

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: P256767

Luminaire Tested: **HLB4069FS1EMW-3500K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P256767
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A1806645A001)
Test Lab: EVERFINE
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: HALO
Catalog Number: HLB4069FS1EMW-3500K
Description: 4 IN HALO BLADE (600 LUMEN) - 3500K
Light Source: -
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 735.2 lumens
Efficiency: N/A
Efficacy: 61.3 lumens/watt
Spacing Criteria (0/90/45): 1.31 / 1.31 / 1.39
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

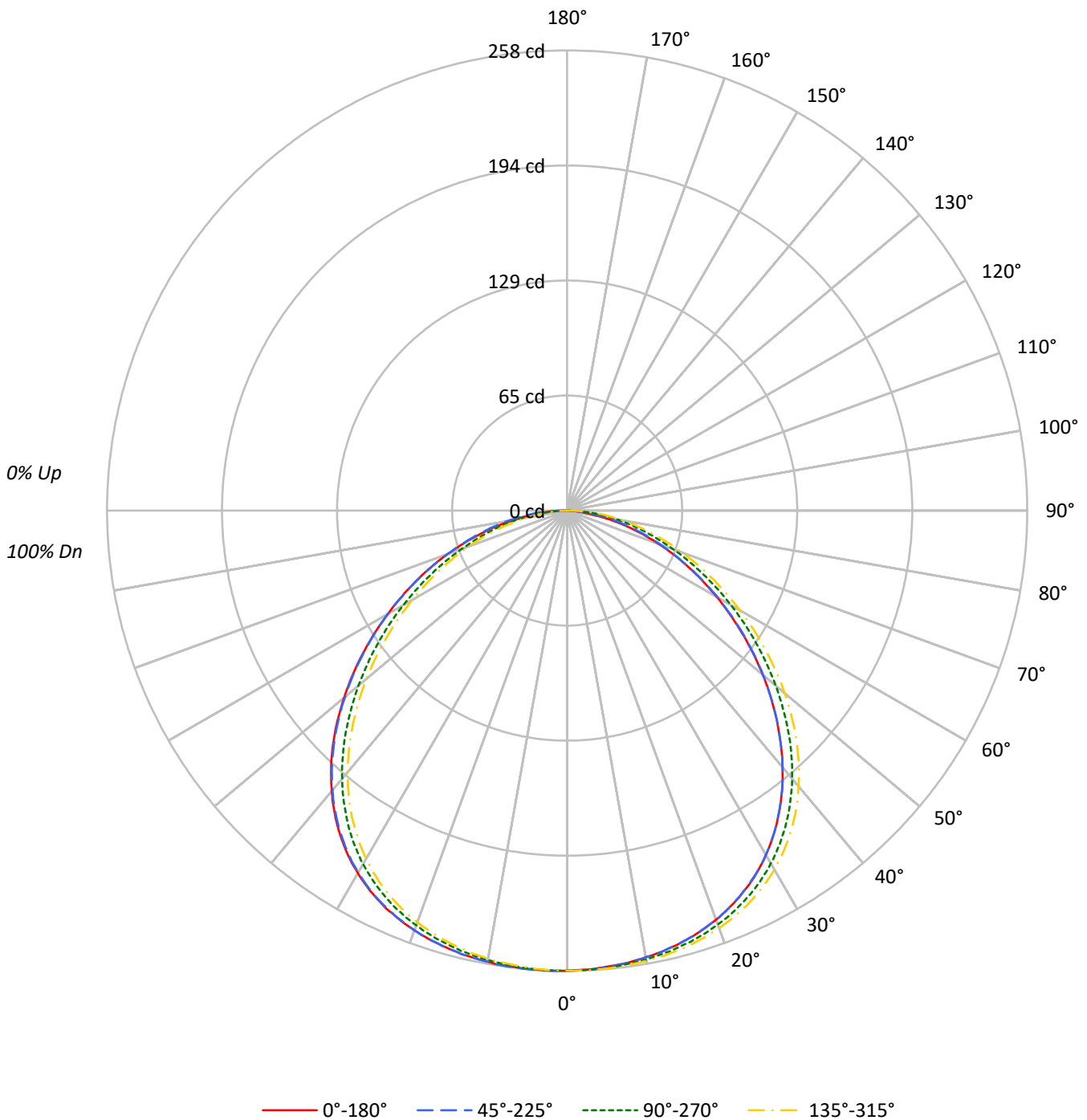
Input Watts (W): 12
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	73	70
3	91	80	72	66	88	79	71	65	76	69	64	73	67	63	70	66	62	59
4	83	71	62	56	81	70	62	55	67	60	55	65	59	54	63	57	53	51
5	76	64	55	48	74	62	54	48	60	53	47	58	52	47	56	51	46	44
6	70	57	48	42	69	56	48	42	54	47	41	53	46	41	51	45	41	39
7	65	52	43	37	64	51	43	37	50	42	37	48	41	36	47	41	36	34
8	61	47	39	33	59	47	39	33	45	38	33	44	37	33	43	37	32	30
9	57	43	35	30	55	43	35	30	42	35	29	41	34	29	40	34	29	27
10	53	40	32	27	52	40	32	27	39	32	27	38	31	27	37	31	27	25

