

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: P776550

Luminaire Tested: HCDJBS4050CSD-HCD41TRH-5000lm-2700K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776550  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B029)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBS4050CSD-HCD41TRH-5000lm-2700K  
Description: 4 INCH ROUND SHALLOW-WIDE HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 2700K CCT  
Ballast/Driver: -

**Summary**

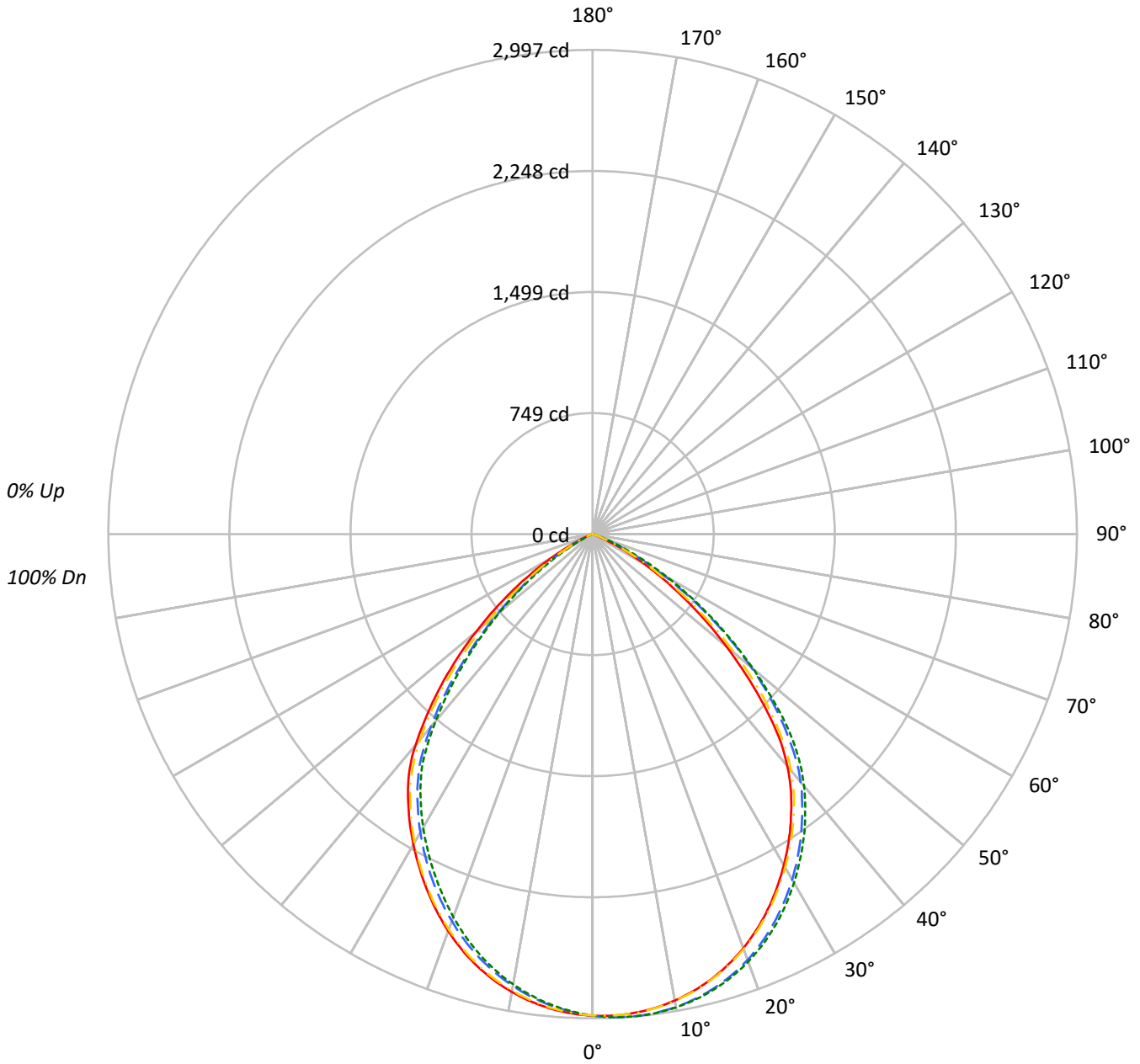
Lumens per Lamp: N/A  
Luminaire Lumens: 5332.0 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Spacing Criteria (0/90/45): 1.15 / 1.15 / 1.22  
Luminous Opening: Circular (Dia: 0.33' x H: 0')  
CIE Type: Direct

Input Watts (W): 48  
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: P776550  
CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

### Luminous Intensity Polar Plot





TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**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 |    |    |    |    |    |   |  |   |
| 1   | 112 | 109 | 105 | 103 | 109 | 106 | 104 | 101 | 102 | 100 | 98  | 98  | 97  | 95  | 95  | 94  | 92  | 90  |    |    |    |    |    |   |  |   |
| 2   | 104 | 98  | 93  | 89  | 102 | 96  | 92  | 88  | 93  | 89  | 86  | 90  | 87  | 84  | 87  | 84  | 82  | 80  |    |    |    |    |    |   |  |   |
| 3   | 97  | 89  | 83  | 77  | 95  | 87  | 82  | 77  | 85  | 80  | 76  | 82  | 78  | 74  | 80  | 76  | 73  | 71  |    |    |    |    |    |   |  |   |
| 4   | 90  | 81  | 74  | 68  | 88  | 79  | 73  | 68  | 77  | 71  | 67  | 75  | 70  | 66  | 73  | 69  | 65  | 63  |    |    |    |    |    |   |  |   |
| 5   | 84  | 73  | 66  | 60  | 82  | 72  | 65  | 60  | 70  | 64  | 60  | 69  | 63  | 59  | 67  | 62  | 58  | 57  |    |    |    |    |    |   |  |   |
| 6   | 78  | 67  | 60  | 54  | 77  | 66  | 59  | 54  | 65  | 58  | 53  | 63  | 57  | 53  | 62  | 57  | 53  | 51  |    |    |    |    |    |   |  |   |
| 7   | 73  | 62  | 54  | 49  | 72  | 61  | 54  | 49  | 59  | 53  | 48  | 58  | 52  | 48  | 57  | 52  | 48  | 46  |    |    |    |    |    |   |  |   |
| 8   | 69  | 57  | 49  | 44  | 67  | 56  | 49  | 44  | 55  | 48  | 44  | 54  | 48  | 44  | 53  | 47  | 43  | 42  |    |    |    |    |    |   |  |   |
| 9   | 64  | 52  | 45  | 40  | 63  | 52  | 45  | 40  | 51  | 44  | 40  | 50  | 44  | 40  | 49  | 44  | 40  | 38  |    |    |    |    |    |   |  |   |
| 10  | 60  | 49  | 42  | 37  | 59  | 48  | 41  | 37  | 47  | 41  | 37  | 46  | 41  | 36  | 46  | 40  | 36  | 35  |    |    |    |    |    |   |  |   |

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

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 375120 | 375120 | 375120 | 375120 |
| 5°  | 375859 | 378511 | 372574 | 369416 |
| 10° | 374607 | 380204 | 367796 | 361624 |
| 15° | 371311 | 379858 | 360497 | 351182 |
| 20° | 365258 | 377151 | 350111 | 337669 |
| 25° | 355981 | 371297 | 336999 | 321808 |
| 30° | 343868 | 362222 | 322477 | 304734 |
| 35° | 328670 | 350317 | 306055 | 284838 |
| 40° | 308035 | 334173 | 279876 | 248202 |
| 45° | 267199 | 305322 | 235964 | 199140 |
| 50° | 211294 | 254132 | 184804 | 145725 |
| 55° | 151790 | 196396 | 129804 | 92504  |
| 60° | 92802  | 133879 | 74327  | 44400  |
| 65° | 38950  | 71528  | 27813  | 13162  |
| 70° | 8721   | 20974  | 8058   | 5703   |
| 75° | 5981   | 7780   | 5543   | 3744   |
| 80° | 4276   | 5943   | 3986   | 2609   |
| 85° | 1300   | 5198   | 722    | 722    |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 305322 cd/sqm



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL4050CSD-HCD41TRH-5000lm-2700K

