

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: P642280

Luminaire Tested: ML5612LSWW97FS1E - 592H WW - 900LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642280
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 - 5000K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH HAZE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 5000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 786.4 lumens
Efficiency: N/A
Efficacy: 59.1 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

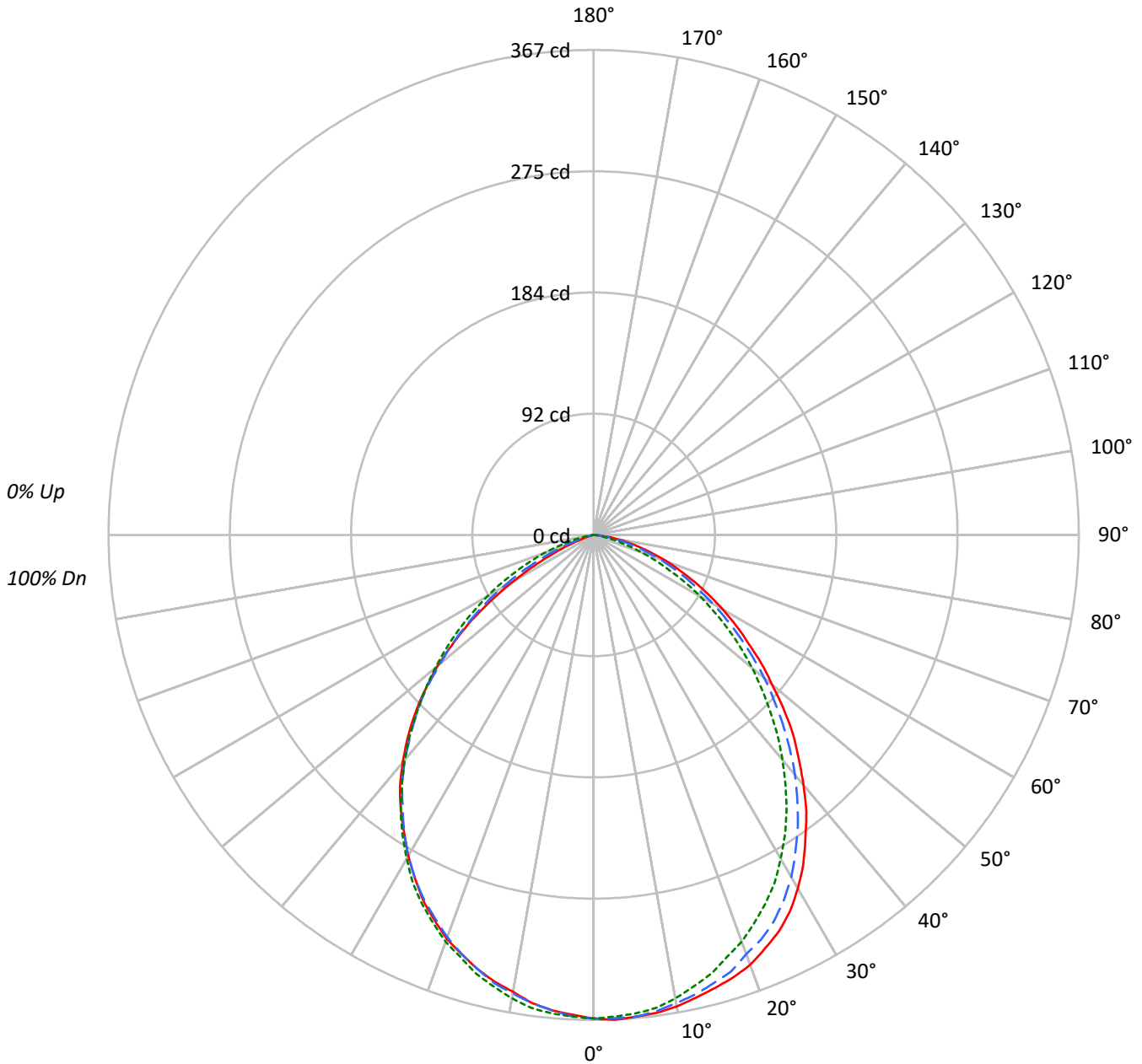
Input Watts (W): 13.3
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



