

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: STREETWORKS

Report Number: P870598

Luminaire Tested: **MEM2-HSN-SA-110-840-U-5WQ**

Issue Date: 09/05/2024



Test Information

Test Method: LM-79-08
Report Number: P870598
Test Lab: INNOVATION CENTER(G3)
Issue Date: 09/05/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-110-840-U-5WQ
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 110W 80CRI 4000K
FITXURE w/ TYPE V SQUARE WIDE DISTRIBUTION OPTIC
Light Source: (30) 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

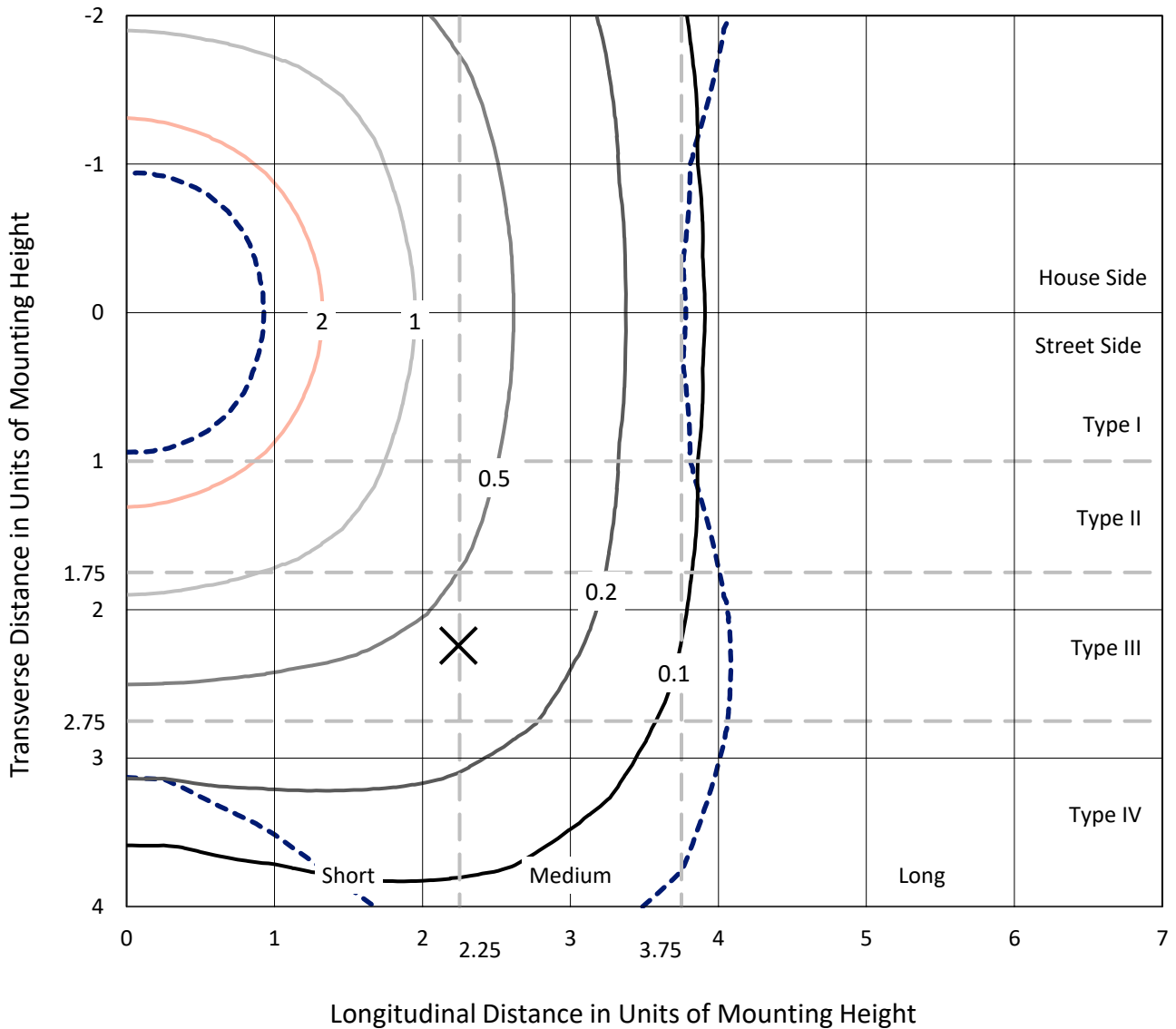
Lumens per Lamp: N/A
Luminaire Lumens: 16552.7 lumens
Efficiency: N/A
Efficacy: 146.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G2

