

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: P475033

Luminaire Tested: **22CZ2-20VHE-RDP-UNV-L835-CD1-U**

Issue Date: 02/10/2021

Test Information

Test Method: LM-79-08
Report Number: P475033
Test Lab: INNOVATION CENTER(G3)
Issue Date: 02/10/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: 22CZ2-20VHE-RDP-UNV-L835-CD1-U
Description: 2'X2' TROFFER LED MODULE, VERY HIGH EFFICIENCY,SMOOTH LENS W/ RDP
INSERT
Light Source: 3500K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 1364.1 lumens
Efficiency: N/A
Efficacy: 98.9 lumens/watt
Spacing Criteria (0/90/45): 1.25 / 1.3 / 1.41
Luminous Opening: Rectangular (W 2' x L: 2' x H: 0')
CIE Type: Direct

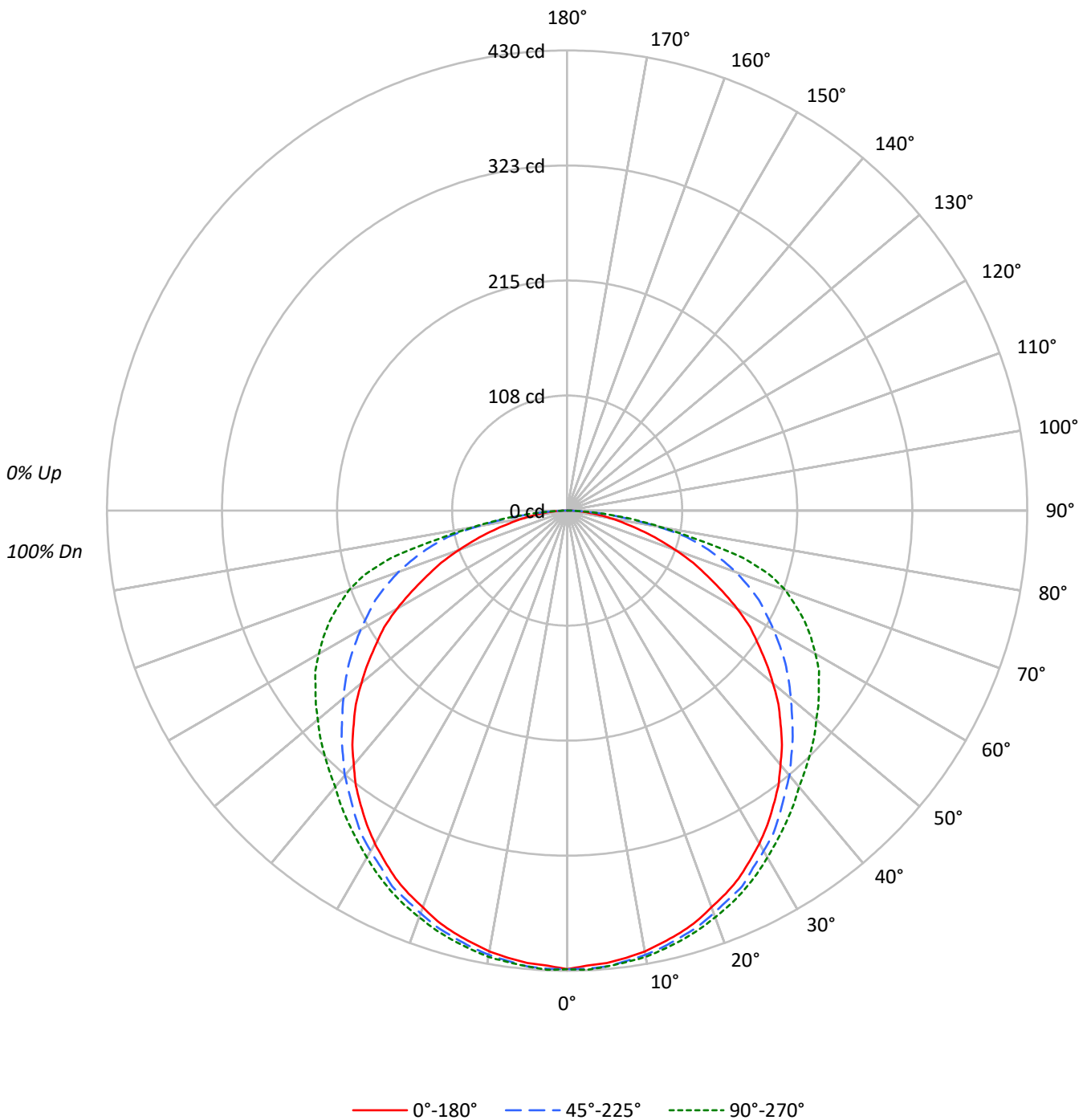
Input Watts (W): 13.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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 | 98 | 94 | 105 | 100 | 96 | 92 | 96 | 92 | 89 | 92 | 89 | 86 | 88 | 86 | 84 | 82 |
| 2 | 97 | 88 | 81 | 75 | 95 | 86 | 80 | 74 | 83 | 77 | 72 | 80 | 75 | 71 | 76 | 72 | 69 | 67 |
| 3 | 88 | 77 | 68 | 61 | 86 | 75 | 67 | 61 | 72 | 65 | 60 | 70 | 64 | 59 | 67 | 62 | 58 | 55 |
| 4 | 80 | 68 | 59 | 51 | 78 | 66 | 58 | 51 | 64 | 56 | 50 | 61 | 55 | 50 | 59 | 54 | 49 | 47 |
| 5 | 74 | 60 | 51 | 44 | 72 | 59 | 50 | 44 | 57 | 49 | 43 | 55 | 48 | 43 | 53 | 47 | 42 | 40 |
| 6 | 68 | 54 | 45 | 38 | 66 | 53 | 44 | 38 | 51 | 43 | 38 | 50 | 43 | 37 | 48 | 42 | 37 | 35 |
| 7 | 63 | 49 | 40 | 33 | 61 | 48 | 39 | 33 | 47 | 39 | 33 | 45 | 38 | 33 | 44 | 37 | 33 | 31 |
| 8 | 59 | 45 | 36 | 30 | 57 | 44 | 35 | 30 | 43 | 35 | 29 | 41 | 34 | 29 | 40 | 34 | 29 | 27 |
| 9 | 55 | 41 | 32 | 27 | 53 | 40 | 32 | 27 | 39 | 32 | 26 | 38 | 31 | 26 | 37 | 31 | 26 | 24 |
