

Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-State
Lighting Products

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: P236291

Luminaire Tested: **4SWLED-60HL-LC-UNV-L850-CD1-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-79-08
Report Number: P236291
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P26870)
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4SWLED-60HL-LC-UNV-L850-CD1-U
Description: METALUX SWLED LINEAR LUMINAIRE
4FT FIXTURE WITH 2 ROW LED, CLEAR LENS
Light Source: (224) 5000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

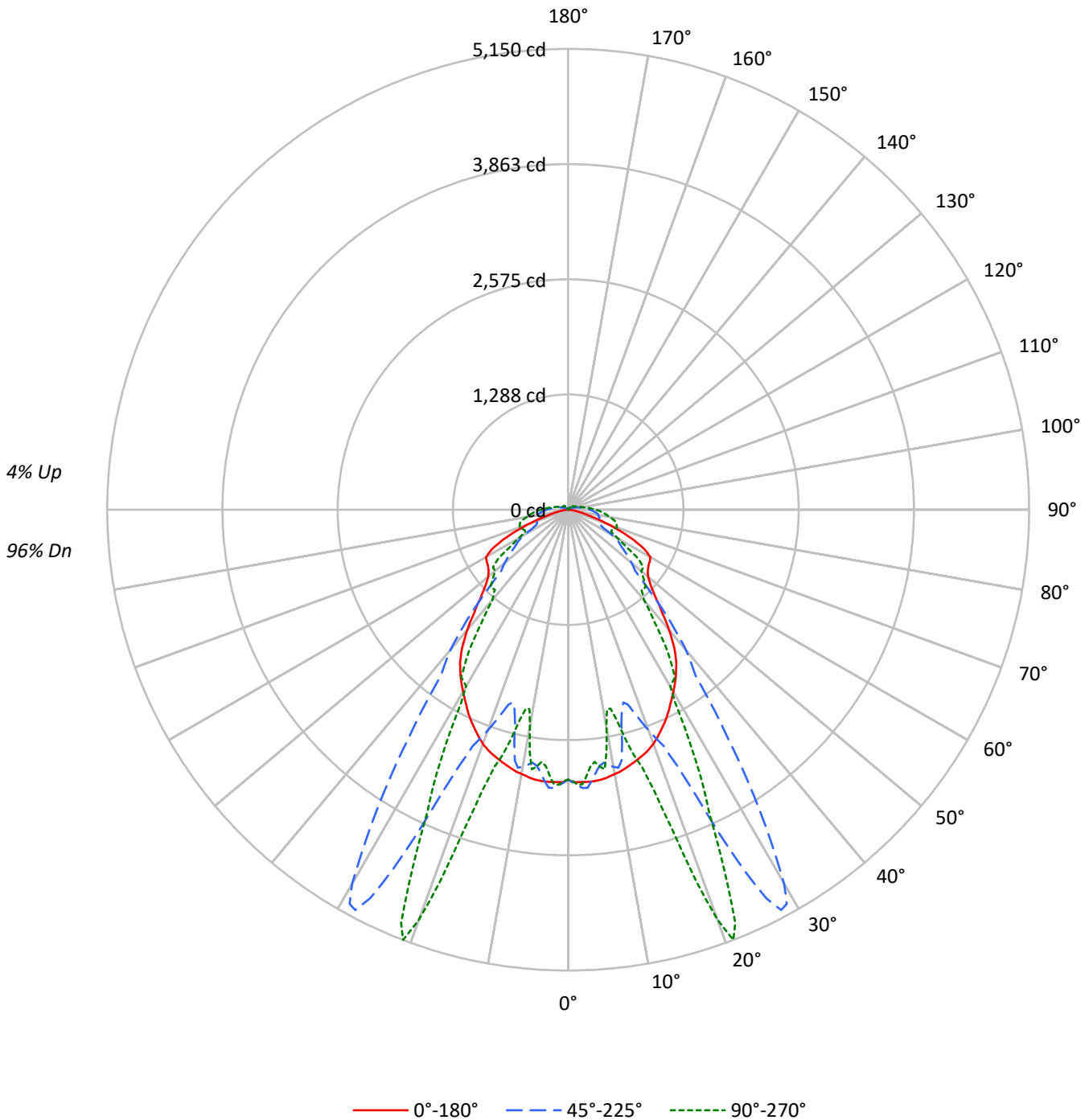
Lumens per Lamp: N/A
Luminaire Lumens: 8225.0 lumens
Efficiency: N/A
Efficacy: 143.8 lumens/watt
Spacing Criteria (0/90/45): 1.17 / 1.15 / 1.24
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 4' x H: 0.15')
CIE Type: Direct

Input Watts (W): 57.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

Luminous Intensity Polar Plot





TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

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 | 118 | 118 | 118 | 118 | 115 | 115 | 115 | 115 | 109 | 109 | 109 | 103 | 103 | 103 | 98 | 98 | 98 | 96 | | | | |
| 1 | 108 | 103 | 99 | 96 | 105 | 101 | 97 | 94 | 96 | 93 | 90 | 91 | 89 | 86 | 87 | 85 | 83 | 81 | | | | |
| 2 | 99 | 91 | 85 | 80 | 96 | 89 | 83 | 78 | 85 | 80 | 76 | 81 | 77 | 74 | 78 | 74 | 71 | 69 | | | | |
| 3 | 91 | 81 | 74 | 68 | 88 | 79 | 72 | 67 | 76 | 70 | 65 | 73 | 68 | 63 | 70 | 65 | 62 | 59 | | | | |
| 4 | 84 | 73 | 65 | 58 | 81 | 71 | 64 | 58 | 68 | 62 | 56 | 65 | 60 | 55 | 63 | 58 | 54 | 52 | | | | |
| 5 | 78 | 66 | 57 | 51 | 75 | 64 | 56 | 50 | 62 | 55 | 49 | 59 | 53 | 49 | 57 | 52 | 48 | 46 | | | | |
| 6 | 72 | 59 | 51 | 45 | 70 | 58 | 50 | 45 | 56 | 49 | 44 | 54 | 48 | 43 | 52 | 47 | 42 | 40 | | | | |
| 7 | 67 | 54 | 46 | 40 | 65 | 53 | 45 | 40 | 51 | 44 | 39 | 49 | 43 | 39 | 48 | 42 | 38 | 36 | | | | |
| 8 | 62 | 50 | 41 | 36 | 61 | 49 | 41 | 36 | 47 | 40 | 35 | 46 | 39 | 35 | 44 | 38 | 34 | 32 | | | | |
| 9 | 58 | 46 | 38 | 32 | 57 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 31 | 41 | 35 | 31 | 29 | | | | |
| 10 | 55 | 42 | 35 | 29 | 53 | 41 | 34 | 29 | 40 | 34 | 29 | 39 | 33 | 29 | 38 | 32 | 28 | 27 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 21655 | 21655 | 21655 |
| 5° | 21882 | 21338 | 20033 |
| 10° | 21715 | 20196 | 16747 |
| 15° | 21405 | 15894 | 19101 |
| 20° | 20988 | 18071 | 32625 |
| 25° | 20122 | 27722 | 24930 |
| 30° | 19085 | 34064 | 15415 |
| 35° | 17994 | 22443 | 13336 |
| 40° | 15916 | 15305 | 9300 |
| 45° | 13474 | 10098 | 8957 |
