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Photometric Test Report

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

Prepared For
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Catalog Number
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Order Number
11748594
Test Number
11748594.16

Test Date

2017-05-16

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 2-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 2x2 housing.
Lamp: 112 white LEDs
Mounting: Surface – Ceiling
Ballast/Driver: Everline D700CC30UNVTZ-C

Luminaire



Luminaire Characteristics

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

Summary of Results

Integrating Sphere

Luminous Flux: 3856 Lumens
Efficacy: 117.3 lm/w
CCT: 4973 K
CRI (Ra): 84.6

Distribution

Total Luminaire Output: 3831 Lumens
Luminaire Efficacy: 116.4 lm/w
Maximum Candela: 1687 Candela

Electrical Data at 120 VAC

Test Temperature: 25.1 °C
Voltage: 120.0 VAC
Current: 0.2749 A
Power: 32.87 W
Power Factor: 0.997
Frequency: 60 Hz
Current THD: 7.36 %



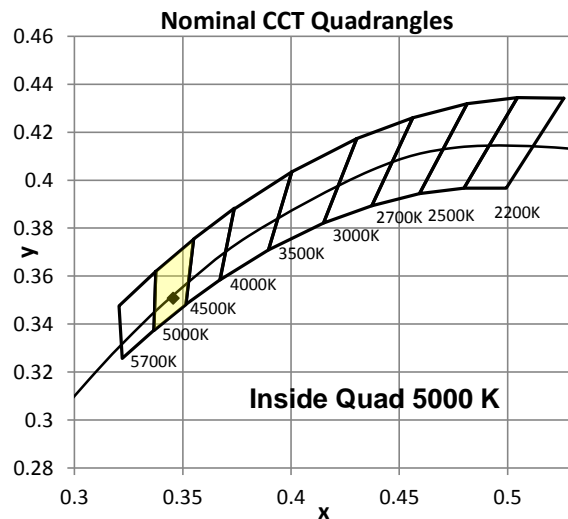
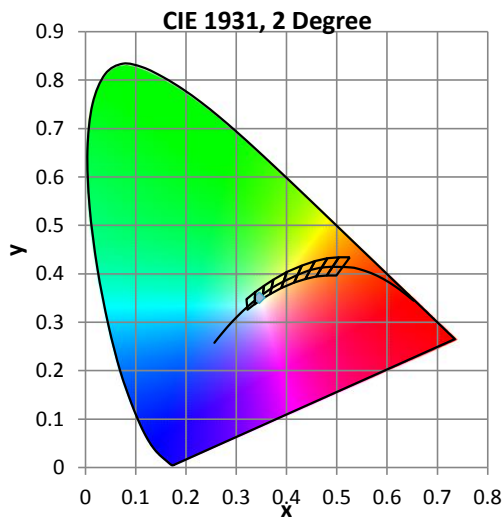
Color Quality - Integrating Sphere

Integrating Sphere Test Conditions

| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 25.1 °C | 120.0 VAC | 0.2749 A | 32.87 W | 0.997 | 60 Hz | 7.36 % |