Input Watts (W): 113
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 7.77%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P870598
 CATALOG NUMBER: MEM2-HSN-SA-110-840-U-5WQ

Iso-Footcandle Lines of Horizontal Illumination

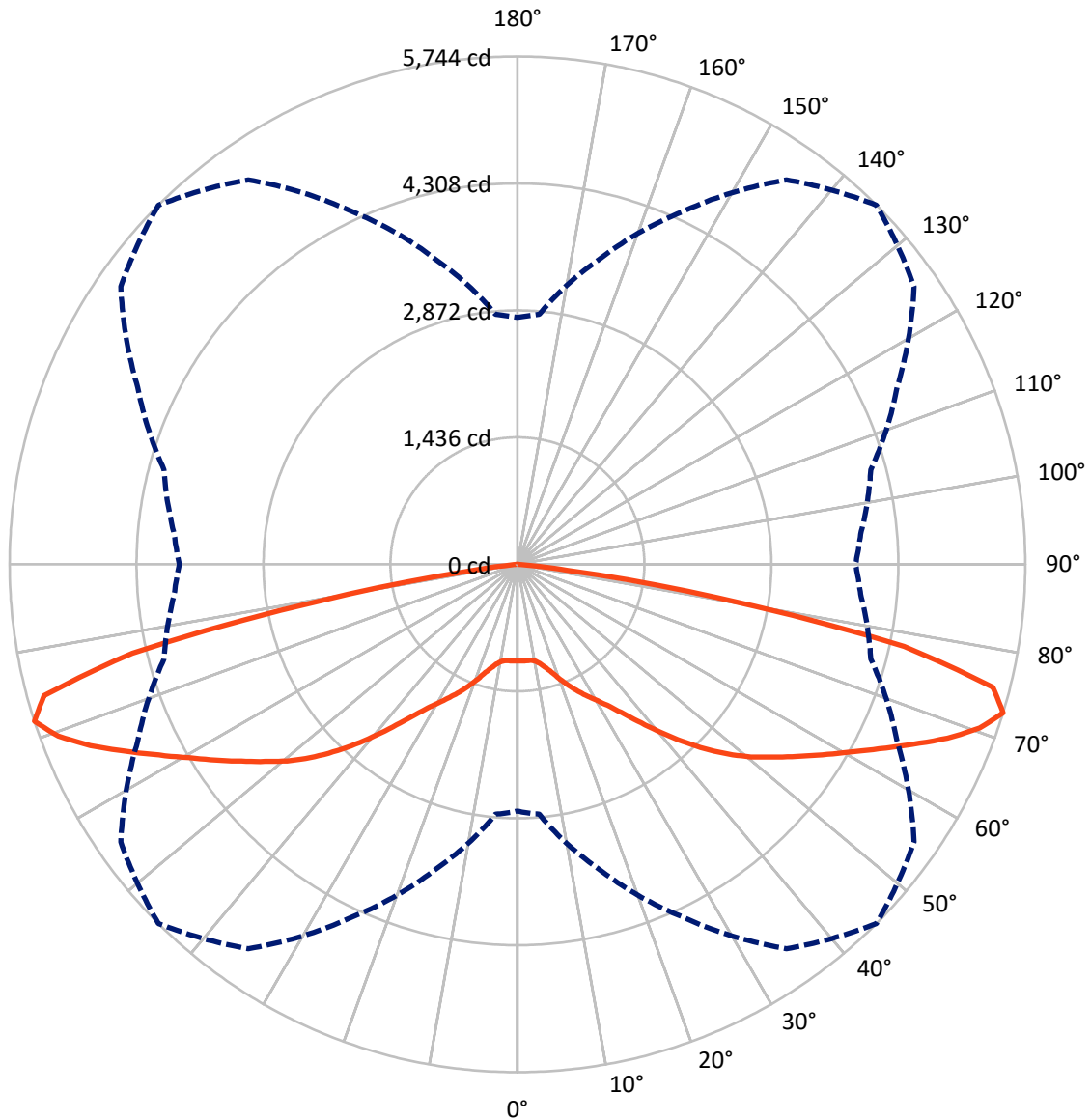
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 2.9 fc
 Type V - Short - N/A

