

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: P776510

Luminaire Tested: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

Issue Date: 2/7/2024

Test Information

Test Method: LM-79-2019
Report Number: P776510
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2310613A001)
Test Lab:
Issue Date: 2/7/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K
Description: 8 INCH SQUARE MEDIUM SPECULAR CLEAR TRIM
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT
Ballast/Driver: -

Summary

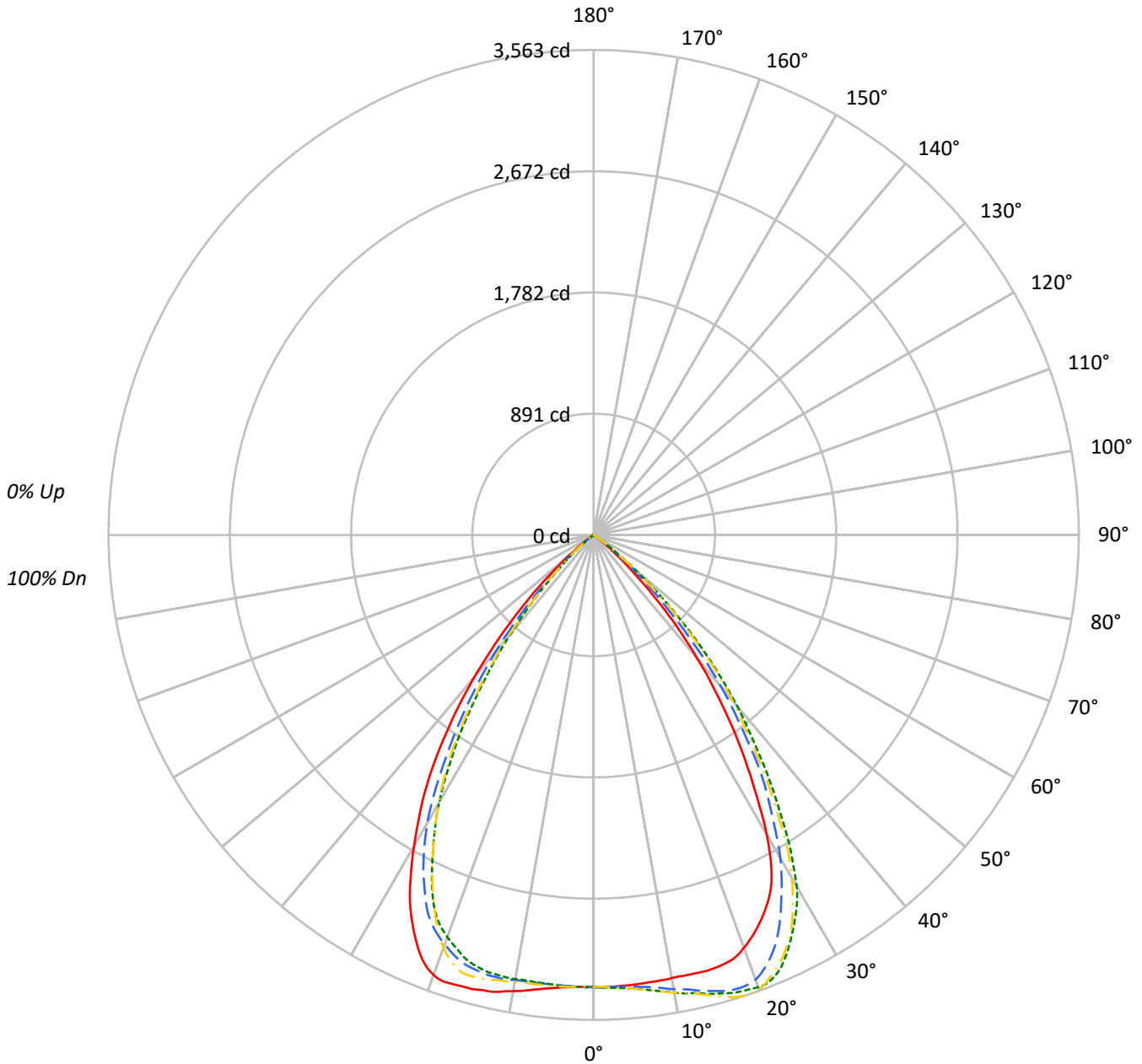
Lumens per Lamp: N/A
Luminaire Lumens: 4465.5 lumens
Efficiency: N/A
Efficacy: 116.0 lumens/watt
Spacing Criteria (0/90/45): 1.16 / 1.17 / 1.07
Luminous Opening: Rectangular (W 0.67' x L: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 38.5
Input Voltage (V): NR
Input Current (A_{in}): 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					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	0					
RCR																										
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100								
1	113	110	108	105	111	108	106	104	104	102	100	100	99	97	97	96	95	93								
2	107	102	98	94	105	100	96	93	97	94	91	94	91	89	91	89	87	85								
3	101	94	89	85	99	93	88	84	90	86	83	88	84	81	85	82	80	78								
4	95	87	81	77	93	86	80	76	84	79	75	82	78	74	80	76	74	72								
5	90	81	75	70	88	80	74	70	78	73	69	76	72	68	75	71	68	66								
6	85	75	69	64	83	74	68	64	73	67	63	71	67	63	70	66	62	61								
7	80	70	63	59	79	69	63	59	68	62	58	67	62	58	66	61	58	56								
8	76	65	59	54	74	65	59	54	64	58	54	62	57	54	61	57	53	52								
9	71	61	55	50	70	61	54	50	60	54	50	59	54	50	58	53	50	48								
10	68	57	51	47	67	57	51	47	56	50	47	55	50	46	54	50	46	45								