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	31696	31696	31696	31696
5°	31657	31743	31805	31768
10°	31724	31898	32048	31923
15°	31835	32064	32369	32140
20°	31913	32292	32750	32358
25°	31869	32424	33089	32506
30°	31635	32401	33294	32472
35°	31045	32110	33295	32140
40°	30134	31465	32941	31465
45°	28893	30457	32246	30474
50°	27369	29166	31230	29185
55°	25638	27673	29944	27695
60°	23809	26070	28576	26094
65°	21860	24389	27180	24331
70°	19612	22737	25611	22630
75°	16756	21170	23828	21075
80°	12593	19880	21932	19597
85°	7471	17902	19452	17761



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	24.5	3.3
10°-20°	71.3	9.7
20°-30°	110.4	15.0
30°-40°	133.9	18.2
40°-50°	135.3	18.4
50°-60°	115.9	15.8
60°-70°	83.5	11.4
70°-80°	46.8	6.4
80°-90°	13.5	1.8
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°	206.3	28.1
0°-40°	340.1	46.3
0°-60°	591.3	80.4
0°-90°	735.2	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	735.2	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	258	258	258	258	258	
5°	257	257	258	258	257	24
15°	250	252	254	253	250	71
25°	235	239	244	240	235	108
35°	207	214	222	214	207	129
45°	166	175	186	175	166	128
55°	120	129	140	129	120	107
65°	75	84	94	84	75	75
75°	35	45	50	44	35	38
85°	5	13	14	13	5	7
90°	0	0	3	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	258.0	258.0	258.0	258.0	258.0	258.0	258.0	258.0	258.0	258.0	258.0
0.5°	257.9	257.9	258.1	258.0	257.9	257.9	258.0	258.0	258.1	258.1	258.2
1°	257.8	257.8	258.0	258.0	257.8	257.9	258.0	258.0	258.1	258.1	258.2
1.5°	257.7	257.7	257.9	257.8	257.8	257.9	258.0	258.1	258.1	258.2	258.2
2°	257.6	257.6	257.8	257.8	257.8	257.9	258.0	258.1	258.1	258.2	258.2
2.5°	257.6	257.6	257.7	257.7	257.7	257.8	258.0	258.1	258.1	258.2	258.2
3°	257.5	257.5	257.6	257.6	257.6	257.8	257.9	258.0	258.1	258.2	258.3
3.5°	257.3	257.4	257.6	257.5	257.6	257.8	257.9	258.0	258.1	258.2	258.2
4°	257.1	257.1	257.3	257.4	257.5	257.7	257.8	258.0	258.1	258.2	258.2
4.5°	256.9	256.9	257.1	257.3	257.5	257.6	257.8	257.9	258.0	258.2	258.2
5°	256.7	256.7	256.9	257.0	257.4	257.6	257.7	257.9	257.9	258.1	258.1
5.5°	256.6	256.5	256.7	256.8	257.2	257.6	257.6	257.8	257.9	258.1	258.1
6°	256.4	256.4	256.5	256.7	257.0	257.3	257.6	257.8	257.8	258.0	258.0
6.5°	256.2	256.1	256.3	256.5	256.9	257.1	257.5	257.7	257.7	257.9	257.9
7°	256.0	255.9	256.1	256.3	256.7	257.0	257.4	257.6	257.6	257.8	257.8
7.5°	255.8	255.7	255.9	256.1	256.5	256.8	257.4	257.6	257.6	257.8	257.7
8°	255.6	255.7	255.8	255.9	256.3	256.6	257.0	257.5	257.5	257.6	257.6
8.5°	255.2	255.1	255.3	255.7	256.1	256.5	256.8	257.2	257.4	257.6	257.5
9°	254.9	254.9	255.0	255.5	255.9	256.3	256.7	257.0	257.4	257.6	257.4
9.5°	254.7	254.6	254.7	255.1	255.8	256.1	256.5	256.9	257.1	257.3	257.2
10°	254.3	254.3	254.4	254.8	255.7	255.9	256.4	256.7	256.9	257.1	256.9
10.5°	254.1	254.0	254.1	254.5	255.2	255.8	256.1	256.5	256.7	256.9	256.8
11°	253.7	253.8	253.8	254.1	254.9	255.4	255.9	256.3	256.5	256.7	256.6
11.5°	253.3	253.3	253.4	253.9	254.6	255.1	255.7	256.1	256.3	256.5	256.4
12°	253.0	253.0	253.1	253.4	254.3	254.8	255.6	255.8	256.1	256.3	256.2
12.5°	252.6	252.5	252.6	253.0	254.0	254.5	255.2	255.8	255.9	256.1	255.9
13°	252.1	252.1	252.1	252.7	253.9	254.2	254.9	255.3	255.7	255.9	255.8
13.5°	251.7	251.7	251.7	252.3	253.3	254.1	254.6	255.1	255.6	255.8	255.6
14°	251.4	251.3	251.4	251.8	253.0	253.5	254.3	254.8	255.1	255.3	255.1
14.5°	250.8	250.7	250.8	251.4	252.5	253.1	254.0	254.4	254.8	254.9	254.9
15°	250.3	250.3	250.3	251.0	252.1	252.8	253.9	254.1	254.5	254.6	254.5
15.5°	249.8	249.7	249.8	250.4	251.7	252.4	253.2	253.9	254.2	254.3	254.2
16°	249.2	249.2	249.2	249.9	251.4	252.0	253.0	253.4	253.9	254.1	254.0
16.5°	248.8	248.6	248.8	249.4	250.8	251.5	252.5	253.1	253.5	253.6	253.5
17°	248.1	248.0	248.1	248.8	250.4	251.1	252.0	252.6	253.1	253.2	253.1
17.5°	247.5	247.5	247.4	248.2	249.8	250.6	251.6	252.2	252.8	252.7	252.7
18°	246.9	246.9	246.8	247.6	249.4	250.0	251.3	251.8	252.4	252.3	252.3
18.5°	246.2	246.2	246.1	247.0	248.8	249.6	250.6	251.4	251.9	251.9	251.9
19°	245.5	245.5	245.5	246.3	248.2	249.0	250.2	250.9	251.5	251.4	251.4
19.5°	244.8	244.9	244.8	245.7	247.6	248.4	249.7	250.3	251.0	250.9	250.9
20°	244.1	244.0	244.1	245.0	247.0	247.8	249.1	249.8	250.5	250.5	250.4
20.5°	243.5	243.4	243.5	244.3	246.3	247.2	248.6	249.2	249.9	249.9	249.8
21°	242.5	242.5	242.4	243.5	245.7	246.6	247.9	248.8	249.4	249.3	249.3
21.5°	241.7	241.7	241.8	242.7	245.1	245.9	247.3	248.1	248.8	248.8	248.7
22°	240.8	240.9	240.8	241.9	244.2	245.3	246.7	247.4	248.2	248.1	248.0



