

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: NEO-RAY

Report Number: G3-1802-639-53

Luminaire Tested: **S122DR-H675D835-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: G3-1802-639-53  
Test Lab: INNOVATION CENTER(G3)  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DR-H675D835-X4F0-XX-UDD-D-W  
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER.  
HIGH PERFORMANCE LIGHT ENGINE  
Light Source: (184) 3500K CCT, 80 CRI LEDS  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2755.2 lumens  
Efficiency: N/A  
Efficacy: 107.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.15' x L: 3.88' x H: 0.08')  
CIE Type: Semi-Direct

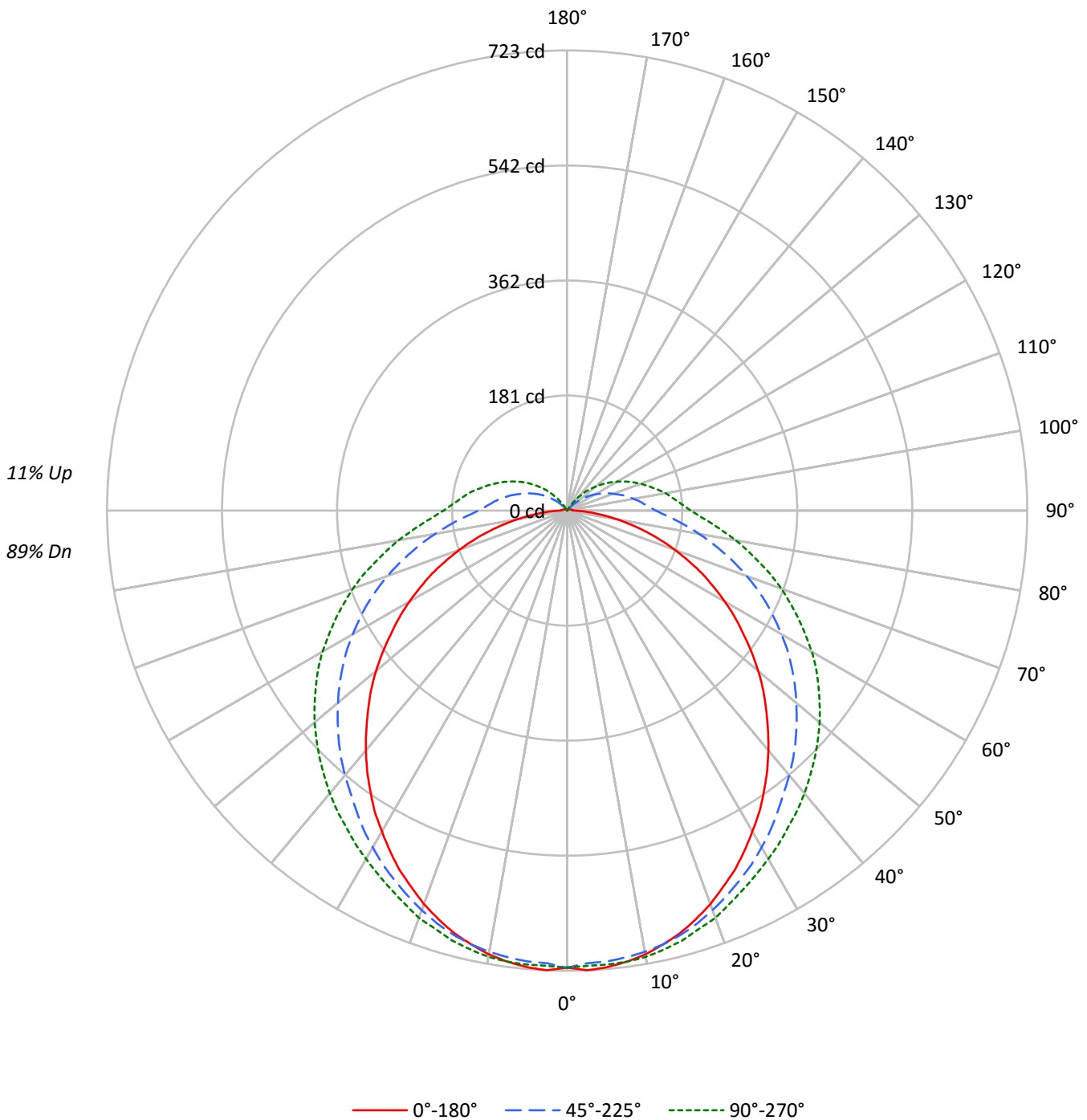
Input Watts (W): 25.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

