

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-2019 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions

Brand: NEO-RAY

Report Number: P646695

Luminaire Tested: S123RDR-S775D835-X4F0-XX-UDD-G-W

Issue Date: 3/20/2023

Test Information

Test Method: LM-79-2019
Report Number: P646695
Test Lab: COOPER LIGHTING SOLUTIONS
Issue Date: 3/20/2023
Manufacturer: COOPER LIGHTING SOLUTIONS
Product Line: NEO-RAY
Catalog Number: S123RDR-S775D835-X4F0-XX-UDD-G-W
Description: DEFINE 3 REGRESSED DIRECT RECESSED WITH WALL GRAZE FLUSH OPTIC
STANDARD LIGHT ENGINE
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

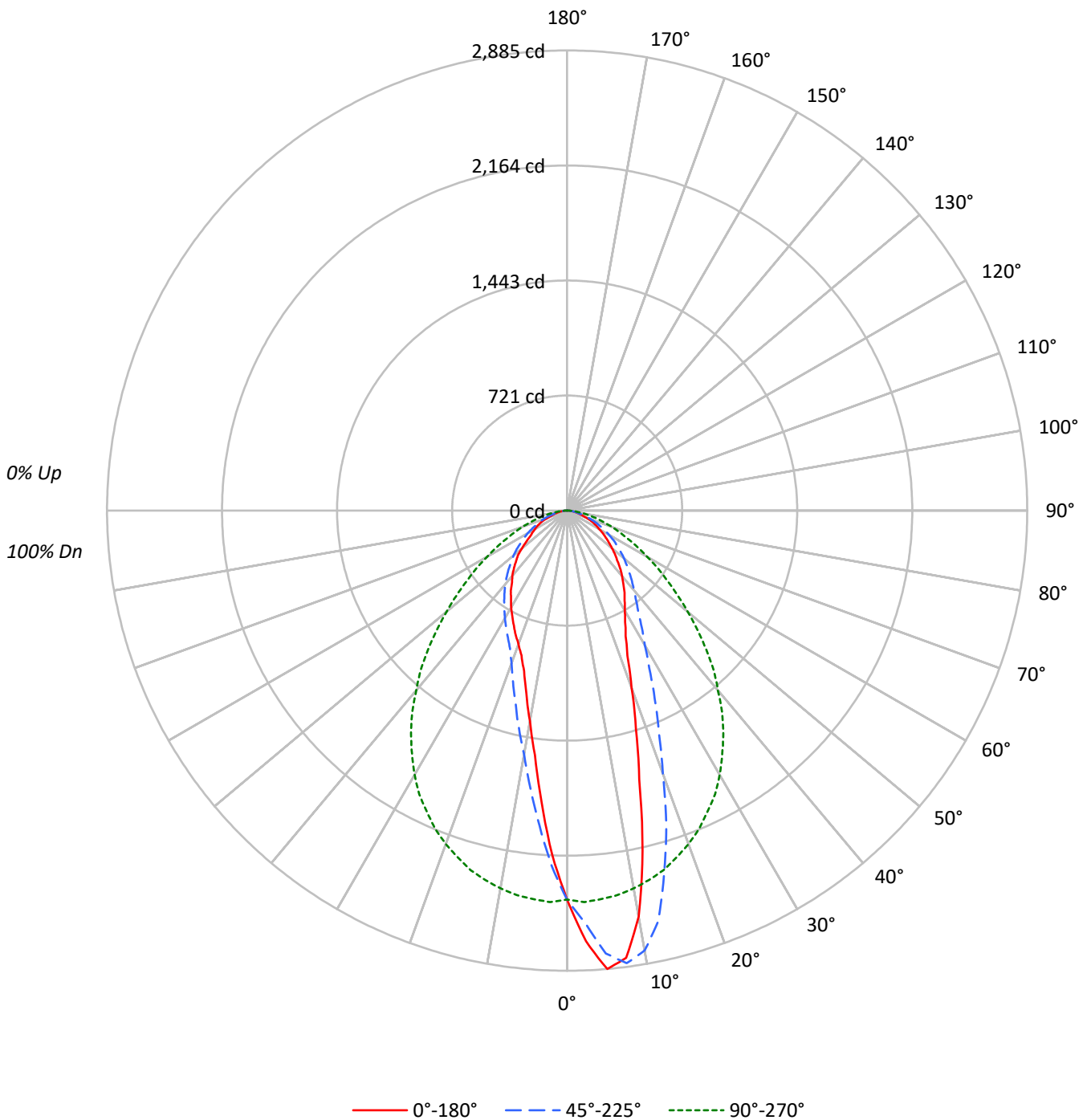
Lumens per Lamp: N/A
Luminaire Lumens: 3231.3 lumens
Efficiency: N/A
Efficacy: 124.3 lumens/watt
Spacing Criteria (0/90/45): 0.55 / 1.17 / 0.79
Luminous Opening: Rectangular (W 4' x L: 0.25' x H: 0')
CIE Type: Direct