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Luminous Intensity Polar Plot



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

REPORT NUMBER: P870598
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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	8276.4	0.0	8276.4
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	8276.4	0.0	8276.4
	% Fixture	50.0	0.0	50.0
Total	Lumens	16552.7	0.0	16552.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.7	0.6
10°-20°	349.6	2.1
20°-30°	721.2	4.4
30°-40°	1327.7	8.0
40°-50°	2334.5	14.1
50°-60°	3385.8	20.5
60°-70°	4413.8	26.7
70°-80°	3669.0	22.2
80°-90°	246.3	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°	16552.7	100.0
0°-180°	16552.7	100.0



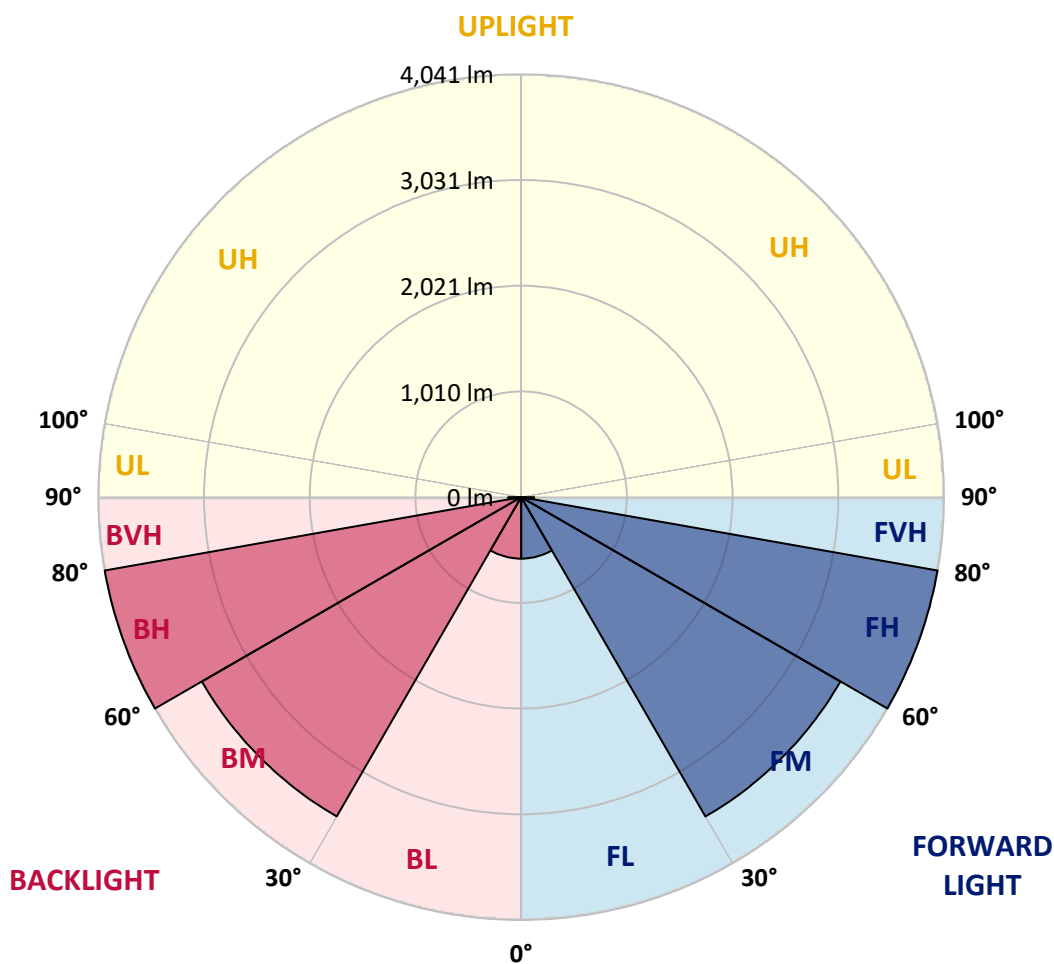
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	587.7	3.6			
FM (30°-60°)	3524.0	21.3			
FH (60°-80°)	4041.4	24.4			G2/5000
FVH (80°-90°)	123.2	0.7			G2/225
BL (0°-30°)	587.7	3.6	B2/1000		
BM (30°-60°)	3524.0	21.3	B3/5000		
BH (60°-80°)	4041.4	24.4	B4/5000		G2/5000
BVH (80°-90°)	123.2	0.7			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G2

