



IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] GEN FROM 13326828.01
[TESTLAB] UL Verification Services Inc.
[ISSUEDATE] 06-MAY-2020
[MANUFAC] WILLIAMS INDOOR
[OTHER] H.E. WILLIAMS, INC. - CARTHAGE, MO.
[LUMCAT] GH-4-L120-840-HA-FA-DIM-UNV
[LUMINAIRE] White steel housing, frosted lens enclosure
[LAMP] 168 white LEDs
[_SEARCH_SOURCETYPE] LED
[_SEARCH_APPLICATION] Indoor, Commercial, Industrial, Manufacturing, High Bay
[_SEARCH_MOUNTING] Pendant, Suspended

CHARACTERISTICS

| | |
|---------------------------------|---------------------|
| Lumens Per Lamp | N.A. (absolute) |
| Total Lamp Lumens | N.A. (absolute) |
| Luminaire Lumens | 12246 |
| Total Luminaire Efficiency | N.A. |
| Luminaire Efficacy Rating (LER) | 154 |
| Total Luminaire Watts | 79.4 |
| Ballast Factor | 1.00 |
| CIE Type | Direct |
| Spacing Criterion (0-180) | 1.20 |
| Spacing Criterion (90-270) | 1.32 |
| Spacing Criterion (Diagonal) | 1.36 |
| Basic Luminous Shape | Rectangular w/Sides |
| Luminous Length (0-180) | 3.73 ft |
| Luminous Width (90-270) | 0.88 ft |
| Luminous Height | 0.27 ft |

LUMINANCE DATA (cd/sq.m)

| Angle In Degrees | Average 0-Deg | Average 45-Deg | Average 90-Deg |
|---------------------|------------------|-------------------|-------------------|
| 45 | 9681 | 9566 | 10288 |
| 55 | 8172 | 8588 | 9614 |
| 65 | 6566 | 7452 | 8323 |
| 75 | 4831 | 5868 | 5836 |
| 85 | 2572 | 3599 | 3914 |

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CANDELA TABULATION

| | <u>0.0</u> | <u>22.5</u> | <u>45.0</u> | <u>67.5</u> | <u>90.0</u> |
|------|------------|-------------|-------------|-------------|-------------|
| 0.0 | 4005.658 | 4005.658 | 4005.658 | 4005.658 | 4005.658 |
| 0.5 | 4055.709 | 3998.074 | 4002.624 | 3998.074 | 3993.524 |
| 1.0 | 4055.709 | 3998.074 | 4002.624 | 3996.557 | 3992.007 |
| 1.5 | 4054.193 | 3996.557 | 4001.108 | 3996.557 | 3990.490 |
| 2.0 | 4052.676 | 3995.041 | 3999.591 | 3995.041 | 3990.490 |
| 2.5 | 4049.643 | 3993.524 | 3998.074 | 3993.524 | 3988.974 |
| 3.0 | 4048.126 | 3990.490 | 3996.557 | 3992.007 | 3987.457 |
| 3.5 | 4045.092 | 3987.457 | 3993.524 | 3990.490 | 3985.940 |
| 4.0 | 4040.542 | 3984.424 | 3992.007 | 3988.974 | 3984.424 |
| 4.5 | 4035.992 | 3981.390 | 3988.974 | 3985.940 | 3982.907 |
| 5.0 | 4031.442 | 3976.840 | 3985.940 | 3982.907 | 3979.873 |
| 5.5 | 4026.892 | 3972.290 | 3981.390 | 3979.873 | 3976.840 |
| 6.0 | 4022.342 | 3967.740 | 3978.357 | 3976.840 | 3973.807 |
| 6.5 | 4014.758 | 3961.673 | 3972.290 | 3973.807 | 3970.773 |
| 7.0 | 4008.691 | 3955.606 | 3967.740 | 3969.256 | 3967.740 |
| 7.5 | 4001.108 | 3949.539 | 3963.190 | 3966.223 | 3963.190 |
| 8.0 | 3995.041 | 3943.472 | 3957.123 | 3960.156 | 3960.156 |
| 8.5 | 3985.940 | 3935.889 | 3952.572 | 3957.123 | 3955.606 |
| 9.0 | 3976.840 | 3928.305 | 3944.989 | 3951.056 | 3951.056 |
| 9.5 | 3969.256 | 3920.721 | 3938.922 | 3946.506 | 3946.506 |
| 10.0 | 3958.639 | 3911.621 | 3932.855 | 3940.439 | 3941.955 |
| 10.5 | 3949.539 | 3904.037 | 3925.272 | 3934.372 | 3937.405 |
| 11.0 | 3940.439 | 3894.937 | 3917.688 | 3929.822 | 3931.338 |
| 11.5 | 3929.822 | 3885.837 | 3910.104 | 3923.755 | 3925.272 |
| 12.0 | 3917.688 | 3875.220 | 3902.521 | 3916.171 | 3919.205 |
| 12.5 | 3907.071 | 3864.603 | 3893.420 | 3910.104 | 3913.138 |
| 13.0 | 3894.937 | 3853.986 | 3884.320 | 3902.521 | 3907.071 |
| 13.5 | 3882.803 | 3843.369 | 3875.220 | 3894.937 | 3899.487 |
| 14.0 | 3869.153 | 3831.235 | 3864.603 | 3887.354 | 3893.420 |
| 14.5 | 3857.019 | 3819.101 | 3855.502 | 3878.253 | 3885.837 |
| 15.0 | 3843.369 | 3806.967 | 3844.885 | 3870.670 | 3878.253 |
| 15.5 | 3828.201 | 3793.317 | 3832.752 | 3861.569 | 3870.670 |
| 16.0 | 3814.551 | 3779.666 | 3822.135 | 3852.469 | 3861.569 |
| 16.5 | 3797.867 | 3766.016 | 3810.001 | 3843.369 | 3853.986 |
| 17.0 | 3782.700 | 3752.365 | 3799.384 | 3832.752 | 3844.885 |
| 17.5 | 3764.499 | 3737.198 | 3787.250 | 3823.651 | 3835.785 |
| 18.0 | 3747.815 | 3722.031 | 3773.600 | 3813.034 | 3826.685 |
| 18.5 | 3729.615 | 3705.347 | 3761.466 | 3802.417 | 3816.068 |
| 19.0 | 3711.414 | 3688.663 | 3747.815 | 3791.800 | 3806.967 |
| 19.5 | 3693.213 | 3670.463 | 3734.165 | 3781.183 | 3796.350 |
| 20.0 | 3675.013 | 3653.779 | 3720.514 | 3769.049 | 3785.733 |
| 20.5 | 3653.779 | 3637.095 | 3706.864 | 3756.916 | 3775.116 |
| 21.0 | 3635.578 | 3618.894 | 3693.213 | 3746.299 | 3764.499 |
| 21.5 | 3614.344 | 3600.693 | 3678.046 | 3734.165 | 3753.882 |
| 22.0 | 3594.627 | 3582.493 | 3662.879 | 3722.031 | 3741.748 |
| 22.5 | 3573.392 | 3562.775 | 3647.712 | 3708.381 | 3731.131 |
| 23.0 | 3552.158 | 3544.575 | 3632.545 | 3696.247 | 3718.998 |
| 23.5 | 3530.924 | 3524.857 | 3615.861 | 3684.113 | 3708.381 |
| 24.0 | 3509.690 | 3505.140 | 3599.177 | 3670.463 | 3696.247 |
| 24.5 | 3486.939 | 3485.423 | 3582.493 | 3656.812 | 3684.113 |
| 25.0 | 3464.189 | 3464.189 | 3565.809 | 3643.162 | 3671.979 |
| 25.5 | 3441.438 | 3444.471 | 3549.125 | 3629.511 | 3658.329 |
| 26.0 | 3417.170 | 3423.237 | 3530.924 | 3615.861 | 3646.195 |
| 26.5 | 3394.419 | 3402.003 | 3512.724 | 3600.693 | 3632.545 |

