

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: P644128

Luminaire Tested: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644128
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-132)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH HAZE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 865.6 lumens
Efficiency: N/A
Efficacy: 64.6 lumens/watt
Spacing Criteria (0/90/45): 1.15 / 1.12 / 1.23
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

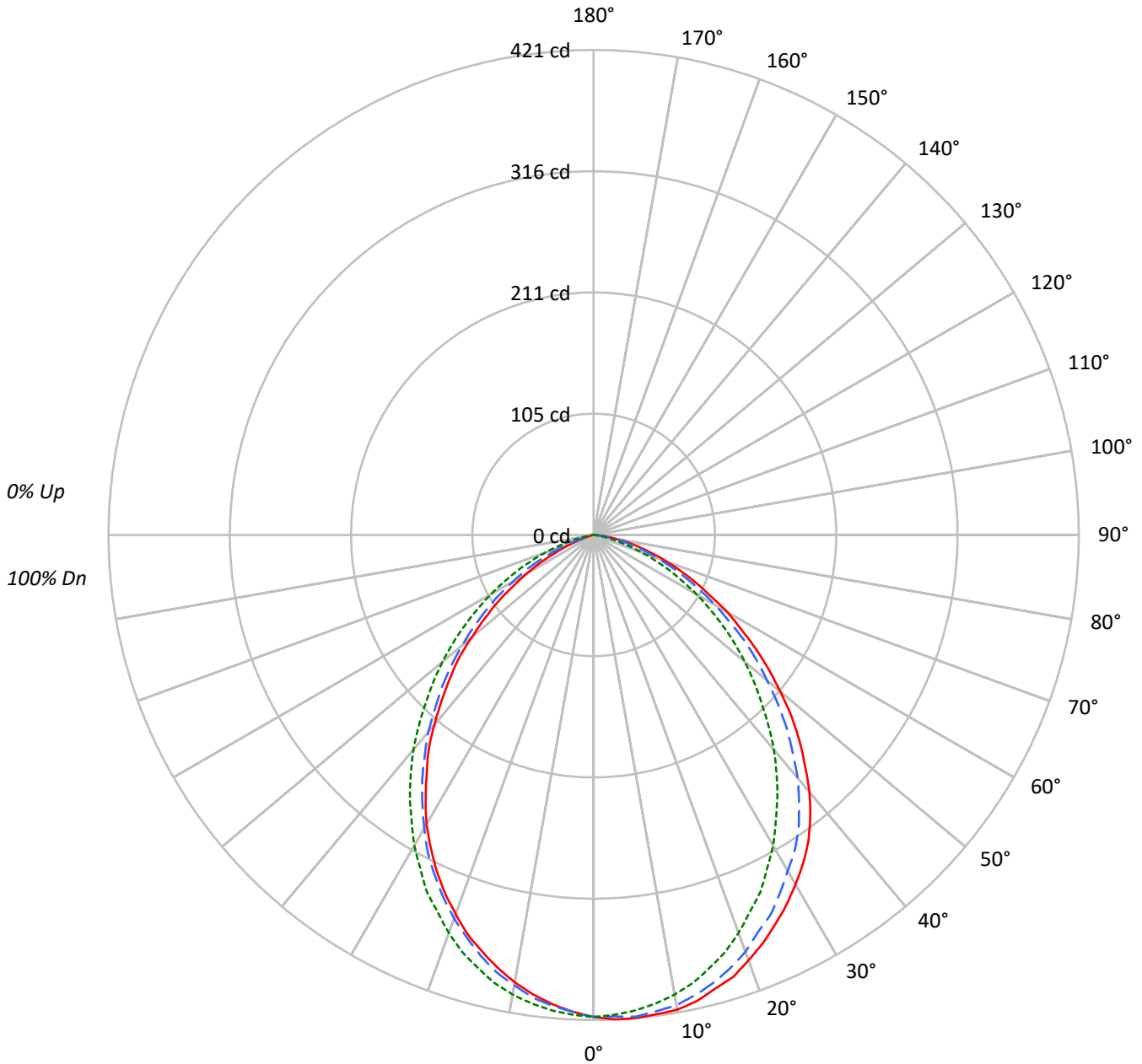
Input Watts (W): 13.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

Luminous Intensity Polar Plot





TEST NUMBER: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88	88	88		
	2	102	95	89	84	100	93	88	83	90	85	81	86	83	79	84	80	78	76	76	76	76	76	76		
	3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66	66	66	66	66	66		
	4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57	57	57	57	57	57		
	5	80	69	60	54	78	68	60	54	66	59	54	64	58	53	62	57	53	51	51	51	51	51	51		
	6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45	45	45	45	45	45		
	7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40	40	40	40	40	40		
	8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36	36	36	36	36	36		
	9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33	33	33	33	33	33		
	10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	22937	22937	22937	22937	22937
5°	23167	23096	22804	22584	22507
10°	23291	23068	22545	22099	21949
15°	23139	22832	22077	21470	21243
20°	22927	22460	21445	20663	20430
25°	22556	21993	20699	19725	19483
30°	22168	21320	19712	18617	18364
35°	21737	20753	18605	17353	16905
40°	20853	19708	17411	15973	15400
45°	19583	18343	15955	14405	13676
50°	18012	16759	14592	12656	11744
55°	16353	15206	13027	10857	9711
60°	14659	13332	11282	8793	7324
65°	12660	11441	9365	6590	4683
70°	10707	9425	7069	4071	2148
75°	8769	7371	4533	1419	847
80°	6314	5051	2115	410	410
85°	3334	2516	818	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 19583 cd/sqm



TEST NUMBER: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.3	4.5
10°-20°	109.8	12.7
20°-30°	158.3	18.3
30°-40°	177.0	20.4
40°-50°	162.3	18.7
50°-60°	121.9	14.1
60°-70°	69.6	8.0
70°-80°	24.3	2.8
80°-90°	3.1	0.4
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°	307.5	35.5
0°-40°	484.4	56.0
0°-60°	768.6	88.8