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	240.0	240.0	240.0	241.0	243.5	244.5	246.0	246.8	247.6	247.4	247.4
23°	239.1	239.1	239.0	240.1	242.7	243.7	245.3	246.1	246.9	246.9	246.8
23.5°	238.1	238.1	238.0	239.2	241.8	243.0	244.6	245.4	246.2	246.1	246.0
24°	237.3	237.2	237.2	238.3	241.0	242.1	243.8	244.7	245.6	245.4	245.3
24.5°	236.2	236.2	236.1	237.4	240.1	241.4	243.2	243.9	245.0	244.7	244.6
25°	235.1	235.1	235.0	236.4	239.2	240.4	242.2	243.2	244.1	243.9	243.8
25.5°	234.1	234.0	234.0	235.3	238.4	239.6	241.5	242.3	243.3	243.2	243.0
26°	233.0	233.0	233.0	234.3	237.4	238.6	240.5	241.6	242.5	242.2	242.2
26.5°	231.9	231.8	231.7	233.2	236.4	237.6	239.8	240.6	241.6	241.5	241.4
27°	230.8	230.8	230.6	232.0	235.4	236.7	238.7	239.8	240.7	240.5	240.4
27.5°	229.6	229.5	229.5	230.9	234.4	235.6	237.8	238.8	239.9	239.7	239.5
28°	228.3	228.3	228.1	229.7	233.2	234.7	236.8	237.7	238.8	238.6	238.5
28.5°	227.0	227.0	226.8	228.4	232.0	233.5	235.7	236.7	237.9	237.6	237.5
29°	225.8	225.7	225.6	227.3	230.9	232.4	234.7	235.7	236.9	236.6	236.5
29.5°	224.4	224.3	224.3	225.8	229.7	231.3	233.5	234.8	235.8	235.6	235.4
30°	223.0	222.9	222.8	224.5	228.4	230.1	232.4	233.5	234.7	234.6	234.3
30.5°	221.5	221.5	221.4	223.0	227.3	228.8	231.2	232.4	233.5	233.4	233.1
31°	220.1	220.2	219.9	221.7	225.8	227.6	229.9	231.3	232.5	232.2	231.9
31.5°	218.6	218.7	218.4	220.3	224.5	226.2	228.7	230.0	231.3	231.1	230.9
32°	217.1	217.1	216.9	218.8	223.1	224.9	227.5	228.7	230.0	229.8	229.5
32.5°	215.5	215.5	215.3	217.2	221.8	223.4	226.1	227.4	228.9	228.5	228.2
33°	213.9	213.9	213.8	215.7	220.3	222.1	224.7	226.1	227.5	227.1	226.8
33.5°	212.2	212.3	212.1	214.0	218.7	220.7	223.3	224.6	226.1	225.9	225.6
34°	210.5	210.6	210.4	212.4	217.2	219.1	222.0	223.2	224.7	224.4	224.1
34.5°	208.8	208.9	208.7	210.7	215.7	217.6	220.5	221.8	223.3	223.0	222.7
35°	207.0	207.2	206.9	209.1	214.1	216.0	218.9	220.4	222.0	221.5	221.2
35.5°	205.2	205.4	205.2	207.4	212.4	214.5	217.4	218.9	220.4	220.0	219.8
36°	203.5	203.7	203.4	205.6	210.8	212.8	215.8	217.3	218.9	218.5	218.3
36.5°	201.6	201.9	201.6	203.7	209.1	211.1	214.2	215.7	217.3	217.0	216.7
37°	199.7	200.0	199.7	201.9	207.3	209.4	212.6	214.0	215.7	215.4	215.1
37.5°	197.9	198.0	197.9	200.1	205.5	207.7	210.9	212.4	214.1	213.8	213.4
38°	196.0	196.1	196.0	198.2	203.7	205.9	209.2	210.7	212.4	212.1	211.7
38.5°	194.1	194.1	194.1	196.2	201.9	204.1	207.4	208.9	210.7	210.3	210.0
39°	192.0	192.2	192.0	194.3	200.1	202.3	205.7	207.1	209.0	208.6	208.3
39.5°	189.9	190.3	189.9	192.3	198.2	200.4	203.8	205.3	207.2	206.8	206.5
40°	187.9	188.1	187.9	190.3	196.2	198.5	201.9	203.5	205.4	204.9	204.6
40.5°	185.8	186.0	185.8	188.3	194.2	196.5	200.0	201.6	203.5	203.1	202.8
41°	183.8	183.9	183.8	186.1	192.3	194.6	198.1	199.7	201.7	201.3	201.0
41.5°	181.7	181.8	181.7	184.0	190.3	192.6	196.1	197.9	199.7	199.4	199.0
42°	179.5	179.7	179.5	181.9	188.2	190.7	194.2	195.9	197.8	197.4	197.2
42.5°	177.2	177.6	177.3	179.9	186.1	188.5	192.2	193.8	195.8	195.5	195.2
43°	175.1	175.3	175.1	177.7	184.0	186.4	190.2	191.8	193.9	193.4	193.1
43.5°	172.8	173.2	172.9	175.4	181.9	184.3	188.1	189.7	191.9	191.3	191.1
44°	170.6	170.9	170.7	173.3	179.8	182.2	185.9	187.6	189.8	189.3	189.0
44.5°	168.4	168.7	168.4	171.0	177.6	180.2	183.8	185.6	187.7	187.2	186.9



