

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: P226502

Luminaire Tested: **ISW-AF-450-LED-E1-T4FT-7060-ULG**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P226502
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P35943)-DOWNLIGHT AND
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: MCGRAW-EDISON
Catalog Number: ISW-AF-450-LED-E1-T4FT-7060-ULG
Description: IMPACT ELITE LED WEDGE LUMINAIRE WITH UPLIGHT
LIGHT SQUARE WITH ACCULED OPTICS-TYPE IV FORWARD THROW, WITH UPLIGHT GLOW
Light Source: (16) 5700K CCT, 70 CRI LEDs and (1) UPLIGHT LED
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4914.4 lumens
Efficiency: N/A
Efficacy: 117.0 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: B1 - U5 - G1

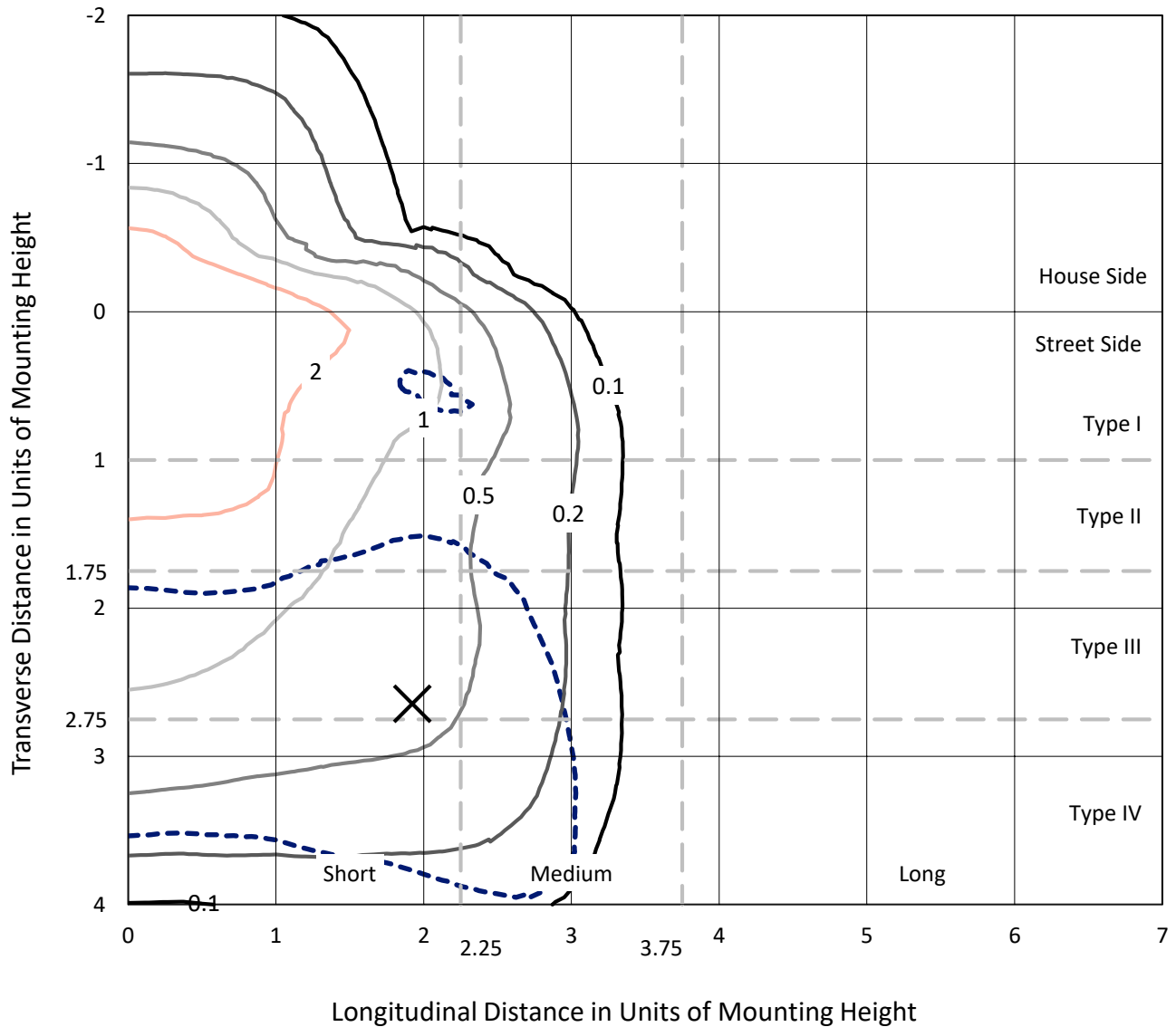
Input Watts (W): 42.01
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

