

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: P303597

Luminaire Tested: **HLA406VWFL9FS1EMWR-3500K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: P303597
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-3500K
Description: 4IN HLA LED DOWNLIGHT WITH 80 DEGREE OPTIC AND 3500K LEDS
Light Source: -
Ballast/Driver: -

Summary

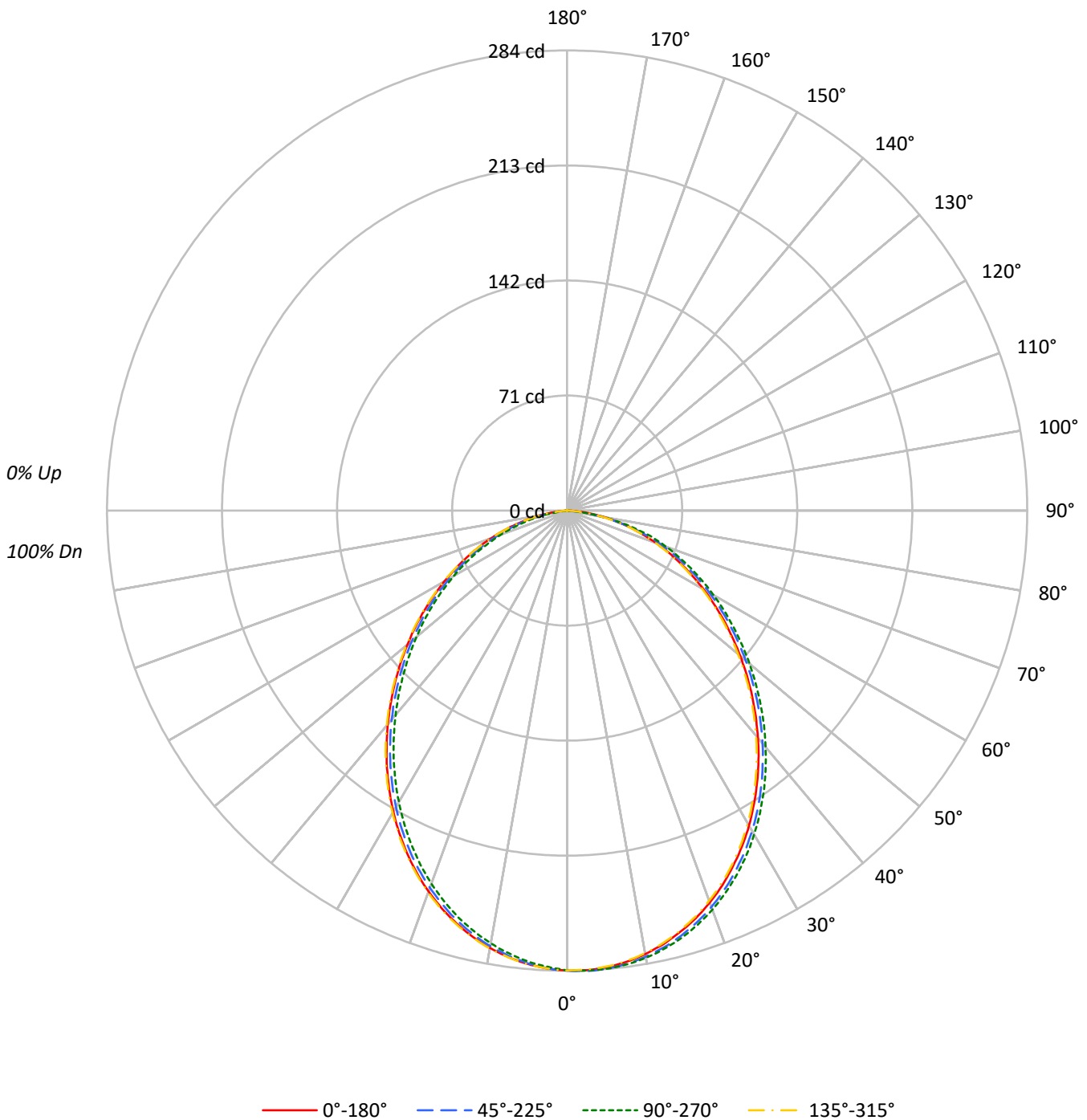
Lumens per Lamp: 678.744 (1 lamp)
Luminaire Lumens: 673.1 lumens
Efficiency: 99.2%
Efficacy: 67.3 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.16 / 1.26
Luminous Opening: Circular (Dia: 0.25m x H: 0m)
CIE Type: Direct

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: P303597
CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

