



IES ROAD REPORT

PHOTOMETRIC FILENAME : HLN-3-LED-18L-50-IL.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]LED-7762_Scaled
[TESTLAB]LSI INDUSTRIES, INC
[ISSUE DATE]04/03/17
[TEST DATE]04/28/16
[MANUFACTURER]LSI INDUSTRIES, INC
[LUMCAT] HLN-3-LED-18L-50-IL
[ABSOLUTE]NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
[OTHER]TEST PROCEDURE: IESNA LM-79-08
[SEARCH_SOURCETYPE] LED
[SEARCH_APPLICATION] Outdoor
[OTHER]SCALED FROM ORIGINAL TEST DATA

CHARACTERISTICS

| | |
|---|----------------------------------|
| IES Classification | Type III |
| Longitudinal Classification | Short |
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 15453 |
| Downward Total Efficiency | N.A. (absolute) |
| Total Luminaire Efficiency | N.A. (absolute) |
| Luminaire Efficacy Rating (LER) | 100 |
| Total Luminaire Watts | 154 |
| Ballast Factor | 1.00 |
| Upward Waste Light Ratio | 0.00 |
| Maximum Candela | 19554.678 |
| Maximum Candela Angle | 55H 67.5V |
| Maximum Candela (<90 Degrees Vertical) | 19554.678 |
| Maximum Candela Angle (<90 Degrees Vertical) | 55H 67.5V |
| Maximum Candela At 90 Degrees Vertical | 0 (0.0% Luminaire Lumens) |
| Maximum Candela from 80 to <90 Degrees Vertical | 1064.644 (6.9% Luminaire Lumens) |
| Cutoff Classification (deprecated) | N.A. (absolute) |

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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

| | Lumens | % Lamp | % Luminaire |
|-------------------------------|----------|--------|-------------|
| FL - Front-Low (0-30) | 683.1 | N.A. | 4.4 |
| FM - Front-Medium (30-60) | 6990.4 | N.A. | 45.2 |
| FH - Front-High (60-80) | 6441.5 | N.A. | 41.7 |
| FVH - Front-Very High (80-90) | 125.5 | N.A. | 0.8 |
| BL - Back-Low (0-30) | 300.4 | N.A. | 1.9 |
| BM - Back-Medium (30-60) | 676.1 | N.A. | 4.4 |
| BH - Back-High (60-80) | 231.9 | N.A. | 1.5 |
| BVH - Back-Very High (80-90) | 4.5 | N.A. | 0.0 |
| UL - Uplight-Low (90-100) | 0.0 | N.A. | 0.0 |
| UH - Uplight-High (100-180) | 0.0 | N.A. | 0.0 |
| Total | 15453.4 | N.A. | 100.0 |
| BUG Rating | B1-U0-G3 | | |

