

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: P642267

Luminaire Tested: ML5612LSWW97FS1E - 592H WW - 1200LM - 3000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642267
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 - 1200LM - 3000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 3000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 861.0 lumens
Efficiency: N/A
Efficacy: 52.2 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

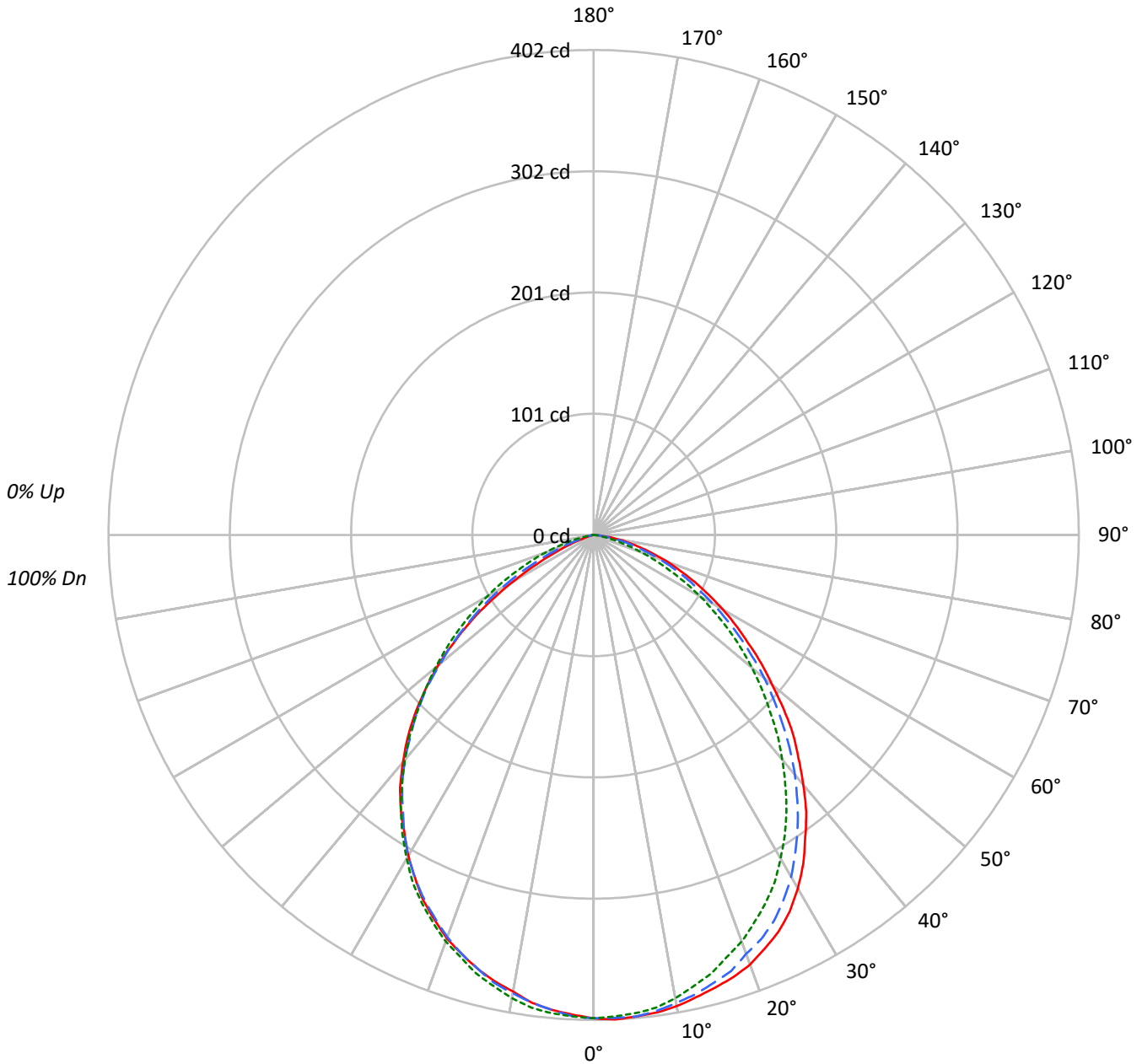
Input Watts (W): 16.5
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	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°	31632	31632	31632	31632	31632
5°	31752	31752	31538	31325	31325
10°	31799	31583	31254	30925	30813
15°	31750	31415	30753	30418	30418
20°	31839	31041	30125	29789	29898
25°	31592	30764	29345	28987	29109
30°	30837	29844	28230	27984	27984
35°	29460	28410	26839	26579	26839
40°	27854	26741	25062	25062	25340
45°	26090	24717	23054	23054	23355
50°	23690	22683	21025	20350	20681
55°	21498	20383	18690	17383	17011
60°	19514	18014	16088	13941	12015
65°	17259	15728	12945	9638	7098
70°	15049	13179	9717	5332	2816
75°	12017	10370	6222	1647	824
80°	9274	6774	2455	636	636
85°	4891	3714	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 26090 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	4.4
10°-20°	106.6	12.4
20°-30°	157.3	18.3
30°-40°	178.1	20.7
40°-50°	164.6	19.1
50°-60°	122.9	14.3
60°-70°	67.9	7.9
70°-80°	22.9	2.7
80°-90°	2.9	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°	301.7	35.0
0°-40°	479.8	55.7
0°-60°	767.3	89.1
0°-90°	861.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	861.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	401	401	401	401	401	
5°	401	401	398	395	395	38
15°	388	384	376	372	372	110
25°	363	353	337	333	334	167
35°	306	295	278	276	278	191
45°	234	221	206	206	209	179
55°	156	148	136	126	124	141
65°	92	84	69	52	38	92
75°	39	34	20	5	3	43
85°	5	4	0	0	0	8
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°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	402.1	402.1	402.1	402.1	400.7	400.7	402.1	400.7	400.7	400.7	400.7
5°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
