

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: P242343

Luminaire Tested: **S122DR-S290D935-X4F0-XX-UDD-D-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P242343
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-14)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-S290D935-X4F0-XX-UDD-D-W
Description: DEFINE 2 DIRECT RECESSED WITH SATIN DROP DIFFUSER
STANDARD LIGHT ENGINE
Light Source: (92) 3500K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 989.8 lumens
Efficiency: N/A
Efficacy: 85.3 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

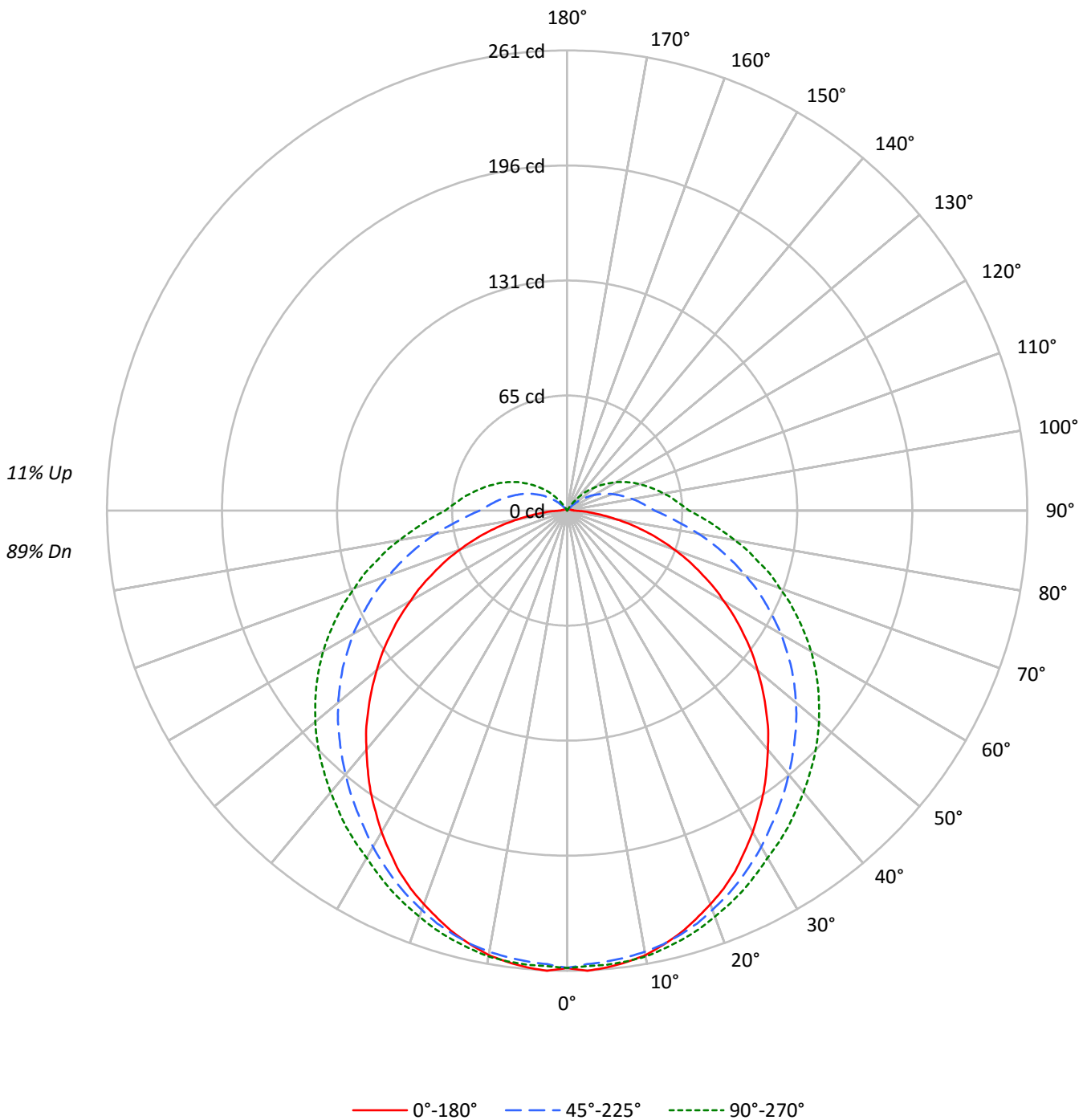
Input Watts (W): 11.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