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	166.3	166.4	166.4	168.8	175.3	178.0	181.7	183.5	185.6	185.2	184.8
45.5°	163.9	164.2	164.1	166.5	173.1	175.8	179.7	181.3	183.5	183.1	182.7
46°	161.7	162.0	161.8	164.3	170.9	173.5	177.4	179.1	181.4	180.9	180.5
46.5°	159.4	159.7	159.5	162.0	168.7	171.3	175.2	177.0	179.2	178.7	178.4
47°	157.1	157.3	157.2	159.7	166.4	169.1	172.9	174.7	176.9	176.5	176.2
47.5°	154.8	155.1	154.9	157.4	164.1	166.8	170.7	172.5	174.7	174.2	173.9
48°	152.5	152.7	152.6	155.1	161.9	164.6	168.3	170.2	172.4	172.0	171.7
48.5°	150.3	150.3	150.4	152.7	159.5	162.3	166.1	168.0	170.2	169.9	169.4
49°	147.8	148.0	148.0	150.3	157.2	160.0	163.8	165.8	167.9	167.6	167.2
49.5°	145.5	145.6	145.7	148.1	155.0	157.6	161.5	163.4	165.7	165.2	164.9
50°	143.2	143.3	143.4	145.7	152.6	155.4	159.2	161.1	163.4	162.9	162.6
50.5°	140.8	141.0	141.2	143.3	150.3	153.0	156.9	158.8	161.0	160.6	160.3
51°	138.4	138.6	138.7	141.0	148.0	150.7	154.6	156.5	158.8	158.2	158.0
51.5°	136.1	136.2	136.5	138.5	145.6	148.4	152.1	154.1	156.4	155.9	155.6
52°	133.7	133.9	134.2	136.2	143.3	146.0	149.8	152.0	154.1	153.6	153.4
52.5°	131.3	131.5	131.9	134.0	141.0	143.7	147.4	149.5	151.7	151.2	151.2
53°	129.0	129.2	129.5	131.6	138.7	141.5	145.0	147.2	149.5	148.8	148.7
53.5°	126.7	126.9	127.3	129.2	136.3	139.0	142.8	144.9	147.0	146.5	146.5
54°	124.3	124.4	124.9	126.9	134.0	136.6	140.3	142.5	144.6	144.1	144.1
54.5°	122.1	122.1	122.6	124.6	131.6	134.4	137.9	140.1	142.3	141.8	141.7
55°	119.7	119.8	120.4	122.2	129.2	132.0	135.6	137.9	139.8	139.4	139.4
55.5°	117.4	117.4	118.0	119.9	127.0	129.7	133.1	135.5	137.5	137.0	137.1
56°	115.1	115.1	115.7	117.6	124.6	127.5	130.7	133.1	135.2	134.6	134.6
56.5°	112.8	112.9	113.5	115.2	122.2	125.0	128.4	130.8	132.8	132.2	132.4
57°	110.5	110.6	111.2	113.0	119.9	122.6	126.1	128.4	130.4	129.8	130.0
57.5°	108.2	108.2	108.7	110.8	117.7	120.4	123.7	126.0	128.1	127.5	127.7
58°	105.9	105.9	106.5	108.4	115.3	118.0	121.4	123.8	125.6	125.1	125.3
58.5°	103.7	103.7	104.2	106.1	113.0	115.6	118.9	121.4	123.4	122.7	123.1
59°	101.4	101.4	102.0	103.9	110.8	113.5	116.5	119.0	120.9	120.4	120.6
59.5°	99.2	99.2	99.6	101.6	108.4	111.2	114.2	116.7	118.5	118.1	118.2
60°	96.9	97.0	97.5	99.4	106.1	108.8	111.9	114.4	116.3	115.7	116.0
60.5°	94.6	94.9	95.2	97.1	103.9	106.5	109.6	112.0	114.0	113.5	113.7
61°	92.4	92.6	92.9	95.0	101.6	104.2	107.3	109.8	111.7	111.1	111.4
61.5°	90.1	90.4	90.7	92.8	99.4	101.9	105.0	107.4	109.4	108.7	109.1
62°	88.0	88.2	88.5	90.6	97.1	99.6	102.8	105.1	107.1	106.5	106.7
62.5°	85.8	86.1	86.4	88.4	95.0	97.5	100.6	102.9	104.7	104.2	104.4
63°	83.6	83.9	84.3	86.3	92.6	95.2	98.3	100.7	102.5	102.0	102.2
63.5°	81.7	81.8	82.0	84.2	90.4	92.9	96.1	98.3	100.3	99.7	99.8
64°	79.4	79.7	79.9	82.0	88.3	90.7	93.9	96.1	97.9	97.5	97.6
64.5°	77.3	77.7	77.8	79.9	86.2	88.5	91.8	93.8	95.7	95.2	95.4
65°	75.2	75.7	75.6	77.7	83.9	86.3	89.6	91.5	93.5	93.0	93.1
65.5°	73.0	73.5	73.5	75.8	81.7	84.0	87.4	89.3	91.2	90.7	90.8
66°	71.1	71.5	71.4	73.6	79.6	81.9	85.2	87.2	89.1	88.6	88.6
66.5°	69.1	69.3	69.4	71.6	77.5	79.9	83.1	85.1	86.8	86.5	86.4
67°	66.9	67.4	67.5	69.5	75.4	77.7	81.1	82.8	84.7	84.3	84.3



