

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: METALUX

Report Number: P893676

Luminaire Tested: 4MB-5SL-RNDU-UNV-L850

Issue Date: 11/11/2024

**Test Information**

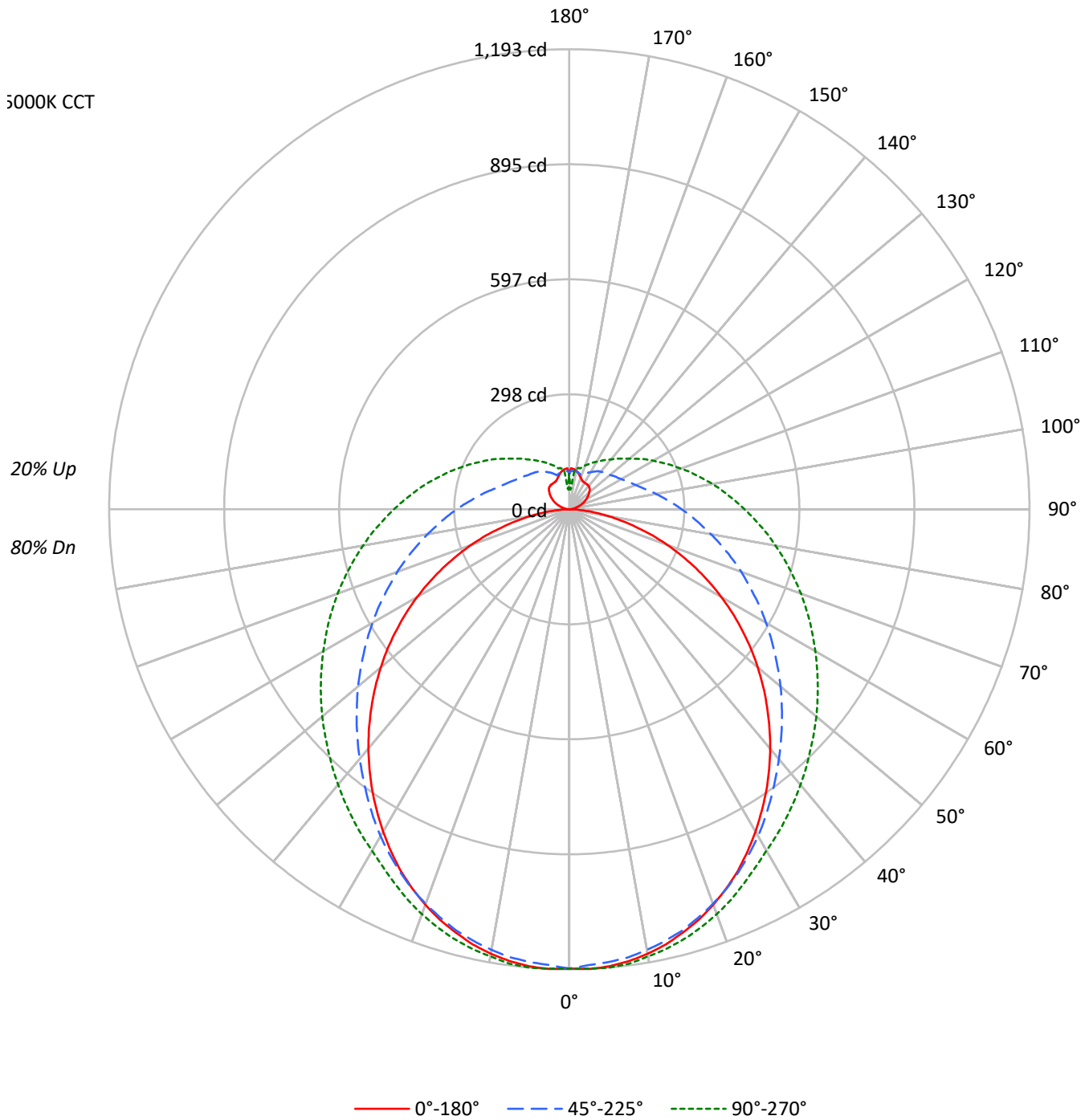
Test Method: LM-79-2019  
Report Number: P893676  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2403-327-3)  
Test Lab: INNOVATION CENTER  
Issue Date: 11/11/2024  
Manufacturer: COOPER LIGHTING SOLUTIONS  
Product Line: METALUX  
Catalog Number: 4MB-5SL-RNDU-UNV-L850  
Description: 5000 Lumen 4FT MICROBAY LINEAR BAY with ROUND FROSTED LENS WITH UPLIGHT, 80CRI, 5  
Light Source: -  
Ballast/Driver: -

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5009.0 lumens  
Efficiency: N/A  
Efficacy: 143.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.28 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.38' x L: 3.98' x H: 0.21')  
CIE Type: Semi-Direct  
  
Input Watts (W): 35  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: 0.995  
Total Harmonic Distortion (THDi): 9.55  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT

