

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

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: McGRAW-EDISON

Report Number: P228389

Luminaire Tested: **ISC-AF-450-LED-E1-SL4-7030-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P228389
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P29763)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISC-AF-450-LED-E1-SL4-7030-ULG
Description: IMPACT ELITE LED CYLINDER LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV W/SPILL CONTROL, WITH UPLIGHT
GLOW
Light Source: (16) 3000K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3771.2 lumens
Efficiency: N/A
Efficacy: 89.8 lumens/watt
Luminous Opening: Rectangular w/ Sides (W: 0.5' x L: 0.5' x H: 0.54')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B0 - U5 - G1

Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT

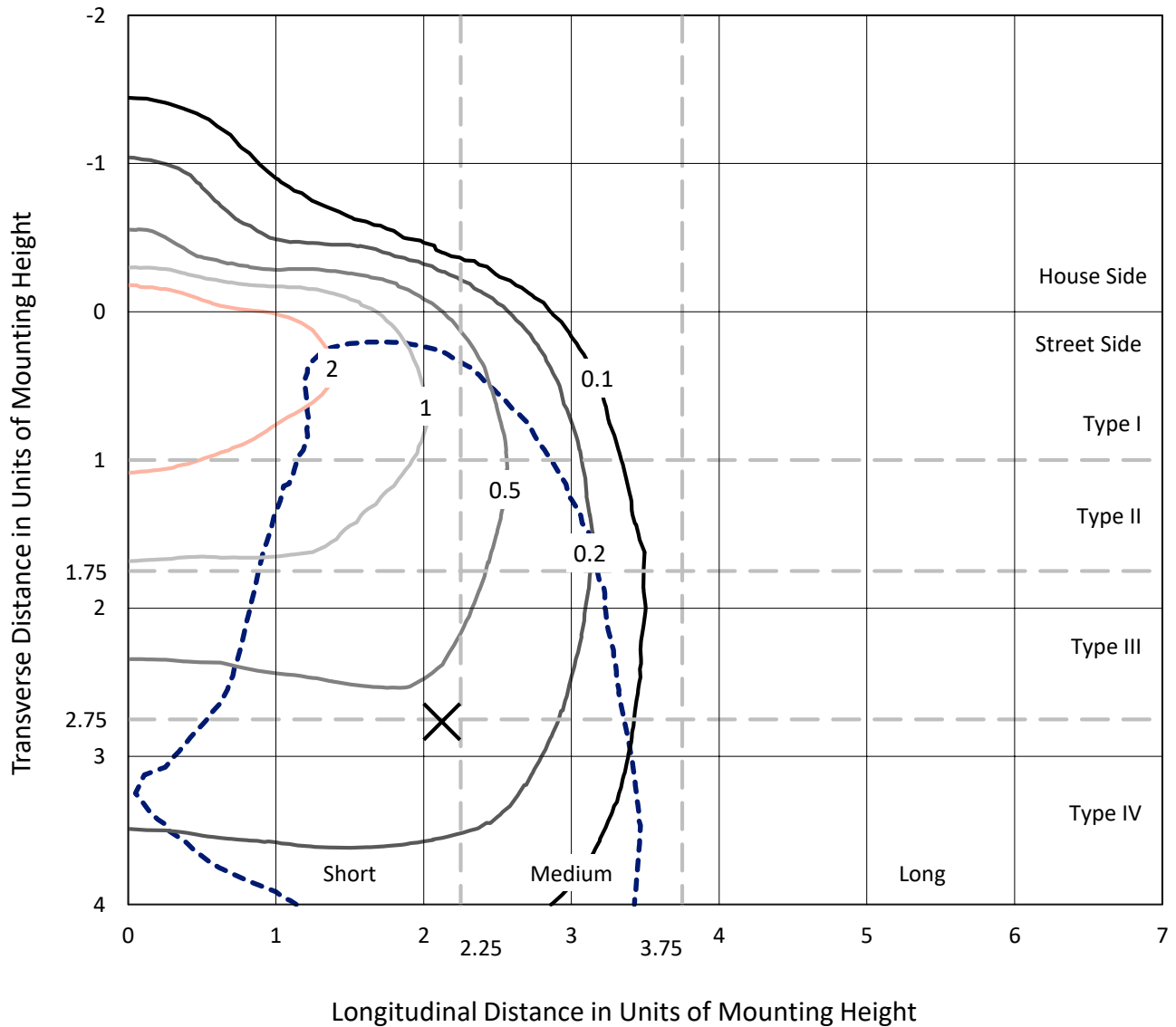


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

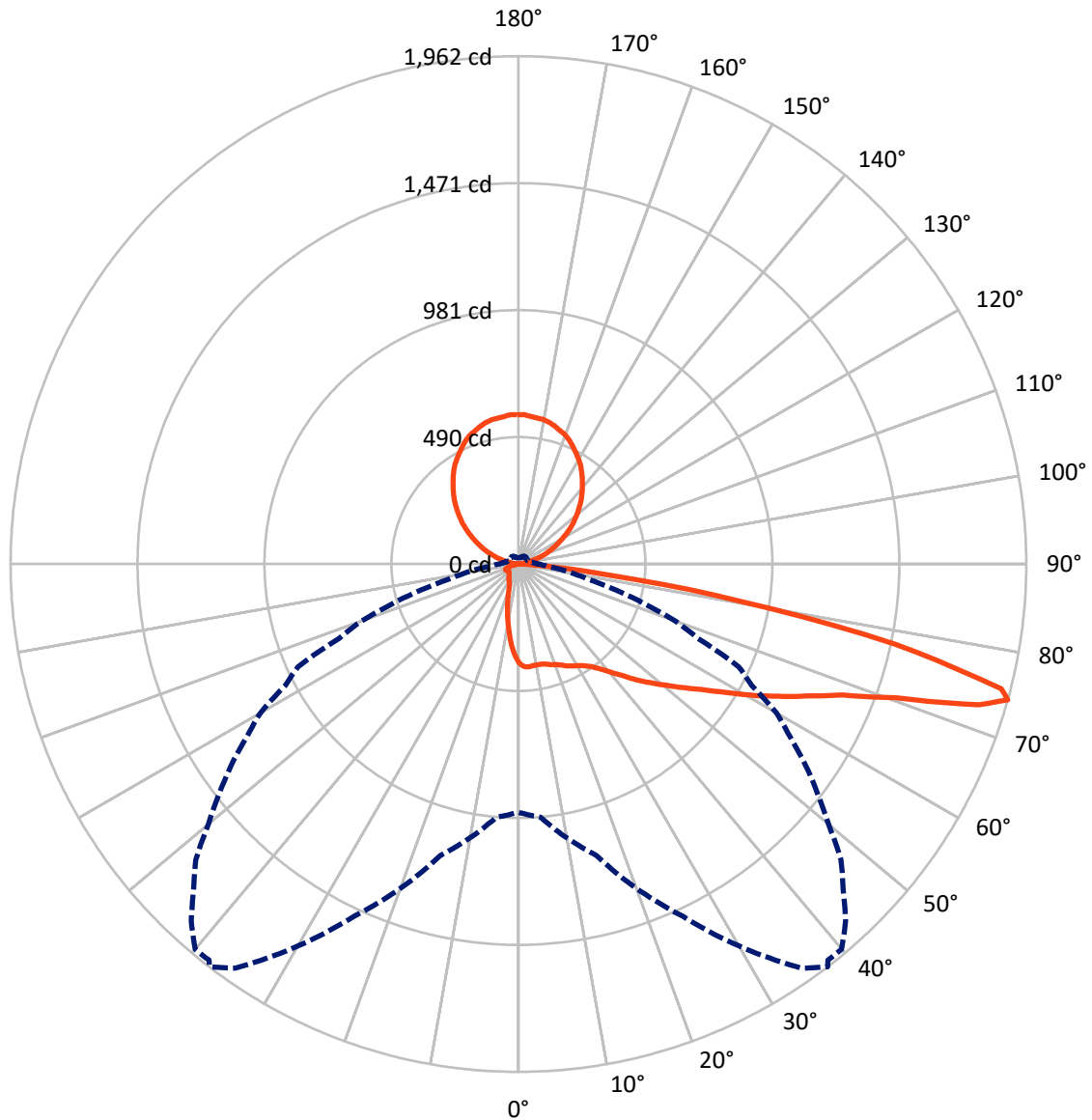


Based on 10 foot mounting height. Maximum calculated value = 4 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 37.5-Deg Lateral - - - Horizontal Cone Through 74-Deg Vertical