| | | | | | | | | | | | | | | | | | | |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|
| RF | 20 | | | | 20 | | | | 20 | | | | 20 | | | | 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 | 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 | 85 | 81 | 82 | 79 | 77 | 77 | 75 | 72 | 69 |
| 2 | 94 | 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 | 42 | 39 |
| 5 | 71 | 57 | 48 | 41 | 68 | 56 | 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 | 42 | 36 | 31 | 29 |
| 7 | 60 | 46 | 37 | 31 | 58 | 45 | 37 | 31 | 43 | 35 | 30 | 40 | 34 | 29 | 38 | 32 | 28 | 25 |
| 8 | 56 | 42 | 34 | 28 | 54 | 41 | 33 | 27 | 39 | 32 | 26 | 37 | 30 | 25 | 35 | 29 | 25 | 23 |
| 9 | 52 | 39 | 30 | 25 | 50 | 38 | 30 | 24 | 36 | 29 | 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° | 4941 | 4941 | 4941 |
| 5° | 4964 | 4736 | 4709 |
| 10° | 4933 | 4576 | 4512 |
| 15° | 4864 | 4413 | 4308 |
| 20° | 4779 | 4238 | 4113 |
| 25° | 4694 | 4072 | 3936 |
| 30° | 4573 | 3901 | 3761 |
| 35° | 4453 | 3737 | 3634 |
| 40° | 4326 | 3596 | 3506 |
| 45° | 4203 | 3468 | 3396 |
| 50° | 4074 | 3349 | 3288 |
| 55° | 3937 | 3226 | 3176 |
| 60° | 3768 | 3094 | 3060 |
| 65° | 3598 | 2945 | 2925 |
| 70° | 3402 | 2782 | 2778 |
| 75° | 3147 | 2623 | 2641 |
| 80° | 2757 | 2455 | 2499 |
| 85° | 2368 | 2298 | 2380 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 24.6 | 2.5 |
| 10°-20° | 70.5 | 7.1 |
| 20°-30° | 106.9 | 10.8 |
| 30°-40° | 130.1 | 13.1 |
| 40°-50° | 140.0 | 14.1 |
| 50°-60° | 136.0 | 13.7 |
| 60°-70° | 118.8 | 12.0 |
| 70°-80° | 91.4 | 9.2 |
| 80°-90° | 61.2 | 6.2 |
| 90°-100° | 42.2 | 4.3 |
| 100°-110° | 30.8 | 3.1 |
| 110°-120° | 20.4 | 2.1 |
| 120°-130° | 11.3 | 1.1 |
| 130°-140° | 4.8 | 0.5 |
| 140°-150° | 0.8 | 0.1 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-30° | 202.0 | 20.4 |
| 0°-40° | 332.1 | 33.6 |
| 0°-60° | 608.1 | 61.4 |
| 0°-90° | 879.4 | 88.9 |
| 90°-120° | 93.4 | 9.4 |
| 90°-150° | 110.3 | 11.1 |
| 90°-180° | 110.0 | 11.1 |
| 0°-180° | 989.8 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|------|-----|-------|-----|-------|-----|------|
| 0° | 259 | 259 | 259 | 259 | 259 | |
| 5° | 260 | 259 | 257 | 259 | 259 | 25 |
| 15° | 248 | 249 | 249 | 252 | 252 | 70 |
| 25° | 226 | 228 | 232 | 236 | 237 | 104 |
| 35° | 194 | 201 | 208 | 216 | 219 | 121 |
| 45° | 159 | 170 | 183 | 194 | 198 | 123 |
| 55° | 122 | 136 | 155 | 169 | 174 | 109 |
| 65° | 84 | 102 | 124 | 140 | 144 | 83 |
| 75° | 46 | 67 | 91 | 108 | 112 | 49 |
| 85° | 14 | 37 | 61 | 77 | 82 | 14 |
| 90° | 4 | 26 | 50 | 65 | 69 | 3 |
| 95° | 3 | 21 | 43 | 58 | 62 | 2 |
| 105° | 2 | 13 | 32 | 46 | 50 | 2 |
| 115° | 2 | 6 | 23 | 34 | 38 | 1 |
| 125° | 1 | 1 | 13 | 23 | 26 | 1 |
| 135° | 0 | 0 | 4 | 12 | 15 | 0 |
| 145° | 0 | 0 | 0 | 2 | 4 | 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: P242343