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°	270°
0°	79656	79656	79656	79656
5°	79857	80550	80413	79867
10°	80483	83137	82874	80678
15°	82104	86629	85733	81580
20°	82388	90222	87744	80193
25°	79544	89169	83332	74355
30°	70460	82626	73074	62863
35°	54080	67414	59765	47026
40°	37168	51234	42561	29611
45°	19546	33276	24361	13873
50°	6558	15033	9363	4495
55°	464	3257	1028	113
60°	72	91	72	58
65°	45	45	45	23
70°	28	28	28	28
75°	37	37	37	0
80°	0	0	0	0
85°	0	0	0	0

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 112.5°
 Vertical Angle: 45°
 Luminance: 33629 cd/sqm



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	318.9	7.1
10°-20°	959.1	21.5
20°-30°	1398.6	31.3
30°-40°	1205.1	27.0
40°-50°	529.9	11.9
50°-60°	52.8	1.2
60°-70°	0.8	0.0
70°-80°	0.2	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°	2676.6	59.9
0°-40°	3881.7	86.9
0°-60°	4464.4	100.0
0°-90°	4465.5	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	4465.5	100.0

CANDELA DISTRIBUTION:

	0°	90°	180°	270°	360°	Flux
0°	3322	3322	3322	3322	3322	
5°	3318	3346	3341	3318	3318	316
15°	3307	3490	3454	3286	3307	933
25°	3006	3370	3150	2810	3006	1365
35°	1848	2303	2042	1606	1848	1146
45°	576	981	718	409	576	460
55°	11	78	25	3	11	38
65°	1	1	1	0	1	1
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	0	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°	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0
0.5°	3322.7	3324.3	3325.0	3322.4	3323.5	3321.6	3320.0	3320.8	3322.0	3323.1	3323.1
1°	3322.7	3324.7	3325.4	3324.3	3324.7	3322.7	3320.4	3321.2	3322.4	3323.1	3323.1
1.5°	3322.7	3324.3	3325.0	3325.4	3327.0	3324.7	3321.6	3322.4	3322.4	3322.7	3322.4
2°	3322.0	3323.1	3324.7	3326.6	3329.3	3327.3	3324.7	3324.3	3323.5	3322.7	3322.0
2.5°	3322.0	3323.1	3325.0	3326.6	3331.2	3331.2	3327.3	3326.6	3325.8	3323.1	3320.8
3°	3320.8	3322.7	3325.4	3327.7	3332.7	3332.3	3331.2	3330.8	3327.3	3323.5	3320.0
3.5°	3320.0	3322.0	3326.6	3330.0	3334.6	3335.0	3334.2	3333.9	3329.6	3324.7	3319.3
4°	3318.9	3320.8	3327.7	3332.7	3338.1	3338.9	3338.1	3338.5	3333.1	3325.4	3318.5
4.5°	3318.5	3320.8	3329.6	3336.2	3341.9	3343.5	3342.7	3342.3	3336.9	3327.0	3317.0
5°	3317.7	3320.8	3331.9	3340.8	3346.5	3347.7	3348.1	3348.1	3340.8	3328.5	3317.0
5.5°	3317.0	3322.4	3335.0	3346.1	3351.1	3352.7	3353.1	3354.6	3345.8	3330.4	3316.6
6°	3315.8	3323.1	3338.5	3351.1	3356.5	3358.0	3359.2	3360.7	3350.8	3333.1	3316.6
