

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: P303598

Luminaire Tested: **HLA406VWFL9FS1EMWR-4000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P303598  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A1813664A001)  
Test Lab: EVERFINE  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: HALO  
Catalog Number: HLA406VWFL9FS1EMWR-4000K  
Description: 4IN HLA LED DOWNLIGHT WITH 80 DEGREE OPTIC AND 4000K LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

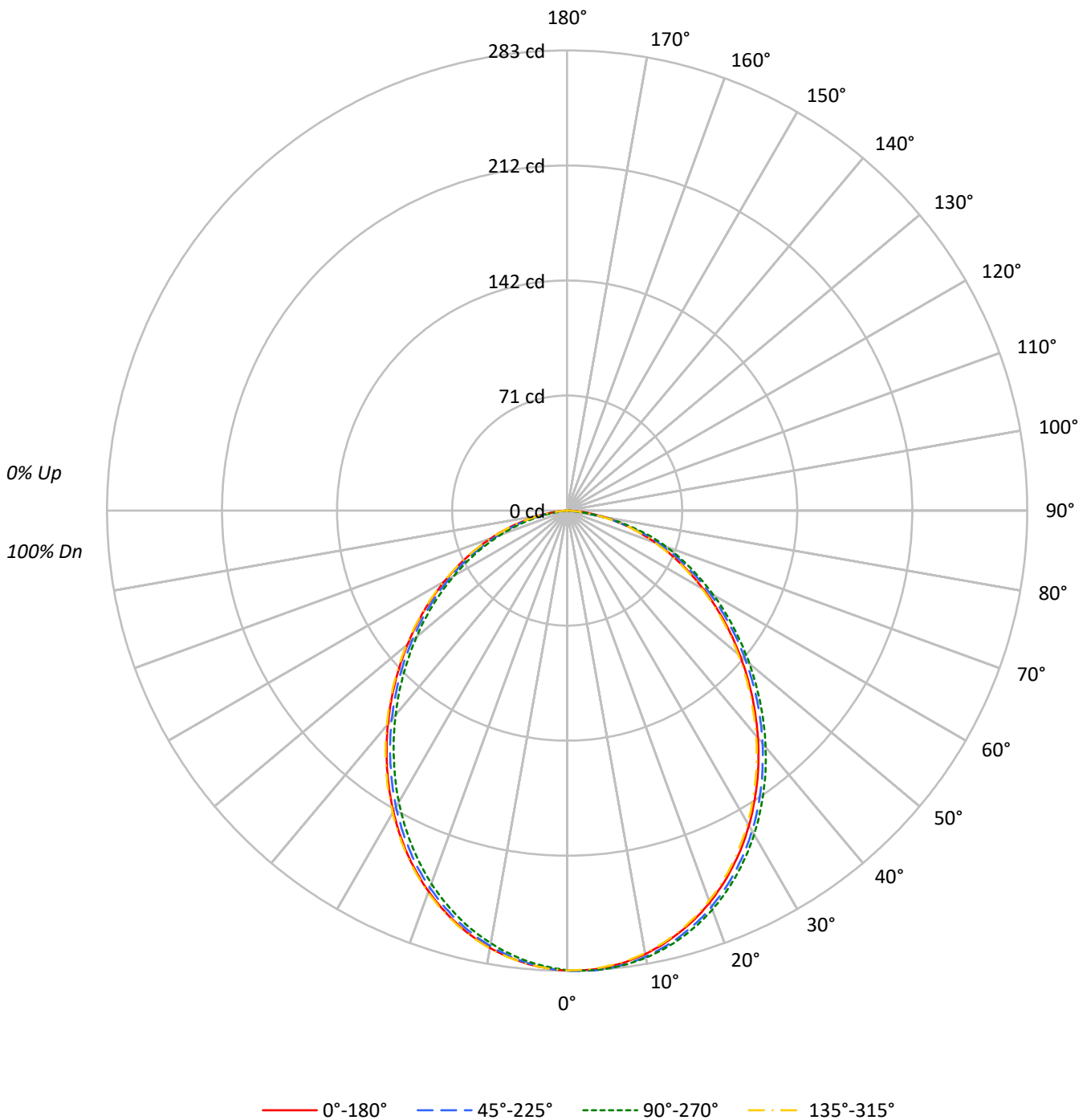
Lumens per Lamp: 678.744 (1 lamp)  
Luminaire Lumens: 670.6 lumens  
Efficiency: 98.8%  
Efficacy: 67.1 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.26  
Luminous Opening: Circular (Dia: 0.25m x H: 0m)  
CIE Type: Direct

Input Watts (W): 10  
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	118	118	118	118	115	115	115	115	110	110	110	105	105	105	101	101	101	99
1	108	104	100	96	106	102	98	95	98	95	92	94	91	89	90	88	86	84
2	99	91	85	80	96	89	84	79	86	81	77	83	79	75	80	76	73	71
3	91	81	73	67	88	79	72	66	76	70	65	74	68	64	71	67	63	61
4	83	72	64	57	81	71	63	57	68	61	56	66	60	55	64	59	55	53
5	77	65	56	50	75	63	55	49	61	54	49	60	53	48	58	52	48	46
6	71	58	50	44	69	57	49	44	56	49	43	54	48	43	53	47	42	40
7	66	53	45	39	64	52	44	39	51	44	38	49	43	38	48	42	38	36
8	62	49	40	35	60	48	40	35	47	40	35	45	39	34	44	39	34	32
9	58	45	37	32	56	44	37	31	43	36	31	42	36	31	41	35	31	29
10	54	41	34	29	53	41	34	29	40	33	29	39	33	28	38	32	28	27

