

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: HALO

Report Number: P644120

Luminaire Tested: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644120
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1111.0 lumens
Efficiency: N/A
Efficacy: 65.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

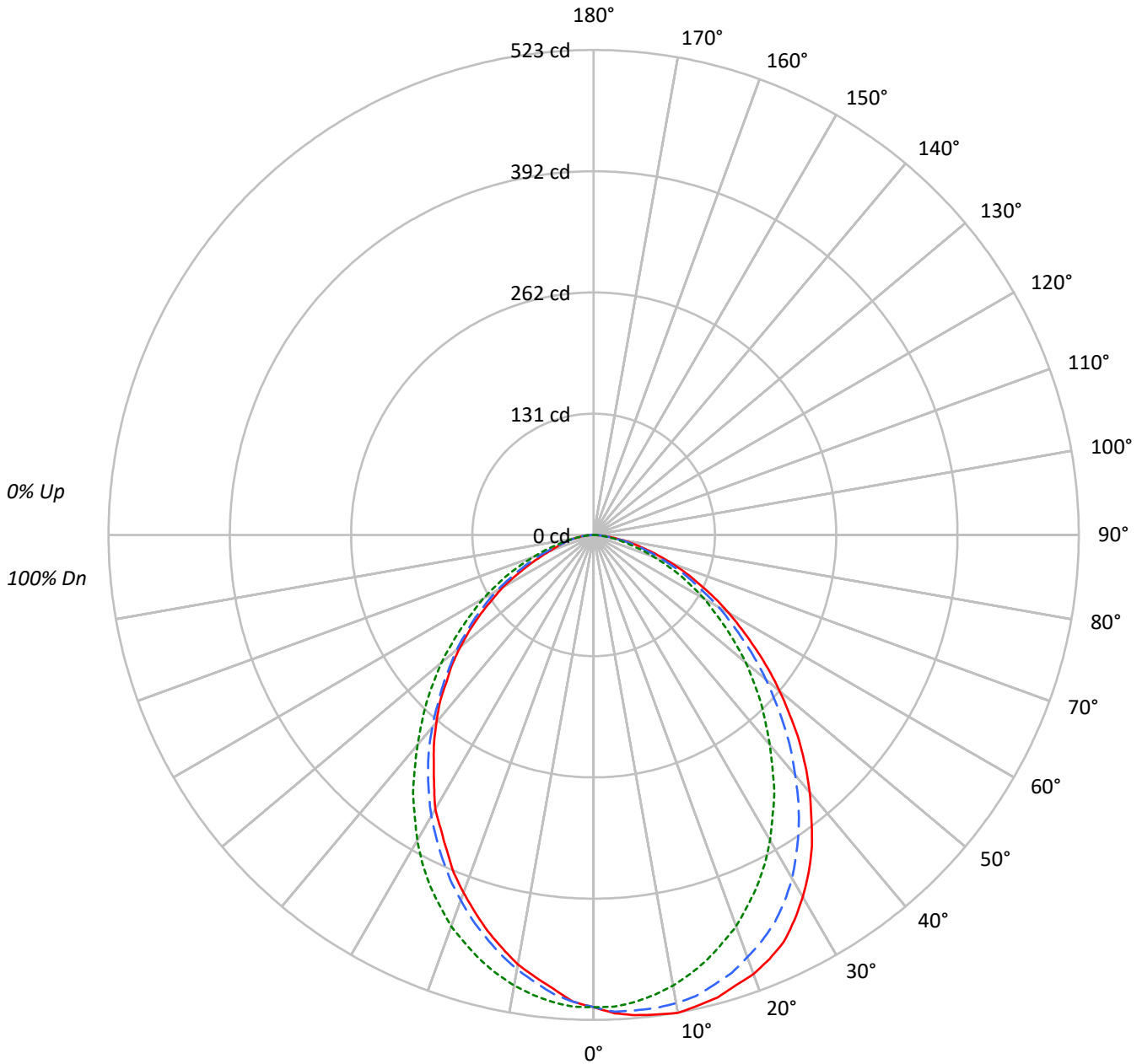
Input Watts (W): 17.1
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

