

Project Number  
15.01822



**HUBBELL**  
Lighting

Date  
10/5/2015

LAB 6

*Test Sample Description*

Catalog Number: P5676-2030K9  
Description: 1-LED Lt. Module. Small Wall Lantern

Test Method: IES LM-79-08 § 10  
Preburn Time: 0:35  
Time To Stabilize: 1:04  
Total Operating Time: 3:59  
  
Input Voltage (Volts): 120.0  
Input Current (Amps): 0.070  
Input Wattage (Watts): 7.9  
Ambient Temp (°C): 24.8



**Hubbell Lighting, Inc.**

701 Millennium Boulevard  
Greenville, SC 29607  
www.hubbellighting.com

Checked: D. ROBBINS  
Approved: M. WASHBURN





**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



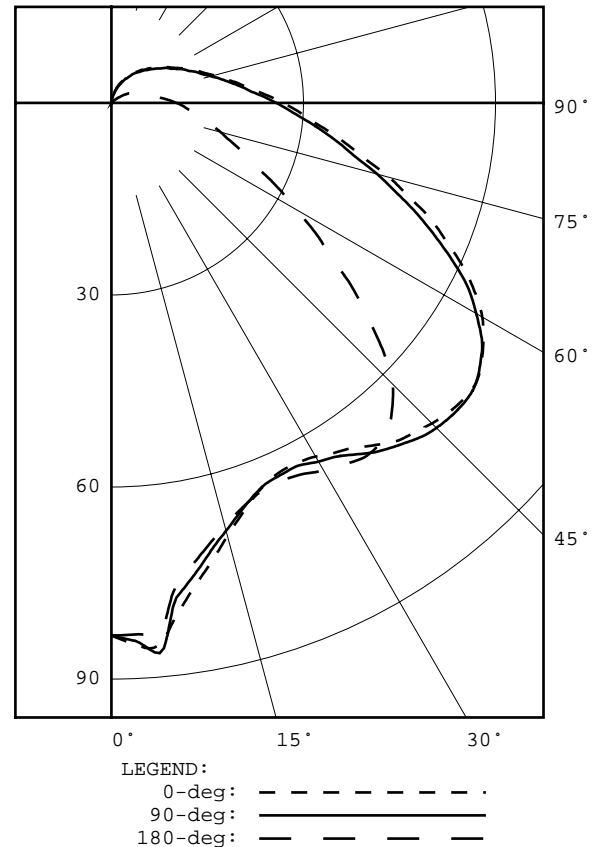
REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15  
PREPARED FOR: PROGRESS  
CATALOG NUMBER: P5676-2030K9  
LUMINAIRE: 1-LED Lt. Module. Small Wall Lantern  
LAMP CAT. NO.: 93049180-3130  
LAMP: 20 - Nichia 3000K LEDs  
BALLAST: 1- HAL 9W LED MODULE  
REFRACTOR: Etched Glass Part # 93063749  
MOUNTING: Wall  
NOTE: DATA SHOWN IS ABSOLUTE FOR THE  
SAMPLE PROVIDED.

