

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: INVUE

Report Number: P401410

Luminaire Tested: **ENT-SA1C-830-U-T4FT**

Issue Date: 5/20/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P401410  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2004-754-15)  
Test Lab: INNOVATION CENTER  
Issue Date: 5/20/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: ENT-SA1C-830-U-T4FT  
Description: ENTRI LED LUMINAIRE  
(1) 80 CRI, 3000K, 615mA LIGHTSQUARE WITH 16 LEDS AND TYPE IV FORWARD  
THROW OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3432 lumens  
Efficiency: N/A  
Efficacy: 103.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B1 - U0 - G1

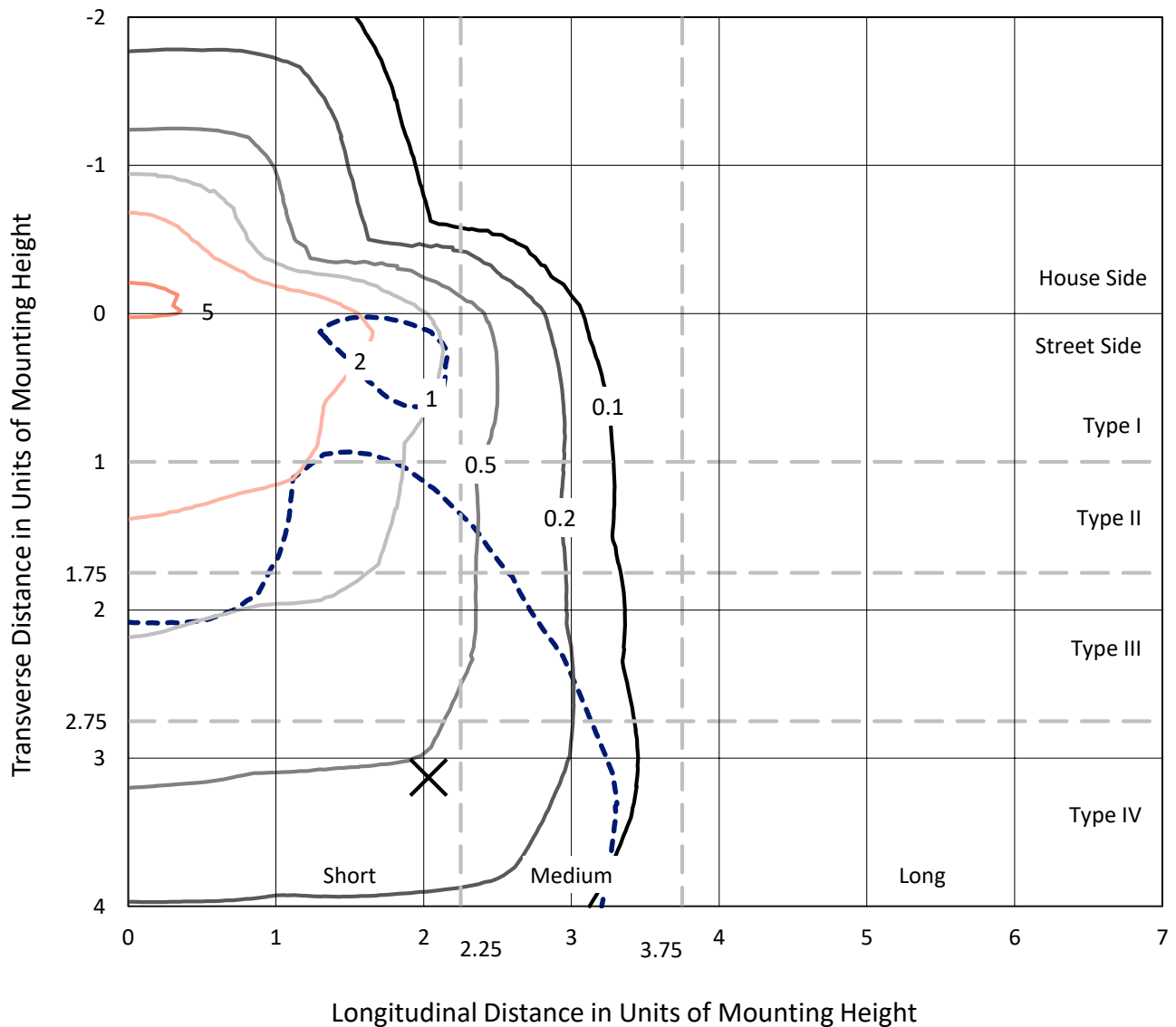
Input Watts (W): 33.3  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



