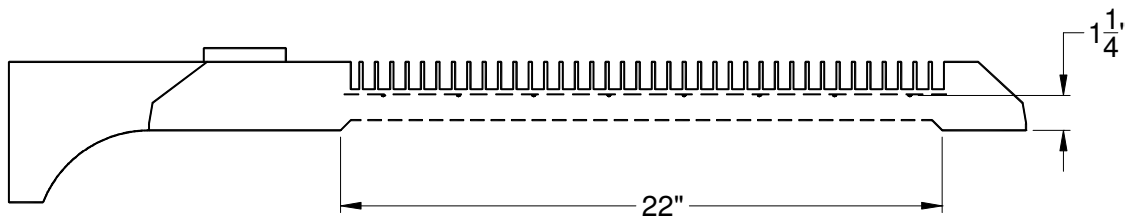




INDEPENDENT TEST LABORATORY REPORT No. 29016

SOLAR OUTDOOR LIGHTING - LED ROADWAY LUMINAIRE, CAT# 20/20 TYPE 5
WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

IESNA CUTOFF CLASSIFICATION: CUTOFF



PREPARED FOR:

SOLAR OUTDOOR LIGHTING INC
PALM CITY, FL

DATE: APR 28, 2011

CERTIFIED BY:

Ryder Tunney

LABORATORY RESULTS MAY NOT BE REPRESENTATIVE OF FIELD PERFORMANCE.
BALLAST FACTORS HAVE NOT BEEN APPLIED

TESTED IN 30 PLANES LEFT SIDE, 30 PLANES RIGHT SIDE, LEFT AND RIGHT AVERAGED

VERTICAL TEST INCREMENTS ARE 2.5 DEGREES.

TEST DISTANCE EXCEEDS FIVE TIMES THE GREATEST
LUMINOUS OPENING OF LUMINAIRE.

LIGHTING SCIENCES, INC.
7826 E. EVANS RD.
SCOTTSDALE, AZ, USA 85260

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LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

*** THIS IS AN ABSOLUTE TEST REPORT ***

UTILIZATION TABLE

CO-EFFICIENT OF UTILIZATION

| RATIO | HOUSE SIDE | STREET SIDE | TOTAL |
|--------|------------|-------------|-------|
| 0.5 | 0.242 | 0.243 | 0.485 |
| 1.0 | 0.388 | 0.385 | 0.773 |
| 1.5 | 0.449 | 0.443 | 0.892 |
| 2.0 | 0.476 | 0.468 | 0.944 |
| 2.5 | 0.488 | 0.480 | 0.969 |
| 3.0 | 0.494 | 0.486 | 0.980 |
| 3.5 | 0.498 | 0.490 | 0.987 |
| 4.0 | 0.499 | 0.491 | 0.991 |
| 5.0 | 0.502 | 0.494 | 0.996 |
| TOTAL: | 0.503 | 0.496 | 1.000 |

PERCENTAGE OUTPUTS

| | | |
|-----------|---------------|--------|
| DOWNWARD: | STREET SIDE = | 49.6% |
| | HOUSE SIDE = | 50.3% |
| | TOTAL = | 100.0% |
| UPWARD: | STREET SIDE = | 0.0% |
| | HOUSE SIDE = | 0.0% |
| | TOTAL = | 0.0% |

EFFICACY (LUMENS PER WATT) 74.1

THE ABOVE COEFFICIENTS HAVE BEEN CALCULATED BASED ON LUMINAIRE LUMENS
BECAUSE IN AN ABSOLUTE TEST THE BARE LAMP LUMENS ARE UNKNOWN.
LIGHTING DESIGN CALCULATIONS MADE USING THESE COEFFICIENTS SHOULD
THEREFORE USE THE LUMINAIRE LUMENS IN THE CALCULATION FORMULA

LIGHTING SCIENCES, INC.
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WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

ZONAL LUMEN SUMMARY PER IES PUBLICATION TM-15-07

*** THIS IS AN ABSOLUTE TEST REPORT ***

FORWARD LIGHT:

| | |
|---|--------|
| LUMENS | 3704.0 |
| % LUMENS | 49.6 % |
| FORWARD LOW ZONE (0 TO 30 DEGREES) | 14.0 % |
| FORWARD MID ZONE (30 TO 60 DEGREES) | 27.3 % |
| FORWARD HIGH ZONE (60 TO 80 DEGREES) | 8.1 % |
| FORWARD VERY HIGH ZONE (80 TO 90 DEGREES) | 0.3 % |