TEST NUMBER: P642280

CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 900LM - 5000K

Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					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	50	30	10	0		
RCR	0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100	100	100	100	100	100		
	1	111	107	103	100	108	105	101	98	100	98	95	96	94	92	93	91	90	88	88	88	88	88	88		
	2	102	95	89	84	100	93	88	83	90	85	81	87	83	79	84	81	78	76	76	76	76	76	76		
	3	94	85	78	72	92	83	77	71	80	75	70	78	73	69	75	71	68	66	66	66	66	66	66		
	4	87	76	68	62	85	75	67	62	72	66	61	70	65	60	68	63	59	57	57	57	57	57	57		
	5	80	69	60	54	78	67	60	54	65	59	54	64	58	53	62	57	52	50	50	50	50	50	50		
	6	74	62	54	48	73	61	54	48	60	53	47	58	52	47	56	51	47	45	45	45	45	45	45		
	7	69	57	49	43	68	56	48	43	54	48	42	53	47	42	52	46	42	40	40	40	40	40	40		
	8	65	52	44	39	63	51	44	39	50	43	38	49	43	38	48	42	38	36	36	36	36	36	36		
	9	61	48	40	35	59	47	40	35	46	39	35	45	39	35	44	39	34	33	33	33	33	33	33		
	10	57	44	37	32	56	44	37	32	43	36	32	42	36	32	41	36	31	30	30	30	30	30	30		

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	28892	28892	28892	28892	28892
5°	29003	29003	28805	28614	28614
10°	29041	28841	28545	28248	28144
15°	29004	28694	28089	27787	27787
20°	29083	28352	27521	27202	27311
25°	28857	28099	26801	26479	26583
30°	28157	27255	25787	25559	25559
35°	26906	25943	24516	24275	24516
40°	25443	24423	22887	22887	23145
45°	23824	22573	21055	21055	21334
50°	21639	20718	19195	18593	18900
55°	19640	18607	17080	15882	15538
60°	17825	16451	14699	12725	10973
65°	15765	14364	11824	8798	6482
70°	13756	12025	8886	4870	2585
75°	10980	9455	5673	1525	763
80°	8456	6183	2273	546	546
85°	4529	3351	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 23824 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	34.5	4.4
10°-20°	97.4	12.4
20°-30°	143.7	18.3
30°-40°	162.7	20.7
40°-50°	150.3	19.1
50°-60°	112.3	14.3
60°-70°	62.0	7.9
70°-80°	20.9	2.7
80°-90°	2.6	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°	275.6	35.0
0°-40°	438.3	55.7
0°-60°	700.8	89.1
0°-90°	786.4	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	786.4	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	366	366	366	366	366	
5°	366	366	364	361	361	35
15°	355	351	344	340	340	100
25°	331	323	308	304	305	152
35°	279	269	254	252	254	175
45°	213	202	189	189	191	164
55°	143	135	124	115	113	128
65°	84	77	63	47	35	84
75°	36	31	19	5	2	39
85°	5	4	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°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0
2.5°	367.3	367.3	367.3	367.3	366.0	366.0	367.3	366.0	366.0	366.0	366.0
5°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0
7.5°	364.8	364.8	364.8	364.8	364.8	364.8	364.8	364.8	363.5	363.5	363.5
10°	362.3	362.3	362.3	362.3	362.3	362.3	362.3	361.1	361.1	361.1	359.8
12.5°	358.6	359.8	358.6	359.8	358.6	358.6	357.3	357.3	357.3	356.1	356.1
15°	354.9	354.9	354.9	354.9	354.9	353.6	353.6	352.4	352.4	352.4	351.1
17.5°	351.1	349.9	349.9	349.9	348.7	348.7	348.7	348.7	347.4	346.2	346.2
20°	346.2	344.9	344.9	344.9	343.7	343.7	342.4	342.4	340.0	340.0	337.5
22.5°	338.7	338.7	338.7	337.5	337.5	336.2	336.2	335.0	333.8	332.5	331.3
25°	331.3	331.3	330.0	330.0	328.8	328.8	328.8	326.3	325.1	323.8	322.6
27.5°	321.4	321.4	320.1	320.1	318.9	317.6	317.6	315.2	315.2	312.7	311.4
30°	308.9	308.9	308.9	306.5	306.5	306.5	305.2	304.0	301.5	300.3	299.0
32.5°	295.3	294.1	294.1	294.1	292.8	291.6	291.6	289.1	287.9	286.6	284.1
35°	279.2	279.2	279.2	279.2	277.9	276.7	276.7	274.2	273.0	270.5	269.2
37.5°	264.3	264.3	263.0	263.0	260.6	261.8	260.6	259.3	258.1	254.4	253.1
40°	246.9	246.9	246.9	245.7	244.4	244.4	243.2	241.9	239.5	238.2	237.0
42.5°	229.5	229.5	229.5	228.3	227.1	227.1	227.1	224.6	223.3	222.1	219.6
45°	213.4	212.2	212.2	210.9	210.9	209.7	208.4	207.2	206.0	204.7	202.2
47.5°	194.8	194.8	193.6	193.6	192.3	192.3	191.1	189.8	188.6	187.4	184.9
50°	176.2	177.4	177.4	176.2	176.2	174.9	173.7	173.7	172.5	171.2	168.7
52.5°	160.1	160.1	160.1	158.8	158.8	157.6	157.6	156.3	155.1	152.6	151.4
55°	142.7	143.9	142.7	142.7	142.7	141.4	141.4	140.2	139.0	136.5	135.2
57.5°	127.8	127.8	126.6	126.6	125.3	125.3	125.3	124.1	122.8	121.6	119.1
60°	112.9	111.7	111.7	111.7	110.4	110.4	110.4	107.9	106.7	105.5	104.2
62.5°	98.0	98.0	98.0	96.8	96.8	95.5	94.3	94.3	93.1	91.8	89.3
65°	84.4	84.4	83.1	83.1	83.1	81.9	81.9	80.6	79.4	78.2	76.9
67.5°	70.7	70.7	70.7	69.5	69.5	69.5	68.2	67.0	67.0	65.8	64.5
70°	59.6	58.3	58.3	58.3	57.1	57.1	57.1	55.8	54.6	53.4	52.1
72.5°	47.1	47.1	47.1	47.1	45.9	45.9	44.7	44.7	43.4	42.2	40.9
75°	36.0	36.0	36.0	36.0	34.7	34.7	34.7	33.5	33.5	32.3	31.0
77.5°	27.3	27.3	27.3	26.1	26.1	24.8	24.8	24.8	23.6	23.6	22.3
80°	18.6	18.6	17.4	17.4	17.4	17.4	17.4	16.1	14.9	14.9	13.6
82.5°	11.2	11.2	11.2	9.9	9.9	9.9	9.9	9.9	8.7	8.7	7.4
85°	5.0	5.0	5.0	5.0	5.0	5.0	3.7	3.7	3.7	3.7	3.7
87.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	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: P642280

CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0
2.5°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	364.8	364.8	364.8	364.8
5°	364.8	364.8	364.8	364.8	364.8	363.5	364.8	363.5	363.5	363.5	363.5
7.5°	362.3	362.3	362.3	362.3	361.1	362.3	361.1	361.1	361.1	361.1	359.8
10°	359.8	358.6	358.6	358.6	358.6	357.3	357.3	356.1	356.1	356.1	354.9
12.5°	356.1	354.9	354.9	353.6	353.6	353.6	352.4	352.4	351.1	349.9	349.9
15°	349.9	349.9	348.7	347.4	347.4	346.2	346.2	344.9	344.9	343.7	342.4
17.5°	344.9	343.7	342.4	341.2	340.0	340.0	338.7	337.5	337.5	335.0	335.0
20°	336.2	335.0	333.8	332.5	332.5	332.5	330.0	330.0	328.8	327.6	326.3
22.5°	328.8	327.6	325.1	323.8	323.8	322.6	321.4	320.1	318.9	317.6	316.4
25°	320.1	318.9	316.4	315.2	313.9	312.7	311.4	310.2	308.9	307.7	306.5
27.5°	308.9	306.5	306.5	304.0	302.7	301.5	300.3	299.0	297.8	296.5	295.3
30°	296.5	295.3	292.8	290.3	289.1	289.1	286.6	285.4	285.4	282.9	281.7
32.5°	282.9	280.4	277.9	276.7	275.4	274.2	273.0	271.7	270.5	269.2	268.0
35°	268.0	264.3	263.0	260.6	260.6	259.3	258.1	255.6	255.6	254.4	251.9
37.5°	251.9	249.4	248.2	245.7	244.4	243.2	241.9	240.7	239.5	238.2	237.0
40°	234.5	232.0	230.8	229.5	228.3	227.1	225.8	224.6	223.3	222.1	220.9
42.5°	217.1	215.9	213.4	210.9	210.9	209.7	208.4	207.2	206.0	206.0	204.7
45°	199.8	198.5	196.0	194.8	193.6	193.6	191.1	191.1	189.8	188.6	188.6
47.5°	183.6	181.2	178.7	178.7	176.2	177.4	174.9	174.9	172.5	172.5	171.2
50°	166.3	165.0	162.5	161.3	161.3	160.1	158.8	158.8	157.6	156.3	155.1
52.5°	150.1	147.6	146.4	145.2	143.9	143.9	142.7	142.7	140.2	140.2	139.0
55°	134.0	132.8	130.3	129.0	129.0	129.0	126.6	125.3	125.3	124.1	122.8
57.5°	117.9	116.6	115.4	114.1	112.9	112.9	111.7	110.4	109.2	107.9	105.5
60°	103.0	101.7	100.5	99.3	98.0	98.0	96.8	95.5	94.3	93.1	91.8
62.5°	88.1	88.1	85.6	84.4	83.1	83.1	81.9	80.6	79.4	78.2	76.9
65°	75.7	74.4	72.0	70.7	70.7	70.7	68.2	67.0	65.8	63.3	62.0
67.5°	63.3	60.8	59.6	59.6	58.3	57.1	55.8	54.6	52.1	50.9	48.4
70°	50.9	49.6	48.4	47.1	45.9	44.7	43.4	42.2	39.7	38.5	37.2
72.5°	39.7	38.5	37.2	36.0	34.7	34.7	32.3	31.0	29.8	27.3	26.1
75°	29.8	28.5	27.3	26.1	24.8	23.6	23.6	21.1	19.9	18.6	16.1
77.5°	21.1	19.9	18.6	17.4	17.4	16.1	14.9	13.6	12.4	11.2	9.9
80°	13.6	12.4	11.2	11.2	9.9	9.9	8.7	7.4	6.2	5.0	5.0
82.5°	7.4	6.2	6.2	5.0	5.0	5.0	3.7	2.5	2.5	2.5	1.2
85°	2.5	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2	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: P642280

CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0
2.5°	364.8	364.8	364.8	364.8	364.8	364.8	364.8	364.8	364.8	363.5	363.5
5°	362.3	362.3	362.3	362.3	362.3	362.3	361.1	361.1	361.1	361.1	361.1
7.5°	359.8	359.8	359.8	358.6	358.6	358.6	358.6	357.3	357.3	357.3	357.3
10°	354.9	354.9	354.9	353.6	353.6	353.6	353.6	353.6	352.4	352.4	352.4
12.5°	348.7	348.7	348.7	348.7	348.7	347.4	347.4	347.4	347.4	346.2	347.4
15°	342.4	342.4	341.2	341.2	341.2	340.0	340.0	340.0	340.0	340.0	340.0
17.5°	335.0	333.8	333.8	332.5	332.5	332.5	332.5	332.5	332.5	332.5	332.5
20°	326.3	325.1	325.1	325.1	325.1	323.8	323.8	322.6	323.8	323.8	323.8
22.5°	316.4	315.2	315.2	315.2	313.9	313.9	313.9	313.9	313.9	313.9	313.9
25°	306.5	305.2	304.0	304.0	304.0	302.7	302.7	304.0	304.0	304.0	304.0
27.5°	294.1	294.1	292.8	292.8	292.8	291.6	291.6	291.6	292.8	292.8	292.8
30°	280.4	280.4	280.4	280.4	279.2	279.2	280.4	279.2	280.4	279.2	280.4
32.5°	268.0	268.0	266.8	265.5	265.5	266.8	265.5	265.5	266.8	266.8	266.8
35°	251.9	251.9	251.9	251.9	251.9	251.9	251.9	251.9	251.9	253.1	254.4
37.5°	237.0	237.0	237.0	237.0	237.0	237.0	237.0	238.2	238.2	238.2	238.2
40°	220.9	220.9	220.9	220.9	220.9	220.9	220.9	220.9	222.1	222.1	223.3
42.5°	203.5	204.7	204.7	204.7	203.5	203.5	204.7	204.7	204.7	206.0	206.0
45°	187.4	187.4	187.4	187.4	188.6	187.4	187.4	187.4	188.6	188.6	188.6
47.5°	171.2	170.0	170.0	171.2	170.0	170.0	170.0	170.0	171.2	171.2	170.0
50°	155.1	153.9	153.9	153.9	152.6	152.6	153.9	151.4	151.4	151.4	152.6
52.5°	139.0	137.7	136.5	136.5	136.5	135.2	134.0	134.0	134.0	132.8	132.8
55°	121.6	120.4	119.1	119.1	119.1	117.9	117.9	115.4	115.4	114.1	114.1
57.5°	105.5	104.2	103.0	103.0	101.7	100.5	100.5	98.0	98.0	96.8	94.3
60°	89.3	88.1	86.9	86.9	86.9	84.4	83.1	80.6	80.6	78.2	76.9
62.5°	74.4	73.2	72.0	70.7	70.7	68.2	67.0	64.5	63.3	62.0	59.6
65°	60.8	58.3	57.1	55.8	55.8	53.4	52.1	49.6	47.1	45.9	43.4
67.5°	47.1	45.9	43.4	42.2	42.2	39.7	37.2	36.0	33.5	31.0	29.8
70°	34.7	33.5	31.0	29.8	28.5	27.3	24.8	23.6	21.1	19.9	17.4
72.5°	23.6	22.3	19.9	19.9	18.6	16.1	14.9	13.6	11.2	9.9	8.7
75°	14.9	13.6	12.4	11.2	9.9	8.7	7.4	6.2	5.0	3.7	3.7
77.5°	8.7	7.4	6.2	5.0	5.0	3.7	2.5	2.5	2.5	1.2	1.2
80°	3.7	2.5	2.5	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.0	0.0	1.2	1.2
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: P642280

CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 900LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	366.0	366.0	366.0	366.0	366.0	366.0	366.0	366.0
2.5°	364.8	363.5	364.8	364.8	363.5	363.5	363.5	363.5
5°	361.1	361.1	361.1	361.1	361.1	361.1	361.1	361.1
7.5°	358.6	357.3	357.3	357.3	357.3	357.3	357.3	357.3
10°	352.4	352.4	352.4	352.4	352.4	352.4	352.4	351.1
12.5°	346.2	346.2	346.2	346.2	346.2	346.2	346.2	346.2
15°	340.0	340.0	340.0	340.0	340.0	340.0	340.0	340.0
17.5°	332.5	332.5	332.5	332.5	332.5	331.3	332.5	332.5
20°	323.8	323.8	323.8	323.8	323.8	323.8	323.8	325.1
22.5°	313.9	313.9	313.9	313.9	313.9	313.9	313.9	315.2
25°	304.0	304.0	304.0	304.0	304.0	304.0	304.0	305.2
27.5°	292.8	292.8	292.8	292.8	292.8	292.8	292.8	292.8
30°	280.4	280.4	281.7	280.4	280.4	280.4	281.7	280.4
32.5°	268.0	268.0	268.0	268.0	268.0	268.0	268.0	266.8
35°	254.4	253.1	254.4	254.4	254.4	254.4	254.4	254.4
37.5°	239.5	239.5	239.5	239.5	239.5	239.5	240.7	240.7
40°	224.6	223.3	223.3	224.6	224.6	224.6	223.3	224.6
42.5°	206.0	207.2	207.2	207.2	208.4	207.2	208.4	208.4
45°	188.6	189.8	189.8	189.8	189.8	189.8	191.1	191.1
47.5°	171.2	171.2	171.2	171.2	172.5	172.5	172.5	172.5
50°	152.6	152.6	152.6	152.6	153.9	152.6	153.9	153.9
52.5°	132.8	132.8	132.8	132.8	132.8	132.8	134.0	132.8
55°	112.9	112.9	112.9	112.9	111.7	111.7	111.7	112.9
57.5°	94.3	93.1	91.8	93.1	90.6	90.6	90.6	90.6
60°	74.4	73.2	73.2	72.0	70.7	69.5	70.7	69.5
62.5°	57.1	55.8	55.8	53.4	52.1	52.1	50.9	50.9
65°	42.2	39.7	38.5	38.5	37.2	36.0	34.7	34.7
67.5°	27.3	26.1	24.8	24.8	23.6	22.3	22.3	21.1
70°	16.1	14.9	13.6	14.9	12.4	11.2	11.2	11.2
72.5°	7.4	6.2	6.2	6.2	5.0	5.0	5.0	5.0
75°	3.7	2.5	2.5	2.5	2.5	2.5	2.5	2.5
77.5°	1.2	1.2	2.5	1.2	1.2	1.2	1.2	1.2
80°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2
82.5°	1.2	0.0	0.0	0.0	1.2	1.2	0.0	1.2
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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Scaled Data Report





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

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(END OF REPORT)