

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: P146880

Luminaire Tested: **LDRL-T4-E05-E**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P146880
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (P33696)
Test Lab: INNOVATION CENTER-P3
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: LDRL-T4-E05-E
Description: RL LED ROADWAY LARGE CUTOFF COBRAHEAD LUMINAIRE
(5) LIGHTBARS WITH AccuLED OPTICS - TYPE 4 SHORT
Light Source: (105) 4000K CCT, 70 CRI LEDs
Ballast/Driver: -

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 14693 lumens
Efficiency: N/A
Efficacy: 115.4 lumens/watt
Luminous Opening: Rectangular (W 0.83' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G3

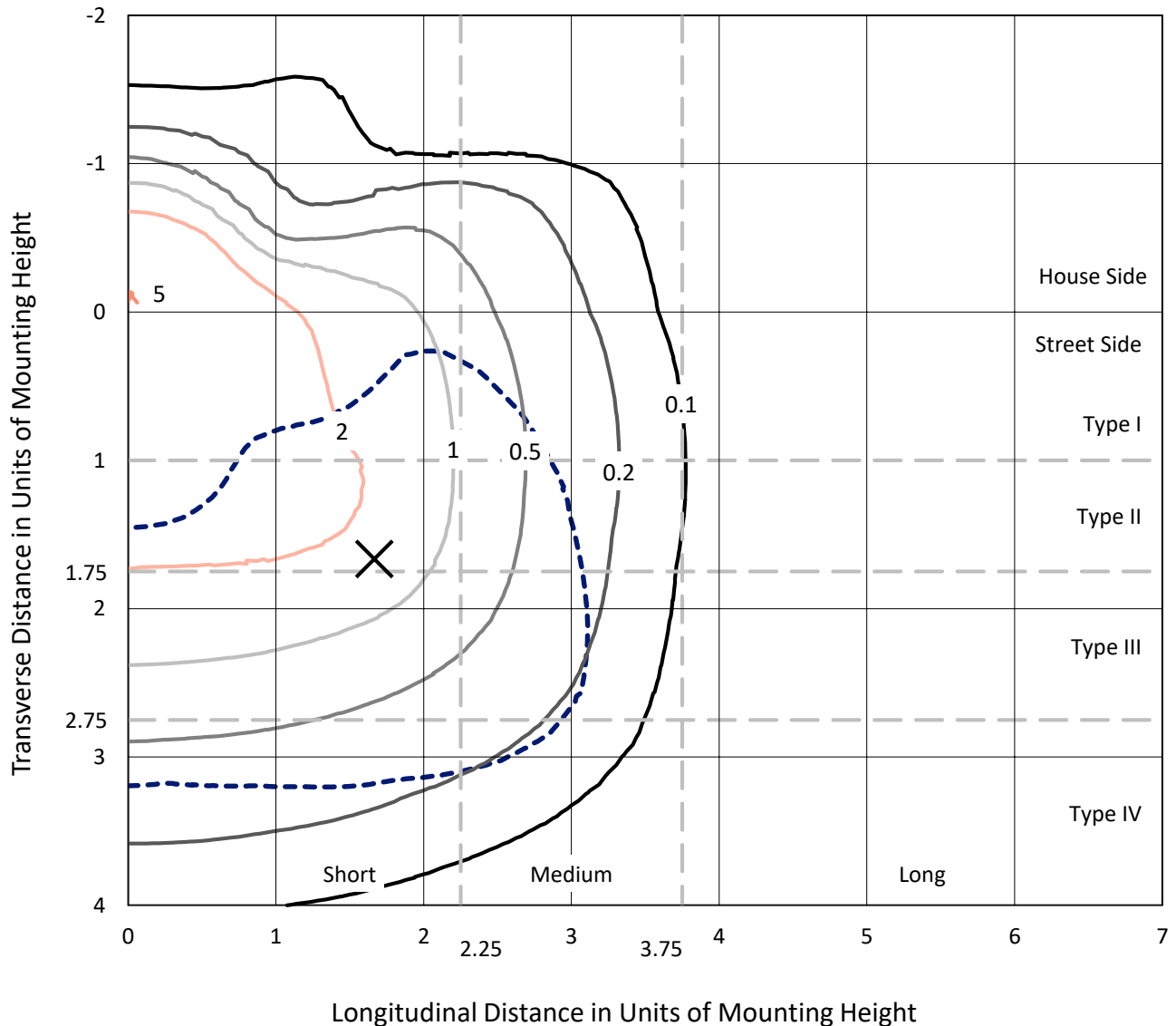
Input Watts (W): 127.3
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

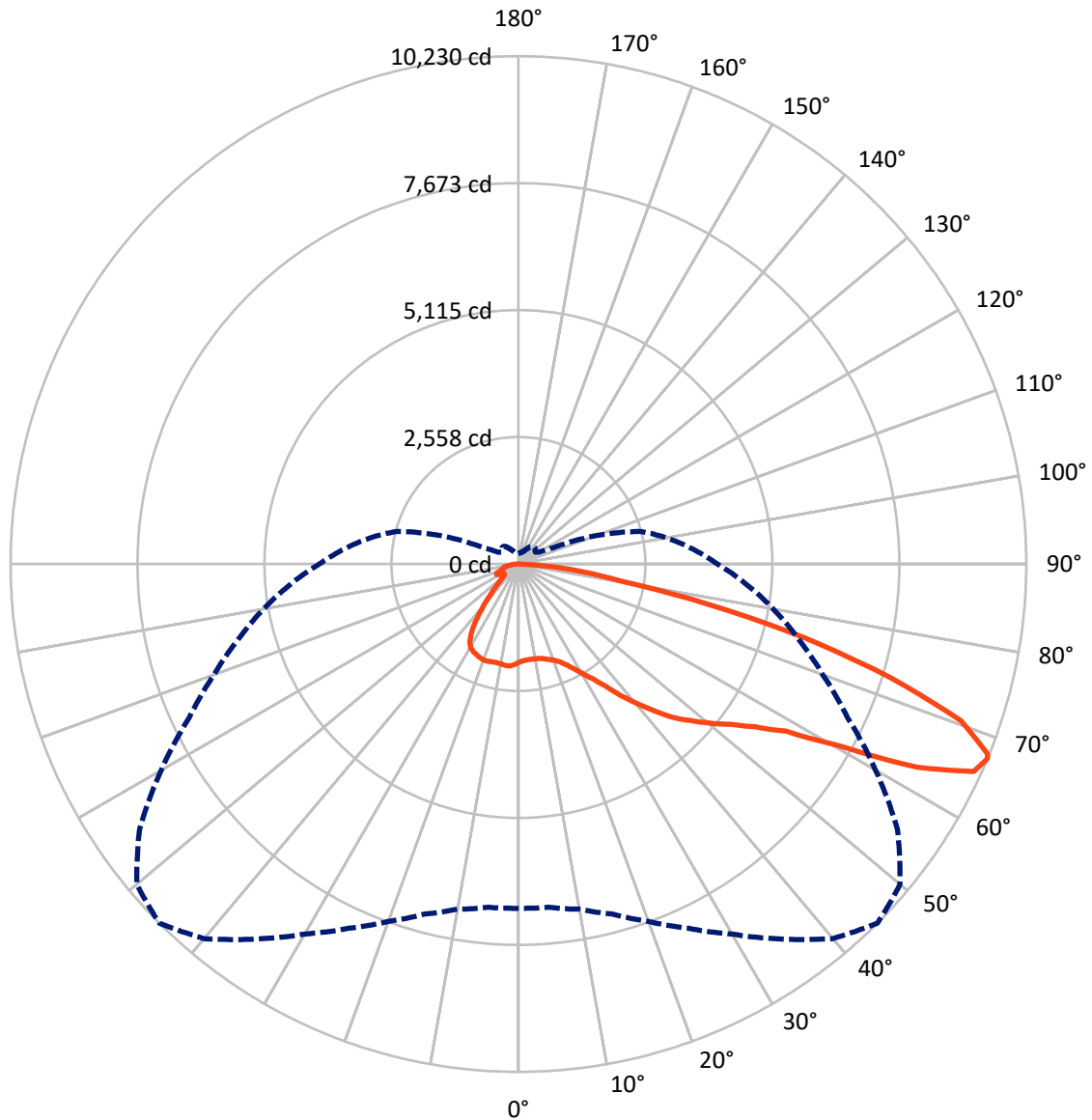
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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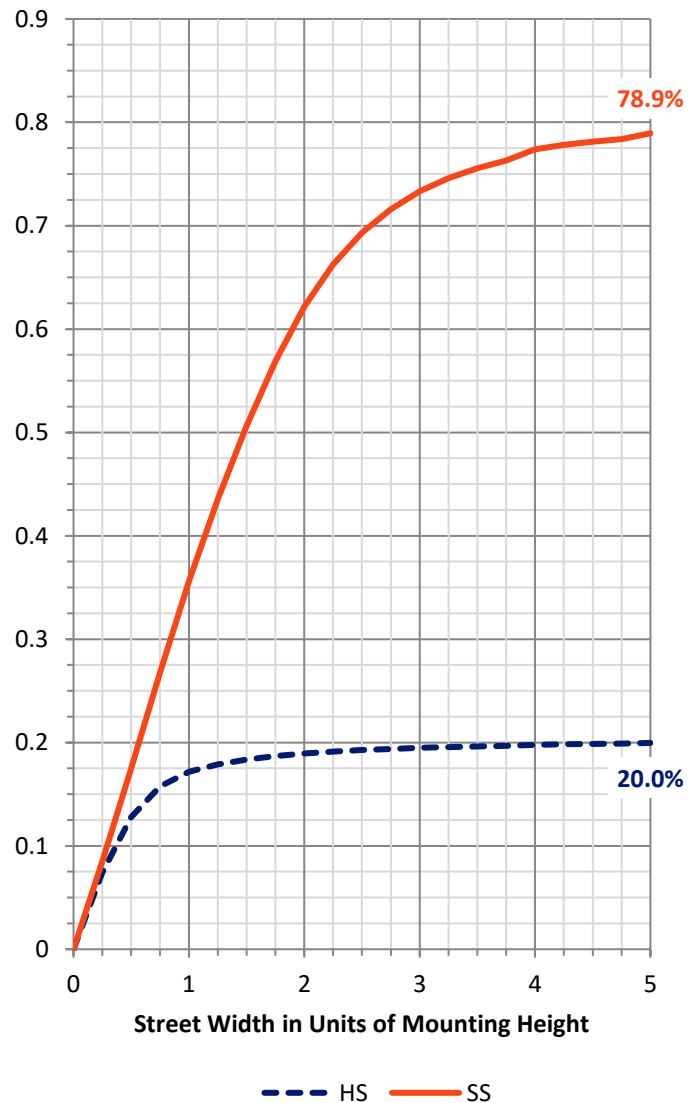
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2977.2 | 0.0 | 2977.2 |
| | % Fixture | 20.3 | 0.0 | 20.3 |
| Street Side | Lumens | 11715.9 | 0.0 | 11715.9 |
| | % Fixture | 79.7 | 0.0 | 79.7 |
| Total | Lumens | 14693.0 | 0.0 | 14693.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 190.6 | 1.3 |
| 10°-20° | 572.4 | 3.9 |
| 20°-30° | 972.9 | 6.6 |
| 30°-40° | 1462.2 | 10.0 |
| 40°-50° | 1901.3 | 12.9 |
| 50°-60° | 2610.4 | 17.8 |
| 60°-70° | 4118.0 | 28.0 |
| 70°-80° | 2488.2 | 16.9 |
| 80°-90° | 376.9 | 2.6 |
| 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° | 14693.0 | 100.0 |
| 0°-180° | 14693.0 | 100.0 |

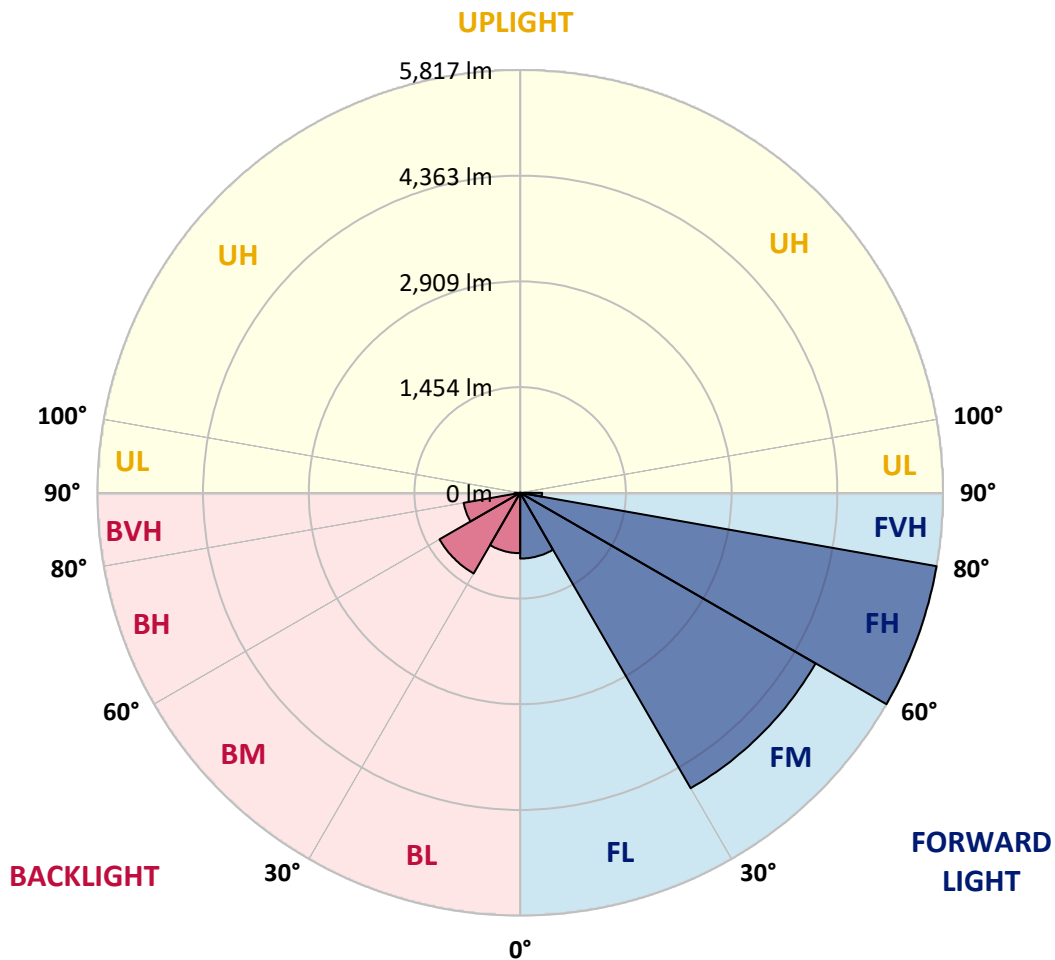


