

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: FAIL-SAFE

Report Number: P27218

Luminaire Tested: **FMB-N-4-LD4-2UP/HI-40-UNV-80/86**

Test Date: 12/28/15

**Test Information**

Test Method: LM-79-08  
Report Number: P27218  
Test Lab: INNOVATION CENTER-P2  
Test Date: 12/28/15  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: FAIL-SAFE  
Catalog Number: FMB-N-4-LD4-2UP/HI-40-UNV-80/86  
Description: FAILSAFE LED 4FT FMB WALL MOUNT CORRECTIONAL LUMINAIRE  
Light Source: (168) LUMILEDS 4000K LEDS  
2UT217042A8404A  
Ballast/Driver: (2) OSRAM ELECTRONIC DRIVER  
OT50W

**Summary**

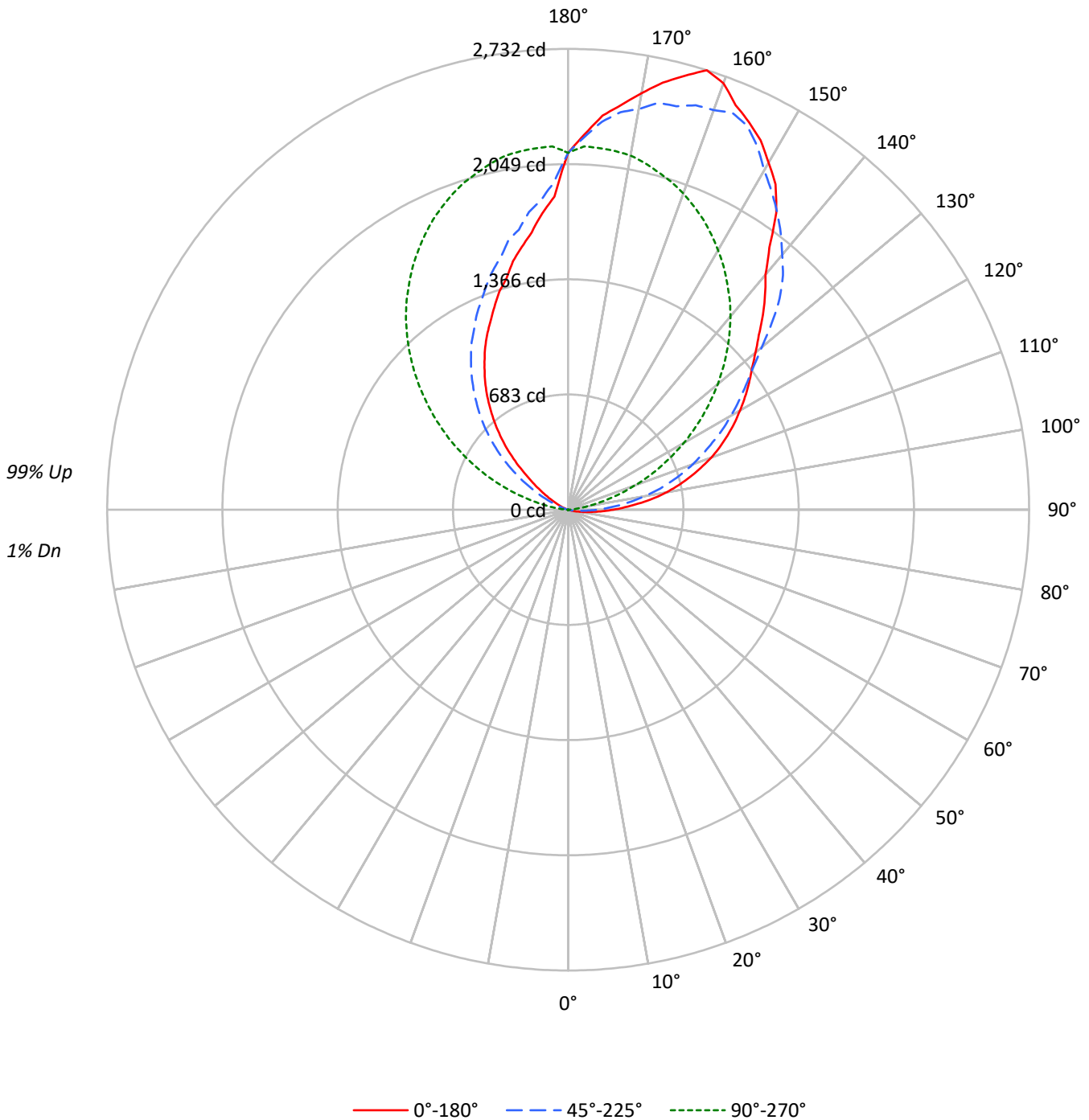
Lumens per Lamp: N/A  
Luminaire Lumens: 5392.3 lumens  
Efficiency: N/A  
Efficacy: 59.4 lumens/watt  
Spacing Criteria (0/90/45): - / - / -  
Luminous Opening: Rectangular w/ Sides (W: 3.67' x L: 0.29' x H: 0.04')  
CIE Type: Indirect  
  
