

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: P642276

Luminaire Tested: ML5612LSWW97FS1E - 592H WW - 900LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642276
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: ML5612LSWW97FS1E - 592H WW - 900LM - 2700K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 691.5 lumens
Efficiency: N/A
Efficacy: 52.0 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

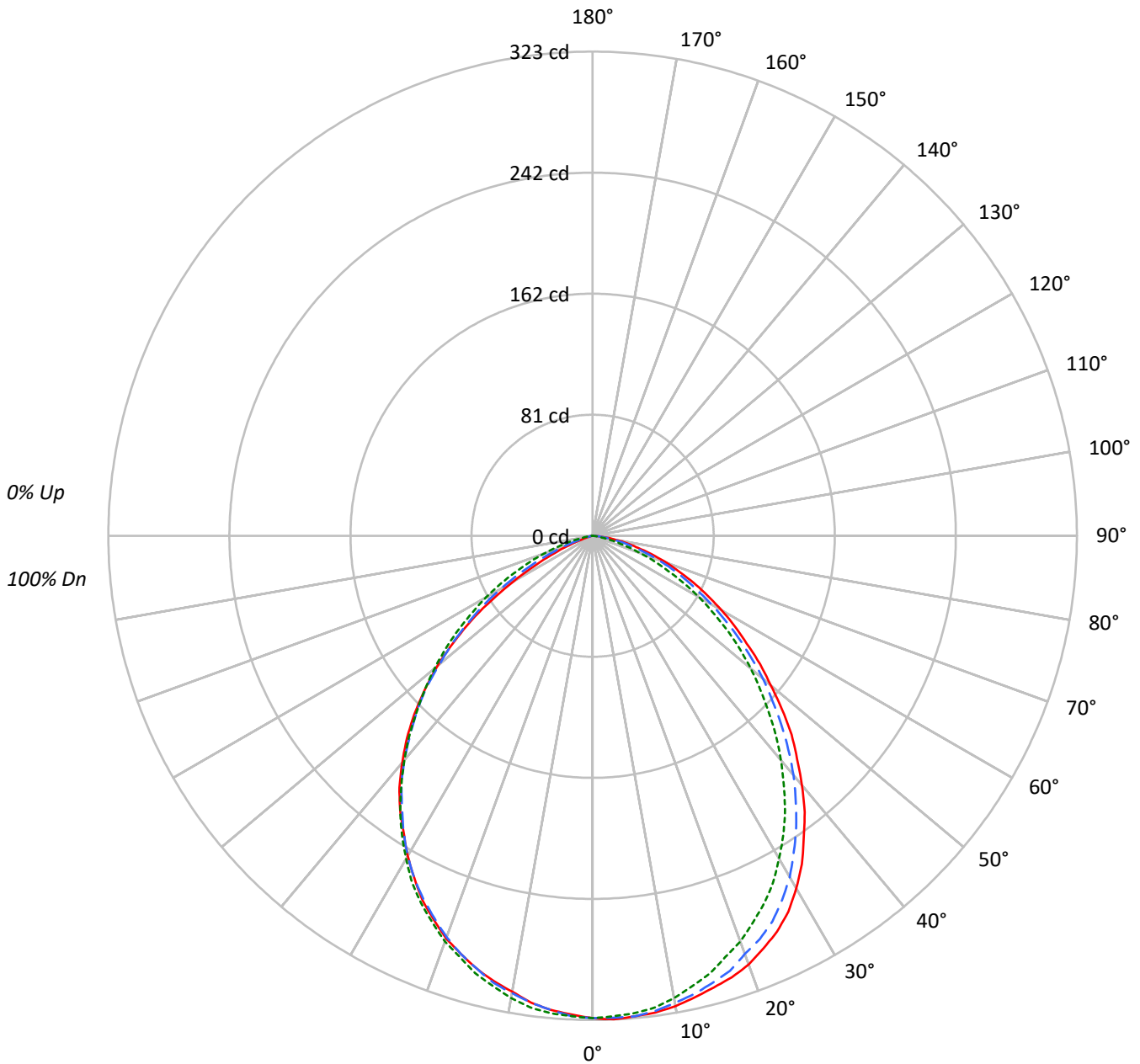
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	25403	25403	25403	25403	25403
5°	25500	25500	25334	25159	25159
10°	25539	25362	25098	24833	24753
15°	25498	25237	24697	24428	24428
20°	25572	24933	24194	23925	24009
25°	25373	24711	23570	23282	23378
30°	24766	23964	22670	22478	22478
35°	23659	22811	21558	21346	21558
40°	22372	21476	20126	20126	20352
45°	20955	19849	18510	18510	18755
50°	19023	18225	16886	16346	16616
55°	17272	16364	15015	13969	13667
60°	15678	14462	12915	11194	9647
65°	13860	12627	10386	7752	5697
70°	12094	10571	7801	4270	2262
75°	9638	8327	5002	1342	671
80°	7455	5455	2000	500	500
85°	3985	2989	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 20955 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.3	4.4
10°-20°	85.6	12.4
20°-30°	126.3	18.3
30°-40°	143.1	20.7
40°-50°	132.2	19.1
50°-60°	98.7	14.3
60°-70°	54.6	7.9
70°-80°	18.4	2.7
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°	242.3	35.0
0°-40°	385.4	55.7
0°-60°	616.3	89.1
0°-90°	691.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	691.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	322	322	322	322	322	
5°	322	322	320	318	318	31
15°	312	309	302	299	299	88
25°	291	284	271	267	268	134
35°	246	237	224	222	224	154
45°	188	178	166	166	168	144
55°	126	119	109	102	99	113
65°	74	68	56	42	30	74
75°	32	27	16	4	2	35
85°	4	3	0	0	0	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°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
2.5°	322.9	322.9	322.9	322.9	321.8	321.8	322.9	321.8	321.8	321.8	321.8
5°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
7.5°	320.8	320.8	320.8	320.8	320.8	320.8	320.8	320.8	319.7	319.7	319.7
10°	318.6	318.6	318.6	318.6	318.6	318.6	318.6	317.5	317.5	317.5	316.4
