

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 COMMERCIAL

Report Number: P776789

Luminaire Tested: HCDJBS4050CSD-HCD82TRMB-5000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P776789
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B065-HCD82TRMB)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K
Description: 8 INCH ROUND NARROW MATTE BLACK TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

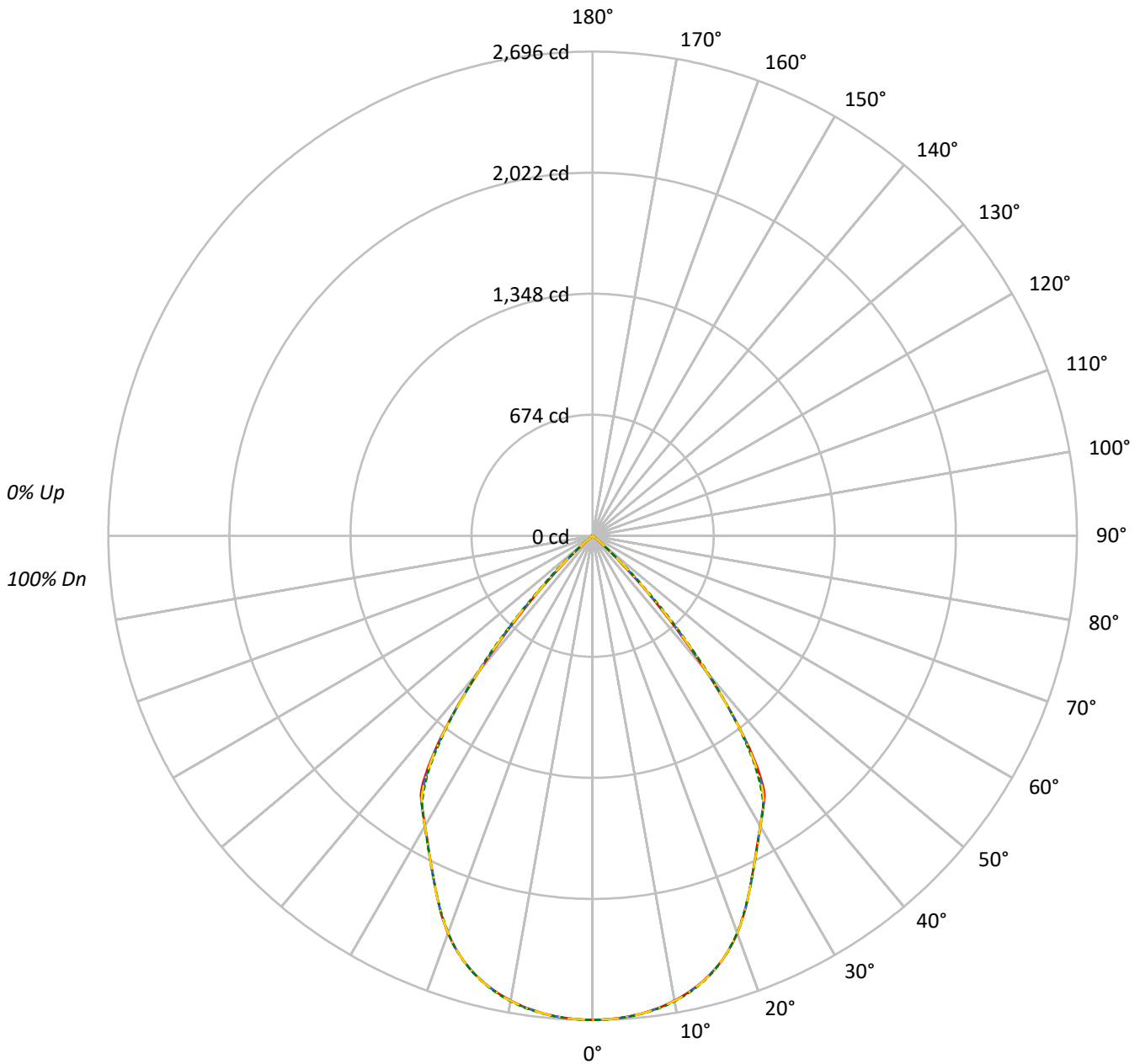
Lumens per Lamp: N/A
Luminaire Lumens: 3206.3 lumens
Efficiency: N/A
Efficacy: 66.8 lumens/watt
Spacing Criteria (0/90/45): 1.06 / 1.06 / 1.08
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 48
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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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	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	50	30	10	50	30	10	0		
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100					100			
1	113	110	108	105	111	108	106	104	104	102	101	100	99	98	97	96	95	93					93			
2	107	102	98	94	105	100	97	93	97	94	91	94	92	89	91	89	87	86					86			
3	101	95	89	85	99	93	88	85	91	86	83	88	85	82	86	83	81	79					79			
4	96	88	82	77	94	87	81	77	84	80	76	82	78	75	81	77	74	73					73			
5	90	82	75	71	89	81	75	70	79	74	70	77	73	69	75	72	69	67					67			
6	85	76	70	65	84	75	69	65	74	68	64	72	67	64	71	67	63	62					62			
7	81	71	64	60	79	70	64	60	69	63	59	68	63	59	66	62	59	57					57			
8	76	66	60	55	75	66	60	55	64	59	55	63	58	55	62	58	55	53					53			
9	72	62	56	51	71	61	55	51	60	55	51	60	55	51	59	54	51	49					49			
10	68	58	52	48	67	58	52	48	57	51	48	56	51	47	55	51	47	46					46			