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	109	104	100	97	106	102	98	95	98	95	92	94	92	89	90	89	87	85
2	99	92	85	80	97	90	84	79	86	81	77	83	79	75	80	77	74	72
3	91	81	73	67	89	79	72	67	77	70	65	74	69	64	71	67	63	61
4	84	72	64	57	81	71	63	57	68	62	56	66	60	56	64	59	55	53
5	77	65	56	50	75	64	56	50	62	55	49	60	53	49	58	52	48	46
6	71	59	50	44	70	58	50	44	56	49	43	54	48	43	53	47	43	41
7	66	53	45	39	65	53	45	39	51	44	39	50	43	38	48	42	38	36
8	62	49	41	35	60	48	40	35	47	40	35	46	39	34	44	39	34	32
9	58	45	37	32	57	44	37	32	43	36	31	42	36	31	41	35	31	29
10	54	42	34	29	53	41	34	29	40	33	29	39	33	29	38	33	28	27

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	5782	5782	5782	5782
5°	5783	5804	5742	5710
10°	5749	5798	5670	5610
15°	5680	5758	5564	5479
20°	5580	5682	5422	5311
25°	5444	5572	5249	5111
30°	5281	5429	5046	4886
35°	5086	5260	4822	4641
40°	4872	5069	4579	4380
45°	4647	4863	4330	4117
50°	4418	4653	4079	3848
55°	4187	4450	3825	3577
60°	3960	4250	3569	3292
65°	3726	4059	3292	2974
70°	3461	3860	2972	2597
75°	3156	3503	2558	2086
80°	2710	2558	1959	1279
85°	2104	841	958	70



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

ZONAL LUMENS:

Zone	Lumens	% Fixture	% Lamp
0°-10°	26.7	4.0	3.9
10°-20°	75.1	11.2	11.1
20°-30°	109.4	16.3	16.1
30°-40°	124.4	18.5	18.3
40°-50°	120.2	17.9	17.7
50°-60°	101.0	15.0	14.9
60°-70°	72.2	10.7	10.6
70°-80°	37.8	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°	211.2	31.4	31.1
0°-40°	335.6	49.9	49.4
0°-60°	556.8	82.7	82.0
0°-90°	673.1	100.0	99.2
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°	673.1	100.0	99.2

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	284	284	284	284	284	
5°	283	284	281	279	283	27
15°	269	273	264	260	269	76
25°	242	248	234	227	242	111
35°	204	212	194	187	204	128
45°	161	169	150	143	161	124
55°	118	125	108	101	118	106
65°	77	84	68	62	77	77
75°	40	44	32	26	40	42
85°	9	4	4	0	9	11
90°	0	0	0	0	0	



TEST NUMBER: P303597

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CANDELA DISTRIBUTION (FULL):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
0°	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8	283.8
0.5°	283.9	284.1	284.2	284.2	283.8	283.7	283.7	283.7	283.7	283.8	283.9
1°	283.9	284.1	284.3	284.4	283.9	283.8	283.7	283.7	283.6	283.6	283.7
1.5°	283.9	284.1	284.3	284.4	284.1	283.8	283.7	283.6	283.3	283.3	283.4
2°	283.9	284.1	284.4	284.4	284.1	283.9	283.7	283.3	283.1	283.0	283.0
2.5°	283.9	284.0	284.4	284.4	284.1	283.9	283.5	283.2	282.8	282.7	282.6
3°	283.8	284.0	284.4	284.4	284.1	283.8	283.4	282.9	282.5	282.3	282.3
3.5°	283.6	283.9	284.3	284.3	284.1	283.8	283.1	282.6	282.1	281.9	281.9
4°	283.3	283.7	284.1	284.2	284.0	283.6	283.0	282.2	281.7	281.5	281.4
4.5°	283.1	283.5	284.0	284.0	283.9	283.3	282.6	281.9	281.3	281.0	280.9
5°	282.8	283.2	283.8	283.9	283.8	283.2	282.3	281.5	280.8	280.4	280.4
5.5°	282.5	283.0	283.5	283.7	283.7	282.8	282.1	281.1	280.3	279.9	279.7
6°	282.2	282.6	283.2	283.4	283.4	282.5	281.7	280.6	279.8	279.3	279.1
6.5°	281.7	282.3	282.9	283.1	283.1	282.2	281.3	280.0	279.2	278.7	278.5
7°	281.4	281.9	282.5	282.7	282.8	281.8	280.8	279.5	278.6	278.0	277.8
7.5°	280.8	281.5	282.1	282.3	282.5	281.5	280.3	278.9	277.9	277.3	277.1
8°	280.4	281.0	281.7	281.9	282.1	280.9	279.8	278.2	277.2	276.6	276.3
8.5°	279.8	280.5	281.2	281.4	281.7	280.5	279.3	277.6	276.5	275.8	275.5
9°	279.2	280.0	280.7	280.9	281.3	279.9	278.7	276.9	275.7	275.2	274.7
9.5°	278.6	279.4	280.1	280.4	280.7	279.3	278.0	276.2	275.0	274.2	273.9
10°	277.9	278.8	279.6	279.9	280.3	278.7	277.4	275.4	274.1	273.4	273.0
10.5°	277.2	278.2	278.9	279.3	279.6	278.1	276.6	274.6	273.3	272.4	272.0
11°	276.4	277.6	278.2	278.6	279.1	277.3	275.9	273.7	272.3	271.5	271.0
11.5°	275.6	276.8	277.5	277.9	278.5	276.6	275.1	272.9	271.4	270.4	270.1
12°	274.9	276.1	276.8	277.2	277.7	275.9	274.3	271.9	270.4	269.4	269.0
12.5°	274.1	275.2	276.1	276.5	277.0	275.2	273.4	271.0	269.4	268.4	267.9
13°	273.2	274.5	275.3	275.7	276.3	274.3	272.5	270.1	268.4	267.3	266.8
13.5°	272.2	273.6	274.4	274.9	275.5	273.5	271.6	269.0	267.3	266.2	265.7
14°	271.3	272.7	273.6	274.0	274.7	272.5	270.6	267.9	266.1	265.0	264.5
14.5°	270.3	271.8	272.6	273.1	273.8	271.6	269.6	266.8	264.9	263.8	263.2
15°	269.3	270.8	271.7	272.1	273.0	270.6	268.5	265.7	263.8	262.6	262.0
15.5°	268.3	269.8	270.6	271.1	272.0	269.6	267.5	264.6	262.5	261.3	260.7
16°	267.2	268.7	269.6	270.1	271.0	268.6	266.3	263.4	261.3	260.0	259.5
16.5°	266.1	267.7	268.6	269.1	270.0	267.6	265.2	262.2	260.0	258.8	258.0
17°	265.0	266.6	267.5	268.1	269.0	266.5	264.0	260.9	258.7	257.4	256.6
17.5°	263.8	265.5	266.4	266.9	268.0	265.3	262.8	259.7	257.4	255.9	255.2
18°	262.6	264.2	265.3	265.8	266.8	264.2	261.6	258.3	256.0	254.5	253.8
18.5°	261.4	263.0	264.1	264.6	265.7	263.0	260.3	256.9	254.5	253.1	252.3
19°	260.1	261.8	262.9	263.4	264.5	261.7	259.0	255.6	253.1	251.6	250.8
19.5°	258.8	260.5	261.6	262.2	263.2	260.4	257.7	254.1	251.7	250.2	249.3
20°	257.4	259.3	260.3	260.9	262.1	259.2	256.2	252.7	250.1	248.7	247.7
20.5°	256.0	257.9	259.0	259.7	260.8	257.7	254.9	251.2	248.6	247.0	246.2
21°	254.6	256.5	257.6	258.2	259.6	256.3	253.5	249.6	247.1	245.4	244.6
21.5°	253.2	255.1	256.2	256.9	258.1	254.9	252.0	248.1	245.5	243.8	242.9
22°	251.7	253.6	254.8	255.4	256.7	253.5	250.5	246.5	243.8	242.1	241.2



