

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: P642301

Luminaire Tested: ML5612LSWW97FS1E - 592W WW - 600LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P642301
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-116)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5612LSWW97FS1E - 592W WW - 600LM - 2700K
Description: ML56 RR, WW OPTIC, 5" WW INSERT WITH WHITE TRIM
Light Source: (1) HCL SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

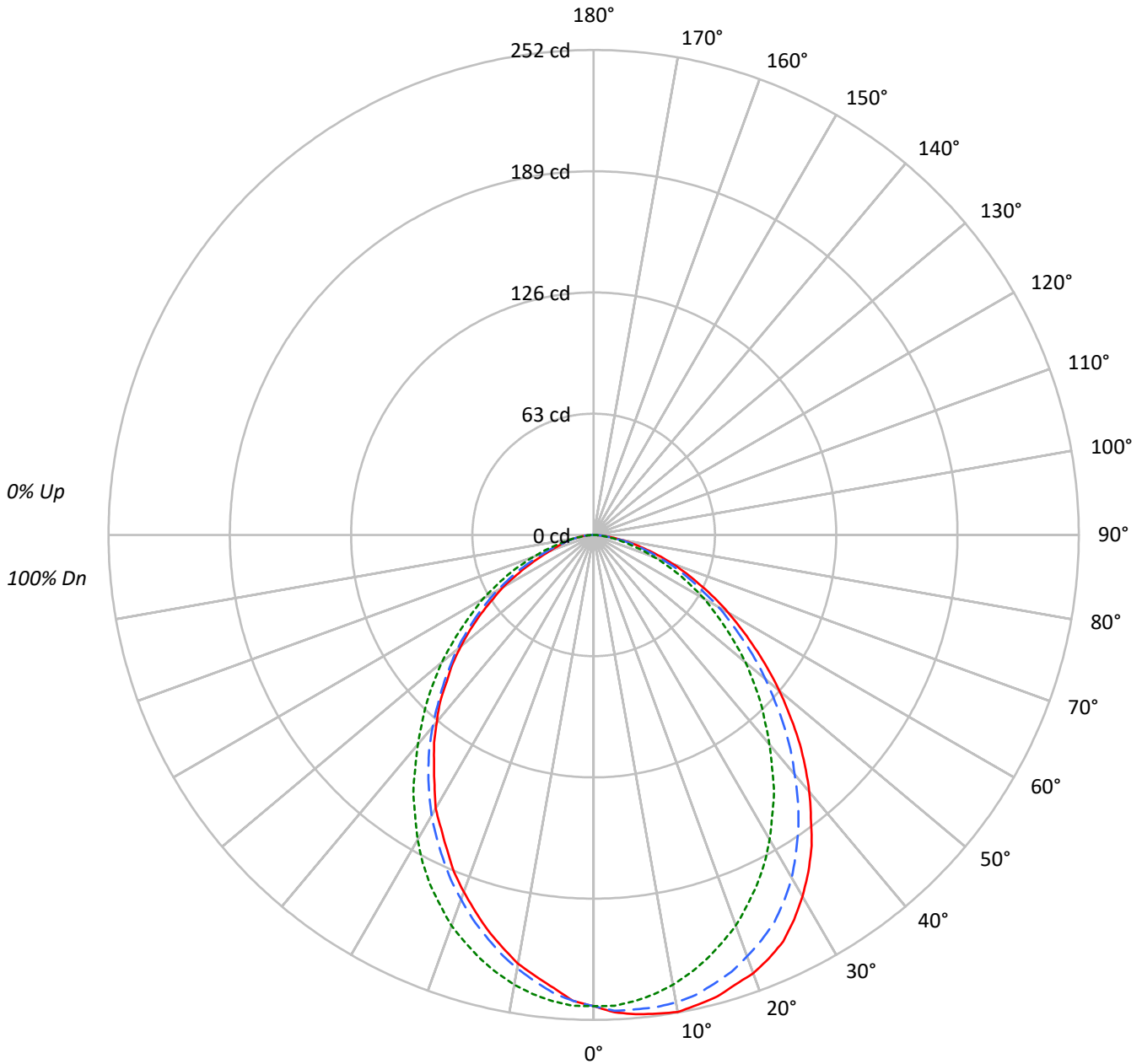
Lumens per Lamp: N/A
Luminaire Lumens: 534.3 lumens
Efficiency: N/A
Efficacy: 51.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.23
Luminous Opening: Circular (Dia: 0.42' x H: 0')
CIE Type: Direct

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					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	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	88	86								
2	101	94	88	82	99	92	86	81	88	84	80	85	81	78	82	79	76	74								
3	93	83	76	70	91	82	75	69	79	73	68	76	71	67	74	69	66	64								
4	86	75	66	60	83	73	66	60	71	64	59	69	63	58	66	62	57	55								
5	79	67	59	53	77	66	58	52	64	57	52	62	56	51	60	55	51	49								
6	73	61	53	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43								
7	68	56	47	41	67	55	47	41	53	46	41	52	45	41	51	45	40	39								
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35								
9	60	47	39	34	58	46	39	34	45	38	34	44	38	33	43	37	33	32								
10	56	43	36	31	55	43	36	31	42	35	31	41	35	31	40	35	30	29								

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	19333	19333	19333	19333	19333
5°	19811	19613	19272	18939	18733
10°	20176	19767	19022	18340	18132
15°	20292	19737	18625	17653	17375
20°	20363	19574	18146	16927	16575
25°	20295	19337	17481	16149	15704
30°	19771	18759	16663	15350	14958
35°	19014	17867	15737	14426	13935
40°	17962	16735	14633	13407	13056
45°	16802	15574	13676	12347	12057
50°	15462	14307	12637	11385	11065
55°	14038	12992	11465	10295	9827
60°	12757	11810	10468	9126	8589
65°	11282	10479	9209	7789	6986
70°	10017	9025	7663	6278	5493
75°	8296	7534	5978	4941	4941
80°	6592	5819	4637	4273	4273
85°	3895	3895	3080	3895	3895

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 16802 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	23.0	4.3
10°-20°	64.5	12.1
20°-30°	93.6	17.5
30°-40°	104.4	19.5
40°-50°	96.8	18.1
50°-60°	76.1	14.2
60°-70°	48.7	9.1
70°-80°	22.4	4.2
80°-90°	4.8	0.9
