

Signify Classified - Internal
Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269



Scaled data based on original data using
LM-79-08 Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Test Report Prepared for
Cooper Lighting Solutions
(formerly Eaton)

Brand: STREETWORKS

Report Number: P867553

Luminaire Tested: **MEM2-HTN-SA-150-730-U-T2U**

Issue Date: 08/21/2024



Test Information

Test Method: LM-79-08
Report Number: P867553
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/21/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-150-730-U-T2U
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 150W 70CRI 3000K
FIXTURE w/ TYPE II URBAN DISTRIBUTION OPTIC
Light Source: (30) 3000K CCT, 70 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

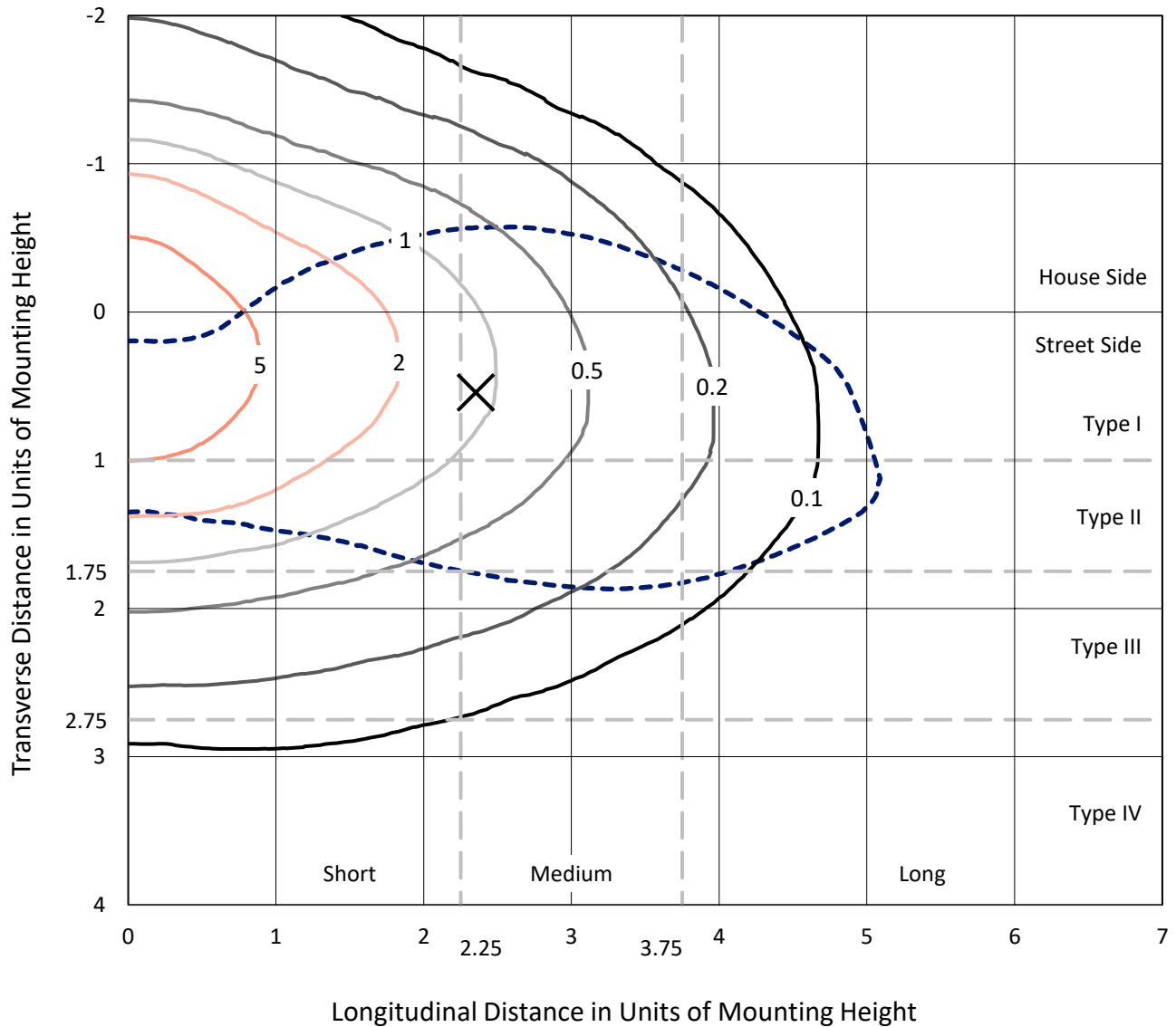
Lumens per Lamp: N/A
Luminaire Lumens: 18132.9 lumens
Efficiency: N/A
Efficacy: 135.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 0.33' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B3 - U0 - G3

