



UL Verification Services Inc.  
7036 Snowdrift Road  
Allentown, PA 18106  
610-774-1300



## Indoor Distribution Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002

Prepared For  
**Mercury Lighting**  
20 Audrey Pl  
Fairfield, NJ 07004-3416  
United States

Catalog Number  
**MLD3-G-48-990-35K-A10-A401-U**  
Order Number  
**12182822**  
Test Number  
**12182822.23**

Test Date

2018-04-17

Revised 2018-04-20

Prepared By

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Approved By

Alexa Lambert, Project Handler

The results contained in this report pertain only to the tested sample.  
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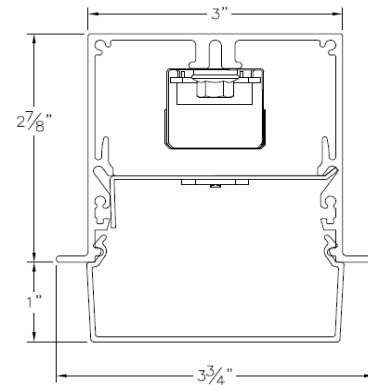


**Luminaire Description:** Extruded aluminum housing, frosted lens enclosure  
**Lamp:** 96 white LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** Philips XI040C110V054BST1

**Luminaire Photo**



**Luminaire Cross-Section**



**Luminaire Characteristics**

Luminous Length: 48.00 in.  
Luminous Width: 3.750 in.  
Luminous Height: 1.00 in.

**Summary of Results**

Total Luminaire Output: 3976 Lumens  
Luminaire Efficacy: 100.1 lm/w  
Maximum Candela: 995 Candela

**Test Conditions**

Test Temperature: 25.8 °C  
Voltage: 120.1 VAC  
Current: 0.3319 A  
Power: 39.74 W  
Power Factor: 0.997  
Frequency: 60 Hz  
Current THD: 6.11 %

Laboratory results may not be representative of field performance  
Ballast factors have not been applied



## Distribution - Goniophotometer

### Distribution Test Conditions

| Temperature | Voltage   | Current  | Power   | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 25.8 °C     | 120.1 VAC | 0.3319 A | 39.74 W | 0.997        | 60 Hz     | 6.11 %      |

### Summary of Results

#### Spacing Criteria

0-180: 1.26  
90-270: 1.39

#### Total Lumen Output:

3976 Lumens

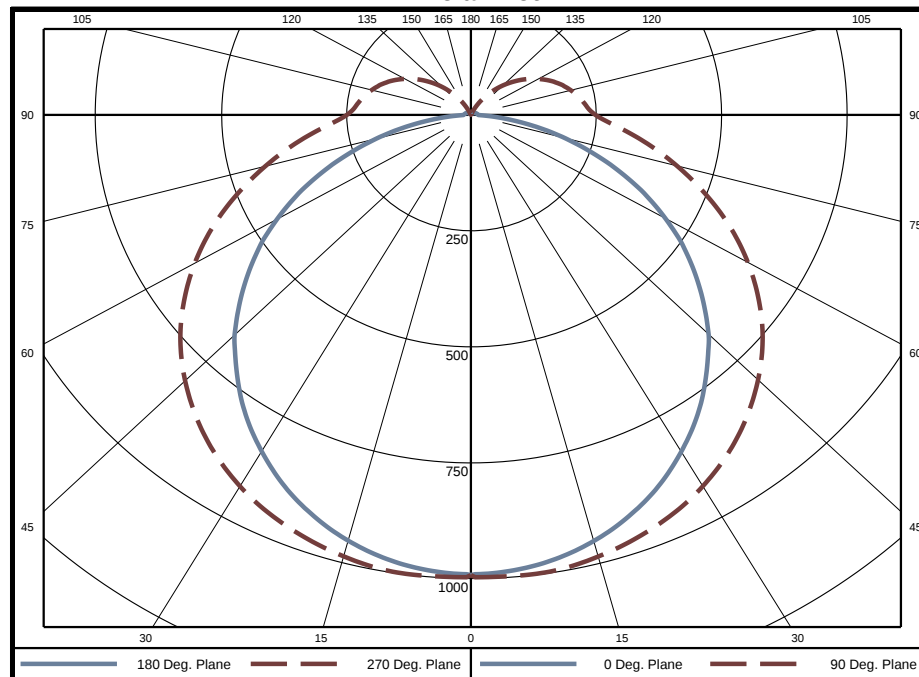
#### Luminaire Efficacy:

100.1 lm/w

#### Maximum Candela:

995 Candela

### Polar Plot



### Zonal Lumen Summary

| Zone  | Lumens | % of Luminaire | Zone    | Lumens | % of Luminaire | Zone    | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5   | 23.6   | 0.6%           | 60-65   | 252.4  | 6.3%           | 120-125 | 34.7   | 0.9%           |
| 5-10  | 70.4   | 1.8%           | 65-70   | 225.0  | 5.7%           | 125-130 | 26.3   | 0.7%           |
| 10-15 | 115.5  | 2.9%           | 70-75   | 192.3  | 4.8%           | 130-135 | 18.7   | 0.5%           |
| 15-20 | 157.4  | 4.0%           | 75-80   | 157.7  | 4.0%           | 135-140 | 12.4   | 0.3%           |
| 20-25 | 195.1  | 4.9%           | 80-85   | 123.4  | 3.1%           | 140-145 | 7.1    | 0.2%           |
| 25-30 | 227.5  | 5.7%           | 85-90   | 94.6   | 2.4%           | 145-150 | 3.1    | 0.1%           |
| 30-35 | 253.7  | 6.4%           | 90-95   | 80.5   | 2.0%           | 150-155 | 0.8    | 0.0%           |
| 35-40 | 273.1  | 6.9%           | 95-100  | 74.5   | 1.9%           | 155-160 | 0.0    | 0.0%           |
| 40-45 | 285.0  | 7.2%           | 100-105 | 68.0   | 1.7%           | 160-165 | 0      | 0.0%           |
| 45-50 | 289.1  | 7.3%           | 105-110 | 60.6   | 1.5%           | 165-170 | 0      | 0.0%           |
| 50-55 | 284.9  | 7.2%           | 110-115 | 52.2   | 1.3%           | 170-175 | 0      | 0.0%           |
| 55-60 | 272.6  | 6.9%           | 115-120 | 43.5   | 1.1%           | 175-180 | 0      | 0.0%           |

| Zone   | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40   | 1316   | 33.1%          |
| 0-60   | 2448   | 61.6%          |
| 0-90   | 3493   | 87.9%          |
| 90-180 | 482    | 12.1%          |



### Candela Tabulation

Horizontal Angle (Degrees)