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°	181.1	33.9
0°-40°	285.5	53.4
0°-60°	458.4	85.8
0°-90°	534.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	534.3	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	245	245	245	245	245	
5°	250	248	243	239	236	24
15°	248	242	228	216	213	70
25°	233	222	201	185	180	107
35°	197	185	163	150	145	123
45°	150	140	122	111	108	116
55°	102	94	83	75	71	92
65°	60	56	49	42	37	61
75°	27	25	20	16	16	29
85°	4	4	3	4	4	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°	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9
2.5°	248.3	248.3	248.3	248.3	248.3	248.3	247.5	247.5	247.5	247.5	247.5
5°	250.0	250.0	250.0	250.0	249.2	249.2	249.2	249.2	248.3	248.3	247.5
7.5°	250.9	250.9	250.9	250.0	250.0	250.0	249.2	249.2	249.2	248.3	247.5
10°	251.7	250.9	250.9	250.0	250.0	250.0	249.2	249.2	248.3	247.5	246.6
12.5°	250.0	250.0	250.0	250.0	249.2	249.2	248.3	247.5	246.6	245.8	244.9
15°	248.3	248.3	248.3	247.5	246.6	246.6	245.8	244.9	244.1	243.2	241.5
17.5°	244.9	245.8	244.9	244.9	244.1	244.1	243.2	242.4	240.7	239.8	238.1
20°	242.4	241.5	241.5	241.5	240.7	239.8	239.0	238.1	236.4	235.6	233.0
22.5°	238.1	238.1	237.3	236.4	235.6	235.6	234.7	233.0	232.2	230.5	227.9
25°	233.0	232.2	232.2	231.3	230.5	230.5	228.8	227.9	226.2	223.7	222.0
27.5°	225.4	225.4	225.4	224.5	223.7	222.8	222.0	220.3	219.4	216.0	214.3
30°	216.9	216.9	216.0	216.0	214.3	214.3	213.5	211.8	210.0	207.5	205.8
32.5°	207.5	207.5	207.5	205.8	204.9	204.1	203.2	202.4	199.8	197.3	195.6
35°	197.3	197.3	196.4	195.6	194.7	193.9	193.0	191.3	189.6	187.9	185.4
37.5°	185.4	186.2	185.4	184.5	183.7	182.8	182.0	181.1	178.6	176.9	174.3
40°	174.3	174.3	173.5	172.6	171.8	171.8	170.9	169.2	167.5	165.0	162.4
42.5°	162.4	162.4	161.6	160.7	160.7	159.9	158.2	157.3	155.6	153.9	151.4
45°	150.5	149.7	148.8	148.8	148.0	147.1	147.1	145.4	143.7	141.2	139.5
47.5°	137.8	137.8	136.9	136.9	136.1	135.2	135.2	133.5	131.0	129.3	127.6
50°	125.9	125.9	125.0	125.0	124.2	123.3	122.5	121.6	119.9	118.2	116.5
52.5°	114.0	114.0	114.0	112.3	111.4	111.4	111.4	109.7	108.9	107.2	105.5
55°	102.0	102.0	102.0	101.2	100.3	100.3	100.3	98.6	97.8	96.1	94.4
57.5°	91.0	91.0	91.0	90.1	90.1	89.3	88.4	87.6	86.7	85.9	84.2
60°	80.8	80.8	79.9	79.1	79.9	79.1	78.2	77.4	76.5	75.7	74.8
62.5°	70.6	70.6	70.6	69.7	68.9	68.9	68.9	68.0	66.3	65.5	64.6
65°	60.4	60.4	60.4	60.4	59.5	59.5	58.7	57.8	57.8	57.0	56.1
67.5°	51.9	51.9	51.0	51.0	50.2	50.2	50.2	49.3	48.5	48.5	47.6