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CANDELA TABULATION

| Vert. Angles | Horizontal Angles | | | | | | | | | |
|-------------------------|--------------------------|-------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| | <u>0.0</u> | <u>5.0</u> | <u>15.0</u> | <u>25.0</u> | <u>35.0</u> | <u>45.0</u> | <u>55.0</u> | <u>57.5</u> | <u>65.0</u> | <u>75.0</u> |
| 0.0 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 |
| 2.5 | 1374.753 | 1368.827 | 1349.075 | 1340.187 | 1323.397 | 1313.521 | 1290.806 | 1279.943 | 1269.079 | 1240.438 |
| 5.0 | 1511.043 | 1509.068 | 1503.142 | 1497.217 | 1483.390 | 1473.514 | 1438.948 | 1417.220 | 1380.679 | 1311.546 |
| 7.5 | 1470.551 | 1470.551 | 1475.489 | 1492.279 | 1500.180 | 1511.043 | 1506.105 | 1497.217 | 1468.576 | 1381.666 |
| 10.0 | 1371.790 | 1371.790 | 1382.654 | 1411.295 | 1443.886 | 1487.341 | 1518.944 | 1517.957 | 1514.994 | 1441.911 |
| 12.5 | 1276.980 | 1277.967 | 1290.806 | 1326.360 | 1366.852 | 1428.084 | 1492.279 | 1501.167 | 1524.870 | 1478.452 |
| 15.0 | 1198.959 | 1199.946 | 1216.735 | 1252.289 | 1306.608 | 1371.790 | 1445.861 | 1460.675 | 1515.981 | 1504.130 |
| 17.5 | 1154.516 | 1155.504 | 1174.268 | 1213.773 | 1271.054 | 1339.199 | 1419.196 | 1437.960 | 1508.080 | 1530.795 |
| 20.0 | 1177.231 | 1180.194 | 1201.921 | 1251.302 | 1302.658 | 1370.803 | 1449.811 | 1472.526 | 1543.634 | 1582.151 |
| 22.5 | 1332.286 | 1334.261 | 1354.013 | 1401.419 | 1437.960 | 1492.279 | 1563.387 | 1588.077 | 1648.321 | 1696.714 |
| 25.0 | 1653.259 | 1653.259 | 1678.937 | 1686.838 | 1699.677 | 1721.404 | 1792.512 | 1796.463 | 1847.818 | 1887.323 |
| 27.5 | 2084.845 | 2111.510 | 2113.485 | 2097.684 | 2081.882 | 2060.154 | 2104.597 | 2105.584 | 2129.287 | 2135.213 |
| 30.0 | 2543.096 | 2571.736 | 2583.588 | 2580.625 | 2551.984 | 2498.653 | 2501.616 | 2490.752 | 2471.000 | 2397.917 |
| 32.5 | 3025.049 | 3012.210 | 3035.913 | 3058.628 | 3057.641 | 3033.938 | 2968.756 | 2940.115 | 2844.317 | 2684.324 |
| 35.0 | 3399.354 | 3394.416 | 3450.709 | 3508.978 | 3551.445 | 3574.161 | 3471.449 | 3422.069 | 3247.262 | 2984.557 |
| 37.5 | 3749.955 | 3766.744 | 3830.939 | 3929.700 | 4017.597 | 4127.222 | 3985.994 | 3919.824 | 3654.157 | 3280.840 |
| 40.0 | 4154.875 | 4173.640 | 4241.785 | 4343.509 | 4481.774 | 4644.730 | 4531.155 | 4413.629 | 4050.189 | 3555.396 |
| 42.5 | 4676.333 | 4694.110 | 4771.144 | 4808.673 | 4994.344 | 5168.163 | 5035.823 | 4918.298 | 4410.666 | 3782.546 |
| 45.0 | 5356.797 | 5374.574 | 5452.595 | 5440.743 | 5579.996 | 5737.026 | 5536.542 | 5395.313 | 4740.528 | 3978.093 |
| 47.5 | 6241.695 | 6264.410 | 6360.208 | 6302.927 | 6398.725 | 6378.973 | 6037.260 | 5842.701 | 5084.216 | 4161.788 |
| 50.0 | 7438.678 | 7487.071 | 7694.469 | 7650.027 | 7538.427 | 7154.247 | 6545.879 | 6296.014 | 5404.202 | 4385.976 |
| 52.5 | 9229.215 | 9310.199 | 9540.312 | 9450.440 | 9166.008 | 8154.696 | 7144.371 | 6801.670 | 5788.382 | 4723.739 |
| 55.0 | 11301.221 | 11496.768 | 11720.955 | 11750.584 | 11327.886 | 9506.734 | 7901.867 | 7478.183 | 6338.481 | 5221.494 |
| 57.5 | 12277.967 | 12412.282 | 13164.841 | 13897.648 | 13819.626 | 11520.470 | 9087.987 | 8543.814 | 7201.652 | 6039.235 |
| 60.0 | 10996.050 | 11239.002 | 12588.077 | 14378.614 | 16517.777 | 14431.945 | 10891.363 | 10235.590 | 8582.331 | 7407.075 |
| 62.5 | 6520.201 | 6692.045 | 9170.946 | 12586.102 | 16483.211 | 17003.681 | 13707.039 | 13215.209 | 10629.646 | 9193.661 |
| 65.0 | 1859.670 | 1939.666 | 3012.210 | 6925.121 | 13787.035 | 17385.886 | 16899.982 | 16497.037 | 13105.584 | 10770.874 |
| 67.5 | 741.695 | 776.261 | 1046.867 | 1983.121 | 7789.280 | 15188.454 | 19554.678 | 19550.727 | 15026.486 | 11264.679 |
| 70.0 | 501.706 | 521.458 | 614.293 | 1025.139 | 2516.430 | 10181.271 | 17710.810 | 18654.965 | 15950.889 | 9326.989 |
| 72.5 | 404.920 | 422.697 | 475.040 | 749.596 | 1456.725 | 4375.112 | 13357.425 | 14625.516 | 12592.027 | 5282.726 |
| 75.0 | 318.998 | 328.874 | 378.255 | 637.008 | 1145.628 | 2114.473 | 6657.479 | 7847.549 | 6591.309 | 1624.618 |
| 77.5 | 243.940 | 258.754 | 300.233 | 557.012 | 999.461 | 1300.682 | 2447.298 | 3095.170 | 1869.546 | 584.665 |
| 80.0 | 169.869 | 179.745 | 225.175 | 469.115 | 842.431 | 903.663 | 929.341 | 1064.644 | 781.199 | 313.072 |
| 82.5 | 101.724 | 107.649 | 148.141 | 387.143 | 641.946 | 621.207 | 417.759 | 382.205 | 363.440 | 201.472 |
| 85.0 | 66.170 | 70.120 | 102.711 | 321.961 | 509.607 | 334.800 | 168.881 | 177.770 | 181.720 | 130.365 |
| 87.5 | 41.480 | 44.442 | 71.108 | 239.989 | 250.853 | 115.550 | 74.071 | 73.083 | 75.058 | 75.058 |
| 90.0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

