

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: P776316

Luminaire Tested: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

Issue Date: 2/7/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776316  
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-HCD4TSQH-4000lm-3000K  
Description: 4 INCH SQUARE MEDIUM HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 3000K CCT  
Ballast/Driver: -

**Summary**

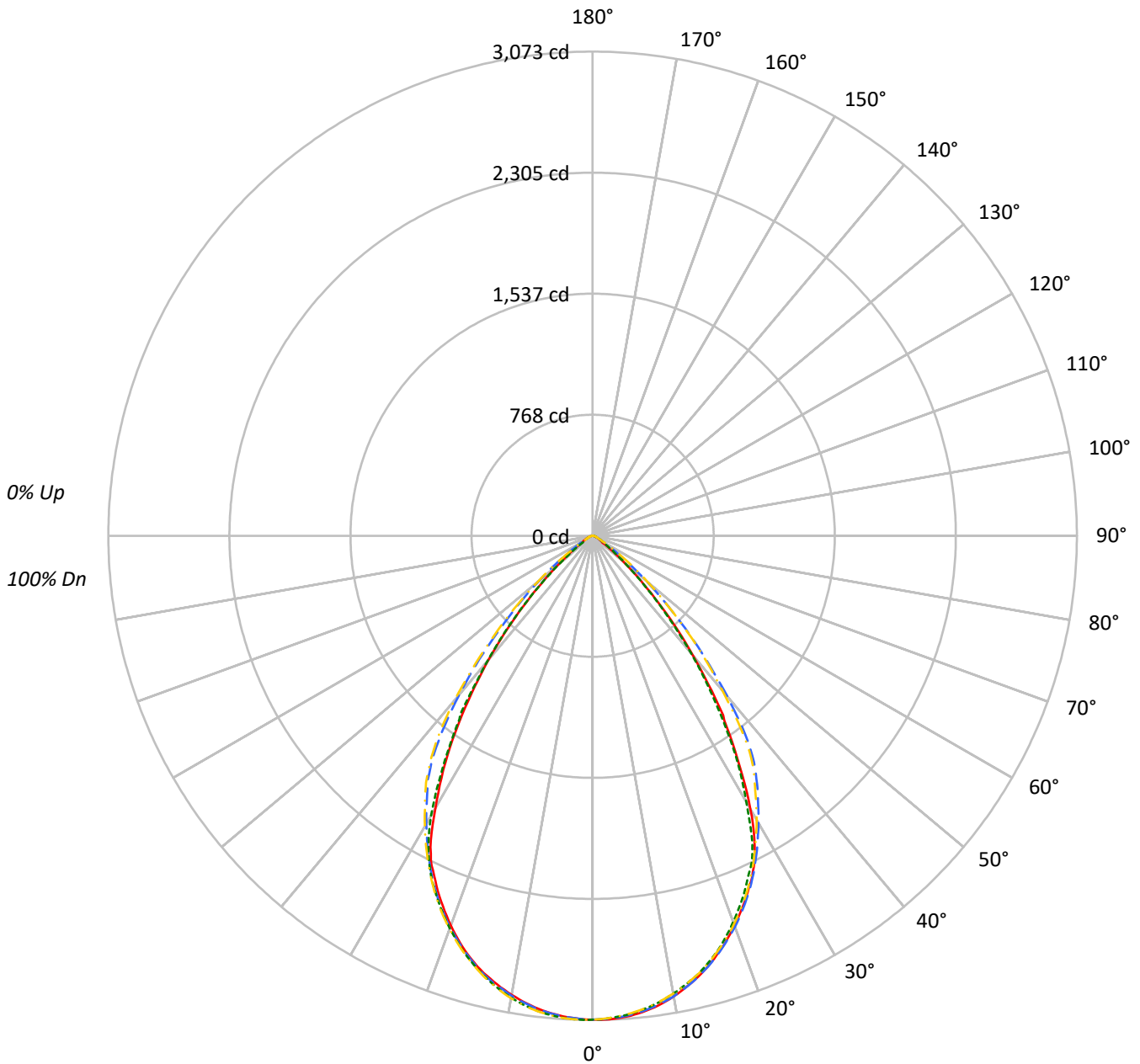
Lumens per Lamp: N/A  
Luminaire Lumens: 3931.4 lumens  
Efficiency: N/A  
Efficacy: 102.1 lumens/watt  
Spacing Criteria (0/90/45): 1.05 / 1.05 / 1.09  
Luminous Opening: Rectangular (W 0.33' x L: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): 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



TEST NUMBER: P776316  
CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

### Luminous Intensity Polar Plot





TEST NUMBER: P776316

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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 | 98 | 97 | 96 | 95 | 94 | 92 |
|     | 1  | 113 | 110 | 107 | 104 | 110 | 107 | 105 | 103 | 103 | 101 | 100 | 100 | 98  | 97  | 96  | 95  | 94  | 92  | 92  | 90 | 87 | 90 | 88 | 85 | 84 |
|     | 2  | 106 | 101 | 96  | 92  | 104 | 99  | 95  | 91  | 96  | 92  | 89  | 93  | 90  | 87  | 90  | 88  | 85  | 84  | 84  | 81 | 78 | 84 | 81 | 78 | 76 |
|     | 3  | 100 | 93  | 87  | 82  | 98  | 91  | 86  | 82  | 88  | 84  | 80  | 86  | 82  | 79  | 84  | 81  | 78  | 76  | 76  | 73 | 70 | 78 | 74 | 71 | 70 |
|     | 4  | 94  | 85  | 79  | 74  | 92  | 84  | 78  | 74  | 82  | 77  | 73  | 80  | 76  | 72  | 78  | 74  | 71  | 70  | 70  | 66 | 63 | 73 | 69 | 65 | 64 |
|     | 5  | 88  | 79  | 72  | 67  | 87  | 78  | 72  | 67  | 76  | 71  | 66  | 74  | 70  | 66  | 73  | 69  | 65  | 64  | 64  | 60 | 57 | 68 | 63 | 60 | 58 |
|     | 6  | 83  | 73  | 66  | 61  | 82  | 72  | 66  | 61  | 71  | 65  | 61  | 69  | 64  | 60  | 68  | 63  | 60  | 58  | 58  | 55 | 63 | 59 | 55 | 54 | 54 |
|     | 7  | 78  | 68  | 61  | 56  | 77  | 67  | 61  | 56  | 66  | 60  | 56  | 65  | 59  | 56  | 63  | 59  | 55  | 54  | 54  | 51 | 59 | 55 | 51 | 49 | 49 |
|     | 8  | 74  | 63  | 56  | 52  | 73  | 63  | 56  | 52  | 61  | 56  | 51  | 60  | 55  | 51  | 59  | 55  | 51  | 49  | 49  | 47 | 56 | 51 | 47 | 46 | 46 |
|     | 9  | 70  | 59  | 52  | 48  | 69  | 58  | 52  | 48  | 57  | 52  | 48  | 57  | 51  | 47  | 56  | 51  | 47  | 46  | 46  | 44 | 52 | 47 | 44 | 43 | 43 |
|     | 10 | 66  | 55  | 49  | 44  | 65  | 55  | 49  | 44  | 54  | 48  | 44  | 53  | 48  | 44  | 52  | 47  | 44  | 43  | 43  | 41 | 48 | 44 | 41 | 40 | 40 |

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

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 303534 | 303534 | 303534 | 303534 |
| 5°  | 302719 | 301400 | 301787 | 302987 |
| 10° | 297889 | 296083 | 296906 | 298752 |
| 15° | 289458 | 287892 | 289417 | 290737 |
| 20° | 276954 | 274366 | 276786 | 278931 |
| 25° | 261123 | 256772 | 259498 | 263337 |
| 30° | 228734 | 222799 | 227798 | 233779 |
| 35° | 179488 | 175663 | 182987 | 185436 |
| 40° | 127700 | 124978 | 132603 | 133920 |
| 45° | 78069  | 76098  | 82766  | 83255  |
| 50° | 38335  | 39535  | 42671  | 41288  |
| 55° | 14372  | 19835  | 20903  | 16044  |
| 60° | 10438  | 13225  | 13383  | 10596  |
| 65° | 8233   | 10431  | 10618  | 8513   |
| 70° | 6560   | 8381   | 8496   | 6907   |
| 75° | 5079   | 6569   | 6569   | 5690   |
| 80° | 3358   | 5123   | 4895   | 4440   |
| 85° | 1361   | 3969   | 2268   | 3062   |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 315°  
 Vertical Angle: 45°  
 Luminance: 119753 cd/sqm



