



UL LLC
1075 W Lambert Rd Suite B
Brea, CA 92821

Indoor Distribution Test Report

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

Prepared For
B-K LIGHTING INC

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Catalog Number
CK-LED-X66-WFL-9

Order Number
11353040
Test Number
11353040.44

Test Date

2016-09-15

Prepared By

Khang Nguyen, Technician

Approved By

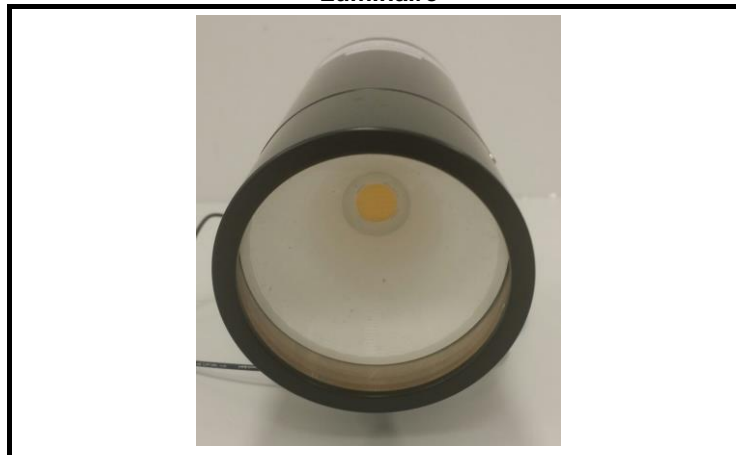
Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.
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Luminaire Description: Circular black aluminum housing, white stepped reflector, and glass lens
Lamp: One (1) White LED
Mounting: Surface
Ballast/Driver: Thomas Research Products LED25W-36-C0700-LE

Luminaire



Luminaire Characteristics

Luminous Diameter: 2.75 in.

Summary of Results

| | |
|-------------------------|--------------|
| Total Luminaire Output: | 1537 Lumens |
| Luminaire Efficacy: | 55.3 lm/w |
| Maximum Candela: | 1620 Candela |

Test Conditions

| | |
|-------------------|-----------|
| Test Temperature: | 24.6 °C |
| Voltage: | 120.1 VAC |
| Current: | 0.2345 A |
| Power: | 27.79 W |
| Power Factor: | 0.987 |
| Frequency: | 60 Hz |
| Current THD: | 12.8 % |

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 |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 24.6 °C | 120.1 VAC | 0.2345 A | 27.79 W | 0.987 | 60 Hz | 12.8 % |

Summary of Results

Spacing Criteria

0-180: 0.92

90-270: 0.92

Total Lumen Output:

1537 Lumens

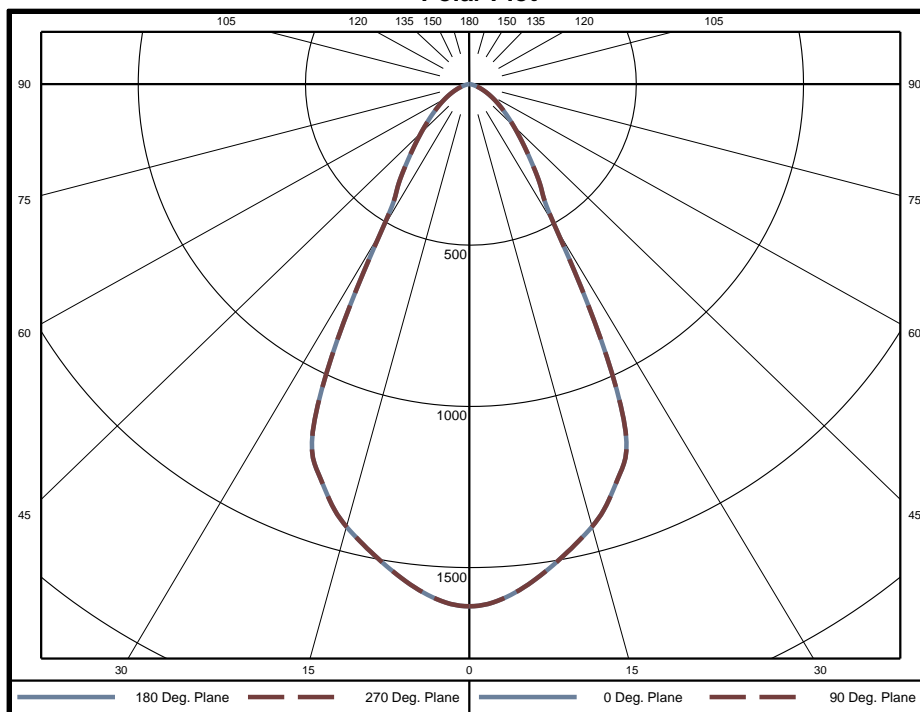
Luminaire Efficacy:

55.3 lm/w

Maximum Candela:

1620 Candela

Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5 | 38.3 | 2.5% | 60-65 | 29.7 | 1.9% | 120-125 | 0 | 0.0% |
| 5-10 | 110.3 | 7.2% | 65-70 | 19.8 | 1.3% | 125-130 | 0 | 0.0% |
| 10-15 | 173.4 | 11.3% | 70-75 | 11.8 | 0.8% | 130-135 | 0 | 0.0% |
| 15-20 | 224.8 | 14.6% | 75-80 | 6.1 | 0.4% | 135-140 | 0 | 0.0% |
| 20-25 | 253.3 | 16.5% | 80-85 | 2.4 | 0.2% | 140-145 | 0 | 0.0% |
| 25-30 | 194.8 | 12.7% | 85-90 | 0.5 | 0.0% | 145-150 | 0 | 0.0% |
| 30-35 | 124.1 | 8.1% | 90-95 | 0 | 0.0% | 150-155 | 0 | 0.0% |
| 35-40 | 103.0 | 6.7% | 95-100 | 0 | 0.0% | 155-160 | 0 | 0.0% |
| 40-45 | 83.5 | 5.4% | 100-105 | 0 | 0.0% | 160-165 | 0 | 0.0% |
| 45-50 | 67.2 | 4.4% | 105-110 | 0 | 0.0% | 165-170 | 0 | 0.0% |
| 50-55 | 53.2 | 3.5% | 110-115 | 0 | 0.0% | 170-175 | 0 | 0.0% |
| 55-60 | 40.9 | 2.7% | 115-120 | 0 | 0.0% | 175-180 | 0 | 0.0% |

| Zone | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40 | 1222 | 79.5% |
| 0-60 | 1467 | 95.4% |
| 0-90 | 1537 | 100.0% |
| 90-180 | 0 | 0.0% |



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 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 | 1620 |
| | 5 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 | 1583 |
| | 10 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 | 1506 |
| | 15 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 | 1422 |
| | 20 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 | 1303 |
| | 25 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 | 1047 |
| | 30 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 | 528 |
| | 35 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 | 362 |
| | 40 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 | 263 |
| | 45 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 | 193 |
| | 50 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 | 143 |
| | 55 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 | 104 |
| | 60 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 | 74 |
| | 65 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 | 49 |
| | 70 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 | 30 |
| | 75 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 | 16 |
| | 80 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 | 7 |
| | 85 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 | 2 |
| | 90 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 95 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 105 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 110 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 115 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 120 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 125 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 130 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 135 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 140 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 145 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 150 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 155 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| | 160 | 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 |
| | 170 | 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 |
| | 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Average Luminance (cd/m²)

Horizontal Angle (Degrees)

| Vertical Angle (Degrees) | 0 | 45 | 90 |
|--------------------------|----|--------|--------|
| | 0 | 422800 | 422800 |
| | 45 | 71270 | 71270 |
| | 55 | 47490 | 47490 |
| | 65 | 30460 | 30460 |
| | 75 | 16540 | 16540 |
| | 85 | 6894 | 6894 |



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 | 1830 | 1830 | 1830 | 1830 | 1787 | 1787 | 1787 | 1787 | 1708 | 1708 | 1708 | 1635 | 1635 | 1635 | 1568 | 1568 | 1568 | 1537 |
| 1 | 1731 | 1683 | 1640 | 1601 | 1693 | 1649 | 1610 | 1575 | 1586 | 1555 | 1526 | 1529 | 1504 | 1481 | 1476 | 1456 | 1438 | 1409 |
| 2 | 1631 | 1546 | 1476 | 1416 | 1596 | 1519 | 1455 | 1400 | 1469 | 1415 | 1369 | 1422 | 1378 | 1340 | 1379 | 1343 | 1312 | 1285 |
| 3 | 1537 | 1426 | 1339 | 1271 | 1505 | 1404 | 1324 | 1260 | 1362 | 1295 | 1240 | 1324 | 1267 | 1220 | 1288 | 1241 | 1201 | 1175 |
| 4 | 1449 | 1320 | 1225 | 1152 | 1420 | 1302 | 1213 | 1145 | 1267 | 1191 | 1131 | 1236 | 1170 | 1117 | 1206 | 1150 | 1104 | 1079 |
| 5 | 1369 | 1227 | 1127 | 1054 | 1342 | 1211 | 1118 | 1049 | 1183 | 1102 | 1039 | 1156 | 1085 | 1030 | 1132 | 1070 | 1020 | 996 |
| 6 | 1295 | 1144 | 1043 | 971 | 1270 | 1132 | 1036 | 967 | 1107 | 1023 | 960 | 1085 | 1011 | 954 | 1064 | 998 | 947 | 923 |
| 7 | 1226 | 1071 | 970 | 900 | 1205 | 1060 | 965 | 897 | 1040 | 954 | 892 | 1021 | 944 | 887 | 1003 | 934 | 882 | 859 |
| 8 | 1164 | 1006 | 906 | 838 | 1144 | 997 | 902 | 836 | 979 | 894 | 832 | 963 | 885 | 829 | 947 | 877 | 825 | 802 |
| 9 | 1106 | 947 | 850 | 784 | 1088 | 939 | 846 | 783 | 924 | 839 | 780 | 910 | 833 | 777 | 897 | 826 | 774 | 752 |
| 10 | 1053 | 895 | 800 | 736 | 1037 | 888 | 797 | 735 | 875 | 791 | 733 | 862 | 785 | 731 | 850 | 780 | 728 | 707 |

