

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: P277436

Luminaire Tested: **22CZ2-20HE-S-UNV-L92765-W2A1-U-3500K**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P277436
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1805-783-23)
Test Lab: INNOVATION CENTER(G3)
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-20HE-S-UNV-L92765-W2A1-U-3500K
Description: CRUZE 2.0 2x2 TUNABLE WHITE LED TROFFER
WITH SMOOTH LENS
Light Source: (168) 90 CRI LEDS TUNED TO 3500K CCT
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1816.0 lumens
Efficiency: N/A
Efficacy: 116.9 lumens/watt
Spacing Criteria (0/90/45): 1.18 / 1.26 / 1.34
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

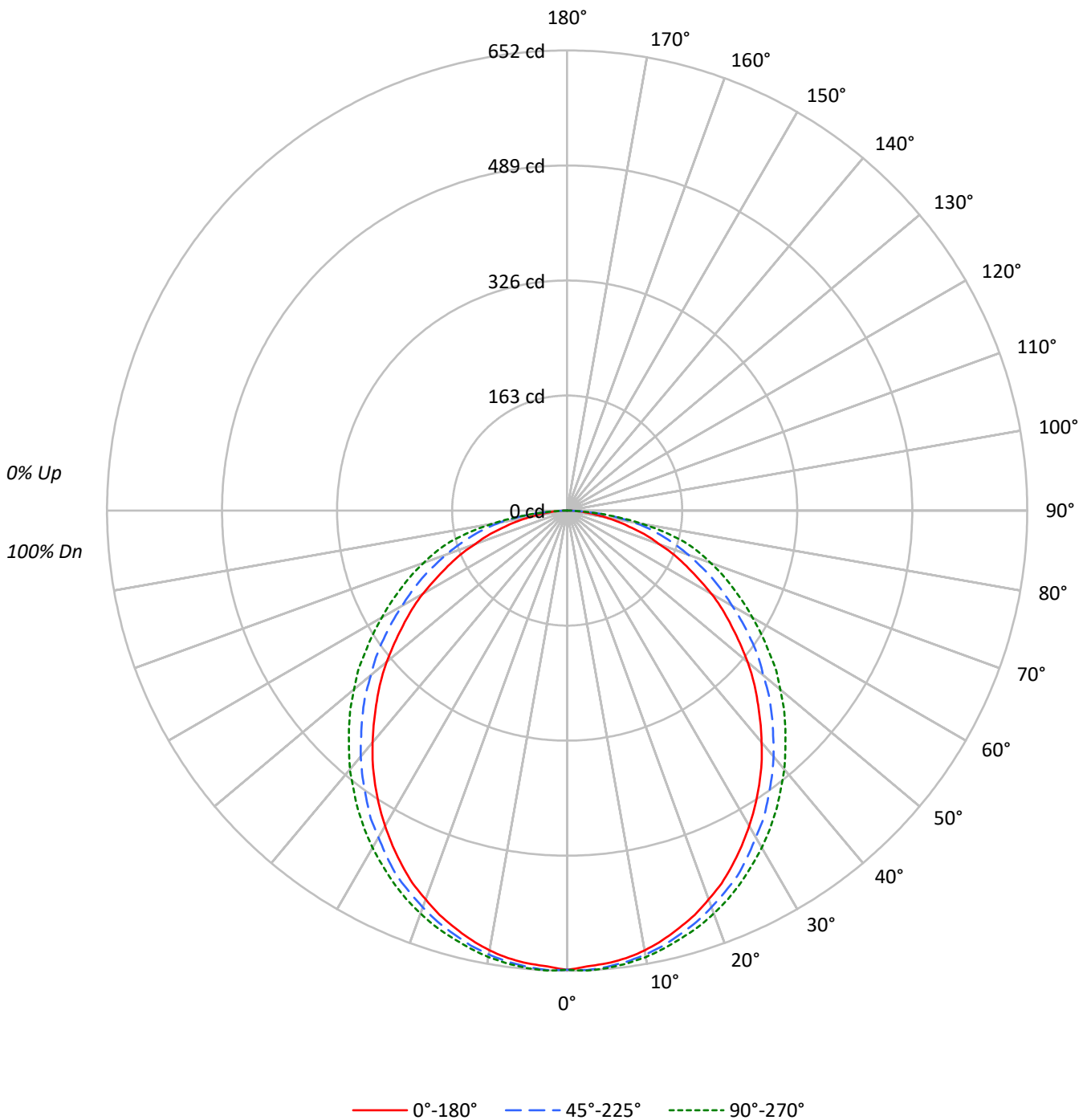
Input Watts (W): 15.531
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 94 | 97 | 94 | 91 | 93 | 90 | 88 | 89 | 87 | 85 | 83 |
| 2 | 98 | 90 | 83 | 77 | 96 | 88 | 82 | 76 | 84 | 79 | 74 | 81 | 77 | 73 | 78 | 74 | 71 | 69 |
| 3 | 90 | 79 | 71 | 64 | 87 | 77 | 70 | 63 | 74 | 68 | 62 | 72 | 66 | 61 | 69 | 64 | 60 | 58 |
| 4 | 82 | 70 | 61 | 54 | 80 | 69 | 60 | 54 | 66 | 59 | 53 | 64 | 57 | 52 | 61 | 56 | 52 | 49 |
| 5 | 75 | 62 | 53 | 47 | 73 | 61 | 53 | 46 | 59 | 52 | 46 | 57 | 51 | 45 | 55 | 50 | 45 | 43 |
| 6 | 70 | 56 | 47 | 41 | 68 | 55 | 47 | 41 | 53 | 46 | 40 | 52 | 45 | 40 | 50 | 44 | 39 | 37 |
| 7 | 65 | 51 | 42 | 36 | 63 | 50 | 42 | 36 | 49 | 41 | 36 | 47 | 40 | 35 | 46 | 40 | 35 | 33 |
| 8 | 60 | 47 | 38 | 32 | 59 | 46 | 38 | 32 | 45 | 37 | 32 | 43 | 37 | 32 | 42 | 36 | 31 | 30 |
| 9 | 56 | 43 | 35 | 29 | 55 | 42 | 34 | 29 | 41 | 34 | 29 | 40 | 33 | 29 | 39 | 33 | 28 | 27 |