TEST NUMBER: P893676  
CATALOG NUMBER: 4MB-5SL-RNDU-UNV-L850

### Luminous Intensity Polar Plot





TEST NUMBER: P893676  
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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|
| RF  | 20  |     |     |     | 20  |     |     |     | 20  |     |     |    | 20 |    |    |    | 20 |    |    |    |
| RC  | 80  |     |     |     | 70  |     |     |     | 50  |     |     |    | 30 |    |    |    | 10 |    | 0  |    |
| RW  | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 |
| RCR |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |
| 0   | 114 | 114 | 114 | 114 | 109 | 109 | 109 | 109 | 100 | 100 | 100 | 91 | 91 | 91 | 83 | 83 | 83 | 80 |    |    |
| 1   | 102 | 96  | 91  | 86  | 97  | 92  | 87  | 83  | 84  | 80  | 76  | 76 | 73 | 70 | 69 | 67 | 65 | 61 |    |    |
| 2   | 92  | 82  | 75  | 68  | 87  | 79  | 72  | 66  | 72  | 66  | 61  | 65 | 61 | 57 | 60 | 56 | 53 | 49 |    |    |
| 3   | 83  | 72  | 63  | 56  | 79  | 69  | 61  | 54  | 63  | 56  | 51  | 57 | 52 | 47 | 52 | 48 | 44 | 41 |    |    |
| 4   | 76  | 63  | 54  | 47  | 72  | 60  | 52  | 45  | 55  | 48  | 43  | 51 | 45 | 40 | 46 | 41 | 37 | 34 |    |    |
| 5   | 69  | 56  | 47  | 40  | 66  | 54  | 45  | 39  | 49  | 42  | 37  | 45 | 39 | 34 | 41 | 36 | 32 | 29 |    |    |
| 6   | 64  | 50  | 41  | 35  | 61  | 48  | 40  | 34  | 44  | 37  | 32  | 41 | 35 | 30 | 37 | 32 | 28 | 26 |    |    |
| 7   | 59  | 46  | 37  | 30  | 56  | 44  | 35  | 30  | 40  | 33  | 28  | 37 | 31 | 26 | 34 | 29 | 25 | 23 |    |    |
| 8   | 55  | 41  | 33  | 27  | 52  | 40  | 32  | 26  | 37  | 30  | 25  | 34 | 28 | 24 | 31 | 26 | 22 | 20 |    |    |
| 9   | 51  | 38  | 30  | 24  | 49  | 36  | 29  | 23  | 34  | 27  | 22  | 31 | 25 | 21 | 29 | 24 | 20 | 18 |    |    |
| 10  | 48  | 35  | 27  | 22  | 46  | 34  | 26  | 21  | 31  | 25  | 20  | 29 | 23 | 19 | 27 | 22 | 18 | 16 |    |    |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 8473 | 8473 | 8473 |
| 5°  | 8459 | 8115 | 8132 |
| 10° | 8379 | 7799 | 7756 |
| 15° | 8256 | 7479 | 7409 |
| 20° | 8108 | 7141 | 7053 |
| 25° | 7928 | 6802 | 6696 |
| 30° | 7699 | 6460 | 6379 |
| 35° | 7462 | 6108 | 6146 |
| 40° | 7208 | 5789 | 5933 |
| 45° | 6934 | 5507 | 5745 |
| 50° | 6646 | 5256 | 5599 |
| 55° | 6317 | 5023 | 5473 |
| 60° | 5943 | 4832 | 5377 |
| 65° | 5488 | 4664 | 5324 |
| 70° | 4925 | 4560 | 5306 |
| 75° | 4169 | 4484 | 5329 |
| 80° | 3257 | 4483 | 5415 |
| 85° | 2084 | 4600 | 5591 |

**MAXIMUM LUMINANCE 45°-90°:**

Horizontal Angle: 0°  
 Vertical Angle: 45°  
 Luminance: 6934 cd/sqm



TEST NUMBER: P893676  
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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 112.7  | 2.2       |
| 10°-20°   | 321.3  | 6.4       |
| 20°-30°   | 482.4  | 9.6       |
| 30°-40°   | 580.0  | 11.6      |
| 40°-50°   | 614.6  | 12.3      |
| 50°-60°   | 591.8  | 11.8      |
| 60°-70°   | 523.8  | 10.5      |
| 70°-80°   | 429.6  | 8.6       |
| 80°-90°   | 333.4  | 6.7       |
| 90°-100°  | 258.7  | 5.2       |
| 100°-110° | 205.0  | 4.1       |
| 110°-120° | 163.3  | 3.3       |
| 120°-130° | 129.7  | 2.6       |
| 130°-140° | 101.3  | 2.0       |
| 140°-150° | 74.6   | 1.5       |
| 150°-160° | 49.3   | 1.0       |
| 160°-170° | 28.4   | 0.6       |
| 170°-180° | 9.1    | 0.2       |
| 0°-30°    | 916.3  | 18.3      |
| 0°-40°    | 1496.4 | 29.9      |
| 0°-60°    | 2702.7 | 54.0      |
| 0°-90°    | 3989.5 | 79.6      |
| 90°-120°  | 627.1  | 12.5      |
| 90°-150°  | 932.7  | 18.6      |
| 90°-180°  | 1019.0 | 20.3      |
| 0°-180°   | 5009.0 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|------|------|-------|------|-------|------|------|
| 0°   | 1191 | 1191  | 1191 | 1191  | 1191 |      |
| 5°   | 1190 | 1191  | 1178 | 1188  | 1193 | 113  |
| 15°  | 1136 | 1138  | 1131 | 1148  | 1154 | 321  |
| 25°  | 1034 | 1038  | 1038 | 1064  | 1071 | 476  |
| 35°  | 891  | 902   | 912  | 960   | 979  | 557  |
| 45°  | 725  | 742   | 780  | 853   | 884  | 560  |
| 55°  | 547  | 574   | 650  | 747   | 786  | 490  |
| 65°  | 363  | 412   | 529  | 640   | 688  | 359  |
| 75°  | 181  | 272   | 422  | 540   | 590  | 194  |
| 85°  | 41   | 164   | 330  | 450   | 497  | 47   |
| 90°  | 1    | 129   | 291  | 408   | 454  | 3    |
| 95°  | 6    | 106   | 257  | 368   | 414  | 6    |
| 105° | 20   | 86    | 203  | 301   | 341  | 22   |
| 115° | 41   | 83    | 169  | 246   | 279  | 40   |
| 125° | 59   | 86    | 147  | 203   | 228  | 53   |
| 135° | 75   | 92    | 133  | 170   | 186  | 57   |
| 145° | 79   | 91    | 120  | 146   | 155  | 50   |
| 155° | 80   | 94    | 103  | 125   | 131  | 38   |
| 165° | 95   | 101   | 97   | 97    | 110  | 27   |
| 175° | 105  | 104   | 100  | 83    | 56   | 10   |
| 180° | 92   | 92    | 92   | 92    | 92   |      |