12.5°	315.3	316.4	315.3	316.4	315.3	315.3	314.2	314.2	314.2	313.1	313.1
15°	312.0	312.0	312.0	312.0	312.0	310.9	310.9	309.8	309.8	309.8	308.8
17.5°	308.8	307.7	307.7	307.7	306.6	306.6	306.6	306.6	305.5	304.4	304.4
20°	304.4	303.3	303.3	303.3	302.2	302.2	301.1	301.1	298.9	298.9	296.8
22.5°	297.8	297.8	297.8	296.8	296.8	295.7	295.7	294.6	293.5	292.4	291.3
25°	291.3	291.3	290.2	290.2	289.1	289.1	289.1	286.9	285.8	284.8	283.7
27.5°	282.6	282.6	281.5	281.5	280.4	279.3	279.3	277.1	277.1	274.9	273.8
30°	271.7	271.7	271.7	269.5	269.5	269.5	268.4	267.3	265.1	264.0	262.9
32.5°	259.7	258.6	258.6	258.6	257.5	256.4	256.4	254.2	253.1	252.0	249.8
35°	245.5	245.5	245.5	245.5	244.4	243.3	243.3	241.1	240.0	237.8	236.7
37.5°	232.4	232.4	231.3	231.3	229.1	230.2	229.1	228.0	226.9	223.7	222.6
40°	217.1	217.1	217.1	216.0	214.9	214.9	213.8	212.7	210.6	209.5	208.4
42.5°	201.8	201.8	201.8	200.7	199.7	199.7	199.7	197.5	196.4	195.3	193.1
45°	187.7	186.6	186.6	185.5	185.5	184.4	183.3	182.2	181.1	180.0	177.8
47.5°	171.3	171.3	170.2	170.2	169.1	169.1	168.0	166.9	165.8	164.7	162.6
50°	154.9	156.0	156.0	154.9	154.9	153.8	152.7	152.7	151.6	150.6	148.4
52.5°	140.7	140.7	140.7	139.6	139.6	138.6	138.6	137.5	136.4	134.2	133.1
55°	125.5	126.6	125.5	125.5	125.5	124.4	124.4	123.3	122.2	120.0	118.9
57.5°	112.4	112.4	111.3	111.3	110.2	110.2	110.2	109.1	108.0	106.9	104.7
60°	99.3	98.2	98.2	98.2	97.1	97.1	97.1	94.9	93.8	92.7	91.6
62.5°	86.2	86.2	86.2	85.1	85.1	84.0	82.9	82.9	81.8	80.7	78.6
65°	74.2	74.2	73.1	73.1	73.1	72.0	72.0	70.9	69.8	68.7	67.6
67.5°	62.2	62.2	62.2	61.1	61.1	61.1	60.0	58.9	58.9	57.8	56.7
70°	52.4	51.3	51.3	51.3	50.2	50.2	50.2	49.1	48.0	46.9	45.8
72.5°	41.5	41.5	41.5	41.5	40.4	40.4	39.3	39.3	38.2	37.1	36.0
75°	31.6	31.6	31.6	31.6	30.5	30.5	30.5	29.5	29.5	28.4	27.3
77.5°	24.0	24.0	24.0	22.9	22.9	21.8	21.8	21.8	20.7	20.7	19.6
80°	16.4	16.4	15.3	15.3	15.3	15.3	15.3	14.2	13.1	13.1	12.0
82.5°	9.8	9.8	9.8	8.7	8.7	8.7	8.7	8.7	7.6	7.6	6.5
85°	4.4	4.4	4.4	4.4	4.4	4.4	3.3	3.3	3.3	3.3	3.3
87.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	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



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CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