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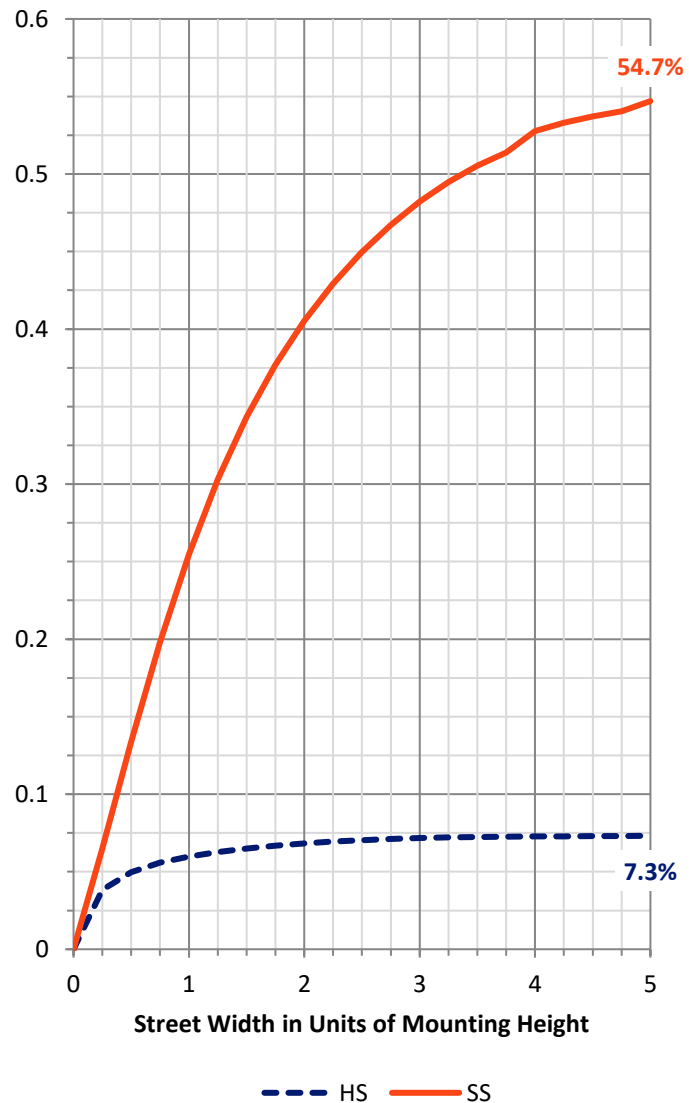
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 278.1 | 713.1 | 991.1 |
| | % Fixture | 7.4 | 18.9 | 26.3 |
| Street Side | Lumens | 2066.9 | 713.1 | 2780.0 |
| | % Fixture | 54.8 | 18.9 | 73.7 |
| Total | Lumens | 2345.0 | 1426.2 | 3771.2 |
| | % Fixture | 62.2 | 37.8 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 33.3 | 0.9 |
| 10°-20° | 84.9 | 2.3 |
| 20°-30° | 131.5 | 3.5 |
| 30°-40° | 195.1 | 5.2 |
| 40°-50° | 300.1 | 8.0 |
| 50°-60° | 443.6 | 11.8 |
| 60°-70° | 591.3 | 15.7 |
| 70°-80° | 510.4 | 13.5 |
| 80°-90° | 54.9 | 1.5 |
| 90°-100° | 4.7 | 0.1 |
| 100°-110° | 69.0 | 1.8 |
| 110°-120° | 153.0 | 4.1 |
| 120°-130° | 223.9 | 5.9 |
| 130°-140° | 265.6 | 7.0 |
| 140°-150° | 269.3 | 7.1 |
| 150°-160° | 231.1 | 6.1 |
| 160°-170° | 155.1 | 4.1 |
| 170°-180° | 54.3 | 1.4 |
| 0°-90° | 2345.0 | 62.2 |
| 0°-180° | 3771.2 | 100.0 |



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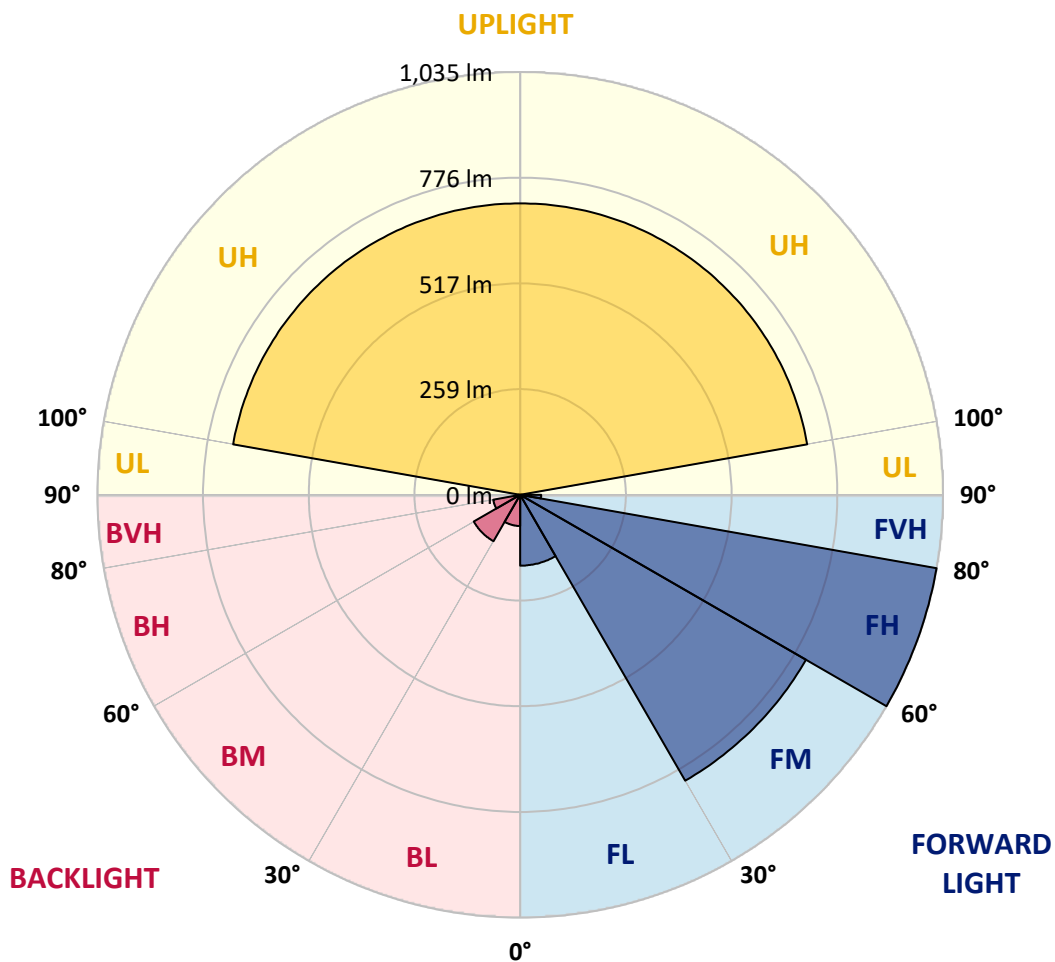
CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|---------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 173.4 | 4.6 | | | |
| FM | (30°-60°) | 807.7 | 21.4 | | | |
| FH | (60°-80°) | 1034.6 | 27.4 | | | G1/1800 |
| FVH | (80°-90°) | 51.3 | 1.4 | | | G1/100 |
| BL | (0°-30°) | 76.3 | 2.0 | B0/110 | | |
| BM | (30°-60°) | 131.1 | 3.5 | B0/220 | | |
| BH | (60°-80°) | 67.0 | 1.8 | B0/110 | | G0/110 |
| BVH | (80°-90°) | 3.6 | 0.1 | | | G0/10 |
| UL | (90°-100°) | 4.7 | 0.1 | | U1/10 | |
| UH | (100°-180°) | 713.1 | 18.9 | | U4/1000 | |

