

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: P475485

Luminaire Tested: **14CZ2-20-SQR-UNV-L830-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475485
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 14CZ2-20-SQR-UNV-L830-CD1-U
Description: 1'X4' TROFFER LED MODULE, SQUARE LENS
Light Source: 3000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

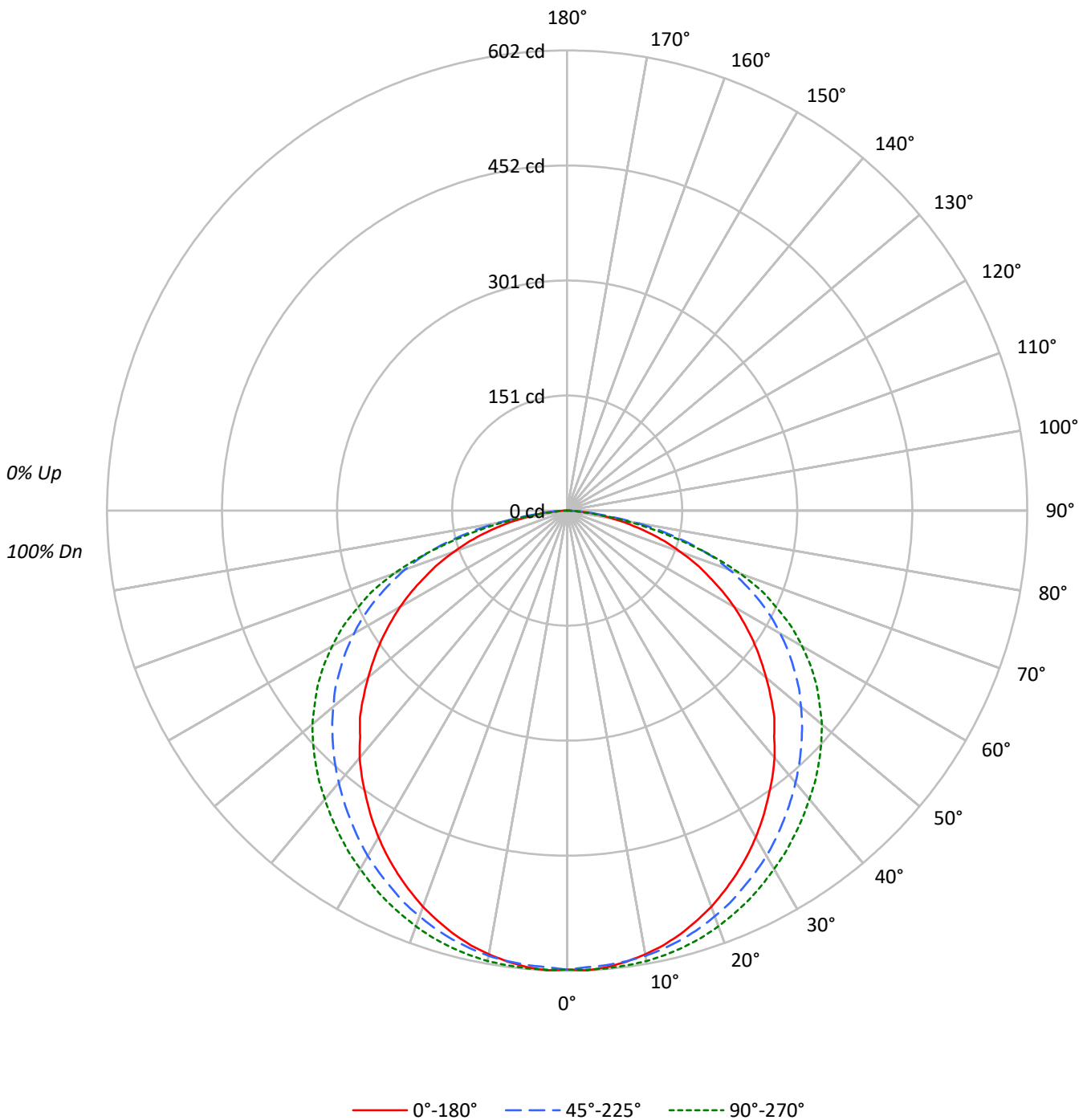
Lumens per Lamp: N/A
Luminaire Lumens: 1885.6 lumens
Efficiency: N/A
Efficacy: 120.9 lumens/watt
Spacing Criteria (0/90/45): 1.22 / 1.34 / 1.43
Luminous Opening: Rectangular (W 1' x L: 4' x H: 0')
CIE Type: Direct