Input Watts (W): 134
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: 0.99
Total Harmonic Distortion (THDi): 6.70%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

REPORT NUMBER: P867553
 CATALOG NUMBER: MEM2-HTN-SA-150-730-U-T2U

Iso-Footcandle Lines of Horizontal Illumination

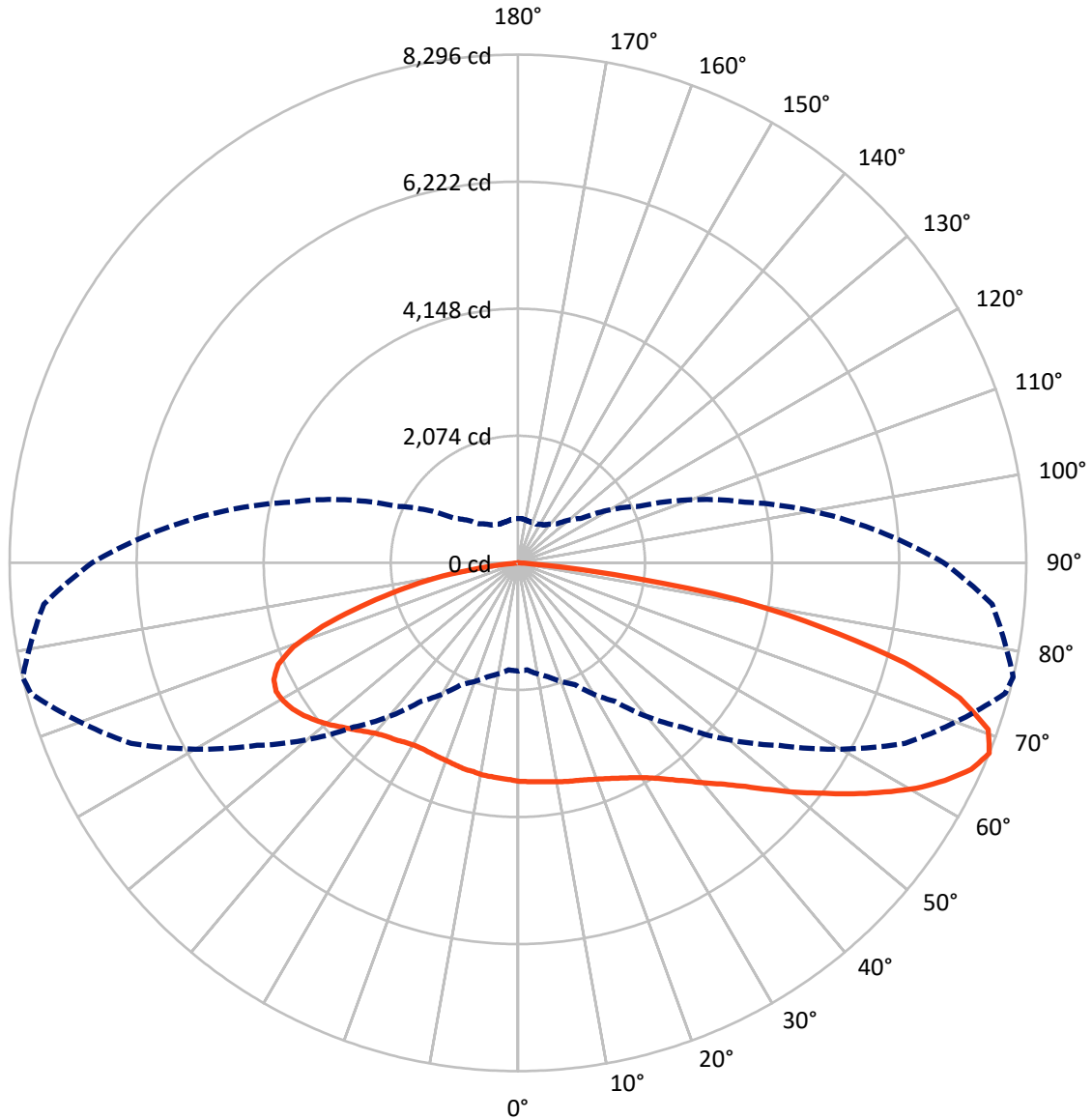
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.8 fc
 Type III - Medium - N/A

