

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: P644156

Luminaire Tested: ML5615LSWW9FS1E - 692W WW - 1200LM - 2700K

Issue Date: 2/17/2023

Test Information

Test Method: LM-79-2019
Report Number: P644156
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2212-866-117)
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 2/17/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: ML5615LSWW9FS1E - 692W WW - 1200LM - 2700K
Description: ML56 RR, WW OPTIC, 6" WW INSERT WITH WHITE TRIM
Light Source: (1) STANDARD SELECTABLE LUMEN LED 90CRI / 2700K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 829.2 lumens
Efficiency: N/A
Efficacy: 61.9 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.13 / 1.25
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

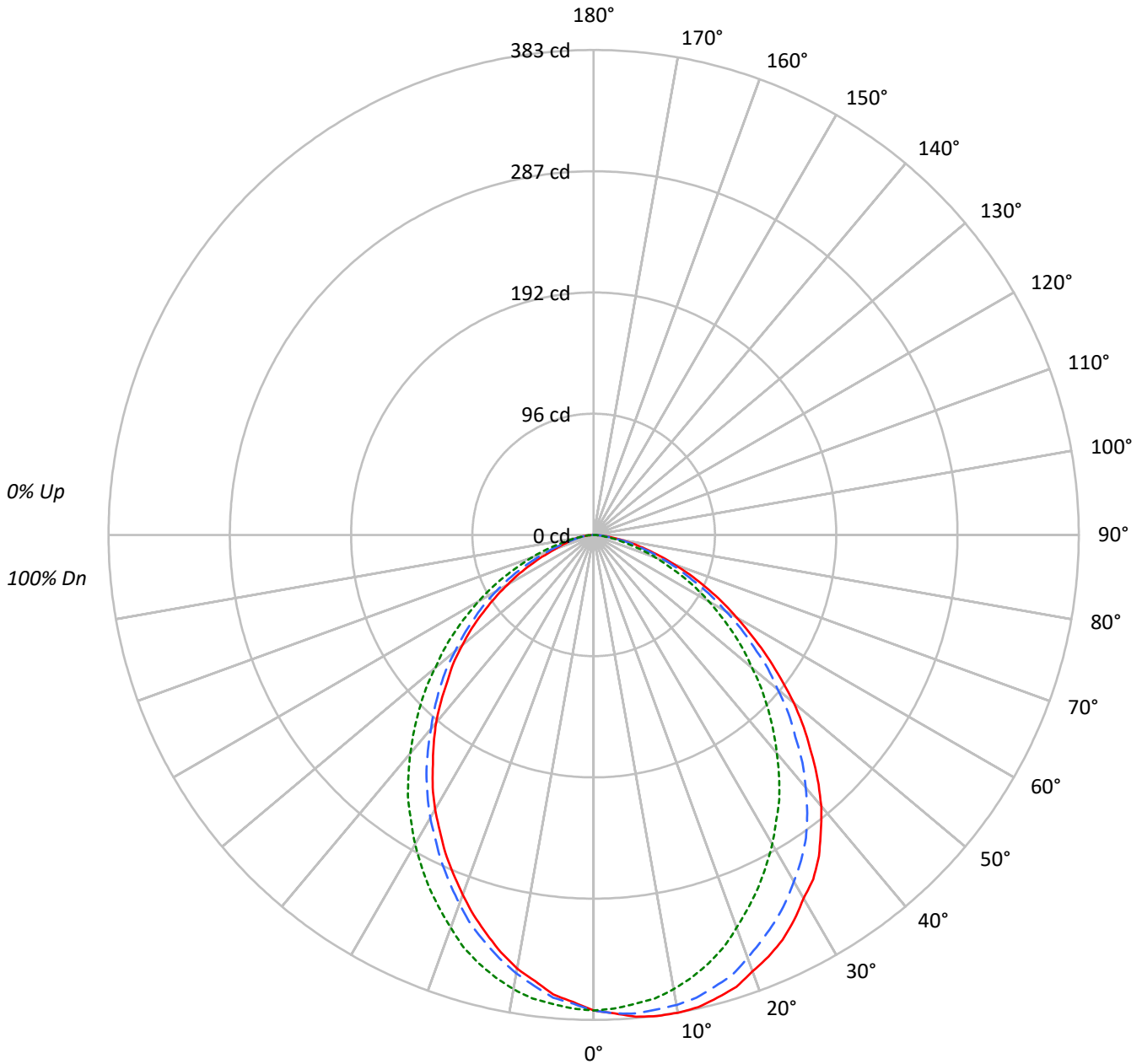
Input Watts (W): 13.4
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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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	110	106	102	99	107	104	100	97	99	97	94	96	93	91	92	90	89	87	
	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	52	46	72	60	52	46	58	51	46	56	50	45	55	49	45	43	
	7	68	55	47	41	67	55	47	41	53	46	41	52	45	41	50	45	40	38	
	8	64	51	43	37	62	50	42	37	49	42	37	48	41	37	46	41	36	35	
	9	60	47	39	34	58	46	39	34	45	38	33	44	38	33	43	37	33	31	
	10	56	43	36	31	55	43	36	31	42	35	30	41	35	30	40	34	30	29	

