

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: HALO

Report Number: P256763

Luminaire Tested: **HLB6099FS1EMW-4000K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P256763
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A1806645B001)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HLB6099FS1EMW-4000K
Description: 6 IN HALO BLADE (900 LUMEN) - 4000K
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1094.9 lumens
Efficiency: N/A
Efficacy: 68.4 lumens/watt
Spacing Criteria (0/90/45): 1.33 / 1.33 / 1.41
Luminous Opening: Circular (Dia: 0.5' x H: 0')
CIE Type: Direct

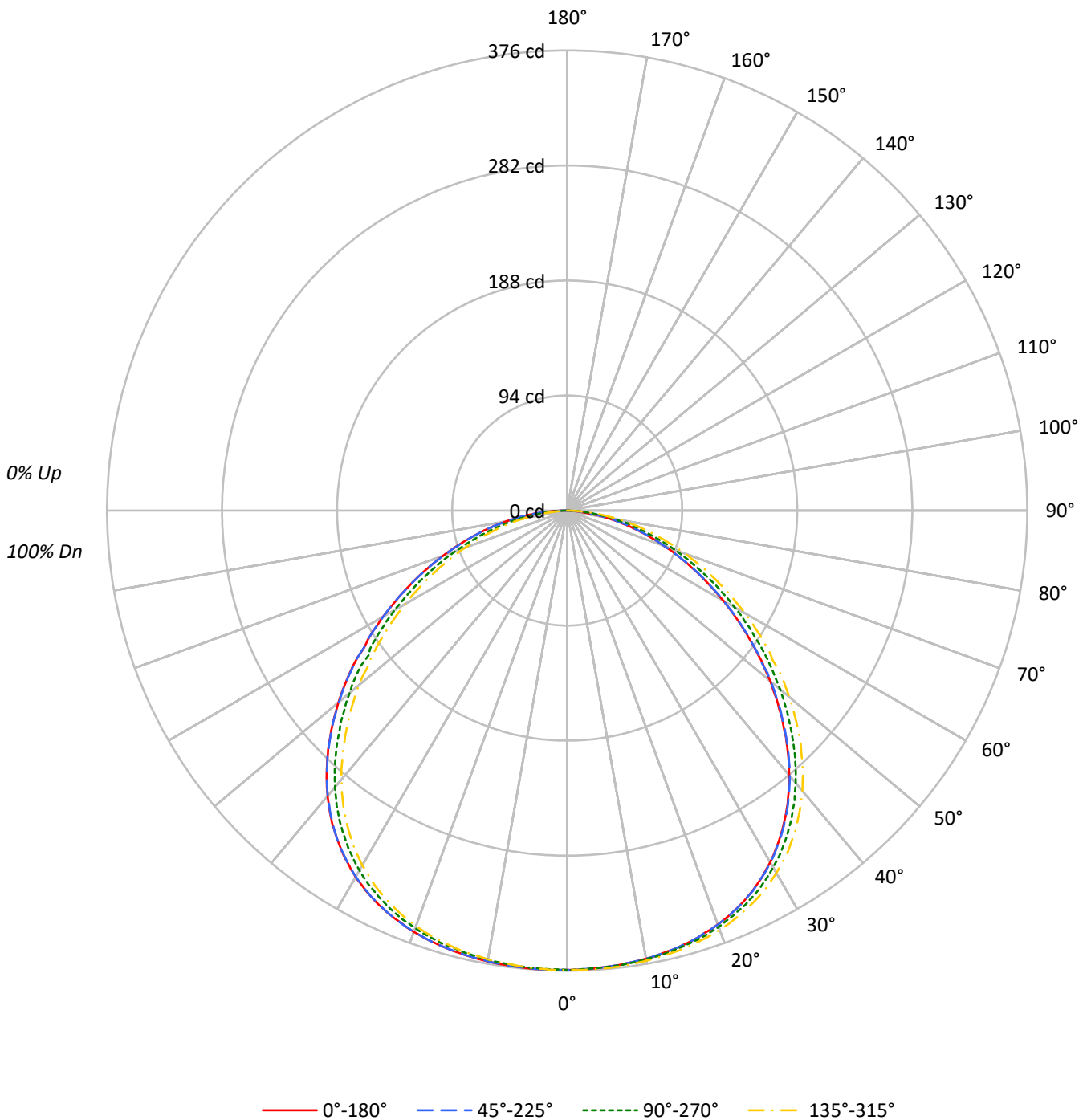
Input Watts (W): 16
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P256763