| 50° | 12460 | 7615 | 8128 |
| 55° | 12999 | 6383 | 7675 |
| 60° | 14301 | 5417 | 5476 |
| 65° | 12807 | 4017 | 4975 |
| 70° | 9059 | 4225 | 5875 |
| 75° | 5210 | 4710 | 6285 |
| 80° | 3287 | 5211 | 6032 |
| 85° | 1778 | 5572 | 5932 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 282.5 | 3.4 |
| 10°-20° | 794.6 | 9.7 |
| 20°-30° | 1565.6 | 19.0 |
| 30°-40° | 1615.4 | 19.6 |
| 40°-50° | 1357.4 | 16.5 |
| 50°-60° | 1001.2 | 12.2 |
| 60°-70° | 567.7 | 6.9 |
| 70°-80° | 407.5 | 5.0 |
| 80°-90° | 276.3 | 3.4 |
| 90°-100° | 165.0 | 2.0 |
| 100°-110° | 86.2 | 1.0 |
| 110°-120° | 48.2 | 0.6 |
| 120°-130° | 28.3 | 0.3 |
| 130°-140° | 19.6 | 0.2 |
| 140°-150° | 7.1 | 0.1 |
| 150°-160° | 2.0 | 0.0 |
| 160°-170° | 0.5 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 2642.6 | 32.1 |
| 0°-40° | 4258.0 | 51.8 |
| 0°-60° | 6616.6 | 80.4 |
| 0°-90° | 7868.1 | 95.7 |
| 90°-120° | 299.5 | 3.6 |
| 90°-150° | 354.4 | 4.3 |
| 90°-180° | 357.0 | 4.3 |
| 0°-180° | 8225.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|------|-------|------|-------|------|------|
| 0° | 3018 | 3018 | 3018 | 3018 | 3018 | |
| 5° | 3047 | 3092 | 3040 | 2897 | 2876 | 289 |
| 15° | 2909 | 2784 | 2312 | 2603 | 2839 | 820 |
| 25° | 2585 | 2307 | 3992 | 4483 | 3720 | 1186 |
| 35° | 2106 | 2595 | 3102 | 2102 | 1937 | 1303 |
| 45° | 1376 | 3465 | 1294 | 1169 | 1226 | 1084 |
| 55° | 1093 | 1944 | 729 | 920 | 954 | 987 |
| 65° | 813 | 780 | 389 | 477 | 537 | 788 |
| 75° | 214 | 315 | 361 | 518 | 556 | 255 |
| 85° | 31 | 132 | 300 | 368 | 392 | 39 |
| 90° | 2 | 96 | 239 | 295 | 304 | 2 |
| 95° | 1 | 77 | 187 | 217 | 227 | 1 |
| 105° | 1 | 40 | 98 | 116 | 125 | 1 |
| 115° | 2 | 18 | 54 | 77 | 86 | 2 |
| 125° | 2 | 8 | 32 | 50 | 61 | 2 |
| 135° | 2 | 4 | 24 | 48 | 59 | 2 |
| 145° | 2 | 2 | 9 | 17 | 22 | 1 |
| 155° | 3 | 3 | 4 | 5 | 7 | 1 |
| 165° | 3 | 3 | 3 | 1 | 2 | 1 |
| 175° | 0 | 0 | 0 | 0 | 0 | 0 |
| 180° | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 |
| 1° | 3043.3 | 3041.2 | 3029.0 | 3022.8 | 3021.8 | 3019.8 | 3020.8 | 3022.8 | 3028.0 | 3028.0 | 3051.4 |
| 2° | 3046.3 | 3045.3 | 3037.1 | 3033.1 | 3033.1 | 3033.1 | 3035.1 | 3041.2 | 3045.3 | 3046.3 | 3082.1 |
| 3° | 3047.4 | 3048.4 | 3043.3 | 3040.2 | 3047.4 | 3047.4 | 3050.4 | 3058.6 | 3072.9 | 3078.0 | 3114.8 |
| 4° | 3049.4 | 3053.5 | 3050.4 | 3049.4 | 3063.7 | 3073.9 | 3080.1 | 3091.3 | 3100.5 | 3101.5 | 3115.8 |
| 5° | 3047.4 | 3052.5 | 3052.5 | 3064.7 | 3084.1 | 3092.3 | 3097.4 | 3104.6 | 3090.3 | 3051.4 | 3040.2 |
| 6° | 3045.3 | 3053.5 | 3058.6 | 3081.1 | 3098.4 | 3105.6 | 3106.6 | 3074.9 | 3037.1 | 2992.2 | 2955.4 |