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CANDELA TABULATION - (Cont.)

| | | | | | |
|------|----------|----------|----------|----------|----------|
| 27.0 | 3370.152 | 3379.252 | 3494.523 | 3587.043 | 3618.894 |
| 27.5 | 3342.851 | 3356.501 | 3476.322 | 3571.876 | 3605.244 |
| 28.0 | 3317.067 | 3333.751 | 3456.605 | 3556.709 | 3591.593 |
| 28.5 | 3291.283 | 3309.483 | 3436.888 | 3540.025 | 3576.426 |
| 29.0 | 3263.982 | 3285.216 | 3418.687 | 3524.857 | 3561.259 |
| 29.5 | 3236.681 | 3260.948 | 3397.453 | 3508.173 | 3546.091 |
| 30.0 | 3207.863 | 3235.164 | 3376.219 | 3489.973 | 3529.408 |
| 30.5 | 3180.562 | 3209.380 | 3354.985 | 3471.772 | 3512.724 |
| 31.0 | 3151.744 | 3183.595 | 3332.234 | 3453.572 | 3494.523 |
| 31.5 | 3121.410 | 3156.294 | 3311.000 | 3435.371 | 3477.839 |
| 32.0 | 3092.592 | 3128.993 | 3288.249 | 3417.170 | 3459.638 |
| 32.5 | 3062.258 | 3101.693 | 3265.498 | 3397.453 | 3441.438 |
| 33.0 | 3031.923 | 3074.392 | 3241.231 | 3376.219 | 3421.720 |
| 33.5 | 3001.589 | 3045.574 | 3216.963 | 3356.501 | 3402.003 |
| 34.0 | 2969.738 | 3016.756 | 3194.212 | 3335.267 | 3382.286 |
| 34.5 | 2937.887 | 2987.939 | 3168.428 | 3314.033 | 3361.052 |
| 35.0 | 2906.036 | 2959.121 | 3144.161 | 3292.799 | 3341.334 |
| 35.5 | 2874.185 | 2928.786 | 3118.376 | 3271.565 | 3321.617 |
| 36.0 | 2842.333 | 2899.969 | 3092.592 | 3248.814 | 3300.383 |
| 36.5 | 2807.449 | 2868.118 | 3068.325 | 3226.064 | 3279.149 |
| 37.0 | 2774.081 | 2837.783 | 3041.024 | 3203.313 | 3256.398 |
| 37.5 | 2740.713 | 2808.966 | 3015.239 | 3180.562 | 3235.164 |
| 38.0 | 2707.345 | 2777.114 | 2987.939 | 3156.294 | 3212.413 |
| 38.5 | 2673.977 | 2746.780 | 2960.638 | 3132.027 | 3189.662 |
| 39.0 | 2639.093 | 2714.929 | 2934.853 | 3109.276 | 3166.911 |
| 39.5 | 2604.208 | 2683.078 | 2906.036 | 3085.009 | 3144.161 |
| 40.0 | 2570.840 | 2651.227 | 2878.735 | 3060.741 | 3119.893 |
| 40.5 | 2535.956 | 2619.376 | 2851.434 | 3036.474 | 3095.626 |
| 41.0 | 2501.071 | 2587.524 | 2824.133 | 3010.689 | 3072.875 |
| 41.5 | 2466.187 | 2555.673 | 2795.315 | 2987.939 | 3050.124 |
| 42.0 | 2431.302 | 2523.822 | 2768.014 | 2963.671 | 3027.373 |
| 42.5 | 2397.934 | 2493.488 | 2742.230 | 2939.403 | 3003.106 |
| 43.0 | 2363.050 | 2461.637 | 2714.929 | 2915.136 | 2978.838 |
| 43.5 | 2329.682 | 2429.786 | 2686.111 | 2890.868 | 2956.087 |
| 44.0 | 2294.797 | 2397.934 | 2660.327 | 2868.118 | 2933.337 |
| 44.5 | 2261.430 | 2367.600 | 2633.026 | 2843.850 | 2912.103 |
| 45.0 | 2228.062 | 2337.266 | 2607.242 | 2819.583 | 2890.868 |
| 45.5 | 2194.694 | 2305.414 | 2579.941 | 2796.832 | 2866.601 |
| 46.0 | 2161.326 | 2275.080 | 2554.157 | 2772.564 | 2843.850 |
| 46.5 | 2127.958 | 2244.746 | 2526.856 | 2749.813 | 2821.099 |
| 47.0 | 2094.590 | 2214.411 | 2499.555 | 2725.546 | 2799.865 |
| 47.5 | 2061.223 | 2182.560 | 2473.770 | 2701.278 | 2777.114 |
| 48.0 | 2029.371 | 2152.226 | 2447.986 | 2677.011 | 2752.847 |
| 48.5 | 1996.004 | 2121.891 | 2420.685 | 2652.743 | 2730.096 |
| 49.0 | 1962.636 | 2091.557 | 2394.901 | 2629.993 | 2707.345 |
| 49.5 | 1929.268 | 2059.706 | 2367.600 | 2605.725 | 2684.595 |
| 50.0 | 1895.900 | 2029.371 | 2341.816 | 2581.458 | 2660.327 |
| 50.5 | 1862.532 | 1999.037 | 2314.515 | 2555.673 | 2637.576 |
| 51.0 | 1830.681 | 1968.703 | 2288.731 | 2531.406 | 2613.309 |
| 51.5 | 1795.797 | 1938.368 | 2261.430 | 2507.138 | 2589.041 |
| 52.0 | 1763.945 | 1908.034 | 2234.129 | 2481.354 | 2564.774 |
| 52.5 | 1730.578 | 1877.699 | 2206.828 | 2457.086 | 2542.023 |
| 53.0 | 1698.726 | 1847.365 | 2179.527 | 2431.302 | 2516.239 |
| 53.5 | 1665.359 | 1817.031 | 2153.742 | 2405.518 | 2491.971 |
| 54.0 | 1633.508 | 1786.696 | 2126.442 | 2379.734 | 2464.670 |
| 54.5 | 1600.140 | 1756.362 | 2099.141 | 2353.950 | 2438.886 |