70°	43.4	42.5	42.5	42.5	41.7	41.7	41.7	40.8	40.8	40.0	39.1
72.5°	34.9	34.9	34.9	34.9	34.0	34.0	33.2	33.2	32.3	32.3	31.5
75°	27.2	27.2	27.2	27.2	26.4	26.4	26.4	26.4	25.5	25.5	24.7
77.5°	20.4	20.4	20.4	20.4	20.4	20.4	19.6	19.6	19.6	18.7	18.7
80°	14.5	14.5	14.5	14.5	13.6	13.6	13.6	13.6	13.6	12.8	12.8
82.5°	9.4	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	8.5	7.7
85°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9
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°	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9
2.5°	246.6	246.6	246.6	246.6	245.8	245.8	245.8	244.9	244.9	244.9	244.9
5°	247.5	247.5	245.8	245.8	245.8	245.8	244.9	244.9	244.1	243.2	242.4
7.5°	246.6	246.6	245.8	244.9	244.1	244.1	243.2	242.4	241.5	240.7	239.8
10°	245.8	244.9	244.1	243.2	242.4	241.5	240.7	239.8	238.1	237.3	236.4
12.5°	244.1	242.4	241.5	239.8	239.8	239.0	237.3	236.4	234.7	233.0	232.2
15°	240.7	239.0	237.3	235.6	235.6	233.9	232.2	231.3	229.6	227.9	226.2
17.5°	236.4	234.7	233.0	231.3	230.5	228.8	227.1	225.4	223.7	222.0	220.3
20°	232.2	229.6	227.9	225.4	224.5	223.7	221.1	219.4	217.7	216.0	213.5
22.5°	226.2	224.5	221.1	219.4	218.6	216.9	215.2	212.6	210.0	208.3	206.6
25°	219.4	217.7	215.2	212.6	210.9	210.0	207.5	204.9	203.2	200.7	199.0
27.5°	211.8	209.2	207.5	204.1	203.2	201.5	199.0	196.4	194.7	192.2	189.6
30°	203.2	200.7	198.1	195.6	193.9	193.0	190.5	187.9	185.4	182.8	181.1
32.5°	193.0	190.5	187.9	186.2	183.7	182.0	180.3	177.7	175.2	172.6	170.9
35°	182.8	180.3	177.7	175.2	173.5	173.5	170.1	167.5	165.0	163.3	160.7
37.5°	171.8	169.2	166.7	164.1	163.3	161.6	159.0	156.5	154.8	152.2	150.5
40°	160.7	157.3	155.6	153.1	152.2	150.5	148.8	146.3	144.6	142.0	140.3
42.5°	148.8	147.1	144.6	142.9	141.2	140.3	137.8	135.2	133.5	131.8	131.0
45°	137.8	135.2	132.7	131.0	130.1	128.4	127.6	125.0	123.3	122.5	120.8
47.5°	125.9	124.2	122.5	119.9	119.1	118.2	116.5	115.7	114.0	112.3	110.6
50°	114.8	113.1	111.4	109.7	108.9	108.9	106.3	104.6	103.7	102.9	101.2
52.5°	103.7	102.0	100.3	98.6	98.6	97.8	96.1	95.2	94.4	92.7	91.0
55°	93.5	91.8	90.1	89.3	88.4	88.4	86.7	85.9	84.2	83.3	82.5
57.5°	83.3	81.6	80.8	79.9	79.1	79.1	77.4	76.5	75.7	74.0	74.0
60°	74.0	72.3	71.4	70.6	69.7	68.9	68.9	67.2	66.3	66.3	64.6
62.5°	63.8	62.9	62.1	61.2	60.4	60.4	59.5	58.7	57.8	57.0	56.1
65°	55.3	54.4	53.6	52.7	51.9	51.9	51.0	50.2	49.3	49.3	47.6
67.5°	46.8	45.9	45.1	44.2	44.2	43.4	42.5	42.5	41.7	40.8	40.0
70°	38.3	38.3	37.4	36.6	36.6	35.7	34.9	34.9	34.0	33.2	32.3
