

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: McGRAW-EDISON

Report Number: P437005

Luminaire Tested: **ISC-SA1A-740-U-SL4-HSS**

Issue Date: 12/9/2020

Test Information

Test Method: LM-79-08
Report Number: P437005
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2011-074-19)
Test Lab: INNOVATION CENTER
Issue Date: 12/9/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: ISC-SA1A-740-U-SL4-HSS
Description: IMPACT ELITE LED CYLINDER LUMINAIRE
(1) 70 CRI, 4000K, 350mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV SPILL LIGHT
ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2272 lumens
Efficiency: N/A
Efficacy: 113.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B0 - U0 - G1

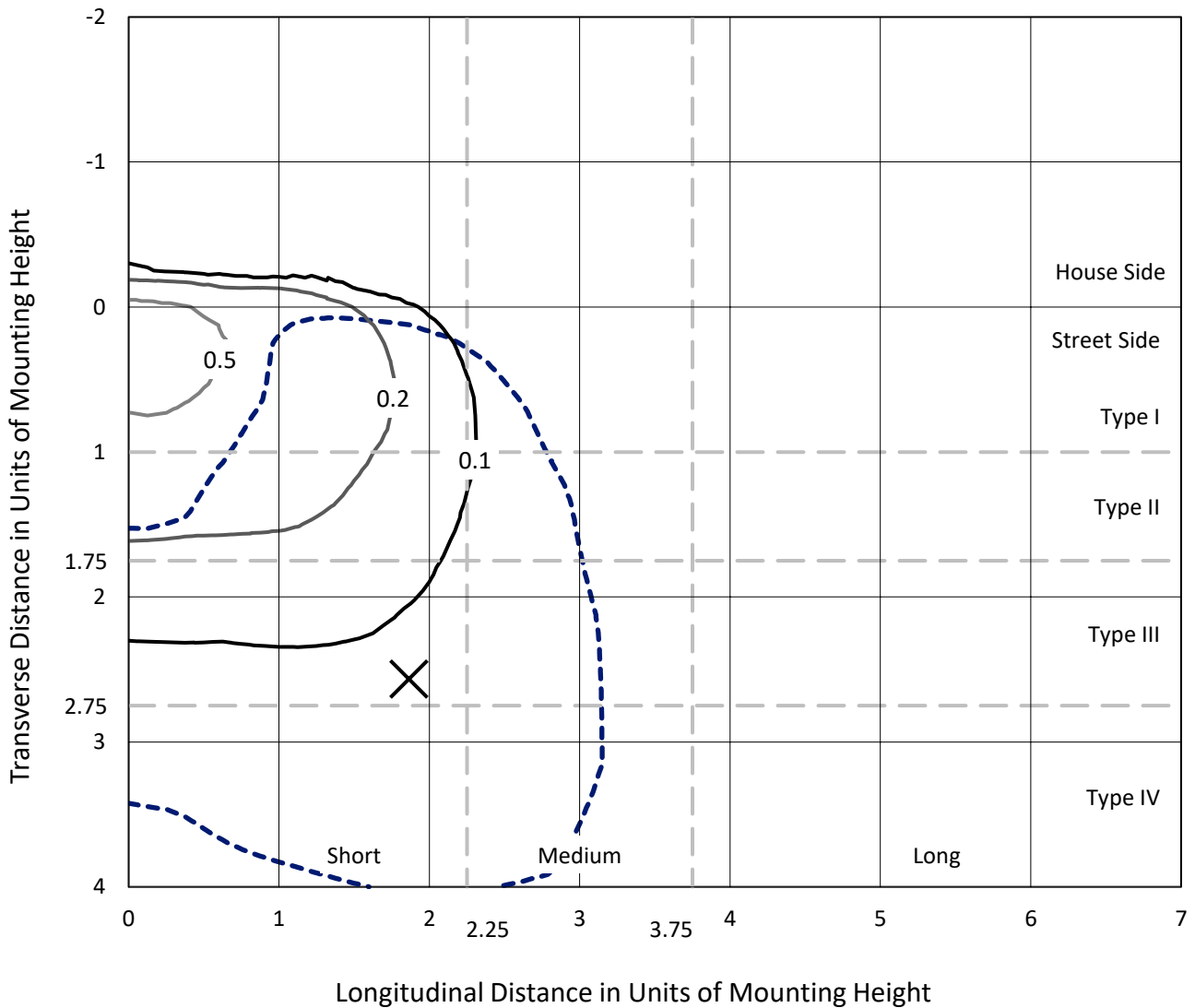
Input Watts (W): 20.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

