

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



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: P776468

Luminaire Tested: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

Issue Date: 2/13/2024

**Test Information**

Test Method: LM-79-2019  
Report Number: P776468  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA ( A2312156B063-HCD82TRH)  
Test Lab:  
Issue Date: 2/13/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: HALO COMMERCIAL  
Catalog Number: HCDJBL3040CSD-HCD82TRH-4000lm-4000K  
Description: 8 INCH ROUND NARROW HAZE TRIM  
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 4000K CCT  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4490.2 lumens  
Efficiency: N/A  
Efficacy: 116.6 lumens/watt  
Spacing Criteria (0/90/45): 0.64 / 0.65 / 0.67  
Luminous Opening: Circular (Dia: 0.67' x H: 0')  
CIE Type: Direct

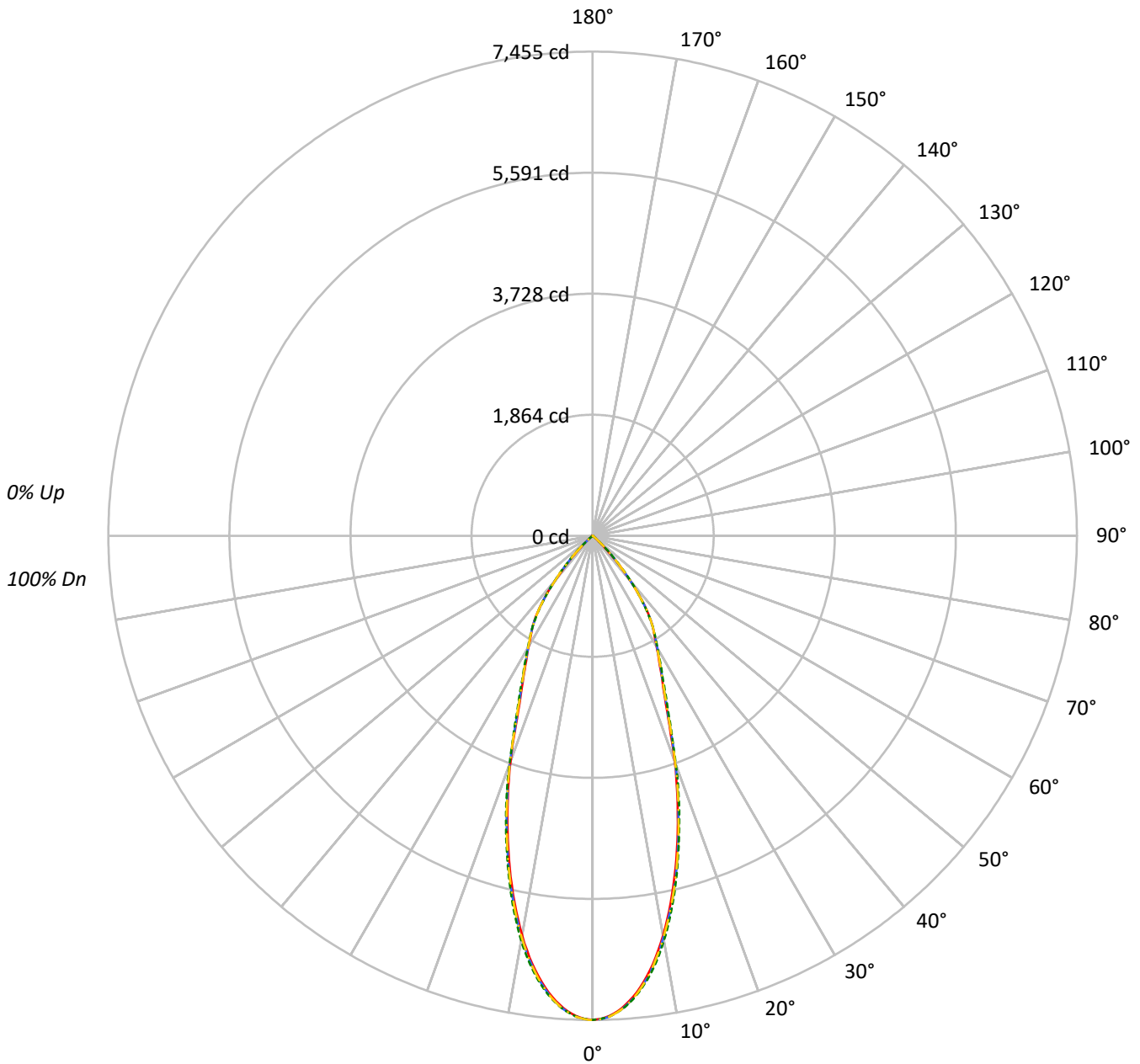
Input Watts (W): 38.5  
Input Voltage (V): NR  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

### Luminous Intensity Polar Plot





TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**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 | 100 | 100 | 100 | 100 |  |   |
|     | 1  | 114 | 111 | 109 | 107 | 111 | 109 | 107 | 105 | 105 | 103 | 102 | 101 | 100 | 99  | 98  | 97  | 96  | 94  | 94  | 94  | 94  | 94  | 94  |  |   |
|     | 2  | 108 | 104 | 100 | 97  | 106 | 102 | 99  | 96  | 99  | 96  | 94  | 96  | 94  | 92  | 93  | 91  | 90  | 88  | 88  | 88  | 88  | 88  | 88  |  |   |
|     | 3  | 103 | 97  | 93  | 89  | 101 | 96  | 92  | 88  | 93  | 90  | 87  | 91  | 88  | 85  | 89  | 86  | 84  | 82  | 82  | 82  | 82  | 82  | 82  |  |   |
|     | 4  | 98  | 91  | 86  | 82  | 97  | 90  | 85  | 82  | 88  | 84  | 81  | 86  | 82  | 80  | 84  | 81  | 79  | 77  | 77  | 77  | 77  | 77  | 77  |  |   |
|     | 5  | 94  | 86  | 80  | 76  | 92  | 85  | 80  | 76  | 83  | 79  | 75  | 82  | 78  | 75  | 80  | 77  | 74  | 72  | 72  | 72  | 72  | 72  | 72  |  |   |
|     | 6  | 89  | 81  | 75  | 71  | 88  | 80  | 75  | 71  | 79  | 74  | 70  | 77  | 73  | 70  | 76  | 72  | 69  | 68  | 68  | 68  | 68  | 68  | 68  |  |   |
|     | 7  | 85  | 76  | 71  | 67  | 84  | 76  | 70  | 67  | 75  | 70  | 66  | 73  | 69  | 66  | 72  | 68  | 65  | 64  | 64  | 64  | 64  | 64  | 64  |  |   |
|     | 8  | 81  | 72  | 67  | 63  | 80  | 72  | 66  | 63  | 71  | 66  | 62  | 70  | 65  | 62  | 69  | 65  | 62  | 61  | 61  | 61  | 61  | 61  | 61  |  |   |
|     | 9  | 78  | 69  | 63  | 59  | 77  | 68  | 63  | 59  | 67  | 62  | 59  | 66  | 62  | 59  | 66  | 62  | 59  | 57  | 57  | 57  | 57  | 57  | 57  |  |   |
|     | 10 | 74  | 65  | 60  | 56  | 73  | 65  | 60  | 56  | 64  | 59  | 56  | 63  | 59  | 56  | 63  | 58  | 56  | 54  | 54  | 54  | 54  | 54  | 54  |  |   |