|     |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|----|----|----|----|----|---|--|--|--|----|--|--|--|--|--|--|--|--|----|---|
| RF  | 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 | 50 | 30 | 10 | 0 |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| RCR |     |     |     |     |     |     |     |     |     |     |     |    |    |    |    |    |    |    |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 0   | 116 | 116 | 116 | 116 | 112 | 112 | 112 | 112 | 105 | 105 | 105 | 98 | 98 | 98 | 92 | 92 | 92 | 89 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 1   | 104 | 98  | 93  | 88  | 100 | 95  | 90  | 86  | 88  | 84  | 81  | 82 | 79 | 76 | 77 | 74 | 72 | 69 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 2   | 93  | 84  | 77  | 70  | 90  | 81  | 74  | 68  | 76  | 70  | 65  | 71 | 66 | 62 | 66 | 62 | 59 | 56 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 3   | 85  | 73  | 64  | 57  | 81  | 71  | 63  | 56  | 66  | 59  | 54  | 62 | 56 | 51 | 58 | 53 | 49 | 46 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 4   | 77  | 64  | 55  | 48  | 74  | 62  | 54  | 47  | 58  | 51  | 45  | 55 | 48 | 43 | 51 | 46 | 41 | 39 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 5   | 71  | 57  | 48  | 41  | 68  | 55  | 47  | 40  | 52  | 44  | 39  | 49 | 42 | 37 | 46 | 40 | 36 | 33 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 6   | 65  | 51  | 42  | 35  | 63  | 50  | 41  | 35  | 47  | 39  | 34  | 44 | 37 | 32 | 41 | 36 | 31 | 29 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 7   | 60  | 46  | 37  | 31  | 58  | 45  | 37  | 30  | 42  | 35  | 29  | 40 | 33 | 28 | 38 | 32 | 28 | 25 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 8   | 56  | 42  | 33  | 27  | 54  | 41  | 33  | 27  | 39  | 31  | 26  | 37 | 30 | 25 | 35 | 29 | 25 | 22 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 9   | 52  | 39  | 30  | 25  | 50  | 38  | 30  | 24  | 36  | 28  | 24  | 34 | 27 | 23 | 32 | 26 | 22 | 20 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |
| 10  | 49  | 36  | 28  | 22  | 47  | 35  | 27  | 22  | 33  | 26  | 21  | 31 | 25 | 21 | 30 | 24 | 20 | 18 |    |    |    |    |    |   |  |  |  |    |  |  |  |  |  |  |  |  |    |   |

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

|     | 0°    | 45°   | 90°   |
|-----|-------|-------|-------|
| 0°  | 13676 | 13676 | 13676 |
| 5°  | 13741 | 13114 | 13038 |
| 10° | 13642 | 12679 | 12511 |
| 15° | 13470 | 12232 | 11954 |
| 20° | 13234 | 11748 | 11427 |
| 25° | 12963 | 11269 | 10886 |
| 30° | 12644 | 10820 | 10452 |
| 35° | 12347 | 10372 | 10064 |
| 40° | 12017 | 9988  | 9748  |
| 45° | 11656 | 9642  | 9428  |
| 50° | 11326 | 9287  | 9132  |
| 55° | 10890 | 8953  | 8814  |
| 60° | 10504 | 8585  | 8501  |
| 65° | 10082 | 8212  | 8121  |
| 70° | 9465  | 7764  | 7758  |
| 75° | 8788  | 7289  | 7330  |
| 80° | 7821  | 6820  | 6958  |
| 85° | 6842  | 6452  | 6587  |