6.5°	3314.3	3324.3	3343.1	3357.3	3362.6	3363.4	3365.7	3367.3	3356.9	3336.9	3317.0
7°	3312.8	3325.4	3348.1	3364.2	3369.2	3369.2	3371.9	3374.5	3363.4	3340.4	3317.0
7.5°	3311.6	3327.0	3353.8	3372.2	3375.7	3375.7	3377.6	3381.1	3369.9	3344.6	3317.0
8°	3311.2	3329.3	3359.6	3380.3	3382.6	3382.6	3385.3	3389.5	3377.2	3348.4	3317.4
8.5°	3310.5	3333.1	3366.1	3388.7	3389.9	3390.7	3392.6	3397.2	3384.5	3352.3	3318.1
9°	3309.7	3337.3	3373.8	3398.3	3398.3	3398.3	3399.5	3405.6	3391.4	3356.5	3318.5
9.5°	3307.8	3340.8	3382.2	3407.2	3405.6	3406.4	3406.4	3413.3	3398.0	3360.3	3318.5
10°	3305.5	3344.2	3389.1	3416.8	3414.5	3415.2	3414.1	3419.8	3403.7	3364.2	3320.4
10.5°	3303.9	3346.9	3395.3	3425.2	3422.9	3423.7	3421.4	3426.0	3409.5	3369.6	3325.0
11°	3303.9	3350.4	3401.0	3431.7	3431.0	3431.3	3427.9	3431.7	3415.6	3377.2	3328.9
11.5°	3305.5	3355.4	3407.2	3437.9	3437.1	3437.9	3434.0	3438.3	3424.8	3384.1	3330.0
12°	3306.2	3361.9	3415.6	3444.8	3441.7	3444.8	3441.7	3447.8	3432.1	3390.7	3328.9
12.5°	3306.2	3368.4	3426.0	3452.5	3447.8	3452.1	3450.9	3457.1	3437.9	3391.8	3327.0
13°	3305.9	3372.2	3436.3	3462.0	3455.9	3460.9	3462.4	3464.3	3440.6	3393.7	3326.6
13.5°	3306.6	3374.5	3445.9	3470.9	3466.3	3470.9	3475.1	3468.6	3442.5	3397.6	3325.4
14°	3308.2	3376.5	3452.8	3477.0	3476.2	3482.0	3485.5	3471.3	3445.9	3401.4	3322.7
14.5°	3308.5	3379.2	3460.5	3480.5	3483.9	3490.4	3493.9	3475.5	3450.2	3404.1	3318.1
15°	3307.4	3381.1	3469.3	3483.5	3489.7	3496.2	3503.1	3482.0	3453.6	3406.0	3313.1
15.5°	3304.3	3381.1	3478.2	3489.7	3495.8	3500.4	3515.4	3487.4	3454.4	3406.4	3307.4
16°	3301.2	3378.0	3486.2	3495.1	3503.5	3506.6	3529.2	3490.8	3454.8	3407.9	3302.4
16.5°	3297.8	3373.4	3491.6	3497.4	3511.6	3513.9	3541.5	3492.0	3455.5	3409.1	3296.6
17°	3294.0	3368.0	3495.1	3497.4	3517.7	3518.8	3550.7	3490.4	3457.1	3410.2	3288.6
17.5°	3289.7	3363.4	3497.0	3496.2	3521.5	3521.1	3556.5	3488.9	3458.6	3408.7	3278.2
18°	3283.6	3358.4	3497.0	3494.7	3524.2	3520.8	3559.5	3487.8	3460.9	3401.8	3264.0
18.5°	3273.2	3353.4	3495.4	3492.7	3526.9	3520.8	3561.4	3485.8	3461.7	3390.7	3248.3
19°	3259.8	3346.9	3492.7	3491.2	3530.0	3522.3	3563.0	3483.5	3458.6	3373.4	3233.3
19.5°	3244.8	3338.5	3487.8	3489.3	3532.7	3525.0	3560.7	3477.4	3450.5	3355.0	3217.6
20°	3228.7	3327.3	3477.8	3486.2	3535.7	3527.7	3554.5	3467.4	3438.6	3334.6	3200.7
20.5°	3211.1	3315.1	3462.8	3480.5	3536.9	3528.4	3542.3	3455.9	3425.6	3312.4	3183.0
21°	3191.9	3302.0	3443.6	3470.9	3534.2	3525.4	3525.4	3442.5	3407.9	3286.3	3164.6