CATALOG NUMBER: HLB6099FS1EMW-4000K

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	0
RCR																		
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	109	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	84	79	97	89	83	78	86	80	76	82	78	74	79	76	72	70
3	90	80	72	65	88	78	71	65	75	69	64	73	67	63	70	65	61	59
4	83	71	62	55	81	70	61	55	67	60	54	65	59	54	63	57	53	51
5	76	63	54	48	74	62	54	47	60	53	47	58	52	46	56	51	46	44
6	70	57	48	42	68	56	48	41	54	47	41	53	46	41	51	45	40	38
7	65	52	43	37	63	51	43	37	49	42	36	48	41	36	47	40	36	34
8	61	47	39	33	59	46	38	33	45	38	32	44	37	32	43	37	32	30
9	57	43	35	29	55	43	35	29	41	34	29	40	34	29	39	33	29	27
10	53	40	32	27	52	39	32	27	38	31	27	37	31	26	37	31	26	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	20579	20579	20579	20579
5°	20592	20598	20653	20614
10°	20697	20719	20825	20730
15°	20851	20903	21073	20937
20°	21002	21124	21369	21177
25°	21080	21273	21654	21388
30°	21003	21307	21883	21484
35°	20719	21161	21944	21409
40°	20195	20782	21791	21118
45°	19382	20149	21405	20576
50°	18473	19360	20810	19778
55°	17337	18437	19985	18809
60°	16161	17312	19088	17838
65°	14891	16150	18147	16746
70°	13480	14970	17327	15612
75°	11967	13662	16521	14276
80°	9723	11996	15848	12975
85°	4655	8932	15599	10693



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.7	3.3
10°-20°	104.4	9.5
20°-30°	162.7	14.9
30°-40°	198.9	18.2
40°-50°	202.6	18.5
50°-60°	174.3	15.9
60°-70°	126.1	11.5
70°-80°	71.0	6.5
80°-90°	19.2	1.7
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°	302.8	27.7
0°-40°	501.7	45.8
0°-60°	878.6	80.2
0°-90°	1094.9	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1094.9	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	375	375	375	375	375	
5°	374	374	375	375	374	36
15°	367	368	371	369	367	104
25°	348	352	358	354	348	160
35°	310	316	328	320	310	193
45°	250	260	276	265	250	193
55°	181	193	209	197	181	162
65°	115	124	140	129	115	114
75°	56	64	78	67	56	60
85°	7	14	25	17	7	11
90°	0	0	4	0	0	