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 288.1  | 7.3       |
| 10°-20°   | 794.2  | 20.2      |
| 20°-30°   | 1093.0 | 27.8      |
| 30°-40°   | 1004.1 | 25.5      |
| 40°-50°   | 543.0  | 13.8      |
| 50°-60°   | 146.3  | 3.7       |
| 60°-70°   | 41.8   | 1.1       |
| 70°-80°   | 17.5   | 0.4       |
| 80°-90°   | 3.4    | 0.1       |
| 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°    | 2175.2 | 55.3      |
| 0°-40°    | 3179.4 | 80.9      |
| 0°-60°    | 3868.7 | 98.4      |
| 0°-90°    | 3931.4 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 3931.4 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 90°  | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 3071 | 3071 | 3071 | 3071 | 3071 |      |
| 5°  | 3051 | 3038 | 3042 | 3054 | 3051 | 289  |
| 15° | 2829 | 2813 | 2828 | 2841 | 2829 | 794  |
| 25° | 2394 | 2354 | 2379 | 2415 | 2394 | 1087 |
| 35° | 1488 | 1456 | 1516 | 1537 | 1488 | 924  |
| 45° | 558  | 544  | 592  | 596  | 558  | 441  |
| 55° | 83   | 115  | 121  | 93   | 83   | 97   |
| 65° | 35   | 45   | 45   | 36   | 35   | 36   |
| 75° | 13   | 17   | 17   | 15   | 13   | 14   |
| 85° | 1    | 4    | 2    | 3    | 1    | 2    |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 |
| 0.5°  | 3072.5 | 3071.3 | 3070.2 | 3069.0 | 3070.9 | 3069.0 | 3069.8 | 3070.2 | 3071.3 | 3071.3 | 3069.8 |
| 1°    | 3072.5 | 3070.5 | 3069.0 | 3068.2 | 3069.4 | 3067.4 | 3067.8 | 3068.2 | 3069.8 | 3070.5 | 3069.0 |
| 1.5°  | 3071.3 | 3069.0 | 3068.6 | 3066.2 | 3066.6 | 3064.3 | 3065.5 | 3065.8 | 3068.2 | 3068.6 | 3067.0 |
| 2°    | 3070.5 | 3067.8 | 3066.2 | 3064.3 | 3063.5 | 3061.9 | 3062.3 | 3063.1 | 3065.1 | 3066.6 | 3065.1 |
| 2.5°  | 3068.6 | 3065.8 | 3064.3 | 3061.5 | 3060.4 | 3058.4 | 3059.2 | 3059.6 | 3062.7 | 3063.9 | 3062.7 |
| 3°    | 3066.2 | 3062.3 | 3061.5 | 3058.8 | 3057.2 | 3054.5 | 3055.3 | 3056.1 | 3059.6 | 3061.5 | 3059.6 |
| 3.5°  | 3063.1 | 3059.2 | 3058.0 | 3055.3 | 3053.3 | 3050.2 | 3050.6 | 3051.8 | 3055.7 | 3058.0 | 3056.5 |
| 4°    | 3059.6 | 3055.3 | 3055.3 | 3051.4 | 3048.6 | 3045.9 | 3045.9 | 3047.5 | 3051.0 | 3054.5 | 3052.5 |
| 4.5°  | 3055.7 | 3050.6 | 3050.2 | 3047.1 | 3043.1 | 3040.0 | 3040.8 | 3042.4 | 3046.7 | 3050.6 | 3047.8 |
| 5°    | 3051.0 | 3045.5 | 3045.5 | 3041.6 | 3037.7 | 3034.5 | 3034.9 | 3036.9 | 3041.6 | 3045.1 | 3042.8 |
| 5.5°  | 3045.1 | 3040.0 | 3040.4 | 3036.1 | 3031.4 | 3027.9 | 3028.7 | 3030.6 | 3035.7 | 3040.4 | 3037.3 |
| 6°    | 3039.6 | 3033.4 | 3034.1 | 3029.8 | 3024.8 | 3020.8 | 3022.0 | 3024.4 | 3029.1 | 3034.1 | 3031.0 |
| 6.5°  | 3033.0 | 3026.7 | 3027.9 | 3023.6 | 3017.3 | 3013.4 | 3014.6 | 3016.9 | 3022.4 | 3028.3 | 3024.8 |
| 7°    | 3025.5 | 3018.9 | 3020.4 | 3015.8 | 3009.5 | 3005.2 | 3007.1 | 3009.9 | 3015.0 | 3021.2 | 3017.7 |
| 7.5°  | 3017.7 | 3011.1 | 3013.0 | 3008.7 | 3000.9 | 2997.0 | 2998.5 | 3001.7 | 3006.8 | 3013.8 | 3009.9 |
| 8°    | 3009.5 | 3002.4 | 3005.6 | 2999.3 | 2991.9 | 2987.2 | 2989.5 | 2992.3 | 2998.5 | 3005.6 | 3001.7 |
| 8.5°  | 3000.1 | 2993.4 | 2996.6 | 2989.9 | 2981.7 | 2978.2 | 2980.5 | 2983.3 | 2989.1 | 2996.6 | 2993.1 |
| 9°    | 2990.3 | 2984.1 | 2987.2 | 2980.5 | 2971.9 | 2967.6 | 2970.4 | 2973.5 | 2979.4 | 2987.2 | 2984.1 |
| 9.5°  | 2979.7 | 2972.7 | 2977.8 | 2970.7 | 2961.0 | 2957.0 | 2959.8 | 2962.9 | 2968.8 | 2977.8 | 2973.9 |
| 10°   | 2968.0 | 2961.7 | 2966.8 | 2959.4 | 2950.0 | 2946.1 | 2949.2 | 2952.4 | 2958.2 | 2967.6 | 2963.7 |
| 10.5° | 2956.7 | 2949.6 | 2955.9 | 2948.0 | 2938.7 | 2934.7 | 2938.3 | 2941.0 | 2946.9 | 2957.0 | 2952.4 |
| 11°   | 2944.5 | 2937.5 | 2945.3 | 2936.3 | 2926.9 | 2923.0 | 2926.5 | 2929.3 | 2935.5 | 2945.7 | 2941.0 |
| 11.5° | 2932.0 | 2925.0 | 2932.0 | 2924.2 | 2914.0 | 2910.1 | 2913.6 | 2918.3 | 2924.2 | 2934.0 | 2928.9 |
| 12°   | 2918.3 | 2911.3 | 2919.5 | 2910.9 | 2901.1 | 2897.6 | 2901.1 | 2905.4 | 2911.3 | 2922.6 | 2920.7 |
| 12.5° | 2905.0 | 2897.2 | 2905.4 | 2897.6 | 2888.2 | 2884.6 | 2888.2 | 2892.9 | 2898.3 | 2909.3 | 2907.3 |
| 13°   | 2890.9 | 2883.1 | 2892.1 | 2883.5 | 2875.6 | 2871.7 | 2875.3 | 2880.0 | 2885.4 | 2896.4 | 2894.0 |
| 13.5° | 2876.4 | 2867.8 | 2877.6 | 2869.0 | 2862.3 | 2858.8 | 2862.3 | 2867.4 | 2872.5 | 2883.5 | 2880.7 |
| 14°   | 2861.2 | 2853.0 | 2862.0 | 2854.1 | 2846.7 | 2842.8 | 2847.5 | 2851.8 | 2859.6 | 2870.6 | 2867.8 |
| 14.5° | 2844.7 | 2836.1 | 2845.9 | 2838.9 | 2830.3 | 2826.7 | 2831.4 | 2835.7 | 2844.3 | 2857.6 | 2849.4 |
| 15°   | 2828.7 | 2819.7 | 2830.3 | 2823.2 | 2813.4 | 2810.7 | 2814.6 | 2820.1 | 2828.3 | 2842.0 | 2833.4 |
| 15.5° | 2811.5 | 2802.9 | 2813.8 | 2806.0 | 2796.2 | 2793.1 | 2797.4 | 2802.9 | 2811.5 | 2825.9 | 2816.6 |
| 16°   | 2794.2 | 2785.2 | 2795.8 | 2788.4 | 2778.6 | 2775.9 | 2779.8 | 2786.0 | 2794.2 | 2809.1 | 2799.7 |
| 16.5° | 2775.5 | 2768.0 | 2777.8 | 2770.8 | 2759.8 | 2757.1 | 2762.2 | 2768.0 | 2777.0 | 2791.5 | 2782.1 |
| 17°   | 2757.1 | 2748.5 | 2760.2 | 2752.8 | 2740.6 | 2738.7 | 2743.8 | 2750.0 | 2759.0 | 2773.9 | 2763.7 |
| 17.5° | 2737.9 | 2729.7 | 2741.0 | 2733.6 | 2720.7 | 2719.5 | 2724.6 | 2730.5 | 2739.1 | 2755.9 | 2744.9 |
| 18°   | 2717.9 | 2709.7 | 2722.2 | 2713.6 | 2698.8 | 2699.1 | 2705.4 | 2711.3 | 2718.3 | 2737.1 | 2726.2 |
| 18.5° | 2696.4 | 2689.0 | 2701.9 | 2694.1 | 2676.8 | 2678.0 | 2685.1 | 2690.9 | 2697.6 | 2717.2 | 2706.6 |
| 19°   | 2676.1 | 2667.8 | 2682.3 | 2673.3 | 2654.1 | 2656.1 | 2664.7 | 2669.8 | 2676.1 | 2696.4 | 2686.2 |
| 19.5° | 2654.5 | 2646.7 | 2661.6 | 2651.0 | 2631.8 | 2633.8 | 2644.0 | 2648.3 | 2654.1 | 2674.9 | 2665.5 |
| 20°   | 2633.0 | 2624.8 | 2640.8 | 2628.3 | 2608.4 | 2610.3 | 2622.8 | 2626.0 | 2631.4 | 2653.0 | 2644.8 |
| 20.5° | 2610.3 | 2602.5 | 2619.3 | 2605.2 | 2584.9 | 2586.8 | 2600.5 | 2602.9 | 2608.4 | 2630.7 | 2622.4 |
| 21°   | 2587.2 | 2579.0 | 2596.2 | 2581.4 | 2560.6 | 2563.0 | 2578.2 | 2579.4 | 2584.9 | 2607.2 | 2600.5 |