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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°	3129.7	3254.0	3374.9	3431.0	3498.9	3510.4	3470.1	3400.6	3331.6	3199.2	3099.4
23°	3106.7	3232.2	3348.8	3416.8	3480.5	3500.8	3449.0	3383.0	3299.7	3166.2	3072.9
23.5°	3082.9	3206.8	3319.3	3398.7	3458.2	3488.5	3426.4	3363.4	3265.6	3131.6	3043.3
24°	3058.7	3178.1	3287.0	3379.5	3431.3	3471.6	3402.6	3340.4	3227.6	3094.8	3009.2
24.5°	3033.4	3145.0	3250.6	3357.7	3401.0	3451.3	3377.6	3313.9	3189.6	3055.6	2971.6
25°	3006.5	3109.7	3212.2	3331.2	3370.3	3425.6	3349.6	3282.4	3149.7	3013.0	2928.6
25.5°	2977.7	3072.1	3170.0	3300.9	3337.7	3396.0	3319.3	3247.5	3110.1	2970.8	2886.0
26°	2947.4	3032.2	3126.2	3265.6	3303.9	3362.3	3284.7	3208.4	3066.0	2923.2	2843.0
26.5°	2912.9	2990.4	3080.2	3226.4	3267.9	3323.9	3248.3	3165.0	3020.7	2875.3	2800.0
27°	2874.9	2943.9	3033.0	3181.5	3232.5	3281.7	3206.8	3117.0	2974.3	2827.7	2757.0
27.5°	2830.0	2895.2	2986.5	3131.2	3196.9	3238.3	3163.9	3067.5	2919.4	2780.1	2706.0
28°	2781.2	2844.2	2939.7	3075.6	3159.6	3187.6	3115.9	3015.7	2864.5	2732.5	2655.7
28.5°	2727.9	2791.6	2894.1	3016.9	3121.3	3135.5	3065.2	2966.6	2809.6	2681.8	2604.7
29°	2670.3	2739.8	2845.3	2958.1	3080.6	3081.3	3014.9	2910.6	2754.7	2629.6	2551.3
29.5°	2608.5	2686.1	2795.4	2899.4	3035.3	3024.9	2965.1	2854.1	2699.5	2577.1	2497.6
30°	2544.8	2633.1	2742.9	2839.6	2984.2	2964.3	2908.3	2797.7	2639.2	2520.6	2442.0
30.5°	2474.6	2580.9	2685.3	2781.2	2920.2	2903.7	2851.5	2741.7	2580.1	2464.2	2384.0
31°	2403.2	2529.9	2623.9	2722.5	2856.1	2843.0	2795.0	2677.2	2523.3	2405.1	2319.2
31.5°	2329.9	2475.7	2561.3	2664.6	2792.0	2782.4	2738.2	2612.0	2464.6	2345.6	2250.8
32°	2259.7	2415.5	2499.2	2608.1	2727.9	2721.4	2667.2	2544.8	2407.0	2285.8	2181.4
32.5°	2187.9	2351.8	2438.5	2549.4	2658.4	2663.4	2594.3	2479.2	2350.6	2226.7	2113.5
33°	2119.2	2284.6	2380.6	2488.4	2585.1	2600.9	2519.1	2414.3	2293.8	2166.0	2042.5
33.5°	2050.5	2213.2	2323.4	2426.6	2513.0	2538.3	2445.0	2346.0	2233.2	2103.1	1974.5
34°	1983.4	2138.8	2267.4	2364.1	2441.2	2467.7	2375.2	2277.3	2172.2	2037.5	1905.1
34.5°	1915.8	2068.2	2207.5	2298.4	2371.4	2392.8	2305.0	2209.8	2108.9	1967.2	1838.7
35°	1847.5	1997.9	2143.8	2232.0	2303.0	2314.2	2235.1	2145.3	2041.7	1896.6	1770.0
35.5°	1782.6	1929.6	2076.6	2166.0	2234.7	2236.6	2161.8	2078.5	1971.5	1826.0	1704.7
36°	1711.6	1862.9	2004.8	2098.9	2165.7	2157.2	2090.0	2013.7	1902.0	1756.5	1636.8
36.5°	1640.6	1794.9	1929.2	2030.6	2094.7	2080.1	2015.6	1946.5	1834.1	1691.7	1570.0
37°	1572.3	1725.5	1857.5	1960.7	2025.2	2004.1	1945.0	1881.3	1768.1	1627.6	1502.5
37.5°	1505.6	1659.1	1789.2	1895.5	1956.9	1935.0	1877.8	1817.6	1704.4	1562.7	1436.1
38°	1441.5	1593.4	1722.8	1828.7	1889.7	1870.9	1815.6	1756.5	1637.2	1497.1	1371.6
38.5°	1382.0	1526.7	1659.1	1764.2	1824.5	1809.9	1756.2	1690.9	1568.5	1431.5	1308.7
39°	1317.5	1458.7	1593.4	1698.2	1762.3	1751.6	1698.6	1624.9	1499.0	1366.2	1247.3
39.5°	1252.6	1392.0	1526.3	1626.8	1700.5	1693.2	1639.9	1554.3	1428.4	1297.9	1184.7
40°	1187.4	1326.3	1456.8	1549.7	1636.8	1636.4	1580.4	1486.0	1359.7	1229.2	1121.0
40.5°	1122.5	1261.1	1388.5	1475.2	1571.9	1575.8	1518.6	1417.3	1288.7	1159.0	1056.2
41°	1057.7	1195.5	1317.1	1405.4	1504.4	1514.4	1456.0	1352.0	1222.3	1089.9	990.9
41.5°	995.5	1129.8	1245.7	1339.4	1437.2	1453.7	1393.1	1287.2	1157.1	1022.8	925.7
42°	934.9	1064.6	1174.0	1273.8	1368.5	1391.2	1328.3	1224.2	1091.8	955.6	860.0
42.5°	875.4	998.2	1102.6	1208.1	1301.4	1328.3	1263.4	1159.8	1027.4	891.5	796.0
43°	813.2	931.4	1031.2	1142.9	1236.5	1262.2	1196.6	1095.7	962.1	829.7	733.8
43.5°	752.2	863.1	965.2	1076.9	1170.5	1195.1	1129.5	1030.8	897.7	769.1	672.4



