

# Report of Test

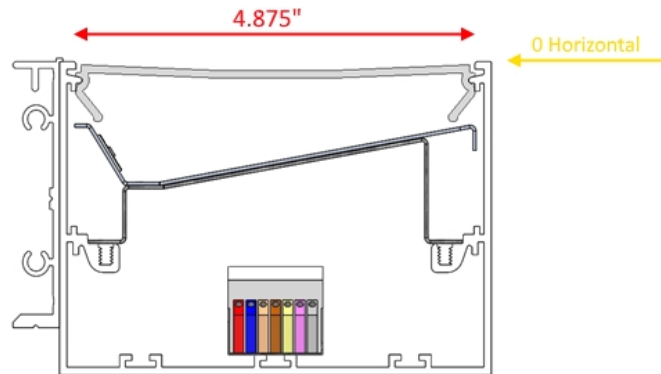
## LLIA001116-004A

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

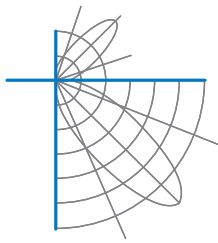
One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA 120.0Vac, 60.00Hz, 0.2334A, 27.92W, 0.997PF, 5.6%THD(i)



### Performance Summary

|                    |            |
|--------------------|------------|
| Total Light Output | 3491 lm    |
| Luminaire Power    | 27.9 W     |
| Luminous Efficacy  | 125.1 lm/W |

**PREPARED FOR : Precision Architectural Lighting, 4830 Timber Creek Drive, Houston, TX 77017**



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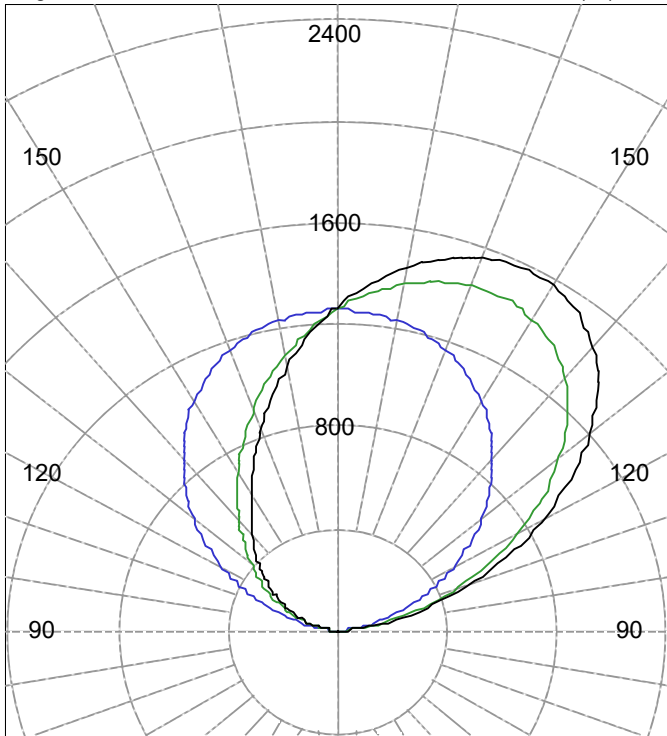
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Legend: C0/C180-Black, C45/C225-Green, C90/C270-Blue (cd)



C180-C270 (Symmetric about C0/C180) C0-C90

**INTENSITY SUMMARY (cd)**

| Gamma | C-Plane |       |      |       |      | Flux (lm) |
|-------|---------|-------|------|-------|------|-----------|
|       | C0      | C22.5 | C45  | C67.5 | C90  |           |
| 90.0  | 0       | 0     | 0    | 0     | 0    |           |
| 95.0  | 73      | 72    | 67   | 55    | 42   | 55        |
| 100.0 | 188     | 185   | 169  | 140   | 106  |           |
| 105.0 | 333     | 326   | 298  | 247   | 188  | 219       |
| 110.0 | 498     | 487   | 443  | 368   | 279  |           |
| 115.0 | 675     | 658   | 598  | 497   | 376  | 407       |
| 120.0 | 856     | 833   | 756  | 630   | 477  |           |
| 125.0 | 1032    | 1004  | 912  | 762   | 581  | 561       |
| 130.0 | 1196    | 1163  | 1058 | 889   | 684  |           |
| 135.0 | 1338    | 1300  | 1185 | 1003  | 784  | 642       |
| 140.0 | 1448    | 1408  | 1288 | 1103  | 880  |           |
| 145.0 | 1524    | 1484  | 1364 | 1184  | 968  | 626       |
| 150.0 | 1565    | 1527  | 1414 | 1246  | 1045 |           |
| 155.0 | 1575    | 1541  | 1438 | 1288  | 1111 | 520       |
| 160.0 | 1557    | 1527  | 1439 | 1313  | 1165 |           |
| 165.0 | 1513    | 1490  | 1419 | 1321  | 1208 | 343       |
| 170.0 | 1449    | 1432  | 1382 | 1315  | 1237 |           |
| 175.0 | 1367    | 1358  | 1330 | 1294  | 1255 | 120       |
| 180.0 | 1266    | 1266  | 1266 | 1266  | 1266 |           |

**ZONAL FLUX AND PERCENTAGES**

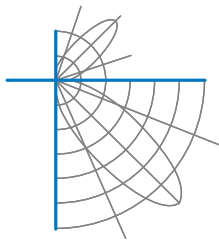
| Zone    | Flux (lm) | % Lamp | % Luminaire |
|---------|-----------|--------|-------------|
| 180-150 | 982       | N / A  | 28.1        |
| 180-140 | 1609      | N / A  | 46.1        |
| 180-120 | 2811      | N / A  | 80.5        |
| 180-90  | 3491      | N / A  | 100.0       |
| 140-90  | 1883      | N / A  | 53.9        |
| 120-90  | 680       | N / A  | 19.5        |
| 90-0    | 0         | N / A  | 0.0         |
| 180-0   | 3491      | N / A  | 100.0       |

Total Light Output = 3,491 lm

Signed:

Authorized Signatory

Date of test 15-May-2019  
Date of report 20-May-2019



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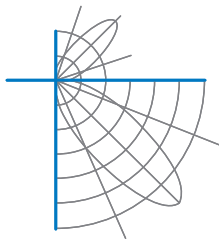
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120.0Vac, 60.00Hz, 0.2334A, 27.92W, 0.997PF, 5.6%THD(i)

