

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: P642292

Luminaire Tested: ML5612LSWW97FS1E - 592SC WW - 900LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642292
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-129)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592SC WW - 900LM - 3000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH SPECULAR CLEAR TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 727.5 lumens
Efficiency: N/A
Efficacy: 54.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

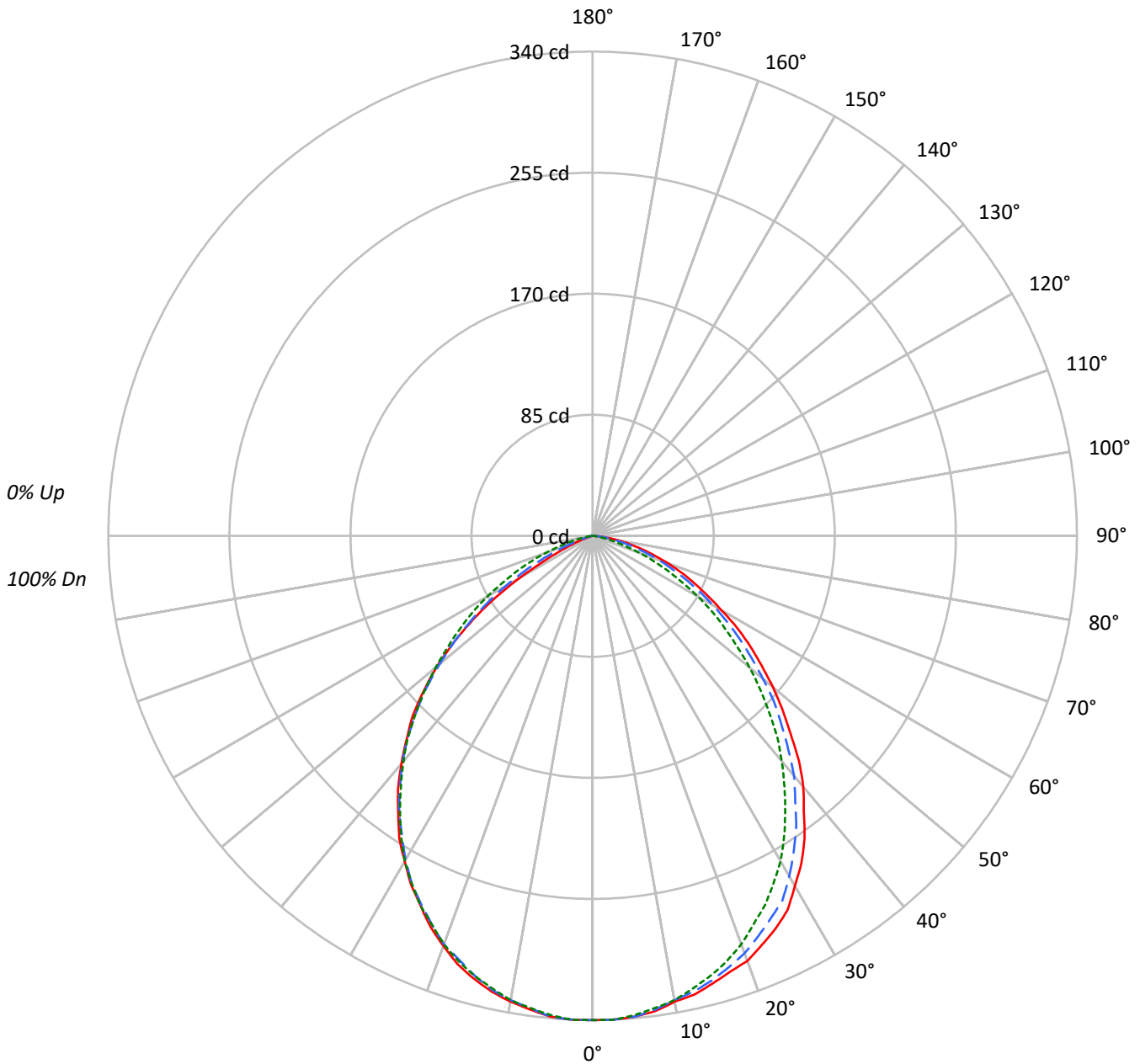
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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									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	97	94	93	93	91	90	88																			
2	102	95	89	84	100	93	88	83	90	85	81	87	83	80	84	81	78	76																			
3	94	85	78	72	92	83	77	71	81	75	70	78	73	69	75	71	68	66																			
4	87	76	68	62	85	75	68	62	72	66	61	70	65	60	68	63	60	58																			
5	80	69	61	55	78	68	60	54	66	59	54	64	58	53	62	57	53	51																			
6	75	62	54	48	73	61	54	48	60	53	48	58	52	47	57	51	47	45																			
7	69	57	49	43	68	56	48	43	55	48	43	53	47	42	52	46	42	40																			
8	65	52	44	39	63	52	44	39	50	43	38	49	43	38	48	42	38	36																			
9	61	48	40	35	59	48	40	35	46	40	35	45	39	35	44	39	35	33																			
10	57	45	37	32	56	44	37	32	43	36	32	42	36	32	41	36	32	30																			

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	26848	26848	26848	26848	26848
5°	26863	26863	26776	26863	26863
10°	26629	26541	26541	26541	26629
15°	26602	26422	26144	26144	26324
20°	26689	26210	25647	25647	25740
25°	26496	25808	24928	24833	24928
30°	25887	25167	24046	23946	24046
35°	24988	24015	22714	22820	22936
40°	23712	22671	21280	21403	21517
45°	21926	20921	19548	19548	19928
50°	20264	19158	17648	17230	17513
55°	18539	17300	15607	14368	14052
60°	16483	15425	13467	11162	9220
65°	14682	13412	10909	7341	4408
70°	12948	11402	8032	3624	1293
75°	10614	8906	4789	1037	336
80°	8183	6137	2046	0	0
85°	4076	3080	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 10°
 Vertical Angle: 45°
 Luminance: 22049 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	4.4
10°-20°	90.7	12.5
20°-30°	133.8	18.4
30°-40°	151.4	20.8
40°-50°	139.8	19.2