| 10 | 53 | 40 | 32 | 26 | 51 | 39 | 31 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 36 | 30 | 26 | 24 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1751 | 1751 | 1751 |
| 5° | 1740 | 1753 | 1758 |
| 10° | 1729 | 1746 | 1755 |
| 15° | 1707 | 1730 | 1747 |
| 20° | 1679 | 1713 | 1740 |
| 25° | 1645 | 1696 | 1728 |
| 30° | 1603 | 1661 | 1714 |
| 35° | 1559 | 1631 | 1698 |
| 40° | 1506 | 1598 | 1682 |
| 45° | 1451 | 1561 | 1664 |
| 50° | 1397 | 1518 | 1649 |
| 55° | 1331 | 1491 | 1638 |
| 60° | 1272 | 1455 | 1632 |
| 65° | 1187 | 1446 | 1651 |
| 70° | 1094 | 1434 | 1700 |
| 75° | 987 | 1454 | 1788 |
| 80° | 854 | 1497 | 1681 |
| 85° | 707 | 1257 | 1257 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 61.5 | 3.4 |
| 10°-20° | 175.1 | 9.6 |
| 20°-30° | 262.0 | 14.4 |
| 30°-40° | 310.3 | 17.1 |
| 40°-50° | 316.2 | 17.4 |
| 50°-60° | 283.4 | 15.6 |
| 60°-70° | 221.9 | 12.2 |
| 70°-80° | 143.1 | 7.9 |
| 80°-90° | 42.3 | 2.3 |
| 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° | 498.7 | 27.5 |
| 0°-40° | 809.0 | 44.5 |
| 0°-60° | 1408.7 | 77.6 |
| 0°-90° | 1816.0 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1816.0 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 651 | 651 | 651 | 651 | 651 | |
| 5° | 644 | 646 | 649 | 650 | 651 | 61 |
| 15° | 613 | 616 | 621 | 626 | 627 | 173 |
| 25° | 554 | 559 | 571 | 579 | 582 | 255 |
| 35° | 474 | 480 | 496 | 512 | 517 | 297 |
| 45° | 381 | 390 | 410 | 431 | 437 | 294 |
| 55° | 284 | 293 | 318 | 340 | 349 | 254 |
| 65° | 186 | 197 | 227 | 249 | 259 | 185 |
| 75° | 95 | 109 | 140 | 164 | 172 | 102 |
| 85° | 23 | 31 | 41 | 41 | 41 | 27 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 650.7 | 650.7 | 650.7 | 650.7 | 650.7 |
| 2.5° | 646.5 | 648.2 | 651.6 | 652.4 | 652.4 |
