

Photometric Report - (ecs-mgm4-mn-854-unv-24h-00w) - Page 1 of 4

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IESNA:LM-63-1995

Photopia 2.0.0.17 PHOTOMETRIC REPORT

PROJECT: ecs-mgm4-mn-854-unv-24h-00w

OPTIONS:

Spawning 1 rays for each reaction.  
Random number generator seed: 8.  
Tracing 5 reflections.  
Stop tracing ray at 1.0% of initial magnitude.  
Tracing 498480 initial lamp rays.  
Photometric test distance of 20.00 feet.

LUMENS EXITING SYSTEM:

| Lumens(%)     | Reflection |
|---------------|------------|
| 16252( 40.6%) | 0          |
| 16087( 40.2%) | 1          |
| 2919( 7.3%)   | 2          |
| 1316( 3.3%)   | 3          |
| 498( 1.2%)    | 4          |
| 256( 0.6%)    | 5          |
| 37330( 93.3%) | Total      |

LUMEN INTERACTION WITH SYSTEM:

| Absorbed(%) | Incident(%)   | Layer Name    |
|-------------|---------------|---------------|
| 490( 1.2%)  | 7608( 19.0%)  | LAMP-F54T5H01 |
| 24( 0.1%)   | 379( 0.9%)    | LAMP-F54T5H02 |
| 1490( 3.7%) | 26332( 65.8%) | Refl-Poly1    |
| 97( 0.2%)   | 972( 2.4%)    | Refl-Poly2    |
| 2102( 5.3%) | 35292( 88.2%) | Total         |

  

| Absorbed(%) | Incident(%)   | Material Name |
|-------------|---------------|---------------|
| 514( 1.3%)  | 7988( 20.0%)  | PHOSGLAS      |
| 1490( 3.7%) | 26332( 65.8%) | ALMIRO04      |
| 97( 0.2%)   | 972( 2.4%)    | PAINT006      |
| 2102( 5.3%) | 35292( 88.2%) | Total         |

UNACCOUNTED LUMENS:

reached interreflection limit: 566.34 ( 1.4%)  
fell below continuation minimum: 0.00 ( 0.0%)  
could not find in/out refractor facet: 0.00 ( 0.0%)  
reached try limit for scatter bounce: 0.00 ( 0.0%)  
lost elsewhere(i.e. outside distrib): 0.00 ( 0.0%)

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Number of Lamps: 8 Lumens per Lamp: 5000  
Ballast Factor: 1.00 Ballast-Lamp Photometric Factor: 1.00  
Luminaire Width: 1.8791 Length: 4.0000 Height: 0.2566  
Photometry Type: C Units: feet

Candela Distribution:

|       | 0.00  | 22.50 | 45.00 | 67.50 | 90.00 |
|-------|-------|-------|-------|-------|-------|
| 0.00  | 14653 | 14653 | 14653 | 14653 | 14653 |
| 5.00  | 15232 | 14473 | 14235 | 13816 | 14241 |
| 10.00 | 15043 | 14019 | 13426 | 12939 | 13258 |
| 15.00 | 14495 | 13526 | 13356 | 13930 | 14535 |
| 20.00 | 14366 | 12926 | 13703 | 14760 | 14527 |
| 25.00 | 13553 | 12464 | 13586 | 13390 | 12805 |
| 30.00 | 12819 | 12229 | 12993 | 10908 | 10401 |
| 35.00 | 11620 | 11461 | 10948 | 9525  | 9363  |
| 40.00 | 10722 | 10948 | 9207  | 8127  | 7851  |
| 45.00 | 9601  | 9689  | 7575  | 7026  | 6996  |
| 50.00 | 8523  | 8185  | 6581  | 6157  | 6032  |
| 55.00 | 7129  | 6697  | 5363  | 5543  | 5844  |
| 60.00 | 5940  | 5189  | 4607  | 5661  | 5845  |
| 65.00 | 4893  | 3862  | 4404  | 5027  | 4713  |
| 70.00 | 3564  | 2871  | 3714  | 3576  | 3676  |
| 75.00 | 2195  | 2175  | 2573  | 2916  | 3073  |
| 80.00 | 1217  | 1362  | 1622  | 1612  | 1492  |
| 85.00 | 428   | 457   | 334   | 194   | 127   |
| 90.00 | 39.8  | 20.1  | 11.3  | 6.26  | 2.11  |

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Zonal Lumens

| Cone | Between    | Lumens  |
|------|------------|---------|
| 0.0  | 0.0- 2.5   | 87.63   |
| 5.0  | 2.5- 7.5   | 683.88  |
| 10.0 | 7.5- 12.5  | 1297.68 |
| 15.0 | 12.5- 17.5 | 1962.31 |
| 20.0 | 17.5- 22.5 | 2616.91 |
| 25.0 | 22.5- 27.5 | 3047.36 |
| 30.0 | 27.5- 32.5 | 3270.93 |
| 35.0 | 32.5- 37.5 | 3334.58 |
| 40.0 | 37.5- 42.5 | 3309.17 |
| 45.0 | 42.5- 47.5 | 3157.73 |
| 50.0 | 47.5- 52.5 | 2960.31 |
| 55.0 | 52.5- 57.5 | 2704.11 |
| 60.0 | 57.5- 62.5 | 2533.63 |
| 65.0 | 62.5- 67.5 | 2247.47 |
| 70.0 | 67.5- 72.5 | 1774.64 |
| 75.0 | 72.5- 77.5 | 1363.20 |
| 80.0 | 77.5- 82.5 | 803.12  |
| 85.0 | 82.5- 87.5 | 172.40  |
| 90.0 | 87.5- 92.5 | 8.04    |