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CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 22.5° | 2516.8 | 2507.4 | 2527.0 | 2507.0 | 2487.0 | 2489.0 | 2508.2 | 2505.8 | 2511.7 | 2534.8 | 2531.7 |
| 23°   | 2490.6 | 2482.7 | 2502.7 | 2480.8 | 2460.8 | 2463.2 | 2484.3 | 2479.6 | 2487.0 | 2509.7 | 2507.4 |
| 23.5° | 2466.3 | 2458.1 | 2477.3 | 2456.1 | 2433.4 | 2438.1 | 2458.9 | 2454.2 | 2460.8 | 2484.3 | 2481.9 |
| 24°   | 2441.2 | 2431.9 | 2452.6 | 2429.5 | 2405.2 | 2411.5 | 2433.0 | 2428.3 | 2434.2 | 2458.9 | 2456.1 |
| 24.5° | 2418.6 | 2406.0 | 2426.4 | 2403.7 | 2379.0 | 2384.1 | 2405.6 | 2402.1 | 2406.4 | 2432.6 | 2429.5 |
| 25°   | 2394.3 | 2378.6 | 2399.4 | 2375.1 | 2354.4 | 2355.9 | 2378.6 | 2375.1 | 2379.4 | 2405.6 | 2402.9 |
| 25.5° | 2362.6 | 2353.2 | 2371.6 | 2346.9 | 2329.7 | 2327.4 | 2350.5 | 2347.3 | 2354.0 | 2377.5 | 2375.5 |
| 26°   | 2334.0 | 2328.5 | 2342.6 | 2317.6 | 2305.1 | 2299.6 | 2322.3 | 2319.1 | 2330.1 | 2349.3 | 2348.1 |
| 26.5° | 2303.1 | 2304.3 | 2314.8 | 2289.8 | 2269.1 | 2273.4 | 2292.9 | 2290.2 | 2300.8 | 2320.7 | 2319.1 |
| 27°   | 2266.3 | 2272.2 | 2285.9 | 2262.8 | 2231.1 | 2248.3 | 2263.6 | 2262.4 | 2262.4 | 2294.5 | 2290.2 |
| 27.5° | 2228.0 | 2241.3 | 2256.5 | 2237.7 | 2195.5 | 2222.5 | 2233.8 | 2235.4 | 2228.7 | 2269.8 | 2260.8 |
| 28°   | 2187.7 | 2208.4 | 2226.0 | 2212.3 | 2146.6 | 2192.7 | 2203.7 | 2210.0 | 2187.3 | 2242.8 | 2231.1 |
| 28.5° | 2145.4 | 2174.0 | 2196.7 | 2184.1 | 2096.9 | 2152.4 | 2173.6 | 2180.6 | 2139.9 | 2204.5 | 2201.7 |
| 29°   | 2101.6 | 2136.4 | 2165.7 | 2145.4 | 2049.1 | 2119.2 | 2143.4 | 2143.0 | 2092.2 | 2169.7 | 2171.2 |
| 29.5° | 2053.4 | 2097.3 | 2136.4 | 2109.4 | 2000.2 | 2078.1 | 2111.7 | 2108.6 | 2043.2 | 2134.4 | 2141.5 |
| 30°   | 2004.1 | 2054.6 | 2106.3 | 2071.0 | 1952.1 | 2029.5 | 2081.2 | 2069.9 | 1995.9 | 2089.0 | 2110.9 |
| 30.5° | 1952.1 | 2013.5 | 2075.3 | 2024.1 | 1905.1 | 1981.0 | 2049.5 | 2023.3 | 1947.4 | 2040.5 | 2080.4 |
| 31°   | 1899.6 | 1966.1 | 2044.0 | 1975.1 | 1858.5 | 1934.1 | 2017.4 | 1977.5 | 1901.6 | 1993.5 | 2049.1 |
| 31.5° | 1846.4 | 1920.0 | 2012.7 | 1927.4 | 1811.6 | 1885.9 | 1984.9 | 1929.4 | 1855.8 | 1945.4 | 2017.0 |
| 32°   | 1792.0 | 1868.7 | 1981.0 | 1880.1 | 1765.8 | 1839.4 | 1953.6 | 1882.4 | 1809.6 | 1898.8 | 1986.1 |
| 32.5° | 1739.6 | 1819.8 | 1951.7 | 1832.3 | 1717.2 | 1794.0 | 1921.5 | 1835.4 | 1762.6 | 1852.3 | 1954.4 |
| 33°   | 1688.3 | 1767.7 | 1923.1 | 1786.1 | 1668.3 | 1749.3 | 1891.4 | 1790.8 | 1716.1 | 1806.5 | 1924.7 |
| 33.5° | 1637.4 | 1714.9 | 1892.6 | 1740.3 | 1615.5 | 1703.6 | 1862.0 | 1744.6 | 1668.7 | 1760.3 | 1898.4 |
| 34°   | 1587.7 | 1664.0 | 1857.7 | 1694.9 | 1563.8 | 1658.2 | 1833.5 | 1700.8 | 1619.4 | 1714.9 | 1871.4 |
| 34.5° | 1537.6 | 1612.8 | 1827.6 | 1648.8 | 1509.1 | 1610.8 | 1803.3 | 1655.4 | 1567.8 | 1669.1 | 1831.9 |
| 35°   | 1487.5 | 1561.5 | 1796.7 | 1602.2 | 1455.8 | 1565.8 | 1770.1 | 1612.0 | 1516.5 | 1622.9 | 1792.0 |
| 35.5° | 1438.6 | 1513.0 | 1763.4 | 1554.4 | 1402.2 | 1515.7 | 1733.3 | 1565.8 | 1465.2 | 1575.2 | 1757.6 |
| 36°   | 1408.5 | 1464.8 | 1724.3 | 1506.3 | 1351.7 | 1466.0 | 1696.1 | 1520.8 | 1413.6 | 1527.4 | 1714.9 |
| 36.5° | 1353.7 | 1417.9 | 1679.3 | 1456.6 | 1300.5 | 1415.5 | 1648.8 | 1473.0 | 1362.3 | 1478.5 | 1667.5 |
| 37°   | 1297.7 | 1370.5 | 1637.0 | 1406.1 | 1251.5 | 1365.0 | 1601.4 | 1425.3 | 1310.2 | 1428.4 | 1619.0 |
| 37.5° | 1241.8 | 1322.8 | 1591.6 | 1357.2 | 1203.4 | 1313.4 | 1550.5 | 1377.2 | 1261.3 | 1377.6 | 1570.1 |
| 38°   | 1185.8 | 1275.4 | 1538.8 | 1308.3 | 1156.4 | 1264.1 | 1495.4 | 1328.6 | 1213.6 | 1328.6 | 1520.4 |
| 38.5° | 1135.7 | 1228.1 | 1484.0 | 1259.8 | 1109.1 | 1216.3 | 1440.6 | 1279.3 | 1166.2 | 1278.2 | 1470.7 |
| 39°   | 1086.0 | 1180.3 | 1430.8 | 1210.8 | 1063.7 | 1169.7 | 1385.8 | 1231.2 | 1118.9 | 1230.4 | 1419.8 |
| 39.5° | 1037.5 | 1131.8 | 1377.9 | 1161.9 | 1015.9 | 1125.9 | 1333.3 | 1183.8 | 1072.7 | 1183.1 | 1369.3 |
| 40°   | 989.7  | 1084.0 | 1325.1 | 1115.4 | 968.6  | 1079.7 | 1281.7 | 1138.4 | 1027.7 | 1136.5 | 1318.5 |
| 40.5° | 943.9  | 1035.5 | 1272.3 | 1070.3 | 920.8  | 1035.5 | 1232.0 | 1091.9 | 980.7  | 1090.3 | 1268.4 |
| 41°   | 898.2  | 989.3  | 1219.1 | 1026.1 | 875.1  | 992.5  | 1183.4 | 1048.0 | 934.2  | 1045.7 | 1216.7 |
| 41.5° | 852.8  | 943.9  | 1166.2 | 982.3  | 828.1  | 949.8  | 1135.7 | 1005.0 | 886.8  | 1002.3 | 1166.6 |
| 42°   | 808.9  | 900.1  | 1115.7 | 937.7  | 783.9  | 904.8  | 1089.1 | 961.9  | 841.4  | 958.0  | 1115.4 |
| 42.5° | 765.1  | 856.3  | 1066.4 | 894.6  | 740.8  | 860.6  | 1044.1 | 919.7  | 797.2  | 914.6  | 1065.3 |