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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°	250.3	252.2	253.4	254.0	255.3	252.1	248.9	244.9	242.2	240.4	239.6
23°	248.7	250.6	252.0	252.6	253.9	250.5	247.4	243.3	240.5	238.7	237.8
23.5°	247.1	249.1	250.5	251.0	252.4	249.0	245.8	241.7	238.8	237.0	236.1
24°	245.5	247.6	248.8	249.6	250.9	247.4	244.2	240.0	237.1	235.2	234.4
24.5°	243.9	246.0	247.3	248.1	249.4	245.9	242.5	238.3	235.3	233.4	232.5
25°	242.2	244.4	245.7	246.4	247.9	244.2	240.9	236.6	233.5	231.6	230.7
25.5°	240.5	242.8	244.0	244.8	246.3	242.5	239.2	234.9	231.8	229.9	228.8
26°	238.8	241.1	242.3	243.2	244.7	240.9	237.5	233.0	229.9	228.0	226.9
26.5°	237.2	239.4	240.7	241.5	243.0	239.2	235.8	231.2	228.1	226.2	225.0
27°	235.4	237.8	239.1	239.8	241.4	237.5	234.0	229.4	226.2	224.3	223.1
27.5°	233.7	236.1	237.3	238.1	239.7	235.8	232.2	227.5	224.3	222.3	221.2
28°	231.9	234.3	235.6	236.4	238.0	233.9	230.4	225.6	222.4	220.3	219.3
28.5°	230.0	232.4	233.7	234.7	236.3	232.2	228.5	223.7	220.6	218.3	217.3
29°	228.2	230.6	231.9	232.9	234.5	230.3	226.6	221.8	218.5	216.3	215.3
29.5°	226.4	228.8	230.1	231.0	232.6	228.4	224.8	219.8	216.5	214.4	213.3
30°	224.5	226.8	228.3	229.3	230.8	226.6	222.8	217.9	214.5	212.4	211.2
30.5°	222.6	225.0	226.4	227.4	229.0	224.7	220.9	215.9	212.5	210.4	209.2
31°	220.6	223.1	224.6	225.5	227.1	222.9	219.0	213.9	210.5	208.3	207.1
31.5°	218.6	221.2	222.7	223.5	225.2	221.0	217.1	211.9	208.5	206.2	205.2
32°	216.6	219.3	220.7	221.6	223.3	219.0	215.1	209.9	206.4	204.1	203.1
32.5°	214.6	217.3	218.7	219.6	221.4	216.9	213.0	207.8	204.3	202.1	200.9
33°	212.6	215.3	216.7	217.7	219.4	214.9	211.0	205.8	202.2	200.0	198.8
33.5°	210.6	213.3	214.7	215.7	217.4	212.9	208.9	203.8	200.1	197.9	196.7
34°	208.6	211.3	212.7	213.7	215.5	211.0	206.9	201.7	198.1	195.8	194.5
34.5°	206.5	209.3	210.7	211.7	213.5	208.9	204.9	199.6	195.9	193.7	192.4
35°	204.5	207.2	208.7	209.7	211.5	206.9	202.8	197.5	193.9	191.7	190.3
35.5°	202.4	205.2	206.6	207.6	209.5	204.8	200.7	195.3	191.7	189.4	188.1
36°	200.4	203.2	204.5	205.6	207.4	202.7	198.6	193.2	189.6	187.2	186.0
36.5°	198.2	201.0	202.4	203.6	205.4	200.6	196.5	191.1	187.4	185.1	183.8
37°	196.1	198.9	200.4	201.5	203.4	198.6	194.3	188.9	185.2	183.0	181.6
37.5°	194.0	196.8	198.2	199.3	201.2	196.5	192.2	186.8	183.1	180.8	179.4
38°	191.9	194.7	196.2	197.3	199.1	194.4	190.1	184.6	180.9	178.6	177.3
38.5°	189.8	192.6	194.0	195.1	197.0	192.1	187.9	182.5	178.7	176.5	175.0
39°	187.6	190.4	192.0	193.0	194.8	190.1	185.8	180.2	176.5	174.2	172.9
39.5°	185.3	188.3	189.8	190.9	192.7	187.9	183.7	178.1	174.3	172.0	170.7
40°	183.2	186.1	187.6	188.7	190.6	185.7	181.4	175.9	172.2	169.8	168.5
40.5°	181.0	183.9	185.4	186.5	188.4	183.5	179.2	173.7	170.0	167.6	166.2
41°	178.8	181.8	183.3	184.4	186.3	181.4	177.1	171.5	167.7	165.4	164.1
41.5°	176.6	179.6	181.1	182.1	184.1	179.2	174.8	169.3	165.6	163.2	162.0
42°	174.5	177.4	178.9	180.0	181.9	177.0	172.7	167.1	163.5	161.1	159.7
42.5°	172.3	175.2	176.7	177.8	179.8	174.8	170.5	164.9	161.2	158.8	157.5
43°	170.1	173.0	174.5	175.8	177.6	172.7	168.3	162.8	159.0	156.7	155.3
43.5°	167.9	170.8	172.3	173.5	175.5	170.5	166.1	160.6	156.8	154.5	153.1
44°	165.7	168.6	170.2	171.3	173.1	168.3	164.0	158.4	154.6	152.3	151.0
44.5°	163.5	166.4	168.0	169.0	170.9	166.1	161.9	156.2	152.4	150.2	148.7