Type V Short





REPORT NUMBER: P870598

CATALOG NUMBER: MEM2-HSN-SA-110-840-U-5WQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8	1092.8
2.5°	1089.3	1091.1	1091.1	1091.1	1092.8	1094.5	1096.2	1097.9	1101.3	1103.1	1103.1
5°	1094.5	1092.8	1091.1	1094.5	1094.5	1094.5	1096.2	1097.9	1097.9	1097.9	1099.6
7.5°	1089.3	1091.1	1089.3	1089.3	1094.5	1096.2	1094.5	1092.8	1092.8	1094.5	1094.5
10°	1108.2	1106.5	1104.8	1104.8	1109.9	1111.6	1109.9	1108.2	1108.2	1111.6	1111.6
12.5°	1151.1	1154.5	1144.2	1144.2	1151.1	1154.5	1149.4	1147.7	1149.4	1152.8	1152.8
15°	1218.0	1216.3	1209.4	1202.6	1209.4	1214.6	1207.7	1204.3	1206.0	1214.6	1207.7
17.5°	1291.8	1293.5	1286.6	1279.8	1284.9	1291.8	1281.5	1272.9	1274.6	1278.0	1274.6
20°	1374.1	1372.4	1370.7	1370.7	1381.0	1389.5	1374.1	1353.5	1348.4	1344.9	1344.9
22.5°	1434.2	1439.3	1441.0	1456.5	1480.5	1489.0	1468.5	1441.0	1420.4	1410.1	1403.3
25°	1528.5	1523.4	1519.9	1537.1	1573.1	1588.5	1562.8	1525.1	1504.5	1502.8	1507.9
27.5°	1614.3	1614.3	1621.1	1638.3	1672.6	1688.0	1665.7	1628.0	1617.7	1617.7	1612.6
30°	1725.8	1720.6	1727.5	1756.7	1782.4	1792.7	1773.8	1748.1	1739.5	1739.5	1730.9
32.5°	1856.2	1857.9	1868.2	1887.0	1912.8	1914.5	1907.6	1895.6	1890.5	1885.3	1893.9
35°	2055.2	2055.2	2051.7	2065.5	2072.3	2075.7	2079.2	2074.0	2074.0	2074.0	2067.2
37.5°	2302.2	2288.5	2286.8	2274.7	2266.2	2274.7	2290.2	2307.3	2321.1	2312.5	2309.1
40°	2547.5	2540.6	2520.1	2501.2	2494.3	2497.8	2516.6	2552.7	2568.1	2568.1	2581.8
42.5°	2811.7	2798.0	2772.2	2749.9	2731.1	2736.2	2753.4	2798.0	2832.3	2847.7	2840.9
45°	3048.4	3036.4	3010.7	2990.1	2976.4	2974.7	2997.0	3026.1	3072.4	3086.2	3096.5
47.5°	3250.9	3242.3	3220.0	3199.4	3204.5	3206.3	3213.1	3238.9	3276.6	3295.5	3293.7
50°	3415.5	3408.7	3388.1	3396.7	3410.4	3424.1	3415.5	3432.7	3456.7	3465.3	3472.2
52.5°	3566.5	3556.2	3542.5	3557.9	3594.0	3621.4	3626.6	3614.5	3621.4	3626.6	3621.4
55°	3715.8	3703.7	3700.3	3727.8	3782.7	3834.1	3829.0	3794.7	3786.1	3775.8	3770.7
57.5°	3837.6	3829.0	3842.7	3889.0	3995.4	4064.0	4041.7	3962.8	3928.5	3904.5	3897.6
60°	3914.8	3913.0	3943.9	4052.0	4213.3	4309.3	4273.3	4137.8	4060.6	4038.3	4028.0