REPORT NUMBER: P401410  
 CATALOG NUMBER: ENT-SA1C-830-U-T4FT

### Iso-Footcandle Lines of Horizontal Illumination

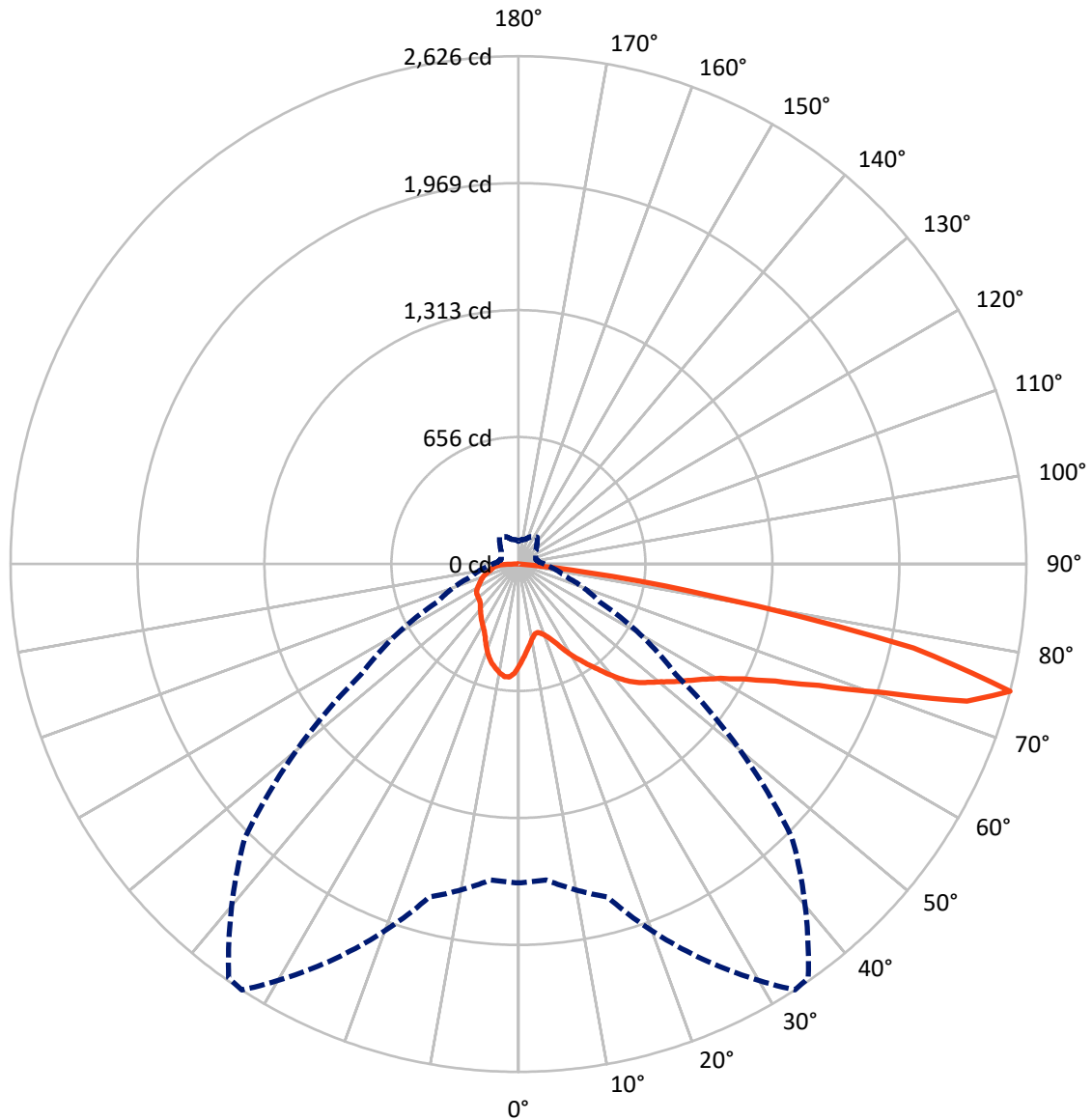
× Max cd  
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 5.6 fc  
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P401410  
CATALOG NUMBER: ENT-SA1C-830-U-T4FT

