

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: P868353

Luminaire Tested: **MEM2-HTN-SA-30-AMB-U-T2U-HSS**

Issue Date: 08/22/2024



Test Information

Test Method: LM-79-08
Report Number: P868353
Test Lab: INNOVATION CENTER(G3)
Issue Date: 08/22/2024
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: STREETWORKS
Catalog Number: MEM2-HTN-SA-30-AMB-U-T2U-HSS
Description: EPIC MODERN TALL HOUSING DISCRETE LED ARRAYS 30W 0CRI 1540K FIXTURE
w/ TYPE II URBAN DISTRIBUTION OPTIC AND HOUSE SIDE SHIELD
Light Source: (20) 1540K CCT, 0 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

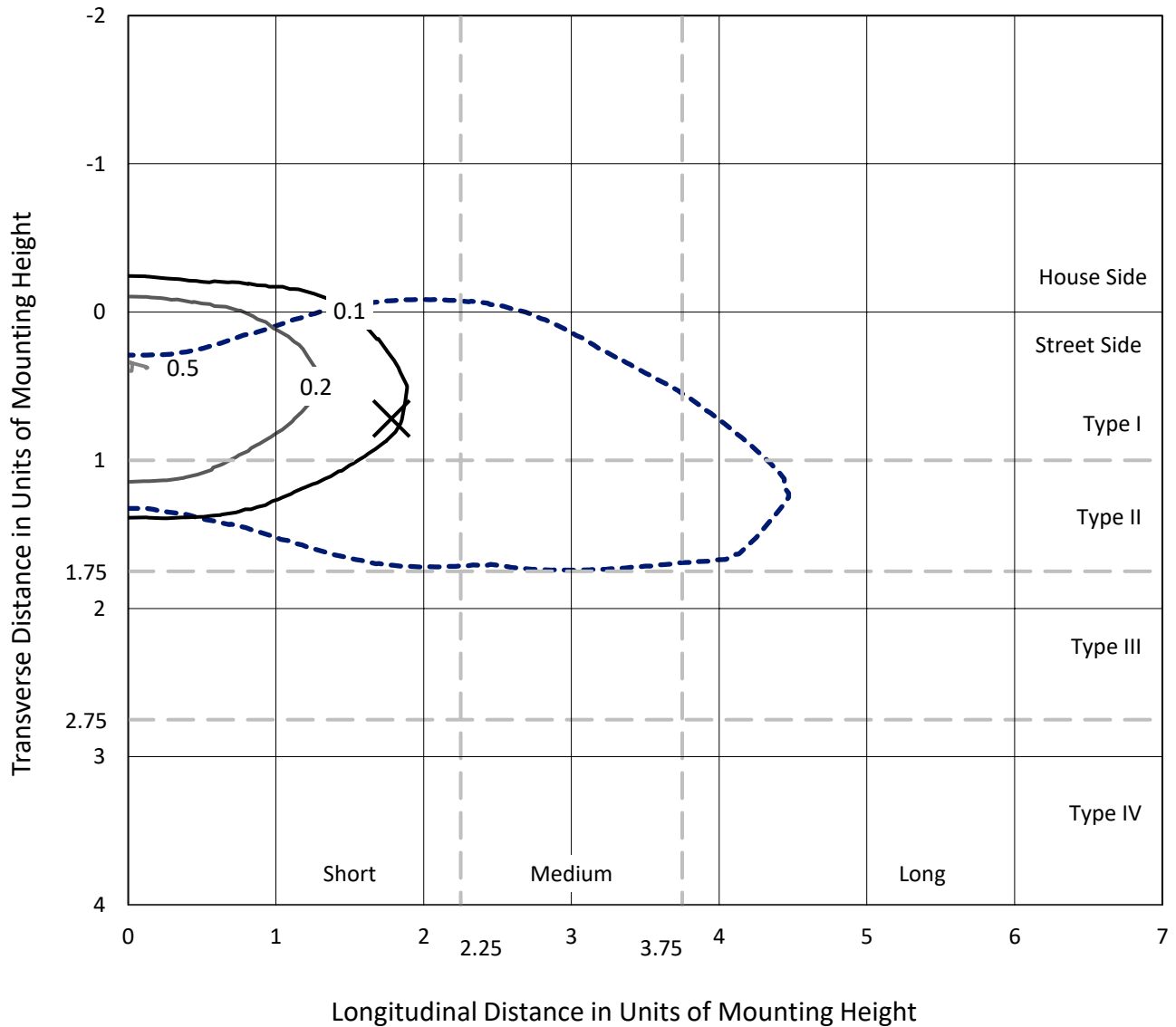
Lumens per Lamp: N/A
Luminaire Lumens: 725.4 lumens
Efficiency: N/A
Efficacy: 24.2 lumens/watt
Luminous Opening: Rectangular (W 0.67' x L: 0.33' x H: 0')
IES Classification: Type II - Short
BUG Rating: B0 - U0 - G1