TEST NUMBER: P893676  
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**CANDELA DISTRIBUTION (FULL):**

|        | 0°     | 5°     | 10°    | 15°    | 20°    | 22.5°  | 25°    | 30°    | 35°    | 40°    | 45°    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 |
| 2.5°   | 1193.2 | 1192.0 | 1194.3 | 1196.6 | 1203.4 | 1194.3 | 1198.8 | 1186.4 | 1187.5 | 1188.6 | 1183.0 |
| 5°     | 1189.8 | 1186.4 | 1189.8 | 1192.0 | 1197.7 | 1190.9 | 1195.4 | 1181.8 | 1183.0 | 1185.2 | 1178.4 |
| 7.5°   | 1181.8 | 1178.4 | 1180.7 | 1183.0 | 1188.6 | 1181.8 | 1187.5 | 1173.9 | 1176.2 | 1177.3 | 1171.6 |
| 10°    | 1170.5 | 1166.0 | 1168.2 | 1171.6 | 1176.2 | 1170.5 | 1175.0 | 1162.6 | 1163.7 | 1166.0 | 1160.3 |
| 12.5°  | 1155.8 | 1151.2 | 1153.5 | 1155.8 | 1161.4 | 1155.8 | 1160.3 | 1147.8 | 1150.1 | 1152.4 | 1146.7 |
| 15°    | 1136.5 | 1132.0 | 1134.2 | 1136.5 | 1141.0 | 1137.6 | 1142.2 | 1129.7 | 1132.0 | 1136.5 | 1130.8 |
| 17.5°  | 1116.1 | 1109.3 | 1111.6 | 1115.0 | 1119.5 | 1117.2 | 1120.6 | 1110.4 | 1111.6 | 1116.1 | 1110.4 |
| 20°    | 1091.2 | 1084.4 | 1086.7 | 1090.1 | 1094.6 | 1093.5 | 1095.7 | 1086.7 | 1088.9 | 1094.6 | 1088.9 |
| 22.5°  | 1064.0 | 1057.2 | 1059.5 | 1064.0 | 1067.4 | 1067.4 | 1068.5 | 1061.7 | 1064.0 | 1069.7 | 1065.1 |
| 25°    | 1034.5 | 1027.7 | 1030.0 | 1034.5 | 1037.9 | 1037.9 | 1040.2 | 1033.4 | 1036.8 | 1042.5 | 1037.9 |
| 27.5°  | 1000.5 | 997.1  | 997.1  | 1001.7 | 1003.9 | 1006.2 | 1007.3 | 1001.7 | 1006.2 | 1011.9 | 1008.5 |
| 30°    | 965.4  | 960.9  | 963.1  | 968.8  | 968.8  | 973.3  | 973.3  | 968.8  | 974.5  | 981.3  | 979.0  |
| 32.5°  | 928.0  | 924.6  | 925.8  | 932.5  | 932.5  | 938.2  | 937.1  | 934.8  | 940.5  | 948.4  | 946.1  |
| 35°    | 890.6  | 887.2  | 888.4  | 895.2  | 895.2  | 902.0  | 899.7  | 899.7  | 905.4  | 914.4  | 912.2  |
| 37.5°  | 851.0  | 848.7  | 849.8  | 856.6  | 856.6  | 863.4  | 861.2  | 862.3  | 869.1  | 879.3  | 878.2  |
| 40°    | 810.2  | 807.9  | 810.2  | 815.8  | 818.1  | 823.8  | 821.5  | 823.8  | 832.8  | 841.9  | 845.3  |
| 42.5°  | 768.2  | 767.1  | 769.4  | 775.0  | 777.3  | 783.0  | 781.8  | 785.2  | 794.3  | 807.9  | 812.4  |
| 45°    | 725.2  | 725.2  | 727.5  | 733.1  | 735.4  | 742.2  | 741.1  | 745.6  | 756.9  | 771.6  | 779.6  |
| 47.5°  | 682.1  | 683.3  | 684.4  | 691.2  | 691.2  | 702.5  | 699.1  | 705.9  | 720.7  | 737.7  | 746.7  |
| 50°    | 637.9  | 640.2  | 641.3  | 647.0  | 649.3  | 659.5  | 657.2  | 668.5  | 684.4  | 702.5  | 715.0  |
| 52.5°  | 593.7  | 596.0  | 598.3  | 602.8  | 605.1  | 617.5  | 615.3  | 630.0  | 649.3  | 668.5  | 682.1  |