### Luminous Intensity Polar Plot



— Vertical Plane Through 33-Deg Lateral    - - - Horizontal Cone Through 75-Deg Vertical

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CATALOG NUMBER: ENT-SA1C-830-U-T4FT

**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 833.7    | 0.0    | 833.7  |
|                    | % Fixture | 24.3     | 0.0    | 24.3   |
| <b>Street Side</b> | Lumens    | 2598.3   | 0.0    | 2598.3 |
|                    | % Fixture | 75.7     | 0.0    | 75.7   |
| <b>Total</b>       | Lumens    | 3432.0   | 0.0    | 3432.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**Coefficient of Utilization**

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 49.1   | 1.4       |
| 10°-20°   | 138.2  | 4.0       |
| 20°-30°   | 229.7  | 6.7       |
| 30°-40°   | 342.8  | 10.0      |
| 40°-50°   | 478.8  | 14.0      |
| 50°-60°   | 639.1  | 18.6      |
| 60°-70°   | 792.5  | 23.1      |
| 70°-80°   | 685.2  | 20.0      |
| 80°-90°   | 76.6   | 2.2       |
| 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°-90°    | 3432.0 | 100.0     |
| 0°-180°   | 3432.0 | 100.0     |



REPORT NUMBER: P401410

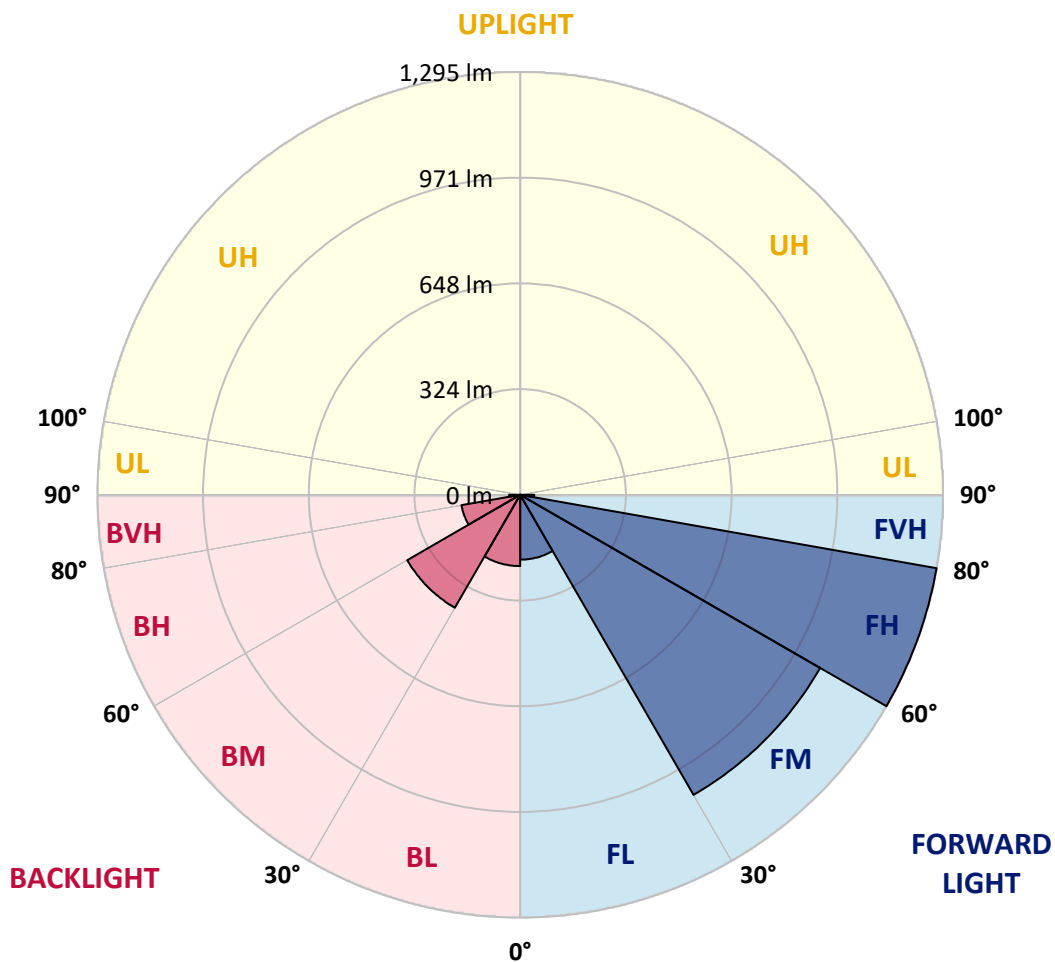
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone |             | Lumens | % Fixture | Zone Rating/Lumen Limit |      |         |
|------|-------------|--------|-----------|-------------------------|------|---------|
|      |             |        |           | B                       | U    | G       |
| FL   | (0°-30°)    | 198.7  | 5.8       |                         |      |         |
| FM   | (30°-60°)   | 1061.2 | 30.9      |                         |      |         |
| FH   | (60°-80°)   | 1295.1 | 37.7      |                         |      | G1/1800 |
| FVH  | (80°-90°)   | 43.3   | 1.3       |                         |      | G1/100  |
| BL   | (0°-30°)    | 218.3  | 6.4       | B1/500                  |      |         |
| BM   | (30°-60°)   | 399.5  | 11.6      | B1/1000                 |      |         |
| BH   | (60°-80°)   | 182.6  | 5.3       | B1/500                  |      | G1/500  |
| BVH  | (80°-90°)   | 33.3   | 1.0       |                         |      | G1/100  |
| UL   | (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |         |
| UH   | (100°-180°) | 0.0    | 0.0       |                         | U0/0 |         |