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	82304	82304	82304	82304
5°	82112	82186	82112	82186
10°	81465	81586	81465	81586
15°	79894	79973	79894	79973
20°	76507	76429	76507	76429
25°	70671	70735	70671	70735
30°	65790	65892	65790	65892
35°	60393	59163	60393	59163
40°	38970	40054	38970	40054
45°	14304	17197	14304	17197
50°	1639	2631	1639	2631
55°	261	261	261	261
60°	147	147	147	147
65°	108	108	108	108
70°	89	89	89	89
75°	59	59	59	59
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 90°
 Vertical Angle: 45°
 Luminance: 17197 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	254.3	7.9
10°-20°	709.1	22.1
20°-30°	966.6	30.1
30°-40°	954.4	29.8
40°-50°	312.5	9.7
50°-60°	7.3	0.2
60°-70°	1.5	0.0
70°-80°	0.5	0.0
80°-90°	0.0	0.0
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°	1930.0	60.2
0°-40°	2884.4	90.0
0°-60°	3204.3	99.9
0°-90°	3206.3	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	3206.3	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	2696	2696	2696	2696	2696	
5°	2679	2682	2679	2682	2679	254
15°	2528	2530	2528	2530	2528	709
25°	2098	2100	2098	2100	2098	966
35°	1620	1587	1620	1587	1620	958
45°	331	398	331	398	331	293
55°	5	5	5	5	5	6
65°	2	2	2	2	2	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
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°	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8
0.5°	2695.3	2695.3	2695.8	2695.3	2695.8	2695.3	2695.8	2695.3	2695.3	2695.3	2695.8
1°	2694.8	2694.8	2695.3	2694.8	2695.8	2694.8	2695.3	2694.8	2694.8	2694.8	2695.3
1.5°	2693.9	2694.4	2694.4	2694.4	2694.8	2694.4	2694.4	2694.4	2693.9	2694.4	2694.4
2°	2692.9	2692.9	2693.4	2693.4	2693.9	2693.4	2693.4	2692.9	2692.9	2692.9	2693.4
2.5°	2691.4	2691.9	2691.9	2691.9	2692.4	2691.9	2691.9	2691.9	2691.4	2691.9	2691.9
3°	2690.0	2690.0	2690.5	2690.5	2691.0	2690.5	2690.5	2690.0	2690.0	2690.0	2690.5
3.5°	2688.0	2688.0	2688.5	2688.5	2689.0	2688.5	2688.5	2688.0	2688.0	2688.0	2688.5
4°	2685.6	2685.6	2686.1	2686.1	2687.1	2686.1	2686.1	2685.6	2685.6	2685.6	2686.1
4.5°	2682.7	2682.7	2683.2	2683.7	2684.2	2683.7	2683.2	2682.7	2682.7	2682.7	2683.2
5°	2679.3	2679.8	2680.3	2680.8	2681.7	2680.8	2680.3	2679.8	2679.3	2679.8	2680.3
5.5°	2676.4	2676.4	2676.9	2677.4	2678.3	2677.4	2676.9	2676.4	2676.4	2676.4	2676.9
6°	2672.5	2672.5	2673.5	2674.0	2674.9	2674.0	2673.5	2672.5	2672.5	2672.5	2673.5
6.5°	2668.1	2668.6	2669.6	2670.1	2671.0	2670.1	2669.6	2668.6	2668.1	2668.6	2669.6