**AVERAGE LUMINANCE (cd/sqm):**

	0°	90°	180°	270°
0°	5761	5761	5761	5761
5°	5763	5783	5722	5689
10°	5728	5776	5649	5589
15°	5659	5734	5543	5458
20°	5561	5660	5402	5292
25°	5424	5550	5231	5091
30°	5262	5410	5027	4867
35°	5066	5240	4805	4623
40°	4853	5047	4561	4364
45°	4630	4843	4313	4103
50°	4402	4637	4063	3835
55°	4173	4433	3811	3562
60°	3948	4237	3557	3280
65°	3712	4044	3278	2965
70°	3449	3848	2960	2585
75°	3141	3487	2550	2078
80°	2698	2546	1959	1279
85°	2104	841	958	70



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	26.6	4.0	3.9
10°-20°	74.8	11.2	11.0
20°-30°	109.0	16.3	16.1
30°-40°	124.0	18.5	18.3
40°-50°	119.8	17.9	17.6
50°-60°	100.6	15.0	14.8
60°-70°	71.9	10.7	10.6
70°-80°	37.7	5.6	5.6
80°-90°	6.2	0.9	0.9
90°-100°	0.0	0.0	0.0
100°-110°	0.0	0.0	0.0
110°-120°	0.0	0.0	0.0
120°-130°	0.0	0.0	0.0
130°-140°	0.0	0.0	0.0
140°-150°	0.0	0.0	0.0
150°-160°	0.0	0.0	0.0
160°-170°	0.0	0.0	0.0
170°-180°	0.0	0.0	0.0
0°-30°	210.4	31.4	31.0
0°-40°	334.4	49.9	49.3
0°-60°	554.8	82.7	81.7
0°-90°	670.6	100.0	98.8
90°-120°	0.0	0.0	0.0
90°-150°	0.0	0.0	0.0
90°-180°	0.0	0.0	0.0
0°-180°	670.6	100.0	98.8

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	283	283	283	283	283	
5°	282	283	280	278	282	27
15°	268	272	263	259	268	76
25°	241	247	233	226	241	111
35°	204	211	193	186	204	127
45°	161	168	150	142	161	124
55°	118	125	107	100	118	105
65°	77	84	68	62	77	76
75°	40	44	32	26	40	42
85°	9	4	4	0	9	10
90°	0	0	0	0	0	