62.5°	3955.9	3957.6	4012.5	4204.7	4462.0	4592.4	4528.9	4321.3	4201.2	4178.9	4182.4
65°	3993.7	3988.5	4060.6	4333.3	4731.3	4908.0	4822.2	4542.6	4367.6	4323.0	4323.0
67.5°	4021.1	4026.3	4134.3	4462.0	4993.8	5246.0	5120.7	4777.6	4546.1	4479.2	4470.6
70°	3674.6	3724.3	4062.3	4547.8	5201.4	5544.5	5379.8	4921.7	4552.9	4362.5	4343.6
72.5°	2791.1	2837.4	3568.2	4395.1	5307.7	5743.5	5475.9	4738.2	4137.8	3895.9	3823.8
75°	1840.7	1873.3	2659.0	3839.3	5012.7	5554.8	4986.9	4081.2	3257.7	2943.8	2962.7
77.5°	820.0	924.7	1694.9	2995.3	4129.2	4470.6	3803.2	2784.2	1990.0	1684.6	1652.0
80°	343.1	375.7	639.9	1597.1	2393.1	2290.2	1619.4	933.2	593.6	461.5	446.0
82.5°	99.5	102.9	126.9	276.2	487.2	573.0	344.8	175.0	166.4	132.1	121.8
85°	6.9	6.9	10.3	17.2	24.0	39.5	44.6	51.5	58.3	49.7	49.7
87.5°	3.4	3.4	3.4	5.1	5.1	6.9	5.1	5.1	5.1	5.1	5.1
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: SP1-2407-157-8

Test Date: 09/05/2024

Luminaire Tested: MEM2-HTN-SA-30-840-U-5WQ

Data in this report applies to families of products including MEM2-HTN-SA-30-840-U-5WQ

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-8
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 09/05/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-SA-30-840-U-5WQ**
 Description: Epic Modern Light Square 30W 5WQ Optic

Spectral Parameters

CCT (K): 3996
 CIE u': 0.2245
 CIE v': 0.5031
 Duv: 0.0012
 CIE x: 0.3815
 CIE y: 0.3799
 CIE z: 0.2386
 Peak Wavelength (nm): 449
 Dominant Wavelength (nm): 578
 Purity: 28.49233
 Rf: 82.6
 Rg: 95.1

CRI (Ra):	80.6		
R1:	78.1	R9:	-5.8
R2:	87.1	R10:	70.3
R3:	94.5	R11:	78.7
R4:	79.7	R12:	60.5
R5:	78.7	R13:	80.2
R6:	82.7	R14:	97.2
R7:	84.3	R15:	70.6
R8:	59.5		



Test Conditions

Stabilization Time: 29M
 Operation Time: 1H 29M
 Sphere Temperature (°C): 24.3

REPORT NUMBER: SP1-2407-157-8

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: SP1-2407-157-8

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 4000K 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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.66