Luminous Intensity Polar Plot





TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86								
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74								
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64								
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55								
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49								
6	73	61	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43								
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39								
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35								
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32								
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	40205	40205	40205	40205	40205
5°	41198	40778	40081	39376	38956
10°	41955	41105	39550	38131	37707
15°	42203	41043	38730	36711	36131
20°	42340	40701	37736	35207	34468
25°	42201	40197	36348	33578	32654
30°	41101	39004	34656	31913	31111
35°	39540	37150	32717	29990	28969
40°	37356	34810	30431	27885	27154
45°	34943	32375	28423	25666	25074
50°	32139	29757	26281	23678	23015
55°	29205	27017	23851	21415	20438
60°	26524	24566	21772	18977	17872
65°	23461	21798	19165	16176	14532
70°	20819	18765	15926	13064	11425
75°	17263	15647	12414	10248	10248
80°	13684	12047	9638	8865	8865
85°	7971	7971	6431	7971	7971

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 34943 cd/sqm



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	47.9	4.3
10°-20°	134.1	12.1
20°-30°	194.6	17.5
30°-40°	217.1	19.5
40°-50°	201.3	18.1
50°-60°	158.3	14.2
60°-70°	101.3	9.1
70°-80°	46.4	4.2
80°-90°	10.0	0.9
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°-30°	376.6	33.9
0°-40°	593.7	53.4
0°-60°	953.3	85.8
0°-90°	1111.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1111.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	509	509	509	509	509	
5°	520	515	506	497	492	50
15°	516	502	474	449	442	146
25°	484	462	417	386	375	222
35°	410	386	340	311	301	256
45°	313	290	255	230	225	241
55°	212	196	173	156	148	191
65°	126	117	103	87	78	126
75°	57	51	41	34	34	61
85°	9	9	7	9	9	12
90°	0	0	0	0	0	