**Intensity data (cd)**

| Gamma | C-Plane |       |     |       |     |
|-------|---------|-------|-----|-------|-----|
|       | C0      | C22.5 | C45 | C67.5 | C90 |
| 0.0   | 0       | 0     | 0   | 0     | 0   |
| 2.5   | 0       | 0     | 0   | 0     | 0   |
| 5.0   | 0       | 0     | 0   | 0     | 0   |
| 7.5   | 0       | 0     | 0   | 0     | 0   |
| 10.0  | 0       | 0     | 0   | 0     | 0   |
| 12.5  | 0       | 0     | 0   | 0     | 0   |
| 15.0  | 0       | 0     | 0   | 0     | 0   |
| 17.5  | 0       | 0     | 0   | 0     | 0   |
| 20.0  | 0       | 0     | 0   | 0     | 0   |
| 22.5  | 0       | 0     | 0   | 0     | 0   |
| 25.0  | 0       | 0     | 0   | 0     | 0   |
| 27.5  | 0       | 0     | 0   | 0     | 0   |
| 30.0  | 0       | 0     | 0   | 0     | 0   |
| 32.5  | 0       | 0     | 0   | 0     | 0   |
| 35.0  | 0       | 0     | 0   | 0     | 0   |
| 37.5  | 0       | 0     | 0   | 0     | 0   |
| 40.0  | 0       | 0     | 0   | 0     | 0   |
| 42.5  | 0       | 0     | 0   | 0     | 0   |
| 45.0  | 0       | 0     | 0   | 0     | 0   |
| 47.5  | 0       | 0     | 0   | 0     | 0   |
| 50.0  | 0       | 0     | 0   | 0     | 0   |
| 52.5  | 0       | 0     | 0   | 0     | 0   |
| 55.0  | 0       | 0     | 0   | 0     | 0   |
| 57.5  | 0       | 0     | 0   | 0     | 0   |
| 60.0  | 0       | 0     | 0   | 0     | 0   |
| 62.5  | 0       | 0     | 0   | 0     | 0   |
| 65.0  | 0       | 0     | 0   | 0     | 0   |
| 67.5  | 0       | 0     | 0   | 0     | 0   |
| 70.0  | 0       | 0     | 0   | 0     | 0   |
| 72.5  | 0       | 0     | 0   | 0     | 0   |
| 75.0  | 0       | 0     | 0   | 0     | 0   |
| 77.5  | 0       | 0     | 0   | 0     | 0   |
| 80.0  | 0       | 0     | 0   | 0     | 0   |
| 82.5  | 0       | 0     | 0   | 0     | 0   |
| 85.0  | 0       | 0     | 0   | 0     | 0   |
| 87.5  | 0       | 0     | 0   | 0     | 0   |
| 90.0  | 0       | 0     | 0   | 0     | 0   |



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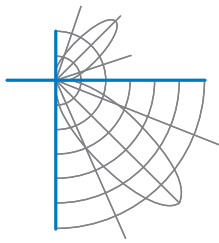
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**Intensity data (cd)**

| Gamma | C-Plane |       |      |       |      |
|-------|---------|-------|------|-------|------|
|       | C0      | C22.5 | C45  | C67.5 | C90  |
| 90.0  | 0       | 0     | 0    | 0     | 0    |
| 92.5  | 27      | 28    | 28   | 24    | 19   |
| 95.0  | 73      | 72    | 67   | 55    | 42   |
| 97.5  | 127     | 124   | 114  | 94    | 71   |
| 100.0 | 188     | 185   | 169  | 140   | 106  |
| 102.5 | 258     | 253   | 231  | 192   | 145  |
| 105.0 | 333     | 326   | 298  | 247   | 188  |
| 107.5 | 414     | 405   | 369  | 306   | 233  |
| 110.0 | 498     | 487   | 443  | 368   | 279  |
| 112.5 | 586     | 572   | 520  | 432   | 327  |
| 115.0 | 675     | 658   | 598  | 497   | 376  |
| 117.5 | 765     | 745   | 677  | 563   | 426  |
| 120.0 | 856     | 833   | 756  | 630   | 477  |
| 122.5 | 945     | 919   | 835  | 696   | 529  |
| 125.0 | 1032    | 1004  | 912  | 762   | 581  |
| 127.5 | 1116    | 1085  | 987  | 826   | 632  |
| 130.0 | 1196    | 1163  | 1058 | 889   | 684  |
| 132.5 | 1270    | 1235  | 1124 | 948   | 735  |
| 135.0 | 1338    | 1300  | 1185 | 1003  | 784  |
| 137.5 | 1397    | 1358  | 1240 | 1055  | 833  |
| 140.0 | 1448    | 1408  | 1288 | 1103  | 880  |
| 142.5 | 1491    | 1450  | 1329 | 1146  | 925  |
| 145.0 | 1524    | 1484  | 1364 | 1184  | 968  |
| 147.5 | 1549    | 1509  | 1392 | 1217  | 1008 |
| 150.0 | 1565    | 1527  | 1414 | 1246  | 1045 |
| 152.5 | 1574    | 1537  | 1429 | 1269  | 1080 |
| 155.0 | 1575    | 1541  | 1438 | 1288  | 1111 |
| 157.5 | 1569    | 1537  | 1441 | 1303  | 1140 |
| 160.0 | 1557    | 1527  | 1439 | 1313  | 1165 |
| 162.5 | 1538    | 1511  | 1431 | 1319  | 1188 |
| 165.0 | 1513    | 1490  | 1419 | 1321  | 1208 |
| 167.5 | 1484    | 1463  | 1403 | 1320  | 1224 |
| 170.0 | 1449    | 1432  | 1382 | 1315  | 1237 |
| 172.5 | 1410    | 1397  | 1358 | 1306  | 1248 |
| 175.0 | 1367    | 1358  | 1330 | 1294  | 1255 |
| 177.5 | 1320    | 1316  | 1298 | 1279  | 1260 |
| 180.0 | 1266    | 1266  | 1266 | 1266  | 1266 |



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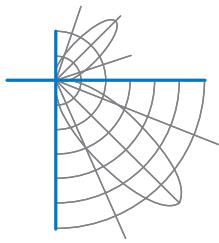
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120.0Vac, 60.00Hz, 0.2334A, 27.92W, 0.997PF, 5.6%THD(i)