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CANDELA TABULATION - (Cont.)

| | | | | | |
|------|----------|----------|----------|----------|----------|
| 55.0 | 1569.805 | 1726.027 | 2071.840 | 2328.165 | 2413.102 |
| 55.5 | 1536.437 | 1697.210 | 2044.539 | 2300.864 | 2385.801 |
| 56.0 | 1505.041 | 1666.875 | 2017.238 | 2273.563 | 2358.500 |
| 56.5 | 1473.342 | 1638.058 | 1989.937 | 2246.262 | 2329.682 |
| 57.0 | 1442.097 | 1607.723 | 1961.119 | 2218.961 | 2299.348 |
| 57.5 | 1411.005 | 1578.906 | 1933.818 | 2190.144 | 2270.530 |
| 58.0 | 1379.912 | 1550.088 | 1905.000 | 2162.843 | 2240.196 |
| 58.5 | 1348.212 | 1521.270 | 1877.699 | 2132.508 | 2208.344 |
| 59.0 | 1317.271 | 1492.149 | 1850.398 | 2103.691 | 2178.010 |
| 59.5 | 1286.785 | 1464.393 | 1821.581 | 2071.840 | 2146.159 |
| 60.0 | 1256.148 | 1435.576 | 1792.763 | 2041.505 | 2112.791 |
| 60.5 | 1226.268 | 1407.516 | 1763.945 | 2011.171 | 2080.940 |
| 61.0 | 1196.692 | 1379.457 | 1736.644 | 1980.836 | 2047.572 |
| 61.5 | 1167.116 | 1351.853 | 1709.344 | 1948.985 | 2014.204 |
| 62.0 | 1140.422 | 1323.793 | 1680.526 | 1915.617 | 1980.836 |
| 62.5 | 1113.424 | 1296.947 | 1651.708 | 1883.766 | 1947.469 |
| 63.0 | 1085.213 | 1270.101 | 1624.407 | 1851.915 | 1914.101 |
| 63.5 | 1056.699 | 1243.710 | 1595.589 | 1818.547 | 1879.216 |
| 64.0 | 1028.640 | 1217.926 | 1566.772 | 1786.696 | 1845.848 |
| 64.5 | 1000.429 | 1191.839 | 1539.471 | 1753.328 | 1812.480 |
| 65.0 | 973.128 | 1166.813 | 1509.591 | 1718.444 | 1776.079 |
| 65.5 | 945.978 | 1142.697 | 1480.167 | 1686.593 | 1739.678 |
| 66.0 | 919.284 | 1121.311 | 1450.894 | 1653.225 | 1703.277 |
| 66.5 | 892.741 | 1097.347 | 1421.622 | 1619.857 | 1669.909 |
| 67.0 | 866.350 | 1072.169 | 1392.349 | 1586.489 | 1631.991 |
| 67.5 | 840.566 | 1047.447 | 1362.470 | 1551.605 | 1592.556 |
| 68.0 | 815.085 | 1023.179 | 1332.135 | 1516.113 | 1553.121 |
| 68.5 | 789.756 | 998.912 | 1301.801 | 1481.532 | 1515.962 |
| 69.0 | 764.579 | 974.796 | 1272.528 | 1446.799 | 1476.679 |
| 69.5 | 739.704 | 950.377 | 1243.255 | 1411.005 | 1435.879 |
| 70.0 | 714.678 | 926.109 | 1213.831 | 1373.845 | 1393.714 |
| 70.5 | 690.259 | 901.690 | 1184.103 | 1335.775 | 1351.246 |
| 71.0 | 666.295 | 877.423 | 1157.561 | 1299.071 | 1310.143 |
| 71.5 | 642.028 | 852.852 | 1128.591 | 1261.759 | 1268.585 |
| 72.0 | 618.215 | 827.826 | 1101.897 | 1223.235 | 1225.965 |
| 72.5 | 594.858 | 803.407 | 1073.534 | 1184.862 | 1185.772 |
| 73.0 | 571.652 | 778.684 | 1043.655 | 1147.247 | 1144.214 |
| 73.5 | 548.749 | 754.265 | 1013.472 | 1108.874 | 1103.262 |
| 74.0 | 526.454 | 729.997 | 984.200 | 1073.838 | 1066.406 |
| 74.5 | 504.158 | 705.426 | 954.927 | 1035.768 | 1027.426 |
| 75.0 | 482.317 | 680.704 | 925.806 | 997.243 | 987.991 |
| 75.5 | 460.931 | 656.436 | 895.775 | 959.932 | 950.225 |
| 76.0 | 440.000 | 632.169 | 865.289 | 923.986 | 914.582 |
| 76.5 | 419.525 | 608.356 | 834.954 | 889.556 | 880.001 |
| 77.0 | 399.201 | 584.392 | 805.075 | 856.037 | 847.088 |
| 77.5 | 379.332 | 560.580 | 775.954 | 822.821 | 814.479 |
| 78.0 | 359.918 | 537.374 | 746.378 | 790.059 | 783.234 |
| 78.5 | 340.807 | 514.775 | 716.499 | 759.270 | 753.810 |
| 79.0 | 322.303 | 493.086 | 687.226 | 730.301 | 726.206 |
| 79.5 | 303.951 | 471.548 | 658.863 | 702.241 | 699.208 |
| 80.0 | 286.053 | 450.314 | 631.411 | 674.637 | 673.272 |
| 80.5 | 268.459 | 429.687 | 604.413 | 648.398 | 648.549 |
| 81.0 | 251.169 | 409.059 | 577.264 | 623.220 | 625.192 |
| 81.5 | 234.333 | 389.039 | 550.418 | 599.104 | 603.048 |
| 82.0 | 217.801 | 368.563 | 525.088 | 576.354 | 581.662 |
| 82.5 | 201.420 | 348.239 | 500.821 | 554.361 | 561.035 |

