

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: P644153

Luminaire Tested: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644153
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 - 900LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

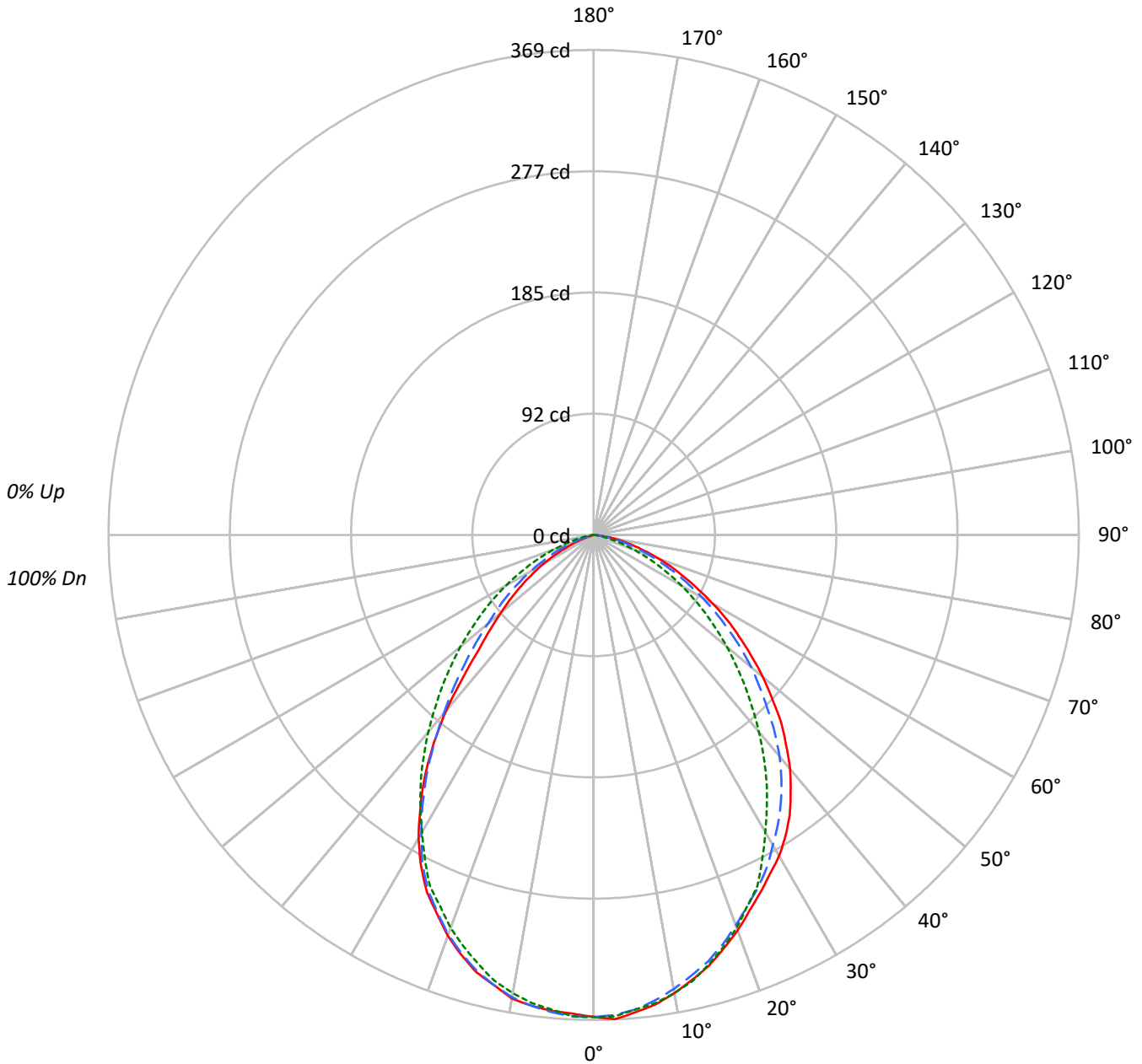
Lumens per Lamp: N/A
Luminaire Lumens: 700.6 lumens
Efficiency: N/A
Efficacy: 66.7 lumens/watt
Spacing Criteria (0/90/45): 1.13 / 1.09 / 1.17
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