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°	135°	180°
0°	20590	20590	20590	20590	20590
5°	21021	20878	20460	20185	20047
10°	21331	20980	20279	19572	19361
15°	21464	20959	19881	18876	18519
20°	21399	20733	19258	18079	17636
25°	21346	20427	18588	17215	16755
30°	20978	20016	17851	16332	15851
35°	20739	19555	17099	15406	14810
40°	20002	18642	16109	14298	13847
45°	18824	17451	15102	13335	12652
50°	17586	16179	13919	12187	11539
55°	15961	14747	12817	11001	10150
60°	14286	13179	11512	9703	8596
65°	12634	11480	10014	8198	6888
70°	10739	9938	8319	6283	5065
75°	8832	8028	6164	4279	4279
80°	6787	5998	4388	3599	3978
85°	4780	3963	3208	3208	3208

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 0°
 Vertical Angle: 45°
 Luminance: 18824 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.3	4.3
10°-20°	98.8	11.9
20°-30°	143.0	17.3
30°-40°	162.5	19.6
40°-50°	153.4	18.5
50°-60°	121.0	14.6
60°-70°	75.7	9.1
70°-80°	32.7	3.9
80°-90°	6.7	0.8
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°	277.2	33.4
0°-40°	439.7	53.0
0°-60°	714.0	86.1
0°-90°	829.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	829.2	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	376	376	376	376	376	
5°	382	379	372	367	364	36
15°	378	369	350	333	326	107
25°	353	338	307	285	277	162
35°	310	292	256	230	221	193
45°	243	225	195	172	163	188
55°	167	154	134	115	106	149
65°	97	88	77	63	53	97
75°	42	38	29	20	20	45
85°	8	6	5	5	5	9
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°	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6
2.5°	378.2	378.2	379.4	379.4	378.2	378.2	378.2	378.2	378.2	378.2	378.2
5°	382.0	382.0	382.0	382.0	380.7	380.7	380.7	380.7	380.7	379.4	379.4
7.5°	383.2	383.2	383.2	383.2	382.0	382.0	380.7	380.7	380.7	379.4	378.2
10°	383.2	383.2	383.2	382.0	382.0	380.7	382.0	380.7	379.4	378.2	376.9
12.5°	382.0	380.7	380.7	380.7	379.4	379.4	379.4	378.2	376.9	375.6	374.4
15°	378.2	378.2	378.2	376.9	376.9	375.6	375.6	374.4	373.1	370.6	369.3
17.5°	374.4	374.4	373.1	373.1	371.8	370.6	370.6	369.3	368.1	365.5	364.3
20°	366.8	366.8	366.8	365.5	364.3	364.3	363.0	361.7	359.2	356.7	355.4
22.5°	360.5	359.2	359.2	357.9	356.7	356.7	355.4	352.9	351.6	349.1	346.6
25°	352.9	351.6	351.6	350.3	349.1	347.8	347.8	345.3	342.8	340.2	337.7
27.5°	342.8	342.8	341.5	340.2	339.0	339.0	337.7	336.4	332.6	330.1	327.6
30°	331.4	332.6	331.4	330.1	328.8	328.8	327.6	325.1	322.5	318.7	316.2
32.5°	322.5	322.5	321.3	320.0	317.5	317.5	317.5	313.7	311.1	308.6	304.8
35°	309.9	309.9	309.9	307.3	306.1	304.8	303.5	301.0	298.5	296.0	292.2
37.5°	294.7	296.0	294.7	293.4	292.2	290.9	289.6	287.1	283.3	280.8	277.0
40°	279.5	279.5	278.3	277.0	275.7	274.5	273.2	270.7	268.1	264.3	260.5
42.5°	261.8	261.8	260.5	259.3	258.0	256.8	256.8	254.2	250.4	247.9	244.1
45°	242.8	242.8	242.8	241.6	240.3	239.0	237.8	236.5	234.0	230.2	225.1
47.5°	225.1	225.1	225.1	222.6	222.6	220.1	218.8	216.3	215.0	211.2	208.7
50°	206.2	204.9	204.9	203.6	202.4	201.1	201.1	197.3	196.0	193.5	189.7