50°-60°	103.3	14.2
60°-70°	55.5	7.6
70°-80°	18.6	2.6
80°-90°	2.4	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°	256.5	35.3
0°-40°	407.9	56.1
0°-60°	651.0	89.5
0°-90°	727.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	727.5	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	340	340	340	340	340	
5°	339	339	338	339	339	32
15°	326	323	320	320	322	92
25°	304	296	286	285	286	140
35°	259	249	236	237	238	162
45°	196	187	175	175	178	152
55°	135	126	113	104	102	120
65°	79	72	58	39	24	78
75°	35	29	16	3	1	38
85°	4	3	0	0	0	7
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°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
2.5°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
5°	339.0	339.0	337.9	339.0	339.0	339.0	339.0	337.9	339.0	339.0	339.0
7.5°	336.7	335.6	335.6	335.6	335.6	335.6	335.6	335.6	335.6	335.6	335.6
10°	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	332.2	331.1
12.5°	330.0	328.9	328.9	328.9	328.9	328.9	328.9	327.8	328.9	327.8	327.8
15°	325.5	325.5	325.5	325.5	325.5	325.5	324.4	324.4	324.4	324.4	323.3
17.5°	321.0	321.0	322.1	322.1	321.0	321.0	321.0	319.9	318.8	318.8	317.7
20°	317.7	317.7	316.5	316.5	315.4	316.5	315.4	314.3	314.3	313.2	312.0
22.5°	310.9	310.9	310.9	310.9	310.9	309.8	309.8	308.7	307.5	306.4	304.2
25°	304.2	304.2	304.2	304.2	303.1	303.1	303.1	300.8	299.7	298.6	296.3
27.5°	296.3	295.2	295.2	295.2	294.1	294.1	293.0	291.8	290.7	289.6	288.5
30°	284.0	284.0	284.0	284.0	282.9	281.7	281.7	280.6	279.5	277.2	276.1
32.5°	272.8	272.8	271.6	270.5	270.5	270.5	269.4	268.3	266.0	264.9	262.7
35°	259.3	258.2	258.2	257.0	257.0	257.0	255.9	253.7	252.5	251.4	249.2
37.5°	243.6	244.7	243.6	243.6	242.4	241.3	240.2	239.1	238.0	235.7	233.5
40°	230.1	230.1	229.0	227.9	226.7	226.7	225.6	224.5	223.4	222.2	220.0
42.5°	214.4	214.4	213.3	213.3	212.1	212.1	209.9	208.8	207.7	206.5	203.2
45°	196.4	196.4	197.5	196.4	195.3	194.2	194.2	193.1	190.8	189.7	187.4
47.5°	180.7	181.8	180.7	179.6	179.6	178.5	178.5	176.2	176.2	174.0	172.9
50°	165.0	165.0	165.0	165.0	163.9	162.8	162.8	161.6	159.4	158.3	156.0
52.5°	149.3	149.3	149.3	149.3	148.2	148.2	147.0	145.9	144.8	142.6	140.3
55°	134.7	133.6	133.6	133.6	132.4	132.4	131.3	130.2	129.1	128.0	125.7
57.5°	120.1	119.0	119.0	117.9	117.9	116.7	116.7	115.6	114.5	112.2	111.1
60°	104.4	105.5	104.4	104.4	103.3	103.3	103.3	102.1	99.9	98.8	97.7