BUG Rating: B0-U5-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 37.5° | 38° | 40° | 42.5° | 45° | 47.5° |
|--------|-------|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 |
| 2.5° | 404.6 | 403.7 | 401.9 | 401.1 | 399.3 | 396.7 | 399.3 | 395.8 | 394.1 | 395.8 | 392.3 |
| 5° | 411.6 | 410.7 | 408.9 | 405.4 | 403.7 | 399.3 | 401.9 | 397.6 | 396.7 | 398.4 | 394.1 |
| 7.5° | 412.4 | 410.7 | 408.1 | 403.7 | 401.9 | 396.7 | 398.4 | 393.2 | 391.4 | 393.2 | 390.5 |
| 10° | 409.8 | 408.9 | 406.3 | 399.3 | 397.6 | 395.8 | 394.9 | 391.4 | 390.5 | 389.7 | 388.8 |
| 12.5° | 405.4 | 405.4 | 403.7 | 401.1 | 400.2 | 396.7 | 397.6 | 394.1 | 394.9 | 393.2 | 391.4 |
| 15° | 403.7 | 402.8 | 404.6 | 406.3 | 406.3 | 401.1 | 404.6 | 401.9 | 400.2 | 401.1 | 398.4 |
| 17.5° | 401.9 | 402.8 | 408.9 | 412.4 | 414.2 | 408.9 | 414.2 | 408.9 | 405.4 | 409.8 | 405.4 |
| 20° | 401.1 | 403.7 | 414.2 | 422.1 | 422.9 | 414.2 | 422.9 | 414.2 | 414.2 | 419.4 | 411.6 |
| 22.5° | 405.4 | 409.8 | 424.7 | 433.5 | 435.2 | 423.8 | 434.3 | 422.9 | 422.9 | 427.3 | 419.4 |
| 25° | 419.4 | 423.8 | 440.5 | 450.1 | 448.3 | 436.1 | 445.7 | 434.3 | 433.5 | 438.7 | 428.2 |
| 27.5° | 437.8 | 444.0 | 459.7 | 468.5 | 462.4 | 445.7 | 459.7 | 443.1 | 443.1 | 451.0 | 437.0 |
| 30° | 464.1 | 468.5 | 482.5 | 483.4 | 475.5 | 455.3 | 471.1 | 452.7 | 450.1 | 464.1 | 446.6 |
| 32.5° | 493.0 | 496.5 | 507.0 | 500.9 | 489.5 | 468.5 | 486.9 | 465.0 | 464.1 | 479.0 | 458.9 |
| 35° | 523.6 | 527.2 | 530.7 | 520.1 | 509.6 | 486.9 | 507.0 | 485.1 | 484.2 | 500.9 | 481.6 |
| 37.5° | 555.2 | 555.2 | 555.2 | 542.9 | 535.9 | 514.0 | 532.4 | 514.9 | 513.1 | 530.7 | 512.3 |
| 40° | 580.6 | 582.3 | 579.7 | 568.3 | 564.8 | 549.0 | 564.8 | 549.0 | 551.7 | 567.4 | 552.5 |
| 42.5° | 601.6 | 603.3 | 604.2 | 594.6 | 598.1 | 589.3 | 601.6 | 590.2 | 591.1 | 608.6 | 599.8 |
| 45° | 622.6 | 621.7 | 628.7 | 626.1 | 636.6 | 637.5 | 644.5 | 640.1 | 641.9 | 655.0 | 652.4 |
| 47.5° | 644.5 | 640.1 | 648.0 | 659.4 | 678.6 | 684.8 | 689.2 | 690.9 | 697.9 | 704.0 | 710.2 |
| 50° | 665.5 | 661.1 | 666.4 | 691.8 | 722.4 | 735.6 | 736.4 | 745.2 | 753.1 | 761.8 | 774.1 |
| 52.5° | 687.4 | 683.9 | 689.2 | 725.1 | 774.1 | 792.5 | 789.9 | 804.7 | 816.1 | 825.8 | 845.9 |
| 55° | 710.2 | 706.7 | 711.9 | 765.3 | 829.3 | 854.7 | 852.0 | 873.0 | 894.9 | 898.4 | 921.2 |
| 57.5° | 732.1 | 727.7 | 742.6 | 812.6 | 894.9 | 933.5 | 921.2 | 953.6 | 974.6 | 972.9 | 1004.4 |
| 60° | 755.7 | 752.2 | 775.8 | 870.4 | 977.2 | 1027.2 | 1008.8 | 1051.7 | 1066.6 | 1060.4 | 1090.2 |
| 62.5° | 778.5 | 777.6 | 817.0 | 937.8 | 1077.1 | 1125.2 | 1108.6 | 1146.2 | 1156.8 | 1148.9 | 1163.8 |
| 65° | 799.5 | 804.7 | 861.7 | 1005.3 | 1173.4 | 1228.6 | 1205.8 | 1243.4 | 1255.7 | 1249.6 | 1275.0 |
| 67.5° | 834.5 | 840.6 | 916.8 | 1091.1 | 1292.5 | 1349.4 | 1330.1 | 1369.5 | 1387.9 | 1386.2 | 1414.2 |
| 70° | 886.2 | 897.6 | 998.3 | 1212.8 | 1473.7 | 1546.4 | 1535.9 | 1584.1 | 1628.7 | 1625.2 | 1653.3 |
| 72.5° | 976.4 | 994.8 | 1132.2 | 1401.9 | 1771.5 | 1859.9 | 1847.7 | 1874.8 | 1866.9 | 1803.0 | 1751.3 |
| 74° | 958.9 | 981.6 | 1165.5 | 1500.9 | 1905.5 | 1961.5 | 1941.4 | 1942.2 | 1870.4 | 1773.2 | 1690.0 |
| 75° | 894.9 | 918.6 | 1117.4 | 1488.6 | 1895.8 | 1926.5 | 1897.6 | 1861.7 | 1775.0 | 1676.0 | 1573.6 |
| 77.5° | 613.8 | 644.5 | 821.4 | 1202.3 | 1526.3 | 1484.3 | 1477.3 | 1408.9 | 1294.2 | 1183.0 | 1051.7 |
| 80° | 314.4 | 336.3 | 424.7 | 628.7 | 905.4 | 863.4 | 877.4 | 822.3 | 726.8 | 646.2 | 512.3 |
| 82.5° | 75.3 | 80.6 | 125.2 | 243.4 | 392.3 | 359.0 | 364.3 | 322.2 | 267.1 | 218.0 | 169.0 |
| 85° | 39.4 | 44.7 | 61.3 | 67.4 | 103.3 | 106.8 | 104.2 | 100.7 | 82.3 | 69.2 | 60.4 |
| 87.5° | 0.0 | 0.0 | 0.0 | 1.8 | 0.9 | 0.0 | 0.9 | 0.0 | 0.0 | 0.9 | 1.8 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 97.5° | 2.0 | 2.0 | 2.0 | 3.0 | 4.0 | 5.2 | 5.5 | 6.5 | 7.8 | 9.0 | 10.0 |
| 100° | 8.0 | 8.0 | 10.0 | 14.0 | 22.0 | 24.0 | 24.4 | 26.0 | 28.0 | 30.0 | 30.5 |
| 102.5° | 28.0 | 28.0 | 32.0 | 38.0 | 45.0 | 46.2 | 46.5 | 47.5 | 48.8 | 50.0 | 50.2 |
| 105° | 54.0 | 54.0 | 56.0 | 61.0 | 66.0 | 67.0 | 67.2 | 68.0 | 69.0 | 70.0 | 70.2 |
| 107.5° | 78.0 | 77.0 | 80.0 | 84.0 | 88.0 | 88.8 | 88.9 | 89.5 | 90.2 | 91.0 | 91.5 |



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CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 35° | 37.5° | 38° | 40° | 42.5° | 45° | 47.5° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 110° | 101.0 | 102.0 | 103.0 | 106.0 | 110.0 | 110.5 | 110.6 | 111.0 | 111.5 | 112.0 | 112.5 |
| 112.5° | 124.0 | 124.0 | 126.0 | 129.0 | 132.0 | 132.5 | 132.6 | 133.0 | 133.5 | 134.0 | 134.5 |
| 115° | 146.0 | 147.0 | 149.0 | 151.0 | 154.0 | 154.5 | 154.6 | 155.0 | 155.5 | 156.0 | 156.5 |
| 117.5° | 169.0 | 170.0 | 172.0 | 174.0 | 177.0 | 177.5 | 177.6 | 178.0 | 178.5 | 179.0 | 179.2 |
| 120° | 193.0 | 195.0 | 196.0 | 198.0 | 201.0 | 201.2 | 201.3 | 201.5 | 201.8 | 202.0 | 202.5 |
| 122.5° | 219.0 | 220.0 | 221.0 | 223.0 | 226.0 | 226.2 | 226.3 | 226.5 | 226.8 | 227.0 | 227.2 |
| 125° | 244.0 | 246.0 | 247.0 | 248.0 | 251.0 | 251.2 | 251.3 | 251.5 | 251.8 | 252.0 | 252.2 |
| 127.5° | 267.0 | 269.0 | 270.0 | 272.0 | 274.0 | 274.5 | 274.6 | 275.0 | 275.5 | 276.0 | 276.5 |
| 130° | 290.0 | 292.0 | 293.0 | 294.0 | 298.0 | 298.2 | 298.3 | 298.5 | 298.8 | 299.0 | 299.5 |
| 132.5° | 313.0 | 314.0 | 317.0 | 318.0 | 321.0 | 321.2 | 321.3 | 321.5 | 321.8 | 322.0 | 322.8 |
| 135° | 336.0 | 337.0 | 339.0 | 341.0 | 345.0 | 345.0 | 345.0 | 345.0 | 345.0 | 345.0 | 345.8 |
| 137.5° | 359.0 | 360.0 | 363.0 | 364.0 | 367.0 | 367.0 | 367.0 | 367.0 | 367.0 | 367.0 | 367.5 |
| 140° | 382.0 | 383.0 | 385.0 | 386.0 | 388.0 | 388.2 | 388.3 | 388.5 | 388.8 | 389.0 | 389.2 |
| 142.5° | 404.0 | 406.0 | 408.0 | 407.0 | 410.0 | 410.0 | 410.0 | 410.0 | 410.0 | 410.0 | 410.5 |
| 145° | 425.0 | 426.0 | 428.0 | 428.0 | 431.0 | 431.2 | 431.3 | 431.5 | 431.8 | 432.0 | 432.5 |
| 147.5° | 444.0 | 444.0 | 447.0 | 448.0 | 452.0 | 452.2 | 452.3 | 452.5 | 452.8 | 453.0 | 453.2 |
| 150° | 461.0 | 462.0 | 464.0 | 465.0 | 469.0 | 469.2 | 469.3 | 469.5 | 469.8 | 470.0 | 470.2 |
| 152.5° | 479.0 | 480.0 | 483.0 | 482.0 | 485.0 | 485.2 | 485.3 | 485.5 | 485.8 | 486.0 | 486.2 |
| 155° | 499.0 | 500.0 | 502.0 | 501.0 | 503.0 | 503.0 | 503.0 | 503.0 | 503.0 | 503.0 | 503.2 |
| 157.5° | 513.0 | 515.0 | 517.0 | 516.0 | 519.0 | 519.0 | 519.0 | 519.0 | 519.0 | 519.0 | 519.0 |
| 160° | 525.0 | 527.0 | 529.0 | 529.0 | 532.0 | 532.0 | 532.0 | 532.0 | 532.0 | 532.0 | 532.0 |
| 162.5° | 535.0 | 536.0 | 539.0 | 538.0 | 541.0 | 541.0 | 541.0 | 541.0 | 541.0 | 541.0 | 541.2 |
| 165° | 546.0 | 547.0 | 549.0 | 548.0 | 552.0 | 552.0 | 552.0 | 552.0 | 552.0 | 552.0 | 552.2 |
| 167.5° | 555.0 | 556.0 | 559.0 | 558.0 | 561.0 | 560.8 | 560.7 | 560.5 | 560.2 | 560.0 | 560.0 |
| 170° | 562.0 | 563.0 | 566.0 | 565.0 | 567.0 | 566.8 | 566.7 | 566.5 | 566.2 | 566.0 | 565.8 |
| 172.5° | 565.0 | 566.0 | 569.0 | 567.0 | 569.0 | 568.8 | 568.7 | 568.5 | 568.2 | 568.0 | 568.2 |
| 175° | 567.0 | 569.0 | 570.0 | 569.0 | 572.0 | 572.0 | 572.0 | 572.0 | 572.0 | 572.0 | 572.2 |
| 177.5° | 572.0 | 573.0 | 575.0 | 574.0 | 578.0 | 577.8 | 577.7 | 577.5 | 577.2 | 577.0 | 577.0 |
| 180° | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 |