52.5°	185.9	185.9	185.9	184.7	183.4	182.1	182.1	179.6	177.1	174.5	173.3
55°	167.0	167.0	167.0	165.7	164.4	164.4	163.2	160.6	159.4	156.8	154.3
57.5°	148.0	149.2	148.0	146.7	146.7	145.5	145.5	144.2	141.7	139.1	137.9
60°	130.3	130.3	130.3	129.0	127.7	127.7	127.7	126.5	123.9	122.7	120.2
62.5°	113.8	113.8	112.6	112.6	111.3	111.3	110.0	108.8	107.5	106.2	105.0
65°	97.4	96.1	96.1	96.1	94.9	94.9	94.9	93.6	91.1	89.8	88.5
67.5°	82.2	82.2	80.9	80.9	79.7	79.7	79.7	78.4	77.2	75.9	74.6
70°	67.0	67.0	67.0	67.0	65.8	65.8	65.8	64.5	63.2	63.2	62.0
72.5°	54.4	54.4	54.4	54.4	53.1	53.1	53.1	51.9	50.6	49.3	49.3
75°	41.7	43.0	41.7	41.7	41.7	41.7	40.5	40.5	39.2	37.9	37.9
77.5°	31.6	31.6	31.6	31.6	30.4	30.4	30.4	30.4	29.1	27.8	27.8
80°	21.5	21.5	21.5	21.5	21.5	21.5	21.5	21.5	20.2	20.2	19.0
82.5°	12.6	13.9	13.9	13.9	12.6	12.6	12.6	12.6	12.6	12.6	11.4
85°	7.6	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3
87.5°	2.5	2.5	2.5	2.5	2.5	1.3	1.3	1.3	1.3	1.3	1.3
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°	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6
2.5°	376.9	376.9	376.9	376.9	375.6	375.6	375.6	374.4	374.4	374.4	374.4
5°	378.2	376.9	376.9	375.6	375.6	375.6	374.4	374.4	373.1	371.8	371.8
7.5°	376.9	376.9	375.6	374.4	374.4	373.1	371.8	370.6	369.3	369.3	366.8
10°	375.6	374.4	373.1	371.8	370.6	370.6	368.1	366.8	365.5	364.3	363.0
12.5°	371.8	370.6	369.3	366.8	366.8	365.5	363.0	361.7	359.2	357.9	355.4
15°	366.8	365.5	364.3	361.7	360.5	359.2	356.7	354.1	351.6	350.3	347.8
17.5°	361.7	359.2	356.7	354.1	352.9	351.6	349.1	346.6	344.0	341.5	339.0
20°	352.9	350.3	347.8	344.0	342.8	341.5	337.7	335.2	332.6	330.1	327.6
22.5°	344.0	341.5	337.7	335.2	333.9	331.4	328.8	325.1	322.5	318.7	316.2
25°	335.2	331.4	327.6	325.1	322.5	321.3	317.5	314.9	309.9	307.3	304.8
27.5°	323.8	321.3	317.5	313.7	311.1	308.6	306.1	302.3	298.5	294.7	292.2
30°	312.4	308.6	304.8	302.3	298.5	297.2	293.4	289.6	285.8	282.0	279.5
32.5°	301.0	297.2	293.4	289.6	287.1	284.6	280.8	277.0	271.9	268.1	265.6
35°	288.4	284.6	279.5	275.7	273.2	270.7	266.9	263.1	259.3	255.5	251.7
37.5°	273.2	268.1	265.6	261.8	258.0	255.5	251.7	246.6	244.1	240.3	236.5
40°	256.8	253.0	249.2	245.4	241.6	240.3	235.3	231.5	228.9	225.1	221.3
42.5°	240.3	236.5	231.5	227.7	225.1	223.9	220.1	216.3	212.5	210.0	206.2
45°	222.6	218.8	215.0	211.2	208.7	207.4	203.6	201.1	197.3	194.8	191.0
47.5°	204.9	201.1	198.6	194.8	192.2	191.0	188.5	184.7	180.9	179.6	177.1
50°	187.2	183.4	180.9	177.1	175.8	174.5	172.0	169.5	167.0	163.2	161.9
52.5°	169.5	165.7	163.2	160.6	160.6	158.1	155.6	154.3	151.8	149.2	146.7
55°	151.8	150.5	148.0	144.2	144.2	142.9	140.4	137.9	135.3	134.1	131.5
57.5°	134.1	132.8	130.3	129.0	127.7	126.5	125.2	122.7	121.4	118.9	117.6
60°	118.9	117.6	115.1	113.8	112.6	111.3	110.0	107.5	106.2	105.0	103.7
62.5°	102.4	101.2	99.9	98.7	97.4	96.1	96.1	93.6	92.3	91.1	89.8
65°	88.5	86.0	84.7	83.5	83.5	82.2	80.9	79.7	78.4	77.2	75.9
67.5°	73.4	72.1	72.1	69.6	69.6	68.3	67.0	67.0	64.5	63.2	62.0
70°	60.7	59.4	58.2	56.9	56.9	55.7	54.4	53.1	51.9	51.9	50.6
