

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: LUMARK

Report Number: 767382_150MP

Luminaire Tested: **MPRC-FL-2-150**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: 767382_150MP
Test Lab:
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: MPRC-FL-2-150
Description: 150W MP TYPE II ROADWAY
Light Source: 150 WATT PULSE-START CLEAR ED-28 HORIZONTAL BURN
Ballast/Driver: -

Summary

Lumens per Lamp: 14000 (1 lamp)
Luminaire Lumens: 10694.7 lumens
Efficiency: 76.4%
Efficacy: 57.8 lumens/watt
Luminous Opening: Point Source (0' x 0' x 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

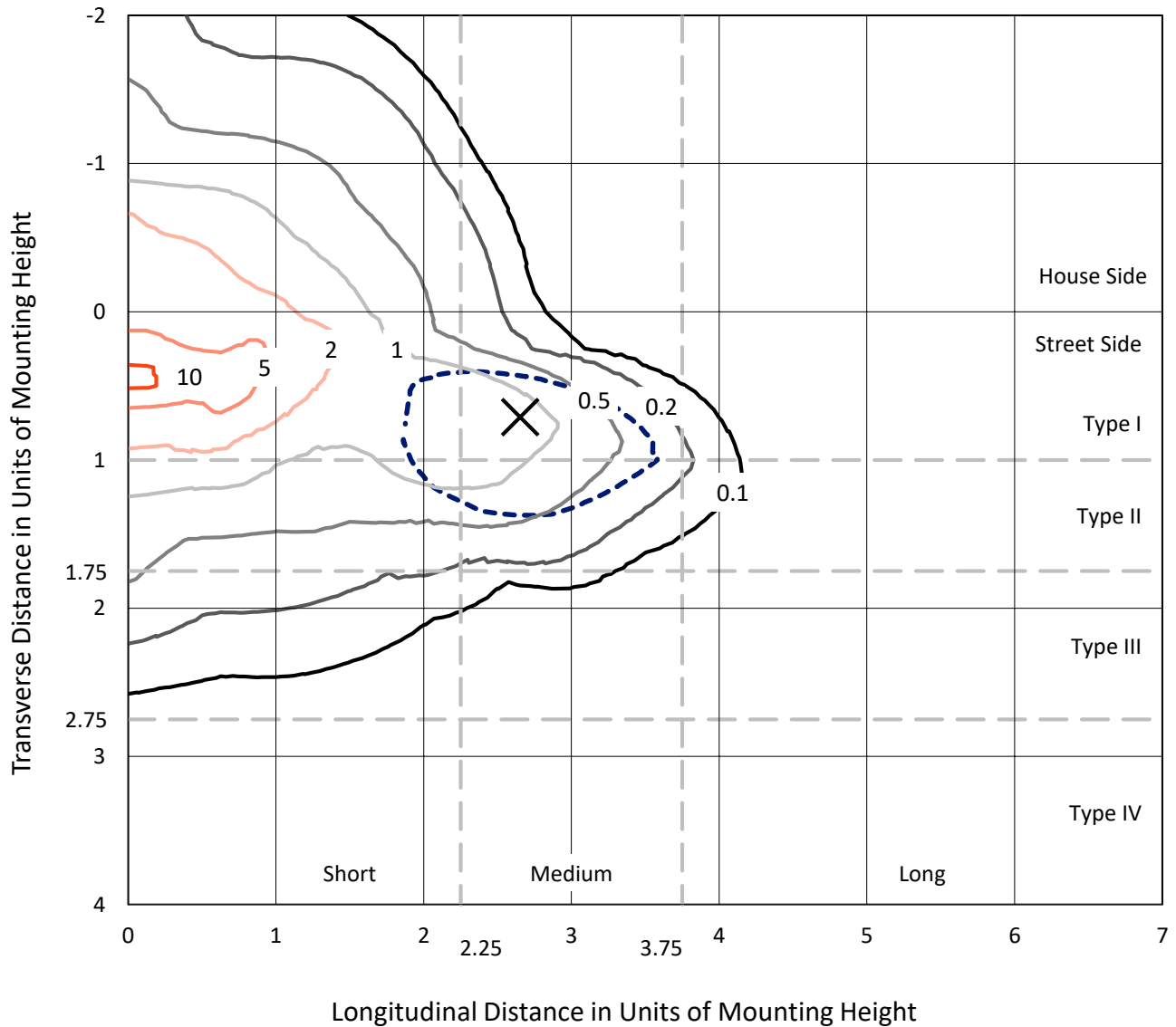
Input Watts (W): 185
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

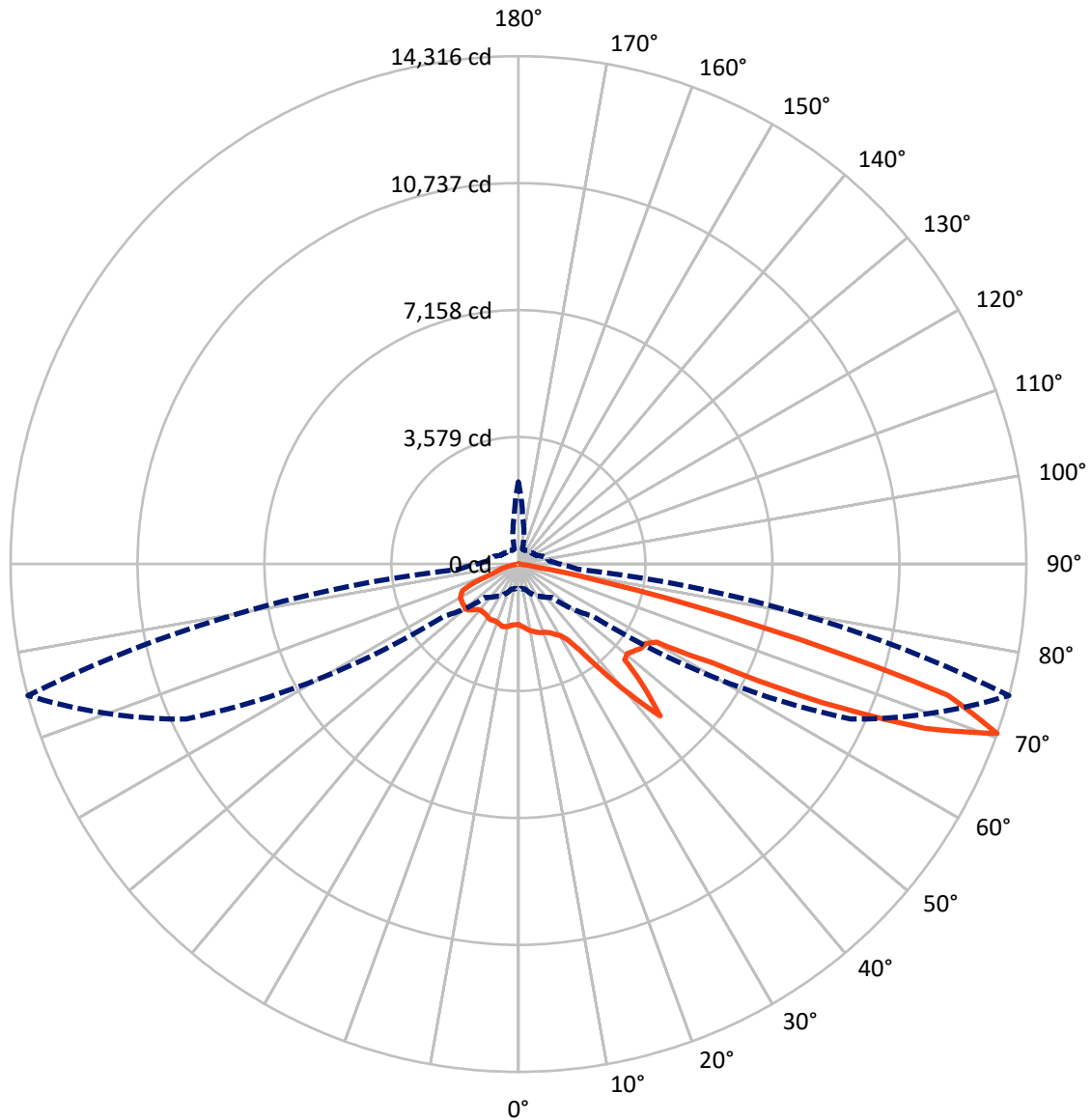
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 10.7 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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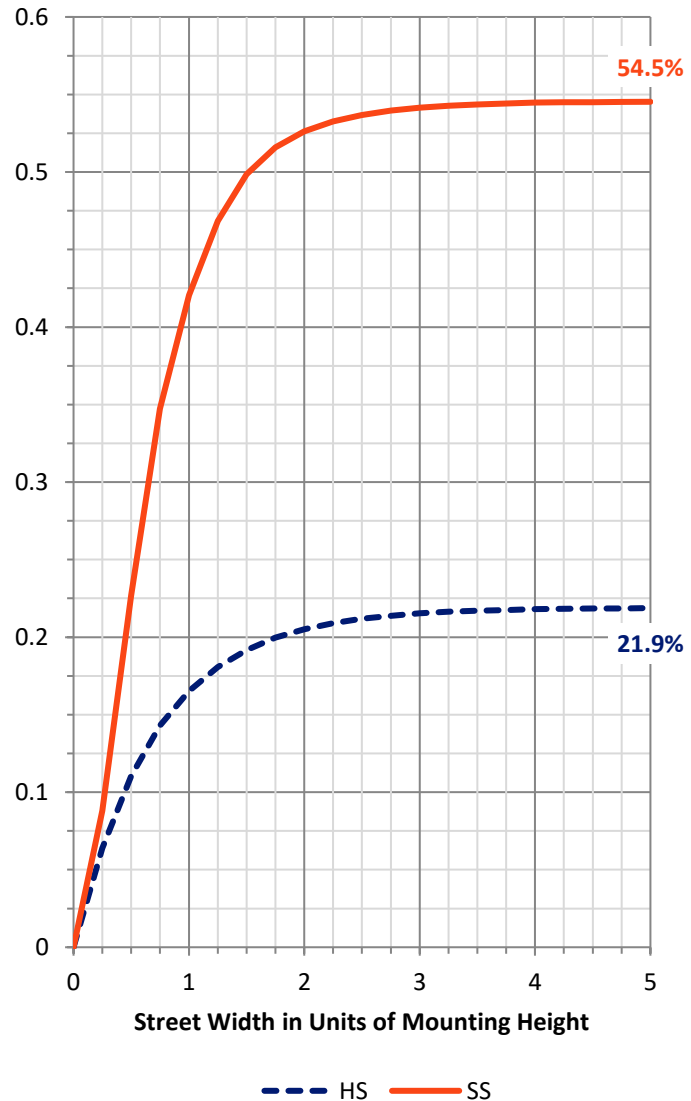
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|--------|----------|--------|---------|
| House Side | Lumens | 3071.9 | 0.0 | 3071.9 |
| | % Lamp | 21.9 | 0.0 | 21.9 |
| Street Side | Lumens | 7622.8 | 0.0 | 7622.8 |
| | % Lamp | 54.4 | 0.0 | 54.4 |
| Total | Lumens | 10694.7 | 0.0 | 10694.7 |
| | % Lamp | 76.4 | 0.0 | 76.4 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|---------|-----------|--------|
