

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: P644170

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 900LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644170
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-117)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 692W WW - 900LM - 5000K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

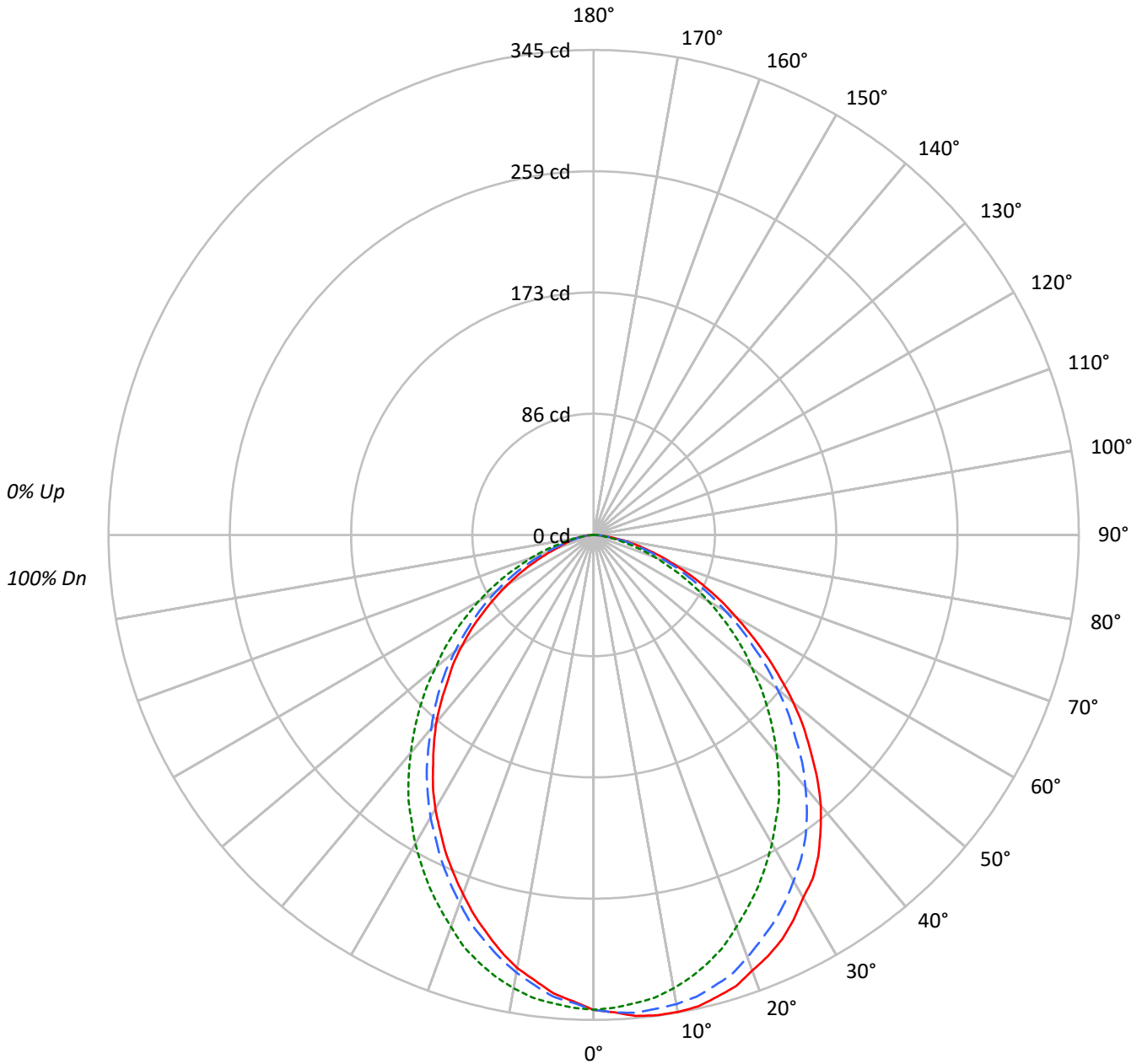
Lumens per Lamp: N/A
Luminaire Lumens: 745.6 lumens
Efficiency: N/A
Efficacy: 71.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 10.5
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



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Luminous Intensity Polar Plot





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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	89	87								
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	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43								
7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38								
8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35								
9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31								
10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	18518	18518	18518	18518	18518
5°	18903	18776	18402	18149	18022
10°	19182	18865	18231	17602	17412
15°	19296	18848	17878	16975	16652
20°	19240	18645	17315	16253	15856
25°	19193	18370	16719	15479	15067
30°	18864	17996	16053	14686	14255
35°	18645	17581	15372	13853	13318
40°	17984	16767	14484	12860	12452
45°	16932	15692	13575	11993	11373
50°	15812	14550	12511	10959	10379
55°	14346	13256	11526	9892	9128
60°	12839	11841	10350	8727	7730
65°	11363	10325	9002	7381	6200
70°	9665	8928	7469	5658	4552
75°	7943	7223	5549	3855	3855
80°	6093	5398	3946	3220	3599
85°	4277	3585	2830	2830	2830

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16932 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.7	4.3
10°-20°	88.9	11.9
20°-30°	128.6	17.3
30°-40°	146.1	19.6
40°-50°	137.9	18.5
50°-60°	108.8	14.6
60°-70°	68.1	9.1
70°-80°	29.4	3.9
80°-90°	6.0	0.8
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°	249.2	33.4
0°-40°	395.4	53.0
0°-60°	642.0	86.1
0°-90°	745.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	745.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	338	338	338	338	338	
5°	344	341	334	330	328	33
15°	340	332	315	299	293	96