| 7° | 3040.2 | 3048.4 | 3064.7 | 3094.4 | 3105.6 | 3104.6 | 3087.2 | 3021.8 | 2955.4 | 2898.2 | 2881.9 |
| 8° | 3028.0 | 3040.2 | 3072.9 | 3097.4 | 3089.2 | 3057.6 | 3024.9 | 2953.4 | 2891.1 | 2850.2 | 2853.3 |
| 9° | 3013.6 | 3026.9 | 3072.9 | 3090.3 | 3050.4 | 3005.5 | 2964.6 | 2875.7 | 2835.9 | 2829.8 | 2884.9 |
| 10° | 2999.3 | 3020.8 | 3073.9 | 3074.9 | 2988.1 | 2942.1 | 2886.0 | 2825.7 | 2824.7 | 2858.4 | 2918.6 |
| 11° | 2987.1 | 3012.6 | 3067.8 | 3044.3 | 2935.0 | 2883.9 | 2826.7 | 2809.3 | 2849.2 | 2887.0 | 2938.1 |
| 12° | 2969.7 | 3004.5 | 3054.5 | 3003.4 | 2866.5 | 2817.5 | 2787.9 | 2820.6 | 2868.6 | 2903.3 | 2864.5 |
| 13° | 2949.3 | 2988.1 | 3029.0 | 2942.1 | 2810.4 | 2776.6 | 2787.9 | 2842.0 | 2872.7 | 2852.2 | 2679.6 |
| 14° | 2927.8 | 2977.9 | 2998.3 | 2888.0 | 2759.3 | 2767.4 | 2803.2 | 2846.1 | 2851.2 | 2674.5 | 2457.9 |
| 15° | 2909.4 | 2964.6 | 2965.6 | 2827.7 | 2741.9 | 2783.8 | 2811.4 | 2831.8 | 2751.1 | 2502.9 | 2311.8 |
| 16° | 2888.0 | 2950.3 | 2929.9 | 2784.8 | 2758.3 | 2797.1 | 2812.4 | 2795.0 | 2561.1 | 2319.0 | 2240.3 |
| 17° | 2866.5 | 2929.9 | 2884.9 | 2747.0 | 2777.7 | 2799.1 | 2798.1 | 2688.8 | 2420.1 | 2237.3 | 2275.0 |
| 18° | 2842.0 | 2904.3 | 2844.1 | 2720.5 | 2785.8 | 2786.9 | 2763.4 | 2564.2 | 2279.1 | 2220.9 | 2381.3 |
| 19° | 2814.4 | 2874.7 | 2800.1 | 2704.1 | 2775.6 | 2753.1 | 2691.9 | 2425.2 | 2225.0 | 2283.2 | 2501.8 |
| 20° | 2784.8 | 2841.0 | 2760.3 | 2706.2 | 2750.1 | 2700.0 | 2607.1 | 2316.9 | 2221.9 | 2383.3 | 2625.4 |
| 21° | 2748.0 | 2801.2 | 2722.5 | 2716.4 | 2703.1 | 2615.2 | 2498.8 | 2253.6 | 2271.0 | 2476.3 | 2737.8 |
| 22° | 2708.2 | 2759.3 | 2692.9 | 2716.4 | 2631.6 | 2533.5 | 2401.7 | 2228.1 | 2354.7 | 2573.3 | 2849.2 |
| 23° | 2665.3 | 2720.5 | 2665.3 | 2703.1 | 2543.7 | 2442.6 | 2323.1 | 2250.5 | 2415.0 | 2668.4 | 3099.5 |
| 24° | 2626.5 | 2676.5 | 2646.9 | 2671.4 | 2465.1 | 2366.0 | 2274.0 | 2299.6 | 2471.2 | 2775.6 | 3448.8 |
| 25° | 2584.6 | 2634.6 | 2630.6 | 2620.3 | 2393.6 | 2306.7 | 2263.8 | 2339.4 | 2545.8 | 3038.2 | 3992.3 |
| 26° | 2538.6 | 2589.7 | 2615.2 | 2545.8 | 2339.4 | 2276.1 | 2278.1 | 2369.0 | 2645.9 | 3368.1 | 4481.7 |
| 27° | 2489.6 | 2547.8 | 2585.6 | 2464.0 | 2301.6 | 2273.0 | 2307.7 | 2390.5 | 2877.8 | 3885.1 | 4871.9 |
| 28° | 2440.5 | 2499.8 | 2543.7 | 2382.3 | 2279.1 | 2293.4 | 2320.0 | 2436.5 | 3174.0 | 4329.4 | 5067.0 |
| 29° | 2393.6 | 2454.8 | 2496.7 | 2319.0 | 2276.1 | 2319.0 | 2318.0 | 2572.3 | 3634.8 | 4712.5 | 5036.4 |
| 30° | 2351.7 | 2409.9 | 2442.6 | 2277.1 | 2292.4 | 2322.0 | 2316.9 | 2797.1 | 4028.1 | 4908.7 | 4824.9 |
| 32.5° | 2233.2 | 2279.1 | 2280.2 | 2239.3 | 2319.0 | 2313.9 | 2496.7 | 3697.1 | 4686.0 | 4714.6 | 3979.0 |