| 55°    | 547.3  | 551.8  | 553.0  | 558.6  | 562.0  | 574.5  | 574.5  | 591.5  | 611.9  | 633.4  | 650.4  |
| 57.5°  | 502.0  | 506.5  | 507.6  | 514.4  | 519.0  | 533.7  | 536.0  | 555.2  | 577.9  | 599.4  | 619.8  |
| 60°    | 455.5  | 461.2  | 462.3  | 469.1  | 477.0  | 492.9  | 496.3  | 517.8  | 542.8  | 565.4  | 589.2  |
| 62.5°  | 409.1  | 414.7  | 417.0  | 423.8  | 436.2  | 452.1  | 457.8  | 482.7  | 508.8  | 533.7  | 559.8  |
| 65°    | 362.6  | 368.3  | 371.7  | 380.7  | 395.5  | 412.5  | 420.4  | 446.4  | 475.9  | 502.0  | 529.2  |
| 67.5°  | 316.1  | 322.9  | 327.5  | 338.8  | 358.1  | 376.2  | 384.1  | 413.6  | 444.2  | 472.5  | 500.8  |
| 70°    | 270.8  | 277.6  | 283.3  | 298.0  | 320.7  | 338.8  | 349.0  | 380.7  | 412.5  | 443.0  | 474.8  |
| 72.5°  | 226.6  | 233.4  | 241.4  | 259.5  | 284.4  | 304.8  | 316.1  | 349.0  | 384.1  | 414.7  | 447.6  |
| 75°    | 181.3  | 189.2  | 198.3  | 223.2  | 251.6  | 271.9  | 284.4  | 319.5  | 355.8  | 386.4  | 421.5  |
| 77.5°  | 140.5  | 148.4  | 162.0  | 187.0  | 218.7  | 241.4  | 254.9  | 292.3  | 329.7  | 360.3  | 396.6  |
| 80°    | 103.1  | 111.0  | 129.2  | 156.4  | 189.2  | 210.8  | 227.8  | 266.3  | 304.8  | 336.5  | 372.8  |
| 82.5°  | 70.3   | 78.2   | 99.7   | 129.2  | 164.3  | 185.8  | 201.7  | 242.5  | 281.0  | 313.9  | 350.1  |
| 85°    | 40.8   | 52.1   | 74.8   | 106.5  | 142.8  | 164.3  | 180.2  | 222.1  | 259.5  | 292.3  | 329.7  |
| 87.5°  | 18.1   | 31.7   | 56.7   | 88.4   | 124.6  | 145.0  | 162.0  | 200.6  | 240.2  | 273.1  | 310.5  |
| 90°    | 1.1    | 18.1   | 44.2   | 74.8   | 109.9  | 129.2  | 145.0  | 183.6  | 221.0  | 254.9  | 291.2  |
| 92.5°  | 2.3    | 12.5   | 36.3   | 64.6   | 97.4   | 116.7  | 132.6  | 168.8  | 204.0  | 239.1  | 274.2  |
| 95°    | 5.7    | 12.5   | 31.7   | 57.8   | 88.4   | 106.5  | 121.2  | 156.4  | 189.2  | 223.2  | 257.2  |
| 97.5°  | 9.1    | 13.6   | 30.6   | 54.4   | 81.6   | 98.6   | 112.2  | 145.0  | 177.9  | 208.5  | 242.5  |
| 100°   | 12.5   | 17.0   | 30.6   | 52.1   | 77.1   | 92.9   | 105.4  | 136.0  | 166.6  | 194.9  | 228.9  |
| 102.5° | 15.9   | 20.4   | 32.9   | 52.1   | 74.8   | 88.4   | 100.8  | 129.2  | 157.5  | 183.6  | 215.3  |
| 105°   | 20.4   | 23.8   | 35.1   | 52.1   | 72.5   | 86.1   | 96.3   | 122.4  | 149.6  | 174.5  | 202.8  |
| 107.5° | 24.9   | 27.2   | 37.4   | 53.3   | 72.5   | 83.9   | 94.0   | 117.8  | 142.8  | 165.4  | 192.6  |
| 110°   | 30.6   | 31.7   | 40.8   | 55.5   | 72.5   | 82.7   | 91.8   | 114.4  | 137.1  | 158.6  | 183.6  |



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**CANDELA DISTRIBUTION (continued):**

