

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: P775829

Luminaire Tested: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

Issue Date: 2/13/2024

Test Information

Test Method: LM-79-2019
Report Number: P775829
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (A2312156B048)
Test Lab:
Issue Date: 2/13/2024
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: HALO COMMERCIAL
Catalog Number: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K
Description: 8 INCH ROUND SHALLOW-WIDE LENSED WALLWASH KIT
Light Source: SELECTABLE LUMENS AND CCT ARRAY 90CRI / 5000K CCT
Ballast/Driver: -

Summary

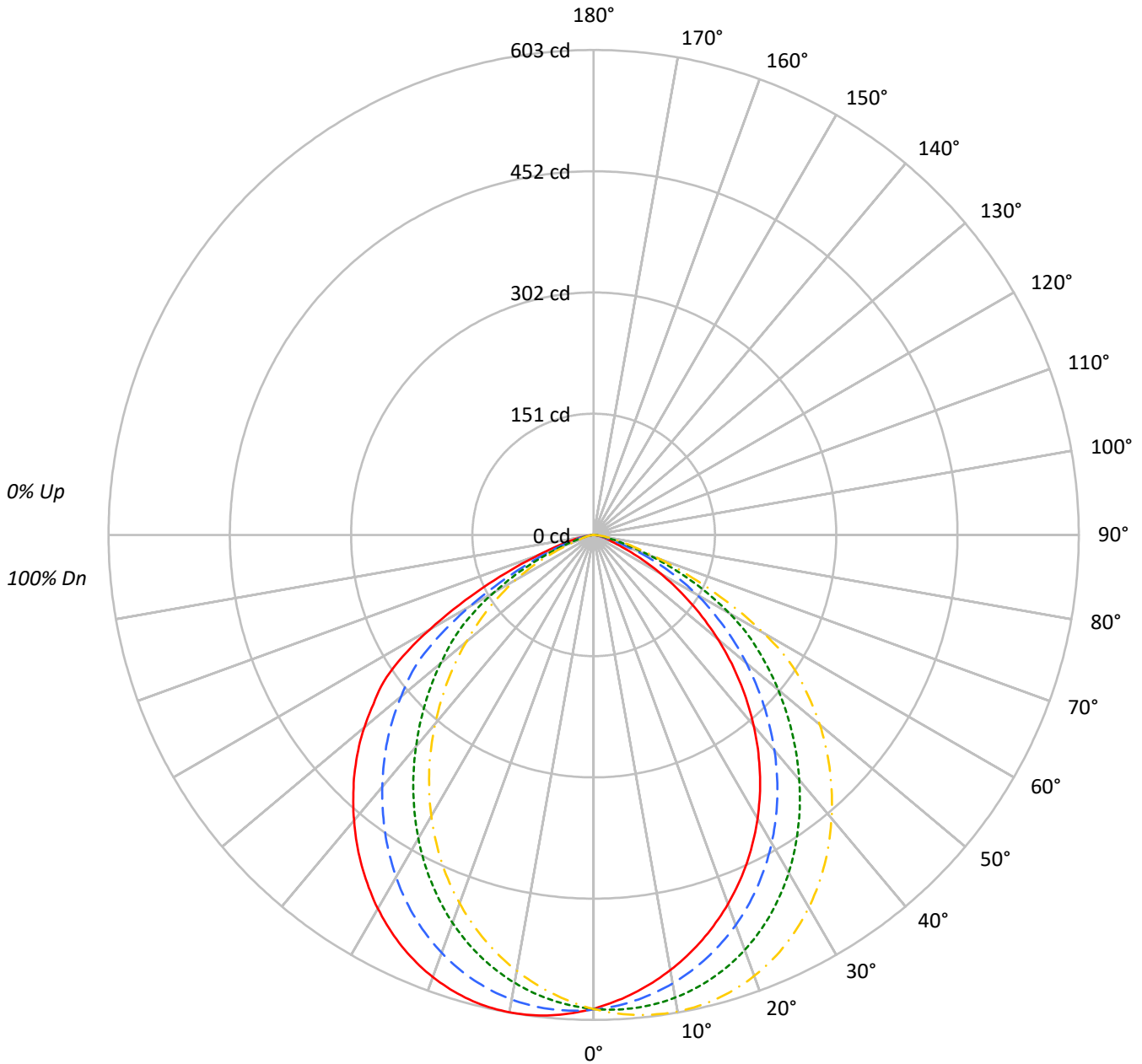
Lumens per Lamp: N/A
Luminaire Lumens: 1308.2 lumens
Efficiency: N/A
Efficacy: 130.8 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.17 / 1.27
Luminous Opening: Circular (Dia: 0.67' x H: 0')
CIE Type: Direct

Input Watts (W): 10
Input Voltage (V): NR
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: 24 FT



TEST NUMBER: P775829
CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

Luminous Intensity Polar Plot





TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 | | | | |
| 1 | 111 | 107 | 103 | 100 | 108 | 105 | 101 | 98 | 100 | 98 | 95 | 97 | 94 | 92 | 93 | 91 | 90 | 88 | | | | 88 | | | | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 86 | 83 | 79 | 83 | 80 | 78 | 76 | | | | 76 | | | | |
| 3 | 94 | 85 | 77 | 72 | 92 | 83 | 76 | 71 | 80 | 74 | 70 | 77 | 73 | 69 | 75 | 71 | 67 | 65 | | | | 65 | | | | |
| 4 | 87 | 76 | 68 | 62 | 84 | 74 | 67 | 61 | 72 | 66 | 61 | 70 | 64 | 60 | 68 | 63 | 59 | 57 | | | | 57 | | | | |
| 5 | 80 | 68 | 60 | 54 | 78 | 67 | 59 | 54 | 65 | 58 | 53 | 63 | 57 | 52 | 61 | 56 | 52 | 50 | | | | 50 | | | | |
| 6 | 74 | 62 | 53 | 48 | 72 | 61 | 53 | 47 | 59 | 52 | 47 | 57 | 51 | 47 | 56 | 50 | 46 | 44 | | | | 44 | | | | |
| 7 | 69 | 56 | 48 | 42 | 67 | 55 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 42 | 51 | 46 | 41 | 39 | | | | 39 | | | | |
| 8 | 64 | 52 | 44 | 38 | 63 | 51 | 43 | 38 | 50 | 43 | 38 | 48 | 42 | 37 | 47 | 42 | 37 | 35 | | | | 35 | | | | |
| 9 | 60 | 47 | 40 | 34 | 59 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 34 | 44 | 38 | 34 | 32 | | | | 32 | | | | |
| 10 | 56 | 44 | 36 | 31 | 55 | 43 | 36 | 31 | 42 | 36 | 31 | 41 | 35 | 31 | 41 | 35 | 31 | 29 | | | | 29 | | | | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 90° | 180° | 270° |
|-----|-------|-------|-------|-------|
| 0° | 18001 | 18001 | 18001 | 18001 |
| 5° | 17527 | 18097 | 18373 | 17809 |
| 10° | 17029 | 18108 | 18688 | 17528 |
| 15° | 16480 | 18029 | 18898 | 17156 |
| 20° | 15868 | 17840 | 19006 | 16670 |
| 25° | 15166 | 17534 | 19013 | 16068 |
| 30° | 14362 | 17094 | 18917 | 15367 |
| 35° | 13425 | 16526 | 18725 | 14562 |
| 40° | 12327 | 15842 | 18469 | 13694 |
| 45° | 11057 | 15069 | 18151 | 12776 |
| 50° | 9575 | 14221 | 17678 | 11793 |
| 55° | 7840 | 13254 | 16980 | 10709 |
| 60° | 5874 | 11882 | 14374 | 8762 |
| 65° | 3764 | 9572 | 10417 | 6271 |
| 70° | 2133 | 6579 | 6445 | 3776 |
| 75° | 1616 | 3845 | 4070 | 2053 |
| 80° | 1143 | 2110 | 2321 | 967 |
| 85° | 666 | 1156 | 596 | 420 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 157.5°
 Vertical Angle: 45°
 Luminance: 18402 cd/sqm



