

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: P303596

Luminaire Tested: **HLA406VWFL9FS1EMWR-3000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P303596  
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-3000K  
Description: 4IN HLA LED DOWNLIGHT WITH 80 DEGREE OPTIC AND 3000K LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

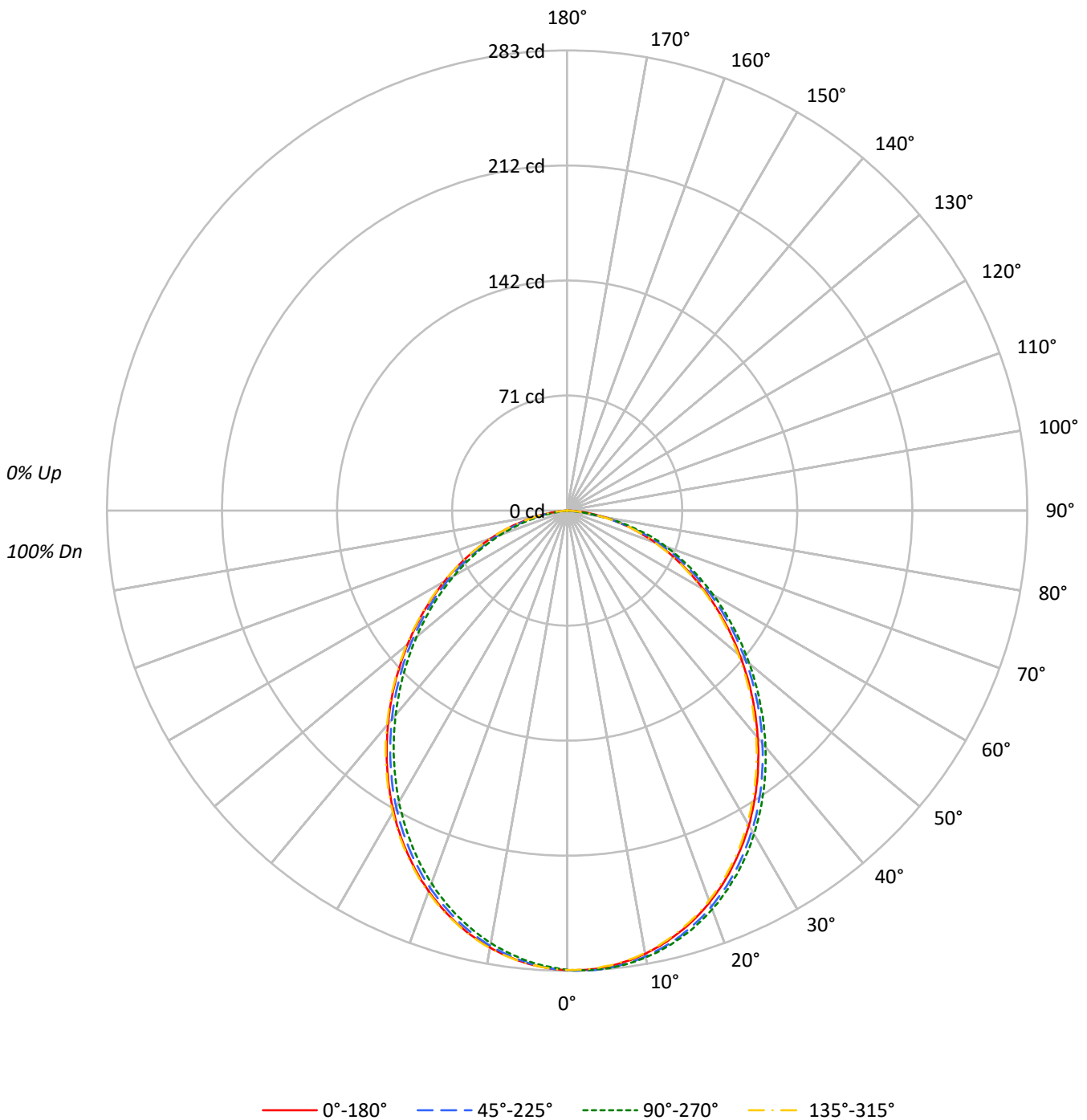
Lumens per Lamp: 678.744 (1 lamp)  
Luminaire Lumens: 670.2 lumens  
Efficiency: 98.7%  
Efficacy: 67.0 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.26  
Luminous Opening: Circular (Dia: 0.25m x H: 0m)  
CIE Type: Direct

