

Scaled data based on original data using

LM-41-14 Approved Method for Photometric Testing Of Indoor Fluorescent Luminaires

Test Report Prepared for

Cooper Lighting Solutions

(formerly Eaton)

Brand: METALUX

Report Number: 236p257

Luminaire Tested: **HBE-832-M-UNV-EB82-U**

Issue Date: 3/3/2020



Test Information

Test Method: LM-41-14
Report Number: 236p257
Test Lab: METALUX RESEARCH LABS
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: METALUX
Catalog Number: HBE-832-M-UNV-EB82-U
Description: OPEN HIGH BAY LUMINAIRE WITH SIDE ENCLOSURES AND MATTE REFLECTOR, MEDIUM DISTRIBUTION, NO UPLIGHT
Light Source: EIGHT 32 WATT T8 - 3100 LUMENS EA
Ballast/Driver: -

Summary

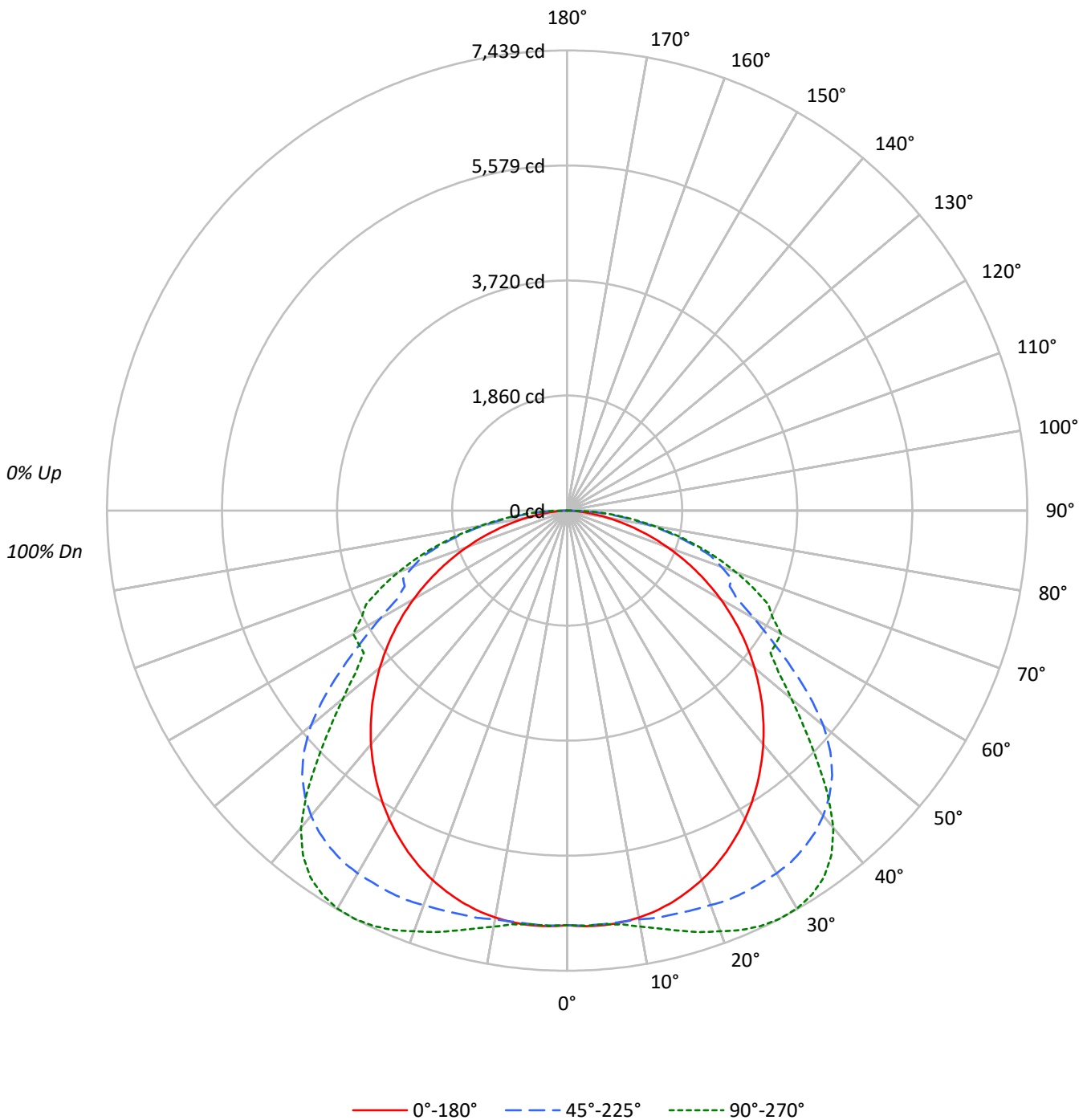
Lumens per Lamp: 3100 (8 lamps)
Luminaire Lumens: 23494.4 lumens
Efficiency: 94.7%
Efficacy: 107.3 lumens/watt
Spacing Criteria (0/90/45): 1.27 / 1.58 / 1.58
Luminous Opening: Rectangular (W 2.06' x L: 3.75' x H: 0')
CIE Type: Direct

