

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: P642275

Luminaire Tested: ML5612LSWW97FS1E - 592H WW - 600LM - 5000K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642275
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 - 600LM - 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

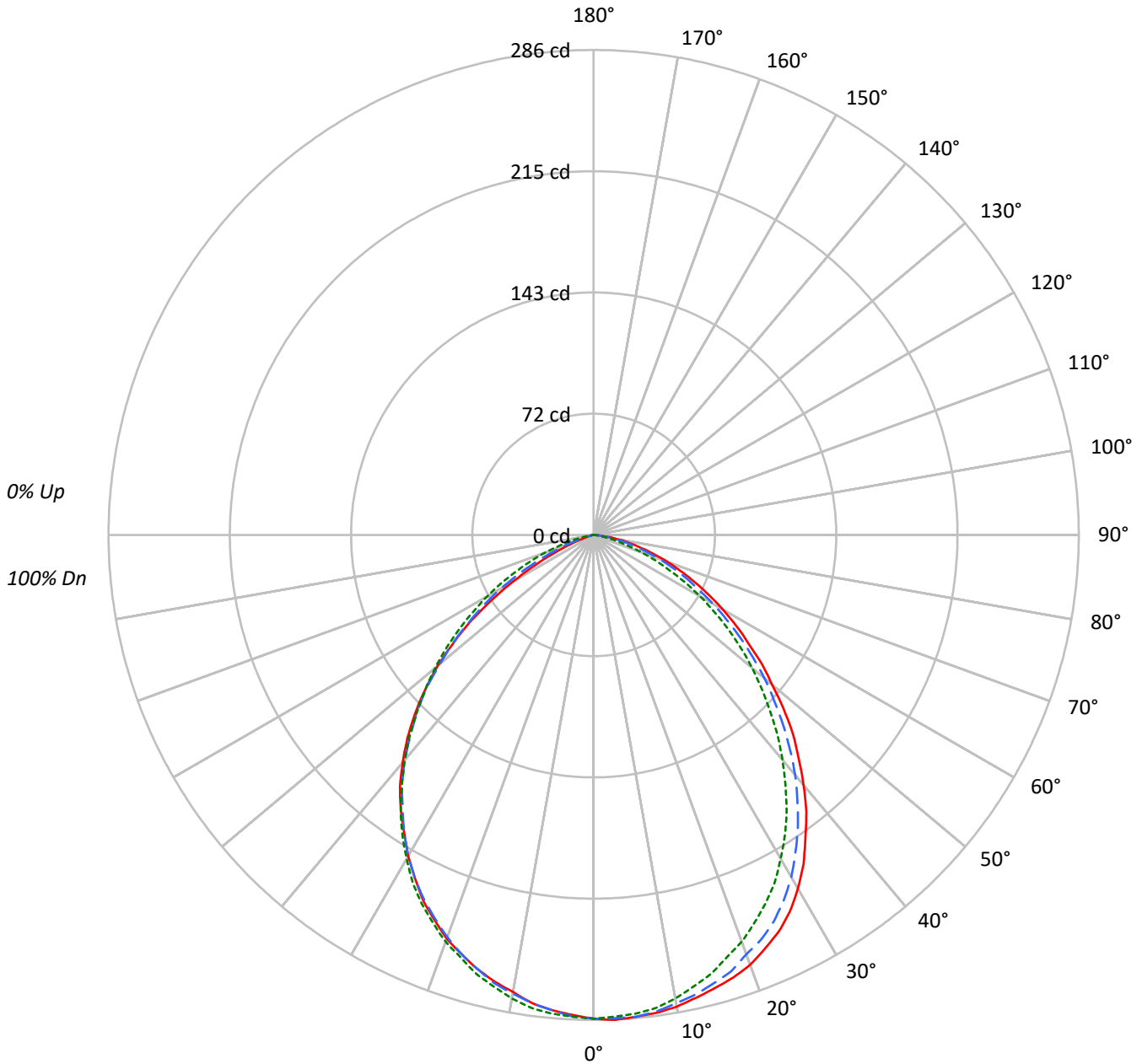
Lumens per Lamp: N/A
Luminaire Lumens: 613.0 lumens
Efficiency: N/A
Efficacy: 59.5 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.25
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

Input Watts (W): 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					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	80	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°	22522	22522	22522	22522	22522
5°	22608	22608	22457	22299	22299
10°	22637	22485	22252	22020	21939
15°	22605	22368	21894	21657	21657
20°	22665	22102	21447	21203	21287
25°	22490	21897	20887	20634	20721
30°	21950	21248	20099	19926	19926
35°	20970	20228	19110	18917	19110
40°	19837	19033	17838	17838	18034
45°	18566	17594	16411	16411	16623
50°	16862	16150	14971	14492	14725
55°	15304	14506	13309	12373	12111
60°	13894	12820	11446	9931	8557
65°	12291	11207	9209	6855	5062
70°	10709	9371	6924	3785	2008
75°	8540	7381	4423	1190	580
80°	6592	4819	1773	455	455
85°	3532	2627	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18566 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	26.9	4.4
10°-20°	75.9	12.4
20°-30°	112.0	18.3
30°-40°	126.8	20.7
40°-50°	117.1	19.1
50°-60°	87.5	14.3
60°-70°	48.4	7.9
70°-80°	16.3	2.7
80°-90°	2.1	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°	214.8	35.0
0°-40°	341.6	55.7
0°-60°	546.3	89.1
0°-90°	613.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	613.0	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	285	285	285	285	285	
5°	285	285	283	281	281	27
15°	277	274	268	265	265	78
25°	258	251	240	237	238	119
35°	218	210	198	196	198	136
45°	166	158	147	147	149	128
55°	111	105	97	90	88	100
65°	66	60	49	37	27	65
75°	28	24	14	4	2	31
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°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3
2.5°	286.3	286.3	286.3	286.3	285.3	285.3	286.3	285.3	285.3	285.3	285.3
5°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3