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



TEST NUMBER: P303596  
CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

### Luminous Intensity Polar Plot





TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-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	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	97	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	59	53	48	58	52	48	46
6	71	58	50	44	69	57	49	44	56	48	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	38	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°	5757	5757	5757	5757
5°	5759	5779	5718	5685
10°	5724	5773	5645	5585
15°	5656	5732	5540	5456
20°	5556	5658	5400	5288
25°	5419	5548	5226	5089
30°	5260	5406	5025	4865
35°	5063	5237	4802	4621
40°	4851	5045	4558	4361
45°	4627	4840	4310	4100
50°	4399	4634	4063	3832
55°	4170	4433	3811	3562
60°	3944	4233	3553	3280
65°	3707	4044	3278	2960
70°	3449	3842	2960	2585
75°	3141	3487	2550	2078
80°	2698	2546	1947	1279
85°	2080	841	958	70



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	26.6	4.0	3.9
10°-20°	74.7	11.2	11.0
20°-30°	108.9	16.3	16.0
30°-40°	123.9	18.5	18.3
40°-50°	119.7	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	5.5
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°	210.3	31.4	31.0
0°-40°	334.2	49.9	49.2
0°-60°	554.4	82.7	81.7
0°-90°	670.2	100.0	98.7
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°	670.2	100.0	98.7

**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	232	226	241	111
35°	204	211	193	186	204	127
45°	161	168	150	142	161	124
55°	117	125	107	100	117	105
65°	77	84	68	61	77	76
75°	40	44	32	26	40	42
85°	9	4	4	0	9	10
90°	0	0	0	0	0	



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (FULL):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	282.6	282.6	282.6	282.6	282.6	282.6	282.6	282.6	282.6	282.6	282.6
0.5°	282.7	282.9	282.9	283.0	282.6	282.5	282.5	282.5	282.5	282.6	282.7
1°	282.7	282.9	283.0	283.1	282.7	282.6	282.5	282.5	282.3	282.4	282.5
1.5°	282.7	282.9	283.1	283.2	282.9	282.6	282.5	282.3	282.1	282.1	282.1
2°	282.7	282.9	283.1	283.2	282.9	282.7	282.5	282.1	281.9	281.8	281.8
2.5°	282.6	282.8	283.1	283.2	282.9	282.7	282.3	282.0	281.6	281.4	281.4
3°	282.5	282.7	283.1	283.1	282.9	282.6	282.1	281.7	281.2	281.1	281.0
3.5°	282.4	282.7	283.1	283.0	282.9	282.5	281.9	281.4	280.9	280.7	280.7
4°	282.1	282.5	282.9	282.9	282.8	282.4	281.8	281.0	280.5	280.3	280.2
4.5°	281.9	282.3	282.8	282.8	282.7	282.1	281.4	280.6	280.1	279.8	279.7
5°	281.6	282.0	282.6	282.7	282.6	281.9	281.1	280.3	279.6	279.2	279.2
5.5°	281.3	281.8	282.3	282.5	282.5	281.6	280.9	279.9	279.1	278.7	278.5
6°	280.9	281.4	282.0	282.1	282.2	281.3	280.5	279.4	278.6	278.1	277.9
6.5°	280.5	281.0	281.7	281.8	281.9	281.0	280.1	278.8	278.0	277.5	277.3
7°	280.1	280.7	281.3	281.5	281.6	280.6	279.6	278.3	277.4	276.8	276.6
7.5°	279.6	280.3	280.9	281.1	281.3	280.2	279.1	277.7	276.7	276.1	275.9
8°	279.2	279.8	280.5	280.7	280.9	279.7	278.6	277.0	276.0	275.4	275.1
8.5°	278.6	279.3	280.0	280.2	280.5	279.2	278.1	276.4	275.3	274.6	274.3
9°	278.0	278.8	279.5	279.7	280.0	278.7	277.5	275.7	274.5	274.0	273.6
9.5°	277.4	278.2	278.9	279.2	279.5	278.1	276.8	275.0	273.8	273.0	272.7
10°	276.7	277.6	278.4	278.7	279.1	277.5	276.2	274.2	272.9	272.2	271.8
10.5°	276.0	277.0	277.7	278.1	278.4	276.9	275.4	273.4	272.1	271.2	270.9
11°	275.2	276.4	277.0	277.4	277.9	276.1	274.7	272.5	271.1	270.3	269.9
11.5°	274.5	275.6	276.3	276.7	277.3	275.4	273.9	271.7	270.3	269.3	268.9
12°	273.8	274.9	275.6	276.0	276.5	274.7	273.1	270.8	269.2	268.3	267.8
12.5°	272.9	274.1	274.9	275.3	275.8	274.0	272.2	269.8	268.2	267.3	266.8
13°	272.1	273.3	274.1	274.5	275.1	273.1	271.3	268.9	267.2	266.2	265.6
13.5°	271.1	272.4	273.2	273.7	274.3	272.4	270.4	267.8	266.2	265.1	264.5
14°	270.2	271.5	272.4	272.8	273.5	271.4	269.4	266.8	265.0	263.9	263.4
14.5°	269.2	270.6	271.4	271.9	272.6	270.5	268.4	265.7	263.8	262.7	262.1
15°	268.2	269.6	270.5	271.0	271.8	269.4	267.4	264.6	262.7	261.5	260.9
15.5°	267.2	268.6	269.4	270.0	270.8	268.5	266.3	263.4	261.4	260.2	259.5
16°	266.1	267.6	268.5	269.0	269.9	267.4	265.2	262.2	260.2	258.9	258.3
16.5°	265.0	266.5	267.4	267.9	268.9	266.4	264.1	261.1	258.9	257.6	256.9
17°	263.9	265.4	266.4	266.9	267.8	265.3	262.9	259.8	257.6	256.3	255.5
17.5°	262.7	264.3	265.3	265.8	266.8	264.2	261.7	258.6	256.3	254.8	254.1
18°	261.5	263.1	264.1	264.6	265.7	263.0	260.5	257.2	254.9	253.4	252.7
18.5°	260.3	261.9	263.0	263.5	264.5	261.8	259.2	255.8	253.4	252.0	251.2
19°	259.0	260.7	261.7	262.2	263.4	260.5	257.9	254.5	252.0	250.5	249.7
19.5°	257.7	259.4	260.5	261.1	262.1	259.3	256.6	253.0	250.6	249.1	248.2
20°	256.3	258.2	259.2	259.8	261.0	258.0	255.1	251.6	249.1	247.6	246.7
20.5°	254.9	256.8	257.9	258.6	259.6	256.6	253.8	250.1	247.5	245.9	245.1
21°	253.5	255.4	256.5	257.1	258.4	255.2	252.4	248.6	246.0	244.4	243.5
21.5°	252.1	254.0	255.1	255.8	257.0	253.8	250.9	247.0	244.5	242.7	241.9
22°	250.6	252.5	253.7	254.3	255.6	252.4	249.4	245.4	242.8	241.0	240.2



