

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: BALLABS TEST NO. 14775.0

Luminaire Tested: **234ISL-3T8 - OUTBOARD LAMPS OFF**

Issue Date: 3/3/2020

Test Information

Test Method: LM-41-14
Report Number: BALLABS TEST NO. 14775.0
Test Lab: BUILDING ACOUSTICS & LIGHTING LABORATORIES, INC
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: 234ISL-3T8 - OUTBOARD LAMPS OFF
Description: 3/32W T8 LAMP 2x4'DIRECT RECESSED LUMINAIRE w/WHITE REFL
PERF DIFFUSER/OVERLAY w/OPEN CENTER 3.6"WHITE BLADE BAFFLE
SYLVANIA BALLAST #QTP1x32T8/UNVPSN-TC WATTS=29
Light Source: -
F32T8/835/RS
Ballast/Driver: -

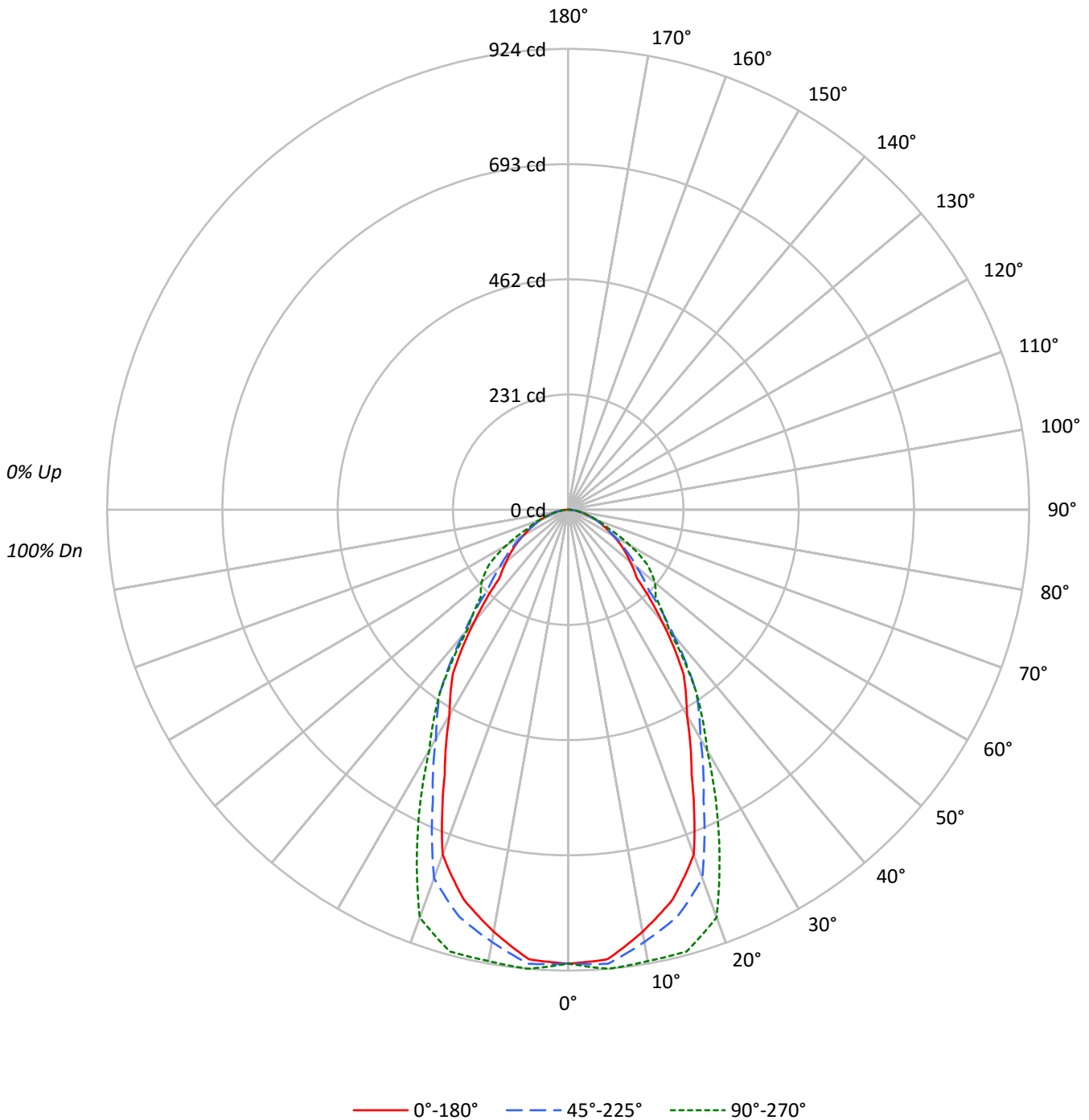
Summary

Lumens per Lamp: 2950 (1 lamp)
Luminaire Lumens: 1343.3 lumens
Efficiency: 45.5%
Efficacy: 46.3 lumens/watt
Spacing Criteria (0/90/45): 0.91 / 1.03 / 1.02
Luminous Opening: Rectangular (W 1.94' x L: 3.92' x H: 0')
CIE Type: Direct

Input Watts (W): 29
Input Voltage (V): NR
Input Current (A_{in}): 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 | 54 | 54 | 54 | 54 | 53 | 53 | 53 | 53 | 51 | 51 | 51 | 48 | 48 | 48 | 46 | 46 | 46 | 46 |
| 1 | 51 | 49 | 47 | 46 | 49 | 48 | 46 | 45 | 46 | 45 | 44 | 44 | 43 | 42 | 43 | 42 | 41 | 40 |
| 2 | 47 | 44 | 41 | 39 | 46 | 43 | 41 | 39 | 42 | 40 | 38 | 40 | 39 | 37 | 39 | 38 | 36 | 36 |