BACK LIGHT:

| | |
|--|--------|
| LUMENS | 3757.1 |
| % LUMENS | 50.3 % |
| BACK LIGHT LOW ZONE (0 TO 30 DEGREES) | 14.0 % |
| BACK LIGHT MID ZONE (30 TO 60 DEGREES) | 27.9 % |
| BACK LIGHT HIGH ZONE (60 TO 80 DEGREES) | 8.2 % |
| BACK LIGHT VERY HIGH ZONE (80 TO 90 DEGREES) | 0.2 % |

UPLIGHT:

| | |
|--|-------|
| LUMENS | 2.3 |
| % LUMENS | 0.0 % |
| UPLIGHT LOW ZONE (90 TO 100 DEGREES) | 0.0 % |
| UPLIGHT HIGH ZONE (100 TO 180 DEGREES) | 0.0 % |

TRAPPED LIGHT: NOT APPLICABLE TO AN ABSOLUTE TEST

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LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

IES "BUG" RATING (BACK LIGHT, UPLIGHT, GLARE)
PER ADDENDUM TO IES TM-15-07

| | LUMENS | SECONDARY SOLID ANGLE RATING |
|----------------------|--------|------------------------------------|
| BACK LIGHT | | |
| BH (60-80 DEGREES) | 615.3 | B2 |
| BM (30-60 DEGREES) | 2080.3 | B2 |
| BL (0-30 DEGREES) | 1043.5 | B3 |
| UPLIGHT | | |
| UH (100-180 DEGREES) | 2.3 | U1 |
| UL (90-100 DEGREES) | 0.0 | U1 |
| FVH (80-90 DEGREES) | 21.3 | U1 |
| BVH (80-90 DEGREES) | 18.0 | U1 |
| GLARE LIGHT | | |
| FVH (80-90 DEGREES) | 21.3 | G1 |
| BVH (80-90 DEGREES) | 18.0 | G1 |
| FH (60-80 DEGREES) | 602.6 | G0 |
| BH (60-80 DEGREES) | 615.3 | G0 |

IES BUG RATING: B3 U1 G0

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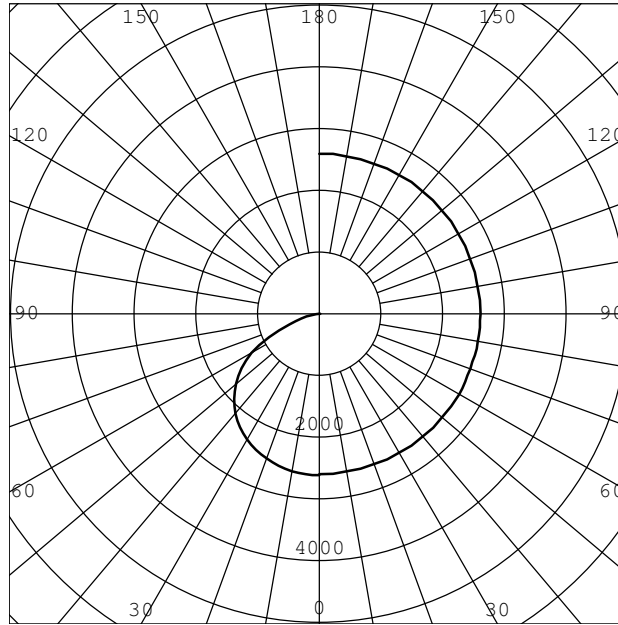
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WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

INTENSITY (CANDLEPOWER)
IN MAX. PLANE

INTENSITY (CANDLEPOWER)
IN MAX. CONE

| ANGLE | CANDLEPOWER |
|-------|-------------|
| 0.0 | 2612 |
| 5.0 | 2610 |
| 10.0 | 2591 |
| 15.0 | 2552 |
| 20.0 | 2498 |
| 25.0 | 2435 |
| 30.0 | 2350 |
| 35.0 | 2243 |
| 40.0 | 2118 |
| 45.0 | 1955 |
| 50.0 | 1763 |
| 52.5 | 1658 |
| 55.0 | 1540 |
| 57.5 | 1412 |
| 60.0 | 1273 |
| 62.5 | 1108 |
| 65.0 | 905 |
| 67.5 | 714 |
| 70.0 | 517 |
| 72.5 | 409 |
| 75.0 | 311 |
| 77.5 | 212 |
| 80.0 | 126 |
| 82.5 | 59 |
| 85.0 | 20 |
| 87.5 | 4 |
| 90.0 | 0 |
| 95.0 | 0 |
| 105.0 | 0 |
| 115.0 | 0 |
| 125.0 | 0 |
| 135.0 | 0 |
| 145.0 | 0 |
| 155.0 | 0 |
| 165.0 | 1 |
| 175.0 | 2 |
| 180.0 | 1 |



