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Photometric Test Report

Relevant Standards
IES LM-79-2008, ANSI C82.77-2002, UL 1598-2008
CIE 13.3-1995, CIE 15-2004, ANSI C78.377-2015
IES TM-30-2015

Prepared For
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United States

Catalog Number
LT424SS1B30CC000,RT424SS1B30CC000
Order Number
11748594
Test Number
11748594.05

Test Date

2017-05-11 - 2017-05-15

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.
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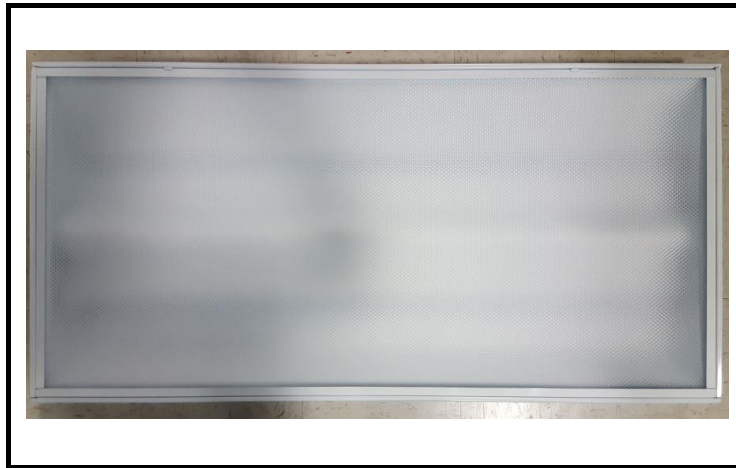
Laboratory results may not be representative of field performance
Ballast factors have not been applied

Testing was performed in a 3-meter integrating sphere using the 4π geometry method.
Absorption correction was employed for Sphere measurement



Luminaire Description: White steel housing, prismatic lens enclosure. Tested in an A.L.P EL 2x4 housing.
Lamp: 224 white LEDs
Mounting: Surface – Ceiling
Ballast/Driver: Everline D10CC55UNVTZ-C

Luminaire



Luminaire Characteristics

Luminous Length: 45.00 in.
Luminous Width: 21.00 in.

Summary of Results

Integrating Sphere

Luminous Flux: 5019 Lumens
Efficacy: 122.5 lm/w
CCT: 3071 K
CRI (Ra): 82.8

Distribution

Total Luminaire Output: 4826 Lumens
Luminaire Efficacy: 117.6 lm/w
Maximum Candela: 2007 Candela

Electrical Data at 277 VAC

Test Temperature: 24.9 °C
Voltage: 277.0 VAC
Current: 0.1523 A
Power: 41.09 W
Power Factor: 0.974
Frequency: 60 Hz
Current THD: 7.41 %

In-Situ

LED Temperature: 42.7 °C
Driver Temperature: 44.4 °C
Measured LED Current: 0.05350 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



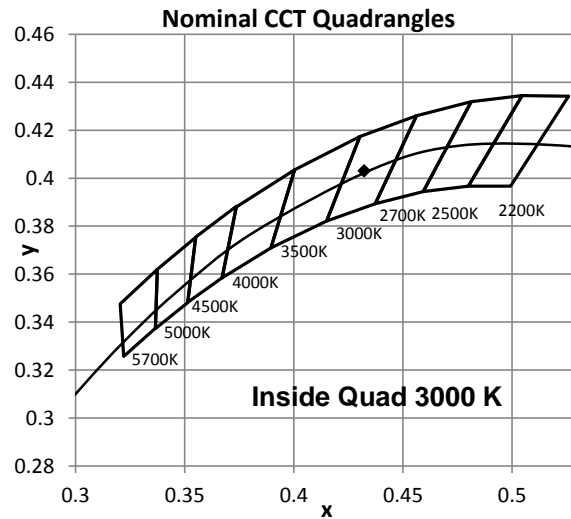
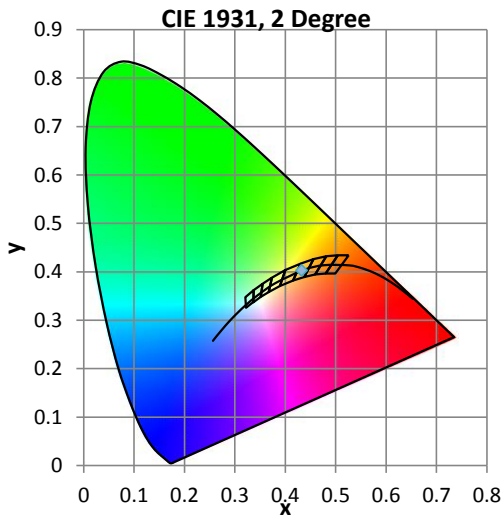
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 24.9 °C | 120.0 VAC | 0.3440 A | 40.97 W | 0.993 | 60 Hz | 6.03 % |