| 35° | 2106.5 | 2120.8 | 2141.2 | 2265.9 | 2336.3 | 2594.8 | 3204.7 | 4283.5 | 4645.1 | 3919.8 | 3101.5 |
| 37.5° | 1949.2 | 1947.1 | 2085.0 | 2285.3 | 2682.7 | 3280.3 | 3767.6 | 4376.4 | 3978.0 | 3035.1 | 2335.3 |
| 40° | 1751.0 | 1773.5 | 2074.8 | 2361.9 | 3243.5 | 3574.5 | 3817.6 | 4101.6 | 3084.1 | 2339.4 | 2046.2 |
| 42.5° | 1548.7 | 1650.9 | 2074.8 | 2675.5 | 3352.8 | 3535.7 | 3782.9 | 3425.3 | 2442.6 | 1995.1 | 1673.3 |
| 45° | 1376.1 | 1586.5 | 2090.1 | 2935.0 | 3245.5 | 3465.2 | 3504.0 | 2734.8 | 2024.8 | 1544.6 | 1294.3 |
| 47.5° | 1248.4 | 1526.2 | 2222.9 | 2833.9 | 3133.2 | 3186.3 | 3040.2 | 2282.2 | 1510.9 | 1135.0 | 1014.4 |
| 50° | 1164.6 | 1454.7 | 2280.2 | 2634.6 | 2900.3 | 2833.9 | 2618.3 | 1683.6 | 1043.0 | 918.4 | 926.6 |
| 52.5° | 1120.7 | 1439.4 | 2123.9 | 2448.7 | 2606.0 | 2463.0 | 2064.6 | 1139.1 | 840.8 | 822.4 | 827.5 |
| 55° | 1093.1 | 1393.4 | 1895.0 | 2194.3 | 2237.3 | 1944.1 | 1524.2 | 857.1 | 719.2 | 709.0 | 729.4 |
| 57.5° | 1079.8 | 1262.7 | 1669.3 | 1860.3 | 1757.1 | 1496.6 | 1157.4 | 653.8 | 585.4 | 605.8 | 667.1 |
| 60° | 1059.4 | 1125.8 | 1340.3 | 1462.9 | 1399.6 | 1185.0 | 877.5 | 520.0 | 508.7 | 546.5 | 574.1 |
| 62.5° | 963.3 | 966.4 | 937.8 | 1155.4 | 1145.2 | 961.3 | 693.7 | 445.4 | 426.0 | 437.2 | 443.4 |
| 65° | 813.2 | 749.8 | 648.7 | 950.1 | 945.0 | 780.5 | 552.7 | 353.5 | 344.3 | 369.8 | 389.2 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 67.5° | 645.6 | 540.4 | 486.3 | 760.1 | 750.9 | 618.1 | 442.3 | 304.4 | 321.8 | 348.4 | 377.0 |
| 70° | 475.0 | 397.4 | 383.1 | 598.6 | 591.5 | 495.5 | 370.8 | 282.0 | 310.6 | 338.1 | 367.8 |
| 72.5° | 323.8 | 294.2 | 301.4 | 451.5 | 462.8 | 396.4 | 314.6 | 267.7 | 293.2 | 324.9 | 369.8 |
| 75° | 213.5 | 215.6 | 231.9 | 332.0 | 354.5 | 314.6 | 265.6 | 249.3 | 276.8 | 314.6 | 360.6 |
| 77.5° | 146.1 | 153.2 | 172.6 | 238.0 | 264.6 | 245.2 | 225.8 | 229.9 | 259.5 | 303.4 | 351.4 |
| 80° | 96.0 | 103.2 | 123.6 | 168.6 | 196.1 | 195.1 | 194.1 | 213.5 | 247.2 | 294.2 | 341.2 |
| 82.5° | 58.2 | 65.4 | 84.8 | 119.5 | 148.1 | 157.3 | 169.6 | 198.2 | 239.0 | 291.1 | 328.9 |
| 85° | 30.6 | 37.8 | 56.2 | 85.8 | 115.4 | 131.8 | 149.2 | 185.9 | 235.0 | 279.9 | 300.3 |
| 87.5° | 12.3 | 19.4 | 36.8 | 62.3 | 94.0 | 112.4 | 132.8 | 176.7 | 227.8 | 257.4 | 268.7 |
| 90° | 2.0 | 9.2 | 23.5 | 47.0 | 77.6 | 96.0 | 118.5 | 169.6 | 211.5 | 224.7 | 239.0 |
| 92.5° | 1.0 | 5.1 | 16.3 | 35.8 | 65.4 | 84.8 | 108.3 | 157.3 | 184.9 | 198.2 | 211.5 |
| 95° | 1.0 | 3.1 | 12.3 | 28.6 | 56.2 | 76.6 | 99.1 | 137.9 | 158.3 | 171.6 | 186.9 |