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CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	161.3	164.2	165.8	166.9	168.8	163.9	159.5	154.0	150.3	147.9	146.6
45.5°	159.2	162.1	163.6	164.7	166.6	161.8	157.4	151.9	148.2	145.8	144.4
46°	156.9	159.9	161.4	162.5	164.4	159.5	155.2	149.6	145.9	143.6	142.3
46.5°	154.7	157.6	159.2	160.3	162.2	157.3	153.0	147.4	143.7	141.4	140.1
47°	152.5	155.4	156.9	158.1	160.0	155.1	150.8	145.3	141.6	139.2	138.0
47.5°	150.4	153.3	154.8	155.9	157.8	152.9	148.6	143.0	139.4	137.0	135.8
48°	148.1	151.0	152.6	153.7	155.6	150.8	146.4	140.9	137.2	135.0	133.6
48.5°	145.9	148.8	150.5	151.5	153.4	148.6	144.2	138.8	135.0	132.8	131.4
49°	143.7	146.6	148.3	149.3	151.2	146.4	142.1	136.7	132.9	130.6	129.3
49.5°	141.6	144.5	146.0	147.1	149.0	144.2	139.9	134.5	130.8	128.5	127.2
50°	139.4	142.3	143.8	145.0	146.8	142.0	137.8	132.3	128.7	126.3	125.0
50.5°	137.1	140.1	141.7	142.8	144.7	139.8	135.6	130.0	126.5	124.2	122.9
51°	135.1	137.9	139.5	140.6	142.4	137.6	133.4	128.0	124.4	122.1	120.8
51.5°	132.9	135.7	137.2	138.4	140.3	135.5	131.2	125.9	122.4	119.9	118.7
52°	130.7	133.5	135.1	136.3	138.1	133.4	129.1	123.8	120.2	117.9	116.5
52.5°	128.6	131.3	133.0	134.2	136.0	131.3	127.0	121.7	118.1	115.9	114.5
53°	126.4	129.2	130.8	131.9	133.8	129.1	124.9	119.6	116.0	113.7	112.4
53.5°	124.4	127.1	128.7	129.8	131.6	126.9	122.8	117.5	113.9	111.6	110.5
54°	122.2	125.0	126.5	127.7	129.5	124.8	120.7	115.5	111.9	109.5	108.5
54.5°	120.0	122.8	124.4	125.6	127.4	122.7	118.6	113.3	109.9	107.6	106.2
55°	117.9	120.8	122.2	123.4	125.3	120.6	116.5	111.2	107.7	105.5	104.2
55.5°	115.9	118.5	120.2	121.2	123.1	118.5	114.4	109.2	105.6	103.4	102.1
56°	113.8	116.4	118.1	119.1	121.0	116.4	112.3	107.2	103.6	101.5	100.1
56.5°	111.7	114.3	115.9	117.0	119.0	114.3	110.4	105.1	101.7	99.5	98.1
57°	109.5	112.2	113.8	115.0	116.9	112.2	108.3	103.0	99.6	97.4	96.1
57.5°	107.5	110.2	111.7	112.8	114.8	110.1	106.1	101.0	97.6	95.4	94.1
58°	105.4	108.1	109.5	110.7	112.6	108.0	104.1	99.0	95.5	93.4	92.0
58.5°	103.3	106.0	107.5	108.7	110.5	106.0	102.0	97.0	93.5	91.3	90.0
59°	101.4	103.8	105.5	106.6	108.5	104.0	100.0	95.0	91.5	89.4	88.0
59.5°	99.3	101.8	103.4	104.5	106.3	102.0	98.0	92.9	89.5	87.5	86.1
60°	97.2	99.8	101.4	102.4	104.3	99.9	96.0	91.0	87.6	85.5	84.2
60.5°	95.3	97.7	99.3	100.4	102.3	98.0	94.0	89.0	85.6	83.5	82.2
61°	93.1	95.6	97.3	98.3	100.2	95.8	92.0	87.0	83.7	81.7	80.2
61.5°	91.1	93.6	95.4	96.4	98.2	93.8	90.0	85.1	81.7	79.7	78.3
62°	89.1	91.6	93.2	94.4	96.2	91.8	88.0	83.2	79.7	77.7	76.3
62.5°	87.2	89.6	91.2	92.3	94.1	89.8	86.1	81.3	77.8	75.7	74.4
63°	85.2	87.7	89.2	90.3	92.1	87.9	84.1	79.3	75.9	73.9	72.5
63.5°	83.2	85.7	87.2	88.3	90.1	86.0	82.1	77.3	74.0	72.0	70.7
64°	81.4	83.8	85.2	86.3	88.2	84.0	80.2	75.4	72.1	70.0	68.8
64.5°	79.2	81.7	83.2	84.4	86.2	81.9	78.3	73.5	70.2	68.0	66.9
65°	77.3	79.7	81.4	82.4	84.2	80.0	76.3	71.5	68.3	66.2	65.0
65.5°	75.3	77.8	79.2	80.4	82.2	78.1	74.4	69.7	66.4	64.4	63.1
66°	73.4	75.8	77.3	78.4	80.3	76.2	72.5	67.9	64.5	62.5	61.2
66.5°	71.5	73.9	75.4	76.4	78.3	74.2	70.6	66.0	62.6	60.7	59.4
67°	69.6	71.9	73.4	74.4	76.3	72.4	68.7	64.1	60.8	58.8	57.5