72.5°	31.5	30.6	29.8	29.8	28.9	28.9	28.1	28.1	27.2	26.4	25.5
75°	23.8	23.0	23.0	23.0	22.1	22.1	22.1	21.3	20.4	19.6	19.6
77.5°	17.9	17.9	17.0	16.2	16.2	16.2	15.3	15.3	15.3	14.5	14.5
80°	12.8	11.9	11.9	11.1	11.1	11.1	11.1	10.2	10.2	10.2	9.4
82.5°	7.7	7.7	7.7	6.8	6.8	6.8	6.8	6.8	6.0	6.0	6.0
85°	4.3	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
87.5°	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	0.9	1.7	1.7
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°	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9
2.5°	244.1	244.1	243.2	243.2	243.2	243.2	243.2	242.4	242.4	242.4	242.4
5°	242.4	241.5	240.7	240.7	240.7	239.8	239.8	239.0	239.0	238.1	238.1
7.5°	239.0	238.1	237.3	237.3	236.4	236.4	234.7	234.7	233.9	233.0	233.0
10°	234.7	233.9	233.0	232.2	232.2	230.5	230.5	229.6	228.8	227.9	227.9
12.5°	230.5	229.6	227.9	227.1	227.1	226.2	224.5	223.7	222.8	222.0	221.1
15°	224.5	223.7	222.0	221.1	220.3	219.4	218.6	217.7	216.0	215.2	215.2
17.5°	218.6	217.7	215.2	214.3	214.3	212.6	211.8	210.0	209.2	208.3	207.5
20°	211.8	210.0	208.3	207.5	206.6	204.9	204.1	203.2	201.5	200.7	199.8
22.5°	204.1	202.4	200.7	199.8	199.0	197.3	196.4	194.7	193.9	193.0	192.2
25°	196.4	194.7	193.0	192.2	190.5	189.6	187.9	186.2	185.4	184.5	183.7
27.5°	187.9	186.2	183.7	182.8	182.0	181.1	179.4	177.7	176.9	175.2	175.2
30°	178.6	176.9	175.2	174.3	173.5	171.8	170.9	169.2	168.4	166.7	166.7
32.5°	169.2	166.7	165.0	164.1	163.3	162.4	160.7	159.9	159.0	158.2	157.3
35°	159.0	157.3	155.6	154.8	153.9	152.2	151.4	150.5	149.7	148.0	148.0
37.5°	148.8	147.1	145.4	144.6	144.6	142.9	142.0	140.3	140.3	138.6	138.6
40°	138.6	136.9	135.2	135.2	134.4	132.7	131.8	131.0	130.1	129.3	129.3
42.5°	129.3	126.7	125.9	125.9	124.2	123.3	122.5	121.6	119.9	119.9	119.9
45°	119.1	117.4	116.5	115.7	114.8	114.0	113.1	111.4	110.6	109.7	109.7
47.5°	109.7	108.0	107.2	106.3	105.5	104.6	103.7	102.9	101.2	101.2	100.3
50°	100.3	98.6	97.8	96.9	96.1	95.2	94.4	93.5	92.7	91.8	91.0
52.5°	90.1	89.3	88.4	87.6	87.6	85.9	85.0	84.2	83.3	83.3	81.6
55°	81.6	80.8	79.9	79.1	78.2	77.4	76.5	75.7	74.8	74.0	73.1
57.5°	72.3	71.4	70.6	70.6	69.7	68.9	68.0	67.2	66.3	65.5	64.6
60°	63.8	62.9	62.1	62.1	61.2	60.4	59.5	59.5	57.8	57.0	56.1
62.5°	55.3	54.4	53.6	53.6	52.7	52.7	51.9	51.0	49.3	49.3	48.5
65°	47.6	46.8	45.9	45.1	45.1	44.2	43.4	42.5	41.7	41.7	40.8
67.5°	40.0	39.1	38.3	38.3	37.4	36.6	35.7	34.9	34.0	34.0	33.2
70°	32.3	31.5	30.6	30.6	29.8	28.9	28.9	28.1	27.2	26.4	26.4