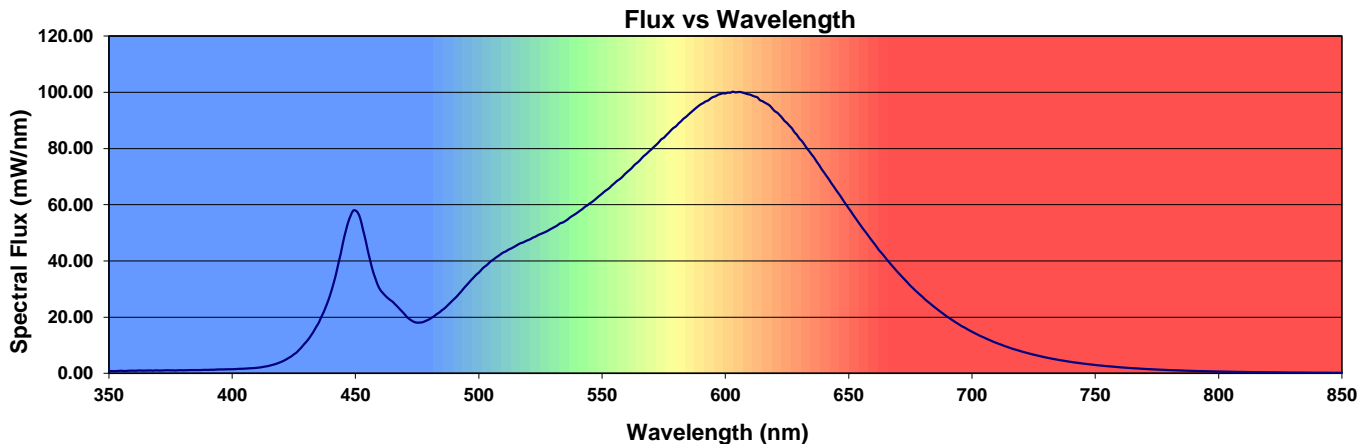
Summary of Results

| | | | |
|-----------------------------|-------------|---------------------------|--------|
| Total Output: | 5019 Lumens | Chromaticity (x): | 0.4322 |
| Efficacy: | 122.5 lm/w | Chromaticity (y): | 0.4031 |
| CCT: | 3071 K | Chromaticity (u'): | 0.2479 |
| CRI (Ra): | 82.8 | Chromaticity (v'): | 0.5203 |
| CRI (R9): | 8.2 | TM-30 Rf: | 83.5 |
| Peak Wavelength: | 604.1 nm | TM-30 Rg: | 96.7 |
| Dominant Wavelength: | 582.4 nm | Duv: | 0.0003 |
| S/P Ratio: | 1.368 | | |



Color Rendering Index Detail

| Ra (CRI) | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 |
|----------|------|------|------|------|------|------|------|------|-----|------|------|------|------|------|
| 82.8 | 81.0 | 90.4 | 96.8 | 81.2 | 81.3 | 88.4 | 83.5 | 60.1 | 8.2 | 78.4 | 80.6 | 72.7 | 83.1 | 98.7 |