REPORT NUMBER: P867553
CATALOG NUMBER: MEM2-HTN-SA-150-730-U-T2U

Luminous Intensity Polar Plot



— Vertical Plane Through 77-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 6029.8 | 0.0 | 6029.8 |
| | % Fixture | 33.3 | 0.0 | 33.3 |
| Street Side | Lumens | 12103.1 | 0.0 | 12103.1 |
| | % Fixture | 66.7 | 0.0 | 66.7 |
| Total | Lumens | 18132.9 | 0.0 | 18132.9 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 342.7 | 1.9 |
| 10°-20° | 1039.2 | 5.7 |
| 20°-30° | 1752.0 | 9.7 |
| 30°-40° | 2486.2 | 13.7 |
| 40°-50° | 3145.6 | 17.3 |
| 50°-60° | 3445.9 | 19.0 |
| 60°-70° | 3331.0 | 18.4 |
| 70°-80° | 2240.3 | 12.4 |
| 80°-90° | 350.1 | 1.9 |
| 90°-100° | 0.0 | 0.0 |
| 100°-110° | 0.0 | 0.0 |
| 110°-120° | 0.0 | 0.0 |
| 120°-130° | 0.0 | 0.0 |
| 130°-140° | 0.0 | 0.0 |
| 140°-150° | 0.0 | 0.0 |
| 150°-160° | 0.0 | 0.0 |
| 160°-170° | 0.0 | 0.0 |
| 170°-180° | 0.0 | 0.0 |
| 0°-90° | 18132.9 | 100.0 |
| 0°-180° | 18132.9 | 100.0 |

Coefficient of Utilization



REPORT NUMBER: P867553

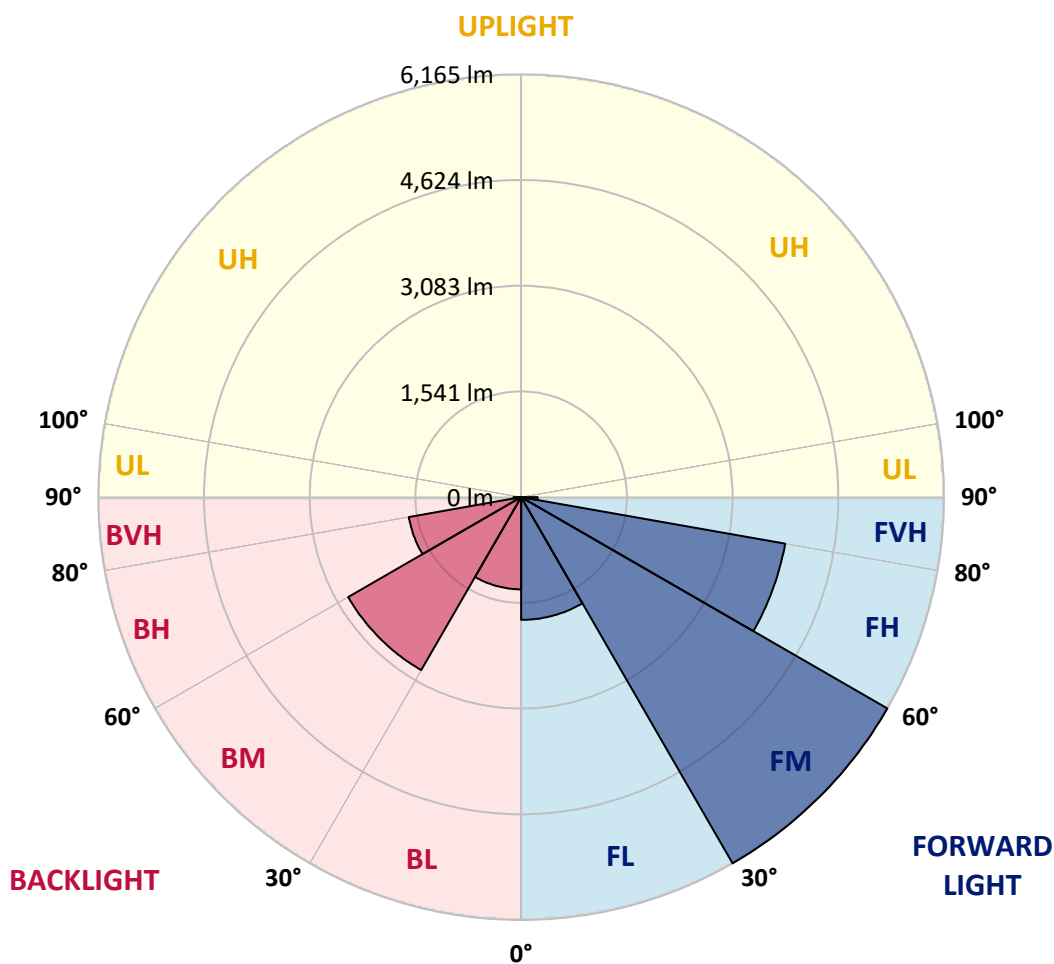
CATALOG NUMBER: MEM2-HTN-SA-150-730-U-T2U