7.5°	399.4	399.4	399.4	399.4	399.4	399.4	399.4	399.4	398.0	398.0	398.0
10°	396.7	396.7	396.7	396.7	396.7	396.7	396.7	395.3	395.3	395.3	394.0
12.5°	392.6	394.0	392.6	394.0	392.6	392.6	391.2	391.2	391.2	389.9	389.9
15°	388.5	388.5	388.5	388.5	388.5	387.2	387.2	385.8	385.8	385.8	384.4
17.5°	384.4	383.1	383.1	383.1	381.7	381.7	381.7	381.7	380.4	379.0	379.0
20°	379.0	377.7	377.7	377.7	376.3	376.3	374.9	374.9	372.2	372.2	369.5
22.5°	370.9	370.9	370.9	369.5	369.5	368.1	368.1	366.8	365.4	364.1	362.7
25°	362.7	362.7	361.3	361.3	360.0	360.0	360.0	357.3	355.9	354.6	353.2
27.5°	351.8	351.8	350.5	350.5	349.1	347.8	347.8	345.0	345.0	342.3	341.0
30°	338.3	338.3	338.3	335.5	335.5	335.5	334.2	332.8	330.1	328.7	327.4
32.5°	323.3	322.0	322.0	322.0	320.6	319.2	319.2	316.5	315.2	313.8	311.1
35°	305.7	305.7	305.7	305.7	304.3	302.9	302.9	300.2	298.9	296.1	294.8
37.5°	289.4	289.4	288.0	288.0	285.3	286.6	285.3	283.9	282.6	278.5	277.1
40°	270.3	270.3	270.3	269.0	267.6	267.6	266.3	264.9	262.2	260.8	259.5
42.5°	251.3	251.3	251.3	250.0	248.6	248.6	248.6	245.9	244.5	243.2	240.4
45°	233.7	232.3	232.3	230.9	230.9	229.6	228.2	226.9	225.5	224.1	221.4
47.5°	213.3	213.3	211.9	211.9	210.6	210.6	209.2	207.8	206.5	205.1	202.4
50°	192.9	194.3	194.3	192.9	192.9	191.5	190.2	190.2	188.8	187.5	184.7
52.5°	175.2	175.2	175.2	173.9	173.9	172.5	172.5	171.2	169.8	167.1	165.7
55°	156.2	157.6	156.2	156.2	156.2	154.9	154.9	153.5	152.1	149.4	148.1
57.5°	139.9	139.9	138.6	138.6	137.2	137.2	137.2	135.8	134.5	133.1	130.4
60°	123.6	122.3	122.3	122.3	120.9	120.9	120.9	118.2	116.8	115.5	114.1
62.5°	107.3	107.3	107.3	106.0	106.0	104.6	103.2	103.2	101.9	100.5	97.8
65°	92.4	92.4	91.0	91.0	91.0	89.7	89.7	88.3	86.9	85.6	84.2
67.5°	77.4	77.4	77.4	76.1	76.1	76.1	74.7	73.4	73.4	72.0	70.6
70°	65.2	63.8	63.8	63.8	62.5	62.5	62.5	61.1	59.8	58.4	57.1
72.5°	51.6	51.6	51.6	51.6	50.3	50.3	48.9	48.9	47.5	46.2	44.8
75°	39.4	39.4	39.4	39.4	38.0	38.0	38.0	36.7	36.7	35.3	34.0
77.5°	29.9	29.9	29.9	28.5	28.5	27.2	27.2	27.2	25.8	25.8	24.5
80°	20.4	20.4	19.0	19.0	19.0	19.0	19.0	17.7	16.3	16.3	14.9
82.5°	12.2	12.2	12.2	10.9	10.9	10.9	10.9	10.9	9.5	9.5	8.2
85°	5.4	5.4	5.4	5.4	5.4	5.4	4.1	4.1	4.1	4.1	4.1
