

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: P303599

Luminaire Tested: **HLA406VWFL9FS1EMWR-5000K**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-41-14  
Report Number: P303599  
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-5000K  
Description: 4IN HLA LED DOWNLIGHT WITH 80 DEGREE OPTIC AND 5000K LEDS  
Light Source: -  
Ballast/Driver: -

**Summary**

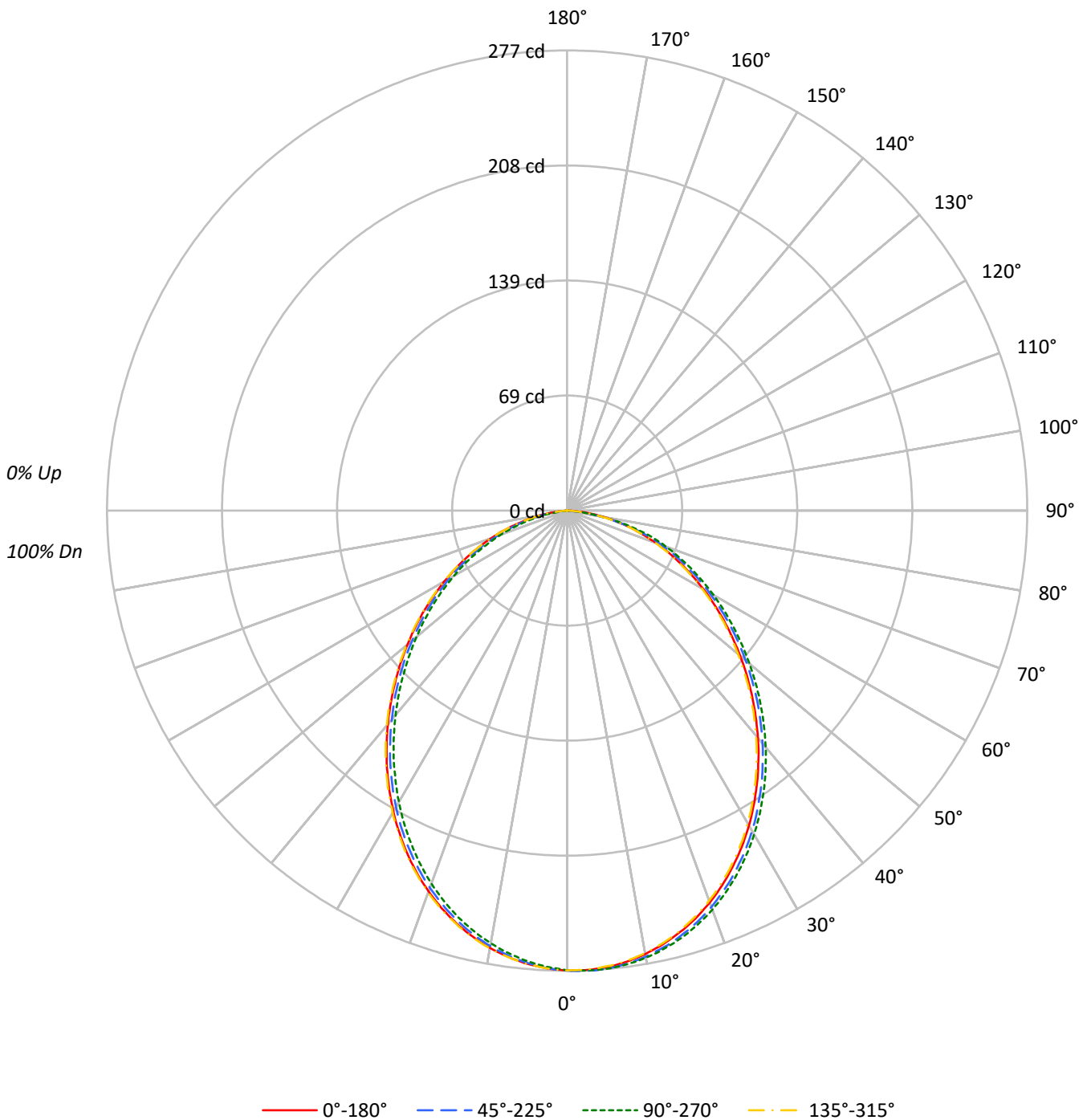
Lumens per Lamp: 678.744 (1 lamp)  
Luminaire Lumens: 656.4 lumens  
Efficiency: 96.7%  
Efficacy: 65.6 lumens/watt  
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.26  
Luminous Opening: Circular (Dia: 0.25m x H: 0m)  
CIE Type: Direct

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: P303599  
CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

### 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	115	115	115	115	112	112	112	112	107	107	107	103	103	103	99	99	99	97
1	106	102	98	94	103	100	96	93	95	93	90	92	89	87	88	86	85	83
2	97	89	83	78	94	88	82	77	84	79	75	81	77	74	78	75	72	70
3	89	79	72	66	86	78	71	65	75	69	64	72	67	63	70	65	62	60
4	82	70	62	56	79	69	62	56	67	60	55	65	59	54	62	58	53	51
5	75	63	55	49	73	62	54	48	60	53	48	58	52	47	56	51	47	45
6	70	57	49	43	68	56	48	43	55	47	42	53	47	42	51	46	42	40
7	65	52	44	38	63	51	43	38	50	43	38	48	42	37	47	41	37	35
8	60	48	40	34	59	47	39	34	46	39	34	45	38	34	43	38	33	32
9	56	44	36	31	55	43	36	31	42	35	31	41	35	30	40	34	30	29
10	53	41	33	28	52	40	33	28	39	32	28	38	32	28	37	32	28	26