**Intensity data (cd)**

| Gamma | C-Plane |        |      |        |      |
|-------|---------|--------|------|--------|------|
|       | C90     | C112.5 | C135 | C157.5 | C180 |
| 0.0   | 0       | 0      | 0    | 0      | 0    |
| 2.5   | 0       | 0      | 0    | 0      | 0    |
| 5.0   | 0       | 0      | 0    | 0      | 0    |
| 7.5   | 0       | 0      | 0    | 0      | 0    |
| 10.0  | 0       | 0      | 0    | 0      | 0    |
| 12.5  | 0       | 0      | 0    | 0      | 0    |
| 15.0  | 0       | 0      | 0    | 0      | 0    |
| 17.5  | 0       | 0      | 0    | 0      | 0    |
| 20.0  | 0       | 0      | 0    | 0      | 0    |
| 22.5  | 0       | 0      | 0    | 0      | 0    |
| 25.0  | 0       | 0      | 0    | 0      | 0    |
| 27.5  | 0       | 0      | 0    | 0      | 0    |
| 30.0  | 0       | 0      | 0    | 0      | 0    |
| 32.5  | 0       | 0      | 0    | 0      | 0    |
| 35.0  | 0       | 0      | 0    | 0      | 0    |
| 37.5  | 0       | 0      | 0    | 0      | 0    |
| 40.0  | 0       | 0      | 0    | 0      | 0    |
| 42.5  | 0       | 0      | 0    | 0      | 0    |
| 45.0  | 0       | 0      | 0    | 0      | 0    |
| 47.5  | 0       | 0      | 0    | 0      | 0    |
| 50.0  | 0       | 0      | 0    | 0      | 0    |
| 52.5  | 0       | 0      | 0    | 0      | 0    |
| 55.0  | 0       | 0      | 0    | 0      | 0    |
| 57.5  | 0       | 0      | 0    | 0      | 0    |
| 60.0  | 0       | 0      | 0    | 0      | 0    |
| 62.5  | 0       | 0      | 0    | 0      | 0    |
| 65.0  | 0       | 0      | 0    | 0      | 0    |
| 67.5  | 0       | 0      | 0    | 0      | 0    |
| 70.0  | 0       | 0      | 0    | 0      | 0    |
| 72.5  | 0       | 0      | 0    | 0      | 0    |
| 75.0  | 0       | 0      | 0    | 0      | 0    |
| 77.5  | 0       | 0      | 0    | 0      | 0    |
| 80.0  | 0       | 0      | 0    | 0      | 0    |
| 82.5  | 0       | 0      | 0    | 0      | 0    |
| 85.0  | 0       | 0      | 0    | 0      | 0    |
| 87.5  | 0       | 0      | 0    | 0      | 0    |
| 90.0  | 0       | 0      | 0    | 0      | 0    |



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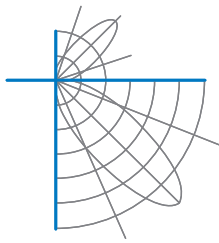
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120.0Vac, 60.00Hz, 0.2334A, 27.92W, 0.997PF, 5.6%THD(i)

**Intensity data (cd)**

| Gamma | C-Plane |        |      |        |      |
|-------|---------|--------|------|--------|------|
|       | C90     | C112.5 | C135 | C157.5 | C180 |
| 90.0  | 0       | 0      | 0    | 0      | 0    |
| 92.5  | 19      | 14     | 12   | 12     | 12   |
| 95.0  | 42      | 33     | 28   | 27     | 26   |
| 97.5  | 71      | 55     | 47   | 44     | 43   |
| 100.0 | 106     | 81     | 68   | 63     | 61   |
| 102.5 | 145     | 110    | 92   | 85     | 82   |
| 105.0 | 188     | 141    | 118  | 108    | 104  |
| 107.5 | 233     | 174    | 145  | 132    | 128  |
| 110.0 | 279     | 208    | 172  | 157    | 152  |
| 112.5 | 327     | 243    | 200  | 182    | 177  |
| 115.0 | 376     | 279    | 229  | 208    | 203  |
| 117.5 | 426     | 315    | 258  | 235    | 228  |
| 120.0 | 477     | 353    | 287  | 261    | 254  |
| 122.5 | 529     | 391    | 318  | 288    | 281  |
| 125.0 | 581     | 430    | 349  | 316    | 307  |
| 127.5 | 632     | 470    | 381  | 344    | 335  |
| 130.0 | 684     | 511    | 414  | 373    | 363  |
| 132.5 | 735     | 552    | 448  | 403    | 392  |
| 135.0 | 784     | 594    | 483  | 434    | 422  |
| 137.5 | 833     | 637    | 519  | 467    | 453  |
| 140.0 | 880     | 681    | 557  | 500    | 486  |
| 142.5 | 925     | 725    | 596  | 536    | 521  |
| 145.0 | 968     | 769    | 636  | 572    | 556  |
| 147.5 | 1008    | 813    | 678  | 611    | 594  |
| 150.0 | 1045    | 857    | 722  | 652    | 634  |
| 152.5 | 1080    | 900    | 767  | 695    | 677  |
| 155.0 | 1111    | 942    | 813  | 741    | 723  |
| 157.5 | 1140    | 983    | 861  | 790    | 772  |
| 160.0 | 1165    | 1023   | 909  | 841    | 824  |
| 162.5 | 1188    | 1061   | 957  | 894    | 879  |
| 165.0 | 1208    | 1097   | 1006 | 949    | 937  |
| 167.5 | 1224    | 1131   | 1053 | 1005   | 995  |
| 170.0 | 1237    | 1163   | 1099 | 1060   | 1055 |
| 172.5 | 1248    | 1192   | 1144 | 1115   | 1114 |
| 175.0 | 1255    | 1219   | 1187 | 1168   | 1172 |
| 177.5 | 1260    | 1243   | 1227 | 1220   | 1228 |
| 180.0 | 1266    | 1266   | 1266 | 1266   | 1266 |



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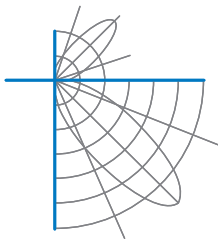
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**Coefficients Of Utilization - Zonal Cavity Method**