Input Watts (W): 30
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: 0.98
Total Harmonic Distortion (THDi): 9.04%
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT

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Iso-Footcandle Lines of Horizontal Illumination

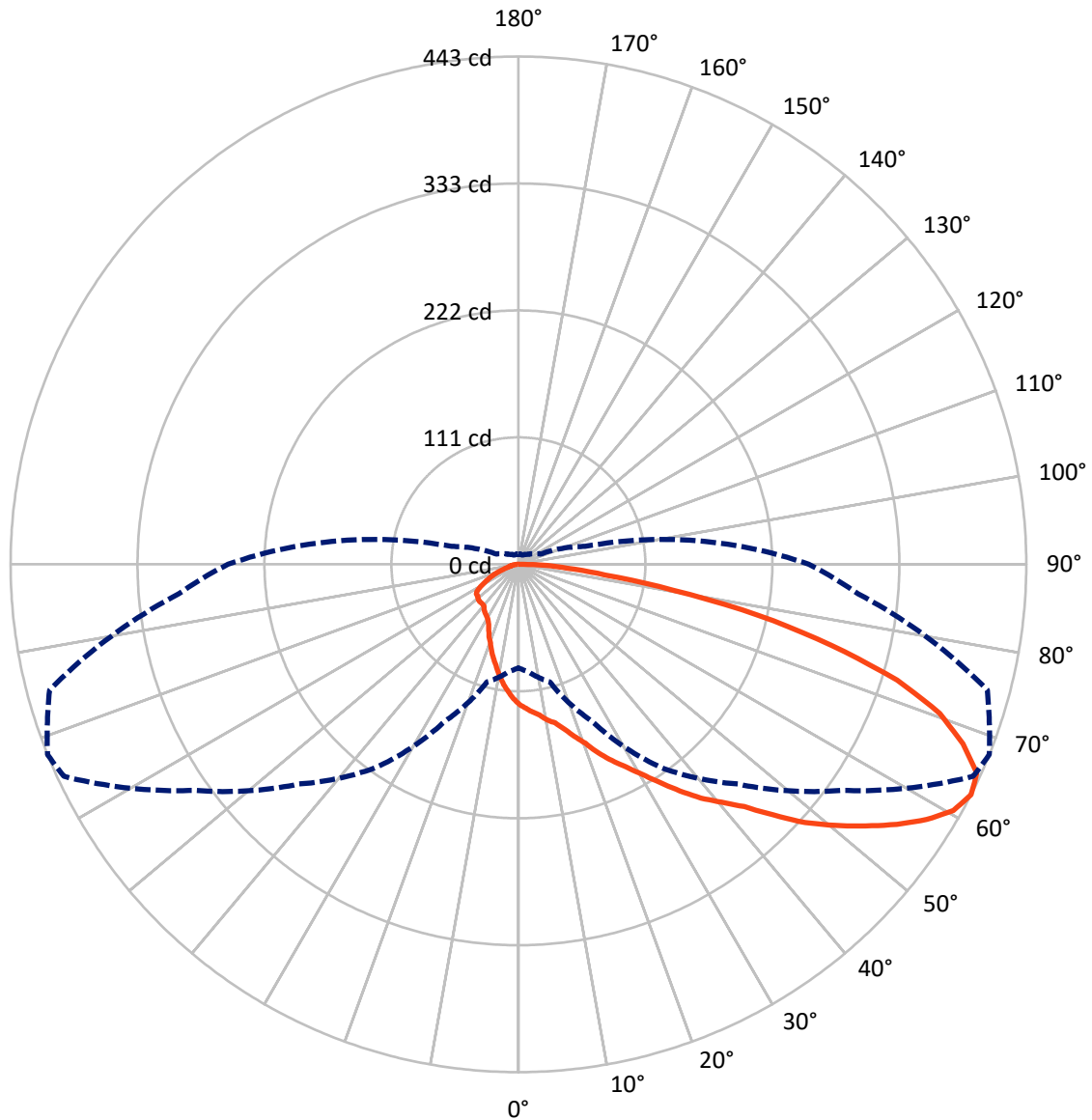
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 0.5 fc
 Type II - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 