7°	2663.8	2663.8	2665.2	2665.7	2666.7	2665.7	2665.2	2663.8	2663.8	2663.8	2665.2
7.5°	2658.9	2658.9	2660.4	2660.8	2661.8	2660.8	2660.4	2658.9	2658.9	2658.9	2660.4
8°	2653.6	2654.0	2655.0	2656.0	2657.0	2656.0	2655.0	2654.0	2653.6	2654.0	2655.0
8.5°	2647.7	2648.2	2649.2	2650.2	2651.1	2650.2	2649.2	2648.2	2647.7	2648.2	2649.2
9°	2641.4	2641.9	2643.4	2644.3	2645.3	2644.3	2643.4	2641.9	2641.4	2641.9	2643.4
9.5°	2634.6	2635.1	2636.5	2638.0	2639.0	2638.0	2636.5	2635.1	2634.6	2635.1	2636.5
10°	2627.8	2628.3	2629.3	2630.7	2631.7	2630.7	2629.3	2628.3	2627.8	2628.3	2629.3
10.5°	2620.0	2620.5	2622.0	2623.4	2624.4	2623.4	2622.0	2620.5	2620.0	2620.5	2622.0
11°	2612.3	2612.7	2614.2	2615.2	2616.1	2615.2	2614.2	2612.7	2612.3	2612.7	2614.2
11.5°	2603.5	2604.0	2605.5	2606.4	2607.9	2606.4	2605.5	2604.0	2603.5	2604.0	2605.5
12°	2594.8	2594.8	2596.2	2597.7	2598.7	2597.7	2596.2	2594.8	2594.8	2594.8	2596.2
12.5°	2585.1	2585.1	2586.5	2588.0	2588.9	2588.0	2586.5	2585.1	2585.1	2585.1	2586.5
13°	2574.9	2575.3	2576.3	2577.8	2578.3	2577.8	2576.3	2575.3	2574.9	2575.3	2576.3
13.5°	2563.7	2564.2	2565.6	2566.6	2567.6	2566.6	2565.6	2564.2	2563.7	2564.2	2565.6
14°	2552.5	2553.0	2554.0	2554.9	2555.9	2554.9	2554.0	2553.0	2552.5	2553.0	2554.0
14.5°	2540.4	2540.9	2541.8	2542.8	2543.8	2542.8	2541.8	2540.9	2540.4	2540.9	2541.8
15°	2527.7	2527.7	2528.7	2529.7	2530.2	2529.7	2528.7	2527.7	2527.7	2527.7	2528.7
15.5°	2514.1	2514.1	2515.1	2516.1	2516.6	2516.1	2515.1	2514.1	2514.1	2514.1	2515.1
16°	2499.6	2500.1	2500.5	2501.0	2502.0	2501.0	2500.5	2500.1	2499.6	2500.1	2500.5
16.5°	2485.0	2485.0	2485.5	2486.0	2486.5	2486.0	2485.5	2485.0	2485.0	2485.0	2485.5
17°	2469.0	2469.0	2469.5	2469.9	2470.4	2469.9	2469.5	2469.0	2469.0	2469.0	2469.5
17.5°	2452.0	2452.0	2452.5	2452.5	2452.9	2452.5	2452.5	2452.0	2452.0	2452.0	2452.5
18°	2435.0	2434.5	2434.5	2434.5	2435.0	2434.5	2434.5	2434.5	2435.0	2434.5	2434.5
18.5°	2416.0	2416.0	2415.5	2415.5	2415.5	2415.5	2415.5	2416.0	2416.0	2416.0	2415.5
19°	2396.6	2396.6	2396.1	2395.6	2395.6	2395.6	2396.1	2396.6	2396.6	2396.6	2396.1
19.5°	2376.2	2375.7	2375.2	2374.7	2374.7	2374.7	2375.2	2375.7	2376.2	2375.7	2375.2
20°	2354.8	2354.3	2353.9	2352.9	2352.4	2352.9	2353.9	2354.3	2354.8	2354.3	2353.9
20.5°	2332.0	2331.5	2330.5	2329.6	2329.1	2329.6	2330.5	2331.5	2332.0	2331.5	2330.5
21°	2308.2	2308.2	2307.2	2305.3	2304.3	2305.3	2307.2	2308.2	2308.2	2308.2	2307.2