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 55.6 | 4.3 |
| 10°-20° | 157.4 | 12.0 |
| 20°-30° | 231.8 | 17.7 |
| 30°-40° | 265.7 | 20.3 |
| 40°-50° | 255.7 | 19.5 |
| 50°-60° | 203.9 | 15.6 |
| 60°-70° | 105.8 | 8.1 |
| 70°-80° | 28.5 | 2.2 |
| 80°-90° | 3.7 | 0.3 |
| 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° | 444.8 | 34.0 |
| 0°-40° | 710.5 | 54.3 |
| 0°-60° | 1170.1 | 89.4 |
| 0°-90° | 1308.2 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1308.2 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 90° | 180° | 270° | 360° | Flux |
|-----|-----|-----|------|------|------|------|
| 0° | 590 | 590 | 590 | 590 | 590 | |
| 5° | 572 | 590 | 600 | 581 | 572 | 54 |
| 15° | 521 | 570 | 598 | 543 | 521 | 147 |
| 25° | 450 | 520 | 564 | 477 | 450 | 207 |
| 35° | 360 | 443 | 502 | 391 | 360 | 225 |
| 45° | 256 | 349 | 420 | 296 | 256 | 197 |
| 55° | 147 | 249 | 319 | 201 | 147 | 132 |
| 65° | 52 | 132 | 144 | 87 | 52 | 54 |
| 75° | 14 | 33 | 34 | 17 | 14 | 15 |
| 85° | 2 | 3 | 2 | 1 | 2 | 3 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 0° | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 |
| 0.5° | 587.5 | 590.1 | 589.8 | 589.5 | 589.8 | 590.4 | 590.7 | 590.7 | 590.3 | 592.1 | 590.8 |
| 1° | 586.0 | 589.0 | 589.2 | 589.4 | 590.3 | 591.3 | 592.0 | 592.0 | 591.5 | 592.9 | 591.3 |
| 1.5° | 584.4 | 587.8 | 588.5 | 589.3 | 590.5 | 592.0 | 593.0 | 593.0 | 592.8 | 593.7 | 591.7 |
| 2° | 582.8 | 586.6 | 587.7 | 589.0 | 590.7 | 592.7 | 594.1 | 594.5 | 594.0 | 594.4 | 592.0 |
| 2.5° | 581.1 | 585.4 | 586.8 | 588.8 | 590.8 | 593.4 | 595.2 | 595.7 | 595.1 | 595.2 | 592.2 |
| 3° | 579.4 | 584.0 | 585.9 | 588.4 | 590.9 | 594.0 | 596.1 | 596.8 | 596.0 | 595.8 | 592.3 |
| 3.5° | 577.7 | 582.6 | 584.9 | 587.9 | 590.9 | 594.5 | 597.0 | 597.8 | 597.1 | 596.3 | 592.4 |
| 4° | 575.8 | 581.1 | 583.9 | 587.4 | 590.8 | 595.0 | 597.7 | 598.8 | 597.9 | 596.8 | 592.4 |
| 4.5° | 574.0 | 579.6 | 582.7 | 586.8 | 590.7 | 595.3 | 598.5 | 599.7 | 598.8 | 597.2 | 592.3 |
| 5° | 571.9 | 578.0 | 581.5 | 586.1 | 590.5 | 595.5 | 599.1 | 600.5 | 599.5 | 597.5 | 592.2 |
| 5.5° | 570.0 | 576.4 | 580.4 | 585.4 | 590.2 | 595.7 | 599.7 | 601.2 | 600.2 | 597.7 | 591.9 |
| 6° | 567.9 | 574.7 | 579.0 | 584.5 | 589.8 | 595.8 | 600.2 | 601.9 | 600.8 | 597.8 | 591.7 |
| 6.5° | 565.8 | 572.9 | 577.6 | 583.7 | 589.3 | 595.9 | 600.6 | 602.4 | 601.4 | 597.9 | 591.3 |
| 7° | 563.6 | 571.1 | 576.2 | 582.7 | 588.8 | 595.9 | 601.0 | 603.1 | 601.8 | 597.9 | 590.9 |
| 7.5° | 561.4 | 569.2 | 574.7 | 581.7 | 588.1 | 595.8 | 601.2 | 603.5 | 602.1 | 597.8 | 590.4 |
| 8° | 559.0 | 567.2 | 573.1 | 580.6 | 587.6 | 595.7 | 601.5 | 603.8 | 602.4 | 597.7 | 589.7 |
| 8.5° | 556.7 | 565.2 | 571.4 | 579.4 | 586.9 | 595.4 | 601.7 | 604.1 | 602.6 | 597.4 | 589.1 |
| 9° | 554.2 | 563.2 | 569.7 | 578.1 | 586.0 | 595.2 | 601.7 | 604.3 | 602.8 | 597.2 | 588.4 |
| 9.5° | 551.9 | 561.1 | 568.0 | 576.8 | 585.2 | 594.7 | 601.7 | 604.4 | 602.8 | 596.8 | 587.5 |
| 10° | 549.3 | 558.9 | 566.1 | 575.5 | 584.1 | 594.2 | 601.6 | 604.6 | 602.8 | 596.2 | 586.6 |
| 10.5° | 546.9 | 556.7 | 564.2 | 574.0 | 583.1 | 593.8 | 601.5 | 604.4 | 602.6 | 595.7 | 585.7 |
| 11° | 544.2 | 554.4 | 562.2 | 572.4 | 582.0 | 593.1 | 601.1 | 604.3 | 602.4 | 595.1 | 584.6 |
| 11.5° | 541.6 | 552.1 | 560.2 | 570.9 | 580.8 | 592.5 | 600.8 | 604.1 | 602.2 | 594.4 | 583.4 |
| 12° | 538.8 | 549.7 | 558.2 | 569.2 | 579.5 | 591.8 | 600.5 | 603.9 | 601.8 | 593.6 | 582.3 |
| 12.5° | 536.1 | 547.2 | 556.0 | 567.4 | 578.2 | 590.9 | 600.0 | 603.5 | 601.4 | 592.7 | 581.0 |
| 13° | 533.2 | 544.7 | 553.8 | 565.5 | 576.8 | 590.1 | 599.4 | 603.1 | 600.8 | 591.8 | 579.6 |
| 13.5° | 530.4 | 542.1 | 551.5 | 563.7 | 575.3 | 589.1 | 598.8 | 602.5 | 600.3 | 590.8 | 578.2 |
| 14° | 527.5 | 539.5 | 549.1 | 561.7 | 573.8 | 588.0 | 598.1 | 602.0 | 599.7 | 589.6 | 576.6 |
| 14.5° | 524.4 | 536.9 | 546.8 | 559.8 | 572.2 | 586.9 | 597.3 | 601.4 | 598.8 | 588.5 | 575.1 |
| 15° | 521.4 | 534.2 | 544.3 | 557.7 | 570.4 | 585.6 | 596.5 | 600.5 | 597.9 | 587.2 | 573.4 |
| 15.5° | 518.3 | 531.3 | 541.8 | 555.5 | 568.6 | 584.4 | 595.5 | 599.7 | 597.0 | 585.9 | 571.7 |
| 16° | 515.2 | 528.5 | 539.1 | 553.3 | 566.7 | 583.0 | 594.4 | 598.8 | 596.0 | 584.4 | 570.0 |
| 16.5° | 512.0 | 525.6 | 536.4 | 550.9 | 564.8 | 581.5 | 593.4 | 597.7 | 595.0 | 582.9 | 568.1 |
| 17° | 508.7 | 522.6 | 533.8 | 548.5 | 562.8 | 580.0 | 592.2 | 596.7 | 593.8 | 581.3 | 566.1 |
| 17.5° | 505.4 | 519.6 | 531.0 | 546.1 | 560.7 | 578.4 | 590.9 | 595.5 | 592.5 | 579.6 | 564.1 |
| 18° | 502.2 | 516.5 | 528.2 | 543.6 | 558.5 | 576.7 | 589.6 | 594.2 | 591.1 | 577.9 | 561.9 |
| 18.5° | 498.8 | 513.4 | 525.3 | 541.0 | 556.3 | 574.9 | 588.2 | 592.9 | 589.6 | 576.1 | 559.8 |
| 19° | 495.2 | 510.2 | 522.3 | 538.4 | 553.9 | 573.2 | 586.8 | 591.5 | 588.2 | 574.3 | 557.5 |
| 19.5° | 491.8 | 506.9 | 519.3 | 535.6 | 551.6 | 571.3 | 585.2 | 590.1 | 586.6 | 572.3 | 555.2 |
| 20° | 488.4 | 503.7 | 516.2 | 532.9 | 549.1 | 569.3 | 583.6 | 588.5 | 585.0 | 570.2 | 552.8 |
| 20.5° | 484.8 | 500.3 | 513.1 | 530.1 | 546.5 | 567.2 | 581.9 | 586.9 | 583.3 | 568.1 | 550.4 |
| 21° | 480.9 | 497.0 | 509.9 | 527.2 | 543.9 | 565.1 | 580.0 | 585.2 | 581.5 | 566.0 | 547.8 |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 22.5° | 469.9 | 486.5 | 499.9 | 517.9 | 535.7 | 558.3 | 574.2 | 579.5 | 575.6 | 559.0 | 539.9 |
| 23° | 466.1 | 482.8 | 496.5 | 514.7 | 532.8 | 555.8 | 572.0 | 577.6 | 573.4 | 556.5 | 537.0 |
| 23.5° | 462.2 | 479.2 | 493.0 | 511.5 | 529.7 | 553.4 | 569.9 | 575.5 | 571.3 | 554.0 | 534.2 |
| 24° | 458.2 | 475.5 | 489.3 | 508.2 | 526.7 | 550.7 | 567.7 | 573.3 | 569.1 | 551.4 | 531.2 |
| 24.5° | 454.3 | 471.7 | 485.7 | 504.7 | 523.7 | 548.1 | 565.3 | 571.1 | 566.7 | 548.7 | 528.2 |