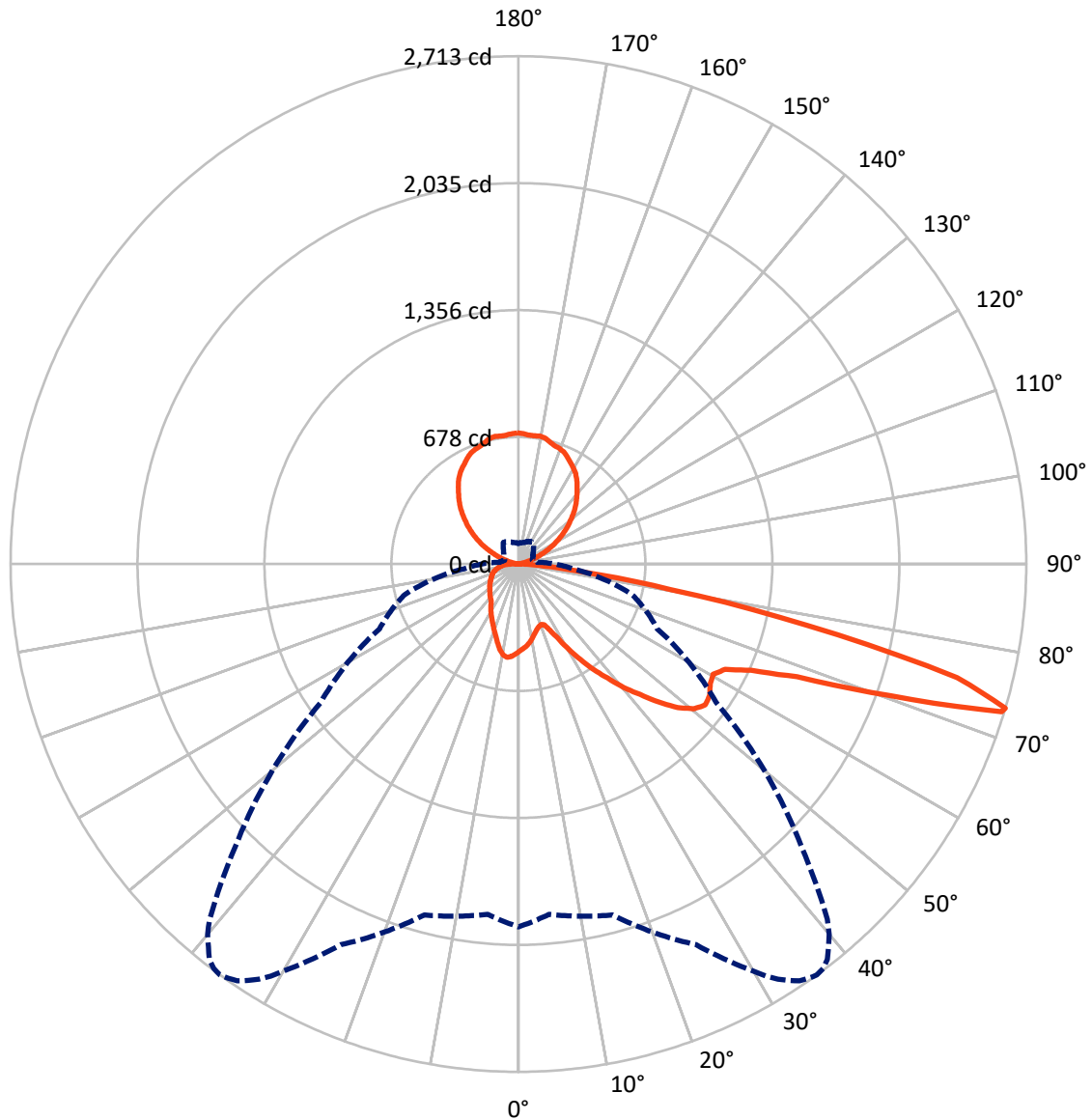
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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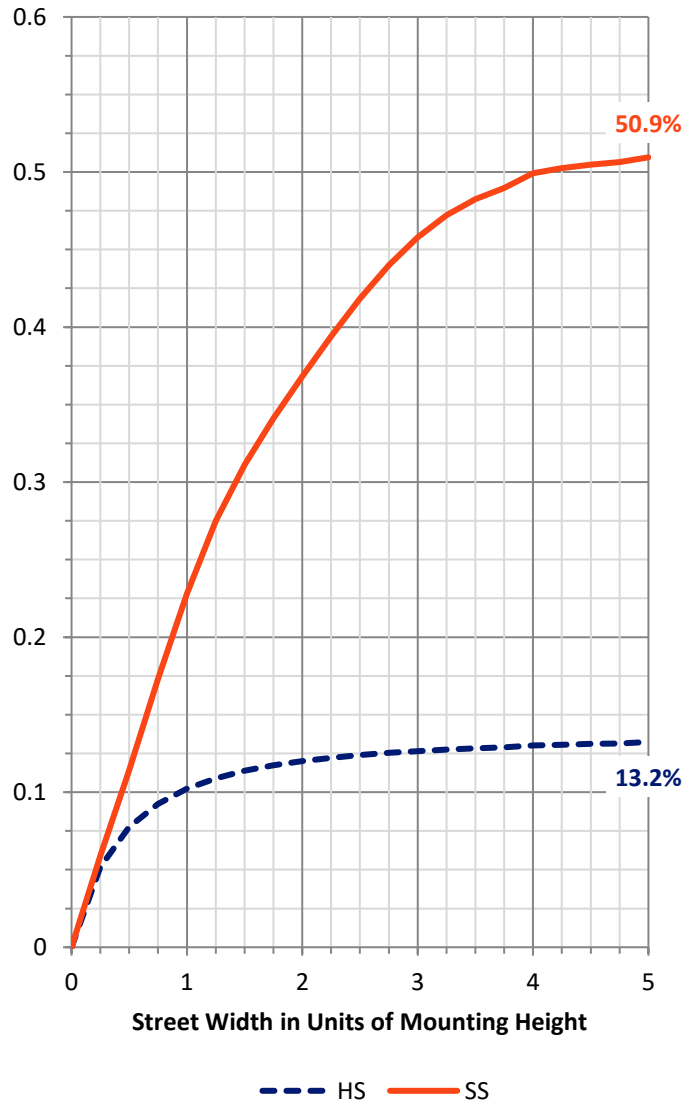
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|--------|
| House Side | Lumens | 670.7 | 868.3 | 1539.0 |
| | % Fixture | 13.6 | 17.7 | 31.3 |
| Street Side | Lumens | 2507.6 | 867.8 | 3375.4 |
| | % Fixture | 51.0 | 17.7 | 68.7 |
| Total | Lumens | 3178.3 | 1736.1 | 4914.4 |
| | % Fixture | 64.7 | 35.3 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 43.9 | 0.9 |
| 10°-20° | 116.4 | 2.4 |
| 20°-30° | 190.8 | 3.9 |
| 30°-40° | 316.1 | 6.4 |
| 40°-50° | 464.6 | 9.5 |
| 50°-60° | 585.8 | 11.9 |
| 60°-70° | 767.1 | 15.6 |
| 70°-80° | 621.0 | 12.6 |
| 80°-90° | 72.5 | 1.5 |
| 90°-100° | 10.3 | 0.2 |
| 100°-110° | 57.4 | 1.2 |
| 110°-120° | 166.1 | 3.4 |
| 120°-130° | 273.2 | 5.6 |
| 130°-140° | 336.8 | 6.9 |
| 140°-150° | 344.6 | 7.0 |
| 150°-160° | 290.3 | 5.9 |
| 160°-170° | 191.2 | 3.9 |
| 170°-180° | 66.3 | 1.3 |
| 0°-90° | 3178.3 | 64.7 |
| 0°-180° | 4914.4 | 100.0 |



