

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: P800661

Luminaire Tested: **ARCH-M-PA2-80-722-24VDC-5WQ**

Issue Date: 5/19/2020

Test Information

Test Method: LM-79-08
Report Number: P800661
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-568-1)
Test Lab: INNOVATION CENTER
Issue Date: 5/19/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: ARCH-M-PA2-80-722-24VDC-5WQ
Description: ARCHEON-M ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2200K, 535mA LIGHT ENGINES WITH 16 LEDS AND TYPE V WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

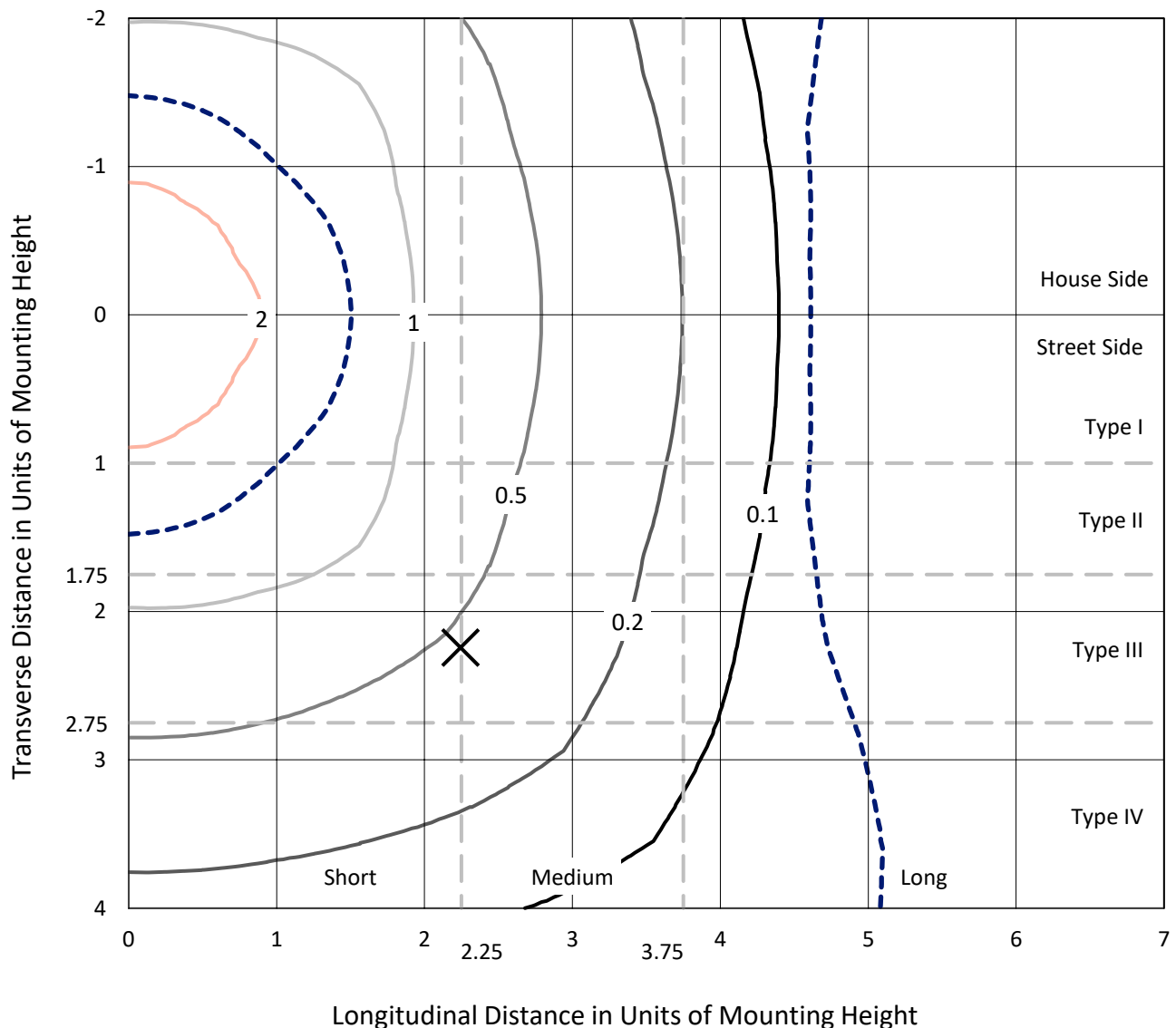
Lumens per Lamp: N/A
Luminaire Lumens: 9970 lumens
Efficiency: N/A
Efficacy: 124.6 lumens/watt
Luminous Opening: Rectangular (W 0.75' x L: 1' x H: 0')
IES Classification: Type V - Short
BUG Rating: B4 - U0 - G3

Input Watts (W): 80
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

REPORT NUMBER: P800661
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Iso-Footcandle Lines of Horizontal Illumination