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

	0°	90°	180°	270°
0°	5639	5639	5639	5639
5°	5640	5660	5599	5568
10°	5606	5654	5529	5471
15°	5538	5614	5427	5344
20°	5441	5541	5288	5179
25°	5309	5433	5118	4983
30°	5152	5295	4921	4763
35°	4959	5128	4703	4526
40°	4750	4941	4465	4271
45°	4532	4742	4221	4013
50°	4310	4538	3977	3752
55°	4084	4340	3729	3488
60°	3862	4148	3480	3211
65°	3630	3958	3210	2902
70°	3377	3764	2901	2531
75°	3078	3416	2495	2039
80°	2640	2487	1912	1255
85°	2057	818	935	70



TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**ZONAL LUMENS:**

Zone	Lumens	% Fixture	% Lamp
0°-10°	26.0	4.0	3.8
10°-20°	73.2	11.2	10.8
20°-30°	106.7	16.3	15.7
30°-40°	121.4	18.5	17.9
40°-50°	117.2	17.9	17.3
50°-60°	98.5	15.0	14.5
60°-70°	70.4	10.7	10.4
70°-80°	36.9	5.6	5.4
80°-90°	6.1	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°	205.9	31.4	30.3
0°-40°	327.3	49.9	48.2
0°-60°	543.0	82.7	80.0
0°-90°	656.4	100.0	96.7
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°	656.4	100.0	96.7

**CANDELA DISTRIBUTION:**

	0°	90°	180°	270°	360°	Flux
0°	277	277	277	277	277	
5°	276	277	274	272	276	26
15°	263	266	257	253	263	74
25°	236	242	228	222	236	109
35°	199	206	189	182	199	125
45°	157	165	146	139	157	121
55°	115	122	105	98	115	103
65°	75	82	67	60	75	75
75°	39	43	32	26	39	41
85°	9	4	4	0	9	10
90°	0	0	0	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°	276.8	276.8	276.8	276.8	276.8	276.8	276.8	276.8	276.8	276.8	276.8
0.5°	276.9	277.0	277.1	277.2	276.7	276.7	276.7	276.7	276.7	276.8	276.8
1°	276.9	277.0	277.2	277.3	276.9	276.8	276.7	276.7	276.5	276.5	276.7
1.5°	276.9	277.0	277.3	277.3	277.0	276.8	276.7	276.5	276.3	276.3	276.3
2°	276.9	277.0	277.3	277.3	277.1	276.8	276.7	276.3	276.1	276.0	276.0
2.5°	276.8	277.0	277.3	277.3	277.1	276.8	276.5	276.2	275.8	275.6	275.6
3°	276.7	276.9	277.3	277.3	277.1	276.8	276.3	275.9	275.4	275.3	275.3
3.5°	276.5	276.8	277.3	277.2	277.1	276.7	276.1	275.6	275.1	274.9	274.9
4°	276.3	276.7	277.1	277.1	277.0	276.5	276.0	275.2	274.7	274.5	274.4
4.5°	276.1	276.4	277.0	277.0	276.9	276.3	275.6	274.9	274.3	274.0	273.9
5°	275.8	276.2	276.7	276.8	276.8	276.1	275.3	274.5	273.8	273.5	273.4
5.5°	275.5	276.0	276.5	276.7	276.7	275.8	275.1	274.1	273.4	272.9	272.8
6°	275.2	275.6	276.2	276.3	276.4	275.5	274.7	273.6	272.8	272.4	272.2
6.5°	274.7	275.3	275.9	276.0	276.1	275.2	274.3	273.1	272.3	271.8	271.6
7°	274.4	274.9	275.5	275.7	275.8	274.8	273.9	272.6	271.7	271.1	270.9
7.5°	273.9	274.5	275.1	275.3	275.5	274.5	273.4	272.0	271.0	270.4	270.2
8°	273.4	274.1	274.7	274.9	275.1	274.0	272.9	271.3	270.3	269.7	269.4
8.5°	272.8	273.6	274.2	274.4	274.7	273.5	272.3	270.7	269.6	269.0	268.7
9°	272.3	273.1	273.7	274.0	274.3	273.0	271.7	270.0	268.9	268.3	267.9
9.5°	271.7	272.5	273.2	273.5	273.8	272.4	271.1	269.3	268.2	267.4	267.1
10°	271.0	271.9	272.6	272.9	273.3	271.8	270.5	268.5	267.3	266.6	266.2
10.5°	270.3	271.3	272.0	272.4	272.7	271.2	269.8	267.8	266.5	265.6	265.3
11°	269.6	270.7	271.3	271.7	272.1	270.5	269.0	266.9	265.6	264.7	264.3
11.5°	268.8	269.9	270.6	271.0	271.6	269.8	268.3	266.1	264.7	263.7	263.4
12°	268.1	269.2	269.9	270.3	270.9	269.1	267.4	265.2	263.7	262.8	262.3
12.5°	267.3	268.4	269.2	269.6	270.1	268.4	266.6	264.3	262.7	261.8	261.3
13°	266.4	267.7	268.5	268.8	269.4	267.5	265.7	263.4	261.7	260.7	260.2
13.5°	265.5	266.8	267.6	268.1	268.7	266.8	264.9	262.3	260.7	259.6	259.1
14°	264.6	265.9	266.8	267.2	267.9	265.8	263.9	261.3	259.5	258.5	257.9
14.5°	263.6	265.1	265.8	266.3	267.0	264.9	262.9	260.2	258.4	257.3	256.7
15°	262.6	264.1	264.9	265.4	266.2	263.9	261.9	259.1	257.3	256.1	255.5
15.5°	261.7	263.1	263.9	264.4	265.3	262.9	260.8	258.0	256.0	254.9	254.2
16°	260.6	262.1	263.0	263.4	264.3	261.9	259.7	256.8	254.9	253.6	253.0
16.5°	259.5	261.0	261.9	262.4	263.3	260.9	258.6	255.7	253.6	252.3	251.6
17°	258.4	260.0	260.9	261.4	262.3	259.9	257.5	254.5	252.3	251.0	250.3
17.5°	257.3	258.9	259.8	260.3	261.3	258.8	256.3	253.2	251.0	249.6	248.9
18°	256.1	257.7	258.7	259.2	260.2	257.6	255.1	251.9	249.6	248.2	247.5
18.5°	254.9	256.5	257.6	258.1	259.1	256.4	253.8	250.6	248.2	246.8	246.1
19°	253.6	255.3	256.3	256.8	258.0	255.2	252.6	249.2	246.8	245.4	244.6
19.5°	252.4	254.0	255.1	255.7	256.7	254.0	251.3	247.8	245.5	244.0	243.1
20°	251.0	252.9	253.9	254.4	255.6	252.7	249.9	246.4	243.9	242.5	241.6
20.5°	249.7	251.5	252.6	253.2	254.3	251.4	248.5	245.0	242.4	240.9	240.0
21°	248.3	250.1	251.2	251.8	253.1	250.0	247.2	243.4	240.9	239.3	238.5
21.5°	246.9	248.7	249.8	250.5	251.7	248.6	245.7	242.0	239.4	237.7	236.9
22°	245.4	247.3	248.5	249.1	250.4	247.2	244.2	240.4	237.8	236.1	235.2