PAGE: 2 OF 8

| CANDELA DISTRIBUTION |      |      |      |       |       | FLUX |
|----------------------|------|------|------|-------|-------|------|
|                      | 0.0  | 45.0 | 90.0 | 135.0 | 180.0 |      |
| 0                    | 83.2 | 83.2 | 83.2 | 83.2  | 83.2  |      |
| 5                    | 85.0 | 95.7 | 86.3 | 87.8  | 83.3  | 7.7  |
| 15                   | 70.0 | 69.9 | 69.2 | 68.3  | 68.4  | 19.6 |
| 25                   | 63.3 | 63.2 | 63.8 | 63.7  | 64.8  | 29.7 |
| 35                   | 65.8 | 66.6 | 67.0 | 68.1  | 67.9  | 42.4 |
| 45                   | 70.8 | 73.0 | 71.8 | 73.6  | 62.1  | 55.0 |
| 55                   | 70.6 | 73.3 | 70.4 | 70.8  | 41.9  | 60.4 |
| 65                   | 60.6 | 62.2 | 59.0 | 56.4  | 26.4  | 54.3 |
| 75                   | 45.0 | 44.5 | 43.0 | 38.1  | 17.7  | 41.3 |
| 85                   | 31.3 | 29.8 | 30.4 | 25.0  | 12.1  | 29.5 |
| 90                   | 26.5 | 24.9 | 25.6 | 20.5  | 10.0  |      |
| 95                   | 22.5 | 20.7 | 21.7 | 16.9  | 8.1   | 20.7 |
| 105                  | 16.6 | 15.0 | 16.1 | 11.9  | 5.4   | 14.6 |
| 115                  | 12.7 | 11.4 | 12.4 | 9.0   | 3.9   | 10.4 |
| 125                  | 9.7  | 8.8  | 9.4  | 6.7   | 1.7   | 7.1  |
| 135                  | 7.3  | 6.8  | 7.2  | 5.1   | 0.3   | 4.6  |
| 145                  | 5.5  | 5.0  | 5.2  | 3.8   | 0.3   | 2.7  |
| 155                  | 3.5  | 3.2  | 3.2  | 2.4   | 0.6   | 1.3  |
| 165                  | 1.6  | 1.5  | 1.4  | 1.2   | 0.6   | 0.4  |
| 175                  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   | 0.0  |
| 180                  | 0.0  | 0.0  | 0.0  | 0.0   | 0.0   |      |

| ZONAL LUMEN ZONE | SUMMARY LUMENS | %FIXT |
|------------------|----------------|-------|
| 0- 30            | 57.0           | 14.2  |
| 0- 40            | 99.4           | 24.7  |
| 0- 60            | 214.8          | 53.5  |
| 0- 90            | 339.9          | 84.6  |
| 90-120           | 45.8           | 11.4  |
| 90-130           | 52.8           | 13.2  |
| 90-150           | 60.1           | 15.0  |
| 90-180           | 61.8           | 15.4  |
| 0-180            | 401.8          | 100.0 |

TOTAL INPUT WATTS = 7.90  
EFFICACY = 50.9 Lm/W  
CIE TYPE - SEMI-DIRECT  
PLANE : 0-DEG 90-DEG 180-DEG  
SPACING CRITERIA : 1.1 1.2 1.2





**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15  
PREPARED FOR: PROGRESS

PAGE: 3 OF 8

PLANE : 0-DEG 90-DEG  
LUMINOUS LENGTH : 5.000 5.000  
HEIGHT OF SIDE : 7.000 7.000

LUMINANCE DATA IN CANDELA/SQ METER

| ANGLE<br>IN DEG | AVERAGE<br>0-DEG | AVERAGE<br>90-DEG | AVERAGE<br>180-DEG |
|-----------------|------------------|-------------------|--------------------|
| 45              | 2586.            | 2622.             | 2268.              |
| 55              | 2543.            | 2536.             | 1509.              |
| 65              | 2220.            | 2162.             | 967.               |
| 75              | 1731.            | 1654.             | 681.               |
| 85              | 1309.            | 1271.             | 506.               |