| 43°   | 722.4  | 814.0  | 1017.5 | 851.2  | 699.0  | 817.5  | 999.5  | 876.6  | 754.1  | 870.4  | 1014.4 |
| 43.5° | 678.6  | 772.9  | 969.8  | 808.1  | 657.9  | 775.7  | 954.9  | 834.4  | 711.9  | 826.9  | 965.9  |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  | 202.5° | 225°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 558.5 | 652.4 | 829.7 | 683.3 | 544.4 | 653.2  | 821.8 | 710.7  | 592.1 | 701.7  | 824.2 |
| 45.5° | 520.9 | 612.9 | 783.9 | 644.6 | 508.0 | 616.4  | 779.2 | 670.4  | 554.5 | 662.2  | 780.4 |
| 46°   | 484.9 | 575.3 | 740.0 | 606.2 | 472.4 | 579.2  | 736.5 | 632.4  | 518.1 | 623.8  | 736.5 |
| 46.5° | 449.7 | 538.5 | 697.4 | 570.2 | 439.1 | 543.6  | 695.8 | 594.9  | 482.9 | 587.0  | 694.6 |
| 47°   | 416.4 | 503.3 | 655.5 | 535.0 | 407.4 | 508.8  | 656.7 | 558.8  | 448.1 | 550.6  | 654.7 |
| 47.5° | 385.5 | 468.8 | 615.2 | 500.1 | 377.7 | 475.1  | 618.7 | 522.8  | 415.6 | 514.6  | 615.6 |
| 48°   | 355.3 | 436.0 | 576.9 | 466.1 | 352.6 | 442.2  | 583.5 | 488.8  | 384.7 | 481.4  | 577.6 |
| 48.5° | 327.2 | 405.0 | 540.1 | 433.6 | 327.6 | 410.9  | 548.3 | 456.3  | 357.7 | 448.1  | 540.8 |
| 49°   | 300.2 | 375.3 | 504.8 | 403.5 | 302.5 | 381.2  | 515.0 | 423.8  | 331.1 | 416.4  | 507.2 |
| 49.5° | 273.9 | 346.7 | 471.6 | 373.7 | 277.9 | 355.3  | 483.3 | 393.3  | 304.1 | 385.9  | 471.6 |
| 50°   | 249.3 | 319.3 | 439.1 | 344.8 | 257.1 | 329.5  | 452.8 | 367.1  | 277.5 | 358.9  | 438.7 |
| 50.5° | 226.6 | 292.7 | 407.0 | 317.0 | 237.9 | 303.7  | 423.8 | 340.9  | 255.9 | 331.5  | 408.2 |
| 51°   | 205.5 | 268.1 | 377.3 | 291.9 | 221.5 | 277.9  | 394.5 | 314.3  | 236.0 | 304.1  | 379.6 |
| 51.5° | 185.9 | 245.0 | 348.7 | 268.5 | 205.9 | 256.7  | 369.0 | 288.0  | 218.0 | 277.1  | 353.0 |
| 52°   | 167.5 | 223.1 | 322.1 | 246.6 | 191.0 | 237.2  | 344.4 | 261.8  | 201.2 | 254.0  | 326.8 |
| 52.5° | 150.7 | 201.9 | 295.9 | 227.0 | 176.9 | 219.2  | 319.3 | 239.9  | 186.3 | 233.2  | 300.6 |
| 53°   | 135.0 | 182.4 | 272.0 | 209.0 | 163.6 | 202.7  | 294.3 | 219.9  | 171.8 | 214.5  | 274.3 |
| 53.5° | 122.1 | 164.8 | 249.3 | 192.9 | 151.5 | 187.8  | 269.2 | 201.9  | 158.5 | 197.2  | 250.5 |
| 54°   | 109.2 | 148.3 | 228.2 | 177.7 | 138.9 | 174.2  | 248.1 | 185.5  | 145.6 | 181.6  | 229.3 |
| 54.5° | 96.3  | 132.7 | 207.8 | 163.6 | 126.8 | 160.8  | 228.2 | 170.2  | 133.1 | 166.7  | 209.8 |
| 55°   | 83.4  | 118.2 | 190.2 | 151.1 | 115.1 | 148.3  | 209.4 | 156.5  | 121.3 | 153.4  | 191.0 |
| 55.5° | 74.7  | 107.6 | 173.0 | 138.5 | 104.5 | 136.6  | 191.8 | 143.6  | 109.6 | 140.9  | 173.8 |
| 56°   | 71.6  | 97.4  | 157.3 | 128.4 | 95.1  | 124.8  | 175.3 | 131.1  | 99.4  | 128.8  | 157.7 |
| 56.5° | 68.9  | 86.9  | 142.8 | 117.8 | 88.4  | 113.5  | 160.1 | 119.8  | 91.2  | 117.4  | 143.2 |
| 57°   | 66.5  | 76.7  | 132.3 | 107.2 | 84.5  | 102.5  | 146.0 | 108.8  | 85.3  | 106.1  | 129.5 |
| 57.5° | 63.8  | 66.1  | 121.3 | 96.7  | 81.4  | 92.8   | 133.1 | 98.2   | 82.2  | 95.5   | 117.4 |
| 58°   | 61.4  | 63.8  | 110.8 | 87.7  | 78.3  | 83.7   | 120.9 | 88.1   | 79.1  | 86.5   | 106.4 |
| 58.5° | 59.1  | 61.4  | 100.2 | 79.8  | 75.5  | 77.1   | 110.4 | 79.8   | 75.9  | 79.4   | 96.3  |
| 59°   | 56.7  | 59.1  | 89.6  | 74.0  | 72.4  | 73.6   | 100.2 | 73.6   | 73.2  | 74.7   | 87.7  |
| 59.5° | 54.8  | 56.7  | 81.8  | 70.8  | 69.7  | 70.4   | 91.6  | 70.1   | 70.4  | 72.0   | 80.2  |
| 60°   | 52.8  | 54.8  | 75.1  | 67.7  | 66.9  | 67.7   | 83.7  | 67.3   | 67.7  | 69.3   | 73.6  |
| 60.5° | 50.5  | 52.8  | 68.9  | 65.4  | 64.2  | 65.4   | 76.7  | 64.6   | 65.0  | 66.5   | 67.3  |
| 61°   | 48.5  | 50.5  | 63.8  | 62.6  | 61.8  | 62.6   | 70.4  | 61.8   | 62.6  | 63.8   | 62.6  |
| 61.5° | 47.0  | 48.9  | 59.1  | 60.3  | 59.5  | 60.3   | 65.0  | 59.5   | 60.3  | 61.4   | 57.9  |
| 62°   | 45.0  | 47.0  | 55.2  | 57.5  | 57.1  | 57.9   | 60.3  | 57.1   | 57.5  | 59.1   | 54.0  |
| 62.5° | 43.0  | 45.0  | 51.3  | 55.6  | 54.8  | 55.6   | 56.4  | 54.8   | 55.6  | 56.7   | 50.5  |
| 63°   | 41.5  | 43.4  | 48.1  | 53.2  | 52.4  | 53.2   | 52.4  | 52.8   | 53.2  | 54.4   | 47.7  |
| 63.5° | 39.9  | 41.5  | 45.4  | 50.9  | 50.5  | 51.3   | 49.3  | 50.5   | 51.3  | 52.4   | 45.0  |
| 64°   | 38.4  | 39.9  | 43.4  | 48.9  | 48.5  | 49.3   | 46.2  | 48.5   | 48.9  | 50.1   | 43.0  |
| 64.5° | 36.8  | 38.4  | 41.9  | 47.0  | 46.6  | 47.4   | 43.8  | 46.6   | 47.0  | 48.1   | 41.1  |
| 65°   | 35.2  | 37.2  | 39.9  | 45.0  | 44.6  | 45.4   | 41.9  | 44.6   | 45.4  | 46.2   | 39.5  |
| 65.5° | 34.0  | 35.6  | 38.4  | 43.4  | 42.7  | 43.4   | 40.3  | 42.7   | 43.4  | 44.2   | 38.0  |
| 66°   | 32.5  | 34.0  | 37.2  | 41.5  | 40.7  | 41.9   | 38.7  | 41.1   | 41.5  | 42.7   | 36.4  |





TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°   | 22.5° | 45°  | 67.5° | 90°  | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|------|-------|------|-------|------|--------|------|--------|------|--------|------|
| 67.5° | 28.6 | 30.1  | 32.9 | 36.4  | 36.0 | 36.8   | 34.4 | 36.0   | 36.4 | 37.6   | 32.1 |
| 68°   | 27.4 | 29.0  | 31.3 | 34.8  | 34.4 | 35.2   | 32.9 | 34.4   | 34.8 | 36.0   | 30.9 |
| 68.5° | 26.2 | 27.4  | 30.1 | 33.7  | 32.9 | 33.7   | 31.7 | 32.9   | 33.3 | 34.4   | 29.7 |
| 69°   | 25.0 | 26.2  | 29.0 | 32.1  | 31.7 | 32.5   | 30.1 | 31.7   | 32.1 | 32.9   | 28.6 |
| 69.5° | 23.9 | 25.0  | 27.8 | 30.9  | 30.1 | 30.9   | 29.0 | 30.1   | 30.5 | 31.3   | 27.4 |
| 70°   | 22.7 | 23.9  | 26.6 | 29.4  | 29.0 | 29.7   | 27.8 | 29.0   | 29.4 | 30.1   | 25.8 |
| 70.5° | 21.5 | 23.1  | 25.4 | 28.2  | 27.4 | 28.6   | 26.2 | 27.4   | 27.8 | 28.6   | 25.0 |
| 71°   | 20.7 | 21.9  | 24.3 | 27.0  | 26.2 | 27.0   | 25.0 | 26.2   | 26.6 | 27.4   | 23.9 |
| 71.5° | 19.6 | 20.7  | 23.1 | 25.4  | 25.0 | 25.8   | 23.9 | 25.0   | 25.0 | 25.8   | 22.7 |
| 72°   | 18.8 | 20.0  | 21.9 | 24.7  | 23.9 | 24.7   | 23.1 | 23.9   | 23.9 | 24.7   | 21.5 |
| 72.5° | 17.6 | 18.8  | 21.1 | 23.5  | 22.7 | 23.5   | 21.9 | 22.7   | 22.7 | 23.5   | 20.7 |
| 73°   | 16.8 | 18.0  | 20.0 | 22.3  | 21.5 | 22.3   | 20.7 | 21.5   | 21.5 | 22.3   | 19.6 |
| 73.5° | 15.7 | 16.8  | 18.8 | 21.1  | 20.4 | 21.1   | 20.0 | 20.4   | 20.4 | 21.1   | 18.8 |
| 74°   | 14.9 | 16.0  | 18.0 | 20.0  | 19.6 | 20.4   | 18.8 | 19.2   | 19.6 | 20.4   | 18.0 |
| 74.5° | 14.1 | 15.3  | 17.2 | 19.2  | 18.4 | 19.2   | 18.0 | 18.4   | 18.4 | 19.2   | 16.8 |
| 75°   | 13.3 | 14.1  | 16.0 | 18.0  | 17.2 | 18.4   | 16.8 | 17.2   | 17.2 | 18.0   | 16.0 |
| 75.5° | 12.5 | 13.3  | 15.3 | 17.2  | 16.4 | 17.2   | 16.0 | 16.4   | 16.4 | 17.2   | 15.3 |
| 76°   | 11.3 | 12.5  | 14.5 | 16.4  | 15.7 | 16.4   | 15.3 | 15.3   | 15.3 | 16.0   | 14.5 |
| 76.5° | 10.6 | 11.7  | 13.7 | 15.3  | 14.5 | 15.7   | 14.5 | 14.5   | 14.5 | 15.3   | 13.3 |
| 77°   | 10.2 | 11.0  | 12.9 | 14.5  | 13.7 | 14.5   | 13.7 | 13.3   | 13.3 | 14.1   | 12.5 |
| 77.5° | 9.4  | 10.2  | 12.1 | 13.7  | 12.9 | 13.7   | 12.9 | 12.5   | 12.5 | 13.3   | 11.7 |
| 78°   | 8.6  | 9.4   | 11.3 | 12.9  | 12.1 | 12.9   | 12.1 | 11.7   | 11.7 | 12.5   | 11.0 |
| 78.5° | 7.8  | 8.6   | 10.6 | 12.1  | 11.3 | 12.1   | 11.3 | 11.0   | 11.0 | 11.3   | 10.6 |
| 79°   | 7.4  | 7.8   | 9.8  | 11.3  | 10.6 | 11.3   | 10.6 | 10.2   | 10.2 | 10.6   | 9.8  |
| 79.5° | 6.7  | 7.0   | 9.4  | 10.6  | 9.8  | 10.6   | 9.8  | 9.4    | 9.4  | 9.8    | 9.0  |
| 80°   | 5.9  | 6.7   | 8.6  | 9.8   | 9.0  | 9.8    | 9.4  | 8.6    | 8.6  | 9.0    | 8.2  |
| 80.5° | 5.5  | 5.9   | 7.8  | 9.0   | 8.6  | 9.0    | 8.6  | 7.8    | 7.8  | 8.2    | 7.8  |
| 81°   | 4.7  | 5.1   | 7.4  | 8.2   | 7.8  | 8.2    | 7.8  | 7.0    | 7.0  | 7.4    | 7.0  |
| 81.5° | 4.3  | 4.7   | 6.7  | 7.4   | 7.0  | 7.8    | 7.4  | 6.3    | 6.3  | 6.7    | 6.7  |
| 82°   | 3.9  | 3.9   | 6.3  | 7.0   | 6.7  | 7.0    | 6.7  | 5.9    | 5.9  | 5.9    | 5.9  |
| 82.5° | 3.1  | 3.5   | 5.5  | 6.3   | 5.9  | 6.7    | 6.3  | 5.1    | 5.1  | 5.1    | 5.5  |
| 83°   | 2.7  | 3.1   | 5.1  | 5.9   | 5.5  | 5.9    | 5.5  | 4.7    | 4.3  | 4.7    | 4.7  |
| 83.5° | 2.0  | 2.3   | 4.3  | 5.1   | 5.1  | 5.5    | 5.1  | 3.9    | 3.9  | 3.9    | 4.3  |
| 84°   | 1.6  | 2.0   | 3.9  | 4.7   | 4.3  | 4.7    | 4.7  | 3.5    | 3.1  | 3.5    | 3.9  |
| 84.5° | 1.6  | 1.6   | 3.5  | 3.9   | 3.9  | 4.3    | 3.9  | 3.1    | 2.7  | 2.7    | 3.5  |
| 85°   | 1.2  | 1.6   | 3.1  | 3.5   | 3.5  | 3.9    | 3.5  | 2.3    | 2.0  | 2.3    | 3.1  |
| 85.5° | 0.8  | 1.2   | 2.7  | 3.1   | 2.7  | 3.1    | 3.1  | 2.0    | 1.6  | 2.0    | 2.3  |
| 86°   | 0.8  | 0.8   | 2.0  | 2.3   | 2.3  | 2.7    | 2.7  | 1.6    | 1.6  | 1.6    | 2.0  |
| 86.5° | 0.8  | 0.8   | 1.6  | 2.0   | 2.0  | 2.3    | 2.3  | 1.6    | 1.2  | 1.2    | 1.6  |
| 87°   | 0.4  | 0.4   | 1.2  | 1.6   | 1.6  | 1.6    | 2.0  | 1.2    | 1.2  | 1.2    | 1.2  |
| 87.5° | 0.0  | 0.4   | 0.8  | 1.2   | 1.2  | 1.2    | 1.6  | 0.8    | 0.8  | 0.8    | 0.8  |
| 88°   | 0.0  | 0.0   | 0.4  | 0.8   | 0.8  | 0.8    | 1.2  | 0.8    | 0.8  | 0.8    | 0.4  |
| 88.5° | 0.0  | 0.0   | 0.0  | 0.4   | 0.4  | 0.4    | 0.8  | 0.4    | 0.4  | 0.4    | 0.4  |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**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: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 0°    | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 | 3070.9 |
| 0.5°  | 3070.2 | 3072.9 | 3071.3 | 3072.1 | 3071.3 | 3072.5 |
| 1°    | 3069.8 | 3072.5 | 3071.3 | 3072.1 | 3071.3 | 3072.5 |
| 1.5°  | 3068.6 | 3072.5 | 3071.3 | 3071.7 | 3071.3 | 3071.3 |
| 2°    | 3067.0 | 3071.3 | 3070.9 | 3070.9 | 3070.5 | 3070.5 |
| 2.5°  | 3065.1 | 3070.5 | 3069.4 | 3070.5 | 3069.0 | 3068.6 |
| 3°    | 3062.3 | 3068.6 | 3067.4 | 3068.2 | 3067.0 | 3066.2 |
| 3.5°  | 3059.2 | 3065.5 | 3065.1 | 3065.8 | 3064.3 | 3063.1 |
| 4°    | 3055.3 | 3061.9 | 3061.9 | 3062.7 | 3061.5 | 3059.6 |
| 4.5°  | 3051.0 | 3058.0 | 3058.4 | 3059.2 | 3057.6 | 3055.7 |
