



IES ROAD REPORT

PHOTOMETRIC FILENAME : HLN-2-LED-27L-30-IL.IES

DESCRIPTIVE INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST]LED-8625_Scaled
[TESTLAB]LSI INDUSTRIES, INC
[ISSUE DATE]4/03/17
[TEST DATE]03/01/17
[MANUFACTURER]LSI INDUSTRIES, INC
[LUMCAT] HLN-2-LED-27L-30-IL
[ABSOLUTE]NOTE: DATA SHOWN IS ABSOLUTE FOR THE SAMPLE PROVIDED.
[OTHER]TEST PROCEDURE: IESNA LM-79-08
[OTHER]SCALED FROM ORIGINAL TEST DATA
[SEARCH_SOURCETYPE] LED
[SEARCH_APPLICATION] Outdoor

CHARACTERISTICS

| | |
|---|----------------------------------|
| IES Classification | Type II |
| Longitudinal Classification | Medium |
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 17810 |
| Downward Total Efficiency | N.A. (absolute) |
| Total Luminaire Efficiency | N.A. (absolute) |
| Luminaire Efficacy Rating (LER) | 74 |
| Total Luminaire Watts | 239.2 |
| Ballast Factor | 1.00 |
| Upward Waste Light Ratio | 0.00 |
| Maximum Candela | 18398.378 |
| Maximum Candela Angle | 80H 67.5V |
| Maximum Candela (<90 Degrees Vertical) | 18398.378 |
| Maximum Candela Angle (<90 Degrees Vertical) | 80H 67.5V |
| Maximum Candela At 90 Degrees Vertical | 0 (0.0% Luminaire Lumens) |
| Maximum Candela from 80 to <90 Degrees Vertical | 1456.358 (8.2% Luminaire Lumens) |
| Cutoff Classification (deprecated) | N.A. (absolute) |

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LUMINAIRE CLASSIFICATION SYSTEM (LCS)

| | Lumens | % Lamp | % Luminaire |
|-------------------------------|----------|--------|-------------|
| FL - Front-Low (0-30) | 1690.5 | N.A. | 9.5 |
| FM - Front-Medium (30-60) | 8047.0 | N.A. | 45.2 |
| FH - Front-High (60-80) | 5295.3 | N.A. | 29.7 |
| FVH - Front-Very High (80-90) | 76.9 | N.A. | 0.4 |
| BL - Back-Low (0-30) | 851.4 | N.A. | 4.8 |
| BM - Back-Medium (30-60) | 1312.1 | N.A. | 7.4 |
| BH - Back-High (60-80) | 532.0 | N.A. | 3.0 |
| BVH - Back-Very High (80-90) | 4.4 | 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 | 17809.6 | N.A. | 100.0 |
| BUG Rating | B2-U0-G3 | | |

