

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



Scaled data based on original data using  
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-  
State Lighting Products

Test Report Prepared for  
Cooper Lighting Solutions

Brand: FAIL-SAFE

Report Number: P1357184

Luminaire Tested: 4ASL4-20HE-2-G52-UNV

Issue Date: 2/17/2026

**Test Information**

Test Method: LM-79-2019  
Report Number: P1357184  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2511-597-7)  
Test Lab: INNOVATION CENTER  
Issue Date: 2/17/2026  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: FAIL-SAFE  
Catalog Number: 4ASL4-20HE-2-G52-UNV  
Description: 4FT 2000 LUMEN PER FOOT 4ASL LED LUMINAIRE WITH OPL LENS AND G52 LEDS 2 ROW  
Light Source: -  
Ballast/Driver: -

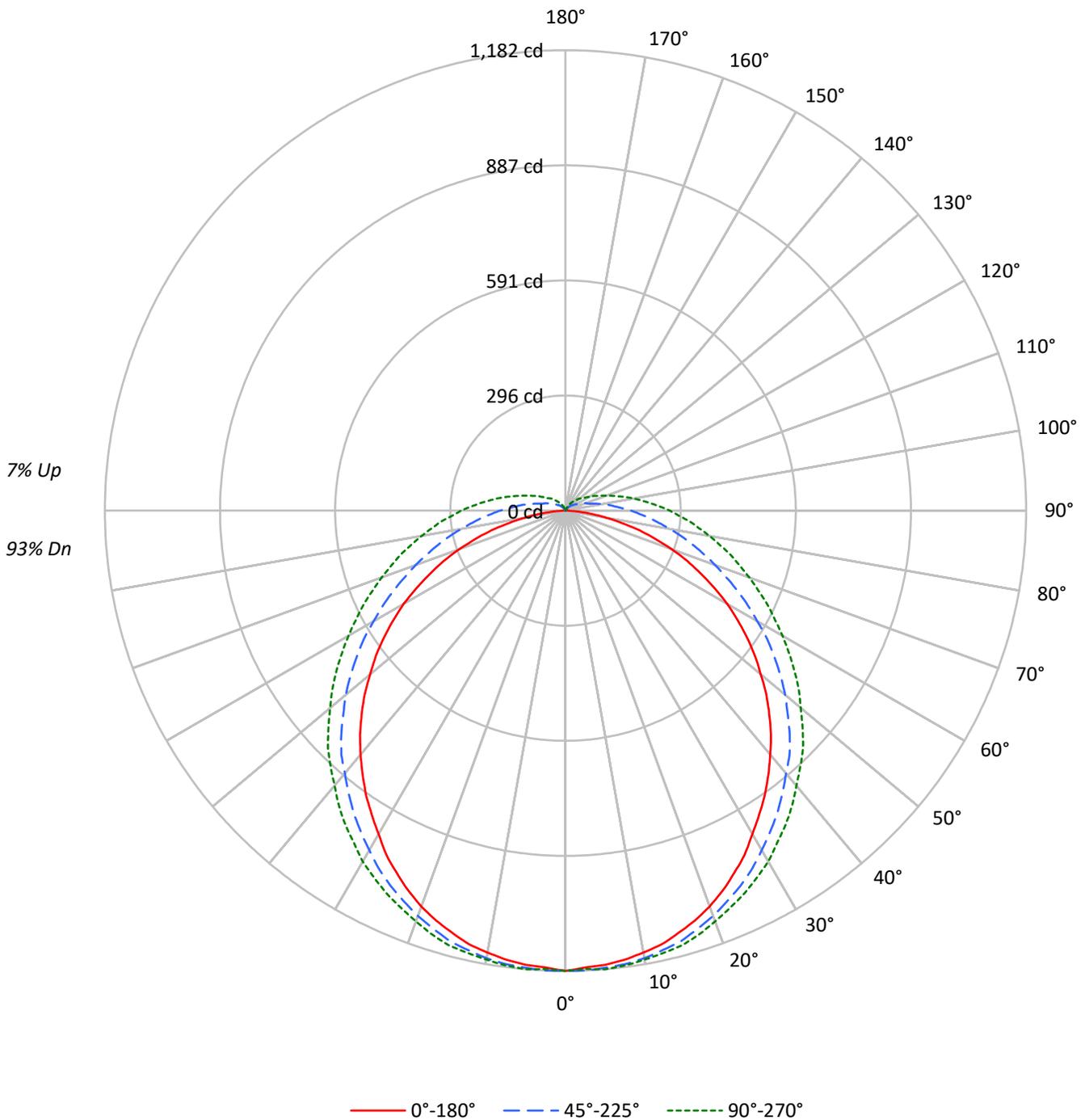
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4057.0 lumens  
Efficiency: N/A  
Efficacy: 49.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.3 / 1.4  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 3.98' x H: 0.1')  
CIE Type: Direct