Distribution - Goniophotometer

Distribution Test Conditions

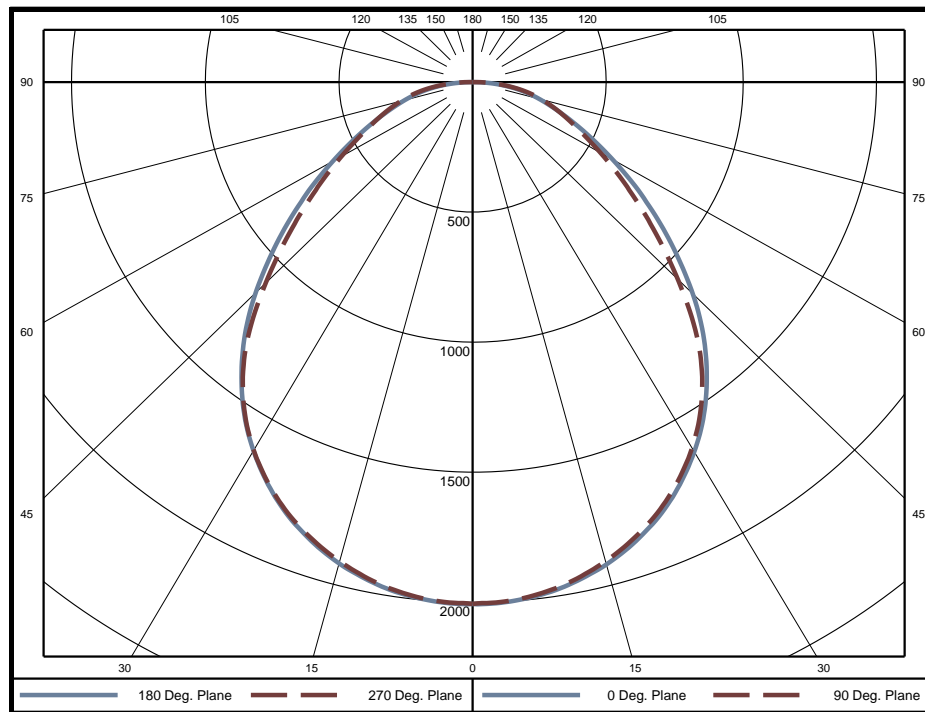
| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 24.5 °C | 120.0 VAC | 0.3428 A | 41.03 W | 0.998 | 60 Hz | 5.94 % |

Summary of Results

Spacing Criteria
 0-180: 1.22
 90-270: 1.22

Total Lumen Output: 4826 Lumens
Luminaire Efficacy: 117.6 lm/w
Maximum Candela: 2007 Candela

Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5 | 47.9 | 1.0% | 60-65 | 246.7 | 5.1% | 120-125 | 0 | 0.0% |
| 5-10 | 141.8 | 2.9% | 65-70 | 198.6 | 4.1% | 125-130 | 0 | 0.0% |
| 10-15 | 230.2 | 4.8% | 70-75 | 158.0 | 3.3% | 130-135 | 0 | 0.0% |
| 15-20 | 309.6 | 6.4% | 75-80 | 119.8 | 2.5% | 135-140 | 0 | 0.0% |
| 20-25 | 376.8 | 7.8% | 80-85 | 76.9 | 1.6% | 140-145 | 0 | 0.0% |
| 25-30 | 428.3 | 8.9% | 85-90 | 29.5 | 0.6% | 145-150 | 0 | 0.0% |
| 30-35 | 460.5 | 9.5% | 90-95 | 0 | 0.0% | 150-155 | 0 | 0.0% |
| 35-40 | 469.9 | 9.7% | 95-100 | 0 | 0.0% | 155-160 | 0 | 0.0% |
| 40-45 | 453.7 | 9.4% | 100-105 | 0 | 0.0% | 160-165 | 0 | 0.0% |
| 45-50 | 414.0 | 8.6% | 105-110 | 0 | 0.0% | 165-170 | 0 | 0.0% |
| 50-55 | 360.8 | 7.5% | 110-115 | 0 | 0.0% | 170-175 | 0 | 0.0% |
| 55-60 | 303.1 | 6.3% | 115-120 | 0 | 0.0% | 175-180 | 0 | 0.0% |

| Zone | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40 | 2465 | 51.1% |
| 0-60 | 3997 | 82.8% |
| 0-90 | 4826 | 100.0% |
| 90-180 | 0 | 0.0% |