TEST NUMBER: P303598

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**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	282.8	282.8	282.8	282.8	282.8	282.8	282.8	282.8	282.8	282.8	282.8
0.5°	282.9	283.0	283.1	283.2	282.7	282.7	282.7	282.7	282.7	282.8	282.8
1°	282.9	283.0	283.2	283.3	282.9	282.7	282.7	282.7	282.5	282.5	282.6
1.5°	282.9	283.0	283.3	283.3	283.0	282.8	282.7	282.5	282.3	282.2	282.3
2°	282.9	283.0	283.3	283.3	283.1	282.8	282.7	282.3	282.0	282.0	282.0
2.5°	282.8	283.0	283.3	283.3	283.1	282.8	282.5	282.2	281.7	281.6	281.6
3°	282.7	282.9	283.3	283.3	283.1	282.8	282.3	281.8	281.4	281.2	281.2
3.5°	282.5	282.8	283.3	283.2	283.1	282.7	282.1	281.5	281.1	280.8	280.9
4°	282.3	282.6	283.1	283.1	283.0	282.5	281.9	281.2	280.7	280.4	280.3
4.5°	282.0	282.4	283.0	283.0	282.9	282.3	281.6	280.8	280.3	279.9	279.8
5°	281.8	282.2	282.7	282.8	282.8	282.1	281.3	280.4	279.8	279.4	279.3
5.5°	281.4	282.0	282.5	282.6	282.6	281.8	281.0	280.0	279.3	278.9	278.7
6°	281.1	281.6	282.2	282.3	282.4	281.5	280.6	279.5	278.7	278.3	278.1
6.5°	280.7	281.2	281.8	282.0	282.1	281.1	280.3	279.0	278.2	277.6	277.5
7°	280.3	280.9	281.4	281.6	281.8	280.7	279.8	278.5	277.5	277.0	276.8
7.5°	279.8	280.4	281.1	281.2	281.4	280.4	279.3	277.8	276.8	276.3	276.0
8°	279.3	280.0	280.6	280.9	281.0	279.9	278.8	277.2	276.2	275.5	275.3
8.5°	278.7	279.5	280.2	280.4	280.6	279.4	278.2	276.5	275.5	274.8	274.5
9°	278.1	279.0	279.6	279.9	280.2	278.9	277.6	275.8	274.7	274.1	273.7
9.5°	277.6	278.4	279.1	279.4	279.7	278.3	277.0	275.1	274.0	273.2	272.9
10°	276.9	277.8	278.5	278.9	279.2	277.7	276.3	274.3	273.1	272.4	272.0
10.5°	276.2	277.2	277.9	278.3	278.6	277.0	275.6	273.6	272.3	271.4	271.0
11°	275.4	276.5	277.2	277.6	278.0	276.3	274.9	272.7	271.3	270.5	270.0
11.5°	274.6	275.8	276.5	276.9	277.4	275.6	274.1	271.8	270.4	269.4	269.1
12°	273.9	275.0	275.8	276.2	276.7	274.9	273.2	270.9	269.4	268.4	268.0
12.5°	273.1	274.2	275.0	275.4	276.0	274.2	272.4	270.0	268.4	267.4	266.9
13°	272.2	273.4	274.3	274.7	275.2	273.3	271.5	269.1	267.4	266.3	265.8
13.5°	271.2	272.6	273.3	273.9	274.5	272.5	270.6	268.0	266.3	265.2	264.7
14°	270.3	271.7	272.6	273.0	273.7	271.5	269.6	266.9	265.2	264.0	263.5
14.5°	269.3	270.8	271.6	272.1	272.8	270.6	268.6	265.9	264.0	262.9	262.2
15°	268.3	269.8	270.6	271.1	271.9	269.6	267.5	264.7	262.8	261.6	261.1
15.5°	267.3	268.8	269.6	270.1	271.0	268.6	266.5	263.6	261.6	260.4	259.7
16°	266.2	267.7	268.6	269.1	270.0	267.6	265.4	262.4	260.4	259.1	258.5
16.5°	265.1	266.7	267.6	268.1	269.0	266.6	264.2	261.2	259.0	257.8	257.0
17°	264.0	265.6	266.5	267.1	268.0	265.5	263.1	260.0	257.7	256.4	255.7
17.5°	262.8	264.5	265.4	265.9	267.0	264.4	261.9	258.7	256.4	255.0	254.3
18°	261.6	263.3	264.3	264.8	265.8	263.2	260.6	257.3	255.0	253.6	252.9
18.5°	260.5	262.0	263.2	263.6	264.7	262.0	259.3	256.0	253.6	252.2	251.4
19°	259.1	260.8	261.9	262.4	263.5	260.7	258.0	254.6	252.2	250.7	249.9
19.5°	257.8	259.5	260.6	261.2	262.3	259.4	256.7	253.2	250.8	249.3	248.3
20°	256.5	258.3	259.4	260.0	261.1	258.2	255.3	251.8	249.2	247.7	246.8
20.5°	255.1	256.9	258.0	258.7	259.8	256.8	253.9	250.3	247.7	246.1	245.2
21°	253.7	255.5	256.6	257.3	258.6	255.4	252.5	248.7	246.2	244.5	243.7
21.5°	252.2	254.1	255.3	255.9	257.1	254.0	251.1	247.2	244.6	242.9	242.0
22°	250.7	252.7	253.8	254.5	255.8	252.5	249.5	245.6	242.9	241.2	240.3