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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°	2231.9	2231.9	2231.0	2229.5	2229.5	2229.5	2231.0	2231.9	2231.9	2231.9	2231.0
23°	2205.2	2205.2	2204.7	2203.3	2203.3	2203.3	2204.7	2205.2	2205.2	2205.2	2204.7
23.5°	2178.0	2178.5	2178.0	2177.0	2177.0	2177.0	2178.0	2178.5	2178.0	2178.5	2178.0
24°	2150.8	2151.3	2151.3	2150.8	2151.3	2150.8	2151.3	2151.3	2150.8	2151.3	2151.3
24.5°	2124.6	2124.6	2125.1	2124.6	2125.6	2124.6	2125.1	2124.6	2124.6	2124.6	2125.1
25°	2097.9	2098.4	2098.8	2098.8	2099.8	2098.8	2098.8	2098.4	2097.9	2098.4	2098.8
25.5°	2072.6	2072.6	2073.1	2073.6	2074.6	2073.6	2073.1	2072.6	2072.6	2072.6	2073.1
26°	2047.4	2047.8	2048.3	2048.8	2049.8	2048.8	2048.3	2047.8	2047.4	2047.8	2048.3
26.5°	2022.6	2023.1	2023.6	2024.0	2025.5	2024.0	2023.6	2023.1	2022.6	2023.1	2023.6
27°	1998.8	1998.8	1999.8	1999.8	2001.2	1999.8	1999.8	1998.8	1998.8	1998.8	1999.8
27.5°	1975.0	1975.5	1976.0	1976.9	1977.9	1976.9	1976.0	1975.5	1975.0	1975.5	1976.0
28°	1951.7	1952.2	1953.1	1953.6	1955.1	1953.6	1953.1	1952.2	1951.7	1952.2	1953.1
28.5°	1929.3	1930.3	1930.8	1931.3	1932.7	1931.3	1930.8	1930.3	1929.3	1930.3	1930.8
29°	1908.0	1908.4	1908.9	1909.4	1910.9	1909.4	1908.9	1908.4	1908.0	1908.4	1908.9
29.5°	1886.6	1887.1	1888.0	1888.5	1889.5	1888.5	1888.0	1887.1	1886.6	1887.1	1888.0
30°	1866.2	1866.2	1867.2	1867.6	1869.1	1867.6	1867.2	1866.2	1866.2	1866.2	1867.2
30.5°	1845.8	1846.3	1846.8	1847.7	1848.7	1847.7	1846.8	1846.3	1845.8	1846.3	1846.8
31°	1826.4	1826.8	1827.8	1828.3	1829.8	1828.3	1827.8	1826.8	1826.4	1826.8	1827.8
31.5°	1807.9	1808.4	1808.4	1808.9	1809.8	1808.9	1808.4	1808.4	1807.9	1808.4	1808.4
32°	1789.9	1789.9	1789.9	1789.4	1790.4	1789.4	1789.9	1789.9	1789.9	1789.9	1789.9
32.5°	1772.4	1771.9	1771.0	1769.0	1767.1	1769.0	1771.0	1771.9	1772.4	1771.9	1771.0
33°	1753.5	1752.5	1747.7	1742.8	1737.5	1742.8	1747.7	1752.5	1753.5	1752.5	1747.7
33.5°	1733.1	1728.2	1719.0	1710.7	1703.9	1710.7	1719.0	1728.2	1733.1	1728.2	1719.0
34°	1703.9	1697.6	1685.0	1674.3	1667.0	1674.3	1685.0	1697.6	1703.9	1697.6	1685.0
34.5°	1665.6	1660.2	1646.1	1635.9	1628.7	1635.9	1646.1	1660.2	1665.6	1660.2	1646.1
35°	1620.4	1615.1	1602.4	1594.2	1587.4	1594.2	1602.4	1615.1	1620.4	1615.1	1602.4
35.5°	1570.9	1567.9	1556.3	1547.5	1540.7	1547.5	1556.3	1567.9	1570.9	1567.9	1556.3
36°	1517.9	1515.5	1505.8	1497.0	1489.7	1497.0	1505.8	1515.5	1517.9	1515.5	1505.8
36.5°	1461.6	1459.6	1451.4	1442.1	1434.4	1442.1	1451.4	1459.6	1461.6	1459.6	1451.4
37°	1398.4	1397.0	1392.1	1385.3	1377.5	1385.3	1392.1	1397.0	1398.4	1397.0	1392.1
37.5°	1333.3	1331.4	1329.4	1325.1	1318.8	1325.1	1329.4	1331.4	1333.3	1331.4	1329.4
38°	1264.4	1261.4	1262.4	1261.9	1259.0	1261.9	1262.4	1261.4	1264.4	1261.4	1262.4
38.5°	1197.3	1193.0	1193.9	1196.4	1198.8	1196.4	1193.9	1193.0	1197.3	1193.0	1193.9
39°	1125.0	1123.5	1124.5	1130.3	1136.6	1130.3	1124.5	1123.5	1125.0	1123.5	1124.5
39.5°	1053.1	1054.0	1056.0	1063.3	1072.0	1063.3	1056.0	1054.0	1053.1	1054.0	1056.0
40°	977.8	982.6	987.0	996.7	1005.0	996.7	987.0	982.6	977.8	982.6	987.0
40.5°	905.4	912.2	920.5	931.1	938.4	931.1	920.5	912.2	905.4	912.2	920.5
41°	831.1	840.3	853.9	866.1	873.3	866.1	853.9	840.3	831.1	840.3	853.9
41.5°	760.7	770.4	786.9	801.5	808.3	801.5	786.9	770.4	760.7	770.4	786.9
42°	691.7	700.4	719.9	737.3	743.7	737.3	719.9	700.4	691.7	700.4	719.9
42.5°	624.7	635.3	657.2	674.7	680.5	674.7	657.2	635.3	624.7	635.3	657.2
43°	560.0	572.2	594.0	612.5	618.8	612.5	594.0	572.2	560.0	572.2	594.0
43.5°	499.8	511.5	532.8	551.8	560.5	551.8	532.8	511.5	499.8	511.5	532.8



