

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: P31369

Luminaire Tested: **2ALNG-BX40-UNV-EB81-U**

Issue Date: 3/3/2020



**Test Information**

Test Method: LM-79-08  
Report Number: P31369  
Test Lab: INNOVATION CENTER-P3  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: METALUX  
Catalog Number: 2ALNG-BX40-UNV-EB81-U  
Description: METALUX 2X2 ARCLINE LFL FIXTURE WITH LENS  
Light Source: (2) FOUR PIN 2G11-4 BASE SINGLE ENDED 40W BIAx FLUORESCENT LAMP  
3500K, 3150 EA  
Ballast/Driver: -  
C240PUNVHP-B

**Summary**

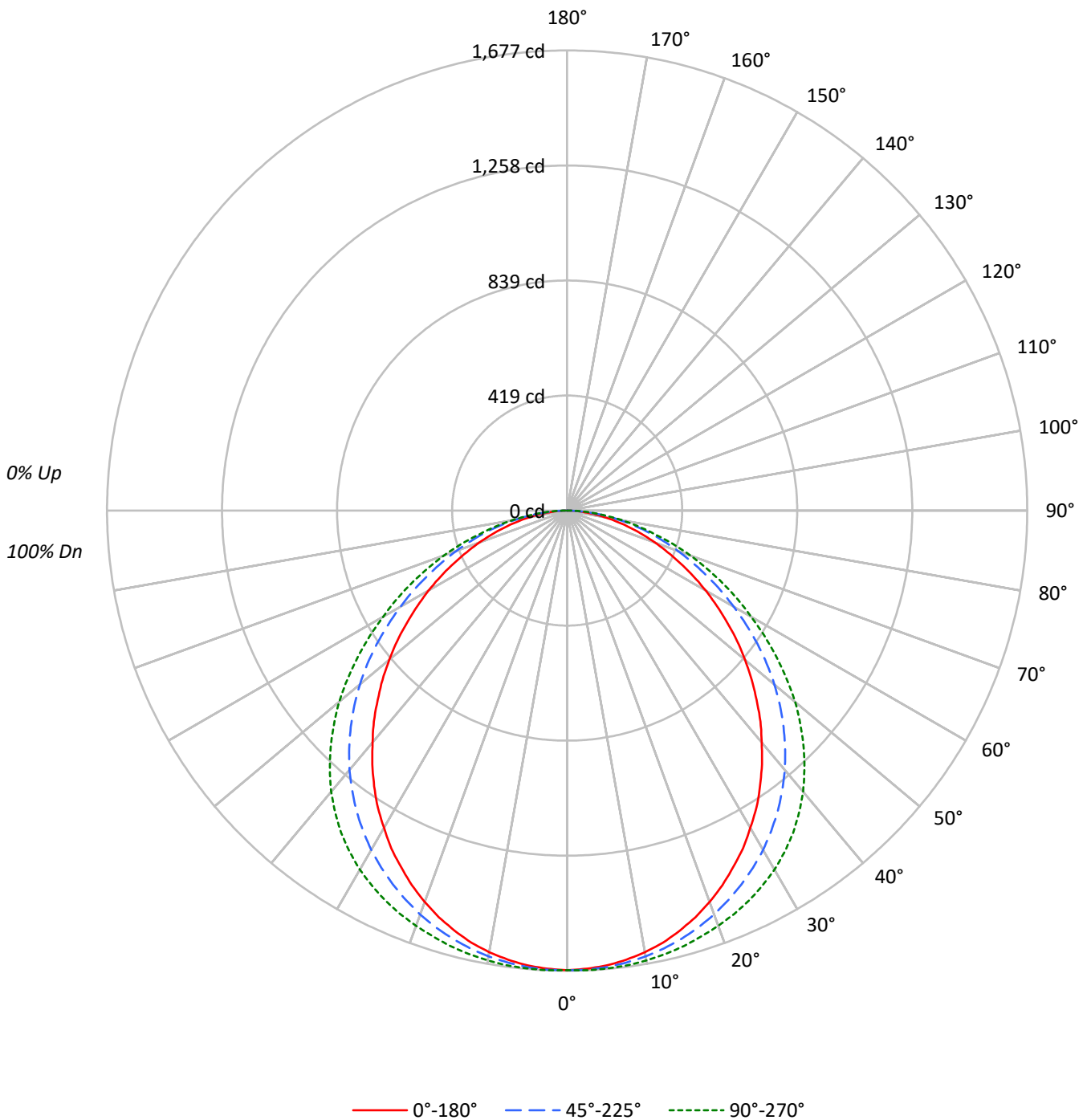
Lumens per Lamp: 3150 (2 lamps)  
Luminaire Lumens: 4689.8 lumens  
Efficiency: 74.4%  
Efficacy: 68.0 lumens/watt  
Spacing Criteria (0/90/45): 1.19 / 1.33 / 1.38  
Luminous Opening: Rectangular (W 1.77' x L: 1.77' x H: 0')  
CIE Type: Direct