**BUG Rating: B1-U0-G1**

Type IV Short





REPORT NUMBER: P401410

CATALOG NUMBER: ENT-SA1C-830-U-T4FT

**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 33°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  | 525.9  |
| 2.5°  | 477.0  | 478.0  | 481.0  | 484.6  | 486.6  | 486.6  | 492.3  | 498.9  | 507.0  | 514.2  | 521.8  |
| 5°    | 437.2  | 438.7  | 441.3  | 445.9  | 451.5  | 452.5  | 463.7  | 475.4  | 490.2  | 506.0  | 521.3  |
| 7.5°  | 398.0  | 401.0  | 406.1  | 412.2  | 420.9  | 423.0  | 438.7  | 454.5  | 474.9  | 498.9  | 523.8  |
| 10°   | 367.9  | 370.0  | 372.5  | 381.2  | 391.9  | 395.4  | 416.3  | 436.2  | 464.2  | 493.8  | 526.9  |
| 12.5° | 359.8  | 359.8  | 359.8  | 363.8  | 372.5  | 375.6  | 397.5  | 423.0  | 454.5  | 490.2  | 531.5  |
| 15°   | 371.5  | 371.0  | 365.4  | 362.3  | 367.4  | 370.0  | 388.8  | 413.8  | 449.4  | 491.2  | 540.2  |
| 17.5° | 398.0  | 396.5  | 383.2  | 373.0  | 376.6  | 378.1  | 390.3  | 411.7  | 447.9  | 495.3  | 552.9  |
| 20°   | 432.6  | 429.1  | 408.7  | 393.4  | 392.9  | 393.9  | 403.1  | 417.9  | 450.5  | 502.4  | 566.7  |
| 22.5° | 478.5  | 476.5  | 446.4  | 423.0  | 418.9  | 418.9  | 423.0  | 432.1  | 457.1  | 510.6  | 585.5  |
| 25°   | 537.6  | 532.0  | 495.8  | 464.2  | 455.1  | 452.5  | 452.0  | 452.0  | 468.8  | 522.8  | 608.9  |
| 27.5° | 598.2  | 591.6  | 554.9  | 512.1  | 499.9  | 495.3  | 487.2  | 481.0  | 484.1  | 536.1  | 637.0  |
| 30°   | 652.8  | 643.6  | 612.5  | 568.2  | 549.8  | 542.7  | 527.9  | 515.2  | 507.0  | 554.4  | 674.2  |
| 32.5° | 682.8  | 679.3  | 657.9  | 617.6  | 596.7  | 593.7  | 569.2  | 552.4  | 538.1  | 578.4  | 724.1  |
| 35°   | 723.1  | 718.5  | 704.7  | 671.6  | 646.7  | 639.0  | 620.7  | 600.8  | 577.9  | 610.5  | 787.3  |
| 37.5° | 760.3  | 757.7  | 752.6  | 729.7  | 703.2  | 695.6  | 678.8  | 657.9  | 626.8  | 657.9  | 858.1  |
| 40°   | 798.0  | 794.9  | 792.9  | 784.8  | 765.9  | 760.8  | 752.6  | 728.2  | 686.4  | 709.8  | 927.9  |
| 42.5° | 853.0  | 846.4  | 825.0  | 824.5  | 826.0  | 830.1  | 830.6  | 803.6  | 751.6  | 774.6  | 989.1  |
