

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: P642348

Luminaire Tested: ML5612LSWW97FS1E - 692W WW - 600LM - 3500K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642348
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: ML5612LSWW97FS1E - 692W WW - 600LM - 3500K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3500K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 589.1 lumens
Efficiency: N/A
Efficacy: 57.2 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

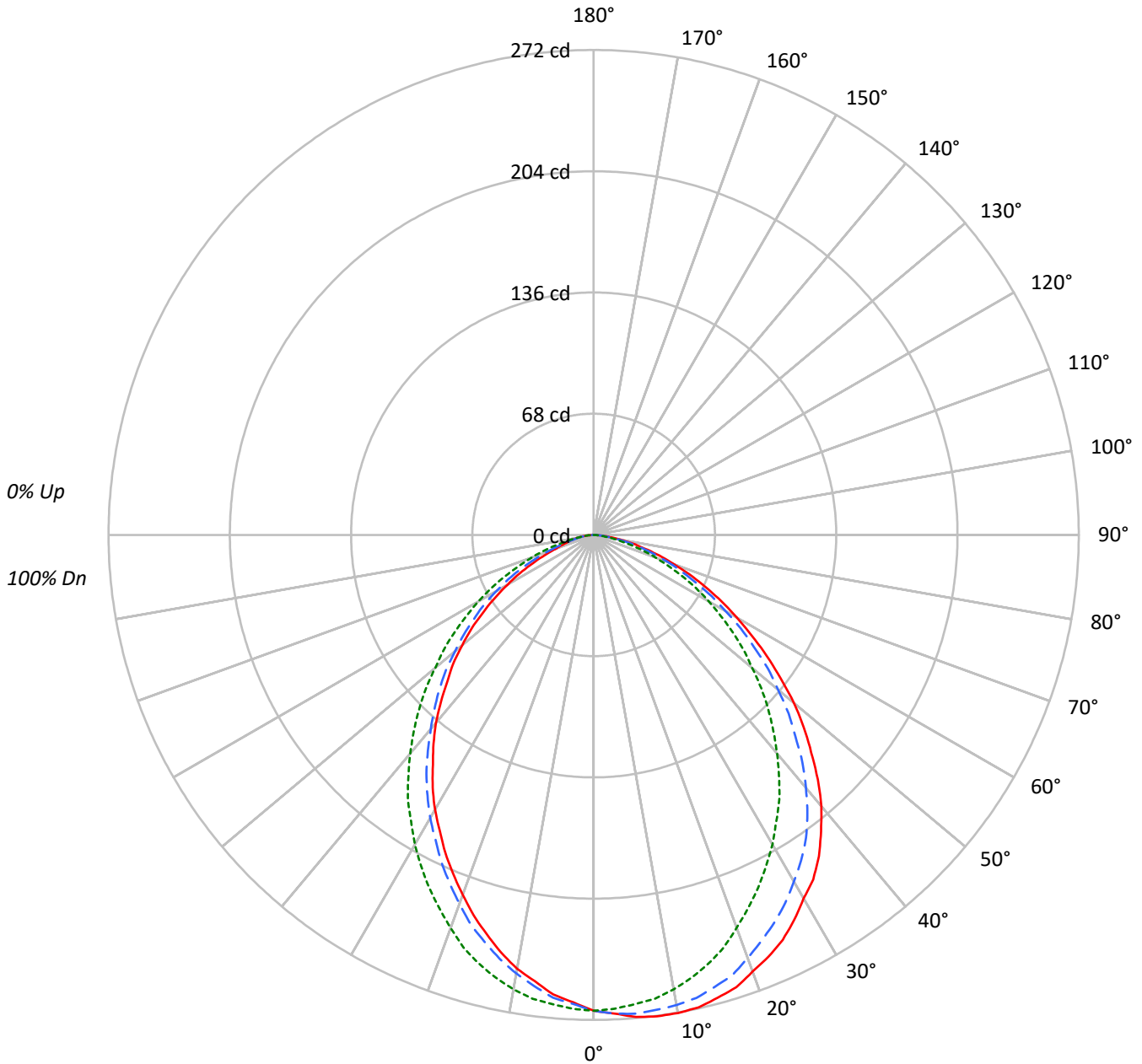
Input Watts (W): 10.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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				
RW	70	50	30	10	70	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°	14632	14632	14632	14632	14632
5°	14935	14836	14539	14341	14242
10°	15158	14907	14406	13905	13755
15°	15250	14892	14126	13411	13156
20°	15203	14730	13680	12840	12525
25°	15164	14511	13204	12231	11904
30°	14901	14217	12685	11603	11261
35°	14730	13893	12147	10942	10520
40°	14212	13246	11443	10162	9840
45°	13373	12397	10730	9474	8985
50°	12494	11496	9885	8656	8196
55°	11335	10475	9099	7818	7216
60°	10142	9363	8179	6896	6107
65°	8976	8159	7108	5824	4890
70°	7629	7052	5898	4472	3606
75°	6291	5719	4384	3050	3050
80°	4830	4262	3125	2557	2841
85°	3397	2830	2264	2264	2264

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 13373 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.1	4.3
10°-20°	70.2	11.9
20°-30°	101.6	17.3
30°-40°	115.4	19.6
40°-50°	109.0	18.5
50°-60°	85.9	14.6
60°-70°	53.8	9.1
70°-80°	23.3	3.9
80°-90°	4.8	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°	196.9	33.4
0°-40°	312.4	53.0
0°-60°	507.2	86.1
0°-90°	589.1	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	589.1	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	267	267	267	267	267	
5°	271	270	264	261	259	26
15°	269	262	249	236	232	76
25°	251	240	218	202	197	115
35°	220	208	182	164	157	137
45°	172	160	138	122	116	133
55°	119	110	95	82	76	106
65°	69	63	55	45	38	69
75°	30	27	21	14	14	32
85°	5	4	4	4	4	6
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°	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9
2.5°	268.7	268.7	269.6	269.6	268.7	268.7	268.7	268.7	268.7	268.7	268.7
5°	271.4	271.4	271.4	271.4	270.5	270.5	270.5	270.5	270.5	269.6	269.6