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CANDELA TABULATION

| Vert. Angles | Horizontal Angles | | | | | | | | | | |
|-------------------------|--------------------------|----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|----------|
| | <u>0</u> | <u>5</u> | <u>15</u> | <u>25</u> | <u>35</u> | <u>45</u> | <u>55</u> | <u>65</u> | <u>75</u> | <u>80</u> | |
| 0.0 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 |
| 2.5 | 3357.245 | 3353.011 | 3353.858 | 3356.398 | 3359.785 | 3355.551 | 3356.398 | 3347.931 | 3341.157 | 3335.230 | |
| 5.0 | 3413.975 | 3410.588 | 3413.128 | 3416.515 | 3422.442 | 3418.209 | 3415.668 | 3399.581 | 3387.727 | 3377.566 | |
| 7.5 | 3474.939 | 3471.552 | 3476.632 | 3486.793 | 3491.026 | 3484.253 | 3479.172 | 3458.851 | 3442.763 | 3426.676 | |
| 10.0 | 3546.063 | 3544.370 | 3551.144 | 3564.691 | 3571.465 | 3560.458 | 3551.990 | 3530.822 | 3511.348 | 3493.567 | |
| 12.5 | 3633.275 | 3630.735 | 3642.589 | 3657.830 | 3664.604 | 3654.443 | 3659.524 | 3638.356 | 3621.421 | 3597.713 | |
| 15.0 | 3699.320 | 3698.473 | 3722.181 | 3756.050 | 3778.065 | 3784.838 | 3803.466 | 3783.145 | 3761.977 | 3732.342 | |
| 17.5 | 3728.955 | 3732.342 | 3762.824 | 3817.014 | 3879.671 | 3940.635 | 3977.890 | 3966.883 | 3932.168 | 3899.146 | |
| 20.0 | 3760.283 | 3764.517 | 3797.539 | 3870.357 | 3964.343 | 4080.344 | 4173.483 | 4168.402 | 4125.220 | 4084.577 | |
| 22.5 | 3797.539 | 3800.079 | 3837.335 | 3944.868 | 4054.942 | 4185.337 | 4365.688 | 4404.637 | 4334.360 | 4289.483 | |
| 25.0 | 3804.313 | 3804.313 | 3865.277 | 3998.212 | 4143.848 | 4282.710 | 4518.945 | 4658.653 | 4583.295 | 4534.185 | |
| 27.5 | 3811.933 | 3818.707 | 3891.525 | 4043.935 | 4220.052 | 4375.002 | 4638.332 | 4932.991 | 4862.713 | 4812.756 | |
| 30.0 | 3880.518 | 3888.985 | 3962.650 | 4115.906 | 4308.111 | 4481.689 | 4764.493 | 5202.248 | 5202.248 | 5137.050 | |
| 32.5 | 4022.767 | 4028.694 | 4098.125 | 4235.293 | 4424.112 | 4620.551 | 4914.363 | 5437.636 | 5555.330 | 5482.512 | |
| 35.0 | 4245.454 | 4244.607 | 4303.031 | 4418.185 | 4580.755 | 4803.442 | 5097.254 | 5645.082 | 5927.887 | 5855.915 | |
| 37.5 | 4545.193 | 4539.266 | 4575.675 | 4673.894 | 4807.676 | 5034.597 | 5320.788 | 5842.368 | 6325.845 | 6264.034 | |
| 40.0 | 4897.428 | 4886.421 | 4910.976 | 4978.713 | 5091.327 | 5325.869 | 5582.425 | 6066.749 | 6702.635 | 6712.796 | |
| 42.5 | 5329.256 | 5308.088 | 5309.781 | 5354.657 | 5437.636 | 5699.272 | 5901.638 | 6304.677 | 7051.484 | 7128.536 | |
| 45.0 | 5906.719 | 5912.646 | 5853.375 | 5853.375 | 5850.835 | 6151.421 | 6274.195 | 6531.598 | 7352.916 | 7562.056 | |
| 47.5 | 6732.271 | 6739.044 | 6746.665 | 6641.672 | 6504.503 | 6733.964 | 6782.227 | 6823.716 | 7686.524 | 8088.716 | |
| 50.0 | 7460.450 | 7483.311 | 7494.319 | 7534.114 | 7562.903 | 7675.517 | 7480.771 | 7249.616 | 8093.796 | 8676.340 | |
| 52.5 | 7551.896 | 7565.443 | 7656.042 | 7942.233 | 8472.280 | 9128.488 | 8562.879 | 7827.926 | 8599.288 | 9374.037 | |
| 55.0 | 7189.499 | 7226.755 | 7403.720 | 7810.145 | 8733.070 | 10230.071 | 10506.102 | 8699.201 | 9177.598 | 10218.217 | |