2.5°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	320.8	320.8	320.8	320.8
5°	320.8	320.8	320.8	320.8	320.8	319.7	320.8	319.7	319.7	319.7	319.7
7.5°	318.6	318.6	318.6	318.6	317.5	318.6	317.5	317.5	317.5	317.5	316.4
10°	316.4	315.3	315.3	315.3	315.3	314.2	314.2	313.1	313.1	313.1	312.0
12.5°	313.1	312.0	312.0	310.9	310.9	310.9	309.8	309.8	308.8	307.7	307.7
15°	307.7	307.7	306.6	305.5	305.5	304.4	304.4	303.3	303.3	302.2	301.1
17.5°	303.3	302.2	301.1	300.0	298.9	298.9	297.8	296.8	296.8	294.6	294.6
20°	295.7	294.6	293.5	292.4	292.4	292.4	290.2	290.2	289.1	288.0	286.9
22.5°	289.1	288.0	285.8	284.8	284.8	283.7	282.6	281.5	280.4	279.3	278.2
25°	281.5	280.4	278.2	277.1	276.0	274.9	273.8	272.8	271.7	270.6	269.5
27.5°	271.7	269.5	269.5	267.3	266.2	265.1	264.0	262.9	261.8	260.8	259.7
30°	260.8	259.7	257.5	255.3	254.2	254.2	252.0	250.9	250.9	248.7	247.7
32.5°	248.7	246.6	244.4	243.3	242.2	241.1	240.0	238.9	237.8	236.7	235.7
35°	235.7	232.4	231.3	229.1	229.1	228.0	226.9	224.7	224.7	223.7	221.5
37.5°	221.5	219.3	218.2	216.0	214.9	213.8	212.7	211.7	210.6	209.5	208.4
40°	206.2	204.0	202.9	201.8	200.7	199.7	198.6	197.5	196.4	195.3	194.2
42.5°	190.9	189.8	187.7	185.5	185.5	184.4	183.3	182.2	181.1	181.1	180.0
45°	175.7	174.6	172.4	171.3	170.2	170.2	168.0	168.0	166.9	165.8	165.8
47.5°	161.5	159.3	157.1	157.1	154.9	156.0	153.8	153.8	151.6	151.6	150.6
50°	146.2	145.1	142.9	141.8	141.8	140.7	139.6	139.6	138.6	137.5	136.4
52.5°	132.0	129.8	128.7	127.6	126.6	126.6	125.5	125.5	123.3	123.3	122.2
55°	117.8	116.7	114.6	113.5	113.5	113.5	111.3	110.2	110.2	109.1	108.0
57.5°	103.6	102.6	101.5	100.4	99.3	99.3	98.2	97.1	96.0	94.9	92.7
60°	90.6	89.5	88.4	87.3	86.2	86.2	85.1	84.0	82.9	81.8	80.7
62.5°	77.5	77.5	75.3	74.2	73.1	73.1	72.0	70.9	69.8	68.7	67.6
65°	66.6	65.5	63.3	62.2	62.2	62.2	60.0	58.9	57.8	55.6	54.6
67.5°	55.6	53.5	52.4	52.4	51.3	50.2	49.1	48.0	45.8	44.7	42.5
70°	44.7	43.6	42.5	41.5	40.4	39.3	38.2	37.1	34.9	33.8	32.7
72.5°	34.9	33.8	32.7	31.6	30.5	30.5	28.4	27.3	26.2	24.0	22.9
75°	26.2	25.1	24.0	22.9	21.8	20.7	20.7	18.5	17.5	16.4	14.2
77.5°	18.5	17.5	16.4	15.3	15.3	14.2	13.1	12.0	10.9	9.8	8.7
80°	12.0	10.9	9.8	9.8	8.7	8.7	7.6	6.5	5.5	4.4	4.4