68-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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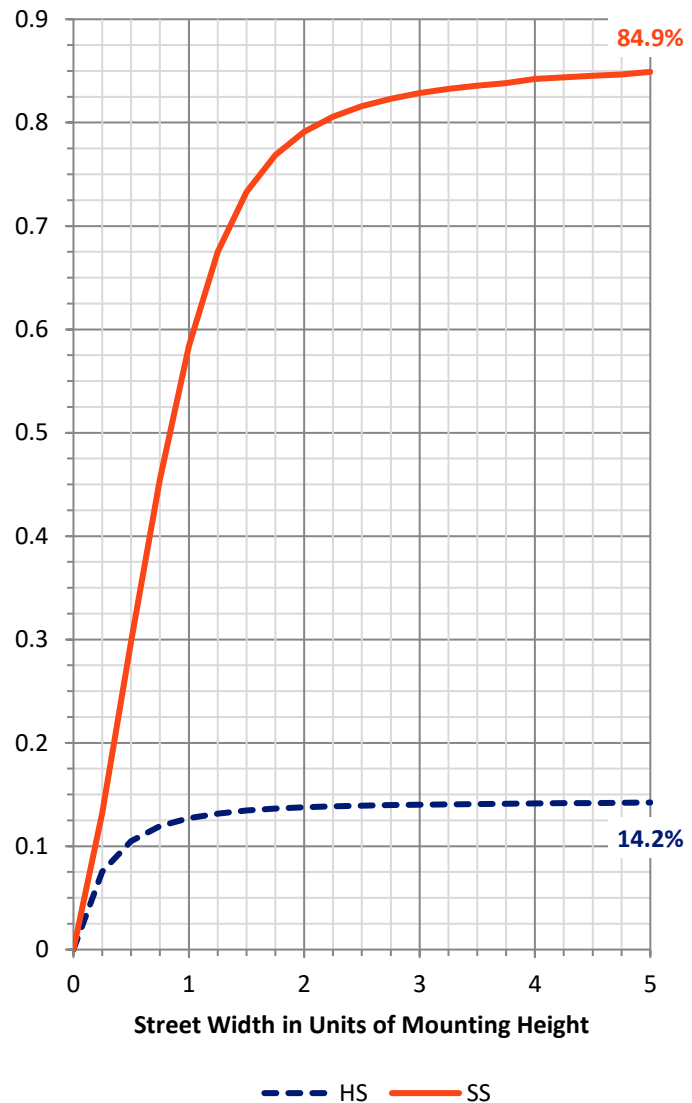
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|-------|
| House Side | Lumens | 104.5 | 0.0 | 104.5 |
| | % Fixture | 14.4 | 0.0 | 14.4 |
| Street Side | Lumens | 620.9 | 0.0 | 620.9 |
| | % Fixture | 85.6 | 0.0 | 85.6 |
| Total | Lumens | 725.4 | 0.0 | 725.4 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