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CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

CANDELA DISTRIBUTION (continued):

| | 50° | 52.5° | 55° | 57.5° | 60° | 62.5° | 65° | 67.5° | 70° | 72.5° | 75° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 |
| 2.5° | 394.9 | 393.2 | 394.9 | 389.7 | 392.3 | 387.9 | 389.7 | 385.3 | 387.0 | 383.5 | 384.4 |
| 5° | 396.7 | 392.3 | 394.9 | 390.5 | 391.4 | 387.9 | 387.0 | 385.3 | 384.4 | 381.8 | 380.0 |
| 7.5° | 392.3 | 388.8 | 387.9 | 386.2 | 383.5 | 384.4 | 380.9 | 380.0 | 377.4 | 377.4 | 372.2 |
| 10° | 387.9 | 388.8 | 383.5 | 385.3 | 380.9 | 381.8 | 375.7 | 377.4 | 373.0 | 376.5 | 368.7 |
| 12.5° | 391.4 | 392.3 | 387.9 | 390.5 | 382.7 | 384.4 | 379.2 | 381.8 | 375.7 | 380.0 | 370.4 |
| 15° | 399.3 | 398.4 | 396.7 | 396.7 | 388.8 | 392.3 | 386.2 | 387.9 | 381.8 | 387.0 | 376.5 |
| 17.5° | 406.3 | 405.4 | 402.8 | 401.9 | 396.7 | 397.6 | 391.4 | 394.9 | 387.9 | 392.3 | 381.8 |
| 20° | 414.2 | 409.8 | 408.9 | 408.1 | 401.9 | 401.9 | 397.6 | 399.3 | 392.3 | 397.6 | 385.3 |
| 22.5° | 420.3 | 416.8 | 415.9 | 412.4 | 408.1 | 409.8 | 403.7 | 404.6 | 397.6 | 402.8 | 392.3 |
| 25° | 430.0 | 425.6 | 425.6 | 420.3 | 417.7 | 416.8 | 413.3 | 415.9 | 408.9 | 412.4 | 402.8 |
| 27.5° | 443.1 | 433.5 | 437.0 | 431.7 | 430.0 | 429.1 | 427.3 | 429.1 | 423.8 | 426.5 | 416.8 |
| 30° | 455.3 | 443.1 | 448.3 | 441.3 | 444.8 | 441.3 | 444.0 | 441.3 | 441.3 | 441.3 | 437.0 |
| 32.5° | 472.0 | 457.1 | 467.6 | 457.1 | 464.1 | 458.9 | 467.6 | 462.4 | 465.9 | 465.0 | 463.2 |
| 35° | 495.6 | 478.1 | 493.0 | 479.0 | 491.2 | 484.2 | 496.5 | 493.9 | 500.9 | 497.4 | 500.9 |
| 37.5° | 527.2 | 508.8 | 526.3 | 513.1 | 528.0 | 517.5 | 535.0 | 533.3 | 548.2 | 542.9 | 548.2 |
| 40° | 566.6 | 553.4 | 566.6 | 556.9 | 572.7 | 568.3 | 586.7 | 587.6 | 604.2 | 601.6 | 607.7 |
| 42.5° | 610.3 | 600.7 | 613.8 | 608.6 | 624.4 | 627.9 | 648.9 | 654.1 | 669.9 | 674.3 | 675.1 |
| 45° | 657.6 | 655.9 | 666.4 | 671.6 | 687.4 | 697.9 | 716.3 | 729.4 | 746.9 | 756.6 | 754.8 |
| 47.5° | 712.8 | 719.8 | 726.8 | 739.9 | 754.0 | 775.8 | 794.2 | 810.9 | 831.0 | 837.1 | 839.8 |
| 50° | 775.0 | 787.2 | 793.4 | 811.7 | 825.8 | 852.9 | 878.3 | 899.3 | 921.2 | 918.6 | 920.3 |
| 52.5° | 840.6 | 856.4 | 865.2 | 887.1 | 905.4 | 937.0 | 958.9 | 979.0 | 1006.1 | 999.1 | 996.5 |
| 55° | 913.3 | 937.0 | 944.0 | 968.5 | 984.3 | 1016.7 | 1035.9 | 1070.9 | 1082.3 | 1075.3 | 1060.4 |
| 57.5° | 990.4 | 1018.4 | 1026.3 | 1059.6 | 1067.4 | 1102.5 | 1119.1 | 1142.7 | 1152.4 | 1141.0 | 1121.7 |
| 60° | 1077.9 | 1103.3 | 1109.5 | 1139.2 | 1149.8 | 1182.2 | 1194.4 | 1215.4 | 1222.4 | 1194.4 | 1167.3 |
| 62.5° | 1165.5 | 1191.8 | 1195.3 | 1221.6 | 1232.1 | 1260.1 | 1274.1 | 1286.4 | 1282.9 | 1241.7 | 1207.5 |
| 65° | 1265.3 | 1290.7 | 1299.5 | 1325.8 | 1331.9 | 1352.9 | 1364.3 | 1350.3 | 1342.4 | 1280.2 | 1241.7 |
| 67.5° | 1423.8 | 1451.0 | 1454.5 | 1460.6 | 1459.7 | 1449.2 | 1444.0 | 1395.8 | 1360.8 | 1246.1 | 1190.9 |
| 70° | 1632.2 | 1612.1 | 1572.7 | 1527.2 | 1493.9 | 1434.3 | 1399.3 | 1300.4 | 1226.8 | 1098.1 | 1005.3 |
| 72.5° | 1669.9 | 1604.2 | 1507.0 | 1429.1 | 1348.5 | 1254.8 | 1179.5 | 1029.8 | 926.5 | 791.6 | 693.5 |
| 74° | 1563.1 | 1456.2 | 1353.8 | 1244.3 | 1151.5 | 1014.9 | 938.7 | 749.6 | 647.1 | 510.5 | 391.4 |
| 75° | 1434.3 | 1309.1 | 1193.5 | 1054.3 | 967.6 | 803.9 | 732.1 | 528.0 | 425.6 | 303.0 | 204.0 |
| 77.5° | 915.1 | 765.3 | 655.0 | 493.9 | 426.5 | 294.2 | 215.4 | 134.0 | 99.0 | 86.7 | 75.3 |
| 80° | 410.7 | 292.5 | 232.1 | 160.2 | 134.0 | 102.5 | 86.7 | 70.1 | 63.9 | 56.0 | 53.4 |
| 82.5° | 131.4 | 105.1 | 99.8 | 89.3 | 89.3 | 71.8 | 61.3 | 48.2 | 43.8 | 37.7 | 34.2 |
| 85° | 56.9 | 53.4 | 55.2 | 50.8 | 51.7 | 39.4 | 31.5 | 23.6 | 23.6 | 16.6 | 14.9 |
| 87.5° | 1.8 | 0.0 | 0.9 | 0.0 | 1.8 | 0.0 | 0.9 | 0.0 | 0.9 | 0.0 | 0.9 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 97.5° | 11.0 | 12.0 | 13.0 | 11.5 | 10.0 | 8.5 | 7.0 | 6.5 | 6.0 | 5.5 | 5.0 |
| 100° | 31.0 | 31.5 | 32.0 | 31.5 | 31.0 | 30.5 | 30.0 | 29.2 | 28.5 | 27.8 | 27.0 |
| 102.5° | 50.5 | 50.8 | 51.0 | 50.8 | 50.5 | 50.2 | 50.0 | 49.5 | 49.0 | 48.5 | 48.0 |
| 105° | 70.5 | 70.8 | 71.0 | 71.0 | 71.0 | 71.0 | 71.0 | 70.5 | 70.0 | 69.5 | 69.0 |
| 107.5° | 92.0 | 92.5 | 93.0 | 92.8 | 92.5 | 92.2 | 92.0 | 91.8 | 91.5 | 91.2 | 91.0 |