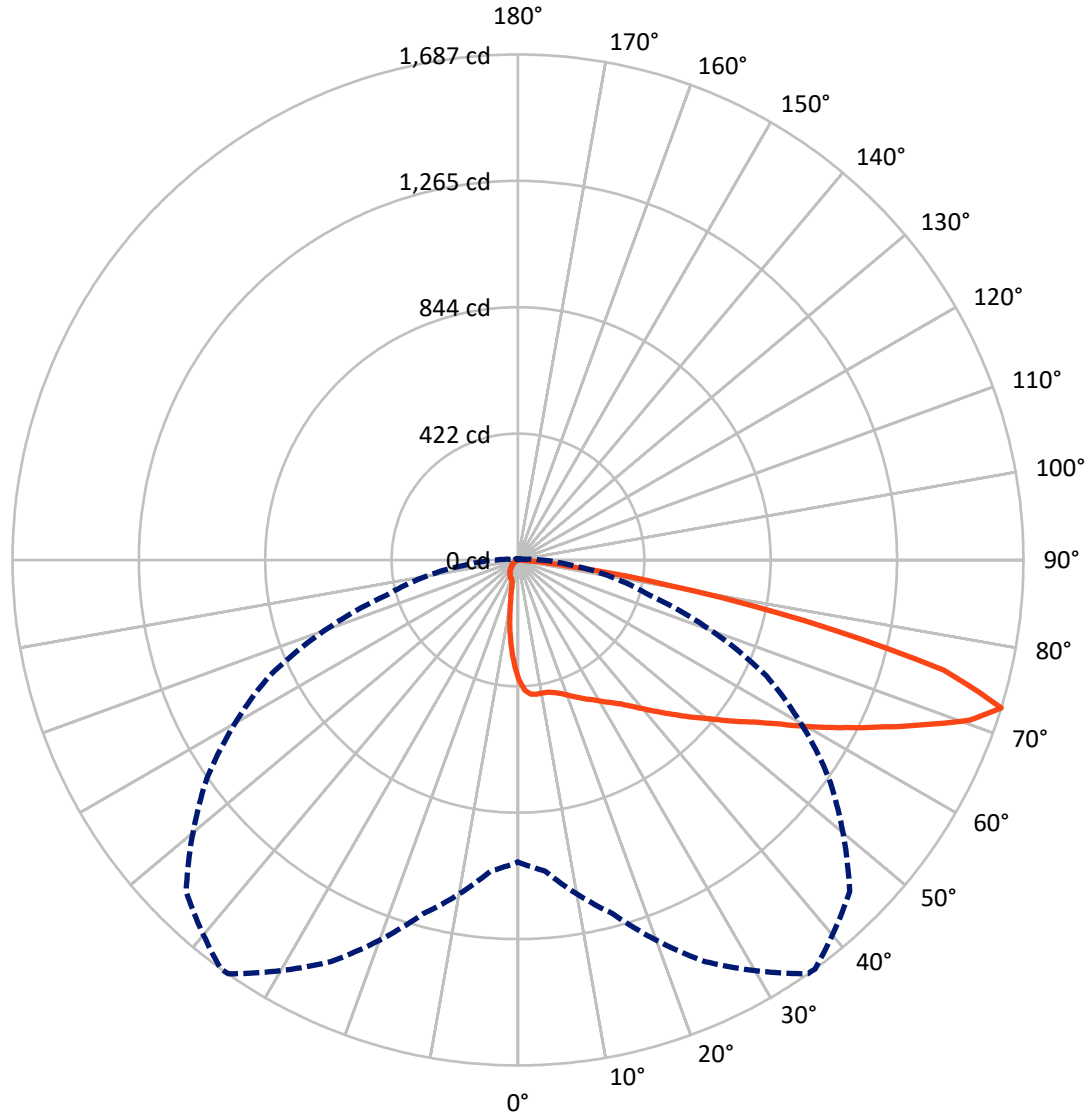
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.7 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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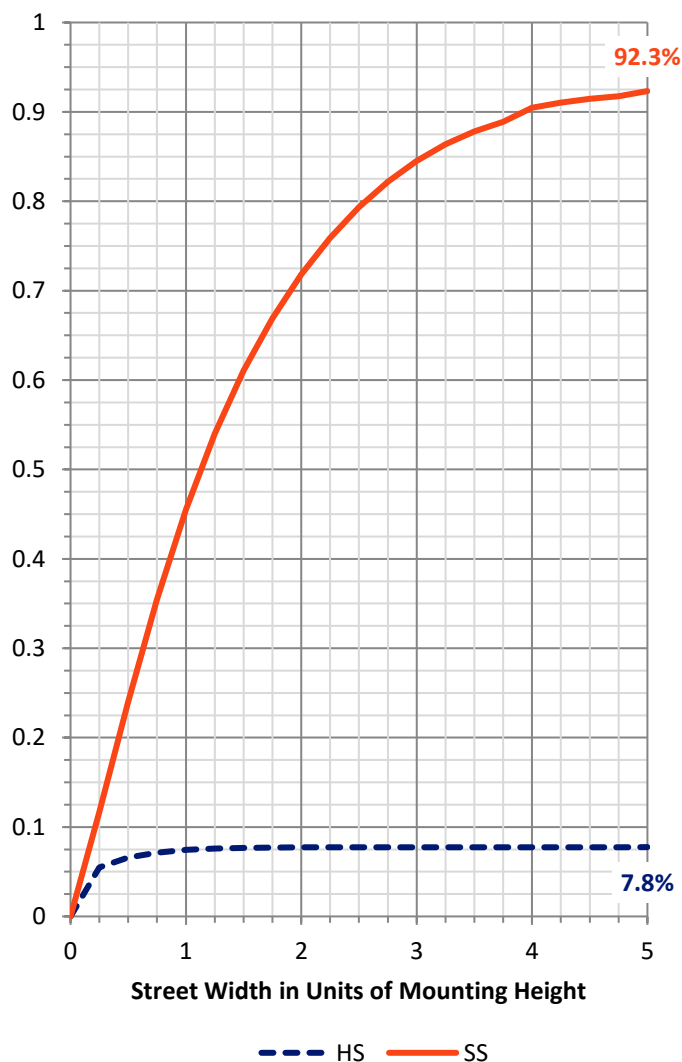
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	177.3	0.0	177.3
	% Fixture	7.8	0.0	7.8
Street Side	Lumens	2094.7	0.0	2094.7
	% Fixture	92.2	0.0	92.2
Total	Lumens	2272.0	0.0	2272.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.1	1.5
10°-20°	85.5	3.8
20°-30°	139.7	6.1
30°-40°	212.4	9.3
40°-50°	324.8	14.3
50°-60°	461.9	20.3
60°-70°	585.7	25.8
70°-80°	401.0	17.7
80°-90°	26.9	1.2
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°	2272.0	100.0
0°-180°	2272.0	100.0