Coefficient of Utilization

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 11.2 | 1.5 |
| 10°-20° | 34.7 | 4.8 |
| 20°-30° | 62.3 | 8.6 |
| 30°-40° | 95.6 | 13.2 |
| 40°-50° | 133.9 | 18.5 |
| 50°-60° | 151.8 | 20.9 |
| 60°-70° | 136.3 | 18.8 |
| 70°-80° | 80.4 | 11.1 |
| 80°-90° | 19.1 | 2.6 |
| 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° | 725.4 | 100.0 |
| 0°-180° | 725.4 | 100.0 |



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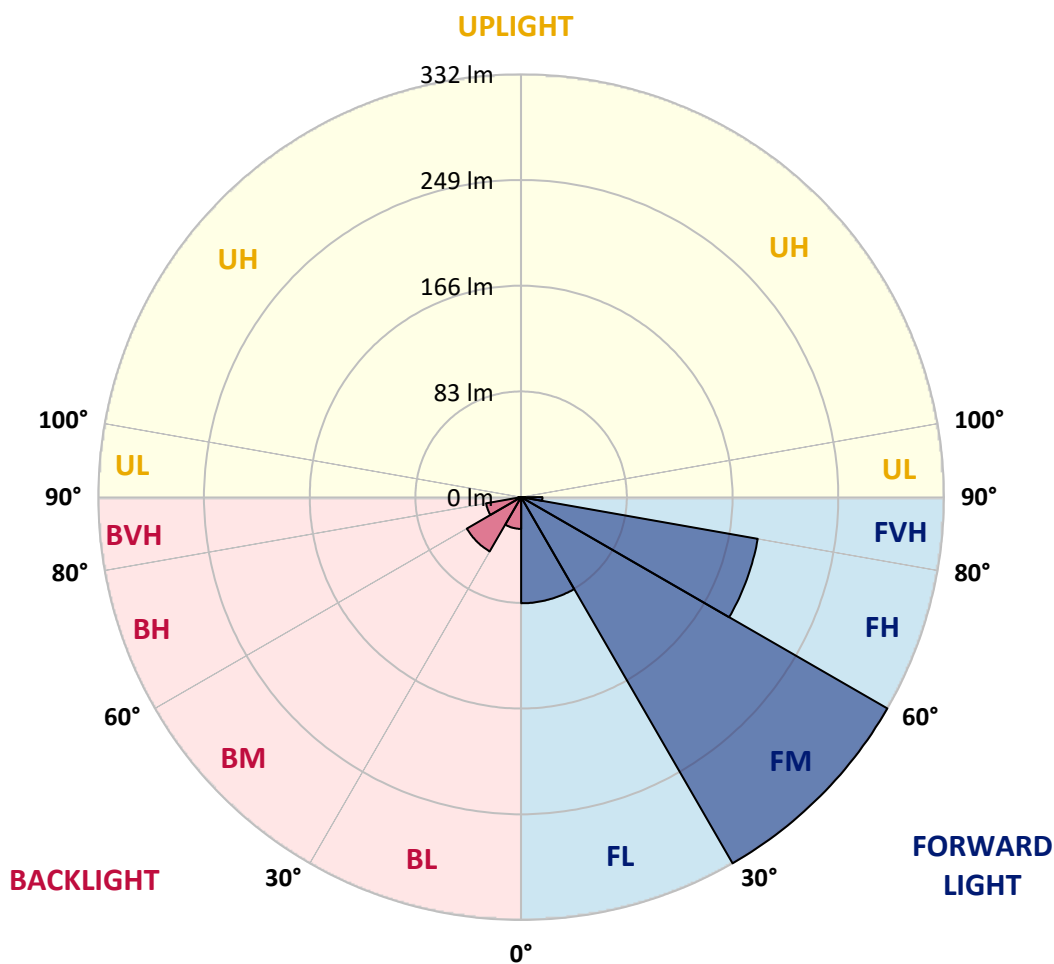
CATALOG NUMBER: MEM2-HTN-SA-30-AMB-U-T2U-HSS