| 5° | 644.0 | 645.6 | 649.0 | 649.9 | 650.7 |
| 7.5° | 639.7 | 640.6 | 644.8 | 646.5 | 647.3 |
| 10° | 632.9 | 634.6 | 638.9 | 641.4 | 642.3 |
| 12.5° | 623.6 | 626.2 | 631.2 | 634.6 | 635.5 |
| 15° | 612.6 | 616.0 | 621.1 | 626.2 | 627.0 |
| 17.5° | 600.7 | 604.1 | 610.9 | 616.8 | 618.5 |
| 20° | 586.3 | 590.6 | 598.2 | 605.0 | 607.5 |
| 22.5° | 571.9 | 575.3 | 584.6 | 593.1 | 595.7 |
| 25° | 554.1 | 559.2 | 571.1 | 578.7 | 582.1 |
| 27.5° | 535.5 | 541.4 | 553.3 | 563.5 | 566.8 |
| 30° | 516.0 | 521.9 | 534.6 | 547.4 | 551.6 |
| 32.5° | 495.7 | 502.5 | 517.7 | 530.4 | 534.6 |
| 35° | 474.5 | 480.4 | 496.5 | 511.8 | 516.9 |
| 37.5° | 452.5 | 457.5 | 476.2 | 492.3 | 497.4 |
| 40° | 428.7 | 435.5 | 455.0 | 473.6 | 478.7 |
| 42.5° | 405.0 | 412.6 | 432.1 | 452.5 | 457.5 |
| 45° | 381.3 | 389.8 | 410.1 | 431.3 | 437.2 |
| 47.5° | 358.4 | 365.2 | 388.1 | 408.4 | 416.9 |
| 50° | 333.8 | 340.6 | 362.6 | 385.5 | 394.0 |
| 52.5° | 308.4 | 317.7 | 341.5 | 363.5 | 373.7 |
| 55° | 283.8 | 293.2 | 317.7 | 339.8 | 349.1 |
| 57.5° | 261.0 | 268.6 | 294.0 | 316.9 | 326.2 |
| 60° | 236.4 | 243.2 | 270.3 | 294.9 | 303.3 |
| 62.5° | 210.1 | 220.3 | 248.3 | 271.1 | 281.3 |
| 65° | 186.4 | 197.4 | 227.1 | 249.1 | 259.3 |
| 67.5° | 164.4 | 174.5 | 203.4 | 227.1 | 238.1 |
| 70° | 139.0 | 152.5 | 182.2 | 205.9 | 216.1 |
| 72.5° | 118.6 | 130.5 | 161.0 | 184.7 | 195.7 |
| 75° | 94.9 | 109.3 | 139.8 | 163.5 | 172.0 |
| 77.5° | 75.4 | 89.8 | 118.6 | 137.3 | 141.5 |
| 80° | 55.1 | 69.5 | 96.6 | 105.9 | 108.5 |
| 82.5° | 37.3 | 50.8 | 69.5 | 72.0 | 72.9 |
| 85° | 22.9 | 31.4 | 40.7 | 40.7 | 40.7 |
| 87.5° | 11.0 | 12.7 | 14.4 | 13.6 | 13.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)