25°	317	304	276	256	249	146
35°	279	263	230	207	199	173
45°	218	202	175	155	147	169
55°	150	139	121	104	96	134
65°	88	80	69	57	48	87
75°	38	34	26	18	18	41
85°	7	6	4	4	4	8
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8
2.5°	340.0	340.0	341.2	341.2	340.0	340.0	340.0	340.0	340.0	340.0	340.0
5°	343.5	343.5	343.5	343.5	342.3	342.3	342.3	342.3	342.3	341.2	341.2
7.5°	344.6	344.6	344.6	344.6	343.5	343.5	342.3	342.3	342.3	341.2	340.0
10°	344.6	344.6	344.6	343.5	343.5	342.3	343.5	342.3	341.2	340.0	338.9
12.5°	343.5	342.3	342.3	342.3	341.2	341.2	341.2	340.0	338.9	337.8	336.6
15°	340.0	340.0	340.0	338.9	338.9	337.8	337.8	336.6	335.5	333.2	332.1
17.5°	336.6	336.6	335.5	335.5	334.4	333.2	333.2	332.1	331.0	328.7	327.5
20°	329.8	329.8	329.8	328.7	327.5	327.5	326.4	325.3	323.0	320.7	319.6
22.5°	324.1	323.0	323.0	321.9	320.7	320.7	319.6	317.3	316.2	313.9	311.6
25°	317.3	316.2	316.2	315.0	313.9	312.8	312.8	310.5	308.2	305.9	303.7
27.5°	308.2	308.2	307.1	305.9	304.8	304.8	303.7	302.5	299.1	296.8	294.6
30°	298.0	299.1	298.0	296.8	295.7	295.7	294.6	292.3	290.0	286.6	284.3
32.5°	290.0	290.0	288.9	287.7	285.5	285.5	285.5	282.0	279.8	277.5	274.1
35°	278.6	278.6	278.6	276.4	275.2	274.1	272.9	270.7	268.4	266.1	262.7
37.5°	265.0	266.1	265.0	263.9	262.7	261.6	260.4	258.2	254.8	252.5	249.1
40°	251.3	251.3	250.2	249.1	247.9	246.8	245.7	243.4	241.1	237.7	234.3
42.5°	235.4	235.4	234.3	233.1	232.0	230.9	230.9	228.6	225.2	222.9	219.5
45°	218.4	218.4	218.4	217.2	216.1	214.9	213.8	212.7	210.4	207.0	202.4
47.5°	202.4	202.4	202.4	200.2	200.2	197.9	196.8	194.5	193.3	189.9	187.7
50°	185.4	184.2	184.2	183.1	182.0	180.8	180.8	177.4	176.3	174.0	170.6
52.5°	167.2	167.2	167.2	166.0	164.9	163.8	163.8	161.5	159.2	156.9	155.8
55°	150.1	150.1	150.1	149.0	147.8	147.8	146.7	144.4	143.3	141.0	138.7
57.5°	133.1	134.2	133.1	131.9	131.9	130.8	130.8	129.7	127.4	125.1	124.0
60°	117.1	117.1	117.1	116.0	114.9	114.9	114.9	113.7	111.5	110.3	108.0
62.5°	102.4	102.4	101.2	101.2	100.1	100.1	98.9	97.8	96.7	95.5	94.4
65°	87.6	86.4	86.4	86.4	85.3	85.3	85.3	84.2	81.9	80.7	79.6
67.5°	73.9	73.9	72.8	72.8	71.6	71.6	71.6	70.5	69.4	68.2	67.1
70°	60.3	60.3	60.3	60.3	59.1	59.1	59.1	58.0	56.9	56.9	55.7
72.5°	48.9	48.9	48.9	48.9	47.8	47.8	47.8	46.6	45.5	44.4	44.4
75°	37.5	38.7	37.5	37.5	37.5	37.5	36.4	36.4	35.3	34.1	34.1
77.5°	28.4	28.4	28.4	28.4	27.3	27.3	27.3	27.3	26.2	25.0	25.0