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	67.7	70.0	71.4	72.6	74.4	70.5	66.9	62.2	59.0	56.9	55.7
68°	65.7	68.1	69.5	70.7	72.5	68.5	65.0	60.3	57.2	55.1	53.8
68.5°	63.8	66.1	67.7	68.8	70.6	66.5	63.1	58.5	55.4	53.3	52.1
69°	61.8	64.2	65.7	66.8	68.7	64.7	61.2	56.7	53.6	51.5	50.2
69.5°	60.0	62.3	63.8	64.8	66.8	62.8	59.5	54.8	51.8	49.7	48.4
70°	58.1	60.4	61.9	62.8	64.8	61.0	57.5	53.0	49.9	47.9	46.7
70.5°	56.3	58.6	60.1	60.8	62.9	59.2	55.7	51.2	48.1	46.2	44.9
71°	54.4	56.8	58.1	58.8	61.1	57.4	53.9	49.5	46.4	44.5	43.2
71.5°	52.5	55.0	56.1	56.8	59.3	55.6	52.1	47.6	44.6	42.6	41.5
72°	50.7	53.2	54.1	54.6	57.3	53.7	50.3	45.8	42.9	40.8	39.7
72.5°	48.9	51.2	52.1	52.4	55.4	51.8	48.5	44.0	41.1	39.1	38.1
73°	47.1	49.4	49.9	50.1	53.4	49.8	46.7	42.3	39.4	37.3	36.3
73.5°	45.3	47.5	47.8	48.0	51.1	47.8	45.0	40.5	37.6	35.7	34.5
74°	43.6	45.8	45.7	45.7	48.9	45.9	43.2	38.8	35.9	33.9	32.8
74.5°	41.8	44.0	43.7	43.5	46.7	43.9	41.5	37.0	34.2	32.3	31.1
75°	40.1	42.2	41.5	41.3	44.5	41.9	39.8	35.3	32.5	30.6	29.5
75.5°	38.3	40.3	39.3	39.0	42.3	39.9	38.0	33.6	30.9	29.0	27.9
76°	36.4	38.4	37.1	36.5	39.9	37.7	36.1	32.0	29.3	27.3	26.1
76.5°	34.6	36.6	35.0	34.3	37.7	35.6	34.2	30.3	27.6	25.8	24.5
77°	33.0	34.8	32.9	31.9	35.3	33.5	32.4	28.8	26.0	24.2	22.9
77.5°	31.3	33.0	30.8	29.5	33.0	31.5	30.6	27.0	24.4	22.6	21.3
78°	29.7	31.2	28.6	27.3	30.8	29.5	28.8	25.5	22.8	21.0	19.8
78.5°	28.1	29.5	26.5	25.0	28.6	27.3	27.1	23.9	21.2	19.5	18.4
79°	26.3	27.7	24.6	22.6	26.2	25.2	25.4	22.4	19.7	17.9	16.9
79.5°	24.8	26.0	22.6	20.5	24.1	23.2	23.4	20.8	18.2	16.5	15.6
80°	23.1	24.4	20.5	18.4	21.8	21.2	21.6	19.4	16.7	15.2	14.2
80.5°	21.4	22.6	18.6	16.1	19.6	19.1	19.9	17.8	15.4	13.9	12.6
81°	19.9	20.9	16.7	14.1	17.5	17.1	18.2	16.3	14.0	12.4	11.2
81.5°	18.5	19.3	14.7	12.2	15.5	15.2	16.5	15.0	12.5	11.0	10.0
82°	17.0	17.6	12.8	10.4	13.6	13.3	14.9	13.6	11.1	9.7	8.6
82.5°	15.6	16.0	11.0	8.6	11.5	11.4	13.3	12.2	10.0	8.7	7.2
83°	14.2	14.3	9.1	6.9	9.5	9.6	11.7	10.9	8.8	7.4	5.8
83.5°	12.6	12.8	7.5	5.4	7.8	8.0	10.1	9.4	7.4	6.2	4.7
84°	11.3	11.4	5.7	3.9	6.2	6.4	8.6	8.3	6.3	5.2	3.6
84.5°	10.1	9.8	4.2	2.7	4.8	5.0	7.2	7.2	5.4	4.1	2.3
85°	9.0	8.5	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°	6.5	5.9	1.5	0.5	1.6	1.5	3.1	3.9	2.4	1.7	0.0
86.5°	5.6	4.9	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°	2.4	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: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-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	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	283.8	283.8	283.8	283.8	283.8	283.8
0.5°	283.8	283.3	283.4	283.6	283.7	283.9
1°	283.6	283.0	283.1	283.5	283.8	283.9
1.5°	283.3	282.6	282.9	283.3	283.7	283.9
2°	282.9	282.3	282.5	283.1	283.5	283.9
2.5°	282.6	281.8	282.2	282.8	283.3	283.9
3°	282.2	281.4	281.9	282.5	283.1	283.8
3.5°	281.7	280.9	281.5	282.2	282.9	283.6
4°	281.3	280.4	281.1	281.8	282.6	283.3
4.5°	280.7	279.9	280.6	281.4	282.2	283.1
5°	280.2	279.2	280.1	280.9	282.0	282.8
5.5°	279.6	278.7	279.5	280.4	281.5	282.5
6°	278.9	277.9	278.9	279.9	281.2	282.2
6.5°	278.2	277.2	278.3	279.4	280.7	281.7
7°	277.5	276.4	277.7	278.7	280.2	281.4
7.5°	276.7	275.6	276.9	278.1	279.6	280.8
8°	276.0	274.8	276.2	277.4	279.1	280.4
8.5°	275.3	274.0	275.4	276.7	278.5	279.8
9°	274.3	273.2	274.6	276.1	277.8	279.2
9.5°	273.5	272.1	273.7	275.3	277.1	278.6
10°	272.5	271.2	272.8	274.4	276.4	277.9
10.5°	271.6	270.2	271.9	273.6	275.7	277.2
11°	270.5	269.2	271.0	272.6	275.0	276.4
11.5°	269.5	268.1	270.0	271.8	274.1	275.6
12°	268.4	267.0	268.9	270.8	273.2	274.9
12.5°	267.4	265.9	267.9	269.8	272.3	274.1
13°	266.3	264.7	266.8	268.7	271.4	273.2
13.5°	265.1	263.5	265.7	267.7	270.4	272.2
14°	263.9	262.3	264.5	266.6	269.4	271.3
14.5°	262.7	261.0	263.3	265.5	268.4	270.3
15°	261.4	259.8	262.1	264.3	267.3	269.3
15.5°	260.1	258.4	260.8	263.1	266.2	268.3
16°	258.8	257.0	259.5	261.9	265.0	267.2
16.5°	257.4	255.6	258.1	260.6	263.9	266.1
17°	256.0	254.2	256.8	259.3	262.6	265.0
17.5°	254.6	252.7	255.4	258.0	261.4	263.8
18°	253.1	251.2	254.0	256.6	260.1	262.6
18.5°	251.6	249.7	252.5	255.2	258.8	261.4
19°	250.2	248.1	251.0	253.8	257.5	260.1
19.5°	248.7	246.6	249.5	252.3	256.1	258.8
20°	247.0	245.0	248.0	250.8	254.7	257.4
20.5°	245.4	243.3	246.4	249.3	253.3	256.0
21°	243.7	241.7	244.8	247.7	251.8	254.6
21.5°	242.0	240.0	243.2	246.2	250.3	253.2
22°	240.4	238.3	241.5	244.5	248.8	251.7