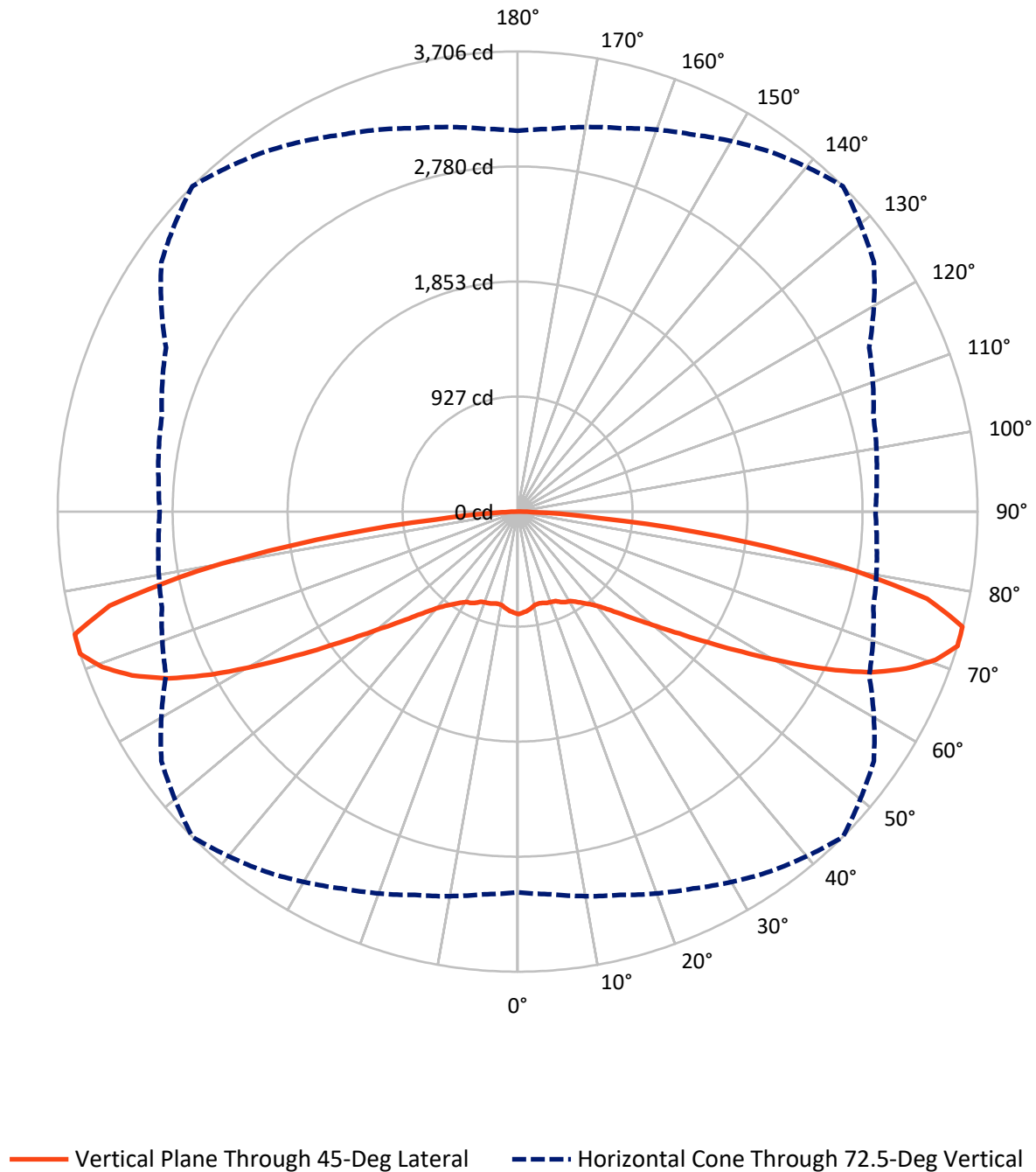
✕ Max cd
 - - - 1/2 Max cd



Based on 15 foot mounting height. Maximum calculated value = 3.7 fc
 Type V - Short - N/A

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CATALOG NUMBER: ARCH-M-PA2-80-722-24VDC-5WQ

Luminous Intensity Polar Plot



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CATALOG NUMBER: ARCH-M-PA2-80-722-24VDC-5WQ

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4985.0	0.0	4985.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	4985.0	0.0	4985.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	9970.0	0.0	9970.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	75.7	0.8
10°-20°	219.6	2.2
20°-30°	373.1	3.7
30°-40°	569.1	5.7
40°-50°	937.1	9.4
50°-60°	1636.5	16.4
60°-70°	2743.7	27.5
70°-80°	2936.3	29.5
80°-90°	478.9	4.8
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°	9970.0	100.0
0°-180°	9970.0	100.0