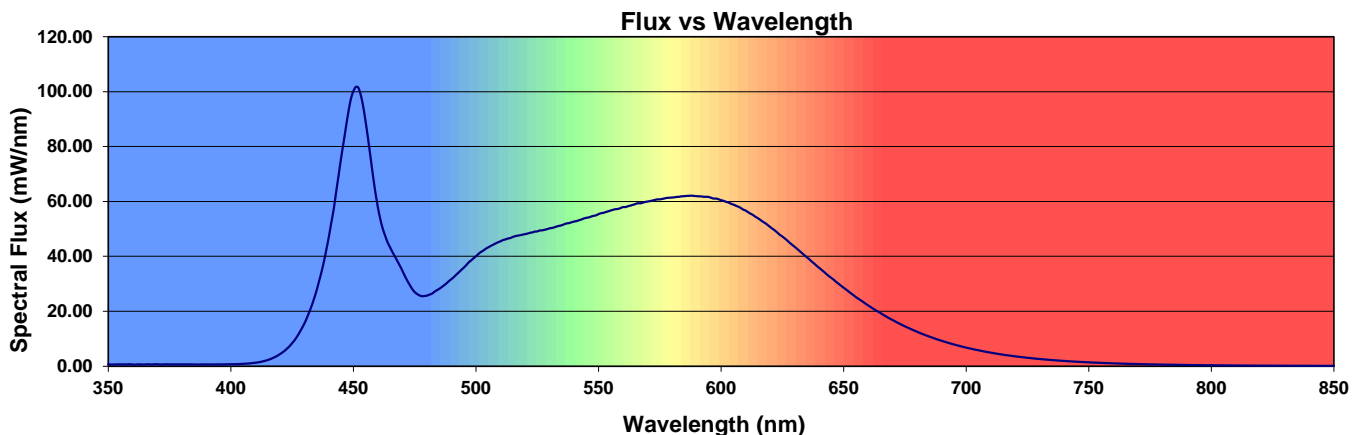
Summary of Results

| | | | |
|-----------------------------|-------------|---------------------------|---------|
| Total Output: | 3856 Lumens | Chromaticity (x): | 0.3456 |
| Efficacy: | 117.3 lm/w | Chromaticity (y): | 0.3508 |
| CCT: | 4973 K | Chromaticity (u'): | 0.2121 |
| CRI (Ra): | 84.6 | Chromaticity (v'): | 0.4844 |
| CRI (R9): | 13.5 | TM-30 Rf: | 82.8 |
| Peak Wavelength: | 451.3 nm | TM-30 Rg: | 96.2 |
| Dominant Wavelength: | 573.8 nm | Duv: | -0.0006 |
| S/P Ratio: | 1.974 | | |



Color Rendering Index Detail

| Ra (CRI) | R1 | R2 | R3 | R4 | R5 | R6 | R7 | R8 | R9 | R10 | R11 | R12 | R13 | R14 |
|----------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 84.6 | 83.2 | 90.4 | 94.4 | 83.7 | 83.6 | 85.5 | 87.4 | 68.7 | 13.5 | 76.7 | 83.1 | 62.4 | 85.3 | 97.3 |





Distribution - Goniophotometer

Distribution Test Conditions

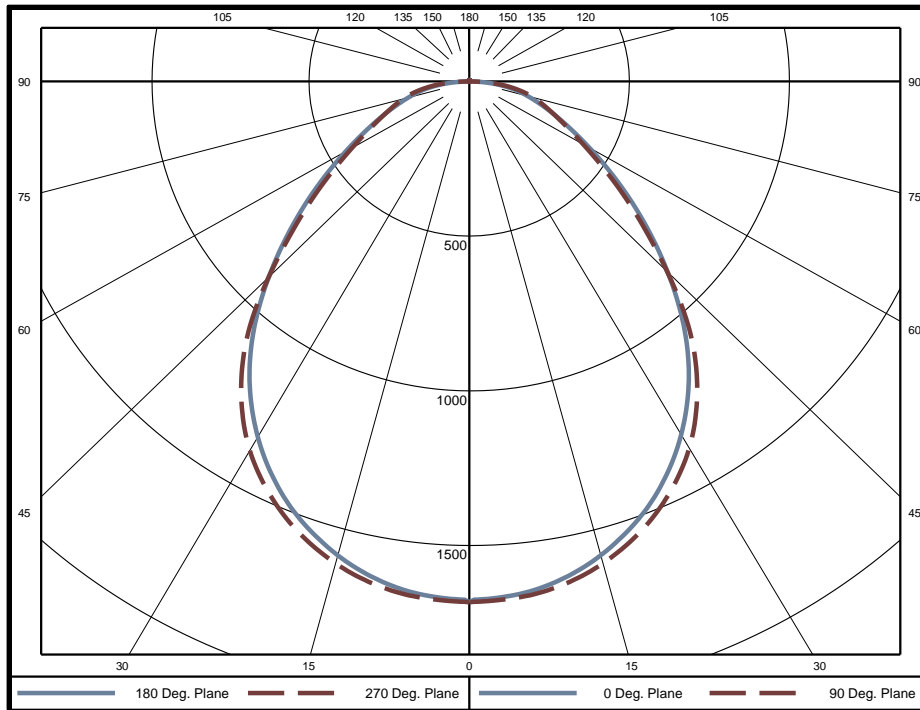
| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|----------|---------|--------------|-----------|-------------|
| 24.5 °C | 120.0 VAC | 0.2754 A | 32.92 W | 0.997 | 60 Hz | 7.34 % |

