

Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

Brand: HALO

Report Number: P938659

Luminaire Tested: HLB4LSFS5-1000LM-4000K

Issue Date: 1/15/2025

Test Information

Test Method: LM-79-2019
Report Number: P938659
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2404364A001)
Test Lab:
Issue Date: 1/15/2025
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO
Catalog Number: HLB4LSFS5-1000LM-4000K
Description: 4IN SELECTABLE LUMENS, 90CRI, DIMMING TO 10%
Light Source: SELECTABLE CCT 90CRI / 4000K CCT
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1155.0 lumens
Efficiency: N/A
Efficacy: 98.7 lumens/watt
Spacing Criteria (0/90/45): 1.3 / 1.3 / 1.38
Luminous Opening: Circular (Dia: 0.33' x H: 0')
CIE Type: Direct

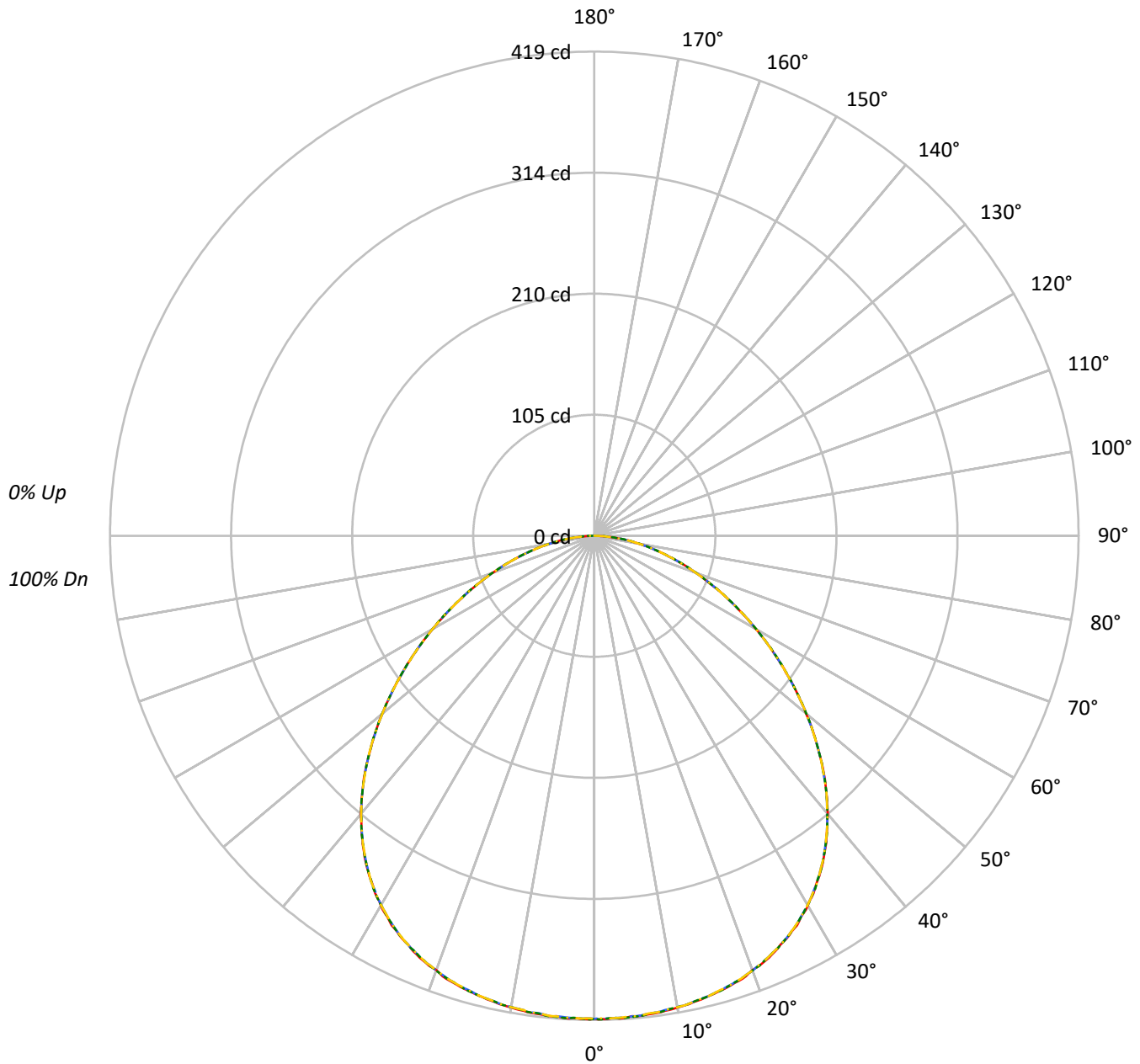
Input Watts (W): 11.7
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

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
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10
RCR																				
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100		
1	109	105	100	97	106	102	98	95	98	95	92	94	92	89	91	88	87	85		
2	100	92	85	79	97	90	84	78	86	81	77	83	79	75	80	76	73	71		
3	91	81	73	66	89	79	72	66	76	70	65	73	68	63	71	66	62	60		
4	83	72	63	56	81	70	62	56	68	61	55	66	59	55	63	58	54	52		
5	77	64	55	49	75	63	55	49	61	54	48	59	53	47	57	52	47	45		
6	71	58	49	43	69	57	49	43	55	48	42	53	47	42	52	46	41	39		
7	66	53	44	38	64	52	43	38	50	43	37	49	42	37	47	41	37	35		
8	61	48	40	34	60	47	39	34	46	39	33	45	38	33	44	38	33	31		
9	57	44	36	30	56	43	36	30	42	35	30	41	35	30	40	34	30	28		
10	54	41	33	28	52	40	33	28	39	32	27	38	32	27	37	31	27	25		

