93

CRI (Ra):	72.0		
R1:	68.6	R9:	-39.6
R2:	78.1	R10:	47.6
R3:	84.6	R11:	68.2
R4:	71.6	R12:	41.4
R5:	69.6	R13:	70.4
R6:	69.4	R14:	91.4
R7:	80.9	R15:	61.4
R8:	53.1		



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-6

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 5000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-6

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	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-6

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.81

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	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 3.73

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	114	NR	620	361	NR	750	9	NR	880	0	NR
365	0	NR	495	145	NR	625	326	NR	755	8	NR	885	0	NR
370	0	NR	500	197	NR	630	294	NR	760	7	NR	890	0	NR
375	0	NR	505	259	NR	635	261	NR	765	6	NR	895	0	NR
380	0	NR	510	319	NR	640	232	NR	770	5	NR	900	0	NR
385	0	NR	515	373	NR	645	204	NR	775	4	NR	905	0	NR
390	0	NR	520	414	NR	650	179	NR	780	4	NR	910	0	NR
395	1	NR	525	445	NR	655	157	NR	785	3	NR	915	0	NR
400	3	NR	530	465	NR	660	136	NR	790	3	NR	920	0	NR
405	5	NR	535	482	NR	665	118	NR	795	2	NR	925	0	NR
410	9	NR	540	493	NR	670	102	NR	800	2	NR	930	0	NR
415	18	NR	545	505	NR	675	87	NR	805	2	NR	935	0	NR
420	36	NR	550	515	NR	680	75	NR	810	2	NR	940	0	NR
425	72	NR	555	527	NR	685	65	NR	815	1	NR	945	0	NR
430	134	NR	560	540	NR	690	56	NR	820	1	NR	950	0	NR
435	242	NR	565	550	NR	695	48	NR	825	1	NR	955	0	NR
440	407	NR	570	557	NR	700	41	NR	830	1	NR	960	0	NR
445	684	NR	575	561	NR	705	35	NR	835	1	NR	965	0	NR
450	988	NR	580	559	NR	710	30	NR	840	1	NR	970	0	NR
455	828	NR	585	551	NR	715	26	NR	845	1	NR	975	0	NR
460	473	NR	590	537	NR	720	22	NR	850	1	NR	980	0	NR
465	333	NR	595	516	NR	725	19	NR	855	0	NR	985	0	NR
470	232	NR	600	491	NR	730	16	NR	860	0	NR	990	0	NR
475	146	NR	605	461	NR	735	14	NR	865	0	NR	995	0	NR
480	113	NR	610	429	NR	740	12	NR	870	0	NR	1000	0	NR
485	106	NR	615	395	NR	745	10	NR	875	0	NR			