Input Watts (W): 82.4  
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: 24 FT

TEST NUMBER: P1357184  
CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

### Luminous Intensity Polar Plot





TEST NUMBER: P1357184

CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20				20				20				20				20				
RC	80				70				50				30				10			0	
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																					
0	117	117	117	117	114	114	114	114	107	107	107	101	101	101	95	95	95	95	95	95	93
1	105	100	95	90	102	97	92	88	91	87	84	86	83	80	81	79	77	77	77	77	74
2	95	86	79	72	92	84	77	71	79	73	68	74	70	65	70	66	63	63	63	63	60
3	86	75	66	59	83	73	65	58	69	62	56	65	59	55	62	57	53	53	53	53	50
4	79	66	57	50	76	64	56	49	61	54	48	58	51	46	55	49	45	45	45	45	42
5	72	59	50	43	70	57	49	42	54	47	41	52	45	40	49	43	39	39	39	39	36
6	67	53	44	37	64	52	43	37	49	41	36	47	40	35	44	39	34	34	34	34	32
7	62	48	39	33	60	47	38	32	45	37	32	43	36	31	41	35	30	30	30	30	28
8	58	44	35	29	56	43	34	29	41	33	28	39	32	28	37	31	27	27	27	27	25
9	54	40	32	26	52	39	31	26	37	30	25	36	29	25	34	29	24	24	24	24	22
10	50	37	29	24	49	36	28	23	35	28	23	33	27	22	32	26	22	22	22	22	20

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	9591	9591	9591
5°	9514	9399	9371
10°	9449	9226	9143
15°	9363	9037	8959
20°	9251	8797	8702
25°	9074	8561	8480
30°	8851	8291	8260
35°	8677	8040	8005
40°	8475	7769	7735
45°	8271	7536	7539
50°	8008	7227	7247
55°	7755	6896	7016
60°	7443	6523	6770
65°	6960	6176	6580
70°	6417	5850	6405
75°	5627	5600	6347
80°	4387	5377	6327
85°	2666	5369	6509

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 8271 cd/sqm



TEST NUMBER: P1357184  
 CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	112.1	2.8
10°-20°	322.1	7.9
20°-30°	488.1	12.0
30°-40°	590.4	14.6
40°-50°	622.4	15.3
50°-60°	580.9	14.3
60°-70°	479.6	11.8
70°-80°	347.9	8.6
80°-90°	219.8	5.4
90°-100°	131.2	3.2
100°-110°	75.2	1.9
110°-120°	42.7	1.1
120°-130°	24.4	0.6
130°-140°	13.2	0.3
140°-150°	5.8	0.1
150°-160°	1.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	922.4	22.7
0°-40°	1512.8	37.3
0°-60°	2716.1	66.9
0°-90°	3763.5	92.8
90°-120°	249.1	6.1
90°-150°	292.5	7.2
90°-180°	294.0	7.2
0°-180°	4057.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1182	1182	1182	1182	1182	
5°	1171	1182	1178	1178	1182	111
15°	1122	1137	1145	1148	1156	317
25°	1026	1040	1063	1078	1085	472
35°	892	914	948	974	985	557
45°	740	769	814	847	862	570
55°	569	602	654	699	717	508
65°	383	424	487	546	572	380
75°	197	249	338	409	438	207
85°	37	115	216	290	320	45
90°	0	71	167	238	268	2
95°	0	45	126	193	219	0
105°	0	15	71	123	141	0
115°	0	7	41	74	89	0
125°	0	4	26	48	56	0
135°	0	0	15	30	37	0
145°	0	0	7	19	22	0
155°	0	0	0	4	7	0
165°	0	0	0	0	0	0
175°	0	0	0	0	0	0
180°	0	0	0	0	0	0