72.5°	48.1	46.8	46.8	45.5	44.3	44.3	43.0	41.7	40.5	40.5	39.2
75°	36.7	35.4	35.4	34.1	34.1	32.9	31.6	31.6	30.4	29.1	27.8
77.5°	26.6	26.6	25.3	25.3	24.0	24.0	22.8	22.8	21.5	20.2	20.2
80°	19.0	17.7	17.7	16.4	16.4	16.4	15.2	15.2	13.9	13.9	12.6
82.5°	11.4	11.4	10.1	10.1	10.1	10.1	8.9	8.9	8.9	7.6	7.6
85°	6.3	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	3.8
87.5°	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3
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°	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6
2.5°	373.1	373.1	371.8	373.1	371.8	371.8	371.8	371.8	370.6	370.6	370.6
5°	370.6	369.3	369.3	368.1	369.3	368.1	366.8	366.8	366.8	366.8	365.5
7.5°	365.5	365.5	364.3	363.0	363.0	361.7	360.5	360.5	359.2	359.2	357.9
10°	361.7	359.2	357.9	356.7	356.7	355.4	354.1	352.9	351.6	350.3	350.3
12.5°	352.9	351.6	350.3	349.1	349.1	346.6	345.3	344.0	342.8	341.5	340.2
15°	346.6	344.0	341.5	340.2	340.2	337.7	336.4	335.2	332.6	332.6	330.1
17.5°	336.4	333.9	331.4	330.1	328.8	327.6	326.3	323.8	322.5	320.0	320.0
20°	323.8	322.5	318.7	317.5	316.2	314.9	312.4	311.1	309.9	307.3	306.1
22.5°	313.7	309.9	307.3	306.1	306.1	302.3	301.0	298.5	297.2	296.0	293.4
25°	301.0	298.5	296.0	293.4	293.4	290.9	289.6	287.1	284.6	283.3	282.0
27.5°	288.4	285.8	282.0	280.8	279.5	278.3	275.7	273.2	270.7	269.4	268.1
30°	274.5	271.9	269.4	268.1	265.6	263.1	260.5	259.3	258.0	255.5	254.2
32.5°	261.8	258.0	255.5	253.0	253.0	249.2	247.9	245.4	244.1	242.8	240.3
35°	247.9	244.1	241.6	240.3	239.0	235.3	232.7	230.2	230.2	227.7	226.4
37.5°	232.7	228.9	227.7	225.1	223.9	221.3	218.8	217.5	215.0	212.5	212.5
40°	218.8	215.0	211.2	211.2	208.7	207.4	203.6	202.4	199.8	198.6	197.3
42.5°	203.6	199.8	197.3	196.0	194.8	192.2	189.7	187.2	185.9	184.7	183.4
45°	187.2	184.7	183.4	180.9	179.6	177.1	175.8	173.3	172.0	169.5	168.2
47.5°	173.3	170.7	168.2	167.0	165.7	163.2	161.9	159.4	158.1	155.6	154.3
50°	159.4	156.8	154.3	153.0	151.8	149.2	146.7	145.5	142.9	141.7	139.1
52.5°	144.2	141.7	139.1	139.1	137.9	135.3	134.1	131.5	129.0	126.5	125.2
55°	130.3	127.7	125.2	123.9	123.9	121.4	118.9	117.6	115.1	113.8	111.3
57.5°	115.1	112.6	111.3	110.0	110.0	107.5	106.2	103.7	102.4	99.9	98.7
60°	101.2	99.9	97.4	97.4	96.1	93.6	92.3	89.8	88.5	87.3	86.0
62.5°	87.3	86.0	83.5	83.5	82.2	80.9	79.7	77.2	75.9	73.4	72.1
65°	73.4	72.1	70.8	69.6	69.6	67.0	65.8	64.5	63.2	62.0	60.7
67.5°	60.7	59.4	58.2	58.2	56.9	55.7	53.1	51.9	50.6	49.3	48.1
70°	49.3	46.8	45.5	45.5	44.3	43.0	41.7	40.5	39.2	37.9	36.7
72.5°	37.9	35.4	35.4	34.1	32.9	31.6	31.6	30.4	29.1	29.1	26.6
75°	27.8	26.6	25.3	25.3	24.0	22.8	21.5	21.5	20.2	20.2	20.2
77.5°	19.0	17.7	17.7	16.4	16.4	16.4	15.2	15.2	15.2	15.2	16.4
80°	12.6	12.6	11.4	11.4	11.4	11.4	11.4	11.4	11.4	12.6	12.6
82.5°	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	7.6	8.9
85°	3.8	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
87.5°	1.3	1.3	2.5	1.3	2.5	1.3	2.5	2.5	2.5	2.5	2.5
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: P644156