Summary of Results

Spacing Criteria
 0-180: 1.18
 90-270: 1.18

Total Lumen Output: 3831 Lumens
Luminaire Efficacy: 116.4 lm/w
Maximum Candela: 1687 Candela

Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5 | 40.2 | 1.0% | 60-65 | 179.9 | 4.7% | 120-125 | 0 | 0.0% |
| 5-10 | 119.0 | 3.1% | 65-70 | 144.0 | 3.8% | 125-130 | 0 | 0.0% |
| 10-15 | 193.0 | 5.0% | 70-75 | 116.9 | 3.1% | 130-135 | 0 | 0.0% |
| 15-20 | 258.9 | 6.8% | 75-80 | 90.3 | 2.4% | 135-140 | 0 | 0.0% |
| 20-25 | 313.8 | 8.2% | 80-85 | 59.8 | 1.6% | 140-145 | 0 | 0.0% |
| 25-30 | 354.4 | 9.3% | 85-90 | 20.5 | 0.5% | 145-150 | 0 | 0.0% |
| 30-35 | 377.5 | 9.9% | 90-95 | 0 | 0.0% | 150-155 | 0 | 0.0% |
| 35-40 | 380.3 | 9.9% | 95-100 | 0 | 0.0% | 155-160 | 0 | 0.0% |
| 40-45 | 360.8 | 9.4% | 100-105 | 0 | 0.0% | 160-165 | 0 | 0.0% |
| 45-50 | 322.5 | 8.4% | 105-110 | 0 | 0.0% | 165-170 | 0 | 0.0% |
| 50-55 | 274.7 | 7.2% | 110-115 | 0 | 0.0% | 170-175 | 0 | 0.0% |
| 55-60 | 224.5 | 5.9% | 115-120 | 0 | 0.0% | 175-180 | 0 | 0.0% |

