

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: P644141

Luminaire Tested: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644141
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-131)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

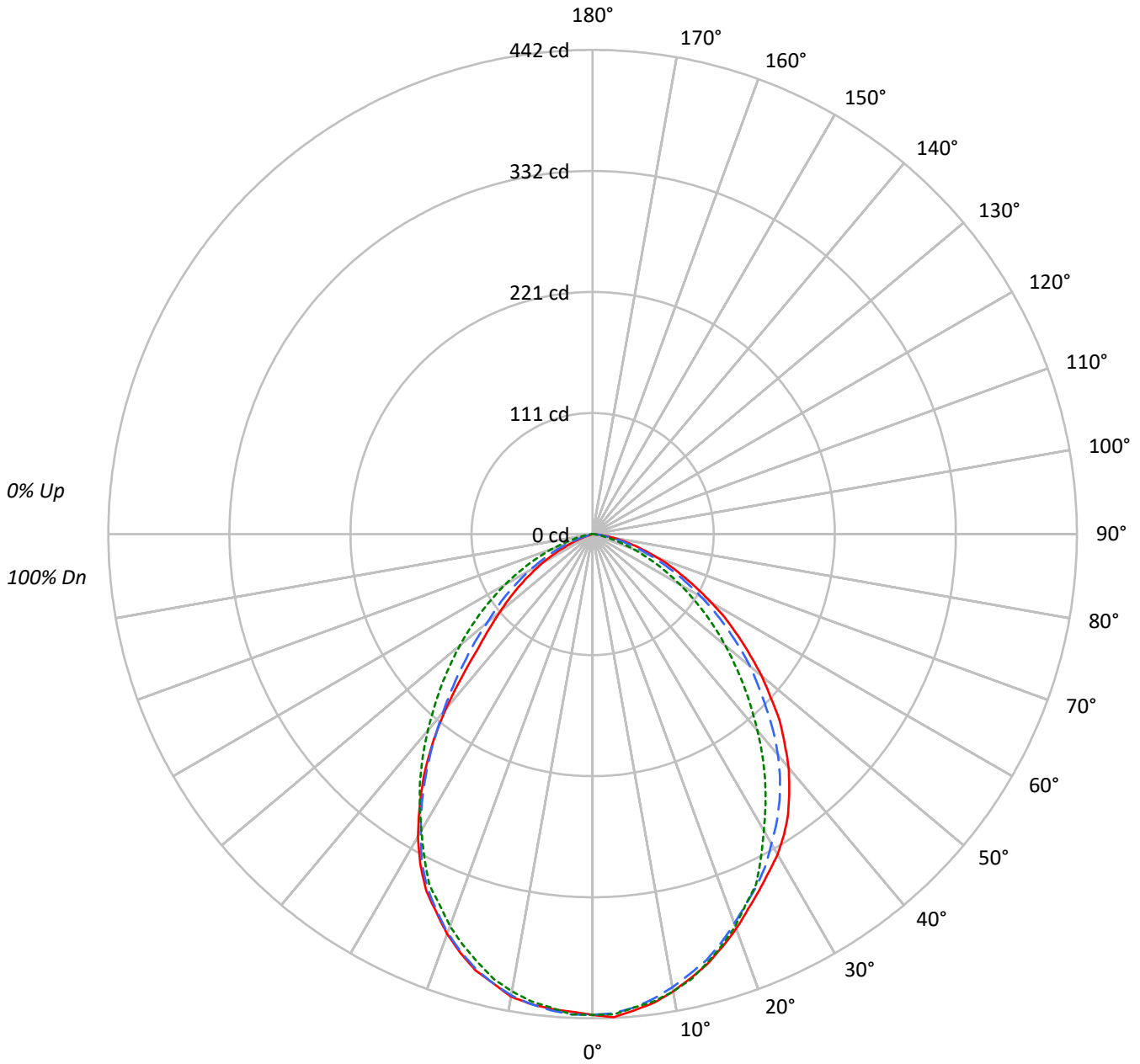
Lumens per Lamp: N/A
Luminaire Lumens: 838.7 lumens
Efficiency: N/A
Efficacy: 62.6 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

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: P644141
CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