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
22.5°	249.2	251.1	252.3	252.9	254.2	251.0	247.8	243.9	241.1	239.4	238.5
23°	247.6	249.6	250.9	251.5	252.8	249.4	246.3	242.3	239.4	237.7	236.8
23.5°	246.0	248.0	249.4	250.0	251.3	247.9	244.8	240.6	237.7	236.0	235.1
24°	244.5	246.5	247.8	248.5	249.8	246.3	243.1	239.0	236.0	234.2	233.3
24.5°	242.8	244.9	246.2	247.1	248.3	244.8	241.5	237.3	234.3	232.4	231.5
25°	241.1	243.3	244.6	245.3	246.8	243.2	239.8	235.6	232.5	230.6	229.7
25.5°	239.5	241.7	243.0	243.8	245.2	241.5	238.2	233.9	230.8	228.9	227.8
26°	237.8	240.1	241.3	242.1	243.6	239.8	236.5	232.0	228.9	227.0	225.9
26.5°	236.1	238.4	239.7	240.5	242.0	238.2	234.8	230.2	227.1	225.2	224.1
27°	234.4	236.7	238.0	238.8	240.3	236.5	233.0	228.4	225.2	223.3	222.2
27.5°	232.7	235.1	236.3	237.1	238.6	234.7	231.2	226.5	223.3	221.4	220.2
28°	230.9	233.3	234.5	235.4	237.0	232.9	229.4	224.6	221.5	219.4	218.3
28.5°	229.0	231.4	232.7	233.6	235.3	231.2	227.5	222.7	219.6	217.4	216.4
29°	227.2	229.6	230.9	231.9	233.5	229.3	225.7	220.8	217.6	215.4	214.4
29.5°	225.4	227.8	229.1	230.0	231.6	227.5	223.8	218.9	215.6	213.4	212.3
30°	223.6	225.9	227.3	228.3	229.8	225.6	221.9	216.9	213.6	211.4	210.3
30.5°	221.7	224.0	225.5	226.4	228.0	223.7	219.9	215.0	211.6	209.5	208.3
31°	219.6	222.1	223.6	224.5	226.1	222.0	218.0	213.0	209.6	207.4	206.2
31.5°	217.7	220.2	221.7	222.6	224.3	220.0	216.2	211.0	207.6	205.3	204.3
32°	215.7	218.3	219.8	220.7	222.4	218.0	214.1	209.0	205.5	203.3	202.2
32.5°	213.7	216.4	217.8	218.7	220.4	216.0	212.1	206.9	203.4	201.3	200.0
33°	211.7	214.4	215.8	216.8	218.5	214.0	210.1	204.9	201.4	199.1	197.9
33.5°	209.7	212.4	213.7	214.8	216.5	212.0	208.0	202.9	199.3	197.1	195.8
34°	207.7	210.4	211.8	212.8	214.5	210.0	206.0	200.8	197.2	195.0	193.7
34.5°	205.6	208.4	209.8	210.8	212.5	208.0	204.0	198.7	195.1	192.9	191.5
35°	203.6	206.3	207.8	208.8	210.6	206.0	201.9	196.6	193.1	190.8	189.5
35.5°	201.6	204.3	205.7	206.8	208.6	204.0	199.9	194.4	190.9	188.6	187.3
36°	199.5	202.3	203.7	204.7	206.5	201.8	197.8	192.3	188.8	186.4	185.2
36.5°	197.3	200.2	201.6	202.7	204.5	199.8	195.7	190.2	186.6	184.3	183.0
37°	195.3	198.1	199.5	200.6	202.5	197.7	193.5	188.1	184.4	182.2	180.8
37.5°	193.1	196.0	197.4	198.5	200.3	195.6	191.4	186.0	182.3	180.0	178.6
38°	191.1	193.8	195.3	196.4	198.2	193.5	189.2	183.8	180.1	177.8	176.5
38.5°	189.0	191.7	193.2	194.3	196.1	191.3	187.1	181.7	177.9	175.7	174.3
39°	186.7	189.6	191.1	192.2	194.0	189.3	185.0	179.4	175.8	173.4	172.1
39.5°	184.5	187.5	189.0	190.1	191.9	187.1	182.9	177.3	173.6	171.2	170.0
40°	182.4	185.3	186.7	187.8	189.7	184.9	180.6	175.2	171.4	169.1	167.8
40.5°	180.2	183.1	184.6	185.7	187.6	182.8	178.5	172.9	169.2	166.9	165.5
41°	178.0	181.0	182.5	183.6	185.5	180.6	176.3	170.7	167.0	164.7	163.4
41.5°	175.9	178.8	180.3	181.4	183.3	178.4	174.1	168.6	164.8	162.5	161.3
42°	173.7	176.7	178.1	179.2	181.1	176.3	171.9	166.4	162.8	160.4	159.0
42.5°	171.5	174.4	175.9	177.1	179.0	174.1	169.8	164.2	160.5	158.1	156.8
43°	169.4	172.3	173.8	175.0	176.9	171.9	167.6	162.1	158.3	156.0	154.6
43.5°	167.1	170.1	171.6	172.7	174.7	169.7	165.4	159.9	156.1	153.8	152.5
44°	165.0	167.9	169.4	170.5	172.4	167.5	163.3	157.7	154.0	151.7	150.3
44.5°	162.8	165.7	167.3	168.3	170.2	165.4	161.2	155.5	151.8	149.5	148.1