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	52618	52618	52618	52618
5°	52743	52756	52743	52756
10°	52969	52931	52969	52931
15°	53314	53314	53314	53314
20°	53571	53611	53571	53611
25°	53836	53808	53836	53808
30°	53681	53652	53681	53652
35°	53004	52927	53004	52927
40°	51618	51536	51618	51536
45°	49567	49549	49567	49549
50°	46832	46891	46832	46891
55°	43926	43948	43926	43948
60°	40700	40826	40700	40826
65°	37402	37581	37402	37581
70°	34257	34478	34257	34478
75°	31266	31557	31266	31557
80°	28265	28700	28265	28700
85°	24259	24692	24259	24692

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°

Vertical Angle: 89.5°

Luminance: 51917 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	39.7	3.4
10°-20°	115.6	10.0
20°-30°	178.5	15.5
30°-40°	215.0	18.6
40°-50°	214.2	18.5
50°-60°	178.9	15.5
60°-70°	125.1	10.8
70°-80°	68.6	5.9
80°-90°	19.5	1.7
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	333.8	28.9
0°-40°	548.8	47.5
0°-60°	941.8	81.5
0°-90°	1155.0	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	1155.0	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	418	418	418	418	418	
5°	418	418	418	418	418	40
15°	409	409	409	409	409	116
25°	388	388	388	388	388	179
35°	345	344	345	344	345	215
45°	278	278	278	278	278	214
55°	200	200	200	200	200	179
65°	126	126	126	126	126	125
75°	64	65	64	65	64	68
85°	17	17	17	17	17	19
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°	418.1	418.1	418.1	418.1	418.1	418.1	418.1	418.1	418.1	418.1	418.1
0.5°	418.6	418.1	417.7	417.9	418.5	417.9	417.7	418.1	418.6	418.1	417.7
1°	418.3	417.8	417.7	417.8	418.5	417.8	417.7	417.8	418.3	417.8	417.7
1.5°	418.3	418.0	418.0	417.9	418.0	417.9	418.0	418.0	418.3	418.0	418.0
2°	417.9	418.0	417.8	417.8	417.7	417.8	417.8	418.0	417.9	418.0	417.8
2.5°	417.8	417.8	417.7	417.8	417.6	417.8	417.7	417.8	417.8	417.8	417.7
3°	418.3	417.8	417.6	417.7	418.1	417.7	417.6	417.8	418.3	417.8	417.6
3.5°	418.0	418.0	417.3	417.4	418.0	417.4	417.3	418.0	418.0	418.0	417.3
4°	417.6	417.4	417.2	417.1	417.8	417.1	417.2	417.4	417.6	417.4	417.2
4.5°	417.1	417.1	417.2	417.2	417.6	417.2	417.2	417.1	417.1	417.1	417.2
5°	417.5	417.3	417.3	417.1	417.6	417.1	417.3	417.3	417.5	417.3	417.3
5.5°	417.5	417.1	417.1	416.9	417.6	416.9	417.1	417.1	417.5	417.1	417.1
6°	417.1	416.7	416.6	416.6	417.1	416.6	416.6	416.7	417.1	416.7	416.6
6.5°	416.7	416.5	416.1	416.5	416.4	416.5	416.1	416.5	416.7	416.5	416.1
7°	416.6	416.3	416.1	416.1	416.1	416.1	416.1	416.3	416.6	416.3	416.1
7.5°	416.5	416.1	415.9	415.9	416.3	415.9	415.9	416.1	416.5	416.1	415.9
8°	416.2	415.9	415.6	415.6	416.1	415.6	415.6	415.9	416.2	415.9	415.6
8.5°	415.7	415.5	415.0	415.4	415.3	415.4	415.0	415.5	415.7	415.5	415.0
9°	415.5	415.0	414.8	414.9	414.8	414.9	414.8	415.0	415.5	415.0	414.8
9.5°	415.0	414.8	414.3	414.6	414.5	414.6	414.3	414.8	415.0	414.8	414.3
10°	414.5	414.5	414.3	414.1	414.2	414.1	414.3	414.5	414.5	414.5	414.3
10.5°	414.2	414.1	414.0	413.9	413.8	413.9	414.0	414.1	414.2	414.1	414.0
11°	413.8	413.6	413.7	413.5	413.7	413.5	413.7	413.6	413.8	413.6	413.7
11.5°	413.4	413.1	413.0	412.9	413.0	412.9	413.0	413.1	413.4	413.1	413.0
12°	412.7	412.6	412.4	412.2	412.4	412.2	412.4	412.6	412.7	412.6	412.4
12.5°	412.2	412.0	411.8	411.6	411.7	411.6	411.8	412.0	412.2	412.0	411.8
13°	411.8	411.7	411.4	411.5	411.3	411.5	411.4	411.7	411.8	411.7	411.4
13.5°	411.0	411.3	410.7	411.3	411.0	411.3	410.7	411.3	411.0	411.3	410.7
14°	410.4	410.6	410.3	410.3	410.4	410.3	410.3	410.6	410.4	410.6	410.3
14.5°	409.9	409.7	409.7	409.5	409.7	409.5	409.7	409.7	409.9	409.7	409.7
15°	409.2	408.8	408.7	408.8	409.2	408.8	408.7	408.8	409.2	408.8	408.7
15.5°	408.3	408.2	408.0	408.2	408.6	408.2	408.0	408.2	408.3	408.2	408.0
16°	407.9	407.6	407.4	407.4	407.9	407.4	407.4	407.6	407.9	407.6	407.4
16.5°	407.2	406.9	406.6	406.9	406.8	406.9	406.6	406.9	407.2	406.9	406.6
17°	406.4	406.1	406.0	405.9	406.1	405.9	406.0	406.1	406.4	406.1	406.0
17.5°	405.5	405.1	405.0	405.0	405.2	405.0	405.0	405.1	405.5	405.1	405.0
18°	404.9	404.3	404.3	404.0	404.5	404.0	404.3	404.3	404.9	404.3	404.3
18.5°	404.3	403.5	403.5	403.3	403.4	403.3	403.5	403.5	404.3	403.5	403.5
19°	403.1	402.8	402.2	402.1	402.5	402.1	402.2	402.8	403.1	402.8	402.2
19.5°	401.4	401.5	401.2	401.4	401.5	401.4	401.2	401.5	401.4	401.5	401.2
20°	400.0	400.6	400.5	400.4	400.3	400.4	400.5	400.6	400.0	400.6	400.5
20.5°	399.2	399.5	399.0	399.3	399.2	399.3	399.0	399.5	399.2	399.5	399.0
21°	398.7	398.5	397.9	397.8	398.6	397.8	397.9	398.5	398.7	398.5	397.9

