

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: P644085

Luminaire Tested: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644085
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-130)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH HAZE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

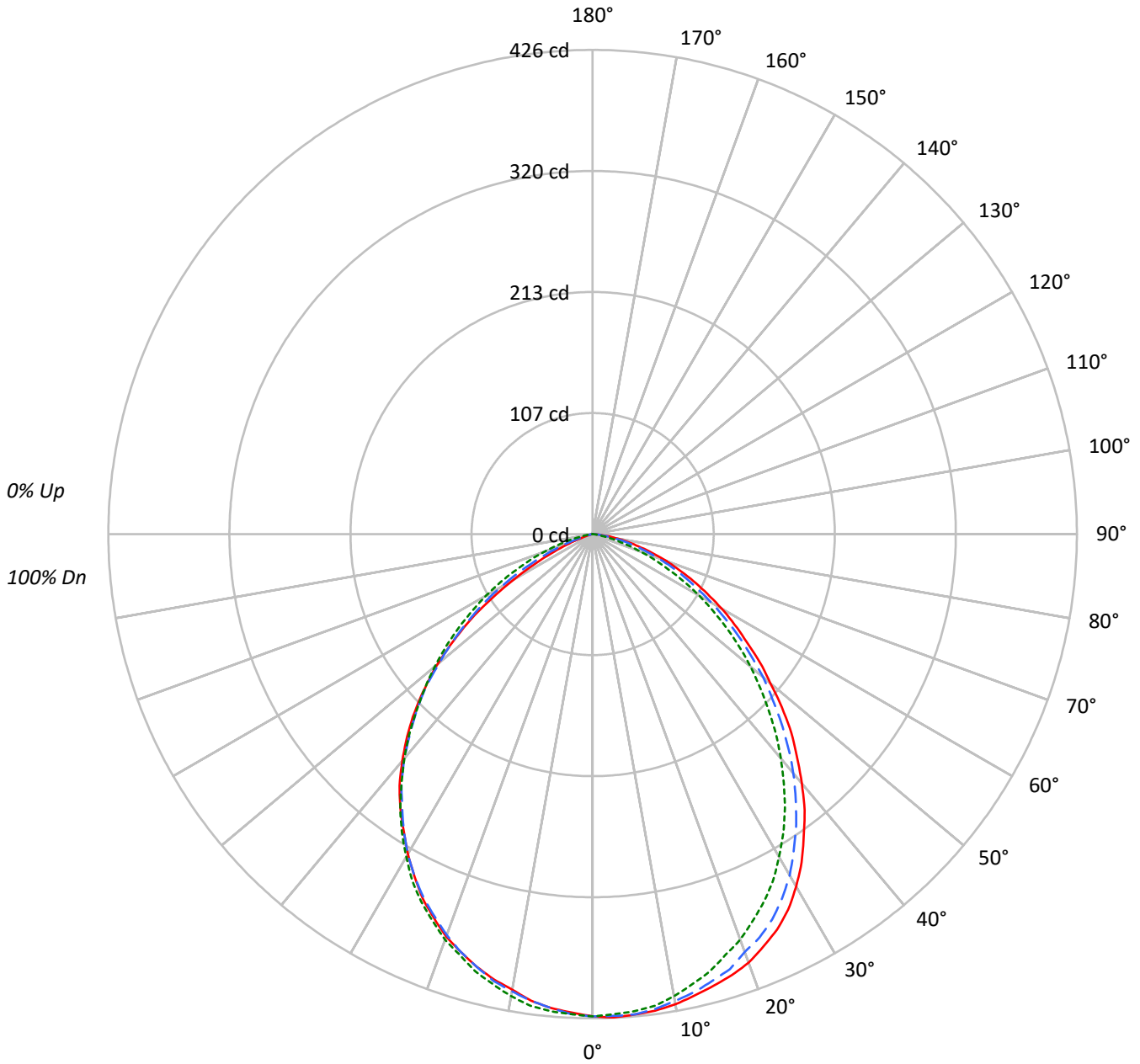
Lumens per Lamp: N/A
Luminaire Lumens: 911.6 lumens
Efficiency: N/A
Efficacy: 68.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.25
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

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: P644085
CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