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**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 68.1   | 2.5       |
| 10°-20°   | 195.5  | 7.1       |
| 20°-30°   | 296.1  | 10.7      |
| 30°-40°   | 361.1  | 13.1      |
| 40°-50°   | 388.6  | 14.1      |
| 50°-60°   | 377.8  | 13.7      |
| 60°-70°   | 330.3  | 12.0      |
| 70°-80°   | 254.3  | 9.2       |
| 80°-90°   | 170.9  | 6.2       |
| 90°-100°  | 118.3  | 4.3       |
| 100°-110° | 87.0   | 3.2       |
| 110°-120° | 57.9   | 2.1       |
| 120°-130° | 32.8   | 1.2       |
| 130°-140° | 14.1   | 0.5       |
| 140°-150° | 2.6    | 0.1       |
| 150°-160° | 0.0    | 0.0       |
| 160°-170° | 0.0    | 0.0       |
| 170°-180° | 0.0    | 0.0       |
| 0°-30°    | 559.6  | 20.3      |
| 0°-40°    | 920.7  | 33.4      |
| 0°-60°    | 1687.1 | 61.2      |
| 0°-90°    | 2442.6 | 88.7      |
| 90°-120°  | 263.1  | 9.5       |
| 90°-150°  | 312.6  | 11.3      |
| 90°-180°  | 313.0  | 11.4      |
| 0°-180°   | 2755.2 | 100.0     |

**CANDELA DISTRIBUTION:**

|      | 0°  | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0°   | 718 | 718   | 718 | 718   | 718 |      |
| 5°   | 720 | 717   | 711 | 717   | 716 | 68   |
| 15°  | 687 | 690   | 690 | 699   | 699 | 194  |
| 25°  | 623 | 633   | 641 | 655   | 656 | 287  |
| 35°  | 539 | 557   | 577 | 599   | 606 | 337  |
| 45°  | 442 | 469   | 508 | 539   | 550 | 341  |
| 55°  | 338 | 378   | 431 | 470   | 482 | 303  |
| 65°  | 234 | 284   | 346 | 388   | 401 | 231  |
| 75°  | 129 | 188   | 254 | 299   | 312 | 136  |
| 85°  | 39  | 103   | 171 | 214   | 227 | 40   |
| 90°  | 11  | 72    | 139 | 181   | 194 | 7    |
| 95°  | 8   | 58    | 121 | 161   | 173 | 7    |
| 105° | 6   | 36    | 92  | 128   | 139 | 6    |
| 115° | 4   | 17    | 64  | 96    | 107 | 4    |
| 125° | 3   | 2     | 38  | 65    | 75  | 2    |
| 135° | 1   | 1     | 13  | 35    | 44  | 1    |
| 145° | 1   | 0     | 0   | 8     | 12  | 0    |
| 155° | 0   | 0     | 0   | 0     | 0   | 0    |
| 165° | 0   | 0     | 0   | 0     | 0   | 0    |
| 175° | 0   | 0     | 0   | 0     | 0   | 0    |
| 180° | 0   | 0     | 0   | 0     | 0   | 0    |



TEST NUMBER: G3-1802-639-53

CATALOG NUMBER: S122DR-H675D835-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (FULL):**