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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°	395.1	394.7	394.3	394.5	394.4	394.5	394.3	394.7	395.1	394.7	394.3
23°	393.7	393.4	393.0	393.0	392.9	393.0	393.0	393.4	393.7	393.4	393.0
23.5°	392.3	391.7	391.5	391.6	391.6	391.6	391.5	391.7	392.3	391.7	391.5
24°	390.7	390.7	390.4	390.0	390.4	390.0	390.4	390.7	390.7	390.7	390.4
24.5°	388.7	389.4	388.8	388.7	388.9	388.7	388.8	389.4	388.7	389.4	388.8
25°	387.7	387.4	387.4	387.2	387.5	387.2	387.4	387.4	387.7	387.4	387.4
25.5°	386.2	385.7	385.8	385.7	385.7	385.7	385.8	385.7	386.2	385.7	385.8
26°	384.6	384.3	384.2	384.2	384.5	384.2	384.2	384.3	384.6	384.3	384.2
26.5°	382.8	382.6	382.4	382.3	382.8	382.3	382.4	382.6	382.8	382.6	382.4
27°	381.3	381.0	380.7	380.5	380.9	380.5	380.7	381.0	381.3	381.0	380.7
27.5°	380.0	379.3	378.9	379.0	379.0	379.0	378.9	379.3	380.0	379.3	378.9
28°	377.7	377.2	377.0	377.0	377.2	377.0	377.0	377.2	377.7	377.2	377.0
28.5°	375.2	375.2	374.9	375.1	375.2	375.1	374.9	375.2	375.2	375.2	374.9
29°	373.6	373.3	373.0	373.0	373.2	373.0	373.0	373.3	373.6	373.3	373.0
29.5°	371.8	371.2	370.9	370.7	371.1	370.7	370.9	371.2	371.8	371.2	370.9
30°	369.4	369.1	369.0	368.7	369.2	368.7	369.0	369.1	369.4	369.1	369.0
30.5°	366.9	366.7	366.9	366.7	367.2	366.7	366.9	366.7	366.9	366.7	366.9
31°	365.0	364.6	364.6	364.5	364.8	364.5	364.6	364.6	365.0	364.6	364.6
31.5°	363.0	362.7	362.1	362.2	362.6	362.2	362.1	362.7	363.0	362.7	362.1
32°	360.2	360.2	359.8	359.7	360.4	359.7	359.8	360.2	360.2	360.2	359.8
32.5°	357.4	357.6	357.6	357.3	357.7	357.3	357.6	357.6	357.4	357.6	357.6
33°	355.1	355.1	355.3	354.9	354.8	354.9	355.3	355.1	355.1	355.1	355.3
33.5°	352.8	352.8	352.4	352.4	352.4	352.4	352.4	352.8	352.8	352.8	352.4
34°	350.1	350.3	349.7	349.8	350.1	349.8	349.7	350.3	350.1	350.3	349.7
34.5°	347.7	347.3	347.0	346.9	347.5	346.9	347.0	347.3	347.7	347.3	347.0
35°	345.0	344.3	344.4	344.3	344.5	344.3	344.4	344.3	345.0	344.3	344.4
35.5°	342.0	341.8	341.5	341.6	341.6	341.6	341.5	341.8	342.0	341.8	341.5
36°	338.9	339.1	338.6	338.8	339.0	338.8	338.6	339.1	338.9	339.1	338.6
36.5°	336.1	336.1	335.7	335.9	335.8	335.9	335.7	336.1	336.1	336.1	335.7
37°	333.2	333.0	332.7	332.7	332.9	332.7	332.7	333.0	333.2	333.0	332.7
37.5°	329.9	329.9	329.5	329.6	330.0	329.6	329.5	329.9	329.9	329.9	329.5
38°	326.8	327.0	326.6	326.6	326.9	326.6	326.6	327.0	326.8	327.0	326.6
38.5°	323.7	323.8	323.4	323.5	323.7	323.5	323.4	323.8	323.7	323.8	323.4
39°	320.3	320.3	320.3	320.2	320.4	320.2	320.3	320.3	320.3	320.3	320.3
39.5°	317.3	317.1	317.0	317.0	316.9	317.0	317.0	317.1	317.3	317.1	317.0
40°	314.2	313.9	313.7	313.8	313.7	313.8	313.7	313.9	314.2	313.9	313.7
40.5°	310.8	310.4	310.1	310.3	310.5	310.3	310.1	310.4	310.8	310.4	310.1
41°	307.3	306.9	306.8	306.8	307.4	306.8	306.8	306.9	307.3	306.9	306.8
41.5°	303.7	303.5	303.4	303.4	303.6	303.4	303.4	303.5	303.7	303.5	303.4
42°	300.1	300.1	300.1	299.9	300.2	299.9	300.1	300.1	300.1	300.1	300.1
42.5°	296.7	296.6	296.5	296.5	296.7	296.5	296.5	296.6	296.7	296.6	296.5
43°	293.2	292.9	292.7	292.7	293.2	292.7	292.7	292.9	293.2	292.9	292.7
43.5°	289.6	289.2	289.0	289.2	289.4	289.2	289.0	289.2	289.6	289.2	289.0