| Vert. Angles | Horizontal Angles | | | | | | | | | |
|-------------------------|--------------------------|--------------------|--------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| | <u>85.0</u> | <u>90.0</u> | <u>95.0</u> | <u>105.0</u> | <u>115.0</u> | <u>125.0</u> | <u>135.0</u> | <u>145.0</u> | <u>155.0</u> | <u>165.0</u> |
| 0.0 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 | 1197.971 |
| 2.5 | 1219.698 | 1208.835 | 1195.008 | 1166.367 | 1144.640 | 1120.937 | 1099.210 | 1067.606 | 1046.867 | 1049.829 |
| 5.0 | 1244.389 | 1208.835 | 1171.305 | 1096.247 | 1024.152 | 958.969 | 898.725 | 862.184 | 837.493 | 829.592 |
| 7.5 | 1268.091 | 1207.847 | 1144.640 | 1020.201 | 911.564 | 835.518 | 795.026 | 764.410 | 737.745 | 720.955 |
| 10.0 | 1288.831 | 1201.921 | 1114.024 | 942.180 | 824.654 | 768.361 | 722.931 | 690.339 | 665.649 | 648.860 |
| 12.5 | 1308.583 | 1194.020 | 1084.396 | 872.060 | 770.336 | 710.092 | 668.612 | 640.959 | 618.244 | 606.393 |
| 15.0 | 1326.360 | 1185.132 | 1052.792 | 818.729 | 729.844 | 675.525 | 630.095 | 609.355 | 595.529 | 587.628 |
| 17.5 | 1345.125 | 1179.206 | 1022.176 | 780.212 | 702.191 | 655.773 | 613.306 | 593.554 | 584.665 | 574.789 |
| 20.0 | 1382.654 | 1195.996 | 1014.275 | 758.484 | 702.191 | 644.909 | 612.318 | 583.677 | 567.876 | 562.938 |
| 22.5 | 1488.328 | 1271.054 | 1061.681 | 767.373 | 730.831 | 658.736 | 616.269 | 575.777 | 550.099 | 547.136 |
| 25.0 | 1646.346 | 1392.530 | 1164.392 | 797.001 | 769.348 | 692.315 | 617.256 | 567.876 | 533.309 | 499.731 |
| 27.5 | 1843.868 | 1562.399 | 1284.881 | 839.468 | 807.865 | 729.844 | 628.120 | 553.062 | 457.263 | 388.131 |