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|------|-------------|--------|-----------|-------------------------|------|---------|
| | | | | B | U | G |
| FL | (0°-30°) | 1789.7 | 9.9 | | | |
| FM | (30°-60°) | 6165.4 | 34.0 | | | |
| FH | (60°-80°) | 3908.2 | 21.6 | | | G2/5000 |
| FVH | (80°-90°) | 239.7 | 1.3 | | | G3/500 |
| BL | (0°-30°) | 1344.2 | 7.4 | B3/2500 | | |
| BM | (30°-60°) | 2912.2 | 16.1 | B3/5000 | | |
| BH | (60°-80°) | 1663.0 | 9.2 | B3/2500 | | G3/2500 |
| BVH | (80°-90°) | 110.4 | 0.6 | | | G2/225 |
| UL | (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH | (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B3-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 75° | 77° | 85° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 |
| 2.5° | 3644.0 | 3640.4 | 3622.5 | 3629.7 | 3608.2 | 3622.5 | 3601.0 | 3583.1 | 3579.5 | 3575.9 | 3579.5 |
| 5° | 3758.8 | 3740.9 | 3722.9 | 3712.2 | 3694.2 | 3687.1 | 3651.2 | 3615.3 | 3593.8 | 3590.2 | 3583.1 |
| 7.5° | 3891.5 | 3884.3 | 3859.2 | 3844.9 | 3794.7 | 3769.6 | 3719.4 | 3654.8 | 3622.5 | 3608.2 | 3590.2 |
| 10° | 4027.8 | 4045.7 | 4013.5 | 3984.8 | 3927.4 | 3873.6 | 3787.5 | 3705.0 | 3640.4 | 3633.3 | 3593.8 |
| 12.5° | 4196.4 | 4192.8 | 4171.3 | 4121.1 | 4052.9 | 3977.6 | 3873.6 | 3758.8 | 3672.7 | 3658.4 | 3601.0 |
| 15° | 4347.0 | 4343.4 | 4314.7 | 4268.1 | 4178.4 | 4085.2 | 3945.3 | 3812.6 | 3705.0 | 3683.5 | 3615.3 |
| 17.5° | 4486.9 | 4479.7 | 4461.8 | 4411.6 | 4300.4 | 4185.6 | 4049.3 | 3873.6 | 3744.5 | 3719.4 | 3626.1 |
| 20° | 4608.8 | 4616.0 | 4594.5 | 4544.3 | 4440.3 | 4318.3 | 4146.2 | 3952.5 | 3794.7 | 3766.0 | 3658.4 |
| 22.5° | 4741.5 | 4745.1 | 4734.4 | 4716.4 | 4583.7 | 4454.6 | 4268.1 | 4042.1 | 3852.1 | 3823.4 | 3694.2 |
| 25° | 4881.4 | 4885.0 | 4892.2 | 4881.4 | 4730.8 | 4590.9 | 4393.6 | 4153.3 | 3931.0 | 3891.5 | 3744.5 |
| 27.5° | 5042.8 | 5046.4 | 5060.8 | 5039.2 | 4877.8 | 4730.8 | 4533.5 | 4271.7 | 4013.5 | 3970.4 | 3787.5 |
| 30° | 5225.7 | 5240.1 | 5229.3 | 5222.2 | 5035.6 | 4892.2 | 4673.4 | 4393.6 | 4121.1 | 4067.3 | 3862.8 |
| 32.5° | 5444.5 | 5440.9 | 5419.4 | 5397.9 | 5207.8 | 5057.2 | 4831.2 | 4551.5 | 4253.8 | 4192.8 | 3984.8 |
| 35° | 5602.3 | 5602.3 | 5570.1 | 5559.3 | 5383.6 | 5225.7 | 5003.4 | 4727.2 | 4404.4 | 4347.0 | 4113.9 |