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 904.8 | 6.2 | | | |
| FM (30°-60°) | 4692.8 | 31.9 | | | |
| FH (60°-80°) | 5817.3 | 39.6 | | | G3/7500 |
| FVH (80°-90°) | 301.0 | 2.0 | | | G3/500 |
| BL (0°-30°) | 831.2 | 5.7 | B2/1000 | | |
| BM (30°-60°) | 1281.1 | 8.7 | B2/2500 | | |
| BH (60°-80°) | 788.9 | 5.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 75.9 | 0.5 | | | G1/100 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 10° | 15° | 20° | 25° | 30° | 35° | 40° | 45° | 50° |
|-------|------|------|------|------|------|------|------|------|------|-------|-------|
| 0° | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 |
| 2.5° | 1934 | 1938 | 1935 | 1935 | 1936 | 1937 | 1939 | 1943 | 1944 | 1950 | 1951 |
| 5° | 1895 | 1896 | 1896 | 1897 | 1903 | 1908 | 1913 | 1920 | 1926 | 1937 | 1944 |
| 7.5° | 1881 | 1885 | 1884 | 1886 | 1892 | 1897 | 1903 | 1913 | 1928 | 1937 | 1947 |
| 10° | 1904 | 1907 | 1904 | 1905 | 1906 | 1911 | 1913 | 1920 | 1932 | 1940 | 1949 |
| 12.5° | 1957 | 1957 | 1954 | 1952 | 1949 | 1950 | 1946 | 1945 | 1951 | 1952 | 1953 |
| 15° | 2027 | 2035 | 2025 | 2017 | 2013 | 2009 | 1996 | 1991 | 1990 | 1981 | 1972 |
| 17.5° | 2098 | 2100 | 2094 | 2085 | 2079 | 2070 | 2059 | 2049 | 2037 | 2023 | 2005 |
| 20° | 2177 | 2178 | 2170 | 2157 | 2150 | 2139 | 2125 | 2108 | 2093 | 2071 | 2051 |
| 22.5° | 2287 | 2286 | 2270 | 2259 | 2249 | 2236 | 2216 | 2193 | 2169 | 2143 | 2115 |
| 25° | 2413 | 2413 | 2402 | 2384 | 2379 | 2360 | 2338 | 2311 | 2286 | 2249 | 2215 |
| 27.5° | 2557 | 2558 | 2538 | 2528 | 2517 | 2497 | 2482 | 2461 | 2427 | 2390 | 2355 |
| 30° | 2728 | 2723 | 2707 | 2686 | 2682 | 2666 | 2645 | 2630 | 2588 | 2562 | 2523 |