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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°	249.3	251.2	252.4	253.1	254.4	251.1	248.0	244.0	241.3	239.5	238.7
23°	247.8	249.7	251.0	251.6	252.9	249.6	246.4	242.4	239.6	237.8	237.0
23.5°	246.2	248.2	249.5	250.1	251.5	248.0	244.9	240.8	237.9	236.1	235.2
24°	244.6	246.6	247.9	248.6	250.0	246.5	243.3	239.2	236.2	234.3	233.5
24.5°	243.0	245.1	246.4	247.2	248.5	245.0	241.6	237.4	234.4	232.6	231.6
25°	241.3	243.5	244.8	245.5	246.9	243.3	240.0	235.7	232.7	230.8	229.8
25.5°	239.6	241.9	243.1	243.9	245.3	241.6	238.3	234.0	230.9	229.0	227.9
26°	238.0	240.2	241.4	242.3	243.8	240.0	236.6	232.1	229.0	227.2	226.1
26.5°	236.3	238.6	239.8	240.6	242.1	238.3	234.9	230.3	227.2	225.3	224.2
27°	234.6	236.9	238.2	238.9	240.5	236.6	233.1	228.6	225.4	223.5	222.3
27.5°	232.8	235.2	236.4	237.2	238.8	234.9	231.3	226.6	223.5	221.5	220.4
28°	231.0	233.4	234.7	235.5	237.1	233.1	229.5	224.8	221.6	219.5	218.4
28.5°	229.2	231.6	232.9	233.8	235.4	231.3	227.7	222.8	219.7	217.5	216.5
29°	227.3	229.8	231.1	232.0	233.6	229.5	225.8	220.9	217.7	215.5	214.5
29.5°	225.5	227.9	229.2	230.2	231.8	227.6	223.9	219.0	215.7	213.6	212.5
30°	223.7	226.0	227.4	228.4	230.0	225.8	222.0	217.1	213.7	211.6	210.5
30.5°	221.8	224.1	225.6	226.5	228.2	223.9	220.1	215.1	211.7	209.6	208.4
31°	219.8	222.3	223.8	224.7	226.3	222.1	218.2	213.1	209.7	207.6	206.4
31.5°	217.8	220.4	221.9	222.7	224.4	220.1	216.3	211.1	207.7	205.4	204.4
32°	215.8	218.4	219.9	220.8	222.5	218.2	214.3	209.1	205.7	203.4	202.3
32.5°	213.8	216.5	217.9	218.8	220.5	216.1	212.2	207.0	203.6	201.4	200.1
33°	211.8	214.5	215.9	216.9	218.6	214.1	210.2	205.0	201.5	199.2	198.1
33.5°	209.8	212.5	213.9	214.9	216.6	212.1	208.1	203.0	199.4	197.2	195.9
34°	207.8	210.5	211.9	212.9	214.7	210.2	206.1	200.9	197.3	195.1	193.8
34.5°	205.8	208.5	209.9	210.9	212.7	208.2	204.1	198.9	195.2	193.0	191.6
35°	203.7	206.5	207.9	208.9	210.7	206.1	202.0	196.7	193.2	191.0	189.6
35.5°	201.7	204.4	205.9	206.9	208.7	204.1	200.0	194.6	191.0	188.7	187.4
36°	199.6	202.4	203.8	204.9	206.6	201.9	197.9	192.5	188.9	186.5	185.3
36.5°	197.5	200.3	201.7	202.8	204.6	199.9	195.8	190.3	186.7	184.4	183.1
37°	195.4	198.2	199.7	200.7	202.6	197.8	193.6	188.2	184.5	182.3	180.9
37.5°	193.3	196.1	197.5	198.6	200.5	195.7	191.5	186.1	182.4	180.1	178.7
38°	191.2	194.0	195.5	196.5	198.3	193.6	189.4	184.0	180.2	177.9	176.7
38.5°	189.1	191.9	193.3	194.4	196.3	191.4	187.2	181.8	178.0	175.8	174.4
39°	186.9	189.7	191.3	192.3	194.1	189.4	185.1	179.5	175.9	173.5	172.2
39.5°	184.6	187.6	189.1	190.2	192.0	187.2	183.0	177.5	173.7	171.3	170.1
40°	182.5	185.4	186.9	188.0	189.8	185.0	180.7	175.3	171.5	169.2	167.9
40.5°	180.3	183.3	184.7	185.8	187.7	182.9	178.6	173.0	169.3	167.0	165.6
41°	178.1	181.1	182.6	183.7	185.6	180.7	176.4	170.8	167.1	164.8	163.5
41.5°	176.0	178.9	180.4	181.5	183.4	178.6	174.2	168.7	164.9	162.6	161.4
42°	173.8	176.8	178.3	179.3	181.2	176.4	172.0	166.5	162.9	160.5	159.1
42.5°	171.6	174.6	176.0	177.2	179.1	174.2	169.9	164.3	160.6	158.2	156.9
43°	169.5	172.4	173.9	175.1	177.0	172.0	167.7	162.2	158.4	156.1	154.7
43.5°	167.2	170.2	171.7	172.8	174.8	169.8	165.5	160.0	156.2	153.9	152.6
44°	165.1	168.0	169.5	170.6	172.5	167.6	163.4	157.8	154.1	151.7	150.4
44.5°	162.9	165.8	167.4	168.4	170.3	165.5	161.3	155.6	151.9	149.6	148.2