Input Watts (W): 15.6
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 | 108 | 103 | 99 | 95 | 106 | 101 | 97 | 93 | 97 | 93 | 90 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 89 | 82 | 76 | 95 | 87 | 81 | 75 | 84 | 78 | 74 | 81 | 76 | 72 | 77 | 74 | 70 | 68 |
| 3 | 89 | 78 | 69 | 63 | 86 | 76 | 68 | 62 | 73 | 67 | 61 | 70 | 65 | 60 | 68 | 63 | 59 | 57 |
| 4 | 81 | 69 | 60 | 53 | 79 | 67 | 59 | 52 | 65 | 57 | 51 | 62 | 56 | 51 | 60 | 55 | 50 | 48 |
| 5 | 74 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 58 | 50 | 44 | 56 | 49 | 44 | 54 | 48 | 43 | 41 |
| 6 | 69 | 55 | 46 | 39 | 67 | 54 | 45 | 39 | 52 | 44 | 38 | 50 | 43 | 38 | 49 | 43 | 38 | 36 |
| 7 | 63 | 50 | 41 | 34 | 62 | 49 | 40 | 34 | 47 | 39 | 34 | 46 | 39 | 34 | 44 | 38 | 33 | 31 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 36 | 30 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 34 | 30 | 28 |
| 9 | 55 | 41 | 33 | 27 | 54 | 41 | 33 | 27 | 40 | 32 | 27 | 39 | 32 | 27 | 37 | 31 | 27 | 25 |
| 10 | 52 | 38 | 30 | 25 | 50 | 38 | 30 | 25 | 37 | 29 | 24 | 36 | 29 | 24 | 35 | 29 | 24 | 22 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1616 | 1616 | 1616 |
| 5° | 1619 | 1612 | 1624 |
| 10° | 1611 | 1616 | 1635 |
| 15° | 1597 | 1618 | 1646 |
| 20° | 1580 | 1618 | 1657 |
| 25° | 1557 | 1617 | 1669 |
| 30° | 1533 | 1621 | 1682 |
| 35° | 1506 | 1623 | 1704 |
| 40° | 1483 | 1633 | 1732 |
| 45° | 1459 | 1649 | 1773 |
| 50° | 1422 | 1672 | 1821 |
| 55° | 1394 | 1701 | 1868 |
| 60° | 1358 | 1734 | 1911 |
| 65° | 1305 | 1762 | 1933 |
| 70° | 1236 | 1776 | 1898 |
| 75° | 1129 | 1716 | 1639 |
| 80° | 948 | 1402 | 1221 |
| 85° | 692 | 707 | 460 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 57.0 | 3.0 |
| 10°-20° | 164.4 | 8.7 |
| 20°-30° | 251.3 | 13.3 |
| 30°-40° | 308.5 | 16.4 |
| 40°-50° | 331.7 | 17.6 |
| 50°-60° | 318.4 | 16.9 |
| 60°-70° | 263.8 | 14.0 |
| 70°-80° | 158.1 | 8.4 |
| 80°-90° | 32.4 | 1.7 |
| 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° | 472.7 | 25.1 |
| 0°-40° | 781.1 | 41.4 |
| 0°-60° | 1431.3 | 75.9 |
| 0°-90° | 1885.6 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1885.6 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 600 | 600 | 600 | 600 | 600 | |
| 5° | 600 | 598 | 597 | 602 | 601 | 57 |
| 15° | 573 | 576 | 581 | 590 | 591 | 162 |
| 25° | 524 | 533 | 545 | 559 | 562 | 242 |
| 35° | 458 | 474 | 494 | 513 | 519 | 287 |
| 45° | 383 | 404 | 433 | 457 | 466 | 295 |
| 55° | 297 | 325 | 363 | 389 | 398 | 265 |
| 65° | 205 | 238 | 277 | 299 | 304 | 203 |
| 75° | 109 | 142 | 165 | 161 | 158 | 115 |
| 85° | 22 | 32 | 23 | 15 | 15 | 28 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475485