Candela Tabulation
Horizontal Angle (Degrees)

| Vertical Angle (Degrees) | Horizontal 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 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 | 2006 |
| 5 | 1998 | 1997 | 1998 | 1996 | 1995 | 1996 | 1998 | 1997 | 1998 | 1997 | 1998 | 1996 | 1995 | 1996 | 1998 | 1997 |
| 10 | 1969 | 1969 | 1967 | 1963 | 1961 | 1963 | 1967 | 1969 | 1969 | 1969 | 1967 | 1963 | 1961 | 1963 | 1967 | 1969 |
| 15 | 1920 | 1919 | 1914 | 1910 | 1908 | 1910 | 1914 | 1919 | 1920 | 1919 | 1914 | 1910 | 1908 | 1910 | 1914 | 1919 |
| 20 | 1850 | 1846 | 1841 | 1839 | 1836 | 1839 | 1841 | 1846 | 1850 | 1846 | 1841 | 1839 | 1836 | 1839 | 1841 | 1846 |
| 25 | 1760 | 1753 | 1748 | 1746 | 1744 | 1746 | 1748 | 1753 | 1760 | 1753 | 1748 | 1746 | 1744 | 1746 | 1748 | 1753 |
| 30 | 1645 | 1637 | 1631 | 1629 | 1629 | 1629 | 1631 | 1637 | 1645 | 1637 | 1631 | 1629 | 1629 | 1629 | 1631 | 1637 |
| 35 | 1509 | 1496 | 1490 | 1484 | 1486 | 1484 | 1490 | 1496 | 1509 | 1496 | 1490 | 1484 | 1486 | 1484 | 1490 | 1496 |
| 40 | 1347 | 1334 | 1322 | 1309 | 1305 | 1309 | 1322 | 1334 | 1347 | 1334 | 1322 | 1309 | 1305 | 1309 | 1322 | 1334 |
| 45 | 1161 | 1153 | 1135 | 1099 | 1084 | 1099 | 1135 | 1153 | 1161 | 1153 | 1135 | 1099 | 1084 | 1099 | 1135 | 1153 |
| 50 | 963 | 962 | 932 | 887 | 877 | 887 | 932 | 962 | 963 | 962 | 932 | 887 | 877 | 887 | 932 | 962 |
| 55 | 778 | 771 | 739 | 709 | 702 | 709 | 739 | 771 | 778 | 771 | 739 | 709 | 702 | 709 | 739 | 771 |
| 60 | 607 | 597 | 572 | 557 | 555 | 557 | 572 | 597 | 607 | 597 | 572 | 557 | 555 | 557 | 572 | 597 |
| 65 | 466 | 454 | 436 | 438 | 438 | 438 | 436 | 454 | 466 | 454 | 436 | 438 | 438 | 438 | 436 | 454 |
| 70 | 352 | 347 | 334 | 346 | 350 | 346 | 334 | 347 | 352 | 347 | 334 | 346 | 350 | 346 | 334 | 347 |
| 75 | 262 | 260 | 256 | 268 | 273 | 268 | 256 | 260 | 262 | 260 | 256 | 268 | 273 | 268 | 256 | 260 |
| 80 | 181 | 179 | 182 | 189 | 194 | 189 | 182 | 179 | 181 | 179 | 182 | 189 | 194 | 189 | 182 | 179 |
| 85 | 93 | 92 | 96 | 102 | 102 | 102 | 96 | 92 | 93 | 92 | 96 | 102 | 102 | 102 | 96 | 92 |
| 90 | 0 | 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 | 0 |
| 100 | 0 | 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 | 0 |
| 110 | 0 | 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 | 0 |
| 120 | 0 | 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 | 0 |
| 130 | 0 | 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 | 0 |
| 140 | 0 | 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 | 0 |
| 150 | 0 | 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 | 0 |
| 160 | 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 |
| 170 | 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 |
| 180 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