| 97.5° | 1.0 | 3.1 | 9.2 | 23.5 | 51.1 | 69.5 | 88.9 | 116.5 | 133.8 | 149.2 | 162.4 |
| 100° | 1.0 | 2.0 | 8.2 | 20.4 | 44.9 | 59.3 | 73.6 | 95.0 | 110.3 | 126.7 | 138.9 |
| 102.5° | 1.0 | 2.0 | 7.2 | 18.4 | 38.8 | 50.1 | 60.3 | 76.6 | 93.0 | 106.2 | 118.5 |
| 105° | 1.0 | 2.0 | 6.1 | 16.3 | 31.7 | 39.8 | 48.0 | 63.3 | 77.6 | 89.9 | 98.1 |
| 107.5° | 1.0 | 2.0 | 5.1 | 13.3 | 25.5 | 32.7 | 39.8 | 53.1 | 65.4 | 74.6 | 82.7 |
| 110° | 1.0 | 1.0 | 4.1 | 11.2 | 21.5 | 27.6 | 32.7 | 43.9 | 54.1 | 63.3 | 70.5 |
| 112.5° | 2.0 | 2.0 | 4.1 | 9.2 | 17.4 | 22.5 | 27.6 | 36.8 | 46.0 | 54.1 | 61.3 |
| 115° | 2.0 | 2.0 | 3.1 | 7.2 | 14.3 | 18.4 | 22.5 | 30.6 | 38.8 | 47.0 | 54.1 |
| 117.5° | 2.0 | 2.0 | 3.1 | 6.1 | 11.2 | 15.3 | 18.4 | 25.5 | 32.7 | 40.9 | 48.0 |
| 120° | 2.0 | 2.0 | 2.0 | 5.1 | 10.2 | 12.3 | 15.3 | 21.5 | 28.6 | 35.8 | 41.9 |
| 122.5° | 2.0 | 2.0 | 2.0 | 4.1 | 8.2 | 10.2 | 12.3 | 18.4 | 24.5 | 30.6 | 36.8 |
| 125° | 2.0 | 2.0 | 2.0 | 3.1 | 6.1 | 8.2 | 10.2 | 15.3 | 20.4 | 26.6 | 31.7 |
| 127.5° | 2.0 | 2.0 | 2.0 | 3.1 | 5.1 | 7.2 | 8.2 | 12.3 | 17.4 | 21.5 | 27.6 |
| 130° | 2.0 | 2.0 | 2.0 | 2.0 | 4.1 | 5.1 | 7.2 | 10.2 | 14.3 | 19.4 | 24.5 |
| 132.5° | 2.0 | 2.0 | 2.0 | 2.0 | 4.1 | 5.1 | 6.1 | 9.2 | 14.3 | 18.4 | 23.5 |
| 135° | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 4.1 | 6.1 | 9.2 | 13.3 | 18.4 | 23.5 |
| 137.5° | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 4.1 | 5.1 | 8.2 | 12.3 | 17.4 | 21.5 |
| 140° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 4.1 | 7.2 | 10.2 | 13.3 | 17.4 |
| 142.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 5.1 | 7.2 | 10.2 | 13.3 |
| 145° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 4.1 | 5.1 | 7.2 | 9.2 |
| 147.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 4.1 | 5.1 | 7.2 |
| 150° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 3.1 | 4.1 | 5.1 |
| 152.5° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 4.1 | 4.1 |
| 155° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 4.1 |
| 157.5° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| 160° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| 162.5° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| 165° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

| | | | | | | | | | | | |
|------|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|
| | 0° | 5° | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

| | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 | 3017.7 |
| 1° | 3059.6 | 3055.5 | 3052.5 | 3048.4 | 3044.3 | 3043.3 | 3041.2 | 3040.2 | 3032.0 | 3033.1 |
| 2° | 3089.2 | 3092.3 | 3090.3 | 3086.2 | 3089.2 | 3085.2 | 3083.1 | 3079.0 | 3076.0 | 3077.0 |