Input Watts (W): 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



TEST NUMBER: P644153
CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	20103	20103	20103	20103	20103
5°	20064	19948	19948	20064	20003
10°	19706	19528	19706	19884	19940
15°	19251	19069	19194	19489	19552
20°	18680	18435	18557	18867	18925
25°	18152	17898	17832	18025	18152
30°	17857	17256	16522	16591	16857
35°	17400	16617	15345	14783	14991
40°	16638	15729	13990	12702	12481
45°	15645	14498	12614	10730	9582
50°	14328	13339	11266	8921	7838
55°	12931	11918	9902	7579	6365
60°	11468	10427	8453	6140	4868
65°	9871	8911	6849	4527	3009
70°	8463	7277	5081	2549	1186
75°	6714	5592	3368	678	0
80°	5020	4009	1673	0	0
85°	2642	2013	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°

Vertical Angle: 45°

Luminance: 15645 cd/sqm



TEST NUMBER: P644153

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.4	4.9
10°-20°	95.4	13.6
20°-30°	136.0	19.4
30°-40°	146.2	20.9
40°-50°	126.0	18.0
50°-60°	91.3	13.0
60°-70°	51.5	7.4
70°-80°	17.5	2.5
80°-90°	2.3	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°	265.8	37.9
0°-40°	412.0	58.8
0°-60°	629.3	89.8
0°-90°	700.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	700.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	367	367	367	367	367	
5°	365	362	362	365	364	34
15°	339	336	338	343	344	95
25°	300	296	295	298	300	139
35°	260	248	229	221	224	162
45°	202	187	163	138	124	155
55°	135	125	104	79	67	121
65°	76	69	53	35	23	76
75°	32	26	16	3	0	34
85°	4	3	0	0	0	6
90°	0	0	0	0	0	



TEST NUMBER: P644153

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	22.5°	25°	30°	35°	40°	45°
0°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	368.8	365.6	364.6	365.6	365.6	365.6	365.6	365.6	365.6	364.6	365.6
5°	364.6	361.4	361.4	361.4	361.4	361.4	360.3	361.4	361.4	361.4	362.5
7.5°	360.3	356.1	357.2	356.1	357.2	356.1	356.1	357.2	356.1	357.2	357.2
10°	354.0	350.8	350.8	350.8	350.8	350.8	350.8	350.8	350.8	350.8	350.8
12.5°	346.6	343.4	343.4	343.4	343.4	343.4	343.4	343.4	344.5	343.4	343.4
15°	339.2	335.0	336.0	335.0	335.0	335.0	335.0	335.0	335.0	335.0	336.0
17.5°	329.7	326.5	326.5	326.5	326.5	326.5	326.5	325.5	326.5	326.5	326.5
20°	320.2	317.0	317.0	316.0	317.0	316.0	316.0	316.0	317.0	316.0	316.0
22.5°	309.6	306.5	307.5	306.5	306.5	306.5	306.5	306.5	305.4	306.5	305.4
25°	300.1	299.1	298.0	299.1	298.0	298.0	298.0	296.9	296.9	296.9	295.9
27.5°	290.6	288.5	288.5	288.5	288.5	287.4	287.4	287.4	286.4	285.3	285.3
30°	282.1	279.0	279.0	279.0	277.9	277.9	276.9	276.9	274.7	273.7	272.6
32.5°	271.6	269.5	268.4	268.4	267.4	267.4	266.3	266.3	264.2	263.1	261.0
35°	260.0	258.9	258.9	257.8	256.8	255.7	254.7	253.6	252.6	250.4	248.3
37.5°	246.2	245.2	244.1	244.1	243.0	242.0	242.0	239.9	238.8	236.7	234.6
40°	232.5	230.4	230.4	229.3	228.3	227.2	227.2	225.1	224.0	221.9	219.8
42.5°	216.6	214.5	214.5	213.5	213.5	213.5	212.4	210.3	208.2	206.1	203.9
45°	201.8	199.7	199.7	197.6	197.6	196.6	195.5	194.4	192.3	190.2	187.0
47.5°	183.9	182.8	182.8	181.8	180.7	179.6	179.6	178.6	176.5	173.3	171.2
50°	168.0	167.0	167.0	165.9	164.8	163.8	162.7	161.7	160.6	158.5	156.4
52.5°	151.1	151.1	150.1	149.0	149.0	147.9	146.9	145.8	143.7	141.6	140.5
55°	135.3	134.2	134.2	133.1	133.1	132.1	131.0	130.0	128.9	126.8	124.7
57.5°	120.5	118.4	118.4	117.3	117.3	117.3	116.2	114.1	113.1	111.0	109.9
60°	104.6	103.6	103.6	103.6	102.5	101.4	101.4	99.3	98.3	97.2	95.1
62.5°	89.8	88.8	88.8	88.8	87.7	87.7	86.7	85.6	84.5	83.5	81.4
65°	76.1	76.1	76.1	75.0	75.0	74.0	72.9	72.9	71.9	70.8	68.7
67.5°	64.5	63.4	63.4	63.4	62.3	62.3	61.3	60.2	59.2	58.1	56.0
70°	52.8	51.8	51.8	50.7	50.7	50.7	50.7	49.7	47.6	47.6	45.4
72.5°	41.2	41.2	41.2	40.2	40.2	40.2	39.1	39.1	38.0	37.0	35.9
75°	31.7	31.7	31.7	30.6	30.6	30.6	29.6	29.6	28.5	27.5	26.4
77.5°	23.2	23.2	23.2	22.2	22.2	22.2	21.1	21.1	20.1	20.1	19.0
80°	15.9	15.9	15.9	14.8	14.8	14.8	14.8	13.7	13.7	12.7	12.7
82.5°	9.5	9.5	9.5	9.5	8.5	8.5	8.5	8.5	8.5	7.4	7.4
85°	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	4.2	3.2	3.2
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