7.5°	284.3	284.3	284.3	284.3	284.3	284.3	284.3	284.3	283.4	283.4	283.4
10°	282.4	282.4	282.4	282.4	282.4	282.4	282.4	281.4	281.4	281.4	280.5
12.5°	279.5	280.5	279.5	280.5	279.5	279.5	278.5	278.5	278.5	277.6	277.6
15°	276.6	276.6	276.6	276.6	276.6	275.6	275.6	274.7	274.7	274.7	273.7
17.5°	273.7	272.7	272.7	272.7	271.8	271.8	271.8	271.8	270.8	269.8	269.8
20°	269.8	268.9	268.9	268.9	267.9	267.9	266.9	266.9	265.0	265.0	263.1
22.5°	264.0	264.0	264.0	263.1	263.1	262.1	262.1	261.1	260.1	259.2	258.2
25°	258.2	258.2	257.2	257.2	256.3	256.3	256.3	254.3	253.4	252.4	251.4
27.5°	250.5	250.5	249.5	249.5	248.5	247.6	247.6	245.6	245.6	243.7	242.7
30°	240.8	240.8	240.8	238.9	238.9	238.9	237.9	236.9	235.0	234.0	233.1
32.5°	230.2	229.2	229.2	229.2	228.2	227.3	227.3	225.3	224.4	223.4	221.5
35°	217.6	217.6	217.6	217.6	216.6	215.7	215.7	213.7	212.8	210.8	209.9
37.5°	206.0	206.0	205.0	205.0	203.1	204.1	203.1	202.1	201.2	198.3	197.3
40°	192.5	192.5	192.5	191.5	190.5	190.5	189.6	188.6	186.7	185.7	184.7
42.5°	178.9	178.9	178.9	177.9	177.0	177.0	177.0	175.0	174.1	173.1	171.2
45°	166.3	165.4	165.4	164.4	164.4	163.4	162.5	161.5	160.5	159.6	157.6
47.5°	151.8	151.8	150.9	150.9	149.9	149.9	148.9	148.0	147.0	146.0	144.1
50°	137.3	138.3	138.3	137.3	137.3	136.4	135.4	135.4	134.4	133.5	131.5
52.5°	124.8	124.8	124.8	123.8	123.8	122.8	122.8	121.9	120.9	119.0	118.0
55°	111.2	112.2	111.2	111.2	111.2	110.2	110.2	109.3	108.3	106.4	105.4
57.5°	99.6	99.6	98.6	98.6	97.7	97.7	97.7	96.7	95.7	94.8	92.8
60°	88.0	87.0	87.0	87.0	86.1	86.1	86.1	84.1	83.2	82.2	81.2
62.5°	76.4	76.4	76.4	75.4	75.4	74.5	73.5	73.5	72.5	71.6	69.6
65°	65.8	65.8	64.8	64.8	64.8	63.8	63.8	62.9	61.9	60.9	60.0
67.5°	55.1	55.1	55.1	54.2	54.2	54.2	53.2	52.2	52.2	51.3	50.3
70°	46.4	45.5	45.5	45.5	44.5	44.5	44.5	43.5	42.6	41.6	40.6
72.5°	36.7	36.7	36.7	36.7	35.8	35.8	34.8	34.8	33.8	32.9	31.9
75°	28.0	28.0	28.0	28.0	27.1	27.1	27.1	26.1	26.1	25.1	24.2
77.5°	21.3	21.3	21.3	20.3	20.3	19.3	19.3	19.3	18.4	18.4	17.4
80°	14.5	14.5	13.5	13.5	13.5	13.5	13.5	12.6	11.6	11.6	10.6
82.5°	8.7	8.7	8.7	7.7	7.7	7.7	7.7	7.7	6.8	6.8	5.8
85°	3.9	3.9	3.9	3.9	3.9	3.9	2.9	2.9	2.9	2.9	2.9
87.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	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):