|        | 0°    | 5°    | 10°   | 15°   | 20°   | 22.5° | 25°   | 30°   | 35°   | 40°   | 45°   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 35.1  | 35.1  | 44.2  | 57.8  | 72.5  | 82.7  | 90.6  | 111.0 | 132.6 | 151.8 | 175.6 |
| 115°   | 40.8  | 40.8  | 47.6  | 60.1  | 73.7  | 82.7  | 90.6  | 109.9 | 129.2 | 146.2 | 168.8 |
| 117.5° | 45.3  | 45.3  | 52.1  | 62.3  | 75.9  | 83.9  | 90.6  | 107.6 | 125.8 | 141.6 | 162.0 |
| 120°   | 49.9  | 49.9  | 54.4  | 64.6  | 77.1  | 85.0  | 90.6  | 106.5 | 122.4 | 138.2 | 156.4 |
| 122.5° | 54.4  | 54.4  | 57.8  | 68.0  | 78.2  | 85.0  | 90.6  | 105.4 | 120.1 | 133.7 | 150.7 |
| 125°   | 58.9  | 58.9  | 61.2  | 70.3  | 80.5  | 86.1  | 91.8  | 105.4 | 119.0 | 130.3 | 147.3 |
| 127.5° | 63.5  | 62.3  | 65.7  | 73.7  | 81.6  | 87.2  | 92.9  | 105.4 | 116.7 | 128.0 | 142.8 |
| 130°   | 66.9  | 65.7  | 70.3  | 75.9  | 83.9  | 88.4  | 92.9  | 104.2 | 115.6 | 125.8 | 138.2 |
| 132.5° | 71.4  | 69.1  | 74.8  | 77.1  | 86.1  | 90.6  | 94.0  | 104.2 | 114.4 | 123.5 | 136.0 |
| 135°   | 74.8  | 72.5  | 78.2  | 80.5  | 87.2  | 91.8  | 95.2  | 104.2 | 113.3 | 122.4 | 132.6 |
| 137.5° | 77.1  | 75.9  | 81.6  | 83.9  | 88.4  | 92.9  | 96.3  | 104.2 | 112.2 | 120.1 | 130.3 |
| 140°   | 78.2  | 77.1  | 81.6  | 86.1  | 88.4  | 92.9  | 95.2  | 103.1 | 111.0 | 117.8 | 126.9 |
| 142.5° | 79.3  | 79.3  | 82.7  | 87.2  | 88.4  | 91.8  | 95.2  | 102.0 | 108.8 | 114.4 | 124.6 |
| 145°   | 79.3  | 79.3  | 82.7  | 88.4  | 89.5  | 90.6  | 92.9  | 99.7  | 105.4 | 111.0 | 120.1 |
| 147.5° | 79.3  | 79.3  | 83.9  | 88.4  | 90.6  | 91.8  | 90.6  | 97.4  | 103.1 | 107.6 | 115.6 |
| 150°   | 79.3  | 79.3  | 83.9  | 88.4  | 91.8  | 92.9  | 91.8  | 95.2  | 99.7  | 104.2 | 111.0 |
| 152.5° | 80.5  | 80.5  | 83.9  | 88.4  | 91.8  | 92.9  | 92.9  | 92.9  | 96.3  | 100.8 | 107.6 |
| 155°   | 80.5  | 81.6  | 83.9  | 90.6  | 92.9  | 94.0  | 94.0  | 94.0  | 92.9  | 97.4  | 103.1 |
| 157.5° | 83.9  | 85.0  | 86.1  | 91.8  | 94.0  | 95.2  | 95.2  | 95.2  | 94.0  | 92.9  | 98.6  |
| 160°   | 87.2  | 88.4  | 89.5  | 94.0  | 96.3  | 97.4  | 97.4  | 97.4  | 95.2  | 94.0  | 94.0  |
| 162.5° | 90.6  | 92.9  | 92.9  | 95.2  | 97.4  | 98.6  | 98.6  | 99.7  | 97.4  | 96.3  | 95.2  |
| 165°   | 95.2  | 96.3  | 96.3  | 97.4  | 99.7  | 100.8 | 99.7  | 100.8 | 99.7  | 98.6  | 97.4  |
| 167.5° | 98.6  | 99.7  | 99.7  | 100.8 | 100.8 | 102.0 | 102.0 | 102.0 | 100.8 | 99.7  | 99.7  |
| 170°   | 102.0 | 103.1 | 103.1 | 103.1 | 103.1 | 103.1 | 103.1 | 103.1 | 102.0 | 99.7  | 99.7  |
| 172.5° | 104.2 | 105.4 | 105.4 | 104.2 | 104.2 | 104.2 | 104.2 | 103.1 | 100.8 | 99.7  | 99.7  |
| 175°   | 105.4 | 106.5 | 106.5 | 105.4 | 104.2 | 104.2 | 104.2 | 103.1 | 100.8 | 99.7  | 99.7  |
| 177.5° | 106.5 | 107.6 | 106.5 | 106.5 | 104.2 | 104.2 | 104.2 | 104.2 | 102.0 | 100.8 | 99.7  |
| 180°   | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  |