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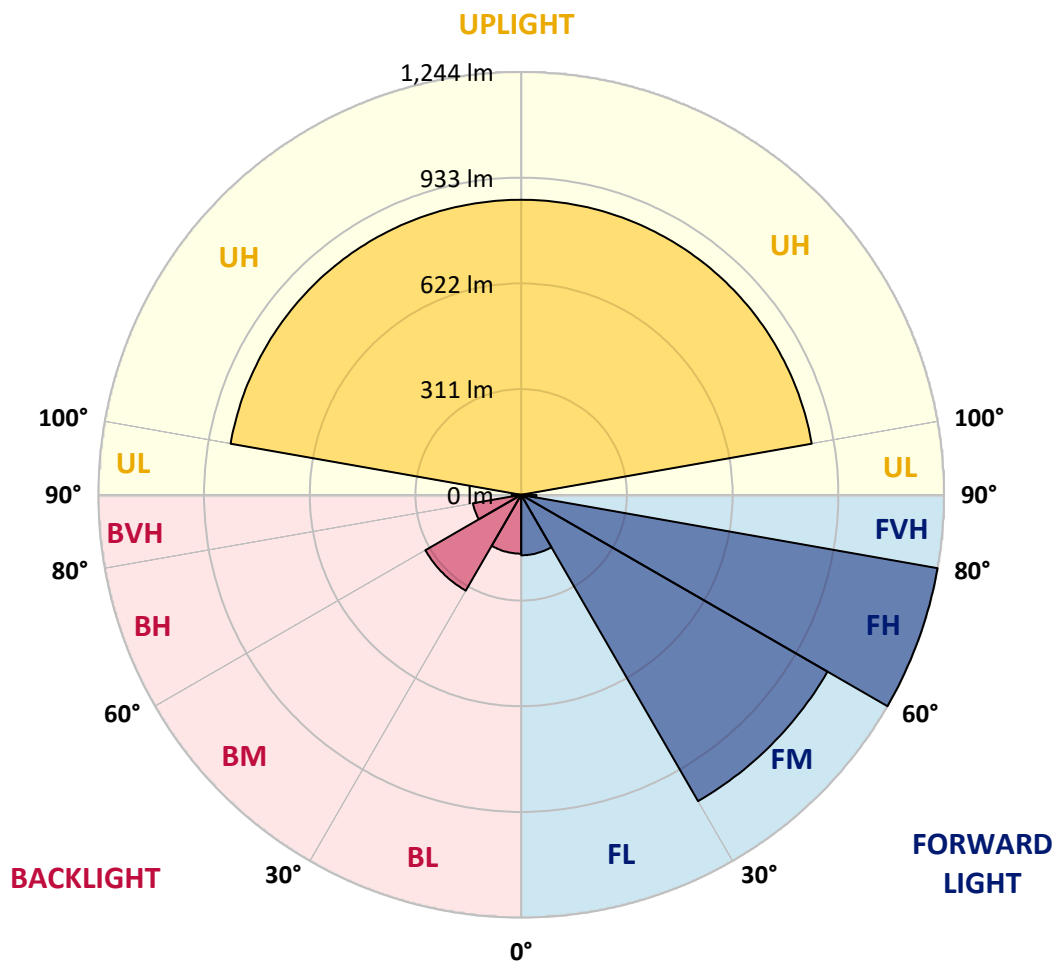
CATALOG NUMBER: ISW-AF-450-LED-E1-T4FT-7060-ULG

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|---------|---------|
| | | | B | U | G |
| FL (0°-30°) | 177.9 | 3.6 | | | |
| FM (30°-60°) | 1040.8 | 21.2 | | | |
| FH (60°-80°) | 1244.3 | 25.3 | | | G1/1800 |
| FVH (80°-90°) | 44.6 | 0.9 | | | G1/100 |
| BL (0°-30°) | 173.3 | 3.5 | B1/500 | | |
| BM (30°-60°) | 325.7 | 6.6 | B1/1000 | | |
| BH (60°-80°) | 143.8 | 2.9 | B1/500 | | G1/500 |
| BVH (80°-90°) | 27.9 | 0.6 | | | G1/100 |
| UL (90°-100°) | 10.3 | 0.2 | | U2/50 | |
| UH (100°-180°) | 868.3 | 17.7 | | U4/1000 | |

BUG Rating: B1-U5-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 30° | 31° | 32° | 33° | 34° | 35° | 36° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 |
| 2.5° | 449.9 | 450.8 | 451.7 | 451.7 | 451.7 | 453.1 | 452.6 | 452.6 | 453.1 | 453.6 | 453.6 |
| 5° | 433.1 | 433.5 | 436.3 | 437.2 | 439.9 | 439.4 | 439.4 | 439.4 | 441.3 | 439.9 | 440.8 |
| 7.5° | 413.9 | 414.8 | 417.6 | 420.8 | 423.0 | 423.5 | 423.0 | 422.1 | 424.4 | 425.3 | 424.4 |
| 10° | 391.2 | 391.6 | 395.3 | 398.0 | 401.6 | 401.2 | 402.6 | 402.6 | 403.5 | 403.0 | 404.8 |
| 12.5° | 379.8 | 378.9 | 377.1 | 378.4 | 379.3 | 379.3 | 379.3 | 380.7 | 380.2 | 381.2 | 382.5 |
| 15° | 378.4 | 376.1 | 367.0 | 363.8 | 362.9 | 362.9 | 362.5 | 362.0 | 363.4 | 364.8 | 364.8 |
| 17.5° | 384.8 | 380.2 | 362.5 | 353.4 | 351.6 | 350.6 | 351.1 | 350.2 | 350.2 | 352.0 | 351.6 |
| 20° | 415.8 | 407.6 | 372.0 | 352.0 | 346.5 | 346.5 | 346.1 | 344.7 | 344.7 | 345.2 | 345.2 |
| 22.5° | 494.5 | 484.1 | 422.1 | 380.7 | 361.6 | 361.1 | 359.7 | 358.4 | 354.7 | 353.8 | 352.0 |
| 25° | 604.3 | 592.0 | 485.9 | 441.3 | 414.4 | 413.5 | 406.7 | 405.7 | 397.1 | 397.5 | 391.6 |
| 27.5° | 689.4 | 681.2 | 571.0 | 511.8 | 486.3 | 480.9 | 477.7 | 469.5 | 462.2 | 456.3 | 449.0 |
| 30° | 718.6 | 717.2 | 657.1 | 609.3 | 571.0 | 564.7 | 556.0 | 552.4 | 541.9 | 533.7 | 528.7 |
| 32.5° | 764.6 | 765.9 | 740.9 | 688.1 | 654.8 | 648.5 | 641.2 | 632.5 | 625.2 | 619.8 | 607.9 |
| 35° | 830.2 | 830.6 | 813.3 | 773.7 | 735.4 | 726.8 | 722.7 | 712.7 | 705.8 | 699.0 | 693.1 |
| 37.5° | 875.7 | 878.0 | 865.7 | 835.2 | 812.4 | 800.1 | 799.6 | 792.4 | 784.6 | 778.7 | 773.2 |
| 40° | 963.1 | 950.8 | 910.3 | 890.7 | 872.0 | 870.7 | 866.6 | 862.5 | 864.3 | 861.1 | 867.0 |
| 42.5° | 1051.5 | 1036.0 | 979.5 | 951.7 | 940.4 | 942.6 | 941.3 | 941.7 | 947.2 | 945.8 | 952.2 |
| 45° | 1127.1 | 1109.3 | 1055.6 | 1022.8 | 1031.9 | 1034.6 | 1042.4 | 1046.9 | 1044.6 | 1052.8 | 1052.8 |
| 47.5° | 1202.7 | 1161.2 | 1097.5 | 1112.5 | 1118.9 | 1139.8 | 1145.3 | 1143.9 | 1151.7 | 1155.3 | 1145.3 |
| 50° | 1149.4 | 1138.4 | 1133.4 | 1179.4 | 1208.1 | 1214.9 | 1222.7 | 1226.8 | 1230.4 | 1225.4 | 1215.4 |
| 52.5° | 1036.9 | 1036.0 | 1106.6 | 1219.0 | 1243.2 | 1252.3 | 1259.6 | 1262.8 | 1261.4 | 1258.7 | 1250.5 |
| 55° | 999.1 | 991.8 | 1052.8 | 1178.1 | 1214.9 | 1223.6 | 1234.1 | 1240.4 | 1246.8 | 1245.9 | 1239.5 |
| 57.5° | 1050.6 | 1044.6 | 1045.1 | 1142.1 | 1178.1 | 1185.8 | 1192.6 | 1199.9 | 1201.7 | 1207.7 | 1208.1 |
| 60° | 1199.9 | 1192.2 | 1129.8 | 1140.7 | 1177.2 | 1185.8 | 1186.7 | 1190.8 | 1191.3 | 1194.5 | 1194.9 |
| 62.5° | 1415.3 | 1401.2 | 1306.0 | 1224.1 | 1236.8 | 1240.9 | 1244.1 | 1243.2 | 1241.4 | 1239.1 | 1239.1 |
| 65° | 1651.2 | 1638.0 | 1515.5 | 1419.9 | 1383.0 | 1393.0 | 1377.1 | 1373.9 | 1370.2 | 1370.2 | 1366.1 |
| 67.5° | 1931.7 | 1906.7 | 1811.9 | 1704.5 | 1651.2 | 1656.2 | 1663.5 | 1635.7 | 1625.7 | 1626.6 | 1605.2 |
| 70° | 2217.7 | 2191.3 | 2149.8 | 2148.5 | 2175.3 | 2163.5 | 2129.8 | 2174.4 | 2121.6 | 2108.9 | 2104.3 |
| 72.5° | 2059.7 | 2028.3 | 2036.9 | 2294.2 | 2535.5 | 2574.7 | 2612.0 | 2646.7 | 2677.6 | 2696.3 | 2699.0 |
| 73° | 1938.5 | 1878.9 | 1940.8 | 2243.2 | 2511.0 | 2568.8 | 2615.2 | 2652.1 | 2685.4 | 2702.2 | 2712.7 |
| 75° | 968.1 | 971.3 | 1276.4 | 1850.7 | 2194.5 | 2244.1 | 2316.5 | 2357.0 | 2417.1 | 2448.1 | 2420.8 |
| 77.5° | 224.5 | 232.7 | 386.6 | 878.4 | 1315.6 | 1386.6 | 1444.5 | 1503.7 | 1573.3 | 1599.3 | 1576.5 |
| 80° | 79.2 | 82.9 | 136.2 | 333.8 | 549.2 | 588.3 | 638.0 | 703.1 | 767.8 | 783.7 | 823.8 |
| 82.5° | 41.9 | 46.0 | 71.9 | 144.8 | 234.5 | 256.4 | 269.1 | 296.0 | 318.8 | 332.4 | 339.7 |
| 85° | 24.1 | 24.6 | 41.0 | 80.1 | 107.5 | 116.1 | 124.3 | 130.7 | 138.0 | 133.0 | 133.0 |
| 87.5° | 9.6 | 10.5 | 20.9 | 37.8 | 51.9 | 57.8 | 57.8 | 57.8 | 57.4 | 50.5 | 46.0 |
| 90° | 6.8 | 7.7 | 11.1 | 15.7 | 14.8 | 14.8 | 14.4 | 13.5 | 13.0 | 13.5 | 11.1 |
| 92.5° | 4.0 | 4.0 | 5.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 |
| 95° | 5.0 | 5.0 | 6.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 |
| 97.5° | 7.0 | 7.0 | 8.0 | 8.0 | 8.5 | 8.6 | 8.7 | 8.8 | 8.9 | 9.0 | 9.0 |
| 100° | 8.0 | 8.0 | 9.0 | 10.0 | 11.0 | 11.2 | 11.4 | 11.6 | 11.8 | 12.0 | 12.9 |
| 102.5° | 11.0 | 11.0 | 13.0 | 18.0 | 22.5 | 23.4 | 24.3 | 25.2 | 26.1 | 27.0 | 28.3 |
| 105° | 21.0 | 22.0 | 27.0 | 36.0 | 42.0 | 43.2 | 44.4 | 45.6 | 46.8 | 48.0 | 49.5 |
| 107.5° | 41.0 | 42.0 | 49.0 | 58.0 | 65.5 | 67.0 | 68.5 | 70.0 | 71.5 | 73.0 | 74.5 |