Input Watts (W): 90.8  
Input Voltage (V): 120.07  
Input Current (Ain): 0.75887  
Voltage Rise (V): NR  
Power Factor: 0.9994  
Total Harmonic Distortion (THDi): 7.99%  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: 24 HR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P27218

CATALOG NUMBER: FMB-N-4-LD4-2UP/HI-40-UNV-80/86

### Luminous Intensity Polar Plot





TEST NUMBER: P27218

CATALOG NUMBER: FMB-N-4-LD4-2UP/HI-40-UNV-80/86

**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 | 0 |
| RCR |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |    |   |
| 0   | 95 | 95 | 95 | 95 | 82 | 82 | 82 | 82 | 56 | 56 | 56 | 33 | 33 | 33 | 11 | 11 | 11 | 1 |
| 1   | 87 | 82 | 79 | 75 | 74 | 71 | 68 | 65 | 48 | 47 | 45 | 28 | 27 | 26 | 9  | 9  | 9  | 0 |
| 2   | 79 | 72 | 66 | 61 | 67 | 61 | 57 | 53 | 42 | 39 | 37 | 24 | 23 | 22 | 8  | 8  | 7  | 0 |
| 3   | 72 | 63 | 56 | 51 | 61 | 54 | 48 | 44 | 37 | 34 | 31 | 22 | 20 | 18 | 7  | 6  | 6  | 0 |
| 4   | 65 | 55 | 48 | 43 | 56 | 48 | 42 | 37 | 33 | 29 | 26 | 19 | 17 | 15 | 6  | 6  | 5  | 0 |
| 5   | 60 | 49 | 42 | 36 | 51 | 42 | 36 | 31 | 29 | 25 | 22 | 17 | 15 | 13 | 6  | 5  | 4  | 0 |
| 6   | 55 | 44 | 36 | 31 | 47 | 38 | 31 | 27 | 26 | 22 | 19 | 15 | 13 | 11 | 5  | 4  | 4  | 0 |
| 7   | 50 | 39 | 32 | 27 | 43 | 34 | 28 | 23 | 23 | 19 | 16 | 14 | 11 | 10 | 5  | 4  | 3  | 0 |
| 8   | 46 | 35 | 28 | 23 | 40 | 30 | 24 | 20 | 21 | 17 | 14 | 12 | 10 | 9  | 4  | 3  | 3  | 0 |
| 9   | 43 | 32 | 25 | 20 | 37 | 27 | 22 | 18 | 19 | 15 | 13 | 11 | 9  | 7  | 4  | 3  | 2  | 0 |
| 10  | 40 | 29 | 22 | 18 | 34 | 25 | 19 | 16 | 17 | 14 | 11 | 10 | 8  | 7  | 3  | 3  | 2  | 0 |