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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°	244.1	245.9	247.1	247.7	249.0	245.8	242.7	238.8	236.2	234.4	233.6
23°	242.5	244.4	245.7	246.3	247.6	244.3	241.2	237.3	234.5	232.8	231.9
23.5°	241.0	242.9	244.3	244.8	246.1	242.8	239.7	235.7	232.8	231.1	230.3
24°	239.4	241.4	242.7	243.4	244.7	241.3	238.1	234.1	231.2	229.4	228.5
24.5°	237.8	239.9	241.1	242.0	243.2	239.8	236.5	232.4	229.4	227.6	226.7
25°	236.2	238.3	239.6	240.3	241.7	238.2	234.9	230.7	227.7	225.9	224.9
25.5°	234.6	236.8	238.0	238.7	240.1	236.5	233.3	229.1	226.0	224.2	223.1
26°	232.9	235.1	236.3	237.1	238.6	234.9	231.6	227.2	224.2	222.4	221.3
26.5°	231.3	233.5	234.7	235.5	237.0	233.3	229.9	225.4	222.4	220.6	219.5
27°	229.6	231.9	233.1	233.9	235.4	231.6	228.2	223.7	220.6	218.7	217.6
27.5°	227.9	230.2	231.4	232.2	233.7	229.9	226.4	221.8	218.7	216.8	215.7
28°	226.1	228.5	229.7	230.5	232.1	228.1	224.7	220.0	216.9	214.9	213.8
28.5°	224.3	226.7	227.9	228.8	230.4	226.4	222.9	218.1	215.1	212.9	211.9
29°	222.5	224.9	226.2	227.1	228.7	224.6	221.0	216.3	213.1	211.0	210.0
29.5°	220.8	223.1	224.4	225.3	226.9	222.8	219.2	214.4	211.1	209.0	208.0
30°	219.0	221.2	222.6	223.6	225.1	221.0	217.3	212.5	209.2	207.1	206.0
30.5°	217.1	219.4	220.8	221.7	223.3	219.1	215.4	210.6	207.2	205.2	204.0
31°	215.1	217.6	219.0	219.9	221.5	217.4	213.6	208.6	205.2	203.2	202.0
31.5°	213.2	215.7	217.2	218.0	219.6	215.5	211.7	206.6	203.3	201.1	200.1
32°	211.2	213.8	215.2	216.1	217.8	213.5	209.7	204.7	201.3	199.1	198.0
32.5°	209.3	211.9	213.3	214.2	215.9	211.6	207.7	202.6	199.3	197.1	195.9
33°	207.4	210.0	211.3	212.3	214.0	209.6	205.8	200.7	197.2	195.0	193.9
33.5°	205.4	208.0	209.3	210.3	212.0	207.6	203.7	198.7	195.2	193.0	191.8
34°	203.4	206.1	207.4	208.4	210.1	205.7	201.7	196.7	193.1	191.0	189.7
34.5°	201.4	204.1	205.5	206.4	208.2	203.8	199.8	194.7	191.1	188.9	187.6
35°	199.4	202.1	203.5	204.5	206.2	201.8	197.8	192.6	189.1	186.9	185.6
35.5°	197.4	200.1	201.5	202.5	204.3	199.8	195.7	190.4	187.0	184.7	183.5
36°	195.4	198.1	199.5	200.5	202.2	197.7	193.7	188.4	184.9	182.6	181.4
36.5°	193.3	196.0	197.4	198.5	200.3	195.6	191.6	186.3	182.7	180.5	179.3
37°	191.2	194.0	195.4	196.5	198.3	193.6	189.5	184.2	180.6	178.4	177.1
37.5°	189.2	191.9	193.3	194.4	196.2	191.6	187.4	182.2	178.5	176.3	175.0
38°	187.2	189.9	191.3	192.4	194.1	189.5	185.4	180.1	176.4	174.2	172.9
38.5°	185.1	187.8	189.2	190.3	192.1	187.4	183.3	177.9	174.3	172.1	170.7
39°	182.9	185.7	187.2	188.2	190.0	185.4	181.2	175.7	172.1	169.9	168.6
39.5°	180.7	183.6	185.1	186.2	188.0	183.2	179.1	173.7	170.0	167.7	166.5
40°	178.6	181.5	182.9	184.0	185.8	181.1	176.9	171.6	167.9	165.6	164.3
40.5°	176.5	179.4	180.8	181.9	183.7	179.0	174.8	169.4	165.8	163.5	162.1
41°	174.4	177.3	178.7	179.8	181.6	176.9	172.7	167.2	163.6	161.3	160.0
41.5°	172.2	175.1	176.6	177.6	179.5	174.8	170.5	165.1	161.4	159.2	157.9
42°	170.2	173.0	174.5	175.5	177.4	172.6	168.4	163.0	159.4	157.1	155.7
42.5°	168.0	170.9	172.3	173.4	175.3	170.5	166.3	160.8	157.2	154.9	153.6
43°	165.9	168.7	170.2	171.4	173.2	168.4	164.2	158.7	155.0	152.8	151.5
43.5°	163.7	166.6	168.0	169.2	171.1	166.3	162.0	156.6	152.9	150.6	149.3
44°	161.6	164.5	166.0	167.0	168.8	164.1	159.9	154.4	150.8	148.5	147.2
44.5°	159.5	162.2	163.8	164.8	166.7	162.0	157.8	152.3	148.6	146.4	145.1