| 25° | 450.2 | 467.9 | 482.1 | 501.3 | 520.5 | 545.4 | 562.9 | 568.7 | 564.4 | 545.9 | 525.1 |
| 25.5° | 446.2 | 464.0 | 478.4 | 497.8 | 517.2 | 542.5 | 560.4 | 566.4 | 561.8 | 543.2 | 522.1 |
| 26° | 442.0 | 460.1 | 474.5 | 494.1 | 513.8 | 539.6 | 557.9 | 563.9 | 559.3 | 540.3 | 518.9 |
| 26.5° | 437.9 | 456.2 | 470.7 | 490.4 | 510.4 | 536.8 | 555.3 | 561.4 | 556.7 | 537.3 | 515.7 |
| 27° | 433.6 | 452.2 | 466.8 | 486.8 | 507.0 | 533.8 | 552.5 | 558.7 | 554.0 | 534.3 | 512.3 |
| 27.5° | 429.3 | 448.2 | 462.9 | 483.0 | 503.5 | 530.7 | 549.8 | 556.2 | 551.3 | 531.3 | 508.9 |
| 28° | 425.1 | 444.0 | 459.0 | 479.2 | 499.8 | 527.4 | 547.0 | 553.4 | 548.5 | 528.1 | 505.4 |
| 28.5° | 420.6 | 439.8 | 454.9 | 475.3 | 496.2 | 524.3 | 544.1 | 550.5 | 545.5 | 524.9 | 502.0 |
| 29° | 416.2 | 435.6 | 450.8 | 471.2 | 492.4 | 520.9 | 541.0 | 547.6 | 542.6 | 521.6 | 498.4 |
| 29.5° | 411.8 | 431.4 | 446.7 | 467.3 | 488.7 | 517.6 | 538.0 | 544.8 | 539.5 | 518.3 | 494.8 |
| 30° | 407.4 | 427.2 | 442.4 | 463.2 | 484.9 | 514.2 | 535.0 | 541.8 | 536.6 | 515.0 | 491.0 |
| 30.5° | 402.8 | 422.7 | 438.2 | 459.2 | 480.9 | 510.5 | 531.8 | 538.7 | 533.4 | 511.5 | 487.4 |
| 31° | 398.2 | 418.3 | 433.9 | 455.1 | 477.1 | 507.0 | 528.6 | 535.5 | 530.2 | 508.1 | 483.7 |
| 31.5° | 393.5 | 414.0 | 429.5 | 450.8 | 473.0 | 503.4 | 525.1 | 532.3 | 526.9 | 504.6 | 479.8 |
| 32° | 388.9 | 409.5 | 425.2 | 446.5 | 468.9 | 499.7 | 521.8 | 529.0 | 523.5 | 501.1 | 476.0 |
| 32.5° | 384.2 | 404.8 | 420.7 | 442.1 | 464.7 | 495.9 | 518.4 | 525.8 | 520.1 | 497.3 | 472.2 |
| 33° | 379.6 | 400.3 | 416.1 | 437.9 | 460.6 | 492.0 | 514.9 | 522.5 | 516.7 | 493.7 | 468.1 |
| 33.5° | 374.8 | 395.8 | 411.6 | 433.4 | 456.3 | 488.2 | 511.4 | 518.9 | 513.2 | 489.9 | 464.2 |
| 34° | 369.9 | 391.2 | 407.2 | 429.0 | 452.1 | 484.3 | 507.7 | 515.3 | 509.7 | 486.1 | 460.1 |
| 34.5° | 365.1 | 386.5 | 402.6 | 424.4 | 447.8 | 480.3 | 504.0 | 511.8 | 506.1 | 482.4 | 456.1 |
| 35° | 360.2 | 381.7 | 398.0 | 420.1 | 443.4 | 476.2 | 500.3 | 508.3 | 502.4 | 478.5 | 451.9 |
| 35.5° | 355.2 | 376.9 | 393.2 | 415.4 | 438.9 | 472.2 | 496.5 | 504.6 | 498.8 | 474.5 | 447.9 |
| 36° | 350.2 | 372.1 | 388.5 | 410.8 | 434.5 | 468.0 | 492.7 | 500.7 | 495.0 | 470.5 | 443.5 |
| 36.5° | 345.2 | 367.3 | 383.7 | 406.0 | 430.1 | 463.9 | 488.7 | 497.0 | 491.3 | 466.6 | 439.2 |
| 37° | 340.2 | 362.4 | 379.0 | 401.5 | 425.6 | 459.5 | 484.8 | 493.3 | 487.3 | 462.5 | 435.1 |
| 37.5° | 335.2 | 357.5 | 374.1 | 396.8 | 420.9 | 455.2 | 480.7 | 489.3 | 483.5 | 458.4 | 430.8 |
| 38° | 330.0 | 352.6 | 369.2 | 392.0 | 416.3 | 450.9 | 476.7 | 485.4 | 479.5 | 454.3 | 426.4 |
| 38.5° | 324.9 | 347.6 | 364.3 | 387.0 | 411.6 | 446.5 | 472.6 | 481.4 | 475.6 | 450.2 | 422.1 |
| 39° | 319.9 | 342.5 | 359.4 | 382.4 | 407.2 | 442.1 | 468.4 | 477.6 | 471.5 | 446.0 | 417.7 |
| 39.5° | 314.7 | 337.6 | 354.5 | 377.5 | 402.3 | 437.6 | 464.2 | 473.5 | 467.6 | 441.7 | 413.3 |
| 40° | 309.3 | 332.5 | 349.5 | 372.7 | 397.5 | 433.1 | 460.0 | 469.3 | 463.4 | 437.4 | 408.8 |
| 40.5° | 304.2 | 327.4 | 344.5 | 367.7 | 392.7 | 428.6 | 455.8 | 465.1 | 459.3 | 433.2 | 404.4 |
| 41° | 298.9 | 322.3 | 339.5 | 362.9 | 387.9 | 424.0 | 451.3 | 461.1 | 455.1 | 428.8 | 399.8 |
| 41.5° | 293.6 | 317.2 | 334.5 | 358.0 | 383.1 | 419.3 | 447.0 | 456.8 | 450.9 | 424.6 | 395.3 |
| 42° | 288.2 | 312.1 | 329.2 | 353.1 | 378.3 | 414.6 | 442.5 | 452.5 | 446.6 | 420.2 | 390.8 |
| 42.5° | 283.1 | 306.9 | 324.3 | 348.2 | 373.5 | 410.0 | 438.3 | 448.2 | 442.3 | 415.7 | 386.2 |
| 43° | 277.7 | 301.6 | 319.2 | 343.3 | 368.6 | 405.3 | 433.7 | 443.9 | 438.1 | 411.1 | 381.6 |
| 43.5° | 272.2 | 296.4 | 314.2 | 338.2 | 363.7 | 400.7 | 429.2 | 439.6 | 433.7 | 406.7 | 377.0 |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|-------|
| 45° | 256.1 | 280.5 | 298.8 | 323.3 | 349.0 | 386.3 | 415.5 | 426.2 | 420.4 | 392.9 | 362.8 |
| 45.5° | 250.7 | 275.3 | 293.7 | 318.4 | 344.1 | 381.5 | 410.8 | 421.8 | 415.9 | 388.1 | 358.0 |
| 46° | 245.3 | 270.0 | 288.5 | 313.3 | 339.2 | 376.7 | 406.1 | 417.1 | 411.3 | 383.4 | 353.2 |
| 46.5° | 239.8 | 264.7 | 283.5 | 308.2 | 334.3 | 371.8 | 401.4 | 412.5 | 406.7 | 378.6 | 348.3 |
| 47° | 234.5 | 259.4 | 278.3 | 303.2 | 329.3 | 366.9 | 396.5 | 407.8 | 401.9 | 373.7 | 343.4 |
| 47.5° | 228.9 | 254.1 | 273.2 | 298.2 | 324.2 | 362.0 | 391.8 | 403.0 | 397.1 | 368.8 | 338.3 |
| 48° | 223.3 | 248.8 | 268.0 | 293.3 | 319.3 | 357.1 | 386.9 | 398.2 | 392.4 | 363.6 | 333.3 |
| 48.5° | 218.0 | 243.3 | 262.8 | 288.2 | 314.4 | 352.2 | 382.0 | 393.3 | 387.5 | 358.4 | 328.2 |
| 49° | 212.5 | 238.1 | 257.6 | 283.2 | 309.4 | 347.0 | 377.0 | 388.4 | 382.5 | 353.2 | 323.0 |
| 49.5° | 207.1 | 232.8 | 252.6 | 278.2 | 304.3 | 342.0 | 372.1 | 383.4 | 377.3 | 347.9 | 317.7 |
| 50° | 201.6 | 227.5 | 247.6 | 273.1 | 299.4 | 337.0 | 366.9 | 378.3 | 372.2 | 342.6 | 312.5 |
| 50.5° | 196.0 | 222.1 | 242.4 | 268.2 | 294.4 | 331.9 | 361.6 | 373.0 | 366.9 | 337.0 | 307.4 |
| 51° | 190.6 | 216.7 | 237.3 | 263.2 | 289.4 | 326.8 | 356.4 | 367.7 | 361.5 | 331.7 | 302.3 |
| 51.5° | 185.2 | 211.4 | 232.1 | 258.2 | 284.4 | 321.7 | 351.1 | 362.3 | 356.1 | 326.5 | 297.3 |
| 52° | 179.7 | 206.1 | 227.0 | 253.1 | 279.3 | 316.3 | 345.7 | 356.7 | 350.6 | 321.5 | 292.5 |
| 52.5° | 174.4 | 200.8 | 221.9 | 248.1 | 274.1 | 311.1 | 340.2 | 351.2 | 345.0 | 316.6 | 287.5 |
| 53° | 168.8 | 195.5 | 216.9 | 243.1 | 269.0 | 305.7 | 334.7 | 345.9 | 339.8 | 311.3 | 282.5 |
| 53.5° | 163.4 | 190.3 | 211.8 | 238.2 | 264.0 | 300.4 | 329.1 | 340.2 | 334.7 | 305.9 | 276.6 |
| 54° | 158.1 | 185.0 | 206.8 | 233.0 | 258.9 | 295.0 | 323.8 | 335.1 | 329.7 | 299.7 | 270.6 |
| 54.5° | 152.7 | 179.8 | 201.7 | 228.1 | 253.9 | 289.9 | 318.6 | 330.2 | 324.4 | 292.9 | 263.8 |
| 55° | 147.3 | 174.6 | 196.7 | 223.1 | 249.0 | 284.8 | 313.6 | 325.2 | 319.0 | 285.2 | 256.8 |