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	100						
	1	111	107	104	100	108	105	102	99	101	98	96	97	95	93	93	92	90	88	88						
	2	103	96	90	85	100	94	89	84	90	86	82	87	84	80	84	81	79	77	77						
	3	95	86	79	73	92	84	78	72	81	76	71	79	74	70	76	72	69	67	67						
	4	88	77	69	64	85	76	69	63	73	67	62	71	66	62	69	65	61	59	59						
	5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52	52						
	6	76	64	56	50	74	63	55	50	61	54	49	59	53	49	58	53	48	46	46						
	7	70	58	50	45	69	57	50	44	56	49	44	55	48	44	53	48	44	42	42						
	8	66	53	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38	38						
	9	62	49	42	37	60	49	42	37	48	41	36	47	41	36	46	40	36	34	34						
	10	58	46	39	34	57	45	38	34	44	38	33	44	38	33	43	37	33	32	32						

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	24061	24061	24061	24061	24061
5°	24015	23877	23877	24015	23943
10°	23591	23380	23591	23803	23870
15°	23042	22832	22974	23332	23405
20°	22361	22064	22209	22583	22653
25°	21727	21425	21346	21576	21727
30°	21377	20661	19775	19857	20180
35°	20826	19896	18370	17694	17949
40°	19916	18828	16746	15207	14935
45°	18731	17358	15102	12846	11474
50°	17151	15965	13484	10678	9390
55°	15474	14270	11851	9070	7617
60°	13727	12477	10120	7346	5822
65°	11817	10663	8198	5409	3606
70°	10130	8719	6075	3045	1427
75°	8028	6693	4024	805	0
80°	5998	4799	1989	0	0
85°	3208	2390	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18731 cd/sqm



TEST NUMBER: P644141

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.2	4.9
10°-20°	114.2	13.6
20°-30°	162.7	19.4
30°-40°	175.0	20.9
40°-50°	150.9	18.0
50°-60°	109.3	13.0
60°-70°	61.7	7.4
70°-80°	21.0	2.5
80°-90°	2.7	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°	318.1	37.9
0°-40°	493.2	58.8
0°-60°	753.3	89.8
0°-90°	838.7	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	838.7	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	439	439	439	439	439	
5°	436	434	434	436	435	41
15°	406	402	405	411	412	114
25°	359	354	353	357	359	166
35°	311	297	274	264	268	194
45°	242	224	195	166	148	185
55°	162	149	124	95	80	145
65°	91	82	63	42	28	91
75°	38	32	19	4	0	41
85°	5	4	0	0	0	7
90°	0	0	0	0	0	