| 0°-10° | 171.7 | 1.6 | 1.2 |
| 10°-20° | 599.3 | 5.6 | 4.3 |
| 20°-30° | 1257.0 | 11.8 | 9.0 |
| 30°-40° | 1604.9 | 15.0 | 11.5 |
| 40°-50° | 1921.8 | 18.0 | 13.7 |
| 50°-60° | 1813.2 | 17.0 | 13.0 |
| 60°-70° | 2232.4 | 20.9 | 15.9 |
| 70°-80° | 1069.2 | 10.0 | 7.6 |
| 80°-90° | 25.3 | 0.2 | 0.2 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 | 0.0 |
| 0°-90° | 10694.7 | 100.0 | 76.4 |
| 0°-180° | 10694.7 | 100.0 | 76.4 |

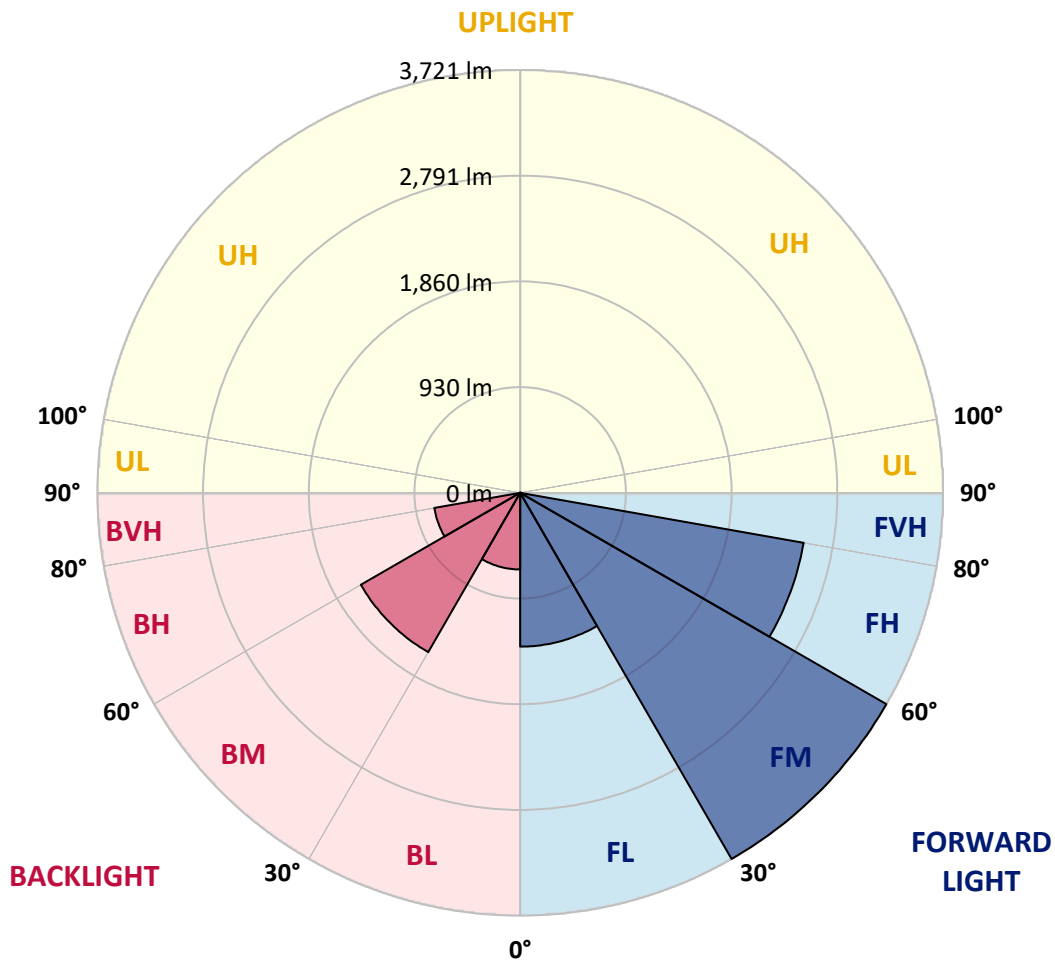


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Lamp | Zone Rating/Lumen Limit | | |
|----------------|--------|--------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1353.6 | 9.7 | | | |
| FM (30°-60°) | 3721.0 | 26.6 | | | |
| FH (60°-80°) | 2533.5 | 18.1 | | | G2/5000 |
| FVH (80°-90°) | 14.8 | 0.1 | | | G1/100 |
| BL (0°-30°) | 674.4 | 4.8 | B2/1000 | | |
| BM (30°-60°) | 1618.9 | 11.6 | B2/2500 | | |
| BH (60°-80°) | 768.0 | 5.5 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 10.5 | 0.1 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |
| Trapped Light | 3305.3 | 23.6 | | | |

BUG Rating: B2-U0-G2
 Type II Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 85° | 90° |
|-------|------|------|------|------|------|------|------|-------|-------|------|------|
| 0° | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 |
| 2.5° | 1813 | 1819 | 1819 | 1807 | 1795 | 1789 | 1783 | 1687 | 1759 | 1741 | 1735 |