Zonal Lumen Summary

| Zone   | Lumens | %Lamp | %Fixt |
|--------|--------|-------|-------|
| 0- 30  | 11269  | 28.2  | 30.2  |
| 0- 40  | 17913  | 44.8  | 48.0  |
| 0- 60  | 29683  | 74.2  | 79.5  |
| 0- 90  | 37331  | 93.3  | 100.0 |
| 90-120 | 4      | 0.0   | 0.0   |
| 90-130 | 4      | 0.0   | 0.0   |
| 90-150 | 4      | 0.0   | 0.0   |
| 90-180 | 4      | 0.0   | 0.0   |
| 0-180  | 37335  | 93.3  | 100.0 |

Total Luminaire Optical Efficiency = 93.3%

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Luminaire Spacing Criterion:

|       |        |
|-------|--------|
| 0 deg | 90 deg |
| 1.27  | 1.10   |

Average Luminaire Luminance (cd/m<sup>2</sup>):

|    |          |          |          |
|----|----------|----------|----------|
|    | 0        | 45       | 90       |
| 0  | 20984.48 | 20984.48 | 20984.48 |
| 45 | 18271.92 | 13434.85 | 12466.20 |
| 50 | 17640.54 | 12541.65 | 11557.37 |
| 55 | 16306.20 | 11134.24 | 12210.63 |
| 60 | 15312.97 | 10590.91 | 13538.25 |
| 65 | 14576.89 | 11440.54 | 12353.40 |
| 70 | 12685.95 | 11188.08 | 11193.17 |
| 75 | 9799.22  | 9308.90  | 11262.77 |
| 80 | 7362.12  | 7411.94  | 6933.84  |
| 85 | 4056.18  | 2096.10  | 814.22   |

Coefficients of Utilization - Zonal Cavity Method:

pfc = 0.20

|     |     |     |     |     |     |     |     |     |     |     |     |  |
|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|--|
| pcc | .8  |     |     |     | .7  |     |     |     | .5  |     |     |  |
| pw  | .7  | .5  | .3  | .1  | .7  | .5  | .3  | .1  | .5  | .3  | .1  |  |
| RCR |     |     |     |     |     |     |     |     |     |     |     |  |
| 0   | 111 | 111 | 111 | 111 | 108 | 108 | 108 | 108 | 103 | 103 | 103 |  |
| 1   | 101 | 97  | 93  | 90  | 99  | 95  | 91  | 88  | 91  | 88  | 85  |  |
| 2   | 92  | 85  | 79  | 73  | 90  | 83  | 77  | 72  | 80  | 75  | 71  |  |
| 3   | 84  | 75  | 67  | 61  | 82  | 73  | 66  | 61  | 70  | 64  | 60  |  |
| 4   | 77  | 66  | 58  | 52  | 75  | 65  | 58  | 52  | 63  | 56  | 51  |  |
| 5   | 71  | 59  | 51  | 45  | 69  | 58  | 51  | 45  | 56  | 50  | 44  |  |
| 6   | 66  | 54  | 45  | 39  | 64  | 53  | 45  | 39  | 51  | 44  | 39  |  |
| 7   | 61  | 49  | 41  | 35  | 59  | 48  | 40  | 35  | 47  | 40  | 35  |  |
| 8   | 57  | 45  | 37  | 31  | 55  | 44  | 36  | 31  | 43  | 36  | 31  |  |
| 9   | 53  | 41  | 33  | 28  | 52  | 40  | 33  | 28  | 39  | 33  | 28  |  |
| 10  | 50  | 38  | 31  | 26  | 49  | 37  | 30  | 26  | 36  | 30  | 25  |  |

|     |    |    |    |    |    |    |    |
|-----|----|----|----|----|----|----|----|
| pcc | .3 |    |    | .1 |    |    | 0  |
| pw  | .5 | .3 | .1 | .5 | .3 | .1 | 0  |
| RCR |    |    |    |    |    |    |    |
| 0   | 99 | 99 | 99 | 95 | 95 | 95 | 93 |
| 1   | 87 | 85 | 83 | 84 | 82 | 80 | 78 |
| 2   | 77 | 73 | 69 | 74 | 71 | 68 | 66 |
| 3   | 68 | 63 | 59 | 65 | 61 | 58 | 55 |
| 4   | 61 | 55 | 50 | 59 | 54 | 50 | 48 |
| 5   | 55 | 49 | 44 | 53 | 48 | 43 | 41 |
| 6   | 49 | 43 | 39 | 48 | 43 | 38 | 36 |
| 7   | 45 | 39 | 34 | 44 | 38 | 34 | 32 |
| 8   | 41 | 35 | 31 | 40 | 35 | 31 | 29 |
| 9   | 38 | 32 | 28 | 37 | 32 | 28 | 26 |
| 10  | 36 | 30 | 25 | 35 | 29 | 25 | 24 |