

itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL62864

DATE: 08/03/09

PREPARED FOR: NEXXUS LIGHTING, INC.

CATALOG NUMBER: AACMR16NW60

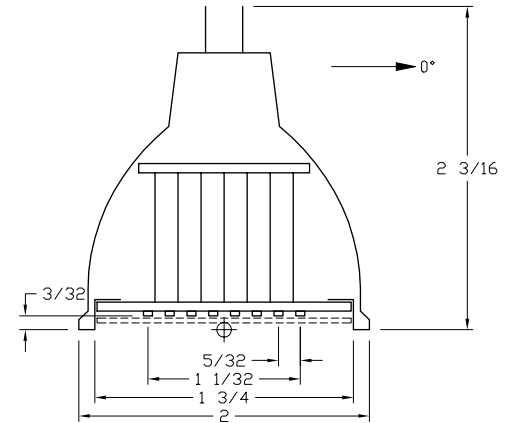
LAMP: ONE MR-16 STYLE BI-PIN BASE LED LAMP, MOLDED FINNED WHITE PLASTIC BODY, ONE WHITE CIRCUIT BOARD WITH 39 VERTICAL BASE-UP WHITE LIGHT EMITTING DIODES (LEDS), MULTIPLE METAL POSTS BETWEEN UPPER AND LOWER HOUSING, FROSTED FLAT PLASTIC LENS, VERTICAL BASE-UP POSITION.

TOTAL INPUT WATTS = 3.30 AT 12.0 VOLTS AC

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE LAMP.

TEST PROCEDURE: IESNA LM-79-08

TEST DISTANCE = 25.25 FEET



| DEG | CANDELA | LUMENS |
|-----|---------|--------|
| 0 | 61.9 | |
| 5 | 61.7 | 5.9 |
| 15 | 59.7 | 16.8 |
| 25 | 55.3 | 25.5 |
| 35 | 48.6 | 30.4 |
| 45 | 39.7 | 30.6 |
| 55 | 29.3 | 26.2 |
| 65 | 18.6 | 18.4 |
| 75 | 8.8 | 9.4 |
| 85 | 1.2 | 1.6 |
| 90 | 0.0 | |

ZONAL LUMEN SUMMARY

| ZONE | LUMENS | %FIXT |
|--------|--------|-------|
| 0- 30 | 48.2 | 29.2 |
| 0- 40 | 78.6 | 47.7 |
| 0- 60 | 135.4 | 82.1 |
| 0- 90 | 164.9 | 100.0 |
| 90-180 | 0.0 | 0.0 |
| 0-180 | 164.9 | 100.0 |

EFFICACY = 50.0 Lm/W

CIE TYPE - DIRECT

LUMINAIRE SPACING CRITERION = 1.3

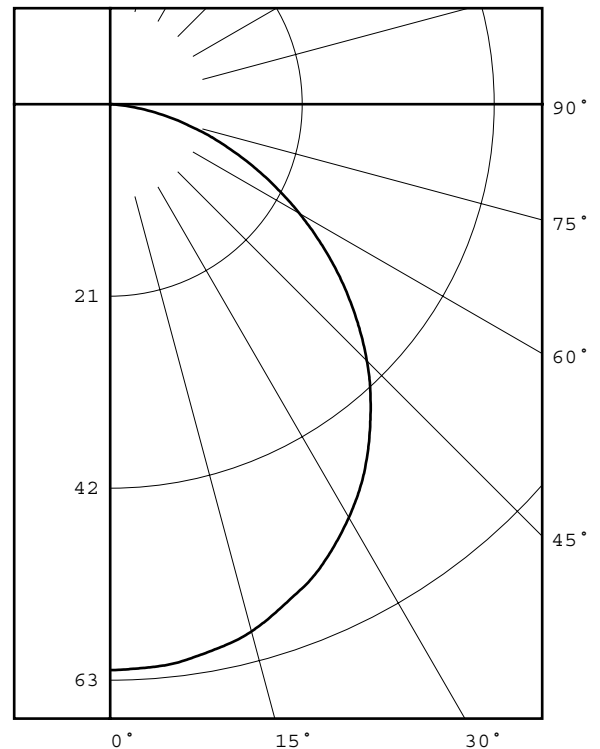
LUMINOUS DIAMETER: 1.750

LUMINANCE DATA IN CANDELA/SQ M

ANGLE AVERAGE

IN DEG

| | |
|----|--------|
| 45 | 36167. |
| 55 | 32907. |
| 65 | 28351. |
| 75 | 21903. |
| 85 | 8869. |