TEST NUMBER: P1357184

CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°
0°	1181.8	1181.8	1181.8	1181.8	1181.8
2.5°	1174.3	1185.5	1181.8	1178.0	1178.0
5°	1170.6	1181.8	1178.0	1178.0	1181.8
7.5°	1163.2	1174.3	1174.3	1174.3	1178.0
10°	1152.0	1166.9	1166.9	1166.9	1170.6
12.5°	1140.9	1152.0	1155.7	1159.5	1163.2
15°	1122.3	1137.2	1144.6	1148.3	1155.7
17.5°	1103.7	1114.9	1126.0	1137.2	1140.9
20°	1081.4	1096.3	1107.4	1118.6	1122.3
22.5°	1055.4	1070.3	1085.1	1096.3	1103.7
25°	1025.7	1040.5	1062.8	1077.7	1085.1
27.5°	996.0	1010.8	1036.8	1055.4	1062.8
30°	958.8	981.1	1007.1	1029.4	1040.5
32.5°	925.3	947.6	977.4	1003.4	1010.8
35°	891.9	914.2	947.6	973.7	984.8
37.5°	854.7	880.7	914.2	943.9	955.1
40°	817.6	843.6	880.7	914.2	921.6
42.5°	780.4	806.4	851.0	880.7	891.9
45°	739.5	769.3	813.9	847.3	862.2
47.5°	698.7	728.4	773.0	810.1	825.0
50°	654.1	687.5	735.8	773.0	787.8
52.5°	613.2	646.6	694.9	735.8	754.4
55°	568.6	602.0	654.1	698.7	717.2
57.5°	524.0	557.4	613.2	661.5	680.1
60°	479.4	512.8	568.6	624.3	642.9
62.5°	431.1	468.2	527.7	583.4	605.7
65°	382.8	423.7	486.8	546.3	572.3
67.5°	338.2	379.1	445.9	512.8	535.1
70°	289.9	334.5	408.8	475.7	501.7
72.5°	241.6	289.9	371.6	442.2	468.2
75°	197.0	249.0	338.2	408.8	438.5
77.5°	148.6	211.8	304.7	379.1	405.1
80°	107.8	174.7	271.3	349.3	375.3
82.5°	70.6	141.2	241.6	319.6	345.6
85°	37.2	115.2	215.5	289.9	319.6
87.5°	11.1	89.2	189.5	263.9	289.9
90°	0.0	70.6	167.2	237.8	267.6
92.5°	0.0	55.7	144.9	215.5	241.6
95°	0.0	44.6	126.4	193.2	219.3
97.5°	0.0	37.2	111.5	174.7	197.0
100°	0.0	29.7	96.6	156.1	178.4
102.5°	0.0	22.3	81.8	137.5	159.8
105°	0.0	14.9	70.6	122.6	141.2
107.5°	0.0	11.1	59.5	107.8	126.4
110°	0.0	11.1	55.7	92.9	111.5



TEST NUMBER: P1357184  
 CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°
112.5°	0.0	7.4	48.3	85.5	100.3
115°	0.0	7.4	40.9	74.3	89.2
117.5°	0.0	7.4	37.2	66.9	81.8
120°	0.0	7.4	33.4	59.5	70.6
122.5°	0.0	3.7	29.7	52.0	63.2
125°	0.0	3.7	26.0	48.3	55.7
127.5°	0.0	3.7	22.3	44.6	52.0
130°	0.0	3.7	22.3	40.9	48.3
132.5°	0.0	0.0	18.6	37.2	44.6
135°	0.0	0.0	14.9	29.7	37.2
137.5°	0.0	0.0	14.9	26.0	33.4
140°	0.0	0.0	11.1	26.0	29.7
142.5°	0.0	0.0	7.4	22.3	26.0
145°	0.0	0.0	7.4	18.6	22.3
147.5°	0.0	0.0	3.7	14.9	18.6
150°	0.0	0.0	3.7	11.1	14.9
152.5°	0.0	0.0	0.0	7.4	11.1
155°	0.0	0.0	0.0	3.7	7.4
157.5°	0.0	0.0	0.0	0.0	3.7
160°	0.0	0.0	0.0	0.0	0.0
162.5°	0.0	0.0	0.0	0.0	0.0
165°	0.0	0.0	0.0	0.0	0.0
167.5°	0.0	0.0	0.0	0.0	0.0
170°	0.0	0.0	0.0	0.0	0.0
172.5°	0.0	0.0	0.0	0.0	0.0
175°	0.0	0.0	0.0	0.0	0.0
177.5°	0.0	0.0	0.0	0.0	0.0
180°	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P1357184  
 CATALOG NUMBER: 4ASL4-20HE-2-G52-UNV

