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Indoor Distribution Test Report

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

Prepared For
Simkar Corporation

Andre Duljas
700 Ramona Ave
Philadelphia, PA 19120
United States

Catalog Number
RG2LEDMR33041U1

Order Number
10792383
Test Number
1071558

Test Date

2015-05-23

Prepared By

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Approved By

Carissa Samonte-cam, Project Handler

The results contained in this report pertain only to the tested sample.
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Luminaire Description: White steel housing, white steel reflector plate, specular reflectors, no enclosure
Lamp: 336 white LEDs, four boards with 84 LEDs each
Mounting: Pendant
Ballast/Driver: Two Eagle Rise ELS150-3150P

Luminaire



Luminaire Characteristics

Luminous Length: 48.00 in.
Luminous Width: 12.00 in.

Summary of Results

Total Luminaire Output: 33620 Lumens
Luminaire Efficacy: 101.6 lm/w
Maximum Candela: 17785 Candela

Electrical Data

Test Temperature: 25.1 °C
Voltage: 120.0 VAC
Current: 2.771 A
Power: 330.8 W
Power Factor: 0.994
Frequency: 60 Hz
Current THD: 6.01 %

Laboratory results may not be representative of field performance
Ballast factors have not been applied



Distribution - Goniophotometer

Distribution Test Conditions

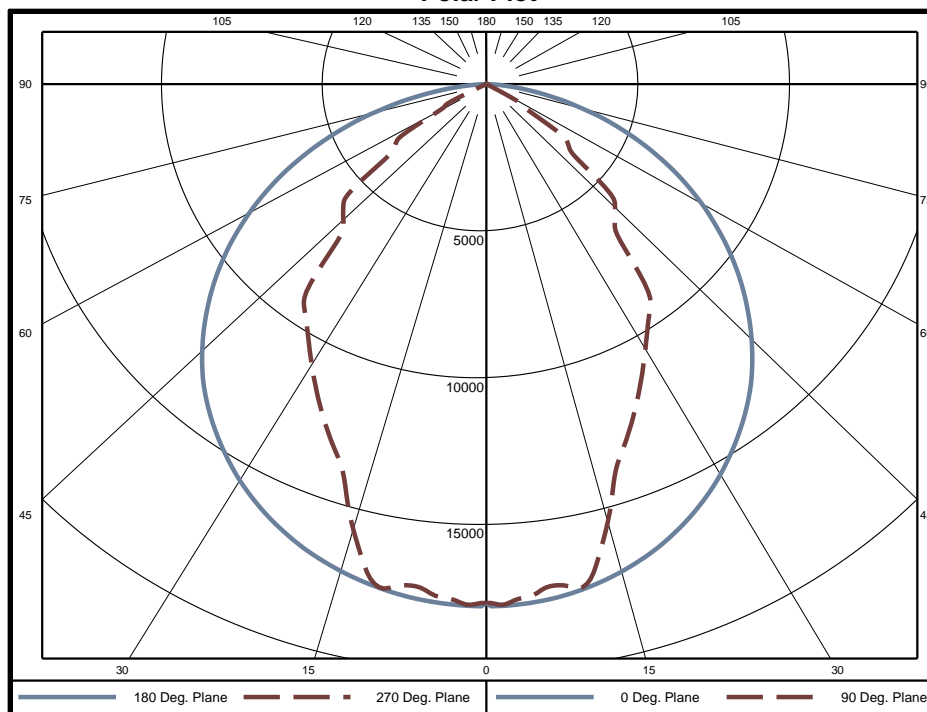
| Temperature | Voltage | Current | Power | Power Factor | Frequency | Current THD |
|-------------|-----------|---------|---------|--------------|-----------|-------------|
| 25.1 °C | 120.0 VAC | 2.771 A | 330.8 W | 0.994 | 60 Hz | 6.01 % |

Summary of Results

Spacing Criteria
 0-180: 1.29
 90-270: 1.29

Total Lumen Output: 33620 Lumens
Luminaire Efficacy: 101.6 lm/w
Maximum Candela: 17785 Candela