REPORT NUMBER: P228389

CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

CANDELA DISTRIBUTION (continued):

| | 50° | 52.5° | 55° | 57.5° | 60° | 62.5° | 65° | 67.5° | 70° | 72.5° | 75° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 110° | 113.0 | 113.5 | 114.0 | 114.0 | 114.0 | 114.0 | 114.0 | 113.8 | 113.5 | 113.2 | 113.0 |
| 112.5° | 135.0 | 135.5 | 136.0 | 136.0 | 136.0 | 136.0 | 136.0 | 135.8 | 135.5 | 135.2 | 135.0 |
| 115° | 157.0 | 157.5 | 158.0 | 158.0 | 158.0 | 158.0 | 158.0 | 158.0 | 158.0 | 158.0 | 158.0 |
| 117.5° | 179.5 | 179.8 | 180.0 | 180.2 | 180.5 | 180.8 | 181.0 | 180.8 | 180.5 | 180.2 | 180.0 |
| 120° | 203.0 | 203.5 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 | 204.0 |
| 122.5° | 227.5 | 227.8 | 228.0 | 228.0 | 228.0 | 228.0 | 228.0 | 228.2 | 228.5 | 228.8 | 229.0 |
| 125° | 252.5 | 252.8 | 253.0 | 253.2 | 253.5 | 253.8 | 254.0 | 254.0 | 254.0 | 254.0 | 254.0 |
| 127.5° | 277.0 | 277.5 | 278.0 | 277.8 | 277.5 | 277.2 | 277.0 | 277.2 | 277.5 | 277.8 | 278.0 |
| 130° | 300.0 | 300.5 | 301.0 | 301.0 | 301.0 | 301.0 | 301.0 | 301.2 | 301.5 | 301.8 | 302.0 |
| 132.5° | 323.5 | 324.2 | 325.0 | 325.0 | 325.0 | 325.0 | 325.0 | 325.2 | 325.5 | 325.8 | 326.0 |
| 135° | 346.5 | 347.2 | 348.0 | 348.0 | 348.0 | 348.0 | 348.0 | 348.2 | 348.5 | 348.8 | 349.0 |
| 137.5° | 368.0 | 368.5 | 369.0 | 369.0 | 369.0 | 369.0 | 369.0 | 369.2 | 369.5 | 369.8 | 370.0 |
| 140° | 389.5 | 389.8 | 390.0 | 390.0 | 390.0 | 390.0 | 390.0 | 390.5 | 391.0 | 391.5 | 392.0 |
| 142.5° | 411.0 | 411.5 | 412.0 | 412.0 | 412.0 | 412.0 | 412.0 | 412.2 | 412.5 | 412.8 | 413.0 |
| 145° | 433.0 | 433.5 | 434.0 | 433.8 | 433.5 | 433.2 | 433.0 | 433.2 | 433.5 | 433.8 | 434.0 |
| 147.5° | 453.5 | 453.8 | 454.0 | 453.5 | 453.0 | 452.5 | 452.0 | 452.2 | 452.5 | 452.8 | 453.0 |
| 150° | 470.5 | 470.8 | 471.0 | 470.5 | 470.0 | 469.5 | 469.0 | 469.0 | 469.0 | 469.0 | 469.0 |
| 152.5° | 486.5 | 486.8 | 487.0 | 486.8 | 486.5 | 486.2 | 486.0 | 486.0 | 486.0 | 486.0 | 486.0 |
| 155° | 503.5 | 503.8 | 504.0 | 503.8 | 503.5 | 503.2 | 503.0 | 503.2 | 503.5 | 503.8 | 504.0 |
| 157.5° | 519.0 | 519.0 | 519.0 | 518.5 | 518.0 | 517.5 | 517.0 | 517.2 | 517.5 | 517.8 | 518.0 |
| 160° | 532.0 | 532.0 | 532.0 | 531.5 | 531.0 | 530.5 | 530.0 | 530.0 | 530.0 | 530.0 | 530.0 |
| 162.5° | 541.5 | 541.8 | 542.0 | 541.5 | 541.0 | 540.5 | 540.0 | 539.5 | 539.0 | 538.5 | 538.0 |
| 165° | 552.5 | 552.8 | 553.0 | 552.2 | 551.5 | 550.8 | 550.0 | 549.5 | 549.0 | 548.5 | 548.0 |
| 167.5° | 560.0 | 560.0 | 560.0 | 559.5 | 559.0 | 558.5 | 558.0 | 558.2 | 558.5 | 558.8 | 559.0 |
| 170° | 565.5 | 565.2 | 565.0 | 564.8 | 564.5 | 564.2 | 564.0 | 564.5 | 565.0 | 565.5 | 566.0 |
| 172.5° | 568.5 | 568.8 | 569.0 | 568.5 | 568.0 | 567.5 | 567.0 | 567.2 | 567.5 | 567.8 | 568.0 |
| 175° | 572.5 | 572.8 | 573.0 | 572.2 | 571.5 | 570.8 | 570.0 | 569.5 | 569.0 | 568.5 | 568.0 |
| 177.5° | 577.0 | 577.0 | 577.0 | 576.2 | 575.5 | 574.8 | 574.0 | 574.0 | 574.0 | 574.0 | 574.0 |
| 180° | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 |



REPORT NUMBER: P228389

CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

CANDELA DISTRIBUTION (continued):