| 3 | 44 | 40 | 37 | 34 | 43 | 39 | 36 | 34 | 38 | 35 | 33 | 37 | 35 | 33 | 36 | 34 | 32 | 31 |
| 4 | 41 | 36 | 33 | 30 | 40 | 36 | 33 | 30 | 35 | 32 | 30 | 34 | 31 | 29 | 33 | 31 | 29 | 28 |
| 5 | 38 | 33 | 30 | 27 | 37 | 33 | 29 | 27 | 32 | 29 | 27 | 31 | 28 | 26 | 30 | 28 | 26 | 25 |
| 6 | 36 | 30 | 27 | 24 | 35 | 30 | 27 | 24 | 29 | 26 | 24 | 29 | 26 | 24 | 28 | 26 | 24 | 23 |
| 7 | 33 | 28 | 25 | 22 | 33 | 28 | 24 | 22 | 27 | 24 | 22 | 26 | 24 | 22 | 26 | 24 | 22 | 21 |
| 8 | 31 | 26 | 23 | 20 | 31 | 26 | 23 | 20 | 25 | 22 | 20 | 25 | 22 | 20 | 24 | 22 | 20 | 19 |
| 9 | 30 | 24 | 21 | 19 | 29 | 24 | 21 | 19 | 24 | 21 | 19 | 23 | 20 | 19 | 23 | 20 | 18 | 18 |
| 10 | 28 | 23 | 19 | 17 | 27 | 22 | 19 | 17 | 22 | 19 | 17 | 22 | 19 | 17 | 21 | 19 | 17 | 16 |

AVERAGE LUMINANCE (cd/sqm):

| | 0° | 45° | 90° |
|-----|------|------|------|
| 0° | 1290 | 1290 | 1290 |
| 5° | 1288 | 1301 | 1315 |
| 10° | 1237 | 1267 | 1323 |
| 15° | 1188 | 1240 | 1346 |
| 20° | 1111 | 1186 | 1313 |
| 25° | 915 | 1004 | 1117 |
| 30° | 779 | 868 | 912 |
| 35° | 698 | 775 | 775 |
| 40° | 540 | 609 | 583 |
| 45° | 391 | 459 | 497 |
| 50° | 357 | 395 | 501 |
| 55° | 331 | 349 | 482 |
| 60° | 295 | 303 | 408 |
| 65° | 265 | 265 | 299 |
| 70° | 245 | 245 | 261 |
| 75° | 208 | 208 | 208 |
| 80° | 196 | 196 | 171 |
| 85° | 163 | 130 | 114 |