Input Watts (W): 26
Input Voltage (V): 120
Input Current (A_{in}): 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: 24 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P646695

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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 | 50 | 30 | 10 | 0 | |
| RCR | | | | | | | | | | | | | | | | | | | | | | |
| 0 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 | | | | 100 |
| 1 | 111 | 107 | 103 | 100 | 108 | 104 | 101 | 98 | 100 | 97 | 95 | 96 | 94 | 92 | 93 | 91 | 89 | | | | 87 | |
| 2 | 102 | 95 | 89 | 84 | 100 | 93 | 88 | 83 | 90 | 85 | 81 | 87 | 83 | 80 | 84 | 81 | 78 | | | | 76 | |
| 3 | 94 | 85 | 78 | 73 | 92 | 84 | 77 | 72 | 81 | 75 | 71 | 78 | 74 | 70 | 76 | 72 | 69 | | | | 67 | |
| 4 | 88 | 77 | 69 | 64 | 85 | 76 | 69 | 63 | 73 | 67 | 62 | 71 | 66 | 62 | 69 | 65 | 61 | | | | 59 | |
| 5 | 82 | 70 | 62 | 56 | 80 | 69 | 62 | 56 | 67 | 61 | 56 | 65 | 60 | 55 | 63 | 58 | 54 | | | | 53 | |
| 6 | 76 | 64 | 56 | 51 | 74 | 63 | 56 | 50 | 62 | 55 | 50 | 60 | 54 | 50 | 59 | 53 | 49 | | | | 47 | |
| 7 | 71 | 59 | 51 | 46 | 70 | 58 | 51 | 46 | 57 | 50 | 45 | 56 | 50 | 45 | 54 | 49 | 45 | | | | 43 | |
| 8 | 67 | 55 | 47 | 42 | 65 | 54 | 47 | 42 | 53 | 46 | 41 | 52 | 46 | 41 | 51 | 45 | 41 | | | | 39 | |
| 9 | 63 | 51 | 43 | 38 | 62 | 50 | 43 | 38 | 49 | 43 | 38 | 48 | 42 | 38 | 47 | 42 | 38 | | | | 36 | |
| 10 | 60 | 47 | 40 | 36 | 58 | 47 | 40 | 35 | 46 | 40 | 35 | 45 | 39 | 35 | 44 | 39 | 35 | | | | 33 | |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° | 135° | 180° |
|-----|-------|-------|-------|-------|-------|
| 0° | 26253 | 26253 | 26253 | 26253 | 26253 |
| 5° | 31173 | 30114 | 26418 | 21426 | 19827 |
| 10° | 28243 | 30604 | 26287 | 16963 | 14679 |
| 15° | 19446 | 26210 | 26009 | 13930 | 11612 |
| 20° | 13528 | 20103 | 25487 | 11672 | 10206 |
| 25° | 10309 | 15428 | 24727 | 10428 | 9406 |
| 30° | 8974 | 12131 | 23777 | 9695 | 8713 |
| 35° | 8239 | 10210 | 22431 | 9041 | 8081 |
| 40° | 7517 | 9161 | 20669 | 8487 | 7503 |
| 45° | 6789 | 8388 | 18769 | 7885 | 6926 |
| 50° | 6162 | 7787 | 16528 | 7335 | 6213 |
| 55° | 5574 | 7150 | 14375 | 6700 | 5330 |
| 60° | 4994 | 6501 | 12486 | 6135 | 5038 |
| 65° | 4610 | 5782 | 10748 | 5450 | 4763 |
| 70° | 3745 | 4941 | 9379 | 4941 | 3871 |
| 75° | 3285 | 3993 | 7943 | 4117 | 3410 |
| 80° | 2975 | 3347 | 6509 | 3471 | 3223 |
| 85° | 2717 | 2841 | 4940 | 3088 | 2964 |

MAXIMUM LUMINANCE 45°-90°:

Horizontal Angle: 80°

Vertical Angle: 45°

Luminance: 19804 cd/sqm



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 222.3 | 6.9 |
| 10°-20° | 514.3 | 15.9 |
| 20°-30° | 590.0 | 18.3 |
| 30°-40° | 581.2 | 18.0 |
| 40°-50° | 512.3 | 15.9 |
| 50°-60° | 394.3 | 12.2 |
| 60°-70° | 259.3 | 8.0 |
| 70°-80° | 125.9 | 3.9 |
| 80°-90° | 31.7 | 1.0 |
| 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°-30° | 1326.6 | 41.1 |
| 0°-40° | 1907.9 | 59.0 |
| 0°-60° | 2814.4 | 87.1 |
| 0°-90° | 3231.3 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 3231.3 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 45° | 90° | 135° | 180° | Flux |
|-----|------|------|------|------|------|------|
| 0° | 2439 | 2439 | 2439 | 2439 | 2439 | |
| 5° | 2885 | 2787 | 2445 | 1983 | 1835 | 264 |
| 15° | 1745 | 2352 | 2334 | 1250 | 1042 | 493 |
| 25° | 868 | 1299 | 2082 | 878 | 792 | 410 |
| 35° | 627 | 777 | 1707 | 688 | 615 | 391 |
| 45° | 446 | 551 | 1233 | 518 | 455 | 346 |
| 55° | 297 | 381 | 766 | 357 | 284 | 266 |
| 65° | 181 | 227 | 422 | 214 | 187 | 177 |
| 75° | 79 | 96 | 191 | 99 | 82 | 85 |
| 85° | 22 | 23 | 40 | 25 | 24 | 25 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P646695

CATALOG NUMBER: S123RDR-S775D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 10° | 20° | 22.5° | 30° | 40° | 45° | 50° | 60° | 67.5° | 70° |
|-------|------|------|------|-------|------|------|------|------|------|-------|------|
| 0° | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 |
| 2.5° | 2703 | 2686 | 2681 | 2675 | 2665 | 2629 | 2588 | 2592 | 2587 | 2556 | 2539 |
| 5° | 2885 | 2887 | 2882 | 2878 | 2861 | 2817 | 2787 | 2769 | 2731 | 2673 | 2655 |
| 7.5° | 2829 | 2861 | 2867 | 2874 | 2883 | 2873 | 2862 | 2855 | 2824 | 2761 | 2732 |
| 10° | 2584 | 2582 | 2618 | 2647 | 2725 | 2780 | 2800 | 2829 | 2855 | 2811 | 2779 |
| 12.5° | 2184 | 2187 | 2305 | 2305 | 2406 | 2546 | 2636 | 2697 | 2809 | 2812 | 2793 |
| 15° | 1745 | 1794 | 1899 | 1921 | 2051 | 2239 | 2352 | 2478 | 2695 | 2763 | 2759 |
| 17.5° | 1433 | 1454 | 1555 | 1584 | 1699 | 1912 | 2068 | 2220 | 2524 | 2667 | 2693 |
| 20° | 1181 | 1200 | 1273 | 1295 | 1411 | 1614 | 1755 | 1919 | 2317 | 2536 | 2582 |
| 22.5° | 986 | 1023 | 1072 | 1106 | 1172 | 1379 | 1500 | 1657 | 2077 | 2389 | 2443 |
| 25° | 868 | 885 | 927 | 943 | 1023 | 1160 | 1299 | 1437 | 1864 | 2205 | 2300 |
| 27.5° | 788 | 793 | 824 | 838 | 886 | 1013 | 1113 | 1241 | 1647 | 2016 | 2127 |
| 30° | 722 | 731 | 755 | 758 | 800 | 890 | 976 | 1094 | 1457 | 1833 | 1947 |
| 32.5° | 671 | 676 | 696 | 702 | 729 | 800 | 870 | 956 | 1281 | 1642 | 1773 |
| 35° | 627 | 628 | 643 | 651 | 675 | 734 | 777 | 849 | 1140 | 1484 | 1599 |
| 37.5° | 577 | 584 | 595 | 602 | 623 | 671 | 710 | 766 | 1010 | 1334 | 1441 |
| 40° | 535 | 541 | 554 | 557 | 576 | 620 | 652 | 702 | 898 | 1190 | 1299 |
| 42.5° | 493 | 497 | 510 | 516 | 537 | 572 | 601 | 640 | 809 | 1062 | 1169 |
| 45° | 446 | 456 | 470 | 473 | 493 | 529 | 551 | 587 | 729 | 951 | 1046 |
| 47.5° | 407 | 412 | 424 | 429 | 452 | 484 | 507 | 538 | 660 | 850 | 943 |
| 50° | 368 | 370 | 381 | 388 | 406 | 443 | 465 | 493 | 597 | 768 | 833 |
| 52.5° | 331 | 336 | 347 | 352 | 364 | 402 | 422 | 451 | 537 | 684 | 749 |
| 55° | 297 | 300 | 308 | 314 | 328 | 361 | 381 | 406 | 485 | 607 | 664 |
| 57.5° | 265 | 269 | 275 | 280 | 293 | 322 | 342 | 367 | 436 | 537 | 581 |
| 60° | 232 | 237 | 244 | 246 | 258 | 284 | 302 | 324 | 386 | 472 | 511 |
| 62.5° | 208 | 209 | 215 | 218 | 225 | 246 | 265 | 286 | 341 | 409 | 441 |
| 65° | 181 | 184 | 187 | 189 | 195 | 213 | 227 | 243 | 297 | 356 | 378 |
| 67.5° | 153 | 156 | 161 | 163 | 168 | 180 | 192 | 208 | 253 | 303 | 323 |
| 70° | 119 | 119 | 127 | 131 | 139 | 148 | 157 | 171 | 210 | 253 | 268 |
| 72.5° | 97 | 98 | 99 | 99 | 106 | 121 | 126 | 135 | 166 | 207 | 220 |
| 75° | 79 | 80 | 81 | 82 | 83 | 88 | 96 | 104 | 127 | 157 | 169 |
| 77.5° | 63 | 64 | 65 | 65 | 67 | 69 | 71 | 75 | 91 | 113 | 123 |
| 80° | 48 | 49 | 50 | 50 | 51 | 53 | 54 | 56 | 61 | 76 | 81 |
| 82.5° | 35 | 35 | 35 | 36 | 37 | 37 | 39 | 39 | 42 | 46 | 49 |
| 85° | 22 | 22 | 23 | 23 | 23 | 24 | 23 | 24 | 25 | 26 | 28 |
| 87.5° | 10 | 9 | 10 | 10 | 10 | 11 | 11 | 11 | 11 | 12 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P646695

