

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: NEO-RAY

Report Number: 168p253

Luminaire Tested: **232R-3T8-ETG-2EB-DU-SFB**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: 168p253
Test Lab: METALUX LABORATORIES
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: 232R-3T8-ETG-2EB-DU-SFB
Description: 2'X2' NEORAY FENESTRA RECESSED LUM, 3 LAMP T8, WITH WHITE
PERFORATED BASKET, FROSTED BAFFLE
Light Source: THREE - F17T8/TL841 - 1300 LUMENS - 17 WATTS
Ballast/Driver: B232IUNVHPB

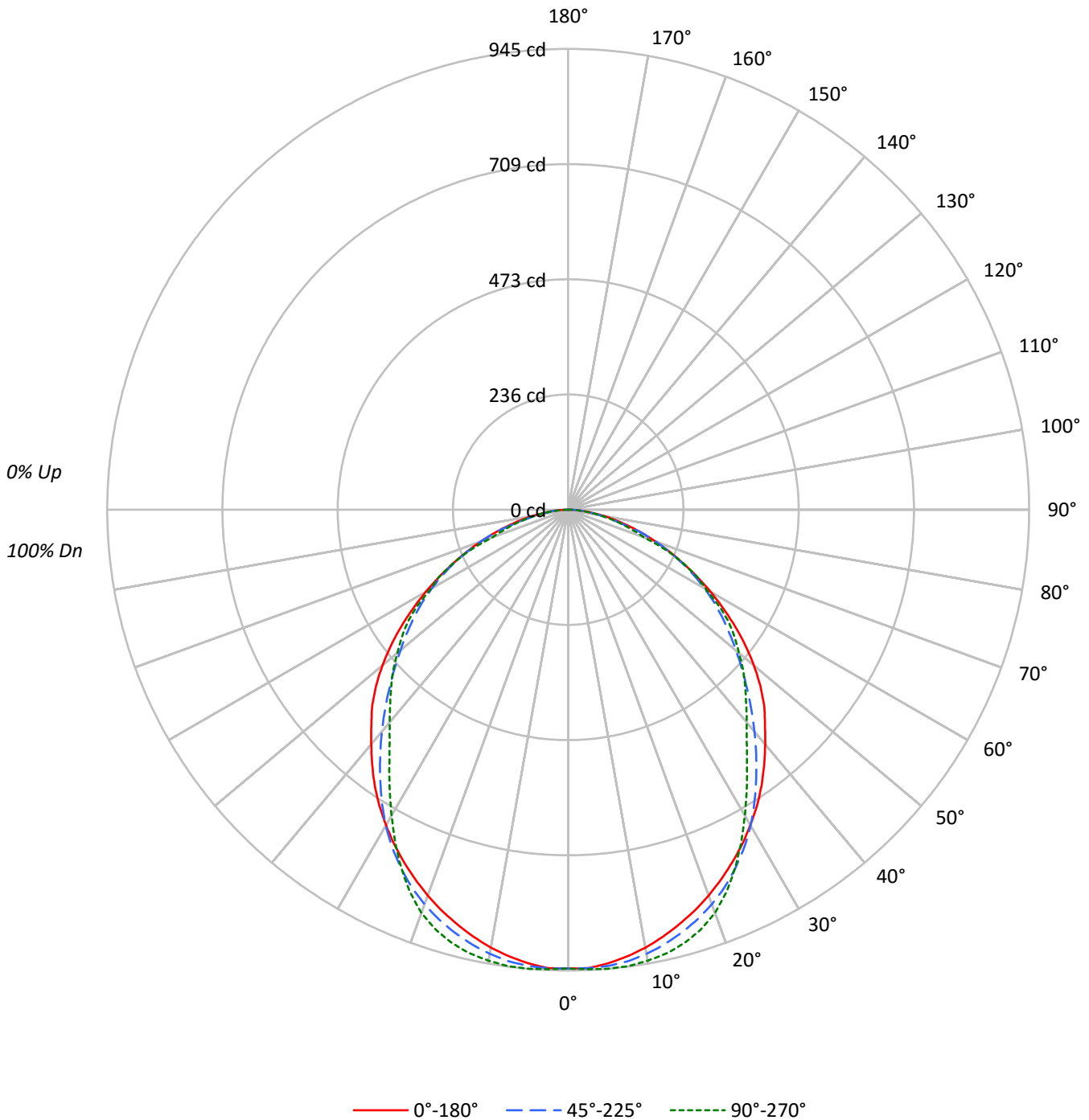
Summary

Lumens per Lamp: 1300 (3 lamps)
Luminaire Lumens: 2316.3 lumens
Efficiency: 59.4%
Efficacy: 48.3 lumens/watt
Spacing Criteria (0/90/45): 1.19 / 1.15 / 1.26
Luminous Opening: Rectangular (W 1.98' x L: 1.94' x H: 0')
CIE Type: Direct

Input Watts (W): 48
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





TEST NUMBER: 168p253

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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 | 71 | 71 | 71 | 71 | 69 | 69 | 69 | 69 | 66 | 66 | 66 | 63 | 63 | 63 | 61 | 61 | 61 | 59 |
| 1 | 65 | 62 | 60 | 58 | 63 | 61 | 59 | 57 | 58 | 57 | 55 | 56 | 55 | 53 | 54 | 53 | 52 | 50 |
| 2 | 59 | 55 | 51 | 47 | 58 | 54 | 50 | 47 | 51 | 48 | 46 | 49 | 47 | 45 | 48 | 46 | 44 | 43 |
| 3 | 54 | 48 | 44 | 40 | 53 | 47 | 43 | 40 | 46 | 42 | 39 | 44 | 41 | 38 | 42 | 40 | 37 | 36 |
| 4 | 50 | 43 | 38 | 34 | 48 | 42 | 37 | 34 | 41 | 37 | 33 | 39 | 36 | 33 | 38 | 35 | 32 | 31 |
| 5 | 46 | 39 | 33 | 30 | 45 | 38 | 33 | 29 | 37 | 32 | 29 | 35 | 32 | 29 | 34 | 31 | 28 | 27 |
| 6 | 43 | 35 | 30 | 26 | 41 | 34 | 29 | 26 | 33 | 29 | 26 | 32 | 28 | 25 | 31 | 28 | 25 | 24 |
| 7 | 40 | 32 | 27 | 23 | 38 | 31 | 26 | 23 | 30 | 26 | 23 | 29 | 26 | 23 | 29 | 25 | 22 | 21 |
| 8 | 37 | 29 | 24 | 21 | 36 | 29 | 24 | 21 | 28 | 24 | 20 | 27 | 23 | 20 | 26 | 23 | 20 | 19 |