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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	278.5	278.1	278.1	278.2	278.4	278.2	278.1	278.1	278.5	278.1	278.1
45.5°	274.5	274.4	274.4	274.4	274.3	274.4	274.4	274.4	274.5	274.4	274.4
46°	270.5	270.7	270.6	270.5	270.4	270.5	270.6	270.7	270.5	270.7	270.6
46.5°	266.7	266.8	266.8	266.8	266.7	266.8	266.8	266.8	266.7	266.8	266.8
47°	262.8	262.8	263.0	262.9	262.9	262.9	263.0	262.8	262.8	262.8	263.0
47.5°	259.1	258.8	258.9	258.9	259.3	258.9	258.9	258.8	259.1	258.8	258.9
48°	255.2	255.0	254.9	254.9	255.3	254.9	254.9	255.0	255.2	255.0	254.9
48.5°	251.4	251.3	251.3	251.2	251.3	251.2	251.3	251.3	251.4	251.3	251.3
49°	247.6	247.5	247.4	247.3	247.5	247.3	247.4	247.5	247.6	247.5	247.4
49.5°	243.4	243.4	243.3	243.4	243.6	243.4	243.3	243.4	243.4	243.4	243.3
50°	239.2	239.3	239.3	239.6	239.5	239.6	239.3	239.3	239.2	239.3	239.3
50.5°	235.5	235.3	235.4	235.7	235.5	235.7	235.4	235.3	235.5	235.3	235.4
51°	231.6	231.5	231.5	231.6	231.7	231.6	231.5	231.5	231.6	231.5	231.5
51.5°	227.5	227.5	227.6	227.7	227.8	227.7	227.6	227.5	227.5	227.5	227.6
52°	223.5	223.5	223.5	223.6	223.7	223.6	223.5	223.5	223.5	223.5	223.5
52.5°	219.6	219.5	219.6	219.7	219.8	219.7	219.6	219.5	219.6	219.5	219.6
53°	215.8	215.7	215.6	215.8	215.9	215.8	215.6	215.7	215.8	215.7	215.6
53.5°	211.9	211.6	211.7	211.9	212.1	211.9	211.7	211.6	211.9	211.6	211.7
54°	207.6	207.5	207.6	207.9	208.2	207.9	207.6	207.5	207.6	207.5	207.6
54.5°	203.6	203.6	203.8	204.1	204.3	204.1	203.8	203.6	203.6	203.6	203.8
55°	200.2	199.9	199.9	200.3	200.3	200.3	199.9	199.9	200.2	199.9	199.9
55.5°	196.3	195.8	196.1	196.3	196.5	196.3	196.1	195.8	196.3	195.8	196.1
56°	192.1	191.9	192.1	192.3	192.3	192.3	192.1	191.9	192.1	191.9	192.1
56.5°	188.4	188.2	188.2	188.4	188.6	188.4	188.2	188.2	188.4	188.2	188.2
57°	184.5	184.4	184.3	184.6	184.8	184.6	184.3	184.4	184.5	184.4	184.3
57.5°	180.6	180.3	180.5	180.6	181.1	180.6	180.5	180.3	180.6	180.3	180.5
58°	176.8	176.5	176.6	176.9	176.9	176.9	176.6	176.5	176.8	176.5	176.6
58.5°	172.9	172.9	172.9	173.1	173.3	173.1	172.9	172.9	172.9	172.9	172.9
59°	169.0	169.1	169.2	169.4	169.4	169.4	169.2	169.1	169.0	169.1	169.2
59.5°	165.4	165.3	165.5	165.5	165.8	165.5	165.5	165.3	165.4	165.3	165.5
60°	161.7	161.6	161.8	161.9	162.2	161.9	161.8	161.6	161.7	161.6	161.8
60.5°	157.8	157.8	157.9	158.2	158.5	158.2	157.9	157.8	157.8	157.8	157.9
61°	154.2	154.2	154.3	154.5	154.6	154.5	154.3	154.2	154.2	154.2	154.3
61.5°	150.5	150.6	150.8	150.8	151.0	150.8	150.8	150.6	150.5	150.6	150.8
62°	146.9	147.0	147.1	147.3	147.3	147.3	147.1	147.0	146.9	147.0	147.1
62.5°	143.3	143.4	143.5	143.7	143.8	143.7	143.5	143.4	143.3	143.4	143.5
63°	139.7	139.7	139.9	140.0	140.1	140.0	139.9	139.7	139.7	139.7	139.9
63.5°	136.1	136.2	136.4	136.5	136.7	136.5	136.4	136.2	136.1	136.2	136.4
64°	132.6	132.7	132.9	133.0	133.1	133.0	132.9	132.7	132.6	132.7	132.9
64.5°	129.0	129.2	129.4	129.5	129.5	129.5	129.4	129.2	129.0	129.2	129.4
65°	125.6	125.8	126.0	126.1	126.2	126.1	126.0	125.8	125.6	125.8	126.0
65.5°	122.3	122.4	122.6	122.7	122.8	122.7	122.6	122.4	122.3	122.4	122.6
66°	119.0	119.0	119.2	119.2	119.4	119.2	119.2	119.0	119.0	119.0	119.2