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	64.8	65.4	65.4	67.5	73.3	75.6	78.8	80.6	82.4	82.1	82.1
68°	62.7	63.6	63.3	65.6	71.3	73.5	76.8	78.3	80.1	80.0	79.9
68.5°	60.6	61.5	61.4	63.7	69.2	71.4	74.7	76.2	77.9	77.9	77.8
69°	58.7	59.5	59.4	61.7	67.3	69.3	72.6	74.0	75.7	75.7	75.7
69.5°	56.7	57.6	57.5	59.7	65.3	67.4	70.6	71.9	73.4	73.7	73.5
70°	54.6	55.7	55.5	57.7	63.3	65.4	68.6	69.7	71.3	71.6	71.5
70.5°	52.6	53.8	53.7	55.9	61.2	63.3	66.5	67.7	69.0	69.5	69.3
71°	50.6	51.9	51.8	54.1	59.3	61.4	64.6	65.6	67.1	67.6	67.3
71.5°	48.6	50.1	50.1	52.1	57.5	59.4	62.6	63.4	64.8	65.4	65.4
72°	46.6	48.2	48.3	50.2	55.5	57.4	60.6	61.3	62.6	63.2	63.4
72.5°	44.8	46.3	46.4	48.4	53.6	55.4	58.6	59.1	60.4	61.2	61.3
73°	42.9	44.4	44.8	46.7	51.7	53.7	56.7	57.1	58.4	59.1	59.4
73.5°	41.0	42.7	43.0	44.9	49.9	51.9	54.8	55.1	56.3	57.1	57.5
74°	39.1	40.8	41.2	43.2	48.1	50.0	53.1	53.0	54.2	55.0	55.4
74.5°	37.3	39.0	39.5	41.3	46.3	48.2	51.2	50.9	52.1	52.9	53.6
75°	35.3	37.3	37.8	39.6	44.6	46.4	49.3	48.8	50.2	50.8	51.7
75.5°	33.5	35.5	36.0	37.9	42.8	44.6	47.5	46.9	48.1	48.8	49.8
76°	31.7	33.7	34.4	36.3	41.0	42.8	45.6	44.9	46.1	46.8	48.0
76.5°	29.9	31.9	32.8	34.5	39.3	41.0	43.8	43.0	44.3	44.9	46.2
77°	28.2	30.2	31.2	32.9	37.6	39.4	42.1	41.0	42.4	43.0	44.5
77.5°	26.4	28.4	29.8	31.3	36.0	37.8	40.3	39.2	40.4	41.0	42.7
78°	24.6	26.6	28.2	29.7	34.3	36.0	38.6	37.3	38.5	39.1	40.9
78.5°	22.9	25.0	26.5	28.2	32.8	34.2	36.9	35.3	36.7	37.2	39.3
79°	21.2	23.4	25.0	26.5	31.1	32.6	35.3	33.5	34.7	35.3	37.6
79.5°	19.5	21.8	23.6	25.0	29.5	31.0	33.6	31.6	32.9	33.4	35.9
80°	17.8	20.3	21.9	23.4	28.1	29.6	32.0	29.8	31.0	31.6	34.2
80.5°	16.2	18.8	20.4	21.9	26.4	28.0	30.2	28.2	29.3	29.9	32.6
81°	14.6	17.3	19.0	20.3	24.9	26.4	28.6	26.4	27.4	28.2	30.9
81.5°	12.9	16.2	17.5	18.9	23.3	24.9	26.9	24.7	25.7	26.4	29.5
82°	11.5	14.6	16.1	17.4	21.7	23.3	25.4	22.9	23.9	24.6	27.9
82.5°	10.4	13.3	14.7	16.1	20.1	21.8	23.8	21.2	22.2	22.9	26.2
83°	9.4	12.0	13.1	14.6	18.6	20.2	22.3	19.4	20.3	21.2	24.6
83.5°	8.3	10.6	11.8	13.0	17.2	18.7	20.6	17.8	18.6	19.8	23.2
84°	7.2	9.2	10.4	11.7	15.7	17.2	19.2	16.5	16.9	18.2	21.5
84.5°	6.1	7.8	9.0	10.3	14.3	15.9	17.8	15.1	15.3	16.7	19.9
85°	5.3	6.8	7.7	9.0	12.7	14.4	16.2	14.0	13.8	15.7	18.4
85.5°	4.2	5.6	6.2	7.5	11.3	12.9	14.6	12.7	12.2	14.4	16.9
86°	3.2	4.1	5.0	6.0	9.9	11.4	13.3	11.4	11.0	12.8	15.5
86.5°	2.4	3.0	3.8	4.9	8.6	10.0	11.9	10.4	10.1	11.6	14.0
87°	1.4	2.0	2.3	3.6	7.3	8.9	10.4	9.4	9.2	10.6	12.4
87.5°	0.5	0.6	1.2	2.2	5.8	7.6	9.2	8.2	7.9	9.4	11.0
88°	0.0	0.0	0.0	0.9	4.5	6.0	7.5	7.0	6.9	8.2	9.4
88.5°	0.0	0.0	0.0	0.0	3.1	4.8	6.2	5.9	5.8	7.0	8.4
89°	0.0	0.0	0.0	0.0	1.9	3.4	5.0	4.9	5.0	5.9	6.9
89.5°	0.0	0.0	0.0	0.0	0.5	2.3	3.9	4.0	4.0	4.9	5.4