| 3° | 3125.0 | 3124.0 | 3114.8 | 3103.5 | 3096.4 | 3096.4 | 3081.1 | 3074.9 | 3056.6 | 3072.9 |
| 4° | 3093.3 | 3071.9 | 3037.1 | 3020.8 | 3005.5 | 3003.4 | 2985.0 | 2967.7 | 2958.5 | 2974.8 |
| 5° | 3007.5 | 2975.9 | 2931.9 | 2914.6 | 2897.2 | 2899.2 | 2883.9 | 2872.7 | 2865.5 | 2875.7 |
| 6° | 2921.7 | 2893.1 | 2862.5 | 2844.1 | 2836.9 | 2831.8 | 2829.8 | 2832.8 | 2834.9 | 2833.9 |
| 7° | 2861.4 | 2855.3 | 2852.2 | 2860.4 | 2867.6 | 2867.6 | 2879.8 | 2890.0 | 2893.1 | 2891.1 |
| 8° | 2872.7 | 2893.1 | 2906.4 | 2911.5 | 2912.5 | 2914.6 | 2934.0 | 2934.0 | 2927.8 | 2929.9 |
| 9° | 2918.6 | 2932.9 | 2947.2 | 2928.9 | 2893.1 | 2886.0 | 2818.5 | 2778.7 | 2722.5 | 2738.8 |
| 10° | 2954.4 | 2927.8 | 2817.5 | 2726.6 | 2665.3 | 2644.9 | 2542.7 | 2497.8 | 2439.5 | 2455.9 |
| 11° | 2893.1 | 2750.1 | 2583.6 | 2470.2 | 2411.9 | 2378.2 | 2311.8 | 2284.2 | 2273.0 | 2269.9 |
| 12° | 2665.3 | 2498.8 | 2349.6 | 2284.2 | 2257.7 | 2247.5 | 2240.3 | 2248.5 | 2266.9 | 2272.0 |
| 13° | 2457.9 | 2320.0 | 2251.6 | 2256.7 | 2269.9 | 2286.3 | 2343.5 | 2377.2 | 2409.9 | 2410.9 |
| 14° | 2290.4 | 2248.5 | 2303.7 | 2373.1 | 2413.0 | 2438.5 | 2518.2 | 2573.3 | 2633.6 | 2644.9 |
| 15° | 2246.4 | 2315.9 | 2446.7 | 2552.9 | 2603.0 | 2657.1 | 2762.3 | 2807.3 | 2841.0 | 2839.0 |
| 16° | 2322.0 | 2441.6 | 2623.4 | 2748.0 | 2799.1 | 2834.9 | 2902.3 | 2943.2 | 2983.0 | 2989.1 |
| 17° | 2448.7 | 2631.6 | 2799.1 | 2895.1 | 2931.9 | 2972.8 | 3097.4 | 3183.2 | 3255.8 | 3279.3 |
| 18° | 2581.5 | 2773.6 | 2906.4 | 3061.7 | 3158.7 | 3238.4 | 3412.1 | 3570.4 | 3722.6 | 3751.2 |
| 19° | 2729.7 | 2897.2 | 3118.9 | 3385.5 | 3505.0 | 3683.8 | 3993.3 | 4186.4 | 4340.7 | 4390.7 |
| 20° | 2826.7 | 3091.3 | 3435.6 | 3937.2 | 4105.7 | 4303.9 | 4600.2 | 4747.3 | 4853.5 | 4877.0 |
| 21° | 2997.3 | 3431.5 | 4023.0 | 4518.4 | 4689.0 | 4799.4 | 4995.5 | 5088.5 | 5115.0 | 5149.8 |
| 22° | 3280.3 | 3970.9 | 4578.7 | 4939.3 | 5053.7 | 5117.1 | 5138.5 | 5069.1 | 5006.7 | 4982.2 |
| 23° | 3799.2 | 4502.1 | 4946.5 | 5146.7 | 5135.5 | 5057.8 | 4883.1 | 4718.7 | 4611.4 | 4566.4 |
| 24° | 4363.2 | 4910.7 | 5130.4 | 4960.8 | 4863.7 | 4698.2 | 4475.5 | 4310.0 | 4195.6 | 4140.4 |
| 25° | 4761.6 | 5113.0 | 4927.1 | 4606.3 | 4482.7 | 4311.1 | 4041.4 | 3883.0 | 3770.6 | 3719.6 |
| 26° | 5059.9 | 5014.9 | 4583.8 | 4216.0 | 4071.0 | 3905.5 | 3668.5 | 3579.6 | 3496.9 | 3447.8 |
| 27° | 5087.4 | 4722.7 | 4219.1 | 3813.5 | 3683.8 | 3566.3 | 3388.6 | 3260.9 | 3174.0 | 3128.1 |
| 28° | 4865.8 | 4381.5 | 3830.9 | 3506.0 | 3400.8 | 3257.8 | 3056.6 | 2930.9 | 2869.6 | 2800.1 |
