

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: METALUX

Report Number: P685403

Luminaire Tested: **4CZL-16-UNV-N-L940-CD-U**

Issue Date: 05/10/2023



Test Information

Test Method: LM-79-08
Report Number: P685403
Test Lab: INNOVATION CENTER(G3)
Issue Date: 05/10/2023
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 4CZL-16-UNV-N-L940-CD-U
Description: METALUX CRUZE LINEAR 4FT NARROW LENS MODEL @90 CRI and 4000K
Light Source: (588) 4000K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

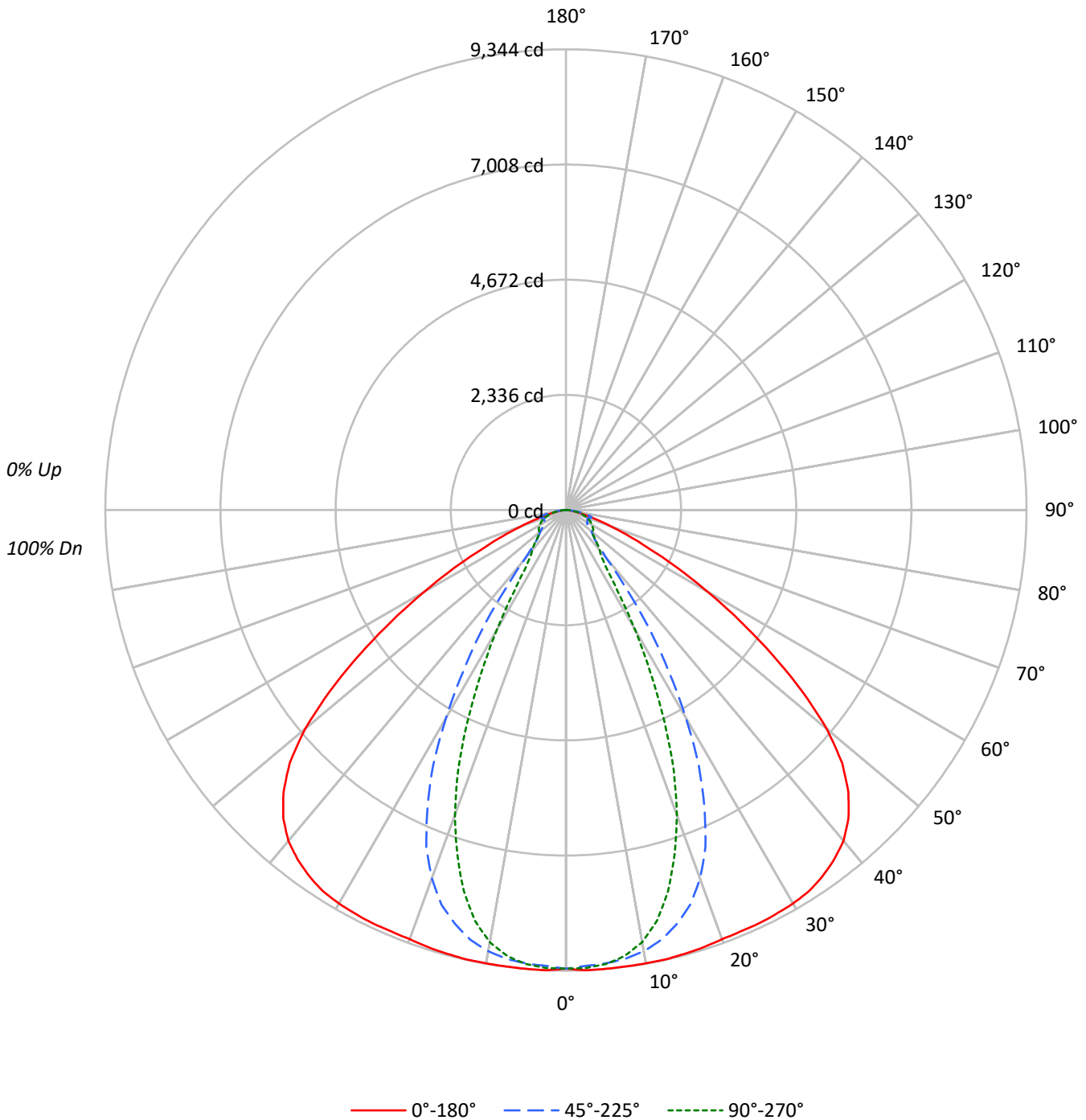
Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13133.9 lumens
Efficiency: N/A
Efficacy: 127.5 lumens/watt
Spacing Criteria (0/90/45): 1.48 / 0.81 / 0.89
Luminous Opening: Rectangular (W 0.83' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 103
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 | | | | 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 | 119 | 119 | 119 | 119 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 102 | 102 | 102 | 100 |
| 1 | 111 | 107 | 104 | 101 | 109 | 105 | 102 | 99 | 101 | 99 | 96 | 97 | 95 | 93 | 94 | 92 | 91 | 89 |
| 2 | 104 | 97 | 92 | 87 | 101 | 95 | 90 | 86 | 92 | 88 | 84 | 89 | 85 | 82 | 86 | 83 | 80 | 79 |
| 3 | 96 | 88 | 81 | 76 | 94 | 86 | 80 | 76 | 84 | 79 | 74 | 81 | 77 | 73 | 79 | 75 | 72 | 70 |
| 4 | 90 | 80 | 73 | 68 | 88 | 79 | 72 | 67 | 77 | 71 | 66 | 74 | 70 | 66 | 72 | 68 | 65 | 63 |
| 5 | 84 | 74 | 66 | 61 | 82 | 73 | 66 | 60 | 71 | 64 | 60 | 69 | 63 | 59 | 67 | 62 | 59 | 57 |
| 6 | 79 | 68 | 60 | 55 | 77 | 67 | 60 | 55 | 65 | 59 | 54 | 64 | 58 | 54 | 62 | 57 | 53 | 52 |
| 7 | 74 | 63 | 55 | 50 | 73 | 62 | 55 | 50 | 61 | 54 | 50 | 59 | 54 | 49 | 58 | 53 | 49 | 47 |
| 8 | 70 | 58 | 51 | 46 | 68 | 58 | 51 | 46 | 56 | 50 | 46 | 55 | 50 | 45 | 54 | 49 | 45 | 44 |
| 9 | 66 | 54 | 47 | 42 | 65 | 54 | 47 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 51 | 46 | 42 | 40 |