Checked *N. WHITE*

Approved *R. BEATTIE*



INDEPENDENT TESTING LABORATORIES, INC.
 3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL62864
 PREPARED FOR: NEXXUS LIGHTING, INC.

DATE: 08/03/09

CANDELA DISTRIBUTION

| | |
|------|------|
| | 0.0 |
| 0.0 | 61.9 |
| 2.5 | 61.8 |
| 5.0 | 61.7 |
| 7.5 | 61.4 |
| 10.0 | 60.9 |
| 12.5 | 60.4 |
| 15.0 | 59.7 |
| 17.5 | 58.7 |
| 20.0 | 57.6 |
| 22.5 | 56.6 |
| 25.0 | 55.3 |
| 27.5 | 53.8 |
| 30.0 | 52.2 |
| 32.5 | 50.5 |
| 35.0 | 48.6 |
| 37.5 | 46.5 |
| 40.0 | 44.3 |
| 42.5 | 42.1 |
| 45.0 | 39.7 |
| 47.5 | 37.2 |
| 50.0 | 34.6 |
| 52.5 | 32.0 |
| 55.0 | 29.3 |
| 57.5 | 26.6 |
| 60.0 | 23.9 |
| 62.5 | 21.2 |
| 65.0 | 18.6 |
| 67.5 | 16.0 |
| 70.0 | 13.5 |
| 72.5 | 11.2 |
| 75.0 | 8.8 |
| 77.5 | 6.7 |
| 80.0 | 4.6 |
| 82.5 | 2.7 |
| 85.0 | 1.2 |
| 87.5 | 0.3 |
| 90.0 | 0.0 |

ZONAL LUMEN SUMMARY

| | |
|--------|-----|
| 0- 5 | 1. |
| 5- 10 | 4. |
| 10- 15 | 7. |
| 15- 20 | 10. |
| 20- 25 | 12. |
| 25- 30 | 14. |
| 30- 35 | 15. |
| 35- 40 | 16. |
| 40- 45 | 16. |
| 45- 50 | 15. |
| 50- 55 | 14. |
| 55- 60 | 12. |
| 60- 65 | 10. |
| 65- 70 | 8. |
| 70- 75 | 6. |
| 75- 80 | 4. |
| 80- 85 | 1. |
| 85- 90 | 0. |



INDEPENDENT TESTING LABORATORIES, INC.
 3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL62864

DATE: 08/03/09

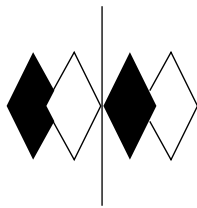
PREPARED FOR: NEXXUS LIGHTING, INC.

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 | 118 | 118 | 118 | 118 | 116 | 116 | 116 | 116 | 111 | 111 | 111 | 106 | 106 | 106 | 101 | 101 | 101 | 99 |
| 1 | 109 | 104 | 100 | 97 | 106 | 102 | 98 | 95 | 98 | 95 | 92 | 94 | 92 | 89 | 90 | 88 | 87 | 85 |
| 2 | 99 | 91 | 85 | 79 | 97 | 90 | 84 | 79 | 86 | 81 | 77 | 83 | 79 | 75 | 80 | 76 | 73 | 71 |
| 3 | 91 | 81 | 73 | 67 | 88 | 79 | 72 | 66 | 76 | 70 | 65 | 73 | 68 | 64 | 71 | 66 | 63 | 60 |
| 4 | 83 | 72 | 63 | 57 | 81 | 70 | 62 | 56 | 68 | 61 | 56 | 66 | 60 | 55 | 63 | 58 | 54 | 52 |
| 5 | 77 | 64 | 55 | 49 | 75 | 63 | 55 | 49 | 61 | 54 | 48 | 59 | 53 | 48 | 57 | 52 | 47 | 45 |
| 6 | 71 | 58 | 49 | 43 | 69 | 57 | 49 | 43 | 55 | 48 | 42 | 53 | 47 | 42 | 52 | 46 | 42 | 40 |
| 7 | 66 | 53 | 44 | 38 | 64 | 52 | 44 | 38 | 50 | 43 | 38 | 49 | 42 | 37 | 47 | 42 | 37 | 35 |
| 8 | 61 | 48 | 40 | 34 | 60 | 47 | 39 | 34 | 46 | 39 | 34 | 45 | 38 | 33 | 44 | 38 | 33 | 31 |
| 9 | 57 | 44 | 36 | 31 | 56 | 43 | 36 | 30 | 42 | 35 | 30 | 41 | 35 | 30 | 40 | 34 | 30 | 28 |
| 10 | 54 | 41 | 33 | 28 | 52 | 40 | 33 | 28 | 39 | 32 | 28 | 38 | 32 | 27 | 37 | 32 | 27 | 26 |