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

|     | 0°   | 90° | 180° |
|-----|------|-----|------|
| 0°  | 0    | 0   | 0    |
| 5°  | 0    | 0   | 0    |
| 10° | 0    | 0   | 0    |
| 15° | 0    | 0   | 0    |
| 20° | 0    | 0   | 0    |
| 25° | 0    | 0   | 0    |
| 30° | 0    | 0   | 0    |
| 35° | 0    | 0   | 0    |
| 40° | 0    | 0   | 0    |
| 45° | 0    | 0   | 0    |
| 50° | 0    | 0   | 0    |
| 55° | 0    | 0   | 0    |
| 60° | 0    | 0   | 0    |
| 65° | 0    | 0   | 0    |
| 70° | 0    | 86  | 42   |
| 75° | 736  | 75  | 51   |
| 80° | 2177 | 109 | 64   |
| 85° | 6535 | 204 | 88   |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 0.0    | 0.0       |
| 10°-20°   | 0.0    | 0.0       |
| 20°-30°   | 0.0    | 0.0       |
| 30°-40°   | 0.0    | 0.0       |
| 40°-50°   | 0.0    | 0.0       |
| 50°-60°   | 0.0    | 0.0       |
| 60°-70°   | 0.3    | 0.0       |
| 70°-80°   | 7.3    | 0.1       |
| 80°-90°   | 45.5   | 0.8       |
| 90°-100°  | 155.7  | 2.9       |
| 100°-110° | 335.7  | 6.2       |
| 110°-120° | 553.6  | 10.3      |
| 120°-130° | 765.9  | 14.2      |
| 130°-140° | 928.2  | 17.2      |
| 140°-150° | 976.4  | 18.1      |
| 150°-160° | 854.0  | 15.8      |
| 160°-170° | 571.9  | 10.6      |
| 170°-180° | 197.7  | 3.7       |
| 0°-30°    | 0.0    | 0.0       |
| 0°-40°    | 0.0    | 0.0       |
| 0°-60°    | 0.0    | 0.0       |
| 0°-90°    | 53.0   | 1.0       |
| 90°-120°  | 1045.1 | 19.4      |
| 90°-150°  | 3715.5 | 68.9      |
| 90°-180°  | 5339.0 | 99.0      |
| 0°-180°   | 5392.3 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°   | 45°  | 90°  | 135° | 180° | Flux |
|------|------|------|------|------|------|------|
| 0°   | 0    | 0    | 0    | 0    | 0    |      |
| 5°   | 0    | 0    | 0    | 0    | 0    | 0    |
| 15°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 25°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 35°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 45°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 55°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 65°  | 0    | 0    | 0    | 0    | 0    | 0    |
| 75°  | 29   | 2    | 2    | 3    | 2    | 30   |
| 85°  | 149  | 73   | 2    | 3    | 2    | 106  |
| 90°  | 267  | 172  | 2    | 2    | 2    | 147  |
| 95°  | 418  | 304  | 30   | 2    | 2    | 378  |
| 105° | 745  | 623  | 252  | 17   | 2    | 788  |
| 115° | 1042 | 944  | 603  | 130  | 50   | 1032 |
| 125° | 1308 | 1286 | 974  | 394  | 202  | 1172 |
| 135° | 1632 | 1773 | 1331 | 704  | 512  | 1260 |
| 145° | 2149 | 2157 | 1642 | 1001 | 841  | 1327 |
| 155° | 2535 | 2511 | 1896 | 1281 | 1140 | 1169 |
| 165° | 2662 | 2476 | 2070 | 1547 | 1416 | 753  |
| 175° | 2345 | 2309 | 2152 | 1842 | 1764 | 228  |
| 180° | 2116 | 2116 | 2116 | 2116 | 2116 |      |



TEST NUMBER: P27218

CATALOG NUMBER: FMB-N-4-LD4-2UP/HI-40-UNV-80/86

**CANDELA DISTRIBUTION (FULL):**

|        | 0°  | 5°  | 10° | 15° | 20° | 22.5° | 25° | 30° | 35° | 40° | 45° |
|--------|-----|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|
| 0°     | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 2.5°   | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 5°     | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 7.5°   | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 10°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 12.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 15°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 17.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 20°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 22.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 25°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 27.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 30°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 32.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 35°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 37.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 40°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 42.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 45°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 47.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 50°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 52.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 55°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 57.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 60°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 62.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 65°    | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 67.5°  | 0   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   |
| 70°    | 0   | 0   | 1   | 1   | 1   | 1     | 1   | 1   | 1   | 1   | 2   |
| 72.5°  | 8   | 8   | 5   | 4   | 2   | 2     | 1   | 1   | 1   | 2   | 2   |
| 75°    | 29  | 29  | 27  | 26  | 22  | 21    | 17  | 10  | 5   | 2   | 2   |
| 77.5°  | 43  | 43  | 41  | 40  | 36  | 34    | 32  | 28  | 24  | 19  | 7   |
| 80°    | 68  | 68  | 65  | 63  | 58  | 55    | 51  | 45  | 39  | 31  | 24  |
| 82.5°  | 103 | 105 | 100 | 99  | 91  | 89    | 83  | 76  | 65  | 54  | 42  |
| 85°    | 149 | 149 | 146 | 142 | 137 | 134   | 128 | 118 | 105 | 91  | 73  |
| 87.5°  | 203 | 204 | 201 | 201 | 193 | 191   | 184 | 174 | 158 | 140 | 117 |
| 90°    | 267 | 267 | 265 | 263 | 258 | 256   | 248 | 239 | 221 | 198 | 172 |
| 92.5°  | 337 | 338 | 337 | 336 | 332 | 330   | 322 | 312 | 288 | 266 | 235 |
| 95°    | 418 | 421 | 420 | 419 | 414 | 410   | 402 | 389 | 362 | 337 | 304 |
| 97.5°  | 508 | 514 | 508 | 500 | 496 | 491   | 482 | 467 | 438 | 412 | 379 |
| 100°   | 590 | 592 | 589 | 581 | 575 | 569   | 561 | 545 | 516 | 491 | 460 |
| 102.5° | 669 | 670 | 667 | 660 | 654 | 652   | 639 | 625 | 596 | 571 | 543 |
| 105°   | 745 | 748 | 745 | 737 | 733 | 731   | 718 | 704 | 674 | 650 | 623 |
| 107.5° | 823 | 826 | 825 | 818 | 812 | 807   | 797 | 779 | 751 | 729 | 705 |
| 110°   | 901 | 904 | 902 | 894 | 887 | 881   | 870 | 853 | 827 | 808 | 785 |