| 5° | 1885 | 1885 | 1891 | 1885 | 1873 | 1849 | 1831 | 1705 | 1801 | 1777 | 1747 |
| 7.5° | 2065 | 2035 | 2035 | 2023 | 2005 | 1957 | 1927 | 1777 | 1861 | 1849 | 1795 |
| 10° | 2269 | 2257 | 2245 | 2209 | 2131 | 2083 | 2023 | 1867 | 1915 | 1897 | 1849 |
| 12.5° | 2533 | 2551 | 2509 | 2425 | 2287 | 2203 | 2101 | 1945 | 1951 | 1903 | 1867 |
| 15° | 3001 | 3013 | 2947 | 2761 | 2563 | 2341 | 2209 | 1987 | 1999 | 1915 | 1879 |
| 17.5° | 3806 | 3794 | 3643 | 3325 | 2935 | 2419 | 2293 | 2029 | 2035 | 1927 | 1891 |
| 20° | 4982 | 5030 | 4766 | 4160 | 3499 | 2719 | 2401 | 2095 | 2053 | 1957 | 1909 |
| 22.5° | 5678 | 5888 | 5630 | 5132 | 4352 | 3157 | 2581 | 2167 | 2095 | 1993 | 1933 |
| 25° | 6062 | 6200 | 5984 | 5660 | 5168 | 3758 | 2863 | 2311 | 2155 | 2005 | 1951 |
| 27.5° | 5906 | 6032 | 6008 | 5942 | 5456 | 4256 | 3301 | 2521 | 2251 | 2035 | 1957 |
| 30° | 4526 | 4658 | 5060 | 5678 | 5474 | 4538 | 3715 | 2923 | 2341 | 2071 | 1963 |
| 32.5° | 3361 | 3337 | 3679 | 4538 | 4940 | 4814 | 4148 | 3319 | 2539 | 2197 | 2017 |
| 35° | 2701 | 2617 | 2803 | 3283 | 4106 | 4874 | 4772 | 3685 | 2971 | 2479 | 2161 |
| 37.5° | 2341 | 2269 | 2473 | 2701 | 3535 | 4796 | 5654 | 4322 | 3800 | 2701 | 2233 |
| 40° | 2125 | 2113 | 2107 | 2485 | 3487 | 5420 | 6843 | 5828 | 4796 | 2935 | 2401 |
| 42.5° | 2017 | 2005 | 2023 | 2623 | 3685 | 5774 | 6963 | 6945 | 5858 | 3013 | 2503 |