| 10 | 62 | 51 | 44 | 39 | 61 | 50 | 44 | 39 | 49 | 43 | 39 | 49 | 43 | 39 | 48 | 43 | 39 | 37 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|-------|-------|-------|
| 0° | 30041 | 30041 | 30041 |
| 5° | 30275 | 29925 | 29972 |
| 10° | 30611 | 29798 | 29181 |
| 15° | 31146 | 29061 | 26754 |
| 20° | 31832 | 27329 | 22617 |
| 25° | 32976 | 23686 | 16806 |
| 30° | 34355 | 18141 | 10427 |
| 35° | 35768 | 11727 | 5593 |
| 40° | 36926 | 5460 | 4478 |
| 45° | 37006 | 3704 | 3814 |
| 50° | 34695 | 3394 | 3510 |
| 55° | 28684 | 3058 | 3808 |
| 60° | 21470 | 3225 | 3910 |
| 65° | 14473 | 3687 | 4186 |
| 70° | 9187 | 4495 | 4307 |
| 75° | 5542 | 6697 | 4299 |
| 80° | 3381 | 5977 | 4004 |
| 85° | 2186 | 3872 | 2749 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 880.7 | 6.7 |
| 10°-20° | 2431.5 | 18.5 |
| 20°-30° | 3105.3 | 23.6 |
| 30°-40° | 2518.6 | 19.2 |
| 40°-50° | 1782.1 | 13.6 |
| 50°-60° | 1160.6 | 8.8 |
| 60°-70° | 712.8 | 5.4 |
| 70°-80° | 423.4 | 3.2 |
| 80°-90° | 118.9 | 0.9 |
| 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° | 6417.5 | 48.9 |
| 0°-40° | 8936.1 | 68.0 |
| 0°-60° | 11878.8 | 90.4 |
| 0°-90° | 13133.9 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 13133.9 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|------|-------|------|-------|------|------|
| 0° | 9303 | 9303 | 9303 | 9303 | 9303 | |
| 5° | 9340 | 9320 | 9232 | 9269 | 9246 | 891 |
| 15° | 9316 | 9190 | 8693 | 8241 | 8003 | 2639 |
| 25° | 9255 | 8491 | 6648 | 5168 | 4717 | 4279 |
| 35° | 9073 | 6160 | 2975 | 1596 | 1419 | 5675 |
| 45° | 8103 | 3101 | 811 | 862 | 835 | 6181 |
| 55° | 5095 | 1044 | 543 | 634 | 676 | 4553 |
| 65° | 1894 | 535 | 482 | 579 | 548 | 1968 |
| 75° | 444 | 304 | 537 | 393 | 345 | 518 |
| 85° | 59 | 118 | 104 | 93 | 74 | 82 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P685403