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CATALOG NUMBER: ISW-AF-450-LED-E1-T4FT-7060-ULG

CANDELA DISTRIBUTION (continued):

| | 0° | 5° | 15° | 25° | 30° | 31° | 32° | 33° | 34° | 35° | 36° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 110° | 66.0 | 68.0 | 74.0 | 87.0 | 94.5 | 96.0 | 97.5 | 99.0 | 100.5 | 102.0 | 103.2 |
| 112.5° | 99.0 | 99.0 | 106.0 | 121.0 | 127.5 | 128.8 | 130.1 | 131.4 | 132.7 | 134.0 | 134.9 |
| 115° | 140.0 | 139.0 | 147.0 | 159.0 | 163.5 | 164.4 | 165.3 | 166.2 | 167.1 | 168.0 | 168.6 |
| 117.5° | 184.0 | 184.0 | 189.0 | 197.0 | 199.5 | 200.0 | 200.5 | 201.0 | 201.5 | 202.0 | 202.3 |
| 120° | 225.0 | 223.0 | 226.0 | 233.0 | 235.0 | 235.4 | 235.8 | 236.2 | 236.6 | 237.0 | 237.6 |
| 122.5° | 263.0 | 260.0 | 261.0 | 267.0 | 269.0 | 269.4 | 269.8 | 270.2 | 270.6 | 271.0 | 271.6 |
| 125° | 298.0 | 294.0 | 296.0 | 299.0 | 302.0 | 302.6 | 303.2 | 303.8 | 304.4 | 305.0 | 305.5 |
| 127.5° | 330.0 | 329.0 | 329.0 | 333.0 | 336.0 | 336.6 | 337.2 | 337.8 | 338.4 | 339.0 | 339.1 |
| 130° | 363.0 | 361.0 | 362.0 | 366.0 | 368.0 | 368.4 | 368.8 | 369.2 | 369.6 | 370.0 | 370.2 |
| 132.5° | 396.0 | 394.0 | 393.0 | 401.0 | 402.5 | 402.8 | 403.1 | 403.4 | 403.7 | 404.0 | 404.1 |
| 135° | 429.0 | 426.0 | 426.0 | 432.0 | 433.5 | 433.8 | 434.1 | 434.4 | 434.7 | 435.0 | 435.2 |
| 137.5° | 460.0 | 457.0 | 459.0 | 460.0 | 462.0 | 462.4 | 462.8 | 463.2 | 463.6 | 464.0 | 464.4 |
| 140° | 488.0 | 485.0 | 487.0 | 489.0 | 490.0 | 490.2 | 490.4 | 490.6 | 490.8 | 491.0 | 491.6 |
| 142.5° | 518.0 | 515.0 | 517.0 | 518.0 | 519.5 | 519.8 | 520.1 | 520.4 | 520.7 | 521.0 | 521.4 |
| 145° | 550.0 | 546.0 | 544.0 | 547.0 | 548.5 | 548.8 | 549.1 | 549.4 | 549.7 | 550.0 | 550.1 |
| 147.5° | 575.0 | 572.0 | 571.0 | 574.0 | 574.0 | 574.0 | 574.0 | 574.0 | 574.0 | 574.0 | 574.1 |
| 150° | 595.0 | 592.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 |
| 152.5° | 611.0 | 608.0 | 608.0 | 609.0 | 609.5 | 609.6 | 609.7 | 609.8 | 609.8 | 609.9 | 610.0 |
| 155° | 629.0 | 625.0 | 625.0 | 627.0 | 628.5 | 628.8 | 629.1 | 629.4 | 629.7 | 630.0 | 629.8 |
| 157.5° | 646.0 | 643.0 | 643.0 | 644.0 | 645.0 | 645.2 | 645.4 | 645.6 | 645.8 | 646.0 | 645.9 |
| 160° | 663.0 | 660.0 | 659.0 | 656.0 | 655.5 | 655.4 | 655.3 | 655.2 | 655.1 | 655.0 | 655.0 |
| 162.5° | 673.0 | 669.0 | 669.0 | 665.0 | 663.0 | 662.6 | 662.2 | 661.8 | 661.4 | 661.0 | 661.2 |
| 165° | 681.0 | 678.0 | 676.0 | 676.0 | 674.5 | 674.2 | 673.9 | 673.6 | 673.3 | 673.0 | 673.0 |
| 167.5° | 690.0 | 687.0 | 684.0 | 686.0 | 687.0 | 687.2 | 687.4 | 687.6 | 687.8 | 688.0 | 687.7 |
| 170° | 698.0 | 695.0 | 692.0 | 692.0 | 692.5 | 692.6 | 692.7 | 692.8 | 692.9 | 693.0 | 692.8 |
| 172.5° | 699.0 | 697.0 | 695.0 | 693.0 | 691.5 | 691.2 | 690.9 | 690.6 | 690.3 | 690.0 | 690.0 |
| 175° | 700.0 | 698.0 | 697.0 | 695.0 | 693.0 | 692.6 | 692.2 | 691.8 | 691.4 | 691.0 | 690.9 |
| 177.5° | 707.0 | 705.0 | 700.0 | 699.0 | 698.0 | 697.8 | 697.6 | 697.4 | 697.2 | 697.0 | 696.8 |
| 180° | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 |