| 37.5° | 5699.2 | 5713.5 | 5688.4 | 5695.6 | 5527.0 | 5380.0 | 5175.5 | 4906.5 | 4569.4 | 4519.2 | 4271.7 |
| 40° | 5735.0 | 5770.9 | 5792.4 | 5821.1 | 5652.6 | 5527.0 | 5358.4 | 5100.2 | 4781.0 | 4723.6 | 4461.8 |
| 42.5° | 5742.2 | 5796.0 | 5871.3 | 5932.3 | 5742.2 | 5638.2 | 5534.2 | 5297.5 | 4989.0 | 4938.8 | 4669.8 |
| 45° | 5706.4 | 5681.2 | 5864.2 | 5871.3 | 5792.4 | 5727.9 | 5688.4 | 5534.2 | 5290.3 | 5207.8 | 4928.0 |
| 47.5° | 5433.8 | 5405.1 | 5455.3 | 5684.8 | 5731.5 | 5767.3 | 5846.2 | 5810.4 | 5591.6 | 5527.0 | 5225.7 |
| 50° | 4992.6 | 4978.3 | 5179.1 | 5426.6 | 5580.8 | 5763.7 | 5975.4 | 6075.8 | 5925.1 | 5885.7 | 5602.3 |
| 52.5° | 4264.5 | 4225.1 | 4633.9 | 5114.6 | 5383.6 | 5727.9 | 6065.0 | 6348.4 | 6301.7 | 6244.3 | 5925.1 |
| 55° | 3801.8 | 3801.8 | 4078.0 | 4677.0 | 5132.5 | 5598.8 | 6122.4 | 6635.3 | 6717.8 | 6653.2 | 6294.6 |
| 57.5° | 3306.9 | 3346.3 | 3633.3 | 4045.7 | 4770.2 | 5362.0 | 6115.2 | 6875.6 | 7119.5 | 7058.5 | 6685.5 |
| 60° | 2883.7 | 2915.9 | 3080.9 | 3497.0 | 4343.4 | 5050.0 | 6036.3 | 7072.9 | 7492.5 | 7471.0 | 7029.8 |
| 62.5° | 2453.3 | 2492.7 | 2625.4 | 3016.4 | 3780.3 | 4691.3 | 5871.3 | 7180.5 | 7844.0 | 7822.5 | 7377.7 |
| 65° | 2108.9 | 2112.5 | 2245.2 | 2571.6 | 3217.2 | 4257.3 | 5580.8 | 7158.9 | 8116.6 | 8130.9 | 7671.8 |
| 67.5° | 1764.6 | 1753.9 | 1926.0 | 2191.4 | 2758.1 | 3791.1 | 5193.5 | 6968.9 | 8231.3 | 8295.9 | 7768.7 |
| 70° | 1298.4 | 1312.7 | 1553.0 | 1847.1 | 2331.3 | 3253.1 | 4651.9 | 6599.4 | 8044.8 | 8145.3 | 7546.3 |
| 72.5° | 975.6 | 1004.3 | 1237.4 | 1542.3 | 1947.5 | 2715.1 | 4060.1 | 5957.4 | 7524.8 | 7539.1 | 6868.4 |
| 75° | 792.6 | 799.8 | 1007.8 | 1280.4 | 1596.1 | 2177.1 | 3260.3 | 4974.7 | 6362.7 | 6527.7 | 5835.5 |
| 77.5° | 674.3 | 667.1 | 767.5 | 1033.0 | 1287.6 | 1739.5 | 2456.9 | 3783.9 | 4996.2 | 5071.5 | 4569.4 |
| 80° | 573.9 | 570.3 | 606.1 | 835.7 | 1007.8 | 1241.0 | 1682.1 | 2636.2 | 3565.1 | 3647.6 | 3245.9 |
| 82.5° | 301.3 | 322.8 | 315.6 | 516.5 | 570.3 | 652.8 | 807.0 | 1197.9 | 1556.6 | 1578.1 | 1492.0 |
| 85° | 14.3 | 14.3 | 14.3 | 21.5 | 35.9 | 57.4 | 111.2 | 111.2 | 121.9 | 233.1 | 265.4 |
| 87.5° | 3.6 | 3.6 | 7.2 | 7.2 | 7.2 | 10.8 | 10.8 | 14.3 | 14.3 | 14.3 | 14.3 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