| ANGLE | CANDLEPOWER |
|-------|-------------|
| 0.0 | 2598 |
| 5.0 | 2602 |
| 15.0 | 2601 |
| 25.0 | 2610 |
| 35.0 | 2611 |
| 45.0 | 2613 |
| 55.0 | 2616 |
| 60.0 | 2618 |
| 62.5 | 2619 |
| 65.0 | 2616 |
| 67.5 | 2602 |
| 70.0 | 2610 |
| 72.5 | 2606 |
| 75.0 | 2613 |
| 77.5 | 2615 |
| 80.0 | 2609 |
| 82.5 | 2613 |
| 85.0 | 2613 |
| 87.5 | 2607 |
| 90.0 | 2612 |
| 95.0 | 2616 |
| 105.0 | 2611 |
| 115.0 | 2612 |
| 125.0 | 2612 |
| 135.0 | 2609 |
| 145.0 | 2607 |
| 155.0 | 2604 |
| 165.0 | 2599 |
| 175.0 | 2602 |
| 180.0 | 2591 |

MAXIMUM INTENSITY (CANDLEPOWER) : 2619 CD
 PLANE OF MAXIMUM: 62.5
 VERTICAL ANGLE OF MAXIMUM: 2.5

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WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

INTENSITY (CANDLEPOWER) SUMMARY

| VERT. ANGLE | HORIZONTAL ANGLES - STREET SIDE | | | | | | | | | | |
|----------------|---------------------------------|------|------|------|------|------|------|------|------|------|------|
| | 0.0 | 5.0 | 15.0 | 25.0 | 35.0 | 45.0 | 55.0 | 62.5 | 65.0 | 75.0 | 85.0 |
| | | | | | | | | **** | | | |
| 0.0 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 |
| 2.5** | 2598 | 2602 | 2601 | 2610 | 2611 | 2613 | 2616 | 2619 | 2616 | 2613 | 2613 |
| 5.0 | 2597 | 2598 | 2600 | 2605 | 2608 | 2608 | 2607 | 2610 | 2609 | 2605 | 2603 |
| 10.0 | 2583 | 2582 | 2585 | 2588 | 2589 | 2586 | 2588 | 2591 | 2591 | 2584 | 2580 |
| 15.0 | 2556 | 2554 | 2559 | 2560 | 2561 | 2551 | 2547 | 2552 | 2551 | 2543 | 2541 |
| 20.0 | 2512 | 2505 | 2510 | 2509 | 2515 | 2504 | 2500 | 2498 | 2498 | 2489 | 2482 |
| 25.0 | 2437 | 2430 | 2441 | 2440 | 2453 | 2441 | 2438 | 2435 | 2436 | 2410 | 2404 |
| 30.0 | 2335 | 2329 | 2341 | 2344 | 2360 | 2356 | 2350 | 2350 | 2346 | 2314 | 2309 |
| 35.0 | 2202 | 2199 | 2212 | 2221 | 2240 | 2247 | 2246 | 2243 | 2231 | 2205 | 2192 |
| 40.0 | 2058 | 2056 | 2068 | 2084 | 2102 | 2112 | 2119 | 2118 | 2108 | 2077 | 2056 |
| 45.0 | 1665 | 1671 | 1708 | 1841 | 1939 | 1948 | 1958 | 1955 | 1944 | 1916 | 1891 |
| 50.0 | 1472 | 1481 | 1490 | 1521 | 1569 | 1747 | 1756 | 1763 | 1755 | 1725 | 1694 |
| 55.0 | 1231 | 1249 | 1272 | 1315 | 1335 | 1347 | 1526 | 1540 | 1535 | 1509 | 1475 |
| 60.0 | 1017 | 1029 | 1044 | 1065 | 1081 | 1096 | 1150 | 1273 | 1268 | 1246 | 1211 |
| 65.0 | 805 | 814 | 824 | 835 | 829 | 842 | 851 | 905 | 950 | 955 | 899 |
| 70.0 | 580 | 592 | 601 | 603 | 599 | 594 | 548 | 517 | 516 | 583 | 568 |
| 75.0 | 315 | 321 | 328 | 344 | 357 | 321 | 314 | 311 | 311 | 345 | 342 |
| 80.0 | 132 | 138 | 141 | 141 | 134 | 131 | 126 | 126 | 125 | 118 | 124 |
| 85.0 | 24 | 28 | 26 | 25 | 23 | 22 | 21 | 20 | 19 | 17 | 15 |
| 90.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