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CANDELA DISTRIBUTION (continued):

| | 37° | 38° | 39° | 40° | 41° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 |
| 2.5° | 454.5 | 454.9 | 454.0 | 455.8 | 454.5 | 454.5 | 456.7 | 460.8 | 464.0 | 464.9 | 467.7 |
| 5° | 441.7 | 442.2 | 442.2 | 442.6 | 442.2 | 443.1 | 447.2 | 450.8 | 457.2 | 460.4 | 464.5 |
| 7.5° | 425.3 | 426.7 | 426.2 | 427.1 | 427.1 | 428.1 | 434.4 | 440.4 | 446.7 | 452.6 | 457.7 |
| 10° | 405.7 | 406.7 | 408.5 | 407.6 | 407.6 | 410.3 | 417.1 | 425.8 | 433.5 | 442.2 | 448.1 |
| 12.5° | 382.5 | 384.8 | 384.3 | 386.2 | 387.1 | 388.9 | 400.3 | 409.8 | 419.4 | 429.4 | 437.2 |
| 15° | 364.3 | 365.7 | 366.6 | 367.0 | 367.0 | 371.1 | 382.5 | 394.4 | 407.1 | 418.9 | 427.1 |
| 17.5° | 352.5 | 352.5 | 353.4 | 353.8 | 354.7 | 357.5 | 369.3 | 382.5 | 397.1 | 411.7 | 420.8 |
| 20° | 345.6 | 345.6 | 346.1 | 346.5 | 346.5 | 349.7 | 360.7 | 375.7 | 391.6 | 410.3 | 421.2 |
| 22.5° | 351.1 | 349.7 | 349.3 | 349.3 | 347.5 | 347.5 | 357.9 | 373.9 | 393.9 | 418.0 | 432.2 |
| 25° | 388.4 | 384.3 | 378.0 | 376.6 | 374.3 | 363.4 | 362.0 | 380.2 | 404.8 | 434.9 | 456.3 |
| 27.5° | 444.4 | 440.4 | 436.3 | 431.2 | 427.6 | 407.6 | 380.2 | 396.6 | 425.8 | 468.6 | 495.0 |
| 30° | 517.8 | 509.6 | 503.6 | 498.2 | 482.2 | 460.4 | 418.0 | 422.1 | 458.1 | 515.5 | 548.7 |
| 32.5° | 599.7 | 591.1 | 582.0 | 569.2 | 565.1 | 529.6 | 475.4 | 464.5 | 499.1 | 570.1 | 604.7 |
| 35° | 679.0 | 674.9 | 668.5 | 663.5 | 653.9 | 624.3 | 550.1 | 515.5 | 546.5 | 634.3 | 661.2 |
| 37.5° | 771.0 | 763.2 | 763.7 | 759.6 | 754.1 | 729.1 | 627.5 | 577.0 | 597.5 | 695.8 | 712.7 |
| 40° | 861.6 | 859.8 | 862.5 | 855.7 | 846.5 | 812.8 | 684.4 | 622.0 | 650.7 | 755.0 | 750.9 |
| 42.5° | 947.2 | 948.6 | 945.4 | 937.6 | 927.6 | 871.1 | 720.9 | 660.3 | 698.5 | 806.9 | 781.4 |
| 45° | 1045.1 | 1040.1 | 1026.9 | 1013.2 | 1000.9 | 921.2 | 740.4 | 703.1 | 744.5 | 862.9 | 812.4 |
| 47.5° | 1137.5 | 1118.0 | 1106.6 | 1085.6 | 1061.5 | 966.8 | 766.9 | 748.2 | 795.5 | 915.8 | 842.0 |
| 50° | 1205.4 | 1187.2 | 1168.0 | 1142.5 | 1117.0 | 1006.4 | 801.9 | 799.2 | 853.4 | 975.0 | 882.5 |
| 52.5° | 1236.4 | 1219.5 | 1200.8 | 1174.9 | 1149.4 | 1035.1 | 848.8 | 848.8 | 921.7 | 1053.3 | 938.5 |
| 55° | 1231.3 | 1219.0 | 1202.7 | 1179.0 | 1159.4 | 1050.6 | 897.1 | 903.5 | 1007.3 | 1138.0 | 1003.2 |
| 57.5° | 1204.9 | 1198.1 | 1188.5 | 1172.1 | 1156.2 | 1062.4 | 954.0 | 958.1 | 1122.1 | 1219.5 | 1064.2 |
| 60° | 1195.8 | 1193.1 | 1187.6 | 1178.1 | 1165.8 | 1088.4 | 1014.6 | 1023.7 | 1250.5 | 1294.2 | 1098.8 |
| 62.5° | 1236.4 | 1230.9 | 1226.8 | 1217.2 | 1205.8 | 1152.1 | 1090.6 | 1093.4 | 1371.1 | 1303.3 | 1065.1 |
| 65° | 1350.2 | 1340.2 | 1333.3 | 1320.6 | 1307.8 | 1248.2 | 1187.6 | 1158.0 | 1430.3 | 1218.1 | 950.8 |
| 67.5° | 1588.8 | 1572.4 | 1552.8 | 1528.7 | 1493.6 | 1439.9 | 1283.7 | 1167.1 | 1376.6 | 1031.9 | 750.0 |
| 70° | 2060.6 | 2025.1 | 1980.0 | 1928.5 | 1915.3 | 1758.7 | 1343.8 | 1099.7 | 1144.4 | 720.9 | 497.3 |
| 72.5° | 2694.5 | 2657.6 | 2617.5 | 2575.2 | 2491.4 | 2147.1 | 1317.4 | 887.1 | 711.8 | 370.7 | 236.8 |
| 73° | 2704.9 | 2679.9 | 2631.6 | 2582.4 | 2514.1 | 2140.3 | 1288.7 | 817.9 | 627.5 | 291.9 | 194.0 |
| 75° | 2425.8 | 2415.8 | 2368.4 | 2273.7 | 2215.9 | 1807.9 | 949.0 | 474.0 | 274.6 | 180.3 | 126.1 |
| 77.5° | 1574.2 | 1563.3 | 1536.4 | 1527.3 | 1420.8 | 1172.1 | 424.9 | 184.4 | 149.4 | 119.8 | 89.3 |
| 80° | 838.8 | 787.8 | 778.7 | 742.3 | 664.4 | 451.3 | 145.3 | 112.9 | 99.3 | 80.1 | 62.4 |
| 82.5° | 340.2 | 318.3 | 310.1 | 281.0 | 264.1 | 135.2 | 72.9 | 78.3 | 66.5 | 47.4 | 38.3 |
| 85° | 125.2 | 115.2 | 112.5 | 91.5 | 80.6 | 40.1 | 44.6 | 55.1 | 41.4 | 26.4 | 19.1 |
| 87.5° | 43.3 | 37.3 | 32.3 | 25.0 | 23.2 | 16.4 | 24.6 | 30.1 | 26.4 | 15.9 | 9.1 |
| 90° | 11.0 | 10.4 | 9.9 | 9.3 | 9.7 | 8.8 | 9.7 | 13.1 | 13.6 | 9.7 | 8.8 |
| 92.5° | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 | 6.0 |
| 95° | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 7.0 | 8.0 | 7.0 | 7.0 | 7.0 |
| 97.5° | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 9.0 | 12.0 | 10.0 | 9.0 | 8.0 | 8.0 |
| 100° | 13.8 | 14.7 | 15.6 | 16.5 | 17.4 | 21.0 | 29.0 | 26.0 | 23.0 | 19.0 | 19.0 |
| 102.5° | 29.6 | 30.9 | 32.2 | 33.5 | 34.8 | 40.0 | 50.0 | 47.0 | 42.0 | 39.0 | 38.0 |
| 105° | 51.0 | 52.5 | 54.0 | 55.5 | 57.0 | 63.0 | 72.0 | 70.0 | 65.0 | 61.0 | 61.0 |
| 107.5° | 76.0 | 77.5 | 79.0 | 80.5 | 82.0 | 88.0 | 95.0 | 94.0 | 90.0 | 87.0 | 86.0 |



