

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: P868221

Luminaire Tested: **MEM2-HSN-SA-70-740-U-5MQ**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P868221
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HSN-SA-70-740-U-5MQ
Description: EPIC MODERN SHORT HOUSING DISCRETE LED ARRAYS 70W 70CRI 4000K
FIXTURE w/ TYPE V SQUARE MEDIUM DISTRIBUTION OPTIC
Light Source: (20) 4000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

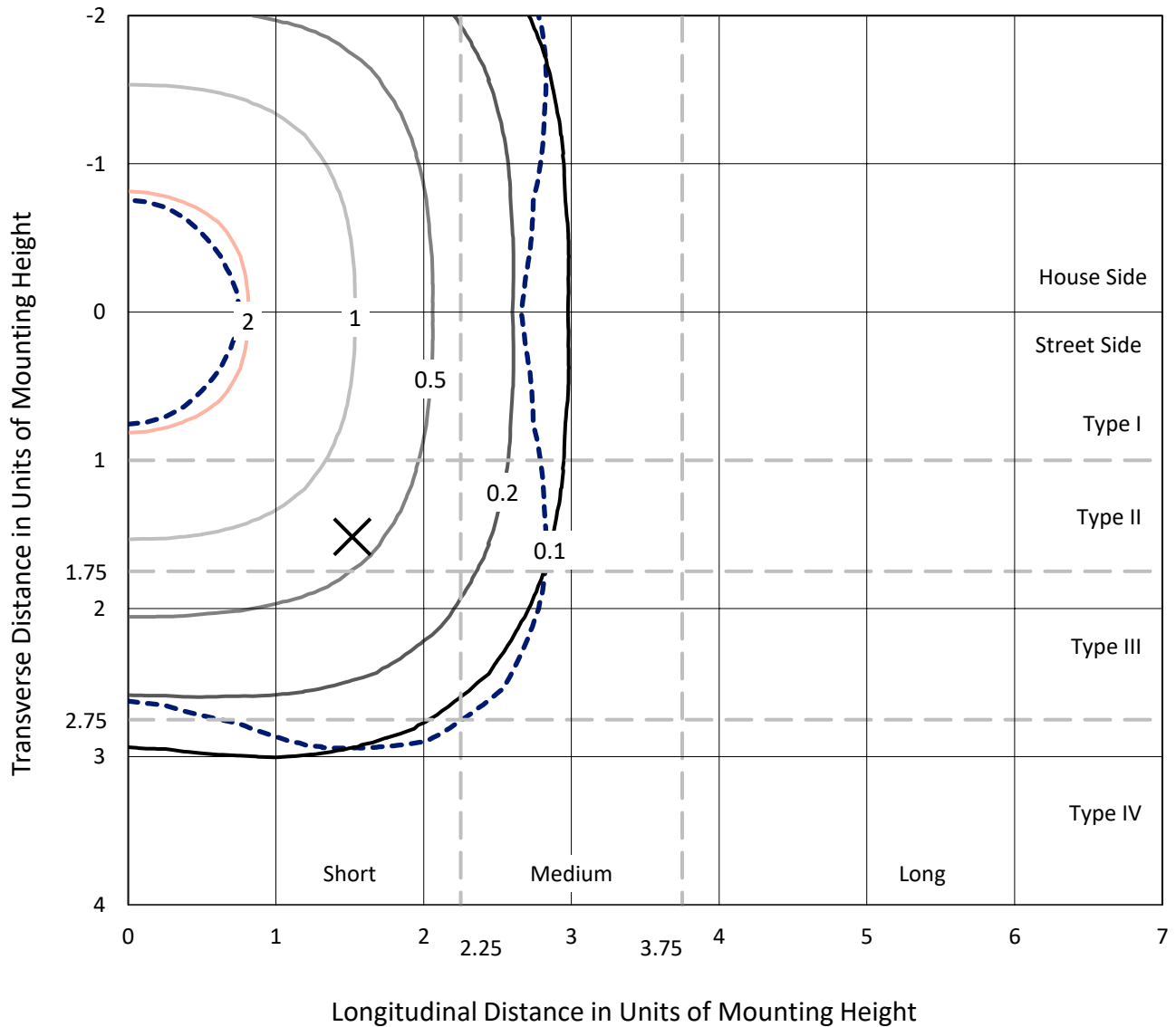
Lumens per Lamp: N/A
Luminaire Lumens: 9697.3 lumens
Efficiency: N/A
Efficacy: 159.0 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type V - Short
BUG Rating: B3 - U0 - G2