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	160.6	163.5	165.1	166.2	168.0	163.2	158.8	153.4	149.6	147.3	145.9
45.5°	158.5	161.4	162.9	163.9	165.9	161.1	156.7	151.2	147.6	145.1	143.7
46°	156.3	159.2	160.7	161.8	163.7	158.8	154.5	149.0	145.3	143.0	141.6
46.5°	154.1	156.9	158.5	159.6	161.5	156.6	152.4	146.8	143.1	140.8	139.5
47°	151.9	154.8	156.3	157.5	159.3	154.4	150.2	144.6	141.0	138.6	137.4
47.5°	149.8	152.6	154.1	155.3	157.1	152.2	147.9	142.4	138.8	136.4	135.2
48°	147.5	150.4	151.9	153.0	154.9	150.1	145.8	140.3	136.6	134.5	133.0
48.5°	145.3	148.1	149.8	150.9	152.8	148.0	143.6	138.2	134.5	132.2	130.8
49°	143.1	146.0	147.6	148.7	150.6	145.7	141.5	136.1	132.3	130.1	128.7
49.5°	141.0	143.9	145.4	146.5	148.4	143.5	139.3	133.9	130.3	127.9	126.6
50°	138.8	141.7	143.2	144.4	146.2	141.4	137.2	131.7	128.2	125.8	124.5
50.5°	136.5	139.5	141.1	142.2	144.1	139.2	135.0	129.5	126.0	123.7	122.3
51°	134.5	137.3	138.8	140.0	141.8	137.0	132.9	127.4	123.8	121.6	120.3
51.5°	132.3	135.1	136.6	137.8	139.7	134.9	130.7	125.4	121.9	119.4	118.2
52°	130.2	132.9	134.6	135.7	137.5	132.8	128.6	123.3	119.7	117.4	116.0
52.5°	128.0	130.7	132.4	133.6	135.5	130.8	126.5	121.2	117.6	115.4	114.0
53°	125.9	128.7	130.3	131.3	133.2	128.6	124.4	119.1	115.5	113.3	111.9
53.5°	123.9	126.5	128.1	129.2	131.1	126.4	122.3	117.0	113.4	111.2	110.0
54°	121.7	124.4	126.0	127.1	129.0	124.3	120.2	115.0	111.4	109.0	108.0
54.5°	119.5	122.3	123.9	125.0	126.9	122.2	118.1	112.8	109.4	107.1	105.8
55°	117.4	120.3	121.7	122.8	124.8	120.1	116.0	110.7	107.3	105.0	103.8
55.5°	115.4	118.0	119.6	120.7	122.5	118.0	113.9	108.8	105.2	103.0	101.7
56°	113.3	115.9	117.5	118.6	120.4	115.9	111.8	106.7	103.1	101.1	99.6
56.5°	111.2	113.8	115.4	116.5	118.4	113.8	109.9	104.6	101.2	99.1	97.7
57°	109.0	111.7	113.3	114.5	116.4	111.8	107.9	102.6	99.2	97.0	95.7
57.5°	107.0	109.7	111.2	112.3	114.3	109.6	105.7	100.6	97.2	95.0	93.7
58°	105.0	107.6	109.1	110.2	112.1	107.6	103.6	98.5	95.1	93.0	91.6
58.5°	102.8	105.5	107.1	108.2	110.0	105.5	101.6	96.6	93.1	90.9	89.6
59°	101.0	103.4	105.0	106.1	108.1	103.5	99.6	94.6	91.1	89.0	87.6
59.5°	98.8	101.4	102.9	104.0	105.9	101.5	97.6	92.5	89.2	87.1	85.7
60°	96.8	99.4	101.0	102.0	103.9	99.5	95.5	90.6	87.2	85.1	83.8
60.5°	94.9	97.3	98.9	100.0	101.9	97.6	93.6	88.6	85.2	83.1	81.8
61°	92.7	95.2	96.9	97.9	99.8	95.4	91.6	86.7	83.4	81.3	79.9
61.5°	90.7	93.2	94.9	96.0	97.8	93.4	89.6	84.7	81.3	79.4	77.9
62°	88.7	91.2	92.8	94.0	95.7	91.4	87.6	82.8	79.4	77.3	76.0
62.5°	86.8	89.2	90.8	91.9	93.7	89.5	85.7	81.0	77.5	75.4	74.1
63°	84.8	87.3	88.8	89.9	91.7	87.5	83.7	78.9	75.6	73.6	72.2
63.5°	82.9	85.3	86.9	87.9	89.8	85.7	81.8	77.0	73.7	71.7	70.4
64°	81.0	83.4	84.8	86.0	87.8	83.6	79.9	75.1	71.8	69.7	68.5
64.5°	78.9	81.3	82.9	84.0	85.9	81.5	78.0	73.1	69.9	67.7	66.6
65°	76.9	79.4	81.0	82.0	83.9	79.6	76.0	71.2	68.0	65.9	64.7
65.5°	74.9	77.4	78.9	80.0	81.8	77.8	74.1	69.4	66.1	64.1	62.8
66°	73.0	75.5	77.0	78.0	79.9	75.9	72.2	67.6	64.2	62.2	60.9
66.5°	71.1	73.6	75.0	76.1	77.9	73.9	70.3	65.8	62.4	60.4	59.1
67°	69.3	71.6	73.1	74.1	76.0	72.1	68.4	63.8	60.5	58.5	57.2





TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	67.4	69.7	71.1	72.2	74.1	70.2	66.7	61.9	58.7	56.7	55.4
68°	65.4	67.8	69.2	70.4	72.2	68.2	64.7	60.0	56.9	54.9	53.6
68.5°	63.5	65.8	67.4	68.5	70.3	66.2	62.8	58.2	55.2	53.1	51.8
69°	61.6	63.9	65.5	66.6	68.4	64.4	60.9	56.4	53.4	51.2	50.0
69.5°	59.8	62.0	63.5	64.5	66.6	62.6	59.2	54.6	51.6	49.5	48.2
70°	57.9	60.2	61.6	62.6	64.5	60.7	57.3	52.8	49.7	47.7	46.5
70.5°	56.0	58.4	59.8	60.5	62.7	59.0	55.5	51.0	47.9	46.0	44.7
71°	54.1	56.6	57.9	58.6	60.8	57.2	53.6	49.2	46.2	44.3	43.0
71.5°	52.3	54.8	55.8	56.5	59.0	55.3	51.9	47.4	44.5	42.4	41.3
72°	50.5	52.9	53.9	54.4	57.1	53.5	50.1	45.6	42.7	40.6	39.6
72.5°	48.7	50.9	51.9	52.1	55.2	51.6	48.3	43.8	40.9	38.9	37.9
73°	46.9	49.2	49.7	49.9	53.1	49.6	46.5	42.1	39.2	37.1	36.1
73.5°	45.1	47.3	47.6	47.8	50.9	47.6	44.8	40.3	37.4	35.5	34.3
74°	43.4	45.6	45.5	45.5	48.7	45.7	43.0	38.6	35.7	33.8	32.7
74.5°	41.6	43.8	43.5	43.3	46.5	43.7	41.3	36.9	34.0	32.1	31.0
75°	39.9	42.0	41.3	41.2	44.3	41.8	39.6	35.1	32.4	30.4	29.4
75.5°	38.1	40.1	39.2	38.8	42.1	39.7	37.9	33.5	30.7	28.9	27.8
76°	36.3	38.3	37.0	36.4	39.7	37.6	36.0	31.8	29.1	27.2	26.0
76.5°	34.5	36.4	34.9	34.1	37.5	35.4	34.1	30.2	27.5	25.7	24.4
77°	32.8	34.6	32.8	31.8	35.2	33.4	32.2	28.6	25.9	24.1	22.8
77.5°	31.2	32.8	30.7	29.4	32.9	31.4	30.4	26.9	24.3	22.5	21.2
78°	29.5	31.1	28.5	27.2	30.6	29.3	28.7	25.4	22.7	21.0	19.7
78.5°	27.9	29.4	26.4	24.9	28.5	27.2	27.0	23.8	21.1	19.4	18.3
79°	26.2	27.6	24.5	22.5	26.1	25.1	25.2	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	18.1	16.4	15.5
80°	23.0	24.3	20.4	18.3	21.7	21.1	21.5	19.3	16.6	15.1	14.1
80.5°	21.3	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°	18.4	19.2	14.6	12.2	15.5	15.2	16.4	14.9	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	7.9	10.1	9.4	7.3	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°	8.9	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°	5.5	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: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**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: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	282.6	282.6	282.6	282.6	282.6	282.6
0.5°	282.6	282.0	282.2	282.4	282.5	282.7
1°	282.4	281.7	281.9	282.3	282.5	282.7
1.5°	282.1	281.4	281.6	282.1	282.5	282.7
2°	281.7	281.0	281.3	281.9	282.3	282.7
2.5°	281.3	280.6	281.0	281.6	282.1	282.6
3°	280.9	280.2	280.7	281.3	281.9	282.5
3.5°	280.5	279.7	280.3	280.9	281.7	282.4
4°	280.0	279.2	279.9	280.6	281.4	282.1
4.5°	279.5	278.6	279.4	280.2	281.0	281.9
5°	278.9	278.0	278.9	279.7	280.8	281.6
5.5°	278.4	277.5	278.3	279.2	280.3	281.3
6°	277.7	276.8	277.7	278.7	280.0	280.9
6.5°	277.0	276.0	277.1	278.2	279.5	280.5
7°	276.3	275.2	276.5	277.5	279.0	280.1
7.5°	275.5	274.4	275.7	276.9	278.4	279.6
8°	274.8	273.7	275.0	276.2	277.9	279.2
8.5°	274.1	272.8	274.2	275.6	277.3	278.6
9°	273.1	272.0	273.4	274.9	276.6	278.0
9.5°	272.3	271.0	272.5	274.1	275.9	277.4
10°	271.3	270.0	271.7	273.2	275.3	276.7
10.5°	270.4	269.1	270.8	272.4	274.5	276.0
11°	269.3	268.0	269.8	271.5	273.8	275.2
11.5°	268.3	267.0	268.8	270.6	272.9	274.5
12°	267.3	265.9	267.8	269.6	272.1	273.8
12.5°	266.3	264.8	266.8	268.6	271.1	272.9
13°	265.1	263.6	265.7	267.6	270.2	272.1
13.5°	264.0	262.4	264.6	266.5	269.2	271.1
14°	262.8	261.2	263.4	265.5	268.2	270.2
14.5°	261.5	259.9	262.1	264.3	267.2	269.2
15°	260.3	258.7	261.0	263.1	266.2	268.2
15.5°	259.0	257.3	259.7	261.9	265.0	267.2
16°	257.7	255.9	258.4	260.7	263.8	266.1
16.5°	256.3	254.5	257.0	259.4	262.7	265.0
17°	254.9	253.1	255.7	258.2	261.5	263.9
17.5°	253.5	251.6	254.3	256.8	260.3	262.7
18°	252.0	250.1	252.9	255.5	259.0	261.5
18.5°	250.6	248.6	251.4	254.1	257.7	260.3
19°	249.1	247.1	249.9	252.7	256.4	259.0
19.5°	247.6	245.5	248.4	251.2	254.9	257.7
20°	246.0	243.9	247.0	249.7	253.6	256.3
20.5°	244.4	242.3	245.3	248.2	252.2	254.9
21°	242.7	240.6	243.8	246.7	250.8	253.5
21.5°	241.0	239.0	242.1	245.1	249.2	252.1
22°	239.3	237.3	240.5	243.5	247.7	250.6