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

| | | | | | | | | | | |
|------|----------|----------|----------|---------|---------|---------|---------|---------|---------|---------|
| 30.0 | 2041.390 | 1710.540 | 1394.505 | 885.886 | 842.431 | 764.410 | 630.095 | 472.078 | 355.540 | 338.750 |
| 32.5 | 2256.689 | 1881.397 | 1514.006 | 928.353 | 873.047 | 791.076 | 586.640 | 393.069 | 342.701 | 349.614 |
| 35.0 | 2480.876 | 2046.328 | 1637.457 | 954.031 | 886.874 | 799.964 | 511.582 | 384.180 | 344.676 | 359.490 |
| 37.5 | 2690.250 | 2204.345 | 1742.144 | 962.920 | 877.985 | 751.571 | 493.805 | 366.403 | 313.072 | 314.060 |
| 40.0 | 2878.883 | 2340.636 | 1823.128 | 953.044 | 843.419 | 657.748 | 484.917 | 341.713 | 268.630 | 250.853 |
| 42.5 | 3038.876 | 2447.298 | 1878.434 | 923.415 | 773.299 | 580.715 | 444.424 | 318.998 | 242.952 | 211.349 |
| 45.0 | 3168.253 | 2533.220 | 1912.013 | 875.022 | 640.959 | 464.177 | 383.193 | 293.320 | 259.741 | 188.634 |
| 47.5 | 3303.555 | 2633.956 | 1954.480 | 810.828 | 466.152 | 336.775 | 298.258 | 258.754 | 246.902 | 178.757 |
| 50.0 | 3483.300 | 2792.961 | 2032.501 | 740.707 | 341.713 | 246.902 | 224.187 | 236.039 | 239.002 | 174.807 |
| 52.5 | 3757.856 | 3050.727 | 2200.395 | 691.327 | 259.741 | 196.534 | 174.807 | 208.386 | 215.299 | 178.757 |
| 55.0 | 4186.479 | 3487.251 | 2480.876 | 655.773 | 233.076 | 174.807 | 145.179 | 174.807 | 168.881 | 189.621 |
| 57.5 | 4908.422 | 4086.730 | 2890.734 | 595.529 | 219.249 | 160.980 | 126.414 | 145.179 | 131.352 | 136.290 |
| 60.0 | 6060.962 | 4822.500 | 3116.897 | 512.570 | 207.398 | 142.216 | 109.625 | 103.699 | 79.009 | 105.674 |
| 62.5 | 7680.643 | 5370.623 | 2939.127 | 428.623 | 182.708 | 117.526 | 108.637 | 64.195 | 53.331 | 82.959 |
| 65.0 | 8497.396 | 5349.883 | 2180.643 | 346.651 | 142.216 | 103.699 | 78.021 | 50.368 | 38.517 | 79.996 |
| 67.5 | 8124.080 | 4339.558 | 1300.682 | 239.002 | 105.674 | 78.021 | 51.356 | 42.467 | 37.529 | 61.232 |
| 70.0 | 5302.478 | 2727.779 | 646.885 | 154.067 | 78.021 | 47.405 | 31.604 | 34.566 | 28.641 | 45.430 |
| 72.5 | 2326.809 | 1087.359 | 239.989 | 98.761 | 57.281 | 27.653 | 23.703 | 22.715 | 18.765 | 30.616 |
| 75.0 | 583.677 | 370.354 | 145.179 | 73.083 | 36.542 | 20.740 | 14.814 | 14.814 | 6.913 | 11.851 |
| 77.5 | 277.518 | 184.683 | 100.736 | 52.343 | 21.727 | 13.827 | 7.901 | 4.938 | 1.975 | 2.963 |
| 80.0 | 171.844 | 122.464 | 74.071 | 34.566 | 11.851 | 5.926 | 4.938 | 2.963 | 0.988 | 0.000 |
| 82.5 | 114.563 | 82.959 | 53.331 | 19.752 | 5.926 | 5.926 | 4.938 | 1.975 | 0.000 | 0.000 |
| 85.0 | 73.083 | 57.281 | 37.529 | 10.864 | 5.926 | 4.938 | 3.950 | 1.975 | 0.000 | 0.000 |
| 87.5 | 41.480 | 30.616 | 18.765 | 5.926 | 6.913 | 6.913 | 5.926 | 2.963 | 0.988 | 0.000 |
| 90.0 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |

Vert. Horizontal Angles
Angles

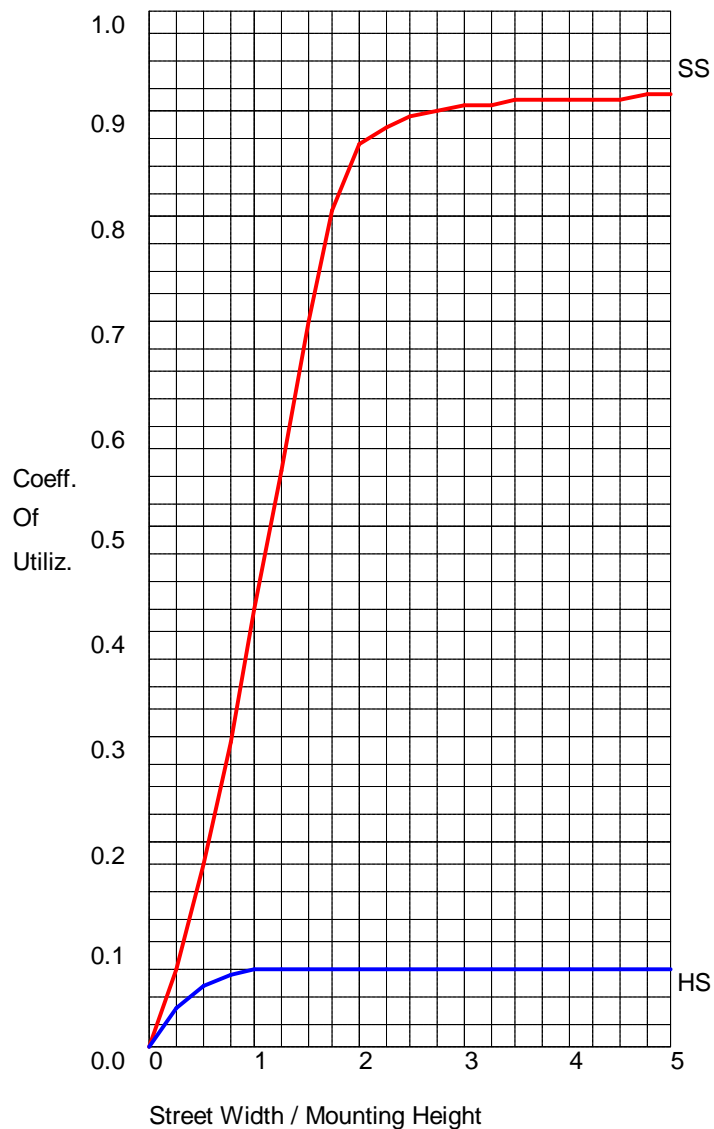
| | 175.0 | 180.0 |
|------|--------------|--------------|
| 0.0 | 1197.971 | 1197.971 |
| 2.5 | 1041.929 | 1043.904 |
| 5.0 | 823.667 | 821.692 |
| 7.5 | 717.992 | 716.017 |
| 10.0 | 644.909 | 640.959 |
| 12.5 | 601.454 | 598.492 |
| 15.0 | 584.665 | 579.727 |
| 17.5 | 570.839 | 565.901 |
| 20.0 | 557.012 | 551.086 |
| 22.5 | 541.210 | 536.272 |
| 25.0 | 473.065 | 467.140 |
| 27.5 | 359.490 | 354.552 |
| 30.0 | 340.725 | 337.763 |
| 32.5 | 365.416 | 360.478 |
| 35.0 | 386.156 | 382.205 |
| 37.5 | 321.961 | 317.023 |
| 40.0 | 242.952 | 235.051 |
| 42.5 | 182.708 | 180.733 |
| 45.0 | 163.943 | 159.005 |
| 47.5 | 149.129 | 146.166 |
| 50.0 | 135.303 | 129.377 |
| 52.5 | 142.216 | 137.278 |
| 55.0 | 139.253 | 132.340 |
| 57.5 | 85.922 | 73.083 |
| 60.0 | 66.170 | 55.306 |
| 62.5 | 57.281 | 44.442 |
| 65.0 | 70.120 | 53.331 |

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

| | | |
|-------------|--------|--------|
| 67.5 | 64.195 | 46.418 |
| 70.0 | 53.331 | 36.542 |
| 72.5 | 35.554 | 24.690 |
| 75.0 | 10.864 | 6.913 |
| 77.5 | 0.000 | 0.000 |
| 80.0 | 0.000 | 0.000 |
| 82.5 | 0.000 | 0.000 |
| 85.0 | 0.000 | 0.000 |
| 87.5 | 0.000 | 0.000 |
| 90.0 | 0.000 | 0.000 |