| 5°    | 3046.3 | 3053.7 | 3054.1 | 3054.9 | 3053.3 | 3051.0 |
| 5.5°  | 3040.8 | 3049.0 | 3049.4 | 3049.8 | 3048.2 | 3045.1 |
| 6°    | 3034.9 | 3043.1 | 3043.9 | 3044.7 | 3042.8 | 3039.6 |
| 6.5°  | 3028.3 | 3036.9 | 3038.1 | 3038.5 | 3036.5 | 3033.0 |
| 7°    | 3021.2 | 3030.2 | 3031.4 | 3032.2 | 3029.8 | 3025.5 |
| 7.5°  | 3013.4 | 3023.2 | 3024.8 | 3024.8 | 3022.4 | 3017.7 |
| 8°    | 3004.8 | 3014.6 | 3016.5 | 3017.3 | 3014.2 | 3009.5 |
| 8.5°  | 2996.2 | 3006.4 | 3008.3 | 3008.7 | 3005.6 | 3000.1 |
| 9°    | 2987.2 | 2996.6 | 2999.7 | 3000.1 | 2995.8 | 2990.3 |
| 9.5°  | 2977.0 | 2986.4 | 2989.5 | 2990.3 | 2986.8 | 2979.7 |
| 10°   | 2966.4 | 2976.6 | 2979.0 | 2980.5 | 2975.8 | 2968.0 |
| 10.5° | 2955.1 | 2965.7 | 2968.4 | 2969.6 | 2964.9 | 2956.7 |
| 11°   | 2944.1 | 2953.5 | 2956.7 | 2957.8 | 2953.1 | 2944.5 |
| 11.5° | 2932.0 | 2941.8 | 2944.5 | 2946.1 | 2941.0 | 2932.0 |
| 12°   | 2919.5 | 2928.5 | 2932.0 | 2933.6 | 2927.3 | 2918.3 |
| 12.5° | 2905.4 | 2915.6 | 2918.7 | 2919.9 | 2914.4 | 2905.0 |
| 13°   | 2891.7 | 2901.9 | 2905.4 | 2907.0 | 2900.7 | 2890.9 |
| 13.5° | 2878.0 | 2887.8 | 2891.3 | 2892.1 | 2885.8 | 2876.4 |
| 14°   | 2863.9 | 2873.3 | 2876.8 | 2876.4 | 2871.0 | 2861.2 |
| 14.5° | 2853.0 | 2857.6 | 2861.6 | 2860.4 | 2855.3 | 2844.7 |
| 15°   | 2836.9 | 2841.2 | 2845.9 | 2844.3 | 2839.3 | 2828.7 |
| 15.5° | 2820.1 | 2825.2 | 2828.3 | 2827.9 | 2822.4 | 2811.5 |
| 16°   | 2802.9 | 2807.9 | 2811.9 | 2811.5 | 2805.2 | 2794.2 |
| 16.5° | 2785.2 | 2790.3 | 2794.6 | 2793.5 | 2788.0 | 2775.5 |
| 17°   | 2766.9 | 2771.5 | 2776.6 | 2775.1 | 2770.0 | 2757.1 |
| 17.5° | 2748.1 | 2753.2 | 2757.9 | 2756.7 | 2750.8 | 2737.9 |
| 18°   | 2728.5 | 2733.2 | 2738.7 | 2737.5 | 2731.6 | 2717.9 |
| 18.5° | 2708.5 | 2713.6 | 2719.1 | 2717.2 | 2710.9 | 2696.4 |
| 19°   | 2688.6 | 2693.3 | 2698.8 | 2697.6 | 2690.1 | 2676.1 |
| 19.5° | 2667.1 | 2672.9 | 2677.6 | 2676.8 | 2669.4 | 2654.5 |
| 20°   | 2645.5 | 2651.8 | 2656.9 | 2656.1 | 2647.9 | 2633.0 |
| 20.5° | 2623.6 | 2629.5 | 2635.0 | 2634.2 | 2625.6 | 2610.3 |
| 21°   | 2600.9 | 2607.2 | 2611.9 | 2612.3 | 2602.1 | 2587.2 |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 2530.5 | 2536.7 | 2541.8 | 2543.0 | 2531.3 | 2516.8 |
| 23°   | 2506.6 | 2512.5 | 2517.2 | 2518.7 | 2506.6 | 2490.6 |
| 23.5° | 2481.6 | 2487.4 | 2492.5 | 2493.7 | 2481.6 | 2466.3 |
| 24°   | 2455.3 | 2461.6 | 2467.1 | 2468.3 | 2456.5 | 2441.2 |
| 24.5° | 2429.9 | 2436.9 | 2441.2 | 2442.0 | 2430.7 | 2418.6 |
| 25°   | 2404.1 | 2414.6 | 2414.2 | 2415.8 | 2404.1 | 2394.3 |
| 25.5° | 2376.7 | 2384.1 | 2387.2 | 2388.8 | 2376.7 | 2362.6 |
| 26°   | 2348.9 | 2354.8 | 2361.8 | 2360.6 | 2350.8 | 2334.0 |
| 26.5° | 2325.0 | 2325.0 | 2337.9 | 2333.2 | 2326.6 | 2303.1 |
| 27°   | 2298.4 | 2290.2 | 2305.8 | 2305.5 | 2301.9 | 2266.3 |
| 27.5° | 2265.1 | 2255.7 | 2276.1 | 2276.5 | 2270.2 | 2228.0 |
| 28°   | 2235.8 | 2218.6 | 2245.2 | 2246.7 | 2238.5 | 2187.7 |
| 28.5° | 2203.3 | 2179.4 | 2211.1 | 2218.2 | 2207.6 | 2145.4 |
| 29°   | 2169.7 | 2137.2 | 2176.7 | 2189.2 | 2172.8 | 2101.6 |
| 29.5° | 2132.9 | 2094.5 | 2139.1 | 2159.5 | 2136.4 | 2053.4 |
| 30°   | 2095.7 | 2048.3 | 2100.4 | 2129.7 | 2097.6 | 2004.1 |
| 30.5° | 2055.8 | 1999.4 | 2060.5 | 2099.6 | 2055.8 | 1952.1 |
| 31°   | 2014.7 | 1947.4 | 2016.6 | 2069.1 | 2013.1 | 1899.6 |
| 31.5° | 1971.2 | 1898.1 | 1971.6 | 2038.2 | 1967.7 | 1846.4 |
| 32°   | 1927.0 | 1844.8 | 1925.4 | 2007.6 | 1921.5 | 1792.0 |
| 32.5° | 1879.3 | 1790.8 | 1876.5 | 1980.2 | 1873.0 | 1739.6 |
| 33°   | 1830.0 | 1739.6 | 1825.3 | 1950.1 | 1822.1 | 1688.3 |
| 33.5° | 1779.5 | 1687.9 | 1774.0 | 1918.0 | 1770.9 | 1637.4 |
| 34°   | 1729.4 | 1637.4 | 1722.7 | 1889.4 | 1719.6 | 1587.7 |
| 34.5° | 1677.3 | 1585.8 | 1672.2 | 1855.8 | 1668.3 | 1537.6 |
| 35°   | 1627.2 | 1536.8 | 1621.0 | 1817.8 | 1617.1 | 1487.5 |
| 35.5° | 1577.9 | 1487.9 | 1570.5 | 1780.6 | 1568.1 | 1438.6 |
| 36°   | 1529.0 | 1439.4 | 1522.4 | 1743.1 | 1520.0 | 1408.5 |
| 36.5° | 1479.7 | 1411.2 | 1474.6 | 1701.2 | 1471.9 | 1353.7 |
| 37°   | 1432.3 | 1356.0 | 1426.9 | 1657.8 | 1424.9 | 1297.7 |
| 37.5° | 1385.4 | 1299.3 | 1379.1 | 1612.8 | 1377.6 | 1241.8 |
| 38°   | 1338.8 | 1242.5 | 1331.4 | 1565.4 | 1330.6 | 1185.8 |
| 38.5° | 1291.5 | 1185.8 | 1283.6 | 1517.3 | 1283.2 | 1135.7 |
| 39°   | 1244.1 | 1136.9 | 1235.9 | 1466.4 | 1235.9 | 1086.0 |
| 39.5° | 1196.8 | 1086.8 | 1188.1 | 1416.3 | 1188.9 | 1037.5 |
| 40°   | 1149.0 | 1037.9 | 1139.2 | 1362.7 | 1139.6 | 989.7  |
| 40.5° | 1101.3 | 990.5  | 1090.3 | 1308.7 | 1091.9 | 943.9  |
| 41°   | 1053.5 | 945.1  | 1043.0 | 1255.1 | 1045.3 | 898.2  |
| 41.5° | 1007.3 | 898.2  | 996.0  | 1201.4 | 999.1  | 852.8  |
| 42°   | 962.3  | 853.9  | 951.0  | 1147.8 | 954.5  | 808.9  |
| 42.5° | 917.7  | 810.5  | 906.0  | 1096.2 | 909.9  | 765.1  |
| 43°   | 874.3  | 764.7  | 862.9  | 1045.7 | 866.8  | 722.4  |
| 43.5° | 831.6  | 720.9  | 819.9  | 996.4  | 823.8  | 678.6  |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°  | 292.5° | 315°  | 337.5° | 360°  |
|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 710.3  | 595.6 | 694.6  | 856.7 | 701.7  | 558.5 |
| 45.5° | 671.2  | 556.5 | 653.9  | 813.2 | 662.2  | 520.9 |
