

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: P256761

Luminaire Tested: **HLB6099FS1EMW-3000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P256761  
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-3000K  
Description: 6 IN HALO BLADE (900 LUMEN) - 3000K  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 1061.0 lumens  
Efficiency: N/A  
Efficacy: 66.3 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

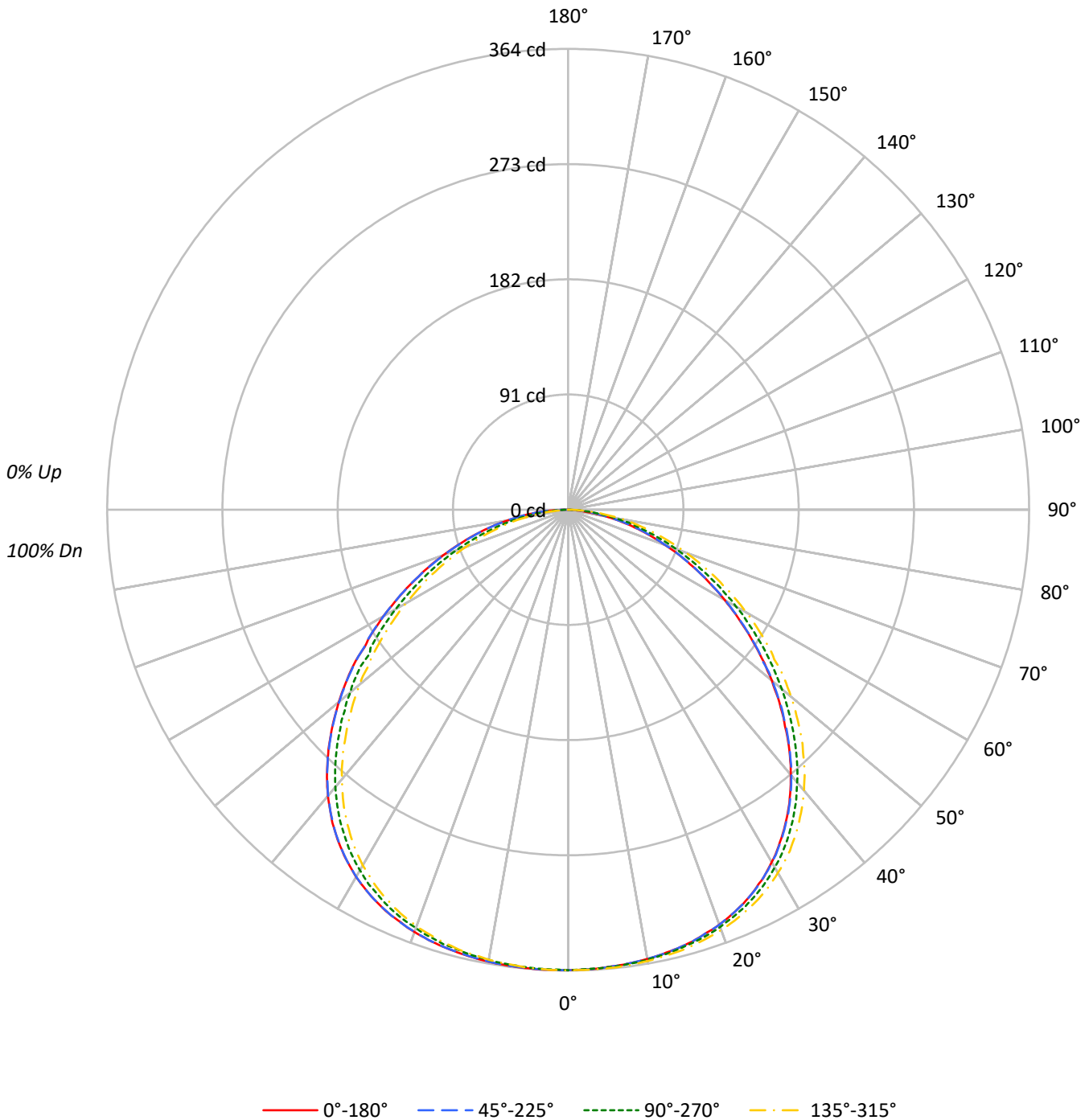
Input Watts (W): 16  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