| Zone | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40 | 2037 | 53.2% |
| 0-60 | 3220 | 84.0% |
| 0-90 | 3831 | 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 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 | 1683 |
| 5 | 1666 | 1676 | 1680 | 1676 | 1675 | 1676 | 1680 | 1676 | 1666 | 1676 | 1680 | 1676 | 1675 | 1676 | 1680 | 1676 |
| 10 | 1636 | 1647 | 1653 | 1653 | 1655 | 1653 | 1653 | 1647 | 1636 | 1647 | 1653 | 1653 | 1655 | 1653 | 1653 | 1647 |
| 15 | 1587 | 1598 | 1607 | 1610 | 1613 | 1610 | 1607 | 1598 | 1587 | 1598 | 1607 | 1610 | 1613 | 1610 | 1607 | 1598 |
| 20 | 1519 | 1530 | 1540 | 1547 | 1554 | 1547 | 1540 | 1530 | 1519 | 1530 | 1540 | 1547 | 1554 | 1547 | 1540 | 1530 |
| 25 | 1432 | 1443 | 1452 | 1464 | 1474 | 1464 | 1452 | 1443 | 1432 | 1443 | 1452 | 1464 | 1474 | 1464 | 1452 | 1443 |
| 30 | 1325 | 1332 | 1344 | 1360 | 1373 | 1360 | 1344 | 1332 | 1325 | 1332 | 1344 | 1360 | 1373 | 1360 | 1344 | 1332 |
| 35 | 1199 | 1202 | 1213 | 1229 | 1243 | 1229 | 1213 | 1202 | 1199 | 1202 | 1213 | 1229 | 1243 | 1229 | 1213 | 1202 |
| 40 | 1050 | 1052 | 1059 | 1071 | 1081 | 1071 | 1059 | 1052 | 1050 | 1052 | 1059 | 1071 | 1081 | 1071 | 1059 | 1052 |
| 45 | 884 | 888 | 895 | 883 | 881 | 883 | 895 | 888 | 884 | 888 | 895 | 883 | 881 | 883 | 895 | 888 |
| 50 | 721 | 725 | 722 | 698 | 695 | 698 | 722 | 725 | 721 | 725 | 722 | 698 | 695 | 698 | 722 | 725 |
| 55 | 571 | 567 | 556 | 541 | 541 | 541 | 556 | 567 | 571 | 567 | 556 | 541 | 541 | 541 | 556 | 567 |
| 60 | 441 | 429 | 420 | 413 | 417 | 413 | 420 | 429 | 441 | 429 | 420 | 413 | 417 | 413 | 420 | 429 |
| 65 | 339 | 329 | 313 | 321 | 328 | 321 | 313 | 329 | 339 | 329 | 313 | 321 | 328 | 321 | 313 | 329 |
| 70 | 259 | 249 | 236 | 257 | 264 | 257 | 236 | 249 | 259 | 249 | 236 | 257 | 264 | 257 | 236 | 249 |
| 75 | 195 | 193 | 187 | 203 | 213 | 203 | 187 | 193 | 195 | 193 | 187 | 203 | 213 | 203 | 187 | 193 |
| 80 | 138 | 134 | 138 | 146 | 155 | 146 | 138 | 134 | 138 | 134 | 138 | 146 | 155 | 146 | 138 | 134 |
| 85 | 70 | 69 | 74 | 83 | 84 | 83 | 74 | 69 | 70 | 69 | 74 | 83 | 84 | 83 | 74 | 69 |
| 90 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 | 3 | 4 | 4 | 4 | 4 | 4 | 4 | 4 |
| 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)

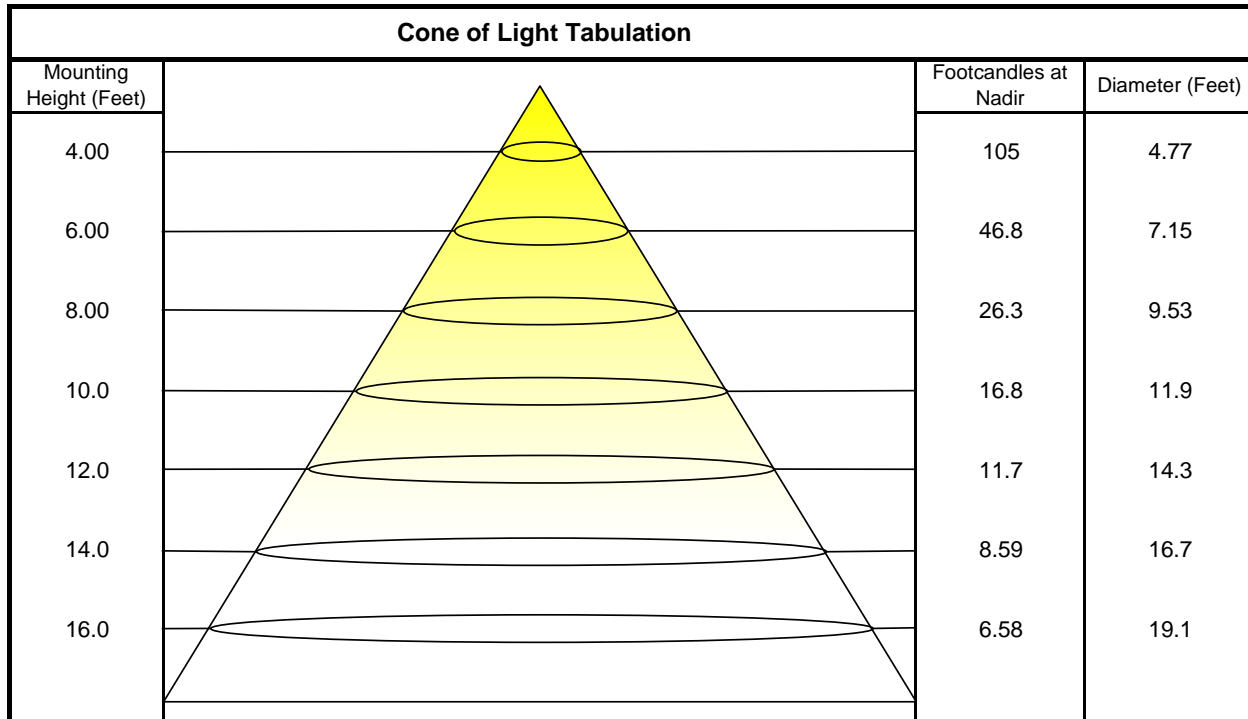
| Vertical Angle (Degrees) | Horizontal Angle (Degrees) | | |
|--------------------------|----------------------------|------|------|
| | 0 | 45 | 90 |
| 0 | 5917 | 5917 | 5917 |
| 45 | 4396 | 4447 | 4378 |
| 55 | 3497 | 3407 | 3312 |
| 65 | 2816 | 2607 | 2726 |
| 75 | 2647 | 2538 | 2888 |
| 85 | 2813 | 2980 | 3372 |