Coefficient of Utilization



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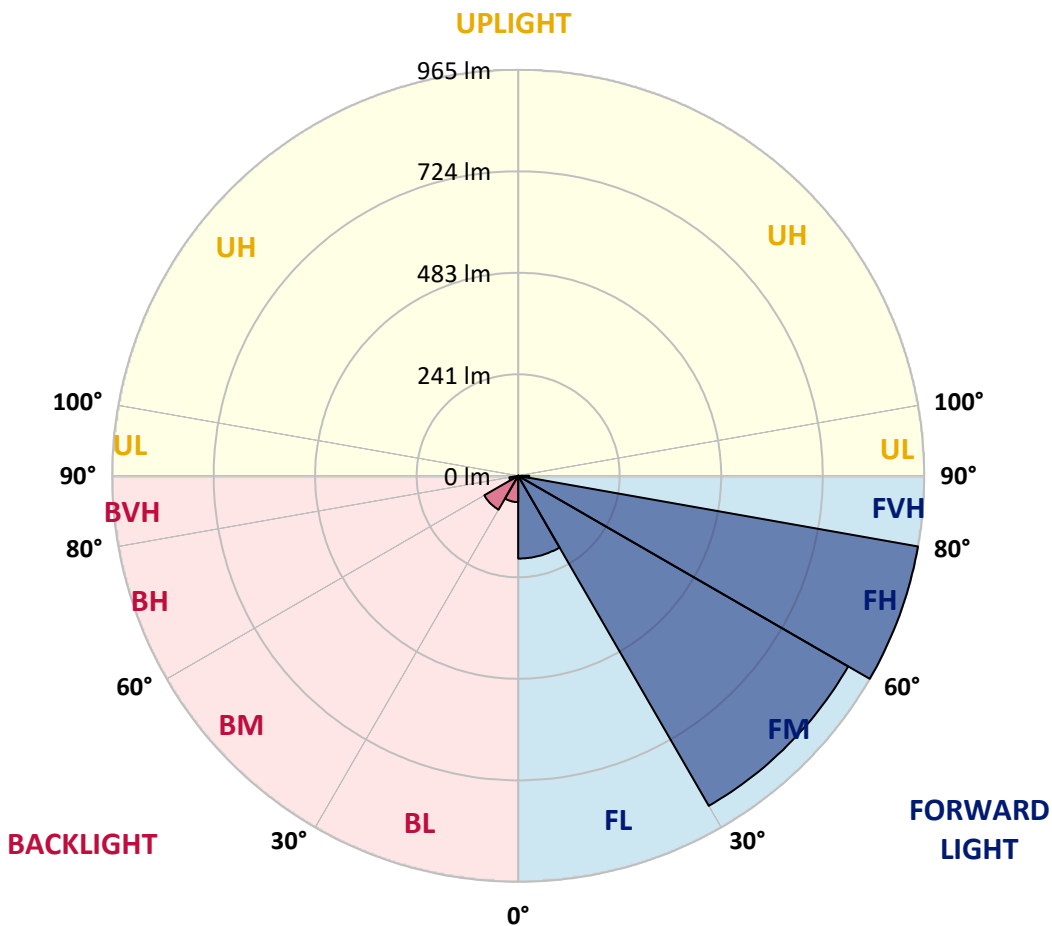
CATALOG NUMBER: ISC-SA1A-740-U-SL4-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	196.8	8.7			
FM (30°-60°)	906.1	39.9			
FH (60°-80°)	965.4	42.5			G1/1800
FVH (80°-90°)	26.5	1.2			G1/100
BL (0°-30°)	62.6	2.8	B0/110		
BM (30°-60°)	93.0	4.1	B0/220		
BH (60°-80°)	21.4	0.9	B0/110		G0/110
BVH (80°-90°)	0.4	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B0-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	399	399	399	399	399	399	399	399	399	399	399
2.5°	447	444	442	440	434	435	429	423	414	410	404
5°	458	457	456	453	448	450	444	438	425	413	400
7.5°	456	458	457	455	451	452	447	441	430	414	396
10°	452	453	453	452	451	451	447	442	432	418	395
12.5°	444	446	449	451	452	453	450	446	437	422	398
15°	441	443	449	455	458	459	456	451	443	430	403
17.5°	441	443	453	462	468	469	465	460	450	437	409
20°	447	449	461	477	480	482	476	469	458	445	416
22.5°	457	460	475	490	496	497	490	477	467	454	422
25°	474	481	495	511	512	513	502	489	477	464	429
27.5°	498	504	516	534	528	528	519	502	490	478	441
30°	529	533	547	554	546	547	536	520	510	498	459
32.5°	558	561	576	577	568	567	559	540	532	528	484
35°	585	589	601	600	591	590	586	569	569	573	521
37.5°	605	615	630	626	620	620	617	604	614	629	570
40°	631	637	657	654	655	655	656	648	666	691	627
42.5°	645	657	681	685	694	694	702	700	734	766	693
45°	667	680	706	721	732	737	751	762	810	850	763
47.5°	695	706	728	756	776	784	812	830	894	935	829
50°	733	735	751	793	828	833	877	907	979	1017	876
52.5°	774	770	779	836	885	894	944	990	1062	1070	895
55°	806	806	813	883	949	954	1024	1073	1138	1101	907
57.5°	847	843	854	931	1029	1033	1114	1152	1180	1121	905
60°	877	882	899	993	1112	1130	1198	1210	1224	1128	899
62.5°	919	918	951	1062	1220	1232	1279	1259	1258	1140	891
65°	954	962	1012	1145	1335	1343	1359	1333	1305	1153	821
67.5°	1008	1024	1087	1254	1458	1467	1481	1424	1318	1061	684
70°	1069	1090	1192	1399	1590	1600	1603	1433	1194	833	464
72.5°	1008	1042	1222	1479	1686	1687	1566	1266	915	455	164
75°	649	692	1012	1312	1452	1468	1228	885	427	102	46
77.5°	220	235	497	828	974	980	808	448	135	41	25
80°	127	126	174	362	486	505	407	179	63	21	17
82.5°	30	31	91	132	193	174	86	108	29	12	15
85°	0	0	15	32	23	27	8	33	5	5	10
87.5°	0	0	0	0	1	1	1	1	1	1	1
90°	0	0	0	0	0	0	0	0	0	0	0