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 280.9  | 5.3       |
| 10°-20°   | 790.3  | 14.8      |
| 20°-30°   | 1148.3 | 21.5      |
| 30°-40°   | 1286.4 | 24.1      |
| 40°-50°   | 1083.1 | 20.3      |
| 50°-60°   | 583.2  | 10.9      |
| 60°-70°   | 143.7  | 2.7       |
| 70°-80°   | 13.7   | 0.3       |
| 80°-90°   | 2.4    | 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°    | 2219.5 | 41.6      |
| 0°-40°    | 3505.9 | 65.8      |
| 0°-60°    | 5172.2 | 97.0      |
| 0°-90°    | 5332.0 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 5332.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 90°  | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 2981 | 2981 | 2981 | 2981 | 2981 |      |
| 5°  | 2975 | 2996 | 2949 | 2924 | 2975 | 283  |
| 15° | 2850 | 2916 | 2767 | 2695 | 2850 | 803  |
| 25° | 2564 | 2674 | 2427 | 2318 | 2564 | 1179 |
| 35° | 2139 | 2280 | 1992 | 1854 | 2139 | 1334 |
| 45° | 1501 | 1716 | 1326 | 1119 | 1501 | 1147 |
| 55° | 692  | 895  | 592  | 422  | 692  | 624  |
| 65° | 131  | 240  | 93   | 44   | 131  | 147  |
| 75° | 12   | 16   | 11   | 8    | 12   | 14   |
| 85° | 1    | 4    | 0    | 0    | 1    | 2    |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 |
| 0.5°  | 2982.5 | 2984.3 | 2985.2 | 2984.3 | 2983.4 | 2981.6 | 2980.7 | 2979.8 | 2979.8 | 2979.8 | 2978.8 |
| 1°    | 2982.9 | 2986.6 | 2988.0 | 2987.5 | 2986.1 | 2984.3 | 2981.6 | 2979.3 | 2977.9 | 2976.6 | 2974.7 |
| 1.5°  | 2983.4 | 2988.0 | 2990.7 | 2990.2 | 2988.9 | 2986.1 | 2982.5 | 2978.8 | 2975.7 | 2972.9 | 2970.6 |
| 2°    | 2983.4 | 2989.3 | 2992.5 | 2992.5 | 2991.2 | 2987.5 | 2982.5 | 2977.5 | 2973.4 | 2969.3 | 2966.1 |
| 2.5°  | 2982.9 | 2990.2 | 2994.3 | 2994.3 | 2993.0 | 2988.4 | 2982.5 | 2975.7 | 2970.2 | 2965.2 | 2960.6 |
| 3°    | 2982.0 | 2990.7 | 2995.3 | 2995.7 | 2994.3 | 2989.3 | 2981.6 | 2973.8 | 2967.0 | 2960.6 | 2955.6 |
| 3.5°  | 2980.7 | 2990.7 | 2996.2 | 2997.1 | 2995.3 | 2989.3 | 2980.7 | 2971.6 | 2962.9 | 2955.1 | 2949.7 |
| 4°    | 2979.3 | 2990.2 | 2996.6 | 2997.5 | 2996.2 | 2989.3 | 2979.8 | 2968.8 | 2958.8 | 2950.1 | 2943.8 |
| 4.5°  | 2977.5 | 2989.3 | 2996.6 | 2998.0 | 2996.6 | 2988.9 | 2977.9 | 2965.6 | 2954.2 | 2944.7 | 2936.9 |
| 5°    | 2975.2 | 2988.4 | 2996.2 | 2998.4 | 2996.2 | 2988.0 | 2975.7 | 2962.0 | 2949.2 | 2938.3 | 2930.1 |
| 5.5°  | 2972.5 | 2987.0 | 2995.3 | 2998.0 | 2996.2 | 2986.6 | 2973.4 | 2958.3 | 2943.8 | 2931.9 | 2923.2 |
| 6°    | 2969.3 | 2985.2 | 2994.8 | 2997.1 | 2995.3 | 2985.2 | 2970.2 | 2953.8 | 2938.3 | 2925.1 | 2915.5 |
| 6.5°  | 2965.6 | 2982.9 | 2993.0 | 2995.7 | 2993.9 | 2982.9 | 2967.0 | 2949.2 | 2931.9 | 2917.8 | 2907.3 |
| 7°    | 2962.4 | 2980.2 | 2991.2 | 2994.3 | 2992.5 | 2980.7 | 2963.4 | 2944.2 | 2925.5 | 2910.5 | 2898.6 |
| 7.5°  | 2957.9 | 2977.5 | 2988.9 | 2992.5 | 2990.2 | 2977.9 | 2959.7 | 2938.7 | 2918.7 | 2902.3 | 2890.0 |
| 8°    | 2953.3 | 2974.3 | 2986.1 | 2990.2 | 2988.0 | 2974.7 | 2955.1 | 2932.8 | 2911.4 | 2893.6 | 2880.9 |
| 8.5°  | 2948.3 | 2970.2 | 2983.4 | 2987.5 | 2985.2 | 2971.6 | 2950.1 | 2926.4 | 2903.2 | 2884.5 | 2871.3 |
| 9°    | 2943.3 | 2966.1 | 2980.2 | 2984.3 | 2982.0 | 2967.5 | 2945.1 | 2919.6 | 2895.4 | 2875.4 | 2861.3 |
| 9.5°  | 2937.4 | 2961.5 | 2976.1 | 2981.1 | 2978.8 | 2963.4 | 2939.7 | 2912.8 | 2886.8 | 2866.3 | 2851.2 |
| 10°   | 2931.4 | 2957.0 | 2972.0 | 2977.0 | 2975.2 | 2958.8 | 2933.7 | 2905.5 | 2878.1 | 2856.2 | 2840.8 |
| 10.5° | 2925.1 | 2951.5 | 2967.5 | 2972.9 | 2970.6 | 2953.8 | 2927.3 | 2897.3 | 2868.6 | 2845.8 | 2829.4 |
| 11°   | 2918.2 | 2946.0 | 2962.4 | 2968.4 | 2966.1 | 2948.3 | 2920.5 | 2889.1 | 2859.0 | 2835.3 | 2818.0 |
| 11.5° | 2910.9 | 2939.7 | 2957.4 | 2963.4 | 2961.1 | 2942.4 | 2913.7 | 2880.4 | 2849.0 | 2823.9 | 2806.6 |
| 12°   | 2903.6 | 2933.3 | 2951.5 | 2957.9 | 2956.1 | 2936.0 | 2906.4 | 2871.7 | 2838.5 | 2812.5 | 2794.3 |
| 12.5° | 2895.4 | 2926.4 | 2945.1 | 2952.0 | 2950.1 | 2929.6 | 2898.2 | 2861.7 | 2827.5 | 2801.1 | 2781.5 |
| 13°   | 2887.2 | 2919.1 | 2938.7 | 2946.0 | 2944.2 | 2922.8 | 2890.0 | 2852.1 | 2816.1 | 2788.8 | 2769.2 |
| 13.5° | 2878.1 | 2911.4 | 2931.4 | 2939.2 | 2937.4 | 2915.5 | 2881.3 | 2842.1 | 2804.7 | 2775.6 | 2755.5 |
| 14°   | 2869.0 | 2903.2 | 2924.6 | 2932.4 | 2930.5 | 2908.2 | 2872.7 | 2831.6 | 2792.0 | 2762.8 | 2741.9 |
| 14.5° | 2859.4 | 2895.0 | 2916.9 | 2924.6 | 2923.2 | 2900.0 | 2863.1 | 2820.2 | 2779.7 | 2749.1 | 2728.2 |
| 15°   | 2849.9 | 2886.3 | 2908.7 | 2916.9 | 2915.5 | 2891.3 | 2853.5 | 2808.4 | 2766.9 | 2735.9 | 2714.0 |
| 15.5° | 2839.4 | 2876.8 | 2900.0 | 2908.7 | 2907.3 | 2882.7 | 2843.0 | 2796.5 | 2753.2 | 2720.9 | 2698.6 |
| 16°   | 2828.4 | 2867.2 | 2891.3 | 2900.5 | 2898.6 | 2873.1 | 2833.0 | 2784.7 | 2739.6 | 2706.3 | 2683.5 |
| 16.5° | 2817.1 | 2857.2 | 2881.8 | 2891.3 | 2890.0 | 2863.5 | 2821.6 | 2771.5 | 2725.0 | 2691.7 | 2668.0 |
| 17°   | 2805.7 | 2846.2 | 2872.2 | 2881.8 | 2880.9 | 2853.5 | 2810.2 | 2758.3 | 2710.9 | 2676.2 | 2652.5 |
| 17.5° | 2793.4 | 2835.7 | 2861.7 | 2871.7 | 2870.8 | 2843.0 | 2798.4 | 2745.0 | 2695.4 | 2660.3 | 2635.7 |