### Luminous Intensity Polar Plot





TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**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°	19944	19944	19944	19944
5°	19954	19959	20009	19976
10°	20056	20079	20179	20090
15°	20204	20256	20420	20290
20°	20348	20471	20710	20518
25°	20427	20614	20989	20729
30°	20351	20649	21206	20820
35°	20077	20505	21268	20746
40°	19572	20138	21118	20467
45°	18785	19529	20746	19940
50°	17901	18763	20161	19164
55°	16802	17863	19364	18226
60°	15657	16775	18496	17279
65°	14424	15657	17589	16227
70°	13047	14506	16798	15131
75°	11586	13238	16013	13852
80°	9408	11649	15374	12565
85°	4529	8680	15096	10378



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	34.6	3.3
10°-20°	101.1	9.5
20°-30°	157.6	14.9
30°-40°	192.8	18.2
40°-50°	196.3	18.5
50°-60°	168.9	15.9
60°-70°	122.2	11.5
70°-80°	68.8	6.5
80°-90°	18.6	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°	293.4	27.7
0°-40°	486.2	45.8
0°-60°	851.4	80.2
0°-90°	1061.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1061.0	100.0

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	364	364	364	364	364	
5°	363	363	364	363	363	35
15°	356	357	360	358	356	101
25°	338	341	347	343	338	156
35°	300	306	318	310	300	187
45°	242	252	268	257	242	187
55°	176	187	203	191	176	157
65°	111	121	136	125	111	110
75°	55	62	76	65	55	58
85°	7	14	24	16	7	11
90°	0	0	4	0	0	