Input Watts (W): 219
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 | 113 | 113 | 113 | 113 | 110 | 110 | 110 | 110 | 105 | 105 | 105 | 101 | 101 | 101 | 97 | 97 | 97 | 95 |
| 1 | 102 | 97 | 93 | 89 | 100 | 95 | 91 | 88 | 91 | 88 | 85 | 87 | 85 | 82 | 84 | 82 | 80 | 78 |
| 2 | 92 | 84 | 77 | 72 | 90 | 82 | 76 | 71 | 79 | 74 | 69 | 76 | 71 | 67 | 73 | 69 | 66 | 64 |
| 3 | 84 | 73 | 65 | 59 | 82 | 72 | 64 | 58 | 69 | 63 | 57 | 66 | 61 | 56 | 64 | 59 | 55 | 53 |
| 4 | 77 | 65 | 56 | 49 | 74 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 51 | 47 | 45 |
| 5 | 70 | 58 | 49 | 42 | 68 | 57 | 48 | 42 | 54 | 47 | 42 | 53 | 46 | 41 | 51 | 45 | 41 | 38 |
| 6 | 65 | 52 | 43 | 37 | 63 | 51 | 42 | 36 | 49 | 42 | 36 | 47 | 41 | 36 | 46 | 40 | 35 | 33 |
| 7 | 60 | 47 | 38 | 32 | 58 | 46 | 38 | 32 | 44 | 37 | 32 | 43 | 36 | 32 | 42 | 36 | 31 | 29 |
| 8 | 56 | 42 | 34 | 28 | 54 | 42 | 34 | 28 | 41 | 33 | 28 | 39 | 33 | 28 | 38 | 32 | 28 | 26 |
| 9 | 52 | 39 | 31 | 25 | 51 | 38 | 31 | 25 | 37 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 25 | 23 |
| 10 | 49 | 36 | 28 | 23 | 47 | 35 | 28 | 23 | 34 | 28 | 23 | 33 | 27 | 23 | 33 | 27 | 23 | 21 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|-------|-------|
| 0° | 9327 | 9327 | 9327 |
| 5° | 9401 | 9375 | 9377 |
| 10° | 9441 | 9485 | 9649 |
| 15° | 9446 | 9725 | 10129 |
| 20° | 9416 | 10052 | 10718 |
| 25° | 9350 | 10453 | 11377 |
| 30° | 9251 | 10881 | 11938 |
| 35° | 9118 | 11325 | 12297 |
| 40° | 8962 | 11702 | 12161 |
| 45° | 8778 | 11925 | 11244 |
| 50° | 8559 | 11709 | 10247 |
| 55° | 8303 | 10749 | 9732 |
| 60° | 7974 | 9717 | 11109 |
| 65° | 7551 | 9543 | 11806 |
| 70° | 7003 | 10783 | 11796 |
| 75° | 6286 | 11168 | 11625 |
| 80° | 5298 | 10876 | 11348 |
| 85° | 3800 | 10491 | 11529 |



TEST NUMBER: 236p257

CATALOG NUMBER: HBE-832-M-UNV-EB82-U

ZONAL LUMENS:

CANDELA DISTRIBUTION:

| Zone | Lumens | % Fixture | % Lamp | | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----------|---------|-----------|--------|-----|------|-------|------|-------|------|------|
| 0°-10° | 641.4 | 2.7 | 2.6 | 0° | 6702 | 6702 | 6702 | 6702 | 6702 | |
| 10°-20° | 1917.5 | 8.2 | 7.7 | 5° | 6729 | 6719 | 6711 | 6708 | 6712 | 641 |
| 20°-30° | 3121.6 | 13.3 | 12.6 | 15° | 6556 | 6564 | 6750 | 6938 | 7030 | 1850 |
| 30°-40° | 4041.2 | 17.2 | 16.3 | 25° | 6089 | 6244 | 6807 | 7250 | 7409 | 2804 |
| 40°-50° | 4278.0 | 18.2 | 17.3 | 35° | 5367 | 5793 | 6666 | 7126 | 7238 | 3356 |
| 50°-60° | 3754.1 | 16.0 | 15.1 | 45° | 4460 | 5205 | 6059 | 5922 | 5713 | 3438 |
| 60°-70° | 3092.5 | 13.2 | 12.5 | 55° | 3422 | 4444 | 4430 | 4020 | 4011 | 3056 |
| 70°-80° | 1979.9 | 8.4 | 8.0 | 65° | 2293 | 3236 | 2898 | 3438 | 3585 | 2269 |
| 80°-90° | 668.2 | 2.8 | 2.7 | 75° | 1169 | 1538 | 2077 | 2153 | 2162 | 1239 |
| 90°-100° | 0.0 | 0.0 | 0.0 | 85° | 238 | 568 | 657 | 706 | 722 | 293 |
| 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° | 5680.5 | 24.2 | 22.9 | | | | | | | |
| 0°-40° | 9721.6 | 41.4 | 39.2 | | | | | | | |
| 0°-60° | 17753.8 | 75.6 | 71.6 | | | | | | | |
| 0°-90° | 23494.4 | 100.0 | 94.7 | | | | | | | |
| 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° | 23494.4 | 100.0 | 94.7 | | | | | | | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|------|-------|------|-------|------|
| 0° | 6702 | 6702 | 6702 | 6702 | 6702 |
| 2.5° | 6727 | 6722 | 6716 | 6713 | 6718 |
| 5° | 6729 | 6719 | 6711 | 6708 | 6712 |
| 7.5° | 6715 | 6703 | 6705 | 6728 | 6747 |
| 10° | 6681 | 6669 | 6712 | 6795 | 6828 |
| 12.5° | 6630 | 6622 | 6743 | 6859 | 6921 |
| 15° | 6556 | 6564 | 6750 | 6938 | 7030 |
| 17.5° | 6464 | 6499 | 6769 | 7039 | 7145 |
| 20° | 6358 | 6434 | 6787 | 7111 | 7237 |
| 22.5° | 6232 | 6349 | 6811 | 7180 | 7339 |
| 25° | 6089 | 6244 | 6807 | 7250 | 7409 |
| 27.5° | 5927 | 6140 | 6787 | 7276 | 7439 |
| 30° | 5757 | 6035 | 6771 | 7269 | 7429 |
| 32.5° | 5568 | 5910 | 6736 | 7223 | 7362 |
| 35° | 5367 | 5793 | 6666 | 7126 | 7238 |
| 37.5° | 5154 | 5665 | 6571 | 6968 | 7017 |
| 40° | 4933 | 5519 | 6441 | 6724 | 6694 |
| 42.5° | 4699 | 5362 | 6272 | 6378 | 6240 |
| 45° | 4460 | 5205 | 6059 | 5922 | 5713 |
| 47.5° | 4207 | 5041 | 5772 | 5393 | 5197 |
| 50° | 3953 | 4860 | 5408 | 4886 | 4733 |
| 52.5° | 3690 | 4660 | 4947 | 4426 | 4313 |
| 55° | 3422 | 4444 | 4430 | 4020 | 4011 |
| 57.5° | 3147 | 4199 | 3931 | 3743 | 4001 |
| 60° | 2865 | 3925 | 3491 | 3760 | 3991 |
| 62.5° | 2580 | 3614 | 3098 | 3678 | 3746 |
| 65° | 2293 | 3236 | 2898 | 3438 | 3585 |
| 67.5° | 2007 | 2789 | 2872 | 3234 | 3248 |
| 70° | 1721 | 2306 | 2650 | 2872 | 2899 |
| 72.5° | 1438 | 1869 | 2432 | 2520 | 2536 |
| 75° | 1169 | 1538 | 2077 | 2153 | 2162 |
| 77.5° | 903 | 1385 | 1723 | 1767 | 1772 |
| 80° | 661 | 1198 | 1357 | 1400 | 1416 |
| 82.5° | 431 | 893 | 994 | 1043 | 1058 |
| 85° | 238 | 568 | 657 | 706 | 722 |
| 87.5° | 79 | 264 | 343 | 392 | 404 |
| 90° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)