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	331.3	341.5	363.8	386.2	398.3	386.2	363.8	341.5	331.3	341.5	363.8
45.5°	280.3	292.4	315.2	338.6	349.7	338.6	315.2	292.4	280.3	292.4	315.2
46°	235.6	245.8	271.5	294.4	308.0	294.4	271.5	245.8	235.6	245.8	271.5
46.5°	195.3	206.0	230.2	252.1	266.7	252.1	230.2	206.0	195.3	206.0	230.2
47°	163.7	170.0	190.4	212.3	224.9	212.3	190.4	170.0	163.7	170.0	190.4
47.5°	133.6	137.5	155.9	174.9	183.1	174.9	155.9	137.5	133.6	137.5	155.9
48°	106.4	110.3	124.3	141.3	150.1	141.3	124.3	110.3	106.4	110.3	124.3
48.5°	85.5	87.4	99.6	112.2	120.0	112.2	99.6	87.4	85.5	87.4	99.6
49°	64.1	66.5	76.7	88.9	93.3	88.9	76.7	66.5	64.1	66.5	76.7
49.5°	48.6	49.5	56.3	67.0	72.9	67.0	56.3	49.5	48.6	49.5	56.3
50°	34.5	33.5	42.7	52.5	55.4	52.5	42.7	33.5	34.5	33.5	42.7
50.5°	21.4	23.3	30.1	39.3	44.7	39.3	30.1	23.3	21.4	23.3	30.1
51°	11.7	15.5	20.9	26.2	34.0	26.2	20.9	15.5	11.7	15.5	20.9
51.5°	9.2	9.7	13.6	17.0	25.3	17.0	13.6	9.7	9.2	9.7	13.6
52°	7.8	8.3	8.7	10.7	16.5	10.7	8.7	8.3	7.8	8.3	8.7
52.5°	6.3	7.3	7.3	8.3	7.8	8.3	7.3	7.3	6.3	7.3	7.3
53°	6.3	6.3	6.8	6.8	6.3	6.8	6.8	6.3	6.3	6.3	6.8
53.5°	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8	5.8
54°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
54.5°	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3	5.3
55°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
55.5°	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9	4.9
56°	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4	4.4
56.5°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
57°	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9	3.9
57.5°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
58°	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4	3.4
58.5°	2.9	3.4	3.4	3.4	3.4	3.4	3.4	3.4	2.9	3.4	3.4
59°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
59.5°	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9	2.9
60°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
60.5°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
61°	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4	2.4
61.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
62°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
62.5°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
63°	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.9
63.5°	1.5	1.9	1.9	1.9	1.9	1.9	1.9	1.9	1.5	1.9	1.9
64°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
64.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
65°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
65.5°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
66°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5