Effective Floor Cavity Reflectance 0.20

| 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 |
| 0  |    | 95 | 95 | 95 | 95 | 81 | 81 | 81 | 81 | 56 | 56 | 56 | 32 | 32 | 32 | 10 | 10 | 10 | 0 |
| 1  |    | 87 | 83 | 79 | 76 | 74 | 71 | 68 | 65 | 48 | 47 | 45 | 28 | 27 | 26 | 9  | 9  | 8  | 0 |
| 2  |    | 79 | 72 | 66 | 62 | 67 | 62 | 57 | 53 | 42 | 40 | 37 | 24 | 23 | 22 | 8  | 7  | 7  | 0 |
| 3  |    | 72 | 63 | 57 | 51 | 61 | 54 | 49 | 44 | 37 | 34 | 31 | 21 | 20 | 18 | 7  | 6  | 6  | 0 |
| 4  |    | 65 | 56 | 48 | 43 | 56 | 48 | 42 | 37 | 33 | 29 | 26 | 19 | 17 | 16 | 6  | 6  | 5  | 0 |
| 5  |    | 60 | 49 | 42 | 36 | 51 | 42 | 36 | 32 | 29 | 25 | 22 | 17 | 15 | 13 | 5  | 5  | 4  | 0 |
| 6  |    | 55 | 44 | 36 | 31 | 47 | 38 | 32 | 27 | 26 | 22 | 19 | 15 | 13 | 11 | 5  | 4  | 4  | 0 |
| 7  |    | 50 | 39 | 32 | 27 | 43 | 34 | 28 | 23 | 23 | 19 | 17 | 14 | 11 | 10 | 4  | 4  | 3  | 0 |
| 8  |    | 47 | 35 | 28 | 23 | 40 | 30 | 24 | 20 | 21 | 17 | 14 | 12 | 10 | 9  | 4  | 3  | 3  | 0 |
| 9  |    | 43 | 32 | 25 | 20 | 37 | 27 | 22 | 18 | 19 | 15 | 13 | 11 | 9  | 8  | 4  | 3  | 3  | 0 |
| 10 |    | 40 | 29 | 22 | 18 | 34 | 25 | 19 | 16 | 17 | 14 | 11 | 10 | 8  | 7  | 3  | 3  | 2  | 0 |

For absolute test reports, CUs are expressed as a percentage of total lumen output. Calculations were based on published IES procedures, and are based on the zonal cavity method. Basic assumptions: 1) Room surfaces are lambertian reflectors. 2) Incident flux on each surface is uniformly distributed. 3) The room is spectrally neutral. When luminaires are not evenly distributed throughout the room, or do not exhibit lateral symmetry, CU values may differ from actual performance.



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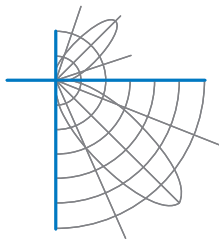
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**Test Distance**            9.5 m  
**Test Temperature**      24.3 °C

**Notes**

The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

Tested in accordance with the applicable sections of publications: IES LM-79-08 (Sec. 12), IES LM-16-93, IES LM-58-13, CIE 13.3:1995, CIE 15:2004, ANSI C78.377:2017, ANSI C82.77-10:2014.

The luminous intensity values, and other derived quantities, contained in this report are based on the absolute data, as measured.

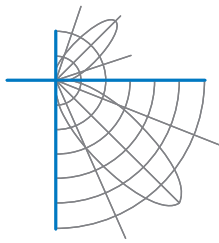
Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections.

Photometric intensity values are reported using the CIE Gamma coordinate system as defined in CIE publication number 121.

This report may contain data that are not covered by the NVLAP accreditation. Quantities marked with \* are not covered.

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST, or any agency of the Federal Government.



## Report of Test

**LLIA001116-004B**

Integrating Sphere Report

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA



### Performance Summary

|              |           |
|--------------|-----------|
| Voltage      | 120.0 Vac |
| Current      | 0.2349 A  |
| Power        | 28.11 W   |
| Frequency    | 59.99 Hz  |
| Power Factor | 0.997     |
| Current THD  | 5.6 %     |

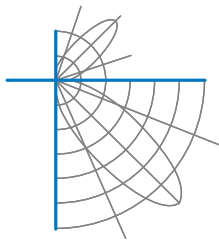
|                     |                  |
|---------------------|------------------|
| Total Luminous Flux | 3516.5 lm        |
| Efficacy            | 125.1 lm/W       |
| Chromaticity (x,y)  | (0.4071, 0.3919) |
| (u',v')             | (0.2364, 0.5120) |
| Duv                 | 0.0002           |
| CCT                 | 3472 K           |
| CRI (Ra)            | 83               |
| R9                  | 12               |
| TM-30: Rf           | 82               |
| TM-30: Rg           | 97               |

Prepared For:

Precision Architectural Lighting  
4830 Timber Creek Drive  
Houston, TX 77017, USA