Input Watts (W): 61
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 9.89%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P868221
 CATALOG NUMBER: MEM2-HSN-SA-70-740-U-5MQ

Iso-Footcandle Lines of Horizontal Illumination

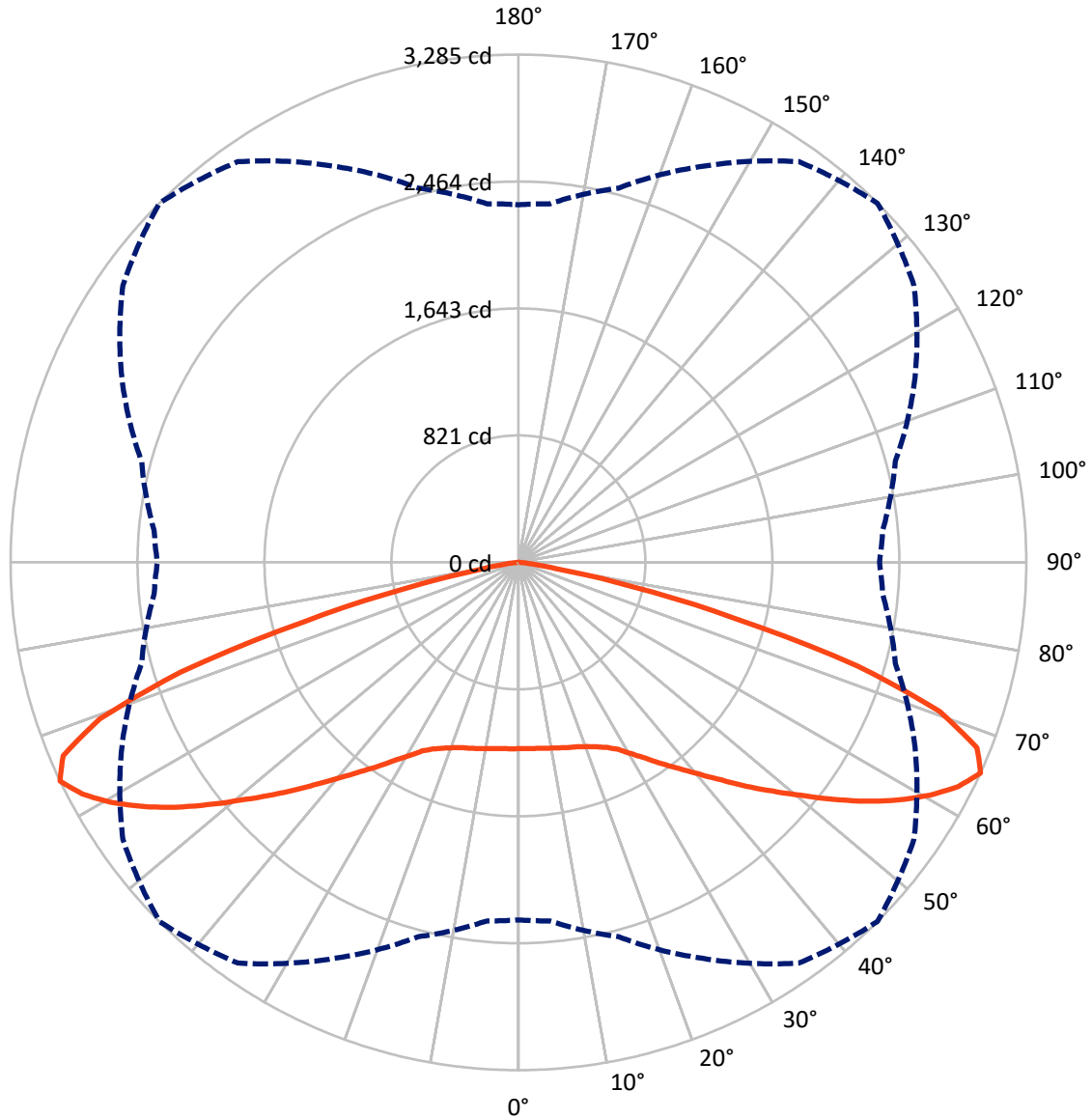
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3 fc
 Type V - Short - N/A

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CATALOG NUMBER: MEM2-HSN-SA-70-740-U-5MQ