| 45° | 1873 | 1873 | 1945 | 2503 | 3433 | 4700 | 5396 | 5810 | 4982 | 2929 | 2587 |
| 47.5° | 1765 | 1759 | 1789 | 2101 | 2827 | 3109 | 4190 | 4172 | 4034 | 3037 | 2731 |
| 50° | 1669 | 1651 | 1669 | 1837 | 2359 | 2593 | 3625 | 3896 | 3974 | 3463 | 2815 |
| 52.5° | 1597 | 1567 | 1519 | 1789 | 2179 | 2305 | 3175 | 3739 | 4076 | 3992 | 2821 |
| 55° | 1645 | 1561 | 1411 | 1705 | 2041 | 2155 | 2749 | 3794 | 4190 | 3914 | 2803 |
| 57.5° | 1813 | 1567 | 1285 | 1543 | 1861 | 2161 | 2539 | 4490 | 4226 | 3559 | 2779 |
| 60° | 1933 | 1561 | 1188 | 1429 | 1753 | 2377 | 2521 | 4352 | 4478 | 3265 | 2833 |
| 62.5° | 1633 | 1429 | 1086 | 1327 | 1723 | 2497 | 2863 | 5444 | 6116 | 2755 | 2503 |
| 65° | 1309 | 1170 | 966 | 1200 | 1519 | 2077 | 3800 | 7887 | 9418 | 2437 | 2263 |
| 67.5° | 972 | 912 | 858 | 1086 | 1291 | 1621 | 3745 | 10048 | 12353 | 2275 | 1879 |
| 70° | 720 | 690 | 732 | 942 | 1116 | 1333 | 2557 | 10336 | 14316 | 1675 | 1152 |
| 72.5° | 516 | 510 | 600 | 810 | 954 | 978 | 1357 | 7269 | 12659 | 1381 | 744 |
| 75° | 360 | 342 | 360 | 468 | 486 | 276 | 666 | 2905 | 7017 | 1074 | 528 |
| 77.5° | 60 | 60 | 60 | 60 | 72 | 228 | 360 | 786 | 2479 | 660 | 354 |
| 80° | 36 | 24 | 30 | 30 | 30 | 90 | 126 | 120 | 504 | 252 | 156 |
| 82.5° | 12 | 12 | 12 | 12 | 12 | 24 | 42 | 36 | 96 | 72 | 48 |
| 85° | 0 | 6 | 0 | 0 | 0 | 6 | 12 | 12 | 24 | 18 | 12 |