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CANDELA TABULATION - (Cont.)

| | | | | | |
|-------|---------|---------|---------|---------|---------|
| 83.0 | 185.495 | 328.067 | 477.312 | 532.975 | 541.014 |
| 83.5 | 170.024 | 308.198 | 453.954 | 512.500 | 522.055 |
| 84.0 | 154.705 | 288.632 | 431.204 | 493.086 | 504.006 |
| 84.5 | 139.538 | 269.066 | 409.514 | 474.733 | 486.715 |
| 85.0 | 124.523 | 249.804 | 389.342 | 456.836 | 469.880 |
| 85.5 | 109.659 | 230.996 | 370.080 | 439.545 | 453.499 |
| 86.0 | 94.643 | 212.644 | 351.272 | 422.862 | 437.725 |
| 86.5 | 79.779 | 194.899 | 332.920 | 406.936 | 422.710 |
| 87.0 | 64.612 | 177.608 | 315.933 | 391.920 | 408.301 |
| 87.5 | 49.445 | 160.924 | 300.007 | 377.360 | 393.741 |
| 88.0 | 34.430 | 145.302 | 284.992 | 363.103 | 379.332 |
| 88.5 | 19.414 | 130.438 | 271.190 | 349.452 | 366.288 |
| 89.0 | 6.067 | 118.152 | 259.359 | 338.532 | 355.671 |
| 89.5 | 0.000 | 108.597 | 249.197 | 328.370 | 345.357 |
| 90.0 | 0.000 | 102.379 | 241.462 | 319.725 | 336.409 |
| 90.5 | 3.943 | 131.045 | 299.097 | 407.088 | 436.360 |
| 91.0 | 4.095 | 126.343 | 291.665 | 397.684 | 426.198 |
| 91.5 | 4.247 | 121.793 | 285.143 | 389.494 | 417.553 |
| 92.0 | 4.247 | 117.394 | 278.925 | 381.758 | 409.059 |
| 92.5 | 4.398 | 112.996 | 272.403 | 374.478 | 401.476 |
| 93.0 | 4.550 | 108.749 | 266.033 | 367.046 | 393.741 |
| 93.5 | 4.854 | 104.957 | 259.662 | 359.311 | 386.005 |
| 94.0 | 5.309 | 101.317 | 253.292 | 351.879 | 377.663 |
| 94.5 | 5.915 | 97.525 | 246.770 | 344.750 | 370.080 |
| 95.0 | 6.522 | 94.037 | 240.703 | 337.622 | 362.799 |
| 95.5 | 7.280 | 90.852 | 234.637 | 330.190 | 355.519 |
| 96.0 | 7.887 | 87.818 | 229.025 | 322.758 | 348.087 |
| 96.5 | 8.494 | 84.785 | 223.868 | 315.781 | 340.049 |
| 97.0 | 9.100 | 81.903 | 218.863 | 308.956 | 332.920 |
| 97.5 | 9.859 | 79.021 | 214.009 | 302.282 | 325.943 |
| 98.0 | 10.314 | 76.594 | 209.004 | 295.912 | 319.118 |
| 98.5 | 10.769 | 74.319 | 203.696 | 290.300 | 312.444 |
| 99.0 | 11.072 | 72.196 | 198.387 | 284.840 | 306.529 |
| 99.5 | 11.375 | 70.224 | 193.685 | 279.380 | 301.069 |
| 100.0 | 11.679 | 68.252 | 188.983 | 273.768 | 295.609 |
| 100.5 | 11.830 | 66.432 | 184.585 | 268.308 | 289.997 |
| 101.0 | 11.982 | 64.764 | 180.490 | 262.089 | 284.385 |
| 101.5 | 12.134 | 63.399 | 176.091 | 255.567 | 279.076 |
| 102.0 | 12.285 | 62.034 | 171.844 | 249.652 | 272.251 |
| 102.5 | 12.437 | 60.820 | 167.598 | 244.495 | 265.578 |
| 103.0 | 12.740 | 59.759 | 163.199 | 239.338 | 259.662 |
| 103.5 | 12.892 | 58.697 | 158.952 | 234.182 | 254.657 |
| 104.0 | 13.044 | 57.635 | 154.857 | 229.631 | 249.500 |
| 104.5 | 13.195 | 56.725 | 151.065 | 225.233 | 244.040 |
| 105.0 | 13.347 | 55.815 | 147.425 | 220.683 | 239.642 |
| 105.5 | 13.499 | 55.057 | 144.392 | 215.829 | 235.395 |
| 106.0 | 13.650 | 54.450 | 141.358 | 211.279 | 230.996 |
| 106.5 | 13.802 | 53.692 | 138.022 | 206.274 | 225.991 |
| 107.0 | 13.954 | 53.085 | 134.988 | 201.117 | 221.441 |
| 107.5 | 14.105 | 52.630 | 132.258 | 196.567 | 216.739 |
| 108.0 | 14.257 | 52.175 | 129.528 | 191.865 | 211.279 |
| 108.5 | 14.409 | 51.720 | 126.949 | 187.315 | 206.274 |
| 109.0 | 14.409 | 51.265 | 124.219 | 182.765 | 201.724 |
| 109.5 | 14.561 | 50.810 | 121.489 | 178.973 | 196.870 |
| 110.0 | 14.712 | 50.507 | 119.366 | 175.636 | 192.472 |
| 110.5 | 14.864 | 50.203 | 117.394 | 172.451 | 187.770 |

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CANDELA TABULATION - (Cont.)