| 32.5° | 2890 | 2898 | 2894 | 2870 | 2874 | 2858 | 2840 | 2829 | 2785 | 2760 | 2724 |
| 35° | 3132 | 3139 | 3145 | 3136 | 3141 | 3132 | 3117 | 3088 | 3052 | 3019 | 2969 |
| 37.5° | 3320 | 3327 | 3331 | 3353 | 3385 | 3416 | 3430 | 3415 | 3417 | 3367 | 3300 |
| 40° | 3474 | 3491 | 3515 | 3557 | 3621 | 3680 | 3712 | 3737 | 3750 | 3703 | 3616 |
| 42.5° | 3628 | 3646 | 3679 | 3746 | 3834 | 3919 | 3986 | 4063 | 4077 | 4065 | 3991 |
| 45° | 3789 | 3810 | 3851 | 3927 | 4030 | 4141 | 4249 | 4358 | 4413 | 4422 | 4332 |
| 47.5° | 3983 | 4013 | 4051 | 4137 | 4237 | 4362 | 4497 | 4637 | 4723 | 4723 | 4619 |
| 50° | 4225 | 4259 | 4291 | 4377 | 4477 | 4606 | 4762 | 4918 | 5035 | 5042 | 4916 |
| 52.5° | 4564 | 4569 | 4588 | 4667 | 4754 | 4898 | 5046 | 5227 | 5362 | 5368 | 5223 |
| 55° | 4976 | 4976 | 4998 | 5064 | 5145 | 5264 | 5417 | 5618 | 5760 | 5791 | 5605 |
| 57.5° | 5518 | 5538 | 5549 | 5626 | 5681 | 5807 | 5935 | 6154 | 6335 | 6355 | 6166 |
| 60° | 6400 | 6362 | 6423 | 6491 | 6620 | 6712 | 6930 | 7150 | 7381 | 7436 | 7233 |
| 62.5° | 7269 | 7310 | 7385 | 7508 | 7729 | 7935 | 8247 | 8581 | 8940 | 9014 | 8859 |
| 65° | 7323 | 7348 | 7452 | 7664 | 7966 | 8333 | 8763 | 9266 | 9801 | 10078 | 9818 |
| 67° | 6935 | 6942 | 7060 | 7301 | 7663 | 8098 | 8607 | 9221 | 9849 | 10230 | 10036 |
| 67.5° | 6812 | 6825 | 6941 | 7187 | 7553 | 7998 | 8517 | 9148 | 9791 | 10189 | 10014 |
| 70° | 6090 | 6090 | 6215 | 6463 | 6806 | 7240 | 7783 | 8420 | 9119 | 9454 | 9305 |
| 72.5° | 5184 | 5151 | 5292 | 5480 | 5760 | 6139 | 6576 | 7079 | 7605 | 7849 | 7790 |
| 75° | 3768 | 3830 | 3903 | 4042 | 4285 | 4584 | 4840 | 5289 | 5702 | 5972 | 5901 |