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	238.6	236.6	239.8	242.9	247.2	250.3
23°	236.9	234.8	238.1	241.2	245.7	248.7
23.5°	235.2	233.0	236.4	239.6	244.0	247.1
24°	233.4	231.1	234.6	237.9	242.3	245.5
24.5°	231.5	229.3	232.8	236.1	240.7	243.9
25°	229.8	227.4	231.1	234.3	239.0	242.2
25.5°	227.9	225.5	229.3	232.5	237.2	240.5
26°	226.1	223.6	227.4	230.7	235.5	238.8
26.5°	224.1	221.7	225.4	228.9	233.7	237.2
27°	222.2	219.8	223.5	227.1	231.9	235.4
27.5°	220.3	217.8	221.6	225.2	230.2	233.7
28°	218.2	215.8	219.7	223.2	228.3	231.9
28.5°	216.2	213.8	217.8	221.3	226.5	230.0
29°	214.3	211.8	215.8	219.4	224.6	228.2
29.5°	212.3	209.8	213.8	217.5	222.6	226.4
30°	210.2	207.7	211.7	215.4	220.7	224.5
30.5°	208.2	205.7	209.7	213.4	218.8	222.6
31°	206.1	203.6	207.7	211.5	216.9	220.6
31.5°	204.1	201.5	205.6	209.4	214.8	218.6
32°	202.0	199.3	203.6	207.4	212.8	216.6
32.5°	199.8	197.2	201.5	205.4	210.8	214.6
33°	197.8	195.1	199.4	203.2	208.8	212.6
33.5°	195.6	193.0	197.3	201.1	206.7	210.6
34°	193.5	190.9	195.2	199.0	204.7	208.6
34.5°	191.4	188.7	193.0	196.9	202.6	206.5
35°	189.2	186.6	190.9	194.8	200.5	204.5
35.5°	187.0	184.5	188.7	192.7	198.5	202.4
36°	184.9	182.3	186.5	190.5	196.4	200.4
36.5°	182.7	180.0	184.4	188.4	194.2	198.2
37°	180.5	178.0	182.3	186.3	192.0	196.1
37.5°	178.4	175.7	180.1	184.1	189.9	194.0
38°	176.3	173.5	177.9	181.9	187.8	191.9
38.5°	174.0	171.3	175.8	179.8	185.6	189.8
39°	171.7	169.1	173.6	177.6	183.5	187.6
39.5°	169.5	166.9	171.4	175.3	181.3	185.3
40°	167.3	164.7	169.1	173.1	179.1	183.2
40.5°	165.1	162.6	167.0	171.0	176.9	181.0
41°	162.9	160.4	164.7	168.8	174.7	178.8
41.5°	160.8	158.1	162.5	166.6	172.5	176.6
42°	158.6	156.0	160.3	164.5	170.4	174.5
42.5°	156.3	153.8	158.2	162.3	168.2	172.3
43°	154.1	151.6	156.0	160.0	166.0	170.1
43.5°	152.0	149.4	153.8	157.7	163.8	167.9
44°	149.8	147.2	151.6	155.6	161.5	165.7
44.5°	147.6	145.1	149.4	153.5	159.3	163.5