| 29° | 4582.8 | 3990.3 | 3508.1 | 3169.9 | 3055.5 | 2911.5 | 2711.3 | 2545.8 | 2505.9 | 2463.0 |
| 30° | 4202.8 | 3633.7 | 3187.3 | 2810.4 | 2701.0 | 2545.8 | 2392.5 | 2338.4 | 2311.8 | 2278.1 |
| 32.5° | 3308.9 | 2737.8 | 2366.0 | 2222.9 | 2190.3 | 2176.0 | 2232.1 | 2241.3 | 2239.3 | 2220.9 |
| 35° | 2476.3 | 2164.7 | 2151.4 | 2130.0 | 2102.4 | 2075.8 | 2023.7 | 1994.1 | 1968.6 | 1936.9 |
| 37.5° | 2114.7 | 2027.8 | 1906.3 | 1801.0 | 1754.0 | 1718.3 | 1664.1 | 1634.5 | 1610.0 | 1591.6 |
| 40° | 1853.1 | 1674.4 | 1552.8 | 1479.2 | 1453.7 | 1411.8 | 1378.1 | 1359.7 | 1341.3 | 1316.8 |
| 42.5° | 1495.6 | 1336.2 | 1240.2 | 1188.1 | 1172.8 | 1156.4 | 1169.7 | 1191.2 | 1201.4 | 1212.6 |
| 45° | 1151.3 | 1078.8 | 1101.3 | 1149.3 | 1168.7 | 1189.1 | 1218.7 | 1224.9 | 1226.9 | 1225.9 |
| 47.5° | 1003.2 | 1055.3 | 1081.8 | 1097.2 | 1094.1 | 1102.3 | 1126.8 | 1143.1 | 1153.4 | 1144.2 |
| 50° | 953.1 | 960.3 | 997.1 | 1034.9 | 1041.0 | 1030.8 | 1035.9 | 1049.2 | 1063.5 | 1065.5 |
| 52.5° | 862.2 | 892.9 | 921.5 | 947.0 | 969.5 | 992.0 | 1028.7 | 1047.1 | 1058.4 | 1058.4 |
| 55° | 774.4 | 830.5 | 870.4 | 906.1 | 920.4 | 926.6 | 945.0 | 952.1 | 959.3 | 954.2 |
| 57.5° | 719.2 | 745.8 | 772.3 | 767.2 | 756.0 | 739.6 | 749.8 | 762.1 | 767.2 | 764.1 |
| 60° | 581.3 | 582.3 | 585.4 | 593.5 | 606.8 | 619.1 | 631.3 | 634.4 | 639.5 | 638.5 |
| 62.5° | 459.7 | 469.9 | 486.3 | 512.8 | 520.0 | 520.0 | 532.2 | 541.4 | 544.5 | 540.4 |
| 65° | 412.7 | 433.1 | 461.8 | 477.1 | 477.1 | 480.1 | 502.6 | 529.2 | 539.4 | 537.3 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

| | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 67.5° | 403.5 | 439.3 | 453.6 | 475.0 | 491.4 | 507.7 | 530.2 | 545.5 | 554.7 | 557.8 |
| 70° | 409.7 | 436.2 | 464.8 | 494.4 | 507.7 | 522.0 | 548.6 | 570.0 | 578.2 | 579.2 |
| 72.5° | 408.6 | 443.4 | 472.0 | 507.7 | 523.0 | 536.3 | 555.7 | 563.9 | 567.0 | 567.0 |
| 75° | 405.6 | 440.3 | 480.1 | 505.7 | 517.9 | 531.2 | 542.5 | 548.6 | 553.7 | 555.7 |
| 77.5° | 392.3 | 430.1 | 449.5 | 473.0 | 481.2 | 487.3 | 501.6 | 511.8 | 519.0 | 520.0 |
| 80° | 375.9 | 393.3 | 407.6 | 427.0 | 433.1 | 442.3 | 456.6 | 462.8 | 467.9 | 467.9 |
| 82.5° | 344.3 | 356.5 | 371.9 | 392.3 | 403.5 | 412.7 | 424.0 | 428.0 | 431.1 | 432.1 |
| 85° | 310.6 | 322.8 | 342.2 | 359.6 | 367.8 | 375.9 | 386.2 | 392.3 | 394.3 | 392.3 |
| 87.5° | 279.9 | 297.3 | 315.7 | 328.9 | 332.0 | 336.1 | 344.3 | 349.4 | 351.4 | 353.5 |
| 90° | 252.3 | 269.7 | 284.0 | 295.2 | 295.2 | 299.3 | 303.4 | 304.4 | 302.4 | 304.4 |
| 92.5° | 227.8 | 239.0 | 247.2 | 252.3 | 252.3 | 255.4 | 260.5 | 262.5 | 261.5 | 262.5 |