REPORT NUMBER: P226502

CATALOG NUMBER: ISW-AF-450-LED-E1-T4FT-7060-ULG

CANDELA DISTRIBUTION (continued):

| | 37° | 38° | 39° | 40° | 41° | 45° | 55° | 65° | 75° | 85° | 90° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 110° | 104.4 | 105.6 | 106.8 | 108.0 | 109.2 | 114.0 | 120.0 | 121.0 | 119.0 | 116.0 | 117.0 |
| 112.5° | 135.8 | 136.7 | 137.6 | 138.5 | 139.4 | 143.0 | 148.0 | 150.0 | 149.0 | 147.0 | 147.0 |
| 115° | 169.2 | 169.8 | 170.4 | 171.0 | 171.6 | 174.0 | 179.0 | 182.0 | 179.0 | 177.0 | 178.0 |
| 117.5° | 202.6 | 202.9 | 203.2 | 203.5 | 203.8 | 205.0 | 211.0 | 215.0 | 210.0 | 208.0 | 209.0 |
| 120° | 238.2 | 238.8 | 239.4 | 240.0 | 240.6 | 243.0 | 246.0 | 250.0 | 245.0 | 243.0 | 243.0 |
| 122.5° | 272.2 | 272.8 | 273.4 | 274.0 | 274.6 | 277.0 | 279.0 | 283.0 | 278.0 | 276.0 | 277.0 |
| 125° | 306.0 | 306.5 | 307.0 | 307.5 | 308.0 | 310.0 | 313.0 | 315.0 | 310.0 | 310.0 | 310.0 |
| 127.5° | 339.2 | 339.3 | 339.4 | 339.5 | 339.6 | 340.0 | 345.0 | 346.0 | 346.0 | 345.0 | 347.0 |
| 130° | 370.4 | 370.6 | 370.8 | 371.0 | 371.2 | 372.0 | 377.0 | 381.0 | 381.0 | 379.0 | 380.0 |
| 132.5° | 404.2 | 404.3 | 404.4 | 404.5 | 404.6 | 405.0 | 411.0 | 416.0 | 414.0 | 414.0 | 415.0 |
| 135° | 435.4 | 435.6 | 435.8 | 436.0 | 436.2 | 437.0 | 443.0 | 448.0 | 447.0 | 450.0 | 451.0 |
| 137.5° | 464.8 | 465.2 | 465.6 | 466.0 | 466.4 | 468.0 | 473.0 | 475.0 | 476.0 | 481.0 | 482.0 |
| 140° | 492.2 | 492.8 | 493.4 | 494.0 | 494.6 | 497.0 | 500.0 | 502.0 | 504.0 | 509.0 | 511.0 |
| 142.5° | 521.8 | 522.2 | 522.6 | 523.0 | 523.4 | 525.0 | 527.0 | 533.0 | 533.0 | 534.0 | 536.0 |
| 145° | 550.2 | 550.3 | 550.4 | 550.5 | 550.6 | 551.0 | 556.0 | 562.0 | 561.0 | 558.0 | 560.0 |
| 147.5° | 574.2 | 574.3 | 574.4 | 574.5 | 574.6 | 575.0 | 580.0 | 585.0 | 586.0 | 583.0 | 585.0 |
| 150° | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 593.0 | 597.0 | 600.0 | 603.0 | 606.0 | 610.0 |
| 152.5° | 610.0 | 610.0 | 610.0 | 610.0 | 610.0 | 610.0 | 611.0 | 614.0 | 618.0 | 623.0 | 628.0 |
| 155° | 629.6 | 629.4 | 629.2 | 629.0 | 628.8 | 628.0 | 626.0 | 631.0 | 636.0 | 638.0 | 641.0 |
| 157.5° | 645.8 | 645.7 | 645.6 | 645.5 | 645.4 | 645.0 | 644.0 | 648.0 | 650.0 | 650.0 | 655.0 |
| 160° | 655.0 | 655.0 | 655.0 | 655.0 | 655.0 | 655.0 | 658.0 | 664.0 | 661.0 | 660.0 | 666.0 |
| 162.5° | 661.4 | 661.6 | 661.8 | 662.0 | 662.2 | 663.0 | 667.0 | 671.0 | 670.0 | 668.0 | 674.0 |
| 165° | 673.0 | 673.0 | 673.0 | 673.0 | 673.0 | 673.0 | 672.0 | 677.0 | 680.0 | 678.0 | 682.0 |
| 167.5° | 687.4 | 687.1 | 686.8 | 686.5 | 686.2 | 685.0 | 678.0 | 684.0 | 688.0 | 688.0 | 694.0 |
| 170° | 692.6 | 692.4 | 692.2 | 692.0 | 691.8 | 691.0 | 686.0 | 689.0 | 694.0 | 696.0 | 701.0 |
| 172.5° | 690.0 | 690.0 | 690.0 | 690.0 | 690.0 | 690.0 | 689.0 | 692.0 | 694.0 | 696.0 | 701.0 |
| 175° | 690.8 | 690.7 | 690.6 | 690.5 | 690.4 | 690.0 | 690.0 | 695.0 | 696.0 | 694.0 | 699.0 |
| 177.5° | 696.6 | 696.4 | 696.2 | 696.0 | 695.8 | 695.0 | 694.0 | 699.0 | 701.0 | 698.0 | 702.0 |
| 180° | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 |