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	4848.6	0.0	4848.6
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4848.6	0.0	4848.6
	% Fixture	50.0	0.0	50.0
Total	Lumens	9697.3	0.0	9697.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.9	1.2
10°-20°	352.7	3.6
20°-30°	620.3	6.4
30°-40°	1003.2	10.3
40°-50°	1562.7	16.1
50°-60°	2285.0	23.6
60°-70°	2631.3	27.1
70°-80°	1074.6	11.1
80°-90°	51.4	0.5
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°	9697.3	100.0
0°-180°	9697.3	100.0



REPORT NUMBER: P868221

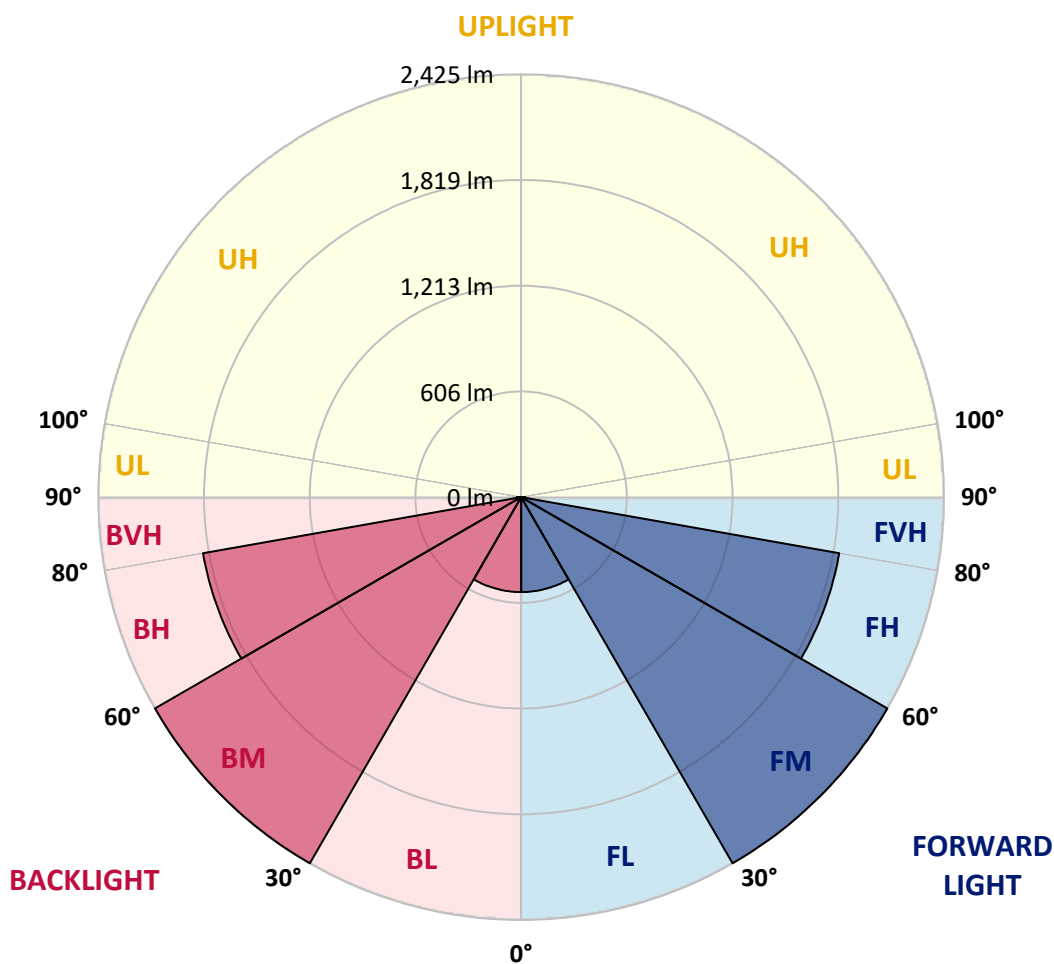
CATALOG NUMBER: MEM2-HSN-SA-70-740-U-5MQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	544.4	5.6			
FM (30°-60°)	2425.5	25.0			
FH (60°-80°)	1853.0	19.1			G2/5000
FVH (80°-90°)	25.7	0.3			G1/100
BL (0°-30°)	544.4	5.6	B2/1000		
BM (30°-60°)	2425.5	25.0	B2/2500		
BH (60°-80°)	1853.0	19.1	B3/2500		G2/5000
BVH (80°-90°)	25.7	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G2