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3
2.5°	516.4	516.4	516.4	516.4	516.4	516.4	514.6	514.6	514.6	514.6	514.6
5°	519.9	519.9	519.9	519.9	518.1	518.1	518.1	518.1	516.4	516.4	514.6
7.5°	521.7	521.7	521.7	519.9	519.9	519.9	518.1	518.1	518.1	516.4	514.6
10°	523.4	521.7	521.7	519.9	519.9	519.9	518.1	518.1	516.4	514.6	512.8
12.5°	519.9	519.9	519.9	519.9	518.1	518.1	516.4	514.6	512.8	511.1	509.3
15°	516.4	516.4	516.4	514.6	512.8	512.8	511.1	509.3	507.5	505.8	502.2
17.5°	509.3	511.1	509.3	509.3	507.5	507.5	505.8	504.0	500.4	498.7	495.1
20°	504.0	502.2	502.2	502.2	500.4	498.7	496.9	495.1	491.6	489.8	484.5
22.5°	495.1	495.1	493.4	491.6	489.8	489.8	488.1	484.5	482.8	479.2	473.9
25°	484.5	482.8	482.8	481.0	479.2	479.2	475.7	473.9	470.4	465.1	461.5
27.5°	468.6	468.6	468.6	466.8	465.1	463.3	461.5	458.0	456.2	449.2	445.6
30°	450.9	450.9	449.2	449.2	445.6	445.6	443.9	440.3	436.8	431.5	427.9
32.5°	431.5	431.5	431.5	427.9	426.2	424.4	422.6	420.9	415.6	410.3	406.7
35°	410.3	410.3	408.5	406.7	405.0	403.2	401.4	397.9	394.3	390.8	385.5
37.5°	385.5	387.3	385.5	383.7	382.0	380.2	378.4	376.7	371.4	367.8	362.5
40°	362.5	362.5	360.7	359.0	357.2	357.2	355.4	351.9	348.4	343.1	337.8
42.5°	337.8	337.8	336.0	334.2	334.2	332.5	328.9	327.1	323.6	320.1	314.8
45°	313.0	311.2	309.5	309.5	307.7	305.9	305.9	302.4	298.9	293.5	290.0
47.5°	286.5	286.5	284.7	284.7	282.9	281.2	281.2	277.6	272.3	268.8	265.3
50°	261.7	261.7	259.9	259.9	258.2	256.4	254.6	252.9	249.3	245.8	242.3
52.5°	237.0	237.0	237.0	233.4	231.7	231.7	231.7	228.1	226.4	222.8	219.3
55°	212.2	212.2	212.2	210.4	208.7	208.7	208.7	205.1	203.4	199.8	196.3
57.5°	189.2	189.2	189.2	187.4	187.4	185.7	183.9	182.1	180.4	178.6	175.1
60°	168.0	168.0	166.2	164.5	166.2	164.5	162.7	160.9	159.2	157.4	155.6
62.5°	146.8	146.8	146.8	145.0	143.2	143.2	143.2	141.5	137.9	136.2	134.4
65°	125.6	125.6	125.6	125.6	123.8	123.8	122.0	120.2	120.2	118.5	116.7
67.5°	107.9	107.9	106.1	106.1	104.3	104.3	104.3	102.6	100.8	100.8	99.0
70°	90.2	88.4	88.4	88.4	86.6	86.6	86.6	84.9	84.9	83.1	81.3
72.5°	72.5	72.5	72.5	72.5	70.7	70.7	69.0	69.0	67.2	67.2	65.4
75°	56.6	56.6	56.6	56.6	54.8	54.8	54.8	54.8	53.1	53.1	51.3
77.5°	42.4	42.4	42.4	42.4	42.4	42.4	40.7	40.7	40.7	38.9	38.9
80°	30.1	30.1	30.1	30.1	28.3	28.3	28.3	28.3	28.3	26.5	26.5
82.5°	19.5	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	17.7	15.9
85°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3
2.5°	512.8	512.8	512.8	512.8	511.1	511.1	511.1	509.3	509.3	509.3	509.3
5°	514.6	514.6	511.1	511.1	511.1	511.1	509.3	509.3	507.5	505.8	504.0
7.5°	512.8	512.8	511.1	509.3	507.5	507.5	505.8	504.0	502.2	500.4	498.7
10°	511.1	509.3	507.5	505.8	504.0	502.2	500.4	498.7	495.1	493.4	491.6
12.5°	507.5	504.0	502.2	498.7	498.7	496.9	493.4	491.6	488.1	484.5	482.8
15°	500.4	496.9	493.4	489.8	489.8	486.3	482.8	481.0	477.5	473.9	470.4
17.5°	491.6	488.1	484.5	481.0	479.2	475.7	472.2	468.6	465.1	461.5	458.0
20°	482.8	477.5	473.9	468.6	466.8	465.1	459.8	456.2	452.7	449.2	443.9
22.5°	470.4	466.8	459.8	456.2	454.5	450.9	447.4	442.1	436.8	433.2	429.7
25°	456.2	452.7	447.4	442.1	438.6	436.8	431.5	426.2	422.6	417.3	413.8
27.5°	440.3	435.0	431.5	424.4	422.6	419.1	413.8	408.5	405.0	399.6	394.3
30°	422.6	417.3	412.0	406.7	403.2	401.4	396.1	390.8	385.5	380.2	376.7
32.5°	401.4	396.1	390.8	387.3	382.0	378.4	374.9	369.6	364.3	359.0	355.4
35°	380.2	374.9	369.6	364.3	360.7	360.7	353.7	348.4	343.1	339.5	334.2
37.5°	357.2	351.9	346.6	341.3	339.5	336.0	330.7	325.4	321.8	316.5	313.0
40°	334.2	327.1	323.6	318.3	316.5	313.0	309.5	304.2	300.6	295.3	291.8
42.5°	309.5	305.9	300.6	297.1	293.5	291.8	286.5	281.2	277.6	274.1	272.3