| 10 | 51 | 38 | 30 | 24 | 50 | 37 | 29 | 24 | 36 | 29 | 24 | 35 | 29 | 24 | 34 | 28 | 24 | 22 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1153 | 1153 | 1153 |
| 5° | 1147 | 1155 | 1155 |
| 10° | 1143 | 1152 | 1157 |
| 15° | 1138 | 1149 | 1157 |
| 20° | 1129 | 1147 | 1158 |
| 25° | 1126 | 1150 | 1162 |
| 30° | 1116 | 1141 | 1163 |
| 35° | 1104 | 1137 | 1170 |
| 40° | 1089 | 1135 | 1184 |
| 45° | 1073 | 1134 | 1222 |
| 50° | 1050 | 1142 | 1273 |
| 55° | 1022 | 1168 | 1346 |
| 60° | 989 | 1199 | 1442 |
| 65° | 920 | 1259 | 1559 |
| 70° | 845 | 1319 | 1706 |
| 75° | 741 | 1387 | 1763 |
| 80° | 638 | 1322 | 1384 |
| 85° | 556 | 960 | 1053 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 40.5 | 3.0 |
| 10°-20° | 116.4 | 8.5 |
| 20°-30° | 177.6 | 13.0 |
| 30°-40° | 216.8 | 15.9 |
| 40°-50° | 231.8 | 17.0 |
| 50°-60° | 223.7 | 16.4 |
| 60°-70° | 192.6 | 14.1 |
| 70°-80° | 130.3 | 9.6 |
| 80°-90° | 34.4 | 2.5 |
| 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° | 334.5 | 24.5 |
| 0°-40° | 551.3 | 40.4 |
| 0°-60° | 1006.8 | 73.8 |
| 0°-90° | 1364.1 | 100.0 |
| 90°-120° | 0.0 | 0.0 |
| 90°-150° | 0.0 | 0.0 |
| 90°-180° | 0.0 | 0.0 |
| 0°-180° | 1364.1 | 100.0 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 428 | 428 | 428 | 428 | 428 | |
| 5° | 424 | 426 | 428 | 428 | 428 | 40 |
| 15° | 408 | 409 | 412 | 414 | 415 | 115 |
| 25° | 379 | 381 | 387 | 389 | 391 | 175 |
| 35° | 336 | 339 | 346 | 353 | 356 | 210 |
| 45° | 282 | 287 | 298 | 313 | 321 | 218 |
| 55° | 218 | 225 | 249 | 274 | 287 | 195 |
| 65° | 144 | 158 | 198 | 229 | 245 | 144 |
| 75° | 71 | 94 | 133 | 160 | 170 | 76 |
| 85° | 18 | 25 | 31 | 32 | 34 | 20 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: P475033