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
90°	0.0	0.0	0.0	0.0	0.0	0.5	2.3	2.8	3.0	4.0	3.7



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	258.0	258.0	258.0	258.0	258.0	258.0
0.5°	258.2	258.0	257.8	258.0	257.9	257.9
1°	258.2	258.0	257.8	257.9	257.8	257.8
1.5°	258.2	258.0	257.8	257.9	257.7	257.7
2°	258.2	258.0	257.7	257.8	257.6	257.6
2.5°	258.2	257.9	257.7	257.8	257.5	257.6
3°	258.2	257.8	257.6	257.7	257.5	257.5
3.5°	258.2	257.8	257.6	257.6	257.4	257.3
4°	258.2	257.7	257.6	257.6	257.2	257.1
4.5°	258.2	257.6	257.5	257.3	257.0	256.9
5°	258.1	257.6	257.4	257.1	256.8	256.7
5.5°	258.0	257.6	257.2	257.0	256.7	256.6
6°	257.9	257.4	257.0	256.8	256.5	256.4
6.5°	257.9	257.2	256.8	256.6	256.4	256.2
7°	257.8	257.0	256.7	256.4	256.2	256.0
7.5°	257.6	256.9	256.5	256.2	255.9	255.8
8°	257.6	256.7	256.3	256.0	255.8	255.6
8.5°	257.6	256.5	256.1	255.9	255.6	255.2
9°	257.2	256.3	255.9	255.8	255.2	254.9
9.5°	257.0	256.1	255.7	255.4	254.9	254.7
10°	256.8	255.9	255.6	255.1	254.6	254.3
10.5°	256.6	255.8	255.1	254.8	254.3	254.1
11°	256.4	255.4	254.9	254.4	254.0	253.7
11.5°	256.2	255.1	254.6	254.1	253.9	253.3
12°	256.0	254.8	254.3	254.0	253.3	253.0
12.5°	255.8	254.5	254.0	253.5	253.0	252.6
13°	255.5	254.2	253.8	253.1	252.5	252.1
13.5°	255.2	254.0	253.2	252.6	252.1	251.7
14°	254.8	253.5	253.0	252.2	251.7	251.4
14.5°	254.5	253.1	252.5	251.8	251.4	250.8
15°	254.2	252.7	252.1	251.4	250.8	250.3
15.5°	254.0	252.2	251.6	250.9	250.3	249.8
16°	253.5	251.8	251.3	250.4	249.8	249.2
16.5°	253.1	251.4	250.7	249.9	249.4	248.8
17°	252.6	250.9	250.2	249.4	248.8	248.1
17.5°	252.1	250.4	249.7	248.8	248.1	247.5
18°	251.7	249.8	249.2	248.2	247.6	246.9
18.5°	251.4	249.3	248.6	247.5	246.9	246.2
19°	250.7	248.8	248.0	247.0	246.2	245.5
19.5°	250.2	248.1	247.3	246.3	245.6	244.8
20°	249.6	247.5	246.7	245.6	245.0	244.1
20.5°	249.0	246.9	246.0	244.9	244.2	243.5
21°	248.4	246.1	245.4	244.1	243.4	242.5
21.5°	247.8	245.5	244.6	243.5	242.6	241.7
22°	247.1	244.7	243.9	242.5	241.8	240.8