REPORT NUMBER: P800661

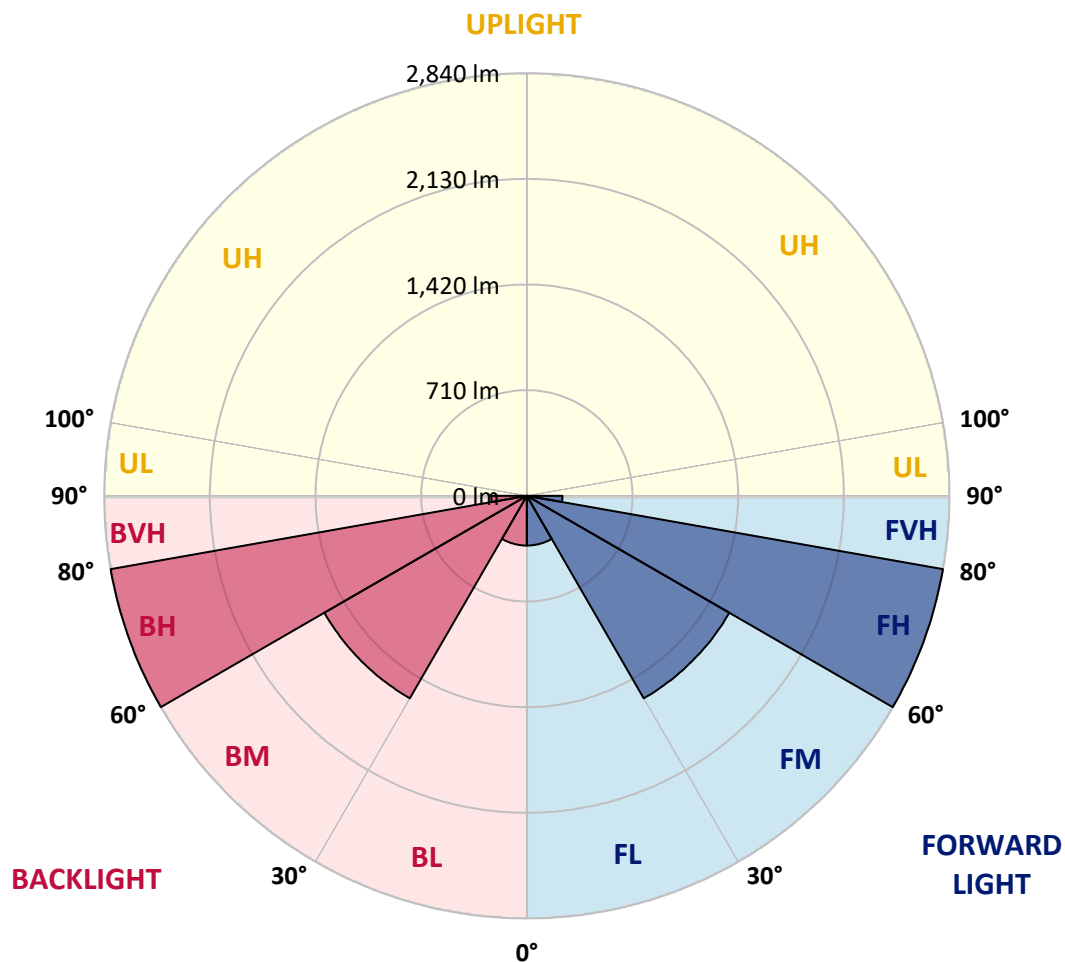
CATALOG NUMBER: ARCH-M-PA2-80-722-24VDC-5WQ

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	334.2	3.4			
FM	(30°-60°)	1571.4	15.8			
FH	(60°-80°)	2840.0	28.5			G2/5000
FVH	(80°-90°)	239.5	2.4			G3/500
BL	(0°-30°)	334.2	3.4	B1/500		
BM	(30°-60°)	1571.4	15.8	B2/2500		
BH	(60°-80°)	2840.0	28.5	B4/5000		G2/5000
BVH	(80°-90°)	239.5	2.4			G3/500
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G3