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CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
45°	576.4	670.8	776.4	886.5	981.3	991.7	934.5	845.1	718.4	595.6	503.9
45.5°	521.2	612.9	720.0	825.5	917.2	924.5	869.6	785.6	662.0	542.7	454.4
46°	468.2	558.8	663.2	765.6	852.8	858.1	806.3	726.5	609.8	492.8	408.3
46.5°	417.5	506.2	608.3	705.4	791.3	793.3	744.5	667.4	556.9	444.8	371.1
47°	370.0	456.7	555.3	647.8	730.7	728.8	683.5	610.2	507.4	402.2	333.9
47.5°	325.8	410.6	504.3	591.0	672.0	667.8	622.9	554.6	458.6	365.7	296.3
48°	286.3	368.4	454.4	538.1	614.0	609.8	566.8	502.0	412.9	328.9	259.0
48.5°	252.5	328.9	408.0	488.2	555.7	553.4	512.0	451.3	372.3	292.4	230.3
49°	223.4	292.4	365.4	440.2	500.1	498.9	459.8	408.3	332.0	256.0	204.2
49.5°	198.0	259.0	325.1	393.0	446.7	447.9	416.0	365.4	291.3	225.3	180.8
50°	175.8	228.7	287.4	346.6	403.0	404.5	371.9	322.4	251.0	198.0	158.9
50.5°	154.7	200.3	252.9	303.2	359.2	361.5	328.1	279.4	218.0	171.9	137.0
51°	134.7	173.9	220.3	262.9	315.8	318.2	284.4	236.4	188.4	147.8	116.7
51.5°	117.1	151.2	191.1	226.8	272.1	275.2	240.2	204.2	162.0	124.7	98.6
52°	99.4	128.9	163.9	195.0	229.1	231.8	206.5	174.2	137.0	103.6	80.6
52.5°	81.7	110.5	138.9	165.4	196.5	196.9	175.4	147.8	113.6	84.8	65.2
53°	64.1	92.1	119.0	139.3	166.6	166.6	147.8	123.2	92.9	68.7	50.3
53.5°	46.4	73.3	99.4	119.0	140.1	139.3	122.4	100.9	75.6	53.0	34.9
54°	27.2	54.9	79.8	99.0	115.1	114.0	100.2	82.1	58.7	37.2	20.0
54.5°	13.8	35.3	60.3	78.7	92.9	92.9	81.0	66.8	41.4	21.5	5.4
55°	11.1	18.8	40.7	58.7	77.9	75.6	65.6	51.0	24.6	6.1	3.8
55.5°	8.4	15.7	22.3	38.4	63.3	58.7	50.3	35.7	8.1	4.2	3.1
56°	5.8	12.3	10.0	20.0	48.4	41.8	35.3	20.3	4.6	3.5	2.7
56.5°	3.5	9.2	7.7	8.4	33.8	24.6	20.0	5.0	3.8	3.1	2.3
57°	3.1	6.1	6.1	6.5	18.8	7.7	5.0	3.8	3.1	2.7	1.9
57.5°	2.7	3.1	4.6	5.4	4.2	4.2	3.8	3.5	2.7	2.3	1.9
58°	2.3	2.7	2.7	3.8	3.5	3.5	3.1	3.1	2.3	1.9	1.5
58.5°	2.3	2.3	2.3	2.7	2.7	2.7	2.7	2.7	2.3	1.9	1.5
59°	1.9	1.9	2.3	2.3	2.3	2.3	2.3	2.3	1.9	1.5	1.5
59.5°	1.9	1.9	1.9	1.9	2.3	2.3	2.3	1.9	1.9	1.5	1.2
60°	1.5	1.5	1.5	1.9	1.9	1.9	1.9	1.9	1.5	1.5	1.2
60.5°	1.5	1.5	1.5	1.5	1.5	1.9	1.9	1.9	1.5	1.2	1.2
61°	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.2	1.2
61.5°	1.2	1.5	1.2	1.2	1.5	1.5	1.5	1.5	1.2	1.2	1.2
62°	1.2	1.2	1.2	1.2	1.2	1.5	1.5	1.5	1.2	1.2	0.8
62.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8
63°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8
63.5°	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.2	0.8	0.8
64°	0.8	1.2	0.8	0.8	1.2	1.2	1.2	1.2	0.8	0.8	0.8
64.5°	0.8	0.8	0.8	0.8	0.8	1.2	1.2	1.2	0.8	0.8	0.8
65°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
65.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8
66°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4