| | | | | | |
|-------|--------|--------|---------|---------|---------|
| 111.0 | 15.016 | 49.748 | 115.574 | 168.659 | 184.130 |
| 111.5 | 15.016 | 49.445 | 113.602 | 165.019 | 180.945 |
| 112.0 | 15.167 | 49.142 | 111.782 | 161.834 | 177.911 |
| 112.5 | 15.319 | 48.990 | 110.114 | 158.801 | 174.574 |
| 113.0 | 15.471 | 48.687 | 108.445 | 155.919 | 170.631 |
| 113.5 | 15.471 | 48.383 | 106.777 | 153.189 | 167.294 |
| 114.0 | 15.471 | 48.232 | 105.260 | 150.307 | 164.412 |
| 114.5 | 15.471 | 48.080 | 103.744 | 146.819 | 161.379 |
| 115.0 | 15.471 | 47.928 | 102.227 | 144.088 | 158.649 |
| 115.5 | 15.319 | 47.625 | 100.710 | 141.965 | 156.070 |
| 116.0 | 15.319 | 47.625 | 99.345 | 139.842 | 153.037 |
| 116.5 | 15.319 | 47.473 | 97.980 | 137.870 | 149.549 |
| 117.0 | 15.319 | 47.322 | 96.767 | 135.898 | 147.122 |
| 117.5 | 15.319 | 47.322 | 95.553 | 134.078 | 144.998 |
| 118.0 | 15.471 | 47.170 | 94.340 | 132.106 | 143.027 |
| 118.5 | 15.622 | 47.018 | 93.278 | 130.286 | 140.903 |
| 119.0 | 15.774 | 46.867 | 92.065 | 128.466 | 139.083 |
| 119.5 | 15.774 | 46.715 | 91.155 | 126.798 | 137.111 |
| 120.0 | 15.926 | 46.412 | 89.941 | 125.129 | 135.291 |
| 120.5 | 15.926 | 46.260 | 88.880 | 123.461 | 133.623 |
| 121.0 | 15.926 | 46.108 | 87.970 | 121.793 | 131.803 |
| 121.5 | 15.926 | 46.108 | 86.908 | 120.276 | 130.135 |
| 122.0 | 15.926 | 45.957 | 85.998 | 118.608 | 128.466 |
| 122.5 | 15.926 | 45.805 | 85.088 | 117.091 | 126.949 |
| 123.0 | 15.926 | 45.653 | 84.178 | 115.574 | 125.433 |
| 123.5 | 16.077 | 45.653 | 83.420 | 114.209 | 123.916 |
| 124.0 | 16.381 | 45.502 | 82.510 | 112.844 | 122.399 |
| 124.5 | 16.532 | 45.350 | 81.751 | 111.327 | 121.034 |
| 125.0 | 16.684 | 45.198 | 80.841 | 110.114 | 119.518 |
| 125.5 | 16.684 | 45.198 | 80.083 | 108.749 | 118.152 |
| 126.0 | 16.836 | 45.198 | 79.476 | 107.535 | 116.939 |
| 126.5 | 16.987 | 45.198 | 78.869 | 106.322 | 115.574 |
| 127.0 | 17.139 | 45.198 | 78.111 | 105.109 | 114.209 |
| 127.5 | 17.291 | 45.198 | 77.504 | 103.895 | 112.996 |
| 128.0 | 17.442 | 45.198 | 76.898 | 102.834 | 111.782 |
| 128.5 | 17.594 | 45.350 | 76.291 | 101.620 | 110.417 |
| 129.0 | 17.897 | 45.350 | 75.684 | 100.559 | 109.204 |
| 129.5 | 18.049 | 45.502 | 75.229 | 99.497 | 107.990 |
| 130.0 | 18.201 | 45.502 | 74.623 | 98.435 | 106.777 |
| 130.5 | 18.504 | 45.653 | 74.016 | 97.373 | 105.564 |
| 131.0 | 18.656 | 45.653 | 73.561 | 96.312 | 104.350 |
| 131.5 | 18.959 | 45.653 | 72.954 | 95.402 | 103.289 |
| 132.0 | 19.111 | 45.653 | 72.499 | 94.340 | 102.227 |
| 132.5 | 19.414 | 45.653 | 72.196 | 93.430 | 101.165 |
| 133.0 | 19.566 | 45.653 | 71.741 | 92.368 | 100.104 |
| 133.5 | 19.717 | 45.653 | 71.286 | 91.458 | 99.193 |
| 134.0 | 19.717 | 45.653 | 70.982 | 90.548 | 98.132 |
| 134.5 | 19.869 | 45.653 | 70.527 | 89.790 | 97.070 |
| 135.0 | 19.869 | 45.653 | 70.072 | 88.880 | 96.160 |
| 135.5 | 19.869 | 45.653 | 69.617 | 88.121 | 95.098 |
| 136.0 | 19.869 | 45.653 | 69.162 | 87.211 | 94.188 |
| 136.5 | 19.717 | 45.653 | 68.707 | 86.453 | 93.278 |
| 137.0 | 19.566 | 45.502 | 68.101 | 85.846 | 92.368 |
| 137.5 | 19.414 | 45.350 | 67.646 | 85.088 | 91.610 |
| 138.0 | 19.111 | 45.350 | 67.039 | 84.481 | 90.852 |
| 138.5 | 18.807 | 45.198 | 66.432 | 83.875 | 90.093 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

CANDELA TABULATION - (Cont.)