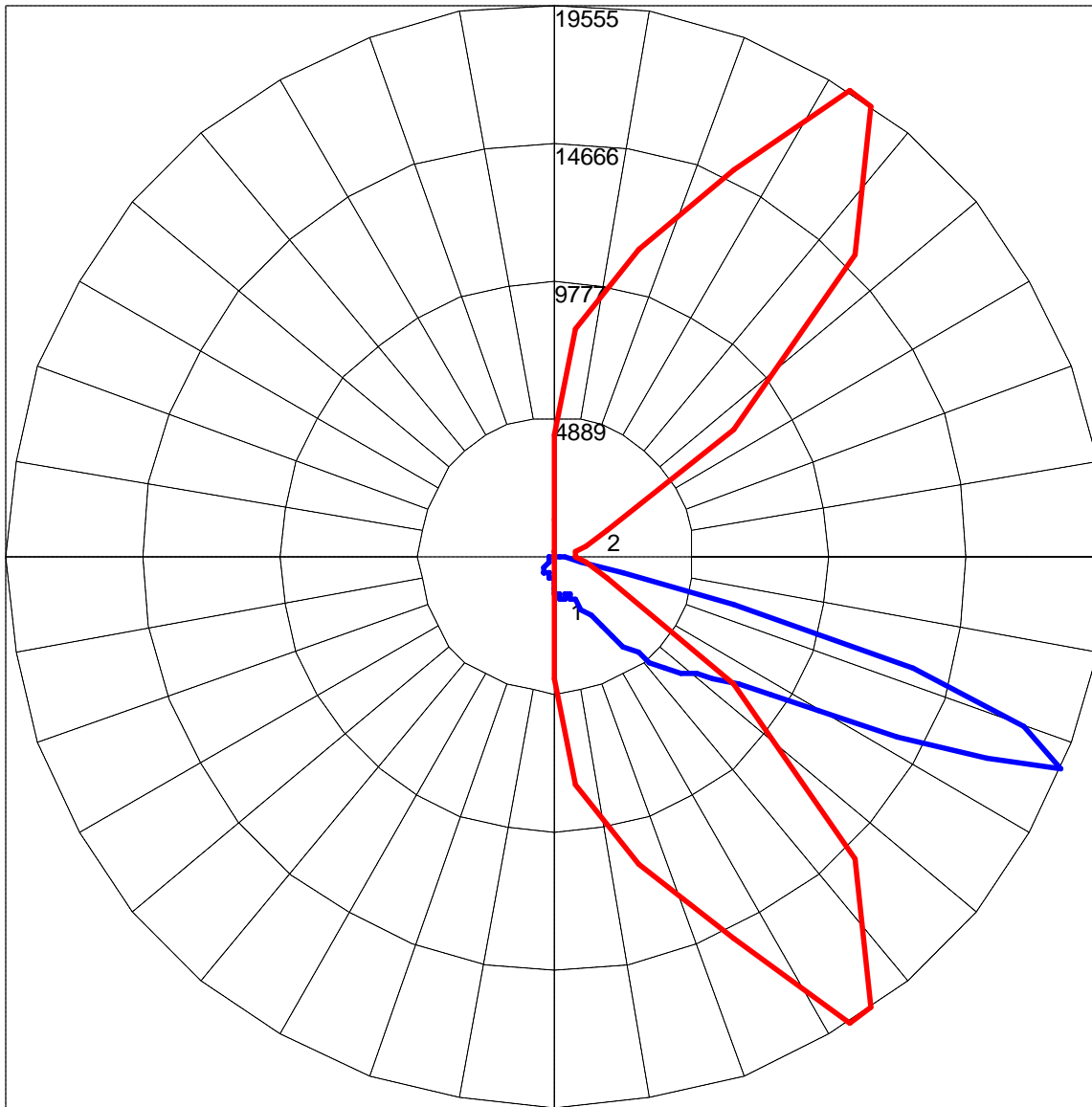
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