CATALOG NUMBER: ML5615LSWW9FS1E - 692W WW - 1200LM - 2700K

CANDELA DISTRIBUTION (continued):

	150°	155°	157.5°	160°	165°	170°	175°	180°
0°	375.6	375.6	375.6	375.6	375.6	375.6	375.6	375.6
2.5°	369.3	370.6	370.6	369.3	370.6	369.3	369.3	369.3
5°	365.5	364.3	364.3	364.3	363.0	364.3	364.3	364.3
7.5°	357.9	357.9	356.7	356.7	355.4	355.4	356.7	355.4
10°	349.1	347.8	349.1	347.8	347.8	347.8	346.6	347.8
12.5°	340.2	339.0	339.0	337.7	337.7	337.7	337.7	337.7
15°	330.1	328.8	328.8	327.6	327.6	326.3	327.6	326.3
17.5°	318.7	318.7	316.2	316.2	316.2	316.2	316.2	314.9
20°	304.8	304.8	303.5	304.8	302.3	302.3	302.3	302.3
22.5°	293.4	292.2	290.9	290.9	290.9	289.6	289.6	289.6
25°	279.5	279.5	278.3	278.3	277.0	277.0	277.0	277.0
27.5°	266.9	265.6	265.6	265.6	264.3	263.1	263.1	263.1
30°	253.0	253.0	251.7	251.7	250.4	250.4	250.4	250.4
32.5°	239.0	239.0	237.8	236.5	236.5	236.5	235.3	236.5
35°	225.1	223.9	223.9	222.6	222.6	222.6	221.3	221.3
37.5°	211.2	210.0	208.7	210.0	208.7	207.4	207.4	207.4
40°	196.0	194.8	194.8	193.5	193.5	193.5	192.2	193.5
42.5°	182.1	182.1	180.9	179.6	179.6	179.6	178.3	178.3
45°	168.2	165.7	167.0	165.7	165.7	164.4	164.4	163.2
47.5°	153.0	151.8	151.8	151.8	150.5	150.5	150.5	150.5
50°	137.9	136.6	137.9	136.6	136.6	135.3	135.3	135.3
52.5°	123.9	122.7	122.7	122.7	122.7	121.4	121.4	121.4
55°	110.0	108.8	108.8	108.8	107.5	107.5	106.2	106.2
57.5°	97.4	96.1	94.9	93.6	93.6	93.6	92.3	92.3
60°	83.5	82.2	80.9	80.9	79.7	79.7	79.7	78.4
62.5°	70.8	69.6	68.3	68.3	67.0	65.8	65.8	65.8
65°	58.2	56.9	56.9	55.7	54.4	54.4	53.1	53.1
67.5°	46.8	45.5	45.5	44.3	43.0	41.7	41.7	41.7
70°	36.7	35.4	34.1	34.1	34.1	32.9	31.6	31.6
72.5°	26.6	25.3	25.3	25.3	25.3	25.3	25.3	25.3
75°	20.2	20.2	20.2	20.2	20.2	20.2	20.2	20.2
77.5°	16.4	16.4	16.4	16.4	16.4	16.4	16.4	16.4
80°	12.6	12.6	12.6	12.6	12.6	12.6	12.6	12.6
82.5°	8.9	8.9	8.9	8.9	8.9	8.9	8.9	8.9
85°	5.1	5.1	5.1	5.1	5.1	5.1	5.1	5.1
87.5°	2.5	2.5	2.5	2.5	2.5	2.5	2.5	1.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Signify Classified - Internal
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Peachtree City, GA 30269

Scaled Data Report



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— 0°-180° - - 45°-225° - - - 90°-270°

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(END OF REPORT)