	50°	55°	60°	65°	67.5°	70°	75°	80°	85°	90°	95°
0°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3
2.5°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	284.3	284.3	284.3	284.3
5°	284.3	284.3	284.3	284.3	284.3	283.4	284.3	283.4	283.4	283.4	283.4
7.5°	282.4	282.4	282.4	282.4	281.4	282.4	281.4	281.4	281.4	281.4	280.5
10°	280.5	279.5	279.5	279.5	279.5	278.5	278.5	277.6	277.6	277.6	276.6
12.5°	277.6	276.6	276.6	275.6	275.6	275.6	274.7	274.7	273.7	272.7	272.7
15°	272.7	272.7	271.8	270.8	270.8	269.8	269.8	268.9	268.9	267.9	266.9
17.5°	268.9	267.9	266.9	266.0	265.0	265.0	264.0	263.1	263.1	261.1	261.1
20°	262.1	261.1	260.1	259.2	259.2	259.2	257.2	257.2	256.3	255.3	254.3
22.5°	256.3	255.3	253.4	252.4	252.4	251.4	250.5	249.5	248.5	247.6	246.6
25°	249.5	248.5	246.6	245.6	244.7	243.7	242.7	241.8	240.8	239.8	238.9
27.5°	240.8	238.9	238.9	236.9	236.0	235.0	234.0	233.1	232.1	231.1	230.2
30°	231.1	230.2	228.2	226.3	225.3	225.3	223.4	222.4	222.4	220.5	219.5
32.5°	220.5	218.6	216.6	215.7	214.7	213.7	212.8	211.8	210.8	209.9	208.9
35°	208.9	206.0	205.0	203.1	203.1	202.1	201.2	199.2	199.2	198.3	196.3
37.5°	196.3	194.4	193.4	191.5	190.5	189.6	188.6	187.6	186.7	185.7	184.7
40°	182.8	180.8	179.9	178.9	177.9	177.0	176.0	175.0	174.1	173.1	172.1
42.5°	169.2	168.3	166.3	164.4	164.4	163.4	162.5	161.5	160.5	160.5	159.6
45°	155.7	154.7	152.8	151.8	150.9	150.9	148.9	148.9	148.0	147.0	147.0
47.5°	143.1	141.2	139.3	139.3	137.3	138.3	136.4	136.4	134.4	134.4	133.5
50°	129.6	128.6	126.7	125.7	125.7	124.8	123.8	123.8	122.8	121.9	120.9
52.5°	117.0	115.1	114.1	113.2	112.2	112.2	111.2	111.2	109.3	109.3	108.3
55°	104.4	103.5	101.5	100.6	100.6	100.6	98.6	97.7	97.7	96.7	95.7
57.5°	91.9	90.9	89.9	89.0	88.0	88.0	87.0	86.1	85.1	84.1	82.2
60°	80.3	79.3	78.3	77.4	76.4	76.4	75.4	74.5	73.5	72.5	71.6
62.5°	68.7	68.7	66.7	65.8	64.8	64.8	63.8	62.9	61.9	60.9	60.0
65°	59.0	58.0	56.1	55.1	55.1	55.1	53.2	52.2	51.3	49.3	48.4
67.5°	49.3	47.4	46.4	46.4	45.5	44.5	43.5	42.6	40.6	39.7	37.7
70°	39.7	38.7	37.7	36.7	35.8	34.8	33.8	32.9	30.9	30.0	29.0
72.5°	30.9	30.0	29.0	28.0	27.1	27.1	25.1	24.2	23.2	21.3	20.3
75°	23.2	22.2	21.3	20.3	19.3	18.4	18.4	16.4	15.5	14.5	12.6
77.5°	16.4	15.5	14.5	13.5	13.5	12.6	11.6	10.6	9.7	8.7	7.7