**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15  
PREPARED FOR: PROGRESS

PAGE: 4 OF 8

CANDELA DISTRIBUTION

|       |      |      |      |      |      |       |       |       |       |
|-------|------|------|------|------|------|-------|-------|-------|-------|
|       | 0.0  | 22.5 | 45.0 | 67.5 | 90.0 | 112.5 | 135.0 | 157.5 | 180.0 |
| 0.0   | 83.2 | 83.2 | 83.2 | 83.2 | 83.2 | 83.2  | 83.2  | 83.2  | 83.2  |
| 5.0   | 85.0 | 94.2 | 95.7 | 90.6 | 86.3 | 87.3  | 87.8  | 85.4  | 83.3  |
| 10.0  | 76.3 | 76.5 | 76.1 | 75.3 | 74.8 | 74.2  | 73.6  | 73.4  | 73.2  |
| 15.0  | 70.0 | 70.0 | 69.9 | 69.6 | 69.2 | 68.8  | 68.3  | 68.3  | 68.4  |
| 20.0  | 65.4 | 65.6 | 65.3 | 65.4 | 65.2 | 65.0  | 64.6  | 65.2  | 65.4  |
| 25.0  | 63.3 | 63.4 | 63.2 | 63.7 | 63.8 | 63.8  | 63.7  | 64.6  | 64.8  |
| 30.0  | 63.8 | 64.1 | 63.9 | 64.3 | 64.7 | 65.0  | 65.2  | 66.2  | 66.3  |
| 35.0  | 65.8 | 66.4 | 66.6 | 66.9 | 67.0 | 67.9  | 68.1  | 68.7  | 67.9  |
| 40.0  | 69.0 | 69.5 | 70.3 | 70.0 | 69.8 | 71.0  | 71.7  | 70.2  | 67.1  |
| 45.0  | 70.8 | 72.0 | 73.0 | 72.2 | 71.8 | 72.9  | 73.6  | 68.8  | 62.1  |
| 50.0  | 71.9 | 73.3 | 74.6 | 73.4 | 72.3 | 73.5  | 73.8  | 64.0  | 52.4  |
| 55.0  | 70.6 | 72.2 | 73.3 | 71.9 | 70.4 | 71.5  | 70.8  | 56.0  | 41.9  |
| 60.0  | 66.9 | 68.2 | 69.2 | 67.7 | 65.8 | 66.7  | 64.9  | 46.0  | 33.4  |
| 65.0  | 60.6 | 61.6 | 62.2 | 60.8 | 59.0 | 59.4  | 56.4  | 36.7  | 26.4  |
| 70.0  | 53.1 | 53.7 | 53.6 | 52.5 | 50.9 | 50.7  | 46.9  | 29.1  | 21.4  |
| 75.0  | 45.0 | 45.1 | 44.5 | 44.1 | 43.0 | 42.5  | 38.1  | 23.4  | 17.7  |
| 80.0  | 37.4 | 37.3 | 36.5 | 36.6 | 36.1 | 35.4  | 30.7  | 19.1  | 14.6  |
| 85.0  | 31.3 | 31.1 | 29.8 | 30.6 | 30.4 | 29.6  | 25.0  | 16.0  | 12.1  |
| 90.0  | 26.5 | 26.2 | 24.9 | 25.7 | 25.6 | 25.1  | 20.5  | 13.5  | 10.0  |
| 95.0  | 22.5 | 21.9 | 20.7 | 21.6 | 21.7 | 21.0  | 16.9  | 11.3  | 8.1   |
| 100.0 | 19.3 | 18.7 | 17.5 | 18.6 | 18.7 | 18.0  | 14.1  | 9.7   | 6.7   |
| 105.0 | 16.6 | 16.0 | 15.0 | 16.0 | 16.1 | 15.6  | 11.9  | 8.2   | 5.4   |
| 110.0 | 14.5 | 14.0 | 13.0 | 13.8 | 14.1 | 13.5  | 10.2  | 7.1   | 4.5   |
| 115.0 | 12.7 | 12.3 | 11.4 | 12.3 | 12.4 | 11.9  | 9.0   | 6.1   | 3.9   |
| 120.0 | 11.0 | 10.6 | 9.9  | 10.6 | 10.7 | 10.3  | 7.7   | 5.1   | 2.8   |
| 125.0 | 9.7  | 9.3  | 8.8  | 9.4  | 9.4  | 9.0   | 6.7   | 4.2   | 1.7   |
| 130.0 | 8.4  | 8.3  | 7.8  | 8.2  | 8.2  | 8.1   | 5.9   | 3.5   | 1.0   |
| 135.0 | 7.3  | 7.2  | 6.8  | 7.1  | 7.2  | 6.9   | 5.1   | 2.8   | 0.3   |
| 140.0 | 6.4  | 6.3  | 5.9  | 6.2  | 6.2  | 6.0   | 4.4   | 2.3   | 0.1   |
| 145.0 | 5.5  | 5.4  | 5.0  | 5.3  | 5.2  | 5.1   | 3.8   | 1.9   | 0.3   |
| 150.0 | 4.4  | 4.4  | 4.2  | 4.3  | 4.3  | 4.2   | 3.0   | 1.4   | 0.5   |
| 155.0 | 3.5  | 3.4  | 3.2  | 3.3  | 3.2  | 3.1   | 2.4   | 1.1   | 0.6   |
| 160.0 | 2.6  | 2.5  | 2.4  | 2.4  | 2.3  | 2.2   | 1.8   | 1.1   | 0.7   |
| 165.0 | 1.6  | 1.6  | 1.5  | 1.4  | 1.4  | 1.3   | 1.2   | 0.8   | 0.6   |
| 170.0 | 0.5  | 0.5  | 0.6  | 0.5  | 0.4  | 0.4   | 0.4   | 0.3   | 0.3   |
| 175.0 | 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   |