TEST NUMBER: P256763

CATALOG NUMBER: HLB6099FS1EMW-4000K

CANDELA DISTRIBUTION (FULL):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	375.4	375.4	375.4	375.4	375.4	375.4	375.4	375.4	375.4	375.4	375.4
1°	375.3	375.4	375.0	375.2	375.3	375.6	375.5	375.5	375.3	375.1	375.4
2°	375.1	375.1	375.0	375.0	375.5	375.6	375.5	375.6	375.4	375.1	375.8
3°	375.0	374.9	374.8	374.6	375.1	375.6	375.5	375.5	375.3	374.9	375.3
4°	374.7	374.6	374.6	374.6	375.4	375.5	375.5	375.5	375.2	374.9	375.2
5°	374.2	374.3	374.2	374.3	375.1	375.4	375.3	375.4	375.2	374.6	375.2
6°	373.9	373.9	373.9	374.3	375.1	375.3	375.2	375.3	375.0	374.4	374.4
7°	373.5	373.4	373.3	373.9	374.4	375.1	375.0	375.0	374.9	373.9	374.1
8°	372.9	372.9	372.9	373.3	374.2	374.8	374.7	374.9	374.5	373.5	373.7
9°	372.5	372.4	372.3	373.1	373.2	374.5	374.5	374.6	374.2	373.3	373.3
10°	371.8	371.9	371.7	372.2	372.9	374.1	374.1	374.2	373.6	372.4	372.8
11°	371.2	371.1	371.1	371.7	372.5	373.4	373.6	373.7	373.2	372.1	371.7
12°	370.2	370.3	370.1	371.1	371.5	373.1	373.1	373.3	372.7	371.5	371.0
13°	369.3	369.4	369.4	370.4	371.0	372.4	372.6	372.8	372.1	370.8	370.6
14°	368.5	368.5	368.4	369.3	370.4	371.9	371.9	372.1	371.6	369.8	370.1
15°	367.4	367.4	367.3	368.3	369.6	371.1	371.3	371.5	370.8	368.9	368.7
16°	366.2	366.2	366.2	367.4	368.5	370.1	370.5	370.7	370.0	368.4	367.7
17°	364.8	364.9	364.8	366.3	367.2	369.3	369.5	369.9	369.1	367.1	366.5
18°	363.0	363.0	363.0	365.0	366.1	368.1	368.7	369.0	368.2	365.8	365.4
19°	361.8	361.6	361.7	363.5	364.9	367.1	367.5	367.8	367.0	364.7	364.0
20°	360.0	360.1	360.0	362.1	363.1	365.9	366.3	366.7	365.8	363.0	362.6
21°	358.0	357.8	358.0	360.0	361.7	364.5	365.0	365.2	364.4	361.4	360.3
22°	355.9	355.9	355.9	358.2	360.1	362.8	363.1	363.9	362.9	360.0	359.0
23°	353.6	353.6	353.7	356.1	357.8	361.1	361.7	362.1	361.3	357.9	356.6
24°	351.2	351.3	351.3	354.2	355.7	359.4	360.1	360.5	359.4	355.9	354.2
25°	348.5	348.3	348.7	351.7	353.7	357.1	358.0	358.3	357.4	353.6	351.8
26°	345.7	345.9	345.9	349.2	351.4	355.1	355.9	356.3	355.3	351.1	349.4
27°	342.3	342.5	342.7	346.5	348.6	352.7	353.6	354.1	353.0	348.3	346.6
28°	339.4	339.1	339.2	343.4	345.8	350.3	351.1	351.6	350.4	346.0	343.6
29°	335.4	335.6	336.1	340.1	342.4	347.4	348.4	348.9	347.7	342.7	340.2
30°	331.8	331.8	332.1	336.6	339.2	344.5	345.7	346.2	344.8	339.4	337.1
31°	327.8	327.9	328.6	333.2	336.0	341.3	342.4	342.9	341.3	336.0	333.3
32°	323.4	323.7	323.9	329.4	332.3	337.9	338.9	339.7	338.3	332.3	329.7
33°	319.1	319.3	320.0	325.2	328.7	334.5	335.6	336.1	334.5	328.5	325.3
34°	314.5	314.7	315.2	321.0	323.9	330.6	331.6	332.5	331.0	324.1	321.1
35°	309.6	309.8	310.2	316.2	320.1	326.6	327.9	328.5	326.7	319.9	316.6
36°	304.6	304.9	305.3	311.8	315.2	322.4	323.4	324.3	322.7	315.6	312.0
37°	299.4	299.7	300.1	306.4	310.1	317.8	319.4	319.6	317.9	310.6	307.0
38°	293.7	294.2	294.6	301.8	305.2	313.3	314.4	315.4	313.3	305.9	302.0
39°	288.1	288.5	289.1	295.8	300.4	307.9	309.5	310.0	308.4	300.4	296.5
40°	282.2	282.7	283.2	290.4	294.7	303.3	304.5	305.5	303.3	295.1	290.3
41°	276.3	276.6	277.2	284.8	289.0	297.6	299.3	299.8	298.0	289.5	285.3
42°	270.0	269.9	271.1	278.9	283.5	292.5	293.7	294.7	292.4	283.8	278.7
43°	263.7	264.1	264.7	272.8	277.0	286.2	288.1	288.5	286.8	277.8	273.0
44°	257.2	257.1	258.3	266.4	270.2	280.8	282.1	283.3	280.7	271.6	266.2



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CATALOG NUMBER: HLB6099FS1EMW-4000K

CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	250.0	251.1	251.7	259.9	265.6	274.3	276.1	276.7	274.8	265.4	259.9
46°	244.0	243.9	244.6	253.6	258.0	268.7	269.9	270.5	268.7	258.4	253.5
47°	236.7	238.0	238.5	247.0	251.7	261.8	263.7	264.1	262.3	252.8	246.7
48°	230.5	230.4	231.1	240.5	245.2	255.4	257.3	257.8	255.8	245.2	240.2
49°	223.0	223.6	224.9	233.7	238.8	248.7	250.5	251.1	249.1	239.4	233.5
50°	216.6	216.9	217.3	227.0	231.9	242.1	244.0	244.6	242.5	231.9	226.8
51°	209.1	209.9	211.1	220.1	224.9	235.4	237.3	237.8	235.7	226.0	219.8
52°	202.9	203.1	200.0	213.3	218.2	228.7	230.4	231.1	229.0	218.5	212.9
53°	195.3	196.2	195.5	206.6	211.1	221.8	223.6	224.2	222.1	211.5	205.9
54°	188.3	189.1	188.5	199.8	200.1	214.9	216.6	217.3	214.6	199.9	199.0
55°	181.4	182.4	181.6	192.9	196.3	208.1	209.1	210.5	207.6	196.8	192.2
56°	174.4	175.3	174.6	185.3	189.2	201.2	199.9	200.0	200.7	189.8	184.6
57°	167.5	168.4	167.9	179.0	182.1	194.5	194.3	195.6	194.4	183.1	178.3
58°	160.9	161.7	161.1	171.5	175.3	187.5	187.9	188.7	186.8	176.2	170.7
59°	154.0	154.7	154.2	165.5	169.0	180.7	180.4	181.8	180.0	169.5	164.7
60°	147.4	147.5	147.7	157.9	162.2	173.7	174.1	174.3	173.0	162.7	157.2
61°	140.6	141.3	141.0	151.6	154.7	166.8	166.7	168.0	166.2	155.7	151.1
62°	134.0	134.0	134.4	144.2	148.2	160.0	159.9	160.6	159.3	149.0	143.8
63°	127.5	128.0	127.9	138.3	142.0	153.3	153.2	154.4	152.6	142.3	137.3
64°	121.1	121.0	121.5	131.1	135.1	145.9	146.6	147.0	145.8	135.7	130.8
65°	114.8	115.3	115.2	124.5	128.9	139.8	139.9	140.9	139.1	129.1	124.3
66°	108.5	108.2	109.0	118.0	122.5	132.6	133.4	133.7	132.5	122.6	118.0
67°	102.4	102.2	102.9	111.7	116.2	126.1	126.9	127.7	125.9	116.3	111.6
68°	96.4	96.0	96.7	105.6	109.9	119.7	120.6	120.7	119.6	109.9	105.4
69°	90.5	90.2	90.4	99.5	103.4	113.2	114.2	114.9	113.2	103.7	99.5
70°	84.1	84.2	85.1	93.4	97.3	106.9	108.1	107.9	107.0	97.4	93.2
71°	78.8	78.5	78.8	87.5	91.3	100.8	101.9	101.8	101.0	90.8	87.4
72°	72.7	72.9	73.8	81.5	85.4	94.6	95.8	95.6	94.4	85.4	81.3
73°	67.1	67.6	67.8	75.7	79.4	88.6	89.7	89.7	89.0	78.9	75.6
74°	61.7	62.3	63.0	69.6	73.6	82.6	83.8	83.8	82.6	73.6	69.9
75°	56.5	57.1	57.4	64.5	67.8	76.7	78.0	78.1	77.4	67.4	64.2
76°	51.3	52.0	52.6	59.1	62.2	71.1	72.4	72.5	71.4	62.0	58.7
77°	45.5	47.9	47.3	53.7	56.8	65.5	66.8	66.9	66.3	56.7	53.2
78°	40.6	41.5	42.4	51.0	51.3	60.1	61.4	61.5	60.4	51.3	50.8
79°	35.6	36.6	37.6	43.0	45.9	54.7	55.5	56.2	55.2	46.2	41.9
80°	30.8	32.0	33.0	38.0	40.9	50.7	50.2	50.9	50.9	41.1	36.7
81°	26.2	27.1	28.7	32.8	36.0	42.8	45.3	46.0	44.3	36.3	31.4
82°	21.1	22.6	24.1	28.2	30.8	37.3	39.9	40.8	39.4	31.2	26.6
83°	16.6	18.3	19.5	23.6	25.8	32.1	34.7	35.6	34.2	26.3	21.7
84°	11.8	13.8	15.4	18.6	21.0	26.7	29.4	30.9	29.5	21.6	16.7
85°	7.4	9.7	11.4	14.2	16.4	21.7	24.8	26.3	24.9	17.0	11.9
86°	3.8	5.8	7.4	10.2	11.5	16.9	19.8	21.3	20.1	12.5	8.0
87°	1.1	2.1	3.4	6.9	8.1	12.4	15.2	17.1	15.7	8.8	4.5
88°	0.0	0.0	0.0	3.6	4.6	8.8	11.2	12.4	11.5	4.9	2.1
89°	0.0	0.0	0.0	0.3	2.0	5.0	6.9	8.1	7.2	2.0	0.1