**CIE UGR TABLE:**

Reflectances:											
Ceiling		0.7	0.7	0.5	0.5	0.3	0.7	0.7	0.5	0.5	0.3
Wall		0.5	0.3	0.5	0.3	0.3	0.5	0.3	0.5	0.3	0.3
Reference plane		0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
Room dimensions		Viewed crosswise					Viewed endwise				
X=2H	Y=2H	17.17	18.70	17.64	19.16	19.65	19.23	20.76	19.70	21.22	21.71
	3H	18.67	20.07	19.15	20.54	21.07	21.68	23.08	22.16	23.55	24.08
	4H	19.15	20.48	19.66	20.96	21.51	22.89	24.21	23.39	24.70	25.25
	6H	19.42	20.66	19.94	21.16	21.72	24.16	25.39	24.68	25.90	26.46
	8H	19.48	20.66	20.01	21.19	21.75	24.82	26.00	25.35	26.53	27.09
	12H	19.49	20.63	20.03	21.15	21.75	25.55	26.68	26.08	27.20	27.80
4H	2H	18.05	19.37	18.55	19.86	20.41	19.66	20.98	20.16	21.47	22.02
	3H	19.79	20.92	20.31	21.45	22.02	22.34	23.47	22.86	24.00	24.57
	4H	20.40	21.43	20.94	21.97	22.57	23.72	24.76	24.26	25.30	25.90
	6H	20.80	21.71	21.36	22.28	22.89	25.19	26.11	25.75	26.67	27.29
	8H	20.90	21.76	21.46	22.32	22.95	25.96	26.82	26.52	27.39	28.01
	12H	20.94	21.73	21.53	22.32	22.95	26.81	27.60	27.40	28.19	28.82
8H	4H	21.09	21.95	21.66	22.52	23.15	23.94	24.80	24.51	25.37	26.00
	6H	21.68	22.41	22.28	23.02	23.65	25.59	26.32	26.18	26.93	27.56
	8H	21.87	22.53	22.48	23.15	23.79	26.50	27.16	27.11	27.78	28.42
	12H	21.99	22.58	22.60	23.19	23.90	27.54	28.13	28.15	28.74	29.45
12H	4H	21.29	22.08	21.88	22.67	23.30	23.95	24.73	24.54	25.33	25.96
	6H	21.98	22.64	22.59	23.26	23.91	25.62	26.29	26.23	26.91	27.55
	8H	22.27	22.86	22.88	23.47	24.18	26.61	27.20	27.22	27.80	28.51

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Fail-Safe

Report Number: SP1-2511-597-8

Test Date: 01/22/2026

Luminaire Tested: 4ASL-2-G520-UNV-OPL-1\_600mA

Data in this report applies to families of products including 4ASL

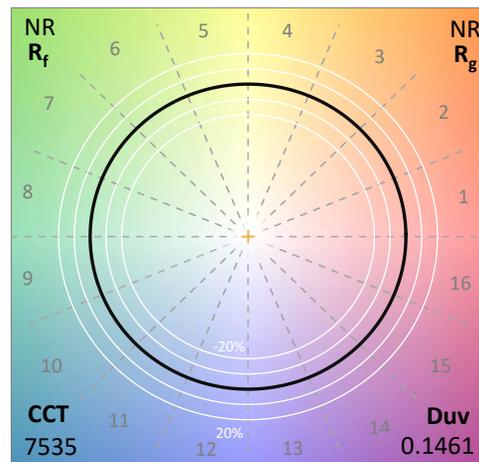
**Test Information**

Test Method: LM-79-2019  
 Report Number: SP1-2511-597-8  
 Test Lab: COOPER LIGHTING SOLUTIONS  
 Photometer: SP1 - 76IN SPHERE  
 Measurement Geometry:  $4\pi$   
 Issue Date: 01/29/2026  
 Manufacturer: COOPER LIGHTING SOLUTIONS  
 Product Line: Fail-Safe  
 Catalog Number: **4ASL-2-G520-UNV-OPL-1\_600mA**  
 Description: 2foot 4ASL LED LUMINAIRE WITH OPL LENS AND GREEN 520NM LEDS with 1 rows at 600mA

**Spectral Parameters**

CCT (K): 7535  
 CIE u': 0.0718  
 CIE v': 0.5710  
 Duv: 0.1461  
 CIE x: 0.1962  
 CIE y: 0.6931  
 CIE z: 0.1107  
 Peak Wavelength (nm): 524  
 Dominant Wavelength (nm): 529  
 Purity: 75.95236  
 Rf: NR  
 Rg: NR

CRI (Ra):	-11.7		
R1:	-30.6	R9:	-351.9
R2:	5.1	R10:	-75.5
R3:	5.6	R11:	-78.0
R4:	-51.7	R12:	-14.7
R5:	-6.4	R13:	-32.5
R6:	-0.6	R14:	52.7
R7:	10.9	R15:	-37.0
R8:	-25.8		