| 57.5 | 6508.736 | 6564.620 | 6828.797 | 7282.639 | 8440.105 | 10438.364 | 12358.725 | 9996.376 | 9916.784 | 11131.828 | |
| 60.0 | 5311.474 | 5386.833 | 5686.571 | 6182.749 | 7471.457 | 9812.638 | 13705.010 | 12064.066 | 10904.060 | 12409.528 | |
| 62.5 | 3009.243 | 3097.302 | 3447.844 | 4231.060 | 5512.994 | 8020.132 | 14450.970 | 14935.294 | 11917.584 | 14232.516 | |
| 65.0 | 1031.305 | 1067.714 | 1161.700 | 1662.111 | 2944.045 | 5071.006 | 14235.903 | 16647.362 | 13368.015 | 16362.017 | |
| 67.5 | 551.215 | 548.675 | 554.602 | 662.135 | 1133.758 | 2315.779 | 11430.720 | 16862.428 | 15242.653 | 18398.378 | |
| 70.0 | 353.082 | 345.462 | 355.622 | 412.353 | 574.076 | 936.472 | 5529.081 | 14836.227 | 15925.956 | 17916.595 | |
| 72.5 | 177.811 | 182.892 | 193.052 | 248.936 | 375.097 | 562.222 | 1967.777 | 10097.136 | 14606.766 | 13050.495 | |
| 75.0 | 92.292 | 93.986 | 93.986 | 131.242 | 233.695 | 402.192 | 917.844 | 4551.120 | 7838.934 | 5212.408 | |
| 77.5 | 50.803 | 52.497 | 54.190 | 71.124 | 120.234 | 254.016 | 500.412 | 2127.807 | 3095.608 | 1715.455 | |
| 80.0 | 44.876 | 45.723 | 44.029 | 49.956 | 64.351 | 120.234 | 257.403 | 751.887 | 1456.358 | 751.041 | |
| 82.5 | 44.876 | 44.029 | 41.489 | 44.029 | 55.037 | 77.898 | 124.468 | 337.841 | 648.588 | 407.272 | |
| 85.0 | 39.796 | 38.949 | 37.256 | 38.102 | 45.723 | 71.124 | 116.001 | 212.527 | 363.243 | 261.636 | |
| 87.5 | 20.321 | 18.628 | 19.475 | 23.708 | 32.175 | 59.270 | 119.388 | 251.476 | 270.950 | 171.037 | |
| 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</u> | <u>90</u> | <u>95</u> | <u>105</u> | <u>115</u> | <u>125</u> | <u>135</u> | <u>145</u> | <u>155</u> | <u>165</u> | |
| 0.0 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 | 3325.916 |
| 2.5 | 3330.150 | 3319.142 | 3331.843 | 3333.537 | 3336.077 | 3329.303 | 3319.142 | 3319.989 | 3316.602 | 3314.909 | |
| 5.0 | 3370.792 | 3355.551 | 3364.865 | 3358.091 | 3350.471 | 3327.610 | 3299.668 | 3278.500 | 3253.945 | 3234.470 | |
| 7.5 | 3411.435 | 3392.807 | 3397.887 | 3379.259 | 3349.624 | 3295.434 | 3231.083 | 3169.273 | 3104.922 | 3045.652 | |
| 10.0 | 3474.092 | 3447.844 | 3446.997 | 3409.741 | 3341.157 | 3231.083 | 3099.842 | 2985.535 | 2861.914 | 2733.212 | |
| 12.5 | 3576.545 | 3544.370 | 3540.983 | 3471.552 | 3347.931 | 3145.565 | 2891.549 | 2616.365 | 2325.940 | 2065.997 | |
| 15.0 | 3701.860 | 3660.370 | 3647.670 | 3540.983 | 3345.391 | 3013.476 | 2487.663 | 1977.091 | 1544.417 | 1238.751 | |
| 17.5 | 3857.656 | 3800.926 | 3778.065 | 3617.188 | 3321.682 | 2710.351 | 1874.638 | 1236.211 | 827.245 | 653.668 | |
| 20.0 | 4030.387 | 3970.270 | 3926.241 | 3699.320 | 3247.171 | 2221.793 | 1257.379 | 719.712 | 470.776 | 403.885 | |
| 22.5 | 4225.133 | 4162.475 | 4093.044 | 3787.378 | 3051.579 | 1661.265 | 789.990 | 441.988 | 370.017 | 343.768 | |
| 25.0 | 4463.061 | 4391.937 | 4302.184 | 3893.218 | 2723.898 | 1174.401 | 496.178 | 375.097 | 335.301 | 309.900 | |
| 27.5 | 4737.398 | 4655.266 | 4546.886 | 3995.672 | 2311.546 | 778.136 | 403.885 | 343.768 | 303.972 | 276.877 | |