| 77.5° | 2056 | 2080 | 2282 | 2365 | 2578 | 2800 | 3081 | 3396 | 3721 | 3891 | 3822 |
| 80° | 1222 | 1269 | 1389 | 1488 | 1603 | 1772 | 1976 | 2045 | 2109 | 2105 | 1980 |
| 82.5° | 772 | 829 | 959 | 1044 | 1104 | 1202 | 1313 | 1400 | 1419 | 1325 | 1180 |
| 85° | 125 | 207 | 541 | 636 | 674 | 727 | 809 | 846 | 790 | 690 | 715 |
| 87.5° | 49 | 59 | 165 | 209 | 221 | 116 | 201 | 236 | 120 | 61 | 138 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 55° | 60° | 65° | 70° | 75° | 80° | 85° | 90° | 95° | 100° | 105° |
|-------|------|------|------|------|------|------|------|------|------|------|------|
| 0° | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 |
| 2.5° | 1957 | 1962 | 1967 | 1973 | 1975 | 1980 | 1989 | 1988 | 1995 | 1998 | 2003 |
| 5° | 1953 | 1964 | 1972 | 1983 | 1987 | 1998 | 2010 | 2014 | 2023 | 2030 | 2036 |
| 7.5° | 1961 | 1973 | 1983 | 1996 | 2005 | 2014 | 2023 | 2034 | 2042 | 2047 | 2051 |
| 10° | 1964 | 1977 | 1989 | 2000 | 2010 | 2017 | 2027 | 2036 | 2044 | 2047 | 2048 |
| 12.5° | 1965 | 1974 | 1986 | 1998 | 2007 | 2016 | 2023 | 2033 | 2039 | 2040 | 2038 |
| 15° | 1973 | 1974 | 1982 | 1996 | 2005 | 2014 | 2019 | 2024 | 2028 | 2025 | 2022 |
| 17.5° | 1997 | 1990 | 1990 | 1997 | 2002 | 2006 | 2007 | 2006 | 2002 | 1996 | 1991 |
| 20° | 2036 | 2022 | 2011 | 2007 | 1999 | 1989 | 1976 | 1964 | 1949 | 1942 | 1941 |
| 22.5° | 2097 | 2076 | 2056 | 2036 | 2010 | 1981 | 1951 | 1925 | 1904 | 1893 | 1894 |
| 25° | 2201 | 2170 | 2147 | 2112 | 2070 | 2029 | 1990 | 1955 | 1930 | 1910 | 1914 |
| 27.5° | 2341 | 2306 | 2286 | 2246 | 2198 | 2146 | 2100 | 2052 | 2016 | 1991 | 1996 |
| 30° | 2505 | 2495 | 2462 | 2422 | 2377 | 2318 | 2249 | 2177 | 2112 | 2071 | 2063 |