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| 139.0 | 18.352 | 45.198 | 66.129 | 83.268 | 89.335 |
| 139.5 | 18.049 | 45.198 | 65.674 | 82.813 | 88.728 |
| 140.0 | 17.594 | 45.047 | 65.219 | 82.358 | 88.121 |
| 140.5 | 17.291 | 45.047 | 64.764 | 81.903 | 87.515 |
| 141.0 | 16.987 | 45.047 | 64.309 | 81.448 | 86.908 |
| 141.5 | 16.684 | 45.047 | 63.854 | 80.993 | 86.453 |
| 142.0 | 16.532 | 45.047 | 63.247 | 80.538 | 85.846 |
| 142.5 | 16.381 | 45.047 | 62.792 | 80.083 | 85.240 |
| 143.0 | 16.229 | 45.047 | 62.337 | 79.628 | 84.785 |
| 143.5 | 16.229 | 45.198 | 62.034 | 79.021 | 84.481 |
| 144.0 | 16.077 | 45.198 | 61.731 | 78.414 | 84.026 |
| 144.5 | 16.229 | 45.350 | 61.427 | 77.959 | 83.571 |
| 145.0 | 16.381 | 45.350 | 61.275 | 77.353 | 83.116 |
| 145.5 | 16.532 | 45.502 | 60.972 | 76.746 | 82.813 |
| 146.0 | 16.684 | 45.653 | 60.820 | 76.139 | 82.358 |
| 146.5 | 16.836 | 45.805 | 60.669 | 75.684 | 81.903 |
| 147.0 | 17.139 | 45.805 | 60.517 | 75.229 | 81.600 |
| 147.5 | 17.291 | 45.957 | 60.517 | 74.774 | 81.448 |
| 148.0 | 17.442 | 45.957 | 60.365 | 74.168 | 81.145 |
| 148.5 | 17.594 | 45.957 | 60.365 | 73.713 | 80.690 |
| 149.0 | 17.746 | 45.957 | 60.365 | 73.106 | 80.538 |
| 149.5 | 17.897 | 45.957 | 60.365 | 72.499 | 80.386 |
| 150.0 | 18.049 | 45.957 | 60.365 | 71.893 | 80.083 |
| 150.5 | 18.201 | 45.957 | 60.365 | 71.438 | 79.779 |
| 151.0 | 18.352 | 45.957 | 60.365 | 71.134 | 79.324 |
| 151.5 | 18.504 | 45.805 | 60.214 | 70.679 | 79.021 |
| 152.0 | 18.656 | 45.653 | 60.062 | 70.224 | 78.718 |
| 152.5 | 18.656 | 45.653 | 59.910 | 69.921 | 78.263 |
| 153.0 | 18.807 | 45.350 | 59.607 | 69.466 | 77.959 |
| 153.5 | 18.959 | 45.198 | 59.000 | 69.011 | 77.656 |
| 154.0 | 18.959 | 44.895 | 58.545 | 68.707 | 77.353 |
| 154.5 | 19.111 | 44.592 | 57.939 | 68.252 | 76.898 |
| 155.0 | 19.111 | 44.137 | 57.484 | 67.949 | 76.443 |
| 155.5 | 19.262 | 43.833 | 57.029 | 67.494 | 75.988 |
| 156.0 | 19.262 | 43.378 | 56.574 | 67.191 | 75.381 |
| 156.5 | 19.414 | 42.923 | 56.270 | 66.584 | 74.774 |
| 157.0 | 19.414 | 42.468 | 55.967 | 66.129 | 74.168 |
| 157.5 | 19.566 | 42.013 | 55.664 | 65.371 | 73.409 |
| 158.0 | 19.566 | 41.558 | 55.512 | 64.461 | 72.499 |
| 158.5 | 19.717 | 41.103 | 55.209 | 63.399 | 71.589 |
| 159.0 | 19.717 | 40.648 | 55.057 | 62.186 | 70.376 |
| 159.5 | 19.869 | 40.193 | 54.905 | 60.820 | 69.011 |
| 160.0 | 20.021 | 39.738 | 54.754 | 59.455 | 67.342 |
| 160.5 | 20.021 | 39.283 | 54.602 | 58.242 | 65.522 |
| 161.0 | 20.021 | 38.828 | 54.299 | 57.180 | 63.399 |
| 161.5 | 20.172 | 38.373 | 54.147 | 56.270 | 61.275 |
| 162.0 | 20.172 | 37.918 | 53.692 | 55.360 | 59.304 |
| 162.5 | 20.324 | 37.463 | 53.237 | 54.754 | 57.635 |
| 163.0 | 20.324 | 37.008 | 52.782 | 53.995 | 56.119 |
| 163.5 | 20.324 | 36.553 | 52.327 | 53.389 | 54.602 |
| 164.0 | 20.324 | 35.946 | 51.872 | 52.782 | 53.389 |
| 164.5 | 20.476 | 35.491 | 51.265 | 52.327 | 52.175 |
| 165.0 | 20.476 | 35.036 | 50.507 | 51.872 | 51.113 |
| 165.5 | 20.476 | 34.430 | 49.445 | 51.417 | 49.900 |
| 166.0 | 20.476 | 33.975 | 48.383 | 50.658 | 48.990 |
| 166.5 | 20.627 | 33.368 | 47.322 | 49.748 | 47.928 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

CANDELA TABULATION - (Cont.)

| | | | | | |
|-------|--------|--------|--------|--------|--------|
| 167.0 | 20.627 | 32.761 | 46.260 | 48.838 | 46.563 |
| 167.5 | 20.627 | 32.306 | 45.198 | 48.080 | 45.047 |
| 168.0 | 20.627 | 31.699 | 43.985 | 47.170 | 43.530 |
| 168.5 | 20.779 | 31.093 | 42.923 | 45.957 | 42.316 |
| 169.0 | 20.779 | 30.638 | 41.861 | 44.592 | 40.951 |
| 169.5 | 20.779 | 30.031 | 40.800 | 43.075 | 39.283 |
| 170.0 | 20.931 | 29.576 | 39.738 | 41.406 | 37.463 |
| 170.5 | 20.931 | 28.969 | 38.828 | 39.890 | 35.491 |
| 171.0 | 21.082 | 28.514 | 37.766 | 38.373 | 33.671 |
| 171.5 | 21.082 | 27.908 | 36.705 | 37.008 | 31.851 |
| 172.0 | 21.082 | 27.453 | 35.643 | 35.491 | 29.879 |
| 172.5 | 21.234 | 26.846 | 34.581 | 34.126 | 28.059 |
| 173.0 | 21.234 | 26.391 | 33.368 | 32.761 | 26.239 |
| 173.5 | 21.386 | 25.936 | 32.306 | 31.244 | 24.723 |
| 174.0 | 21.537 | 25.481 | 31.244 | 29.879 | 23.357 |
| 174.5 | 21.689 | 25.026 | 30.031 | 28.514 | 21.992 |
| 175.0 | 21.841 | 24.723 | 28.969 | 27.149 | 20.627 |
| 175.5 | 21.992 | 24.268 | 27.908 | 25.784 | 19.717 |
| 176.0 | 21.992 | 23.964 | 26.846 | 24.571 | 19.414 |
| 176.5 | 22.296 | 23.661 | 25.936 | 23.357 | 19.111 |
| 177.0 | 22.447 | 23.509 | 25.178 | 22.144 | 18.504 |
| 177.5 | 22.751 | 23.509 | 24.419 | 21.082 | 17.897 |
| 178.0 | 23.054 | 23.357 | 23.813 | 20.324 | 17.594 |
| 178.5 | 23.054 | 23.206 | 23.206 | 19.717 | 17.442 |
| 179.0 | 23.054 | 23.054 | 22.751 | 19.111 | 17.897 |
| 179.5 | 22.902 | 22.902 | 22.447 | 18.807 | 18.352 |
| 180.0 | 21.082 | 21.082 | 21.082 | 21.082 | 21.082 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