80°	19.3	19.3	19.3	19.3	19.3	19.3	19.3	19.3	18.2	18.2	17.1
82.5°	11.4	12.5	12.5	12.5	11.4	11.4	11.4	11.4	11.4	11.4	10.2
85°	6.8	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7	5.7
87.5°	2.3	2.3	2.3	2.3	2.3	1.1	1.1	1.1	1.1	1.1	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8
2.5°	338.9	338.9	338.9	338.9	337.8	337.8	337.8	336.6	336.6	336.6	336.6
5°	340.0	338.9	338.9	337.8	337.8	337.8	336.6	336.6	335.5	334.4	334.4
7.5°	338.9	338.9	337.8	336.6	336.6	335.5	334.4	333.2	332.1	332.1	329.8
10°	337.8	336.6	335.5	334.4	333.2	333.2	331.0	329.8	328.7	327.5	326.4
12.5°	334.4	333.2	332.1	329.8	329.8	328.7	326.4	325.3	323.0	321.9	319.6
15°	329.8	328.7	327.5	325.3	324.1	323.0	320.7	318.4	316.2	315.0	312.8
17.5°	325.3	323.0	320.7	318.4	317.3	316.2	313.9	311.6	309.3	307.1	304.8
20°	317.3	315.0	312.8	309.3	308.2	307.1	303.7	301.4	299.1	296.8	294.6
22.5°	309.3	307.1	303.7	301.4	300.2	298.0	295.7	292.3	290.0	286.6	284.3
25°	301.4	298.0	294.6	292.3	290.0	288.9	285.5	283.2	278.6	276.4	274.1
27.5°	291.1	288.9	285.5	282.0	279.8	277.5	275.2	271.8	268.4	265.0	262.7
30°	280.9	277.5	274.1	271.8	268.4	267.3	263.9	260.4	257.0	253.6	251.3
32.5°	270.7	267.3	263.9	260.4	258.2	255.9	252.5	249.1	244.5	241.1	238.8
35°	259.3	255.9	251.3	247.9	245.7	243.4	240.0	236.6	233.1	229.7	226.3
37.5°	245.7	241.1	238.8	235.4	232.0	229.7	226.3	221.8	219.5	216.1	212.7
40°	230.9	227.5	224.0	220.6	217.2	216.1	211.5	208.1	205.8	202.4	199.0
42.5°	216.1	212.7	208.1	204.7	202.4	201.3	197.9	194.5	191.1	188.8	185.4
45°	200.2	196.8	193.3	189.9	187.7	186.5	183.1	180.8	177.4	175.1	171.7
47.5°	184.2	180.8	178.6	175.1	172.9	171.7	169.5	166.0	162.6	161.5	159.2
50°	168.3	164.9	162.6	159.2	158.1	156.9	154.7	152.4	150.1	146.7	145.6
52.5°	152.4	149.0	146.7	144.4	144.4	142.2	139.9	138.7	136.5	134.2	131.9
55°	136.5	135.3	133.1	129.7	129.7	128.5	126.2	124.0	121.7	120.6	118.3
57.5°	120.6	119.4	117.1	116.0	114.9	113.7	112.6	110.3	109.2	106.9	105.8
60°	106.9	105.8	103.5	102.4	101.2	100.1	98.9	96.7	95.5	94.4	93.3
62.5°	92.1	91.0	89.8	88.7	87.6	86.4	86.4	84.2	83.0	81.9	80.7
65°	79.6	77.3	76.2	75.1	75.1	73.9	72.8	71.6	70.5	69.4	68.2
67.5°	66.0	64.8	64.8	62.6	62.6	61.4	60.3	60.3	58.0	56.9	55.7
70°	54.6	53.5	52.3	51.2	51.2	50.0	48.9	47.8	46.6	46.6	45.5
72.5°	43.2	42.1	42.1	40.9	39.8	39.8	38.7	37.5	36.4	36.4	35.3
75°	33.0	31.8	31.8	30.7	30.7	29.6	28.4	28.4	27.3	26.2	25.0