0°-90°	865.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	865.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	418	418	418	418	418	
5°	421	420	414	410	409	40
15°	408	402	389	378	374	115
25°	373	364	342	326	322	172
35°	325	310	278	259	253	202
45°	253	237	206	186	176	194
55°	171	159	136	114	102	153
65°	98	88	72	51	36	97
75°	41	35	21	7	4	45
85°	5	4	1	0	0	8
90°	0	0	0	0	0	



TEST NUMBER: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4
2.5°	421.0	419.7	419.7	419.7	419.7	419.7	419.7	419.7	419.7	419.7	418.4
5°	421.0	421.0	421.0	421.0	421.0	421.0	421.0	419.7	419.7	419.7	419.7
7.5°	419.7	419.7	419.7	419.7	419.7	419.7	419.7	418.4	418.4	417.0	417.0
10°	418.4	418.4	418.4	417.0	417.0	417.0	417.0	417.0	415.7	415.7	414.4
12.5°	414.4	414.4	414.4	414.4	413.0	413.0	413.0	411.7	410.4	410.4	409.0
15°	407.7	409.0	409.0	407.7	407.7	407.7	407.7	406.3	405.0	403.7	402.3
17.5°	402.3	402.3	402.3	401.0	399.7	401.0	399.7	398.3	397.0	395.7	394.3
20°	393.0	393.0	391.6	391.6	391.6	391.6	390.3	389.0	387.6	386.3	385.0
22.5°	383.6	383.6	383.6	380.9	380.9	380.9	379.6	379.6	376.9	375.6	372.9
25°	372.9	372.9	372.9	371.6	370.3	368.9	370.3	367.6	366.2	363.6	363.6
27.5°	362.2	362.2	360.9	360.9	359.6	359.6	358.2	355.6	354.2	352.9	350.2
30°	350.2	350.2	348.9	348.9	347.5	346.2	346.2	343.5	342.2	339.5	336.8
32.5°	338.2	338.2	336.8	336.8	335.5	334.2	334.2	331.5	328.8	326.1	324.8
35°	324.8	324.8	323.5	323.5	322.1	320.8	319.5	316.8	315.5	311.4	310.1
37.5°	308.8	310.1	307.4	307.4	306.1	304.8	303.4	302.1	299.4	296.7	292.7
40°	291.4	290.1	290.1	288.7	287.4	287.4	286.0	283.4	282.0	278.0	275.4
42.5°	271.3	271.3	271.3	270.0	268.7	268.7	266.0	264.7	262.0	259.3	255.3
45°	252.6	252.6	251.3	251.3	248.6	248.6	247.3	244.6	243.3	239.3	236.6
47.5°	232.6	231.2	231.2	229.9	228.6	228.6	227.2	225.9	223.2	219.2	216.5
50°	211.2	211.2	211.2	209.9	208.5	208.5	207.2	204.5	203.2	200.5	196.5
52.5°	191.1	191.1	191.1	189.8	188.5	188.5	187.1	185.8	183.1	180.4	177.8
55°	171.1	171.1	171.1	169.8	169.8	167.1	167.1	165.7	163.1	160.4	159.1
57.5°	151.0	151.0	151.0	151.0	149.7	149.7	148.4	147.0	144.4	143.0	139.0
60°	133.7	132.3	132.3	131.0	131.0	129.7	128.3	127.0	125.6	123.0	121.6
62.5°	113.6	115.0	113.6	113.6	112.3	112.3	112.3	109.6	108.3	105.6	104.3
65°	97.6	97.6	97.6	97.6	94.9	94.9	94.9	92.2	90.9	90.9	88.2