| 18°   | 2781.0 | 2824.3 | 2851.2 | 2861.3 | 2860.8 | 2832.1 | 2786.1 | 2731.4 | 2679.9 | 2643.9 | 2619.3 |
| 18.5° | 2768.3 | 2812.5 | 2840.3 | 2850.3 | 2850.3 | 2821.2 | 2773.8 | 2716.8 | 2663.9 | 2627.0 | 2601.9 |
| 19°   | 2755.1 | 2800.2 | 2828.4 | 2839.4 | 2839.4 | 2809.3 | 2760.5 | 2702.2 | 2647.5 | 2609.7 | 2585.1 |
| 19.5° | 2741.4 | 2787.4 | 2816.6 | 2827.5 | 2828.0 | 2797.5 | 2747.3 | 2686.7 | 2631.1 | 2592.8 | 2566.8 |
| 20°   | 2727.3 | 2774.2 | 2804.3 | 2815.2 | 2816.1 | 2784.7 | 2733.2 | 2671.2 | 2614.2 | 2575.5 | 2549.1 |
| 20.5° | 2712.7 | 2761.0 | 2791.1 | 2802.9 | 2803.8 | 2771.9 | 2719.5 | 2655.3 | 2596.9 | 2556.8 | 2530.8 |
| 21°   | 2697.6 | 2746.9 | 2777.9 | 2790.2 | 2791.1 | 2758.3 | 2704.9 | 2639.3 | 2578.7 | 2538.6 | 2512.1 |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 22.5° | 2650.2 | 2702.7 | 2735.0 | 2748.2 | 2750.5 | 2715.9 | 2658.4 | 2588.3 | 2524.0 | 2481.2 | 2454.3 |
| 23°   | 2634.3 | 2686.7 | 2720.0 | 2733.2 | 2736.4 | 2700.8 | 2642.5 | 2570.9 | 2505.3 | 2462.0 | 2434.7 |
| 23.5° | 2617.0 | 2670.8 | 2704.5 | 2718.6 | 2721.3 | 2685.8 | 2625.6 | 2552.7 | 2485.7 | 2442.0 | 2414.2 |
| 24°   | 2599.7 | 2654.3 | 2688.5 | 2702.7 | 2705.8 | 2669.8 | 2608.8 | 2534.9 | 2466.6 | 2421.9 | 2393.7 |
| 24.5° | 2581.9 | 2637.0 | 2672.1 | 2686.7 | 2689.9 | 2653.4 | 2591.5 | 2515.8 | 2447.0 | 2401.9 | 2373.1 |
| 25°   | 2563.6 | 2620.2 | 2655.3 | 2670.3 | 2673.9 | 2637.0 | 2574.1 | 2497.6 | 2426.9 | 2381.8 | 2352.6 |
| 25.5° | 2545.4 | 2602.8 | 2638.4 | 2653.9 | 2658.0 | 2620.6 | 2556.4 | 2478.4 | 2406.9 | 2360.4 | 2331.7 |
| 26°   | 2526.7 | 2584.6 | 2620.6 | 2636.6 | 2640.7 | 2602.8 | 2538.6 | 2459.3 | 2387.3 | 2339.4 | 2310.2 |
| 26.5° | 2507.6 | 2566.4 | 2603.3 | 2619.3 | 2622.9 | 2585.1 | 2519.9 | 2439.2 | 2366.3 | 2318.0 | 2288.8 |
| 27°   | 2488.9 | 2547.7 | 2585.1 | 2601.5 | 2605.6 | 2566.8 | 2501.2 | 2420.1 | 2345.3 | 2297.0 | 2266.9 |
| 27.5° | 2468.9 | 2528.6 | 2566.4 | 2583.7 | 2587.3 | 2548.6 | 2481.6 | 2400.0 | 2324.8 | 2275.6 | 2245.1 |
| 28°   | 2448.8 | 2509.4 | 2547.2 | 2565.0 | 2569.1 | 2529.5 | 2462.9 | 2380.0 | 2303.9 | 2253.7 | 2223.2 |
| 28.5° | 2428.7 | 2490.3 | 2528.1 | 2545.9 | 2550.4 | 2511.2 | 2443.3 | 2359.0 | 2282.4 | 2232.3 | 2200.4 |
| 29°   | 2408.2 | 2470.2 | 2508.5 | 2526.7 | 2531.3 | 2492.1 | 2423.3 | 2338.5 | 2261.5 | 2210.4 | 2178.1 |
| 29.5° | 2387.3 | 2450.2 | 2488.9 | 2507.6 | 2512.1 | 2472.5 | 2402.8 | 2318.0 | 2240.1 | 2187.6 | 2155.7 |
| 30°   | 2366.3 | 2429.2 | 2468.4 | 2487.1 | 2492.6 | 2452.0 | 2383.2 | 2297.5 | 2219.1 | 2165.8 | 2132.5 |
| 30.5° | 2345.3 | 2408.7 | 2448.3 | 2467.9 | 2472.5 | 2431.9 | 2362.2 | 2276.1 | 2196.8 | 2143.4 | 2109.3 |
| 31°   | 2323.5 | 2388.2 | 2427.4 | 2447.4 | 2452.4 | 2411.9 | 2341.2 | 2254.6 | 2174.9 | 2120.7 | 2085.6 |
| 31.5° | 2302.0 | 2366.3 | 2406.9 | 2426.5 | 2431.5 | 2390.9 | 2319.8 | 2233.2 | 2153.0 | 2097.9 | 2061.9 |
| 32°   | 2279.7 | 2344.9 | 2385.0 | 2405.0 | 2410.5 | 2369.5 | 2299.3 | 2212.3 | 2131.1 | 2074.6 | 2037.7 |
| 32.5° | 2257.8 | 2323.0 | 2364.0 | 2384.5 | 2389.5 | 2348.5 | 2277.4 | 2190.4 | 2108.8 | 2050.9 | 2013.1 |
| 33°   | 2234.1 | 2300.7 | 2342.1 | 2363.1 | 2368.1 | 2327.6 | 2256.0 | 2169.0 | 2085.6 | 2027.2 | 1988.9 |
| 33.5° | 2211.8 | 2278.8 | 2319.8 | 2341.2 | 2346.3 | 2305.2 | 2234.1 | 2145.7 | 2062.3 | 2003.1 | 1963.4 |
| 34°   | 2187.6 | 2256.0 | 2297.0 | 2319.4 | 2324.8 | 2283.8 | 2211.8 | 2123.4 | 2039.1 | 1979.4 | 1938.3 |
| 34.5° | 2164.4 | 2232.3 | 2275.2 | 2297.0 | 2302.0 | 2261.5 | 2189.5 | 2100.1 | 2015.8 | 1954.3 | 1913.3 |
| 35°   | 2139.3 | 2208.2 | 2251.9 | 2274.7 | 2280.2 | 2238.7 | 2166.2 | 2076.9 | 1992.1 | 1929.7 | 1886.8 |
| 35.5° | 2116.5 | 2184.9 | 2228.2 | 2251.0 | 2257.4 | 2215.4 | 2142.5 | 2053.7 | 1968.0 | 1904.6 | 1860.0 |
| 36°   | 2091.5 | 2160.8 | 2204.1 | 2228.2 | 2234.1 | 2192.2 | 2119.3 | 2030.0 | 1943.4 | 1879.1 | 1834.0 |
| 36.5° | 2066.9 | 2136.1 | 2180.8 | 2204.1 | 2210.0 | 2168.5 | 2095.1 | 2006.3 | 1918.7 | 1852.7 | 1805.3 |
| 37°   | 2040.4 | 2111.1 | 2156.2 | 2179.4 | 2185.4 | 2143.9 | 2070.5 | 1981.2 | 1893.2 | 1824.4 | 1773.8 |
| 37.5° | 2016.3 | 2086.0 | 2131.6 | 2155.3 | 2161.2 | 2119.7 | 2046.4 | 1956.1 | 1866.8 | 1793.4 | 1740.5 |
| 38°   | 1988.5 | 2060.9 | 2106.1 | 2130.7 | 2137.1 | 2095.1 | 2020.8 | 1930.6 | 1838.1 | 1761.1 | 1705.5 |
| 38.5° | 1961.1 | 2035.4 | 2081.5 | 2105.2 | 2112.0 | 2069.6 | 1994.9 | 1903.7 | 1807.5 | 1727.8 | 1669.0 |
| 39°   | 1932.4 | 2008.1 | 2056.4 | 2080.1 | 2086.9 | 2044.1 | 1968.9 | 1874.5 | 1775.2 | 1693.1 | 1632.1 |
| 39.5° | 1905.1 | 1980.3 | 2030.0 | 2054.6 | 2061.4 | 2017.2 | 1941.5 | 1843.1 | 1741.0 | 1656.7 | 1595.2 |
| 40°   | 1875.0 | 1952.5 | 2002.6 | 2027.2 | 2034.1 | 1990.8 | 1911.9 | 1811.2 | 1703.6 | 1619.8 | 1557.8 |
| 40.5° | 1843.5 | 1923.3 | 1974.4 | 1999.9 | 2007.2 | 1962.0 | 1880.5 | 1777.0 | 1666.7 | 1581.9 | 1518.6 |
| 41°   | 1811.2 | 1892.8 | 1945.2 | 1972.1 | 1979.4 | 1933.8 | 1848.1 | 1742.4 | 1629.8 | 1543.2 | 1479.9 |
| 41.5° | 1777.5 | 1860.0 | 1913.3 | 1941.5 | 1950.7 | 1903.7 | 1815.3 | 1707.7 | 1592.4 | 1505.8 | 1442.0 |
| 42°   | 1742.8 | 1826.7 | 1880.5 | 1910.1 | 1921.0 | 1872.3 | 1780.7 | 1672.2 | 1554.1 | 1464.4 | 1401.5 |