| 32.5° | 2703 | 2692 | 2656 | 2622 | 2564 | 2499 | 2409 | 2295 | 2193 | 2115 | 2081 |
| 35° | 2947 | 2920 | 2876 | 2843 | 2778 | 2694 | 2578 | 2424 | 2269 | 2152 | 2067 |
| 37.5° | 3251 | 3184 | 3111 | 3025 | 2929 | 2827 | 2693 | 2513 | 2321 | 2155 | 2004 |
| 40° | 3541 | 3433 | 3312 | 3176 | 3059 | 2936 | 2797 | 2591 | 2356 | 2134 | 1909 |
| 42.5° | 3864 | 3696 | 3532 | 3345 | 3191 | 3045 | 2886 | 2646 | 2363 | 2077 | 1786 |
| 45° | 4175 | 3959 | 3739 | 3508 | 3312 | 3150 | 2969 | 2693 | 2361 | 2017 | 1664 |
| 47.5° | 4452 | 4194 | 3922 | 3662 | 3434 | 3256 | 3058 | 2757 | 2388 | 2000 | 1583 |
| 50° | 4711 | 4413 | 4094 | 3805 | 3557 | 3375 | 3171 | 2858 | 2471 | 2039 | 1571 |
| 52.5° | 4978 | 4654 | 4289 | 3978 | 3719 | 3508 | 3302 | 2987 | 2587 | 2119 | 1598 |
| 55° | 5326 | 4954 | 4565 | 4220 | 3923 | 3696 | 3458 | 3143 | 2712 | 2212 | 1649 |
| 57.5° | 5844 | 5409 | 4967 | 4596 | 4253 | 3970 | 3709 | 3348 | 2919 | 2352 | 1761 |
| 60° | 6774 | 6292 | 5780 | 5295 | 4900 | 4569 | 4237 | 3789 | 3301 | 2670 | 2018 |
| 62.5° | 8293 | 7626 | 6918 | 6280 | 5737 | 5289 | 4821 | 4283 | 3714 | 3056 | 2407 |
| 65° | 9206 | 8286 | 7385 | 6645 | 6003 | 5429 | 4863 | 4285 | 3734 | 3159 | 2582 |
| 67° | 9319 | 8310 | 7313 | 6525 | 5837 | 5212 | 4598 | 4007 | 3514 | 3032 | 2534 |
| 67.5° | 9285 | 8262 | 7245 | 6449 | 5754 | 5149 | 4545 | 3940 | 3460 | 2978 | 2498 |
| 70° | 8615 | 7614 | 6608 | 5834 | 5168 | 4549 | 3978 | 3372 | 3001 | 2656 | 2241 |
| 72.5° | 7150 | 6369 | 5526 | 4881 | 4306 | 3770 | 3268 | 2761 | 2463 | 2219 | 1927 |
| 75° | 5302 | 4586 | 3873 | 3485 | 3039 | 2610 | 2222 | 1847 | 1732 | 1674 | 1502 |
| 77.5° | 3274 | 2631 | 2094 | 1743 | 1386 | 1086 | 864 | 703 | 733 | 853 | 908 |