| | 77.5° | 80° | 85° | 90° | 95° | 100° | 102.5° | 105° | 107.5° | 110° | 112.5° |
|--------|--------|--------|-------|-------|-------|-------|--------|-------|--------|-------|--------|
| 0° | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 |
| 2.5° | 380.9 | 382.7 | 381.8 | 378.3 | 377.4 | 374.8 | 368.7 | 369.5 | 366.0 | 368.7 | 364.3 |
| 5° | 377.4 | 376.5 | 373.0 | 368.7 | 364.3 | 359.0 | 354.6 | 352.9 | 349.4 | 347.6 | 345.0 |
| 7.5° | 372.2 | 368.7 | 362.5 | 355.5 | 349.4 | 342.4 | 338.9 | 332.8 | 331.0 | 324.9 | 324.0 |
| 10° | 370.4 | 364.3 | 357.3 | 348.5 | 338.0 | 327.5 | 326.6 | 316.1 | 315.2 | 305.6 | 303.0 |
| 12.5° | 373.9 | 366.0 | 357.3 | 346.8 | 334.5 | 319.6 | 319.6 | 303.9 | 303.0 | 289.8 | 285.5 |
| 15° | 380.9 | 371.3 | 359.9 | 347.6 | 331.9 | 313.5 | 312.6 | 294.2 | 292.5 | 276.7 | 271.5 |
| 17.5° | 387.0 | 373.9 | 363.4 | 346.8 | 328.4 | 307.4 | 303.0 | 284.6 | 281.1 | 262.7 | 255.7 |
| 20° | 391.4 | 376.5 | 364.3 | 345.0 | 322.2 | 297.7 | 291.6 | 272.3 | 264.5 | 246.1 | 236.4 |
| 22.5° | 396.7 | 382.7 | 366.0 | 344.1 | 318.7 | 289.8 | 276.7 | 259.2 | 247.8 | 228.5 | 215.4 |
| 25° | 404.6 | 392.3 | 372.2 | 346.8 | 316.1 | 282.0 | 264.5 | 246.1 | 230.3 | 211.0 | 191.8 |
| 27.5° | 416.8 | 404.6 | 380.9 | 350.3 | 315.2 | 274.1 | 254.8 | 232.1 | 212.8 | 191.8 | 169.9 |
| 30° | 434.3 | 421.2 | 395.8 | 359.9 | 316.1 | 268.0 | 244.3 | 219.8 | 197.0 | 172.5 | 149.7 |
| 32.5° | 457.1 | 446.6 | 415.1 | 370.4 | 319.6 | 262.7 | 234.7 | 206.7 | 178.6 | 155.0 | 134.9 |
| 35° | 488.6 | 481.6 | 442.2 | 390.5 | 328.4 | 260.1 | 225.0 | 194.4 | 162.9 | 139.2 | 117.3 |
| 37.5° | 535.0 | 525.4 | 481.6 | 419.4 | 342.4 | 258.3 | 218.0 | 179.5 | 149.7 | 124.3 | 106.0 |
| 40° | 593.7 | 580.6 | 528.0 | 454.5 | 364.3 | 259.2 | 211.9 | 168.1 | 138.4 | 111.2 | 96.3 |
| 42.5° | 663.8 | 644.5 | 584.9 | 497.4 | 386.2 | 260.9 | 208.4 | 157.6 | 129.6 | 100.7 | 89.3 |
| 45° | 742.6 | 720.7 | 652.4 | 550.8 | 417.7 | 265.3 | 205.8 | 148.9 | 121.7 | 92.8 | 84.9 |
| 47.5° | 819.6 | 797.7 | 721.6 | 604.2 | 450.1 | 273.2 | 207.5 | 143.6 | 116.5 | 88.4 | 79.7 |
| 50° | 894.9 | 872.2 | 782.8 | 652.4 | 478.1 | 283.7 | 214.5 | 144.5 | 115.6 | 86.7 | 77.1 |
| 52.5° | 961.5 | 933.5 | 835.4 | 690.0 | 498.3 | 290.7 | 220.7 | 147.1 | 116.5 | 85.8 | 76.2 |
| 55° | 1028.0 | 992.1 | 877.4 | 719.8 | 510.5 | 291.6 | 220.7 | 148.0 | 117.3 | 85.8 | 75.3 |
| 57.5° | 1077.9 | 1036.8 | 909.8 | 737.3 | 514.9 | 287.2 | 215.4 | 143.6 | 112.1 | 84.9 | 73.6 |
| 60° | 1109.5 | 1065.7 | 932.6 | 748.7 | 508.8 | 268.8 | 187.4 | 127.0 | 99.0 | 78.8 | 68.3 |
| 62.5° | 1135.7 | 1091.1 | 939.6 | 729.4 | 457.1 | 213.7 | 146.2 | 103.3 | 82.3 | 70.1 | 63.0 |
| 65° | 1141.9 | 1088.5 | 890.6 | 644.5 | 357.3 | 148.0 | 106.0 | 81.4 | 67.4 | 62.2 | 56.9 |
| 67.5° | 1049.1 | 985.1 | 748.7 | 504.4 | 243.4 | 101.6 | 78.8 | 66.6 | 57.8 | 55.2 | 53.4 |
| 70° | 852.9 | 782.8 | 548.2 | 330.1 | 135.7 | 70.9 | 60.4 | 55.2 | 49.9 | 49.9 | 47.3 |
| 72.5° | 549.9 | 477.2 | 281.1 | 141.0 | 69.2 | 54.3 | 49.0 | 47.3 | 42.9 | 43.8 | 41.2 |
| 74° | 281.1 | 218.9 | 114.7 | 74.4 | 56.9 | 48.2 | 43.8 | 42.9 | 38.5 | 39.4 | 36.8 |
| 75° | 142.7 | 113.0 | 80.6 | 62.2 | 52.5 | 45.5 | 40.3 | 40.3 | 35.0 | 35.9 | 33.3 |
| 77.5° | 66.6 | 63.9 | 55.2 | 49.0 | 44.7 | 38.5 | 33.3 | 32.4 | 27.1 | 28.9 | 25.4 |
| 80° | 46.4 | 46.4 | 42.9 | 41.2 | 36.8 | 31.5 | 25.4 | 25.4 | 20.1 | 21.0 | 18.4 |
| 82.5° | 26.3 | 24.5 | 24.5 | 28.0 | 28.9 | 23.6 | 18.4 | 17.5 | 14.9 | 14.9 | 12.3 |
| 85° | 11.4 | 13.1 | 15.8 | 19.3 | 21.0 | 18.4 | 13.1 | 12.3 | 7.9 | 7.9 | 4.4 |
| 87.5° | 0.0 | 0.9 | 0.9 | 1.8 | 3.5 | 3.5 | 0.0 | 1.8 | 0.0 | 0.9 | 0.0 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 |
| 97.5° | 4.8 | 4.5 | 4.0 | 4.0 | 4.0 | 4.5 | 4.8 | 5.0 | 5.5 | 6.0 | 6.5 |
| 100° | 26.8 | 26.5 | 26.0 | 25.0 | 26.0 | 26.5 | 26.8 | 27.0 | 27.8 | 28.5 | 29.2 |
| 102.5° | 48.2 | 48.5 | 49.0 | 48.0 | 49.0 | 48.5 | 48.2 | 48.0 | 48.5 | 49.0 | 49.5 |
| 105° | 69.5 | 70.0 | 71.0 | 69.0 | 71.0 | 70.0 | 69.5 | 69.0 | 69.5 | 70.0 | 70.5 |
| 107.5° | 91.2 | 91.5 | 92.0 | 91.0 | 92.0 | 91.5 | 91.2 | 91.0 | 91.2 | 91.5 | 91.8 |



REPORT NUMBER: P228389
 CATALOG NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

REPORT N
 CATALOG

CANDELA DISTRIBUTION (continued):

CANDELA

| | 77.5° | 80° | 85° | 90° | 95° | 100° | 102.5° | 105° | 107.5° | 110° | 112.5° | |
|--------|-------|-------|-------|-------|-------|-------|--------|-------|--------|-------|--------|--------|
| 110° | 113.2 | 113.5 | 114.0 | 113.0 | 114.0 | 113.5 | 113.2 | 113.0 | 113.2 | 113.5 | 113.8 | 0° |
| 112.5° | 135.5 | 136.0 | 137.0 | 135.0 | 137.0 | 136.0 | 135.5 | 135.0 | 135.2 | 135.5 | 135.8 | 2.5° |
| 115° | 158.5 | 159.0 | 160.0 | 159.0 | 160.0 | 159.0 | 158.5 | 158.0 | 158.0 | 158.0 | 158.0 | 5° |
| 117.5° | 180.5 | 181.0 | 182.0 | 180.0 | 182.0 | 181.0 | 180.5 | 180.0 | 180.2 | 180.5 | 180.8 | 7.5° |
| 120° | 204.5 | 205.0 | 206.0 | 204.0 | 206.0 | 205.0 | 204.5 | 204.0 | 204.0 | 204.0 | 204.0 | 10° |
| 122.5° | 230.0 | 231.0 | 233.0 | 232.0 | 233.0 | 231.0 | 230.0 | 229.0 | 228.8 | 228.5 | 228.2 | 12.5° |
| 125° | 254.8 | 255.5 | 257.0 | 256.0 | 257.0 | 255.5 | 254.8 | 254.0 | 254.0 | 254.0 | 254.0 | 15° |
| 127.5° | 278.8 | 279.5 | 281.0 | 278.0 | 281.0 | 279.5 | 278.8 | 278.0 | 277.8 | 277.5 | 277.2 | 17.5° |
| 130° | 302.8 | 303.5 | 305.0 | 303.0 | 305.0 | 303.5 | 302.8 | 302.0 | 301.8 | 301.5 | 301.2 | 20° |
| 132.5° | 326.8 | 327.5 | 329.0 | 327.0 | 329.0 | 327.5 | 326.8 | 326.0 | 325.8 | 325.5 | 325.2 | 22.5° |
| 135° | 349.5 | 350.0 | 351.0 | 350.0 | 351.0 | 350.0 | 349.5 | 349.0 | 348.8 | 348.5 | 348.2 | 25° |
| 137.5° | 371.0 | 372.0 | 374.0 | 372.0 | 374.0 | 372.0 | 371.0 | 370.0 | 369.8 | 369.5 | 369.2 | 27.5° |
| 140° | 393.0 | 394.0 | 396.0 | 394.0 | 396.0 | 394.0 | 393.0 | 392.0 | 391.5 | 391.0 | 390.5 | 30° |
| 142.5° | 413.8 | 414.5 | 416.0 | 415.0 | 416.0 | 414.5 | 413.8 | 413.0 | 412.8 | 412.5 | 412.2 | 32.5° |
| 145° | 434.8 | 435.5 | 437.0 | 435.0 | 437.0 | 435.5 | 434.8 | 434.0 | 433.8 | 433.5 | 433.2 | 35° |
| 147.5° | 453.8 | 454.5 | 456.0 | 453.0 | 456.0 | 454.5 | 453.8 | 453.0 | 452.8 | 452.5 | 452.2 | 37.5° |
| 150° | 470.0 | 471.0 | 473.0 | 470.0 | 473.0 | 471.0 | 470.0 | 469.0 | 469.0 | 469.0 | 469.0 | 40° |
| 152.5° | 486.8 | 487.5 | 489.0 | 486.0 | 489.0 | 487.5 | 486.8 | 486.0 | 486.0 | 486.0 | 486.0 | 42.5° |
| 155° | 504.8 | 505.5 | 507.0 | 505.0 | 507.0 | 505.5 | 504.8 | 504.0 | 503.8 | 503.5 | 503.2 | 45° |
| 157.5° | 519.2 | 520.5 | 523.0 | 520.0 | 523.0 | 520.5 | 519.2 | 518.0 | 517.8 | 517.5 | 517.2 | 47.5° |
| 160° | 530.8 | 531.5 | 533.0 | 531.0 | 533.0 | 531.5 | 530.8 | 530.0 | 530.0 | 530.0 | 530.0 | 50° |
| 162.5° | 538.5 | 539.0 | 540.0 | 537.0 | 540.0 | 539.0 | 538.5 | 538.0 | 538.5 | 539.0 | 539.5 | 52.5° |
| 165° | 548.5 | 549.0 | 550.0 | 548.0 | 550.0 | 549.0 | 548.5 | 548.0 | 548.5 | 549.0 | 549.5 | 55° |
| 167.5° | 560.0 | 561.0 | 563.0 | 561.0 | 563.0 | 561.0 | 560.0 | 559.0 | 558.8 | 558.5 | 558.2 | 57.5° |
| 170° | 567.2 | 568.5 | 571.0 | 569.0 | 571.0 | 568.5 | 567.2 | 566.0 | 565.5 | 565.0 | 564.5 | 60° |
| 172.5° | 568.8 | 569.5 | 571.0 | 568.0 | 571.0 | 569.5 | 568.8 | 568.0 | 567.8 | 567.5 | 567.2 | 62.5° |
| 175° | 568.8 | 569.5 | 571.0 | 568.0 | 571.0 | 569.5 | 568.8 | 568.0 | 568.5 | 569.0 | 569.5 | 65° |
| 177.5° | 574.8 | 575.5 | 577.0 | 574.0 | 577.0 | 575.5 | 574.8 | 574.0 | 574.0 | 574.0 | 574.0 | 67.5° |
| 180° | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 70° |
| | | | | | | | | | | | | 72.5° |
| | | | | | | | | | | | | 74° |
| | | | | | | | | | | | | 75° |
| | | | | | | | | | | | | 77.5° |
| | | | | | | | | | | | | 80° |
| | | | | | | | | | | | | 82.5° |
| | | | | | | | | | | | | 85° |
| | | | | | | | | | | | | 87.5° |
| | | | | | | | | | | | | 90° |
| | | | | | | | | | | | | 92.5° |
| | | | | | | | | | | | | 95° |
| | | | | | | | | | | | | 97.5° |
| | | | | | | | | | | | | 100° |
| | | | | | | | | | | | | 102.5° |
| | | | | | | | | | | | | 105° |
| | | | | | | | | | | | | 107.5° |