| 46°   | 632.4  | 518.5 | 614.8  | 770.2 | 623.8  | 484.9 |
| 46.5° | 593.7  | 482.1 | 574.9  | 726.7 | 585.5  | 449.7 |
| 47°   | 556.9  | 447.3 | 538.1  | 684.9 | 549.5  | 416.4 |
| 47.5° | 520.9  | 413.3 | 501.7  | 643.8 | 513.5  | 385.5 |
| 48°   | 486.1  | 380.8 | 466.5  | 605.0 | 479.0  | 355.3 |
| 48.5° | 452.8  | 350.7 | 433.2  | 565.5 | 445.0  | 327.2 |
| 49°   | 420.3  | 321.7 | 401.1  | 528.3 | 414.0  | 300.2 |
| 49.5° | 390.2  | 294.7 | 369.4  | 492.3 | 383.1  | 273.9 |
| 50°   | 362.4  | 268.5 | 340.5  | 457.1 | 352.6  | 249.3 |
| 50.5° | 334.6  | 243.4 | 312.7  | 424.2 | 324.4  | 226.6 |
| 51°   | 306.8  | 220.7 | 285.3  | 392.5 | 297.8  | 205.5 |
| 51.5° | 279.4  | 200.0 | 260.6  | 362.0 | 272.4  | 185.9 |
| 52°   | 254.4  | 180.8 | 237.6  | 333.4 | 248.5  | 167.5 |
| 52.5° | 231.3  | 162.4 | 214.9  | 306.0 | 225.4  | 150.7 |
| 53°   | 209.4  | 145.6 | 194.5  | 280.2 | 203.5  | 135.0 |
| 53.5° | 188.6  | 132.7 | 174.9  | 256.3 | 183.5  | 122.1 |
| 54°   | 169.1  | 119.4 | 157.3  | 232.1 | 165.2  | 109.2 |
| 54.5° | 151.8  | 106.1 | 141.3  | 210.9 | 148.3  | 96.3  |
| 55°   | 135.8  | 93.1  | 128.0  | 191.0 | 134.6  | 83.4  |
| 55.5° | 121.3  | 79.8  | 115.1  | 171.8 | 121.3  | 74.7  |
| 56°   | 106.8  | 73.6  | 101.8  | 154.2 | 108.0  | 71.6  |
| 56.5° | 93.9   | 70.4  | 88.8   | 137.8 | 94.7   | 68.9  |
| 57°   | 82.6   | 67.7  | 75.5   | 126.4 | 81.4   | 66.5  |
| 57.5° | 72.8   | 65.0  | 68.1   | 115.4 | 71.6   | 63.8  |
| 58°   | 65.4   | 62.6  | 65.4   | 104.1 | 65.4   | 61.4  |
| 58.5° | 62.6   | 60.3  | 63.0   | 92.8  | 62.6   | 59.1  |
| 59°   | 59.9   | 57.9  | 60.7   | 81.8  | 60.3   | 56.7  |
| 59.5° | 57.9   | 56.0  | 58.3   | 74.4  | 57.9   | 54.8  |
| 60°   | 55.6   | 53.6  | 56.0   | 68.1  | 56.0   | 52.8  |
| 60.5° | 53.6   | 51.7  | 54.0   | 62.6  | 53.6   | 50.5  |
| 61°   | 51.7   | 49.7  | 52.0   | 57.9  | 51.7   | 48.5  |
| 61.5° | 49.7   | 47.7  | 50.1   | 53.6  | 49.7   | 47.0  |
| 62°   | 47.7   | 46.2  | 48.1   | 50.1  | 47.7   | 45.0  |
| 62.5° | 45.8   | 44.2  | 46.2   | 47.0  | 46.2   | 43.0  |
| 63°   | 44.2   | 42.7  | 44.6   | 44.2  | 44.2   | 41.5  |
| 63.5° | 42.7   | 41.1  | 42.7   | 42.3  | 42.3   | 39.9  |
| 64°   | 40.7   | 39.5  | 41.1   | 40.7  | 40.7   | 38.4  |
| 64.5° | 39.5   | 38.0  | 39.5   | 39.1  | 39.1   | 36.8  |
| 65°   | 38.0   | 36.4  | 38.0   | 37.6  | 37.6   | 35.2  |
| 65.5° | 36.4   | 34.8  | 36.8   | 36.0  | 36.0   | 34.0  |
| 66°   | 34.8   | 33.7  | 35.2   | 34.8  | 34.8   | 32.5  |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|------|--------|------|--------|------|
| 67.5° | 31.3   | 29.7 | 31.3   | 30.9 | 30.5   | 28.6 |
| 68°   | 29.7   | 28.6 | 29.7   | 29.4 | 29.4   | 27.4 |
| 68.5° | 28.6   | 27.4 | 28.6   | 28.2 | 28.2   | 26.2 |
| 69°   | 27.4   | 26.2 | 27.4   | 27.0 | 27.0   | 25.0 |
| 69.5° | 26.2   | 25.0 | 26.2   | 25.8 | 25.8   | 23.9 |
| 70°   | 25.0   | 23.9 | 25.4   | 24.7 | 24.7   | 22.7 |
| 70.5° | 24.3   | 23.1 | 24.3   | 23.9 | 23.5   | 21.5 |
| 71°   | 23.1   | 21.9 | 23.1   | 22.7 | 22.3   | 20.7 |
| 71.5° | 21.9   | 21.1 | 21.9   | 21.5 | 21.1   | 19.6 |
| 72°   | 21.1   | 20.0 | 21.1   | 20.7 | 20.4   | 18.8 |
| 72.5° | 20.4   | 19.2 | 20.0   | 19.6 | 19.2   | 17.6 |
| 73°   | 19.2   | 18.0 | 19.2   | 18.8 | 18.0   | 16.8 |
| 73.5° | 18.4   | 17.2 | 18.4   | 18.0 | 17.2   | 15.7 |
| 74°   | 17.6   | 16.4 | 17.2   | 16.8 | 16.4   | 14.9 |
| 74.5° | 16.8   | 15.7 | 16.4   | 16.0 | 15.3   | 14.1 |
| 75°   | 15.7   | 14.9 | 15.7   | 15.3 | 14.5   | 13.3 |
| 75.5° | 14.9   | 14.1 | 14.9   | 14.5 | 13.7   | 12.5 |
| 76°   | 14.1   | 13.3 | 14.1   | 13.7 | 12.9   | 11.3 |
| 76.5° | 13.3   | 12.5 | 13.3   | 12.9 | 12.1   | 10.6 |
| 77°   | 12.5   | 11.7 | 12.5   | 11.7 | 11.3   | 10.2 |
| 77.5° | 11.7   | 11.0 | 11.7   | 11.3 | 10.2   | 9.4  |
| 78°   | 11.0   | 10.2 | 11.0   | 10.6 | 9.4    | 8.6  |
| 78.5° | 10.6   | 9.8  | 10.2   | 9.8  | 9.0    | 7.8  |
| 79°   | 9.8    | 9.0  | 9.4    | 9.0  | 8.2    | 7.4  |
| 79.5° | 9.0    | 8.2  | 9.0    | 8.2  | 7.4    | 6.7  |
| 80°   | 8.2    | 7.8  | 8.2    | 7.8  | 6.7    | 5.9  |
| 80.5° | 7.8    | 7.4  | 7.8    | 7.0  | 5.9    | 5.5  |
| 81°   | 7.0    | 6.7  | 7.0    | 6.7  | 5.5    | 4.7  |
| 81.5° | 6.7    | 6.3  | 6.3    | 5.9  | 4.7    | 4.3  |
| 82°   | 5.9    | 5.5  | 5.9    | 5.5  | 3.9    | 3.9  |
| 82.5° | 5.5    | 5.1  | 5.5    | 4.7  | 3.5    | 3.1  |
| 83°   | 5.1    | 4.7  | 4.7    | 4.3  | 3.1    | 2.7  |
| 83.5° | 4.3    | 4.3  | 4.3    | 3.9  | 2.7    | 2.0  |
| 84°   | 3.9    | 3.9  | 3.9    | 3.5  | 2.0    | 1.6  |
| 84.5° | 3.5    | 3.5  | 3.1    | 3.1  | 1.6    | 1.6  |
| 85°   | 3.1    | 2.7  | 2.7    | 2.3  | 1.6    | 1.2  |
| 85.5° | 2.3    | 2.3  | 2.3    | 2.0  | 1.2    | 0.8  |
| 86°   | 2.0    | 2.0  | 2.0    | 1.6  | 0.8    | 0.8  |
| 86.5° | 1.6    | 1.6  | 1.6    | 1.2  | 0.8    | 0.8  |
| 87°   | 1.2    | 1.2  | 1.2    | 0.8  | 0.4    | 0.4  |
| 87.5° | 0.8    | 0.8  | 0.8    | 0.4  | 0.4    | 0.0  |
| 88°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.0  |
| 88.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776316