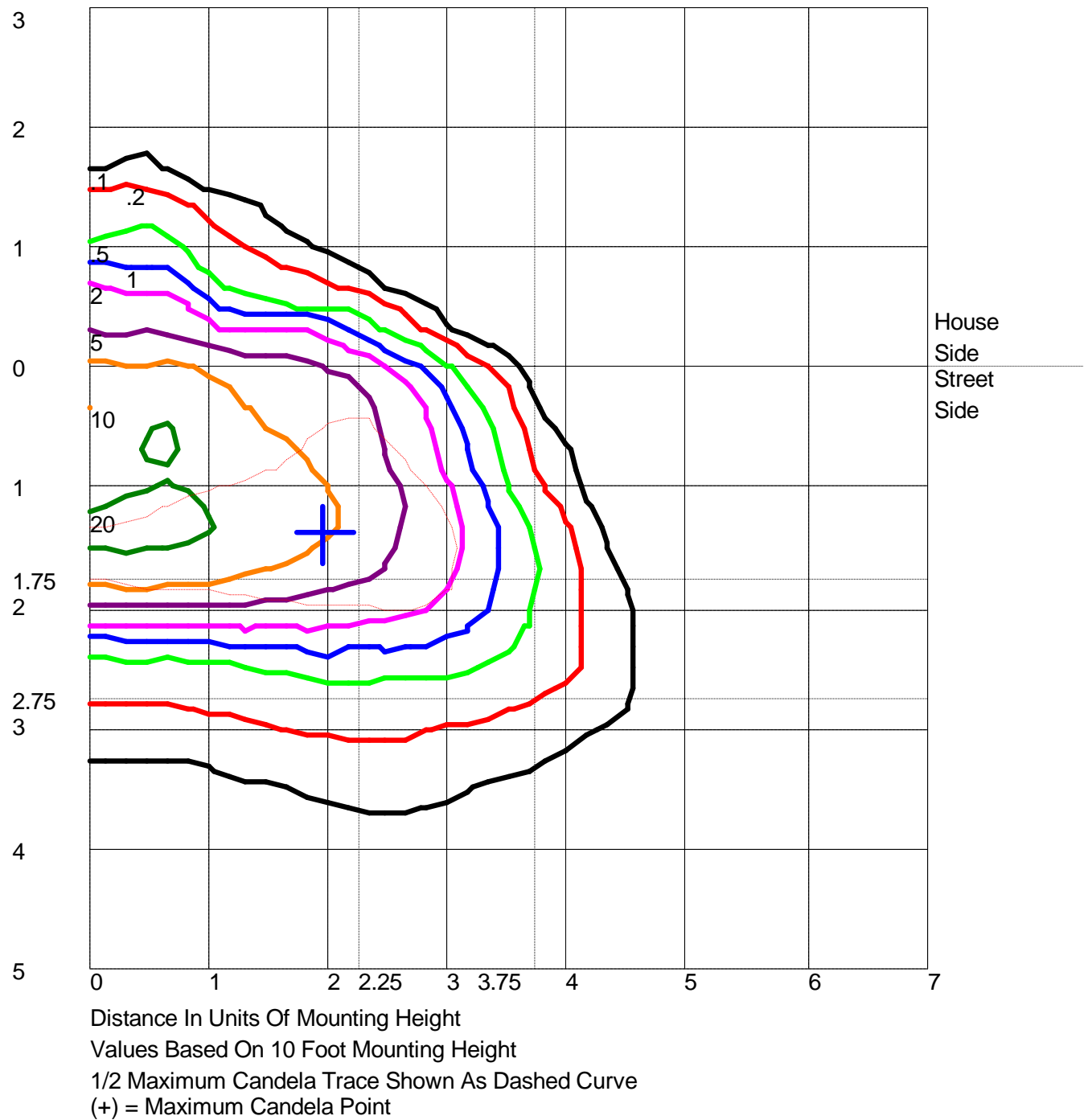
| | Lumens | Percent Of Luminaire |
|----------------------|---------|-------------------------|
| Downward Street Side | 14240.5 | 92.2 |
| Downward House Side | 1212.7 | 7.8 |
| Downward Total | 15453.2 | 100.0 |
| Upward Street Side | 0.0 | 0.0 |
| Upward House Side | 0.0 | 0.0 |
| Upward Total | 0.0 | 0.0 |
| Total Flux | 15453.2 | 100.0 |