Summary

$R_f = 73.7$
 $R_g = 93$
 $CIE R_a = 72.0$
 $R_9 = -39.6$

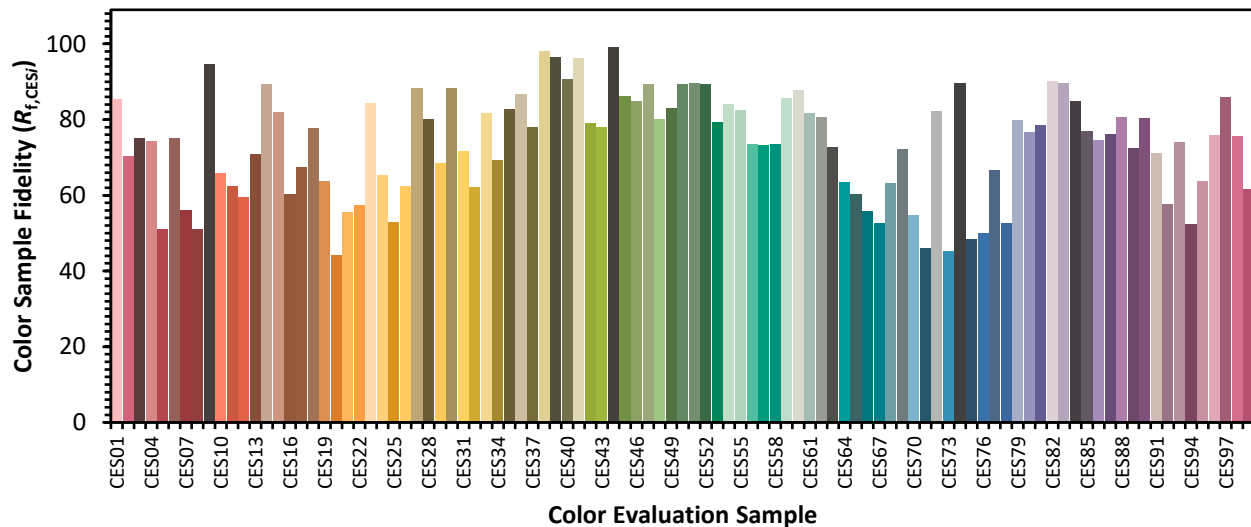


Color Vector Graphics



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

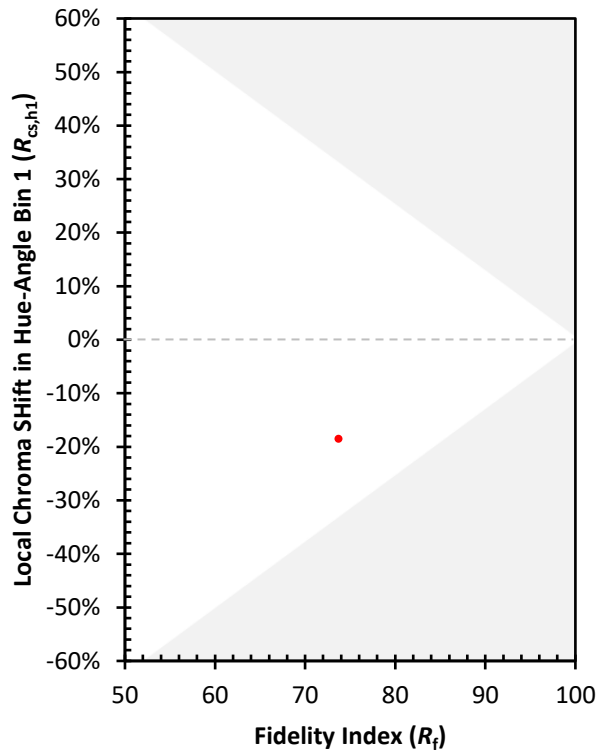
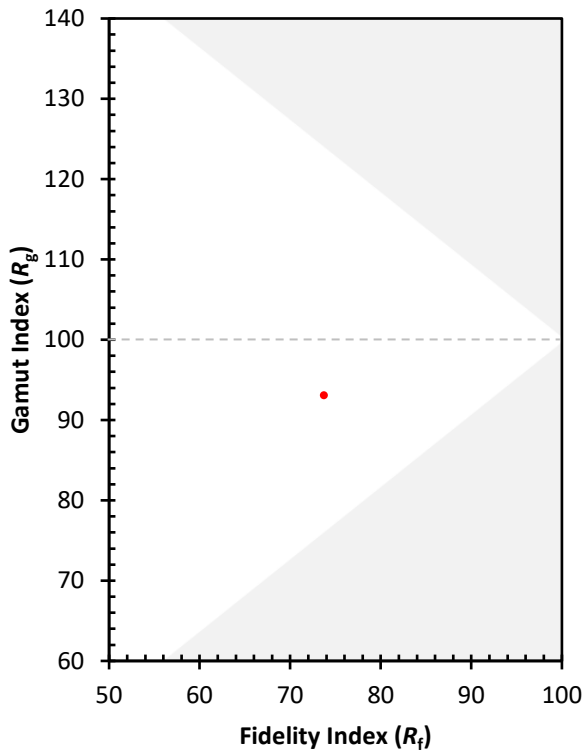
CES01 = 85	CES26 = 62	CES51 = 90	CES76 = 50
CES02 = 59	CES27 = 88	CES52 = 89	CES77 = 67
CES03 = 30	CES28 = 80	CES53 = 79	CES78 = 53
CES04 = 69	CES29 = 69	CES54 = 84	CES79 = 80
CES05 = 46	CES30 = 88	CES55 = 83	CES80 = 77
CES06 = 50	CES31 = 72	CES56 = 74	CES81 = 78
CES07 = 38	CES32 = 62	CES57 = 73	CES82 = 90
CES08 = 38	CES33 = 82	CES58 = 73	CES83 = 90
CES09 = 29	CES34 = 69	CES59 = 86	CES84 = 85
CES10 = 72	CES35 = 83	CES60 = 88	CES85 = 77
CES11 = 56	CES36 = 87	CES61 = 82	CES86 = 75
CES12 = 61	CES37 = 78	CES62 = 81	CES87 = 76
CES13 = 41	CES38 = 98	CES63 = 73	CES88 = 81
CES14 = 74	CES39 = 96	CES64 = 63	CES89 = 72
CES15 = 70	CES40 = 91	CES65 = 60	CES90 = 80
CES16 = 46	CES41 = 96	CES66 = 56	CES91 = 71
CES17 = 49	CES42 = 79	CES67 = 53	CES92 = 58
CES18 = 55	CES43 = 78	CES68 = 63	CES93 = 74
CES19 = 71	CES44 = 99	CES69 = 72	CES94 = 52
CES20 = 63	CES45 = 86	CES70 = 55	CES95 = 64
CES21 = 85	CES46 = 85	CES71 = 46	CES96 = 76
CES22 = 77	CES47 = 89	CES72 = 82	CES97 = 86
CES23 = 91	CES48 = 80	CES73 = 45	CES98 = 76
CES24 = 90	CES49 = 83	CES74 = 90	CES99 = 62
CES25 = 71	CES50 = 89	CES75 = 48	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)