87.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	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°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	399.4	399.4	399.4	399.4
5°	399.4	399.4	399.4	399.4	399.4	398.0	399.4	398.0	398.0	398.0	398.0
7.5°	396.7	396.7	396.7	396.7	395.3	396.7	395.3	395.3	395.3	395.3	394.0
10°	394.0	392.6	392.6	392.6	392.6	391.2	391.2	389.9	389.9	389.9	388.5
12.5°	389.9	388.5	388.5	387.2	387.2	387.2	385.8	385.8	384.4	383.1	383.1
15°	383.1	383.1	381.7	380.4	380.4	379.0	379.0	377.7	377.7	376.3	374.9
17.5°	377.7	376.3	374.9	373.6	372.2	372.2	370.9	369.5	369.5	366.8	366.8
20°	368.1	366.8	365.4	364.1	364.1	364.1	361.3	361.3	360.0	358.6	357.3
22.5°	360.0	358.6	355.9	354.6	354.6	353.2	351.8	350.5	349.1	347.8	346.4
25°	350.5	349.1	346.4	345.0	343.7	342.3	341.0	339.6	338.3	336.9	335.5
27.5°	338.3	335.5	335.5	332.8	331.5	330.1	328.7	327.4	326.0	324.7	323.3
30°	324.7	323.3	320.6	317.9	316.5	316.5	313.8	312.4	312.4	309.7	308.4
32.5°	309.7	307.0	304.3	302.9	301.6	300.2	298.9	297.5	296.1	294.8	293.4
35°	293.4	289.4	288.0	285.3	285.3	283.9	282.6	279.8	279.8	278.5	275.8
37.5°	275.8	273.0	271.7	269.0	267.6	266.3	264.9	263.5	262.2	260.8	259.5
40°	256.7	254.0	252.7	251.3	250.0	248.6	247.2	245.9	244.5	243.2	241.8
42.5°	237.7	236.4	233.7	230.9	230.9	229.6	228.2	226.9	225.5	225.5	224.1
45°	218.7	217.4	214.6	213.3	211.9	211.9	209.2	209.2	207.8	206.5	206.5
47.5°	201.1	198.3	195.6	195.6	192.9	194.3	191.5	191.5	188.8	188.8	187.5
50°	182.0	180.7	178.0	176.6	176.6	175.2	173.9	173.9	172.5	171.2	169.8
52.5°	164.4	161.7	160.3	158.9	157.6	157.6	156.2	156.2	153.5	153.5	152.1
55°	146.7	145.4	142.6	141.3	141.3	141.3	138.6	137.2	137.2	135.8	134.5
57.5°	129.1	127.7	126.3	125.0	123.6	123.6	122.3	120.9	119.5	118.2	115.5
60°	112.8	111.4	110.0	108.7	107.3	107.3	106.0	104.6	103.2	101.9	100.5
62.5°	96.5	96.5	93.7	92.4	91.0	91.0	89.7	88.3	86.9	85.6	84.2
65°	82.9	81.5	78.8	77.4	77.4	77.4	74.7	73.4	72.0	69.3	67.9
67.5°	69.3	66.6	65.2	65.2	63.8	62.5	61.1	59.8	57.1	55.7	53.0
70°	55.7	54.3	53.0	51.6	50.3	48.9	47.5	46.2	43.5	42.1	40.8
72.5°	43.5	42.1	40.8	39.4	38.0	38.0	35.3	34.0	32.6	29.9	28.5
75°	32.6	31.2	29.9	28.5	27.2	25.8	25.8	23.1	21.7	20.4	17.7
77.5°	23.1	21.7	20.4	19.0	19.0	17.7	16.3	14.9	13.6	12.2	10.9