NUMBER: P228389
 NUMBER: ISC-AF-450-LED-E1-SL4-7030-ULG

REPORT NUMBER: P
 CATALOG NUMBER:

DISTRIBUTION (continued):

CANDELA DISTRIBUTION

| 115° | 117.5° | 120° | 122.5° | 125° | 127.5° | 130° | 135° | 145° | 155° | 165° | 110° | 115° |
|-------|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|--------|-------|
| 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 382.7 | 110° | 114.0 |
| 366.0 | 361.7 | 364.3 | 359.9 | 361.7 | 357.3 | 359.0 | 356.4 | 353.8 | 350.3 | 349.4 | 112.5° | 136.0 |
| 342.4 | 338.9 | 338.0 | 333.6 | 334.5 | 331.0 | 327.5 | 323.1 | 317.9 | 310.9 | 308.2 | 115° | 158.0 |
| 316.1 | 315.2 | 309.1 | 306.5 | 303.0 | 299.5 | 293.3 | 286.3 | 275.8 | 266.2 | 260.1 | 117.5° | 181.0 |
| 293.3 | 290.7 | 282.0 | 277.6 | 272.3 | 268.0 | 259.2 | 249.6 | 234.7 | 219.8 | 211.9 | 120° | 204.0 |
| 274.1 | 270.6 | 259.2 | 253.9 | 246.1 | 240.8 | 230.3 | 218.0 | 197.0 | 176.0 | 166.4 | 122.5° | 228.0 |
| 258.3 | 253.1 | 239.9 | 232.1 | 221.5 | 216.3 | 204.9 | 187.4 | 162.0 | 140.1 | 127.0 | 125° | 254.0 |
| 239.9 | 232.9 | 218.9 | 209.3 | 198.8 | 189.1 | 177.8 | 159.4 | 130.5 | 110.3 | 97.2 | 127.5° | 277.0 |
| 219.8 | 211.0 | 196.1 | 183.0 | 171.6 | 162.9 | 151.5 | 133.1 | 104.2 | 88.4 | 81.4 | 130° | 301.0 |
| 198.8 | 184.8 | 171.6 | 160.2 | 147.1 | 138.4 | 127.0 | 110.3 | 88.4 | 79.7 | 77.1 | 132.5° | 325.0 |
| 176.9 | 161.1 | 148.0 | 136.6 | 124.3 | 116.5 | 106.8 | 93.7 | 80.6 | 77.9 | 77.9 | 135° | 348.0 |
| 155.0 | 139.2 | 127.0 | 115.6 | 105.1 | 99.8 | 91.1 | 82.3 | 76.2 | 77.1 | 77.9 | 137.5° | 369.0 |
| 134.9 | 119.1 | 107.7 | 99.0 | 89.3 | 85.8 | 78.8 | 73.6 | 72.7 | 75.3 | 76.2 | 140° | 390.0 |
| 117.3 | 103.3 | 92.8 | 85.8 | 77.9 | 76.2 | 70.1 | 67.4 | 70.1 | 73.6 | 72.7 | 142.5° | 412.0 |
| 102.5 | 91.1 | 80.6 | 76.2 | 69.2 | 68.3 | 63.9 | 62.2 | 65.7 | 70.1 | 70.1 | 145° | 433.0 |
| 91.1 | 80.6 | 72.7 | 69.2 | 63.9 | 63.0 | 59.5 | 57.8 | 60.4 | 66.6 | 68.3 | 147.5° | 452.0 |
| 81.4 | 75.3 | 67.4 | 63.9 | 60.4 | 58.7 | 56.9 | 55.2 | 56.0 | 63.9 | 64.8 | 150° | 469.0 |
| 75.3 | 70.9 | 63.9 | 62.2 | 57.8 | 56.9 | 54.3 | 52.5 | 53.4 | 59.5 | 62.2 | 152.5° | 486.0 |
| 70.9 | 67.4 | 61.3 | 60.4 | 56.0 | 55.2 | 52.5 | 50.8 | 51.7 | 56.9 | 59.5 | 155° | 503.0 |
| 67.4 | 63.9 | 58.7 | 56.9 | 54.3 | 53.4 | 51.7 | 49.9 | 49.9 | 55.2 | 57.8 | 157.5° | 517.0 |
| 65.7 | 62.2 | 56.9 | 55.2 | 52.5 | 51.7 | 49.9 | 48.2 | 49.0 | 53.4 | 55.2 | 160° | 530.0 |
| 64.8 | 60.4 | 56.0 | 53.4 | 51.7 | 49.9 | 48.2 | 46.4 | 47.3 | 51.7 | 53.4 | 162.5° | 540.0 |
| 64.8 | 59.5 | 56.0 | 53.4 | 50.8 | 48.2 | 47.3 | 44.7 | 46.4 | 49.9 | 52.5 | 165° | 550.0 |
| 64.8 | 59.5 | 56.0 | 53.4 | 51.7 | 49.0 | 47.3 | 45.5 | 46.4 | 49.9 | 52.5 | 167.5° | 558.0 |
| 63.0 | 58.7 | 56.9 | 54.3 | 53.4 | 50.8 | 49.9 | 48.2 | 48.2 | 52.5 | 56.9 | 170° | 564.0 |
| 60.4 | 57.8 | 56.9 | 55.2 | 55.2 | 53.4 | 53.4 | 51.7 | 51.7 | 56.9 | 61.3 | 172.5° | 567.0 |
| 56.9 | 55.2 | 56.0 | 55.2 | 55.2 | 55.2 | 54.3 | 54.3 | 54.3 | 58.7 | 63.9 | 175° | 570.0 |
| 53.4 | 52.5 | 53.4 | 53.4 | 54.3 | 53.4 | 54.3 | 53.4 | 53.4 | 57.8 | 63.0 | 177.5° | 574.0 |
| 48.2 | 48.2 | 49.0 | 48.2 | 49.0 | 49.0 | 49.9 | 49.9 | 49.9 | 52.5 | 57.8 | 180° | 576.0 |
| 42.0 | 41.2 | 42.0 | 41.2 | 42.9 | 41.2 | 42.9 | 43.8 | 42.9 | 43.8 | 46.4 | | |
| 37.7 | 36.8 | 37.7 | 36.8 | 38.5 | 36.8 | 37.7 | 37.7 | 36.8 | 29.8 | 25.4 | | |
| 34.2 | 33.3 | 34.2 | 33.3 | 35.0 | 33.3 | 35.0 | 34.2 | 32.4 | 21.9 | 21.0 | | |
| 27.1 | 24.5 | 27.1 | 24.5 | 26.3 | 23.6 | 25.4 | 21.9 | 16.6 | 15.8 | 15.8 | | |
| 20.1 | 17.5 | 19.3 | 16.6 | 15.8 | 12.3 | 13.1 | 12.3 | 11.4 | 12.3 | 12.3 | | |
| 12.3 | 8.8 | 10.5 | 7.9 | 9.6 | 7.0 | 8.8 | 7.9 | 7.0 | 7.0 | 7.0 | | |
| 6.1 | 4.4 | 6.1 | 3.5 | 5.3 | 3.5 | 4.4 | 4.4 | 2.6 | 2.6 | 2.6 | | |
| 0.9 | 0.0 | 1.8 | 0.0 | 1.8 | 0.0 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | | |
| 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | 1.0 | | |
| 7.0 | 8.5 | 10.0 | 11.5 | 13.0 | 12.0 | 11.0 | 9.0 | 4.0 | 3.0 | 2.0 | | |
| 30.0 | 30.5 | 31.0 | 31.5 | 32.0 | 31.5 | 31.0 | 30.0 | 22.0 | 14.0 | 10.0 | | |
| 50.0 | 50.2 | 50.5 | 50.8 | 51.0 | 50.8 | 50.5 | 50.0 | 45.0 | 38.0 | 32.0 | | |
| 71.0 | 71.0 | 71.0 | 71.0 | 71.0 | 70.8 | 70.5 | 70.0 | 66.0 | 61.0 | 56.0 | | |
| 92.0 | 92.2 | 92.5 | 92.8 | 93.0 | 92.5 | 92.0 | 91.0 | 88.0 | 84.0 | 80.0 | | |