Test date: 05/15/2019

Report date: 05/17/2019



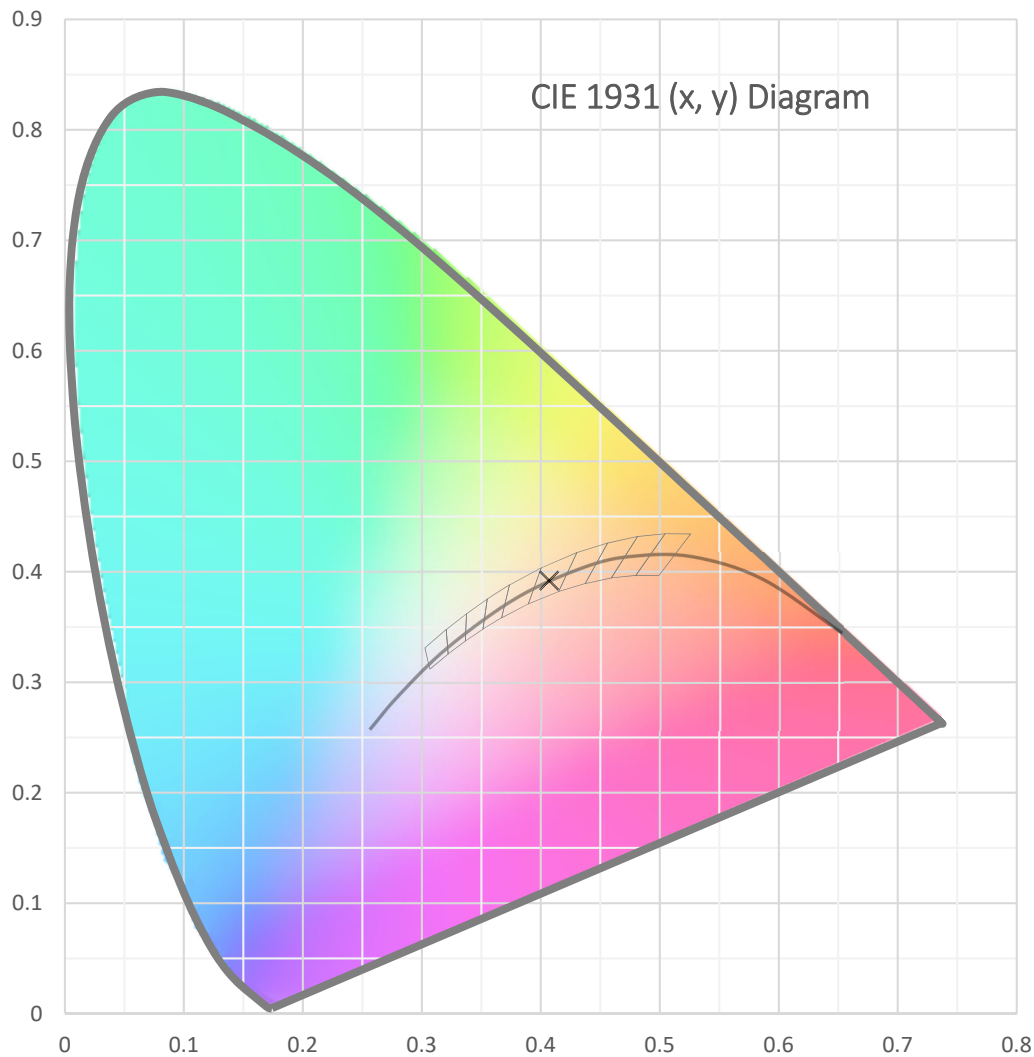
**Test Report Number: LLIA001116-004B**

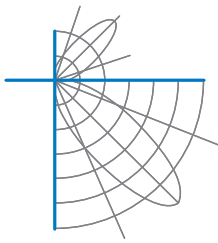
Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA





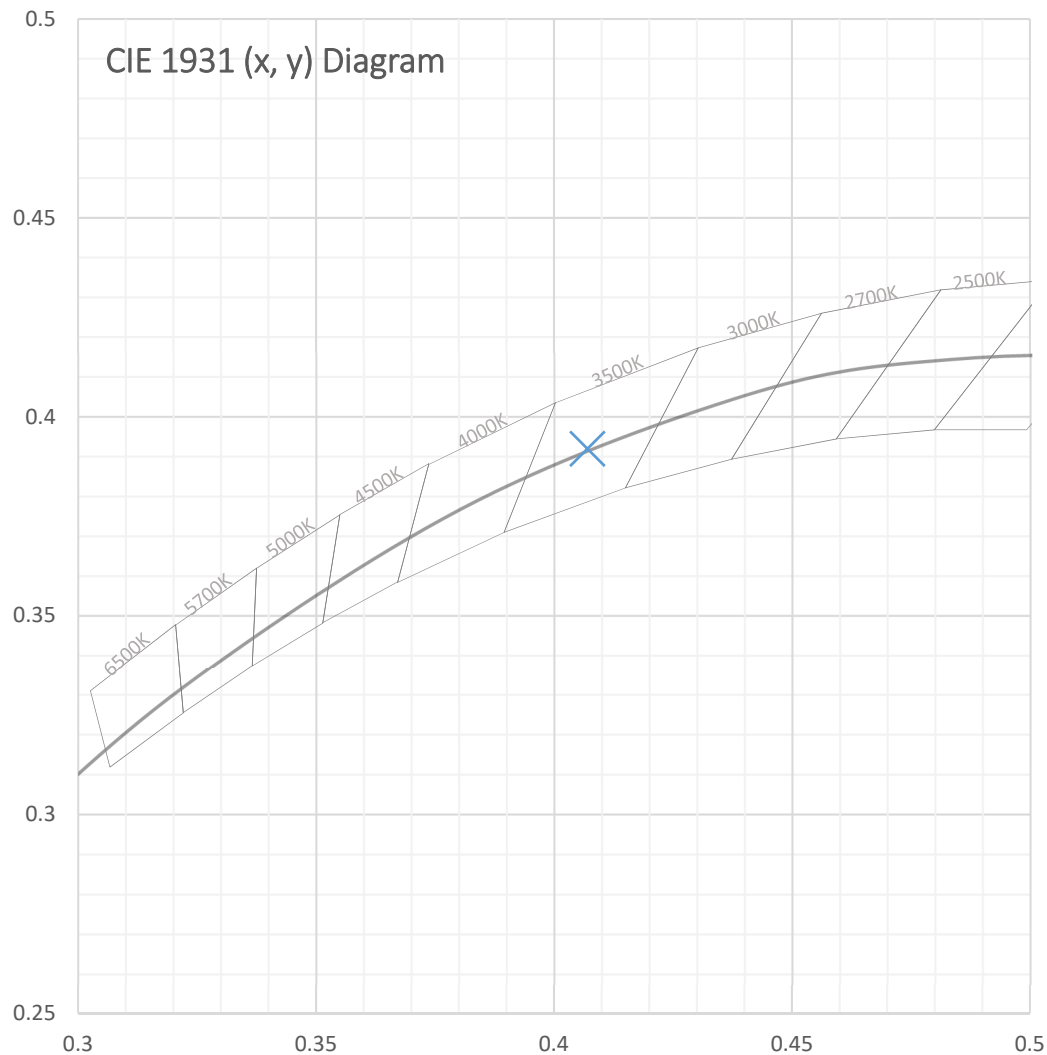
**Test Report Number: LLIA001116-004B**

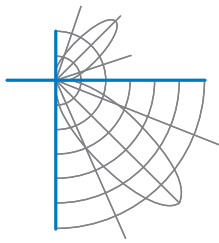
Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

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**Test Report Number: LLIA001116-004B**

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white  
enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

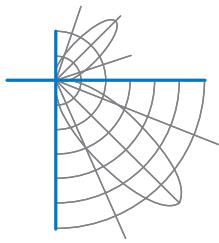
One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA

**Spectral Data**

|                                     |                  |
|-------------------------------------|------------------|
| Total Radiant Flux                  | 10.82 W          |
| Total Luminous Flux                 | 3516.5 Lm        |
| Chromaticity CIE 1931 (x, y)        | (0.4071, 0.3919) |
| Chromaticity CIE 1976 (u', v')      | (0.2364, 0.5120) |
| Correlated Color Temperature (CCT)  | 3472 K           |
| Color Rendering Index (Ra)          | 83               |
| R1                                  | 81               |
| R2                                  | 89               |
| R3                                  | 95               |
| R4                                  | 82               |
| R5                                  | 81               |
| R6                                  | 85               |
| R7                                  | 86               |
| R8                                  | 64               |
| R9                                  | 12               |
| R10                                 | 73               |
| R11                                 | 80               |
| R12                                 | 64               |
| R13                                 | 83               |
| R14                                 | 97               |
| TM-30: Rf                           | 82               |
| TM-30: Rg                           | 97               |
| Distance from Planckian Locus (Duv) | 0.0002           |
| Scotopic/Photopic Ratio *           | 1.497            |

**Electrical Data**

|              |           |
|--------------|-----------|
| Voltage      | 120.0 Vac |
| Current      | 0.2349 A  |
| Power        | 28.11 W   |
| Frequency    | 59.99 Hz  |
| Power Factor | 0.997     |
| Current THD  | 5.6 %     |



**Test Report Number: LLIA001116-004B**

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

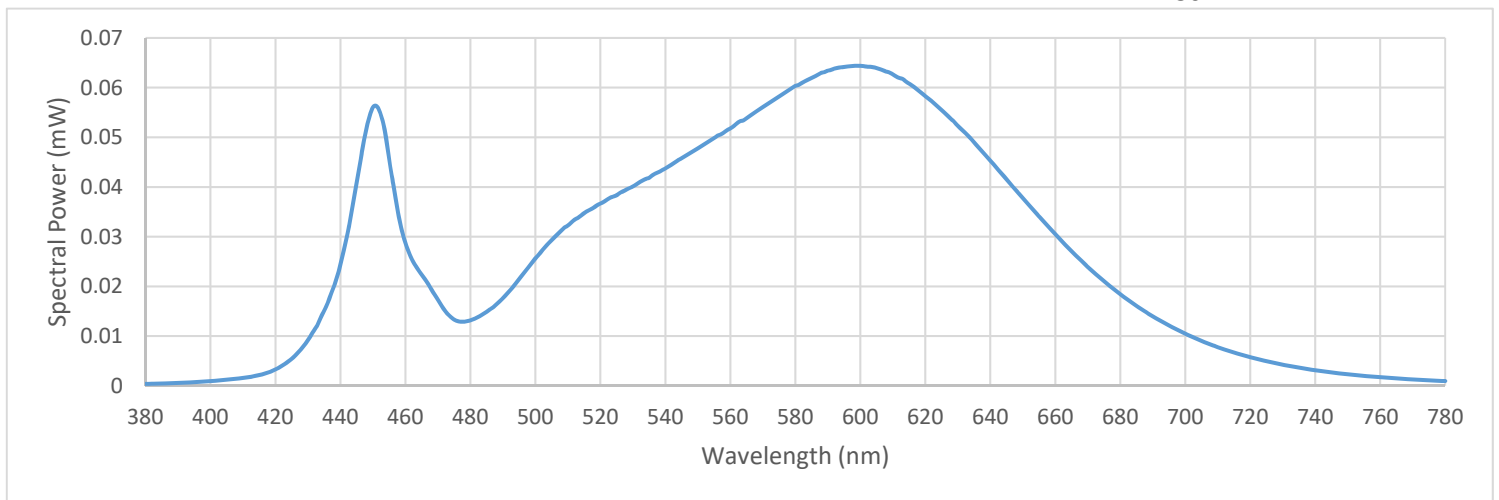
Wall mounted, extruded aluminum housing, formed white  
enamel LED tray/reflector, frosted plastic enclosure.

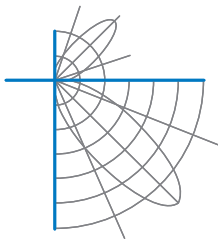
One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA

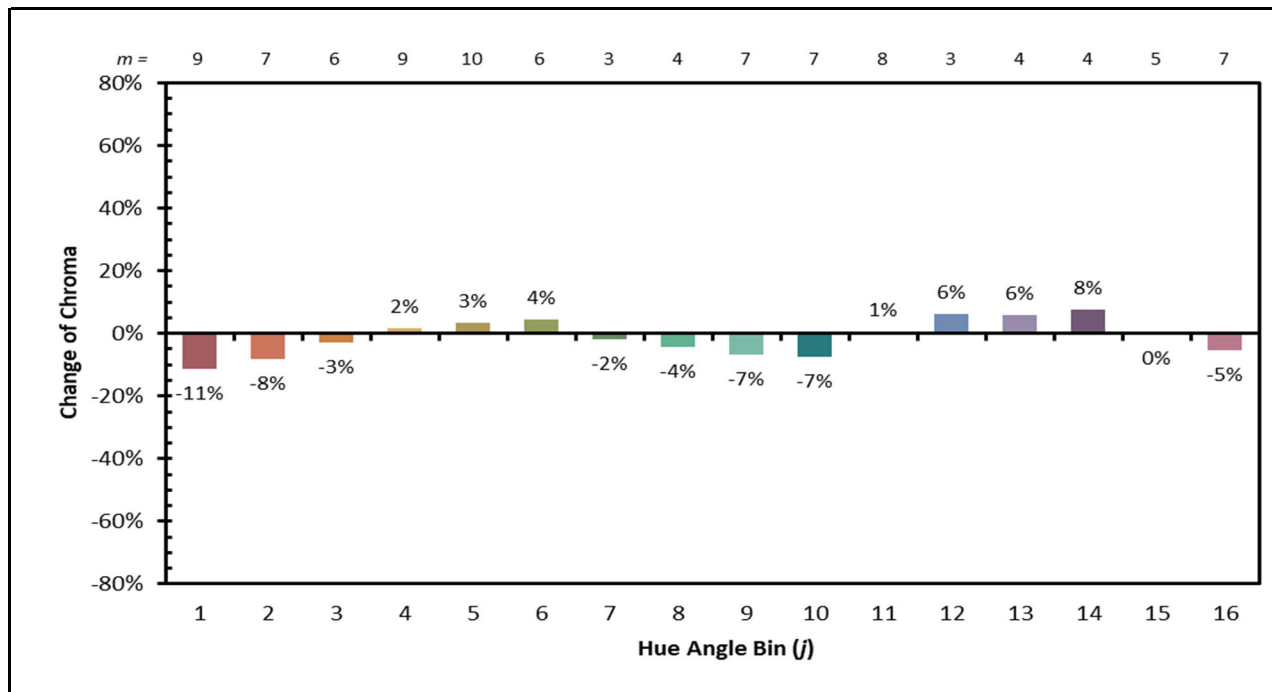
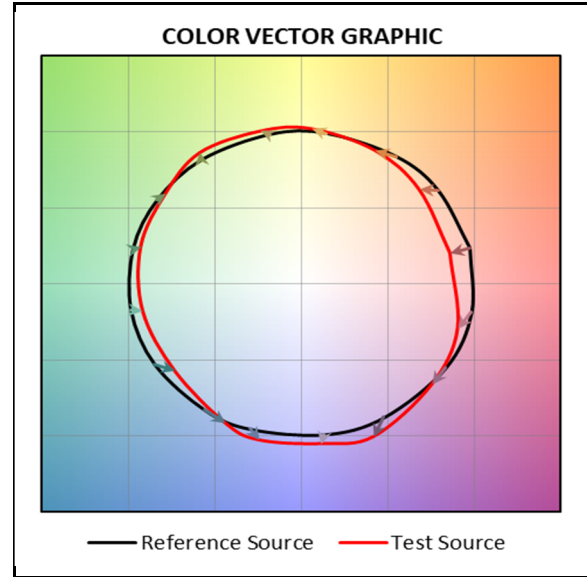
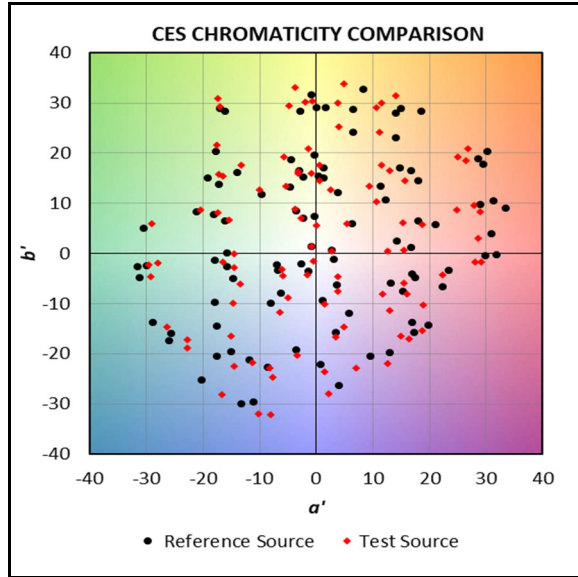
Summary Spectral Power Distribution (wavelength - nm, spectral power - mW)