| 87.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|------|------|------|------|------|------|------|------|------|------|
| 0° | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 | 1705 |
| 2.5° | 1729 | 1711 | 1717 | 1705 | 1705 | 1687 | 1687 | 1693 | 1681 | 1693 |
| 5° | 1729 | 1717 | 1705 | 1687 | 1687 | 1651 | 1639 | 1633 | 1621 | 1609 |
| 7.5° | 1777 | 1747 | 1729 | 1699 | 1675 | 1669 | 1633 | 1585 | 1567 | 1561 |
| 10° | 1819 | 1789 | 1777 | 1735 | 1699 | 1681 | 1645 | 1573 | 1537 | 1537 |
| 12.5° | 1837 | 1807 | 1765 | 1747 | 1723 | 1693 | 1615 | 1543 | 1489 | 1489 |
| 15° | 1861 | 1813 | 1753 | 1771 | 1825 | 1723 | 1603 | 1513 | 1477 | 1465 |
| 17.5° | 1867 | 1783 | 1699 | 1747 | 1939 | 1729 | 1405 | 1501 | 1483 | 1465 |
| 20° | 1867 | 1747 | 1639 | 1639 | 1843 | 1723 | 1327 | 1453 | 1471 | 1465 |
| 22.5° | 1885 | 1735 | 1591 | 1543 | 1633 | 1627 | 1248 | 1405 | 1477 | 1513 |
| 25° | 1897 | 1741 | 1579 | 1489 | 1483 | 1453 | 1200 | 1351 | 1501 | 1549 |
| 27.5° | 1897 | 1753 | 1573 | 1483 | 1411 | 1357 | 1224 | 1309 | 1501 | 1573 |
| 30° | 1879 | 1735 | 1555 | 1471 | 1381 | 1309 | 1242 | 1242 | 1429 | 1549 |
| 32.5° | 1903 | 1699 | 1531 | 1453 | 1369 | 1279 | 1194 | 1170 | 1309 | 1453 |
| 35° | 1963 | 1687 | 1513 | 1435 | 1345 | 1242 | 1152 | 1104 | 1164 | 1236 |
| 37.5° | 2005 | 1681 | 1507 | 1429 | 1339 | 1206 | 1092 | 1032 | 1056 | 1056 |