67.5°	81.5	81.5	81.5	80.2	80.2	80.2	78.9	77.5	76.2	74.9	73.5
70°	66.8	66.8	66.8	65.5	65.5	64.2	64.2	62.8	61.5	61.5	58.8
72.5°	53.5	53.5	53.5	53.5	52.1	52.1	50.8	50.8	49.5	48.1	46.8
75°	41.4	41.4	41.4	40.1	40.1	40.1	38.8	38.8	37.4	36.1	34.8
77.5°	30.7	29.4	29.4	29.4	29.4	28.1	28.1	28.1	26.7	25.4	25.4
80°	20.0	20.0	20.0	20.0	20.0	18.7	18.7	18.7	17.4	17.4	16.0
82.5°	12.0	12.0	12.0	12.0	12.0	10.7	10.7	10.7	9.4	9.4	9.4
85°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	4.0	4.0	4.0
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4
2.5°	419.7	419.7	418.4	418.4	418.4	418.4	418.4	417.0	417.0	417.0	417.0
5°	419.7	418.4	417.0	417.0	417.0	417.0	415.7	415.7	415.7	414.4	414.4
7.5°	415.7	415.7	415.7	414.4	414.4	413.0	413.0	411.7	411.7	410.4	410.4
10°	413.0	411.7	411.7	410.4	410.4	409.0	409.0	406.3	405.0	405.0	403.7
12.5°	407.7	406.3	406.3	403.7	403.7	403.7	402.3	399.7	398.3	398.3	397.0
15°	401.0	399.7	398.3	395.7	395.7	394.3	393.0	391.6	390.3	389.0	387.6
17.5°	393.0	390.3	389.0	387.6	386.3	385.0	383.6	382.3	379.6	379.6	376.9
20°	383.6	380.9	379.6	376.9	375.6	375.6	372.9	370.3	368.9	367.6	364.9
22.5°	371.6	370.3	367.6	364.9	363.6	363.6	360.9	358.2	356.9	354.2	352.9
25°	360.9	356.9	355.6	352.9	351.5	351.5	348.9	346.2	343.5	342.2	339.5
27.5°	347.5	344.9	343.5	339.5	338.2	336.8	334.2	331.5	328.8	326.1	323.5
30°	334.2	331.5	328.8	324.8	324.8	322.1	319.5	315.5	314.1	311.4	307.4
32.5°	320.8	318.1	314.1	311.4	308.8	307.4	303.4	300.7	298.1	294.1	292.7
35°	306.1	302.1	299.4	295.4	294.1	291.4	288.7	284.7	282.0	278.0	274.0
37.5°	290.1	284.7	282.0	278.0	276.7	274.0	271.3	268.7	264.7	260.6	258.0
40°	272.7	267.3	263.3	260.6	258.0	255.3	254.0	248.6	245.9	243.3	240.6
42.5°	252.6	248.6	244.6	241.9	239.3	237.9	233.9	231.2	227.2	224.6	221.9
45°	233.9	229.9	225.9	221.9	220.5	219.2	216.5	212.5	208.5	205.8	203.2
47.5°	213.9	211.2	205.8	204.5	201.8	200.5	196.5	193.8	192.5	188.5	185.8
50°	193.8	191.1	188.5	184.5	183.1	181.8	179.1	176.4	173.8	171.1	168.4
52.5°	173.8	172.4	169.8	165.7	165.7	164.4	161.7	159.1	156.4	153.7	151.0
55°	156.4	153.7	151.0	148.4	147.0	145.7	143.0	141.7	139.0	136.3	133.7
57.5°	137.7	135.0	133.7	131.0	129.7	128.3	125.6	124.3	121.6	119.0	116.3
60°	120.3	117.6	116.3	113.6	112.3	112.3	109.6	106.9	105.6	102.9	100.2
62.5°	102.9	100.2	98.9	96.2	96.2	94.9	93.6	90.9	89.6	86.9	85.5