TEST NUMBER: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°	180°	202.5°	225°
67.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4
68°	0.8	0.8	0.4	0.4	0.8	0.8	0.8	0.8	0.4	0.4	0.4
68.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.8	0.8	0.4	0.4	0.4
69°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
69.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
70°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
70.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
71°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0
74°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0
74.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0
75°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0
75.5°	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.4	0.0	0.0	0.0
76°	0.0	0.0	0.0	0.0	0.0	0.4	0.4	0.4	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	0.0	0.0	0.0	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: P776510
CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

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: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
0°	3322.0	3322.0	3322.0	3322.0	3322.0	3322.0
0.5°	3321.2	3323.5	3321.2	3320.0	3320.8	3322.7
1°	3321.2	3323.1	3322.0	3320.4	3322.0	3322.7
1.5°	3320.8	3323.1	3322.4	3321.2	3322.0	3322.7
2°	3320.0	3322.7	3322.7	3322.4	3322.4	3322.0
2.5°	3318.5	3322.0	3323.5	3323.5	3322.7	3322.0
3°	3317.4	3321.2	3324.3	3325.4	3323.5	3320.8
3.5°	3315.8	3320.8	3325.4	3325.8	3323.5	3320.0
4°	3314.3	3320.4	3325.8	3327.3	3323.5	3318.9
4.5°	3312.4	3318.9	3326.6	3327.7	3323.1	3318.5
5°	3310.8	3318.1	3326.6	3327.7	3322.7	3317.7
5.5°	3309.7	3317.0	3325.8	3327.7	3321.2	3317.0
6°	3308.2	3315.8	3325.4	3327.0	3320.8	3315.8
6.5°	3305.5	3314.7	3325.4	3327.0	3320.0	3314.3
7°	3303.5	3313.9	3325.8	3327.3	3319.3	3312.8
7.5°	3300.9	3312.8	3327.3	3328.9	3318.9	3311.6
8°	3298.2	3312.4	3327.3	3329.6	3319.3	3311.2
8.5°	3295.1	3311.2	3327.0	3329.6	3318.9	3310.5
9°	3291.3	3310.1	3327.3	3329.6	3317.4	3309.7
9.5°	3288.2	3311.2	3330.4	3330.4	3316.2	3307.8
10°	3287.0	3313.5	3334.6	3334.2	3316.2	3305.5
10.5°	3287.8	3315.1	3338.5	3338.9	3318.1	3303.9
11°	3287.0	3314.3	3341.2	3341.9	3320.8	3303.9
11.5°	3284.7	3312.0	3342.3	3343.8	3321.2	3305.5
12°	3281.7	3309.3	3344.2	3344.6	3319.7	3306.2
12.5°	3281.3	3308.2	3348.8	3349.2	3318.1	3306.2
13°	3281.3	3307.4	3355.0	3355.0	3317.4	3305.9
13.5°	3280.5	3305.5	3360.3	3359.2	3317.4	3306.6
14°	3278.2	3300.9	3362.3	3361.9	3315.1	3308.2
14.5°	3274.0	3293.6	3363.4	3362.6	3310.5	3308.5
15°	3270.2	3286.3	3363.8	3363.4	3304.3	3307.4
15.5°	3265.6	3279.0	3363.8	3363.8	3298.9	3304.3
16°	3260.9	3270.9	3361.9	3363.4	3292.8	3301.2
16.5°	3256.3	3260.9	3355.7	3360.0	3286.7	3297.8
17°	3247.5	3247.1	3344.2	3351.5	3278.2	3294.0
17.5°	3234.9	3230.6	3327.3	3338.5	3266.7	3289.7
18°	3219.1	3213.0	3306.2	3321.2	3253.3	3283.6
18.5°	3200.7	3196.5	3282.8	3301.6	3237.9	3273.2
19°	3182.3	3179.2	3256.3	3279.0	3222.6	3259.8
19.5°	3162.7	3161.6	3226.8	3253.7	3207.6	3244.8
20°	3141.2	3142.7	3194.2	3224.1	3192.3	3228.7
20.5°	3119.3	3123.9	3158.5	3192.3	3176.1	3211.1
21°	3095.2	3102.8	3119.3	3155.8	3159.6	3191.9