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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



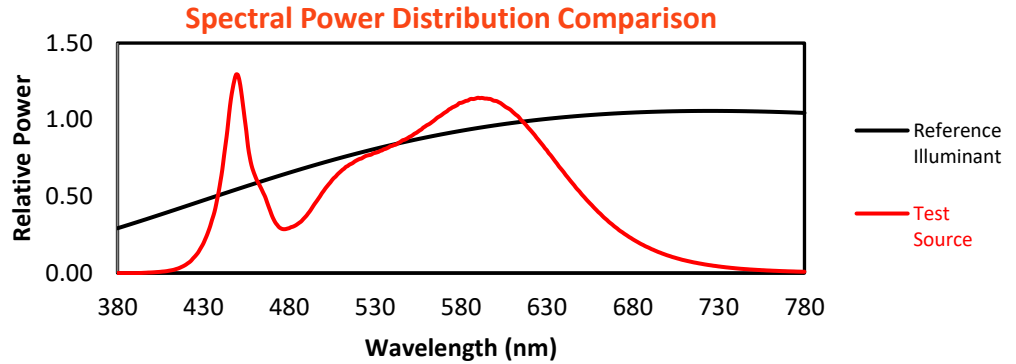
Melanopic Lumens: NR

M/P: 3.37

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	289	NR	620	725	NR	750	17	NR	880	0	NR
365	0	NR	495	351	NR	625	673	NR	755	15	NR	885	0	NR
370	0	NR	500	414	NR	630	619	NR	760	13	NR	890	0	NR
375	0	NR	505	470	NR	635	562	NR	765	11	NR	895	0	NR
380	0	NR	510	513	NR	640	506	NR	770	9	NR	900	0	NR
385	0	NR	515	546	NR	645	452	NR	775	8	NR	905	0	NR
390	0	NR	520	571	NR	650	400	NR	780	7	NR	910	0	NR
395	1	NR	525	592	NR	655	352	NR	785	6	NR	915	0	NR
400	3	NR	530	606	NR	660	307	NR	790	5	NR	920	0	NR
405	6	NR	535	624	NR	665	267	NR	795	4	NR	925	0	NR
410	12	NR	540	642	NR	670	231	NR	800	4	NR	930	0	NR
415	22	NR	545	663	NR	675	199	NR	805	3	NR	935	0	NR
420	44	NR	550	686	NR	680	171	NR	810	3	NR	940	0	NR
425	83	NR	555	713	NR	685	146	NR	815	2	NR	945	0	NR
430	150	NR	560	745	NR	690	125	NR	820	2	NR	950	0	NR
435	267	NR	565	774	NR	695	106	NR	825	2	NR	955	0	NR
440	466	NR	570	806	NR	700	90	NR	830	1	NR	960	0	NR
445	804	NR	575	835	NR	705	76	NR	835	1	NR	965	0	NR
450	1000	NR	580	858	NR	710	65	NR	840	1	NR	970	0	NR
455	715	NR	585	875	NR	715	55	NR	845	1	NR	975	0	NR
460	492	NR	590	884	NR	720	47	NR	850	1	NR	980	0	NR
465	402	NR	595	880	NR	725	40	NR	855	1	NR	985	0	NR
470	288	NR	600	868	NR	730	34	NR	860	1	NR	990	0	NR
475	226	NR	605	844	NR	735	28	NR	865	1	NR	995	0	NR
480	227	NR	610	814	NR	740	24	NR	870	0	NR	1000	0	NR
485	248	NR	615	771	NR	745	20	NR	875	0	NR			