ZONAL LUMEN SUMMARY

| Zone | Lumens | %Lamp | %Fixt |
|---------|----------|-------|--------|
| 0-20 | 1463.87 | N.A. | 12.00 |
| 0-30 | 3104.28 | N.A. | 25.30 |
| 0-40 | 5060.35 | N.A. | 41.30 |
| 0-60 | 8866.98 | N.A. | 72.40 |
| 0-80 | 11180.67 | N.A. | 91.30 |
| 0-90 | 11571.6 | N.A. | 94.50 |
| 10-90 | 11192.66 | N.A. | 91.40 |
| 20-40 | 3596.47 | N.A. | 29.40 |
| 20-50 | 5589.58 | N.A. | 45.60 |
| 40-70 | 5234.33 | N.A. | 42.70 |
| 60-80 | 2313.69 | N.A. | 18.90 |
| 70-80 | 886.00 | N.A. | 7.20 |
| 80-90 | 390.93 | N.A. | 3.20 |
| 90-110 | 381.70 | N.A. | 3.10 |
| 90-120 | 477.58 | N.A. | 3.90 |
| 90-130 | 546.34 | N.A. | 4.50 |
| 90-150 | 634.22 | N.A. | 5.20 |
| 90-180 | 674.43 | N.A. | 5.50 |
| 110-180 | 292.73 | N.A. | 2.40 |
| 0-180 | 12246.03 | N.A. | 100.00 |

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

| Zone | Lumens |
|---------|---------|
| 0-10 | 378.94 |
| 10-20 | 1084.93 |
| 20-30 | 1640.41 |
| 30-40 | 1956.06 |
| 40-50 | 1993.11 |
| 50-60 | 1813.53 |
| 60-70 | 1427.69 |
| 70-80 | 886.00 |
| 80-90 | 390.93 |
| 90-100 | 234.44 |
| 100-110 | 147.25 |
| 110-120 | 95.88 |
| 120-130 | 68.76 |
| 130-140 | 50.96 |
| 140-150 | 36.92 |
| 150-160 | 25.10 |
| 160-170 | 12.35 |
| 170-180 | 2.75 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

| RC | 80 | | | | 70 | | | | 50 | | | 30 | | | 10 | | | 0 |
|----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|----|----|----|----|
| RW | 70 | 50 | 30 | 10 | 70 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 50 | 30 | 10 | 0 |
| 0 | 118 | 118 | 118 | 118 | 114 | 114 | 114 | 114 | 108 | 108 | 108 | 102 | 102 | 102 | 97 | 97 | 97 | 94 |
| 1 | 107 | 102 | 97 | 93 | 104 | 99 | 95 | 91 | 94 | 90 | 87 | 89 | 86 | 84 | 84 | 82 | 80 | 78 |
| 2 | 97 | 88 | 81 | 76 | 94 | 86 | 80 | 74 | 82 | 76 | 72 | 77 | 73 | 69 | 74 | 70 | 67 | 64 |
| 3 | 88 | 78 | 69 | 63 | 85 | 76 | 68 | 62 | 72 | 65 | 60 | 68 | 63 | 58 | 65 | 60 | 56 | 54 |
| 4 | 81 | 69 | 60 | 53 | 78 | 67 | 59 | 52 | 64 | 57 | 51 | 61 | 55 | 50 | 58 | 53 | 48 | 46 |
| 5 | 74 | 61 | 52 | 45 | 72 | 60 | 51 | 45 | 57 | 50 | 44 | 54 | 48 | 43 | 52 | 46 | 42 | 40 |
| 6 | 69 | 55 | 46 | 40 | 66 | 54 | 45 | 39 | 51 | 44 | 38 | 49 | 43 | 38 | 47 | 41 | 37 | 35 |
| 7 | 64 | 50 | 41 | 35 | 61 | 49 | 41 | 35 | 47 | 39 | 34 | 45 | 38 | 33 | 43 | 37 | 33 | 31 |
| 8 | 59 | 46 | 37 | 31 | 57 | 45 | 37 | 31 | 43 | 36 | 30 | 41 | 35 | 30 | 40 | 34 | 29 | 27 |
| 9 | 55 | 42 | 34 | 28 | 54 | 41 | 33 | 28 | 39 | 32 | 27 | 38 | 32 | 27 | 37 | 31 | 26 | 25 |
| 10 | 52 | 39 | 31 | 25 | 50 | 38 | 30 | 25 | 36 | 30 | 25 | 35 | 29 | 24 | 34 | 28 | 24 | 22 |