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	160.7	163.6	165.2	166.3	168.1	163.3	158.9	153.4	149.7	147.4	146.0
45.5°	158.6	161.5	163.0	164.0	166.0	161.2	156.8	151.3	147.7	145.2	143.8
46°	156.4	159.3	160.8	161.9	163.8	158.9	154.6	149.1	145.4	143.0	141.7
46.5°	154.1	157.0	158.6	159.7	161.6	156.7	152.5	146.9	143.2	140.9	139.5
47°	151.9	154.9	156.4	157.6	159.4	154.5	150.2	144.7	141.0	138.7	137.5
47.5°	149.8	152.7	154.2	155.4	157.2	152.3	148.0	142.5	138.9	136.5	135.3
48°	147.6	150.5	152.0	153.1	155.0	150.2	145.9	140.4	136.7	134.5	133.1
48.5°	145.4	148.2	149.9	151.0	152.9	148.1	143.6	138.3	134.5	132.3	130.9
49°	143.2	146.1	147.7	148.7	150.7	145.8	141.6	136.2	132.4	130.2	128.8
49.5°	141.1	144.0	145.4	146.6	148.4	143.6	139.4	134.0	130.4	128.0	126.7
50°	138.9	141.7	143.2	144.4	146.3	141.4	137.3	131.8	128.2	125.9	124.6
50.5°	136.6	139.6	141.1	142.3	144.2	139.3	135.1	129.6	126.1	123.8	122.4
51°	134.6	137.4	138.9	140.1	141.9	137.1	132.9	127.5	123.9	121.6	120.3
51.5°	132.4	135.2	136.7	137.9	139.7	135.0	130.8	125.4	121.9	119.5	118.2
52°	130.2	133.0	134.6	135.8	137.6	132.9	128.7	123.4	119.8	117.5	116.1
52.5°	128.1	130.8	132.5	133.7	135.5	130.8	126.5	121.2	117.6	115.5	114.0
53°	126.0	128.7	130.4	131.4	133.3	128.7	124.5	119.2	115.6	113.3	112.0
53.5°	124.0	126.6	128.2	129.3	131.1	126.5	122.4	117.1	113.5	111.2	110.1
54°	121.7	124.5	126.0	127.2	129.0	124.3	120.3	115.0	111.5	109.1	108.0
54.5°	119.6	122.3	124.0	125.1	126.9	122.3	118.2	112.9	109.5	107.2	105.8
55°	117.5	120.3	121.8	122.9	124.8	120.2	116.0	110.8	107.3	105.1	103.8
55.5°	115.5	118.1	119.7	120.8	122.6	118.0	113.9	108.8	105.3	103.1	101.7
56°	113.3	115.9	117.6	118.6	120.5	115.9	111.9	106.8	103.2	101.1	99.7
56.5°	111.2	113.9	115.5	116.6	118.5	113.9	110.0	104.7	101.3	99.1	97.7
57°	109.1	111.8	113.4	114.5	116.4	111.8	107.9	102.7	99.2	97.0	95.7
57.5°	107.1	109.8	111.3	112.4	114.4	109.7	105.7	100.6	97.2	95.1	93.7
58°	105.0	107.7	109.1	110.3	112.2	107.6	103.7	98.6	95.1	93.0	91.7
58.5°	102.9	105.6	107.1	108.3	110.1	105.6	101.6	96.6	93.1	91.0	89.7
59°	101.0	103.5	105.1	106.2	108.1	103.6	99.6	94.7	91.1	89.1	87.7
59.5°	98.9	101.4	103.0	104.1	105.9	101.6	97.7	92.6	89.2	87.2	85.8
60°	96.9	99.5	101.1	102.0	104.0	99.6	95.6	90.6	87.3	85.1	83.9
60.5°	94.9	97.4	98.9	100.0	101.9	97.7	93.6	88.7	85.3	83.2	81.9
61°	92.8	95.3	96.9	98.0	99.8	95.5	91.6	86.7	83.4	81.4	79.9
61.5°	90.8	93.3	95.0	96.0	97.8	93.5	89.7	84.8	81.4	79.4	78.0
62°	88.8	91.3	92.9	94.0	95.8	91.5	87.7	82.8	79.4	77.4	76.1
62.5°	86.9	89.3	90.9	92.0	93.8	89.5	85.8	81.0	77.5	75.4	74.1
63°	84.9	87.3	88.9	89.9	91.8	87.6	83.8	79.0	75.6	73.6	72.2
63.5°	82.9	85.4	86.9	87.9	89.8	85.7	81.8	77.0	73.7	71.7	70.4
64°	81.1	83.5	84.9	86.0	87.9	83.7	79.9	75.1	71.8	69.8	68.6
64.5°	78.9	81.4	82.9	84.1	85.9	81.6	78.0	73.2	69.9	67.8	66.7
65°	77.0	79.4	81.1	82.1	83.9	79.7	76.0	71.3	68.0	65.9	64.7
65.5°	75.0	77.5	79.0	80.1	81.9	77.8	74.1	69.4	66.1	64.1	62.9
66°	73.1	75.5	77.0	78.1	80.0	75.9	72.2	67.6	64.2	62.3	61.0
66.5°	71.2	73.6	75.1	76.1	78.0	74.0	70.4	65.8	62.4	60.4	59.2
67°	69.3	71.7	73.1	74.2	76.0	72.1	68.5	63.8	60.5	58.6	57.3





TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	67.5	69.8	71.2	72.3	74.1	70.2	66.7	61.9	58.7	56.7	55.5
68°	65.5	67.8	69.3	70.4	72.3	68.2	64.7	60.1	56.9	54.9	53.6
68.5°	63.5	65.9	67.5	68.5	70.3	66.3	62.9	58.2	55.2	53.1	51.9
69°	61.6	64.0	65.5	66.6	68.4	64.5	61.0	56.5	53.4	51.3	50.1
69.5°	59.8	62.1	63.5	64.5	66.6	62.6	59.2	54.6	51.6	49.5	48.2
70°	57.9	60.2	61.7	62.6	64.6	60.8	57.3	52.8	49.7	47.7	46.5
70.5°	56.1	58.4	59.8	60.6	62.7	59.0	55.5	51.0	48.0	46.1	44.8
71°	54.2	56.6	57.9	58.6	60.8	57.2	53.7	49.3	46.2	44.3	43.0
71.5°	52.4	54.8	55.9	56.6	59.1	55.4	51.9	47.4	44.5	42.4	41.3
72°	50.5	53.0	53.9	54.4	57.1	53.5	50.1	45.7	42.7	40.6	39.6
72.5°	48.7	51.0	51.9	52.2	55.2	51.6	48.3	43.9	41.0	38.9	37.9
73°	46.9	49.2	49.8	50.0	53.2	49.6	46.5	42.1	39.3	37.1	36.1
73.5°	45.2	47.3	47.6	47.8	50.9	47.7	44.8	40.3	37.4	35.5	34.4
74°	43.4	45.6	45.6	45.6	48.7	45.8	43.0	38.6	35.8	33.8	32.7
74.5°	41.7	43.8	43.5	43.3	46.5	43.8	41.4	36.9	34.0	32.2	31.0
75°	39.9	42.0	41.4	41.2	44.3	41.8	39.6	35.2	32.4	30.5	29.4
75.5°	38.1	40.1	39.2	38.9	42.1	39.8	37.9	33.5	30.8	28.9	27.8
76°	36.3	38.3	37.0	36.4	39.7	37.6	36.0	31.8	29.2	27.2	26.0
76.5°	34.5	36.5	34.9	34.1	37.5	35.4	34.1	30.2	27.5	25.7	24.4
77°	32.9	34.6	32.8	31.8	35.2	33.4	32.2	28.7	25.9	24.1	22.8
77.5°	31.2	32.8	30.7	29.4	32.9	31.4	30.5	26.9	24.3	22.5	21.3
78°	29.6	31.1	28.5	27.2	30.6	29.3	28.7	25.5	22.7	21.0	19.7
78.5°	28.0	29.4	26.4	24.9	28.5	27.2	27.0	23.8	21.1	19.5	18.3
79°	26.2	27.6	24.5	22.6	26.1	25.1	25.3	22.3	19.6	17.9	16.8
79.5°	24.7	25.9	22.5	20.4	24.0	23.1	23.3	20.7	18.2	16.4	15.5
80°	23.0	24.3	20.4	18.3	21.7	21.1	21.5	19.3	16.7	15.1	14.1
80.5°	21.4	22.5	18.5	16.1	19.5	19.0	19.8	17.8	15.3	13.8	12.6
81°	19.8	20.9	16.6	14.1	17.4	17.1	18.1	16.3	14.0	12.3	11.2
81.5°	18.5	19.2	14.7	12.2	15.5	15.2	16.4	15.0	12.4	11.0	9.9
82°	16.9	17.5	12.7	10.3	13.5	13.2	14.9	13.6	11.1	9.7	8.6
82.5°	15.5	15.9	10.9	8.5	11.5	11.4	13.2	12.1	10.0	8.7	7.2
83°	14.1	14.3	9.1	6.9	9.5	9.6	11.7	10.9	8.7	7.4	5.8
83.5°	12.6	12.7	7.4	5.4	7.8	8.0	10.1	9.4	7.4	6.1	4.7
84°	11.2	11.3	5.7	3.8	6.2	6.4	8.6	8.3	6.3	5.1	3.6
84.5°	10.1	9.8	4.2	2.6	4.8	5.0	7.2	7.2	5.4	4.1	2.3
85°	9.0	8.4	3.0	1.8	3.6	3.7	5.6	5.9	4.1	3.2	1.4
85.5°	7.5	7.3	2.2	1.1	2.3	2.4	4.4	4.9	3.2	2.3	0.5
86°	6.4	5.8	1.5	0.5	1.6	1.5	3.1	3.9	2.4	1.7	0.0
86.5°	5.6	4.8	0.6	0.0	0.6	0.6	2.1	3.0	1.9	1.0	0.3
87°	4.3	3.8	0.5	0.3	0.4	0.0	1.4	2.2	1.3	0.6	0.0
87.5°	3.3	2.9	0.0	0.3	0.0	0.3	0.6	1.6	0.5	0.0	0.0
88°	2.3	2.2	0.0	0.3	0.3	0.0	0.5	0.9	0.3	0.3	0.0
88.5°	1.6	1.3	0.3	0.3	0.0	0.0	0.0	0.6	0.3	0.0	0.0
89°	0.7	0.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.3	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.0



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**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	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	282.8	282.8	282.8	282.8	282.8	282.8
0.5°	282.8	282.2	282.3	282.6	282.7	282.9
1°	282.5	281.9	282.1	282.4	282.7	282.9
1.5°	282.2	281.6	281.8	282.2	282.7	282.9
2°	281.9	281.2	281.5	282.0	282.4	282.9
2.5°	281.5	280.8	281.2	281.8	282.3	282.8
3°	281.1	280.4	280.9	281.4	282.0	282.7
3.5°	280.7	279.9	280.4	281.1	281.8	282.5
4°	280.2	279.4	280.0	280.7	281.5	282.3
4.5°	279.7	278.8	279.5	280.4	281.2	282.0
5°	279.1	278.2	279.1	279.9	280.9	281.8
5.5°	278.5	277.6	278.5	279.4	280.5	281.4
6°	277.9	276.9	277.9	278.9	280.1	281.1
6.5°	277.2	276.2	277.3	278.3	279.6	280.7
7°	276.4	275.4	276.6	277.7	279.2	280.3
7.5°	275.7	274.6	275.9	277.1	278.6	279.8
8°	275.0	273.8	275.1	276.4	278.0	279.3
8.5°	274.2	273.0	274.3	275.7	277.5	278.7
9°	273.3	272.1	273.5	275.1	276.8	278.1
9.5°	272.5	271.1	272.7	274.3	276.1	277.6
10°	271.5	270.2	271.8	273.4	275.4	276.9
10.5°	270.6	269.2	270.9	272.6	274.7	276.2
11°	269.5	268.2	270.0	271.6	274.0	275.4
11.5°	268.5	267.1	269.0	270.8	273.0	274.6
12°	267.4	266.0	267.9	269.8	272.2	273.9
12.5°	266.4	264.9	266.9	268.8	271.3	273.1
13°	265.3	263.8	265.8	267.7	270.4	272.2
13.5°	264.1	262.6	264.7	266.7	269.4	271.2
14°	262.9	261.3	263.5	265.6	268.4	270.3
14.5°	261.7	260.0	262.3	264.5	267.4	269.3
15°	260.5	258.8	261.2	263.3	266.3	268.3
15.5°	259.2	257.4	259.8	262.1	265.2	267.3
16°	257.8	256.0	258.6	260.9	264.0	266.2
16.5°	256.5	254.7	257.2	259.6	262.9	265.1
17°	255.1	253.2	255.8	258.3	261.7	264.0
17.5°	253.6	251.8	254.4	257.0	260.4	262.8
18°	252.2	250.3	253.0	255.7	259.1	261.6
18.5°	250.7	248.7	251.6	254.2	257.8	260.5
19°	249.3	247.2	250.1	252.8	256.5	259.1
19.5°	247.8	245.7	248.5	251.4	255.1	257.8
20°	246.1	244.1	247.1	249.9	253.7	256.5
20.5°	244.5	242.4	245.4	248.3	252.4	255.1
21°	242.8	240.8	243.9	246.8	250.9	253.7
21.5°	241.1	239.2	242.2	245.2	249.4	252.2
22°	239.5	237.4	240.6	243.6	247.9	250.7