Polar Plot



Zonal Lumen Summary

| Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire | Zone | Lumens | % of Luminaire |
|-------|--------|----------------|---------|--------|----------------|---------|--------|----------------|
| 0-5 | 422 | 1.3% | 60-65 | 1447 | 4.3% | 120-125 | 0 | 0.0% |
| 5-10 | 1244 | 3.7% | 65-70 | 861 | 2.6% | 125-130 | 0 | 0.0% |
| 10-15 | 2019 | 6.0% | 70-75 | 503 | 1.5% | 130-135 | 0 | 0.0% |
| 15-20 | 2591 | 7.7% | 75-80 | 233 | 0.7% | 135-140 | 0 | 0.0% |
| 20-25 | 3013 | 9.0% | 80-85 | 84 | 0.2% | 140-145 | 0 | 0.0% |
| 25-30 | 3335 | 9.9% | 85-90 | 18 | 0.1% | 145-150 | 0 | 0.0% |
| 30-35 | 3497 | 10.4% | 90-95 | 0 | 0.0% | 150-155 | 0 | 0.0% |
| 35-40 | 3493 | 10.4% | 95-100 | 0 | 0.0% | 155-160 | 0 | 0.0% |
| 40-45 | 3241 | 9.6% | 100-105 | 0 | 0.0% | 160-165 | 0 | 0.0% |
| 45-50 | 3028 | 9.0% | 105-110 | 0 | 0.0% | 165-170 | 0 | 0.0% |
| 50-55 | 2522 | 7.5% | 110-115 | 0 | 0.0% | 170-175 | 0 | 0.0% |
| 55-60 | 2066 | 6.1% | 115-120 | 0 | 0.0% | 175-180 | 0 | 0.0% |

| Zone | Lumens | % of Luminaire |
|--------|--------|----------------|
| 0-40 | 19614 | 58.3% |
| 0-60 | 27136 | 90.6% |
| 0-90 | 33617 | 100.0% |
| 90-180 | 0 | 0.0% |



Candela Tabulation
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 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 | 17670 |
| 5 | 17720 | 17730 | 17500 | 17470 | 17480 | 17470 | 17500 | 17730 | 17720 | 17730 | 17500 | 17470 | 17480 | 17470 | 17500 | 17730 |
| 10 | 17520 | 17400 | 17040 | 17290 | 17450 | 17290 | 17040 | 17400 | 17520 | 17400 | 17040 | 17290 | 17450 | 17290 | 17040 | 17400 |
| 15 | 17180 | 16900 | 17060 | 15890 | 15430 | 15890 | 17060 | 16900 | 17180 | 16900 | 17060 | 15890 | 15430 | 15890 | 17060 | 16900 |
| 20 | 16710 | 16390 | 15230 | 13420 | 13180 | 13420 | 15230 | 16390 | 16710 | 16390 | 15230 | 13420 | 13180 | 13420 | 15230 | 16390 |
| 25 | 16100 | 16100 | 13040 | 12070 | 11790 | 12070 | 13040 | 16100 | 16100 | 16100 | 13040 | 12070 | 11790 | 12070 | 13040 | 16100 |
| 30 | 15350 | 14900 | 11710 | 10730 | 10460 | 10730 | 11710 | 14900 | 15350 | 14900 | 11710 | 10730 | 10460 | 10730 | 11710 | 14900 |
| 35 | 14460 | 13030 | 10420 | 9522 | 9381 | 9522 | 10420 | 13030 | 14460 | 13030 | 10420 | 9522 | 9381 | 9522 | 10420 | 13030 |
| 40 | 13470 | 11060 | 9114 | 8070 | 6688 | 8070 | 9114 | 11060 | 13470 | 11060 | 9114 | 8070 | 6688 | 8070 | 9114 | 11060 |
| 45 | 12300 | 9605 | 8033 | 5987 | 5990 | 5987 | 8033 | 9605 | 12300 | 9605 | 8033 | 5987 | 5990 | 5987 | 8033 | 9605 |
| 50 | 11010 | 8164 | 5591 | 5165 | 3736 | 5165 | 5591 | 8164 | 11010 | 8164 | 5591 | 5165 | 3736 | 5165 | 5591 | 8164 |
| 55 | 9630 | 6800 | 4780 | 3182 | 3054 | 3182 | 4780 | 6800 | 9630 | 6800 | 4780 | 3182 | 3054 | 3182 | 4780 | 6800 |
| 60 | 8157 | 5569 | 2765 | 1380 | 1330 | 1380 | 2765 | 5569 | 8157 | 5569 | 2765 | 1380 | 1330 | 1380 | 2765 | 5569 |
| 65 | 6600 | 3726 | 1478 | 24 | 14 | 24 | 1478 | 3726 | 6600 | 3726 | 1478 | 24 | 14 | 24 | 1478 | 3726 |
| 70 | 4976 | 2565 | 99 | 12 | 10 | 12 | 99 | 2565 | 4976 | 2565 | 99 | 12 | 10 | 12 | 99 | 2565 |
| 75 | 3309 | 1087 | 30 | 9 | 7 | 9 | 30 | 1087 | 3309 | 1087 | 30 | 9 | 7 | 9 | 30 | 1087 |
| 80 | 1801 | 26 | 10 | 6 | 4 | 6 | 10 | 26 | 1801 | 26 | 10 | 6 | 4 | 6 | 10 | 26 |
| 85 | 596 | 10 | 28 | 6 | 2 | 6 | 28 | 10 | 596 | 10 | 28 | 6 | 2 | 6 | 28 | 10 |
| 90 | 8 | 5 | 3 | 2 | 1 | 2 | 3 | 5 | 8 | 5 | 3 | 2 | 1 | 2 | 3 | 5 |
| 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)