CATALOG NUMBER: S122DR-S290D935-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-------|-------|-------|-------|-------|
| 0° | 259.4 | 259.4 | 259.4 | 259.4 | 259.4 |
| 2.5° | 261.3 | 260.1 | 257.5 | 259.4 | 258.6 |
| 5° | 260.1 | 259.0 | 256.8 | 259.0 | 258.6 |
| 7.5° | 258.3 | 257.5 | 255.6 | 258.3 | 257.9 |
| 10° | 256.0 | 255.3 | 254.1 | 257.1 | 256.8 |
| 12.5° | 252.3 | 252.6 | 251.9 | 254.9 | 254.5 |
| 15° | 248.1 | 248.9 | 248.9 | 252.3 | 251.9 |
| 17.5° | 242.9 | 244.4 | 245.5 | 248.9 | 248.9 |
| 20° | 237.6 | 239.5 | 241.0 | 245.1 | 245.1 |
| 22.5° | 232.0 | 234.2 | 236.5 | 240.6 | 241.3 |
| 25° | 225.6 | 228.2 | 231.6 | 236.1 | 237.2 |
| 27.5° | 218.0 | 222.2 | 225.9 | 231.6 | 232.3 |
| 30° | 210.5 | 215.4 | 220.3 | 226.3 | 227.4 |
| 32.5° | 202.3 | 207.9 | 213.9 | 221.0 | 223.3 |
| 35° | 194.4 | 200.7 | 207.9 | 216.2 | 218.8 |
| 37.5° | 185.7 | 192.9 | 201.9 | 210.9 | 213.5 |
| 40° | 177.1 | 185.3 | 195.5 | 205.3 | 208.6 |
| 42.5° | 168.8 | 177.1 | 189.1 | 200.0 | 203.4 |
| 45° | 159.4 | 169.5 | 182.7 | 194.4 | 198.1 |
| 47.5° | 150.4 | 161.3 | 176.3 | 188.3 | 192.5 |
| 50° | 141.0 | 152.6 | 169.5 | 182.3 | 186.5 |
| 52.5° | 132.0 | 144.4 | 162.4 | 175.6 | 180.1 |
| 55° | 122.2 | 135.7 | 155.3 | 168.8 | 173.7 |
| 57.5° | 112.8 | 127.8 | 147.4 | 162.0 | 166.9 |
| 60° | 102.6 | 118.8 | 140.2 | 154.5 | 159.8 |
| 62.5° | 93.6 | 110.5 | 132.0 | 147.4 | 152.3 |
| 65° | 83.5 | 101.9 | 124.1 | 139.5 | 144.4 |
| 67.5° | 74.4 | 93.6 | 116.2 | 131.6 | 136.8 |
| 70° | 64.7 | 84.2 | 107.5 | 123.7 | 128.2 |
| 72.5° | 55.6 | 75.9 | 99.6 | 115.4 | 121.1 |
| 75° | 46.2 | 67.3 | 91.4 | 107.5 | 112.4 |
| 77.5° | 37.2 | 59.0 | 83.5 | 99.6 | 104.9 |
| 80° | 28.2 | 51.1 | 75.6 | 91.4 | 96.6 |
| 82.5° | 20.7 | 43.2 | 68.0 | 83.8 | 88.7 |
| 85° | 13.5 | 36.8 | 60.9 | 76.7 | 82.0 |
| 87.5° | 8.3 | 30.8 | 54.9 | 70.3 | 75.2 |
| 90° | 3.8 | 25.6 | 49.6 | 64.7 | 69.2 |
| 92.5° | 3.4 | 23.3 | 46.2 | 60.9 | 65.4 |
| 95° | 3.0 | 20.7 | 43.2 | 57.5 | 62.0 |
| 97.5° | 2.6 | 18.8 | 40.6 | 54.5 | 59.0 |
| 100° | 2.6 | 16.5 | 37.6 | 51.5 | 55.6 |
| 102.5° | 2.3 | 14.7 | 35.0 | 48.5 | 52.6 |
| 105° | 1.9 | 12.8 | 32.3 | 45.5 | 49.6 |
| 107.5° | 1.9 | 10.9 | 29.7 | 42.5 | 46.6 |
| 110° | 1.5 | 9.0 | 27.4 | 39.5 | 43.6 |



TEST NUMBER: P242343

CATALOG NUMBER: S122DR-S290D935-X4F0-XX-UDD-D-W

CANDELA DISTRIBUTION (continued):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|--------|-----|-------|------|-------|------|
| 112.5° | 1.5 | 7.5 | 24.8 | 36.8 | 41.0 |
| 115° | 1.5 | 5.6 | 22.6 | 33.8 | 38.0 |
| 117.5° | 1.1 | 4.1 | 19.9 | 31.2 | 35.0 |
| 120° | 1.1 | 2.6 | 17.7 | 28.2 | 32.3 |
| 122.5° | 1.1 | 1.5 | 15.4 | 25.6 | 28.9 |
| 125° | 0.8 | 0.8 | 12.8 | 22.9 | 26.3 |
| 127.5° | 0.8 | 0.4 | 10.5 | 19.9 | 23.3 |
| 130° | 0.8 | 0.4 | 8.3 | 17.3 | 20.3 |
| 132.5° | 0.8 | 0.4 | 6.0 | 14.7 | 17.7 |
| 135° | 0.4 | 0.4 | 4.1 | 12.0 | 15.0 |
| 137.5° | 0.4 | 0.4 | 2.3 | 9.4 | 12.0 |
| 140° | 0.4 | 0.0 | 0.8 | 6.8 | 9.0 |
| 142.5° | 0.4 | 0.0 | 0.0 | 4.5 | 6.4 |
| 145° | 0.0 | 0.0 | 0.0 | 2.3 | 4.1 |
| 147.5° | 0.0 | 0.0 | 0.0 | 0.4 | 1.5 |
| 150° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)