Type V Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	85°	90°
0°	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0	825.0
2.5°	819.9	819.9	819.9	818.7	816.1	814.8	812.3	813.6	813.6	813.6	813.6
5°	809.8	809.8	808.5	807.2	804.7	803.4	800.8	803.4	803.4	803.4	803.4
7.5°	790.7	791.9	791.9	790.7	786.8	785.6	781.7	783.0	783.0	784.3	783.0
10°	780.5	780.5	779.2	772.8	766.5	763.9	762.6	766.5	770.3	774.1	774.1
12.5°	780.5	780.5	777.9	767.7	758.8	758.8	758.8	763.9	771.6	779.2	780.5
15°	784.3	784.3	779.2	767.7	762.6	763.9	763.9	769.0	777.9	788.1	789.4
17.5°	786.8	786.8	780.5	769.0	769.0	772.8	770.3	774.1	783.0	794.5	795.7
20°	790.7	790.7	781.7	772.8	772.8	776.6	776.6	780.5	788.1	799.6	800.8
22.5°	798.3	797.0	788.1	780.5	780.5	783.0	785.6	790.7	797.0	807.2	809.8
25°	807.2	807.2	799.6	798.3	800.8	807.2	805.9	804.7	807.2	816.1	819.9
27.5°	812.3	812.3	807.2	811.0	821.2	826.3	819.9	814.8	814.8	823.8	825.0
30°	828.8	827.6	822.5	825.0	833.9	836.5	832.7	826.3	830.1	840.3	841.6
32.5°	856.9	856.9	849.2	849.2	855.6	865.8	853.0	849.2	854.3	865.8	867.0
35°	900.1	900.1	890.0	884.9	890.0	904.0	884.9	883.6	892.5	905.2	906.5
37.5°	954.9	954.9	948.5	935.8	937.1	946.0	929.4	928.2	944.7	958.7	958.7
40°	1023.6	1027.5	1021.1	1005.8	1000.7	1002.0	989.3	990.5	1009.6	1026.2	1026.2
42.5°	1109.0	1111.5	1101.3	1089.9	1083.5	1079.7	1066.9	1069.5	1092.4	1114.0	1114.0
45°	1212.1	1213.4	1203.2	1189.2	1181.5	1179.0	1166.2	1172.6	1198.1	1221.0	1219.7
47.5°	1327.9	1329.2	1319.0	1305.0	1299.9	1303.7	1291.0	1291.0	1313.9	1333.0	1330.5
50°	1459.1	1461.6	1450.2	1443.8	1440.0	1450.2	1434.9	1420.9	1436.2	1455.3	1452.7
52.5°	1604.2	1610.6	1602.9	1605.5	1619.5	1632.2	1606.8	1576.2	1583.9	1596.6	1592.8
55°	1779.9	1787.6	1790.1	1799.0	1835.9	1857.6	1815.6	1764.6	1760.8	1762.1	1755.7
57.5°	1977.3	1982.4	1998.9	2019.3	2095.7	2130.1	2063.8	1976.0	1948.0	1931.4	1927.6
60°	2175.9	2184.8	2225.5	2267.6	2384.7	2447.1	2345.2	2197.5	2137.7	2107.1	2100.8
62.5°	2375.8	2393.6	2459.8	2531.1	2701.7	2794.7	2638.1	2424.2	2337.6	2299.4	2289.2
65°	2607.5	2629.1	2709.4	2799.7	2989.5	3120.6	2930.9	2658.4	2565.5	2514.6	2501.8
67.5°	2878.7	2901.6	2966.5	3067.1	3246.6	3375.2	3207.2	2897.8	2776.8	2711.9	2701.7
70°	3101.5	3121.9	3191.9	3293.7	3427.4	3573.9	3413.4	3088.8	2979.3	2933.4	2927.1
72.5°	3067.1	3093.9	3197.0	3349.8	3540.7	3706.3	3503.8	3125.7	2967.8	2904.2	2883.8
75°	2678.8	2708.1	2830.3	3106.6	3455.4	3702.4	3372.7	2880.0	2694.1	2640.6	2630.4
77.5°	1773.6	1801.6	2007.8	2443.3	3017.5	3374.0	2976.7	2412.7	2113.5	1984.9	1977.3
80°	716.8	752.5	949.8	1412.0	2139.0	2622.8	2207.7	1544.4	1041.5	840.3	799.6
82.5°	166.8	198.6	289.0	520.7	1094.9	1633.5	1190.4	576.8	334.8	238.1	213.9
85°	70.0	71.3	123.5	169.3	342.5	659.5	389.6	210.1	170.6	124.8	122.2
87.5°	26.7	28.0	59.8	71.3	109.5	124.8	132.4	108.2	100.6	62.4	59.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

LM-79-08: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

STREETWORKS

Report Number: SP1-2101-121-4

Luminaire Tested: IFLD-S-SA2B-722-U-T3R

Test Date: 03/03/2021

Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/03/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2B-722-U-T3R**
 Description: STREETWORKS INF FLOOD

PROGRAMMED @ 800mA.

Spectral Parameters

CCT (K):	2218	CRI (Ra):	72.2		
CIE u':	0.2889	R1:	69.1	R9:	-16.8
CIE v':	0.5350	R2:	83.2	R10:	61.9
Duv:	-0.0005	R3:	95.4	R11:	60.1
CIE x:	0.5026	R4:	66.4	R12:	51.2
CIE y:	0.4136	R5:	66.2	R13:	71.3
CIE z:	0.0839	R6:	76.7	R14:	97.1
Peak Wavelength (nm):	606	R7:	76.7		
Dominant Wavelength (nm):	587	R8:	43.9		
Purity:	75.3				
Rf:	70				
Rg:	99.3				



Test Conditions

Stabilization Time: 95M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.3/31%
 Sphere Temperature (°C): 24.8

REPORT NUMBER: SP1-2101-121-4

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	IN0058	1/31/2021	7/31/2021
Power Meter	IN0071	12/1/2020	12/1/2021
AC Power Source	IN0063	12/1/2020	12/1/2021
DC Power Source	IN0208	12/1/2020	12/1/2021
Sphere Thermometer	IN0085	12/1/2020	12/1/2021
Room Thermometer	IN0046	12/1/2020	12/1/2021