'228389
 ISC-AF-450-LED-E1-SL4-7030-ULG

REPORT NUMBER: P228389
 CATALOG NUMBER: ISC-AF-45

TION (continued):

CANDELA DISTRIBUTION (con

| 117.5° | 120° | 122.5° | 125° | 127.5° | 130° | 135° | 145° | 155° | 165° | | 175° | 180° |
|--------|-------|--------|-------|--------|-------|-------|-------|-------|-------|--------|-------|-------|
| 114.0 | 114.0 | 114.0 | 114.0 | 113.5 | 113.0 | 112.0 | 110.0 | 106.0 | 103.0 | 0° | 382.7 | 382.7 |
| 136.0 | 136.0 | 136.0 | 136.0 | 135.5 | 135.0 | 134.0 | 132.0 | 129.0 | 126.0 | 2.5° | 346.8 | 347.6 |
| 158.0 | 158.0 | 158.0 | 158.0 | 157.5 | 157.0 | 156.0 | 154.0 | 151.0 | 149.0 | 5° | 303.9 | 306.5 |
| 180.8 | 180.5 | 180.2 | 180.0 | 179.8 | 179.5 | 179.0 | 177.0 | 174.0 | 172.0 | 7.5° | 256.6 | 258.3 |
| 204.0 | 204.0 | 204.0 | 204.0 | 203.5 | 203.0 | 202.0 | 201.0 | 198.0 | 196.0 | 10° | 206.7 | 208.4 |
| 228.0 | 228.0 | 228.0 | 228.0 | 227.8 | 227.5 | 227.0 | 226.0 | 223.0 | 221.0 | 12.5° | 159.4 | 161.1 |
| 253.8 | 253.5 | 253.2 | 253.0 | 252.8 | 252.5 | 252.0 | 251.0 | 248.0 | 247.0 | 15° | 120.0 | 118.2 |
| 277.2 | 277.5 | 277.8 | 278.0 | 277.5 | 277.0 | 276.0 | 274.0 | 272.0 | 270.0 | 17.5° | 91.9 | 90.2 |
| 301.0 | 301.0 | 301.0 | 301.0 | 300.5 | 300.0 | 299.0 | 298.0 | 294.0 | 293.0 | 20° | 77.9 | 77.9 |
| 325.0 | 325.0 | 325.0 | 325.0 | 324.2 | 323.5 | 322.0 | 321.0 | 318.0 | 317.0 | 22.5° | 76.2 | 75.3 |
| 348.0 | 348.0 | 348.0 | 348.0 | 347.2 | 346.5 | 345.0 | 345.0 | 341.0 | 339.0 | 25° | 77.1 | 76.2 |
| 369.0 | 369.0 | 369.0 | 369.0 | 368.5 | 368.0 | 367.0 | 367.0 | 364.0 | 363.0 | 27.5° | 77.1 | 76.2 |
| 390.0 | 390.0 | 390.0 | 390.0 | 389.8 | 389.5 | 389.0 | 388.0 | 386.0 | 385.0 | 30° | 75.3 | 74.4 |
| 412.0 | 412.0 | 412.0 | 412.0 | 411.5 | 411.0 | 410.0 | 410.0 | 407.0 | 408.0 | 32.5° | 72.7 | 71.8 |
| 433.2 | 433.5 | 433.8 | 434.0 | 433.5 | 433.0 | 432.0 | 431.0 | 428.0 | 428.0 | 35° | 70.1 | 70.1 |
| 452.5 | 453.0 | 453.5 | 454.0 | 453.8 | 453.5 | 453.0 | 452.0 | 448.0 | 447.0 | 37.5° | 68.3 | 69.2 |
| 469.5 | 470.0 | 470.5 | 471.0 | 470.8 | 470.5 | 470.0 | 469.0 | 465.0 | 464.0 | 40° | 65.7 | 66.6 |
| 486.2 | 486.5 | 486.8 | 487.0 | 486.8 | 486.5 | 486.0 | 485.0 | 482.0 | 483.0 | 42.5° | 63.0 | 63.9 |
| 503.2 | 503.5 | 503.8 | 504.0 | 503.8 | 503.5 | 503.0 | 503.0 | 501.0 | 502.0 | 45° | 60.4 | 61.3 |
| 517.5 | 518.0 | 518.5 | 519.0 | 519.0 | 519.0 | 519.0 | 519.0 | 516.0 | 517.0 | 47.5° | 57.8 | 57.8 |
| 530.5 | 531.0 | 531.5 | 532.0 | 532.0 | 532.0 | 532.0 | 532.0 | 529.0 | 529.0 | 50° | 54.3 | 54.3 |
| 540.5 | 541.0 | 541.5 | 542.0 | 541.8 | 541.5 | 541.0 | 541.0 | 538.0 | 539.0 | 52.5° | 53.4 | 53.4 |
| 550.8 | 551.5 | 552.2 | 553.0 | 552.8 | 552.5 | 552.0 | 552.0 | 548.0 | 549.0 | 55° | 53.4 | 53.4 |
| 558.5 | 559.0 | 559.5 | 560.0 | 560.0 | 560.0 | 560.0 | 561.0 | 558.0 | 559.0 | 57.5° | 55.2 | 55.2 |
| 564.2 | 564.5 | 564.8 | 565.0 | 565.2 | 565.5 | 566.0 | 567.0 | 565.0 | 566.0 | 60° | 60.4 | 61.3 |
| 567.5 | 568.0 | 568.5 | 569.0 | 568.8 | 568.5 | 568.0 | 569.0 | 567.0 | 569.0 | 62.5° | 70.9 | 71.8 |
| 570.8 | 571.5 | 572.2 | 573.0 | 572.8 | 572.5 | 572.0 | 572.0 | 569.0 | 570.0 | 65° | 81.4 | 83.2 |
| 574.8 | 575.5 | 576.2 | 577.0 | 577.0 | 577.0 | 577.0 | 578.0 | 574.0 | 575.0 | 67.5° | 82.3 | 84.9 |
| 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 576.0 | 70° | 79.7 | 82.3 |
| | | | | | | | | | | 72.5° | 55.2 | 55.2 |
| | | | | | | | | | | 74° | 24.5 | 23.6 |
| | | | | | | | | | | 75° | 21.0 | 20.1 |
| | | | | | | | | | | 77.5° | 15.8 | 15.8 |
| | | | | | | | | | | 80° | 11.4 | 10.5 |
| | | | | | | | | | | 82.5° | 6.1 | 6.1 |
| | | | | | | | | | | 85° | 1.8 | 1.8 |
| | | | | | | | | | | 87.5° | 0.0 | 0.0 |
| | | | | | | | | | | 90° | 0.0 | 0.0 |
| | | | | | | | | | | 92.5° | 0.0 | 0.0 |
| | | | | | | | | | | 95° | 1.0 | 1.0 |
| | | | | | | | | | | 97.5° | 2.0 | 2.0 |
| | | | | | | | | | | 100° | 8.0 | 8.0 |
| | | | | | | | | | | 102.5° | 28.0 | 28.0 |
| | | | | | | | | | | 105° | 54.0 | 54.0 |
| | | | | | | | | | | 107.5° | 77.0 | 78.0 |



REPORT NUMBER: P228389

CATALOG NUMBER: ISC-AF-450-LED-E1-S

CANDELA DISTRIBUTION (continued):

| | 175° | 180° |
|--------|-------|-------|
| 110° | 102.0 | 101.0 |
| 112.5° | 124.0 | 124.0 |
| 115° | 147.0 | 146.0 |
| 117.5° | 170.0 | 169.0 |
| 120° | 195.0 | 193.0 |
| 122.5° | 220.0 | 219.0 |
| 125° | 246.0 | 244.0 |
| 127.5° | 269.0 | 267.0 |
| 130° | 292.0 | 290.0 |
| 132.5° | 314.0 | 313.0 |
| 135° | 337.0 | 336.0 |
| 137.5° | 360.0 | 359.0 |
| 140° | 383.0 | 382.0 |
| 142.5° | 406.0 | 404.0 |
| 145° | 426.0 | 425.0 |
| 147.5° | 444.0 | 444.0 |
| 150° | 462.0 | 461.0 |
| 152.5° | 480.0 | 479.0 |
| 155° | 500.0 | 499.0 |
| 157.5° | 515.0 | 513.0 |
| 160° | 527.0 | 525.0 |
| 162.5° | 536.0 | 535.0 |
| 165° | 547.0 | 546.0 |
| 167.5° | 556.0 | 555.0 |
| 170° | 563.0 | 562.0 |
| 172.5° | 566.0 | 565.0 |
| 175° | 569.0 | 567.0 |
| 177.5° | 573.0 | 572.0 |
| 180° | 576.0 | 576.0 |

(END OF REPORT)

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

Scaled Data Report