| VERT. ANGLE | HORIZONTAL ANGLES - HOUSE SIDE | | | | | | | | | | |
|----------------|--------------------------------|------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| | 90.0 | 95.0 | 105.0 | 115.0 | 125.0 | 135.0 | 145.0 | 155.0 | 165.0 | 175.0 | 180.0 |
| 0.0 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 | 2612 |
| 2.5** | 2612 | 2616 | 2611 | 2612 | 2612 | 2609 | 2607 | 2604 | 2599 | 2602 | 2591 |
| 5.0 | 2603 | 2608 | 2604 | 2601 | 2604 | 2605 | 2601 | 2600 | 2591 | 2596 | 2586 |
| 10.0 | 2581 | 2583 | 2580 | 2584 | 2582 | 2580 | 2580 | 2580 | 2570 | 2574 | 2562 |
| 15.0 | 2539 | 2545 | 2538 | 2542 | 2534 | 2537 | 2542 | 2546 | 2544 | 2552 | 2541 |
| 20.0 | 2480 | 2482 | 2477 | 2481 | 2483 | 2496 | 2501 | 2503 | 2502 | 2504 | 2484 |
| 25.0 | 2409 | 2409 | 2405 | 2412 | 2419 | 2433 | 2442 | 2443 | 2442 | 2443 | 2434 |
| 30.0 | 2306 | 2309 | 2307 | 2328 | 2335 | 2348 | 2365 | 2361 | 2354 | 2353 | 2353 |
| 35.0 | 2194 | 2193 | 2194 | 2224 | 2232 | 2250 | 2268 | 2252 | 2244 | 2232 | 2233 |
| 40.0 | 2060 | 2051 | 2061 | 2097 | 2115 | 2138 | 2140 | 2117 | 2106 | 2092 | 2089 |
| 45.0 | 1895 | 1885 | 1907 | 1934 | 1969 | 1985 | 1981 | 1954 | 1890 | 1811 | 1804 |
| 50.0 | 1690 | 1688 | 1723 | 1754 | 1785 | 1790 | 1748 | 1589 | 1558 | 1538 | 1537 |
| 55.0 | 1473 | 1465 | 1501 | 1539 | 1568 | 1488 | 1390 | 1382 | 1349 | 1316 | 1317 |
| 60.0 | 1206 | 1198 | 1232 | 1285 | 1283 | 1143 | 1134 | 1121 | 1097 | 1075 | 1079 |
| 65.0 | 885 | 881 | 944 | 987 | 897 | 879 | 862 | 866 | 859 | 841 | 837 |
| 70.0 | 557 | 563 | 580 | 535 | 553 | 611 | 613 | 617 | 613 | 604 | 601 |
| 75.0 | 333 | 341 | 350 | 319 | 317 | 321 | 339 | 336 | 330 | 321 | 318 |
| 80.0 | 119 | 126 | 118 | 123 | 119 | 124 | 128 | 119 | 120 | 106 | 104 |
| 85.0 | 14 | 15 | 15 | 14 | 15 | 16 | 16 | 17 | 15 | 13 | 14 |
| 90.0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |

** DENOTES VERTICAL ANGLE OF MAXIMUM CONE

**** DENOTES LATERAL ANGLE OF MAXIMUM PLANE

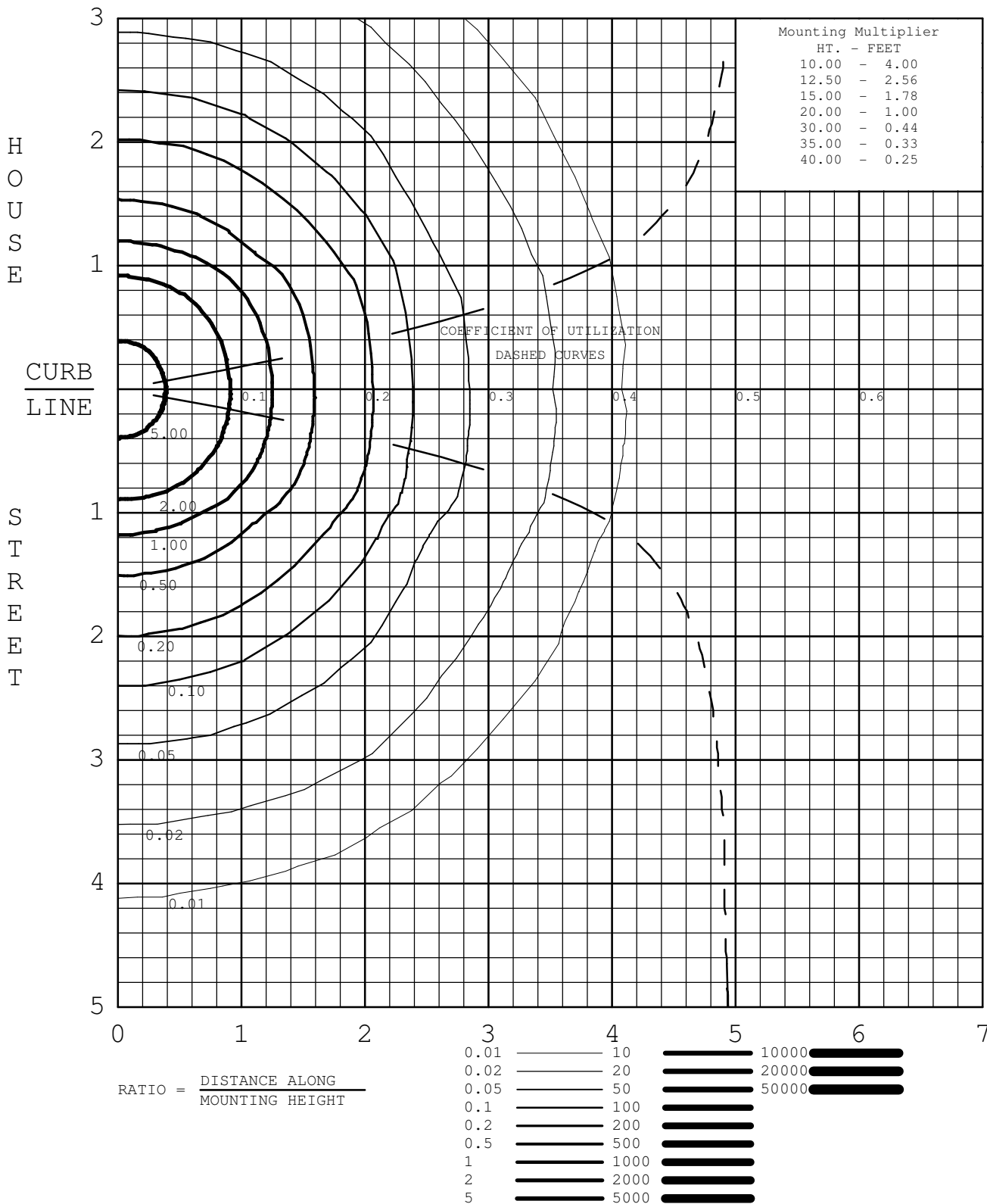
INTENSITY WAS MEASURED IN 2.5 DEGREE STEPS - TABULATIONS ARE AVAILABLE

ISOFOOTCANDLE

CERTIFIED TEST REPORT NO.29016

SOLAR OUTDOOR LIGHTING - LED ROADWAY LUMINAIRE, CAT# 20/20 TYPE 5
 WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
 LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