TEST NUMBER: P938659

CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	109.0	109.1	109.1	109.4	109.5	109.4	109.1	109.1	109.0	109.1	109.1
68°	105.8	105.8	105.9	106.1	106.3	106.1	105.9	105.8	105.8	105.8	105.9
68.5°	102.5	102.6	102.7	102.9	103.0	102.9	102.7	102.6	102.5	102.6	102.7
69°	99.3	99.4	99.6	99.8	99.8	99.8	99.6	99.4	99.3	99.4	99.6
69.5°	96.3	96.3	96.4	96.6	96.8	96.6	96.4	96.3	96.3	96.3	96.4
70°	93.1	93.2	93.3	93.5	93.7	93.5	93.3	93.2	93.1	93.2	93.3
70.5°	90.1	90.1	90.3	90.5	90.6	90.5	90.3	90.1	90.1	90.1	90.3
71°	87.1	87.1	87.2	87.5	87.6	87.5	87.2	87.1	87.1	87.1	87.2
71.5°	84.1	84.1	84.1	84.5	84.7	84.5	84.1	84.1	84.1	84.1	84.1
72°	81.2	81.2	81.2	81.5	81.7	81.5	81.2	81.2	81.2	81.2	81.2
72.5°	78.2	78.2	78.4	78.6	78.8	78.6	78.4	78.2	78.2	78.2	78.4
73°	75.4	75.3	75.5	75.8	75.9	75.8	75.5	75.3	75.4	75.3	75.5
73.5°	72.6	72.4	72.6	72.9	73.1	72.9	72.6	72.4	72.6	72.4	72.6
74°	69.7	69.7	69.7	70.1	70.4	70.1	69.7	69.7	69.7	69.7	69.7
74.5°	67.0	66.8	67.0	67.3	67.7	67.3	67.0	66.8	67.0	66.8	67.0
75°	64.3	64.3	64.4	64.7	64.9	64.7	64.4	64.3	64.3	64.3	64.4
75.5°	61.7	61.6	61.7	62.0	62.2	62.0	61.7	61.6	61.7	61.6	61.7
76°	59.0	58.9	59.0	59.2	59.5	59.2	59.0	58.9	59.0	58.9	59.0
76.5°	56.4	56.3	56.4	56.6	56.8	56.6	56.4	56.3	56.4	56.3	56.4
77°	53.8	53.7	53.8	54.1	54.3	54.1	53.8	53.7	53.8	53.7	53.8
77.5°	51.3	51.2	51.3	51.5	51.8	51.5	51.3	51.2	51.3	51.2	51.3
78°	48.8	48.7	48.8	49.1	49.3	49.1	48.8	48.7	48.8	48.7	48.8
78.5°	46.3	46.2	46.3	46.6	47.0	46.6	46.3	46.2	46.3	46.2	46.3
79°	43.8	43.8	43.9	44.1	44.5	44.1	43.9	43.8	43.8	43.8	43.9
79.5°	41.4	41.4	41.4	41.7	41.9	41.7	41.4	41.4	41.4	41.4	41.4
80°	39.0	38.9	39.0	39.3	39.6	39.3	39.0	38.9	39.0	38.9	39.0
80.5°	36.7	36.8	36.7	36.9	37.1	36.9	36.7	36.8	36.7	36.8	36.7
81°	34.3	34.4	34.4	34.6	34.8	34.6	34.4	34.4	34.3	34.4	34.4
81.5°	32.0	32.1	32.1	32.3	32.4	32.3	32.1	32.1	32.0	32.1	32.1
82°	29.7	29.7	29.9	30.1	30.2	30.1	29.9	29.7	29.7	29.7	29.9
82.5°	27.5	27.6	27.7	27.9	27.9	27.9	27.7	27.6	27.5	27.6	27.7
83°	25.3	25.3	25.4	25.6	25.7	25.6	25.4	25.3	25.3	25.3	25.4
83.5°	23.1	23.1	23.2	23.4	23.6	23.4	23.2	23.1	23.1	23.1	23.2
84°	21.0	21.0	21.1	21.3	21.4	21.3	21.1	21.0	21.0	21.0	21.1
84.5°	18.9	18.9	19.0	19.1	19.2	19.1	19.0	18.9	18.9	18.9	19.0
85°	16.8	16.8	16.9	17.0	17.1	17.0	16.9	16.8	16.8	16.8	16.9
85.5°	14.8	14.8	14.8	14.9	15.0	14.9	14.8	14.8	14.8	14.8	14.8
86°	12.7	12.7	12.8	12.8	12.9	12.8	12.8	12.7	12.7	12.7	12.8
86.5°	10.6	10.6	10.9	11.1	11.4	11.1	10.9	10.6	10.6	10.6	10.9
87°	8.7	9.0	9.3	9.3	9.8	9.3	9.3	9.0	8.7	9.0	9.3
87.5°	6.6	7.2	7.5	7.5	8.3	7.5	7.5	7.2	6.6	7.2	7.5
88°	5.3	5.5	5.8	6.1	6.7	6.1	5.8	5.5	5.3	5.5	5.8
88.5°	3.8	4.0	4.2	5.1	5.7	5.1	4.2	4.0	3.8	4.0	4.2