| 80° | 1630 | 1204 | 932 | 741 | 599 | 484 | 355 | 260 | 311 | 369 | 418 |
| 82.5° | 981 | 775 | 613 | 519 | 422 | 326 | 231 | 176 | 195 | 262 | 288 |
| 85° | 609 | 488 | 390 | 326 | 270 | 200 | 131 | 130 | 138 | 174 | 199 |
| 87.5° | 179 | 121 | 96 | 100 | 111 | 92 | 69 | 59 | 73 | 100 | 112 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 110° | 115° | 120° | 125° | 130° | 135° | 140° | 145° | 150° | 155° | 160° |
|-------|------|------|------|------|------|------|------|------|------|------|------|
| 0° | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 | 1978 |
| 2.5° | 2004 | 2011 | 2014 | 2015 | 2016 | 2022 | 2022 | 2028 | 2030 | 2030 | 2032 |
| 5° | 2042 | 2049 | 2052 | 2053 | 2055 | 2058 | 2057 | 2061 | 2063 | 2062 | 2062 |
| 7.5° | 2056 | 2058 | 2058 | 2061 | 2064 | 2061 | 2059 | 2061 | 2060 | 2061 | 2061 |
| 10° | 2051 | 2049 | 2049 | 2047 | 2050 | 2044 | 2044 | 2046 | 2045 | 2047 | 2050 |
| 12.5° | 2039 | 2038 | 2035 | 2034 | 2038 | 2034 | 2035 | 2038 | 2040 | 2044 | 2049 |
| 15° | 2022 | 2019 | 2019 | 2023 | 2033 | 2036 | 2040 | 2045 | 2046 | 2048 | 2050 |
| 17.5° | 1993 | 1998 | 2010 | 2024 | 2043 | 2050 | 2052 | 2049 | 2039 | 2031 | 2023 |
| 20° | 1953 | 1975 | 2006 | 2036 | 2059 | 2058 | 2045 | 2026 | 2002 | 1985 | 1974 |
| 22.5° | 1919 | 1962 | 2010 | 2046 | 2061 | 2042 | 2012 | 1983 | 1955 | 1930 | 1908 |
| 25° | 1943 | 1984 | 2025 | 2047 | 2046 | 2013 | 1973 | 1941 | 1903 | 1868 | 1831 |
| 27.5° | 2021 | 2046 | 2058 | 2051 | 2030 | 1986 | 1942 | 1897 | 1848 | 1806 | 1763 |
| 30° | 2074 | 2074 | 2062 | 2034 | 1997 | 1948 | 1894 | 1836 | 1778 | 1729 | 1680 |