7.5°	272.3	272.3	272.3	272.3	271.4	271.4	270.5	270.5	270.5	269.6	268.7
10°	272.3	272.3	272.3	271.4	271.4	270.5	271.4	270.5	269.6	268.7	267.8
12.5°	271.4	270.5	270.5	270.5	269.6	269.6	269.6	268.7	267.8	266.9	266.0
15°	268.7	268.7	268.7	267.8	267.8	266.9	266.9	266.0	265.1	263.3	262.4
17.5°	266.0	266.0	265.1	265.1	264.2	263.3	263.3	262.4	261.5	259.7	258.8
20°	260.6	260.6	260.6	259.7	258.8	258.8	257.9	257.0	255.2	253.4	252.5
22.5°	256.1	255.2	255.2	254.3	253.4	253.4	252.5	250.7	249.8	248.0	246.2
25°	250.7	249.8	249.8	248.9	248.0	247.1	247.1	245.3	243.5	241.7	239.9
27.5°	243.5	243.5	242.6	241.7	240.8	240.8	239.9	239.0	236.3	234.5	232.7
30°	235.4	236.3	235.4	234.5	233.6	233.6	232.7	230.9	229.1	226.4	224.6
32.5°	229.1	229.1	228.2	227.3	225.5	225.5	225.5	222.8	221.0	219.2	216.5
35°	220.1	220.1	220.1	218.3	217.4	216.5	215.6	213.8	212.1	210.3	207.6
37.5°	209.4	210.3	209.4	208.5	207.6	206.7	205.8	204.0	201.3	199.5	196.8
40°	198.6	198.6	197.7	196.8	195.9	195.0	194.1	192.3	190.5	187.8	185.1
42.5°	186.0	186.0	185.1	184.2	183.3	182.4	182.4	180.6	177.9	176.1	173.4
45°	172.5	172.5	172.5	171.6	170.7	169.8	168.9	168.0	166.2	163.5	159.9
47.5°	159.9	159.9	159.9	158.1	158.1	156.3	155.4	153.6	152.7	150.1	148.3
50°	146.5	145.6	145.6	144.7	143.8	142.9	142.9	140.2	139.3	137.5	134.8
52.5°	132.1	132.1	132.1	131.2	130.3	129.4	129.4	127.6	125.8	124.0	123.1
55°	118.6	118.6	118.6	117.7	116.8	116.8	115.9	114.1	113.2	111.4	109.6
57.5°	105.1	106.0	105.1	104.2	104.2	103.3	103.3	102.4	100.6	98.8	97.9
60°	92.5	92.5	92.5	91.6	90.8	90.8	90.8	89.9	88.1	87.2	85.4
62.5°	80.9	80.9	80.0	80.0	79.1	79.1	78.2	77.3	76.4	75.5	74.6
65°	69.2	68.3	68.3	68.3	67.4	67.4	67.4	66.5	64.7	63.8	62.9
67.5°	58.4	58.4	57.5	57.5	56.6	56.6	56.6	55.7	54.8	53.9	53.0
70°	47.6	47.6	47.6	47.6	46.7	46.7	46.7	45.8	44.9	44.9	44.0
72.5°	38.6	38.6	38.6	38.6	37.7	37.7	37.7	36.8	35.9	35.0	35.0
75°	29.7	30.5	29.7	29.7	29.7	29.7	28.8	28.8	27.9	27.0	27.0
77.5°	22.5	22.5	22.5	22.5	21.6	21.6	21.6	21.6	20.7	19.8	19.8
80°	15.3	15.3	15.3	15.3	15.3	15.3	15.3	15.3	14.4	14.4	13.5
82.5°	9.0	9.9	9.9	9.9	9.0	9.0	9.0	9.0	9.0	9.0	8.1
85°	5.4	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5
87.5°	1.8	1.8	1.8	1.8	1.8	0.9	0.9	0.9	0.9	0.9	0.9
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°	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9