62.5°	90.9	92.0	90.9	89.8	89.8	89.8	89.8	87.6	86.4	85.3	84.2
65°	78.6	78.6	78.6	77.4	77.4	77.4	75.2	75.2	74.1	73.0	71.8
67.5°	67.3	66.2	66.2	66.2	65.1	65.1	64.0	64.0	61.7	61.7	59.5
70°	56.1	55.0	55.0	55.0	53.9	52.8	53.9	51.6	50.5	49.4	49.4
72.5°	44.9	44.9	43.8	43.8	43.8	42.7	42.7	41.5	40.4	39.3	38.2
75°	34.8	34.8	34.8	33.7	33.7	32.6	32.6	31.4	31.4	29.2	29.2
77.5°	25.8	25.8	25.8	24.7	24.7	24.7	23.6	23.6	22.4	21.3	20.2
80°	18.0	16.8	16.8	16.8	16.8	15.7	15.7	15.7	14.6	14.6	13.5
82.5°	10.1	10.1	10.1	10.1	10.1	10.1	9.0	9.0	9.0	7.9	7.9
85°	4.5	4.5	4.5	4.5	4.5	4.5	4.5	4.5	3.4	3.4	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
2.5°	340.1	340.1	340.1	340.1	339.0	340.1	339.0	340.1	340.1	340.1	340.1
5°	339.0	337.9	337.9	337.9	339.0	339.0	337.9	337.9	337.9	337.9	337.9
7.5°	335.6	335.6	335.6	334.5	335.6	335.6	334.5	335.6	335.6	334.5	335.6
10°	332.2	332.2	331.1	331.1	331.1	331.1	331.1	331.1	330.0	331.1	331.1
12.5°	327.8	327.8	327.8	326.6	326.6	326.6	326.6	326.6	325.5	325.5	326.6
15°	323.3	323.3	322.1	322.1	322.1	321.0	321.0	321.0	321.0	319.9	319.9
17.5°	317.7	316.5	316.5	315.4	315.4	314.3	314.3	313.2	313.2	313.2	312.0
20°	310.9	309.8	308.7	308.7	307.5	307.5	306.4	306.4	305.3	305.3	304.2
22.5°	303.1	301.9	300.8	299.7	299.7	298.6	298.6	297.4	296.3	295.2	295.2
25°	296.3	294.1	293.0	291.8	289.6	289.6	288.5	288.5	287.3	286.2	285.1
27.5°	286.2	284.0	282.9	281.7	280.6	279.5	277.2	277.2	276.1	275.0	273.9
30°	273.9	272.8	270.5	269.4	268.3	268.3	266.0	263.8	263.8	263.8	262.7
32.5°	261.5	259.3	258.2	255.9	254.8	254.8	253.7	251.4	250.3	250.3	249.2
35°	248.1	245.8	243.6	242.4	241.3	240.2	239.1	238.0	236.8	235.7	234.6
37.5°	232.3	230.1	229.0	227.9	226.7	225.6	224.5	223.4	222.2	221.1	222.2
40°	217.8	215.5	213.3	212.1	211.0	211.0	209.9	208.8	207.7	206.5	206.5
42.5°	202.0	199.8	198.7	197.5	196.4	195.3	194.2	193.1	191.9	191.9	190.8
45°	185.2	184.1	181.8	180.7	179.6	179.6	177.3	176.2	176.2	175.1	175.1
47.5°	170.6	168.4	166.1	165.0	163.9	162.8	161.6	160.5	159.4	159.4	159.4
50°	153.8	152.7	150.4	149.3	148.2	148.2	147.0	145.9	144.8	143.7	143.7
52.5°	138.1	136.9	136.9	134.7	133.6	133.6	131.3	131.3	129.1	128.0	126.8
55°	124.6	122.3	121.2	119.0	119.0	117.9	116.7	115.6	114.5	113.4	112.2
57.5°	108.9	107.8	106.6	105.5	105.5	104.4	103.3	102.1	99.9	99.9	97.7
60°	96.5	94.3	93.2	92.0	90.9	90.9	89.8	88.7	86.4	85.3	84.2