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 | 4561 | 4561 | 4561 | 4561 | 4455 | 4455 | 4455 | 4455 | 4257 | 4257 | 4257 | 4075 | 4075 | 4075 | 3909 | 3909 | 3909 | 3831 |
| 1 | 4195 | 4023 | 3870 | 3732 | 4092 | 3937 | 3798 | 3671 | 3775 | 3661 | 3555 | 3626 | 3533 | 3447 | 3489 | 3415 | 3345 | 3266 |
| 2 | 3848 | 3554 | 3311 | 3106 | 3750 | 3483 | 3259 | 3069 | 3348 | 3160 | 2998 | 3225 | 3068 | 2931 | 3110 | 2981 | 2866 | 2786 |
| 3 | 3536 | 3159 | 2867 | 2635 | 3444 | 3100 | 2829 | 2612 | 2988 | 2756 | 2566 | 2884 | 2687 | 2522 | 2788 | 2622 | 2480 | 2400 |
| 4 | 3260 | 2829 | 2513 | 2272 | 3175 | 2779 | 2485 | 2257 | 2685 | 2429 | 2226 | 2598 | 2376 | 2197 | 2516 | 2326 | 2168 | 2089 |
| 5 | 3015 | 2551 | 2226 | 1987 | 2937 | 2509 | 2204 | 1976 | 2429 | 2161 | 1955 | 2355 | 2119 | 1934 | 2286 | 2080 | 1914 | 1837 |
| 6 | 2797 | 2314 | 1989 | 1756 | 2726 | 2278 | 1972 | 1749 | 2211 | 1938 | 1734 | 2148 | 1905 | 1719 | 2089 | 1873 | 1705 | 1629 |
| 7 | 2604 | 2111 | 1792 | 1568 | 2539 | 2081 | 1778 | 1562 | 2023 | 1750 | 1551 | 1969 | 1724 | 1541 | 1918 | 1698 | 1530 | 1457 |
| 8 | 2431 | 1936 | 1625 | 1411 | 2373 | 1910 | 1614 | 1407 | 1861 | 1591 | 1399 | 1814 | 1570 | 1391 | 1771 | 1549 | 1383 | 1313 |
| 9 | 2277 | 1785 | 1483 | 1280 | 2225 | 1762 | 1474 | 1276 | 1720 | 1455 | 1270 | 1679 | 1437 | 1264 | 1641 | 1420 | 1258 | 1190 |
| 10 | 2140 | 1653 | 1362 | 1168 | 2092 | 1633 | 1354 | 1165 | 1596 | 1338 | 1160 | 1561 | 1323 | 1155 | 1528 | 1309 | 1151 | 1086 |