2.5°	267.8	267.8	267.8	267.8	266.9	266.9	266.9	266.0	266.0	266.0	266.0
5°	268.7	267.8	267.8	266.9	266.9	266.9	266.0	266.0	265.1	264.2	264.2
7.5°	267.8	267.8	266.9	266.0	266.0	265.1	264.2	263.3	262.4	262.4	260.6
10°	266.9	266.0	265.1	264.2	263.3	263.3	261.5	260.6	259.7	258.8	257.9
12.5°	264.2	263.3	262.4	260.6	260.6	259.7	257.9	257.0	255.2	254.3	252.5
15°	260.6	259.7	258.8	257.0	256.1	255.2	253.4	251.6	249.8	248.9	247.1
17.5°	257.0	255.2	253.4	251.6	250.7	249.8	248.0	246.2	244.4	242.6	240.8
20°	250.7	248.9	247.1	244.4	243.5	242.6	239.9	238.1	236.3	234.5	232.7
22.5°	244.4	242.6	239.9	238.1	237.2	235.4	233.6	230.9	229.1	226.4	224.6
25°	238.1	235.4	232.7	230.9	229.1	228.2	225.5	223.7	220.1	218.3	216.5
27.5°	230.0	228.2	225.5	222.8	221.0	219.2	217.4	214.7	212.1	209.4	207.6
30°	221.9	219.2	216.5	214.7	212.1	211.2	208.5	205.8	203.1	200.4	198.6
32.5°	213.8	211.2	208.5	205.8	204.0	202.2	199.5	196.8	193.2	190.5	188.7
35°	204.9	202.2	198.6	195.9	194.1	192.3	189.6	186.9	184.2	181.5	178.8
37.5°	194.1	190.5	188.7	186.0	183.3	181.5	178.8	175.2	173.4	170.7	168.0
40°	182.4	179.7	177.0	174.3	171.6	170.7	167.1	164.4	162.6	159.9	157.2
42.5°	170.7	168.0	164.4	161.7	159.9	159.0	156.3	153.6	151.0	149.2	146.5
45°	158.1	155.4	152.7	150.1	148.3	147.4	144.7	142.9	140.2	138.4	135.7
47.5°	145.6	142.9	141.1	138.4	136.6	135.7	133.9	131.2	128.5	127.6	125.8
50°	133.0	130.3	128.5	125.8	124.9	124.0	122.2	120.4	118.6	115.9	115.0
52.5°	120.4	117.7	115.9	114.1	114.1	112.3	110.5	109.6	107.8	106.0	104.2
55°	107.8	106.9	105.1	102.4	102.4	101.5	99.7	97.9	96.1	95.2	93.4
57.5°	95.2	94.3	92.5	91.6	90.8	89.9	89.0	87.2	86.3	84.5	83.6
60°	84.5	83.6	81.8	80.9	80.0	79.1	78.2	76.4	75.5	74.6	73.7
62.5°	72.8	71.9	71.0	70.1	69.2	68.3	68.3	66.5	65.6	64.7	63.8
65°	62.9	61.1	60.2	59.3	59.3	58.4	57.5	56.6	55.7	54.8	53.9
67.5°	52.1	51.2	51.2	49.4	49.4	48.5	47.6	47.6	45.8	44.9	44.0
70°	43.1	42.2	41.3	40.4	40.4	39.5	38.6	37.7	36.8	36.8	35.9
72.5°	34.1	33.2	33.2	32.3	31.4	31.4	30.5	29.7	28.8	28.8	27.9
75°	26.1	25.2	25.2	24.3	24.3	23.4	22.5	22.5	21.6	20.7	19.8
77.5°	18.9	18.9	18.0	18.0	17.1	17.1	16.2	16.2	15.3	14.4	14.4
80°	13.5	12.6	12.6	11.7	11.7	11.7	10.8	10.8	9.9	9.9	9.0
82.5°	8.1	8.1	7.2	7.2	7.2	7.2	6.3	6.3	6.3	5.4	5.4