IES INDOOR REPORT
PHOTOMETRIC FILENAME : GH-4-L120-840-HA-FA-DIM-UNV_.IES

UGR TABLE - CORRECTED

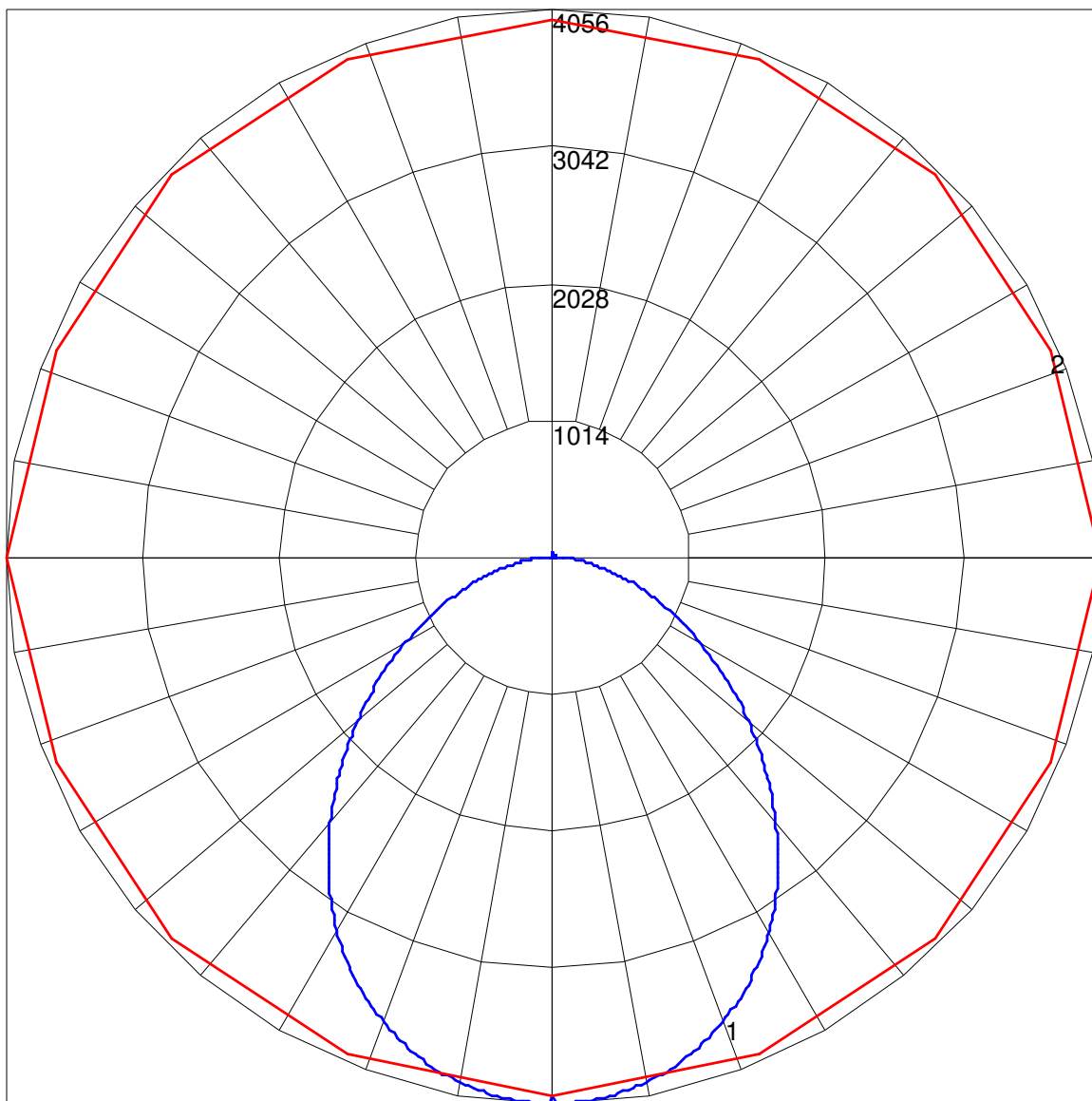
Reflectances

| | | | | | | | | | | |
|----------------|----|----|----|----|----|----|----|----|----|----|
| Ceiling Cavity | 70 | 70 | 50 | 50 | 30 | 70 | 70 | 50 | 50 | 30 |
| Walls | 50 | 30 | 50 | 30 | 30 | 50 | 30 | 50 | 30 | 30 |
| Floor Cavity | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 | 20 |

| Room Size | | UGR Viewed Crosswise | | | | | UGR Viewed Endwise | | | | |
|-----------|------|----------------------|------|------|------|------|--------------------|------|------|------|------|
| X=2H | Y=2H | 17.5 | 19.0 | 17.9 | 19.4 | 19.8 | 20.5 | 22.1 | 21.0 | 22.5 | 22.9 |
| | 3H | 18.8 | 20.2 | 19.3 | 20.6 | 21.1 | 22.5 | 23.9 | 23.0 | 24.3 | 24.8 |
| | 4H | 19.2 | 20.6 | 19.7 | 21.0 | 21.5 | 23.2 | 24.5 | 23.7 | 25.0 | 25.5 |
| | 6H | 19.5 | 20.7 | 20.0 | 21.2 | 21.7 | 23.8 | 25.0 | 24.3 | 25.5 | 26.0 |
| | 8H | 19.5 | 20.7 | 20.0 | 21.2 | 21.7 | 24.0 | 25.2 | 24.5 | 25.7 | 26.2 |
| | 12H | 19.6 | 20.7 | 20.1 | 21.2 | 21.7 | 24.2 | 25.4 | 24.7 | 25.8 | 26.4 |
| 4H | 2H | 18.5 | 19.8 | 19.0 | 20.3 | 20.8 | 20.9 | 22.2 | 21.4 | 22.7 | 23.2 |
| | 3H | 20.1 | 21.2 | 20.6 | 21.7 | 22.2 | 23.1 | 24.2 | 23.6 | 24.7 | 25.2 |
| | 4H | 20.6 | 21.6 | 21.1 | 22.2 | 22.7 | 23.9 | 25.0 | 24.4 | 25.5 | 26.0 |
| | 6H | 21.0 | 21.9 | 21.5 | 22.4 | 23.0 | 24.7 | 25.5 | 25.2 | 26.1 | 26.6 |
| | 8H | 21.1 | 21.9 | 21.6 | 22.4 | 23.0 | 25.0 | 25.8 | 25.5 | 26.3 | 26.9 |
| | 12H | 21.1 | 21.9 | 21.7 | 22.4 | 23.0 | 25.3 | 26.0 | 25.8 | 26.6 | 27.2 |
| 8H | 4H | 21.2 | 22.1 | 21.8 | 22.6 | 23.2 | 24.1 | 25.0 | 24.7 | 25.5 | 26.1 |
| | 6H | 21.7 | 22.4 | 22.3 | 23.0 | 23.6 | 24.9 | 25.6 | 25.5 | 26.2 | 26.8 |
| | 8H | 21.9 | 22.5 | 22.5 | 23.1 | 23.7 | 25.3 | 26.0 | 25.9 | 26.5 | 27.1 |
| | 12H | 22.0 | 22.5 | 22.5 | 23.1 | 23.8 | 25.7 | 26.3 | 26.3 | 26.9 | 27.5 |
| 12H | 4H | 21.3 | 22.1 | 21.9 | 22.6 | 23.2 | 24.1 | 24.9 | 24.7 | 25.4 | 26.0 |
| | 6H | 21.9 | 22.5 | 22.5 | 23.1 | 23.7 | 25.0 | 25.6 | 25.6 | 26.2 | 26.8 |
| | 8H | 22.1 | 22.7 | 22.7 | 23.2 | 23.9 | 25.4 | 26.0 | 26.0 | 26.5 | 27.2 |

Maximum UGR = 27.5

POLAR GRAPH



Maximum Candela = 4055.709 Located At Horizontal Angle = 0, Vertical Angle = .5
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (.5) (Through Max. Cd.)