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

|     | 0°     | 90°    | 180°   | 270°   |
|-----|--------|--------|--------|--------|
| 0°  | 227597 | 227597 | 227597 | 227597 |
| 5°  | 218476 | 219475 | 218476 | 219475 |
| 10° | 193727 | 196151 | 193727 | 196151 |
| 15° | 158330 | 160890 | 158330 | 160890 |
| 20° | 120114 | 121618 | 120114 | 121618 |
| 25° | 86604  | 88956  | 86604  | 88956  |
| 30° | 69477  | 70542  | 69477  | 70542  |
| 35° | 56871  | 56390  | 56871  | 56390  |
| 40° | 35674  | 36431  | 35674  | 36431  |
| 45° | 13592  | 15764  | 13592  | 15764  |
| 50° | 2028   | 2855   | 2028   | 2855   |
| 55° | 431    | 452    | 431    | 452    |
| 60° | 269    | 269    | 269    | 269    |
| 65° | 173    | 173    | 173    | 173    |
| 70° | 107    | 143    | 107    | 143    |
| 75° | 94     | 94     | 94     | 94     |
| 80° | 70     | 70     | 70     | 70     |
| 85° | 0      | 0      | 0      | 0      |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 90°  
 Vertical Angle: 45°  
 Luminance: 15764 cd/sqm