**Test Conditions**

Stabilization Time: 48M  
 Operation Time: 1H 48M  
 Sphere Temperature (°C): 25.1

REPORT NUMBER: SP1-2511-597-8

Measurement and Test Equipment			
Instrument	Identification Number	Calibration Date	Calibration Due Date
Photometer	76INCH SPHERE IN0058	12/16/2025	6/16/2026
Power Meter	XITRON INXT2011004	10/21/2025	10/21/2026
AC Power Source	CHROMA 61603 IN0063	10/21/2025	10/21/2026
DC Power Source	AGILENT E3634A IN0208	10/21/2025	10/21/2026
Sphere Thermometer	ONSET IN0085	10/21/2025	10/21/2026
Room Thermometer	ONSET IN0046	10/21/2025	10/21/2026

REPORT NUMBER: SP1-2511-597-8

CIE 1931 Chromaticity Diagram



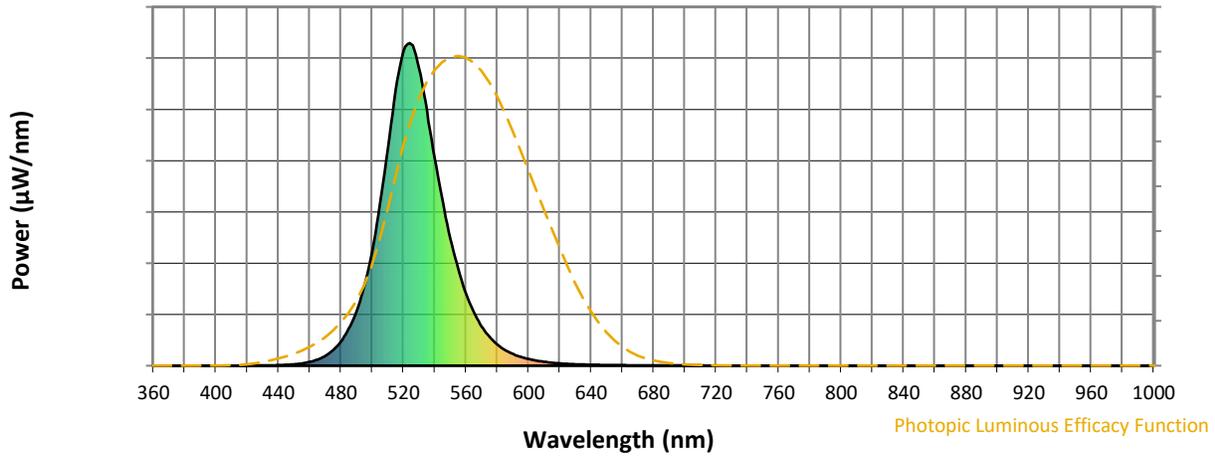
CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies outside the range

REPORT NUMBER: SP1-2511-597-8

**Photopic Flux vs. Wavelength**



**Photopic Lumens: NR**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	7	NR	750	0	NR	880	0	NR
365	0	NR	495	249	NR	625	6	NR	755	0	NR	885	0	NR
370	0	NR	500	356	NR	630	4	NR	760	0	NR	890	0	NR
375	0	NR	505	502	NR	635	4	NR	765	0	NR	895	0	NR
380	0	NR	510	674	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	853	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	976	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	996	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	920	NR	660	2	NR	790	0	NR	920	0	NR
405	0	NR	535	792	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	642	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	511	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	394	NR	680	1	NR	810	0	NR	940	0	NR
425	1	NR	555	300	NR	685	1	NR	815	0	NR	945	0	NR
430	1	NR	560	224	NR	690	1	NR	820	0	NR	950	0	NR
435	1	NR	565	166	NR	695	1	NR	825	0	NR	955	0	NR
440	2	NR	570	122	NR	700	1	NR	830	0	NR	960	0	NR
445	3	NR	575	90	NR	705	1	NR	835	0	NR	965	0	NR
450	4	NR	580	66	NR	710	1	NR	840	0	NR	970	0	NR
455	7	NR	585	48	NR	715	0	NR	845	0	NR	975	0	NR
460	12	NR	590	36	NR	720	0	NR	850	0	NR	980	0	NR
465	19	NR	595	27	NR	725	0	NR	855	0	NR	985	0	NR
470	31	NR	600	21	NR	730	0	NR	860	0	NR	990	0	NR
475	49	NR	605	16	NR	735	0	NR	865	0	NR	995	0	NR
480	75	NR	610	12	NR	740	0	NR	870	0	NR	1000	0	NR
485	115	NR	615	9	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-8