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	246.4	243.9	243.3	241.8	240.9	240.0
23°	245.7	243.3	242.3	240.8	240.0	239.1
23.5°	245.3	242.4	241.6	240.1	239.1	238.1
24°	244.3	241.7	240.5	239.1	238.2	237.3
24.5°	243.5	240.6	239.8	238.0	237.3	236.2
25°	242.7	239.8	238.8	237.2	236.3	235.1
25.5°	241.8	238.8	237.8	236.1	235.3	234.1
26°	240.9	237.8	236.8	235.0	234.2	233.0
26.5°	240.1	236.8	235.7	234.0	233.1	231.9
27°	239.1	235.8	234.7	233.0	231.9	230.8
27.5°	238.1	234.7	233.6	231.7	230.9	229.6
28°	237.2	233.6	232.5	230.6	229.6	228.3
28.5°	236.1	232.4	231.3	229.5	228.3	227.0
29°	235.0	231.3	230.0	228.0	227.1	225.8
29.5°	233.9	230.1	228.9	226.7	225.7	224.4
30°	232.8	228.9	227.5	225.4	224.4	223.0
30.5°	231.6	227.7	226.1	224.1	223.0	221.5
31°	230.4	226.2	224.8	222.6	221.6	220.1
31.5°	229.2	224.9	223.4	221.2	220.2	218.6
32°	227.8	223.4	222.1	219.7	218.7	217.1
32.5°	226.5	222.0	220.5	218.1	217.1	215.5
33°	225.1	220.6	219.0	216.6	215.6	213.9
33.5°	223.7	219.0	217.4	215.0	213.9	212.2
34°	222.4	217.5	215.9	213.4	212.3	210.5
34.5°	220.8	216.0	214.3	211.8	210.6	208.8
35°	219.2	214.3	212.7	210.2	208.9	207.0
35.5°	217.7	212.6	211.0	208.4	207.2	205.2
36°	216.2	210.9	209.4	206.7	205.4	203.5
36.5°	214.5	209.2	207.7	204.9	203.6	201.6
37°	212.9	207.5	205.8	203.0	201.8	199.7
37.5°	211.2	205.7	204.0	201.2	199.9	197.9
38°	209.5	203.9	202.1	199.3	198.0	196.0
38.5°	207.8	202.1	200.2	197.4	196.0	194.1
39°	205.9	200.1	198.3	195.4	194.1	192.0
39.5°	204.1	198.2	196.4	193.4	192.2	189.9
40°	202.2	196.2	194.4	191.3	190.1	187.9
40.5°	200.3	194.4	192.4	189.3	188.0	185.8
41°	198.3	192.4	190.4	187.3	185.9	183.8
41.5°	196.4	190.3	188.4	185.2	183.8	181.7
42°	194.5	188.2	186.3	183.1	181.7	179.5
42.5°	192.5	186.1	184.2	180.9	179.7	177.2
43°	190.4	184.0	182.1	178.7	177.4	175.1
43.5°	188.3	181.9	179.9	176.7	175.2	172.8
44°	186.2	179.8	177.9	174.4	173.0	170.6
44.5°	184.1	177.6	175.6	172.2	170.8	168.4