Luminous Intensity Polar Plot





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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			
1	111	107	103	100	108	105	101	98	100	98	95	96	94	92	93	91	90	88					88			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	79	84	81	78	76					76			
3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66					66			
4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57					57			
5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50					50			
6	74	62	54	48	73	61	54	48	60	53	47	58	52	47	56	51	47	45					45			
7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42	40					40			
8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36					36			
9	61	48	40	35	59	47	40	35	46	39	35	45	39	35	44	39	34	33					33			
10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	31	30					30			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	33495	33495	33495	33495	33495
5°	33623	33623	33393	33171	33171
10°	33667	33434	33090	32745	32625
15°	33622	33262	32559	32208	32208
20°	33712	32864	31898	31536	31654
25°	33447	32576	31069	30695	30817
30°	32642	31594	29889	29634	29634
35°	31185	30077	28419	28140	28419
40°	29493	28308	26535	26535	26824
45°	27620	26168	24404	24404	24728
50°	25078	24022	22253	21553	21909
55°	22764	21580	19791	18415	18016
60°	20667	19072	17035	14762	12709
65°	18268	16662	13710	10217	7528
70°	15926	13941	10294	5655	2977
75°	12719	10980	6588	1769	885
80°	9819	7183	2637	636	636
85°	5253	3895	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 27620 cd/sqm



TEST NUMBER: P644085

CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.0	4.4
10°-20°	112.9	12.4
20°-30°	166.6	18.3
30°-40°	188.6	20.7
40°-50°	174.2	19.1
50°-60°	130.1	14.3
60°-70°	71.9	7.9
70°-80°	24.2	2.7
80°-90°	3.0	0.3
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°	319.4	35.0
0°-40°	508.1	55.7
0°-60°	812.4	89.1
0°-90°	911.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	911.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	424	424	424	424	424	
5°	424	424	421	419	419	40
15°	411	407	398	394	394	116
25°	384	374	357	352	354	176
35°	324	312	295	292	295	202
45°	247	234	219	219	222	190
55°	165	157	144	134	131	149
65°	98	89	73	55	40	97
75°	42	36	22	6	3	46
85°	6	4	0	0	0	8
90°	0	0	0	0	0	



TEST NUMBER: P644085

CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3
2.5°	425.7	425.7	425.7	425.7	424.3	424.3	425.7	424.3	424.3	424.3	424.3
5°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3
7.5°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	421.4	421.4	421.4
10°	420.0	420.0	420.0	420.0	420.0	420.0	420.0	418.6	418.6	418.6	417.1
12.5°	415.7	417.1	415.7	417.1	415.7	415.7	414.2	414.2	414.2	412.8	412.8
15°	411.4	411.4	411.4	411.4	411.4	409.9	409.9	408.5	408.5	408.5	407.0
17.5°	407.0	405.6	405.6	405.6	404.2	404.2	404.2	404.2	402.7	401.3	401.3
20°	401.3	399.9	399.9	399.9	398.4	398.4	397.0	397.0	394.1	394.1	391.2
22.5°	392.7	392.7	392.7	391.2	391.2	389.8	389.8	388.3	386.9	385.5	384.0
25°	384.0	384.0	382.6	382.6	381.2	381.2	381.2	378.3	376.8	375.4	374.0
27.5°	372.5	372.5	371.1	371.1	369.6	368.2	368.2	365.3	365.3	362.5	361.0
30°	358.1	358.1	358.1	355.3	355.3	355.3	353.8	352.4	349.5	348.1	346.6
32.5°	342.3	340.9	340.9	340.9	339.4	338.0	338.0	335.1	333.7	332.3	329.4
35°	323.6	323.6	323.6	323.6	322.2	320.7	320.7	317.9	316.4	313.6	312.1
37.5°	306.4	306.4	304.9	304.9	302.0	303.5	302.0	300.6	299.2	294.9	293.4
40°	286.2	286.2	286.2	284.8	283.3	283.3	281.9	280.5	277.6	276.2	274.7
42.5°	266.1	266.1	266.1	264.7	263.2	263.2	263.2	260.3	258.9	257.5	254.6
45°	247.4	246.0	246.0	244.5	244.5	243.1	241.6	240.2	238.8	237.3	234.4
47.5°	225.8	225.8	224.4	224.4	222.9	222.9	221.5	220.1	218.6	217.2	214.3
50°	204.2	205.7	205.7	204.2	204.2	202.8	201.4	201.4	199.9	198.5	195.6
52.5°	185.5	185.5	185.5	184.1	184.1	182.7	182.7	181.2	179.8	176.9	175.5
55°	165.4	166.8	165.4	165.4	165.4	164.0	164.0	162.5	161.1	158.2	156.8
57.5°	148.1	148.1	146.7	146.7	145.3	145.3	145.3	143.8	142.4	141.0	138.1
60°	130.9	129.4	129.4	129.4	128.0	128.0	128.0	125.1	123.7	122.3	120.8
62.5°	113.6	113.6	113.6	112.2	112.2	110.8	109.3	109.3	107.9	106.4	103.6
65°	97.8	97.8	96.4	96.4	96.4	94.9	94.9	93.5	92.1	90.6	89.2
67.5°	82.0	82.0	82.0	80.5	80.5	80.5	79.1	77.7	77.7	76.2	74.8
70°	69.0	67.6	67.6	67.6	66.2	66.2	66.2	64.7	63.3	61.8	60.4
72.5°	54.7	54.7	54.7	54.7	53.2	53.2	51.8	51.8	50.3	48.9	47.5
75°	41.7	41.7	41.7	41.7	40.3	40.3	40.3	38.8	38.8	37.4	36.0
77.5°	31.6	31.6	31.6	30.2	30.2	28.8	28.8	28.8	27.3	27.3	25.9
80°	21.6	21.6	20.1	20.1	20.1	20.1	20.1	18.7	17.3	17.3	15.8
82.5°	12.9	12.9	12.9	11.5	11.5	11.5	11.5	11.5	10.1	10.1	8.6
85°	5.8	5.8	5.8	5.8	5.8	5.8	4.3	4.3	4.3	4.3	4.3
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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: P644085

CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3
2.5°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	422.9	422.9	422.9	422.9
5°	422.9	422.9	422.9	422.9	422.9	421.4	422.9	421.4	421.4	421.4	421.4
7.5°	420.0	420.0	420.0	420.0	418.6	420.0	418.6	418.6	418.6	418.6	417.1
10°	417.1	415.7	415.7	415.7	415.7	414.2	414.2	412.8	412.8	412.8	411.4
12.5°	412.8	411.4	411.4	409.9	409.9	409.9	408.5	408.5	407.0	405.6	405.6
15°	405.6	405.6	404.2	402.7	402.7	401.3	401.3	399.9	399.9	398.4	397.0
17.5°	399.9	398.4	397.0	395.5	394.1	394.1	392.7	391.2	391.2	388.3	388.3
20°	389.8	388.3	386.9	385.5	385.5	385.5	382.6	382.6	381.2	379.7	378.3
22.5°	381.2	379.7	376.8	375.4	375.4	374.0	372.5	371.1	369.6	368.2	366.8
25°	371.1	369.6	366.8	365.3	363.9	362.5	361.0	359.6	358.1	356.7	355.3
27.5°	358.1	355.3	355.3	352.4	351.0	349.5	348.1	346.6	345.2	343.8	342.3
30°	343.8	342.3	339.4	336.6	335.1	335.1	332.3	330.8	330.8	327.9	326.5
32.5°	327.9	325.1	322.2	320.7	319.3	317.9	316.4	315.0	313.6	312.1	310.7
35°	310.7	306.4	304.9	302.0	302.0	300.6	299.2	296.3	296.3	294.9	292.0
37.5°	292.0	289.1	287.7	284.8	283.3	281.9	280.5	279.0	277.6	276.2	274.7
40°	271.8	269.0	267.5	266.1	264.7	263.2	261.8	260.3	258.9	257.5	256.0
42.5°	251.7	250.3	247.4	244.5	244.5	243.1	241.6	240.2	238.8	238.8	237.3
45°	231.6	230.1	227.3	225.8	224.4	224.4	221.5	221.5	220.1	218.6	218.6
47.5°	212.9	210.0	207.1	207.1	204.2	205.7	202.8	202.8	199.9	199.9	198.5
50°	192.7	191.3	188.4	187.0	187.0	185.5	184.1	184.1	182.7	181.2	179.8
52.5°	174.0	171.2	169.7	168.3	166.8	166.8	165.4	165.4	162.5	162.5	161.1
55°	155.3	153.9	151.0	149.6	149.6	149.6	146.7	145.3	145.3	143.8	142.4
57.5°	136.6	135.2	133.8	132.3	130.9	130.9	129.4	128.0	126.6	125.1	122.3
60°	119.4	117.9	116.5	115.1	113.6	113.6	112.2	110.8	109.3	107.9	106.4
62.5°	102.1	102.1	99.2	97.8	96.4	96.4	94.9	93.5	92.1	90.6	89.2
65°	87.7	86.3	83.4	82.0	82.0	82.0	79.1	77.7	76.2	73.4	71.9
67.5°	73.4	70.5	69.0	69.0	67.6	66.2	64.7	63.3	60.4	59.0	56.1
70°	59.0	57.5	56.1	54.7	53.2	51.8	50.3	48.9	46.0	44.6	43.1
72.5°	46.0	44.6	43.1	41.7	40.3	40.3	37.4	36.0	34.5	31.6	30.2
75°	34.5	33.1	31.6	30.2	28.8	27.3	27.3	24.5	23.0	21.6	18.7
77.5°	24.5	23.0	21.6	20.1	20.1	18.7	17.3	15.8	14.4	12.9	11.5
80°	15.8	14.4	12.9	12.9	11.5	11.5	10.1	8.6	7.2	5.8	5.8
82.5°	8.6	7.2	7.2	5.8	5.8	5.8	4.3	2.9	2.9	2.9	1.4
85°	2.9	2.9	2.9	1.4	1.4	1.4	1.4	1.4	1.4	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: P644085

CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3
2.5°	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	422.9	421.4	421.4
5°	420.0	420.0	420.0	420.0	420.0	420.0	418.6	418.6	418.6	418.6	418.6
7.5°	417.1	417.1	417.1	415.7	415.7	415.7	415.7	414.2	414.2	414.2	414.2
10°	411.4	411.4	411.4	409.9	409.9	409.9	409.9	409.9	408.5	408.5	408.5
12.5°	404.2	404.2	404.2	404.2	404.2	402.7	402.7	402.7	402.7	401.3	402.7
15°	397.0	397.0	395.5	395.5	395.5	394.1	394.1	394.1	394.1	394.1	394.1
17.5°	388.3	386.9	386.9	385.5	385.5	385.5	385.5	385.5	385.5	385.5	385.5
20°	378.3	376.8	376.8	376.8	376.8	375.4	375.4	374.0	375.4	375.4	375.4
22.5°	366.8	365.3	365.3	365.3	363.9	363.9	363.9	363.9	363.9	363.9	363.9
25°	355.3	353.8	352.4	352.4	352.4	351.0	351.0	352.4	352.4	352.4	352.4
27.5°	340.9	340.9	339.4	339.4	339.4	338.0	338.0	338.0	339.4	339.4	339.4
30°	325.1	325.1	325.1	325.1	323.6	323.6	325.1	323.6	325.1	323.6	325.1
32.5°	310.7	310.7	309.2	307.8	307.8	309.2	307.8	307.8	309.2	309.2	309.2
35°	292.0	292.0	292.0	292.0	292.0	292.0	292.0	292.0	292.0	293.4	294.9
37.5°	274.7	274.7	274.7	274.7	274.7	274.7	274.7	276.2	276.2	276.2	276.2
40°	256.0	256.0	256.0	256.0	256.0	256.0	256.0	256.0	257.5	257.5	258.9
42.5°	235.9	237.3	237.3	237.3	235.9	235.9	237.3	237.3	237.3	238.8	238.8
45°	217.2	217.2	217.2	217.2	218.6	217.2	217.2	217.2	218.6	218.6	218.6
47.5°	198.5	197.0	197.0	198.5	197.0	197.0	197.0	197.0	198.5	198.5	197.0
50°	179.8	178.4	178.4	178.4	176.9	176.9	178.4	175.5	175.5	175.5	176.9
52.5°	161.1	159.7	158.2	158.2	158.2	156.8	155.3	155.3	155.3	153.9	153.9
55°	141.0	139.5	138.1	138.1	138.1	136.6	136.6	133.8	133.8	132.3	132.3
57.5°	122.3	120.8	119.4	119.4	117.9	116.5	116.5	113.6	113.6	112.2	109.3
60°	103.6	102.1	100.7	100.7	100.7	97.8	96.4	93.5	93.5	90.6	89.2
62.5°	86.3	84.9	83.4	82.0	82.0	79.1	77.7	74.8	73.4	71.9	69.0
65°	70.5	67.6	66.2	64.7	64.7	61.8	60.4	57.5	54.7	53.2	50.3
67.5°	54.7	53.2	50.3	48.9	48.9	46.0	43.1	41.7	38.8	36.0	34.5
70°	40.3	38.8	36.0	34.5	33.1	31.6	28.8	27.3	24.5	23.0	20.1
72.5°	27.3	25.9	23.0	23.0	21.6	18.7	17.3	15.8	12.9	11.5	10.1
75°	17.3	15.8	14.4	12.9	11.5	10.1	8.6	7.2	5.8	4.3	4.3
77.5°	10.1	8.6	7.2	5.8	5.8	4.3	2.9	2.9	2.9	1.4	1.4
80°	4.3	2.9	2.9	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.0	0.0	1.4	1.4
85°	0.0	0.0	0.0	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	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: P644085