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**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	157.3	160.1	161.7	162.8	164.6	159.9	155.6	150.2	146.5	144.3	142.9
45.5°	155.2	158.1	159.5	160.6	162.5	157.7	153.5	148.1	144.5	142.1	140.8
46°	153.0	155.9	157.4	158.5	160.4	155.5	151.4	145.9	142.3	140.0	138.7
46.5°	150.9	153.7	155.2	156.3	158.2	153.4	149.2	143.7	140.2	137.9	136.6
47°	148.7	151.6	153.1	154.2	156.1	151.2	147.1	141.7	138.1	135.8	134.5
47.5°	146.7	149.5	150.9	152.1	153.9	149.1	144.9	139.5	136.0	133.6	132.4
48°	144.5	147.3	148.8	149.9	151.8	147.0	142.8	137.4	133.8	131.7	130.2
48.5°	142.3	145.1	146.8	147.8	149.6	145.0	140.6	135.3	131.7	129.5	128.1
49°	140.2	143.0	144.6	145.6	147.5	142.7	138.6	133.3	129.6	127.4	126.1
49.5°	138.1	140.9	142.4	143.5	145.3	140.6	136.4	131.1	127.6	125.3	124.0
50°	136.0	138.7	140.2	141.4	143.2	138.4	134.4	129.0	125.5	123.2	121.9
50.5°	133.7	136.6	138.1	139.2	141.1	136.4	132.2	126.8	123.4	121.2	119.8
51°	131.8	134.5	136.0	137.1	138.9	134.2	130.1	124.8	121.3	119.0	117.8
51.5°	129.6	132.3	133.8	134.9	136.8	132.1	128.0	122.8	119.4	117.0	115.7
52°	127.5	130.2	131.8	132.9	134.7	130.1	125.9	120.7	117.2	115.0	113.6
52.5°	125.4	128.1	129.7	130.8	132.7	128.1	123.9	118.7	115.1	113.0	111.6
53°	123.3	126.0	127.6	128.6	130.5	125.9	121.8	116.7	113.1	110.9	109.6
53.5°	121.3	123.9	125.5	126.6	128.4	123.8	119.8	114.6	111.1	108.9	107.7
54°	119.2	121.9	123.4	124.5	126.3	121.7	117.8	112.6	109.1	106.8	105.8
54.5°	117.0	119.7	121.3	122.4	124.3	119.7	115.7	110.5	107.2	104.9	103.6
55°	115.0	117.8	119.2	120.3	122.2	117.6	113.6	108.4	105.0	102.9	101.6
55.5°	113.0	115.6	117.2	118.2	120.0	115.5	111.5	106.5	103.0	100.9	99.6
56°	110.9	113.5	115.1	116.1	118.0	113.5	109.5	104.5	101.0	99.0	97.6
56.5°	108.9	111.5	113.0	114.1	116.0	111.4	107.6	102.5	99.1	97.0	95.7
57°	106.8	109.4	111.0	112.1	114.0	109.5	105.6	100.5	97.1	95.0	93.7
57.5°	104.8	107.5	108.9	110.0	111.9	107.4	103.5	98.5	95.2	93.1	91.7
58°	102.8	105.4	106.8	107.9	109.8	105.4	101.5	96.5	93.1	91.1	89.7
58.5°	100.7	103.3	104.9	106.0	107.8	103.4	99.5	94.6	91.1	89.1	87.8
59°	98.9	101.3	102.9	103.9	105.9	101.4	97.5	92.6	89.2	87.2	85.8
59.5°	96.8	99.3	100.8	101.9	103.7	99.4	95.6	90.6	87.3	85.3	84.0
60°	94.8	97.3	98.9	99.9	101.8	97.5	93.6	88.7	85.4	83.3	82.1
60.5°	92.9	95.3	96.9	97.9	99.8	95.6	91.7	86.8	83.5	81.4	80.2
61°	90.8	93.3	94.9	95.9	97.7	93.4	89.7	84.9	81.6	79.6	78.2
61.5°	88.8	91.3	93.0	94.0	95.8	91.5	87.8	83.0	79.6	77.7	76.3
62°	86.9	89.3	90.9	92.0	93.8	89.6	85.8	81.1	77.7	75.7	74.5
62.5°	85.0	87.4	89.0	90.0	91.8	87.6	84.0	79.3	75.9	73.8	72.6
63°	83.1	85.5	87.0	88.0	89.8	85.7	82.0	77.3	74.0	72.1	70.7
63.5°	81.2	83.6	85.1	86.1	87.9	83.9	80.1	75.4	72.2	70.2	68.9
64°	79.3	81.7	83.1	84.2	86.0	81.9	78.2	73.5	70.3	68.3	67.1
64.5°	77.3	79.6	81.2	82.3	84.1	79.9	76.4	71.6	68.5	66.3	65.3
65°	75.3	77.7	79.3	80.3	82.1	78.0	74.4	69.8	66.6	64.5	63.3
65.5°	73.4	75.8	77.3	78.4	80.2	76.2	72.6	68.0	64.7	62.8	61.5
66°	71.5	73.9	75.4	76.4	78.3	74.3	70.7	66.2	62.9	60.9	59.7
66.5°	69.7	72.1	73.5	74.5	76.3	72.4	68.9	64.4	61.1	59.2	57.9
67°	67.9	70.1	71.6	72.6	74.4	70.6	67.0	62.5	59.2	57.3	56.0





TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**CANDELA DISTRIBUTION (continued):**

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	66.0	68.3	69.7	70.8	72.6	68.8	65.3	60.6	57.5	55.5	54.3
68°	64.1	66.4	67.8	68.9	70.7	66.8	63.3	58.8	55.7	53.8	52.5
68.5°	62.2	64.5	66.0	67.1	68.9	64.9	61.5	57.0	54.0	52.0	50.8
69°	60.3	62.6	64.1	65.2	67.0	63.1	59.7	55.3	52.3	50.2	49.0
69.5°	58.5	60.7	62.2	63.2	65.2	61.3	58.0	53.5	50.5	48.5	47.2
70°	56.7	58.9	60.4	61.3	63.2	59.5	56.1	51.7	48.7	46.7	45.5
70.5°	54.9	57.2	58.6	59.3	61.4	57.8	54.3	50.0	46.9	45.1	43.8
71°	53.0	55.4	56.7	57.3	59.6	56.0	52.5	48.2	45.2	43.4	42.1
71.5°	51.2	53.7	54.7	55.4	57.8	54.2	50.8	46.4	43.5	41.5	40.5
72°	49.5	51.8	52.8	53.3	55.9	52.4	49.1	44.7	41.8	39.8	38.8
72.5°	47.7	49.9	50.8	51.1	54.0	50.5	47.3	42.9	40.1	38.1	37.1
73°	45.9	48.2	48.7	48.9	52.0	48.6	45.5	41.2	38.4	36.4	35.4
73.5°	44.2	46.3	46.6	46.8	49.8	46.7	43.8	39.5	36.6	34.8	33.6
74°	42.5	44.7	44.6	44.6	47.7	44.8	42.1	37.8	35.0	33.1	32.0
74.5°	40.8	42.9	42.6	42.4	45.5	42.8	40.5	36.1	33.3	31.5	30.3
75°	39.1	41.1	40.5	40.3	43.4	40.9	38.8	34.4	31.7	29.8	28.8
75.5°	37.3	39.3	38.4	38.0	41.2	38.9	37.1	32.8	30.1	28.3	27.2
76°	35.5	37.5	36.2	35.6	38.9	36.8	35.3	31.2	28.5	26.6	25.5
76.5°	33.8	35.7	34.1	33.4	36.7	34.7	33.4	29.5	27.0	25.1	23.9
77°	32.2	33.9	32.1	31.1	34.5	32.7	31.6	28.0	25.4	23.6	22.3
77.5°	30.5	32.1	30.0	28.8	32.2	30.7	29.8	26.4	23.8	22.0	20.8
78°	28.9	30.5	27.9	26.7	30.0	28.7	28.1	24.9	22.2	20.5	19.3
78.5°	27.4	28.8	25.9	24.4	27.9	26.7	26.4	23.3	20.6	19.0	17.9
79°	25.7	27.1	24.0	22.1	25.6	24.5	24.7	21.8	19.2	17.5	16.5
79.5°	24.2	25.4	22.0	20.0	23.5	22.6	22.8	20.3	17.8	16.0	15.2
80°	22.5	23.8	20.0	17.9	21.2	20.6	21.1	18.9	16.3	14.8	13.8
80.5°	20.9	22.0	18.1	15.7	19.1	18.6	19.4	17.4	15.0	13.5	12.3
81°	19.4	20.4	16.2	13.8	17.0	16.7	17.7	15.9	13.7	12.1	11.0
81.5°	18.1	18.8	14.3	11.9	15.1	14.9	16.1	14.6	12.2	10.7	9.7
82°	16.6	17.2	12.4	10.1	13.2	12.9	14.6	13.3	10.9	9.5	8.4
82.5°	15.2	15.6	10.7	8.4	11.2	11.2	12.9	11.9	9.8	8.5	7.1
83°	13.8	14.0	8.9	6.7	9.3	9.4	11.4	10.7	8.5	7.3	5.7
83.5°	12.3	12.5	7.3	5.3	7.6	7.8	9.8	9.2	7.2	6.0	4.6
84°	11.0	11.1	5.6	3.8	6.1	6.3	8.4	8.1	6.1	5.0	3.5
84.5°	9.9	9.6	4.1	2.6	4.7	4.9	7.0	7.0	5.3	4.0	2.2
85°	8.8	8.3	3.0	1.7	3.5	3.6	5.5	5.7	4.0	3.1	1.4
85.5°	7.3	7.1	2.2	1.0	2.2	2.3	4.3	4.8	3.1	2.3	0.5
86°	6.3	5.7	1.5	0.5	1.5	1.5	3.0	3.8	2.3	1.7	0.0