REPORT NUMBER: SP1-2101-121-4

CIE 1931 Chromaticity Diagram



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



Point lies inside the ANSI 2200K 4-step quadrangle

REPORT NUMBER: SP1-2101-121-4

Photopic Flux vs. Wavelength



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λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	2623	0.0	490	7941	1.1	620	205150	53.4	750	13431	0.0	880	3867	0.0
365	2260	0.0	495	11299	2.0	625	198277	43.7	755	12426	0.0	885	3345	0.0
370	2306	0.0	500	16633	3.7	630	187878	34.0	760	11385	0.0	890	2956	0.0
375	2437	0.0	505	23672	6.6	635	176836	26.6	765	9797	0.0	895	2272	0.0
380	2473	0.0	510	32025	11.0	640	164455	19.7	770	8562	0.0	900	3003	0.0
385	2203	0.0	515	41295	17.1	645	154086	14.8	775	7810	0.0	905	2480	0.0
390	2262	0.0	520	50628	24.6	650	141592	10.3	780	7052	0.0	910	2068	0.0
395	2028	0.0	525	58836	31.6	655	128604	7.4	785	6345	0.0	915	2064	0.0
400	1806	0.0	530	67109	39.5	660	116713	4.9	790	5524	0.0	920	2581	0.0
405	1945	0.0	535	74404	46.1	665	104993	3.3	795	5788	0.0	925	3137	0.0
410	3199	0.0	540	81280	53.0	670	93149	2.0	800	5282	0.0	930	2747	0.0
415	5572	0.0	545	88806	59.1	675	82543	1.4	805	4258	0.0	935	2471	0.0
420	10322	0.0	550	97367	66.2	680	73089	0.8	810	5156	0.0	940	2339	0.0
425	18494	0.1	555	106598	72.8	685	64438	0.6	815	4391	0.0	945	2917	0.0
430	28541	0.2	560	117615	79.9	690	56546	0.3	820	4383	0.0	950	1966	0.0
435	37453	0.4	565	129103	85.8	695	49328	0.2	825	4881	0.0	955	1580	0.0
440	44455	0.7	570	141415	92.0	700	43493	0.1	830	3588	0.0	960	1318	0.0
445	45934	1.0	575	155854	97.0	705	38035	0.1	835	3835	0.0	965	1419	0.0
450	37926	1.0	580	168613	100.2	710	33716	0.0	840	3014	0.0	970	1917	0.0
455	24793	0.8	585	182390	101.3	715	30449	0.0	845	3765	0.0	975	1210	0.0
460	15340	0.6	590	194054	100.3	720	27240	0.0	850	2906	0.0	980	3915	0.0
465	10883	0.6	595	203639	96.5	725	24231	0.0	855	2947	0.0	985	3180	0.0
470	8138	0.5	600	211043	91.0	730	21490	0.0	860	3864	0.0	990	5676	0.0
475	6653	0.5	605	214591	83.1	735	18548	0.0	865	3546	0.0	995	4736	0.0
480	6220	0.6	610	214337	73.6	740	16963	0.0	870	3253	0.0	1000	5113	0.0
485	6613	0.8	615	211915	64.0	745	14922	0.0	875	2450	0.0			

REPORT NUMBER: SP1-2101-121-4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 7290.1

S/P: 0.84

λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	2623	0.0	490	7941	12.2	620	205150	2.6	750	13431	0.0	880	3867	0.0
365	2260	0.0	495	11299	18.3	625	198277	1.7	755	12426	0.0	885	3345	0.0
370	2306	0.0	500	16633	27.8	630	187878	1.1	760	11385	0.0	890	2956	0.0
375	2437	0.0	505	23672	40.2	635	176836	0.7	765	9797	0.0	895	2272	0.0
380	2473	0.0	510	32025	54.3	640	164455	0.4	770	8562	0.0	900	3003	0.0
385	2203	0.0	515	41295	68.4	645	154086	0.3	775	7810	0.0	905	2480	0.0
390	2262	0.0	520	50628	80.5	650	141592	0.2	780	7052	0.0	910	2068	0.0
395	2028	0.0	525	58836	88.0	655	128604	0.1	785	6345	0.0	915	2064	0.0
400	1806	0.0	530	67109	92.5	660	116713	0.1	790	5524	0.0	920	2581	0.0
405	1945	0.1	535	74404	92.7	665	104993	0.0	795	5788	0.0	925	3137	0.0
410	3199	0.2	540	81280	89.8	670	93149	0.0	800	5282	0.0	930	2747	0.0
415	5572	0.6	545	88806	85.1	675	82543	0.0	805	4258	0.0	935	2471	0.0
420	10322	1.7	550	97367	79.6	680	73089	0.0	810	5156	0.0	940	2339	0.0
425	18494	4.5	555	106598	72.8	685	64438	0.0	815	4391	0.0	945	2917	0.0
430	28541	9.7	560	117615	65.7	690	56546	0.0	820	4383	0.0	950	1966	0.0
435	37453	16.7	565	129103	57.9	695	49328	0.0	825	4881	0.0	955	1580	0.0
440	44455	24.8	570	141415	49.9	700	43493	0.0	830	3588	0.0	960	1318	0.0
445	45934	30.8	575	155854	42.4	705	38035	0.0	835	3835	0.0	965	1419	0.0
450	37926	29.4	580	168613	34.7	710	33716	0.0	840	3014	0.0	970	1917	0.0
455	24793	21.7	585	182390	27.9	715	30449	0.0	845	3765	0.0	975	1210	0.0
460	15340	14.8	590	194054	21.6	720	27240	0.0	850	2906	0.0	980	3915	0.0
465	10883	11.5	595	203639	16.2	725	24231	0.0	855	2947	0.0	985	3180	0.0
470	8138	9.4	600	211043	11.9	730	21490	0.0	860	3864	0.0	990	5676	0.0
475	6653	8.3	605	214591	8.4	735	18548	0.0	865	3546	0.0	995	4736	0.0
480	6220	8.4	610	214337	5.8	740	16963	0.0	870	3253	0.0	1000	5113	0.0
485	6613	9.6	615	211915	3.9	745	14922	0.0	875	2450	0.0			