TEST NUMBER: P644153

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	366.7	365.6
5°	362.5	362.5	362.5	362.5	362.5	362.5	363.5	362.5	363.5	362.5	363.5
7.5°	357.2	357.2	358.2	358.2	357.2	358.2	358.2	358.2	358.2	359.3	359.3
10°	350.8	351.9	351.9	352.9	352.9	352.9	352.9	354.0	354.0	354.0	354.0
12.5°	344.5	344.5	344.5	344.5	345.6	344.5	345.6	345.6	346.6	347.7	346.6
15°	335.0	336.0	336.0	336.0	336.0	336.0	337.1	338.2	338.2	338.2	339.2
17.5°	326.5	326.5	326.5	327.6	326.5	327.6	327.6	327.6	328.6	328.6	329.7
20°	316.0	314.9	317.0	316.0	316.0	317.0	317.0	317.0	318.1	318.1	318.1
22.5°	304.3	305.4	304.3	304.3	305.4	305.4	305.4	304.3	305.4	305.4	306.5
25°	294.8	294.8	294.8	294.8	294.8	294.8	294.8	293.8	294.8	294.8	294.8
27.5°	284.3	282.1	282.1	281.1	281.1	280.0	279.0	279.0	279.0	277.9	279.0
30°	271.6	269.5	268.4	267.4	266.3	266.3	264.2	263.1	262.1	261.0	260.0
32.5°	258.9	256.8	255.7	254.7	252.6	251.5	249.4	248.3	247.3	245.2	243.0
35°	247.3	244.1	242.0	239.9	238.8	237.8	235.7	233.5	231.4	229.3	227.2
37.5°	231.4	229.3	227.2	225.1	224.0	223.0	220.9	216.6	214.5	212.4	210.3
40°	217.7	214.5	212.4	209.2	208.2	206.1	203.9	200.8	197.6	195.5	193.4
42.5°	200.8	198.7	196.6	193.4	192.3	190.2	187.0	184.9	182.8	178.6	176.5
45°	184.9	182.8	180.7	177.5	175.4	174.4	172.2	169.1	165.9	162.7	160.6
47.5°	169.1	167.0	163.8	161.7	159.6	158.5	156.4	153.2	150.1	146.9	144.8
50°	153.2	151.1	149.0	144.8	144.8	142.7	140.5	137.4	135.3	132.1	128.9
52.5°	138.4	135.3	133.1	130.0	130.0	128.9	125.8	122.6	120.5	117.3	115.2
55°	122.6	120.5	118.4	116.2	114.1	113.1	112.0	108.8	105.7	103.6	100.4
57.5°	107.8	104.6	103.6	101.4	100.4	99.3	97.2	94.0	91.9	89.8	87.7
60°	94.0	91.9	88.8	87.7	86.7	85.6	83.5	81.4	79.3	77.1	75.0
62.5°	80.3	78.2	76.1	74.0	72.9	71.9	70.8	68.7	66.6	64.5	62.3
65°	66.6	65.5	63.4	62.3	61.3	60.2	58.1	56.0	54.9	52.8	50.7
67.5°	54.9	53.9	51.8	50.7	49.7	49.7	46.5	45.4	43.3	42.3	40.2
70°	44.4	43.3	41.2	40.2	39.1	38.0	37.0	35.9	33.8	31.7	30.6
72.5°	34.9	32.8	31.7	30.6	29.6	29.6	27.5	26.4	24.3	23.2	21.1
75°	25.4	24.3	23.2	22.2	22.2	21.1	20.1	19.0	16.9	15.9	14.8
77.5°	18.0	16.9	15.9	14.8	14.8	13.7	12.7	11.6	10.6	9.5	8.5
80°	11.6	10.6	10.6	9.5	8.5	8.5	7.4	6.3	5.3	5.3	4.2
82.5°	6.3	6.3	5.3	5.3	4.2	4.2	3.2	3.2	2.1	2.1	1.1
85°	3.2	2.1	2.1	2.1	2.1	1.1	1.1	1.1	0.0	0.0	0.0
87.5°	1.1	1.1	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: P644153