| 45°   | 924.9  | 906.5  | 858.6  | 857.1  | 874.9  | 885.6  | 911.6  | 888.7  | 819.4  | 840.8  | 1057.4 |
| 47.5° | 961.6  | 942.7  | 893.3  | 890.2  | 913.7  | 929.5  | 993.7  | 971.3  | 889.7  | 915.2  | 1128.2 |
| 50°   | 979.4  | 967.2  | 923.9  | 933.5  | 957.5  | 972.8  | 1071.6 | 1053.8 | 962.6  | 995.7  | 1217.4 |
| 52.5° | 1004.4 | 984.0  | 953.4  | 973.8  | 1009.5 | 1025.3 | 1141.5 | 1138.4 | 1024.3 | 1083.4 | 1315.2 |
| 55°   | 995.7  | 985.0  | 990.6  | 1018.1 | 1063.0 | 1086.4 | 1211.8 | 1211.8 | 1086.9 | 1177.1 | 1412.0 |
| 57.5° | 1002.9 | 995.7  | 1042.1 | 1066.5 | 1123.1 | 1156.7 | 1296.4 | 1273.9 | 1139.9 | 1255.6 | 1477.3 |
| 60°   | 1063.5 | 1043.1 | 1079.3 | 1127.7 | 1200.6 | 1233.2 | 1393.2 | 1339.2 | 1183.2 | 1323.4 | 1489.0 |
| 62.5° | 1170.5 | 1154.2 | 1157.8 | 1213.3 | 1307.6 | 1345.3 | 1489.0 | 1396.8 | 1212.3 | 1351.9 | 1445.2 |
| 65°   | 1347.8 | 1340.2 | 1296.4 | 1330.0 | 1459.9 | 1494.1 | 1608.7 | 1446.7 | 1204.1 | 1330.5 | 1329.5 |
| 67.5° | 1586.3 | 1555.7 | 1496.6 | 1526.7 | 1676.5 | 1711.2 | 1753.0 | 1465.5 | 1151.1 | 1202.6 | 1068.6 |
| 70°   | 1784.0 | 1758.6 | 1731.5 | 1810.5 | 1982.8 | 2001.6 | 1903.3 | 1447.7 | 1022.2 | 941.2  | 716.5  |
| 72.5° | 1909.9 | 1891.6 | 1916.5 | 2148.9 | 2424.6 | 2388.9 | 2051.6 | 1322.9 | 797.5  | 576.3  | 358.2  |
| 75°   | 1648.5 | 1639.8 | 1782.5 | 2253.9 | 2625.9 | 2612.6 | 2000.1 | 990.1  | 462.7  | 253.8  | 163.1  |
| 77.5° | 829.1  | 923.4  | 1073.7 | 1599.1 | 2089.3 | 2091.8 | 1457.4 | 475.9  | 194.7  | 142.2  | 112.1  |
| 80°   | 233.4  | 236.4  | 358.2  | 659.4  | 1043.1 | 1111.4 | 551.4  | 161.5  | 111.1  | 106.0  | 83.6   |
| 82.5° | 55.5   | 51.5   | 91.7   | 195.2  | 350.1  | 364.3  | 165.6  | 58.1   | 62.2   | 66.2   | 51.5   |
| 85°   | 0.5    | 0.5    | 0.5    | 0.5    | 0.5    | 1.0    | 6.1    | 6.1    | 14.8   | 18.9   | 14.8   |
| 87.5° | 0.0    | 0.0    | 0.0    | 0.5    | 0.5    | 0.5    | 0.0    | 0.0    | 0.0    | 0.0    | 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    |