80°	10.6	9.7	8.7	8.7	7.7	7.7	6.8	5.8	4.8	3.9	3.9
82.5°	5.8	4.8	4.8	3.9	3.9	3.9	2.9	1.9	1.9	1.9	1.0
85°	1.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	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):

	100°	105°	110°	112.5°	115°	120°	125°	130°	135°	140°	145°
0°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3
2.5°	284.3	284.3	284.3	284.3	284.3	284.3	284.3	284.3	284.3	283.4	283.4
5°	282.4	282.4	282.4	282.4	282.4	282.4	281.4	281.4	281.4	281.4	281.4
7.5°	280.5	280.5	280.5	279.5	279.5	279.5	279.5	278.5	278.5	278.5	278.5
10°	276.6	276.6	276.6	275.6	275.6	275.6	275.6	275.6	274.7	274.7	274.7
12.5°	271.8	271.8	271.8	271.8	271.8	270.8	270.8	270.8	270.8	269.8	270.8
15°	266.9	266.9	266.0	266.0	266.0	265.0	265.0	265.0	265.0	265.0	265.0
17.5°	261.1	260.1	260.1	259.2	259.2	259.2	259.2	259.2	259.2	259.2	259.2
20°	254.3	253.4	253.4	253.4	253.4	252.4	252.4	251.4	252.4	252.4	252.4
22.5°	246.6	245.6	245.6	245.6	244.7	244.7	244.7	244.7	244.7	244.7	244.7
25°	238.9	237.9	236.9	236.9	236.9	236.0	236.0	236.9	236.9	236.9	236.9
27.5°	229.2	229.2	228.2	228.2	228.2	227.3	227.3	227.3	228.2	228.2	228.2
30°	218.6	218.6	218.6	218.6	217.6	217.6	218.6	217.6	218.6	217.6	218.6
32.5°	208.9	208.9	207.9	207.0	207.0	207.9	207.0	207.0	207.9	207.9	207.9
35°	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	196.3	197.3	198.3
37.5°	184.7	184.7	184.7	184.7	184.7	184.7	184.7	185.7	185.7	185.7	185.7
40°	172.1	172.1	172.1	172.1	172.1	172.1	172.1	172.1	173.1	173.1	174.1
42.5°	158.6	159.6	159.6	159.6	158.6	158.6	159.6	159.6	159.6	160.5	160.5
45°	146.0	146.0	146.0	146.0	147.0	146.0	146.0	146.0	147.0	147.0	147.0
47.5°	133.5	132.5	132.5	133.5	132.5	132.5	132.5	132.5	133.5	133.5	132.5
50°	120.9	119.9	119.9	119.9	119.0	119.0	119.9	118.0	118.0	118.0	119.0
52.5°	108.3	107.3	106.4	106.4	106.4	105.4	104.4	104.4	104.4	103.5	103.5
55°	94.8	93.8	92.8	92.8	92.8	91.9	91.9	89.9	89.9	89.0	89.0
57.5°	82.2	81.2	80.3	80.3	79.3	78.3	78.3	76.4	76.4	75.4	73.5
60°	69.6	68.7	67.7	67.7	67.7	65.8	64.8	62.9	62.9	60.9	60.0
62.5°	58.0	57.1	56.1	55.1	55.1	53.2	52.2	50.3	49.3	48.4	46.4
65°	47.4	45.5	44.5	43.5	43.5	41.6	40.6	38.7	36.7	35.8	33.8
67.5°	36.7	35.8	33.8	32.9	32.9	30.9	29.0	28.0	26.1	24.2	23.2