85°	4.5	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	2.7
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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°	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9
2.5°	265.1	265.1	264.2	265.1	264.2	264.2	264.2	264.2	263.3	263.3	263.3
5°	263.3	262.4	262.4	261.5	262.4	261.5	260.6	260.6	260.6	260.6	259.7
7.5°	259.7	259.7	258.8	257.9	257.9	257.0	256.1	256.1	255.2	255.2	254.3
10°	257.0	255.2	254.3	253.4	253.4	252.5	251.6	250.7	249.8	248.9	248.9
12.5°	250.7	249.8	248.9	248.0	248.0	246.2	245.3	244.4	243.5	242.6	241.7
15°	246.2	244.4	242.6	241.7	241.7	239.9	239.0	238.1	236.3	236.3	234.5
17.5°	239.0	237.2	235.4	234.5	233.6	232.7	231.8	230.0	229.1	227.3	227.3
20°	230.0	229.1	226.4	225.5	224.6	223.7	221.9	221.0	220.1	218.3	217.4
22.5°	222.8	220.1	218.3	217.4	217.4	214.7	213.8	212.1	211.2	210.3	208.5
25°	213.8	212.1	210.3	208.5	208.5	206.7	205.8	204.0	202.2	201.3	200.4
27.5°	204.9	203.1	200.4	199.5	198.6	197.7	195.9	194.1	192.3	191.4	190.5
30°	195.0	193.2	191.4	190.5	188.7	186.9	185.1	184.2	183.3	181.5	180.6
32.5°	186.0	183.3	181.5	179.7	179.7	177.0	176.1	174.3	173.4	172.5	170.7
35°	176.1	173.4	171.6	170.7	169.8	167.1	165.3	163.5	163.5	161.7	160.8
37.5°	165.3	162.6	161.7	159.9	159.0	157.2	155.4	154.5	152.7	151.0	151.0
40°	155.4	152.7	150.1	150.1	148.3	147.4	144.7	143.8	142.0	141.1	140.2
42.5°	144.7	142.0	140.2	139.3	138.4	136.6	134.8	133.0	132.1	131.2	130.3
45°	133.0	131.2	130.3	128.5	127.6	125.8	124.9	123.1	122.2	120.4	119.5
47.5°	123.1	121.3	119.5	118.6	117.7	115.9	115.0	113.2	112.3	110.5	109.6
50°	113.2	111.4	109.6	108.7	107.8	106.0	104.2	103.3	101.5	100.6	98.8
52.5°	102.4	100.6	98.8	98.8	97.9	96.1	95.2	93.4	91.6	89.9	89.0
55°	92.5	90.8	89.0	88.1	88.1	86.3	84.5	83.6	81.8	80.9	79.1
57.5°	81.8	80.0	79.1	78.2	78.2	76.4	75.5	73.7	72.8	71.0	70.1
60°	71.9	71.0	69.2	69.2	68.3	66.5	65.6	63.8	62.9	62.0	61.1
62.5°	62.0	61.1	59.3	59.3	58.4	57.5	56.6	54.8	53.9	52.1	51.2
65°	52.1	51.2	50.3	49.4	49.4	47.6	46.7	45.8	44.9	44.0	43.1
67.5°	43.1	42.2	41.3	41.3	40.4	39.5	37.7	36.8	35.9	35.0	34.1
70°	35.0	33.2	32.3	32.3	31.4	30.5	29.7	28.8	27.9	27.0	26.1
72.5°	27.0	25.2	25.2	24.3	23.4	22.5	22.5	21.6	20.7	20.7	18.9
75°	19.8	18.9	18.0	18.0	17.1	16.2	15.3	15.3	14.4	14.4	14.4
77.5°	13.5	12.6	12.6	11.7	11.7	11.7	10.8	10.8	10.8	10.8	11.7