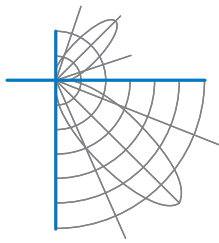
|     |          |     |          |     |          |     |          |
|-----|----------|-----|----------|-----|----------|-----|----------|
| 380 | 0.000394 | 480 | 0.013161 | 580 | 0.060341 | 680 | 0.018406 |
| 385 | 0.000435 | 485 | 0.014891 | 585 | 0.061976 | 685 | 0.016091 |
| 390 | 0.000565 | 490 | 0.017644 | 590 | 0.063431 | 690 | 0.013984 |
| 395 | 0.000724 | 495 | 0.021460 | 595 | 0.064139 | 695 | 0.012121 |
| 400 | 0.000939 | 500 | 0.025659 | 600 | 0.064377 | 700 | 0.010490 |
| 405 | 0.001206 | 505 | 0.029308 | 605 | 0.063953 | 705 | 0.009031 |
| 410 | 0.001568 | 510 | 0.032251 | 610 | 0.062673 | 710 | 0.007766 |
| 415 | 0.002149 | 515 | 0.034720 | 615 | 0.060771 | 715 | 0.006697 |
| 420 | 0.003292 | 520 | 0.036685 | 620 | 0.058270 | 720 | 0.005756 |
| 425 | 0.005419 | 525 | 0.038338 | 625 | 0.055525 | 725 | 0.004949 |
| 430 | 0.009227 | 530 | 0.040142 | 630 | 0.052272 | 730 | 0.004242 |
| 435 | 0.015134 | 535 | 0.041858 | 635 | 0.048958 | 735 | 0.003635 |
| 440 | 0.024353 | 540 | 0.043721 | 640 | 0.045298 | 740 | 0.003113 |
| 445 | 0.040841 | 545 | 0.045794 | 645 | 0.041533 | 745 | 0.002691 |
| 450 | 0.056057 | 550 | 0.047794 | 650 | 0.037773 | 750 | 0.002302 |
| 455 | 0.045675 | 555 | 0.049790 | 655 | 0.034067 | 755 | 0.001990 |
| 460 | 0.028804 | 560 | 0.051798 | 660 | 0.030524 | 760 | 0.001727 |
| 465 | 0.022346 | 565 | 0.053821 | 665 | 0.027035 | 765 | 0.001482 |
| 470 | 0.017283 | 570 | 0.056039 | 670 | 0.023896 | 770 | 0.001276 |
| 475 | 0.013325 | 575 | 0.058217 | 675 | 0.021057 | 775 | 0.001099 |
|     |          |     |          |     |          | 780 | 0.000949 |





IES TM-30 Details





**Test Report Number: LLIA001116-004B**

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA

Test Equipment Configuration: LightLab International Allentown 2m Integrating Sphere  
Measurements acquired using a Labsphere CDS 2600 spectroradiometer  
Testing was performed using 4 $\pi$  geometry

Test Temperature: 25.3 °C

Test Procedure: Tested in accordance with the applicable sections of:  
LM-79-08, LM-78-07, LM-58-13, ANSI\_ANSLG C78.377-2017,  
ANSI C82-77-10:2014, TM-30-15

Significance: The laboratory has not participated in the selection of samples to be tested.  
All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units.

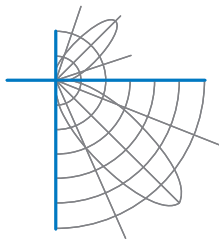
Notes: The measurements and other derived quantities contained in this report are based on the absolute data as measured.

Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results.

This report is free of erasures and corrections

This report may contain data that are not covered by the NVLAP accreditation.  
Quantities marked with \* are not covered.