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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	399	399	399	399	399	399	399	399	399	399	399
2.5°	398	393	383	375	364	355	346	342	335	333	334
5°	392	384	365	346	325	305	284	272	267	258	256
7.5°	385	373	346	315	279	250	221	201	183	176	173
10°	382	367	329	282	233	186	150	124	108	102	100
12.5°	382	364	313	250	185	131	98	83	78	77	76
15°	386	363	298	216	140	91	75	73	72	72	73
17.5°	388	361	282	183	103	73	70	70	70	70	70
20°	393	360	264	148	78	68	67	67	67	67	68
22.5°	394	360	242	114	69	65	64	64	64	65	65
25°	400	358	221	87	65	61	61	60	61	61	61
27.5°	408	359	195	72	61	58	57	57	57	57	57
30°	417	361	168	64	57	55	54	53	53	53	53
32.5°	434	363	139	58	53	51	50	49	49	49	49
35°	460	374	114	54	49	47	46	45	45	45	44
37.5°	495	391	90	50	45	43	42	41	40	40	40
40°	537	409	75	45	41	39	38	37	36	35	35
42.5°	587	431	60	41	37	35	34	33	31	30	31
45°	643	452	51	38	34	32	31	29	27	26	26
47.5°	692	457	45	34	31	29	28	25	23	21	21
50°	725	448	40	31	28	27	25	21	18	17	16
52.5°	729	424	35	28	26	24	21	18	15	13	13
55°	725	384	31	26	23	21	18	14	11	10	9
57.5°	712	342	28	23	21	18	14	11	8	7	6
60°	688	291	25	21	18	15	11	8	5	4	4
62.5°	643	235	22	18	15	12	9	5	3	2	2
65°	554	176	19	15	12	10	6	3	1	0	0
67.5°	431	119	15	12	10	8	5	1	0	0	0
70°	254	63	12	9	8	6	3	1	0	0	0
72.5°	73	25	9	7	6	4	2	1	0	0	0
75°	30	15	6	5	5	3	1	1	0	0	0
77.5°	20	11	4	3	3	2	1	0	0	0	0
80°	16	6	2	2	2	1	1	0	0	0	0
82.5°	14	4	1	1	1	1	0	0	0	0	0
85°	7	2	1	1	0	0	0	0	0	0	0
87.5°	1	1	1	0	0	0	0	0	0	0	0
90°	0	0	0	0	0	0	0	0	0	0	0

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Test Information

Test Method: LM-79-08
 Report Number: SP1-2101-121-2
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1
 Measurement Geometry: 4π
 Issue Date: 03/05/2021
 Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
 Product Line: STREETWORKS
 Catalog Number: **IFLD-S-SA2A-740-U-T3R-HSS**
 Description: STREETWORKS INF FLOOD

SHIELD, DRIVER PROGRAMMED @ 615mA.