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

| | | | | | | | | | | |
|------|-----------|-----------|----------|----------|----------|---------|---------|---------|---------|---------|
| 30.0 | 5078.626 | 4974.480 | 4843.238 | 4051.555 | 1856.010 | 515.652 | 370.017 | 312.440 | 273.491 | 243.009 |
| 32.5 | 5430.015 | 5323.329 | 5166.685 | 4049.862 | 1331.891 | 426.747 | 336.148 | 281.111 | 238.775 | 200.673 |
| 35.0 | 5800.879 | 5683.185 | 5490.979 | 3950.795 | 886.516 | 387.798 | 301.432 | 246.396 | 192.205 | 146.483 |
| 37.5 | 6208.998 | 6082.836 | 5844.908 | 3727.261 | 588.470 | 348.849 | 265.870 | 199.826 | 132.088 | 91.446 |
| 40.0 | 6646.752 | 6515.510 | 6225.932 | 3349.624 | 458.076 | 309.053 | 226.074 | 143.096 | 78.745 | 53.343 |
| 42.5 | 7116.681 | 6954.111 | 6588.328 | 2786.555 | 406.426 | 271.797 | 176.964 | 88.059 | 44.029 | 28.788 |
| 45.0 | 7585.764 | 7410.493 | 6956.651 | 2122.727 | 364.936 | 232.848 | 120.234 | 48.263 | 20.321 | 11.854 |
| 47.5 | 8128.512 | 7954.934 | 7299.573 | 1446.198 | 325.140 | 190.512 | 75.358 | 23.708 | 7.620 | 3.387 |
| 50.0 | 8793.187 | 8617.916 | 7632.334 | 916.998 | 284.498 | 142.249 | 44.029 | 11.007 | 2.540 | 0.847 |
| 52.5 | 9539.147 | 9316.460 | 7864.335 | 632.500 | 245.549 | 97.373 | 21.168 | 5.080 | 1.693 | 0.847 |
| 55.0 | 10473.079 | 10153.866 | 8003.197 | 552.061 | 212.527 | 62.657 | 12.701 | 3.387 | 2.540 | 1.693 |
| 57.5 | 11545.874 | 11118.280 | 8035.373 | 571.536 | 196.439 | 38.102 | 7.620 | 3.387 | 3.387 | 3.387 |
| 60.0 | 12805.793 | 12111.483 | 7797.444 | 596.091 | 192.205 | 20.321 | 5.927 | 3.387 | 4.234 | 4.234 |
| 62.5 | 14842.155 | 13313.825 | 7233.529 | 576.616 | 186.278 | 13.548 | 5.080 | 3.387 | 4.234 | 3.387 |
| 65.0 | 16399.273 | 14231.669 | 6054.895 | 490.251 | 158.337 | 19.475 | 4.234 | 3.387 | 2.540 | 1.693 |
| 67.5 | 17554.199 | 13949.712 | 4236.987 | 329.374 | 109.227 | 13.548 | 4.234 | 1.693 | 2.540 | 5.080 |
| 70.0 | 15720.203 | 11101.346 | 2093.092 | 154.103 | 56.730 | 11.007 | 2.540 | 2.540 | 3.387 | 1.693 |
| 72.5 | 9888.843 | 5943.974 | 775.596 | 67.738 | 28.788 | 9.314 | 1.693 | 1.693 | 0.847 | 0.000 |
| 75.0 | 3749.276 | 2314.932 | 348.002 | 28.788 | 11.854 | 5.080 | 1.693 | 0.000 | 0.000 | 0.000 |
| 77.5 | 1044.006 | 700.237 | 198.979 | 12.701 | 6.774 | 2.540 | 0.847 | 0.000 | 0.000 | 0.000 |
| 80.0 | 487.711 | 352.236 | 123.621 | 8.467 | 4.234 | 1.693 | 0.000 | 0.000 | 0.000 | 0.000 |
| 82.5 | 248.089 | 185.432 | 63.504 | 7.620 | 4.234 | 0.000 | 0.000 | 0.000 | 0.000 | 0.000 |
| 85.0 | 152.410 | 105.840 | 25.402 | 5.927 | 1.693 | 0.847 | 0.847 | 0.847 | 0.847 | 0.000 |
| 87.5 | 88.059 | 44.029 | 8.467 | 2.540 | 2.540 | 1.693 | 1.693 | 1.693 | 0.847 | 0.847 |
| 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