Type V Short





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CATALOG NUMBER: MEM2-HSN-SA-70-740-U-5MQ

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9	1204.9
2.5°	1208.7	1208.7	1206.8	1206.8	1203.1	1206.8	1204.9	1206.8	1204.9	1204.9	1206.8
5°	1212.4	1212.4	1208.7	1210.5	1206.8	1208.7	1206.8	1210.5	1208.7	1206.8	1210.5
7.5°	1218.0	1218.0	1214.3	1216.1	1212.4	1214.3	1212.4	1216.1	1214.3	1214.3	1216.1
10°	1223.6	1225.4	1221.7	1219.8	1219.8	1221.7	1223.6	1225.4	1223.6	1223.6	1227.3
12.5°	1232.9	1234.7	1231.0	1229.1	1229.1	1231.0	1232.9	1236.6	1231.0	1231.0	1231.0
15°	1242.2	1242.2	1240.3	1238.5	1240.3	1242.2	1242.2	1245.9	1242.2	1238.5	1238.5
17.5°	1245.9	1247.8	1245.9	1249.6	1251.5	1253.4	1255.2	1255.2	1249.6	1247.8	1247.8
20°	1258.9	1260.8	1257.1	1258.9	1264.5	1272.0	1272.0	1272.0	1272.0	1266.4	1266.4
22.5°	1281.3	1283.2	1281.3	1281.3	1288.7	1296.2	1296.2	1301.8	1294.3	1290.6	1290.6
25°	1318.5	1318.5	1316.7	1318.5	1322.3	1326.0	1333.4	1337.2	1337.2	1335.3	1337.2
27.5°	1363.2	1365.1	1363.2	1363.2	1361.4	1368.8	1380.0	1385.6	1387.4	1389.3	1389.3
30°	1422.8	1426.6	1424.7	1426.6	1430.3	1435.9	1439.6	1441.5	1441.5	1437.7	1437.7
32.5°	1488.0	1491.7	1488.0	1497.3	1510.4	1510.4	1506.6	1514.1	1508.5	1504.8	1501.1
35°	1564.4	1564.4	1568.1	1571.8	1590.4	1599.8	1599.8	1596.0	1584.9	1579.3	1583.0
37.5°	1651.9	1653.8	1657.5	1659.4	1676.1	1692.9	1691.0	1681.7	1668.7	1653.8	1653.8
40°	1756.2	1752.5	1754.3	1767.4	1780.4	1800.9	1802.8	1789.7	1767.4	1752.5	1752.5
42.5°	1851.2	1853.0	1860.5	1877.2	1907.0	1923.8	1914.5	1892.1	1867.9	1849.3	1847.4
45°	1951.7	1949.9	1970.4	2005.7	2044.9	2065.3	2050.4	2018.8	1981.5	1957.3	1957.3
47.5°	2054.2	2052.3	2085.8	2143.6	2193.8	2210.6	2195.7	2154.7	2104.5	2069.1	2063.5
50°	2160.3	2167.8	2203.2	2285.1	2350.3	2368.9	2350.3	2296.3	2229.2	2182.7	2175.2
52.5°	2281.4	2287.0	2333.5	2422.9	2503.0	2545.8	2517.9	2437.8	2352.1	2296.3	2288.8
55°	2393.1	2396.8	2463.9	2571.9	2670.6	2728.3	2683.6	2581.2	2473.2	2402.4	2395.0
57.5°	2471.3	2480.6	2566.3	2706.0	2832.6	2899.7	2832.6	2722.8	2579.4	2491.8	2486.2
60°	2521.6	2536.5	2635.2	2810.3	2985.3	3058.0	2989.1	2836.4	2659.4	2545.8	2540.2
62.5°	2495.5	2516.0	2642.7	2871.7	3115.7	3193.9	3104.5	2890.4	2650.1	2506.7	2491.8
65°	2313.0	2327.9	2506.7	2827.0	3164.1	3285.2	3123.2	2830.8	2523.5	2365.2	2335.4
67.5°	1935.0	1961.1	2197.6	2611.0	3059.8	3199.5	2994.7	2616.6	2246.0	2052.3	2018.8
70°	1486.2	1532.7	1791.6	2240.4	2733.9	2892.2	2666.9	2208.7	1773.0	1575.5	1514.1
72.5°	858.5	931.2	1311.1	1748.7	2175.2	2294.4	1977.8	1543.9	1177.0	1037.3	1020.6
75°	284.9	311.0	623.9	1007.5	1387.4	1447.0	1236.6	974.0	774.7	663.0	668.6
77.5°	139.7	139.7	188.1	368.7	631.3	744.9	676.0	471.2	338.9	257.0	249.6
80°	111.7	111.7	130.4	180.6	212.3	249.6	212.3	154.6	126.6	115.5	121.1
82.5°	54.0	52.1	61.5	87.5	89.4	85.7	80.1	80.1	76.4	70.8	68.9
85°	3.7	3.7	7.4	16.8	27.9	37.2	42.8	41.0	39.1	33.5	37.2
87.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	3.7	3.7	3.7	3.7
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: SP1-2407-157-5