| 40° | 2065 | 1687 | 1501 | 1423 | 1321 | 1176 | 1062 | 984 | 984 | 984 |
| 42.5° | 2155 | 1723 | 1537 | 1441 | 1327 | 1170 | 1014 | 942 | 924 | 924 |
| 45° | 2341 | 1813 | 1573 | 1453 | 1315 | 1152 | 996 | 900 | 882 | 876 |
| 47.5° | 2485 | 1903 | 1573 | 1453 | 1303 | 1134 | 966 | 870 | 852 | 840 |
| 50° | 2557 | 1957 | 1573 | 1459 | 1321 | 1128 | 948 | 870 | 882 | 888 |
| 52.5° | 2569 | 1927 | 1573 | 1453 | 1279 | 1104 | 912 | 858 | 978 | 1032 |
| 55° | 2533 | 1927 | 1585 | 1501 | 1291 | 1086 | 894 | 876 | 1146 | 1236 |
| 57.5° | 2479 | 1909 | 1585 | 1519 | 1303 | 1062 | 852 | 870 | 1182 | 1297 |
| 60° | 2419 | 1897 | 1561 | 1519 | 1303 | 1038 | 816 | 858 | 1164 | 1309 |
| 62.5° | 2329 | 1825 | 1525 | 1465 | 1273 | 996 | 768 | 774 | 1188 | 1417 |
| 65° | 2167 | 1753 | 1471 | 1399 | 1224 | 972 | 738 | 696 | 1309 | 1729 |
| 67.5° | 1729 | 1387 | 1134 | 1140 | 1044 | 852 | 624 | 594 | 1417 | 2113 |
| 70° | 888 | 768 | 564 | 510 | 462 | 468 | 426 | 438 | 1345 | 2317 |
| 72.5° | 510 | 588 | 468 | 330 | 246 | 192 | 204 | 264 | 978 | 1885 |
| 75° | 354 | 486 | 402 | 240 | 156 | 108 | 102 | 84 | 480 | 816 |
| 77.5° | 222 | 306 | 252 | 144 | 96 | 78 | 66 | 42 | 192 | 276 |
| 80° | 108 | 138 | 108 | 84 | 60 | 48 | 36 | 24 | 78 | 96 |
| 82.5° | 42 | 48 | 42 | 30 | 30 | 24 | 18 | 6 | 30 | 36 |
| 85° | 12 | 6 | 12 | 12 | 12 | 6 | 0 | 0 | 6 | 12 |
| 87.5° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)