80°	14.9	13.6	12.2	12.2	10.9	10.9	9.5	8.2	6.8	5.4	5.4
82.5°	8.2	6.8	6.8	5.4	5.4	5.4	4.1	2.7	2.7	2.7	1.4
85°	2.7	2.7	2.7	1.4	1.4	1.4	1.4	1.4	1.4	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°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	399.4	399.4	399.4	399.4	399.4	399.4	399.4	399.4	399.4	398.0	398.0
5°	396.7	396.7	396.7	396.7	396.7	396.7	395.3	395.3	395.3	395.3	395.3
7.5°	394.0	394.0	394.0	392.6	392.6	392.6	392.6	391.2	391.2	391.2	391.2
10°	388.5	388.5	388.5	387.2	387.2	387.2	387.2	387.2	385.8	385.8	385.8
12.5°	381.7	381.7	381.7	381.7	381.7	380.4	380.4	380.4	380.4	379.0	380.4
15°	374.9	374.9	373.6	373.6	373.6	372.2	372.2	372.2	372.2	372.2	372.2
17.5°	366.8	365.4	365.4	364.1	364.1	364.1	364.1	364.1	364.1	364.1	364.1
20°	357.3	355.9	355.9	355.9	355.9	354.6	354.6	353.2	354.6	354.6	354.6
22.5°	346.4	345.0	345.0	345.0	343.7	343.7	343.7	343.7	343.7	343.7	343.7
25°	335.5	334.2	332.8	332.8	332.8	331.5	331.5	332.8	332.8	332.8	332.8
27.5°	322.0	322.0	320.6	320.6	320.6	319.2	319.2	319.2	320.6	320.6	320.6
30°	307.0	307.0	307.0	307.0	305.7	305.7	307.0	305.7	307.0	305.7	307.0
32.5°	293.4	293.4	292.1	290.7	290.7	292.1	290.7	290.7	292.1	292.1	292.1
35°	275.8	275.8	275.8	275.8	275.8	275.8	275.8	275.8	275.8	277.1	278.5
37.5°	259.5	259.5	259.5	259.5	259.5	259.5	259.5	260.8	260.8	260.8	260.8
40°	241.8	241.8	241.8	241.8	241.8	241.8	241.8	241.8	243.2	243.2	244.5
42.5°	222.8	224.1	224.1	224.1	222.8	222.8	224.1	224.1	224.1	225.5	225.5
45°	205.1	205.1	205.1	205.1	206.5	205.1	205.1	205.1	206.5	206.5	206.5
47.5°	187.5	186.1	186.1	187.5	186.1	186.1	186.1	186.1	187.5	187.5	186.1
50°	169.8	168.4	168.4	168.4	167.1	167.1	168.4	165.7	165.7	165.7	167.1
52.5°	152.1	150.8	149.4	149.4	149.4	148.1	146.7	146.7	146.7	145.4	145.4
55°	133.1	131.8	130.4	130.4	130.4	129.1	129.1	126.3	126.3	125.0	125.0
57.5°	115.5	114.1	112.8	112.8	111.4	110.0	110.0	107.3	107.3	106.0	103.2
60°	97.8	96.5	95.1	95.1	95.1	92.4	91.0	88.3	88.3	85.6	84.2
62.5°	81.5	80.1	78.8	77.4	77.4	74.7	73.4	70.6	69.3	67.9	65.2
65°	66.6	63.8	62.5	61.1	61.1	58.4	57.1	54.3	51.6	50.3	47.5
67.5°	51.6	50.3	47.5	46.2	46.2	43.5	40.8	39.4	36.7	34.0	32.6
70°	38.0	36.7	34.0	32.6	31.2	29.9	27.2	25.8	23.1	21.7	19.0