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CANDELA DISTRIBUTION (continued):

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
90°	0.0	0.0	0.0	0.0	0.3	2.1	3.8	4.7	3.1	0.3	0.0



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CANDELA DISTRIBUTION (continued):

	330°	360°
0°	375.4	375.4
1°	375.4	375.3
2°	375.3	375.1
3°	374.9	375.0
4°	374.8	374.7
5°	374.6	374.2
6°	374.1	373.9
7°	373.6	373.5
8°	373.1	372.9
9°	372.5	372.5
10°	372.0	371.8
11°	371.2	371.2
12°	370.6	370.2
13°	369.7	369.3
14°	368.7	368.5
15°	367.5	367.4
16°	366.3	366.2
17°	364.9	364.8
18°	363.3	363.0
19°	362.0	361.8
20°	360.0	360.0
21°	358.2	358.0
22°	355.9	355.9
23°	353.8	353.6
24°	351.3	351.2
25°	348.5	348.5
26°	345.9	345.7
27°	342.9	342.3
28°	339.3	339.4
29°	335.8	335.4
30°	332.3	331.8
31°	328.3	327.8
32°	324.0	323.4
33°	319.9	319.1
34°	315.1	314.5
35°	310.3	309.6
36°	304.9	304.6
37°	300.1	299.4
38°	294.2	293.7
39°	289.0	288.1
40°	282.7	282.2
41°	277.3	276.3
42°	270.6	270.0
43°	264.6	263.7
44°	257.8	257.2



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CANDELA DISTRIBUTION (continued):

	330°	360°
45°	251.2	250.0
46°	244.5	244.0
47°	237.9	236.7
48°	231.2	230.5
49°	224.4	223.0
50°	217.6	216.6
51°	210.7	209.1
52°	199.7	202.9
53°	195.9	195.3
54°	189.0	188.3
55°	182.1	181.4
56°	175.2	174.4
57°	168.4	167.5
58°	161.7	160.9
59°	154.9	154.0
60°	148.2	147.4
61°	140.9	140.6
62°	134.8	134.0
63°	127.7	127.5
64°	121.8	121.1
65°	114.9	114.8
66°	109.2	108.5
67°	102.5	102.4
68°	96.3	96.4
69°	90.4	90.5
70°	84.5	84.1
71°	78.7	78.8
72°	73.1	72.7
73°	67.5	67.1
74°	62.2	61.7
75°	56.9	56.5
76°	51.6	51.3
77°	46.4	45.5
78°	41.3	40.6
79°	36.2	35.6
80°	31.2	30.8
81°	26.2	26.2
82°	21.6	21.1
83°	16.9	16.6
84°	12.6	11.8
85°	8.2	7.4
86°	4.0	3.8
87°	1.4	1.1
88°	0.0	0.0
89°	0.0	0.0



TEST NUMBER: P256763

CATALOG NUMBER: HLB6099FS1EMW-4000K

CANDELA DISTRIBUTION (continued):

	330°	360°
90°	0.0	0.0

(END OF REPORT)