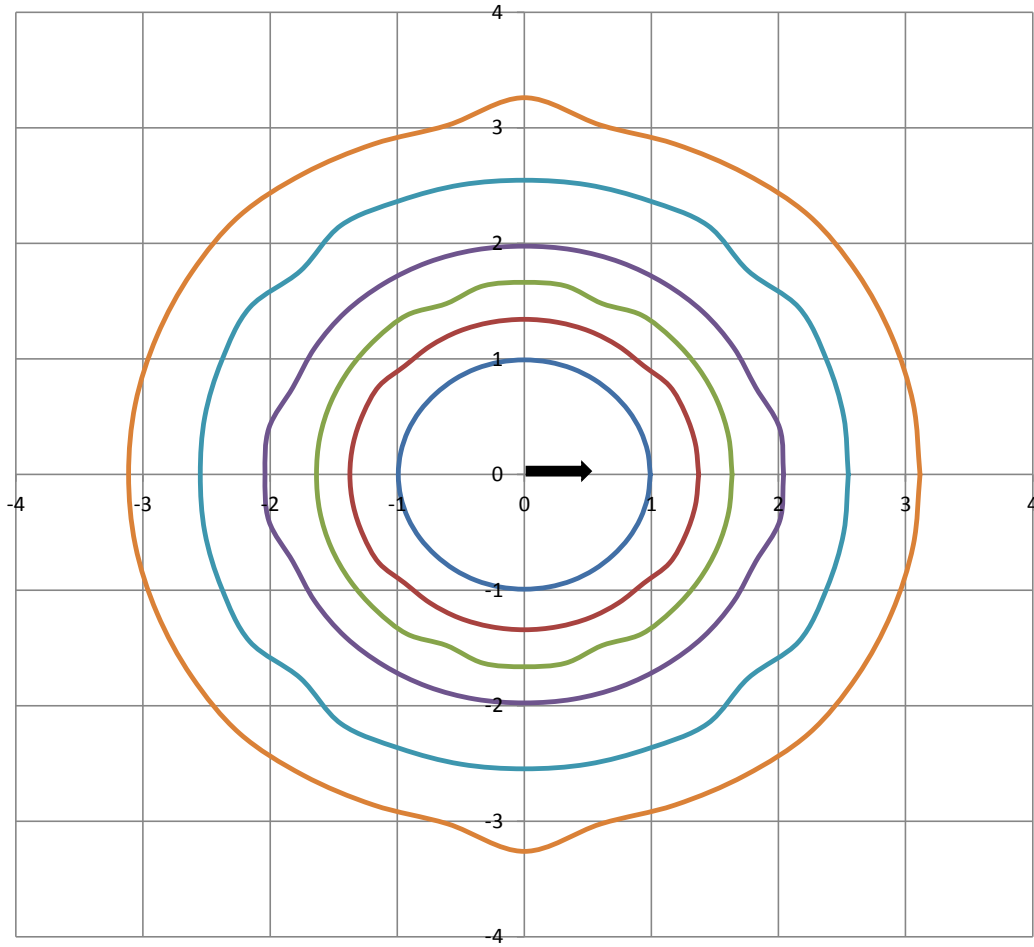
| Beam and Field Information | |
|----------------------------|---------------|
| CIE Type: | Direct |
| Center Beam Intensity: | 1683 Candela |
| Central Cone Intensity: | 1680 Candela |
| Beam Flux: | 2485.1 Lumens |
| Beam Angle (0-180): | 92.6 Degrees |
| Beam Angle (90-270): | 91.9 Degrees |
| Field Angle (0-180): | 154.8 Degrees |
| Field Angle (90-270): | 157.8 Degrees |





ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