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	182.1	175.4	173.4	170.0	168.6	166.3
45.5°	179.9	173.2	171.1	167.8	166.3	163.9
46°	177.6	171.0	169.1	165.4	164.1	161.7
46.5°	175.4	168.7	166.7	163.1	161.9	159.4
47°	173.1	166.4	164.4	160.9	159.5	157.1
47.5°	170.9	164.3	162.2	158.6	157.2	154.8
48°	168.7	161.9	159.8	156.3	155.0	152.5
48.5°	166.5	159.6	157.5	154.0	152.6	150.3
49°	164.2	157.3	155.2	151.7	150.3	147.8
49.5°	161.8	155.0	153.0	149.3	148.0	145.5
50°	159.5	152.7	150.6	146.9	145.7	143.2
50.5°	157.1	150.4	148.2	144.6	143.3	140.8
51°	154.8	148.0	145.9	142.1	141.0	138.4
51.5°	152.4	145.7	143.5	139.8	138.7	136.1
52°	150.1	143.4	141.2	137.5	136.3	133.7
52.5°	147.7	141.0	139.0	135.1	134.1	131.3
53°	145.4	138.7	136.6	132.8	131.8	129.0
53.5°	143.0	136.4	134.2	130.4	129.4	126.7
54°	140.6	134.1	131.9	127.9	127.1	124.3
54.5°	138.3	131.6	129.5	125.6	124.8	122.1
55°	135.9	129.3	127.1	123.3	122.4	119.7
55.5°	133.5	127.1	124.8	120.9	120.0	117.4
56°	131.2	124.7	122.4	118.6	117.7	115.1
56.5°	128.8	122.4	120.1	116.3	115.4	112.8
57°	126.3	120.1	117.9	113.9	113.1	110.5
57.5°	124.1	117.7	115.5	111.7	110.9	108.2
58°	121.8	115.3	113.2	109.4	108.4	105.9
58.5°	119.3	113.1	111.0	107.0	106.1	103.7
59°	117.0	110.8	108.5	104.8	103.8	101.4
59.5°	114.7	108.4	106.2	102.6	101.5	99.2
60°	112.4	106.2	104.0	100.3	99.3	96.9
60.5°	110.1	103.9	101.8	98.1	97.0	94.6
61°	107.8	101.6	99.5	95.9	94.9	92.4
61.5°	105.4	99.3	97.2	93.7	92.6	90.1
62°	103.3	97.1	95.1	91.4	90.4	88.0
62.5°	101.1	94.8	92.7	89.4	88.2	85.8
63°	98.8	92.6	90.5	87.2	85.9	83.6
63.5°	96.6	90.5	88.3	85.1	83.8	81.7
64°	94.3	88.2	86.2	83.0	81.6	79.4
64.5°	92.2	86.0	84.0	80.8	79.5	77.3
65°	89.9	83.7	81.8	78.6	77.4	75.2
65.5°	87.9	81.7	79.6	76.6	75.2	73.0
66°	85.6	79.5	77.6	74.5	73.2	71.1
66.5°	83.5	77.4	75.4	72.5	71.0	69.1
67°	81.4	75.3	73.3	70.4	69.0	66.9



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	79.2	73.2	71.3	68.3	67.1	64.8
68°	77.1	71.1	69.2	66.3	65.0	62.7
68.5°	75.0	69.1	67.3	64.3	62.7	60.6
69°	73.0	67.0	65.3	62.3	60.7	58.7
69.5°	71.0	65.0	63.2	60.4	58.6	56.7
70°	69.0	63.0	61.2	58.5	56.6	54.6
70.5°	66.9	61.1	59.3	56.6	54.6	52.6
71°	65.0	59.1	57.4	54.7	52.6	50.6
71.5°	62.9	57.2	55.5	52.8	50.6	48.6
72°	60.9	55.3	53.5	50.9	48.5	46.6
72.5°	58.9	53.5	51.7	49.0	46.6	44.8
73°	57.1	51.6	49.8	47.2	44.6	42.9
73.5°	55.2	49.8	48.0	45.5	42.7	41.0
74°	53.4	48.0	46.2	43.8	40.7	39.1
74.5°	51.5	46.2	44.5	41.9	39.0	37.3
75°	49.5	44.4	42.8	40.1	37.2	35.3
75.5°	47.7	42.7	40.9	38.2	35.4	33.5
76°	45.9	40.8	39.3	36.4	33.6	31.7
76.5°	44.1	39.2	37.6	34.6	31.7	29.9
77°	42.5	37.6	35.9	33.1	30.0	28.2
77.5°	40.7	35.9	34.2	31.2	28.2	26.4
78°	38.9	34.2	32.7	29.7	26.3	24.6
78.5°	37.2	32.4	31.0	28.0	24.7	22.9
79°	35.4	30.8	29.5	26.3	23.1	21.2
79.5°	33.9	29.2	27.9	24.6	21.3	19.5
80°	32.3	27.7	26.3	23.1	19.7	17.8
80.5°	30.6	26.2	24.8	21.5	17.9	16.2
81°	29.0	24.6	23.2	20.1	16.2	14.6
81.5°	27.3	23.0	21.6	18.4	14.6	12.9
82°	25.7	21.5	20.1	16.9	13.1	11.5
82.5°	24.2	20.1	18.6	15.6	11.9	10.4
83°	22.7	18.4	17.0	14.2	10.6	9.4
83.5°	21.2	16.9	15.6	12.7	9.4	8.3
84°	19.9	15.6	14.1	11.3	8.3	7.2
84.5°	18.3	14.3	12.6	10.1	7.4	6.1
85°	16.6	12.6	11.2	9.0	6.2	5.3
85.5°	15.4	11.2	9.8	7.7	5.2	4.2
86°	13.9	9.8	8.5	6.1	4.1	3.2
86.5°	12.4	8.5	7.1	5.0	3.1	2.4
87°	11.1	7.1	5.7	4.0	2.2	1.4
87.5°	9.4	5.9	4.2	2.4	1.4	0.5
88°	8.2	4.3	2.9	1.5	0.4	0.0
88.5°	6.9	3.1	1.6	0.1	0.0	0.0
89°	5.8	1.7	0.5	0.0	0.0	0.0
89.5°	4.1	0.6	0.0	0.0	0.0	0.0



TEST NUMBER: P256767

CATALOG NUMBER: HLB4069FS1EMW-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
90°	2.7	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)