REPORT NUMBER: SP1-2101-121-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 2276.7

M/P: 0.26

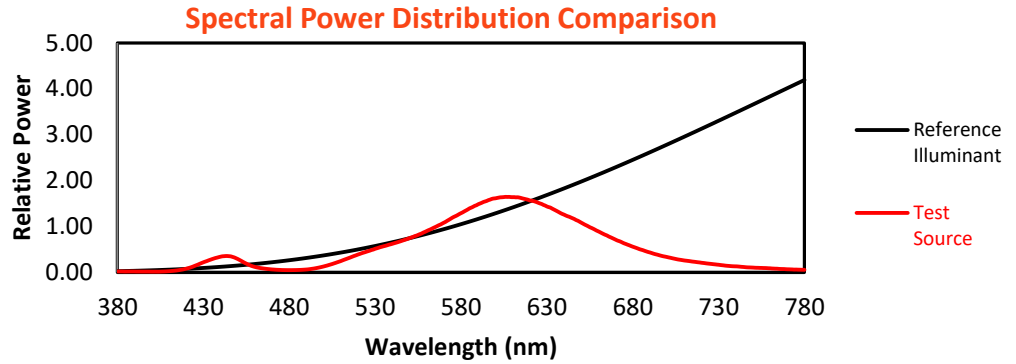
λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)	λ (nm)	Power (μW/nm)	Lumens (Φ/nm)
360	2623	0.0	490	7941	6.6	620	205150	0.2	750	13431	0.0	880	3867	0.0
365	2260	0.0	495	11299	9.3	625	198277	0.1	755	12426	0.0	885	3345	0.0
370	2306	0.0	500	16633	13.4	630	187878	0.1	760	11385	0.0	890	2956	0.0
375	2437	0.0	505	23672	18.2	635	176836	0.0	765	9797	0.0	895	2272	0.0
380	2473	0.0	510	32025	23.0	640	164455	0.0	770	8562	0.0	900	3003	0.0
385	2203	0.0	515	41295	27.0	645	154086	0.0	775	7810	0.0	905	2480	0.0
390	2262	0.0	520	50628	29.5	650	141592	0.0	780	7052	0.0	910	2068	0.0
395	2028	0.0	525	58836	29.8	655	128604	0.0	785	6345	0.0	915	2064	0.0
400	1806	0.0	530	67109	29.0	660	116713	0.0	790	5524	0.0	920	2581	0.0
405	1945	0.0	535	74404	26.8	665	104993	0.0	795	5788	0.0	925	3137	0.0
410	3199	0.1	540	81280	23.8	670	93149	0.0	800	5282	0.0	930	2747	0.0
415	5572	0.4	545	88806	20.6	675	82543	0.0	805	4258	0.0	935	2471	0.0
420	10322	1.2	550	97367	17.5	680	73089	0.0	810	5156	0.0	940	2339	0.0
425	18494	2.9	555	106598	14.4	685	64438	0.0	815	4391	0.0	945	2917	0.0
430	28541	6.0	560	117615	11.6	690	56546	0.0	820	4383	0.0	950	1966	0.0
435	37453	10.0	565	129103	9.1	695	49328	0.0	825	4881	0.0	955	1580	0.0
440	44455	14.9	570	141415	6.9	700	43493	0.0	830	3588	0.0	960	1318	0.0
445	45934	18.1	575	155854	5.2	705	38035	0.0	835	3835	0.0	965	1419	0.0
450	37926	17.5	580	168613	3.8	710	33716	0.0	840	3014	0.0	970	1917	0.0
455	24793	13.0	585	182390	2.7	715	30449	0.0	845	3765	0.0	975	1210	0.0
460	15340	9.0	590	194054	1.9	720	27240	0.0	850	2906	0.0	980	3915	0.0
465	10883	7.1	595	203639	1.3	725	24231	0.0	855	2947	0.0	985	3180	0.0
470	8138	5.8	600	211043	0.9	730	21490	0.0	860	3864	0.0	990	5676	0.0
475	6653	5.1	605	214591	0.6	735	18548	0.0	865	3546	0.0	995	4736	0.0
480	6220	5.0	610	214337	0.4	740	16963	0.0	870	3253	0.0	1000	5113	0.0
485	6613	5.5	615	211915	0.3	745	14922	0.0	875	2450	0.0			