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 654.7  | 14.6      |
| 10°-20°   | 1389.2 | 30.9      |
| 20°-30°   | 1220.0 | 27.2      |
| 30°-40°   | 921.3  | 20.5      |
| 40°-50°   | 290.3  | 6.5       |
| 50°-60°   | 11.1   | 0.2       |
| 60°-70°   | 2.7    | 0.1       |
| 70°-80°   | 0.8    | 0.0       |
| 80°-90°   | 0.1    | 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°    | 3263.8 | 72.7      |
| 0°-40°    | 4185.1 | 93.2      |
| 0°-60°    | 4486.6 | 99.9      |
| 0°-90°    | 4490.2 | 100.0     |
| 90°-120°  | 0.0    | 0.0       |
| 90°-150°  | 0.0    | 0.0       |
| 90°-180°  | 0.0    | 0.0       |
| 0°-180°   | 4490.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|     | 0°   | 90°  | 180° | 270° | 360° | Flux |
|-----|------|------|------|------|------|------|
| 0°  | 7455 | 7455 | 7455 | 7455 | 7455 |      |
| 5°  | 7129 | 7161 | 7129 | 7161 | 7129 | 652  |
| 15° | 5009 | 5090 | 5009 | 5090 | 5009 | 1378 |
| 25° | 2571 | 2641 | 2571 | 2641 | 2571 | 1209 |
| 35° | 1526 | 1513 | 1526 | 1513 | 1526 | 920  |
| 45° | 315  | 365  | 315  | 365  | 315  | 274  |
| 55° | 8    | 8    | 8    | 8    | 8    | 9    |
| 65° | 2    | 2    | 2    | 2    | 2    | 3    |
| 75° | 1    | 1    | 1    | 1    | 1    | 1    |
| 85° | 0    | 0    | 0    | 0    | 0    | 0    |
| 90° | 0    | 0    | 0    | 0    | 0    |      |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 |
| 0.5°  | 7448.0 | 7449.6 | 7453.6 | 7455.2 | 7448.0 | 7455.2 | 7453.6 | 7449.6 | 7448.0 | 7449.6 | 7453.6 |
| 1°    | 7437.9 | 7439.9 | 7444.0 | 7446.8 | 7439.5 | 7446.8 | 7444.0 | 7439.9 | 7437.9 | 7439.9 | 7444.0 |
| 1.5°  | 7421.0 | 7423.4 | 7428.6 | 7431.9 | 7424.6 | 7431.9 | 7428.6 | 7423.4 | 7421.0 | 7423.4 | 7428.6 |
| 2°    | 7398.4 | 7400.4 | 7407.3 | 7411.3 | 7404.5 | 7411.3 | 7407.3 | 7400.4 | 7398.4 | 7400.4 | 7407.3 |
| 2.5°  | 7367.4 | 7371.4 | 7379.5 | 7384.3 | 7377.9 | 7384.3 | 7379.5 | 7371.4 | 7367.4 | 7371.4 | 7379.5 |
| 3°    | 7332.3 | 7336.3 | 7346.0 | 7352.1 | 7346.0 | 7352.1 | 7346.0 | 7336.3 | 7332.3 | 7336.3 | 7346.0 |
| 3.5°  | 7290.4 | 7295.2 | 7306.1 | 7313.8 | 7309.3 | 7313.8 | 7306.1 | 7295.2 | 7290.4 | 7295.2 | 7306.1 |
| 4°    | 7241.6 | 7247.7 | 7260.6 | 7269.8 | 7265.8 | 7269.8 | 7260.6 | 7247.7 | 7241.6 | 7247.7 | 7260.6 |
| 4.5°  | 7188.0 | 7193.7 | 7209.0 | 7220.3 | 7216.2 | 7220.3 | 7209.0 | 7193.7 | 7188.0 | 7193.7 | 7209.0 |
| 5°    | 7128.8 | 7134.8 | 7151.8 | 7165.1 | 7161.4 | 7165.1 | 7151.8 | 7134.8 | 7128.8 | 7134.8 | 7151.8 |
| 5.5°  | 7063.5 | 7069.9 | 7087.7 | 7103.0 | 7101.4 | 7103.0 | 7087.7 | 7069.9 | 7063.5 | 7069.9 | 7087.7 |
| 6°    | 6992.2 | 6999.0 | 7018.4 | 7036.1 | 7036.5 | 7036.1 | 7018.4 | 6999.0 | 6992.2 | 6999.0 | 7018.4 |
| 6.5°  | 6917.6 | 6923.2 | 6944.6 | 6964.4 | 6965.6 | 6964.4 | 6944.6 | 6923.2 | 6917.6 | 6923.2 | 6944.6 |
| 7°    | 6836.2 | 6842.6 | 6864.8 | 6887.0 | 6891.4 | 6887.0 | 6864.8 | 6842.6 | 6836.2 | 6842.6 | 6864.8 |
| 7.5°  | 6750.7 | 6756.0 | 6779.0 | 6802.3 | 6808.8 | 6802.3 | 6779.0 | 6756.0 | 6750.7 | 6756.0 | 6779.0 |
| 8°    | 6658.9 | 6664.9 | 6689.1 | 6714.5 | 6722.5 | 6714.5 | 6689.1 | 6664.9 | 6658.9 | 6664.9 | 6689.1 |
| 8.5°  | 6563.7 | 6569.0 | 6593.2 | 6621.8 | 6631.0 | 6621.8 | 6593.2 | 6569.0 | 6563.7 | 6569.0 | 6593.2 |
| 9°    | 6461.8 | 6468.6 | 6494.0 | 6524.6 | 6535.1 | 6524.6 | 6494.0 | 6468.6 | 6461.8 | 6468.6 | 6494.0 |
| 9.5°  | 6357.8 | 6365.0 | 6389.2 | 6421.5 | 6433.6 | 6421.5 | 6389.2 | 6365.0 | 6357.8 | 6365.0 | 6389.2 |
| 10°   | 6249.0 | 6257.0 | 6282.0 | 6317.1 | 6327.2 | 6317.1 | 6282.0 | 6257.0 | 6249.0 | 6257.0 | 6282.0 |
| 10.5° | 6136.5 | 6144.6 | 6170.4 | 6207.5 | 6217.1 | 6207.5 | 6170.4 | 6144.6 | 6136.5 | 6144.6 | 6170.4 |
| 11°   | 6016.4 | 6029.3 | 6055.5 | 6094.2 | 6102.7 | 6094.2 | 6055.5 | 6029.3 | 6016.4 | 6029.3 | 6055.5 |
| 11.5° | 5900.8 | 5911.2 | 5937.4 | 5974.9 | 5985.0 | 5974.9 | 5937.4 | 5911.2 | 5900.8 | 5911.2 | 5937.4 |
| 12°   | 5777.8 | 5790.3 | 5817.3 | 5855.2 | 5864.5 | 5855.2 | 5817.3 | 5790.3 | 5777.8 | 5790.3 | 5817.3 |
| 12.5° | 5654.5 | 5667.4 | 5694.8 | 5730.7 | 5738.7 | 5730.7 | 5694.8 | 5667.4 | 5654.5 | 5667.4 | 5694.8 |
| 13°   | 5528.0 | 5542.5 | 5571.9 | 5607.8 | 5614.2 | 5607.8 | 5571.9 | 5542.5 | 5528.0 | 5542.5 | 5571.9 |
| 13.5° | 5401.4 | 5415.9 | 5446.5 | 5478.0 | 5487.2 | 5478.0 | 5446.5 | 5415.9 | 5401.4 | 5415.9 | 5446.5 |
| 14°   | 5271.6 | 5287.3 | 5318.4 | 5347.0 | 5357.1 | 5347.0 | 5318.4 | 5287.3 | 5271.6 | 5287.3 | 5318.4 |
| 14.5° | 5140.6 | 5156.8 | 5188.2 | 5215.2 | 5223.7 | 5215.2 | 5188.2 | 5156.8 | 5140.6 | 5156.8 | 5188.2 |
| 15°   | 5009.3 | 5025.8 | 5056.8 | 5084.2 | 5090.3 | 5084.2 | 5056.8 | 5025.8 | 5009.3 | 5025.8 | 5056.8 |
| 15.5° | 4877.5 | 4893.6 | 4924.6 | 4950.8 | 4960.1 | 4950.8 | 4924.6 | 4893.6 | 4877.5 | 4893.6 | 4924.6 |
| 16°   | 4746.5 | 4760.6 | 4791.6 | 4817.8 | 4828.7 | 4817.8 | 4791.6 | 4760.6 | 4746.5 | 4760.6 | 4791.6 |
| 16.5° | 4617.1 | 4629.2 | 4660.2 | 4685.6 | 4697.3 | 4685.6 | 4660.2 | 4629.2 | 4617.1 | 4629.2 | 4660.2 |
| 17°   | 4484.1 | 4497.4 | 4525.6 | 4555.4 | 4564.3 | 4555.4 | 4525.6 | 4497.4 | 4484.1 | 4497.4 | 4525.6 |