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	365.6	365.6	365.6	365.6	365.6	365.6	365.6	365.6	366.7	365.6	365.6
5°	363.5	363.5	364.6	363.5	364.6	364.6	363.5	363.5	364.6	365.6	364.6
7.5°	359.3	359.3	360.3	360.3	360.3	360.3	360.3	361.4	361.4	362.5	362.5
10°	355.1	355.1	355.1	355.1	356.1	356.1	357.2	357.2	357.2	357.2	357.2
12.5°	347.7	348.7	348.7	348.7	348.7	349.8	349.8	350.8	350.8	350.8	351.9
15°	339.2	340.3	341.3	341.3	340.3	341.3	342.4	342.4	343.4	343.4	343.4
17.5°	329.7	330.8	330.8	331.8	330.8	332.9	332.9	333.9	333.9	335.0	335.0
20°	319.1	320.2	320.2	320.2	321.2	321.2	322.3	322.3	323.4	323.4	323.4
22.5°	306.5	307.5	307.5	307.5	307.5	308.6	308.6	309.6	310.7	311.7	310.7
25°	294.8	295.9	296.9	295.9	296.9	296.9	296.9	298.0	298.0	299.1	298.0
27.5°	279.0	279.0	279.0	280.0	281.1	281.1	281.1	282.1	282.1	282.1	283.2
30°	260.0	258.9	260.0	260.0	260.0	260.0	262.1	262.1	262.1	263.1	264.2
32.5°	242.0	242.0	242.0	240.9	240.9	240.9	240.9	242.0	242.0	243.0	244.1
35°	225.1	224.0	221.9	221.9	221.9	220.9	219.8	219.8	220.9	220.9	220.9
37.5°	207.1	206.1	205.0	202.9	202.9	200.8	199.7	198.7	198.7	197.6	197.6
40°	190.2	188.1	186.0	186.0	183.9	182.8	180.7	179.6	177.5	175.4	175.4
42.5°	173.3	171.2	169.1	168.0	165.9	164.8	161.7	159.6	157.5	156.4	154.3
45°	157.5	155.3	152.2	151.1	149.0	146.9	144.8	141.6	138.4	136.3	135.3
47.5°	141.6	139.5	136.3	134.2	133.1	130.0	127.9	124.7	121.5	118.4	115.2
50°	126.8	123.6	120.5	118.4	117.3	114.1	112.0	108.8	104.6	103.6	100.4
52.5°	112.0	108.8	105.7	104.6	103.6	100.4	97.2	94.0	91.9	88.8	86.7
55°	97.2	95.1	91.9	90.9	89.8	86.7	83.5	81.4	79.3	76.1	74.0
57.5°	84.5	82.4	79.3	78.2	77.1	74.0	71.9	68.7	66.6	64.5	62.3
60°	72.9	69.7	67.6	66.6	65.5	62.3	60.2	58.1	56.0	53.9	50.7
62.5°	60.2	58.1	56.0	54.9	52.8	51.8	48.6	47.6	44.4	43.3	41.2
65°	48.6	46.5	44.4	44.4	43.3	40.2	39.1	37.0	34.9	32.8	31.7
67.5°	39.1	37.0	34.9	33.8	32.8	30.6	29.6	27.5	25.4	24.3	22.2
70°	29.6	27.5	25.4	24.3	23.2	22.2	20.1	18.0	15.9	14.8	12.7
72.5°	20.1	18.0	16.9	16.9	15.9	13.7	11.6	10.6	8.5	7.4	6.3
75°	12.7	10.6	9.5	8.5	8.5	7.4	5.3	4.2	3.2	2.1	1.1
77.5°	7.4	6.3	5.3	4.2	4.2	3.2	2.1	1.1	1.1	0.0	0.0
80°	3.2	2.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	1.1	1.1	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: P644153