Summary

$R_f = 82.6$
 $R_g = 95.1$
 CIE $R_a = 80.6$
 $R_g = -5.8$

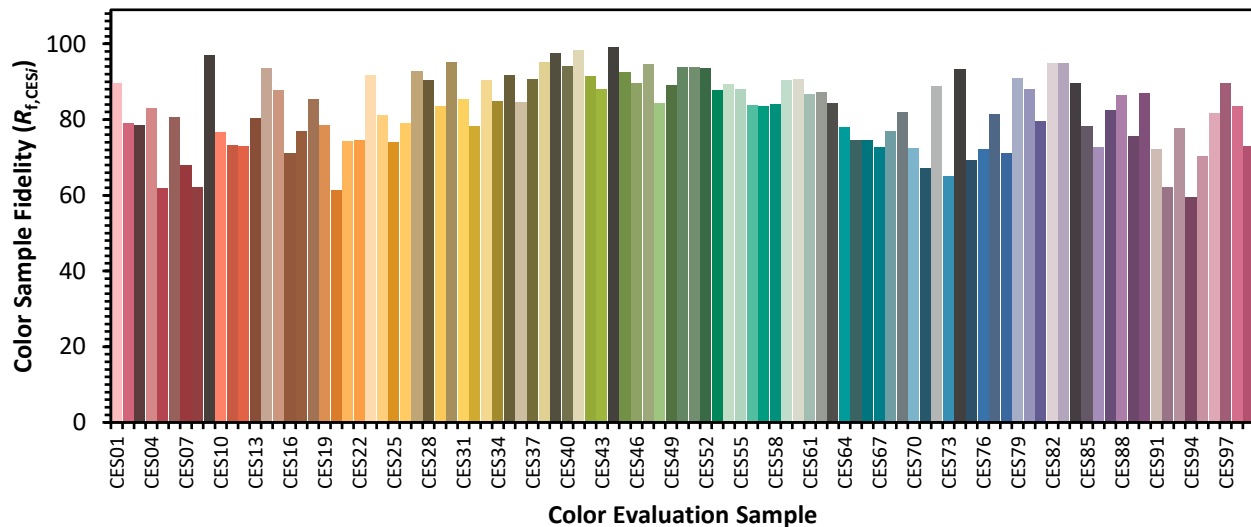


Color Vector Graphics

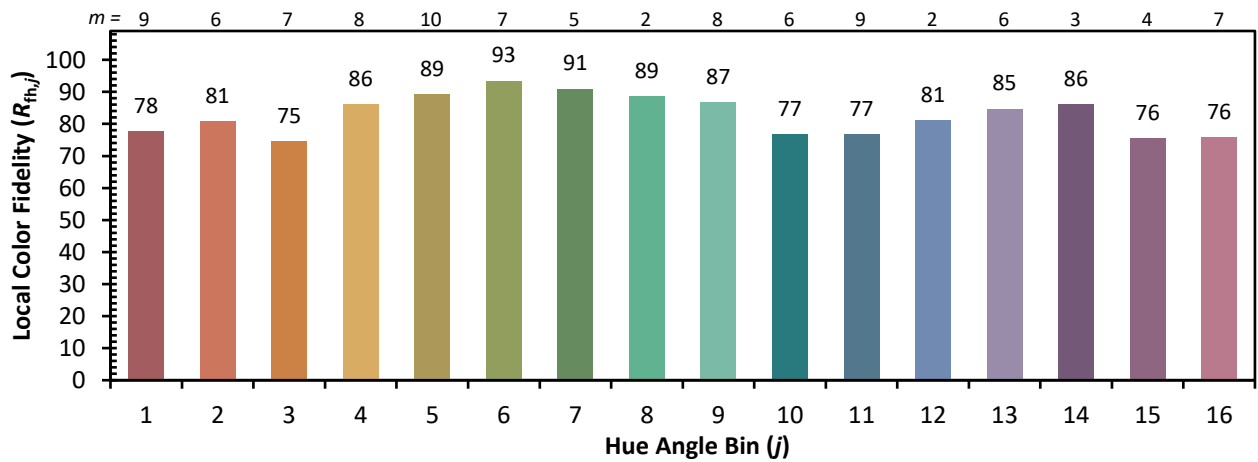
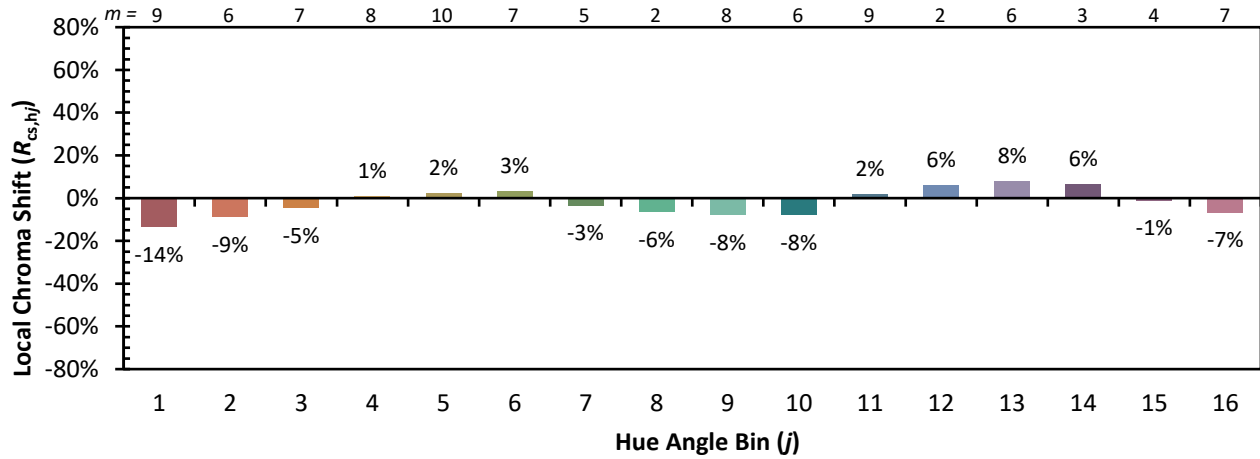


Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 79	CES51 = 94	CES76 = 72
CES02 = 61	CES27 = 93	CES52 = 94	CES77 = 82
CES03 = 31	CES28 = 90	CES53 = 88	CES78 = 71
CES04 = 69	CES29 = 83	CES54 = 89	CES79 = 91
CES05 = 48	CES30 = 95	CES55 = 88	CES80 = 88
CES06 = 50	CES31 = 86	CES56 = 84	CES81 = 80
CES07 = 40	CES32 = 78	CES57 = 84	CES82 = 95
CES08 = 39	CES33 = 90	CES58 = 84	CES83 = 95
CES09 = 29	CES34 = 85	CES59 = 90	CES84 = 90
CES10 = 74	CES35 = 92	CES60 = 91	CES85 = 78
CES11 = 57	CES36 = 85	CES61 = 87	CES86 = 73
CES12 = 63	CES37 = 91	CES62 = 87	CES87 = 83
CES13 = 42	CES38 = 95	CES63 = 84	CES88 = 86
CES14 = 74	CES39 = 98	CES64 = 78	CES89 = 76
CES15 = 71	CES40 = 94	CES65 = 75	CES90 = 87
CES16 = 46	CES41 = 98	CES66 = 75	CES91 = 72
CES17 = 49	CES42 = 92	CES67 = 73	CES92 = 62
CES18 = 56	CES43 = 88	CES68 = 77	CES93 = 78
CES19 = 71	CES44 = 99	CES69 = 82	CES94 = 60
CES20 = 65	CES45 = 93	CES70 = 72	CES95 = 70
CES21 = 86	CES46 = 90	CES71 = 67	CES96 = 82
CES22 = 78	CES47 = 95	CES72 = 89	CES97 = 90
CES23 = 91	CES48 = 84	CES73 = 65	CES98 = 84
CES24 = 90	CES49 = 89	CES74 = 93	CES99 = 73
CES25 = 71	CES50 = 94	CES75 = 69	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)