TEST NUMBER: P27218

CATALOG NUMBER: FMB-N-4-LD4-2UP/HI-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

|        | 0°   | 5°   | 10°  | 15°  | 20°  | 22.5° | 25°  | 30°  | 35°  | 40°  | 45°  |
|--------|------|------|------|------|------|-------|------|------|------|------|------|
| 112.5° | 974  | 977  | 975  | 966  | 957  | 953   | 941  | 925  | 901  | 885  | 862  |
| 115°   | 1042 | 1045 | 1043 | 1034 | 1027 | 1022  | 1011 | 998  | 976  | 961  | 944  |
| 117.5° | 1110 | 1114 | 1111 | 1101 | 1095 | 1092  | 1081 | 1068 | 1051 | 1039 | 1031 |
| 120°   | 1175 | 1179 | 1176 | 1168 | 1160 | 1156  | 1148 | 1140 | 1124 | 1121 | 1114 |
| 122.5° | 1242 | 1244 | 1240 | 1232 | 1225 | 1225  | 1220 | 1212 | 1204 | 1207 | 1199 |
| 125°   | 1308 | 1310 | 1308 | 1300 | 1297 | 1295  | 1290 | 1291 | 1292 | 1292 | 1286 |
| 127.5° | 1372 | 1377 | 1374 | 1368 | 1369 | 1370  | 1369 | 1380 | 1378 | 1381 | 1379 |
| 130°   | 1448 | 1455 | 1452 | 1451 | 1455 | 1461  | 1463 | 1470 | 1468 | 1472 | 1496 |
| 132.5° | 1533 | 1537 | 1542 | 1548 | 1553 | 1551  | 1555 | 1564 | 1561 | 1590 | 1636 |
| 135°   | 1632 | 1637 | 1639 | 1640 | 1646 | 1652  | 1651 | 1659 | 1679 | 1740 | 1773 |
| 137.5° | 1727 | 1734 | 1737 | 1738 | 1741 | 1742  | 1749 | 1792 | 1841 | 1883 | 1884 |
| 140°   | 1820 | 1825 | 1829 | 1836 | 1864 | 1887  | 1910 | 1961 | 1985 | 1995 | 1973 |
| 142.5° | 1959 | 1973 | 1986 | 2014 | 2047 | 2053  | 2074 | 2097 | 2093 | 2088 | 2069 |
| 145°   | 2149 | 2162 | 2164 | 2176 | 2189 | 2190  | 2195 | 2196 | 2186 | 2180 | 2157 |
| 147.5° | 2288 | 2291 | 2290 | 2288 | 2286 | 2280  | 2282 | 2284 | 2274 | 2262 | 2241 |
| 150°   | 2376 | 2380 | 2380 | 2372 | 2374 | 2369  | 2369 | 2362 | 2345 | 2339 | 2323 |
| 152.5° | 2469 | 2471 | 2467 | 2451 | 2445 | 2438  | 2438 | 2432 | 2419 | 2424 | 2427 |
| 155°   | 2535 | 2533 | 2532 | 2518 | 2512 | 2506  | 2508 | 2507 | 2515 | 2533 | 2511 |
| 157.5° | 2595 | 2594 | 2598 | 2592 | 2601 | 2603  | 2614 | 2617 | 2610 | 2592 | 2546 |
| 160°   | 2690 | 2691 | 2694 | 2685 | 2684 | 2679  | 2677 | 2666 | 2639 | 2589 | 2521 |
| 162.5° | 2732 | 2732 | 2724 | 2710 | 2690 | 2681  | 2665 | 2630 | 2586 | 2550 | 2514 |
| 165°   | 2662 | 2658 | 2643 | 2626 | 2608 | 2603  | 2596 | 2581 | 2555 | 2520 | 2476 |
| 167.5° | 2593 | 2592 | 2578 | 2563 | 2545 | 2540  | 2529 | 2514 | 2497 | 2486 | 2471 |
| 170°   | 2507 | 2505 | 2500 | 2497 | 2493 | 2493  | 2491 | 2484 | 2467 | 2444 | 2412 |
| 172.5° | 2421 | 2423 | 2412 | 2405 | 2398 | 2401  | 2397 | 2391 | 2384 | 2385 | 2377 |
| 175°   | 2345 | 2347 | 2346 | 2344 | 2343 | 2346  | 2344 | 2342 | 2336 | 2326 | 2309 |
| 177.5° | 2227 | 2228 | 2218 | 2214 | 2217 | 2217  | 2216 | 2218 | 2219 | 2219 | 2213 |
| 180°   | 2116 | 2116 | 2116 | 2116 | 2116 | 2116  | 2116 | 2116 | 2116 | 2116 | 2116 |