REPORT NUMBER: P401410

CATALOG NUMBER: ENT-SA1C-830-U-T4FT

**CANDELA DISTRIBUTION (continued):**

|       | 90°    | 95°   | 105°  | 115°  | 125°  | 135°  | 145°  | 155°  | 165°  | 175°  | 180°  |
|-------|--------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0°    | 525.9  | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 | 525.9 |
| 2.5°  | 525.4  | 530.5 | 538.6 | 545.8 | 551.9 | 556.5 | 563.6 | 564.6 | 566.7 | 567.7 | 568.7 |
| 5°    | 530.0  | 539.6 | 554.9 | 568.2 | 577.4 | 579.9 | 586.0 | 585.5 | 586.0 | 586.0 | 585.5 |
| 7.5°  | 536.1  | 549.3 | 570.7 | 585.5 | 590.6 | 589.1 | 587.5 | 581.9 | 577.4 | 575.3 | 572.8 |
| 10°   | 543.7  | 559.0 | 584.0 | 594.7 | 592.1 | 584.0 | 574.3 | 564.1 | 556.0 | 551.9 | 550.9 |
| 12.5° | 551.4  | 571.2 | 594.7 | 597.7 | 587.5 | 572.8 | 556.5 | 545.2 | 534.5 | 528.9 | 528.9 |
| 15°   | 564.1  | 586.0 | 603.3 | 597.2 | 578.9 | 560.0 | 537.6 | 522.3 | 510.1 | 502.4 | 501.9 |
| 17.5° | 579.4  | 602.8 | 612.5 | 594.7 | 568.2 | 541.7 | 514.7 | 494.8 | 479.0 | 471.4 | 466.8 |
| 20°   | 598.2  | 620.2 | 617.1 | 586.5 | 552.4 | 519.8 | 486.1 | 462.2 | 445.9 | 437.7 | 436.2 |
| 22.5° | 619.6  | 638.0 | 618.6 | 573.3 | 531.0 | 489.2 | 452.5 | 428.6 | 417.9 | 411.7 | 412.2 |
| 25°   | 645.6  | 659.9 | 619.1 | 557.5 | 500.4 | 448.9 | 416.8 | 405.6 | 404.1 | 401.5 | 402.6 |
| 27.5° | 678.2  | 682.8 | 617.1 | 536.1 | 461.2 | 406.6 | 387.8 | 392.4 | 396.5 | 394.9 | 395.9 |
| 30°   | 717.0  | 710.4 | 612.5 | 505.0 | 412.8 | 367.9 | 368.9 | 379.1 | 384.7 | 383.2 | 383.7 |
| 32.5° | 762.3  | 737.9 | 603.9 | 467.3 | 366.9 | 344.5 | 352.6 | 362.8 | 368.4 | 368.4 | 368.9 |
| 35°   | 813.3  | 771.0 | 587.0 | 418.4 | 334.8 | 330.2 | 337.3 | 345.5 | 349.1 | 347.0 | 348.6 |
| 37.5° | 866.8  | 799.5 | 560.0 | 363.8 | 310.8 | 319.0 | 323.1 | 325.1 | 324.6 | 321.5 | 320.0 |
| 40°   | 916.7  | 822.0 | 511.6 | 309.8 | 291.0 | 307.3 | 309.3 | 303.7 | 297.1 | 291.5 | 287.9 |