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	237.6	235.6	238.8	241.8	246.2	249.2
23°	235.9	233.8	237.1	240.2	244.6	247.6
23.5°	234.1	232.0	235.3	238.5	243.0	246.0
24°	232.4	230.1	233.6	236.9	241.3	244.5
24.5°	230.6	228.3	231.8	235.1	239.6	242.8
25°	228.8	226.4	230.1	233.3	238.0	241.1
25.5°	226.9	224.6	228.3	231.5	236.2	239.5
26°	225.1	222.7	226.4	229.7	234.5	237.8
26.5°	223.2	220.7	224.5	227.9	232.7	236.1
27°	221.2	218.8	222.5	226.1	230.9	234.4
27.5°	219.3	216.9	220.6	224.2	229.2	232.7
28°	217.3	214.9	218.8	222.3	227.3	230.9
28.5°	215.3	212.9	216.8	220.4	225.5	229.0
29°	213.3	210.8	214.8	218.5	223.6	227.2
29.5°	211.3	208.9	212.8	216.5	221.7	225.4
30°	209.3	206.8	210.8	214.5	219.8	223.6
30.5°	207.3	204.8	208.8	212.5	217.9	221.7
31°	205.2	202.7	206.8	210.6	215.9	219.6
31.5°	203.2	200.6	204.7	208.5	213.9	217.7
32°	201.1	198.5	202.7	206.5	211.9	215.7
32.5°	199.0	196.4	200.7	204.5	209.9	213.7
33°	196.9	194.2	198.5	202.3	207.9	211.7
33.5°	194.7	192.2	196.4	200.2	205.8	209.7
34°	192.6	190.1	194.3	198.2	203.9	207.7
34.5°	190.6	187.9	192.2	196.1	201.7	205.6
35°	188.4	185.8	190.1	194.0	199.6	203.6
35.5°	186.2	183.7	187.9	191.9	197.6	201.6
36°	184.1	181.5	185.7	189.7	195.5	199.5
36.5°	181.9	179.3	183.6	187.6	193.4	197.3
37°	179.7	177.2	181.5	185.5	191.2	195.3
37.5°	177.6	175.0	179.3	183.3	189.1	193.1
38°	175.6	172.8	177.1	181.2	187.0	191.1
38.5°	173.2	170.6	175.0	179.0	184.8	189.0
39°	171.0	168.4	172.8	176.8	182.7	186.7
39.5°	168.8	166.2	170.6	174.6	180.5	184.5
40°	166.6	164.0	168.4	172.4	178.4	182.4
40.5°	164.4	161.9	166.2	170.2	176.2	180.2
41°	162.2	159.7	164.0	168.1	174.0	178.0
41.5°	160.1	157.5	161.8	165.9	171.8	175.9
42°	157.9	155.3	159.6	163.8	169.6	173.7
42.5°	155.7	153.1	157.5	161.6	167.4	171.5
43°	153.5	151.0	155.3	159.3	165.2	169.4
43.5°	151.4	148.8	153.1	157.1	163.1	167.1
44°	149.1	146.6	150.9	154.9	160.8	165.0
44.5°	147.0	144.5	148.7	152.8	158.6	162.8