| 17.5° | 4351.5 | 4364.8 | 4393.0 | 4423.3 | 4433.7 | 4423.3 | 4393.0 | 4364.8 | 4351.5 | 4364.8 | 4393.0 |
| 18°   | 4221.3 | 4231.4 | 4261.6 | 4291.1 | 4301.5 | 4291.1 | 4261.6 | 4231.4 | 4221.3 | 4231.4 | 4261.6 |
| 18.5° | 4091.2 | 4101.2 | 4128.2 | 4156.8 | 4168.1 | 4156.8 | 4128.2 | 4101.2 | 4091.2 | 4101.2 | 4128.2 |
| 19°   | 3960.6 | 3970.2 | 3996.8 | 4021.0 | 4033.9 | 4021.0 | 3996.8 | 3970.2 | 3960.6 | 3970.2 | 3996.8 |
| 19.5° | 3830.0 | 3840.5 | 3862.2 | 3882.8 | 3892.9 | 3882.8 | 3862.2 | 3840.5 | 3830.0 | 3840.5 | 3862.2 |
| 20°   | 3697.0 | 3705.9 | 3723.2 | 3742.9 | 3743.3 | 3742.9 | 3723.2 | 3705.9 | 3697.0 | 3705.9 | 3723.2 |
| 20.5° | 3562.4 | 3568.0 | 3586.6 | 3605.1 | 3602.7 | 3605.1 | 3586.6 | 3568.0 | 3562.4 | 3568.0 | 3586.6 |
| 21°   | 3424.9 | 3434.2 | 3451.9 | 3470.1 | 3469.7 | 3470.1 | 3451.9 | 3434.2 | 3424.9 | 3434.2 | 3451.9 |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°     | 22.5°  | 45°    | 67.5°  | 90°    | 112.5° | 135°   | 157.5° | 180°   | 202.5° | 225°   |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 22.5° | 3042.9 | 3054.2 | 3070.3 | 3099.7 | 3112.6 | 3099.7 | 3070.3 | 3054.2 | 3042.9 | 3054.2 | 3070.3 |
| 23°   | 2932.8 | 2941.3 | 2960.7 | 2985.6 | 3000.2 | 2985.6 | 2960.7 | 2941.3 | 2932.8 | 2941.3 | 2960.7 |
| 23.5° | 2824.0 | 2845.0 | 2860.3 | 2880.9 | 2895.0 | 2880.9 | 2860.3 | 2845.0 | 2824.0 | 2845.0 | 2860.3 |
| 24°   | 2738.6 | 2746.6 | 2768.0 | 2790.2 | 2808.7 | 2790.2 | 2768.0 | 2746.6 | 2738.6 | 2746.6 | 2768.0 |
| 24.5° | 2650.3 | 2660.0 | 2681.0 | 2703.1 | 2725.3 | 2703.1 | 2681.0 | 2660.0 | 2650.3 | 2660.0 | 2681.0 |
| 25°   | 2570.9 | 2581.0 | 2600.8 | 2619.7 | 2640.7 | 2619.7 | 2600.8 | 2581.0 | 2570.9 | 2581.0 | 2600.8 |
| 25.5° | 2502.8 | 2507.2 | 2523.4 | 2539.5 | 2557.6 | 2539.5 | 2523.4 | 2507.2 | 2502.8 | 2507.2 | 2523.4 |
| 26°   | 2435.5 | 2439.5 | 2450.0 | 2465.3 | 2476.2 | 2465.3 | 2450.0 | 2439.5 | 2435.5 | 2439.5 | 2450.0 |
| 26.5° | 2365.8 | 2371.8 | 2384.3 | 2397.6 | 2404.5 | 2397.6 | 2384.3 | 2371.8 | 2365.8 | 2371.8 | 2384.3 |
| 27°   | 2298.5 | 2305.7 | 2321.9 | 2336.4 | 2343.2 | 2336.4 | 2321.9 | 2305.7 | 2298.5 | 2305.7 | 2321.9 |
| 27.5° | 2236.8 | 2243.7 | 2259.4 | 2274.7 | 2284.4 | 2274.7 | 2259.4 | 2243.7 | 2236.8 | 2243.7 | 2259.4 |
| 28°   | 2180.0 | 2185.6 | 2198.5 | 2212.6 | 2220.7 | 2212.6 | 2198.5 | 2185.6 | 2180.0 | 2185.6 | 2198.5 |
| 28.5° | 2126.0 | 2130.8 | 2141.7 | 2153.4 | 2162.3 | 2153.4 | 2141.7 | 2130.8 | 2126.0 | 2130.8 | 2141.7 |
| 29°   | 2073.6 | 2077.6 | 2088.1 | 2099.4 | 2105.0 | 2099.4 | 2088.1 | 2077.6 | 2073.6 | 2077.6 | 2088.1 |
| 29.5° | 2021.2 | 2025.6 | 2036.1 | 2046.6 | 2051.8 | 2046.6 | 2036.1 | 2025.6 | 2021.2 | 2025.6 | 2036.1 |
| 30°   | 1970.8 | 1974.8 | 1984.9 | 1995.0 | 2001.0 | 1995.0 | 1984.9 | 1974.8 | 1970.8 | 1974.8 | 1984.9 |
| 30.5° | 1922.0 | 1925.3 | 1935.8 | 1945.8 | 1951.9 | 1945.8 | 1935.8 | 1925.3 | 1922.0 | 1925.3 | 1935.8 |
| 31°   | 1874.1 | 1879.3 | 1888.6 | 1899.1 | 1904.3 | 1899.1 | 1888.6 | 1879.3 | 1874.1 | 1879.3 | 1888.6 |
| 31.5° | 1830.2 | 1833.4 | 1843.5 | 1853.1 | 1859.6 | 1853.1 | 1843.5 | 1833.4 | 1830.2 | 1833.4 | 1843.5 |
| 32°   | 1786.6 | 1790.7 | 1799.9 | 1809.2 | 1814.8 | 1809.2 | 1799.9 | 1790.7 | 1786.6 | 1790.7 | 1799.9 |
| 32.5° | 1746.3 | 1750.4 | 1758.8 | 1765.3 | 1768.5 | 1765.3 | 1758.8 | 1750.4 | 1746.3 | 1750.4 | 1758.8 |
| 33°   | 1708.8 | 1710.9 | 1716.1 | 1719.3 | 1718.9 | 1719.3 | 1716.1 | 1710.9 | 1708.8 | 1710.9 | 1716.1 |
| 33.5° | 1670.2 | 1669.8 | 1670.2 | 1670.2 | 1669.3 | 1670.2 | 1670.2 | 1669.8 | 1670.2 | 1669.8 | 1670.2 |
| 34°   | 1627.0 | 1624.2 | 1621.0 | 1625.4 | 1616.6 | 1625.4 | 1621.0 | 1624.2 | 1627.0 | 1624.2 | 1621.0 |
| 34.5° | 1577.5 | 1576.7 | 1575.8 | 1572.6 | 1564.6 | 1572.6 | 1575.8 | 1576.7 | 1577.5 | 1576.7 | 1575.8 |
| 35°   | 1525.9 | 1522.2 | 1522.2 | 1519.0 | 1513.0 | 1519.0 | 1522.2 | 1522.2 | 1525.9 | 1522.2 | 1522.2 |
| 35.5° | 1472.7 | 1468.2 | 1468.2 | 1462.6 | 1459.0 | 1462.6 | 1468.2 | 1468.2 | 1472.7 | 1468.2 | 1468.2 |
| 36°   | 1414.2 | 1411.8 | 1413.0 | 1403.8 | 1402.9 | 1403.8 | 1413.0 | 1411.8 | 1414.2 | 1411.8 | 1413.0 |
| 36.5° | 1353.8 | 1353.4 | 1353.4 | 1344.5 | 1342.9 | 1344.5 | 1353.4 | 1353.4 | 1353.8 | 1353.4 | 1353.4 |
| 37°   | 1291.3 | 1291.3 | 1291.7 | 1284.9 | 1282.0 | 1284.9 | 1291.7 | 1291.3 | 1291.3 | 1291.3 | 1291.7 |
| 37.5° | 1228.8 | 1227.6 | 1232.9 | 1224.4 | 1222.4 | 1224.4 | 1232.9 | 1227.6 | 1228.8 | 1227.6 | 1232.9 |
| 38°   | 1165.2 | 1162.3 | 1163.9 | 1161.5 | 1161.9 | 1161.5 | 1163.9 | 1162.3 | 1165.2 | 1162.3 | 1163.9 |
| 38.5° | 1098.7 | 1096.2 | 1095.4 | 1099.1 | 1100.3 | 1099.1 | 1095.4 | 1096.2 | 1098.7 | 1096.2 | 1095.4 |
| 39°   | 1031.4 | 1030.1 | 1028.1 | 1036.2 | 1036.6 | 1036.2 | 1028.1 | 1030.1 | 1031.4 | 1030.1 | 1028.1 |
| 39.5° | 962.8  | 962.8  | 962.8  | 972.9  | 975.3  | 972.9  | 962.8  | 962.8  | 962.8  | 962.8  | 962.8  |
| 40°   | 895.1  | 897.1  | 901.2  | 910.0  | 914.1  | 910.0  | 901.2  | 897.1  | 895.1  | 897.1  | 901.2  |
| 40.5° | 828.6  | 831.0  | 839.9  | 846.8  | 854.0  | 846.8  | 839.9  | 831.0  | 828.6  | 831.0  | 839.9  |
| 41°   | 762.9  | 766.6  | 778.3  | 785.5  | 793.2  | 785.5  | 778.3  | 766.6  | 762.9  | 766.6  | 778.3  |