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-740-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-740-U-5WQ-2

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-5
 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-40-740-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3915
 CIE u': 0.2262
 CIE v': 0.5044
 Duv: 0.0010
 CIE x: 0.3850
 CIE y: 0.3816
 CIE z: 0.2334
 Peak Wavelength (nm): 449
 Dominant Wavelength (nm): 578
 Purity: 30.05482
 Rf: 73.2
 Rg: 93.9

CRI (Ra):	71.0		
R1:	67.6	R9:	-38.4
R2:	78.3	R10:	48.9
R3:	87.1	R11:	65.3
R4:	69.7	R12:	40.4
R5:	67.4	R13:	69.3
R6:	69.3	R14:	92.6
R7:	79.7	R15:	59.9
R8:	48.7		



Test Conditions

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

REPORT NUMBER: SP1-2407-157-5

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 4000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-5

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	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

REPORT NUMBER: SP1-2407-157-5

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR S/P: 1.49

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	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

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Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.88

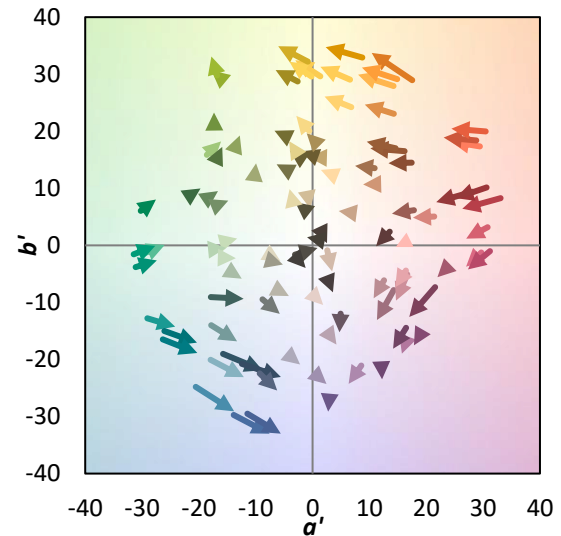
λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)	λ (nm)	Power W [^] /nm	Lumens (φ/nm)
360	0	NR	490	112	NR	620	618	NR	750	15	NR	880	0	NR
365	0	NR	495	153	NR	625	563	NR	755	13	NR	885	0	NR
370	0	NR	500	216	NR	630	510	NR	760	11	NR	890	0	NR
375	0	NR	505	291	NR	635	456	NR	765	9	NR	895	0	NR
380	0	NR	510	366	NR	640	407	NR	770	8	NR	900	0	NR
385	0	NR	515	436	NR	645	359	NR	775	7	NR	905	0	NR
390	0	NR	520	492	NR	650	316	NR	780	6	NR	910	0	NR
395	2	NR	525	536	NR	655	277	NR	785	5	NR	915	0	NR
400	4	NR	530	567	NR	660	240	NR	790	4	NR	920	0	NR
405	7	NR	535	596	NR	665	208	NR	795	4	NR	925	0	NR
410	12	NR	540	619	NR	670	179	NR	800	3	NR	930	0	NR
415	25	NR	545	644	NR	675	154	NR	805	3	NR	935	0	NR
420	51	NR	550	671	NR	680	133	NR	810	3	NR	940	0	NR
425	100	NR	555	701	NR	685	114	NR	815	2	NR	945	0	NR
430	180	NR	560	735	NR	690	98	NR	820	2	NR	950	0	NR
435	315	NR	565	768	NR	695	83	NR	825	2	NR	955	0	NR
440	514	NR	570	798	NR	700	71	NR	830	1	NR	960	0	NR
445	828	NR	575	825	NR	705	61	NR	835	1	NR	965	0	NR
450	992	NR	580	843	NR	710	52	NR	840	1	NR	970	0	NR
455	652	NR	585	848	NR	715	44	NR	845	1	NR	975	0	NR
460	382	NR	590	844	NR	720	38	NR	850	1	NR	980	0	NR
465	282	NR	595	826	NR	725	32	NR	855	1	NR	985	0	NR
470	180	NR	600	800	NR	730	28	NR	860	1	NR	990	0	NR
475	119	NR	605	762	NR	735	24	NR	865	1	NR	995	0	NR
480	101	NR	610	719	NR	740	20	NR	870	1	NR	1000	0	NR
485	98	NR	615	669	NR	745	17	NR	875	0	NR			