CATALOG NUMBER: 22CZ2-20VHE-RDP-UNV-L835-CD1-U

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-------|-------|-------|-------|-------|
| 0° | 428.5 | 428.5 | 428.5 | 428.5 | 428.5 |
| 2.5° | 425.5 | 426.5 | 428.5 | 428.5 | 429.5 |
| 5° | 424.5 | 425.5 | 427.5 | 427.5 | 427.5 |
| 7.5° | 421.5 | 422.5 | 424.5 | 425.5 | 425.5 |
| 10° | 418.4 | 419.5 | 421.5 | 422.5 | 423.5 |
| 12.5° | 413.4 | 414.4 | 417.4 | 419.5 | 419.5 |
| 15° | 408.4 | 409.4 | 412.4 | 414.4 | 415.4 |
| 17.5° | 402.4 | 404.4 | 407.4 | 409.4 | 410.4 |
| 20° | 394.4 | 396.4 | 400.4 | 403.5 | 404.4 |
| 22.5° | 387.4 | 389.4 | 393.4 | 396.4 | 398.4 |
| 25° | 379.3 | 381.3 | 387.4 | 389.4 | 391.4 |
| 27.5° | 369.2 | 371.3 | 376.3 | 380.3 | 383.3 |
| 30° | 359.3 | 361.3 | 367.3 | 372.3 | 374.3 |
| 32.5° | 348.2 | 351.2 | 358.3 | 362.3 | 365.3 |
| 35° | 336.1 | 339.1 | 346.2 | 353.2 | 356.3 |
| 37.5° | 324.2 | 327.2 | 334.1 | 343.2 | 347.2 |
| 40° | 310.1 | 314.1 | 323.1 | 335.1 | 337.1 |
| 42.5° | 297.1 | 302.0 | 310.1 | 324.2 | 329.2 |
| 45° | 282.0 | 287.0 | 298.1 | 313.1 | 321.1 |
| 47.5° | 267.9 | 272.9 | 285.0 | 303.0 | 313.1 |
| 50° | 250.9 | 257.9 | 272.9 | 294.1 | 304.0 |
| 52.5° | 234.8 | 240.8 | 261.0 | 284.0 | 296.1 |
| 55° | 217.8 | 224.8 | 248.9 | 273.9 | 287.0 |
| 57.5° | 202.7 | 208.7 | 235.8 | 263.9 | 279.0 |
| 60° | 183.7 | 191.7 | 222.8 | 252.9 | 267.9 |
| 62.5° | 163.5 | 175.6 | 209.7 | 240.8 | 256.9 |
| 65° | 144.5 | 158.5 | 197.7 | 228.7 | 244.9 |
| 67.5° | 127.4 | 142.5 | 182.7 | 215.8 | 230.8 |
| 70° | 107.4 | 126.4 | 167.6 | 199.7 | 216.8 |
| 72.5° | 89.3 | 110.4 | 150.6 | 182.7 | 197.7 |
| 75° | 71.3 | 94.3 | 133.4 | 160.5 | 169.6 |
| 77.5° | 55.1 | 77.3 | 114.4 | 122.5 | 123.4 |
| 80° | 41.2 | 61.2 | 85.3 | 86.3 | 89.3 |
| 82.5° | 28.1 | 43.2 | 55.1 | 60.2 | 61.2 |
| 85° | 18.0 | 25.1 | 31.1 | 32.1 | 34.1 |
| 87.5° | 8.1 | 9.1 | 11.1 | 10.1 | 10.1 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

(END OF REPORT)