|        | 0°  | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|-----|-------|-----|
| 0°     | 718 | 718   | 718 | 718   | 718 |
| 2.5°   | 723 | 720   | 712 | 718   | 716 |
| 5°     | 720 | 717   | 711 | 717   | 716 |
| 7.5°   | 715 | 713   | 708 | 716   | 715 |
| 10°    | 708 | 707   | 704 | 712   | 712 |
| 12.5°  | 698 | 699   | 698 | 707   | 706 |
| 15°    | 687 | 690   | 690 | 699   | 699 |
| 17.5°  | 673 | 678   | 680 | 690   | 689 |
| 20°    | 658 | 664   | 668 | 679   | 681 |
| 22.5°  | 640 | 649   | 655 | 667   | 668 |
| 25°    | 623 | 633   | 641 | 655   | 656 |
| 27.5°  | 603 | 615   | 627 | 641   | 644 |
| 30°    | 582 | 597   | 611 | 628   | 632 |
| 32.5°  | 562 | 577   | 595 | 613   | 620 |
| 35°    | 539 | 557   | 577 | 599   | 606 |
| 37.5°  | 516 | 535   | 559 | 585   | 594 |
| 40°    | 492 | 514   | 543 | 571   | 580 |
| 42.5°  | 467 | 491   | 526 | 555   | 565 |
| 45°    | 442 | 469   | 508 | 539   | 550 |
| 47.5°  | 418 | 447   | 489 | 524   | 534 |
| 50°    | 392 | 424   | 470 | 506   | 518 |
| 52.5°  | 365 | 401   | 451 | 488   | 500 |
| 55°    | 338 | 378   | 431 | 470   | 482 |
| 57.5°  | 313 | 355   | 411 | 450   | 464 |
| 60°    | 286 | 331   | 389 | 430   | 444 |
| 62.5°  | 259 | 308   | 367 | 409   | 422 |
| 65°    | 234 | 284   | 346 | 388   | 401 |
| 67.5°  | 206 | 259   | 323 | 367   | 379 |
| 70°    | 180 | 236   | 300 | 344   | 358 |
| 72.5°  | 154 | 211   | 277 | 321   | 336 |
| 75°    | 129 | 188   | 254 | 299   | 312 |
| 77.5°  | 103 | 165   | 232 | 277   | 290 |
| 80°    | 80  | 142   | 210 | 255   | 269 |
| 82.5°  | 57  | 121   | 190 | 234   | 247 |
| 85°    | 39  | 103   | 171 | 214   | 227 |
| 87.5°  | 23  | 86    | 153 | 196   | 209 |
| 90°    | 11  | 72    | 139 | 181   | 194 |
| 92.5°  | 9   | 65    | 129 | 170   | 183 |
| 95°    | 8   | 58    | 121 | 161   | 173 |
| 97.5°  | 8   | 53    | 114 | 153   | 165 |
| 100°   | 7   | 47    | 106 | 144   | 157 |
| 102.5° | 7   | 41    | 99  | 136   | 148 |
| 105°   | 6   | 36    | 92  | 128   | 139 |
| 107.5° | 5   | 31    | 84  | 120   | 131 |
| 110°   | 5   | 26    | 77  | 112   | 123 |



TEST NUMBER: G3-1802-639-53

CATALOG NUMBER: S122DR-H675D835-X4F0-XX-UDD-D-W

**CANDELA DISTRIBUTION (continued):**

|        | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|----|-------|-----|-------|-----|
| 112.5° | 4  | 22    | 71  | 104   | 115 |
| 115°   | 4  | 17    | 64  | 96    | 107 |
| 117.5° | 4  | 12    | 57  | 88    | 99  |
| 120°   | 3  | 8     | 51  | 81    | 91  |
| 122.5° | 3  | 5     | 44  | 73    | 83  |
| 125°   | 3  | 2     | 38  | 65    | 75  |
| 127.5° | 2  | 2     | 31  | 58    | 67  |
| 130°   | 2  | 1     | 25  | 50    | 59  |
| 132.5° | 2  | 1     | 19  | 43    | 51  |
| 135°   | 1  | 1     | 13  | 35    | 44  |
| 137.5° | 1  | 1     | 7   | 28    | 35  |
| 140°   | 1  | 0     | 3   | 21    | 27  |
| 142.5° | 1  | 0     | 0   | 14    | 20  |
| 145°   | 1  | 0     | 0   | 8     | 12  |
| 147.5° | 0  | 0     | 0   | 2     | 6   |
| 150°   | 0  | 0     | 0   | 0     | 1   |
| 152.5° | 0  | 0     | 0   | 0     | 0   |
| 155°   | 0  | 0     | 0   | 0     | 0   |
| 157.5° | 0  | 0     | 0   | 0     | 0   |
| 160°   | 0  | 0     | 0   | 0     | 0   |
| 162.5° | 0  | 0     | 0   | 0     | 0   |
| 165°   | 0  | 0     | 0   | 0     | 0   |
| 167.5° | 0  | 0     | 0   | 0     | 0   |
| 170°   | 0  | 0     | 0   | 0     | 0   |
| 172.5° | 0  | 0     | 0   | 0     | 0   |
| 175°   | 0  | 0     | 0   | 0     | 0   |
| 177.5° | 0  | 0     | 0   | 0     | 0   |
| 180°   | 0  | 0     | 0   | 0     | 0   |

(END OF REPORT)