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	144.8	142.3	146.5	150.6	156.5	160.6
45.5°	142.7	140.1	144.4	148.4	154.3	158.5
46°	140.5	138.0	142.3	146.3	152.1	156.3
46.5°	138.3	135.8	140.1	144.1	150.0	154.1
47°	136.2	133.6	138.0	141.9	147.8	151.9
47.5°	134.1	131.4	135.8	139.7	145.6	149.8
48°	131.9	129.4	133.7	137.6	143.3	147.5
48.5°	129.7	127.3	131.4	135.4	141.2	145.3
49°	127.6	125.2	129.3	133.3	139.0	143.1
49.5°	125.5	123.0	127.2	131.2	136.9	141.0
50°	123.4	120.9	125.1	129.0	134.7	138.8
50.5°	121.2	118.8	123.0	126.8	132.6	136.5
51°	119.1	116.7	120.8	124.7	130.4	134.5
51.5°	117.0	114.7	118.7	122.6	128.3	132.3
52°	115.0	112.6	116.7	120.6	126.1	130.2
52.5°	113.0	110.5	114.6	118.5	124.0	128.0
53°	110.8	108.5	112.5	116.3	122.0	125.9
53.5°	108.8	106.4	110.4	114.2	119.9	123.9
54°	106.8	104.4	108.3	112.1	117.7	121.7
54.5°	104.7	102.3	106.4	110.2	115.6	119.5
55°	102.7	100.3	104.3	108.1	113.5	117.4
55.5°	100.7	98.3	102.1	106.0	111.4	115.4
56°	98.6	96.3	100.2	103.9	109.4	113.3
56.5°	96.6	94.3	98.1	101.9	107.2	111.2
57°	94.7	92.3	96.1	99.9	105.2	109.0
57.5°	92.6	90.2	94.3	97.8	103.1	107.0
58°	90.6	88.2	92.1	95.8	101.2	105.0
58.5°	88.6	86.3	90.1	93.8	99.0	102.8
59°	86.6	84.4	88.1	91.8	97.0	101.0
59.5°	84.7	82.4	86.1	89.8	94.9	98.8
60°	82.7	80.5	84.2	87.8	92.9	96.8
60.5°	80.8	78.6	82.3	85.9	91.0	94.9
61°	78.8	76.6	80.4	84.0	89.0	92.7
61.5°	76.9	74.6	78.3	81.8	87.0	90.7
62°	75.0	72.7	76.4	79.9	85.0	88.7
62.5°	73.1	70.9	74.5	78.0	83.1	86.8
63°	71.2	69.0	72.6	76.1	81.1	84.8
63.5°	69.3	67.2	70.7	74.2	79.2	82.9
64°	67.5	65.2	68.9	72.3	77.3	81.0
64.5°	65.6	63.3	67.1	70.3	75.3	78.9
65°	63.6	61.4	65.1	68.4	73.4	76.9
65.5°	61.7	59.6	63.1	66.5	71.5	74.9
66°	59.9	57.8	61.2	64.6	69.5	73.0
66.5°	58.1	55.9	59.4	62.7	67.5	71.1
67°	56.3	54.0	57.6	60.9	65.7	69.3