CATALOG NUMBER: ML5615LSWW9FS1E - 592H WW - 1200LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	424.3	424.3	424.3	424.3	424.3	424.3	424.3	424.3
2.5°	422.9	421.4	422.9	422.9	421.4	421.4	421.4	421.4
5°	418.6	418.6	418.6	418.6	418.6	418.6	418.6	418.6
7.5°	415.7	414.2	414.2	414.2	414.2	414.2	414.2	414.2
10°	408.5	408.5	408.5	408.5	408.5	408.5	408.5	407.0
12.5°	401.3	401.3	401.3	401.3	401.3	401.3	401.3	401.3
15°	394.1	394.1	394.1	394.1	394.1	394.1	394.1	394.1
17.5°	385.5	385.5	385.5	385.5	385.5	384.0	385.5	385.5
20°	375.4	375.4	375.4	375.4	375.4	375.4	375.4	376.8
22.5°	363.9	363.9	363.9	363.9	363.9	363.9	363.9	365.3
25°	352.4	352.4	352.4	352.4	352.4	352.4	352.4	353.8
27.5°	339.4	339.4	339.4	339.4	339.4	339.4	339.4	339.4
30°	325.1	325.1	326.5	325.1	325.1	325.1	326.5	325.1
32.5°	310.7	310.7	310.7	310.7	310.7	310.7	310.7	309.2
35°	294.9	293.4	294.9	294.9	294.9	294.9	294.9	294.9
37.5°	277.6	277.6	277.6	277.6	277.6	277.6	279.0	279.0
40°	260.3	258.9	258.9	260.3	260.3	260.3	258.9	260.3
42.5°	238.8	240.2	240.2	240.2	241.6	240.2	241.6	241.6
45°	218.6	220.1	220.1	220.1	220.1	220.1	221.5	221.5
47.5°	198.5	198.5	198.5	198.5	199.9	199.9	199.9	199.9
50°	176.9	176.9	176.9	176.9	178.4	176.9	178.4	178.4
52.5°	153.9	153.9	153.9	153.9	153.9	153.9	155.3	153.9
55°	130.9	130.9	130.9	130.9	129.4	129.4	129.4	130.9
57.5°	109.3	107.9	106.4	107.9	105.0	105.0	105.0	105.0
60°	86.3	84.9	84.9	83.4	82.0	80.5	82.0	80.5
62.5°	66.2	64.7	64.7	61.8	60.4	60.4	59.0	59.0
65°	48.9	46.0	44.6	44.6	43.1	41.7	40.3	40.3
67.5°	31.6	30.2	28.8	28.8	27.3	25.9	25.9	24.5
70°	18.7	17.3	15.8	17.3	14.4	12.9	12.9	12.9
72.5°	8.6	7.2	7.2	7.2	5.8	5.8	5.8	5.8
75°	4.3	2.9	2.9	2.9	2.9	2.9	2.9	2.9
77.5°	1.4	1.4	2.9	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	0.0	0.0	0.0	1.4	1.4	0.0	1.4
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



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— 0°-180° - - 45°-225° - - - - 90°-270°

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(END OF REPORT)