| | 0 | 45 | 90 |
|----|-------|-------|-------|
| 0 | 47560 | 47560 | 47560 |
| 45 | 46790 | 30570 | 22800 |
| 55 | 45180 | 22430 | 14330 |
| 65 | 42030 | 9412 | 87 |
| 75 | 34410 | 310 | 73 |
| 85 | 18410 | 855 | 70 |



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 | 40019 | 40019 | 40019 | 40019 | 39089 | 39089 | 39089 | 39089 | 37351 | 37351 | 37351 | 35762 | 35762 | 35762 | 34302 | 34302 | 34302 | 33616 |
| 1 | 37307 | 36015 | 34858 | 33816 | 36431 | 35269 | 34221 | 33271 | 33870 | 33015 | 32232 | 32586 | 31896 | 31257 | 31402 | 30853 | 30340 | 29685 |
| 2 | 34493 | 32185 | 30275 | 28668 | 33665 | 31572 | 29821 | 28335 | 30421 | 28957 | 27692 | 29360 | 28145 | 27078 | 28379 | 27381 | 26491 | 25834 |
| 3 | 31862 | 28834 | 26491 | 24624 | 31088 | 28326 | 26158 | 24411 | 27367 | 25518 | 23995 | 26481 | 24912 | 23594 | 25658 | 24338 | 23207 | 22548 |
| 4 | 29474 | 25958 | 23383 | 21417 | 28757 | 25532 | 23131 | 21275 | 24728 | 22646 | 20997 | 23982 | 22184 | 20727 | 23287 | 21743 | 20465 | 19810 |
| 5 | 27328 | 23495 | 20816 | 18839 | 26671 | 23136 | 20622 | 18742 | 22457 | 20246 | 18550 | 21826 | 19886 | 18363 | 21236 | 19541 | 18181 | 17535 |
| 6 | 25404 | 21379 | 18678 | 16739 | 24805 | 21075 | 18525 | 16670 | 20498 | 18228 | 16534 | 19960 | 17942 | 16401 | 19456 | 17668 | 16270 | 15640 |
| 7 | 23684 | 19556 | 16881 | 15006 | 23139 | 19297 | 16758 | 14956 | 18803 | 16519 | 14856 | 18341 | 16289 | 14758 | 17907 | 16067 | 14662 | 14051 |
| 8 | 22147 | 17979 | 15358 | 13558 | 21652 | 17757 | 15258 | 13520 | 17332 | 15064 | 13446 | 16933 | 14876 | 13372 | 16558 | 14694 | 13300 | 12709 |
| 9 | 20771 | 16607 | 14057 | 12335 | 20322 | 16415 | 13974 | 12306 | 16047 | 13814 | 12249 | 15701 | 13658 | 12193 | 15374 | 13507 | 12137 | 11568 |
| 10 | 19537 | 15407 | 12936 | 11291 | 19129 | 15240 | 12868 | 11269 | 14920 | 12734 | 11225 | 14619 | 12604 | 11181 | 14333 | 12477 | 11138 | 10590 |

Cone of Light Tabulation

| Mounting Height (Feet) | Footcandles at Nadir | Diameter (Feet) |
|------------------------|----------------------|-----------------|
| 4.00 | 1100 | 4.32 |
| 6.00 | 491 | 6.49 |
| 8.00 | 276 | 8.65 |
| 10.0 | 177 | 10.8 |
| 12.0 | 123 | 13.0 |
| 14.0 | 90.2 | 15.1 |
| 16.0 | 69.0 | 17.3 |

Cone of Light Plot