| 42.5° | 1705.9 | 1792.0 | 1846.7 | 1877.7 | 1890.0 | 1839.0 | 1746.0 | 1635.3 | 1515.9 | 1424.7 | 1361.8 |
| 43°   | 1666.7 | 1756.0 | 1812.6 | 1843.5 | 1858.1 | 1804.4 | 1710.5 | 1596.5 | 1478.5 | 1385.5 | 1320.8 |
| 43.5° | 1626.2 | 1719.1 | 1777.9 | 1808.9 | 1824.0 | 1769.3 | 1674.0 | 1558.7 | 1441.1 | 1346.3 | 1281.6 |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 45°   | 1501.3 | 1605.2 | 1669.9 | 1701.8 | 1715.5 | 1656.2 | 1560.5 | 1443.8 | 1325.8 | 1227.4 | 1159.9 |
| 45.5° | 1458.0 | 1566.4 | 1633.9 | 1665.3 | 1675.4 | 1617.0 | 1521.3 | 1405.6 | 1288.4 | 1188.6 | 1119.3 |
| 46°   | 1414.7 | 1526.3 | 1596.1 | 1628.0 | 1635.7 | 1576.5 | 1481.7 | 1366.8 | 1249.2 | 1149.4 | 1078.3 |
| 46.5° | 1372.3 | 1484.4 | 1558.2 | 1589.7 | 1594.7 | 1535.9 | 1441.6 | 1328.1 | 1211.0 | 1110.7 | 1038.7 |
| 47°   | 1329.5 | 1443.8 | 1520.4 | 1551.4 | 1552.3 | 1494.0 | 1400.1 | 1288.4 | 1172.7 | 1071.9 | 998.6  |
| 47.5° | 1287.1 | 1402.4 | 1480.3 | 1512.2 | 1510.4 | 1451.6 | 1359.1 | 1249.7 | 1134.4 | 1035.5 | 958.9  |
| 48°   | 1244.2 | 1360.9 | 1441.1 | 1472.6 | 1467.1 | 1409.2 | 1317.6 | 1211.0 | 1095.2 | 996.3  | 920.2  |
| 48.5° | 1202.3 | 1319.0 | 1401.5 | 1432.5 | 1424.7 | 1366.4 | 1276.1 | 1172.2 | 1057.4 | 958.5  | 882.8  |
| 49°   | 1161.3 | 1277.5 | 1362.7 | 1392.3 | 1381.9 | 1323.5 | 1234.2 | 1132.1 | 1019.5 | 920.6  | 844.1  |
| 49.5° | 1119.3 | 1234.7 | 1321.7 | 1351.8 | 1339.9 | 1280.7 | 1192.7 | 1093.8 | 982.2  | 884.2  | 807.2  |
| 50°   | 1079.2 | 1192.7 | 1281.1 | 1309.9 | 1298.0 | 1237.4 | 1150.3 | 1053.7 | 943.9  | 847.7  | 770.2  |
| 50.5° | 1037.3 | 1151.2 | 1240.1 | 1267.9 | 1257.9 | 1194.5 | 1108.4 | 1015.0 | 906.5  | 811.3  | 734.7  |
| 51°   | 997.7  | 1110.2 | 1199.6 | 1226.9 | 1214.6 | 1152.6 | 1066.5 | 974.9  | 870.0  | 775.7  | 699.6  |
| 51.5° | 957.6  | 1068.3 | 1157.6 | 1184.5 | 1173.6 | 1112.1 | 1025.9 | 937.5  | 834.0  | 740.6  | 666.3  |
| 52°   | 918.8  | 1028.6 | 1118.0 | 1144.4 | 1133.5 | 1071.0 | 984.9  | 898.8  | 798.0  | 705.5  | 632.6  |
| 52.5° | 879.2  | 988.5  | 1076.0 | 1102.0 | 1094.3 | 1028.6 | 944.8  | 860.0  | 762.0  | 670.9  | 600.2  |
| 53°   | 840.9  | 948.4  | 1034.6 | 1061.0 | 1052.3 | 988.1  | 904.2  | 821.7  | 726.9  | 637.2  | 567.4  |
| 53.5° | 802.6  | 908.3  | 992.6  | 1018.2 | 1011.8 | 948.4  | 865.5  | 785.3  | 692.3  | 604.3  | 536.4  |
| 54°   | 765.2  | 869.1  | 952.1  | 978.1  | 972.1  | 908.8  | 825.4  | 747.9  | 658.6  | 571.5  | 506.3  |
| 54.5° | 727.8  | 831.3  | 911.5  | 937.0  | 934.8  | 869.6  | 788.0  | 710.5  | 624.4  | 539.6  | 476.7  |
| 55°   | 691.8  | 793.0  | 871.4  | 897.8  | 895.1  | 830.4  | 750.2  | 675.0  | 591.6  | 509.1  | 448.9  |
| 55.5° | 655.4  | 755.2  | 831.3  | 856.8  | 855.9  | 793.0  | 713.7  | 639.9  | 558.8  | 478.5  | 422.9  |
| 56°   | 621.2  | 718.3  | 791.2  | 819.5  | 817.6  | 754.7  | 677.3  | 604.8  | 526.9  | 449.4  | 396.5  |
| 56.5° | 586.1  | 682.3  | 752.5  | 780.3  | 781.2  | 717.8  | 641.3  | 570.2  | 495.4  | 422.0  | 370.1  |
| 57°   | 553.3  | 646.3  | 712.4  | 742.0  | 742.9  | 681.4  | 606.6  | 537.3  | 464.9  | 395.1  | 344.1  |
| 57.5° | 520.0  | 610.7  | 675.0  | 703.2  | 706.0  | 646.3  | 572.9  | 505.0  | 434.8  | 367.8  | 317.7  |
| 58°   | 488.1  | 576.5  | 638.1  | 668.1  | 670.4  | 611.6  | 540.1  | 472.6  | 406.5  | 340.9  | 294.4  |
| 58.5° | 457.1  | 543.3  | 601.6  | 631.2  | 634.0  | 577.9  | 508.2  | 442.1  | 378.3  | 313.6  | 272.1  |
| 59°   | 427.0  | 509.1  | 565.6  | 595.2  | 599.3  | 545.1  | 476.3  | 413.4  | 350.0  | 289.0  | 250.2  |
| 59.5° | 397.9  | 476.7  | 530.5  | 559.2  | 565.6  | 512.7  | 445.7  | 384.2  | 321.8  | 265.7  | 229.2  |
| 60°   | 368.7  | 445.3  | 496.3  | 526.4  | 531.9  | 480.8  | 417.9  | 355.5  | 295.3  | 242.9  | 209.6  |
| 60.5° | 340.9  | 413.8  | 463.1  | 492.7  | 499.1  | 450.7  | 390.1  | 326.8  | 270.3  | 221.5  | 190.1  |
| 61°   | 314.0  | 383.3  | 430.7  | 459.0  | 466.7  | 422.5  | 362.3  | 300.8  | 246.1  | 200.5  | 171.8  |
| 61.5° | 288.5  | 354.6  | 400.2  | 427.5  | 436.6  | 394.7  | 334.5  | 276.2  | 222.9  | 181.4  | 155.0  |
| 62°   | 263.9  | 326.3  | 370.1  | 396.5  | 407.0  | 366.4  | 306.7  | 252.0  | 201.0  | 162.7  | 139.0  |
| 62.5° | 239.3  | 299.0  | 340.5  | 366.0  | 377.4  | 338.6  | 281.7  | 229.2  | 179.1  | 145.4  | 123.5  |
| 63°   | 215.6  | 272.1  | 312.2  | 336.8  | 347.7  | 310.4  | 257.5  | 206.5  | 159.5  | 128.5  | 108.5  |
| 63.5° | 192.3  | 246.6  | 285.3  | 307.6  | 318.1  | 285.3  | 234.7  | 186.0  | 140.8  | 113.5  | 95.3   |
| 64°   | 169.5  | 221.5  | 259.3  | 280.7  | 290.8  | 260.7  | 212.4  | 166.8  | 123.5  | 98.9   | 82.9   |
| 64.5° | 149.9  | 197.3  | 234.7  | 254.3  | 264.8  | 236.5  | 192.3  | 148.6  | 108.0  | 85.7   | 71.1   |
| 65°   | 130.8  | 174.6  | 211.0  | 229.7  | 240.2  | 214.2  | 172.3  | 131.3  | 93.4   | 73.8   | 61.1   |
| 65.5° | 111.7  | 155.0  | 188.2  | 206.0  | 216.0  | 192.3  | 154.0  | 115.3  | 79.3   | 62.9   | 53.8   |
| 66°   | 92.5   | 136.7  | 166.8  | 182.8  | 192.8  | 171.4  | 135.8  | 100.7  | 67.5   | 53.3   | 46.5   |





TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 0°   | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|------|-------|-------|-------|-------|--------|------|--------|------|--------|------|
| 67.5° | 47.9 | 82.9  | 114.4 | 126.7 | 131.7 | 115.8  | 90.7 | 62.9   | 44.2 | 35.1   | 24.6 |
| 68°   | 38.3 | 69.7  | 96.6  | 109.8 | 113.9 | 99.8   | 77.5 | 53.3   | 37.8 | 28.7   | 21.4 |
| 68.5° | 31.4 | 57.9  | 79.3  | 92.5  | 97.5  | 85.2   | 65.6 | 47.4   | 31.4 | 22.8   | 19.6 |
| 69°   | 27.3 | 47.9  | 65.6  | 75.2  | 82.0  | 72.0   | 55.6 | 41.9   | 25.1 | 20.5   | 18.2 |
| 69.5° | 25.1 | 39.7  | 53.8  | 62.4  | 68.4  | 60.2   | 48.8 | 36.0   | 23.2 | 19.1   | 16.9 |
| 70°   | 23.7 | 32.8  | 43.8  | 51.5  | 57.0  | 52.9   | 42.4 | 30.1   | 21.9 | 17.8   | 16.0 |
| 70.5° | 22.3 | 27.3  | 35.1  | 41.9  | 50.1  | 45.6   | 36.0 | 24.6   | 20.5 | 16.9   | 15.0 |
| 71°   | 21.0 | 23.2  | 28.7  | 34.2  | 43.3  | 38.3   | 29.6 | 22.3   | 19.1 | 16.0   | 13.7 |
| 71.5° | 19.6 | 21.4  | 24.2  | 28.3  | 36.5  | 31.0   | 23.2 | 21.0   | 17.8 | 14.6   | 12.8 |
| 72°   | 18.2 | 20.1  | 21.4  | 23.7  | 29.6  | 23.7   | 21.4 | 19.6   | 16.9 | 13.7   | 12.3 |
| 72.5° | 17.3 | 18.7  | 19.6  | 21.4  | 22.8  | 21.4   | 20.1 | 18.2   | 15.5 | 12.8   | 11.4 |
| 73°   | 16.4 | 17.3  | 18.2  | 20.1  | 21.0  | 20.1   | 18.7 | 17.3   | 14.6 | 11.8   | 10.5 |
| 73.5° | 15.0 | 16.4  | 17.3  | 18.7  | 19.6  | 18.7   | 17.3 | 16.0   | 13.7 | 11.4   | 10.0 |
| 74°   | 14.1 | 15.5  | 16.4  | 17.3  | 18.2  | 17.3   | 16.4 | 15.0   | 12.8 | 10.5   | 9.1  |
| 74.5° | 13.2 | 14.1  | 15.0  | 16.4  | 17.3  | 16.4   | 15.0 | 14.1   | 11.8 | 9.6    | 8.7  |
| 75°   | 12.3 | 13.2  | 14.1  | 15.0  | 16.0  | 15.0   | 14.1 | 13.2   | 11.4 | 9.1    | 7.7  |
| 75.5° | 11.4 | 12.3  | 13.2  | 14.1  | 15.0  | 14.1   | 13.2 | 12.3   | 10.5 | 8.7    | 7.3  |
| 76°   | 10.9 | 11.8  | 12.3  | 13.2  | 14.1  | 13.2   | 12.3 | 11.4   | 9.6  | 7.7    | 6.8  |
| 76.5° | 10.0 | 10.9  | 11.4  | 12.3  | 13.2  | 12.3   | 11.4 | 10.5   | 9.1  | 7.3    | 6.4  |
| 77°   | 9.6  | 10.0  | 10.9  | 11.4  | 12.3  | 11.4   | 10.9 | 10.0   | 8.7  | 6.8    | 5.9  |
| 77.5° | 8.7  | 9.6   | 10.0  | 10.9  | 11.4  | 10.9   | 10.0 | 9.1    | 7.7  | 6.4    | 5.5  |
| 78°   | 8.2  | 9.1   | 9.6   | 10.0  | 10.5  | 10.0   | 9.1  | 8.7    | 7.3  | 5.9    | 5.0  |
| 78.5° | 7.7  | 8.2   | 8.7   | 9.6   | 10.0  | 9.6    | 8.7  | 7.7    | 6.8  | 5.5    | 4.6  |
| 79°   | 6.8  | 7.7   | 8.2   | 8.7   | 9.1   | 8.7    | 8.2  | 7.3    | 6.4  | 5.0    | 4.1  |
| 79.5° | 6.4  | 7.3   | 7.7   | 8.2   | 8.7   | 8.2    | 7.3  | 6.8    | 5.9  | 4.6    | 4.1  |
| 80°   | 5.9  | 6.4   | 6.8   | 7.7   | 8.2   | 7.7    | 6.8  | 6.4    | 5.5  | 4.1    | 3.6  |
| 80.5° | 5.5  | 5.9   | 6.4   | 7.3   | 7.3   | 7.3    | 6.4  | 5.9    | 5.0  | 3.6    | 3.2  |
| 81°   | 5.0  | 5.5   | 5.9   | 6.8   | 6.8   | 6.4    | 5.9  | 5.5    | 4.6  | 3.2    | 2.7  |
| 81.5° | 4.6  | 5.0   | 5.5   | 6.4   | 6.4   | 5.9    | 5.5  | 5.0    | 4.1  | 2.7    | 2.7  |
| 82°   | 3.6  | 4.6   | 5.0   | 5.9   | 5.9   | 5.5    | 5.0  | 4.6    | 3.6  | 2.3    | 2.3  |
| 82.5° | 3.2  | 4.1   | 5.0   | 5.5   | 5.5   | 5.5    | 4.6  | 4.1    | 2.7  | 1.8    | 2.3  |
| 83°   | 2.7  | 3.6   | 4.6   | 5.0   | 5.0   | 5.0    | 4.6  | 3.6    | 2.3  | 1.8    | 1.8  |
| 83.5° | 1.8  | 3.2   | 4.1   | 4.6   | 4.6   | 4.6    | 4.1  | 3.2    | 1.8  | 1.4    | 1.8  |
| 84°   | 1.4  | 2.7   | 3.6   | 4.1   | 4.6   | 4.1    | 3.6  | 2.7    | 1.4  | 0.9    | 1.4  |
| 84.5° | 0.9  | 2.3   | 3.2   | 3.6   | 4.1   | 3.6    | 3.2  | 2.3    | 0.9  | 0.9    | 0.9  |
| 85°   | 0.9  | 1.8   | 3.2   | 3.6   | 3.6   | 3.6    | 3.2  | 1.8    | 0.5  | 0.9    | 0.9  |
| 85.5° | 0.5  | 1.8   | 2.7   | 3.2   | 3.2   | 3.2    | 2.7  | 1.8    | 0.5  | 0.5    | 0.5  |
| 86°   | 0.5  | 1.4   | 2.7   | 2.7   | 3.2   | 2.7    | 2.3  | 1.4    | 0.5  | 0.5    | 0.5  |
| 86.5° | 0.5  | 1.4   | 2.3   | 2.7   | 2.7   | 2.7    | 2.3  | 1.4    | 0.5  | 0.5    | 0.0  |
| 87°   | 0.5  | 1.4   | 1.8   | 2.3   | 2.3   | 2.3    | 1.8  | 0.9    | 0.0  | 0.0    | 0.0  |
| 87.5° | 0.0  | 0.9   | 1.8   | 1.8   | 2.3   | 1.8    | 1.4  | 0.9    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0  | 0.5   | 1.4   | 1.8   | 1.8   | 1.8    | 1.4  | 0.5    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.0  | 0.5   | 0.9   | 1.4   | 1.4   | 1.4    | 0.9  | 0.5    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776550  
CATALOG NUMBER: HCDJBL4050CSD-HCD41TRH-5000lm-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 | 0.5   | 0.5 | 0.5    | 0.0  | 0.0    | 0.0  | 0.0    | 0.5  |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 0°    | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 | 2980.7 |
| 0.5°  | 2977.0 | 2975.7 | 2975.7 | 2977.5 | 2979.3 | 2982.5 |
| 1°    | 2972.9 | 2971.6 | 2972.5 | 2975.2 | 2978.8 | 2982.9 |
| 1.5°  | 2968.4 | 2967.0 | 2968.4 | 2972.5 | 2977.9 | 2983.4 |
| 2°    | 2963.4 | 2962.0 | 2964.3 | 2969.7 | 2976.1 | 2983.4 |
| 2.5°  | 2958.3 | 2957.0 | 2959.7 | 2966.1 | 2974.3 | 2982.9 |
| 3°    | 2952.4 | 2951.0 | 2955.1 | 2962.4 | 2972.0 | 2982.0 |
| 3.5°  | 2946.0 | 2945.1 | 2949.7 | 2958.3 | 2969.3 | 2980.7 |
| 4°    | 2939.7 | 2938.3 | 2944.2 | 2953.8 | 2966.1 | 2979.3 |
| 4.5°  | 2932.8 | 2931.4 | 2937.8 | 2948.8 | 2962.9 | 2977.5 |
| 5°    | 2925.5 | 2924.2 | 2931.4 | 2943.8 | 2959.2 | 2975.2 |
| 5.5°  | 2917.8 | 2916.4 | 2924.6 | 2938.3 | 2954.7 | 2972.5 |
| 6°    | 2909.6 | 2908.7 | 2917.3 | 2932.4 | 2950.1 | 2969.3 |
| 6.5°  | 2901.4 | 2900.5 | 2909.6 | 2926.0 | 2945.1 | 2965.6 |
| 7°    | 2892.7 | 2891.3 | 2901.4 | 2918.7 | 2940.1 | 2962.4 |
| 7.5°  | 2883.6 | 2882.2 | 2893.2 | 2911.4 | 2934.2 | 2957.9 |
| 8°    | 2874.0 | 2872.2 | 2884.0 | 2903.6 | 2928.7 | 2953.3 |
| 8.5°  | 2864.0 | 2862.6 | 2874.9 | 2895.9 | 2922.3 | 2948.3 |
| 9°    | 2854.0 | 2852.1 | 2864.9 | 2887.7 | 2915.5 | 2943.3 |
| 9.5°  | 2843.5 | 2841.2 | 2854.9 | 2878.6 | 2907.7 | 2937.4 |
| 10°   | 2832.5 | 2829.8 | 2844.4 | 2869.5 | 2900.5 | 2931.4 |
| 10.5° | 2821.2 | 2818.4 | 2833.5 | 2860.3 | 2892.7 | 2925.1 |
| 11°   | 2809.3 | 2806.6 | 2822.5 | 2850.8 | 2884.5 | 2918.2 |
| 11.5° | 2797.0 | 2794.3 | 2810.7 | 2840.3 | 2875.8 | 2910.9 |
| 12°   | 2784.7 | 2781.5 | 2798.8 | 2829.4 | 2866.7 | 2903.6 |
| 12.5° | 2771.5 | 2767.8 | 2786.1 | 2818.0 | 2856.7 | 2895.4 |
| 13°   | 2758.3 | 2754.6 | 2772.8 | 2807.0 | 2847.1 | 2887.2 |
| 13.5° | 2744.6 | 2740.5 | 2759.6 | 2794.7 | 2837.1 | 2878.1 |
| 14°   | 2730.5 | 2725.9 | 2746.0 | 2782.4 | 2826.6 | 2869.0 |
| 14.5° | 2715.9 | 2711.3 | 2731.4 | 2769.7 | 2815.2 | 2859.4 |
| 15°   | 2700.8 | 2695.4 | 2716.8 | 2756.9 | 2803.8 | 2849.9 |
| 15.5° | 2685.8 | 2679.4 | 2701.3 | 2743.2 | 2791.5 | 2839.4 |
| 16°   | 2669.8 | 2663.5 | 2686.2 | 2729.1 | 2779.2 | 2828.4 |
| 16.5° | 2653.4 | 2647.1 | 2669.8 | 2715.0 | 2766.9 | 2817.1 |
| 17°   | 2637.0 | 2630.2 | 2653.9 | 2700.4 | 2754.2 | 2805.7 |
| 17.5° | 2620.2 | 2612.9 | 2637.0 | 2685.3 | 2740.0 | 2793.4 |
| 18°   | 2603.3 | 2595.1 | 2620.2 | 2669.4 | 2726.4 | 2781.0 |
| 18.5° | 2585.5 | 2576.9 | 2602.4 | 2653.4 | 2711.8 | 2768.3 |
| 19°   | 2567.8 | 2558.6 | 2584.6 | 2637.0 | 2697.2 | 2755.1 |
| 19.5° | 2549.1 | 2540.4 | 2566.8 | 2620.6 | 2682.1 | 2741.4 |
| 20°   | 2530.4 | 2521.3 | 2548.6 | 2603.3 | 2666.7 | 2727.3 |
| 20.5° | 2511.7 | 2501.7 | 2529.9 | 2586.0 | 2650.7 | 2712.7 |
| 21°   | 2492.6 | 2482.1 | 2510.3 | 2568.2 | 2634.3 | 2697.6 |

TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 2433.3 | 2421.9 | 2452.4 | 2513.1 | 2583.7 | 2650.2 |
| 23°   | 2412.8 | 2401.4 | 2431.9 | 2494.4 | 2565.9 | 2634.3 |
| 23.5° | 2392.7 | 2380.9 | 2412.3 | 2475.2 | 2548.2 | 2617.0 |
| 24°   | 2371.8 | 2359.9 | 2391.8 | 2455.2 | 2529.5 | 2599.7 |
| 24.5° | 2350.8 | 2339.0 | 2371.3 | 2435.6 | 2511.2 | 2581.9 |
| 25°   | 2329.8 | 2317.5 | 2349.9 | 2415.5 | 2492.1 | 2563.6 |
| 25.5° | 2308.0 | 2296.1 | 2329.4 | 2395.5 | 2473.0 | 2545.4 |
| 26°   | 2286.5 | 2275.2 | 2308.0 | 2375.0 | 2453.8 | 2526.7 |
| 26.5° | 2264.7 | 2253.3 | 2287.0 | 2354.5 | 2434.2 | 2507.6 |
| 27°   | 2242.8 | 2231.9 | 2265.6 | 2333.5 | 2414.2 | 2488.9 |
| 27.5° | 2220.9 | 2209.5 | 2244.2 | 2312.5 | 2394.1 | 2468.9 |
| 28°   | 2198.6 | 2187.2 | 2222.3 | 2291.1 | 2373.1 | 2448.8 |
| 28.5° | 2175.8 | 2164.9 | 2200.0 | 2269.7 | 2352.6 | 2428.7 |
| 29°   | 2153.9 | 2143.0 | 2178.5 | 2247.8 | 2331.2 | 2408.2 |
| 29.5° | 2131.1 | 2120.2 | 2156.2 | 2225.9 | 2310.2 | 2387.3 |
| 30°   | 2107.9 | 2097.0 | 2133.9 | 2204.1 | 2288.8 | 2366.3 |
| 30.5° | 2084.2 | 2073.7 | 2111.1 | 2181.3 | 2266.5 | 2345.3 |
| 31°   | 2060.5 | 2050.5 | 2087.4 | 2158.9 | 2244.2 | 2323.5 |
| 31.5° | 2036.8 | 2026.8 | 2064.1 | 2135.7 | 2222.3 | 2302.0 |
| 32°   | 2012.2 | 2003.1 | 2040.9 | 2112.4 | 2199.5 | 2279.7 |
| 32.5° | 1988.5 | 1978.9 | 2017.2 | 2088.7 | 2176.7 | 2257.8 |
| 33°   | 1963.9 | 1954.3 | 1993.0 | 2065.5 | 2152.6 | 2234.1 |
| 33.5° | 1939.3 | 1930.6 | 1969.3 | 2041.3 | 2128.9 | 2211.8 |
| 34°   | 1914.2 | 1905.5 | 1945.2 | 2017.2 | 2105.2 | 2187.6 |
| 34.5° | 1888.7 | 1880.0 | 1919.7 | 1992.1 | 2080.1 | 2164.4 |
| 35°   | 1862.2 | 1854.0 | 1894.1 | 1968.0 | 2055.9 | 2139.3 |
| 35.5° | 1836.3 | 1827.6 | 1868.6 | 1942.4 | 2030.9 | 2116.5 |
| 36°   | 1809.4 | 1798.9 | 1842.2 | 1916.9 | 2005.8 | 2091.5 |
| 36.5° | 1778.8 | 1768.8 | 1813.5 | 1889.1 | 1980.3 | 2066.9 |
| 37°   | 1746.0 | 1735.5 | 1781.6 | 1861.8 | 1952.9 | 2040.4 |
| 37.5° | 1712.3 | 1700.0 | 1748.3 | 1831.2 | 1925.1 | 2016.3 |
| 38°   | 1676.3 | 1663.5 | 1712.7 | 1798.9 | 1896.9 | 1988.5 |
| 38.5° | 1639.8 | 1626.2 | 1676.3 | 1765.2 | 1867.7 | 1961.1 |
| 39°   | 1602.5 | 1588.8 | 1639.4 | 1731.0 | 1836.7 | 1932.4 |
| 39.5° | 1564.2 | 1550.5 | 1601.5 | 1696.3 | 1803.9 | 1905.1 |
| 40°   | 1524.5 | 1510.8 | 1564.2 | 1659.9 | 1768.8 | 1875.0 |
| 40.5° | 1486.2 | 1471.2 | 1525.4 | 1623.0 | 1734.2 | 1843.5 |
| 41°   | 1445.7 | 1432.0 | 1488.1 | 1585.6 | 1698.2 | 1811.2 |
| 41.5° | 1406.0 | 1392.8 | 1449.3 | 1546.8 | 1661.7 | 1777.5 |
| 42°   | 1365.5 | 1354.1 | 1411.0 | 1508.1 | 1624.8 | 1742.8 |
| 42.5° | 1325.8 | 1314.4 | 1372.7 | 1469.4 | 1585.6 | 1705.9 |
| 43°   | 1284.3 | 1274.8 | 1334.9 | 1429.3 | 1546.4 | 1666.7 |
| 43.5° | 1244.7 | 1236.0 | 1296.2 | 1388.7 | 1505.8 | 1626.2 |

TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 45°   | 1124.8 | 1118.9 | 1178.6 | 1267.9 | 1382.3 | 1501.3 |
| 45.5° | 1085.2 | 1080.2 | 1139.4 | 1226.0 | 1340.4 | 1458.0 |
| 46°   | 1046.0 | 1041.4 | 1098.8 | 1187.3 | 1298.0 | 1414.7 |
| 46.5° | 1007.7 | 1002.7 | 1058.3 | 1146.2 | 1254.3 | 1372.3 |
| 47°   | 968.0  | 964.4  | 1020.0 | 1105.7 | 1211.4 | 1329.5 |
| 47.5° | 930.2  | 926.6  | 979.9  | 1064.2 | 1168.6 | 1287.1 |
| 48°   | 893.3  | 889.2  | 942.1  | 1025.0 | 1126.2 | 1244.2 |
| 48.5° | 855.9  | 852.3  | 903.3  | 983.5  | 1082.9 | 1202.3 |
| 49°   | 819.0  | 816.3  | 865.0  | 944.8  | 1041.4 | 1161.3 |
| 49.5° | 782.1  | 779.8  | 828.1  | 904.7  | 999.9  | 1119.3 |
| 50°   | 746.5  | 744.3  | 790.7  | 865.5  | 958.0  | 1079.2 |
| 50.5° | 711.0  | 708.7  | 753.8  | 824.0  | 917.0  | 1037.3 |
| 51°   | 676.8  | 674.5  | 716.9  | 788.0  | 877.3  | 997.7  |
| 51.5° | 643.5  | 640.8  | 681.8  | 749.3  | 838.1  | 957.6  |
| 52°   | 609.4  | 607.5  | 646.7  | 711.9  | 799.9  | 918.8  |
| 52.5° | 577.0  | 575.2  | 612.5  | 672.7  | 761.6  | 879.2  |
| 53°   | 545.1  | 542.8  | 578.4  | 638.5  | 724.2  | 840.9  |
| 53.5° | 514.1  | 511.4  | 544.6  | 603.0  | 688.2  | 802.6  |
| 54°   | 484.0  | 480.8  | 511.8  | 567.0  | 652.2  | 765.2  |
| 54.5° | 454.4  | 451.2  | 480.8  | 533.2  | 618.0  | 727.8  |
| 55°   | 428.0  | 421.6  | 449.8  | 500.4  | 583.8  | 691.8  |
| 55.5° | 401.1  | 393.3  | 418.8  | 468.5  | 550.6  | 655.4  |
| 56°   | 374.6  | 365.1  | 389.7  | 437.5  | 518.2  | 621.2  |
| 56.5° | 347.7  | 338.2  | 361.0  | 407.0  | 487.2  | 586.1  |
| 57°   | 320.9  | 312.2  | 333.6  | 377.8  | 456.2  | 553.3  |
| 57.5° | 297.2  | 286.7  | 306.7  | 350.5  | 426.1  | 520.0  |
| 58°   | 274.4  | 262.5  | 280.7  | 323.6  | 397.0  | 488.1  |
| 58.5° | 252.0  | 239.3  | 256.6  | 298.1  | 369.2  | 457.1  |
| 59°   | 231.5  | 217.4  | 232.9  | 273.0  | 341.8  | 427.0  |
| 59.5° | 210.6  | 196.4  | 211.0  | 249.8  | 315.4  | 397.9  |
| 60°   | 191.0  | 176.4  | 190.1  | 227.9  | 289.9  | 368.7  |
| 60.5° | 172.3  | 157.7  | 170.0  | 206.0  | 265.3  | 340.9  |
| 61°   | 155.4  | 141.7  | 153.6  | 185.5  | 241.6  | 314.0  |
| 61.5° | 138.1  | 125.8  | 137.6  | 166.8  | 219.2  | 288.5  |
| 62°   | 122.6  | 110.3  | 121.7  | 151.3  | 198.3  | 263.9  |
| 62.5° | 108.5  | 94.3   | 105.7  | 135.4  | 177.3  | 239.3  |
| 63°   | 95.3   | 81.6   | 89.8   | 119.9  | 157.7  | 215.6  |
| 63.5° | 82.0   | 70.6   | 77.5   | 104.4  | 141.3  | 192.3  |
| 64°   | 70.6   | 60.2   | 66.5   | 88.9   | 125.3  | 169.5  |
| 64.5° | 60.2   | 52.0   | 57.4   | 76.6   | 109.4  | 149.9  |
| 65°   | 53.8   | 44.2   | 49.2   | 65.6   | 93.4   | 130.8  |
| 65.5° | 47.4   | 37.8   | 42.4   | 55.6   | 80.2   | 111.7  |
| 66°   | 41.0   | 31.9   | 36.0   | 46.9   | 67.9   | 92.5   |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|------|--------|------|--------|------|
| 67.5° | 22.3   | 21.4 | 23.2   | 27.8 | 39.7   | 47.9 |
| 68°   | 20.1   | 20.1 | 21.0   | 24.2 | 33.3   | 38.3 |
| 68.5° | 18.7   | 18.7 | 19.6   | 21.4 | 27.8   | 31.4 |
| 69°   | 17.8   | 17.3 | 18.2   | 20.1 | 24.2   | 27.3 |
| 69.5° | 16.4   | 16.4 | 17.3   | 18.7 | 21.9   | 25.1 |
| 70°   | 15.5   | 15.5 | 16.4   | 17.8 | 20.5   | 23.7 |
| 70.5° | 14.6   | 14.6 | 15.0   | 16.4 | 19.1   | 22.3 |
| 71°   | 13.2   | 13.2 | 14.1   | 15.5 | 17.8   | 21.0 |
| 71.5° | 12.3   | 12.3 | 13.2   | 14.6 | 16.9   | 19.6 |
| 72°   | 11.8   | 11.8 | 12.3   | 13.7 | 16.0   | 18.2 |
| 72.5° | 10.9   | 10.9 | 11.4   | 12.8 | 14.6   | 17.3 |
| 73°   | 10.0   | 10.0 | 10.5   | 11.8 | 13.7   | 16.4 |
| 73.5° | 9.6    | 9.6  | 10.0   | 10.9 | 12.8   | 15.0 |
| 74°   | 8.7    | 8.7  | 9.1    | 10.0 | 11.8   | 14.1 |
| 74.5° | 8.2    | 8.2  | 8.7    | 9.6  | 10.9   | 13.2 |
| 75°   | 7.7    | 7.7  | 8.2    | 9.1  | 10.5   | 12.3 |
| 75.5° | 7.3    | 7.3  | 7.7    | 8.2  | 9.6    | 11.4 |
| 76°   | 6.8    | 6.8  | 6.8    | 7.7  | 9.1    | 10.9 |
| 76.5° | 6.4    | 6.4  | 6.4    | 7.3  | 8.2    | 10.0 |
| 77°   | 5.9    | 5.9  | 5.9    | 6.8  | 7.7    | 9.6  |
| 77.5° | 5.5    | 5.5  | 5.5    | 6.4  | 7.3    | 8.7  |
| 78°   | 5.0    | 5.0  | 5.5    | 5.9  | 6.8    | 8.2  |
| 78.5° | 4.6    | 4.6  | 5.0    | 5.5  | 5.9    | 7.7  |
| 79°   | 4.1    | 4.1  | 4.6    | 5.0  | 5.5    | 6.8  |
| 79.5° | 4.1    | 4.1  | 4.1    | 4.6  | 5.0    | 6.4  |
| 80°   | 3.6    | 3.6  | 3.6    | 4.1  | 4.6    | 5.9  |
| 80.5° | 3.2    | 3.2  | 3.6    | 3.6  | 4.1    | 5.5  |
| 81°   | 3.2    | 3.2  | 3.2    | 3.2  | 3.6    | 5.0  |
| 81.5° | 2.7    | 2.7  | 2.7    | 3.2  | 3.2    | 4.6  |
| 82°   | 2.3    | 2.3  | 2.7    | 2.7  | 2.7    | 3.6  |
| 82.5° | 2.3    | 2.3  | 2.3    | 2.3  | 2.3    | 3.2  |
| 83°   | 1.8    | 1.8  | 1.8    | 2.3  | 1.8    | 2.7  |
| 83.5° | 1.8    | 1.4  | 1.8    | 1.8  | 1.8    | 1.8  |
| 84°   | 1.4    | 1.4  | 1.4    | 1.8  | 1.4    | 1.4  |
| 84.5° | 0.9    | 0.9  | 0.9    | 1.4  | 1.4    | 0.9  |
| 85°   | 0.9    | 0.5  | 0.9    | 0.9  | 0.9    | 0.9  |
| 85.5° | 0.5    | 0.5  | 0.5    | 0.9  | 0.9    | 0.5  |
| 86°   | 0.0    | 0.0  | 0.0    | 0.5  | 0.5    | 0.5  |
| 86.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.5    | 0.5  |
| 87°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.5  |
| 87.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0    | 0.5  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.5    | 0.5  | 0.5    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776550