REPORT NUMBER: P867553

CATALOG NUMBER: MEM2-HTN-SA-150-730-U-T2U

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 | 3565.1 |
| 2.5° | 3572.3 | 3558.0 | 3536.4 | 3540.0 | 3536.4 | 3536.4 | 3518.5 | 3504.2 | 3500.6 | 3507.7 | 3522.1 |
| 5° | 3575.9 | 3554.4 | 3522.1 | 3511.3 | 3500.6 | 3493.4 | 3464.7 | 3443.2 | 3432.4 | 3439.6 | 3443.2 |
| 7.5° | 3575.9 | 3543.6 | 3507.7 | 3486.2 | 3457.5 | 3436.0 | 3403.7 | 3375.0 | 3360.7 | 3364.3 | 3371.4 |
| 10° | 3568.7 | 3532.8 | 3504.2 | 3461.1 | 3414.5 | 3389.4 | 3339.2 | 3303.3 | 3285.4 | 3289.0 | 3271.0 |
| 12.5° | 3568.7 | 3529.3 | 3471.9 | 3432.4 | 3367.9 | 3314.1 | 3274.6 | 3235.2 | 3220.8 | 3206.5 | 3199.3 |
| 15° | 3572.3 | 3522.1 | 3464.7 | 3382.2 | 3306.9 | 3249.5 | 3199.3 | 3174.2 | 3152.7 | 3145.5 | 3149.1 |
| 17.5° | 3572.3 | 3522.1 | 3436.0 | 3339.2 | 3253.1 | 3181.4 | 3138.3 | 3109.6 | 3102.4 | 3095.3 | 3095.3 |
| 20° | 3590.2 | 3525.7 | 3410.9 | 3296.1 | 3188.5 | 3113.2 | 3073.8 | 3055.8 | 3055.8 | 3045.1 | 3045.1 |
| 22.5° | 3618.9 | 3532.8 | 3396.6 | 3260.3 | 3134.7 | 3052.2 | 3009.2 | 2987.7 | 2998.4 | 2991.3 | 2987.7 |
| 25° | 3651.2 | 3558.0 | 3378.6 | 3210.0 | 3063.0 | 2976.9 | 2933.9 | 2919.5 | 2915.9 | 2898.0 | 2923.1 |
| 27.5° | 3676.3 | 3575.9 | 3367.9 | 3159.8 | 2998.4 | 2898.0 | 2844.2 | 2819.1 | 2801.2 | 2808.3 | 2801.2 |
| 30° | 3744.5 | 3626.1 | 3371.4 | 3116.8 | 2926.7 | 2804.8 | 2740.2 | 2711.5 | 2704.3 | 2704.3 | 2704.3 |
| 32.5° | 3837.7 | 3690.7 | 3396.6 | 3098.9 | 2858.6 | 2715.1 | 2636.2 | 2607.5 | 2600.3 | 2586.0 | 2593.1 |
| 35° | 3956.1 | 3787.5 | 3436.0 | 3070.2 | 2804.8 | 2611.1 | 2525.0 | 2485.5 | 2474.8 | 2460.4 | 2460.4 |
| 37.5° | 4088.8 | 3884.3 | 3464.7 | 3055.8 | 2733.0 | 2503.5 | 2406.6 | 2356.4 | 2349.3 | 2334.9 | 2342.1 |
| 40° | 4257.3 | 4017.0 | 3511.3 | 3027.1 | 2650.5 | 2406.6 | 2277.5 | 2195.0 | 2213.0 | 2220.1 | 2234.5 |
| 42.5° | 4447.4 | 4185.6 | 3583.1 | 2998.4 | 2586.0 | 2306.2 | 2116.1 | 2033.6 | 2055.1 | 2048.0 | 2062.3 |
| 45° | 4705.7 | 4382.9 | 3672.7 | 2987.7 | 2507.1 | 2184.3 | 1951.1 | 1857.9 | 1850.7 | 1839.9 | 1847.1 |
| 47.5° | 4974.7 | 4619.6 | 3758.8 | 2966.2 | 2421.0 | 2033.6 | 1764.6 | 1646.3 | 1617.6 | 1603.2 | 1588.9 |
| 50° | 5254.4 | 4856.3 | 3859.2 | 2951.8 | 2306.2 | 1865.1 | 1578.1 | 1441.8 | 1388.0 | 1370.1 | 1352.2 |
| 52.5° | 5570.1 | 5111.0 | 3945.3 | 2915.9 | 2180.7 | 1689.3 | 1409.6 | 1255.3 | 1194.4 | 1158.5 | 1162.1 |
| 55° | 5903.6 | 5344.1 | 4024.2 | 2872.9 | 2037.2 | 1524.3 | 1241.0 | 1111.9 | 1050.9 | 1040.1 | 1040.1 |
| 57.5° | 6212.1 | 5584.4 | 4081.6 | 2797.6 | 1893.7 | 1362.9 | 1101.1 | 989.9 | 961.2 | 975.6 | 975.6 |
| 60° | 6527.7 | 5778.1 | 4110.3 | 2715.1 | 1746.7 | 1226.6 | 1004.3 | 914.6 | 900.2 | 928.9 | 932.5 |
| 62.5° | 6782.3 | 5932.3 | 4103.1 | 2600.3 | 1585.3 | 1108.3 | 911.0 | 839.3 | 846.4 | 896.7 | 907.4 |
| 65° | 6965.3 | 6007.6 | 4013.5 | 2428.2 | 1431.1 | 1004.3 | 828.5 | 760.4 | 760.4 | 796.2 | 807.0 |
| 67.5° | 6950.9 | 5910.8 | 3834.1 | 2187.9 | 1266.1 | 900.2 | 753.2 | 699.4 | 699.4 | 724.5 | 720.9 |
| 70° | 6656.8 | 5577.2 | 3493.4 | 1897.3 | 1104.7 | 810.6 | 688.6 | 649.2 | 645.6 | 656.4 | 652.8 |
| 72.5° | 5950.2 | 4899.4 | 2962.6 | 1567.4 | 954.0 | 720.9 | 624.1 | 588.2 | 581.0 | 566.7 | 555.9 |
| 75° | 4910.1 | 4024.2 | 2313.4 | 1248.2 | 807.0 | 634.8 | 563.1 | 530.8 | 502.1 | 520.1 | 509.3 |
| 77.5° | 3809.0 | 3088.1 | 1721.6 | 968.4 | 656.4 | 552.3 | 502.1 | 466.3 | 459.1 | 523.7 | 502.1 |
| 80° | 2779.6 | 2134.1 | 1215.9 | 692.2 | 509.3 | 448.3 | 419.6 | 390.9 | 495.0 | 663.5 | 659.9 |
| 82.5° | 1233.8 | 1029.4 | 555.9 | 330.0 | 236.7 | 197.3 | 165.0 | 186.5 | 312.0 | 304.9 | 315.6 |
| 85° | 111.2 | 114.8 | 61.0 | 39.5 | 25.1 | 21.5 | 14.3 | 14.3 | 10.8 | 10.8 | 10.8 |
| 87.5° | 14.3 | 14.3 | 10.8 | 10.8 | 7.2 | 7.2 | 7.2 | 7.2 | 3.6 | 3.6 | 3.6 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