| Vertical Angle (Degrees) | 0   | 22.5  | 45    | 67.5  | 90    | 112.5 | 135   | 157.5 | 180   | 202.5 | 225   | 247.5 | 270   | 292.5 | 315   | 337.5 |
|--------------------------|-----|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
|                          | 0   | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 | 989.4 |
|                          | 5   | 982.8 | 987.0 | 987.1 | 988.7 | 994.7 | 988.7 | 987.1 | 987.0 | 982.8 | 987.0 | 987.1 | 988.7 | 994.7 | 988.7 | 987.1 |
|                          | 10  | 969.6 | 976.3 | 980.1 | 985.2 | 993.0 | 985.2 | 980.1 | 976.3 | 969.6 | 976.3 | 980.1 | 985.2 | 993.0 | 985.2 | 980.1 |
|                          | 15  | 947.9 | 957.9 | 966.2 | 973.7 | 982.0 | 973.7 | 966.2 | 957.9 | 947.9 | 957.9 | 966.2 | 973.7 | 982.0 | 973.7 | 966.2 |
|                          | 20  | 918.2 | 931.9 | 945.3 | 956.1 | 966.5 | 956.1 | 945.3 | 931.9 | 918.2 | 931.9 | 945.3 | 956.1 | 966.5 | 956.1 | 945.3 |
|                          | 25  | 881.3 | 898.1 | 917.6 | 933.8 | 946.6 | 933.8 | 917.6 | 898.1 | 881.3 | 898.1 | 917.6 | 933.8 | 946.6 | 933.8 | 917.6 |
|                          | 30  | 836.2 | 857.4 | 883.7 | 906.2 | 920.9 | 906.2 | 883.7 | 857.4 | 836.2 | 857.4 | 883.7 | 906.2 | 920.9 | 906.2 | 883.7 |
|                          | 35  | 785.9 | 809.9 | 845.8 | 872.7 | 888.7 | 872.7 | 845.8 | 809.9 | 785.9 | 809.9 | 845.8 | 872.7 | 888.7 | 872.7 | 845.8 |
|                          | 40  | 727.8 | 756.7 | 802.4 | 832.5 | 849.8 | 832.5 | 802.4 | 756.7 | 727.8 | 756.7 | 802.4 | 832.5 | 849.8 | 832.5 | 802.4 |
|                          | 45  | 668.4 | 699.2 | 753.3 | 786.9 | 805.2 | 786.9 | 753.3 | 699.2 | 668.4 | 699.2 | 753.3 | 786.9 | 805.2 | 786.9 | 753.3 |
|                          | 50  | 597.6 | 637.5 | 697.4 | 735.3 | 755.0 | 735.3 | 697.4 | 637.5 | 597.6 | 637.5 | 697.4 | 735.3 | 755.0 | 735.3 | 697.4 |
|                          | 55  | 525.0 | 571.1 | 635.6 | 677.3 | 697.0 | 677.3 | 635.6 | 571.1 | 525.0 | 571.1 | 635.6 | 677.3 | 697.0 | 677.3 | 635.6 |
|                          | 60  | 446.8 | 500.0 | 567.8 | 613.4 | 633.7 | 613.4 | 567.8 | 500.0 | 446.8 | 500.0 | 567.8 | 613.4 | 633.7 | 613.4 | 567.8 |
|                          | 65  | 364.3 | 424.5 | 495.6 | 545.7 | 565.5 | 545.7 | 495.6 | 424.5 | 364.3 | 424.5 | 495.6 | 545.7 | 565.5 | 545.7 | 495.6 |
|                          | 70  | 277.3 | 344.5 | 420.7 | 473.6 | 493.2 | 473.6 | 420.7 | 344.5 | 277.3 | 344.5 | 420.7 | 473.6 | 493.2 | 473.6 | 420.7 |
|                          | 75  | 193.6 | 265.9 | 346.7 | 403.0 | 422.0 | 403.0 | 346.7 | 265.9 | 193.6 | 265.9 | 346.7 | 403.0 | 422.0 | 403.0 | 346.7 |
|                          | 80  | 114.3 | 192.1 | 277.6 | 335.0 | 354.0 | 335.0 | 277.6 | 192.1 | 114.3 | 192.1 | 277.6 | 335.0 | 354.0 | 335.0 | 277.6 |
|                          | 85  | 48.2  | 129.6 | 215.2 | 271.9 | 290.4 | 271.9 | 215.2 | 129.6 | 48.2  | 129.6 | 215.2 | 271.9 | 290.4 | 271.9 | 215.2 |
|                          | 90  | 12.5  | 89.5  | 173.6 | 227.0 | 245.2 | 227.0 | 173.6 | 89.5  | 12.5  | 89.5  | 173.6 | 227.0 | 245.2 | 227.0 | 173.6 |
|                          | 95  | 10.8  | 78.6  | 158.8 | 210.2 | 227.4 | 210.2 | 158.8 | 78.6  | 10.8  | 78.6  | 158.8 | 210.2 | 227.4 | 210.2 | 158.8 |
|                          | 100 | 9.7   | 69.3  | 148.4 | 198.8 | 215.8 | 198.8 | 148.4 | 69.3  | 9.7   | 69.3  | 148.4 | 198.8 | 215.8 | 198.8 | 148.4 |
|                          | 105 | 9.0   | 58.8  | 135.8 | 186.2 | 203.1 | 186.2 | 135.8 | 58.8  | 9.0   | 58.8  | 135.8 | 186.2 | 203.1 | 186.2 | 135.8 |
|                          | 110 | 8.0   | 47.8  | 121.5 | 171.3 | 188.7 | 171.3 | 121.5 | 47.8  | 8.0   | 47.8  | 121.5 | 171.3 | 188.7 | 171.3 | 121.5 |
|                          | 115 | 7.1   | 36.6  | 106.0 | 153.4 | 171.7 | 153.4 | 106.0 | 36.6  | 7.1   | 36.6  | 106.0 | 153.4 | 171.7 | 153.4 | 106.0 |
|                          | 120 | 6.0   | 25.2  | 90.0  | 134.6 | 152.4 | 134.6 | 90.0  | 25.2  | 6.0   | 25.2  | 90.0  | 134.6 | 152.4 | 134.6 | 90.0  |
|                          | 125 | 4.7   | 14.6  | 73.1  | 114.8 | 131.9 | 114.8 | 73.1  | 14.6  | 4.7   | 14.6  | 73.1  | 114.8 | 131.9 | 114.8 | 73.1  |
|                          | 130 | 3.8   | 5.2   | 56.0  | 94.3  | 109.8 | 94.3  | 56.0  | 5.2   | 3.8   | 5.2   | 56.0  | 94.3  | 109.8 | 94.3  | 56.0  |
|                          | 135 | 2.8   | 2.1   | 37.5  | 73.7  | 87.4  | 73.7  | 37.5  | 2.1   | 2.8   | 2.1   | 37.5  | 73.7  | 87.4  | 73.7  | 37.5  |
|                          | 140 | 1.8   | 1.2   | 20.8  | 53.1  | 64.7  | 53.1  | 20.8  | 1.2   | 1.8   | 1.2   | 20.8  | 53.1  | 64.7  | 53.1  | 20.8  |
|                          | 145 | 0.9   | 0.4   | 6.6   | 33.1  | 43.0  | 33.1  | 6.6   | 0.4   | 0.9   | 0.4   | 6.6   | 33.1  | 43.0  | 33.1  | 6.6   |
|                          | 150 | 0.1   | 0.0   | 0.0   | 13.7  | 22.1  | 13.7  | 0.0   | 0.0   | 0.1   | 0.0   | 0.0   | 13.7  | 22.1  | 13.7  | 0.0   |
|                          | 155 | 0.0   | 0.0   | 0.0   | 0.9   | 4.0   | 0.9   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.9   | 4.0   | 0.9   | 0.0   |
|                          | 160 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
|                          | 165 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
|                          | 170 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
|                          | 175 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |
|                          | 180 | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |

### Average Luminance (cd/m<sup>2</sup>)

Horizontal Angle (Degrees)

| Vertical Angle<br>(Degrees) | 0  | 45   | 90   |      |
|-----------------------------|----|------|------|------|
|                             | 0  | 8520 | 8520 | 8520 |
|                             | 45 | 7973 | 7624 | 7742 |
|                             | 55 | 7655 | 7395 | 7578 |
|                             | 65 | 7106 | 7032 | 7331 |
|                             | 75 | 5975 | 6558 | 7037 |
|                             | 85 | 3848 | 6397 | 7088 |



### Utilization of Lumens - Zonal Cavity Method

| Effective Floor Cavity Reflectance 20% |                                                                    |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|----------------------------------------|--------------------------------------------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Ceiling Cavity Reflectance             | 80                                                                 |      |      |      | 70   |      |      |      | 50   |      |      | 30   |      |      | 10   |      |      | 0    |
| Wall Reflectance                       | 70                                                                 | 50   | 30   | 10   | 70   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 50   | 30   | 10   | 0    |
| Room Cavity Ratio (RCR)                | ** Values are expressed as Lumens delivered to the task surface ** |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| 0                                      | 4618                                                               | 4618 | 4618 | 4618 | 4455 | 4455 | 4455 | 4455 | 4150 | 4150 | 4150 | 3870 | 3870 | 3870 | 3614 | 3614 | 3614 | 3493 |
| 1                                      | 4131                                                               | 3908 | 3708 | 3528 | 3969 | 3769 | 3588 | 3425 | 3509 | 3362 | 3228 | 3269 | 3152 | 3043 | 3049 | 2956 | 2869 | 2749 |
| 2                                      | 3722                                                               | 3358 | 3057 | 2804 | 3568 | 3240 | 2965 | 2733 | 3018 | 2791 | 2595 | 2813 | 2627 | 2464 | 2624 | 2473 | 2338 | 2221 |
| 3                                      | 3372                                                               | 2920 | 2570 | 2291 | 3228 | 2819 | 2498 | 2239 | 2629 | 2359 | 2137 | 2453 | 2228 | 2039 | 2290 | 2104 | 1944 | 1832 |
| 4                                      | 3074                                                               | 2568 | 2198 | 1915 | 2941 | 2482 | 2140 | 1875 | 2319 | 2027 | 1797 | 2167 | 1920 | 1720 | 2026 | 1818 | 1646 | 1540 |
| 5                                      | 2817                                                               | 2281 | 1906 | 1630 | 2696 | 2207 | 1859 | 1599 | 2066 | 1766 | 1536 | 1935 | 1678 | 1476 | 1813 | 1593 | 1416 | 1315 |
| 6                                      | 2594                                                               | 2043 | 1674 | 1409 | 2484 | 1979 | 1634 | 1383 | 1857 | 1557 | 1333 | 1744 | 1483 | 1283 | 1637 | 1411 | 1234 | 1140 |
| 7                                      | 2399                                                               | 1845 | 1485 | 1234 | 2299 | 1789 | 1452 | 1212 | 1683 | 1386 | 1170 | 1583 | 1323 | 1129 | 1490 | 1262 | 1088 | 999  |
| 8                                      | 2229                                                               | 1677 | 1330 | 1092 | 2138 | 1628 | 1301 | 1074 | 1535 | 1245 | 1038 | 1448 | 1191 | 1003 | 1366 | 1139 | 969  | 885  |
| 9                                      | 2078                                                               | 1534 | 1201 | 975  | 1996 | 1491 | 1176 | 960  | 1409 | 1127 | 930  | 1332 | 1080 | 900  | 1259 | 1035 | 870  | 791  |
| 10                                     | 1945                                                               | 1411 | 1091 | 878  | 1870 | 1373 | 1070 | 865  | 1300 | 1027 | 839  | 1232 | 986  | 813  | 1167 | 947  | 788  | 713  |