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	237.7	235.7	238.9	242.0	246.3	249.3
23°	236.0	234.0	237.2	240.3	244.7	247.8
23.5°	234.3	232.1	235.5	238.7	243.1	246.2
24°	232.5	230.3	233.8	237.0	241.4	244.6
24.5°	230.7	228.5	232.0	235.2	239.8	243.0
25°	228.9	226.5	230.2	233.4	238.1	241.3
25.5°	227.0	224.7	228.4	231.7	236.4	239.6
26°	225.2	222.8	226.5	229.8	234.6	238.0
26.5°	223.3	220.9	224.6	228.1	232.8	236.3
27°	221.4	219.0	222.7	226.2	231.1	234.6
27.5°	219.4	217.0	220.7	224.4	229.3	232.8
28°	217.4	215.0	218.9	222.4	227.5	231.0
28.5°	215.4	213.0	216.9	220.5	225.6	229.2
29°	213.5	211.0	215.0	218.6	223.7	227.3
29.5°	211.5	209.0	213.0	216.6	221.8	225.5
30°	209.4	206.9	211.0	214.6	219.9	223.7
30.5°	207.5	204.9	208.9	212.6	218.0	221.8
31°	205.3	202.9	206.9	210.7	216.1	219.8
31.5°	203.3	200.8	204.9	208.6	214.0	217.8
32°	201.2	198.6	202.8	206.6	212.0	215.8
32.5°	199.1	196.5	200.8	204.6	210.0	213.8
33°	197.0	194.4	198.6	202.5	208.0	211.8
33.5°	194.8	192.3	196.6	200.4	206.0	209.8
34°	192.8	190.2	194.4	198.3	204.0	207.8
34.5°	190.7	188.0	192.3	196.2	201.8	205.8
35°	188.5	185.9	190.2	194.1	199.8	203.7
35.5°	186.3	183.8	188.0	192.0	197.7	201.7
36°	184.2	181.6	185.9	189.8	195.6	199.6
36.5°	182.0	179.4	183.7	187.7	193.5	197.5
37°	179.9	177.3	181.6	185.6	191.3	195.4
37.5°	177.7	175.1	179.4	183.4	189.2	193.3
38°	175.7	172.9	177.2	181.3	187.1	191.2
38.5°	173.3	170.7	175.1	179.1	184.9	189.1
39°	171.1	168.5	172.9	176.9	182.8	186.9
39.5°	168.9	166.3	170.7	174.7	180.6	184.6
40°	166.7	164.1	168.5	172.5	178.5	182.5
40.5°	164.5	162.0	166.3	170.3	176.3	180.3
41°	162.3	159.8	164.1	168.2	174.1	178.1
41.5°	160.2	157.6	161.9	166.0	171.9	176.0
42°	158.0	155.4	159.7	163.9	169.7	173.8
42.5°	155.8	153.2	157.6	161.7	167.5	171.6
43°	153.5	151.1	155.4	159.4	165.3	169.5
43.5°	151.5	148.8	153.2	157.2	163.2	167.2
44°	149.2	146.7	151.0	155.0	160.9	165.1
44.5°	147.1	144.6	148.8	152.9	158.7	162.9