REPORT NUMBER: P226502

CATALOG NUMBER: ISW-AF-450-LED-E1-T4FT-7060-ULG

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 | 466.8 |
| 2.5° | 468.6 | 470.4 | 474.0 | 476.8 | 479.1 | 482.2 | 483.2 | 485.0 | 482.7 | 485.4 |
| 5° | 466.8 | 472.2 | 479.1 | 485.4 | 491.4 | 496.4 | 498.6 | 499.1 | 499.5 | 501.4 |
| 7.5° | 462.2 | 470.4 | 481.3 | 490.0 | 499.1 | 502.3 | 503.6 | 504.1 | 500.9 | 502.3 |
| 10° | 453.1 | 466.3 | 480.0 | 490.4 | 495.0 | 492.7 | 489.1 | 483.2 | 480.4 | 480.4 |
| 12.5° | 443.1 | 459.9 | 475.9 | 481.8 | 477.7 | 469.0 | 459.0 | 448.1 | 444.0 | 444.0 |
| 15° | 434.9 | 456.3 | 469.5 | 465.4 | 453.6 | 437.2 | 423.5 | 412.1 | 408.5 | 407.1 |
| 17.5° | 430.3 | 454.5 | 459.5 | 446.7 | 426.7 | 406.2 | 392.5 | 383.0 | 379.8 | 379.8 |
| 20° | 434.0 | 456.3 | 448.1 | 424.4 | 399.4 | 380.7 | 368.9 | 362.5 | 359.3 | 360.7 |
| 22.5° | 449.5 | 463.1 | 438.1 | 402.6 | 372.0 | 356.1 | 350.6 | 346.5 | 346.1 | 347.0 |
| 25° | 475.4 | 472.2 | 429.4 | 379.8 | 346.5 | 335.2 | 334.7 | 333.3 | 332.9 | 332.4 |
| 27.5° | 509.1 | 483.6 | 418.9 | 354.3 | 321.0 | 315.6 | 318.3 | 317.9 | 317.4 | 317.9 |
| 30° | 553.7 | 493.6 | 403.5 | 326.5 | 296.9 | 296.9 | 301.0 | 299.6 | 297.8 | 298.3 |
| 32.5° | 595.2 | 500.9 | 379.8 | 295.5 | 277.8 | 278.7 | 280.1 | 276.4 | 271.9 | 272.8 |
| 35° | 630.7 | 500.9 | 347.9 | 267.8 | 258.2 | 258.2 | 259.1 | 255.9 | 252.3 | 250.9 |
| 37.5° | 660.3 | 490.9 | 307.8 | 246.8 | 242.3 | 242.3 | 245.9 | 242.7 | 235.9 | 234.5 |
| 40° | 678.1 | 469.0 | 270.9 | 231.3 | 234.5 | 235.0 | 230.0 | 224.5 | 218.1 | 216.8 |
| 42.5° | 689.4 | 437.2 | 241.8 | 220.4 | 229.5 | 225.9 | 214.0 | 205.4 | 204.9 | 206.7 |
| 45° | 699.5 | 401.2 | 218.6 | 209.5 | 224.0 | 216.3 | 200.4 | 192.2 | 194.9 | 196.7 |
| 47.5° | 709.5 | 365.2 | 199.9 | 197.2 | 214.0 | 208.6 | 191.7 | 182.6 | 181.2 | 184.0 |
| 50° | 733.2 | 315.1 | 178.5 | 182.6 | 201.7 | 199.9 | 184.0 | 173.5 | 164.8 | 164.4 |
| 52.5° | 765.0 | 248.2 | 160.3 | 169.9 | 192.2 | 194.9 | 175.3 | 165.3 | 153.5 | 151.6 |
| 55° | 800.6 | 190.3 | 145.3 | 159.8 | 183.1 | 187.6 | 172.1 | 157.1 | 144.4 | 142.5 |
| 57.5° | 811.0 | 150.3 | 131.1 | 145.7 | 170.8 | 180.8 | 167.1 | 147.5 | 138.0 | 136.2 |
| 60° | 775.1 | 124.8 | 119.3 | 133.9 | 158.5 | 174.0 | 159.4 | 140.3 | 131.6 | 130.2 |
| 62.5° | 665.3 | 110.2 | 112.9 | 126.1 | 149.4 | 167.6 | 153.5 | 134.8 | 128.0 | 127.1 |
| 65° | 507.7 | 100.2 | 107.5 | 119.8 | 141.2 | 161.7 | 149.4 | 132.5 | 127.1 | 126.1 |
| 67.5° | 318.8 | 92.9 | 102.0 | 112.9 | 133.0 | 155.3 | 146.2 | 129.8 | 125.7 | 124.3 |
| 70° | 176.7 | 85.2 | 94.7 | 105.2 | 124.8 | 149.4 | 142.1 | 125.7 | 125.2 | 122.5 |
| 72.5° | 107.5 | 77.0 | 87.0 | 97.0 | 115.7 | 142.1 | 134.8 | 120.7 | 116.1 | 110.7 |
| 73° | 102.5 | 76.0 | 85.2 | 95.2 | 113.4 | 140.3 | 133.4 | 118.9 | 114.3 | 108.8 |
| 75° | 82.9 | 68.3 | 77.9 | 86.5 | 105.2 | 133.0 | 125.7 | 112.5 | 105.2 | 101.1 |
| 77.5° | 61.0 | 58.3 | 67.4 | 75.6 | 94.7 | 123.0 | 114.8 | 102.9 | 94.3 | 92.0 |
| 80° | 45.1 | 48.3 | 56.9 | 64.2 | 83.3 | 112.9 | 103.4 | 92.0 | 86.5 | 83.8 |
| 82.5° | 30.5 | 37.3 | 45.5 | 51.5 | 73.8 | 102.0 | 91.5 | 80.6 | 84.2 | 70.1 |
| 85° | 17.8 | 26.0 | 32.8 | 40.1 | 59.2 | 91.1 | 79.7 | 68.8 | 60.1 | 54.2 |
| 87.5° | 11.8 | 14.6 | 20.0 | 27.3 | 42.8 | 71.5 | 63.3 | 53.7 | 39.2 | 39.2 |
| 90° | 8.4 | 10.8 | 11.7 | 10.2 | 12.9 | 38.5 | 28.9 | 32.0 | 9.6 | 9.1 |
| 92.5° | 6.0 | 6.0 | 7.0 | 7.0 | 6.0 | 6.0 | 6.0 | 5.0 | 4.0 | 4.0 |
| 95° | 7.0 | 7.0 | 8.0 | 7.0 | 7.0 | 7.0 | 7.0 | 6.0 | 5.0 | 5.0 |
| 97.5° | 8.0 | 9.0 | 10.0 | 12.0 | 9.0 | 9.0 | 8.0 | 8.0 | 7.0 | 7.0 |
| 100° | 19.0 | 23.0 | 26.0 | 29.0 | 21.0 | 12.0 | 10.0 | 9.0 | 8.0 | 8.0 |
| 102.5° | 39.0 | 42.0 | 47.0 | 50.0 | 40.0 | 27.0 | 18.0 | 13.0 | 11.0 | 11.0 |
| 105° | 61.0 | 65.0 | 70.0 | 72.0 | 63.0 | 48.0 | 36.0 | 27.0 | 22.0 | 21.0 |
| 107.5° | 87.0 | 90.0 | 94.0 | 95.0 | 88.0 | 73.0 | 58.0 | 49.0 | 42.0 | 41.0 |