TEST NUMBER: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
22.5°	3021.9	3024.5	2994.2	3035.7	3101.3	3129.7
23°	2995.4	2989.6	2948.2	2991.2	3076.7	3106.7
23.5°	2968.1	2950.5	2902.5	2945.1	3049.1	3082.9
24°	2939.7	2906.7	2854.9	2898.3	3015.7	3058.7
24.5°	2912.1	2860.7	2806.2	2849.9	2977.3	3033.4
25°	2876.4	2810.4	2755.5	2801.2	2933.6	3006.5
25.5°	2840.7	2759.0	2707.9	2752.1	2887.2	2977.7
26°	2805.4	2707.2	2660.0	2701.0	2837.6	2947.4
26.5°	2769.3	2654.6	2607.0	2650.4	2786.6	2912.9
27°	2719.1	2600.5	2555.2	2598.6	2733.6	2874.9
27.5°	2664.6	2547.1	2503.8	2545.2	2680.3	2830.0
28°	2602.0	2494.5	2450.4	2490.7	2626.6	2781.2
28.5°	2539.8	2442.0	2395.1	2438.1	2572.8	2727.9
29°	2476.5	2387.1	2338.3	2384.8	2518.0	2670.3
29.5°	2413.6	2332.2	2281.9	2329.5	2459.2	2608.5
30°	2347.2	2270.4	2227.4	2274.6	2399.8	2544.8
30.5°	2279.2	2206.7	2172.6	2217.5	2337.2	2474.6
31°	2210.9	2141.5	2117.3	2163.0	2272.7	2403.2
31.5°	2142.2	2076.2	2062.0	2108.1	2204.8	2329.9
32°	2073.9	2006.4	2004.8	2051.3	2136.9	2259.7
32.5°	2005.2	1940.0	1947.7	1990.6	2067.8	2187.9
33°	1936.5	1874.7	1885.9	1927.3	1998.7	2119.2
33.5°	1871.3	1810.7	1817.6	1862.1	1929.2	2050.5
34°	1805.3	1745.4	1745.8	1793.8	1867.1	1983.4
34.5°	1738.5	1678.6	1671.7	1723.2	1801.4	1915.8
35°	1669.0	1606.5	1603.0	1651.8	1735.1	1847.5
35.5°	1599.2	1535.5	1533.6	1581.2	1665.6	1782.6
36°	1531.7	1465.3	1467.6	1512.5	1596.9	1711.6
36.5°	1465.3	1393.9	1398.9	1445.3	1522.4	1640.6
37°	1402.7	1330.2	1331.3	1380.1	1454.5	1572.3
37.5°	1342.1	1266.5	1264.2	1312.9	1388.1	1505.6
38°	1279.1	1202.4	1196.6	1245.7	1324.8	1441.5
38.5°	1213.5	1138.7	1129.5	1178.6	1261.1	1382.0
39°	1145.2	1075.0	1061.9	1111.4	1197.4	1317.5
39.5°	1080.7	1010.5	997.8	1044.3	1133.7	1252.6
40°	1017.0	946.0	933.7	981.7	1070.0	1187.4
40.5°	957.9	886.5	869.6	919.1	1005.5	1122.5
41°	898.4	828.2	811.3	857.4	945.6	1057.7
41.5°	840.5	769.9	750.3	796.7	883.8	995.5
42°	779.8	713.8	696.2	738.4	825.1	934.9
42.5°	720.7	658.9	642.4	682.0	766.8	875.4
43°	662.4	604.4	592.2	628.6	711.1	813.2
43.5°	606.4	550.7	544.2	578.0	654.7	752.2