| 41.5° | 697.2  | 703.3  | 717.0  | 725.1  | 733.9  | 725.1  | 717.0  | 703.3  | 697.2  | 703.3  | 717.0  |
| 42°   | 634.4  | 641.2  | 657.3  | 666.6  | 675.1  | 666.6  | 657.3  | 641.2  | 634.4  | 641.2  | 657.3  |
| 42.5° | 573.5  | 581.2  | 599.3  | 611.4  | 619.1  | 611.4  | 599.3  | 581.2  | 573.5  | 581.2  | 599.3  |
| 43°   | 514.3  | 525.1  | 543.7  | 557.4  | 563.8  | 557.4  | 543.7  | 525.1  | 514.3  | 525.1  | 543.7  |
| 43.5° | 458.6  | 471.5  | 489.7  | 504.6  | 510.2  | 504.6  | 489.7  | 471.5  | 458.6  | 471.5  | 489.7  |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°    | 22.5° | 45°   | 67.5° | 90°   | 112.5° | 135°  | 157.5° | 180°  | 202.5° | 225°  |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 314.8 | 321.6 | 338.1 | 357.9 | 365.1 | 357.9  | 338.1 | 321.6  | 314.8 | 321.6  | 338.1 |
| 45.5° | 271.2 | 278.1 | 294.6 | 314.4 | 322.4 | 314.4  | 294.6 | 278.1  | 271.2 | 278.1  | 294.6 |
| 46°   | 229.3 | 237.8 | 254.7 | 274.9 | 287.8 | 274.9  | 254.7 | 237.8  | 229.3 | 237.8  | 254.7 |
| 46.5° | 193.9 | 200.3 | 219.7 | 238.6 | 253.1 | 238.6  | 219.7 | 200.3  | 193.9 | 200.3  | 219.7 |
| 47°   | 162.4 | 169.7 | 186.6 | 203.9 | 218.4 | 203.9  | 186.6 | 169.7  | 162.4 | 169.7  | 186.6 |
| 47.5° | 134.6 | 140.7 | 155.2 | 170.1 | 183.8 | 170.1  | 155.2 | 140.7  | 134.6 | 140.7  | 155.2 |
| 48°   | 111.6 | 115.3 | 127.4 | 139.4 | 149.1 | 139.4  | 127.4 | 115.3  | 111.6 | 115.3  | 127.4 |
| 48.5° | 90.3  | 94.7  | 102.8 | 113.7 | 122.1 | 113.7  | 102.8 | 94.7   | 90.3  | 94.7   | 102.8 |
| 49°   | 70.5  | 75.4  | 83.8  | 90.7  | 97.9  | 90.7   | 83.8  | 75.4   | 70.5  | 75.4   | 83.8  |
| 49.5° | 55.2  | 58.8  | 66.1  | 72.5  | 77.8  | 72.5   | 66.1  | 58.8   | 55.2  | 58.8   | 66.1  |
| 50°   | 42.7  | 45.1  | 50.4  | 56.0  | 60.1  | 56.0   | 50.4  | 45.1   | 42.7  | 45.1   | 50.4  |
| 50.5° | 31.8  | 32.2  | 38.3  | 43.9  | 46.8  | 43.9   | 38.3  | 32.2   | 31.8  | 32.2   | 38.3  |
| 51°   | 22.2  | 23.8  | 28.6  | 34.7  | 39.5  | 34.7   | 28.6  | 23.8   | 22.2  | 23.8   | 28.6  |
| 51.5° | 14.5  | 17.7  | 22.2  | 26.2  | 32.6  | 26.2   | 22.2  | 17.7   | 14.5  | 17.7   | 22.2  |
| 52°   | 12.5  | 13.3  | 16.5  | 20.2  | 25.4  | 20.2   | 16.5  | 13.3   | 12.5  | 13.3   | 16.5  |
| 52.5° | 11.3  | 11.7  | 12.1  | 15.3  | 18.5  | 15.3   | 12.1  | 11.7   | 11.3  | 11.7   | 12.1  |
| 53°   | 10.5  | 10.9  | 10.9  | 11.7  | 11.7  | 11.7   | 10.9  | 10.9   | 10.5  | 10.9   | 10.9  |
| 53.5° | 9.7   | 10.1  | 10.5  | 10.5  | 10.1  | 10.5   | 10.5  | 10.1   | 9.7   | 10.1   | 10.5  |
| 54°   | 9.3   | 9.3   | 9.7   | 9.7   | 9.3   | 9.7    | 9.7   | 9.3    | 9.3   | 9.3    | 9.7   |
| 54.5° | 8.5   | 8.9   | 8.9   | 8.9   | 8.9   | 8.9    | 8.9   | 8.9    | 8.5   | 8.9    | 8.9   |
| 55°   | 8.1   | 8.5   | 8.5   | 8.5   | 8.5   | 8.5    | 8.5   | 8.5    | 8.1   | 8.5    | 8.5   |
| 55.5° | 7.7   | 7.7   | 8.1   | 8.1   | 8.1   | 8.1    | 8.1   | 7.7    | 7.7   | 7.7    | 8.1   |
| 56°   | 7.3   | 7.3   | 7.7   | 7.7   | 7.7   | 7.7    | 7.7   | 7.3    | 7.3   | 7.3    | 7.7   |
| 56.5° | 6.9   | 6.9   | 7.3   | 7.3   | 6.9   | 7.3    | 7.3   | 6.9    | 6.9   | 6.9    | 7.3   |
| 57°   | 6.4   | 6.4   | 6.9   | 6.9   | 6.4   | 6.9    | 6.9   | 6.4    | 6.4   | 6.4    | 6.9   |
| 57.5° | 6.0   | 6.0   | 6.4   | 6.4   | 6.4   | 6.4    | 6.4   | 6.0    | 6.0   | 6.0    | 6.4   |
| 58°   | 5.6   | 5.6   | 6.0   | 6.0   | 6.0   | 6.0    | 6.0   | 5.6    | 5.6   | 5.6    | 6.0   |
| 58.5° | 5.2   | 5.2   | 5.6   | 5.6   | 5.6   | 5.6    | 5.6   | 5.2    | 5.2   | 5.2    | 5.6   |
| 59°   | 4.8   | 5.2   | 5.2   | 5.2   | 5.2   | 5.2    | 5.2   | 5.2    | 4.8   | 5.2    | 5.2   |
| 59.5° | 4.4   | 4.8   | 4.8   | 4.8   | 4.8   | 4.8    | 4.8   | 4.8    | 4.4   | 4.8    | 4.8   |
| 60°   | 4.4   | 4.4   | 4.8   | 4.8   | 4.4   | 4.8    | 4.8   | 4.4    | 4.4   | 4.4    | 4.8   |
| 60.5° | 4.0   | 4.0   | 4.4   | 4.4   | 4.4   | 4.4    | 4.4   | 4.0    | 4.0   | 4.0    | 4.4   |
| 61°   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 4.0    | 4.0   | 4.0    | 4.0   | 4.0    | 4.0   |
| 61.5° | 3.6   | 3.6   | 4.0   | 4.0   | 4.0   | 4.0    | 4.0   | 3.6    | 3.6   | 3.6    | 4.0   |
| 62°   | 3.6   | 3.6   | 3.6   | 3.6   | 3.6   | 3.6    | 3.6   | 3.6    | 3.6   | 3.6    | 3.6   |
| 62.5° | 3.2   | 3.2   | 3.6   | 3.6   | 3.6   | 3.6    | 3.6   | 3.2    | 3.2   | 3.2    | 3.6   |
| 63°   | 3.2   | 3.2   | 3.2   | 3.2   | 3.2   | 3.2    | 3.2   | 3.2    | 3.2   | 3.2    | 3.2   |
| 63.5° | 2.8   | 2.8   | 3.2   | 3.2   | 3.2   | 3.2    | 3.2   | 2.8    | 2.8   | 2.8    | 3.2   |
| 64°   | 2.8   | 2.8   | 2.8   | 2.8   | 2.8   | 2.8    | 2.8   | 2.8    | 2.8   | 2.8    | 2.8   |
| 64.5° | 2.4   | 2.8   | 2.8   | 2.8   | 2.8   | 2.8    | 2.8   | 2.8    | 2.4   | 2.8    | 2.8   |
| 65°   | 2.4   | 2.4   | 2.8   | 2.8   | 2.4   | 2.8    | 2.8   | 2.4    | 2.4   | 2.4    | 2.8   |
| 65.5° | 2.4   | 2.4   | 2.4   | 2.4   | 2.4   | 2.4    | 2.4   | 2.4    | 2.4   | 2.4    | 2.4   |
| 66°   | 2.0   | 2.4   | 2.4   | 2.4   | 2.4   | 2.4    | 2.4   | 2.4    | 2.0   | 2.4    | 2.4   |





TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 0°  | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-----|-------|-----|-------|-----|--------|------|--------|------|--------|------|
| 67.5° | 2.0 | 2.0   | 2.0 | 2.0   | 2.0 | 2.0    | 2.0  | 2.0    | 2.0  | 2.0    | 2.0  |
| 68°   | 1.6 | 1.6   | 2.0 | 2.0   | 2.0 | 2.0    | 2.0  | 1.6    | 1.6  | 1.6    | 2.0  |
| 68.5° | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 69°   | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 69.5° | 1.6 | 1.6   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 70°   | 1.2 | 1.2   | 1.6 | 1.6   | 1.6 | 1.6    | 1.6  | 1.2    | 1.2  | 1.2    | 1.6  |
| 70.5° | 1.2 | 1.2   | 1.2 | 1.6   | 1.2 | 1.6    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 71°   | 1.2 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 71.5° | 1.2 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 72°   | 1.2 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 72.5° | 0.8 | 1.2   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 1.2    | 0.8  | 1.2    | 1.2  |
| 73°   | 0.8 | 0.8   | 1.2 | 1.2   | 1.2 | 1.2    | 1.2  | 0.8    | 0.8  | 0.8    | 1.2  |
| 73.5° | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 74°   | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 74.5° | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 75°   | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 75.5° | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 76°   | 0.8 | 0.8   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 76.5° | 0.4 | 0.4   | 0.8 | 0.8   | 0.8 | 0.8    | 0.8  | 0.4    | 0.4  | 0.4    | 0.8  |
| 77°   | 0.4 | 0.4   | 0.4 | 0.8   | 0.8 | 0.8    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 77.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 78°   | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 78.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 79°   | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 79.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 80°   | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 80.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 81°   | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 81.5° | 0.4 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 82°   | 0.0 | 0.4   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.4    | 0.0  | 0.4    | 0.4  |
| 82.5° | 0.0 | 0.0   | 0.4 | 0.4   | 0.4 | 0.4    | 0.4  | 0.0    | 0.0  | 0.0    | 0.4  |
| 83°   | 0.0 | 0.0   | 0.0 | 0.4   | 0.4 | 0.4    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 83.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 84°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 84.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 85°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 85.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 86°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 86.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.0 | 0.0   | 0.0 | 0.0   | 0.0 | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**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: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 0°    | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 | 7454.8 |
| 0.5°  | 7455.2 | 7448.0 | 7455.2 | 7453.6 | 7449.6 | 7448.0 |
| 1°    | 7446.8 | 7439.5 | 7446.8 | 7444.0 | 7439.9 | 7437.9 |
| 1.5°  | 7431.9 | 7424.6 | 7431.9 | 7428.6 | 7423.4 | 7421.0 |
| 2°    | 7411.3 | 7404.5 | 7411.3 | 7407.3 | 7400.4 | 7398.4 |
| 2.5°  | 7384.3 | 7377.9 | 7384.3 | 7379.5 | 7371.4 | 7367.4 |
| 3°    | 7352.1 | 7346.0 | 7352.1 | 7346.0 | 7336.3 | 7332.3 |
| 3.5°  | 7313.8 | 7309.3 | 7313.8 | 7306.1 | 7295.2 | 7290.4 |
| 4°    | 7269.8 | 7265.8 | 7269.8 | 7260.6 | 7247.7 | 7241.6 |
| 4.5°  | 7220.3 | 7216.2 | 7220.3 | 7209.0 | 7193.7 | 7188.0 |
| 5°    | 7165.1 | 7161.4 | 7165.1 | 7151.8 | 7134.8 | 7128.8 |
| 5.5°  | 7103.0 | 7101.4 | 7103.0 | 7087.7 | 7069.9 | 7063.5 |
| 6°    | 7036.1 | 7036.5 | 7036.1 | 7018.4 | 6999.0 | 6992.2 |
| 6.5°  | 6964.4 | 6965.6 | 6964.4 | 6944.6 | 6923.2 | 6917.6 |
| 7°    | 6887.0 | 6891.4 | 6887.0 | 6864.8 | 6842.6 | 6836.2 |
| 7.5°  | 6802.3 | 6808.8 | 6802.3 | 6779.0 | 6756.0 | 6750.7 |
| 8°    | 6714.5 | 6722.5 | 6714.5 | 6689.1 | 6664.9 | 6658.9 |
| 8.5°  | 6621.8 | 6631.0 | 6621.8 | 6593.2 | 6569.0 | 6563.7 |
| 9°    | 6524.6 | 6535.1 | 6524.6 | 6494.0 | 6468.6 | 6461.8 |
| 9.5°  | 6421.5 | 6433.6 | 6421.5 | 6389.2 | 6365.0 | 6357.8 |
| 10°   | 6317.1 | 6327.2 | 6317.1 | 6282.0 | 6257.0 | 6249.0 |
| 10.5° | 6207.5 | 6217.1 | 6207.5 | 6170.4 | 6144.6 | 6136.5 |
| 11°   | 6094.2 | 6102.7 | 6094.2 | 6055.5 | 6029.3 | 6016.4 |
| 11.5° | 5974.9 | 5985.0 | 5974.9 | 5937.4 | 5911.2 | 5900.8 |
| 12°   | 5855.2 | 5864.5 | 5855.2 | 5817.3 | 5790.3 | 5777.8 |
| 12.5° | 5730.7 | 5738.7 | 5730.7 | 5694.8 | 5667.4 | 5654.5 |
| 13°   | 5607.8 | 5614.2 | 5607.8 | 5571.9 | 5542.5 | 5528.0 |
| 13.5° | 5478.0 | 5487.2 | 5478.0 | 5446.5 | 5415.9 | 5401.4 |
| 14°   | 5347.0 | 5357.1 | 5347.0 | 5318.4 | 5287.3 | 5271.6 |
| 14.5° | 5215.2 | 5223.7 | 5215.2 | 5188.2 | 5156.8 | 5140.6 |
| 15°   | 5084.2 | 5090.3 | 5084.2 | 5056.8 | 5025.8 | 5009.3 |
| 15.5° | 4950.8 | 4960.1 | 4950.8 | 4924.6 | 4893.6 | 4877.5 |
| 16°   | 4817.8 | 4828.7 | 4817.8 | 4791.6 | 4760.6 | 4746.5 |
| 16.5° | 4685.6 | 4697.3 | 4685.6 | 4660.2 | 4629.2 | 4617.1 |
| 17°   | 4555.4 | 4564.3 | 4555.4 | 4525.6 | 4497.4 | 4484.1 |
| 17.5° | 4423.3 | 4433.7 | 4423.3 | 4393.0 | 4364.8 | 4351.5 |
| 18°   | 4291.1 | 4301.5 | 4291.1 | 4261.6 | 4231.4 | 4221.3 |
| 18.5° | 4156.8 | 4168.1 | 4156.8 | 4128.2 | 4101.2 | 4091.2 |
| 19°   | 4021.0 | 4033.9 | 4021.0 | 3996.8 | 3970.2 | 3960.6 |
| 19.5° | 3882.8 | 3892.9 | 3882.8 | 3862.2 | 3840.5 | 3830.0 |
| 20°   | 3742.9 | 3743.3 | 3742.9 | 3723.2 | 3705.9 | 3697.0 |
| 20.5° | 3605.1 | 3602.7 | 3605.1 | 3586.6 | 3568.0 | 3562.4 |
| 21°   | 3470.1 | 3469.7 | 3470.1 | 3451.9 | 3434.2 | 3424.9 |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°   | 292.5° | 315°   | 337.5° | 360°   |
|-------|--------|--------|--------|--------|--------|--------|
| 22.5° | 3099.7 | 3112.6 | 3099.7 | 3070.3 | 3054.2 | 3042.9 |
| 23°   | 2985.6 | 3000.2 | 2985.6 | 2960.7 | 2941.3 | 2932.8 |
| 23.5° | 2880.9 | 2895.0 | 2880.9 | 2860.3 | 2845.0 | 2824.0 |
| 24°   | 2790.2 | 2808.7 | 2790.2 | 2768.0 | 2746.6 | 2738.6 |
| 24.5° | 2703.1 | 2725.3 | 2703.1 | 2681.0 | 2660.0 | 2650.3 |
| 25°   | 2619.7 | 2640.7 | 2619.7 | 2600.8 | 2581.0 | 2570.9 |
| 25.5° | 2539.5 | 2557.6 | 2539.5 | 2523.4 | 2507.2 | 2502.8 |
| 26°   | 2465.3 | 2476.2 | 2465.3 | 2450.0 | 2439.5 | 2435.5 |
| 26.5° | 2397.6 | 2404.5 | 2397.6 | 2384.3 | 2371.8 | 2365.8 |
| 27°   | 2336.4 | 2343.2 | 2336.4 | 2321.9 | 2305.7 | 2298.5 |
| 27.5° | 2274.7 | 2284.4 | 2274.7 | 2259.4 | 2243.7 | 2236.8 |
| 28°   | 2212.6 | 2220.7 | 2212.6 | 2198.5 | 2185.6 | 2180.0 |
| 28.5° | 2153.4 | 2162.3 | 2153.4 | 2141.7 | 2130.8 | 2126.0 |
| 29°   | 2099.4 | 2105.0 | 2099.4 | 2088.1 | 2077.6 | 2073.6 |
| 29.5° | 2046.6 | 2051.8 | 2046.6 | 2036.1 | 2025.6 | 2021.2 |
| 30°   | 1995.0 | 2001.0 | 1995.0 | 1984.9 | 1974.8 | 1970.8 |
| 30.5° | 1945.8 | 1951.9 | 1945.8 | 1935.8 | 1925.3 | 1922.0 |
| 31°   | 1899.1 | 1904.3 | 1899.1 | 1888.6 | 1879.3 | 1874.1 |
| 31.5° | 1853.1 | 1859.6 | 1853.1 | 1843.5 | 1833.4 | 1830.2 |
| 32°   | 1809.2 | 1814.8 | 1809.2 | 1799.9 | 1790.7 | 1786.6 |
| 32.5° | 1765.3 | 1768.5 | 1765.3 | 1758.8 | 1750.4 | 1746.3 |
| 33°   | 1719.3 | 1718.9 | 1719.3 | 1716.1 | 1710.9 | 1708.8 |
| 33.5° | 1670.2 | 1669.3 | 1670.2 | 1670.2 | 1669.8 | 1670.2 |
| 34°   | 1625.4 | 1616.6 | 1625.4 | 1621.0 | 1624.2 | 1627.0 |
| 34.5° | 1572.6 | 1564.6 | 1572.6 | 1575.8 | 1576.7 | 1577.5 |
| 35°   | 1519.0 | 1513.0 | 1519.0 | 1522.2 | 1522.2 | 1525.9 |
| 35.5° | 1462.6 | 1459.0 | 1462.6 | 1468.2 | 1468.2 | 1472.7 |
| 36°   | 1403.8 | 1402.9 | 1403.8 | 1413.0 | 1411.8 | 1414.2 |
| 36.5° | 1344.5 | 1342.9 | 1344.5 | 1353.4 | 1353.4 | 1353.8 |
| 37°   | 1284.9 | 1282.0 | 1284.9 | 1291.7 | 1291.3 | 1291.3 |
| 37.5° | 1224.4 | 1222.4 | 1224.4 | 1232.9 | 1227.6 | 1228.8 |
| 38°   | 1161.5 | 1161.9 | 1161.5 | 1163.9 | 1162.3 | 1165.2 |
| 38.5° | 1099.1 | 1100.3 | 1099.1 | 1095.4 | 1096.2 | 1098.7 |
| 39°   | 1036.2 | 1036.6 | 1036.2 | 1028.1 | 1030.1 | 1031.4 |
| 39.5° | 972.9  | 975.3  | 972.9  | 962.8  | 962.8  | 962.8  |
| 40°   | 910.0  | 914.1  | 910.0  | 901.2  | 897.1  | 895.1  |
| 40.5° | 846.8  | 854.0  | 846.8  | 839.9  | 831.0  | 828.6  |
| 41°   | 785.5  | 793.2  | 785.5  | 778.3  | 766.6  | 762.9  |
| 41.5° | 725.1  | 733.9  | 725.1  | 717.0  | 703.3  | 697.2  |
| 42°   | 666.6  | 675.1  | 666.6  | 657.3  | 641.2  | 634.4  |
| 42.5° | 611.4  | 619.1  | 611.4  | 599.3  | 581.2  | 573.5  |
| 43°   | 557.4  | 563.8  | 557.4  | 543.7  | 525.1  | 514.3  |
| 43.5° | 504.6  | 510.2  | 504.6  | 489.7  | 471.5  | 458.6  |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270°  | 292.5° | 315°  | 337.5° | 360°  |
|-------|--------|-------|--------|-------|--------|-------|
| 45°   | 357.9  | 365.1 | 357.9  | 338.1 | 321.6  | 314.8 |
| 45.5° | 314.4  | 322.4 | 314.4  | 294.6 | 278.1  | 271.2 |
| 46°   | 274.9  | 287.8 | 274.9  | 254.7 | 237.8  | 229.3 |
| 46.5° | 238.6  | 253.1 | 238.6  | 219.7 | 200.3  | 193.9 |
| 47°   | 203.9  | 218.4 | 203.9  | 186.6 | 169.7  | 162.4 |
| 47.5° | 170.1  | 183.8 | 170.1  | 155.2 | 140.7  | 134.6 |
| 48°   | 139.4  | 149.1 | 139.4  | 127.4 | 115.3  | 111.6 |
| 48.5° | 113.7  | 122.1 | 113.7  | 102.8 | 94.7   | 90.3  |
| 49°   | 90.7   | 97.9  | 90.7   | 83.8  | 75.4   | 70.5  |
| 49.5° | 72.5   | 77.8  | 72.5   | 66.1  | 58.8   | 55.2  |
| 50°   | 56.0   | 60.1  | 56.0   | 50.4  | 45.1   | 42.7  |
| 50.5° | 43.9   | 46.8  | 43.9   | 38.3  | 32.2   | 31.8  |
| 51°   | 34.7   | 39.5  | 34.7   | 28.6  | 23.8   | 22.2  |
| 51.5° | 26.2   | 32.6  | 26.2   | 22.2  | 17.7   | 14.5  |
| 52°   | 20.2   | 25.4  | 20.2   | 16.5  | 13.3   | 12.5  |
| 52.5° | 15.3   | 18.5  | 15.3   | 12.1  | 11.7   | 11.3  |
| 53°   | 11.7   | 11.7  | 11.7   | 10.9  | 10.9   | 10.5  |
| 53.5° | 10.5   | 10.1  | 10.5   | 10.5  | 10.1   | 9.7   |
| 54°   | 9.7    | 9.3   | 9.7    | 9.7   | 9.3    | 9.3   |
| 54.5° | 8.9    | 8.9   | 8.9    | 8.9   | 8.9    | 8.5   |
| 55°   | 8.5    | 8.5   | 8.5    | 8.5   | 8.5    | 8.1   |
| 55.5° | 8.1    | 8.1   | 8.1    | 8.1   | 7.7    | 7.7   |
| 56°   | 7.7    | 7.7   | 7.7    | 7.7   | 7.3    | 7.3   |
| 56.5° | 7.3    | 6.9   | 7.3    | 7.3   | 6.9    | 6.9   |
| 57°   | 6.9    | 6.4   | 6.9    | 6.9   | 6.4    | 6.4   |
| 57.5° | 6.4    | 6.4   | 6.4    | 6.4   | 6.0    | 6.0   |
| 58°   | 6.0    | 6.0   | 6.0    | 6.0   | 5.6    | 5.6   |
| 58.5° | 5.6    | 5.6   | 5.6    | 5.6   | 5.2    | 5.2   |
| 59°   | 5.2    | 5.2   | 5.2    | 5.2   | 5.2    | 4.8   |
| 59.5° | 4.8    | 4.8   | 4.8    | 4.8   | 4.8    | 4.4   |
| 60°   | 4.8    | 4.4   | 4.8    | 4.8   | 4.4    | 4.4   |
| 60.5° | 4.4    | 4.4   | 4.4    | 4.4   | 4.0    | 4.0   |
| 61°   | 4.0    | 4.0   | 4.0    | 4.0   | 4.0    | 4.0   |
| 61.5° | 4.0    | 4.0   | 4.0    | 4.0   | 3.6    | 3.6   |
| 62°   | 3.6    | 3.6   | 3.6    | 3.6   | 3.6    | 3.6   |
| 62.5° | 3.6    | 3.6   | 3.6    | 3.6   | 3.2    | 3.2   |
| 63°   | 3.2    | 3.2   | 3.2    | 3.2   | 3.2    | 3.2   |
| 63.5° | 3.2    | 3.2   | 3.2    | 3.2   | 2.8    | 2.8   |
| 64°   | 2.8    | 2.8   | 2.8    | 2.8   | 2.8    | 2.8   |
| 64.5° | 2.8    | 2.8   | 2.8    | 2.8   | 2.8    | 2.4   |
| 65°   | 2.8    | 2.4   | 2.8    | 2.8   | 2.4    | 2.4   |
| 65.5° | 2.4    | 2.4   | 2.4    | 2.4   | 2.4    | 2.4   |
| 66°   | 2.4    | 2.4   | 2.4    | 2.4   | 2.4    | 2.0   |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**CANDELA DISTRIBUTION (continued):**