| 9 | 34 | 27 | 22 | 19 | 34 | 26 | 22 | 19 | 26 | 21 | 19 | 25 | 21 | 18 | 24 | 21 | 18 | 17 |
| 10 | 32 | 25 | 20 | 17 | 32 | 24 | 20 | 17 | 24 | 20 | 17 | 23 | 19 | 17 | 23 | 19 | 17 | 16 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 2641 | 2641 | 2641 |
| 5° | 2632 | 2646 | 2663 |
| 10° | 2599 | 2637 | 2676 |
| 15° | 2557 | 2610 | 2674 |
| 20° | 2515 | 2572 | 2629 |
| 25° | 2468 | 2512 | 2509 |
| 30° | 2421 | 2424 | 2347 |
| 35° | 2368 | 2303 | 2190 |
| 40° | 2301 | 2177 | 2085 |
| 45° | 2255 | 2056 | 2036 |
| 50° | 2170 | 1961 | 1996 |
| 55° | 2046 | 1889 | 1967 |
| 60° | 1892 | 1813 | 1830 |
| 65° | 1727 | 1707 | 1727 |
| 70° | 1559 | 1568 | 1354 |
| 75° | 1388 | 1280 | 1226 |
| 80° | 1196 | 1067 | 1083 |
| 85° | 998 | 998 | 870 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 89.2 | 3.9 | 2.3 |
| 10°-20° | 253.3 | 10.9 | 6.5 |
| 20°-30° | 370.9 | 16.0 | 9.5 |
| 30°-40° | 419.0 | 18.1 | 10.7 |
| 40°-50° | 410.4 | 17.7 | 10.5 |
| 50°-60° | 355.8 | 15.4 | 9.1 |
| 60°-70° | 254.4 | 11.0 | 6.5 |
| 70°-80° | 128.6 | 5.6 | 3.3 |
| 80°-90° | 34.9 | 1.5 | 0.9 |
| 90°-100° | 0.0 | 0.0 | 0.0 |
| 100°-110° | 0.0 | 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° | 713.4 | 30.8 | 18.3 |
| 0°-40° | 1132.3 | 48.9 | 29.0 |
| 0°-60° | 1898.4 | 82.0 | 48.7 |
| 0°-90° | 2316.3 | 100.0 | 59.4 |
| 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° | 2316.3 | 100.0 | 59.4 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 941 | 941 | 941 | 941 | 941 | |
| 5° | 934 | 935 | 939 | 943 | 945 | 88 |
| 15° | 880 | 887 | 898 | 911 | 920 | 248 |
| 25° | 797 | 805 | 811 | 809 | 810 | 367 |
| 35° | 691 | 695 | 672 | 647 | 639 | 432 |
| 45° | 568 | 557 | 518 | 510 | 513 | 436 |
| 55° | 418 | 406 | 386 | 393 | 402 | 373 |
| 65° | 260 | 254 | 257 | 260 | 260 | 259 |
| 75° | 128 | 126 | 118 | 113 | 113 | 137 |
| 85° | 31 | 32 | 31 | 29 | 27 | 36 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