Spectral Parameters

CCT (K):	3905	CRI (Ra):	71.2	R9:	-29.7
CIE u':	0.2273	R1:	68.9	R10:	46.2
CIE v':	0.5024	R2:	77.0	R11:	68.8
Duv:	-0.0008	R3:	84.0	R12:	45.6
CIE x:	0.3841	R4:	71.6	R13:	69.5
CIE y:	0.3774	R5:	68.9	R14:	90.7
CIE z:	0.2385	R6:	68.3		
Peak Wavelength (nm):	443	R7:	78.7		
Dominant Wavelength (nm):	579	R8:	52.2		
Purity:	28.7				
Rf:	71.7				
Rg:	96.9				



Test Conditions

Stabilization Time:	211M
Operation Time:	12H
Room Temperature (°C) / RH%:	24.8/312%
Sphere Temperature (°C):	24.1

REPORT NUMBER: SP1-2101-121-2

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

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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

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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	2304	0.0	490	19043	2.7	620	97577	25.4	750	4830	0.0	880	3505	0.0
365	2150	0.0	495	26606	4.8	625	90158	19.9	755	4664	0.0	885	2991	0.0
370	2146	0.0	500	36376	8.0	630	82240	14.9	760	4006	0.0	890	2327	0.0
375	2332	0.0	505	47714	13.3	635	74361	11.2	765	3715	0.0	895	2775	0.0
380	2527	0.0	510	58741	20.2	640	66994	8.0	770	3696	0.0	900	2141	0.0
385	2304	0.0	515	68716	28.5	645	60405	5.8	775	3117	0.0	905	2421	0.0
390	2064	0.0	520	77136	37.4	650	53806	3.9	780	3062	0.0	910	2200	0.0
395	1856	0.0	525	83567	44.9	655	47610	2.7	785	2907	0.0	915	2716	0.0
400	1856	0.0	530	89283	52.6	660	42018	1.8	790	2655	0.0	920	2656	0.0
405	2374	0.0	535	94097	58.4	665	36742	1.2	795	2467	0.0	925	2671	0.0
410	4084	0.0	540	96845	63.1	670	32105	0.7	800	2609	0.0	930	3292	0.0
415	8543	0.0	545	100829	67.1	675	27946	0.5	805	2293	0.0	935	3188	0.0
420	18394	0.1	550	105648	71.8	680	24146	0.3	810	2188	0.0	940	1997	0.0
425	37987	0.2	555	110017	75.1	685	21191	0.2	815	2386	0.0	945	2623	0.0
430	67605	0.5	560	114586	77.9	690	18544	0.1	820	2712	0.0	950	2969	0.0
435	102160	1.2	565	118987	79.1	695	16058	0.1	825	2473	0.0	955	2277	0.0
440	135103	2.1	570	122326	79.5	700	14133	0.0	830	1969	0.0	960	4267	0.0
445	140126	2.9	575	125968	78.4	705	12309	0.0	835	1917	0.0	965	2034	0.0
450	102339	2.7	580	127613	75.8	710	11142	0.0	840	2248	0.0	970	3586	0.0
455	58751	2.0	585	129466	71.9	715	10143	0.0	845	2266	0.0	975	2505	0.0
460	36892	1.5	590	128813	66.6	720	9072	0.0	850	2558	0.0	980	2666	0.0
465	24637	1.3	595	126387	59.9	725	8130	0.0	855	2767	0.0	985	2934	0.0
470	16738	1.0	600	123477	53.2	730	7149	0.0	860	2826	0.0	990	4120	0.0
475	13456	1.1	605	118718	46.0	735	6311	0.0	865	2385	0.0	995	3858	0.0
480	13081	1.2	610	112091	38.5	740	5711	0.0	870	3194	0.0	1000	3405	0.0
485	14734	1.7	615	105039	31.7	745	5111	0.0	875	3189	0.0			