45°	286.5	281.2	275.9	272.3	270.6	267.0	265.3	259.9	256.4	254.6	251.1
47.5°	261.7	258.2	254.6	249.3	247.6	245.8	242.3	240.5	237.0	233.4	229.9
50°	238.7	235.2	231.7	228.1	226.4	226.4	221.0	217.5	215.7	214.0	210.4
52.5°	215.7	212.2	208.7	205.1	205.1	203.4	199.8	198.1	196.3	192.8	189.2
55°	194.5	191.0	187.4	185.7	183.9	183.9	180.4	178.6	175.1	173.3	171.5
57.5°	173.3	169.8	168.0	166.2	164.5	164.5	160.9	159.2	157.4	153.8	153.8
60°	153.8	150.3	148.5	146.8	145.0	143.2	143.2	139.7	137.9	137.9	134.4
62.5°	132.6	130.9	129.1	127.3	125.6	125.6	123.8	122.0	120.2	118.5	116.7
65°	114.9	113.2	111.4	109.6	107.9	107.9	106.1	104.3	102.6	102.6	99.0
67.5°	97.3	95.5	93.7	92.0	92.0	90.2	88.4	88.4	86.6	84.9	83.1
70°	79.6	79.6	77.8	76.0	76.0	74.3	72.5	72.5	70.7	69.0	67.2
72.5°	65.4	63.7	61.9	61.9	60.1	60.1	58.4	58.4	56.6	54.8	53.1
75°	49.5	47.7	47.7	47.7	46.0	46.0	46.0	44.2	42.4	40.7	40.7
77.5°	37.1	37.1	35.4	33.6	33.6	33.6	31.8	31.8	31.8	30.1	30.1
80°	26.5	24.8	24.8	23.0	23.0	23.0	23.0	21.2	21.2	21.2	19.5
82.5°	15.9	15.9	15.9	14.1	14.1	14.1	14.1	14.1	12.4	12.4	12.4
85°	8.8	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1	7.1
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8	3.5	3.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3
2.5°	507.5	507.5	505.8	505.8	505.8	505.8	505.8	504.0	504.0	504.0	504.0
5°	504.0	502.2	500.4	500.4	500.4	498.7	498.7	496.9	496.9	495.1	495.1
7.5°	496.9	495.1	493.4	493.4	491.6	491.6	488.1	488.1	486.3	484.5	484.5
10°	488.1	486.3	484.5	482.8	482.8	479.2	479.2	477.5	475.7	473.9	473.9
12.5°	479.2	477.5	473.9	472.2	472.2	470.4	466.8	465.1	463.3	461.5	459.8
15°	466.8	465.1	461.5	459.8	458.0	456.2	454.5	452.7	449.2	447.4	447.4
17.5°	454.5	452.7	447.4	445.6	445.6	442.1	440.3	436.8	435.0	433.2	431.5
20°	440.3	436.8	433.2	431.5	429.7	426.2	424.4	422.6	419.1	417.3	415.6
22.5°	424.4	420.9	417.3	415.6	413.8	410.3	408.5	405.0	403.2	401.4	399.6
25°	408.5	405.0	401.4	399.6	396.1	394.3	390.8	387.3	385.5	383.7	382.0
27.5°	390.8	387.3	382.0	380.2	378.4	376.7	373.1	369.6	367.8	364.3	364.3
30°	371.4	367.8	364.3	362.5	360.7	357.2	355.4	351.9	350.1	346.6	346.6
32.5°	351.9	346.6	343.1	341.3	339.5	337.8	334.2	332.5	330.7	328.9	327.1
35°	330.7	327.1	323.6	321.8	320.1	316.5	314.8	313.0	311.2	307.7	307.7
37.5°	309.5	305.9	302.4	300.6	300.6	297.1	295.3	291.8	291.8	288.2	288.2
40°	288.2	284.7	281.2	281.2	279.4	275.9	274.1	272.3	270.6	268.8	268.8
42.5°	268.8	263.5	261.7	261.7	258.2	256.4	254.6	252.9	249.3	249.3	249.3
45°	247.6	244.0	242.3	240.5	238.7	237.0	235.2	231.7	229.9	228.1	228.1
47.5°	228.1	224.6	222.8	221.0	219.3	217.5	215.7	214.0	210.4	210.4	208.7
50°	208.7	205.1	203.4	201.6	199.8	198.1	196.3	194.5	192.8	191.0	189.2
52.5°	187.4	185.7	183.9	182.1	182.1	178.6	176.8	175.1	173.3	173.3	169.8
55°	169.8	168.0	166.2	164.5	162.7	160.9	159.2	157.4	155.6	153.8	152.1
57.5°	150.3	148.5	146.8	146.8	145.0	143.2	141.5	139.7	137.9	136.2	134.4
60°	132.6	130.9	129.1	129.1	127.3	125.6	123.8	123.8	120.2	118.5	116.7
62.5°	114.9	113.2	111.4	111.4	109.6	109.6	107.9	106.1	102.6	102.6	100.8
65°	99.0	97.3	95.5	93.7	93.7	92.0	90.2	88.4	86.6	86.6	84.9
67.5°	83.1	81.3	79.6	79.6	77.8	76.0	74.3	72.5	70.7	70.7	69.0
70°	67.2	65.4	63.7	63.7	61.9	60.1	60.1	58.4	56.6	54.8	54.8
72.5°	51.3	51.3	49.5	49.5	47.7	47.7	46.0	44.2	44.2	42.4	40.7
75°	38.9	38.9	37.1	37.1	35.4	35.4	33.6	33.6	33.6	31.8	33.6
77.5°	28.3	28.3	26.5	26.5	26.5	24.8	24.8	24.8	26.5	26.5	26.5
80°	19.5	19.5	19.5	19.5	17.7	17.7	19.5	19.5	19.5	19.5	19.5
82.5°	12.4	12.4	12.4	12.4	12.4	12.4	12.4	12.4	14.1	14.1	14.1
85°	7.1	7.1	7.1	7.1	7.1	7.1	7.1	8.8	8.8	8.8	8.8
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P644120