Average Luminance (cd/m²)
Horizontal Angle (Degrees)

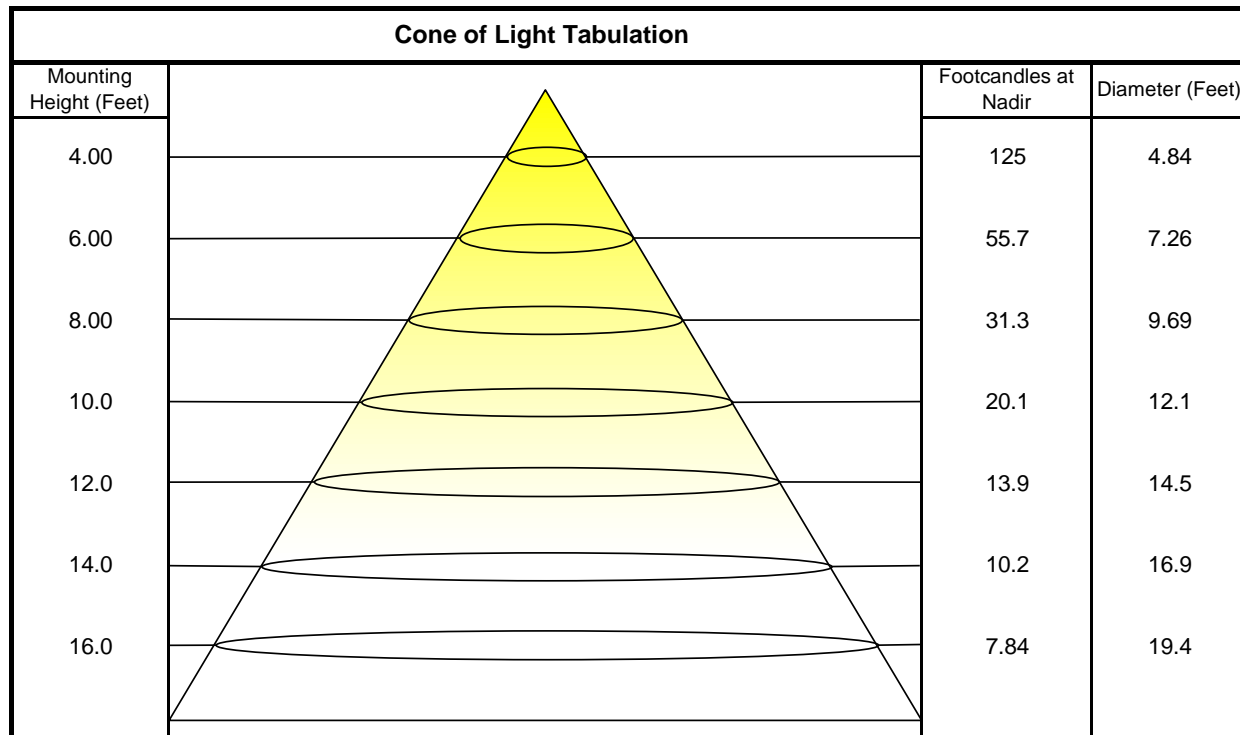
| Vertical Angle (Degrees) | Horizontal Angle (Degrees) | | |
|--------------------------|----------------------------|------|------|
| | 0 | 45 | 90 |
| 0 | 3291 | 3291 | 3291 |
| 45 | 2693 | 2633 | 2514 |
| 55 | 2223 | 2113 | 2008 |
| 65 | 1807 | 1693 | 1699 |
| 75 | 1659 | 1621 | 1728 |
| 85 | 1753 | 1803 | 1921 |