CATALOG NUMBER: ML5615LSWW9FS1E - 692SC WW - 900LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	366.7	366.7	366.7	366.7	366.7	366.7	366.7	366.7
2.5°	365.6	365.6	365.6	365.6	364.6	364.6	364.6	364.6
5°	364.6	364.6	364.6	364.6	363.5	363.5	364.6	363.5
7.5°	362.5	362.5	361.4	361.4	361.4	361.4	361.4	361.4
10°	358.2	358.2	358.2	357.2	358.2	358.2	357.2	358.2
12.5°	351.9	351.9	351.9	351.9	350.8	350.8	351.9	350.8
15°	344.5	344.5	344.5	344.5	344.5	343.4	344.5	344.5
17.5°	336.0	336.0	335.0	335.0	335.0	336.0	336.0	335.0
20°	324.4	324.4	324.4	324.4	324.4	324.4	324.4	324.4
22.5°	311.7	311.7	311.7	311.7	311.7	311.7	311.7	311.7
25°	299.1	299.1	299.1	299.1	299.1	299.1	299.1	300.1
27.5°	283.2	283.2	283.2	283.2	283.2	282.1	282.1	284.3
30°	264.2	265.2	265.2	265.2	265.2	265.2	265.2	266.3
32.5°	245.2	245.2	245.2	246.2	245.2	246.2	245.2	245.2
35°	223.0	223.0	223.0	223.0	223.0	224.0	224.0	224.0
37.5°	197.6	198.7	198.7	199.7	199.7	199.7	200.8	199.7
40°	174.4	174.4	174.4	173.3	174.4	173.3	174.4	174.4
42.5°	152.2	150.1	150.1	149.0	149.0	147.9	146.9	146.9
45°	132.1	128.9	128.9	127.9	126.8	124.7	123.6	123.6
47.5°	113.1	112.0	111.0	109.9	108.8	106.7	105.7	106.7
50°	97.2	96.2	95.1	95.1	94.0	93.0	91.9	91.9
52.5°	84.5	82.4	81.4	81.4	80.3	79.3	79.3	79.3
55°	71.9	69.7	69.7	69.7	68.7	67.6	67.6	66.6
57.5°	60.2	58.1	58.1	57.1	56.0	56.0	56.0	54.9
60°	49.7	47.6	46.5	46.5	45.4	44.4	44.4	44.4
62.5°	39.1	38.0	35.9	35.9	34.9	33.8	32.8	33.8
65°	29.6	27.5	26.4	26.4	25.4	24.3	23.2	23.2
67.5°	20.1	19.0	18.0	18.0	15.9	15.9	14.8	14.8
70°	11.6	10.6	10.6	9.5	8.5	8.5	7.4	7.4
72.5°	5.3	4.2	4.2	3.2	3.2	2.1	2.1	2.1
75°	1.1	1.1	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	1.1	1.1	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

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Peachtree City, GA 30269

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

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(END OF REPORT)