TEST NUMBER: P644141

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9
2.5°	441.5	437.7	436.4	437.7	437.7	437.7	437.7	437.7	437.7	436.4	437.7
5°	436.4	432.6	432.6	432.6	432.6	432.6	431.3	432.6	432.6	432.6	433.9
7.5°	431.3	426.3	427.6	426.3	427.6	426.3	426.3	427.6	426.3	427.6	427.6
10°	423.8	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0	420.0
12.5°	414.9	411.1	411.1	411.1	411.1	411.1	411.1	411.1	412.4	411.1	411.1
15°	406.0	401.0	402.3	401.0	401.0	401.0	401.0	401.0	401.0	401.0	402.3
17.5°	394.7	390.9	390.9	390.9	390.9	390.9	390.9	389.6	390.9	390.9	390.9
20°	383.3	379.5	379.5	378.2	379.5	378.2	378.2	378.2	379.5	378.2	378.2
22.5°	370.6	366.8	368.1	366.8	366.8	366.8	366.8	366.8	365.6	366.8	365.6
25°	359.2	358.0	356.7	358.0	356.7	356.7	356.7	355.4	355.4	355.4	354.2
27.5°	347.9	345.3	345.3	345.3	345.3	344.1	344.1	344.1	342.8	341.5	341.5
30°	337.7	333.9	333.9	333.9	332.7	332.7	331.4	331.4	328.9	327.6	326.4
32.5°	325.1	322.6	321.3	321.3	320.0	320.0	318.8	318.8	316.2	315.0	312.4
35°	311.2	309.9	309.9	308.6	307.4	306.1	304.9	303.6	302.3	299.8	297.3
37.5°	294.7	293.5	292.2	292.2	290.9	289.7	289.7	287.1	285.9	283.3	280.8
40°	278.3	275.8	275.8	274.5	273.2	272.0	272.0	269.4	268.2	265.6	263.1
42.5°	259.3	256.8	256.8	255.5	255.5	255.5	254.3	251.7	249.2	246.7	244.1
45°	241.6	239.1	239.1	236.5	236.5	235.3	234.0	232.8	230.2	227.7	223.9
47.5°	220.1	218.8	218.8	217.6	216.3	215.0	215.0	213.8	211.2	207.5	204.9
50°	201.1	199.9	199.9	198.6	197.3	196.1	194.8	193.5	192.3	189.7	187.2
52.5°	180.9	180.9	179.6	178.4	178.4	177.1	175.8	174.6	172.0	169.5	168.2
55°	161.9	160.6	160.6	159.4	159.4	158.1	156.9	155.6	154.3	151.8	149.3
57.5°	144.2	141.7	141.7	140.4	140.4	140.4	139.1	136.6	135.3	132.8	131.6
60°	125.2	124.0	124.0	124.0	122.7	121.4	121.4	118.9	117.6	116.4	113.8
62.5°	107.5	106.3	106.3	106.3	105.0	105.0	103.7	102.5	101.2	99.9	97.4
65°	91.1	91.1	91.1	89.8	89.8	88.5	87.3	87.3	86.0	84.8	82.2
67.5°	77.2	75.9	75.9	75.9	74.6	74.6	73.4	72.1	70.8	69.6	67.0
70°	63.2	62.0	62.0	60.7	60.7	60.7	60.7	59.5	56.9	56.9	54.4
72.5°	49.3	49.3	49.3	48.1	48.1	48.1	46.8	46.8	45.5	44.3	43.0
75°	37.9	37.9	37.9	36.7	36.7	36.7	35.4	35.4	34.2	32.9	31.6
77.5°	27.8	27.8	27.8	26.6	26.6	26.6	25.3	25.3	24.0	24.0	22.8
80°	19.0	19.0	19.0	17.7	17.7	17.7	17.7	16.4	16.4	15.2	15.2
82.5°	11.4	11.4	11.4	11.4	10.1	10.1	10.1	10.1	10.1	8.9	8.9
85°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	3.8	3.8
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: P644141

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9
2.5°	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	438.9	437.7
5°	433.9	433.9	433.9	433.9	433.9	433.9	435.1	433.9	435.1	433.9	435.1
7.5°	427.6	427.6	428.8	428.8	427.6	428.8	428.8	428.8	428.8	430.1	430.1
10°	420.0	421.2	421.2	422.5	422.5	422.5	422.5	423.8	423.8	423.8	423.8
12.5°	412.4	412.4	412.4	412.4	413.6	412.4	413.6	413.6	414.9	416.2	414.9
15°	401.0	402.3	402.3	402.3	402.3	402.3	403.5	404.8	404.8	404.8	406.0
17.5°	390.9	390.9	390.9	392.1	390.9	392.1	392.1	392.1	393.4	393.4	394.7
20°	378.2	377.0	379.5	378.2	378.2	379.5	379.5	379.5	380.7	380.7	380.7
22.5°	364.3	365.6	364.3	364.3	365.6	365.6	365.6	364.3	365.6	365.6	366.8
25°	352.9	352.9	352.9	352.9	352.9	352.9	352.9	351.7	352.9	352.9	352.9
27.5°	340.3	337.7	337.7	336.5	336.5	335.2	333.9	333.9	333.9	332.7	333.9
30°	325.1	322.6	321.3	320.0	318.8	318.8	316.2	315.0	313.7	312.4	311.2
32.5°	309.9	307.4	306.1	304.9	302.3	301.1	298.5	297.3	296.0	293.5	290.9
35°	296.0	292.2	289.7	287.1	285.9	284.6	282.1	279.6	277.0	274.5	272.0
37.5°	277.0	274.5	272.0	269.4	268.2	266.9	264.4	259.3	256.8	254.3	251.7
40°	260.6	256.8	254.3	250.5	249.2	246.7	244.1	240.3	236.5	234.0	231.5
42.5°	240.3	237.8	235.3	231.5	230.2	227.7	223.9	221.4	218.8	213.8	211.2
45°	221.4	218.8	216.3	212.5	210.0	208.7	206.2	202.4	198.6	194.8	192.3
47.5°	202.4	199.9	196.1	193.5	191.0	189.7	187.2	183.4	179.6	175.8	173.3
50°	183.4	180.9	178.4	173.3	173.3	170.8	168.2	164.4	161.9	158.1	154.3
52.5°	165.7	161.9	159.4	155.6	155.6	154.3	150.5	146.7	144.2	140.4	137.9
55°	146.7	144.2	141.7	139.1	136.6	135.3	134.1	130.3	126.5	124.0	120.2
57.5°	129.0	125.2	124.0	121.4	120.2	118.9	116.4	112.6	110.1	107.5	105.0
60°	112.6	110.1	106.3	105.0	103.7	102.5	99.9	97.4	94.9	92.3	89.8
62.5°	96.1	93.6	91.1	88.5	87.3	86.0	84.8	82.2	79.7	77.2	74.6
65°	79.7	78.4	75.9	74.6	73.4	72.1	69.6	67.0	65.8	63.2	60.7
67.5°	65.8	64.5	62.0	60.7	59.5	59.5	55.7	54.4	51.9	50.6	48.1
70°	53.1	51.9	49.3	48.1	46.8	45.5	44.3	43.0	40.5	37.9	36.7
72.5°	41.7	39.2	37.9	36.7	35.4	35.4	32.9	31.6	29.1	27.8	25.3
75°	30.4	29.1	27.8	26.6	26.6	25.3	24.0	22.8	20.2	19.0	17.7
77.5°	21.5	20.2	19.0	17.7	17.7	16.4	15.2	13.9	12.6	11.4	10.1
80°	13.9	12.6	12.6	11.4	10.1	10.1	8.9	7.6	6.3	6.3	5.1
82.5°	7.6	7.6	6.3	6.3	5.1	5.1	3.8	3.8	2.5	2.5	1.3
85°	3.8	2.5	2.5	2.5	2.5	1.3	1.3	1.3	0.0	0.0	0.0
87.5°	1.3	1.3	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: P644141