## Report of Test

**LLIA001116-004C**

Electrical Test Report

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA



### Performance Summary

|              |           |
|--------------|-----------|
| Voltage      | 277.0 Vac |
| Current      | 0.1114 A  |
| Power        | 29.37 W   |
| Frequency    | 60.00 Hz  |
| Power Factor | 0.951     |
| Current THD  | 11.8 %    |

Ambient Temperature: 24.2 °C

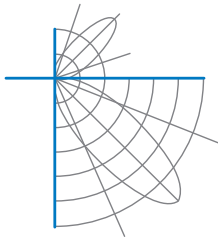
Prepared For:  
Precision Architectural Lighting  
4830 Timber Creek Drive  
Houston, TX 77017, USA

Tested in accordance with the applicable sections of C82.77-10-2014. The laboratory has not participated in the selection of samples to be tested. All testing is performed on the understanding that the significance of the report is limited to the extent that the test sample is representative of production units. Prorating the performance of the sample for the use of other component combinations (such as lamp / LED / Ballast / driver), or for use in different environmental conditions than that tested, may produce erroneous results. This report is free of erasures and corrections.

Test date: 05/15/2019

Report date: 05/17/2019

Electrical Report Template V1-2



## Report of Test

LLIA001116-004D

ISTM Report

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA



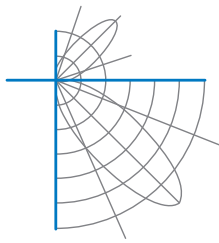
Prepared For:

Precision Architectural Lighting  
4830 Timber Creek Drive  
Houston, TX 77017, USA

This test report was issued by LightLab International Allentown, LLC without alterations or erasures.

Test date: 05/30/2019

Report date: 05/30/2019



**Test Report Number: LLIA001116-004D**

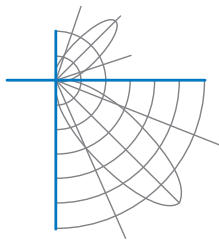
Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA

|                     |   |
|---------------------|---|
| Purpose of Test:    | To determine the in-situ temperature of the specified LED Ts point and driver Tc point. In this test, in-situ temperature refers to standard laboratory conditions with the luminaire configured in accordance with appropriate sections of UL1598-2008   |
| Luminaire Mounting: | Surface/Wall  |
| LED Test Point:     | Thermocouples were attached to the LED case temperature point (Ts) as specified by report number SQETMN558601, issued 07/11/2016 by Nichia Corporation LED Testing Laboratory. The measured LED was selected according to guidance provided by DLC and ENERGY STAR for lumen maintenance projection.  |
| Driver Test Point:  | Thermocouples were attached to the driver case in the location (Tc) designated by the manufacturer.   |
| Sample Selection:   | LightLab International Allentown. LLC has not participated in the selection of sample(s) being tested. Testing is performed on the understanding that the significance of the report is limited to the extent to which the sample is representative of production units.  |
| Disclaimer:         | This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.  |
| Procedure:          | In-situ temperature measurements were performed with the luminaire mounted vertically, on a simulated wall. The luminaire supply voltage and frequency was set according to the luminaire manufacturer's instructions. The luminaire was allowed to reach stabilization as defined in UL1598-2008 prior to reported measurements. Testing was performed in a draft-free, temperature-controlled environment with an ambient temperature of 25 +/- 5 °C. |
| Test Equipment:     | GW Instek APS-7100 AC Power Source<br>Xitron 2801 Power Analyzer<br>Fluke 52-ii Thermometer   |



**Test Report Number: LLIA001116-004D**

Catalog Number: MLP5-IASY-HO-K35-80-4-W-FDC-FXXX-UNV

Wall mounted, extruded aluminum housing, formed white enamel LED tray/reflector, frosted plastic enclosure.

One PAL-Lighting LED board with 92 LEDs

One Osram Optotronic OTi30/120-277/1A0 DIM L LED driver labeled as 720mA

Electrical Measurements

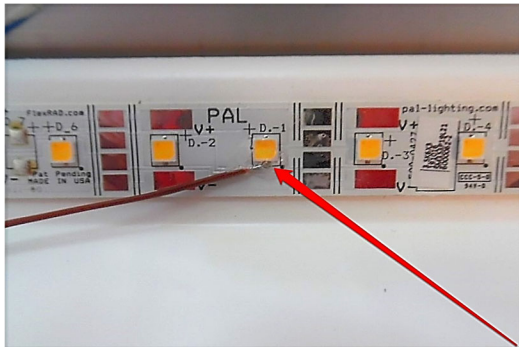
|                  |           |
|------------------|-----------|
| Voltage          | 120.0 Vac |
| Current          | 0.2337 A  |
| Power            | 27.96 W   |
| Frequency        | 60.0 Hz   |
| Power Factor     | 0.997     |
| Current THD      | 5.7 %     |
| Driver #1 Output | 0.716 Adc |

Temperature Measurements

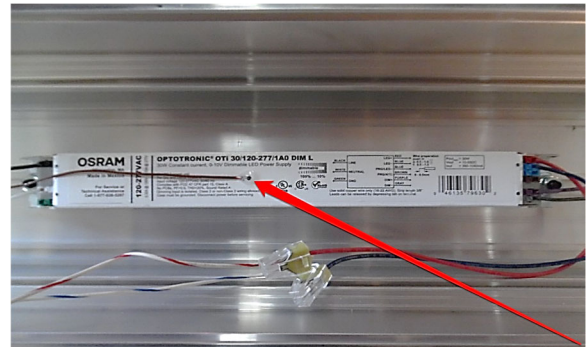
|             |        |                |        |
|-------------|--------|----------------|--------|
| LED #1 (Ts) | 45.4°C | Driver #1 (Tc) | 46.8°C |
|-------------|--------|----------------|--------|

\*The above temperatures have been normalized to 25°C ambient.

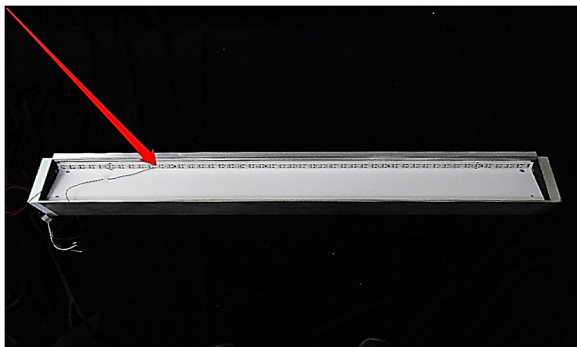
Measured Ambient Temperature (Ta) 23.4°C



LED Thermocouple Location



Driver Thermocouple Location



Selected LED Location