80°	9.0	9.0	8.1	8.1	8.1	8.1	8.1	8.1	8.1	9.0	9.0
82.5°	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	5.4	6.3
85°	2.7	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
87.5°	0.9	0.9	1.8	0.9	1.8	0.9	1.8	1.8	1.8	1.8	1.8
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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CATALOG NUMBER: ML5612LSWW97FS1E - 692W WW - 600LM - 3500K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	266.9	266.9	266.9	266.9	266.9	266.9	266.9	266.9
2.5°	262.4	263.3	263.3	262.4	263.3	262.4	262.4	262.4
5°	259.7	258.8	258.8	258.8	257.9	258.8	258.8	258.8
7.5°	254.3	254.3	253.4	253.4	252.5	252.5	253.4	252.5
10°	248.0	247.1	248.0	247.1	247.1	247.1	246.2	247.1
12.5°	241.7	240.8	240.8	239.9	239.9	239.9	239.9	239.9
15°	234.5	233.6	233.6	232.7	232.7	231.8	232.7	231.8
17.5°	226.4	226.4	224.6	224.6	224.6	224.6	224.6	223.7
20°	216.5	216.5	215.6	216.5	214.7	214.7	214.7	214.7
22.5°	208.5	207.6	206.7	206.7	206.7	205.8	205.8	205.8
25°	198.6	198.6	197.7	197.7	196.8	196.8	196.8	196.8
27.5°	189.6	188.7	188.7	188.7	187.8	186.9	186.9	186.9
30°	179.7	179.7	178.8	178.8	177.9	177.9	177.9	177.9
32.5°	169.8	169.8	168.9	168.0	168.0	168.0	167.1	168.0
35°	159.9	159.0	159.0	158.1	158.1	158.1	157.2	157.2
37.5°	150.1	149.2	148.3	149.2	148.3	147.4	147.4	147.4
40°	139.3	138.4	138.4	137.5	137.5	137.5	136.6	137.5
42.5°	129.4	129.4	128.5	127.6	127.6	127.6	126.7	126.7
45°	119.5	117.7	118.6	117.7	117.7	116.8	116.8	115.9
47.5°	108.7	107.8	107.8	107.8	106.9	106.9	106.9	106.9
50°	97.9	97.0	97.9	97.0	97.0	96.1	96.1	96.1
52.5°	88.1	87.2	87.2	87.2	87.2	86.3	86.3	86.3
55°	78.2	77.3	77.3	77.3	76.4	76.4	75.5	75.5
57.5°	69.2	68.3	67.4	66.5	66.5	66.5	65.6	65.6
60°	59.3	58.4	57.5	57.5	56.6	56.6	56.6	55.7
62.5°	50.3	49.4	48.5	48.5	47.6	46.7	46.7	46.7
65°	41.3	40.4	40.4	39.5	38.6	38.6	37.7	37.7
67.5°	33.2	32.3	32.3	31.4	30.5	29.7	29.7	29.7
70°	26.1	25.2	24.3	24.3	24.3	23.4	22.5	22.5
72.5°	18.9	18.0	18.0	18.0	18.0	18.0	18.0	18.0
75°	14.4	14.4	14.4	14.4	14.4	14.4	14.4	14.4
77.5°	11.7	11.7	11.7	11.7	11.7	11.7	11.7	11.7
80°	9.0	9.0	9.0	9.0	9.0	9.0	9.0	9.0
82.5°	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
85°	3.6	3.6	3.6	3.6	3.6	3.6	3.6	3.6
87.5°	1.8	1.8	1.8	1.8	1.8	1.8	1.8	0.9
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)