TEST NUMBER: 168p253

CATALOG NUMBER: 232R-3T8-ETG-2EB-DU-SFB

CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-------|-----|-------|-----|-------|-----|
| 0° | 941 | 941 | 941 | 941 | 941 |
| 2.5° | 941 | 940 | 941 | 942 | 943 |
| 5° | 934 | 935 | 939 | 943 | 945 |
| 7.5° | 924 | 927 | 934 | 941 | 944 |
| 10° | 912 | 916 | 925 | 934 | 939 |
| 12.5° | 897 | 903 | 913 | 924 | 932 |
| 15° | 880 | 887 | 898 | 911 | 920 |
| 17.5° | 862 | 870 | 881 | 894 | 903 |
| 20° | 842 | 850 | 861 | 871 | 880 |
| 22.5° | 820 | 828 | 838 | 843 | 848 |
| 25° | 797 | 805 | 811 | 809 | 810 |
| 27.5° | 773 | 780 | 781 | 769 | 768 |
| 30° | 747 | 754 | 748 | 728 | 724 |
| 32.5° | 720 | 725 | 711 | 687 | 681 |
| 35° | 691 | 695 | 672 | 647 | 639 |
| 37.5° | 660 | 663 | 633 | 607 | 601 |
| 40° | 628 | 629 | 594 | 572 | 569 |
| 42.5° | 597 | 593 | 556 | 540 | 540 |
| 45° | 568 | 557 | 518 | 510 | 513 |
| 47.5° | 534 | 521 | 483 | 481 | 486 |
| 50° | 497 | 485 | 449 | 453 | 457 |
| 52.5° | 458 | 446 | 417 | 423 | 430 |
| 55° | 418 | 406 | 386 | 393 | 402 |
| 57.5° | 377 | 366 | 355 | 362 | 366 |
| 60° | 337 | 327 | 323 | 327 | 326 |
| 62.5° | 298 | 290 | 290 | 293 | 298 |
| 65° | 260 | 254 | 257 | 260 | 260 |
| 67.5° | 224 | 220 | 223 | 226 | 219 |
| 70° | 190 | 187 | 191 | 181 | 165 |
| 72.5° | 158 | 156 | 158 | 137 | 138 |
| 75° | 128 | 126 | 118 | 113 | 113 |
| 77.5° | 100 | 98 | 87 | 89 | 89 |
| 80° | 74 | 73 | 66 | 67 | 67 |
| 82.5° | 51 | 48 | 47 | 47 | 46 |
| 85° | 31 | 32 | 31 | 29 | 27 |
| 87.5° | 15 | 19 | 17 | 14 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)