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 | 5745 | 5745 | 5745 | 5745 | 5612 | 5612 | 5612 | 5612 | 5362 | 5362 | 5362 | 5134 | 5134 | 5134 | 4924 | 4924 | 4924 | 4826 |
| 1 | 5273 | 5052 | 4854 | 4676 | 5142 | 4943 | 4763 | 4600 | 4738 | 4591 | 4455 | 4551 | 4430 | 4319 | 4378 | 4281 | 4191 | 4091 |
| 2 | 4826 | 4448 | 4135 | 3871 | 4702 | 4357 | 4070 | 3825 | 4188 | 3946 | 3736 | 4031 | 3829 | 3652 | 3886 | 3720 | 3571 | 3469 |
| 3 | 4426 | 3942 | 3567 | 3268 | 4309 | 3867 | 3519 | 3239 | 3725 | 3427 | 3182 | 3593 | 3340 | 3127 | 3471 | 3257 | 3074 | 2972 |
| 4 | 4073 | 3521 | 3116 | 2807 | 3965 | 3457 | 3080 | 2787 | 3338 | 3010 | 2749 | 3227 | 2943 | 2712 | 3124 | 2879 | 2677 | 2575 |
| 5 | 3762 | 3167 | 2751 | 2445 | 3663 | 3114 | 2723 | 2431 | 3013 | 2669 | 2405 | 2919 | 2617 | 2380 | 2832 | 2567 | 2355 | 2255 |
| 6 | 3486 | 2868 | 2452 | 2155 | 3396 | 2823 | 2430 | 2145 | 2737 | 2387 | 2126 | 2657 | 2346 | 2108 | 2582 | 2306 | 2090 | 1994 |
| 7 | 3242 | 2612 | 2204 | 1918 | 3160 | 2574 | 2186 | 1911 | 2500 | 2152 | 1898 | 2432 | 2118 | 1884 | 2368 | 2086 | 1871 | 1778 |
| 8 | 3025 | 2393 | 1996 | 1723 | 2951 | 2360 | 1981 | 1717 | 2297 | 1953 | 1707 | 2238 | 1925 | 1697 | 2182 | 1899 | 1687 | 1598 |
| 9 | 2831 | 2203 | 1818 | 1559 | 2764 | 2175 | 1807 | 1555 | 2120 | 1783 | 1547 | 2069 | 1760 | 1539 | 2021 | 1739 | 1531 | 1446 |
| 10 | 2658 | 2038 | 1667 | 1420 | 2598 | 2013 | 1657 | 1417 | 1966 | 1637 | 1411 | 1922 | 1619 | 1405 | 1879 | 1600 | 1399 | 1316 |