LM-79-2019: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

Streetworks

Report Number: SP1-2407-157-4

Test Date: 08/07/2024

Luminaire Tested: MEM2-HTN-SA-40-730-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-40-730-U-5WQ-2

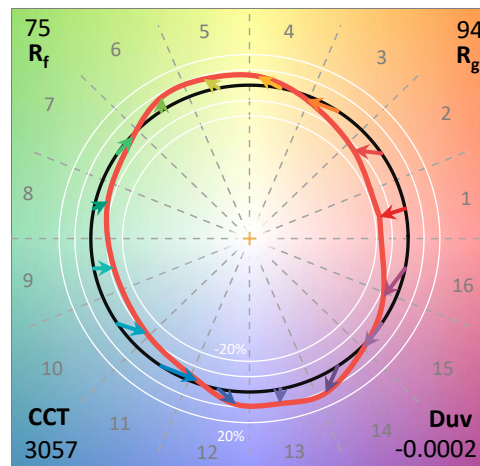
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 08/20/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: Streetworks
 Catalog Number: **MEM2-HTN-SA-40-730-U-5WQ-2**
 Description: Epic Modern Light Square 40W 5WQ Optic and Flare Trim

Spectral Parameters

CCT (K): 3057
 CIE u': 0.2487
 CIE v': 0.5199
 Duv: -0.0002
 CIE x: 0.4326
 CIE y: 0.4020
 CIE z: 0.1654
 Peak Wavelength (nm): 593
 Dominant Wavelength (nm): 582
 Purity: 50.50735
 Rf: 74.6
 Rg: 94

| | | | |
|-----------|------|------|-------|
| CRI (Ra): | 71.7 | | |
| R1: | 68.1 | R9: | -34.8 |
| R2: | 82.0 | R10: | 58.5 |
| R3: | 93.5 | R11: | 62.5 |
| R4: | 67.5 | R12: | 47.5 |
| R5: | 67.2 | R13: | 70.7 |
| R6: | 74.9 | R14: | 96.4 |
| R7: | 77.4 | R15: | 60.0 |
| R8: | 43.1 | | |



Test Conditions

Stabilization Time: 21M
 Operation Time: 1H 21M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-4

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC Power Source | IN0208 | 10/24/2023 | 10/24/2024 |
| Sphere Thermometer | IN0085 | 10/24/2023 | 10/24/2024 |
| Room Thermometer | IN0046 | 10/24/2023 | 10/24/2024 |

REPORT NUMBER: SP1-2407-157-4

CIE 1931 Chromaticity Diagram



CIE 1931 Chromaticity Diagram with 2017 ANSI 7-Step and 4-Step Quadrangles



Point lies inside the ANSI 3000K 4-step quadrangle

REPORT NUMBER: SP1-2407-157-4

Photopic Flux vs. Wavelength



Photopic Lumens: NR

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Scotopic Flux vs. Wavelength



Scotopic Lumens: NR

S/P: 1.23

| λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) | λ (nm) | Power W [^] /nm | Lumens (ϕ /nm) |
|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|-------------------|-----------------------------|-------------------------|
| 360 | 0 | NR | 490 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-157-4