62.5°	83.1	80.8	80.8	79.7	77.4	77.4	76.3	74.1	73.0	70.7	69.6
65°	70.7	69.6	67.3	66.2	66.2	65.1	62.9	61.7	60.6	58.4	56.1
67.5°	58.4	57.2	56.1	53.9	53.9	52.8	50.5	49.4	47.1	46.0	43.8
70°	47.1	46.0	44.9	42.7	42.7	41.5	40.4	38.2	35.9	34.8	32.6
72.5°	37.0	35.9	34.8	32.6	32.6	31.4	29.2	28.1	25.8	23.6	22.4
75°	28.1	26.9	24.7	23.6	22.4	22.4	20.2	19.1	18.0	15.7	14.6
77.5°	19.1	18.0	16.8	15.7	15.7	14.6	13.5	12.3	11.2	10.1	7.9
80°	12.3	11.2	10.1	10.1	9.0	9.0	7.9	6.7	5.6	4.5	3.4
82.5°	6.7	6.7	5.6	4.5	4.5	4.5	3.4	3.4	2.2	1.1	1.1
85°	2.2	2.2	2.2	2.2	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°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
2.5°	340.1	340.1	340.1	340.1	340.1	340.1	339.0	340.1	340.1	340.1	339.0
5°	339.0	337.9	337.9	339.0	337.9	337.9	339.0	339.0	339.0	337.9	337.9
7.5°	334.5	335.6	334.5	334.5	335.6	335.6	335.6	335.6	334.5	334.5	335.6
10°	331.1	331.1	330.0	331.1	330.0	331.1	331.1	331.1	331.1	331.1	331.1
12.5°	325.5	325.5	325.5	326.6	325.5	325.5	326.6	326.6	326.6	326.6	326.6
15°	318.8	318.8	319.9	318.8	319.9	319.9	319.9	319.9	319.9	319.9	321.0
17.5°	312.0	312.0	312.0	312.0	312.0	312.0	312.0	312.0	312.0	313.2	313.2
20°	304.2	304.2	304.2	304.2	304.2	303.1	304.2	304.2	305.3	305.3	305.3
22.5°	294.1	294.1	294.1	294.1	294.1	294.1	294.1	294.1	295.2	296.3	295.2
25°	284.0	284.0	284.0	284.0	284.0	284.0	284.0	285.1	285.1	285.1	286.2
27.5°	273.9	273.9	273.9	272.8	273.9	272.8	273.9	273.9	275.0	273.9	275.0
30°	262.7	261.5	261.5	261.5	261.5	262.7	261.5	261.5	262.7	263.8	262.7
32.5°	248.1	248.1	248.1	249.2	249.2	249.2	250.3	249.2	249.2	250.3	250.3
35°	234.6	234.6	234.6	235.7	235.7	235.7	235.7	236.8	236.8	236.8	238.0
37.5°	220.0	221.1	220.0	221.1	221.1	222.2	222.2	222.2	222.2	223.4	223.4
40°	206.5	205.4	206.5	206.5	206.5	206.5	206.5	206.5	207.7	208.8	208.8
42.5°	190.8	190.8	190.8	190.8	190.8	190.8	191.9	191.9	191.9	193.1	193.1
45°	175.1	174.0	174.0	174.0	174.0	175.1	174.0	175.1	175.1	176.2	176.2
47.5°	158.3	158.3	158.3	158.3	158.3	158.3	158.3	158.3	158.3	159.4	158.3
50°	143.7	142.6	141.4	141.4	140.3	141.4	140.3	140.3	140.3	141.4	140.3
52.5°	126.8	125.7	124.6	124.6	124.6	123.5	122.3	122.3	122.3	121.2	121.2
55°	112.2	111.1	108.9	110.0	107.8	106.6	106.6	105.5	104.4	104.4	103.3
57.5°	96.5	95.4	94.3	93.2	93.2	90.9	89.8	88.7	87.6	86.4	84.2
60°	83.1	80.8	78.6	78.6	77.4	76.3	74.1	71.8	70.7	68.5	67.3