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**CANDELA DISTRIBUTION (continued):**

|        | 50° | 55° | 60° | 65° | 67.5° | 70° | 75° | 80° | 85° | 90° | 95° |
|--------|-----|-----|-----|-----|-------|-----|-----|-----|-----|-----|-----|
| 0°     | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 2.5°   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 5°     | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 7.5°   | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 10°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 12.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 15°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 17.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 20°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 22.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 25°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 27.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 30°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 32.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 35°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 37.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 40°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 42.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 45°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 47.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 50°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 52.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 55°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 57.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 60°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 62.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 65°    | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 67.5°  | 0   | 0   | 0   | 0   | 0     | 0   | 0   | 0   | 0   | 0   | 0   |
| 70°    | 2   | 2   | 2   | 2   | 2     | 2   | 2   | 2   | 3   | 3   | 3   |
| 72.5°  | 2   | 2   | 2   | 2   | 2     | 2   | 2   | 2   | 2   | 2   | 3   |
| 75°    | 2   | 2   | 2   | 2   | 2     | 2   | 2   | 2   | 2   | 2   | 3   |
| 77.5°  | 2   | 2   | 2   | 2   | 2     | 2   | 2   | 2   | 2   | 2   | 2   |
| 80°    | 19  | 9   | 2   | 2   | 2     | 2   | 2   | 2   | 2   | 2   | 3   |
| 82.5°  | 32  | 23  | 16  | 6   | 3     | 2   | 2   | 2   | 2   | 2   | 2   |
| 85°    | 56  | 42  | 29  | 19  | 16    | 12  | 3   | 2   | 2   | 2   | 2   |
| 87.5°  | 94  | 73  | 54  | 38  | 30    | 23  | 13  | 7   | 2   | 2   | 2   |
| 90°    | 147 | 117 | 93  | 68  | 58    | 48  | 30  | 16  | 7   | 2   | 2   |
| 92.5°  | 207 | 173 | 144 | 112 | 98    | 83  | 60  | 38  | 21  | 10  | 5   |
| 95°    | 274 | 238 | 205 | 167 | 149   | 133 | 104 | 75  | 52  | 30  | 16  |
| 97.5°  | 350 | 310 | 273 | 231 | 214   | 196 | 162 | 129 | 97  | 66  | 40  |
| 100°   | 428 | 387 | 347 | 307 | 288   | 273 | 232 | 200 | 156 | 115 | 79  |
| 102.5° | 509 | 467 | 427 | 391 | 371   | 354 | 316 | 275 | 226 | 179 | 131 |
| 105°   | 591 | 548 | 515 | 478 | 464   | 443 | 409 | 362 | 307 | 252 | 194 |
| 107.5° | 673 | 635 | 605 | 570 | 548   | 542 | 506 | 455 | 395 | 335 | 267 |
| 110°   | 751 | 724 | 696 | 666 | 653   | 648 | 611 | 551 | 488 | 422 | 347 |





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CATALOG NUMBER: FMB-N-4-LD4-2UP/HI-40-UNV-80/86