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.



itl boulder

THE LIGHT CENTER OF THE INDUSTRY SINCE 1955

INDEPENDENT TESTING LABORATORIES, INC.
3386 LONGHORN ROAD, BOULDER, CO 80302 USA

PHONE: (303)442-1255 • FAX: (303)449-5274 • E-MAIL: itl@itlboulder.com • WEBSITE: www.itlboulder.com

REPORT NUMBER: ITL62875
DATE: 8/06/09
PREPARED FOR: NEXXUS LIGHTING, INC.

Page 1 of 1

CATALOG NUMBER: AACMR16NW60

LAMP: ONE MR-16 STYLE BI-PIN BASE LED LAMP, MOLDED FINNED WHITE PLASTIC BODY, ONE WHITE CIRCUIT BOARD WITH 39 VERTICAL BASE-UP WHITE LIGHT EMITTING DIODES (LEDs), MULTIPLE METAL POSTS BETWEEN UPPER AND LOWER HOUSING, FROSTED FLAT PLASTIC LENS, VERTICAL BASE-UP POSITION.

NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED AT RATED INPUT VOLTAGE (12VAC, 60Hz) TO THE LAMP.

INSTRUMENTATION: Kikusui PCR500L AC Power Source
Yokogawa WT210 Digital Power Meter
Optronics OL770 Spectroradiometer
ITL 1.5 Meter Diameter Integrating Sphere

OBJECT OF TEST: Measure the Correlated Color Temperature (CCT), Color Rendering Index (CRI), Chromaticity Coordinates (x,y), ANSI C78.377 Duv, and input electrical parameters.

PROCEDURE: The lamp was provided by customer and the LEDs had an unknown number of burn hours. The lamp was mounted inside the integrating sphere with the lamp in a base up position (LEDS facing down). The lamp was allowed to stabilize at 12 VAC input. After stabilization occurred, CCT, CRI, x/y chromaticity coordinates, ANSI C78.377 Duv, and input electrical data were measured with the lamp operating in the integrating sphere. In order to measure the mean performance, twenty data sets were recorded and averaged within the OL770. Readings were taken with the lamp operating at 12 VAC input in a 25 +/-1 degree Celsius free air ambient and in accordance with IESNA LM-79-08. All data are traceable to the National Institute of Standards and Technology.

RESULTS:

| SPECTRORADIOMETRIC | |
|-------------------------------|-------------------|
| Observer | CIE 1931 2 degree |
| Correlated Color Temp CCT (K) | 5131 |
| Chromaticity Ordinate x | 0.3418 |
| Chromaticity Ordinate y | 0.3534 |
| Color Rendering Index (CRI) | 76 |
| ANSI C78.377-2008 Duv | 0.002 |
| ELECTRICAL | |
| Input Voltage (Volts AC) | 12.0 |
| Input Current (mA AC) | 289 |
| Input Power (Watts) | 3.30 |
| Input Power Factor (%) | 95.2 |

| | |
|-----------|-----------------|
| Checked: | <i>N Gully</i> |
| Approved: | <i>R Bergin</i> |