**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15  
PREPARED FOR: PROGRESS

PAGE: 5 OF 8

ZONAL LUMEN SUMMARY

|         |      |
|---------|------|
| 0- 5    | 2.0  |
| 5- 10   | 5.7  |
| 10- 15  | 8.5  |
| 15- 20  | 11.0 |
| 20- 25  | 13.5 |
| 25- 30  | 16.2 |
| 30- 35  | 19.4 |
| 35- 40  | 22.9 |
| 40- 45  | 26.2 |
| 45- 50  | 28.8 |
| 50- 55  | 30.2 |
| 55- 60  | 30.2 |
| 60- 65  | 28.6 |
| 65- 70  | 25.8 |
| 70- 75  | 22.4 |
| 75- 80  | 19.0 |
| 80- 85  | 16.0 |
| 85- 90  | 13.5 |
| 90- 95  | 11.3 |
| 95-100  | 9.5  |
| 100-105 | 8.0  |
| 105-110 | 6.7  |
| 110-115 | 5.7  |
| 115-120 | 4.7  |
| 120-125 | 3.9  |
| 125-130 | 3.2  |
| 130-135 | 2.6  |
| 135-140 | 2.0  |
| 140-145 | 1.6  |
| 145-150 | 1.1  |
| 150-155 | 0.8  |
| 155-160 | 0.5  |
| 160-165 | 0.3  |
| 165-170 | 0.1  |
| 170-175 | 0.0  |
| 175-180 | 0.0  |



**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15  
PREPARED FOR: PROGRESS

PAGE: 6 OF 8

5-DEGREE  
ZONAL LUMEN SUMMARY

|         |    |
|---------|----|
| 0- 5    | 2  |
| 5- 10   | 6  |
| 10- 15  | 9  |
| 15- 20  | 11 |
| 20- 25  | 13 |
| 25- 30  | 16 |
| 30- 35  | 19 |
| 35- 40  | 23 |
| 40- 45  | 26 |
| 45- 50  | 29 |
| 50- 55  | 30 |
| 55- 60  | 30 |
| 60- 65  | 29 |
| 65- 70  | 26 |
| 70- 75  | 22 |
| 75- 80  | 19 |
| 80- 85  | 16 |
| 85- 90  | 13 |
| 90- 95  | 11 |
| 95-100  | 9  |
| 100-105 | 8  |
| 105-110 | 7  |
| 110-115 | 6  |
| 115-120 | 5  |
| 120-125 | 4  |
| 125-130 | 3  |
| 130-135 | 3  |
| 135-140 | 2  |
| 140-145 | 2  |
| 145-150 | 1  |
| 150-155 | 1  |
| 155-160 | 1  |
| 160-165 | 0  |
| 165-170 | 0  |
| 170-175 | 0  |
| 175-180 | 0  |

10-DEGREE  
ZONAL LUMEN SUMMARY

|       |     |
|-------|-----|
| 0- 10 | 8   |
| 0- 20 | 27  |
| 0- 30 | 57  |
| 0- 40 | 99  |
| 0- 50 | 154 |
| 0- 60 | 215 |
| 0- 70 | 269 |
| 0- 80 | 310 |
| 0- 90 | 340 |
| 0-100 | 361 |
| 0-110 | 375 |
| 0-120 | 386 |
| 0-130 | 393 |
| 0-140 | 397 |
| 0-150 | 400 |
| 0-160 | 401 |
| 0-170 | 402 |
| 0-180 | 402 |