| 55.5° | 142.1 | 169.3 | 191.7 | 218.3 | 244.2 | 279.9 | 308.4 | 319.5 | 312.5 | 277.8 | 249.4 |
| 56° | 136.7 | 164.2 | 186.6 | 213.4 | 239.3 | 274.8 | 302.9 | 313.3 | 305.4 | 269.4 | 241.8 |
| 56.5° | 131.5 | 159.1 | 181.7 | 208.5 | 234.4 | 269.3 | 296.8 | 306.2 | 297.9 | 261.1 | 234.3 |
| 57° | 126.3 | 153.9 | 176.9 | 203.8 | 229.1 | 263.5 | 290.3 | 299.1 | 289.9 | 252.6 | 226.6 |
| 57.5° | 121.1 | 148.9 | 172.1 | 199.0 | 223.7 | 257.6 | 283.4 | 291.1 | 281.3 | 244.2 | 218.4 |
| 58° | 116.2 | 143.9 | 167.1 | 194.2 | 218.1 | 251.2 | 276.3 | 282.9 | 272.5 | 235.0 | 210.3 |
| 58.5° | 111.1 | 139.0 | 162.2 | 189.1 | 212.5 | 244.7 | 268.8 | 274.1 | 263.7 | 225.9 | 202.2 |
| 59° | 106.1 | 134.1 | 157.4 | 184.0 | 206.6 | 238.0 | 260.7 | 265.3 | 254.4 | 216.9 | 194.1 |
| 59.5° | 101.0 | 129.2 | 152.5 | 178.7 | 200.7 | 231.0 | 252.6 | 255.8 | 244.9 | 208.1 | 185.9 |
| 60° | 96.2 | 124.2 | 147.6 | 173.5 | 194.6 | 224.0 | 244.3 | 246.6 | 235.4 | 198.8 | 177.9 |
| 60.5° | 91.5 | 119.4 | 142.5 | 168.3 | 188.8 | 216.9 | 235.9 | 237.2 | 226.0 | 189.8 | 169.9 |
| 61° | 86.8 | 114.7 | 137.6 | 162.9 | 182.5 | 209.7 | 227.1 | 228.0 | 216.6 | 181.0 | 162.0 |
| 61.5° | 82.0 | 109.8 | 132.6 | 157.6 | 176.3 | 202.3 | 218.3 | 218.5 | 207.0 | 171.9 | 154.1 |
| 62° | 77.5 | 105.0 | 127.6 | 152.2 | 170.2 | 194.8 | 209.8 | 209.3 | 197.7 | 163.2 | 146.2 |
| 62.5° | 73.0 | 100.2 | 122.7 | 146.9 | 163.8 | 187.4 | 200.8 | 200.1 | 188.2 | 154.7 | 138.7 |
| 63° | 68.6 | 95.5 | 117.6 | 141.5 | 157.5 | 179.7 | 192.1 | 190.8 | 179.2 | 146.7 | 131.3 |
| 63.5° | 64.2 | 90.8 | 112.7 | 135.9 | 151.2 | 172.1 | 183.4 | 181.6 | 170.1 | 138.6 | 124.1 |
| 64° | 60.1 | 86.3 | 107.8 | 130.6 | 145.1 | 164.7 | 175.1 | 172.8 | 161.4 | 130.9 | 117.0 |
| 64.5° | 56.1 | 81.8 | 102.9 | 125.1 | 138.8 | 157.1 | 166.6 | 164.0 | 152.8 | 123.4 | 110.2 |
| 65° | 52.1 | 77.2 | 98.1 | 119.8 | 132.5 | 149.6 | 158.5 | 155.5 | 144.2 | 116.2 | 103.7 |
| 65.5° | 48.3 | 72.8 | 93.2 | 114.4 | 126.2 | 142.3 | 150.4 | 147.1 | 135.8 | 109.4 | 98.0 |
| 66° | 44.7 | 68.5 | 88.4 | 109.0 | 119.9 | 135.0 | 142.4 | 138.9 | 127.5 | 102.7 | 92.3 |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-------|------|-------|------|-------|-------|--------|-------|--------|-------|--------|------|
| 67.5° | 35.3 | 56.1 | 74.1 | 93.2 | 101.8 | 114.3 | 119.7 | 116.0 | 103.9 | 85.5 | 75.2 |
| 68° | 32.6 | 52.1 | 69.5 | 87.9 | 96.1 | 107.7 | 112.6 | 108.8 | 97.3 | 79.6 | 70.2 |
| 68.5° | 30.1 | 48.3 | 65.0 | 82.7 | 90.5 | 101.1 | 105.5 | 101.9 | 90.7 | 73.9 | 65.7 |
| 69° | 27.4 | 44.4 | 60.4 | 77.6 | 84.8 | 95.2 | 99.4 | 95.7 | 84.1 | 69.0 | 61.3 |
| 69.5° | 25.4 | 40.7 | 56.0 | 72.4 | 79.3 | 89.3 | 93.4 | 89.6 | 77.6 | 64.4 | 57.1 |
| 70° | 23.9 | 37.4 | 51.6 | 67.6 | 73.7 | 83.3 | 87.4 | 83.5 | 72.2 | 60.0 | 53.3 |
| 70.5° | 22.9 | 34.2 | 47.3 | 62.7 | 68.6 | 77.4 | 81.3 | 77.4 | 67.0 | 56.0 | 49.7 |
| 71° | 21.9 | 31.1 | 43.3 | 57.9 | 63.8 | 72.3 | 75.2 | 72.2 | 62.2 | 52.1 | 46.2 |
| 71.5° | 20.8 | 28.0 | 39.3 | 53.3 | 59.2 | 67.0 | 70.0 | 67.1 | 57.8 | 48.5 | 43.0 |
| 72° | 19.7 | 24.9 | 36.1 | 48.9 | 54.7 | 62.2 | 65.0 | 62.5 | 53.7 | 45.2 | 40.0 |
| 72.5° | 18.7 | 22.7 | 33.0 | 44.8 | 50.3 | 57.7 | 60.4 | 58.1 | 49.9 | 42.0 | 37.0 |
| 73° | 17.6 | 21.1 | 30.0 | 40.9 | 46.3 | 53.4 | 56.2 | 53.9 | 46.4 | 39.0 | 34.3 |
| 73.5° | 16.6 | 20.0 | 26.9 | 37.2 | 42.5 | 49.3 | 52.1 | 50.1 | 43.2 | 36.2 | 31.8 |
| 74° | 15.7 | 19.0 | 23.7 | 34.2 | 39.0 | 45.6 | 48.3 | 46.6 | 40.1 | 33.6 | 29.3 |
| 74.5° | 14.7 | 18.0 | 21.4 | 31.1 | 35.6 | 42.1 | 44.8 | 43.3 | 37.2 | 31.1 | 27.1 |
| 75° | 13.7 | 17.1 | 19.4 | 28.1 | 32.6 | 38.8 | 41.5 | 40.2 | 34.5 | 28.8 | 24.8 |
| 75.5° | 12.9 | 16.1 | 17.8 | 25.2 | 29.7 | 35.7 | 38.4 | 37.3 | 31.9 | 26.4 | 22.8 |
| 76° | 12.0 | 15.1 | 16.3 | 22.7 | 27.1 | 32.8 | 35.5 | 34.5 | 29.4 | 24.3 | 20.8 |
| 76.5° | 11.3 | 14.3 | 15.0 | 20.5 | 24.5 | 30.1 | 32.8 | 32.1 | 27.1 | 22.3 | 19.0 |
| 77° | 10.6 | 13.3 | 14.0 | 18.5 | 22.4 | 27.7 | 30.3 | 29.6 | 24.7 | 20.4 | 17.2 |
| 77.5° | 9.8 | 12.5 | 13.0 | 16.7 | 20.3 | 25.3 | 27.9 | 27.4 | 22.6 | 18.4 | 15.5 |
| 78° | 9.1 | 11.7 | 12.3 | 15.1 | 18.3 | 23.0 | 25.6 | 25.2 | 20.6 | 16.7 | 13.9 |
| 78.5° | 8.4 | 11.0 | 11.4 | 13.7 | 16.5 | 21.0 | 23.4 | 23.0 | 18.5 | 15.1 | 12.4 |
| 79° | 7.8 | 10.2 | 10.8 | 12.5 | 14.9 | 19.1 | 21.4 | 21.1 | 16.6 | 13.5 | 11.0 |
| 79.5° | 7.1 | 9.5 | 10.0 | 11.3 | 13.4 | 17.3 | 19.5 | 19.2 | 14.9 | 12.2 | 9.9 |
| 80° | 6.5 | 8.7 | 9.4 | 10.2 | 12.0 | 15.6 | 17.7 | 17.4 | 13.2 | 11.0 | 8.7 |
| 80.5° | 6.0 | 8.1 | 8.6 | 9.3 | 10.8 | 14.1 | 16.0 | 15.8 | 11.6 | 9.7 | 7.6 |
| 81° | 5.4 | 7.5 | 8.1 | 8.4 | 9.8 | 12.5 | 14.4 | 14.2 | 10.3 | 8.5 | 6.5 |
| 81.5° | 4.9 | 6.9 | 7.5 | 7.7 | 8.7 | 11.2 | 12.8 | 12.7 | 9.1 | 7.4 | 5.3 |
| 82° | 4.4 | 6.3 | 6.9 | 6.9 | 7.8 | 10.0 | 11.4 | 11.2 | 7.8 | 6.2 | 4.5 |
| 82.5° | 3.9 | 5.8 | 6.3 | 6.3 | 6.7 | 9.0 | 10.2 | 10.0 | 6.4 | 5.0 | 3.7 |
| 83° | 3.4 | 5.1 | 5.8 | 5.6 | 5.8 | 7.9 | 9.1 | 8.8 | 5.1 | 4.2 | 3.0 |
| 83.5° | 3.0 | 4.7 | 5.3 | 5.2 | 5.0 | 6.7 | 7.9 | 7.7 | 4.2 | 3.3 | 2.3 |
| 84° | 2.7 | 4.2 | 4.8 | 4.7 | 4.4 | 5.6 | 6.7 | 6.5 | 3.2 | 2.6 | 1.8 |
| 84.5° | 2.2 | 3.7 | 4.3 | 4.3 | 3.8 | 4.9 | 5.5 | 5.3 | 2.5 | 1.9 | 1.4 |
| 85° | 1.9 | 3.3 | 3.8 | 3.8 | 3.3 | 4.2 | 4.7 | 4.4 | 1.7 | 1.3 | 1.0 |
| 85.5° | 1.6 | 2.9 | 3.5 | 3.4 | 2.8 | 3.4 | 3.8 | 3.5 | 1.1 | 0.9 | 0.6 |
| 86° | 1.3 | 2.5 | 3.1 | 3.1 | 2.5 | 2.9 | 3.1 | 2.8 | 0.6 | 0.5 | 0.3 |
| 86.5° | 1.0 | 2.0 | 2.7 | 2.7 | 2.0 | 2.3 | 2.5 | 2.0 | 0.4 | 0.2 | 0.1 |
| 87° | 0.7 | 1.7 | 2.2 | 2.3 | 1.7 | 1.8 | 1.9 | 1.5 | 0.3 | 0.1 | 0.0 |
| 87.5° | 0.5 | 1.4 | 1.9 | 2.0 | 1.4 | 1.5 | 1.4 | 1.1 | 0.2 | 0.0 | 0.0 |
| 88° | 0.4 | 1.1 | 1.6 | 1.7 | 1.2 | 1.1 | 1.0 | 0.6 | 0.1 | 0.0 | 0.0 |
| 88.5° | 0.2 | 0.9 | 1.3 | 1.4 | 0.9 | 0.7 | 0.6 | 0.3 | 0.1 | 0.0 | 0.0 |