TEST NUMBER: P893676  
 CATALOG NUMBER: 4MB-5SL-RNDU-UNV-L850

**CANDELA DISTRIBUTION (continued):**

|        | 50°    | 55°    | 60°    | 65°    | 67.5°  | 70°    | 75°    | 80°    | 85°    | 90°    |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°     | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 | 1190.9 |
| 2.5°   | 1189.8 | 1176.2 | 1185.2 | 1186.4 | 1190.9 | 1186.4 | 1189.8 | 1186.4 | 1195.4 | 1192.0 |
| 5°     | 1185.2 | 1172.8 | 1180.7 | 1181.8 | 1187.5 | 1181.8 | 1187.5 | 1185.2 | 1196.6 | 1193.2 |
| 7.5°   | 1177.3 | 1167.1 | 1173.9 | 1175.0 | 1181.8 | 1176.2 | 1181.8 | 1179.6 | 1193.2 | 1188.6 |
| 10°    | 1166.0 | 1158.0 | 1164.8 | 1166.0 | 1172.8 | 1167.1 | 1171.6 | 1169.4 | 1184.1 | 1177.3 |
| 12.5°  | 1153.5 | 1146.7 | 1152.4 | 1153.5 | 1161.4 | 1155.8 | 1161.4 | 1159.2 | 1173.9 | 1167.1 |
| 15°    | 1135.4 | 1132.0 | 1137.6 | 1139.9 | 1147.8 | 1143.3 | 1149.0 | 1146.7 | 1162.6 | 1153.5 |
| 17.5°  | 1117.2 | 1115.0 | 1120.6 | 1122.9 | 1132.0 | 1126.3 | 1132.0 | 1129.7 | 1145.6 | 1136.5 |
| 20°    | 1094.6 | 1093.5 | 1099.1 | 1102.5 | 1110.4 | 1104.8 | 1111.6 | 1109.3 | 1126.3 | 1117.2 |
| 22.5°  | 1070.8 | 1070.8 | 1075.3 | 1078.7 | 1086.7 | 1082.1 | 1088.9 | 1087.8 | 1104.8 | 1095.7 |
| 25°    | 1044.7 | 1045.9 | 1050.4 | 1054.9 | 1064.0 | 1060.6 | 1066.3 | 1066.3 | 1082.1 | 1070.8 |
| 27.5°  | 1015.3 | 1020.9 | 1024.3 | 1030.0 | 1037.9 | 1034.5 | 1040.2 | 1041.3 | 1057.2 | 1045.9 |
| 30°    | 984.7  | 992.6  | 996.0  | 1002.8 | 1009.6 | 1009.6 | 1015.3 | 1017.5 | 1033.4 | 1022.1 |
| 32.5°  | 952.9  | 962.0  | 966.5  | 975.6  | 984.7  | 984.7  | 992.6  | 996.0  | 1011.9 | 1001.7 |
| 35°    | 921.2  | 933.7  | 939.3  | 950.7  | 959.7  | 960.9  | 968.8  | 973.3  | 989.2  | 979.0  |
| 37.5°  | 890.6  | 906.5  | 912.2  | 925.8  | 933.7  | 935.9  | 945.0  | 950.7  | 965.4  | 956.3  |
| 40°    | 858.9  | 878.2  | 885.0  | 899.7  | 906.5  | 911.0  | 920.1  | 926.9  | 940.5  | 932.5  |
| 42.5°  | 828.3  | 849.8  | 856.6  | 872.5  | 880.4  | 885.0  | 894.0  | 903.1  | 916.7  | 908.8  |
| 45°    | 797.7  | 821.5  | 829.4  | 846.4  | 853.2  | 860.0  | 870.2  | 878.2  | 890.6  | 883.8  |
| 47.5°  | 768.2  | 793.2  | 801.1  | 819.2  | 827.2  | 835.1  | 844.2  | 855.5  | 866.8  | 860.0  |
| 50°    | 737.7  | 763.7  | 773.9  | 793.2  | 800.0  | 809.0  | 820.4  | 830.6  | 841.9  | 836.2  |
| 52.5°  | 708.2  | 735.4  | 745.6  | 766.0  | 773.9  | 783.0  | 794.3  | 805.6  | 815.8  | 811.3  |
| 55°    | 676.5  | 705.9  | 717.3  | 738.8  | 746.7  | 755.8  | 768.2  | 780.7  | 789.8  | 786.4  |
| 57.5°  | 647.0  | 677.6  | 688.9  | 712.7  | 719.5  | 730.9  | 743.3  | 756.9  | 764.8  | 761.4  |
| 60°    | 617.5  | 648.1  | 661.7  | 685.5  | 693.5  | 704.8  | 717.3  | 732.0  | 738.8  | 736.5  |
| 62.5°  | 588.1  | 619.8  | 634.5  | 659.5  | 666.3  | 678.7  | 693.5  | 705.9  | 712.7  | 711.6  |
| 65°    | 560.9  | 591.5  | 608.5  | 633.4  | 640.2  | 653.8  | 667.4  | 681.0  | 687.8  | 687.8  |
| 67.5°  | 532.6  | 565.4  | 582.4  | 608.5  | 614.1  | 628.9  | 643.6  | 657.2  | 662.9  | 662.9  |
| 70°    | 506.5  | 538.2  | 557.5  | 583.6  | 589.2  | 602.8  | 618.7  | 633.4  | 637.9  | 639.1  |
| 72.5°  | 480.4  | 512.2  | 532.6  | 559.8  | 565.4  | 579.0  | 593.7  | 609.6  | 613.0  | 614.1  |
| 75°    | 455.5  | 487.2  | 507.6  | 534.8  | 540.5  | 554.1  | 570.0  | 584.7  | 589.2  | 590.3  |
| 77.5°  | 430.6  | 462.3  | 485.0  | 511.0  | 516.7  | 530.3  | 546.2  | 560.9  | 564.3  | 566.6  |
| 80°    | 407.9  | 438.5  | 460.0  | 488.4  | 494.0  | 507.6  | 522.4  | 537.1  | 539.4  | 542.8  |
| 82.5°  | 385.3  | 415.9  | 438.5  | 465.7  | 471.4  | 485.0  | 499.7  | 514.4  | 516.7  | 521.2  |
| 85°    | 363.7  | 394.3  | 417.0  | 443.0  | 449.8  | 462.3  | 478.2  | 491.8  | 494.0  | 497.4  |
| 87.5°  | 344.5  | 372.8  | 396.6  | 421.5  | 428.3  | 440.8  | 456.6  | 470.2  | 471.4  | 475.9  |
| 90°    | 324.1  | 352.4  | 376.2  | 401.1  | 407.9  | 419.3  | 435.1  | 448.7  | 451.0  | 454.4  |
| 92.5°  | 307.1  | 333.1  | 358.1  | 381.9  | 387.5  | 400.0  | 414.7  | 428.3  | 430.6  | 434.0  |
| 95°    | 288.9  | 315.0  | 339.9  | 362.6  | 368.3  | 380.7  | 394.3  | 407.9  | 410.2  | 413.6  |
| 97.5°  | 273.1  | 298.0  | 321.8  | 344.5  | 350.1  | 361.5  | 376.2  | 388.7  | 390.9  | 395.5  |
| 100°   | 258.3  | 282.1  | 307.1  | 327.5  | 333.1  | 344.5  | 358.1  | 370.5  | 372.8  | 377.3  |
| 102.5° | 244.8  | 267.4  | 291.2  | 310.5  | 317.3  | 327.5  | 341.1  | 352.4  | 354.7  | 358.1  |
| 105°   | 232.3  | 253.8  | 276.5  | 294.6  | 301.4  | 311.6  | 324.1  | 335.4  | 337.7  | 341.1  |
| 107.5° | 219.8  | 240.2  | 261.7  | 279.9  | 285.5  | 294.6  | 307.1  | 318.4  | 320.7  | 325.2  |
| 110°   | 208.5  | 228.9  | 249.3  | 266.3  | 273.1  | 279.9  | 292.3  | 302.5  | 304.8  | 308.2  |