**CANDELA DISTRIBUTION (continued):**

|        | 50°  | 55°  | 60°  | 65°  | 67.5° | 70°  | 75°  | 80°  | 85°  | 90°  | 95°  |
|--------|------|------|------|------|-------|------|------|------|------|------|------|
| 112.5° | 837  | 813  | 790  | 767  | 765   | 754  | 706  | 647  | 582  | 515  | 430  |
| 115°   | 925  | 902  | 888  | 878  | 875   | 857  | 808  | 743  | 682  | 603  | 517  |
| 117.5° | 1012 | 995  | 991  | 990  | 980   | 959  | 913  | 840  | 777  | 695  | 611  |
| 120°   | 1097 | 1091 | 1102 | 1094 | 1079  | 1060 | 1007 | 943  | 871  | 792  | 700  |
| 122.5° | 1191 | 1197 | 1219 | 1196 | 1182  | 1154 | 1104 | 1035 | 965  | 881  | 788  |
| 125°   | 1291 | 1316 | 1327 | 1294 | 1280  | 1251 | 1201 | 1130 | 1061 | 974  | 877  |
| 127.5° | 1406 | 1442 | 1425 | 1389 | 1375  | 1344 | 1296 | 1226 | 1152 | 1065 | 963  |
| 130°   | 1537 | 1549 | 1523 | 1489 | 1469  | 1438 | 1388 | 1318 | 1244 | 1157 | 1051 |
| 132.5° | 1661 | 1642 | 1618 | 1577 | 1553  | 1533 | 1478 | 1407 | 1334 | 1245 | 1136 |
| 135°   | 1765 | 1746 | 1709 | 1667 | 1650  | 1625 | 1562 | 1495 | 1421 | 1331 | 1219 |
| 137.5° | 1863 | 1840 | 1799 | 1764 | 1739  | 1716 | 1648 | 1581 | 1501 | 1415 | 1298 |
| 140°   | 1955 | 1928 | 1887 | 1857 | 1827  | 1797 | 1728 | 1664 | 1587 | 1496 | 1375 |
| 142.5° | 2045 | 2016 | 1981 | 1948 | 1912  | 1876 | 1807 | 1740 | 1662 | 1572 | 1447 |
| 145°   | 2134 | 2106 | 2081 | 2032 | 1993  | 1951 | 1885 | 1814 | 1736 | 1642 | 1518 |
| 147.5° | 2222 | 2204 | 2169 | 2096 | 2058  | 2018 | 1954 | 1889 | 1807 | 1713 | 1587 |
| 150°   | 2323 | 2294 | 2234 | 2148 | 2114  | 2084 | 2019 | 1958 | 1877 | 1776 | 1654 |
| 152.5° | 2413 | 2353 | 2275 | 2194 | 2169  | 2140 | 2084 | 2012 | 1946 | 1838 | 1714 |
| 155°   | 2462 | 2375 | 2298 | 2243 | 2212  | 2183 | 2140 | 2065 | 2001 | 1896 | 1777 |
| 157.5° | 2467 | 2379 | 2329 | 2271 | 2248  | 2229 | 2175 | 2120 | 2046 | 1947 | 1833 |
| 160°   | 2458 | 2397 | 2339 | 2306 | 2291  | 2264 | 2202 | 2162 | 2081 | 1995 | 1879 |
| 162.5° | 2457 | 2393 | 2361 | 2328 | 2305  | 2276 | 2235 | 2185 | 2106 | 2037 | 1928 |
| 165°   | 2438 | 2409 | 2368 | 2318 | 2302  | 2290 | 2262 | 2198 | 2132 | 2070 | 1969 |
| 167.5° | 2432 | 2381 | 2340 | 2322 | 2317  | 2306 | 2258 | 2201 | 2158 | 2105 | 2006 |
| 170°   | 2372 | 2349 | 2338 | 2322 | 2309  | 2288 | 2237 | 2201 | 2177 | 2132 | 2048 |
| 172.5° | 2354 | 2332 | 2305 | 2277 | 2264  | 2248 | 2220 | 2202 | 2183 | 2144 | 2083 |
| 175°   | 2284 | 2260 | 2240 | 2228 | 2224  | 2219 | 2207 | 2197 | 2181 | 2152 | 2115 |
| 177.5° | 2196 | 2192 | 2196 | 2198 | 2199  | 2198 | 2189 | 2183 | 2174 | 2156 | 2138 |
| 180°   | 2116 | 2116 | 2116 | 2116 | 2116  | 2116 | 2116 | 2116 | 2116 | 2116 | 2116 |



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**CANDELA DISTRIBUTION (continued):**

|        | 100° | 105° | 110° | 112.5° | 115° | 120° | 125° | 130° | 135° | 140° | 145° |
|--------|------|------|------|--------|------|------|------|------|------|------|------|
| 0°     | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 2.5°   | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 5°     | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 7.5°   | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 10°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 12.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 15°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 17.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 20°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 22.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 25°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 27.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 30°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 32.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 35°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 37.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 40°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 42.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 45°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 47.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 50°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 52.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 55°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 57.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 60°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 62.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 65°    | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 67.5°  | 0    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| 70°    | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 72.5°  | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 75°    | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 77.5°  | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 80°    | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 82.5°  | 3    | 3    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 85°    | 2    | 2    | 3    | 3      | 3    | 3    | 3    | 3    | 3    | 3    | 2    |
| 87.5°  | 2    | 2    | 3    | 2      | 3    | 3    | 3    | 3    | 3    | 2    | 2    |
| 90°    | 2    | 2    | 2    | 2      | 2    | 3    | 3    | 3    | 2    | 2    | 2    |
| 92.5°  | 2    | 2    | 2    | 2      | 3    | 3    | 3    | 3    | 2    | 2    | 2    |
| 95°    | 10   | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    | 2    | 2    |
| 97.5°  | 25   | 16   | 9    | 3      | 3    | 2    | 3    | 2    | 2    | 2    | 2    |
| 100°   | 52   | 32   | 23   | 20     | 18   | 5    | 2    | 2    | 2    | 2    | 2    |
| 102.5° | 93   | 62   | 44   | 36     | 31   | 24   | 16   | 3    | 2    | 2    | 2    |
| 105°   | 145  | 103  | 78   | 65     | 57   | 41   | 31   | 26   | 17   | 6    | 2    |
| 107.5° | 207  | 156  | 123  | 107    | 95   | 70   | 53   | 40   | 33   | 30   | 22   |
| 110°   | 277  | 218  | 179  | 159    | 144  | 114  | 87   | 67   | 52   | 43   | 38   |