| 32.5° | 2057 | 2018 | 1983 | 1945 | 1903 | 1850 | 1788 | 1725 | 1659 | 1602 | 1560 |
| 35° | 1983 | 1899 | 1826 | 1772 | 1728 | 1665 | 1593 | 1521 | 1467 | 1428 | 1404 |
| 37.5° | 1851 | 1717 | 1611 | 1545 | 1477 | 1412 | 1329 | 1296 | 1248 | 1224 | 1215 |
| 40° | 1691 | 1495 | 1362 | 1277 | 1205 | 1124 | 1068 | 1047 | 1029 | 1024 | 1020 |
| 42.5° | 1507 | 1262 | 1104 | 1016 | 929 | 870 | 845 | 832 | 829 | 829 | 834 |
| 45° | 1316 | 1025 | 843 | 772 | 700 | 669 | 663 | 657 | 658 | 655 | 657 |
| 47.5° | 1168 | 823 | 636 | 571 | 534 | 524 | 517 | 515 | 515 | 510 | 504 |
| 50° | 1091 | 688 | 499 | 448 | 427 | 420 | 420 | 416 | 408 | 403 | 390 |
| 52.5° | 1071 | 618 | 432 | 388 | 370 | 364 | 358 | 352 | 340 | 329 | 314 |
| 55° | 1087 | 596 | 411 | 370 | 350 | 343 | 338 | 328 | 311 | 295 | 278 |
| 57.5° | 1154 | 610 | 419 | 375 | 357 | 352 | 347 | 332 | 311 | 288 | 269 |
| 60° | 1337 | 676 | 453 | 402 | 387 | 388 | 381 | 362 | 332 | 299 | 271 |
| 62.5° | 1573 | 768 | 497 | 440 | 438 | 448 | 448 | 415 | 366 | 316 | 278 |
| 65° | 1708 | 797 | 503 | 445 | 462 | 491 | 489 | 445 | 378 | 316 | 275 |
| 67° | 1674 | 766 | 478 | 416 | 436 | 469 | 465 | 423 | 360 | 303 | 267 |
| 67.5° | 1647 | 756 | 472 | 409 | 429 | 456 | 456 | 414 | 352 | 299 | 264 |
| 70° | 1450 | 668 | 442 | 382 | 382 | 389 | 384 | 354 | 312 | 275 | 252 |
| 72.5° | 1209 | 584 | 418 | 363 | 344 | 340 | 333 | 312 | 285 | 259 | 239 |
| 75° | 937 | 517 | 399 | 343 | 318 | 309 | 302 | 286 | 265 | 243 | 226 |
| 77.5° | 656 | 443 | 374 | 326 | 299 | 292 | 281 | 263 | 246 | 227 | 211 |
| 80° | 407 | 366 | 326 | 294 | 266 | 256 | 242 | 226 | 212 | 201 | 189 |
| 82.5° | 290 | 269 | 243 | 226 | 197 | 167 | 179 | 180 | 171 | 164 | 161 |