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**CANDELA DISTRIBUTION (FULL):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
0°	363.8	363.8	363.8	363.8	363.8	363.8	363.8	363.8	363.8	363.8	363.8
1°	363.6	363.7	363.3	363.5	363.6	363.9	363.8	363.8	363.6	363.4	363.7
2°	363.4	363.4	363.3	363.3	363.8	363.9	363.8	363.9	363.7	363.4	364.1
3°	363.3	363.3	363.2	363.0	363.4	363.9	363.8	363.8	363.6	363.3	363.6
4°	363.1	363.0	363.0	363.0	363.7	363.8	363.8	363.8	363.5	363.3	363.5
5°	362.6	362.7	362.6	362.7	363.4	363.7	363.6	363.7	363.5	363.0	363.5
6°	362.3	362.3	362.3	362.7	363.4	363.6	363.5	363.6	363.3	362.8	362.8
7°	362.0	361.9	361.8	362.3	362.8	363.4	363.3	363.3	363.3	362.3	362.5
8°	361.4	361.4	361.4	361.8	362.6	363.2	363.1	363.3	362.9	362.0	362.2
9°	361.0	360.9	360.8	361.6	361.7	362.9	362.9	363.0	362.6	361.8	361.8
10°	360.3	360.4	360.2	360.7	361.4	362.5	362.5	362.6	362.1	360.9	361.3
11°	359.7	359.6	359.6	360.2	361.0	361.9	362.1	362.2	361.7	360.6	360.2
12°	358.8	358.9	358.7	359.6	360.0	361.6	361.6	361.8	361.2	360.0	359.5
13°	357.9	358.0	358.0	359.0	359.5	360.9	361.1	361.3	360.6	359.3	359.2
14°	357.1	357.1	357.0	357.9	359.0	360.4	360.4	360.6	360.1	358.4	358.7
15°	356.0	356.0	355.9	356.9	358.2	359.6	359.8	360.0	359.3	357.5	357.3
16°	354.9	354.9	354.9	356.0	357.1	358.7	359.1	359.3	358.6	357.0	356.3
17°	353.5	353.6	353.5	355.0	355.8	357.9	358.1	358.5	357.7	355.7	355.2
18°	351.7	351.7	351.7	353.7	354.8	356.7	357.3	357.6	356.8	354.5	354.1
19°	350.6	350.4	350.5	352.2	353.6	355.7	356.1	356.4	355.6	353.4	352.7
20°	348.8	348.9	348.8	350.9	351.8	354.6	355.0	355.3	354.5	351.7	351.4
21°	347.0	346.8	347.0	348.8	350.5	353.2	353.7	353.9	353.1	350.2	349.1
22°	344.9	344.9	344.9	347.2	348.9	351.5	351.8	352.6	351.6	348.8	347.8
23°	342.7	342.7	342.8	345.1	346.8	349.9	350.5	350.9	350.1	346.9	345.6
24°	340.3	340.4	340.4	343.3	344.7	348.2	348.9	349.3	348.2	344.9	343.3
25°	337.7	337.5	337.9	340.8	342.8	346.1	347.0	347.3	346.4	342.7	340.9
26°	335.0	335.2	335.2	338.4	340.5	344.1	344.9	345.3	344.3	340.2	338.6
27°	331.7	331.9	332.1	335.7	337.8	341.8	342.7	343.2	342.1	337.5	335.8
28°	328.9	328.6	328.7	332.7	335.1	339.4	340.2	340.7	339.5	335.3	332.9
29°	325.0	325.2	325.7	329.6	331.8	336.6	337.6	338.1	336.9	332.1	329.7
30°	321.5	321.5	321.8	326.2	328.7	333.8	335.0	335.5	334.1	328.9	326.7
31°	317.7	317.8	318.4	322.9	325.6	330.8	331.8	332.3	330.8	325.6	323.0
32°	313.4	313.7	313.9	319.2	322.0	327.5	328.4	329.2	327.8	322.0	319.5
33°	309.2	309.4	310.1	315.2	318.5	324.1	325.2	325.7	324.1	318.3	315.3
34°	304.7	304.9	305.4	311.1	313.9	320.3	321.3	322.2	320.7	314.1	311.2
35°	300.0	300.2	300.6	306.4	310.2	316.5	317.8	318.3	316.6	310.0	306.8
36°	295.2	295.5	295.8	302.2	305.4	312.4	313.4	314.3	312.7	305.8	302.4
37°	290.1	290.4	290.8	296.9	300.5	307.9	309.5	309.7	308.0	301.0	297.5
38°	284.6	285.1	285.5	292.4	295.8	303.6	304.6	305.6	303.6	296.4	292.6
39°	279.2	279.6	280.1	286.7	291.1	298.4	299.9	300.4	298.9	291.1	287.4
40°	273.5	273.9	274.4	281.4	285.6	293.9	295.1	296.0	293.9	286.0	281.3
41°	267.8	268.0	268.6	275.9	280.0	288.3	290.0	290.5	288.7	280.5	276.4
42°	261.6	261.5	262.7	270.3	274.7	283.5	284.6	285.6	283.4	275.0	270.1
43°	255.6	256.0	256.5	264.3	268.4	277.3	279.2	279.6	277.9	269.2	264.5
44°	249.2	249.1	250.3	258.2	261.8	272.1	273.4	274.5	272.0	263.2	258.0