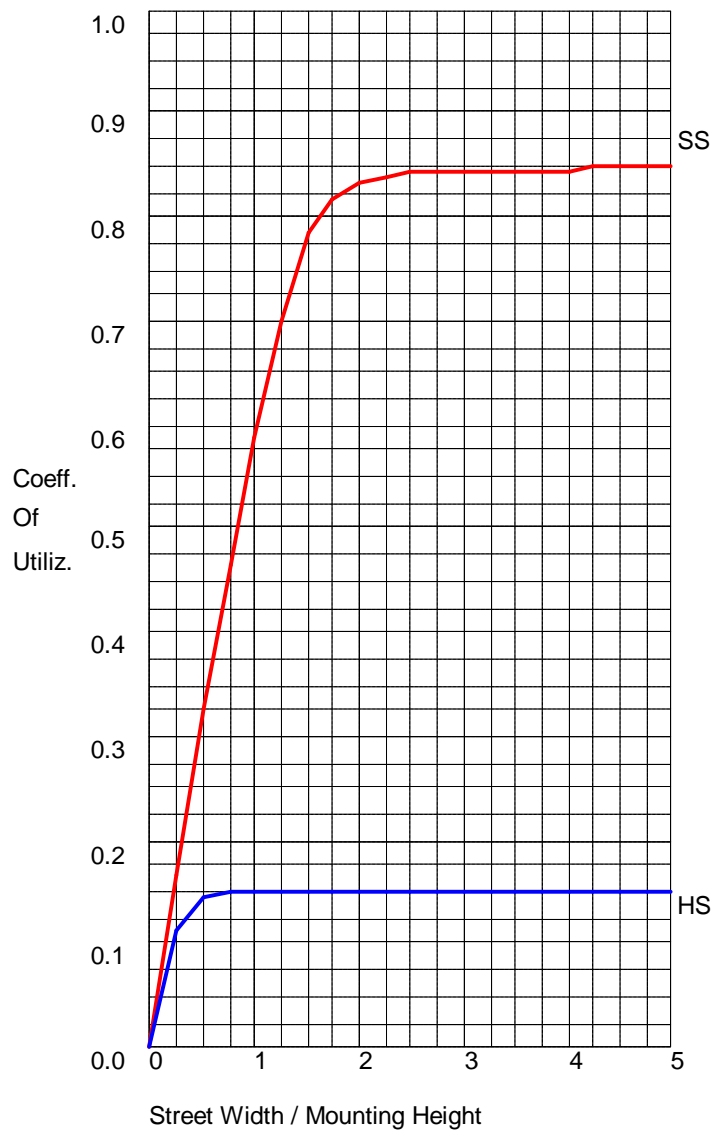
| | 175 | 180 |
|------|------------|------------|
| 0.0 | 3325.916 | 3325.916 |
| 2.5 | 3309.828 | 3301.361 |
| 5.0 | 3214.996 | 3205.682 |
| 7.5 | 3015.170 | 3004.162 |
| 10.0 | 2661.241 | 2644.306 |
| 12.5 | 1933.062 | 1911.047 |
| 15.0 | 1107.510 | 1088.882 |
| 17.5 | 568.996 | 559.682 |
| 20.0 | 381.871 | 377.637 |
| 22.5 | 332.761 | 331.914 |
| 25.0 | 298.045 | 296.352 |
| 27.5 | 264.177 | 261.636 |
| 30.0 | 226.074 | 225.228 |
| 32.5 | 180.351 | 178.658 |
| 35.0 | 125.315 | 120.234 |
| 37.5 | 76.205 | 71.971 |
| 40.0 | 43.183 | 42.336 |
| 42.5 | 22.861 | 22.861 |
| 45.0 | 8.467 | 7.620 |
| 47.5 | 0.000 | 0.000 |
| 50.0 | 0.000 | 0.000 |
| 52.5 | 0.000 | 0.000 |
| 55.0 | 0.000 | 0.000 |
| 57.5 | 1.693 | 0.847 |
| 60.0 | 2.540 | 1.693 |
| 62.5 | 0.847 | 0.000 |
| 65.0 | 0.000 | 0.000 |

IES ROAD REPORT
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CANDELA TABULATION - (Cont.)

| | | |
|-------------|-------|-------|
| 67.5 | 2.540 | 2.540 |
| 70.0 | 0.000 | 0.000 |
| 72.5 | 0.000 | 0.000 |
| 75.0 | 0.000 | 0.000 |
| 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 |