70°	27.1	26.1	24.2	23.2	22.2	21.3	19.3	18.4	16.4	15.5	13.5
72.5°	18.4	17.4	15.5	15.5	14.5	12.6	11.6	10.6	8.7	7.7	6.8
75°	11.6	10.6	9.7	8.7	7.7	6.8	5.8	4.8	3.9	2.9	2.9
77.5°	6.8	5.8	4.8	3.9	3.9	2.9	1.9	1.9	1.9	1.0	1.0
80°	2.9	1.9	1.9	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.0	0.0	1.0	1.0
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



TEST NUMBER: P642275

CATALOG NUMBER: ML5612LSWW97FS1E - 592H WW - 600LM - 5000K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	285.3	285.3	285.3	285.3	285.3	285.3	285.3	285.3
2.5°	284.3	283.4	284.3	284.3	283.4	283.4	283.4	283.4
5°	281.4	281.4	281.4	281.4	281.4	281.4	281.4	281.4
7.5°	279.5	278.5	278.5	278.5	278.5	278.5	278.5	278.5
10°	274.7	274.7	274.7	274.7	274.7	274.7	274.7	273.7
12.5°	269.8	269.8	269.8	269.8	269.8	269.8	269.8	269.8
15°	265.0	265.0	265.0	265.0	265.0	265.0	265.0	265.0
17.5°	259.2	259.2	259.2	259.2	259.2	258.2	259.2	259.2
20°	252.4	252.4	252.4	252.4	252.4	252.4	252.4	253.4
22.5°	244.7	244.7	244.7	244.7	244.7	244.7	244.7	245.6
25°	236.9	236.9	236.9	236.9	236.9	236.9	236.9	237.9
27.5°	228.2	228.2	228.2	228.2	228.2	228.2	228.2	228.2
30°	218.6	218.6	219.5	218.6	218.6	218.6	219.5	218.6
32.5°	208.9	208.9	208.9	208.9	208.9	208.9	208.9	207.9
35°	198.3	197.3	198.3	198.3	198.3	198.3	198.3	198.3
37.5°	186.7	186.7	186.7	186.7	186.7	186.7	187.6	187.6
40°	175.0	174.1	174.1	175.0	175.0	175.0	174.1	175.0
42.5°	160.5	161.5	161.5	161.5	162.5	161.5	162.5	162.5
45°	147.0	148.0	148.0	148.0	148.0	148.0	148.9	148.9
47.5°	133.5	133.5	133.5	133.5	134.4	134.4	134.4	134.4
50°	119.0	119.0	119.0	119.0	119.9	119.0	119.9	119.9
52.5°	103.5	103.5	103.5	103.5	103.5	103.5	104.4	103.5
55°	88.0	88.0	88.0	88.0	87.0	87.0	87.0	88.0
57.5°	73.5	72.5	71.6	72.5	70.6	70.6	70.6	70.6
60°	58.0	57.1	57.1	56.1	55.1	54.2	55.1	54.2
62.5°	44.5	43.5	43.5	41.6	40.6	40.6	39.7	39.7
65°	32.9	30.9	30.0	30.0	29.0	28.0	27.1	27.1
67.5°	21.3	20.3	19.3	19.3	18.4	17.4	17.4	16.4
70°	12.6	11.6	10.6	11.6	9.7	8.7	8.7	8.7
72.5°	5.8	4.8	4.8	4.8	3.9	3.9	3.9	3.9
75°	2.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
77.5°	1.0	1.0	1.9	1.0	1.0	1.0	1.0	1.0
80°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
82.5°	1.0	0.0	0.0	0.0	1.0	1.0	0.0	1.0
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)