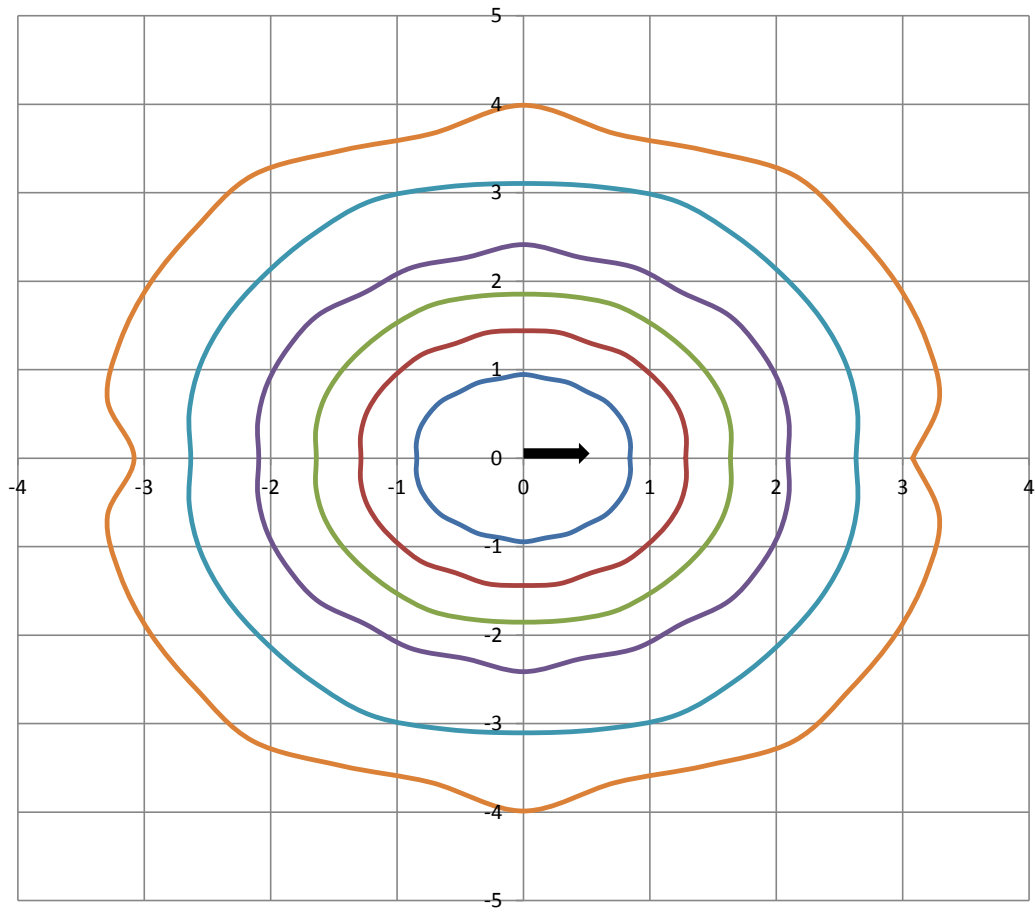
| Beam and Field Information |               |
|----------------------------|---------------|
| CIE Type:                  | Semi-Direct   |
| Center Beam Intensity:     | 989.4 Candela |
| Central Cone Intensity:    | 989 Candela   |
| Beam Flux:                 | 2687.0 Lumens |
| Beam Angle (0-180):        | 114.2 Degrees |
| Beam Angle (90-270):       | 139.8 Degrees |
| Field Angle (0-180):       | 162.1 Degrees |
| Field Angle (90-270):      | 264.8 Degrees |

| Cone of Light Tabulation |  |                      |                 |
|--------------------------|--|----------------------|-----------------|
| Mounting Height (Feet)   |  | Footcandles at Nadir | Diameter (Feet) |
| 4.00                     |  | 61.8                 | 5.30            |
| 6.00                     |  | 27.5                 | 7.95            |
| 8.00                     |  | 15.5                 | 10.6            |
| 10.0                     |  | 9.89                 | 13.3            |
| 12.0                     |  | 6.87                 | 15.9            |
| 14.0                     |  | 5.05                 | 18.6            |
| 16.0                     |  | 3.86                 | 21.2            |



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