TEST NUMBER: P776789

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
68°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
68.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
69°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
69.5°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
70.5°	0.5	1.0	1.0	1.0	1.0	1.0	1.0	1.0	0.5	1.0	1.0
71°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.0	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.0	0.5	0.5
78°	0.0	0.0	0.0	0.5	0.5	0.5	0.0	0.0	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776789

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-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: P776789

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	2695.8	2695.8	2695.8	2695.8	2695.8	2695.8
0.5°	2695.3	2695.8	2695.3	2695.8	2695.3	2695.3
1°	2694.8	2695.8	2694.8	2695.3	2694.8	2694.8
1.5°	2694.4	2694.8	2694.4	2694.4	2694.4	2693.9
2°	2693.4	2693.9	2693.4	2693.4	2692.9	2692.9
2.5°	2691.9	2692.4	2691.9	2691.9	2691.9	2691.4
3°	2690.5	2691.0	2690.5	2690.5	2690.0	2690.0
3.5°	2688.5	2689.0	2688.5	2688.5	2688.0	2688.0
4°	2686.1	2687.1	2686.1	2686.1	2685.6	2685.6
4.5°	2683.7	2684.2	2683.7	2683.2	2682.7	2682.7
5°	2680.8	2681.7	2680.8	2680.3	2679.8	2679.3
5.5°	2677.4	2678.3	2677.4	2676.9	2676.4	2676.4
6°	2674.0	2674.9	2674.0	2673.5	2672.5	2672.5
6.5°	2670.1	2671.0	2670.1	2669.6	2668.6	2668.1
7°	2665.7	2666.7	2665.7	2665.2	2663.8	2663.8
7.5°	2660.8	2661.8	2660.8	2660.4	2658.9	2658.9
8°	2656.0	2657.0	2656.0	2655.0	2654.0	2653.6
8.5°	2650.2	2651.1	2650.2	2649.2	2648.2	2647.7
9°	2644.3	2645.3	2644.3	2643.4	2641.9	2641.4
9.5°	2638.0	2639.0	2638.0	2636.5	2635.1	2634.6
10°	2630.7	2631.7	2630.7	2629.3	2628.3	2627.8
10.5°	2623.4	2624.4	2623.4	2622.0	2620.5	2620.0
11°	2615.2	2616.1	2615.2	2614.2	2612.7	2612.3
11.5°	2606.4	2607.9	2606.4	2605.5	2604.0	2603.5
12°	2597.7	2598.7	2597.7	2596.2	2594.8	2594.8
12.5°	2588.0	2588.9	2588.0	2586.5	2585.1	2585.1
13°	2577.8	2578.3	2577.8	2576.3	2575.3	2574.9
13.5°	2566.6	2567.6	2566.6	2565.6	2564.2	2563.7
14°	2554.9	2555.9	2554.9	2554.0	2553.0	2552.5
14.5°	2542.8	2543.8	2542.8	2541.8	2540.9	2540.4
15°	2529.7	2530.2	2529.7	2528.7	2527.7	2527.7
15.5°	2516.1	2516.6	2516.1	2515.1	2514.1	2514.1
16°	2501.0	2502.0	2501.0	2500.5	2500.1	2499.6
16.5°	2486.0	2486.5	2486.0	2485.5	2485.0	2485.0
17°	2469.9	2470.4	2469.9	2469.5	2469.0	2469.0
17.5°	2452.5	2452.9	2452.5	2452.5	2452.0	2452.0
18°	2434.5	2435.0	2434.5	2434.5	2434.5	2435.0
18.5°	2415.5	2415.5	2415.5	2415.5	2416.0	2416.0
19°	2395.6	2395.6	2395.6	2396.1	2396.6	2396.6
19.5°	2374.7	2374.7	2374.7	2375.2	2375.7	2376.2
20°	2352.9	2352.4	2352.9	2353.9	2354.3	2354.8
20.5°	2329.6	2329.1	2329.6	2330.5	2331.5	2332.0
21°	2305.3	2304.3	2305.3	2307.2	2308.2	2308.2