CATALOG NUMBER: 4CZL-16-UNV-N-L940-CD-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|--------|--------|--------|--------|--------|
| 0° | 9302.9 | 9302.9 | 9302.9 | 9302.9 | 9302.9 |
| 2.5° | 9344.3 | 9326.0 | 9255.0 | 9310.8 | 9294.9 |
| 5° | 9339.6 | 9319.6 | 9231.9 | 9269.4 | 9246.2 |
| 7.5° | 9336.4 | 9306.9 | 9182.4 | 9171.3 | 9123.4 |
| 10° | 9335.6 | 9283.7 | 9087.5 | 8979.9 | 8899.3 |
| 12.5° | 9337.2 | 9245.4 | 8932.0 | 8694.3 | 8530.8 |
| 15° | 9316.4 | 9190.4 | 8692.7 | 8241.3 | 8002.8 |
| 17.5° | 9297.3 | 9064.4 | 8391.2 | 7687.0 | 7328.9 |
| 20° | 9263.0 | 8940.0 | 7952.6 | 7007.5 | 6581.6 |
| 22.5° | 9253.4 | 8751.7 | 7398.3 | 6132.5 | 5710.6 |
| 25° | 9255.0 | 8490.9 | 6647.8 | 5168.3 | 4716.8 |
| 27.5° | 9237.5 | 8143.2 | 5830.2 | 4235.9 | 3701.5 |
| 30° | 9213.5 | 7650.3 | 4865.2 | 3236.5 | 2796.3 |
| 32.5° | 9171.3 | 6958.8 | 3877.0 | 2306.6 | 1941.3 |
| 35° | 9073.2 | 6159.6 | 2974.9 | 1595.9 | 1418.9 |
| 37.5° | 8936.8 | 5271.1 | 2005.9 | 1198.0 | 1169.2 |
| 40° | 8759.7 | 4464.8 | 1295.3 | 1047.2 | 1062.4 |
| 42.5° | 8485.4 | 3768.5 | 945.9 | 952.3 | 953.9 |
| 45° | 8103.3 | 3101.0 | 811.1 | 862.2 | 835.1 |
| 47.5° | 7600.9 | 2435.0 | 737.0 | 751.3 | 747.3 |
| 50° | 6906.2 | 1823.2 | 675.5 | 672.4 | 698.7 |
| 52.5° | 6047.2 | 1348.7 | 612.5 | 639.7 | 689.1 |
| 55° | 5094.9 | 1044.0 | 543.1 | 634.1 | 676.3 |
| 57.5° | 4181.7 | 846.2 | 503.3 | 618.1 | 642.8 |
| 60° | 3324.3 | 705.1 | 499.3 | 588.6 | 605.4 |
| 62.5° | 2568.2 | 604.6 | 496.9 | 574.3 | 580.6 |
| 65° | 1894.2 | 535.2 | 482.5 | 579.0 | 547.9 |
| 67.5° | 1379.8 | 512.8 | 471.4 | 571.1 | 504.9 |
| 70° | 973.0 | 450.6 | 476.1 | 527.2 | 456.2 |
| 72.5° | 660.4 | 376.5 | 529.6 | 465.0 | 399.6 |
| 75° | 444.2 | 303.9 | 536.8 | 393.2 | 344.6 |
| 77.5° | 288.7 | 252.8 | 456.2 | 321.4 | 285.5 |
| 80° | 181.8 | 210.6 | 321.4 | 247.2 | 215.3 |
| 82.5° | 118.0 | 161.9 | 203.4 | 174.7 | 148.3 |
| 85° | 59.0 | 118.0 | 104.5 | 93.3 | 74.2 |
| 87.5° | 35.1 | 71.8 | 55.8 | 40.7 | 37.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)