TEST NUMBER: P893676  
 CATALOG NUMBER: 4MB-5SL-RNDU-UNV-L850

**CANDELA DISTRIBUTION (continued):**

|        | 50°   | 55°   | 60°   | 65°   | 67.5° | 70°   | 75°   | 80°   | 85°   | 90°   |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 112.5° | 198.3 | 216.4 | 236.8 | 252.7 | 258.3 | 266.3 | 276.5 | 286.7 | 288.9 | 293.5 |
| 115°   | 189.2 | 206.2 | 226.6 | 241.4 | 245.9 | 252.7 | 264.0 | 273.1 | 275.3 | 278.7 |
| 117.5° | 181.3 | 196.0 | 214.2 | 228.9 | 234.6 | 240.2 | 250.4 | 258.3 | 261.7 | 264.0 |
| 120°   | 174.5 | 188.1 | 204.0 | 217.6 | 224.4 | 228.9 | 238.0 | 245.9 | 249.3 | 251.6 |
| 122.5° | 167.7 | 180.2 | 194.9 | 207.4 | 213.0 | 216.4 | 226.6 | 233.4 | 236.8 | 240.2 |
| 125°   | 162.0 | 173.4 | 187.0 | 197.2 | 202.8 | 206.2 | 215.3 | 222.1 | 225.5 | 227.8 |
| 127.5° | 156.4 | 166.6 | 180.2 | 188.1 | 193.8 | 196.0 | 204.0 | 210.8 | 214.2 | 215.3 |
| 130°   | 150.7 | 160.9 | 172.2 | 180.2 | 184.7 | 188.1 | 194.9 | 199.4 | 202.8 | 204.0 |
| 132.5° | 146.2 | 155.2 | 165.4 | 173.4 | 177.9 | 179.0 | 185.8 | 190.4 | 193.8 | 194.9 |
| 135°   | 142.8 | 149.6 | 159.8 | 166.6 | 170.0 | 172.2 | 177.9 | 181.3 | 184.7 | 185.8 |
| 137.5° | 138.2 | 145.0 | 154.1 | 158.6 | 163.2 | 164.3 | 170.0 | 173.4 | 176.8 | 177.9 |
| 140°   | 134.8 | 140.5 | 148.4 | 153.0 | 157.5 | 157.5 | 162.0 | 165.4 | 168.8 | 168.8 |
| 142.5° | 131.4 | 137.1 | 143.9 | 148.4 | 151.8 | 151.8 | 156.4 | 158.6 | 162.0 | 162.0 |
| 145°   | 126.9 | 132.6 | 139.4 | 142.8 | 146.2 | 146.2 | 149.6 | 151.8 | 155.2 | 155.2 |
| 147.5° | 122.4 | 128.0 | 134.8 | 137.1 | 140.5 | 140.5 | 143.9 | 146.2 | 148.4 | 148.4 |
| 150°   | 116.7 | 121.2 | 129.2 | 132.6 | 136.0 | 136.0 | 138.2 | 140.5 | 142.8 | 142.8 |
| 152.5° | 112.2 | 115.6 | 122.4 | 126.9 | 130.3 | 130.3 | 132.6 | 134.8 | 137.1 | 137.1 |
| 155°   | 106.5 | 109.9 | 115.6 | 121.2 | 124.6 | 125.8 | 128.0 | 129.2 | 131.4 | 131.4 |
| 157.5° | 102.0 | 105.4 | 109.9 | 114.4 | 117.8 | 120.1 | 123.5 | 124.6 | 125.8 | 125.8 |
| 160°   | 96.3  | 98.6  | 103.1 | 107.6 | 111.0 | 113.3 | 119.0 | 120.1 | 121.2 | 121.2 |
| 162.5° | 94.0  | 94.0  | 96.3  | 99.7  | 103.1 | 104.2 | 109.9 | 114.4 | 116.7 | 115.6 |
| 165°   | 95.2  | 94.0  | 94.0  | 95.2  | 97.4  | 98.6  | 102.0 | 108.8 | 111.0 | 109.9 |
| 167.5° | 97.4  | 95.2  | 94.0  | 94.0  | 96.3  | 96.3  | 99.7  | 105.4 | 112.2 | 109.9 |
| 170°   | 97.4  | 94.0  | 91.8  | 91.8  | 92.9  | 92.9  | 95.2  | 98.6  | 105.4 | 106.5 |
| 172.5° | 96.3  | 94.0  | 90.6  | 86.1  | 87.2  | 86.1  | 85.0  | 87.2  | 88.4  | 99.7  |
| 175°   | 97.4  | 94.0  | 90.6  | 85.0  | 82.7  | 79.3  | 73.7  | 69.1  | 68.0  | 55.5  |
| 177.5° | 96.3  | 92.9  | 88.4  | 83.9  | 81.6  | 77.1  | 70.3  | 62.3  | 57.8  | 51.0  |
| 180°   | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  | 91.8  |