Input Watts (W): 69  
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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### 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   | 89 | 89 | 89 | 89 | 87 | 87 | 87 | 87 | 83 | 83 | 83 |  | 79 | 79 | 79 |  | 76 | 76 | 76 | 74 |
| 1   | 81 | 77 | 74 | 71 | 79 | 76 | 73 | 70 | 73 | 70 | 68 |  | 70 | 68 | 66 |  | 67 | 65 | 64 | 62 |
| 2   | 74 | 68 | 63 | 58 | 72 | 66 | 62 | 58 | 64 | 60 | 56 |  | 61 | 58 | 55 |  | 59 | 56 | 54 | 52 |
| 3   | 67 | 59 | 53 | 49 | 65 | 58 | 53 | 48 | 56 | 51 | 47 |  | 54 | 50 | 46 |  | 52 | 49 | 46 | 44 |
| 4   | 62 | 53 | 46 | 41 | 60 | 52 | 46 | 41 | 50 | 44 | 40 |  | 48 | 43 | 40 |  | 46 | 42 | 39 | 38 |
| 5   | 57 | 47 | 40 | 35 | 55 | 46 | 40 | 35 | 45 | 39 | 35 |  | 43 | 38 | 34 |  | 42 | 38 | 34 | 33 |
| 6   | 52 | 42 | 36 | 31 | 51 | 42 | 35 | 31 | 40 | 35 | 31 |  | 39 | 34 | 30 |  | 38 | 33 | 30 | 28 |
| 7   | 49 | 38 | 32 | 27 | 47 | 38 | 32 | 27 | 37 | 31 | 27 |  | 36 | 31 | 27 |  | 35 | 30 | 27 | 25 |
| 8   | 45 | 35 | 29 | 24 | 44 | 35 | 29 | 24 | 34 | 28 | 24 |  | 33 | 28 | 24 |  | 32 | 27 | 24 | 22 |
| 9   | 42 | 32 | 26 | 22 | 41 | 32 | 26 | 22 | 31 | 26 | 22 |  | 30 | 25 | 22 |  | 29 | 25 | 22 | 20 |
| 10  | 40 | 30 | 24 | 20 | 39 | 29 | 24 | 20 | 29 | 23 | 20 |  | 28 | 23 | 20 |  | 27 | 23 | 20 | 18 |

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

|     | 0°   | 45°  | 90°  |
|-----|------|------|------|
| 0°  | 5749 | 5749 | 5749 |
| 5°  | 5734 | 5754 | 5771 |
| 10° | 5695 | 5751 | 5803 |
| 15° | 5632 | 5739 | 5839 |
| 20° | 5545 | 5720 | 5881 |
| 25° | 5427 | 5692 | 5939 |
| 30° | 5291 | 5660 | 5989 |
| 35° | 5137 | 5607 | 6013 |
| 40° | 4942 | 5529 | 5995 |
| 45° | 4738 | 5413 | 5917 |
| 50° | 4518 | 5265 | 5794 |
| 55° | 4267 | 5063 | 5578 |
| 60° | 4002 | 4812 | 5320 |
| 65° | 3704 | 4548 | 5084 |
| 70° | 3412 | 4305 | 4797 |
| 75° | 3103 | 4072 | 4350 |
| 80° | 2748 | 3795 | 3993 |
| 85° | 2284 | 3269 | 3505 |