65°	86.9	85.5	82.9	81.5	80.2	78.9	77.5	76.2	73.5	72.2	69.5
67.5°	72.2	69.5	68.2	66.8	65.5	64.2	62.8	61.5	58.8	57.5	54.8
70°	57.5	56.1	54.8	53.5	52.1	52.1	49.5	48.1	45.4	44.1	41.4
72.5°	45.4	44.1	42.8	40.1	40.1	38.8	37.4	36.1	33.4	32.1	29.4
75°	33.4	33.4	30.7	29.4	29.4	28.1	26.7	25.4	24.1	21.4	20.0
77.5°	24.1	22.7	21.4	20.0	18.7	18.7	17.4	16.0	14.7	13.4	10.7
80°	16.0	14.7	13.4	12.0	12.0	10.7	9.4	9.4	8.0	6.7	5.3
82.5°	8.0	8.0	6.7	6.7	5.3	5.3	5.3	4.0	4.0	2.7	2.7
85°	4.0	2.7	2.7	2.7	2.7	2.7	1.3	1.3	1.3	1.3	0.0
87.5°	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4
2.5°	417.0	415.7	417.0	417.0	415.7	415.7	415.7	415.7	414.4	415.7	414.4
5°	414.4	413.0	413.0	413.0	413.0	411.7	411.7	410.4	410.4	410.4	410.4
7.5°	409.0	407.7	407.7	406.3	406.3	406.3	406.3	405.0	405.0	403.7	403.7
10°	403.7	402.3	401.0	401.0	399.7	399.7	399.7	398.3	397.0	397.0	395.7
12.5°	394.3	394.3	393.0	393.0	391.6	391.6	390.3	389.0	389.0	387.6	387.6
15°	386.3	385.0	383.6	383.6	382.3	380.9	379.6	379.6	378.3	378.3	376.9
17.5°	375.6	372.9	372.9	371.6	370.3	370.3	368.9	367.6	366.2	366.2	366.2
20°	363.6	362.2	360.9	359.6	358.2	358.2	356.9	355.6	354.2	352.9	352.9
22.5°	350.2	348.9	347.5	346.2	346.2	344.9	343.5	342.2	340.8	339.5	339.5
25°	336.8	335.5	334.2	332.8	331.5	330.2	328.8	327.5	326.1	324.8	324.8
27.5°	322.1	319.5	318.1	316.8	315.5	314.1	314.1	311.4	311.4	310.1	308.8
30°	306.1	303.4	300.7	300.7	299.4	298.1	295.4	295.4	294.1	292.7	291.4
32.5°	288.7	287.4	284.7	284.7	282.0	280.7	279.4	278.0	276.7	275.4	275.4
35°	272.7	268.7	267.3	267.3	264.7	263.3	262.0	259.3	259.3	256.6	256.6
37.5°	255.3	252.6	251.3	248.6	247.3	245.9	244.6	241.9	240.6	239.3	237.9
40°	237.9	235.3	232.6	231.2	229.9	227.2	225.9	223.2	223.2	220.5	219.2
42.5°	219.2	216.5	213.9	212.5	211.2	208.5	207.2	204.5	203.2	201.8	200.5
45°	200.5	197.8	196.5	195.2	193.8	192.5	188.5	187.1	185.8	183.1	181.8
47.5°	183.1	180.4	177.8	177.8	175.1	173.8	171.1	168.4	167.1	164.4	163.1
50°	165.7	163.1	160.4	159.1	159.1	155.1	153.7	151.0	148.4	145.7	144.4
52.5°	148.4	145.7	143.0	141.7	140.3	137.7	135.0	133.7	131.0	128.3	127.0
55°	131.0	128.3	125.6	124.3	123.0	120.3	119.0	115.0	113.6	110.9	108.3
57.5°	115.0	112.3	109.6	108.3	106.9	104.3	101.6	98.9	97.6	94.9	92.2
60°	97.6	96.2	93.6	92.2	90.9	89.6	85.5	82.9	80.2	78.9	76.2
62.5°	82.9	80.2	77.5	76.2	74.9	73.5	70.8	68.2	66.8	62.8	60.1