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	145.5	142.9	147.1	151.3	157.1	161.3
45.5°	143.3	140.7	145.0	149.1	155.0	159.2
46°	141.1	138.6	142.9	147.0	152.8	156.9
46.5°	138.9	136.4	140.7	144.7	150.6	154.7
47°	136.8	134.2	138.5	142.5	148.5	152.5
47.5°	134.7	132.0	136.4	140.3	146.2	150.4
48°	132.4	130.0	134.3	138.2	143.9	148.1
48.5°	130.3	127.8	132.0	136.0	141.8	145.9
49°	128.2	125.7	129.9	133.8	139.6	143.7
49.5°	126.1	123.5	127.7	131.7	137.5	141.6
50°	123.9	121.4	125.7	129.5	135.3	139.4
50.5°	121.7	119.3	123.5	127.4	133.1	137.1
51°	119.6	117.2	121.3	125.2	131.0	135.1
51.5°	117.5	115.2	119.2	123.1	128.8	132.9
52°	115.5	113.1	117.2	121.1	126.7	130.7
52.5°	113.5	111.0	115.1	119.0	124.5	128.6
53°	111.3	109.0	113.0	116.8	122.5	126.4
53.5°	109.3	106.9	110.9	114.7	120.4	124.4
54°	107.3	104.9	108.8	112.6	118.2	122.2
54.5°	105.1	102.7	106.8	110.7	116.1	120.0
55°	103.1	100.7	104.7	108.6	114.0	117.9
55.5°	101.2	98.7	102.6	106.5	111.9	115.9
56°	99.0	96.7	100.7	104.4	109.8	113.8
56.5°	97.1	94.7	98.6	102.3	107.7	111.7
57°	95.1	92.7	96.6	100.3	105.7	109.5
57.5°	93.0	90.6	94.7	98.3	103.6	107.5
58°	91.0	88.6	92.5	96.2	101.6	105.4
58.5°	89.0	86.7	90.5	94.2	99.5	103.3
59°	87.0	84.7	88.5	92.2	97.5	101.4
59.5°	85.1	82.8	86.5	90.2	95.4	99.3
60°	83.1	80.8	84.6	88.2	93.3	97.2
60.5°	81.2	78.9	82.6	86.2	91.4	95.3
61°	79.2	76.9	80.7	84.3	89.4	93.1
61.5°	77.3	74.9	78.7	82.2	87.4	91.1
62°	75.3	73.0	76.8	80.3	85.4	89.1
62.5°	73.4	71.2	74.8	78.3	83.4	87.2
63°	71.5	69.3	72.9	76.5	81.4	85.2
63.5°	69.6	67.5	71.0	74.5	79.5	83.2
64°	67.8	65.5	69.2	72.6	77.6	81.4
64.5°	65.9	63.6	67.4	70.6	75.6	79.2
65°	63.9	61.7	65.4	68.7	73.7	77.3
65.5°	62.0	59.8	63.4	66.8	71.8	75.3
66°	60.2	58.0	61.5	64.9	69.8	73.4
66.5°	58.4	56.1	59.6	63.0	67.8	71.5
67°	56.5	54.2	57.9	61.1	66.0	69.6