CATALOG NUMBER: HCDJBL3040CSD-HCD4TSQH-4000lm-3000K

**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



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





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

Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



Signify Classified - Internal  
Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





|       |        |        |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 21.5° | 2564.1 | 2555.1 | 2573.5 | 2556.7 | 2536.7 | 2538.3 | 2555.5 | 2555.1 | 2560.6 | 2583.3 | 2577.8 |
| 22°   | 2540.7 | 2531.7 | 2550.4 | 2532.0 | 2512.5 | 2514.0 | 2531.7 | 2530.5 | 2536.3 | 2559.0 | 2555.5 |



|       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 44°   | 637.1 | 732.2 | 922.4 | 765.1 | 619.1 | 732.6 | 909.5 | 792.5 | 669.6 | 784.7 | 917.3 |
| 44.5° | 597.2 | 691.9 | 875.8 | 722.8 | 580.8 | 693.1 | 865.3 | 751.0 | 630.5 | 742.8 | 870.0 |



|       |      |      |      |      |      |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|------|------|------|------|------|
| 66.5° | 31.3 | 32.9 | 35.6 | 39.9 | 39.1 | 39.9 | 37.2 | 39.1 | 39.9 | 40.7 | 34.8 |
| 67°   | 29.7 | 31.3 | 34.0 | 38.0 | 37.6 | 38.4 | 35.6 | 37.6 | 38.0 | 39.1 | 33.7 |



|       |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 89°   | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.4 | 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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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 2577.4 | 2583.7 | 2589.2 | 2589.6 | 2579.0 | 2564.1 |
| 22°   | 2554.3 | 2560.6 | 2565.7 | 2566.5 | 2555.5 | 2540.7 |



|       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 44°   | 790.5 | 679.0 | 777.2 | 948.6 | 782.7 | 637.1 |
| 44.5° | 750.6 | 636.7 | 735.7 | 901.7 | 741.6 | 597.2 |



|       |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|
| 66.5° | 33.7 | 32.1 | 33.7 | 33.3 | 33.3 | 31.3 |
| 67°   | 32.5 | 30.9 | 32.5 | 32.1 | 31.7 | 29.7 |



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 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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Scaled Data Report



(END OF REPORT)