CATALOG NUMBER: S123RDR-S775D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

| | 80° | 90° | 100° | 110° | 112.5° | 120° | 130° | 135° | 140° | 150° | 157.5° |
|-------|------|------|------|------|--------|------|------|------|------|------|--------|
| 0° | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 | 2439 |
| 2.5° | 2492 | 2457 | 2398 | 2361 | 2347 | 2304 | 2263 | 2229 | 2212 | 2210 | 2179 |
| 5° | 2541 | 2445 | 2323 | 2221 | 2197 | 2122 | 2025 | 1983 | 1928 | 1906 | 1880 |
| 7.5° | 2581 | 2431 | 2251 | 2097 | 2052 | 1939 | 1815 | 1760 | 1718 | 1652 | 1613 |
| 10° | 2609 | 2405 | 2163 | 1964 | 1900 | 1768 | 1618 | 1552 | 1513 | 1437 | 1406 |
| 12.5° | 2620 | 2372 | 2075 | 1826 | 1770 | 1613 | 1466 | 1398 | 1340 | 1271 | 1241 |
| 15° | 2616 | 2334 | 1985 | 1699 | 1629 | 1470 | 1314 | 1250 | 1196 | 1127 | 1088 |
| 17.5° | 2589 | 2280 | 1887 | 1576 | 1509 | 1345 | 1187 | 1128 | 1080 | 1013 | 983 |
| 20° | 2544 | 2225 | 1801 | 1464 | 1388 | 1231 | 1082 | 1019 | 977 | 941 | 919 |
| 22.5° | 2482 | 2160 | 1696 | 1353 | 1287 | 1129 | 986 | 935 | 910 | 881 | 865 |
| 25° | 2388 | 2082 | 1601 | 1260 | 1194 | 1037 | 912 | 878 | 853 | 834 | 817 |
| 27.5° | 2287 | 2007 | 1506 | 1166 | 1104 | 954 | 854 | 828 | 806 | 782 | 767 |
| 30° | 2170 | 1913 | 1416 | 1083 | 1023 | 887 | 804 | 780 | 762 | 736 | 721 |
| 32.5° | 2032 | 1810 | 1332 | 1003 | 947 | 829 | 758 | 732 | 717 | 692 | 677 |
| 35° | 1889 | 1707 | 1240 | 929 | 878 | 778 | 713 | 688 | 672 | 647 | 632 |
| 37.5° | 1749 | 1597 | 1158 | 864 | 818 | 727 | 666 | 645 | 630 | 604 | 586 |
| 40° | 1601 | 1471 | 1078 | 803 | 760 | 682 | 623 | 604 | 584 | 561 | 543 |
| 42.5° | 1446 | 1360 | 1004 | 749 | 709 | 638 | 580 | 560 | 543 | 516 | 508 |
| 45° | 1301 | 1233 | 926 | 692 | 660 | 594 | 538 | 518 | 499 | 476 | 468 |
| 47.5° | 1172 | 1109 | 855 | 642 | 610 | 551 | 496 | 475 | 461 | 443 | 431 |
| 50° | 1039 | 987 | 777 | 593 | 563 | 505 | 452 | 438 | 422 | 400 | 391 |
| 52.5° | 915 | 875 | 713 | 546 | 518 | 466 | 412 | 398 | 383 | 364 | 351 |
| 55° | 806 | 766 | 640 | 493 | 472 | 423 | 375 | 357 | 345 | 323 | 307 |
| 57.5° | 694 | 675 | 570 | 449 | 429 | 380 | 337 | 323 | 308 | 284 | 268 |
| 60° | 602 | 580 | 505 | 401 | 382 | 341 | 299 | 285 | 271 | 248 | 241 |
| 62.5° | 515 | 499 | 442 | 356 | 340 | 300 | 263 | 250 | 236 | 221 | 216 |
| 65° | 436 | 422 | 379 | 310 | 297 | 262 | 228 | 214 | 205 | 198 | 193 |
| 67.5° | 362 | 354 | 321 | 267 | 257 | 226 | 196 | 185 | 180 | 172 | 168 |
| 70° | 295 | 298 | 268 | 228 | 217 | 192 | 166 | 157 | 151 | 144 | 136 |
| 72.5° | 241 | 240 | 222 | 186 | 178 | 158 | 138 | 132 | 125 | 111 | 102 |
| 75° | 187 | 191 | 174 | 154 | 146 | 126 | 107 | 99 | 92 | 87 | 84 |
| 77.5° | 143 | 145 | 137 | 118 | 111 | 94 | 79 | 75 | 72 | 69 | 68 |
| 80° | 102 | 105 | 97 | 85 | 79 | 65 | 57 | 56 | 55 | 53 | 52 |
| 82.5° | 66 | 70 | 66 | 53 | 50 | 43 | 41 | 41 | 40 | 39 | 38 |
| 85° | 36 | 40 | 38 | 31 | 29 | 27 | 26 | 25 | 25 | 25 | 25 |
| 87.5° | 14 | 19 | 16 | 13 | 13 | 13 | 13 | 13 | 13 | 13 | 13 |
| 90° | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |



TEST NUMBER: P646695

CATALOG NUMBER: S123RDR-S775D835-X4F0-XX-UDD-G-W

CANDELA DISTRIBUTION (continued):

| | 160° | 170° | 180° |
|-------|------|------|------|
| 0° | 2439 | 2439 | 2439 |
| 2.5° | 2172 | 2162 | 2158 |
| 5° | 1873 | 1842 | 1835 |
| 7.5° | 1601 | 1588 | 1545 |
| 10° | 1401 | 1361 | 1343 |
| 12.5° | 1221 | 1184 | 1178 |
| 15° | 1077 | 1051 | 1042 |
| 17.5° | 982 | 964 | 953 |
| 20° | 912 | 899 | 891 |
| 22.5° | 859 | 849 | 843 |
| 25° | 812 | 797 | 792 |
| 27.5° | 764 | 751 | 746 |
| 30° | 719 | 708 | 701 |
| 32.5° | 672 | 659 | 655 |
| 35° | 627 | 619 | 615 |
| 37.5° | 583 | 573 | 567 |
| 40° | 542 | 537 | 534 |
| 42.5° | 505 | 496 | 495 |
| 45° | 466 | 457 | 455 |
| 47.5° | 429 | 421 | 420 |
| 50° | 390 | 379 | 371 |
| 52.5° | 343 | 333 | 326 |
| 55° | 301 | 290 | 284 |
| 57.5° | 266 | 261 | 258 |
| 60° | 239 | 236 | 234 |
| 62.5° | 215 | 212 | 212 |
| 65° | 193 | 190 | 187 |
| 67.5° | 166 | 160 | 159 |
| 70° | 133 | 124 | 123 |
| 72.5° | 101 | 100 | 98 |
| 75° | 84 | 82 | 82 |
| 77.5° | 68 | 66 | 66 |
| 80° | 52 | 51 | 52 |
| 82.5° | 38 | 38 | 37 |
| 85° | 25 | 24 | 24 |
| 87.5° | 12 | 12 | 12 |
| 90° | 0 | 0 | 0 |

(END OF REPORT)