MOUNTING HEIGHT FOR ISOFC 20.0 FEET



LIGHTING SCIENCES, INC.
7826 E. EVANS RD.
SCOTTSDALE, AZ, USA 85260

INDEPENDENT TEST LABORATORY REPORT No. 29016

| ** ILLUMINANCE(FOOTCANDLE) TABLE FOR SINGLE LUMINAIRE AT 20.0 FT. ** | | | | | | | | | | | | | | | |
|--|-------------------------------------|-----------|------|------|------|------|------|------|------|------|------|------|------|------|-----|
| LATERAL RATIOS | | | | | | | | | | | | | | | |
| -3.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .040 | .038 | .033 | .025 | .018 | .011 | .008 | .005 | .003 | .002 | .001 | .001 | .001 | .000 | |
| | | | | | | | | | | | | | | | |
| -2.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .088 | .083 | .067 | .048 | .031 | .018 | .011 | .007 | .004 | .003 | .002 | .001 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| -2.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 0.20 | 0.18 | 0.14 | .090 | .053 | .028 | .016 | .009 | .005 | .003 | .002 | .001 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| -1.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 0.53 | 0.46 | 0.30 | 0.17 | .090 | .042 | .022 | .013 | .007 | .004 | .002 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| -1.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 1.5 | 1.2 | 0.72 | 0.34 | 0.15 | .061 | .031 | .017 | .009 | .005 | .003 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| -0.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 4.3 | 3.0 | 1.3 | 0.52 | 0.20 | .079 | .037 | .019 | .010 | .005 | .003 | .002 | .001 | .001 | |
| HOUSE | | CURB LINE | | | | | | | | | | | | | |
| ----- | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| STREET | 6.5 | 4.2 | 1.6 | 0.60 | 0.22 | .082 | .039 | .020 | .010 | .005 | .003 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 0.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 4.3 | 3.0 | 1.3 | 0.53 | 0.20 | .079 | .038 | .019 | .010 | .005 | .003 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 1.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 1.4 | 1.1 | 0.65 | 0.31 | 0.14 | .061 | .031 | .016 | .009 | .005 | .003 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 1.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 0.50 | 0.44 | 0.29 | 0.16 | .086 | .040 | .022 | .012 | .007 | .004 | .002 | .002 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 2.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | 0.19 | 0.17 | 0.13 | .087 | .052 | .028 | .016 | .009 | .006 | .003 | .002 | .001 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 2.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .085 | .080 | .065 | .047 | .031 | .018 | .011 | .007 | .004 | .003 | .002 | .001 | .001 | .001 | |
| | | | | | | | | | | | | | | | |
| 3.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .039 | .038 | .033 | .025 | .018 | .012 | .008 | .005 | .003 | .002 | .001 | .001 | .001 | .000 | |
| | | | | | | | | | | | | | | | |
| 3.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .019 | .019 | .016 | .013 | .010 | .007 | .005 | .004 | .002 | .002 | .001 | .001 | .001 | .000 | |
| | | | | | | | | | | | | | | | |
| 4.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .010 | .010 | .009 | .008 | .006 | .004 | .003 | .002 | .002 | .001 | .001 | .001 | .000 | .000 | |
| | | | | | | | | | | | | | | | |
| 4.50 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .006 | .006 | .005 | .005 | .004 | .003 | .002 | .002 | .001 | .001 | .001 | .001 | .000 | .000 | |
| | | | | | | | | | | | | | | | |
| 5.00 | + | + | + | + | + | + | + | + | + | + | + | + | + | + | |
| | .003 | .003 | .003 | .003 | .002 | .002 | .002 | .001 | .001 | .001 | .001 | .000 | .000 | .000 | |
| | | | | | | | | | | | | | | | |
| | 0.0 | 0.5 | 1.0 | 1.5 | 2.0 | 2.5 | 3.0 | 3.5 | 4.0 | 4.5 | 5.0 | 5.5 | 6.0 | 6.5 | 7.0 |
| | LONGITUDINAL MOUNTING HEIGHT RATIOS | | | | | | | | | | | | | | |

CORRECTION FACTORS FOR OTHER MOUNTING HEIGHTS: SEE ISOFOOTCANDLE PAGE

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FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

ELECTRICAL MEASUREMENTS

| | | |
|------------------|-------|----------|
| INPUT VOLTAGE: | 13.0 | VOLTS DC |
| INPUT CURRENT: | 7.740 | AMPS |
| INPUT POWER: | 100.7 | WATTS |
| OFF STATE POWER: | 0.00 | WATTS |

LIGHT OUTPUT

| | | |
|-----------|------|------|
| LUMENS: | 7463 | lm |
| EFFICACY: | 74.1 | lm/W |