CATALOG NUMBER: ML5615LSWW9FS1E - 592W WW - 1500LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	509.3	509.3	509.3	509.3	509.3	509.3	509.3	509.3
2.5°	502.2	502.2	502.2	502.2	502.2	502.2	502.2	504.0
5°	493.4	493.4	493.4	493.4	493.4	493.4	493.4	491.6
7.5°	484.5	482.8	482.8	482.8	482.8	481.0	481.0	481.0
10°	472.2	472.2	470.4	470.4	470.4	470.4	468.6	470.4
12.5°	459.8	458.0	458.0	458.0	456.2	456.2	456.2	456.2
15°	445.6	443.9	443.9	443.9	442.1	442.1	442.1	442.1
17.5°	429.7	429.7	427.9	427.9	426.2	426.2	426.2	426.2
20°	413.8	413.8	413.8	412.0	412.0	412.0	410.3	410.3
22.5°	397.9	396.1	394.3	396.1	394.3	392.6	394.3	394.3
25°	380.2	378.4	376.7	376.7	376.7	376.7	374.9	374.9
27.5°	362.5	359.0	359.0	359.0	359.0	357.2	357.2	357.2
30°	344.8	343.1	343.1	341.3	339.5	339.5	339.5	341.3
32.5°	325.4	323.6	321.8	321.8	321.8	321.8	320.1	320.1
35°	305.9	305.9	304.2	304.2	304.2	302.4	302.4	300.6
37.5°	286.5	286.5	284.7	284.7	284.7	282.9	282.9	282.9
40°	267.0	265.3	265.3	267.0	265.3	265.3	263.5	263.5
42.5°	247.6	247.6	245.8	245.8	245.8	245.8	244.0	245.8
45°	226.4	226.4	226.4	226.4	226.4	226.4	224.6	224.6
47.5°	208.7	206.9	206.9	206.9	206.9	206.9	206.9	206.9
50°	189.2	187.4	187.4	187.4	187.4	187.4	187.4	187.4
52.5°	169.8	168.0	168.0	168.0	168.0	168.0	168.0	168.0
55°	152.1	150.3	150.3	148.5	150.3	148.5	148.5	148.5
57.5°	134.4	132.6	130.9	132.6	130.9	130.9	130.9	129.1
60°	116.7	114.9	114.9	114.9	113.2	111.4	111.4	113.2
62.5°	99.0	99.0	97.3	97.3	95.5	93.7	93.7	93.7
65°	83.1	81.3	81.3	79.6	79.6	77.8	77.8	77.8
67.5°	67.2	67.2	65.4	65.4	63.7	63.7	63.7	61.9
70°	53.1	53.1	51.3	51.3	51.3	49.5	49.5	49.5
72.5°	40.7	40.7	40.7	40.7	40.7	40.7	40.7	40.7
75°	33.6	33.6	33.6	33.6	33.6	33.6	33.6	33.6
77.5°	26.5	26.5	26.5	26.5	26.5	26.5	26.5	28.3
80°	19.5	19.5	21.2	19.5	21.2	19.5	19.5	19.5
82.5°	14.1	14.1	14.1	14.1	14.1	14.1	14.1	14.1
85°	8.8	8.8	8.8	8.8	8.8	8.8	8.8	8.8
87.5°	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Report Generated By 670245859 / DESKTOP-T8S5UU9

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





— 0°-180° - - 45°-225° - - - 90°-270°

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)