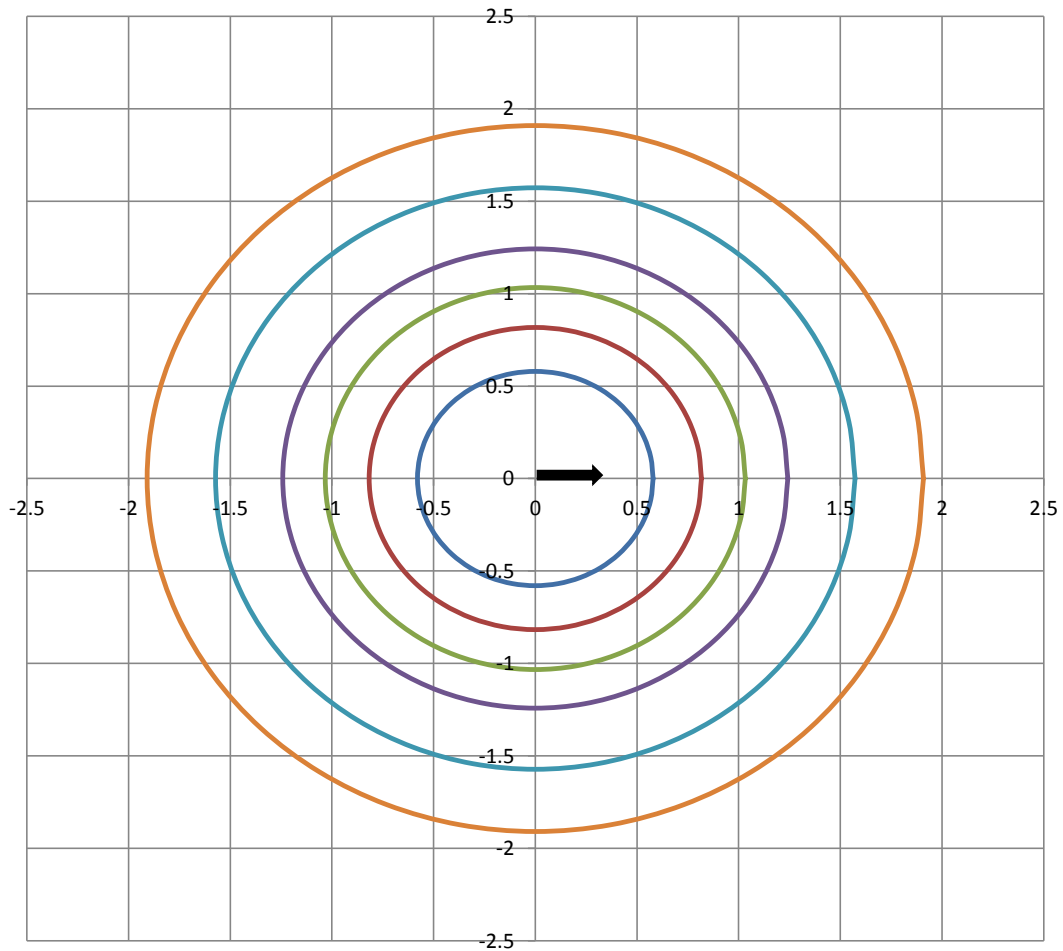
| Beam and Field Information | |
|----------------------------|--------------|
| CIE Type: | Direct |
| Center Beam Intensity: | 1620 Candela |
| Central Cone Intensity: | 1607 Candela |
| Beam Flux: | 896.1 Lumens |
| Beam Angle (0-180): | 54.3 Degrees |
| Beam Angle (90-270): | 54.3 Degrees |
| Field Angle (0-180): | 95.8 Degrees |
| Field Angle (90-270): | 95.8 Degrees |

| Cone of Light Tabulation | | | |
|--------------------------|--|----------------------|-----------------|
| Mounting Height (Feet) | | Footcandles at Nadir | Diameter (Feet) |
| 4.00 | | 101 | 3.67 |
| 6.00 | | 45.0 | 5.51 |
| 8.00 | | 25.3 | 7.35 |
| 10.0 | | 16.2 | 9.18 |
| 12.0 | | 11.3 | 11.0 |
| 14.0 | | 8.27 | 12.9 |
| 16.0 | | 6.33 | 14.7 |



ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc 2 fc 1 fc 0.5 fc 0.2 fc 0.1 fc