TEST NUMBER: P938659
CATALOG NUMBER: HLB4LSFS5-1000LM-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: P938659

CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	418.1	418.1	418.1	418.1	418.1	418.1
0.5°	417.9	418.5	417.9	417.7	418.1	418.6
1°	417.8	418.5	417.8	417.7	417.8	418.3
1.5°	417.9	418.0	417.9	418.0	418.0	418.3
2°	417.8	417.7	417.8	417.8	418.0	417.9
2.5°	417.8	417.6	417.8	417.7	417.8	417.8
3°	417.7	418.1	417.7	417.6	417.8	418.3
3.5°	417.4	418.0	417.4	417.3	418.0	418.0
4°	417.1	417.8	417.1	417.2	417.4	417.6
4.5°	417.2	417.6	417.2	417.2	417.1	417.1
5°	417.1	417.6	417.1	417.3	417.3	417.5
5.5°	416.9	417.6	416.9	417.1	417.1	417.5
6°	416.6	417.1	416.6	416.6	416.7	417.1
6.5°	416.5	416.4	416.5	416.1	416.5	416.7
7°	416.1	416.1	416.1	416.1	416.3	416.6
7.5°	415.9	416.3	415.9	415.9	416.1	416.5
8°	415.6	416.1	415.6	415.6	415.9	416.2
8.5°	415.4	415.3	415.4	415.0	415.5	415.7
9°	414.9	414.8	414.9	414.8	415.0	415.5
9.5°	414.6	414.5	414.6	414.3	414.8	415.0
10°	414.1	414.2	414.1	414.3	414.5	414.5
10.5°	413.9	413.8	413.9	414.0	414.1	414.2
11°	413.5	413.7	413.5	413.7	413.6	413.8
11.5°	412.9	413.0	412.9	413.0	413.1	413.4
12°	412.2	412.4	412.2	412.4	412.6	412.7
12.5°	411.6	411.7	411.6	411.8	412.0	412.2
13°	411.5	411.3	411.5	411.4	411.7	411.8
13.5°	411.3	411.0	411.3	410.7	411.3	411.0
14°	410.3	410.4	410.3	410.3	410.6	410.4
14.5°	409.5	409.7	409.5	409.7	409.7	409.9
15°	408.8	409.2	408.8	408.7	408.8	409.2
15.5°	408.2	408.6	408.2	408.0	408.2	408.3
16°	407.4	407.9	407.4	407.4	407.6	407.9
16.5°	406.9	406.8	406.9	406.6	406.9	407.2
17°	405.9	406.1	405.9	406.0	406.1	406.4
17.5°	405.0	405.2	405.0	405.0	405.1	405.5
18°	404.0	404.5	404.0	404.3	404.3	404.9
18.5°	403.3	403.4	403.3	403.5	403.5	404.3
19°	402.1	402.5	402.1	402.2	402.8	403.1
19.5°	401.4	401.5	401.4	401.2	401.5	401.4
20°	400.4	400.3	400.4	400.5	400.6	400.0
20.5°	399.3	399.2	399.3	399.0	399.5	399.2
21°	397.8	398.6	397.8	397.9	398.5	398.7