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	30°	60°	90°	120°	150°	180°	210°	240°	270°	300°
45°	242.3	243.4	244.0	251.9	257.4	265.8	267.6	268.1	266.3	257.2	251.9
46°	236.4	236.3	237.0	245.7	250.0	260.3	261.5	262.1	260.3	250.4	245.6
47°	229.3	230.6	231.1	239.4	244.0	253.7	255.6	256.0	254.2	244.9	239.1
48°	223.4	223.3	224.0	233.0	237.6	247.5	249.3	249.8	247.9	237.6	232.7
49°	216.1	216.6	217.9	226.5	231.4	241.0	242.8	243.4	241.4	232.0	226.3
50°	209.9	210.2	210.6	220.0	224.7	234.6	236.4	237.0	235.0	224.7	219.8
51°	202.6	203.4	204.5	213.3	217.9	228.2	229.9	230.4	228.4	219.0	213.0
52°	196.6	196.8	193.8	206.7	211.5	221.6	223.3	224.0	221.9	211.8	206.3
53°	189.2	190.1	189.4	200.2	204.5	214.9	216.6	217.2	215.2	204.9	199.6
54°	182.5	183.3	182.7	193.6	193.9	208.3	209.9	210.6	208.0	193.7	192.8
55°	175.8	176.7	176.0	186.9	190.2	201.6	202.6	204.0	201.1	190.7	186.2
56°	169.0	169.9	169.2	179.6	183.4	195.0	193.7	193.8	194.5	184.0	178.9
57°	162.3	163.2	162.7	173.4	176.5	188.5	188.3	189.5	188.4	177.4	172.7
58°	155.9	156.7	156.1	166.2	169.9	181.7	182.1	182.9	181.0	170.7	165.4
59°	149.2	149.9	149.4	160.4	163.8	175.1	174.8	176.2	174.4	164.3	159.6
60°	142.8	142.9	143.1	153.0	157.1	168.4	168.7	168.9	167.7	157.6	152.4
61°	136.3	137.0	136.7	146.9	149.9	161.6	161.5	162.8	161.0	150.9	146.4
62°	129.8	129.8	130.2	139.8	143.6	155.1	155.0	155.6	154.4	144.4	139.4
63°	123.6	124.1	124.0	134.0	137.6	148.6	148.5	149.6	147.9	137.9	133.0
64°	117.3	117.2	117.7	127.0	130.9	141.3	142.0	142.4	141.2	131.5	126.7
65°	111.2	111.7	111.6	120.7	125.0	135.5	135.6	136.6	134.8	125.1	120.5
66°	105.2	104.9	105.6	114.3	118.7	128.5	129.2	129.5	128.4	118.8	114.3
67°	99.2	99.0	99.7	108.3	112.6	122.2	123.0	123.8	122.0	112.7	108.2
68°	93.4	93.1	93.7	102.3	106.5	116.0	116.9	117.0	115.9	106.5	102.1
69°	87.7	87.4	87.6	96.4	100.2	109.7	110.7	111.3	109.7	100.5	96.4
70°	81.4	81.5	82.4	90.5	94.3	103.6	104.8	104.6	103.7	94.4	90.3
71°	76.4	76.1	76.4	84.8	88.5	97.6	98.7	98.6	97.8	88.0	84.7
72°	70.4	70.6	71.5	79.0	82.7	91.7	92.9	92.7	91.5	82.7	78.8
73°	65.1	65.5	65.7	73.4	77.0	85.8	86.9	86.9	86.2	76.5	73.3
74°	59.8	60.4	61.1	67.4	71.3	80.1	81.3	81.3	80.1	71.3	67.7
75°	54.7	55.3	55.6	62.5	65.7	74.3	75.6	75.7	75.0	65.4	62.2
76°	49.7	50.4	51.0	57.3	60.3	68.9	70.1	70.2	69.2	60.1	56.9
77°	44.1	46.4	45.8	52.0	55.0	63.5	64.8	64.9	64.3	54.9	51.6
78°	39.3	40.2	41.1	49.5	49.7	58.2	59.5	59.6	58.5	49.7	49.3
79°	34.5	35.5	36.5	41.7	44.5	53.0	53.7	54.4	53.5	44.8	40.6
80°	29.8	31.0	32.0	36.9	39.6	49.2	48.7	49.4	49.4	39.8	35.6
81°	25.4	26.2	27.8	31.8	34.9	41.5	43.9	44.6	42.9	35.2	30.4
82°	20.5	21.9	23.3	27.3	29.8	36.2	38.6	39.5	38.1	30.2	25.8
83°	16.1	17.8	18.9	22.8	25.0	31.1	33.7	34.5	33.2	25.5	21.1
84°	11.4	13.4	14.9	18.0	20.4	25.8	28.5	29.9	28.6	21.0	16.2
85°	7.2	9.4	11.0	13.8	15.9	21.1	24.0	25.5	24.1	16.5	11.5
86°	3.7	5.7	7.2	9.9	11.1	16.4	19.2	20.7	19.5	12.1	7.7
87°	1.1	2.0	3.3	6.7	7.8	12.0	14.7	16.6	15.2	8.5	4.4
88°	0.0	0.0	0.0	3.5	4.5	8.5	10.8	12.0	11.1	4.8	2.0
89°	0.0	0.0	0.0	0.3	2.0	4.9	6.7	7.8	7.0	2.0	0.1