82.5°	6.5	5.5	5.5	4.4	4.4	4.4	3.3	2.2	2.2	2.2	1.1
85°	2.2	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	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



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CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
2.5°	320.8	320.8	320.8	320.8	320.8	320.8	320.8	320.8	320.8	319.7	319.7
5°	318.6	318.6	318.6	318.6	318.6	318.6	317.5	317.5	317.5	317.5	317.5
7.5°	316.4	316.4	316.4	315.3	315.3	315.3	315.3	314.2	314.2	314.2	314.2
10°	312.0	312.0	312.0	310.9	310.9	310.9	310.9	310.9	309.8	309.8	309.8
12.5°	306.6	306.6	306.6	306.6	306.6	305.5	305.5	305.5	305.5	304.4	305.5
15°	301.1	301.1	300.0	300.0	300.0	298.9	298.9	298.9	298.9	298.9	298.9
17.5°	294.6	293.5	293.5	292.4	292.4	292.4	292.4	292.4	292.4	292.4	292.4
20°	286.9	285.8	285.8	285.8	285.8	284.8	284.8	283.7	284.8	284.8	284.8
22.5°	278.2	277.1	277.1	277.1	276.0	276.0	276.0	276.0	276.0	276.0	276.0
25°	269.5	268.4	267.3	267.3	267.3	266.2	266.2	267.3	267.3	267.3	267.3
27.5°	258.6	258.6	257.5	257.5	257.5	256.4	256.4	256.4	257.5	257.5	257.5
30°	246.6	246.6	246.6	246.6	245.5	245.5	246.6	245.5	246.6	245.5	246.6
32.5°	235.7	235.7	234.6	233.5	233.5	234.6	233.5	233.5	234.6	234.6	234.6
35°	221.5	221.5	221.5	221.5	221.5	221.5	221.5	221.5	221.5	222.6	223.7
37.5°	208.4	208.4	208.4	208.4	208.4	208.4	208.4	209.5	209.5	209.5	209.5
40°	194.2	194.2	194.2	194.2	194.2	194.2	194.2	194.2	195.3	195.3	196.4
42.5°	178.9	180.0	180.0	180.0	178.9	178.9	180.0	180.0	180.0	181.1	181.1
45°	164.7	164.7	164.7	164.7	165.8	164.7	164.7	164.7	165.8	165.8	165.8
47.5°	150.6	149.5	149.5	150.6	149.5	149.5	149.5	149.5	150.6	150.6	149.5
50°	136.4	135.3	135.3	135.3	134.2	134.2	135.3	133.1	133.1	133.1	134.2
52.5°	122.2	121.1	120.0	120.0	120.0	118.9	117.8	117.8	117.8	116.7	116.7
55°	106.9	105.8	104.7	104.7	104.7	103.6	103.6	101.5	101.5	100.4	100.4
57.5°	92.7	91.6	90.6	90.6	89.5	88.4	88.4	86.2	86.2	85.1	82.9
60°	78.6	77.5	76.4	76.4	76.4	74.2	73.1	70.9	70.9	68.7	67.6
62.5°	65.5	64.4	63.3	62.2	62.2	60.0	58.9	56.7	55.6	54.6	52.4
65°	53.5	51.3	50.2	49.1	49.1	46.9	45.8	43.6	41.5	40.4	38.2
67.5°	41.5	40.4	38.2	37.1	37.1	34.9	32.7	31.6	29.5	27.3	26.2
70°	30.5	29.5	27.3	26.2	25.1	24.0	21.8	20.7	18.5	17.5	15.3