TEST NUMBER: P938659

CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	394.5	394.4	394.5	394.3	394.7	395.1
23°	393.0	392.9	393.0	393.0	393.4	393.7
23.5°	391.6	391.6	391.6	391.5	391.7	392.3
24°	390.0	390.4	390.0	390.4	390.7	390.7
24.5°	388.7	388.9	388.7	388.8	389.4	388.7
25°	387.2	387.5	387.2	387.4	387.4	387.7
25.5°	385.7	385.7	385.7	385.8	385.7	386.2
26°	384.2	384.5	384.2	384.2	384.3	384.6
26.5°	382.3	382.8	382.3	382.4	382.6	382.8
27°	380.5	380.9	380.5	380.7	381.0	381.3
27.5°	379.0	379.0	379.0	378.9	379.3	380.0
28°	377.0	377.2	377.0	377.0	377.2	377.7
28.5°	375.1	375.2	375.1	374.9	375.2	375.2
29°	373.0	373.2	373.0	373.0	373.3	373.6
29.5°	370.7	371.1	370.7	370.9	371.2	371.8
30°	368.7	369.2	368.7	369.0	369.1	369.4
30.5°	366.7	367.2	366.7	366.9	366.7	366.9
31°	364.5	364.8	364.5	364.6	364.6	365.0
31.5°	362.2	362.6	362.2	362.1	362.7	363.0
32°	359.7	360.4	359.7	359.8	360.2	360.2
32.5°	357.3	357.7	357.3	357.6	357.6	357.4
33°	354.9	354.8	354.9	355.3	355.1	355.1
33.5°	352.4	352.4	352.4	352.4	352.8	352.8
34°	349.8	350.1	349.8	349.7	350.3	350.1
34.5°	346.9	347.5	346.9	347.0	347.3	347.7
35°	344.3	344.5	344.3	344.4	344.3	345.0
35.5°	341.6	341.6	341.6	341.5	341.8	342.0
36°	338.8	339.0	338.8	338.6	339.1	338.9
36.5°	335.9	335.8	335.9	335.7	336.1	336.1
37°	332.7	332.9	332.7	332.7	333.0	333.2
37.5°	329.6	330.0	329.6	329.5	329.9	329.9
38°	326.6	326.9	326.6	326.6	327.0	326.8
38.5°	323.5	323.7	323.5	323.4	323.8	323.7
39°	320.2	320.4	320.2	320.3	320.3	320.3
39.5°	317.0	316.9	317.0	317.0	317.1	317.3
40°	313.8	313.7	313.8	313.7	313.9	314.2
40.5°	310.3	310.5	310.3	310.1	310.4	310.8
41°	306.8	307.4	306.8	306.8	306.9	307.3
41.5°	303.4	303.6	303.4	303.4	303.5	303.7
42°	299.9	300.2	299.9	300.1	300.1	300.1
42.5°	296.5	296.7	296.5	296.5	296.6	296.7
43°	292.7	293.2	292.7	292.7	292.9	293.2
43.5°	289.2	289.4	289.2	289.0	289.2	289.6

TEST NUMBER: P938659

CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	278.2	278.4	278.2	278.1	278.1	278.5
45.5°	274.4	274.3	274.4	274.4	274.4	274.5
46°	270.5	270.4	270.5	270.6	270.7	270.5
46.5°	266.8	266.7	266.8	266.8	266.8	266.7
47°	262.9	262.9	262.9	263.0	262.8	262.8
47.5°	258.9	259.3	258.9	258.9	258.8	259.1
48°	254.9	255.3	254.9	254.9	255.0	255.2
48.5°	251.2	251.3	251.2	251.3	251.3	251.4
49°	247.3	247.5	247.3	247.4	247.5	247.6
49.5°	243.4	243.6	243.4	243.3	243.4	243.4
50°	239.6	239.5	239.6	239.3	239.3	239.2
50.5°	235.7	235.5	235.7	235.4	235.3	235.5
51°	231.6	231.7	231.6	231.5	231.5	231.6
51.5°	227.7	227.8	227.7	227.6	227.5	227.5
52°	223.6	223.7	223.6	223.5	223.5	223.5
52.5°	219.7	219.8	219.7	219.6	219.5	219.6
53°	215.8	215.9	215.8	215.6	215.7	215.8
53.5°	211.9	212.1	211.9	211.7	211.6	211.9
54°	207.9	208.2	207.9	207.6	207.5	207.6
54.5°	204.1	204.3	204.1	203.8	203.6	203.6
55°	200.3	200.3	200.3	199.9	199.9	200.2
55.5°	196.3	196.5	196.3	196.1	195.8	196.3
56°	192.3	192.3	192.3	192.1	191.9	192.1
56.5°	188.4	188.6	188.4	188.2	188.2	188.4
57°	184.6	184.8	184.6	184.3	184.4	184.5
57.5°	180.6	181.1	180.6	180.5	180.3	180.6
58°	176.9	176.9	176.9	176.6	176.5	176.8
58.5°	173.1	173.3	173.1	172.9	172.9	172.9
59°	169.4	169.4	169.4	169.2	169.1	169.0
59.5°	165.5	165.8	165.5	165.5	165.3	165.4
60°	161.9	162.2	161.9	161.8	161.6	161.7
60.5°	158.2	158.5	158.2	157.9	157.8	157.8
61°	154.5	154.6	154.5	154.3	154.2	154.2
61.5°	150.8	151.0	150.8	150.8	150.6	150.5
62°	147.3	147.3	147.3	147.1	147.0	146.9
62.5°	143.7	143.8	143.7	143.5	143.4	143.3
63°	140.0	140.1	140.0	139.9	139.7	139.7
63.5°	136.5	136.7	136.5	136.4	136.2	136.1
64°	133.0	133.1	133.0	132.9	132.7	132.6
64.5°	129.5	129.5	129.5	129.4	129.2	129.0
65°	126.1	126.2	126.1	126.0	125.8	125.6
65.5°	122.7	122.8	122.7	122.6	122.4	122.3
66°	119.2	119.4	119.2	119.2	119.0	119.0