TEST NUMBER: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
45°	450.6	409.1	414.9	440.6	492.8	576.4
45.5°	408.3	367.3	376.9	400.7	444.4	521.2
46°	366.5	328.1	341.2	362.7	398.4	468.2
46.5°	324.7	292.4	306.6	327.0	354.2	417.5
47°	282.8	260.2	275.6	294.0	314.3	370.0
47.5°	241.0	230.6	245.6	261.7	278.2	325.8
48°	214.9	204.2	218.0	232.6	246.0	286.3
48.5°	192.3	180.8	191.9	205.3	217.6	252.5
49°	171.9	159.7	166.9	180.0	192.7	223.4
49.5°	152.4	139.3	143.9	156.6	169.6	198.0
50°	133.9	120.5	124.7	133.6	148.9	175.8
50.5°	115.1	102.1	105.5	114.7	129.3	154.7
51°	97.1	83.3	86.0	95.9	112.1	134.7
51.5°	80.6	64.9	66.8	77.1	94.4	117.1
52°	65.2	46.1	47.6	58.7	77.1	99.4
52.5°	50.3	26.5	28.4	39.9	59.5	81.7
53°	35.3	12.7	13.8	21.9	39.5	64.1
53.5°	20.0	10.0	11.1	9.6	22.3	46.4
54°	5.4	7.3	8.1	8.1	10.4	27.2
54.5°	3.8	5.0	5.4	6.1	8.4	13.8
55°	3.1	2.7	2.7	4.6	6.5	11.1
55.5°	2.7	2.3	2.3	2.7	5.0	8.4
56°	2.3	1.9	2.3	2.7	3.1	5.8
56.5°	1.9	1.9	1.9	2.3	2.7	3.5
57°	1.9	1.5	1.9	1.9	2.3	3.1
57.5°	1.5	1.5	1.5	1.9	2.3	2.7
58°	1.5	1.5	1.5	1.9	1.9	2.3
58.5°	1.5	1.2	1.5	1.5	1.9	2.3
59°	1.2	1.2	1.2	1.5	1.9	1.9
59.5°	1.2	1.2	1.2	1.5	1.5	1.9
60°	1.2	1.2	1.2	1.2	1.5	1.5
60.5°	1.2	1.2	1.2	1.2	1.5	1.5
61°	1.2	0.8	1.2	1.2	1.2	1.5
61.5°	0.8	0.8	0.8	1.2	1.2	1.2
62°	0.8	0.8	0.8	1.2	1.2	1.2
62.5°	0.8	0.8	0.8	0.8	1.2	1.2
63°	0.8	0.8	0.8	0.8	1.2	1.2
63.5°	0.8	0.8	0.8	0.8	0.8	1.2
64°	0.8	0.8	0.8	0.8	0.8	0.8
64.5°	0.8	0.8	0.8	0.8	0.8	0.8
65°	0.8	0.4	0.8	0.8	0.8	0.8
65.5°	0.4	0.4	0.4	0.8	0.8	0.8
66°	0.4	0.4	0.4	0.8	0.8	0.8



TEST NUMBER: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

CANDELA DISTRIBUTION (continued):

	247.5°	270°	292.5°	315°	337.5°	360°
67.5°	0.4	0.4	0.4	0.4	0.4	0.8
68°	0.4	0.4	0.4	0.4	0.4	0.8
68.5°	0.4	0.4	0.4	0.4	0.4	0.4
69°	0.4	0.4	0.4	0.4	0.4	0.4
69.5°	0.4	0.4	0.4	0.4	0.4	0.4
70°	0.4	0.4	0.4	0.4	0.4	0.4
70.5°	0.4	0.4	0.4	0.4	0.4	0.4
71°	0.4	0.4	0.4	0.4	0.4	0.4
71.5°	0.4	0.4	0.4	0.4	0.4	0.4
72°	0.4	0.4	0.4	0.4	0.4	0.4
72.5°	0.4	0.4	0.4	0.4	0.4	0.4
73°	0.4	0.4	0.4	0.4	0.4	0.4
73.5°	0.0	0.0	0.4	0.4	0.4	0.4
74°	0.0	0.0	0.0	0.4	0.4	0.4
74.5°	0.0	0.0	0.0	0.4	0.4	0.4
75°	0.0	0.0	0.0	0.0	0.4	0.4
75.5°	0.0	0.0	0.0	0.0	0.0	0.4
76°	0.0	0.0	0.0	0.0	0.0	0.0
76.5°	0.0	0.0	0.0	0.0	0.0	0.0
77°	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0
78°	0.0	0.0	0.0	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: P776510

CATALOG NUMBER: HCDJBL3040CSD-HCD8TSQC-4000lm-2700K

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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21.5°	3171.9	3288.6	3422.1	3457.4	3526.1	3521.1	3508.1	3430.2	3386.8	3258.6	3144.7
22°	3151.6	3272.8	3399.5	3444.4	3513.9	3516.2	3489.7	3416.4	3360.7	3229.9	3123.6



44°	691.9	796.7	900.0	1010.9	1107.6	1127.9	1063.4	967.5	836.2	709.2	613.7
44.5°	633.6	731.9	837.4	947.2	1045.0	1060.0	997.8	904.2	776.4	650.5	557.2



66.5°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4
67°	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.4	0.4



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°	3071.7	3079.4	3080.2	3117.0	3141.6	3171.9
22°	3046.4	3053.7	3037.2	3077.1	3122.4	3151.6



44°	553.4	500.4	498.5	530.0	597.9	691.9
44.5°	501.6	454.0	455.5	483.9	544.6	633.6



66.5°	0.4	0.4	0.4	0.8	0.8	0.8
67°	0.4	0.4	0.4	0.4	0.8	0.8

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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)