**Scotopic Flux vs. Wavelength**



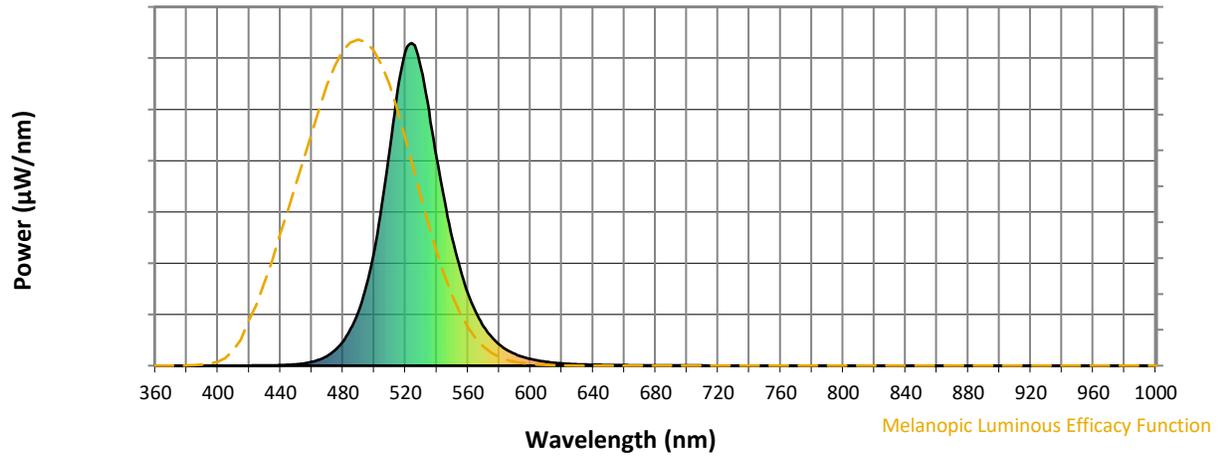
**Scotopic Lumens: NR**

**S/P: 2.63**

λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)	λ (nm)	Power W <sup>^</sup> /nm	Lumens (φ/nm)
360	0	NR	490	169	NR	620	7	NR	750	0	NR	880	0	NR
365	0	NR	495	249	NR	625	6	NR	755	0	NR	885	0	NR
370	0	NR	500	356	NR	630	4	NR	760	0	NR	890	0	NR
375	0	NR	505	502	NR	635	4	NR	765	0	NR	895	0	NR
380	0	NR	510	674	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	853	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	976	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	996	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	920	NR	660	2	NR	790	0	NR	920	0	NR
405	0	NR	535	792	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	642	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	511	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	394	NR	680	1	NR	810	0	NR	940	0	NR
425	1	NR	555	300	NR	685	1	NR	815	0	NR	945	0	NR
430	1	NR	560	224	NR	690	1	NR	820	0	NR	950	0	NR
435	1	NR	565	166	NR	695	1	NR	825	0	NR	955	0	NR
440	2	NR	570	122	NR	700	1	NR	830	0	NR	960	0	NR
445	3	NR	575	90	NR	705	1	NR	835	0	NR	965	0	NR
450	4	NR	580	66	NR	710	1	NR	840	0	NR	970	0	NR
455	7	NR	585	48	NR	715	0	NR	845	0	NR	975	0	NR
460	12	NR	590	36	NR	720	0	NR	850	0	NR	980	0	NR
465	19	NR	595	27	NR	725	0	NR	855	0	NR	985	0	NR
470	31	NR	600	21	NR	730	0	NR	860	0	NR	990	0	NR
475	49	NR	605	16	NR	735	0	NR	865	0	NR	995	0	NR
480	75	NR	610	12	NR	740	0	NR	870	0	NR	1000	0	NR
485	115	NR	615	9	NR	745	0	NR	875	0	NR			