|       | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|------|--------|------|--------|------|
| 67.5° | 2.0    | 2.0  | 2.0    | 2.0  | 2.0    | 2.0  |
| 68°   | 2.0    | 2.0  | 2.0    | 2.0  | 1.6    | 1.6  |
| 68.5° | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 69°   | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 69.5° | 1.6    | 1.6  | 1.6    | 1.6  | 1.6    | 1.6  |
| 70°   | 1.6    | 1.6  | 1.6    | 1.6  | 1.2    | 1.2  |
| 70.5° | 1.6    | 1.2  | 1.6    | 1.2  | 1.2    | 1.2  |
| 71°   | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 71.5° | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 72°   | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 1.2  |
| 72.5° | 1.2    | 1.2  | 1.2    | 1.2  | 1.2    | 0.8  |
| 73°   | 1.2    | 1.2  | 1.2    | 1.2  | 0.8    | 0.8  |
| 73.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 74°   | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 74.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 75°   | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 75.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 76°   | 0.8    | 0.8  | 0.8    | 0.8  | 0.8    | 0.8  |
| 76.5° | 0.8    | 0.8  | 0.8    | 0.8  | 0.4    | 0.4  |
| 77°   | 0.8    | 0.8  | 0.8    | 0.4  | 0.4    | 0.4  |
| 77.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 78°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 78.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 79°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 79.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 80°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 80.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 81°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 81.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.4  |
| 82°   | 0.4    | 0.4  | 0.4    | 0.4  | 0.4    | 0.0  |
| 82.5° | 0.4    | 0.4  | 0.4    | 0.4  | 0.0    | 0.0  |
| 83°   | 0.4    | 0.4  | 0.4    | 0.0  | 0.0    | 0.0  |
| 83.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 84°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 84.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 85°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 85.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 86°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 86.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 87.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88°   | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |
| 88.5° | 0.0    | 0.0  | 0.0    | 0.0  | 0.0    | 0.0  |