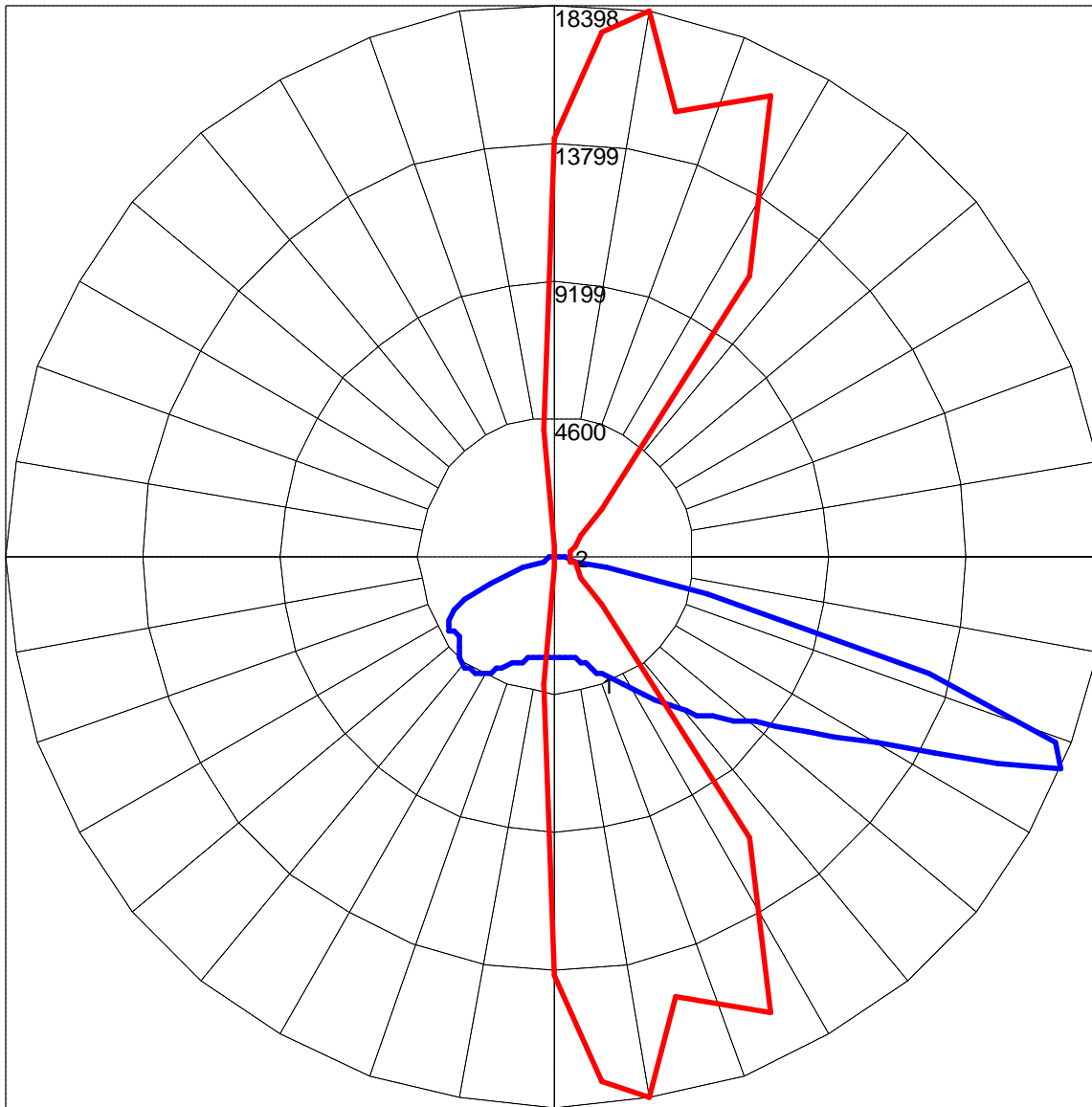
COEFFICIENTS OF UTILIZATION



FLUX DISTRIBUTION

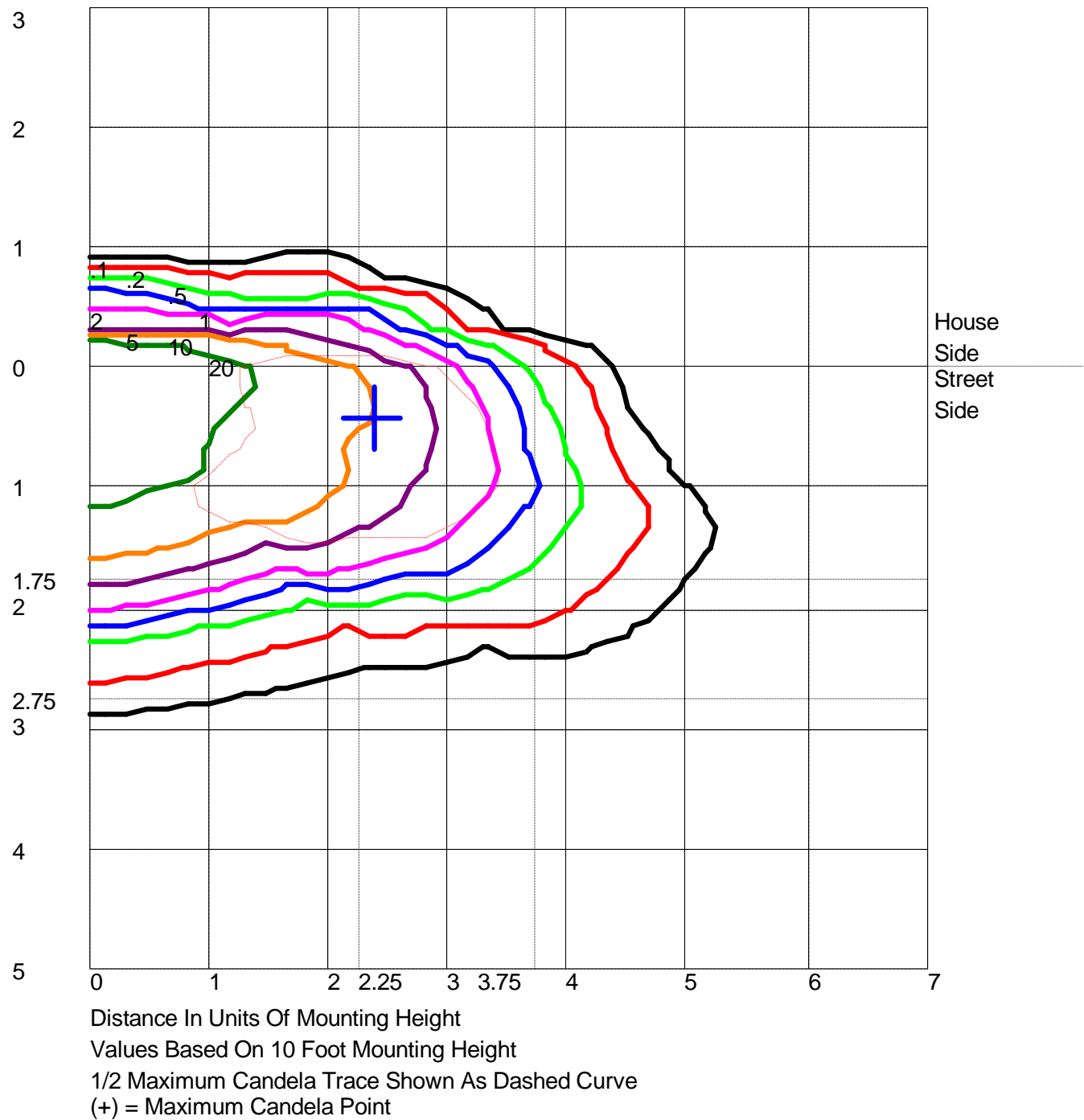
| | Lumens | Percent Of Luminaire |
|----------------------|---------|-------------------------|
| Downward Street Side | 15109.7 | 84.8 |
| Downward House Side | 2699.9 | 15.2 |
| Downward Total | 17809.6 | 100.0 |
| Upward Street Side | 0.0 | 0.0 |
| Upward House Side | 0.0 | 0.0 |
| Upward Total | 0.0 | 0.0 |
| Total Flux | 17809.6 | 100.0 |