Summary

$R_f = 73.2$
 $R_g = 93.9$
 CIE $R_a = 71.0$
 $R_g = -38.4$



Color Vector Graphics

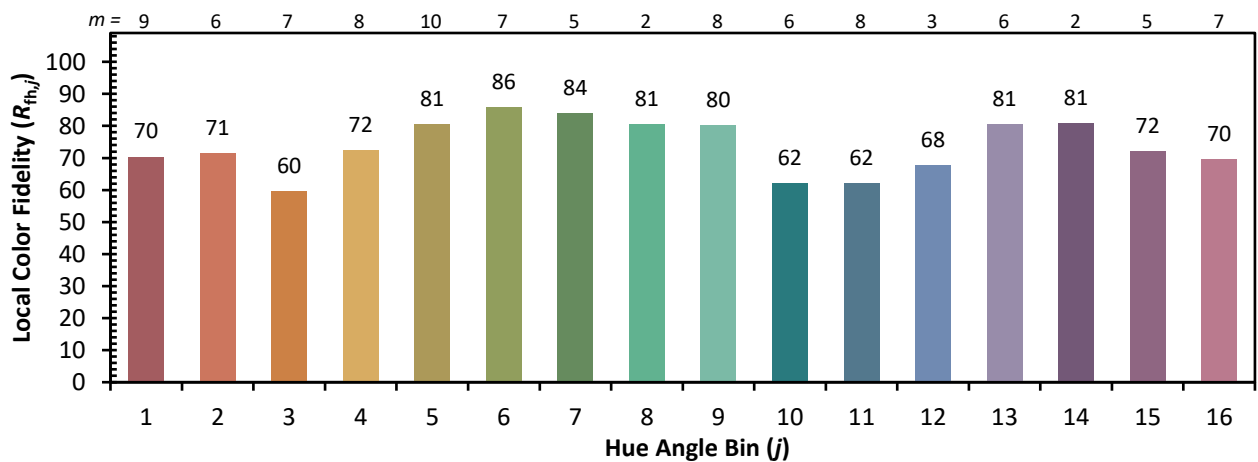
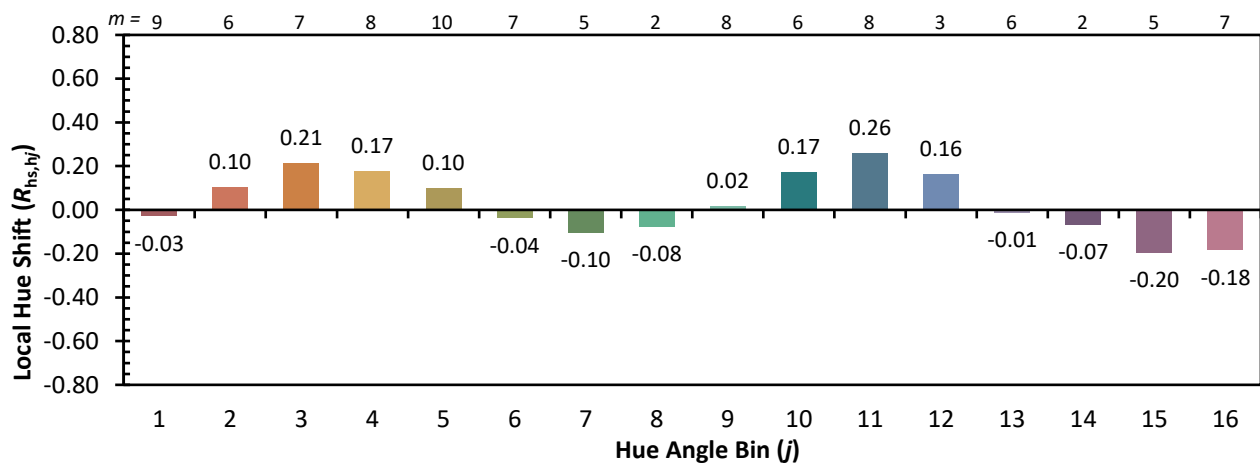
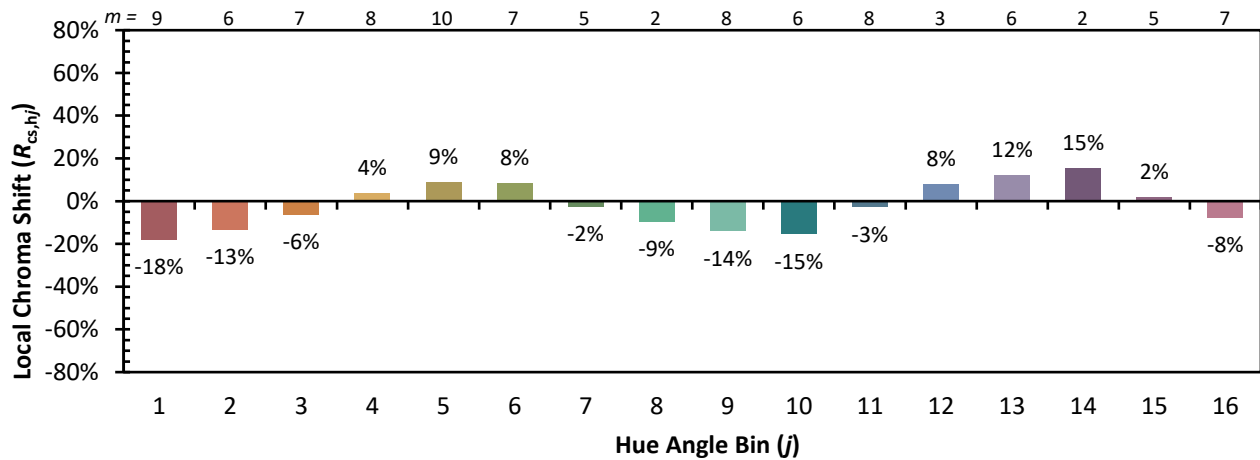


Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 85	CES26 = 61	CES51 = 88	CES76 = 50
CES02 = 61	CES27 = 88	CES52 = 87	CES77 = 69
CES03 = 30	CES28 = 81	CES53 = 77	CES78 = 53
CES04 = 70	CES29 = 65	CES54 = 84	CES79 = 81
CES05 = 47	CES30 = 81	CES55 = 83	CES80 = 78
CES06 = 50	CES31 = 69	CES56 = 73	CES81 = 77
CES07 = 40	CES32 = 60	CES57 = 72	CES82 = 91
CES08 = 39	CES33 = 76	CES58 = 73	CES83 = 89
CES09 = 29	CES34 = 70	CES59 = 85	CES84 = 86
CES10 = 74	CES35 = 83	CES60 = 89	CES85 = 77
CES11 = 57	CES36 = 91	CES61 = 81	CES86 = 71
CES12 = 63	CES37 = 79	CES62 = 85	CES87 = 76
CES13 = 42	CES38 = 92	CES63 = 72	CES88 = 80
CES14 = 74	CES39 = 96	CES64 = 64	CES89 = 70
CES15 = 71	CES40 = 91	CES65 = 61	CES90 = 79
CES16 = 46	CES41 = 93	CES66 = 57	CES91 = 74
CES17 = 49	CES42 = 80	CES67 = 54	CES92 = 57
CES18 = 56	CES43 = 76	CES68 = 63	CES93 = 74
CES19 = 72	CES44 = 99	CES69 = 73	CES94 = 51
CES20 = 65	CES45 = 85	CES70 = 55	CES95 = 65
CES21 = 86	CES46 = 82	CES71 = 48	CES96 = 76
CES22 = 78	CES47 = 86	CES72 = 83	CES97 = 84
CES23 = 92	CES48 = 77	CES73 = 45	CES98 = 75
CES24 = 91	CES49 = 80	CES74 = 93	CES99 = 62
CES25 = 72	CES50 = 88	CES75 = 51	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)