REPORT NUMBER: SP1-2511-597-8

**Melanopic Flux vs. Wavelength**



**Melanopic Lumens: NR**

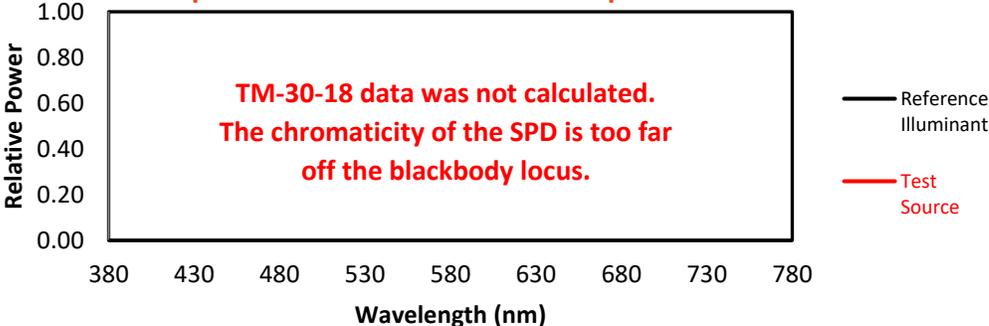
**M/P: 4.87**

$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)	$\lambda$ (nm)	Power W <sup>^</sup> /nm	Lumens ( $\phi$ /nm)
360	0	NR	490	169	NR	620	7	NR	750	0	NR	880	0	NR
365	0	NR	495	249	NR	625	6	NR	755	0	NR	885	0	NR
370	0	NR	500	356	NR	630	4	NR	760	0	NR	890	0	NR
375	0	NR	505	502	NR	635	4	NR	765	0	NR	895	0	NR
380	0	NR	510	674	NR	640	3	NR	770	0	NR	900	0	NR
385	0	NR	515	853	NR	645	3	NR	775	0	NR	905	0	NR
390	0	NR	520	976	NR	650	2	NR	780	0	NR	910	0	NR
395	0	NR	525	996	NR	655	2	NR	785	0	NR	915	0	NR
400	0	NR	530	920	NR	660	2	NR	790	0	NR	920	0	NR
405	0	NR	535	792	NR	665	1	NR	795	0	NR	925	0	NR
410	0	NR	540	642	NR	670	1	NR	800	0	NR	930	0	NR
415	0	NR	545	511	NR	675	1	NR	805	0	NR	935	0	NR
420	0	NR	550	394	NR	680	1	NR	810	0	NR	940	0	NR
425	1	NR	555	300	NR	685	1	NR	815	0	NR	945	0	NR
430	1	NR	560	224	NR	690	1	NR	820	0	NR	950	0	NR
435	1	NR	565	166	NR	695	1	NR	825	0	NR	955	0	NR
440	2	NR	570	122	NR	700	1	NR	830	0	NR	960	0	NR
445	3	NR	575	90	NR	705	1	NR	835	0	NR	965	0	NR
450	4	NR	580	66	NR	710	1	NR	840	0	NR	970	0	NR
455	7	NR	585	48	NR	715	0	NR	845	0	NR	975	0	NR
460	12	NR	590	36	NR	720	0	NR	850	0	NR	980	0	NR
465	19	NR	595	27	NR	725	0	NR	855	0	NR	985	0	NR
470	31	NR	600	21	NR	730	0	NR	860	0	NR	990	0	NR
475	49	NR	605	16	NR	735	0	NR	865	0	NR	995	0	NR
480	75	NR	610	12	NR	740	0	NR	870	0	NR	1000	0	NR
485	115	NR	615	9	NR	745	0	NR	875	0	NR			