CATALOG NUMBER: HCDJBL54050CSD-HCD41TRH-5000lm-2700K

**CANDELA DISTRIBUTION (continued):**

|     | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-----|--------|------|--------|------|--------|------|
| 90° | 0.0    | 0.0  | 0.0    | 0.0  | 0.5    | 0.0  |

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

Scaled Data Report



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° | 2682.1 | 2732.7 | 2764.2 | 2776.0 | 2778.3 | 2744.6 | 2689.4 | 2622.4 | 2560.9 | 2519.4 | 2493.0 |
| 22°   | 2666.7 | 2717.7 | 2750.1 | 2762.4 | 2764.2 | 2730.5 | 2673.9 | 2605.1 | 2542.7 | 2500.8 | 2473.9 |



|       |        |        |        |        |        |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 44°   | 1585.1 | 1681.8 | 1742.8 | 1773.8 | 1788.9 | 1732.3 | 1637.1 | 1521.3 | 1402.4 | 1305.8 | 1240.1 |
| 44.5° | 1544.1 | 1643.9 | 1706.8 | 1737.8 | 1753.3 | 1694.5 | 1598.8 | 1483.0 | 1364.1 | 1267.0 | 1199.6 |



|       |      |       |       |       |       |       |       |      |      |      |      |
|-------|------|-------|-------|-------|-------|-------|-------|------|------|------|------|
| 66.5° | 73.4 | 119.0 | 149.5 | 161.3 | 171.4 | 151.8 | 119.4 | 86.6 | 57.0 | 46.9 | 39.2 |
| 67°   | 59.2 | 100.7 | 131.7 | 144.0 | 150.9 | 133.1 | 104.4 | 73.8 | 50.6 | 41.0 | 31.9 |



|       |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 89°   | 0.0 | 0.0 | 0.9 | 0.9 | 1.4 | 0.9 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 |
| 89.5° | 0.0 | 0.0 | 0.5 | 0.5 | 0.9 | 0.5 | 0.5 | 0.0 | 0.0 | 0.0 | 0.5 |



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Cooper Lighting Solutions Photometric Lab  
1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report





|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 2472.5 | 2462.5 | 2491.2 | 2550.4 | 2617.9 | 2682.1 |
| 22°   | 2452.9 | 2442.0 | 2472.0 | 2531.7 | 2600.6 | 2666.7 |



|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 44°   | 1204.6 | 1197.3 | 1257.0 | 1348.6 | 1465.7 | 1585.1 |
| 44.5° | 1164.9 | 1157.6 | 1216.9 | 1307.1 | 1425.2 | 1544.1 |



|       |      |      |      |      |      |      |
|-------|------|------|------|------|------|------|
| 66.5° | 35.1 | 27.8 | 30.5 | 39.2 | 57.4 | 73.4 |
| 67°   | 28.7 | 23.7 | 26.4 | 32.8 | 47.9 | 59.2 |

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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 89°   | 0.5 | 0.5 | 0.0 | 0.5 | 0.0 | 0.0 |
| 89.5° | 0.5 | 0.0 | 0.0 | 0.5 | 0.0 | 0.0 |

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1121 Highway 74 South  
Peachtree City, GA 30269

Scaled Data Report



(END OF REPORT)