TEST NUMBER: P893676  
 CATALOG NUMBER: 4MB-5SL-RNDU-UNV-L850

**CIE UGR TABLE:**

| Reflectances:   |      |                  |       |       |       |       |                |       |       |       |       |
|-----------------|------|------------------|-------|-------|-------|-------|----------------|-------|-------|-------|-------|
| Ceiling         |      | 0.7              | 0.7   | 0.5   | 0.5   | 0.3   | 0.7            | 0.7   | 0.5   | 0.5   | 0.3   |
| Wall            |      | 0.5              | 0.3   | 0.5   | 0.3   | 0.3   | 0.5            | 0.3   | 0.5   | 0.3   | 0.3   |
| Reference plane |      | 0.2              | 0.2   | 0.2   | 0.2   | 0.2   | 0.2            | 0.2   | 0.2   | 0.2   | 0.2   |
| Room dimensions |      | Viewed crosswise |       |       |       |       | Viewed endwise |       |       |       |       |
| X=2H            | Y=2H | 14.35            | 15.67 | 15.00 | 16.33 | 17.10 | 17.90          | 19.21 | 18.54 | 19.88 | 20.65 |
|                 | 3H   | 15.70            | 16.90 | 16.36 | 17.58 | 18.38 | 20.82          | 22.02 | 21.47 | 22.69 | 23.49 |
|                 | 4H   | 16.11            | 17.25 | 16.78 | 17.93 | 18.75 | 22.29          | 23.43 | 22.97 | 24.12 | 24.93 |
|                 | 6H   | 16.32            | 17.39 | 17.01 | 18.08 | 18.91 | 23.85          | 24.91 | 24.54 | 25.61 | 26.44 |
|                 | 8H   | 16.36            | 17.38 | 17.05 | 18.09 | 18.93 | 24.66          | 25.68 | 25.36 | 26.40 | 27.23 |
|                 | 12H  | 16.36            | 17.34 | 17.07 | 18.05 | 18.91 | 25.54          | 26.52 | 26.24 | 27.23 | 28.09 |
| 4H              | 2H   | 15.50            | 16.64 | 16.17 | 17.32 | 18.14 | 18.22          | 19.36 | 18.90 | 20.05 | 20.86 |
|                 | 3H   | 17.14            | 18.12 | 17.83 | 18.84 | 19.67 | 21.37          | 22.35 | 22.06 | 23.07 | 23.90 |
|                 | 4H   | 17.71            | 18.61 | 18.41 | 19.33 | 20.20 | 23.02          | 23.92 | 23.72 | 24.65 | 25.51 |
|                 | 6H   | 18.05            | 18.85 | 18.77 | 19.60 | 20.46 | 24.79          | 25.59 | 25.51 | 26.34 | 27.21 |
|                 | 8H   | 18.12            | 18.87 | 18.85 | 19.62 | 20.51 | 25.73          | 26.48 | 26.45 | 27.22 | 28.11 |
|                 | 12H  | 18.15            | 18.84 | 18.90 | 19.60 | 20.49 | 26.75          | 27.43 | 27.50 | 28.20 | 29.09 |
| 8H              | 4H   | 18.79            | 19.55 | 19.52 | 20.29 | 21.18 | 23.20          | 23.95 | 23.92 | 24.69 | 25.58 |
|                 | 6H   | 19.40            | 20.04 | 20.16 | 20.83 | 21.72 | 25.15          | 25.79 | 25.90 | 26.57 | 27.46 |
|                 | 8H   | 19.60            | 20.18 | 20.37 | 20.97 | 21.87 | 26.23          | 26.81 | 26.99 | 27.59 | 28.49 |
|                 | 12H  | 19.71            | 20.23 | 20.48 | 21.01 | 21.97 | 27.45          | 27.96 | 28.22 | 28.74 | 29.70 |
| 12H             | 4H   | 19.15            | 19.83 | 19.90 | 20.60 | 21.49 | 23.19          | 23.87 | 23.94 | 24.64 | 25.53 |
|                 | 6H   | 19.93            | 20.51 | 20.69 | 21.29 | 22.19 | 25.18          | 25.76 | 25.94 | 26.54 | 27.44 |
|                 | 8H   | 20.25            | 20.77 | 21.02 | 21.55 | 22.51 | 26.32          | 26.84 | 27.09 | 27.62 | 28.58 |