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9
2.5°	437.7	437.7	437.7	437.7	437.7	437.7	437.7	437.7	438.9	437.7	437.7
5°	435.1	435.1	436.4	435.1	436.4	436.4	435.1	435.1	436.4	437.7	436.4
7.5°	430.1	430.1	431.3	431.3	431.3	431.3	431.3	432.6	432.6	433.9	433.9
10°	425.0	425.0	425.0	425.0	426.3	426.3	427.6	427.6	427.6	427.6	427.6
12.5°	416.2	417.4	417.4	417.4	417.4	418.7	418.7	420.0	420.0	420.0	421.2
15°	406.0	407.3	408.6	408.6	407.3	408.6	409.8	409.8	411.1	411.1	411.1
17.5°	394.7	395.9	395.9	397.2	395.9	398.5	398.5	399.7	399.7	401.0	401.0
20°	382.0	383.3	383.3	383.3	384.5	384.5	385.8	385.8	387.1	387.1	387.1
22.5°	366.8	368.1	368.1	368.1	368.1	369.4	369.4	370.6	371.9	373.2	371.9
25°	352.9	354.2	355.4	354.2	355.4	355.4	355.4	356.7	356.7	358.0	356.7
27.5°	333.9	333.9	333.9	335.2	336.5	336.5	336.5	337.7	337.7	337.7	339.0
30°	311.2	309.9	311.2	311.2	311.2	311.2	313.7	313.7	313.7	315.0	316.2
32.5°	289.7	289.7	289.7	288.4	288.4	288.4	288.4	289.7	289.7	290.9	292.2
35°	269.4	268.2	265.6	265.6	265.6	264.4	263.1	263.1	264.4	264.4	264.4
37.5°	247.9	246.7	245.4	242.9	242.9	240.3	239.1	237.8	237.8	236.5	236.5
40°	227.7	225.2	222.6	222.6	220.1	218.8	216.3	215.0	212.5	210.0	210.0
42.5°	207.5	204.9	202.4	201.1	198.6	197.3	193.5	191.0	188.5	187.2	184.7
45°	188.5	185.9	182.2	180.9	178.4	175.8	173.3	169.5	165.7	163.2	161.9
47.5°	169.5	167.0	163.2	160.6	159.4	155.6	153.1	149.3	145.5	141.7	137.9
50°	151.8	148.0	144.2	141.7	140.4	136.6	134.1	130.3	125.2	124.0	120.2
52.5°	134.1	130.3	126.5	125.2	124.0	120.2	116.4	112.6	110.1	106.3	103.7
55°	116.4	113.8	110.1	108.8	107.5	103.7	99.9	97.4	94.9	91.1	88.5
57.5°	101.2	98.7	94.9	93.6	92.3	88.5	86.0	82.2	79.7	77.2	74.6
60°	87.3	83.5	81.0	79.7	78.4	74.6	72.1	69.6	67.0	64.5	60.7
62.5°	72.1	69.6	67.0	65.8	63.2	62.0	58.2	56.9	53.1	51.9	49.3
65°	58.2	55.7	53.1	53.1	51.9	48.1	46.8	44.3	41.7	39.2	37.9
67.5°	46.8	44.3	41.7	40.5	39.2	36.7	35.4	32.9	30.4	29.1	26.6
70°	35.4	32.9	30.4	29.1	27.8	26.6	24.0	21.5	19.0	17.7	15.2
72.5°	24.0	21.5	20.2	20.2	19.0	16.4	13.9	12.6	10.1	8.9	7.6
75°	15.2	12.6	11.4	10.1	10.1	8.9	6.3	5.1	3.8	2.5	1.3
77.5°	8.9	7.6	6.3	5.1	5.1	3.8	2.5	1.3	1.3	0.0	0.0
80°	3.8	2.5	1.3	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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: P644141