| 95° | 198.2 | 206.4 | 210.4 | 213.5 | 216.6 | 220.7 | 224.7 | 225.8 | 225.8 | 226.8 |
| 97.5° | 171.6 | 177.8 | 181.8 | 184.9 | 185.9 | 189.0 | 189.0 | 190.0 | 190.0 | 191.0 |
| 100° | 148.1 | 154.3 | 155.3 | 154.3 | 155.3 | 156.3 | 157.3 | 159.4 | 160.4 | 161.4 |
| 102.5° | 125.7 | 130.8 | 132.8 | 133.8 | 134.8 | 136.9 | 138.9 | 140.0 | 142.0 | 142.0 |
| 105° | 104.2 | 110.3 | 114.4 | 116.5 | 116.5 | 118.5 | 120.5 | 122.6 | 123.6 | 124.6 |
| 107.5° | 88.9 | 95.0 | 100.1 | 102.2 | 104.2 | 105.2 | 107.3 | 109.3 | 110.3 | 111.4 |
| 110° | 76.6 | 82.7 | 88.9 | 93.0 | 94.0 | 96.0 | 98.1 | 100.1 | 101.1 | 102.2 |
| 112.5° | 68.4 | 73.6 | 78.7 | 82.7 | 84.8 | 86.8 | 88.9 | 90.9 | 93.0 | 93.0 |
| 115° | 60.3 | 66.4 | 70.5 | 74.6 | 76.6 | 77.6 | 80.7 | 83.8 | 84.8 | 85.8 |
| 117.5° | 54.1 | 59.3 | 63.3 | 67.4 | 69.5 | 71.5 | 73.6 | 75.6 | 77.6 | 77.6 |
| 120° | 48.0 | 53.1 | 57.2 | 60.3 | 62.3 | 63.3 | 66.4 | 68.4 | 69.5 | 70.5 |
| 122.5° | 41.9 | 47.0 | 50.1 | 54.1 | 55.2 | 57.2 | 60.3 | 62.3 | 63.3 | 64.4 |
| 125° | 36.8 | 40.9 | 44.9 | 49.0 | 50.1 | 52.1 | 56.2 | 58.2 | 60.3 | 61.3 |
| 127.5° | 32.7 | 36.8 | 41.9 | 46.0 | 48.0 | 51.1 | 55.2 | 58.2 | 60.3 | 61.3 |
| 130° | 29.6 | 35.8 | 40.9 | 46.0 | 49.0 | 51.1 | 56.2 | 60.3 | 62.3 | 62.3 |
| 132.5° | 29.6 | 35.8 | 41.9 | 47.0 | 50.1 | 52.1 | 57.2 | 61.3 | 63.3 | 64.4 |
| 135° | 28.6 | 33.7 | 39.8 | 44.9 | 48.0 | 50.1 | 54.1 | 57.2 | 59.3 | 59.3 |
| 137.5° | 25.5 | 29.6 | 33.7 | 37.8 | 40.9 | 42.9 | 46.0 | 48.0 | 50.1 | 50.1 |
| 140° | 20.4 | 23.5 | 26.6 | 29.6 | 31.7 | 33.7 | 36.8 | 37.8 | 39.8 | 39.8 |
| 142.5° | 15.3 | 17.4 | 20.4 | 22.5 | 23.5 | 25.5 | 27.6 | 29.6 | 30.6 | 30.6 |
| 145° | 11.2 | 13.3 | 14.3 | 16.3 | 17.4 | 18.4 | 20.4 | 21.5 | 22.5 | 22.5 |
| 147.5° | 8.2 | 9.2 | 10.2 | 12.3 | 12.3 | 13.3 | 15.3 | 16.3 | 16.3 | 16.3 |
| 150° | 6.1 | 7.2 | 8.2 | 8.2 | 9.2 | 9.2 | 11.2 | 12.3 | 12.3 | 12.3 |
| 152.5° | 5.1 | 5.1 | 6.1 | 6.1 | 7.2 | 7.2 | 8.2 | 9.2 | 9.2 | 9.2 |
| 155° | 4.1 | 4.1 | 4.1 | 4.1 | 5.1 | 5.1 | 6.1 | 6.1 | 7.2 | 7.2 |
| 157.5° | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 3.1 | 4.1 | 4.1 | 5.1 | 5.1 |
| 160° | 3.1 | 3.1 | 2.0 | 2.0 | 2.0 | 2.0 | 3.1 | 3.1 | 3.1 | 3.1 |
| 162.5° | 3.1 | 2.0 | 2.0 | 2.0 | 1.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 165° | 2.0 | 2.0 | 2.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 2.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P236291

CATALOG NUMBER: 4SWLED-60HL-LC-UNV-L850-CD1-U

CANDELA DISTRIBUTION (continued):

| | | | | | | | | | | |
|------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|
| | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)