72.5°	20.7	19.6	17.5	17.5	16.4	14.2	13.1	12.0	9.8	8.7	7.6
75°	13.1	12.0	10.9	9.8	8.7	7.6	6.5	5.5	4.4	3.3	3.3
77.5°	7.6	6.5	5.5	4.4	4.4	3.3	2.2	2.2	2.2	1.1	1.1
80°	3.3	2.2	2.2	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	0.0	0.0	1.1	1.1
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



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CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 900LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	321.8	321.8	321.8	321.8	321.8	321.8	321.8	321.8
2.5°	320.8	319.7	320.8	320.8	319.7	319.7	319.7	319.7
5°	317.5	317.5	317.5	317.5	317.5	317.5	317.5	317.5
7.5°	315.3	314.2	314.2	314.2	314.2	314.2	314.2	314.2
10°	309.8	309.8	309.8	309.8	309.8	309.8	309.8	308.8
12.5°	304.4	304.4	304.4	304.4	304.4	304.4	304.4	304.4
15°	298.9	298.9	298.9	298.9	298.9	298.9	298.9	298.9
17.5°	292.4	292.4	292.4	292.4	292.4	291.3	292.4	292.4
20°	284.8	284.8	284.8	284.8	284.8	284.8	284.8	285.8
22.5°	276.0	276.0	276.0	276.0	276.0	276.0	276.0	277.1
25°	267.3	267.3	267.3	267.3	267.3	267.3	267.3	268.4
27.5°	257.5	257.5	257.5	257.5	257.5	257.5	257.5	257.5
30°	246.6	246.6	247.7	246.6	246.6	246.6	247.7	246.6
32.5°	235.7	235.7	235.7	235.7	235.7	235.7	235.7	234.6
35°	223.7	222.6	223.7	223.7	223.7	223.7	223.7	223.7
37.5°	210.6	210.6	210.6	210.6	210.6	210.6	211.7	211.7
40°	197.5	196.4	196.4	197.5	197.5	197.5	196.4	197.5
42.5°	181.1	182.2	182.2	182.2	183.3	182.2	183.3	183.3
45°	165.8	166.9	166.9	166.9	166.9	166.9	168.0	168.0
47.5°	150.6	150.6	150.6	150.6	151.6	151.6	151.6	151.6
50°	134.2	134.2	134.2	134.2	135.3	134.2	135.3	135.3
52.5°	116.7	116.7	116.7	116.7	116.7	116.7	117.8	116.7
55°	99.3	99.3	99.3	99.3	98.2	98.2	98.2	99.3
57.5°	82.9	81.8	80.7	81.8	79.6	79.6	79.6	79.6
60°	65.5	64.4	64.4	63.3	62.2	61.1	62.2	61.1
62.5°	50.2	49.1	49.1	46.9	45.8	45.8	44.7	44.7
65°	37.1	34.9	33.8	33.8	32.7	31.6	30.5	30.5
67.5°	24.0	22.9	21.8	21.8	20.7	19.6	19.6	18.5
70°	14.2	13.1	12.0	13.1	10.9	9.8	9.8	9.8
72.5°	6.5	5.5	5.5	5.5	4.4	4.4	4.4	4.4
75°	3.3	2.2	2.2	2.2	2.2	2.2	2.2	2.2
77.5°	1.1	1.1	2.2	1.1	1.1	1.1	1.1	1.1
80°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
82.5°	1.1	0.0	0.0	0.0	1.1	1.1	0.0	1.1
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)