TEST NUMBER: P776789

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	2229.5	2229.5	2229.5	2231.0	2231.9	2231.9
23°	2203.3	2203.3	2203.3	2204.7	2205.2	2205.2
23.5°	2177.0	2177.0	2177.0	2178.0	2178.5	2178.0
24°	2150.8	2151.3	2150.8	2151.3	2151.3	2150.8
24.5°	2124.6	2125.6	2124.6	2125.1	2124.6	2124.6
25°	2098.8	2099.8	2098.8	2098.8	2098.4	2097.9
25.5°	2073.6	2074.6	2073.6	2073.1	2072.6	2072.6
26°	2048.8	2049.8	2048.8	2048.3	2047.8	2047.4
26.5°	2024.0	2025.5	2024.0	2023.6	2023.1	2022.6
27°	1999.8	2001.2	1999.8	1999.8	1998.8	1998.8
27.5°	1976.9	1977.9	1976.9	1976.0	1975.5	1975.0
28°	1953.6	1955.1	1953.6	1953.1	1952.2	1951.7
28.5°	1931.3	1932.7	1931.3	1930.8	1930.3	1929.3
29°	1909.4	1910.9	1909.4	1908.9	1908.4	1908.0
29.5°	1888.5	1889.5	1888.5	1888.0	1887.1	1886.6
30°	1867.6	1869.1	1867.6	1867.2	1866.2	1866.2
30.5°	1847.7	1848.7	1847.7	1846.8	1846.3	1845.8
31°	1828.3	1829.8	1828.3	1827.8	1826.8	1826.4
31.5°	1808.9	1809.8	1808.9	1808.4	1808.4	1807.9
32°	1789.4	1790.4	1789.4	1789.9	1789.9	1789.9
32.5°	1769.0	1767.1	1769.0	1771.0	1771.9	1772.4
33°	1742.8	1737.5	1742.8	1747.7	1752.5	1753.5
33.5°	1710.7	1703.9	1710.7	1719.0	1728.2	1733.1
34°	1674.3	1667.0	1674.3	1685.0	1697.6	1703.9
34.5°	1635.9	1628.7	1635.9	1646.1	1660.2	1665.6
35°	1594.2	1587.4	1594.2	1602.4	1615.1	1620.4
35.5°	1547.5	1540.7	1547.5	1556.3	1567.9	1570.9
36°	1497.0	1489.7	1497.0	1505.8	1515.5	1517.9
36.5°	1442.1	1434.4	1442.1	1451.4	1459.6	1461.6
37°	1385.3	1377.5	1385.3	1392.1	1397.0	1398.4
37.5°	1325.1	1318.8	1325.1	1329.4	1331.4	1333.3
38°	1261.9	1259.0	1261.9	1262.4	1261.4	1264.4
38.5°	1196.4	1198.8	1196.4	1193.9	1193.0	1197.3
39°	1130.3	1136.6	1130.3	1124.5	1123.5	1125.0
39.5°	1063.3	1072.0	1063.3	1056.0	1054.0	1053.1
40°	996.7	1005.0	996.7	987.0	982.6	977.8
40.5°	931.1	938.4	931.1	920.5	912.2	905.4
41°	866.1	873.3	866.1	853.9	840.3	831.1
41.5°	801.5	808.3	801.5	786.9	770.4	760.7
42°	737.3	743.7	737.3	719.9	700.4	691.7
42.5°	674.7	680.5	674.7	657.2	635.3	624.7
43°	612.5	618.8	612.5	594.0	572.2	560.0
43.5°	551.8	560.5	551.8	532.8	511.5	499.8



TEST NUMBER: P776789

CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	386.2	398.3	386.2	363.8	341.5	331.3
45.5°	338.6	349.7	338.6	315.2	292.4	280.3
46°	294.4	308.0	294.4	271.5	245.8	235.6
46.5°	252.1	266.7	252.1	230.2	206.0	195.3
47°	212.3	224.9	212.3	190.4	170.0	163.7
47.5°	174.9	183.1	174.9	155.9	137.5	133.6
48°	141.3	150.1	141.3	124.3	110.3	106.4
48.5°	112.2	120.0	112.2	99.6	87.4	85.5
49°	88.9	93.3	88.9	76.7	66.5	64.1
49.5°	67.0	72.9	67.0	56.3	49.5	48.6
50°	52.5	55.4	52.5	42.7	33.5	34.5
50.5°	39.3	44.7	39.3	30.1	23.3	21.4
51°	26.2	34.0	26.2	20.9	15.5	11.7
51.5°	17.0	25.3	17.0	13.6	9.7	9.2
52°	10.7	16.5	10.7	8.7	8.3	7.8
52.5°	8.3	7.8	8.3	7.3	7.3	6.3
53°	6.8	6.3	6.8	6.8	6.3	6.3
53.5°	5.8	5.8	5.8	5.8	5.8	5.8
54°	5.3	5.3	5.3	5.3	5.3	5.3
54.5°	5.3	5.3	5.3	5.3	5.3	5.3
55°	4.9	4.9	4.9	4.9	4.9	4.9
55.5°	4.9	4.9	4.9	4.9	4.9	4.9
56°	4.4	4.4	4.4	4.4	4.4	4.4
56.5°	3.9	3.9	3.9	3.9	3.9	3.9
57°	3.9	3.9	3.9	3.9	3.9	3.9
57.5°	3.4	3.4	3.4	3.4	3.4	3.4
58°	3.4	3.4	3.4	3.4	3.4	3.4
58.5°	3.4	3.4	3.4	3.4	3.4	2.9
59°	2.9	2.9	2.9	2.9	2.9	2.9
59.5°	2.9	2.9	2.9	2.9	2.9	2.9
60°	2.4	2.4	2.4	2.4	2.4	2.4
60.5°	2.4	2.4	2.4	2.4	2.4	2.4
61°	2.4	2.4	2.4	2.4	2.4	2.4
61.5°	1.9	1.9	1.9	1.9	1.9	1.9
62°	1.9	1.9	1.9	1.9	1.9	1.9
62.5°	1.9	1.9	1.9	1.9	1.9	1.9
63°	1.9	1.9	1.9	1.9	1.9	1.9
63.5°	1.9	1.9	1.9	1.9	1.9	1.5
64°	1.5	1.5	1.5	1.5	1.5	1.5
64.5°	1.5	1.5	1.5	1.5	1.5	1.5
65°	1.5	1.5	1.5	1.5	1.5	1.5
65.5°	1.5	1.5	1.5	1.5	1.5	1.5
66°	1.5	1.5	1.5	1.5	1.5	1.5