**HUBBELL**  
Lighting

701 Millennium Blvd  
Greenville, SC 29607  
www.hubbellighting.com



REPORT NUMBER: 15.01822  
ISSUE DATE: 10/05/15

PAGE: 7 OF 8

PREPARED FOR: PROGRESS

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

EFFECTIVE FLOOR CAVITY REFLECTANCE 0.20

| RC | 80  |     |     |     | 70  |     |     |     | 50  |     |     | 30 |    |    | 10 |    |    | 0  |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|----|----|----|
|    | 70  | 50  | 30  | 10  | 70  | 50  | 30  | 10  | 50  | 30  | 10  | 50 | 30 | 10 | 50 | 30 | 10 | 0  |
| 0  | 115 | 115 | 115 | 115 | 111 | 111 | 111 | 111 | 103 | 103 | 103 | 95 | 95 | 95 | 88 | 88 | 88 | 85 |
| 1  | 102 | 96  | 90  | 85  | 97  | 92  | 87  | 82  | 85  | 81  | 77  | 78 | 75 | 72 | 72 | 69 | 67 | 64 |
| 2  | 91  | 81  | 73  | 66  | 87  | 78  | 70  | 64  | 72  | 66  | 60  | 66 | 61 | 57 | 61 | 57 | 53 | 50 |
| 3  | 82  | 70  | 60  | 53  | 78  | 67  | 58  | 51  | 62  | 54  | 49  | 57 | 51 | 46 | 52 | 47 | 43 | 40 |
| 4  | 74  | 61  | 51  | 43  | 71  | 58  | 49  | 42  | 54  | 46  | 40  | 50 | 43 | 38 | 46 | 40 | 36 | 33 |
| 5  | 68  | 54  | 44  | 36  | 64  | 51  | 42  | 35  | 48  | 40  | 34  | 44 | 37 | 32 | 40 | 35 | 30 | 27 |
| 6  | 62  | 48  | 38  | 31  | 59  | 46  | 37  | 30  | 42  | 35  | 29  | 39 | 32 | 27 | 36 | 30 | 26 | 23 |
| 7  | 57  | 43  | 33  | 27  | 55  | 41  | 32  | 26  | 38  | 31  | 25  | 35 | 29 | 24 | 33 | 27 | 22 | 20 |
| 8  | 53  | 39  | 30  | 24  | 51  | 37  | 29  | 23  | 35  | 27  | 22  | 32 | 26 | 21 | 30 | 24 | 20 | 18 |
| 9  | 49  | 35  | 27  | 21  | 47  | 34  | 26  | 20  | 32  | 25  | 19  | 30 | 23 | 19 | 27 | 22 | 18 | 16 |
| 10 | 46  | 32  | 24  | 19  | 44  | 31  | 23  | 18  | 29  | 22  | 17  | 27 | 21 | 17 | 25 | 20 | 16 | 14 |

ALL CANDELA, LUMENS, LUMINANCE, AND VCP VALUES IN THIS REPORT ARE BASED ON ABSOLUTE PHOTOMETRY. THE COEFFICIENT OF UTILIZATION VALUES ARE BASED ON THE TOTAL ABSOLUTE LUMEN OUTPUT OF THIS LUMINAIRE SAMPLE.

Project Number  
15.01822



**HUBBELL**  
Lighting

Date  
10/5/2015

### *Goniophotometer Calibration*

*Calibration Lamp:* GE 1000W, 120V, T6, CL (FEL)

*Lamp Number:* ITL78966-1000-14

*Calibration Current:* 8.300 Amps DC

*Total Luminous Flux:* 23413.0 Lumens

*Calibration Date:* 07/19/2015

### *Test Equipment Used*

| <i>Instrument</i>      | <i>Manufacturer / Model</i>            | <i>S/N</i> | <i>Calibration Due:</i> |
|------------------------|--|------------|-------------------------|
| <i>Goniophotometer</i> | ITL / HLI LAB 6 - Test Distance: 31.3' | N/A        | N/A                     |
| <i>Power Analyzer</i>  | Yokogawa / WT 332                      | C2QA27076V | 11/12/2015              |
| <i>Power Source</i>    | Voltage-Regulated House Power          | N/A        | N/A                     |
| <i>Thermometer</i>     | National Instruments / USB-TC01        | 1912745    | 11/11/2015              |

### **Hubbell Lighting, Inc.**

701 Millennium Boulevard  
Greenville, SC 29607  
[www.hubbellighting.com](http://www.hubbellighting.com)

*This report shall not be used to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the federal government.*