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**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	2.0	3.7	4.6	3.0	0.3	0.0





TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
0°	363.8	363.8
1°	363.7	363.6
2°	363.6	363.4
3°	363.3	363.3
4°	363.2	363.1
5°	363.0	362.6
6°	362.5	362.3
7°	362.1	362.0
8°	361.6	361.4
9°	361.0	361.0
10°	360.5	360.3
11°	359.7	359.7
12°	359.2	358.8
13°	358.3	357.9
14°	357.3	357.1
15°	356.1	356.0
16°	355.0	354.9
17°	353.6	353.5
18°	352.0	351.7
19°	350.8	350.6
20°	348.8	348.8
21°	347.2	347.0
22°	344.9	344.9
23°	342.9	342.7
24°	340.4	340.3
25°	337.7	337.7
26°	335.2	335.0
27°	332.3	331.7
28°	328.8	328.9
29°	325.4	325.0
30°	322.0	321.5
31°	318.1	317.7
32°	314.0	313.4
33°	310.0	309.2
34°	305.3	304.7
35°	300.7	300.0
36°	295.5	295.2
37°	290.8	290.1
38°	285.1	284.6
39°	280.0	279.2
40°	273.9	273.5
41°	268.7	267.8
42°	262.2	261.6
43°	256.4	255.6
44°	249.8	249.2



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
45°	243.5	242.3
46°	236.9	236.4
47°	230.5	229.3
48°	224.1	223.4
49°	217.4	216.1
50°	210.9	209.9
51°	204.2	202.6
52°	193.5	196.6
53°	189.8	189.2
54°	183.2	182.5
55°	176.5	175.8
56°	169.8	169.0
57°	163.2	162.3
58°	156.7	155.9
59°	150.1	149.2
60°	143.6	142.8
61°	136.6	136.3
62°	130.6	129.8
63°	123.8	123.6
64°	118.0	117.3
65°	111.3	111.2
66°	105.8	105.2
67°	99.3	99.2
68°	93.3	93.4
69°	87.6	87.7
70°	81.8	81.4
71°	76.3	76.4
72°	70.8	70.4
73°	65.5	65.1
74°	60.3	59.8
75°	55.1	54.7
76°	50.0	49.7
77°	45.0	44.1
78°	40.0	39.3
79°	35.1	34.5
80°	30.2	29.8
81°	25.4	25.4
82°	21.0	20.5
83°	16.4	16.1
84°	12.2	11.4
85°	7.9	7.2
86°	3.9	3.7
87°	1.4	1.1
88°	0.0	0.0
89°	0.0	0.0



TEST NUMBER: P256761

CATALOG NUMBER: HLB6099FS1EMW-3000K

**CANDELA DISTRIBUTION (continued):**

	330°	360°
90°	0.0	0.0

(END OF REPORT)