| 85° | 194 | 175 | 162 | 147 | 130 | 117 | 120 | 129 | 130 | 127 | 127 |
| 87.5° | 106 | 90 | 87 | 90 | 78 | 74 | 75 | 83 | 84 | 84 | 85 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



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CANDELA DISTRIBUTION (continued):

| | 165° | 170° | 175° | 180° |
|-------|------|------|------|------|
| 0° | 1978 | 1978 | 1978 | 1978 |
| 2.5° | 2033 | 2036 | 2035 | 2037 |
| 5° | 2064 | 2066 | 2065 | 2066 |
| 7.5° | 2059 | 2063 | 2065 | 2062 |
| 10° | 2051 | 2057 | 2061 | 2061 |
| 12.5° | 2053 | 2063 | 2069 | 2069 |
| 15° | 2051 | 2059 | 2061 | 2061 |
| 17.5° | 2020 | 2020 | 2021 | 2017 |
| 20° | 1966 | 1960 | 1958 | 1951 |
| 22.5° | 1889 | 1875 | 1866 | 1861 |
| 25° | 1801 | 1779 | 1765 | 1757 |
| 27.5° | 1728 | 1709 | 1695 | 1687 |
| 30° | 1647 | 1625 | 1617 | 1611 |
| 32.5° | 1530 | 1509 | 1503 | 1498 |
| 35° | 1378 | 1371 | 1355 | 1344 |
| 37.5° | 1202 | 1193 | 1187 | 1183 |
| 40° | 1018 | 1019 | 1014 | 1005 |
| 42.5° | 834 | 844 | 834 | 832 |
| 45° | 655 | 666 | 666 | 669 |
| 47.5° | 505 | 503 | 507 | 508 |
| 50° | 382 | 376 | 374 | 371 |
| 52.5° | 303 | 296 | 292 | 287 |
| 55° | 267 | 259 | 255 | 254 |
| 57.5° | 255 | 245 | 239 | 238 |
| 60° | 252 | 238 | 230 | 228 |
| 62.5° | 252 | 235 | 226 | 223 |
| 65° | 249 | 232 | 224 | 221 |
| 67° | 245 | 230 | 222 | 220 |
| 67.5° | 243 | 229 | 222 | 219 |
| 70° | 238 | 226 | 218 | 215 |
| 72.5° | 227 | 217 | 209 | 207 |
| 75° | 215 | 206 | 201 | 199 |
| 77.5° | 201 | 193 | 187 | 182 |
| 80° | 180 | 171 | 162 | 160 |
| 82.5° | 153 | 143 | 136 | 135 |
| 85° | 123 | 115 | 107 | 107 |
| 87.5° | 86 | 81 | 76 | 71 |
| 90° | 0 | 0 | 0 | 0 |

(END OF REPORT)