62.5°	68.5	66.2	64.0	62.9	61.7	60.6	58.4	56.1	53.9	52.8	50.5
65°	55.0	52.8	50.5	49.4	48.3	46.0	43.8	41.5	39.3	37.0	35.9
67.5°	41.5	39.3	38.2	35.9	34.8	32.6	30.3	29.2	26.9	24.7	21.3
70°	30.3	28.1	25.8	24.7	23.6	21.3	20.2	18.0	15.7	14.6	12.3
72.5°	20.2	18.0	16.8	15.7	14.6	13.5	11.2	10.1	7.9	6.7	5.6
75°	12.3	11.2	10.1	9.0	7.9	6.7	5.6	4.5	3.4	2.2	1.1
77.5°	6.7	5.6	4.5	4.5	3.4	2.2	2.2	1.1	1.1	1.1	1.1
80°	3.4	2.2	1.1	1.1	1.1	1.1	0.0	0.0	0.0	0.0	1.1
82.5°	1.1	0.0	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



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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
2.5°	340.1	340.1	340.1	340.1	340.1	340.1	340.1	340.1
5°	339.0	339.0	337.9	339.0	337.9	337.9	337.9	339.0
7.5°	335.6	335.6	335.6	335.6	335.6	335.6	335.6	335.6
10°	331.1	331.1	331.1	332.2	332.2	332.2	331.1	332.2
12.5°	326.6	326.6	326.6	327.8	326.6	327.8	326.6	327.8
15°	321.0	321.0	322.1	322.1	321.0	321.0	322.1	322.1
17.5°	313.2	314.3	314.3	314.3	314.3	314.3	314.3	315.4
20°	306.4	306.4	305.3	306.4	306.4	307.5	307.5	306.4
22.5°	295.2	297.4	297.4	297.4	297.4	297.4	297.4	297.4
25°	286.2	286.2	286.2	287.3	286.2	286.2	287.3	286.2
27.5°	275.0	276.1	275.0	276.1	276.1	276.1	276.1	276.1
30°	263.8	263.8	263.8	263.8	263.8	264.9	263.8	263.8
32.5°	250.3	251.4	251.4	251.4	252.5	251.4	251.4	252.5
35°	238.0	238.0	238.0	239.1	238.0	239.1	239.1	238.0
37.5°	223.4	224.5	223.4	224.5	224.5	224.5	224.5	224.5
40°	209.9	208.8	209.9	208.8	209.9	209.9	209.9	208.8
42.5°	193.1	194.2	194.2	194.2	194.2	194.2	194.2	193.1
45°	176.2	177.3	177.3	177.3	177.3	177.3	178.5	178.5
47.5°	158.3	160.5	160.5	160.5	159.4	161.6	160.5	160.5
50°	140.3	140.3	141.4	141.4	142.6	142.6	142.6	142.6
52.5°	122.3	121.2	122.3	122.3	123.5	122.3	123.5	122.3
55°	102.1	102.1	102.1	101.0	102.1	102.1	102.1	102.1
57.5°	84.2	83.1	81.9	80.8	80.8	80.8	79.7	80.8
60°	65.1	62.9	64.0	61.7	60.6	59.5	59.5	58.4
62.5°	48.3	46.0	44.9	43.8	41.5	39.3	39.3	38.2
65°	32.6	30.3	29.2	26.9	25.8	24.7	23.6	23.6
67.5°	20.2	18.0	18.0	16.8	15.7	14.6	13.5	13.5
70°	11.2	10.1	9.0	7.9	7.9	6.7	5.6	5.6
72.5°	4.5	3.4	3.4	2.2	2.2	2.2	2.2	1.1
75°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
77.5°	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1
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
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)