| 42.5° | 955.0  | 833.7 | 444.4 | 270.6 | 272.1 | 294.0 | 295.6 | 284.3 | 271.6 | 262.9 | 260.9 |
| 45°   | 994.2  | 837.7 | 377.6 | 239.0 | 251.7 | 280.8 | 284.9 | 269.6 | 252.2 | 242.0 | 240.5 |
| 47.5° | 1039.0 | 847.9 | 311.9 | 217.1 | 234.4 | 271.6 | 278.2 | 259.4 | 240.0 | 224.7 | 222.2 |
| 50°   | 1099.2 | 867.3 | 262.4 | 200.3 | 222.2 | 267.0 | 276.2 | 251.2 | 226.8 | 209.9 | 207.9 |
| 52.5° | 1175.6 | 895.8 | 216.6 | 187.0 | 212.5 | 259.9 | 273.1 | 243.1 | 217.1 | 196.7 | 193.6 |
| 55°   | 1241.3 | 906.5 | 187.0 | 175.8 | 202.3 | 251.2 | 270.6 | 240.0 | 206.4 | 183.4 | 179.9 |
| 57.5° | 1271.4 | 876.0 | 166.1 | 164.6 | 191.6 | 240.5 | 265.5 | 229.8 | 194.7 | 176.8 | 173.8 |
| 60°   | 1257.6 | 800.0 | 150.3 | 154.4 | 179.4 | 226.8 | 252.2 | 219.6 | 186.5 | 171.7 | 168.7 |
| 62.5° | 1196.5 | 712.4 | 138.6 | 144.7 | 165.6 | 209.4 | 237.0 | 210.5 | 179.4 | 166.1 | 162.0 |
| 65°   | 1089.0 | 616.1 | 129.9 | 136.1 | 153.4 | 192.6 | 224.7 | 199.8 | 171.2 | 158.0 | 154.4 |
| 67.5° | 888.7  | 490.2 | 120.8 | 127.4 | 143.2 | 178.9 | 213.5 | 191.1 | 162.0 | 153.4 | 150.3 |
| 70°   | 588.1  | 329.7 | 112.1 | 118.7 | 133.0 | 165.6 | 201.8 | 181.9 | 153.4 | 147.8 | 143.7 |
| 72.5° | 270.1  | 177.3 | 102.9 | 109.6 | 121.3 | 150.8 | 187.0 | 168.2 | 141.7 | 138.1 | 132.0 |
| 75°   | 133.5  | 109.0 | 91.7  | 97.8  | 107.0 | 133.0 | 169.7 | 156.4 | 131.0 | 124.8 | 117.7 |
| 77.5° | 97.3   | 81.5  | 79.0  | 85.1  | 92.7  | 117.7 | 151.3 | 144.2 | 120.3 | 111.6 | 107.5 |
| 80°   | 72.4   | 63.2  | 66.2  | 72.4  | 79.5  | 106.5 | 141.7 | 135.0 | 111.1 | 102.4 | 99.4  |
| 82.5° | 44.3   | 42.3  | 51.0  | 58.1  | 66.8  | 97.8  | 135.0 | 123.3 | 99.9  | 91.7  | 88.2  |
| 85°   | 12.7   | 15.3  | 26.0  | 37.7  | 47.4  | 79.0  | 125.9 | 108.0 | 84.1  | 70.3  | 67.8  |
| 87.5° | 0.0    | 1.5   | 8.2   | 17.3  | 28.0  | 52.5  | 96.8  | 84.6  | 64.2  | 52.0  | 49.9  |
| 90°   | 0.0    | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

(END OF REPORT)