72.5°	25.8	24.5	21.7	21.7	20.4	17.7	16.3	14.9	12.2	10.9	9.5
75°	16.3	14.9	13.6	12.2	10.9	9.5	8.2	6.8	5.4	4.1	4.1
77.5°	9.5	8.2	6.8	5.4	5.4	4.1	2.7	2.7	2.7	1.4	1.4
80°	4.1	2.7	2.7	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	0.0	0.0	1.4	1.4
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: P642267

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CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	400.7	400.7	400.7	400.7	400.7	400.7	400.7	400.7
2.5°	399.4	398.0	399.4	399.4	398.0	398.0	398.0	398.0
5°	395.3	395.3	395.3	395.3	395.3	395.3	395.3	395.3
7.5°	392.6	391.2	391.2	391.2	391.2	391.2	391.2	391.2
10°	385.8	385.8	385.8	385.8	385.8	385.8	385.8	384.4
12.5°	379.0	379.0	379.0	379.0	379.0	379.0	379.0	379.0
15°	372.2	372.2	372.2	372.2	372.2	372.2	372.2	372.2
17.5°	364.1	364.1	364.1	364.1	364.1	362.7	364.1	364.1
20°	354.6	354.6	354.6	354.6	354.6	354.6	354.6	355.9
22.5°	343.7	343.7	343.7	343.7	343.7	343.7	343.7	345.0
25°	332.8	332.8	332.8	332.8	332.8	332.8	332.8	334.2
27.5°	320.6	320.6	320.6	320.6	320.6	320.6	320.6	320.6
30°	307.0	307.0	308.4	307.0	307.0	307.0	308.4	307.0
32.5°	293.4	293.4	293.4	293.4	293.4	293.4	293.4	292.1
35°	278.5	277.1	278.5	278.5	278.5	278.5	278.5	278.5
37.5°	262.2	262.2	262.2	262.2	262.2	262.2	263.5	263.5
40°	245.9	244.5	244.5	245.9	245.9	245.9	244.5	245.9
42.5°	225.5	226.9	226.9	226.9	228.2	226.9	228.2	228.2
45°	206.5	207.8	207.8	207.8	207.8	207.8	209.2	209.2
47.5°	187.5	187.5	187.5	187.5	188.8	188.8	188.8	188.8
50°	167.1	167.1	167.1	167.1	168.4	167.1	168.4	168.4
52.5°	145.4	145.4	145.4	145.4	145.4	145.4	146.7	145.4
55°	123.6	123.6	123.6	123.6	122.3	122.3	122.3	123.6
57.5°	103.2	101.9	100.5	101.9	99.2	99.2	99.2	99.2
60°	81.5	80.1	80.1	78.8	77.4	76.1	77.4	76.1
62.5°	62.5	61.1	61.1	58.4	57.1	57.1	55.7	55.7
65°	46.2	43.5	42.1	42.1	40.8	39.4	38.0	38.0
67.5°	29.9	28.5	27.2	27.2	25.8	24.5	24.5	23.1
70°	17.7	16.3	14.9	16.3	13.6	12.2	12.2	12.2
72.5°	8.2	6.8	6.8	6.8	5.4	5.4	5.4	5.4
75°	4.1	2.7	2.7	2.7	2.7	2.7	2.7	2.7
77.5°	1.4	1.4	2.7	1.4	1.4	1.4	1.4	1.4
80°	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
82.5°	1.4	0.0	0.0	0.0	1.4	1.4	0.0	1.4
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)