TEST NUMBER: P776468

CATALOG NUMBER: HCDJBL3040CSD-HCD82TRH-4000lm-4000K

**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° | 3282.7 | 3302.4 | 3322.2 | 3340.7 | 3345.5 | 3340.7 | 3322.2 | 3302.4 | 3282.7 | 3302.4 | 3322.2 |
| 22°   | 3158.9 | 3171.8 | 3194.8 | 3213.8 | 3223.4 | 3213.8 | 3194.8 | 3171.8 | 3158.9 | 3171.8 | 3194.8 |



|       |       |       |       |       |       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 44°   | 408.3 | 419.6 | 437.7 | 453.0 | 459.1 | 453.0 | 437.7 | 419.6 | 408.3 | 419.6 | 437.7 |
| 44.5° | 360.7 | 369.6 | 386.5 | 403.0 | 410.3 | 403.0 | 386.5 | 369.6 | 360.7 | 369.6 | 386.5 |



|       |     |     |     |     |     |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 66.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 67°   | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |



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



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

Scaled Data Report





|       |        |        |        |        |        |        |
|-------|--------|--------|--------|--------|--------|--------|
| 21.5° | 3340.7 | 3345.5 | 3340.7 | 3322.2 | 3302.4 | 3282.7 |
| 22°   | 3213.8 | 3223.4 | 3213.8 | 3194.8 | 3171.8 | 3158.9 |



|       |       |       |       |       |       |       |
|-------|-------|-------|-------|-------|-------|-------|
| 44°   | 453.0 | 459.1 | 453.0 | 437.7 | 419.6 | 408.3 |
| 44.5° | 403.0 | 410.3 | 403.0 | 386.5 | 369.6 | 360.7 |

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

Scaled Data Report



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 66.5° | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |
| 67°   | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 | 2.0 |

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

Scaled Data Report



|       |     |     |     |     |     |     |
|-------|-----|-----|-----|-----|-----|-----|
| 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 |

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

Scaled Data Report



(END OF REPORT)