CATALOG NUMBER: 14CZ2-20-SQR-UNV-L830-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 600.5 | 600.5 | 600.5 | 600.5 | 600.5 |
| 2.5° | 602.1 | 600.5 | 597.9 | 602.1 | 601.1 |
| 5° | 599.5 | 598.4 | 596.8 | 601.6 | 601.1 |
| 7.5° | 595.2 | 595.2 | 594.7 | 600.5 | 600.0 |
| 10° | 589.4 | 590.4 | 591.5 | 598.4 | 598.4 |
| 12.5° | 582.4 | 583.5 | 586.7 | 594.7 | 595.2 |
| 15° | 573.4 | 576.1 | 580.8 | 589.9 | 591.0 |
| 17.5° | 562.7 | 567.0 | 573.4 | 584.0 | 585.6 |
| 20° | 551.6 | 556.4 | 564.9 | 576.6 | 578.7 |
| 22.5° | 538.3 | 545.2 | 555.8 | 568.1 | 570.7 |
| 25° | 524.4 | 532.9 | 544.6 | 559.0 | 562.2 |
| 27.5° | 509.5 | 519.6 | 533.5 | 548.4 | 552.1 |
| 30° | 493.5 | 505.2 | 521.8 | 537.7 | 541.4 |
| 32.5° | 476.5 | 490.3 | 508.4 | 526.0 | 530.8 |
| 35° | 458.4 | 473.8 | 494.1 | 513.2 | 518.6 |
| 37.5° | 440.8 | 457.3 | 479.7 | 500.5 | 506.3 |
| 40° | 422.2 | 439.8 | 464.8 | 486.6 | 493.0 |
| 42.5° | 400.9 | 422.2 | 449.3 | 472.8 | 480.2 |
| 45° | 383.3 | 403.6 | 433.4 | 457.3 | 465.8 |
| 47.5° | 361.5 | 384.9 | 416.9 | 442.4 | 450.9 |
| 50° | 339.7 | 366.3 | 399.3 | 425.9 | 435.0 |
| 52.5° | 318.4 | 345.5 | 382.3 | 408.3 | 416.3 |
| 55° | 297.1 | 325.3 | 362.6 | 389.2 | 398.2 |
| 57.5° | 274.7 | 305.6 | 343.4 | 370.0 | 377.5 |
| 60° | 252.4 | 283.2 | 322.1 | 347.7 | 355.1 |
| 62.5° | 228.9 | 261.9 | 300.8 | 324.2 | 331.7 |
| 65° | 205.0 | 238.5 | 276.8 | 298.7 | 303.5 |
| 67.5° | 182.6 | 216.7 | 251.3 | 271.5 | 276.3 |
| 70° | 157.1 | 193.3 | 225.7 | 240.6 | 241.2 |
| 72.5° | 133.6 | 167.2 | 198.1 | 202.3 | 201.2 |
| 75° | 108.6 | 141.6 | 165.0 | 161.3 | 157.6 |
| 77.5° | 84.1 | 117.7 | 129.9 | 119.3 | 116.6 |
| 80° | 61.2 | 91.6 | 90.5 | 80.4 | 78.8 |
| 82.5° | 42.1 | 63.4 | 52.2 | 42.6 | 39.4 |
| 85° | 22.4 | 32.5 | 22.9 | 15.4 | 14.9 |
| 87.5° | 8.5 | 8.0 | 4.8 | 3.2 | 3.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)