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 1200LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	438.9	438.9	438.9	438.9	438.9	438.9	438.9	438.9
2.5°	437.7	437.7	437.7	437.7	436.4	436.4	436.4	436.4
5°	436.4	436.4	436.4	436.4	435.1	435.1	436.4	435.1
7.5°	433.9	433.9	432.6	432.6	432.6	432.6	432.6	432.6
10°	428.8	428.8	428.8	427.6	428.8	428.8	427.6	428.8
12.5°	421.2	421.2	421.2	421.2	420.0	420.0	421.2	420.0
15°	412.4	412.4	412.4	412.4	412.4	411.1	412.4	412.4
17.5°	402.3	402.3	401.0	401.0	401.0	402.3	402.3	401.0
20°	388.3	388.3	388.3	388.3	388.3	388.3	388.3	388.3
22.5°	373.2	373.2	373.2	373.2	373.2	373.2	373.2	373.2
25°	358.0	358.0	358.0	358.0	358.0	358.0	358.0	359.2
27.5°	339.0	339.0	339.0	339.0	339.0	337.7	337.7	340.3
30°	316.2	317.5	317.5	317.5	317.5	317.5	317.5	318.8
32.5°	293.5	293.5	293.5	294.7	293.5	294.7	293.5	293.5
35°	266.9	266.9	266.9	266.9	266.9	268.2	268.2	268.2
37.5°	236.5	237.8	237.8	239.1	239.1	239.1	240.3	239.1
40°	208.7	208.7	208.7	207.5	208.7	207.5	208.7	208.7
42.5°	182.2	179.6	179.6	178.4	178.4	177.1	175.8	175.8
45°	158.1	154.3	154.3	153.1	151.8	149.3	148.0	148.0
47.5°	135.3	134.1	132.8	131.6	130.3	127.8	126.5	127.8
50°	116.4	115.1	113.8	113.8	112.6	111.3	110.1	110.1
52.5°	101.2	98.7	97.4	97.4	96.1	94.9	94.9	94.9
55°	86.0	83.5	83.5	83.5	82.2	81.0	81.0	79.7
57.5°	72.1	69.6	69.6	68.3	67.0	67.0	67.0	65.8
60°	59.5	56.9	55.7	55.7	54.4	53.1	53.1	53.1
62.5°	46.8	45.5	43.0	43.0	41.7	40.5	39.2	40.5
65°	35.4	32.9	31.6	31.6	30.4	29.1	27.8	27.8
67.5°	24.0	22.8	21.5	21.5	19.0	19.0	17.7	17.7
70°	13.9	12.6	12.6	11.4	10.1	10.1	8.9	8.9
72.5°	6.3	5.1	5.1	3.8	3.8	2.5	2.5	2.5
75°	1.3	1.3	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.3	1.3	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
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
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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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