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ZONAL LUMENS:

| Zone | Lumens | % Fixture | % Lamp |
|-----------|--------|-----------|--------|
| 0°-10° | 86.1 | 6.4 | 2.9 |
| 10°-20° | 238.8 | 17.8 | 8.1 |
| 20°-30° | 298.3 | 22.2 | 10.1 |
| 30°-40° | 266.0 | 19.8 | 9.0 |
| 40°-50° | 181.6 | 13.5 | 6.2 |
| 50°-60° | 135.0 | 10.0 | 4.6 |
| 60°-70° | 84.3 | 6.3 | 2.9 |
| 70°-80° | 42.0 | 3.1 | 1.4 |
| 80°-90° | 11.3 | 0.8 | 0.4 |
| 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° | 623.2 | 46.4 | 21.1 |
| 0°-40° | 889.2 | 66.2 | 30.1 |
| 0°-60° | 1205.8 | 89.8 | 40.9 |
| 0°-90° | 1343.3 | 100.0 | 45.5 |
| 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° | 1343.3 | 100.0 | 45.5 |

CANDELA DISTRIBUTION:

| | 0° | 22.5° | 45° | 67.5° | 90° | Flux |
|-----|-----|-------|-----|-------|-----|------|
| 0° | 910 | 910 | 910 | 910 | 910 | |
| 5° | 905 | 907 | 914 | 921 | 924 | 85 |
| 15° | 809 | 818 | 845 | 887 | 917 | 226 |
| 25° | 585 | 599 | 642 | 686 | 714 | 273 |
| 35° | 403 | 423 | 448 | 444 | 448 | 245 |
| 45° | 195 | 209 | 229 | 227 | 248 | 162 |
| 55° | 134 | 134 | 141 | 167 | 195 | 119 |
| 65° | 79 | 79 | 79 | 88 | 89 | 79 |
| 75° | 38 | 38 | 38 | 38 | 38 | 42 |
| 85° | 10 | 12 | 8 | 8 | 7 | 12 |
| 90° | 0 | 0 | 0 | 0 | 0 | |



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CANDELA DISTRIBUTION (FULL):

| | 0° | 22.5° | 45° | 67.5° | 90° |
|-----|-----|-------|-----|-------|-----|
| 0° | 910 | 910 | 910 | 910 | 910 |
| 5° | 905 | 907 | 914 | 921 | 924 |
| 10° | 859 | 864 | 880 | 904 | 919 |
| 15° | 809 | 818 | 845 | 887 | 917 |
| 20° | 736 | 749 | 786 | 837 | 870 |
| 25° | 585 | 599 | 642 | 686 | 714 |
| 30° | 476 | 493 | 530 | 545 | 557 |
| 35° | 403 | 423 | 448 | 444 | 448 |
| 40° | 292 | 314 | 329 | 315 | 315 |
| 45° | 195 | 209 | 229 | 227 | 248 |
| 50° | 162 | 167 | 179 | 199 | 227 |
| 55° | 134 | 134 | 141 | 167 | 195 |
| 60° | 104 | 104 | 107 | 128 | 144 |
| 65° | 79 | 79 | 79 | 88 | 89 |
| 70° | 59 | 59 | 59 | 61 | 63 |
| 75° | 38 | 38 | 38 | 38 | 38 |
| 80° | 24 | 24 | 24 | 22 | 21 |
| 85° | 10 | 12 | 8 | 8 | 7 |
| 90° | 0 | 0 | 0 | 0 | 0 |

(END OF REPORT)