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**ZONAL LUMENS:**

**CANDELA DISTRIBUTION:**

| Zone      | Lumens | % Fixture | % Lamp |     | 0°   | 22.5° | 45°  | 67.5° | 90°  | Flux |
|-----------|--------|-----------|--------|-----|------|-------|------|-------|------|------|
| 0°-10°    | 158.7  | 3.4       | 2.5    | 0°  | 1675 | 1675  | 1675 | 1675  | 1675 |      |
| 10°-20°   | 455.6  | 9.7       | 7.2    | 5°  | 1664 | 1665  | 1670 | 1672  | 1675 | 158  |
| 20°-30°   | 692.2  | 14.8      | 11.0   | 15° | 1585 | 1594  | 1615 | 1634  | 1643 | 447  |
| 30°-40°   | 833.9  | 17.8      | 13.2   | 25° | 1433 | 1456  | 1503 | 1548  | 1568 | 660  |
| 40°-50°   | 853.0  | 18.2      | 13.5   | 35° | 1226 | 1261  | 1338 | 1408  | 1435 | 766  |
| 50°-60°   | 745.7  | 15.9      | 11.8   | 45° | 976  | 1023  | 1115 | 1193  | 1219 | 754  |
| 60°-70°   | 546.5  | 11.7      | 8.7    | 55° | 713  | 759   | 846  | 910   | 932  | 638  |
| 70°-80°   | 312.8  | 6.7       | 5.0    | 65° | 456  | 494   | 560  | 608   | 626  | 453  |
| 80°-90°   | 91.4   | 1.9       | 1.5    | 75° | 234  | 260   | 307  | 328   | 328  | 249  |
| 90°-100°  | 0.0    | 0.0       | 0.0    | 85° | 58   | 74    | 83   | 88    | 89   | 68   |
| 100°-110° | 0.0    | 0.0       | 0.0    | 90° | 0    | 0     | 0    | 0     | 0    |      |
| 110°-120° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 120°-130° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 130°-140° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 140°-150° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 150°-160° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 160°-170° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 170°-180° | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 0°-30°    | 1306.5 | 27.9      | 20.7   |     |      |       |      |       |      |      |
| 0°-40°    | 2140.4 | 45.6      | 34.0   |     |      |       |      |       |      |      |
| 0°-60°    | 3739.1 | 79.7      | 59.4   |     |      |       |      |       |      |      |
| 0°-90°    | 4689.8 | 100.0     | 74.4   |     |      |       |      |       |      |      |
| 90°-120°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 90°-150°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 90°-180°  | 0.0    | 0.0       | 0.0    |     |      |       |      |       |      |      |
| 0°-180°   | 4689.8 | 100.0     | 74.4   |     |      |       |      |       |      |      |



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**CANDELA DISTRIBUTION (FULL):**

|       | 0°   | 22.5° | 45°  | 67.5° | 90°  |
|-------|------|-------|------|-------|------|
| 0°    | 1675 | 1675  | 1675 | 1675  | 1675 |
| 2.5°  | 1671 | 1672  | 1675 | 1674  | 1677 |
| 5°    | 1664 | 1665  | 1670 | 1672  | 1675 |
| 7.5°  | 1651 | 1654  | 1661 | 1668  | 1672 |
| 10°   | 1634 | 1639  | 1650 | 1659  | 1665 |
| 12.5° | 1613 | 1619  | 1634 | 1648  | 1655 |
| 15°   | 1585 | 1594  | 1615 | 1634  | 1643 |
| 17.5° | 1554 | 1565  | 1592 | 1617  | 1627 |
| 20°   | 1518 | 1533  | 1566 | 1597  | 1610 |
| 22.5° | 1478 | 1495  | 1536 | 1575  | 1591 |
| 25°   | 1433 | 1456  | 1503 | 1548  | 1568 |
| 27.5° | 1388 | 1412  | 1467 | 1520  | 1541 |
| 30°   | 1335 | 1365  | 1428 | 1487  | 1511 |
| 32.5° | 1284 | 1314  | 1384 | 1449  | 1475 |
| 35°   | 1226 | 1261  | 1338 | 1408  | 1435 |
| 37.5° | 1166 | 1205  | 1287 | 1361  | 1388 |
| 40°   | 1103 | 1145  | 1234 | 1309  | 1338 |
| 42.5° | 1043 | 1086  | 1176 | 1252  | 1280 |
| 45°   | 976  | 1023  | 1115 | 1193  | 1219 |
| 47.5° | 913  | 957   | 1052 | 1127  | 1153 |
| 50°   | 846  | 892   | 986  | 1057  | 1085 |
| 52.5° | 781  | 827   | 917  | 986   | 1009 |
| 55°   | 713  | 759   | 846  | 910   | 932  |
| 57.5° | 647  | 691   | 773  | 835   | 854  |
| 60°   | 583  | 624   | 701  | 757   | 775  |
| 62.5° | 519  | 558   | 632  | 681   | 701  |
| 65°   | 456  | 494   | 560  | 608   | 626  |
| 67.5° | 396  | 433   | 493  | 537   | 549  |
| 70°   | 340  | 371   | 429  | 465   | 478  |
| 72.5° | 286  | 314   | 367  | 398   | 403  |
| 75°   | 234  | 260   | 307  | 328   | 328  |
| 77.5° | 185  | 210   | 249  | 261   | 265  |
| 80°   | 139  | 162   | 192  | 202   | 202  |
| 82.5° | 97   | 117   | 137  | 139   | 142  |
| 85°   | 58   | 74    | 83   | 88    | 89   |
| 87.5° | 25   | 33    | 39   | 43    | 45   |
| 90°   | 0    | 0     | 0    | 0     | 0    |

(END OF REPORT)