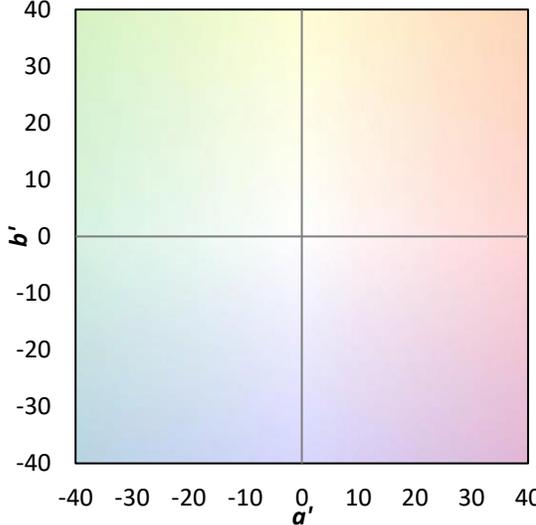
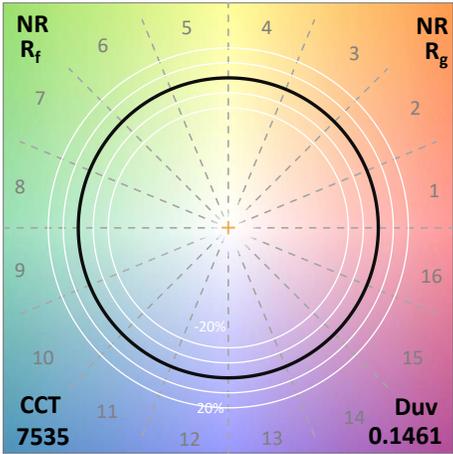
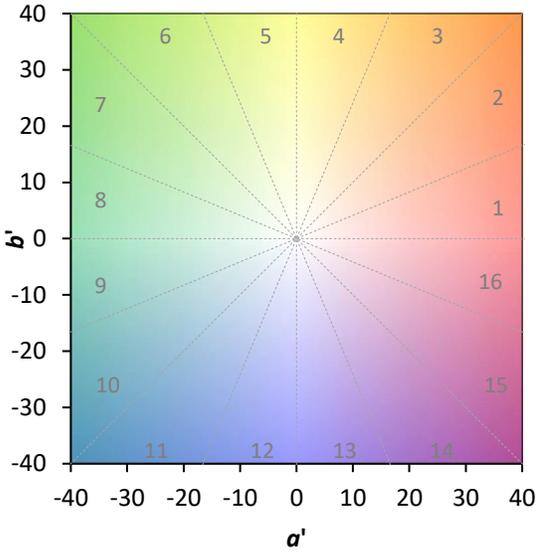
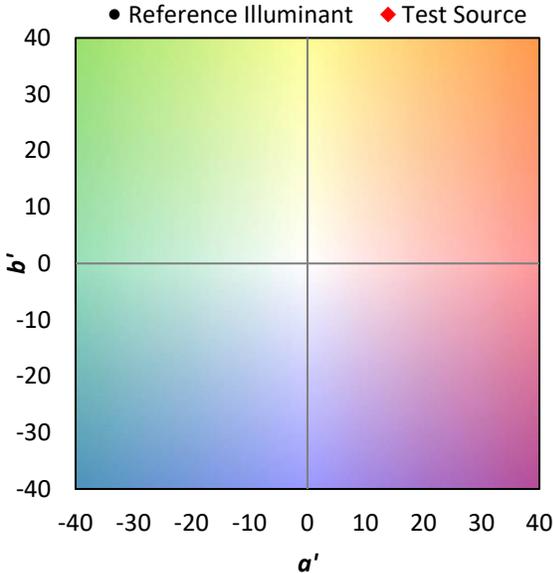
**Summary**

$R_f = 0$   
 $R_g = 0$   
 $CIE R_a = -11.7$   
 $R_g = -351.9$

**Spectral Power Distribution Comparison**



**Color Vector Graphics**



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

CES01 = 0	CES26 = 0	CES51 = 0	CES76 = 0
CES02 = 0	CES27 = 0	CES52 = 0	CES77 = 0
CES03 = 0	CES28 = 0	CES53 = 0	CES78 = 0
CES04 = 0	CES29 = 0	CES54 = 0	CES79 = 0
CES05 = 0	CES30 = 0	CES55 = 0	CES80 = 0
CES06 = 0	CES31 = 0	CES56 = 0	CES81 = 0
CES07 = 0	CES32 = 0	CES57 = 0	CES82 = 0
CES08 = 0	CES33 = 0	CES58 = 0	CES83 = 0
CES09 = 0	CES34 = 0	CES59 = 0	CES84 = 0
CES10 = 0	CES35 = 0	CES60 = 0	CES85 = 0
CES11 = 0	CES36 = 0	CES61 = 0	CES86 = 0
CES12 = 0	CES37 = 0	CES62 = 0	CES87 = 0
CES13 = 0	CES38 = 0	CES63 = 0	CES88 = 0
CES14 = 0	CES39 = 0	CES64 = 0	CES89 = 0
CES15 = 0	CES40 = 0	CES65 = 0	CES90 = 0
CES16 = 0	CES41 = 0	CES66 = 0	CES91 = 0
CES17 = 0	CES42 = 0	CES67 = 0	CES92 = 0
CES18 = 0	CES43 = 0	CES68 = 0	CES93 = 0
CES19 = 0	CES44 = 0	CES69 = 0	CES94 = 0
CES20 = 0	CES45 = 0	CES70 = 0	CES95 = 0
CES21 = 0	CES46 = 0	CES71 = 0	CES96 = 0
CES22 = 0	CES47 = 0	CES72 = 0	CES97 = 0
CES23 = 0	CES48 = 0	CES73 = 0	CES98 = 0
CES24 = 0	CES49 = 0	CES74 = 0	CES99 = 0
CES25 = 0	CES50 = 0	CES75 = 0	



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)