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 2.27

| λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) | λ (nm) | Power W [^] /nm | Lumens (φ/nm) |
|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|--------|--------------------------|---------------|
| 360 | 0 | NR | 490 | 104 | NR | 620 | 818 | NR | 750 | 20 | NR | 880 | 1 | NR |
| 365 | 0 | NR | 495 | 135 | NR | 625 | 755 | NR | 755 | 17 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 184 | NR | 630 | 691 | NR | 760 | 15 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 247 | NR | 635 | 625 | NR | 765 | 13 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 309 | NR | 640 | 561 | NR | 770 | 11 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 369 | NR | 645 | 499 | NR | 775 | 9 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 419 | NR | 650 | 441 | NR | 780 | 8 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 460 | NR | 655 | 388 | NR | 785 | 7 | NR | 915 | 0 | NR |
| 400 | 1 | NR | 530 | 492 | NR | 660 | 338 | NR | 790 | 6 | NR | 920 | 0 | NR |
| 405 | 3 | NR | 535 | 524 | NR | 665 | 294 | NR | 795 | 5 | NR | 925 | 0 | NR |
| 410 | 7 | NR | 540 | 553 | NR | 670 | 253 | NR | 800 | 4 | NR | 930 | 0 | NR |
| 415 | 15 | NR | 545 | 588 | NR | 675 | 218 | NR | 805 | 4 | NR | 935 | 0 | NR |
| 420 | 31 | NR | 550 | 625 | NR | 680 | 188 | NR | 810 | 3 | NR | 940 | 0 | NR |
| 425 | 60 | NR | 555 | 670 | NR | 685 | 161 | NR | 815 | 3 | NR | 945 | 0 | NR |
| 430 | 107 | NR | 560 | 723 | NR | 690 | 139 | NR | 820 | 3 | NR | 950 | 0 | NR |
| 435 | 183 | NR | 565 | 780 | NR | 695 | 118 | NR | 825 | 2 | NR | 955 | 0 | NR |
| 440 | 289 | NR | 570 | 837 | NR | 700 | 100 | NR | 830 | 2 | NR | 960 | 0 | NR |
| 445 | 460 | NR | 575 | 894 | NR | 705 | 85 | NR | 835 | 2 | NR | 965 | 0 | NR |
| 450 | 646 | NR | 580 | 942 | NR | 710 | 73 | NR | 840 | 1 | NR | 970 | 0 | NR |
| 455 | 561 | NR | 585 | 976 | NR | 715 | 62 | NR | 845 | 1 | NR | 975 | 0 | NR |
| 460 | 331 | NR | 590 | 998 | NR | 720 | 53 | NR | 850 | 1 | NR | 980 | 0 | NR |
| 465 | 238 | NR | 595 | 1000 | NR | 725 | 45 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 178 | NR | 600 | 990 | NR | 730 | 39 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 120 | NR | 605 | 962 | NR | 735 | 33 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 96 | NR | 610 | 925 | NR | 740 | 28 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 95 | NR | 615 | 873 | NR | 745 | 24 | NR | 875 | 1 | NR | | | |

Summary

$R_f = 74.6$
 $R_g = 94$
 $CIE R_a = 71.7$
 $R_9 = -34.8$



Color Vector Graphics



Individual Sample Fidelity Index ($R_{f,i}$)

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 65 | CES51 = 87 | CES76 = 58 |
| CES02 = 62 | CES27 = 89 | CES52 = 85 | CES77 = 76 |
| CES03 = 31 | CES28 = 84 | CES53 = 77 | CES78 = 61 |
| CES04 = 71 | CES29 = 68 | CES54 = 85 | CES79 = 86 |
| CES05 = 49 | CES30 = 83 | CES55 = 84 | CES80 = 83 |
| CES06 = 51 | CES31 = 71 | CES56 = 74 | CES81 = 73 |
| CES07 = 41 | CES32 = 64 | CES57 = 74 | CES82 = 93 |
| CES08 = 40 | CES33 = 78 | CES58 = 75 | CES83 = 91 |
| CES09 = 29 | CES34 = 75 | CES59 = 85 | CES84 = 88 |
| CES10 = 76 | CES35 = 87 | CES60 = 90 | CES85 = 75 |
| CES11 = 59 | CES36 = 92 | CES61 = 81 | CES86 = 64 |
| CES12 = 65 | CES37 = 84 | CES62 = 89 | CES87 = 77 |
| CES13 = 43 | CES38 = 92 | CES63 = 75 | CES88 = 80 |
| CES14 = 74 | CES39 = 96 | CES64 = 65 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 64 | CES90 = 80 |
| CES16 = 47 | CES41 = 93 | CES66 = 60 | CES91 = 78 |
| CES17 = 50 | CES42 = 86 | CES67 = 58 | CES92 = 56 |
| CES18 = 56 | CES43 = 77 | CES68 = 66 | CES93 = 73 |
| CES19 = 73 | CES44 = 99 | CES69 = 75 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 60 | CES95 = 66 |
| CES21 = 87 | CES46 = 81 | CES71 = 56 | CES96 = 76 |
| CES22 = 79 | CES47 = 86 | CES72 = 85 | CES97 = 82 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 76 |
| CES24 = 91 | CES49 = 79 | CES74 = 95 | CES99 = 64 |
| CES25 = 73 | CES50 = 86 | CES75 = 60 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)