TEST NUMBER: P775829
CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° | 112.5° | 135° | 157.5° | 180° | 202.5° | 225° |
|-----|-----|-------|-----|-------|-----|--------|------|--------|------|--------|------|
| 90° | 0.0 | 0.3 | 0.5 | 0.6 | 0.3 | 0.2 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|-------|--------|-------|--------|-------|
| 0° | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 | 589.6 |
| 0.5° | 589.5 | 589.0 | 588.5 | 588.1 | 587.7 | 587.5 |
| 1° | 589.4 | 588.4 | 587.4 | 586.8 | 586.1 | 586.0 |
| 1.5° | 589.2 | 587.7 | 586.2 | 585.2 | 584.5 | 584.4 |
| 2° | 589.0 | 587.0 | 585.0 | 583.7 | 582.8 | 582.8 |
| 2.5° | 588.6 | 586.1 | 583.8 | 582.1 | 581.1 | 581.1 |
| 3° | 588.1 | 585.3 | 582.4 | 580.4 | 579.3 | 579.4 |
| 3.5° | 587.7 | 584.4 | 581.0 | 578.7 | 577.5 | 577.7 |
| 4° | 587.1 | 583.3 | 579.5 | 576.8 | 575.5 | 575.8 |
| 4.5° | 586.5 | 582.3 | 577.9 | 574.9 | 573.5 | 574.0 |
| 5° | 585.8 | 581.1 | 576.3 | 573.0 | 571.4 | 571.9 |
| 5.5° | 585.0 | 579.8 | 574.6 | 571.0 | 569.4 | 570.0 |
| 6° | 584.2 | 578.5 | 572.8 | 569.0 | 567.2 | 567.9 |
| 6.5° | 583.2 | 577.2 | 571.0 | 566.8 | 565.0 | 565.8 |
| 7° | 582.3 | 575.8 | 569.1 | 564.7 | 562.8 | 563.6 |
| 7.5° | 581.2 | 574.2 | 567.1 | 562.5 | 560.4 | 561.4 |
| 8° | 580.0 | 572.6 | 565.1 | 560.1 | 558.1 | 559.0 |
| 8.5° | 578.9 | 570.9 | 563.0 | 557.8 | 555.6 | 556.7 |
| 9° | 577.5 | 569.2 | 560.9 | 555.3 | 553.1 | 554.2 |
| 9.5° | 576.2 | 567.4 | 558.6 | 552.9 | 550.5 | 551.9 |
| 10° | 574.7 | 565.4 | 556.3 | 550.3 | 548.0 | 549.3 |
| 10.5° | 573.2 | 563.6 | 553.9 | 547.6 | 545.3 | 546.9 |
| 11° | 571.6 | 561.5 | 551.5 | 545.1 | 542.6 | 544.2 |
| 11.5° | 570.0 | 559.4 | 548.9 | 542.3 | 539.9 | 541.6 |
| 12° | 568.2 | 557.2 | 546.4 | 539.5 | 537.0 | 538.8 |
| 12.5° | 566.4 | 555.0 | 543.7 | 536.7 | 534.1 | 536.1 |
| 13° | 564.5 | 552.8 | 541.0 | 533.8 | 531.2 | 533.2 |
| 13.5° | 562.6 | 550.3 | 538.3 | 530.8 | 528.3 | 530.4 |
| 14° | 560.5 | 547.8 | 535.4 | 527.9 | 525.3 | 527.5 |
| 14.5° | 558.5 | 545.4 | 532.6 | 524.8 | 522.2 | 524.4 |
| 15° | 556.3 | 542.8 | 529.6 | 521.6 | 519.1 | 521.4 |
| 15.5° | 554.0 | 540.2 | 526.5 | 518.4 | 515.8 | 518.3 |
| 16° | 551.7 | 537.4 | 523.5 | 515.2 | 512.7 | 515.2 |
| 16.5° | 549.3 | 534.6 | 520.4 | 511.9 | 509.4 | 512.0 |
| 17° | 546.9 | 531.8 | 517.2 | 508.6 | 506.1 | 508.7 |
| 17.5° | 544.3 | 528.8 | 513.8 | 505.1 | 502.7 | 505.4 |
| 18° | 541.7 | 525.8 | 510.5 | 501.8 | 499.2 | 502.2 |
| 18.5° | 539.0 | 522.7 | 507.1 | 498.2 | 495.6 | 498.8 |
| 19° | 536.3 | 519.6 | 503.6 | 494.8 | 492.2 | 495.2 |
| 19.5° | 533.5 | 516.4 | 500.1 | 491.0 | 488.6 | 491.8 |
| 20° | 530.6 | 513.1 | 496.5 | 487.4 | 485.0 | 488.4 |
| 20.5° | 527.6 | 509.8 | 492.9 | 483.6 | 481.3 | 484.8 |
| 21° | 524.6 | 506.4 | 489.1 | 479.8 | 477.5 | 480.9 |

TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|-------|--------|-------|--------|-------|
| 22.5° | 515.2 | 495.8 | 477.7 | 468.1 | 466.0 | 469.9 |
| 23° | 511.9 | 492.2 | 473.9 | 464.2 | 462.0 | 466.1 |
| 23.5° | 508.6 | 488.5 | 469.9 | 460.2 | 458.1 | 462.2 |
| 24° | 505.1 | 484.6 | 465.9 | 456.2 | 454.1 | 458.2 |
| 24.5° | 501.7 | 480.9 | 461.8 | 451.9 | 450.0 | 454.3 |
| 25° | 498.2 | 477.0 | 457.6 | 447.8 | 445.8 | 450.2 |
| 25.5° | 494.6 | 473.2 | 453.5 | 443.6 | 441.7 | 446.2 |
| 26° | 490.9 | 469.2 | 449.4 | 439.3 | 437.5 | 442.0 |
| 26.5° | 487.2 | 465.2 | 445.1 | 435.0 | 433.3 | 437.9 |
| 27° | 483.5 | 461.1 | 440.8 | 430.6 | 429.0 | 433.6 |
| 27.5° | 479.6 | 457.0 | 436.5 | 426.2 | 424.6 | 429.3 |
| 28° | 475.8 | 452.9 | 432.1 | 421.9 | 420.2 | 425.1 |
| 28.5° | 471.9 | 448.6 | 427.7 | 417.4 | 415.8 | 420.6 |
| 29° | 467.9 | 444.5 | 423.3 | 412.8 | 411.4 | 416.2 |
| 29.5° | 463.9 | 440.2 | 418.8 | 408.2 | 406.8 | 411.8 |
| 30° | 459.8 | 435.9 | 414.3 | 403.7 | 402.3 | 407.4 |
| 30.5° | 455.8 | 431.5 | 409.7 | 399.1 | 397.8 | 402.8 |
| 31° | 451.7 | 427.1 | 405.1 | 394.5 | 393.1 | 398.2 |
| 31.5° | 447.4 | 422.6 | 400.4 | 389.8 | 388.5 | 393.5 |
| 32° | 443.3 | 418.1 | 395.8 | 385.0 | 383.7 | 388.9 |
| 32.5° | 438.9 | 413.7 | 391.2 | 380.3 | 379.0 | 384.2 |
| 33° | 434.7 | 409.2 | 386.5 | 375.5 | 374.2 | 379.6 |
| 33.5° | 430.3 | 404.5 | 381.8 | 370.7 | 369.4 | 374.8 |
| 34° | 425.9 | 400.0 | 376.9 | 365.9 | 364.5 | 369.9 |
| 34.5° | 421.7 | 395.3 | 372.2 | 361.1 | 359.7 | 365.1 |
| 35° | 417.2 | 390.7 | 367.3 | 356.2 | 354.7 | 360.2 |
| 35.5° | 412.7 | 386.2 | 362.5 | 351.2 | 349.9 | 355.2 |
| 36° | 408.2 | 381.4 | 357.8 | 346.4 | 344.8 | 350.2 |
| 36.5° | 403.7 | 376.8 | 352.9 | 341.5 | 340.0 | 345.2 |
| 37° | 399.2 | 372.1 | 348.1 | 336.5 | 334.9 | 340.2 |
| 37.5° | 394.6 | 367.4 | 343.3 | 331.5 | 329.9 | 335.2 |
| 38° | 390.0 | 362.6 | 338.4 | 326.5 | 324.8 | 330.0 |
| 38.5° | 385.4 | 357.8 | 333.6 | 321.6 | 319.8 | 324.9 |
| 39° | 380.9 | 353.1 | 328.6 | 316.6 | 314.6 | 319.9 |
| 39.5° | 376.2 | 348.4 | 323.8 | 311.5 | 309.5 | 314.7 |
| 40° | 371.6 | 343.6 | 318.9 | 306.5 | 304.4 | 309.3 |
| 40.5° | 367.0 | 338.8 | 314.1 | 301.5 | 299.3 | 304.2 |
| 41° | 362.3 | 333.9 | 309.2 | 296.5 | 294.0 | 298.9 |
| 41.5° | 357.7 | 329.3 | 304.2 | 291.5 | 288.8 | 293.6 |
| 42° | 353.0 | 324.7 | 299.4 | 286.4 | 283.7 | 288.2 |
| 42.5° | 348.2 | 319.8 | 294.6 | 281.4 | 278.5 | 283.1 |
| 43° | 343.5 | 315.0 | 289.8 | 276.3 | 273.2 | 277.7 |
| 43.5° | 338.8 | 310.3 | 284.8 | 271.4 | 268.1 | 272.2 |

TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|-------|--------|-------|--------|-------|
| 45° | 324.6 | 295.9 | 270.3 | 256.2 | 252.2 | 256.1 |
| 45.5° | 319.8 | 291.3 | 265.4 | 251.3 | 247.1 | 250.7 |
| 46° | 315.1 | 286.6 | 260.7 | 246.3 | 241.8 | 245.3 |
| 46.5° | 310.2 | 281.7 | 255.8 | 241.3 | 236.5 | 239.8 |
| 47° | 305.3 | 276.9 | 251.1 | 236.3 | 231.3 | 234.5 |
| 47.5° | 300.4 | 272.2 | 246.1 | 231.3 | 226.0 | 228.9 |
| 48° | 295.3 | 267.4 | 241.5 | 226.4 | 220.7 | 223.3 |
| 48.5° | 290.4 | 262.6 | 236.6 | 221.4 | 215.5 | 218.0 |
| 49° | 285.4 | 257.9 | 231.9 | 216.5 | 210.3 | 212.5 |
| 49.5° | 280.3 | 253.1 | 227.1 | 211.5 | 205.2 | 207.1 |
| 50° | 275.4 | 248.3 | 222.3 | 206.6 | 199.8 | 201.6 |
| 50.5° | 270.5 | 243.4 | 217.5 | 201.8 | 194.6 | 196.0 |
| 51° | 265.7 | 238.6 | 212.9 | 196.9 | 189.5 | 190.6 |
| 51.5° | 260.9 | 234.1 | 208.2 | 191.9 | 184.4 | 185.2 |
| 52° | 256.4 | 229.6 | 203.6 | 187.2 | 179.3 | 179.7 |
| 52.5° | 251.6 | 225.1 | 199.0 | 182.4 | 174.1 | 174.4 |
| 53° | 246.6 | 220.6 | 194.6 | 177.7 | 168.9 | 168.8 |
| 53.5° | 241.3 | 216.0 | 190.0 | 172.9 | 163.9 | 163.4 |
| 54° | 235.6 | 211.3 | 185.6 | 168.2 | 158.8 | 158.1 |
| 54.5° | 229.8 | 206.3 | 181.0 | 163.7 | 153.8 | 152.7 |
| 55° | 223.4 | 201.2 | 176.3 | 159.1 | 148.9 | 147.3 |
| 55.5° | 217.0 | 195.8 | 171.4 | 154.3 | 144.0 | 142.1 |
| 56° | 210.3 | 190.4 | 166.6 | 149.8 | 139.2 | 136.7 |
| 56.5° | 203.7 | 184.8 | 161.7 | 145.0 | 134.3 | 131.5 |
| 57° | 196.7 | 179.1 | 156.8 | 140.3 | 129.5 | 126.3 |
| 57.5° | 189.8 | 173.2 | 151.8 | 135.5 | 124.7 | 121.1 |
| 58° | 182.8 | 167.3 | 146.9 | 130.9 | 120.0 | 116.2 |
| 58.5° | 175.8 | 161.5 | 141.7 | 126.2 | 115.3 | 111.1 |
| 59° | 168.8 | 155.4 | 136.6 | 121.5 | 110.6 | 106.1 |
| 59.5° | 161.9 | 149.4 | 131.5 | 116.8 | 105.9 | 101.0 |
| 60° | 154.9 | 143.5 | 126.3 | 112.2 | 101.3 | 96.2 |
| 60.5° | 148.0 | 137.5 | 121.1 | 107.4 | 96.7 | 91.5 |
| 61° | 141.3 | 131.5 | 115.9 | 102.9 | 92.1 | 86.8 |
| 61.5° | 134.5 | 125.7 | 110.6 | 98.3 | 87.6 | 82.0 |
| 62° | 127.8 | 119.8 | 105.5 | 93.7 | 83.2 | 77.5 |
| 62.5° | 121.4 | 114.0 | 100.3 | 89.0 | 78.8 | 73.0 |
| 63° | 115.0 | 108.4 | 95.1 | 84.4 | 74.5 | 68.6 |
| 63.5° | 108.8 | 102.7 | 90.1 | 79.6 | 70.2 | 64.2 |
| 64° | 103.0 | 97.2 | 85.1 | 75.0 | 66.2 | 60.1 |
| 64.5° | 97.3 | 92.0 | 80.2 | 70.5 | 62.1 | 56.1 |
| 65° | 91.7 | 86.8 | 75.2 | 66.1 | 58.2 | 52.1 |
| 65.5° | 86.1 | 81.4 | 70.7 | 61.5 | 54.1 | 48.3 |
| 66° | 80.5 | 76.3 | 65.9 | 57.0 | 50.4 | 44.7 |