TEST NUMBER: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	54.6	52.4	56.0	59.3	64.1	67.7
68°	52.8	50.6	54.1	57.4	62.2	65.7
68.5°	50.9	48.9	52.3	55.7	60.4	63.8
69°	49.1	47.1	50.4	53.8	58.5	61.8
69.5°	47.3	45.3	48.6	52.0	56.6	60.0
70°	45.6	43.6	46.8	50.1	54.7	58.1
70.5°	43.8	41.9	45.0	48.3	53.0	56.3
71°	42.1	40.1	43.3	46.4	51.1	54.4
71.5°	40.4	38.4	41.7	44.7	49.3	52.5
72°	38.7	36.6	39.9	42.9	47.5	50.7
72.5°	36.9	34.9	38.2	41.2	45.7	48.9
73°	35.2	33.1	36.4	39.4	44.0	47.1
73.5°	33.4	31.5	34.7	37.7	42.1	45.3
74°	31.7	29.9	33.0	35.9	40.2	43.6
74.5°	30.1	28.3	31.2	34.2	38.5	41.8
75°	28.4	26.5	29.6	32.5	36.8	40.1
75.5°	26.7	24.8	27.9	30.8	35.1	38.3
76°	25.1	23.2	26.3	29.1	33.3	36.4
76.5°	23.5	21.7	24.6	27.5	31.6	34.6
77°	22.0	20.2	23.0	26.0	29.9	33.0
77.5°	20.5	18.7	21.5	24.3	28.3	31.3
78°	19.0	17.2	19.9	22.7	26.6	29.7
78.5°	17.5	15.7	18.4	21.2	25.0	28.1
79°	16.1	14.2	16.8	19.6	23.4	26.3
79.5°	14.6	12.5	15.2	18.0	21.9	24.8
80°	13.0	10.9	13.6	16.5	20.2	23.1
80.5°	11.5	9.3	11.9	15.2	18.8	21.4
81°	10.1	7.7	10.4	13.6	17.3	19.9
81.5°	8.6	6.1	8.8	12.1	15.9	18.5
82°	7.1	4.8	7.2	10.6	14.3	17.0
82.5°	5.7	3.4	5.6	9.2	13.0	15.6
83°	4.2	2.3	4.1	7.6	11.7	14.2
83.5°	3.0	1.4	2.8	6.2	10.3	12.6
84°	2.2	0.6	1.6	4.9	9.0	11.3
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	6.5
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	1.2	2.4
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: P303597

CATALOG NUMBER: HLA406VWFL9FS1EMWR-3500K

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)