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 10425.8 S/P: 1.47

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	2304	0.0	490	19043	29.3	620	97577	1.2	750	4830	0.0	880	3505	0.0
365	2150	0.0	495	26606	43.0	625	90158	0.8	755	4664	0.0	885	2991	0.0
370	2146	0.0	500	36376	60.8	630	82240	0.5	760	4006	0.0	890	2327	0.0
375	2332	0.0	505	47714	81.1	635	74361	0.3	765	3715	0.0	895	2775	0.0
380	2527	0.0	510	58741	99.6	640	66994	0.2	770	3696	0.0	900	2141	0.0
385	2304	0.0	515	68716	113.9	645	60405	0.1	775	3117	0.0	905	2421	0.0
390	2064	0.0	520	77136	122.6	650	53806	0.1	780	3062	0.0	910	2200	0.0
395	1856	0.0	525	83567	125.0	655	47610	0.0	785	2907	0.0	915	2716	0.0
400	1856	0.0	530	89283	123.1	660	42018	0.0	790	2655	0.0	920	2656	0.0
405	2374	0.1	535	94097	117.3	665	36742	0.0	795	2467	0.0	925	2671	0.0
410	4084	0.2	540	96845	107.0	670	32105	0.0	800	2609	0.0	930	3292	0.0
415	8543	0.9	545	100829	96.7	675	27946	0.0	805	2293	0.0	935	3188	0.0
420	18394	3.0	550	105648	86.4	680	24146	0.0	810	2188	0.0	940	1997	0.0
425	37987	9.3	555	110017	75.2	685	21191	0.0	815	2386	0.0	945	2623	0.0
430	67605	23.0	560	114586	64.0	690	18544	0.0	820	2712	0.0	950	2969	0.0
435	102160	45.7	565	118987	53.4	695	16058	0.0	825	2473	0.0	955	2277	0.0
440	135103	75.5	570	122326	43.2	700	14133	0.0	830	1969	0.0	960	4267	0.0
445	140126	93.8	575	125968	34.3	705	12309	0.0	835	1917	0.0	965	2034	0.0
450	102339	79.3	580	127613	26.3	710	11142	0.0	840	2248	0.0	970	3586	0.0
455	58751	51.3	585	129466	19.8	715	10143	0.0	845	2266	0.0	975	2505	0.0
460	36892	35.6	590	128813	14.3	720	9072	0.0	850	2558	0.0	980	2666	0.0
465	24637	26.0	595	126387	10.1	725	8130	0.0	855	2767	0.0	985	2934	0.0
470	16738	19.3	600	123477	7.0	730	7149	0.0	860	2826	0.0	990	4120	0.0
475	13456	16.8	605	118718	4.7	735	6311	0.0	865	2385	0.0	995	3858	0.0
480	13081	17.7	610	112091	3.0	740	5711	0.0	870	3194	0.0	1000	3405	0.0
485	14734	21.4	615	105039	1.9	745	5111	0.0	875	3189	0.0			