86.5°	5.4	4.7	0.5	0.0	0.6	0.6	2.1	2.9	1.9	1.0	0.3
87°	4.2	3.8	0.5	0.3	0.4	0.0	1.3	2.2	1.2	0.6	0.0
87.5°	3.2	2.9	0.0	0.3	0.0	0.3	0.6	1.6	0.5	0.0	0.0
88°	2.3	2.1	0.0	0.3	0.3	0.0	0.5	0.9	0.3	0.3	0.0
88.5°	1.6	1.2	0.3	0.3	0.0	0.0	0.0	0.6	0.3	0.0	0.0
89°	0.6	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: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**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: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
0°	276.8	276.8	276.8	276.8	276.8	276.8
0.5°	276.8	276.2	276.3	276.6	276.7	276.9
1°	276.6	275.9	276.1	276.5	276.7	276.9
1.5°	276.3	275.6	275.8	276.3	276.7	276.9
2°	275.9	275.3	275.5	276.1	276.5	276.9
2.5°	275.6	274.9	275.2	275.8	276.3	276.8
3°	275.2	274.4	274.9	275.5	276.1	276.7
3.5°	274.7	274.0	274.5	275.2	275.9	276.5
4°	274.3	273.5	274.1	274.8	275.6	276.3
4.5°	273.7	272.9	273.6	274.4	275.2	276.1
5°	273.2	272.3	273.2	274.0	275.0	275.8
5.5°	272.6	271.7	272.6	273.5	274.6	275.5
6°	272.0	271.1	272.0	273.0	274.2	275.2
6.5°	271.3	270.3	271.4	272.4	273.7	274.7
7°	270.6	269.5	270.8	271.8	273.3	274.4
7.5°	269.9	268.8	270.0	271.2	272.7	273.9
8°	269.1	268.0	269.3	270.5	272.2	273.4
8.5°	268.4	267.2	268.5	269.9	271.6	272.8
9°	267.5	266.4	267.7	269.2	270.9	272.3
9.5°	266.7	265.4	266.9	268.5	270.2	271.7
10°	265.7	264.5	266.1	267.6	269.6	271.0
10.5°	264.9	263.5	265.2	266.8	268.9	270.3
11°	263.8	262.5	264.3	265.9	268.2	269.6
11.5°	262.8	261.5	263.3	265.0	267.3	268.8
12°	261.8	260.4	262.3	264.1	266.5	268.1
12.5°	260.8	259.3	261.3	263.1	265.5	267.3
13°	259.7	258.2	260.2	262.1	264.7	266.4
13.5°	258.5	257.0	259.1	261.1	263.7	265.5
14°	257.4	255.8	257.9	260.0	262.7	264.6
14.5°	256.1	254.5	256.7	258.9	261.7	263.6
15°	254.9	253.4	255.6	257.7	260.7	262.6
15.5°	253.7	252.0	254.3	256.5	259.6	261.7
16°	252.4	250.6	253.1	255.4	258.4	260.6
16.5°	251.1	249.3	251.7	254.1	257.3	259.5
17°	249.7	247.9	250.4	252.9	256.1	258.4
17.5°	248.3	246.5	249.0	251.6	254.9	257.3
18°	246.8	245.0	247.7	250.3	253.6	256.1
18.5°	245.4	243.5	246.2	248.8	252.3	254.9
19°	244.0	242.0	244.8	247.5	251.1	253.6
19.5°	242.5	240.5	243.3	246.1	249.7	252.4
20°	240.9	238.9	241.9	244.6	248.4	251.0
20.5°	239.3	237.3	240.3	243.1	247.0	249.7
21°	237.7	235.7	238.7	241.6	245.6	248.3
21.5°	236.0	234.1	237.1	240.0	244.1	246.9
22°	234.4	232.4	235.5	238.5	242.6	245.4



TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	232.7	230.7	233.9	236.8	241.1	244.1
23°	231.0	229.0	232.2	235.2	239.6	242.5
23.5°	229.3	227.2	230.5	233.6	238.0	241.0
24°	227.6	225.4	228.8	232.0	236.3	239.4
24.5°	225.8	223.6	227.1	230.3	234.7	237.8
25°	224.1	221.7	225.3	228.5	233.1	236.2
25.5°	222.2	219.9	223.6	226.8	231.4	234.6
26°	220.5	218.1	221.7	225.0	229.7	232.9
26.5°	218.6	216.2	219.9	223.2	227.9	231.3
27°	216.7	214.3	217.9	221.4	226.2	229.6
27.5°	214.8	212.4	216.1	219.6	224.4	227.9
28°	212.8	210.5	214.3	217.7	222.6	226.1
28.5°	210.9	208.5	212.4	215.8	220.8	224.3
29°	208.9	206.5	210.4	214.0	219.0	222.5
29.5°	207.0	204.6	208.5	212.1	217.1	220.8
30°	205.0	202.5	206.5	210.1	215.3	219.0
30.5°	203.1	200.6	204.5	208.1	213.4	217.1
31°	201.0	198.6	202.5	206.2	211.5	215.1
31.5°	199.0	196.5	200.5	204.2	209.5	213.2
32°	197.0	194.4	198.5	202.2	207.6	211.2
32.5°	194.9	192.3	196.5	200.3	205.6	209.3
33°	192.8	190.2	194.4	198.2	203.6	207.4
33.5°	190.7	188.2	192.4	196.1	201.6	205.4
34°	188.7	186.2	190.3	194.1	199.7	203.4
34.5°	186.7	184.1	188.2	192.1	197.5	201.4
35°	184.5	182.0	186.2	190.0	195.5	199.4
35.5°	182.4	179.9	184.0	187.9	193.5	197.4
36°	180.3	177.7	181.9	185.8	191.5	195.4
36.5°	178.2	175.6	179.8	183.7	189.4	193.3
37°	176.0	173.6	177.7	181.6	187.3	191.2
37.5°	173.9	171.4	175.6	179.5	185.2	189.2
38°	171.9	169.2	173.5	177.4	183.2	187.2
38.5°	169.7	167.1	171.4	175.3	181.0	185.1
39°	167.4	164.9	169.3	173.2	178.9	182.9
39.5°	165.3	162.8	167.1	171.0	176.8	180.7
40°	163.2	160.6	164.9	168.8	174.7	178.6
40.5°	161.0	158.6	162.8	166.7	172.5	176.5
41°	158.9	156.4	160.6	164.6	170.4	174.4
41.5°	156.8	154.2	158.5	162.5	168.2	172.2
42°	154.6	152.1	156.4	160.4	166.1	170.2
42.5°	152.5	150.0	154.2	158.3	164.0	168.0
43°	150.3	147.9	152.1	156.0	161.8	165.9
43.5°	148.2	145.7	150.0	153.8	159.7	163.7
44°	146.1	143.6	147.8	151.7	157.5	161.6
44.5°	144.0	141.5	145.7	149.7	155.3	159.5



TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
45°	141.9	139.3	143.5	147.5	153.2	157.3
45.5°	139.7	137.2	141.4	145.4	151.2	155.2
46°	137.6	135.1	139.4	143.3	149.0	153.0
46.5°	135.5	133.0	137.3	141.1	146.9	150.9
47°	133.4	130.9	135.1	139.0	144.8	148.7
47.5°	131.3	128.7	133.0	136.8	142.6	146.7
48°	129.2	126.7	131.0	134.8	140.4	144.5
48.5°	127.1	124.7	128.7	132.7	138.3	142.3
49°	125.0	122.6	126.6	130.5	136.2	140.2
49.5°	122.9	120.4	124.6	128.5	134.1	138.1
50°	120.8	118.4	122.6	126.3	131.9	136.0
50.5°	118.7	116.4	120.5	124.2	129.8	133.7
51°	116.7	114.3	118.3	122.1	127.8	131.8
51.5°	114.6	112.3	116.2	120.1	125.6	129.6
52°	112.6	110.3	114.3	118.1	123.5	127.5
52.5°	110.7	108.2	112.2	116.0	121.4	125.4
53°	108.5	106.3	110.2	113.9	119.5	123.3
53.5°	106.6	104.2	108.1	111.9	117.4	121.3
54°	104.6	102.3	106.1	109.8	115.3	119.2
54.5°	102.5	100.2	104.2	107.9	113.2	117.0
55°	100.6	98.2	102.1	105.9	111.1	115.0
55.5°	98.7	96.3	100.0	103.8	109.1	113.0
56°	96.6	94.3	98.2	101.8	107.1	110.9
56.5°	94.7	92.3	96.1	99.8	105.0	108.9
57°	92.7	90.4	94.2	97.8	103.0	106.8
57.5°	90.7	88.3	92.3	95.8	101.0	104.8
58°	88.7	86.4	90.2	93.8	99.1	102.8
58.5°	86.7	84.5	88.3	91.9	97.0	100.7
59°	84.8	82.6	86.3	89.9	95.0	98.9
59.5°	83.0	80.7	84.3	88.0	93.0	96.8
60°	81.0	78.8	82.5	86.0	91.0	94.8
60.5°	79.1	76.9	80.6	84.1	89.1	92.9
61°	77.2	75.0	78.7	82.2	87.2	90.8
61.5°	75.4	73.1	76.7	80.2	85.2	88.8
62°	73.4	71.2	74.9	78.3	83.3	86.9
62.5°	71.6	69.4	73.0	76.4	81.3	85.0
63°	69.7	67.6	71.1	74.6	79.4	83.1
63.5°	67.9	65.8	69.2	72.7	77.5	81.2
64°	66.1	63.9	67.5	70.8	75.7	79.3
64.5°	64.2	62.0	65.7	68.9	73.8	77.3
65°	62.3	60.2	63.8	67.0	71.9	75.3
65.5°	60.4	58.4	61.8	65.1	70.0	73.4
66°	58.7	56.6	60.0	63.2	68.1	71.5
66.5°	56.9	54.7	58.2	61.4	66.1	69.7
67°	55.1	52.9	56.4	59.6	64.4	67.9



TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**CANDELA DISTRIBUTION (continued):**

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	53.3	51.1	54.6	57.8	62.5	66.0
68°	51.5	49.4	52.7	56.0	60.7	64.1
68.5°	49.6	47.7	51.0	54.3	58.9	62.2
69°	47.9	45.9	49.2	52.5	57.1	60.3
69.5°	46.1	44.2	47.4	50.7	55.2	58.5
70°	44.5	42.5	45.6	48.8	53.4	56.7
70.5°	42.8	40.9	43.9	47.1	51.7	54.9
71°	41.1	39.1	42.2	45.3	49.8	53.0
71.5°	39.4	37.4	40.6	43.6	48.1	51.2
72°	37.7	35.7	38.9	41.9	46.3	49.5
72.5°	35.9	34.0	37.2	40.2	44.6	47.7
73°	34.3	32.3	35.5	38.4	42.9	45.9
73.5°	32.6	30.7	33.8	36.7	41.1	44.2
74°	30.9	29.1	32.1	35.0	39.2	42.5
74.5°	29.4	27.6	30.4	33.3	37.6	40.8
75°	27.7	25.9	28.9	31.7	35.9	39.1
75.5°	26.0	24.2	27.2	30.0	34.2	37.3
76°	24.5	22.6	25.6	28.4	32.5	35.5
76.5°	22.9	21.1	24.0	26.9	30.8	33.8
77°	21.5	19.7	22.4	25.3	29.2	32.2
77.5°	20.0	18.2	20.9	23.7	27.6	30.5
78°	18.5	16.8	19.4	22.2	25.9	28.9
78.5°	17.1	15.3	17.9	20.7	24.4	27.4
79°	15.7	13.8	16.4	19.1	22.8	25.7
79.5°	14.2	12.2	14.8	17.6	21.3	24.2
80°	12.6	10.7	13.3	16.1	19.7	22.5
80.5°	11.2	9.1	11.6	14.8	18.3	20.9
81°	9.9	7.5	10.1	13.3	16.9	19.4
81.5°	8.4	6.0	8.6	11.8	15.5	18.1
82°	6.9	4.7	7.1	10.3	13.9	16.6
82.5°	5.6	3.3	5.5	9.0	12.6	15.2
83°	4.1	2.2	4.0	7.4	11.4	13.8
83.5°	2.9	1.4	2.7	6.0	10.0	12.3
84°	2.2	0.6	1.6	4.8	8.8	11.0
84.5°	1.2	0.0	0.6	3.7	7.4	9.9
85°	0.6	0.3	0.3	2.4	6.4	8.8
85.5°	0.0	0.0	0.3	1.5	5.4	7.3
86°	0.0	0.0	0.0	0.6	4.3	6.3
86.5°	0.0	0.0	0.0	0.5	3.2	5.4
87°	0.0	0.0	0.0	0.0	2.3	4.2
87.5°	0.0	0.0	0.0	0.3	1.6	3.2
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	0.6
89.5°	0.0	0.0	0.0	0.0	0.0	0.3



TEST NUMBER: P303599

CATALOG NUMBER: HLA406VWFL9FS1EMWR-5000K

**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)