77.5°	23.9	23.9	22.7	22.7	21.6	21.6	20.5	20.5	19.3	18.2	18.2
80°	17.1	15.9	15.9	14.8	14.8	14.8	13.6	13.6	12.5	12.5	11.4
82.5°	10.2	10.2	9.1	9.1	9.1	9.1	8.0	8.0	8.0	6.8	6.8
85°	5.7	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.4
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8
2.5°	335.5	335.5	334.4	335.5	334.4	334.4	334.4	334.4	333.2	333.2	333.2
5°	333.2	332.1	332.1	331.0	332.1	331.0	329.8	329.8	329.8	329.8	328.7
7.5°	328.7	328.7	327.5	326.4	326.4	325.3	324.1	324.1	323.0	323.0	321.9
10°	325.3	323.0	321.9	320.7	320.7	319.6	318.4	317.3	316.2	315.0	315.0
12.5°	317.3	316.2	315.0	313.9	313.9	311.6	310.5	309.3	308.2	307.1	305.9
15°	311.6	309.3	307.1	305.9	305.9	303.7	302.5	301.4	299.1	299.1	296.8
17.5°	302.5	300.2	298.0	296.8	295.7	294.6	293.4	291.1	290.0	287.7	287.7
20°	291.1	290.0	286.6	285.5	284.3	283.2	280.9	279.8	278.6	276.4	275.2
22.5°	282.0	278.6	276.4	275.2	275.2	271.8	270.7	268.4	267.3	266.1	263.9
25°	270.7	268.4	266.1	263.9	263.9	261.6	260.4	258.2	255.9	254.8	253.6
27.5°	259.3	257.0	253.6	252.5	251.3	250.2	247.9	245.7	243.4	242.2	241.1
30°	246.8	244.5	242.2	241.1	238.8	236.6	234.3	233.1	232.0	229.7	228.6
32.5°	235.4	232.0	229.7	227.5	227.5	224.0	222.9	220.6	219.5	218.4	216.1
35°	222.9	219.5	217.2	216.1	214.9	211.5	209.3	207.0	207.0	204.7	203.6
37.5°	209.3	205.8	204.7	202.4	201.3	199.0	196.8	195.6	193.3	191.1	191.1
40°	196.8	193.3	189.9	189.9	187.7	186.5	183.1	182.0	179.7	178.6	177.4
42.5°	183.1	179.7	177.4	176.3	175.1	172.9	170.6	168.3	167.2	166.0	164.9
45°	168.3	166.0	164.9	162.6	161.5	159.2	158.1	155.8	154.7	152.4	151.3
47.5°	155.8	153.5	151.3	150.1	149.0	146.7	145.6	143.3	142.2	139.9	138.7
50°	143.3	141.0	138.7	137.6	136.5	134.2	131.9	130.8	128.5	127.4	125.1
52.5°	129.7	127.4	125.1	125.1	124.0	121.7	120.6	118.3	116.0	113.7	112.6
55°	117.1	114.9	112.6	111.5	111.5	109.2	106.9	105.8	103.5	102.4	100.1
57.5°	103.5	101.2	100.1	98.9	98.9	96.7	95.5	93.3	92.1	89.8	88.7
60°	91.0	89.8	87.6	87.6	86.4	84.2	83.0	80.7	79.6	78.5	77.3
62.5°	78.5	77.3	75.1	75.1	73.9	72.8	71.6	69.4	68.2	66.0	64.8
65°	66.0	64.8	63.7	62.6	62.6	60.3	59.1	58.0	56.9	55.7	54.6
67.5°	54.6	53.5	52.3	52.3	51.2	50.0	47.8	46.6	45.5	44.4	43.2
70°	44.4	42.1	40.9	40.9	39.8	38.7	37.5	36.4	35.3	34.1	33.0
72.5°	34.1	31.8	31.8	30.7	29.6	28.4	28.4	27.3	26.2	26.2	23.9
75°	25.0	23.9	22.7	22.7	21.6	20.5	19.3	19.3	18.2	18.2	18.2