65°	68.2	65.5	62.8	61.5	60.1	58.8	56.1	53.5	50.8	48.1	46.8
67.5°	52.1	50.8	48.1	48.1	46.8	44.1	41.4	40.1	37.4	36.1	33.4
70°	40.1	38.8	36.1	34.8	33.4	30.7	29.4	26.7	25.4	24.1	21.4
72.5°	28.1	26.7	24.1	22.7	21.4	20.0	17.4	16.0	14.7	13.4	12.0
75°	18.7	16.0	14.7	13.4	13.4	10.7	9.4	8.0	6.7	5.3	5.3
77.5°	10.7	9.4	6.7	6.7	6.7	5.3	4.0	4.0	2.7	2.7	2.7
80°	5.3	4.0	2.7	2.7	2.7	2.7	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P644128

CATALOG NUMBER: ML5615LSWW9FS1E - 692H WW - 1200LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	418.4	418.4	418.4	418.4	418.4	418.4	418.4	418.4
2.5°	414.4	414.4	414.4	414.4	414.4	414.4	414.4	414.4
5°	410.4	409.0	409.0	409.0	409.0	409.0	409.0	409.0
7.5°	403.7	403.7	402.3	403.7	402.3	402.3	402.3	402.3
10°	395.7	395.7	395.7	395.7	394.3	394.3	394.3	394.3
12.5°	387.6	386.3	386.3	386.3	385.0	386.3	385.0	385.0
15°	376.9	375.6	375.6	375.6	375.6	374.3	375.6	374.3
17.5°	364.9	364.9	363.6	364.9	363.6	363.6	363.6	363.6
20°	351.5	351.5	351.5	350.2	351.5	350.2	350.2	350.2
22.5°	338.2	338.2	336.8	336.8	336.8	336.8	336.8	336.8
25°	323.5	323.5	323.5	323.5	322.1	322.1	322.1	322.1
27.5°	308.8	307.4	307.4	307.4	306.1	307.4	306.1	306.1
30°	291.4	291.4	290.1	290.1	290.1	288.7	288.7	290.1
32.5°	272.7	272.7	272.7	272.7	271.3	271.3	271.3	271.3
35°	255.3	255.3	254.0	254.0	254.0	252.6	252.6	252.6
37.5°	236.6	236.6	235.3	235.3	235.3	233.9	233.9	235.3
40°	217.9	217.9	216.5	216.5	216.5	215.2	215.2	215.2
42.5°	199.2	197.8	197.8	196.5	196.5	196.5	195.2	195.2
45°	180.4	179.1	179.1	179.1	177.8	176.4	176.4	176.4
47.5°	161.7	160.4	159.1	159.1	157.7	157.7	157.7	159.1
50°	143.0	141.7	141.7	140.3	139.0	139.0	139.0	137.7
52.5°	124.3	123.0	123.0	121.6	121.6	120.3	119.0	119.0
55°	106.9	105.6	104.3	102.9	102.9	101.6	101.6	101.6
57.5°	89.6	88.2	86.9	86.9	85.5	85.5	84.2	82.9
60°	73.5	72.2	70.8	70.8	69.5	68.2	66.8	66.8
62.5°	58.8	57.5	56.1	54.8	53.5	52.1	50.8	52.1
65°	45.4	42.8	41.4	40.1	40.1	38.8	37.4	36.1
67.5°	32.1	30.7	29.4	28.1	26.7	25.4	24.1	24.1
70°	20.0	17.4	17.4	17.4	16.0	14.7	13.4	13.4
72.5°	10.7	9.4	8.0	8.0	6.7	6.7	6.7	6.7
75°	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
77.5°	2.7	2.7	2.7	2.7	2.7	2.7	2.7	2.7
80°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
82.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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)