72.5°	24.7	24.7	23.8	23.8	23.0	23.0	22.1	21.3	21.3	20.4	19.6
75°	18.7	18.7	17.9	17.9	17.0	17.0	16.2	16.2	16.2	15.3	16.2
77.5°	13.6	13.6	12.8	12.8	12.8	11.9	11.9	11.9	12.8	12.8	12.8
80°	9.4	9.4	9.4	9.4	8.5	8.5	9.4	9.4	9.4	9.4	9.4
82.5°	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.8	6.8	6.8
85°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	4.3	4.3	4.3	4.3
87.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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: P642301

CATALOG NUMBER: ML5612LSWW97FS1E - 592W WW - 600LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	244.9	244.9	244.9	244.9	244.9	244.9	244.9	244.9
2.5°	241.5	241.5	241.5	241.5	241.5	241.5	241.5	242.4
5°	237.3	237.3	237.3	237.3	237.3	237.3	237.3	236.4
7.5°	233.0	232.2	232.2	232.2	232.2	231.3	231.3	231.3
10°	227.1	227.1	226.2	226.2	226.2	226.2	225.4	226.2
12.5°	221.1	220.3	220.3	220.3	219.4	219.4	219.4	219.4
15°	214.3	213.5	213.5	213.5	212.6	212.6	212.6	212.6
17.5°	206.6	206.6	205.8	205.8	204.9	204.9	204.9	204.9
20°	199.0	199.0	199.0	198.1	198.1	198.1	197.3	197.3
22.5°	191.3	190.5	189.6	190.5	189.6	188.8	189.6	189.6
25°	182.8	182.0	181.1	181.1	181.1	181.1	180.3	180.3
27.5°	174.3	172.6	172.6	172.6	172.6	171.8	171.8	171.8
30°	165.8	165.0	165.0	164.1	163.3	163.3	163.3	164.1
32.5°	156.5	155.6	154.8	154.8	154.8	154.8	153.9	153.9
35°	147.1	147.1	146.3	146.3	146.3	145.4	145.4	144.6
37.5°	137.8	137.8	136.9	136.9	136.9	136.1	136.1	136.1
40°	128.4	127.6	127.6	128.4	127.6	127.6	126.7	126.7
42.5°	119.1	119.1	118.2	118.2	118.2	118.2	117.4	118.2
45°	108.9	108.9	108.9	108.9	108.9	108.9	108.0	108.0
47.5°	100.3	99.5	99.5	99.5	99.5	99.5	99.5	99.5
50°	91.0	90.1	90.1	90.1	90.1	90.1	90.1	90.1
52.5°	81.6	80.8	80.8	80.8	80.8	80.8	80.8	80.8
55°	73.1	72.3	72.3	71.4	72.3	71.4	71.4	71.4
57.5°	64.6	63.8	62.9	63.8	62.9	62.9	62.9	62.1
60°	56.1	55.3	55.3	55.3	54.4	53.6	53.6	54.4
62.5°	47.6	47.6	46.8	46.8	45.9	45.1	45.1	45.1
65°	40.0	39.1	39.1	38.3	38.3	37.4	37.4	37.4
67.5°	32.3	32.3	31.5	31.5	30.6	30.6	30.6	29.8
70°	25.5	25.5	24.7	24.7	24.7	23.8	23.8	23.8
72.5°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
75°	16.2	16.2	16.2	16.2	16.2	16.2	16.2	16.2
77.5°	12.8	12.8	12.8	12.8	12.8	12.8	12.8	13.6
80°	9.4	9.4	10.2	9.4	10.2	9.4	9.4	9.4
82.5°	6.8	6.8	6.8	6.8	6.8	6.8	6.8	6.8
85°	4.3	4.3	4.3	4.3	4.3	4.3	4.3	4.3
87.5°	1.7	1.7	1.7	1.7	1.7	1.7	1.7	1.7
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)