77.5°	17.1	15.9	15.9	14.8	14.8	14.8	13.6	13.6	13.6	13.6	14.8
80°	11.4	11.4	10.2	10.2	10.2	10.2	10.2	10.2	10.2	11.4	11.4
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8	8.0
85°	3.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	1.1	1.1	2.3	1.1	2.3	1.1	2.3	2.3	2.3	2.3	2.3
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: P644170

CATALOG NUMBER: ML5615LSWW9FS1E - 692W WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	337.8	337.8	337.8	337.8	337.8	337.8	337.8	337.8
2.5°	332.1	333.2	333.2	332.1	333.2	332.1	332.1	332.1
5°	328.7	327.5	327.5	327.5	326.4	327.5	327.5	327.5
7.5°	321.9	321.9	320.7	320.7	319.6	319.6	320.7	319.6
10°	313.9	312.8	313.9	312.8	312.8	312.8	311.6	312.8
12.5°	305.9	304.8	304.8	303.7	303.7	303.7	303.7	303.7
15°	296.8	295.7	295.7	294.6	294.6	293.4	294.6	293.4
17.5°	286.6	286.6	284.3	284.3	284.3	284.3	284.3	283.2
20°	274.1	274.1	272.9	274.1	271.8	271.8	271.8	271.8
22.5°	263.9	262.7	261.6	261.6	261.6	260.4	260.4	260.4
25°	251.3	251.3	250.2	250.2	249.1	249.1	249.1	249.1
27.5°	240.0	238.8	238.8	238.8	237.7	236.6	236.6	236.6
30°	227.5	227.5	226.3	226.3	225.2	225.2	225.2	225.2
32.5°	214.9	214.9	213.8	212.7	212.7	212.7	211.5	212.7
35°	202.4	201.3	201.3	200.2	200.2	200.2	199.0	199.0
37.5°	189.9	188.8	187.7	188.8	187.7	186.5	186.5	186.5
40°	176.3	175.1	175.1	174.0	174.0	174.0	172.9	174.0
42.5°	163.8	163.8	162.6	161.5	161.5	161.5	160.4	160.4
45°	151.3	149.0	150.1	149.0	149.0	147.8	147.8	146.7
47.5°	137.6	136.5	136.5	136.5	135.3	135.3	135.3	135.3
50°	124.0	122.8	124.0	122.8	122.8	121.7	121.7	121.7
52.5°	111.5	110.3	110.3	110.3	110.3	109.2	109.2	109.2
55°	98.9	97.8	97.8	97.8	96.7	96.7	95.5	95.5
57.5°	87.6	86.4	85.3	84.2	84.2	84.2	83.0	83.0
60°	75.1	73.9	72.8	72.8	71.6	71.6	71.6	70.5
62.5°	63.7	62.6	61.4	61.4	60.3	59.1	59.1	59.1
65°	52.3	51.2	51.2	50.0	48.9	48.9	47.8	47.8
67.5°	42.1	40.9	40.9	39.8	38.7	37.5	37.5	37.5
70°	33.0	31.8	30.7	30.7	30.7	29.6	28.4	28.4
72.5°	23.9	22.7	22.7	22.7	22.7	22.7	22.7	22.7
75°	18.2	18.2	18.2	18.2	18.2	18.2	18.2	18.2
77.5°	14.8	14.8	14.8	14.8	14.8	14.8	14.8	14.8
80°	11.4	11.4	11.4	11.4	11.4	11.4	11.4	11.4
82.5°	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	2.3	2.3	2.3	2.3	2.3	2.3	2.3	1.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
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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)