REPORT NUMBER: SP1-2101-121-2

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3927.2 M/P: 0.55

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	2304	0.0	490	19043	15.8	620	97577	0.1	750	4830	0.0	880	3505	0.0
365	2150	0.0	495	26606	22.0	625	90158	0.0	755	4664	0.0	885	2991	0.0
370	2146	0.0	500	36376	29.2	630	82240	0.0	760	4006	0.0	890	2327	0.0
375	2332	0.0	505	47714	36.6	635	74361	0.0	765	3715	0.0	895	2775	0.0
380	2527	0.0	510	58741	42.2	640	66994	0.0	770	3696	0.0	900	2141	0.0
385	2304	0.0	515	68716	44.9	645	60405	0.0	775	3117	0.0	905	2421	0.0
390	2064	0.0	520	77136	44.9	650	53806	0.0	780	3062	0.0	910	2200	0.0
395	1856	0.0	525	83567	42.4	655	47610	0.0	785	2907	0.0	915	2716	0.0
400	1856	0.0	530	89283	38.6	660	42018	0.0	790	2655	0.0	920	2656	0.0
405	2374	0.0	535	94097	33.9	665	36742	0.0	795	2467	0.0	925	2671	0.0
410	4084	0.2	540	96845	28.3	670	32105	0.0	800	2609	0.0	930	3292	0.0
415	8543	0.6	545	100829	23.4	675	27946	0.0	805	2293	0.0	935	3188	0.0
420	18394	2.1	550	105648	19.0	680	24146	0.0	810	2188	0.0	940	1997	0.0
425	37987	5.9	555	110017	14.8	685	21191	0.0	815	2386	0.0	945	2623	0.0
430	67605	14.3	560	114586	11.3	690	18544	0.0	820	2712	0.0	950	2969	0.0
435	102160	27.3	565	118987	8.4	695	16058	0.0	825	2473	0.0	955	2277	0.0
440	135103	45.1	570	122326	6.0	700	14133	0.0	830	1969	0.0	960	4267	0.0
445	140126	55.3	575	125968	4.2	705	12309	0.0	835	1917	0.0	965	2034	0.0
450	102339	47.2	580	127613	2.9	710	11142	0.0	840	2248	0.0	970	3586	0.0
455	58751	30.8	585	129466	1.9	715	10143	0.0	845	2266	0.0	975	2505	0.0
460	36892	21.7	590	128813	1.3	720	9072	0.0	850	2558	0.0	980	2666	0.0
465	24637	16.1	595	126387	0.8	725	8130	0.0	855	2767	0.0	985	2934	0.0
470	16738	12.0	600	123477	0.5	730	7149	0.0	860	2826	0.0	990	4120	0.0
475	13456	10.3	605	118718	0.3	735	6311	0.0	865	2385	0.0	995	3858	0.0
480	13081	10.5	610	112091	0.2	740	5711	0.0	870	3194	0.0	1000	3405	0.0
485	14734	12.1	615	105039	0.1	745	5111	0.0	875	3189	0.0			

Summary

$R_f = 71.7$
 $R_g = 96.9$
 CIE $R_a = 71.2$
 $R_g = -29.7$



Color Vector Graphics



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

CES01 = 85	CES26 = 55	CES51 = 86	CES76 = 45
CES02 = 61	CES27 = 80	CES52 = 87	CES77 = 68
CES03 = 30	CES28 = 79	CES53 = 74	CES78 = 49
CES04 = 70	CES29 = 51	CES54 = 81	CES79 = 77
CES05 = 47	CES30 = 60	CES55 = 80	CES80 = 75
CES06 = 50	CES31 = 56	CES56 = 69	CES81 = 75
CES07 = 40	CES32 = 52	CES57 = 67	CES82 = 90
CES08 = 39	CES33 = 62	CES58 = 69	CES83 = 85
CES09 = 29	CES34 = 65	CES59 = 86	CES84 = 87
CES10 = 74	CES35 = 81	CES60 = 91	CES85 = 83
CES11 = 57	CES36 = 92	CES61 = 85	CES86 = 72
CES12 = 63	CES37 = 74	CES62 = 81	CES87 = 77
CES13 = 42	CES38 = 69	CES63 = 72	CES88 = 77
CES14 = 74	CES39 = 92	CES64 = 69	CES89 = 72
CES15 = 71	CES40 = 86	CES65 = 64	CES90 = 75
CES16 = 46	CES41 = 84	CES66 = 63	CES91 = 91
CES17 = 49	CES42 = 75	CES67 = 60	CES92 = 66
CES18 = 56	CES43 = 70	CES68 = 67	CES93 = 80
CES19 = 72	CES44 = 98	CES69 = 77	CES94 = 56
CES20 = 65	CES45 = 80	CES70 = 57	CES95 = 72
CES21 = 86	CES46 = 77	CES71 = 53	CES96 = 78
CES22 = 78	CES47 = 74	CES72 = 84	CES97 = 83
CES23 = 92	CES48 = 66	CES73 = 47	CES98 = 73
CES24 = 91	CES49 = 76	CES74 = 96	CES99 = 63
CES25 = 72	CES50 = 85	CES75 = 52	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)