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**CANDELA DISTRIBUTION (continued):**

|        | 100° | 105° | 110° | 112.5° | 115° | 120° | 125° | 130° | 135° | 140° | 145° |
|--------|------|------|------|--------|------|------|------|------|------|------|------|
| 112.5° | 353  | 288  | 244  | 219    | 203  | 167  | 134  | 107  | 85   | 69   | 56   |
| 115°   | 434  | 364  | 315  | 288    | 269  | 228  | 190  | 158  | 130  | 106  | 88   |
| 117.5° | 518  | 444  | 388  | 362    | 338  | 297  | 253  | 218  | 186  | 157  | 131  |
| 120°   | 603  | 526  | 468  | 438    | 413  | 366  | 323  | 284  | 249  | 216  | 186  |
| 122.5° | 688  | 610  | 553  | 519    | 492  | 442  | 398  | 356  | 319  | 284  | 250  |
| 125°   | 774  | 694  | 635  | 601    | 575  | 522  | 475  | 430  | 394  | 360  | 323  |
| 127.5° | 857  | 780  | 715  | 682    | 653  | 599  | 551  | 510  | 471  | 436  | 398  |
| 130°   | 939  | 862  | 795  | 762    | 733  | 677  | 629  | 589  | 550  | 515  | 478  |
| 132.5° | 1018 | 941  | 874  | 839    | 810  | 754  | 707  | 661  | 627  | 595  | 558  |
| 135°   | 1094 | 1017 | 950  | 915    | 885  | 834  | 782  | 742  | 704  | 672  | 641  |
| 137.5° | 1169 | 1091 | 1022 | 988    | 957  | 902  | 856  | 817  | 780  | 748  | 719  |
| 140°   | 1241 | 1162 | 1093 | 1060   | 1027 | 972  | 927  | 891  | 853  | 822  | 791  |
| 142.5° | 1311 | 1230 | 1159 | 1129   | 1095 | 1042 | 998  | 961  | 927  | 895  | 865  |
| 145°   | 1377 | 1297 | 1230 | 1196   | 1166 | 1111 | 1064 | 1033 | 1001 | 967  | 942  |
| 147.5° | 1444 | 1363 | 1299 | 1262   | 1234 | 1176 | 1136 | 1103 | 1072 | 1040 | 1016 |
| 150°   | 1508 | 1429 | 1368 | 1333   | 1299 | 1248 | 1204 | 1167 | 1144 | 1106 | 1088 |
| 152.5° | 1572 | 1498 | 1432 | 1401   | 1364 | 1319 | 1267 | 1240 | 1207 | 1179 | 1153 |
| 155°   | 1630 | 1565 | 1495 | 1471   | 1437 | 1380 | 1339 | 1301 | 1281 | 1240 | 1224 |
| 157.5° | 1691 | 1627 | 1552 | 1527   | 1506 | 1442 | 1406 | 1367 | 1341 | 1320 | 1286 |
| 160°   | 1744 | 1687 | 1617 | 1585   | 1565 | 1520 | 1462 | 1439 | 1416 | 1377 | 1362 |
| 162.5° | 1796 | 1732 | 1681 | 1646   | 1618 | 1584 | 1540 | 1496 | 1486 | 1462 | 1429 |
| 165°   | 1847 | 1784 | 1744 | 1716   | 1684 | 1634 | 1609 | 1577 | 1547 | 1517 | 1502 |
| 167.5° | 1892 | 1823 | 1791 | 1776   | 1755 | 1703 | 1663 | 1644 | 1635 | 1607 | 1574 |
| 170°   | 1947 | 1873 | 1830 | 1818   | 1806 | 1775 | 1737 | 1702 | 1685 | 1668 | 1655 |
| 172.5° | 2000 | 1932 | 1880 | 1863   | 1849 | 1827 | 1809 | 1792 | 1780 | 1754 | 1730 |
| 175°   | 2061 | 2000 | 1949 | 1929   | 1911 | 1878 | 1855 | 1843 | 1842 | 1833 | 1821 |
| 177.5° | 2110 | 2080 | 2040 | 2025   | 2007 | 1986 | 1960 | 1945 | 1942 | 1925 | 1911 |
| 180°   | 2116 | 2116 | 2116 | 2116   | 2116 | 2116 | 2116 | 2116 | 2116 | 2116 | 2116 |