TEST NUMBER: P776789
 CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-5000K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	1.0	1.0	1.0	1.0	1.0	1.0
68°	1.0	1.0	1.0	1.0	1.0	1.0
68.5°	1.0	1.0	1.0	1.0	1.0	1.0
69°	1.0	1.0	1.0	1.0	1.0	1.0
69.5°	1.0	1.0	1.0	1.0	1.0	1.0
70°	1.0	1.0	1.0	1.0	1.0	1.0
70.5°	1.0	1.0	1.0	1.0	1.0	0.5
71°	0.5	0.5	0.5	0.5	0.5	0.5
71.5°	0.5	0.5	0.5	0.5	0.5	0.5
72°	0.5	0.5	0.5	0.5	0.5	0.5
72.5°	0.5	0.5	0.5	0.5	0.5	0.5
73°	0.5	0.5	0.5	0.5	0.5	0.5
73.5°	0.5	0.5	0.5	0.5	0.5	0.5
74°	0.5	0.5	0.5	0.5	0.5	0.5
74.5°	0.5	0.5	0.5	0.5	0.5	0.5
75°	0.5	0.5	0.5	0.5	0.5	0.5
75.5°	0.5	0.5	0.5	0.5	0.5	0.5
76°	0.5	0.5	0.5	0.5	0.5	0.5
76.5°	0.5	0.5	0.5	0.5	0.5	0.5
77°	0.5	0.5	0.5	0.5	0.5	0.5
77.5°	0.5	0.5	0.5	0.5	0.5	0.0
78°	0.5	0.5	0.5	0.0	0.0	0.0
78.5°	0.0	0.0	0.0	0.0	0.0	0.0
79°	0.0	0.0	0.0	0.0	0.0	0.0
79.5°	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0
80.5°	0.0	0.0	0.0	0.0	0.0	0.0
81°	0.0	0.0	0.0	0.0	0.0	0.0
81.5°	0.0	0.0	0.0	0.0	0.0	0.0
82°	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0
83°	0.0	0.0	0.0	0.0	0.0	0.0
83.5°	0.0	0.0	0.0	0.0	0.0	0.0
84°	0.0	0.0	0.0	0.0	0.0	0.0
84.5°	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0
85.5°	0.0	0.0	0.0	0.0	0.0	0.0
86°	0.0	0.0	0.0	0.0	0.0	0.0
86.5°	0.0	0.0	0.0	0.0	0.0	0.0
87°	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0
88°	0.0	0.0	0.0	0.0	0.0	0.0
88.5°	0.0	0.0	0.0	0.0	0.0	0.0



TEST NUMBER: P776789
CATALOG NUMBER: HCDJBL54050CSD-HCD82TRMB-5000lm-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



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Scaled Data Report





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

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Scaled Data Report





21.5°	2283.4	2282.9	2282.0	2280.5	2280.0	2280.5	2282.0	2282.9	2283.4	2282.9	2282.0
22°	2258.2	2257.7	2256.7	2255.3	2254.8	2255.3	2256.7	2257.7	2258.2	2257.7	2256.7



44°	441.5	450.8	473.1	493.0	504.7	493.0	473.1	450.8	441.5	450.8	473.1
44.5°	385.7	394.4	416.8	438.6	450.3	438.6	416.8	394.4	385.7	394.4	416.8



66.5°	1.0	1.0	1.5	1.5	1.5	1.5	1.5	1.0	1.0	1.0	1.5
67°	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0



89°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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21.5°	2280.5	2280.0	2280.5	2282.0	2282.9	2283.4
22°	2255.3	2254.8	2255.3	2256.7	2257.7	2258.2

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44°	493.0	504.7	493.0	473.1	450.8	441.5
44.5°	438.6	450.3	438.6	416.8	394.4	385.7

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66.5°	1.5	1.5	1.5	1.5	1.0	1.0
67°	1.0	1.0	1.0	1.0	1.0	1.0

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89°	0.0	0.0	0.0	0.0	0.0	0.0
89.5°	0.0	0.0	0.0	0.0	0.0	0.0

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(END OF REPORT)