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	144.9	142.4	146.6	150.7	156.5	160.7
45.5°	142.8	140.2	144.5	148.5	154.4	158.6
46°	140.6	138.0	142.4	146.4	152.2	156.4
46.5°	138.4	135.9	140.2	144.2	150.0	154.1
47°	136.3	133.7	138.0	142.0	147.9	151.9
47.5°	134.2	131.5	135.9	139.8	145.7	149.8
48°	132.0	129.5	133.8	137.7	143.4	147.6
48.5°	129.8	127.4	131.5	135.5	141.2	145.4
49°	127.7	125.2	129.4	133.3	139.1	143.2
49.5°	125.6	123.0	127.3	131.2	137.0	141.1
50°	123.5	121.0	125.2	129.1	134.8	138.9
50.5°	121.3	118.9	123.1	126.9	132.6	136.6
51°	119.2	116.7	120.9	124.8	130.5	134.6
51.5°	117.1	114.7	118.8	122.7	128.4	132.4
52°	115.1	112.7	116.7	120.7	126.2	130.2
52.5°	113.0	110.6	114.6	118.5	124.0	128.1
53°	110.9	108.6	112.5	116.4	122.0	126.0
53.5°	108.9	106.5	110.4	114.3	120.0	124.0
54°	106.9	104.5	108.4	112.2	117.8	121.7
54.5°	104.7	102.3	106.4	110.3	115.6	119.6
55°	102.7	100.3	104.3	108.2	113.5	117.5
55.5°	100.8	98.4	102.2	106.1	111.5	115.5
56°	98.7	96.3	100.3	104.0	109.4	113.3
56.5°	96.7	94.3	98.2	102.0	107.3	111.2
57°	94.7	92.3	96.2	99.9	105.3	109.1
57.5°	92.6	90.3	94.3	97.9	103.2	107.1
58°	90.6	88.3	92.2	95.8	101.2	105.0
58.5°	88.6	86.4	90.2	93.8	99.1	102.9
59°	86.7	84.4	88.1	91.8	97.1	101.0
59.5°	84.8	82.4	86.2	89.9	95.0	98.9
60°	82.8	80.5	84.2	87.9	93.0	96.9
60.5°	80.9	78.6	82.3	85.9	91.0	94.9
61°	78.9	76.6	80.4	84.0	89.0	92.8
61.5°	77.0	74.7	78.4	81.9	87.1	90.8
62°	75.0	72.8	76.5	80.0	85.1	88.8
62.5°	73.1	70.9	74.5	78.1	83.1	86.9
63°	71.2	69.1	72.6	76.2	81.1	84.9
63.5°	69.4	67.3	70.7	74.3	79.2	82.9
64°	67.5	65.2	68.9	72.3	77.3	81.1
64.5°	65.6	63.4	67.1	70.4	75.4	78.9
65°	63.6	61.5	65.2	68.4	73.4	77.0
65.5°	61.7	59.6	63.2	66.5	71.6	75.0
66°	60.0	57.8	61.3	64.6	69.6	73.1
66.5°	58.1	55.9	59.4	62.8	67.6	71.2
67°	56.3	54.0	57.6	60.9	65.8	69.3



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	54.4	52.2	55.8	59.1	63.8	67.5
68°	52.6	50.4	53.9	57.2	62.0	65.5
68.5°	50.7	48.7	52.1	55.4	60.2	63.5
69°	48.9	46.9	50.2	53.6	58.3	61.6
69.5°	47.1	45.2	48.4	51.8	56.4	59.8
70°	45.5	43.4	46.6	49.9	54.5	57.9
70.5°	43.7	41.8	44.9	48.1	52.8	56.1
71°	42.0	40.0	43.1	46.3	50.9	54.2
71.5°	40.2	38.2	41.5	44.6	49.2	52.4
72°	38.5	36.5	39.8	42.8	47.3	50.5
72.5°	36.7	34.8	38.0	41.0	45.5	48.7
73°	35.1	33.0	36.3	39.2	43.8	46.9
73.5°	33.3	31.4	34.6	37.5	41.9	45.2
74°	31.6	29.8	32.8	35.8	40.1	43.4
74.5°	30.0	28.1	31.1	34.0	38.4	41.7
75°	28.3	26.4	29.5	32.4	36.7	39.9
75.5°	26.6	24.7	27.8	30.7	34.9	38.1
76°	25.0	23.1	26.2	29.0	33.2	36.3
76.5°	23.4	21.6	24.5	27.4	31.5	34.5
77°	22.0	20.1	22.9	25.9	29.8	32.9
77.5°	20.4	18.6	21.4	24.2	28.2	31.2
78°	18.9	17.1	19.8	22.6	26.5	29.6
78.5°	17.5	15.7	18.3	21.1	24.9	28.0
79°	16.0	14.1	16.7	19.5	23.3	26.2
79.5°	14.5	12.5	15.1	17.9	21.8	24.7
80°	12.9	10.9	13.5	16.4	20.2	23.0
80.5°	11.5	9.3	11.9	15.1	18.7	21.4
81°	10.1	7.6	10.3	13.6	17.2	19.8
81.5°	8.6	6.1	8.8	12.0	15.8	18.5
82°	7.1	4.8	7.2	10.6	14.2	16.9
82.5°	5.7	3.4	5.6	9.1	12.9	15.5
83°	4.2	2.2	4.1	7.5	11.6	14.1
83.5°	3.0	1.4	2.8	6.2	10.2	12.6
84°	2.2	0.6	1.6	4.9	9.0	11.2
84.5°	1.2	0.0	0.6	3.8	7.6	10.1
85°	0.6	0.3	0.3	2.4	6.6	9.0
85.5°	0.0	0.0	0.3	1.6	5.6	7.5
86°	0.0	0.0	0.0	0.7	4.4	6.4
86.5°	0.0	0.0	0.0	0.5	3.3	5.6
87°	0.0	0.0	0.0	0.0	2.4	4.3
87.5°	0.0	0.0	0.0	0.3	1.7	3.3
88°	0.0	0.0	0.0	0.0	1.1	2.3
88.5°	0.0	0.0	0.0	0.0	0.5	1.6
89°	0.0	0.0	0.0	0.0	0.0	0.7
89.5°	0.0	0.0	0.0	0.0	0.0	0.3



TEST NUMBER: P303598

CATALOG NUMBER: HLA406VWFL9FS1EMWR-4000K

**CANDELA DISTRIBUTION (continued):**

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

(END OF REPORT)