POLAR GRAPH

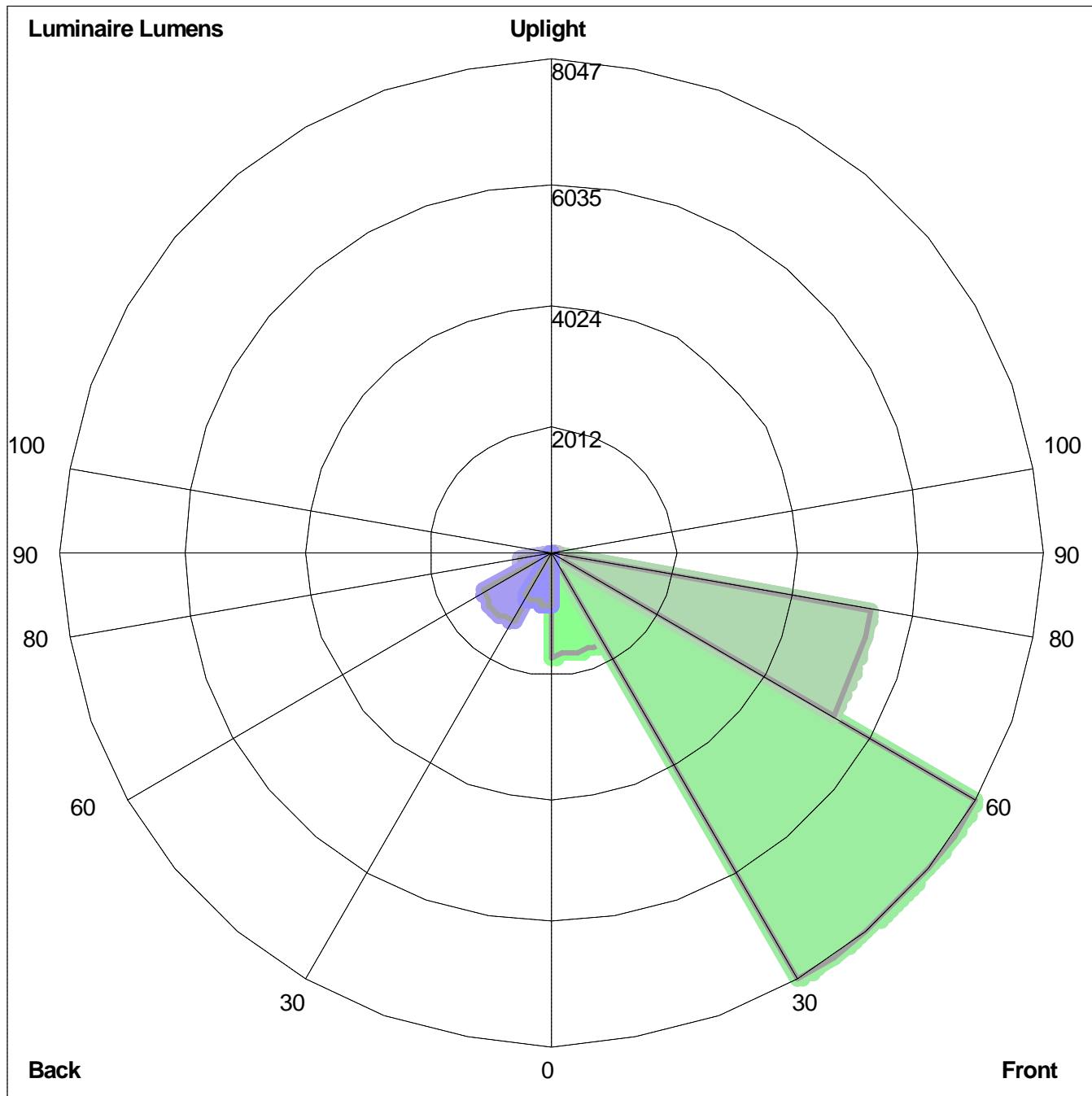


Maximum Candela = 18398.378 Located At Horizontal Angle = 80, Vertical Angle = 67.5
1 - Vertical Plane Through Horizontal Angles (80 - 260) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (67.5) (Through Max. Cd.)

ISOFOOTCANDLE LINES OF HORIZONTAL ILLUMINANCE



LUMINAIRE CLASSIFICATION SYSTEM (LCS) GRAPH



Luminaire Lumens:
Front: Low=1690.5, Medium= 8047.0, High=5295.3, Very High=76.9
Back: Low=851.4, Medium=1312.1, High=532.0, Very High=4.4
Uplight: Low=0.0, High=0.0

BUG Rating : B2-U0-G3