TEST NUMBER: P775829

CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

CANDELA DISTRIBUTION (continued):

| | 247.5° | 270° | 292.5° | 315° | 337.5° | 360° |
|-------|--------|------|--------|------|--------|------|
| 67.5° | 65.2 | 62.4 | 52.9 | 44.9 | 39.3 | 35.3 |
| 68° | 60.9 | 57.9 | 48.7 | 41.0 | 36.3 | 32.6 |
| 68.5° | 56.6 | 53.6 | 44.8 | 37.2 | 33.4 | 30.1 |
| 69° | 52.5 | 49.7 | 41.0 | 34.3 | 30.5 | 27.4 |
| 69.5° | 48.8 | 45.9 | 37.3 | 31.4 | 27.5 | 25.4 |
| 70° | 45.4 | 42.3 | 34.4 | 28.5 | 24.5 | 23.9 |
| 70.5° | 42.0 | 39.0 | 31.7 | 25.6 | 22.4 | 22.9 |
| 71° | 38.8 | 36.2 | 28.8 | 23.1 | 20.9 | 21.9 |
| 71.5° | 35.9 | 33.5 | 25.9 | 21.1 | 19.8 | 20.8 |
| 72° | 33.0 | 30.8 | 23.6 | 19.3 | 18.9 | 19.7 |
| 72.5° | 30.6 | 28.0 | 21.4 | 17.7 | 17.9 | 18.7 |
| 73° | 28.1 | 25.4 | 19.4 | 16.3 | 16.9 | 17.6 |
| 73.5° | 25.8 | 23.0 | 17.6 | 15.0 | 16.0 | 16.6 |
| 74° | 23.7 | 21.0 | 16.0 | 14.0 | 15.0 | 15.7 |
| 74.5° | 21.5 | 19.1 | 14.6 | 13.1 | 14.2 | 14.7 |
| 75° | 19.6 | 17.4 | 13.2 | 12.3 | 13.3 | 13.7 |
| 75.5° | 17.8 | 15.7 | 12.0 | 11.5 | 12.5 | 12.9 |
| 76° | 16.2 | 14.2 | 10.9 | 10.8 | 11.6 | 12.0 |
| 76.5° | 14.5 | 12.7 | 9.9 | 10.1 | 10.9 | 11.3 |
| 77° | 13.1 | 11.4 | 9.1 | 9.4 | 10.1 | 10.6 |
| 77.5° | 11.7 | 10.2 | 8.2 | 8.8 | 9.4 | 9.8 |
| 78° | 10.6 | 9.2 | 7.5 | 8.2 | 8.7 | 9.1 |
| 78.5° | 9.5 | 8.1 | 6.8 | 7.6 | 8.1 | 8.4 |
| 79° | 8.3 | 7.2 | 6.2 | 7.0 | 7.5 | 7.8 |
| 79.5° | 7.2 | 6.4 | 5.6 | 6.4 | 6.8 | 7.1 |
| 80° | 6.2 | 5.5 | 5.1 | 5.9 | 6.2 | 6.5 |
| 80.5° | 5.3 | 4.9 | 4.7 | 5.3 | 5.6 | 6.0 |
| 81° | 4.6 | 4.3 | 4.3 | 4.9 | 5.1 | 5.4 |
| 81.5° | 3.8 | 3.8 | 3.8 | 4.4 | 4.6 | 4.9 |
| 82° | 3.2 | 3.4 | 3.4 | 3.9 | 4.1 | 4.4 |
| 82.5° | 2.7 | 2.9 | 3.0 | 3.5 | 3.6 | 3.9 |
| 83° | 2.1 | 2.5 | 2.7 | 3.1 | 3.2 | 3.4 |
| 83.5° | 1.7 | 2.0 | 2.2 | 2.7 | 2.8 | 3.0 |
| 84° | 1.4 | 1.7 | 1.9 | 2.2 | 2.3 | 2.7 |
| 84.5° | 1.0 | 1.4 | 1.7 | 1.9 | 1.9 | 2.2 |
| 85° | 0.7 | 1.2 | 1.4 | 1.6 | 1.6 | 1.9 |
| 85.5° | 0.5 | 0.9 | 1.1 | 1.4 | 1.3 | 1.6 |
| 86° | 0.3 | 0.6 | 0.9 | 1.1 | 1.1 | 1.3 |
| 86.5° | 0.1 | 0.4 | 0.5 | 0.7 | 0.9 | 1.0 |
| 87° | 0.0 | 0.2 | 0.3 | 0.5 | 0.6 | 0.7 |
| 87.5° | 0.0 | 0.1 | 0.1 | 0.3 | 0.4 | 0.5 |
| 88° | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 | 0.4 |
| 88.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 | 0.2 |



TEST NUMBER: P775829
CATALOG NUMBER: HCDJBL510CSD-HCD81TRH-HCD81TRLWW-1000lm-5000K

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



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1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report





| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 21.5° | 477.3 | 493.5 | 506.6 | 524.1 | 541.2 | 562.9 | 578.1 | 583.3 | 579.6 | 563.7 | 545.3 |
| 22° | 473.7 | 490.1 | 503.3 | 521.0 | 538.6 | 560.6 | 576.2 | 581.4 | 577.7 | 561.4 | 542.5 |



| | | | | | | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 44° | 266.9 | 291.2 | 309.0 | 333.3 | 358.8 | 395.8 | 424.5 | 435.1 | 429.3 | 402.1 | 372.3 |
| 44.5° | 261.6 | 285.9 | 304.0 | 328.4 | 353.9 | 391.1 | 420.1 | 430.6 | 425.0 | 397.6 | 367.6 |



| | | | | | | | | | | | |
|-------|------|------|------|-------|-------|-------|-------|-------|-------|------|------|
| 66.5° | 41.2 | 64.3 | 83.7 | 103.7 | 113.8 | 128.0 | 134.6 | 131.0 | 119.3 | 97.0 | 86.5 |
| 67° | 37.8 | 60.0 | 79.0 | 98.4 | 107.9 | 121.0 | 127.2 | 123.4 | 111.6 | 91.2 | 80.9 |



| | | | | | | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|
| 89° | 0.1 | 0.6 | 1.1 | 1.2 | 0.6 | 0.5 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 |
| 89.5° | 0.0 | 0.4 | 0.7 | 0.9 | 0.4 | 0.3 | 0.1 | 0.0 | 0.0 | 0.0 | 0.0 |

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1121 Highway 74 South
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Scaled Data Report





| | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| 21.5° | 521.5 | 502.9 | 485.4 | 476.0 | 473.7 | 477.3 |
| 22° | 518.3 | 499.4 | 481.7 | 472.1 | 469.9 | 473.7 |



| | | | | | | |
|-------|-------|-------|-------|-------|-------|-------|
| 44° | 334.1 | 305.6 | 279.9 | 266.3 | 262.8 | 266.9 |
| 44.5° | 329.2 | 300.7 | 275.1 | 261.3 | 257.5 | 261.6 |

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| | | | | | | |
|-------|------|------|------|------|------|------|
| 66.5° | 74.9 | 71.6 | 61.4 | 52.9 | 46.6 | 41.2 |
| 67° | 69.8 | 66.8 | 56.9 | 48.7 | 42.8 | 37.8 |

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Scaled Data Report



| | | | | | | |
|-------|-----|-----|-----|-----|-----|-----|
| 89° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.1 |
| 89.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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Scaled Data Report



(END OF REPORT)