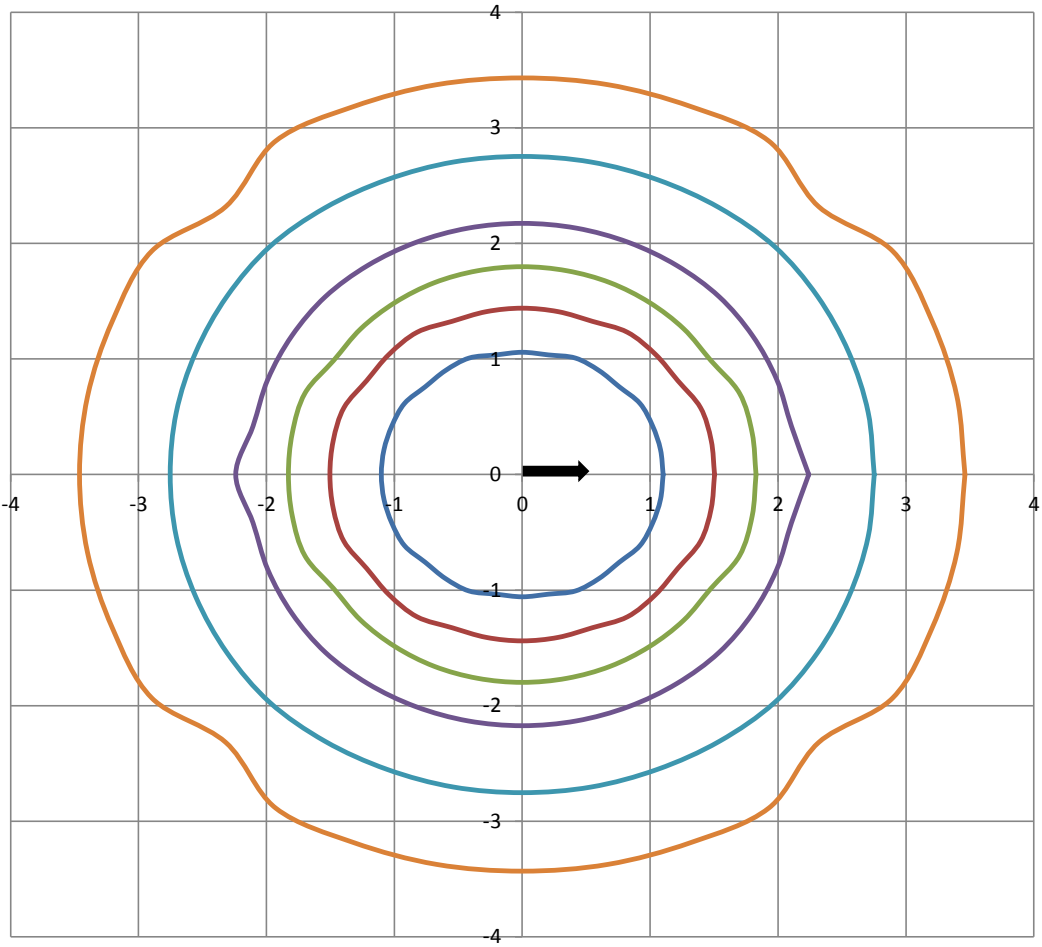
| Beam and Field Information | |
|----------------------------|---------------|
| CIE Type: | Direct |
| Center Beam Intensity: | 2006 Candela |
| Central Cone Intensity: | 2003 Candela |
| Beam Flux: | 3179.3 Lumens |
| Beam Angle (0-180): | 97.9 Degrees |
| Beam Angle (90-270): | 93.7 Degrees |
| Field Angle (0-180): | 157.7 Degrees |
| Field Angle (90-270): | 159.2 Degrees |





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height





In-Situ Test

In-Situ Test Conditions

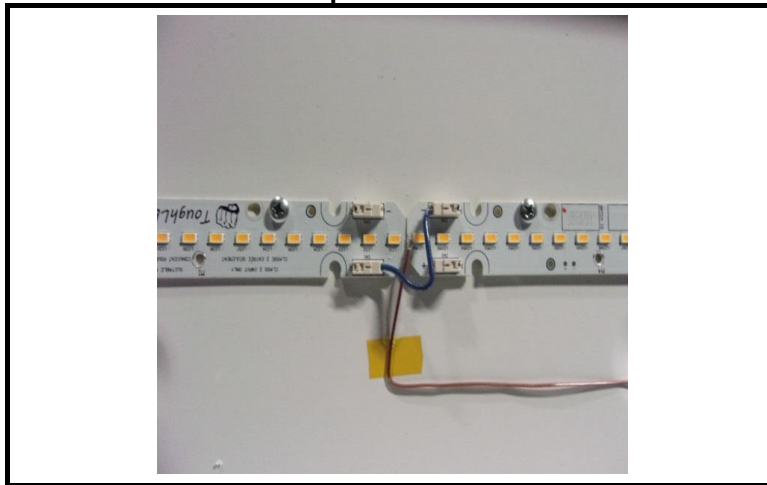
| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|---------|-------|--------------|-----------|-------------|
| 24.6 °C | 120.0 VAC | N/A | N/A | N/A | 60 Hz | N/A |

Summary of Results

LED Temperature: 42.7 °C
Driver Temperature: 44.4 °C
Measured LED Current: 0.05350 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

LED Temperature Location



Driver Temperature Location