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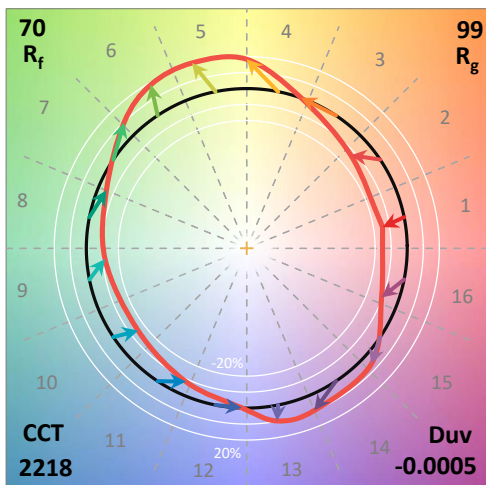
TM-30-18

Summary

$R_f = 70$
 $R_g = 99.3$
 CIE $R_a = 72.2$
 $R_g = -16.8$

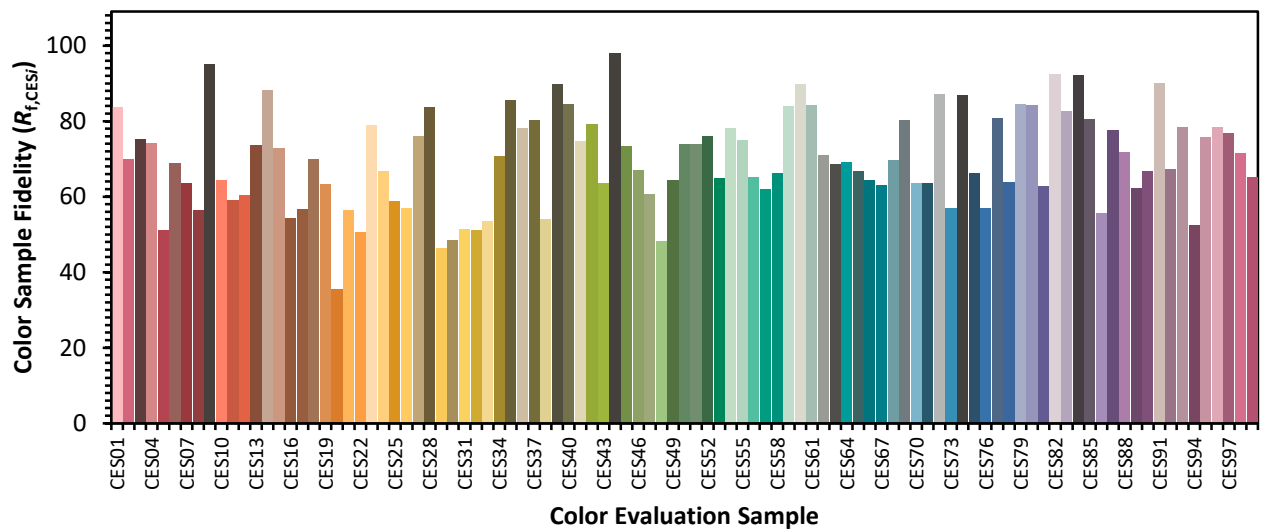


Color Vector Graphics

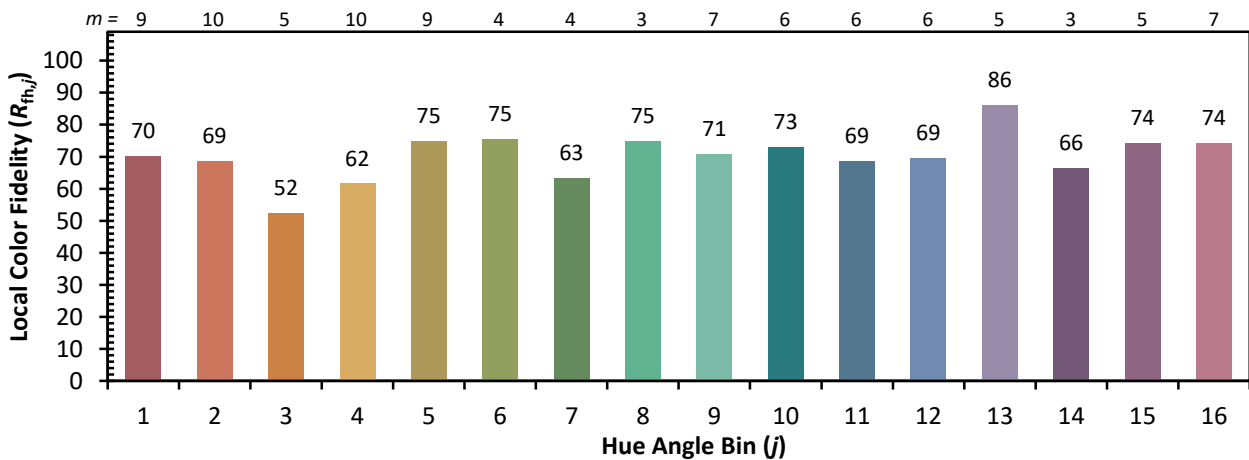
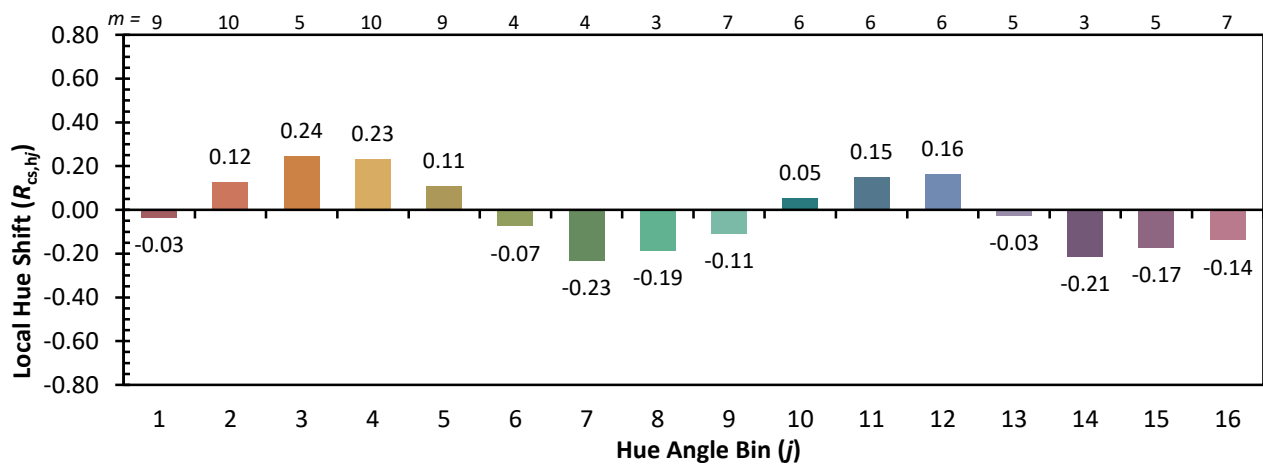


Individual Sample Fidelity Index ($R_{f,i}$)

CES01 = 87	CES26 = 57	CES51 = 74	CES76 = 57
CES02 = 65	CES27 = 76	CES52 = 76	CES77 = 81
CES03 = 32	CES28 = 84	CES53 = 65	CES78 = 64
CES04 = 72	CES29 = 46	CES54 = 78	CES79 = 85
CES05 = 52	CES30 = 48	CES55 = 75	CES80 = 84
CES06 = 52	CES31 = 52	CES56 = 65	CES81 = 63
CES07 = 44	CES32 = 51	CES57 = 62	CES82 = 92
CES08 = 43	CES33 = 54	CES58 = 66	CES83 = 83
CES09 = 29	CES34 = 71	CES59 = 84	CES84 = 92
CES10 = 79	CES35 = 86	CES60 = 90	CES85 = 81
CES11 = 62	CES36 = 78	CES61 = 84	CES86 = 56
CES12 = 68	CES37 = 80	CES62 = 71	CES87 = 78
CES13 = 45	CES38 = 54	CES63 = 68	CES88 = 72
CES14 = 75	CES39 = 90	CES64 = 69	CES89 = 62
CES15 = 72	CES40 = 85	CES65 = 67	CES90 = 67
CES16 = 49	CES41 = 75	CES66 = 64	CES91 = 90
CES17 = 51	CES42 = 79	CES67 = 63	CES92 = 67
CES18 = 57	CES43 = 64	CES68 = 70	CES93 = 78
CES19 = 74	CES44 = 98	CES69 = 80	CES94 = 52
CES20 = 68	CES45 = 73	CES70 = 64	CES95 = 76
CES21 = 89	CES46 = 67	CES71 = 64	CES96 = 78
CES22 = 81	CES47 = 61	CES72 = 87	CES97 = 77
CES23 = 92	CES48 = 48	CES73 = 57	CES98 = 72
CES24 = 92	CES49 = 64	CES74 = 87	CES99 = 65
CES25 = 74	CES50 = 74	CES75 = 66	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)