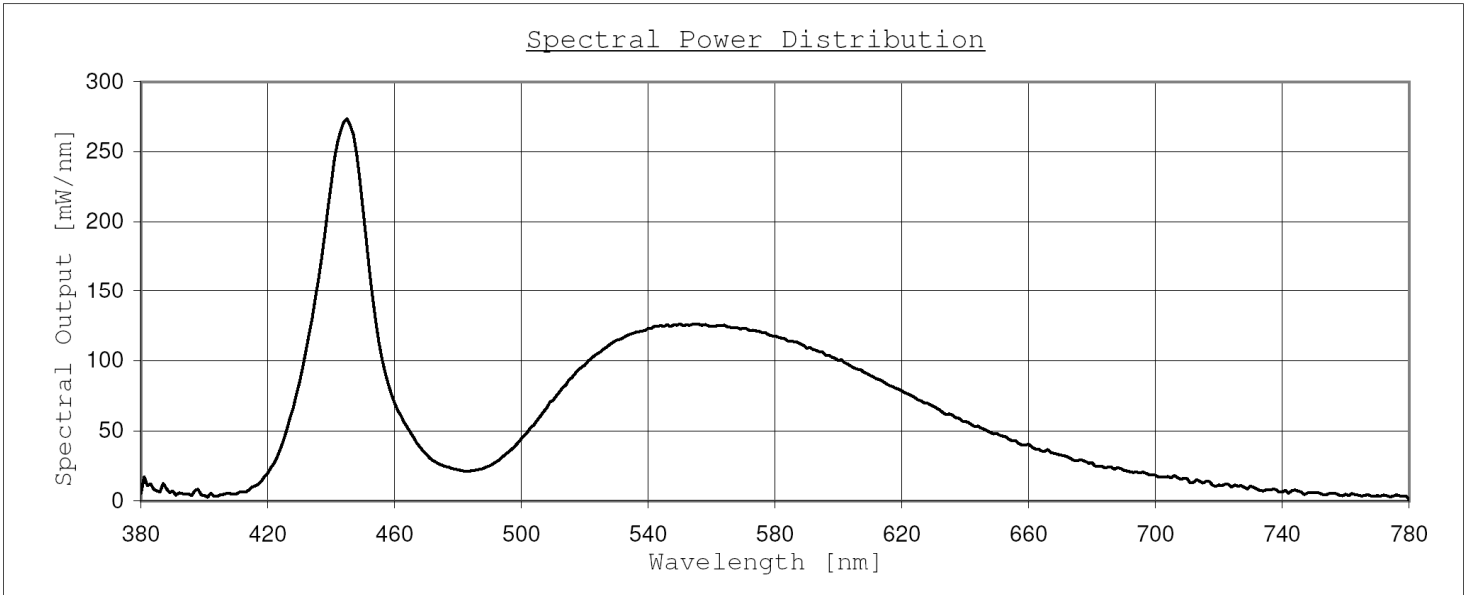
SPECTRAL MEASUREMENTS

| | | |
|------------------------|--------|----|
| X: | 0.3245 | |
| y: | 0.3319 | |
| u/u': | 0.2049 | |
| v: | 0.3144 | |
| v': | 0.4716 | |
| Duv: | 0.0010 | |
| CRI (R _a): | 71.5 | |
| CRI (R _g): | -11.7 | |
| CCT: | 5873 | K |
| RADIANT FLUX: | 24050 | mW |

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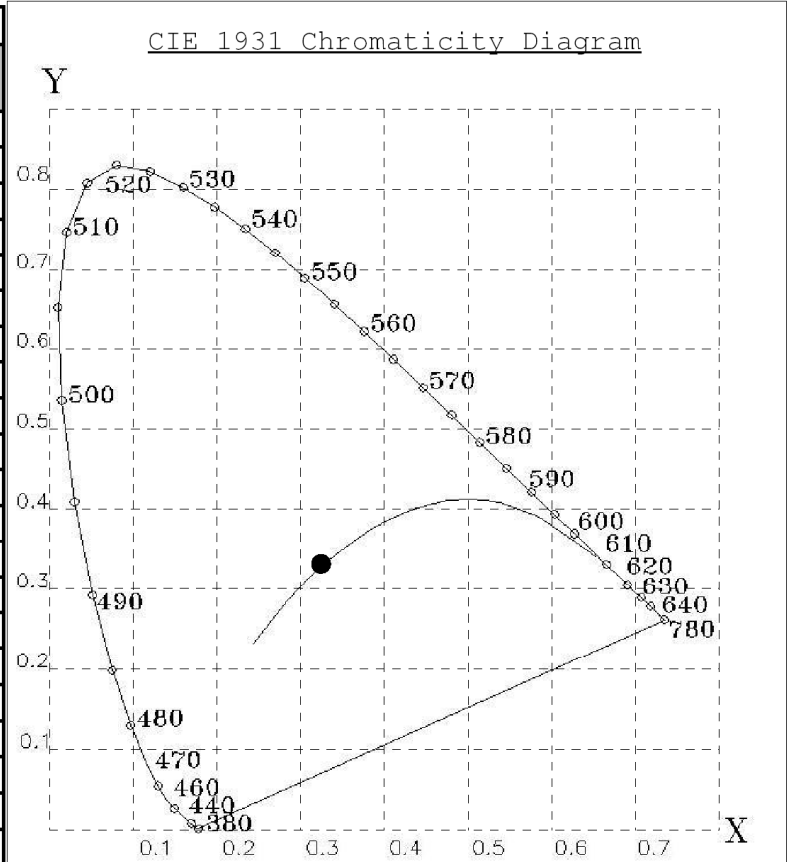
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 WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
 FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
 LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS



Tabulated Spectral Power Distribution

| Wavelength [nm] | [mW/nm] | Wavelength [nm] | [mW/nm] |
|-----------------|-----------|-----------------|-----------|
| 380 | 5.29072 | 590 | 108.94412 |
| 390 | 7.21610 | 600 | 100.06071 |
| 400 | 3.97162 | 610 | 89.54073 |
| 410 | 4.99781 | 620 | 78.52506 |
| 420 | 20.00149 | 630 | 67.50119 |
| 430 | 84.70882 | 640 | 56.69240 |
| 440 | 226.79417 | 650 | 48.04864 |
| 450 | 209.41039 | 660 | 40.49457 |
| 460 | 69.86696 | 670 | 32.74182 |
| 470 | 33.43414 | 680 | 27.33230 |
| 480 | 22.23822 | 690 | 21.91049 |
| 490 | 25.07919 | 700 | 18.47757 |
| 500 | 44.45390 | 710 | 15.95203 |
| 510 | 71.88042 | 720 | 11.44171 |
| 520 | 96.88177 | 730 | 10.62650 |
| 530 | 114.64244 | 740 | 6.41318 |
| 540 | 123.05679 | 750 | 5.84375 |
| 550 | 126.24392 | 760 | 4.80118 |
| 560 | 124.75482 | 770 | 3.77908 |
| 570 | 122.93185 | 780 | 1.16035 |
| 580 | 117.60221 | | |

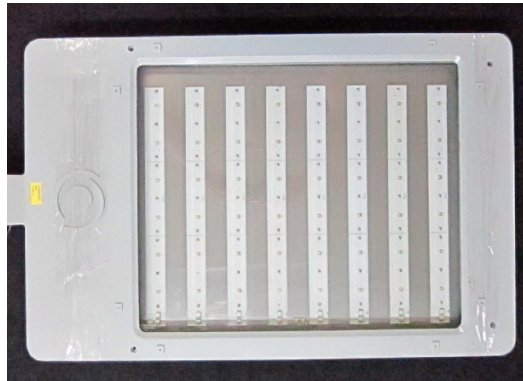


LIGHTING SCIENCES, INC.
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SCOTTSDALE, AZ, USA 85260

INDEPENDENT TEST LABORATORY REPORT No. 29016

SOLAR OUTDOOR LIGHTING - LED ROADWAY LUMINAIRE, CAT# 20/20 TYPE 5
WITH ALUMINUM INTERIOR AND CLEAR FLAT GLASS LENS
FORTY EIGHT LEDS. LUMINAIRE OUTPUT: 7463 Lms.
LUMINAIRE OPERATING AT 13.0 VDC AND 100.7 WATTS

LUMINOUS OPENING



SIDE VIEW



All testing was conducted in accordance with LM-79-08,

Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products as published by the Illuminating Engineering Society of North America (IESNA).

The condition of the item tested was new. Stabilization time before testing exceeded 16 hours.

The test results (luminous distribution and flux) were obtained by using a Lighting Sciences series 6000 Type C Moving Mirror Goniophotometer

- The photometric reference standard used is a set of three incandescent luminous intensity standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.

The test results (colorimetric and luminous flux) were obtained by using a Lighting Sciences model 4000 Integrating Sphere of either 1 or 2 meters diameter, having an internal reflectance exceeding 0.80. 4π geometry was used. Correction factors were applied for spectral mismatch and self-absorption. The spectroradiometer employed was a LSC model 500E having a bandwidth of .84.

- The photometric reference standard used is a set of three incandescent luminous flux standard lamps calibrated and traceable to the U.S. National Institute of Standards and Technology.
- The colorimetric reference standard used is an incandescent spectral standard lamp calibrated and traceable to the U.S. National Institute of Standards and Technology.

Power measurements were obtained with a Yokogawa WT210 power analyzer.

Ambient temperature during testing was $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$, measured using an Omega model DP460.

Calibration certificates are on file at the laboratories of Lighting Sciences Inc.