POLAR GRAPH

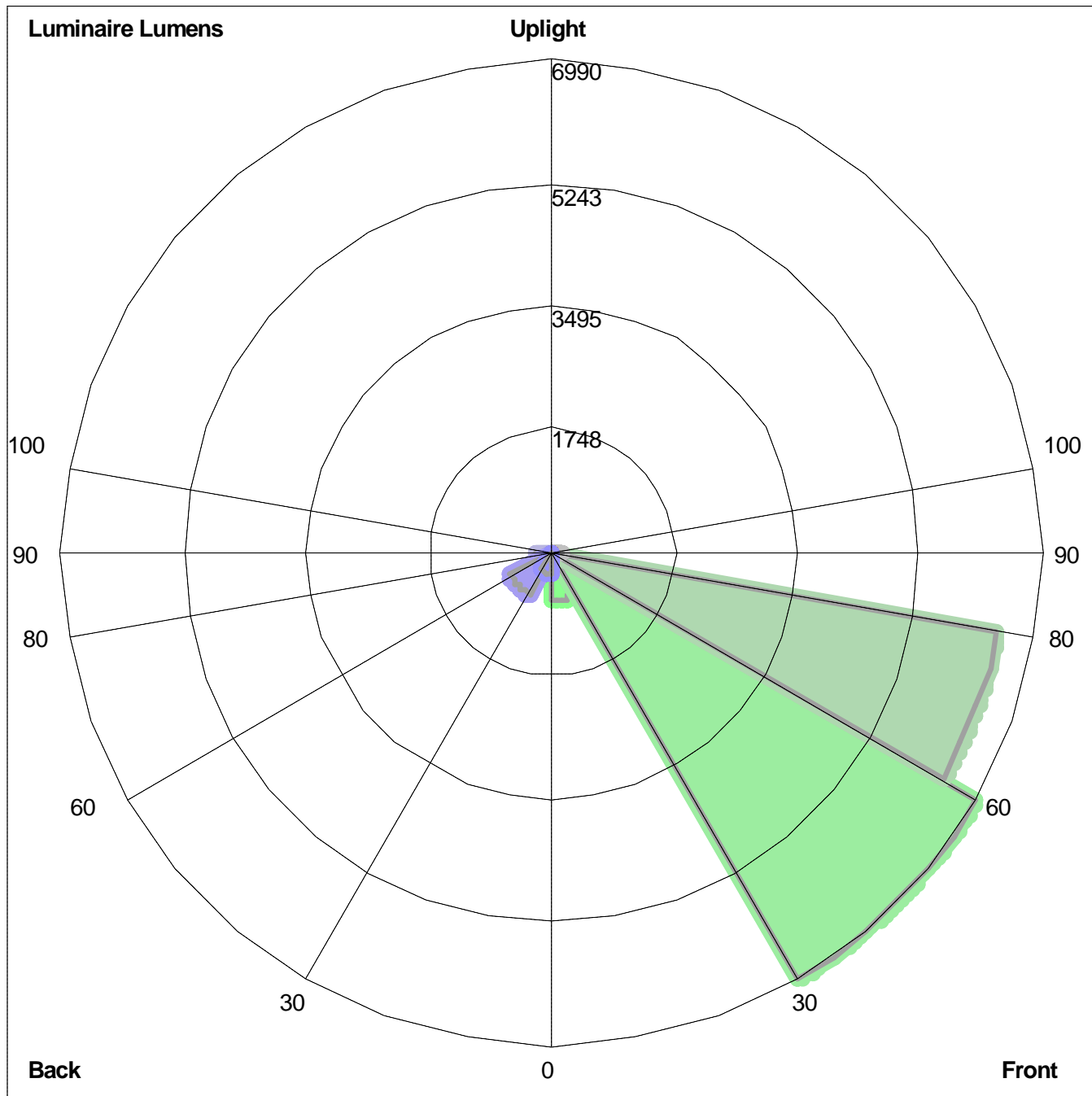


Maximum Candela = 19554.678 Located At Horizontal Angle = 55, Vertical Angle = 67.5
1 - Vertical Plane Through Horizontal Angles (55 - 235) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (67.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=683.1, Medium=6990.4, High=6441.5, Very High=125.5
Back: Low=300.4, Medium=676.1, High=231.9, Very High=4.5
Uplight: Low=0.0, High=0.0

BUG Rating : B1-U0-G3