REPORT NUMBER: P226502

CATALOG NUMBER: ISW-AF-450-LED-E1-T4FT-7060-ULG

CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 110° | 116.0 | 119.0 | 121.0 | 120.0 | 114.0 | 102.0 | 87.0 | 74.0 | 68.0 | 66.0 |
| 112.5° | 147.0 | 149.0 | 150.0 | 148.0 | 143.0 | 134.0 | 121.0 | 106.0 | 99.0 | 99.0 |
| 115° | 177.0 | 179.0 | 182.0 | 179.0 | 174.0 | 168.0 | 159.0 | 147.0 | 139.0 | 140.0 |
| 117.5° | 208.0 | 210.0 | 215.0 | 211.0 | 205.0 | 202.0 | 197.0 | 189.0 | 184.0 | 184.0 |
| 120° | 243.0 | 245.0 | 250.0 | 246.0 | 243.0 | 237.0 | 233.0 | 226.0 | 223.0 | 225.0 |
| 122.5° | 276.0 | 278.0 | 283.0 | 279.0 | 277.0 | 271.0 | 267.0 | 261.0 | 260.0 | 263.0 |
| 125° | 310.0 | 310.0 | 315.0 | 313.0 | 310.0 | 305.0 | 299.0 | 296.0 | 294.0 | 298.0 |
| 127.5° | 345.0 | 346.0 | 346.0 | 345.0 | 340.0 | 339.0 | 333.0 | 329.0 | 329.0 | 330.0 |
| 130° | 379.0 | 381.0 | 381.0 | 377.0 | 372.0 | 370.0 | 366.0 | 362.0 | 361.0 | 363.0 |
| 132.5° | 414.0 | 414.0 | 416.0 | 411.0 | 405.0 | 404.0 | 401.0 | 393.0 | 394.0 | 396.0 |
| 135° | 450.0 | 447.0 | 448.0 | 443.0 | 437.0 | 435.0 | 432.0 | 426.0 | 426.0 | 429.0 |
| 137.5° | 481.0 | 476.0 | 475.0 | 473.0 | 468.0 | 464.0 | 460.0 | 459.0 | 457.0 | 460.0 |
| 140° | 509.0 | 504.0 | 502.0 | 500.0 | 497.0 | 491.0 | 489.0 | 487.0 | 485.0 | 488.0 |
| 142.5° | 534.0 | 533.0 | 533.0 | 527.0 | 525.0 | 521.0 | 518.0 | 517.0 | 515.0 | 518.0 |
| 145° | 558.0 | 561.0 | 562.0 | 556.0 | 551.0 | 550.0 | 547.0 | 544.0 | 546.0 | 550.0 |
| 147.5° | 583.0 | 586.0 | 585.0 | 580.0 | 575.0 | 574.0 | 574.0 | 571.0 | 572.0 | 575.0 |
| 150° | 606.0 | 603.0 | 600.0 | 597.0 | 593.0 | 593.0 | 593.0 | 593.0 | 592.0 | 595.0 |
| 152.5° | 623.0 | 618.0 | 614.0 | 611.0 | 610.0 | 610.0 | 609.0 | 608.0 | 608.0 | 611.0 |
| 155° | 638.0 | 636.0 | 631.0 | 626.0 | 628.0 | 630.0 | 627.0 | 625.0 | 625.0 | 629.0 |
| 157.5° | 650.0 | 650.0 | 648.0 | 644.0 | 645.0 | 646.0 | 644.0 | 643.0 | 643.0 | 646.0 |
| 160° | 660.0 | 661.0 | 664.0 | 658.0 | 655.0 | 655.0 | 656.0 | 659.0 | 660.0 | 663.0 |
| 162.5° | 668.0 | 670.0 | 671.0 | 667.0 | 663.0 | 661.0 | 665.0 | 669.0 | 669.0 | 673.0 |
| 165° | 678.0 | 680.0 | 677.0 | 672.0 | 673.0 | 673.0 | 676.0 | 676.0 | 678.0 | 681.0 |
| 167.5° | 688.0 | 688.0 | 684.0 | 678.0 | 685.0 | 688.0 | 686.0 | 684.0 | 687.0 | 690.0 |
| 170° | 696.0 | 694.0 | 689.0 | 686.0 | 691.0 | 693.0 | 692.0 | 692.0 | 695.0 | 698.0 |
| 172.5° | 696.0 | 694.0 | 692.0 | 689.0 | 690.0 | 690.0 | 693.0 | 695.0 | 697.0 | 699.0 |
| 175° | 694.0 | 696.0 | 695.0 | 690.0 | 690.0 | 691.0 | 695.0 | 697.0 | 698.0 | 700.0 |
| 177.5° | 698.0 | 701.0 | 699.0 | 694.0 | 695.0 | 697.0 | 699.0 | 700.0 | 705.0 | 707.0 |
| 180° | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 | 700.0 |

(END OF REPORT)