TEST NUMBER: P938659

CATALOG NUMBER: HLB4LSFS5-1000LM-4000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	109.4	109.5	109.4	109.1	109.1	109.0
68°	106.1	106.3	106.1	105.9	105.8	105.8
68.5°	102.9	103.0	102.9	102.7	102.6	102.5
69°	99.8	99.8	99.8	99.6	99.4	99.3
69.5°	96.6	96.8	96.6	96.4	96.3	96.3
70°	93.5	93.7	93.5	93.3	93.2	93.1
70.5°	90.5	90.6	90.5	90.3	90.1	90.1
71°	87.5	87.6	87.5	87.2	87.1	87.1
71.5°	84.5	84.7	84.5	84.1	84.1	84.1
72°	81.5	81.7	81.5	81.2	81.2	81.2
72.5°	78.6	78.8	78.6	78.4	78.2	78.2
73°	75.8	75.9	75.8	75.5	75.3	75.4
73.5°	72.9	73.1	72.9	72.6	72.4	72.6
74°	70.1	70.4	70.1	69.7	69.7	69.7
74.5°	67.3	67.7	67.3	67.0	66.8	67.0
75°	64.7	64.9	64.7	64.4	64.3	64.3
75.5°	62.0	62.2	62.0	61.7	61.6	61.7
76°	59.2	59.5	59.2	59.0	58.9	59.0
76.5°	56.6	56.8	56.6	56.4	56.3	56.4
77°	54.1	54.3	54.1	53.8	53.7	53.8
77.5°	51.5	51.8	51.5	51.3	51.2	51.3
78°	49.1	49.3	49.1	48.8	48.7	48.8
78.5°	46.6	47.0	46.6	46.3	46.2	46.3
79°	44.1	44.5	44.1	43.9	43.8	43.8
79.5°	41.7	41.9	41.7	41.4	41.4	41.4
80°	39.3	39.6	39.3	39.0	38.9	39.0
80.5°	36.9	37.1	36.9	36.7	36.8	36.7
81°	34.6	34.8	34.6	34.4	34.4	34.3
81.5°	32.3	32.4	32.3	32.1	32.1	32.0
82°	30.1	30.2	30.1	29.9	29.7	29.7
82.5°	27.9	27.9	27.9	27.7	27.6	27.5
83°	25.6	25.7	25.6	25.4	25.3	25.3
83.5°	23.4	23.6	23.4	23.2	23.1	23.1
84°	21.3	21.4	21.3	21.1	21.0	21.0
84.5°	19.1	19.2	19.1	19.0	18.9	18.9
85°	17.0	17.1	17.0	16.9	16.8	16.8
85.5°	14.9	15.0	14.9	14.8	14.8	14.8
86°	12.8	12.9	12.8	12.8	12.7	12.7
86.5°	11.1	11.4	11.1	10.9	10.6	10.6
87°	9.3	9.8	9.3	9.3	9.0	8.7
87.5°	7.5	8.3	7.5	7.5	7.2	6.6
88°	6.1	6.7	6.1	5.8	5.5	5.3
88.5°	5.1	5.7	5.1	4.2	4.0	3.8



TEST NUMBER: P938659
CATALOG NUMBER: HLB4LSFS5-1000LM-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



Report Generated By 670245859 / DESKTOP-T8S5UU9





— 0°-180° - - 45°-225° - - - - 90°-270° - · - 135°-315°







21.5°	397.4	397.2	397.1	396.7	397.0	396.7	397.1	397.2	397.4	397.2	397.1
22°	396.3	395.8	395.7	395.5	395.5	395.5	395.7	395.8	396.3	395.8	395.7



44°	285.7	285.6	285.4	285.6	285.6	285.6	285.4	285.6	285.7	285.6	285.4
44.5°	282.1	282.0	281.7	281.9	282.0	281.9	281.7	282.0	282.1	282.0	281.7



66.5°	115.5	115.6	115.8	115.9	116.0	115.9	115.8	115.6	115.5	115.6	115.8
67°	112.2	112.4	112.4	112.7	112.8	112.7	112.4	112.4	112.2	112.4	112.4



89°	2.4	2.7	3.2	4.0	4.6	4.0	3.2	2.7	2.4	2.7	3.2
89.5°	1.0	1.8	2.5	3.1	3.6	3.1	2.5	1.8	1.0	1.8	2.5





21.5°	396.7	397.0	396.7	397.1	397.2	397.4
22°	395.5	395.5	395.5	395.7	395.8	396.3



44°	285.6	285.6	285.6	285.4	285.6	285.7
44.5°	281.9	282.0	281.9	281.7	282.0	282.1



66.5°	115.9	116.0	115.9	115.8	115.6	115.5
67°	112.7	112.8	112.7	112.4	112.4	112.2



89°	4.0	4.6	4.0	3.2	2.7	2.4
89.5°	3.1	3.6	3.1	2.5	1.8	1.0



(END OF REPORT)