TEST NUMBER: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	54.4	52.2	55.8	59.0	63.8	67.4
68°	52.6	50.4	53.9	57.2	62.0	65.4
68.5°	50.7	48.7	52.0	55.4	60.1	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°	45.4	43.4	46.6	49.9	54.5	57.9
70.5°	43.7	41.8	44.8	48.1	52.8	56.0
71°	41.9	40.0	43.1	46.2	50.8	54.1
71.5°	40.2	38.2	41.5	44.5	49.1	52.3
72°	38.5	36.4	39.8	42.7	47.3	50.5
72.5°	36.7	34.7	38.0	41.0	45.5	48.7
73°	35.0	33.0	36.2	39.2	43.8	46.9
73.5°	33.3	31.4	34.5	37.5	41.9	45.1
74°	31.6	29.8	32.8	35.8	40.1	43.4
74.5°	30.0	28.1	31.1	34.0	38.3	41.6
75°	28.3	26.4	29.5	32.3	36.6	39.9
75.5°	26.6	24.7	27.8	30.7	34.9	38.1
76°	25.0	23.1	26.1	29.0	33.1	36.3
76.5°	23.4	21.6	24.5	27.4	31.5	34.5
77°	21.9	20.1	22.9	25.9	29.8	32.8
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	29.5
78.5°	17.5	15.7	18.3	21.1	24.9	27.9
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	21.3
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	18.4
82°	7.1	4.8	7.2	10.5	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	8.9	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	6.5	8.9
85.5°	0.0	0.0	0.3	1.6	5.5	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	5.5
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: P303596

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3000K

**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)