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**CANDELA DISTRIBUTION (continued):**

|        | 150° | 155° | 157.5° | 160° | 165° | 170° | 175° | 180° |
|--------|------|------|--------|------|------|------|------|------|
| 0°     | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 2.5°   | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 5°     | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 7.5°   | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 10°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 12.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 15°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 17.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 20°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 22.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 25°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 27.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 30°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 32.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 35°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 37.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 40°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 42.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 45°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 47.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 50°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 52.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 55°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 57.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 60°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 62.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 65°    | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 67.5°  | 0    | 0    | 0      | 0    | 0    | 0    | 0    | 0    |
| 70°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 72.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 75°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 77.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 80°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 82.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 85°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 87.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 90°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 92.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 95°    | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 97.5°  | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 100°   | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 102.5° | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 105°   | 2    | 2    | 2      | 2    | 2    | 2    | 2    | 2    |
| 107.5° | 12   | 5    | 3      | 2    | 2    | 2    | 2    | 2    |
| 110°   | 34   | 32   | 30     | 28   | 21   | 17   | 15   | 13   |



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**CANDELA DISTRIBUTION (continued):**

|        | 150° | 155° | 157.5° | 160° | 165° | 170° | 175° | 180° |
|--------|------|------|--------|------|------|------|------|------|
| 112.5° | 48   | 44   | 43     | 42   | 40   | 39   | 38   | 37   |
| 115°   | 74   | 66   | 63     | 60   | 55   | 52   | 51   | 50   |
| 117.5° | 112  | 100  | 93     | 90   | 82   | 77   | 75   | 73   |
| 120°   | 161  | 143  | 137    | 130  | 120  | 113  | 109  | 106  |
| 122.5° | 220  | 197  | 190    | 180  | 167  | 159  | 154  | 150  |
| 125°   | 290  | 262  | 254    | 240  | 224  | 213  | 206  | 202  |
| 127.5° | 366  | 340  | 324    | 311  | 292  | 277  | 268  | 264  |
| 130°   | 446  | 421  | 406    | 393  | 372  | 355  | 343  | 339  |
| 132.5° | 526  | 503  | 488    | 476  | 457  | 441  | 430  | 426  |
| 135°   | 611  | 583  | 569    | 558  | 539  | 525  | 516  | 512  |
| 137.5° | 689  | 663  | 651    | 639  | 622  | 608  | 602  | 596  |
| 140°   | 767  | 742  | 727    | 719  | 704  | 690  | 681  | 680  |
| 142.5° | 842  | 820  | 805    | 798  | 784  | 770  | 762  | 761  |
| 145°   | 916  | 895  | 882    | 874  | 860  | 850  | 842  | 841  |
| 147.5° | 990  | 968  | 954    | 949  | 938  | 926  | 919  | 918  |
| 150°   | 1059 | 1040 | 1029   | 1023 | 1011 | 998  | 993  | 992  |
| 152.5° | 1128 | 1112 | 1099   | 1092 | 1080 | 1072 | 1067 | 1068 |
| 155°   | 1199 | 1177 | 1164   | 1161 | 1153 | 1145 | 1142 | 1140 |
| 157.5° | 1261 | 1252 | 1242   | 1238 | 1224 | 1214 | 1207 | 1205 |
| 160°   | 1344 | 1323 | 1307   | 1301 | 1290 | 1282 | 1280 | 1279 |
| 162.5° | 1399 | 1382 | 1377   | 1375 | 1370 | 1362 | 1358 | 1356 |
| 165°   | 1489 | 1464 | 1453   | 1446 | 1431 | 1420 | 1415 | 1416 |
| 167.5° | 1542 | 1525 | 1519   | 1516 | 1512 | 1509 | 1508 | 1509 |
| 170°   | 1644 | 1625 | 1616   | 1611 | 1597 | 1585 | 1580 | 1581 |
| 172.5° | 1710 | 1687 | 1679   | 1675 | 1668 | 1662 | 1658 | 1658 |
| 175°   | 1812 | 1797 | 1790   | 1783 | 1778 | 1769 | 1764 | 1764 |
| 177.5° | 1889 | 1879 | 1872   | 1865 | 1864 | 1859 | 1858 | 1858 |
| 180°   | 2116 | 2116 | 2116   | 2116 | 2116 | 2116 | 2116 | 2116 |

(END OF REPORT)