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 83.4 | 11.5 | | | |
| FM (30°-60°) | 332.1 | 45.8 | | | |
| FH (60°-80°) | 188.7 | 26.0 | | | G0/660 |
| FVH (80°-90°) | 16.7 | 2.3 | | | G1/100 |
| BL (0°-30°) | 25.0 | 3.4 | B0/110 | | |
| BM (30°-60°) | 49.2 | 6.8 | B0/220 | | |
| BH (60°-80°) | 28.0 | 3.9 | B0/110 | | G0/110 |
| BVH (80°-90°) | 2.4 | 0.3 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B0-U0-G1

Type II Short





REPORT NUMBER: P868353

CATALOG NUMBER: MEM2-HTN-SA-30-AMB-U-T2U-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 68° | 75° | 85° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 |
| 2.5° | 133.0 | 133.0 | 133.0 | 133.0 | 131.2 | 131.2 | 129.5 | 127.7 | 125.9 | 125.9 | 124.1 |
| 5° | 140.1 | 140.1 | 140.1 | 140.1 | 138.3 | 136.6 | 134.8 | 131.2 | 129.5 | 127.7 | 124.1 |
| 7.5° | 154.3 | 154.3 | 154.3 | 149.0 | 147.2 | 143.6 | 140.1 | 134.8 | 133.0 | 131.2 | 125.9 |
| 10° | 173.8 | 175.6 | 172.0 | 168.5 | 161.4 | 154.3 | 145.4 | 140.1 | 138.3 | 133.0 | 127.7 |
| 12.5° | 195.1 | 193.3 | 191.5 | 186.2 | 177.3 | 168.5 | 156.1 | 145.4 | 141.9 | 136.6 | 129.5 |
| 15° | 214.6 | 214.6 | 212.8 | 203.9 | 195.1 | 182.7 | 168.5 | 154.3 | 149.0 | 141.9 | 131.2 |
| 17.5° | 235.9 | 235.9 | 230.5 | 221.7 | 211.0 | 195.1 | 180.9 | 163.2 | 157.8 | 145.4 | 134.8 |
| 20° | 248.3 | 248.3 | 246.5 | 239.4 | 228.8 | 211.0 | 193.3 | 173.8 | 166.7 | 152.5 | 136.6 |
| 22.5° | 253.6 | 253.6 | 253.6 | 250.1 | 241.2 | 227.0 | 205.7 | 186.2 | 179.1 | 159.6 | 141.9 |
| 25° | 253.6 | 253.6 | 255.4 | 257.1 | 253.6 | 241.2 | 221.7 | 196.8 | 189.8 | 168.5 | 145.4 |
| 27.5° | 250.1 | 250.1 | 253.6 | 255.4 | 257.1 | 251.8 | 235.9 | 209.3 | 200.4 | 179.1 | 150.7 |
| 30° | 257.1 | 257.1 | 257.1 | 257.1 | 260.7 | 260.7 | 248.3 | 221.7 | 212.8 | 189.8 | 156.1 |
| 32.5° | 274.9 | 274.9 | 274.9 | 269.6 | 266.0 | 267.8 | 260.7 | 235.9 | 227.0 | 202.2 | 163.2 |
| 35° | 289.1 | 287.3 | 289.1 | 289.1 | 280.2 | 276.7 | 273.1 | 250.1 | 243.0 | 219.9 | 173.8 |
| 37.5° | 299.7 | 301.5 | 301.5 | 303.3 | 299.7 | 292.6 | 285.5 | 267.8 | 258.9 | 234.1 | 184.4 |
| 40° | 306.8 | 308.6 | 313.9 | 315.7 | 312.1 | 308.6 | 301.5 | 282.0 | 273.1 | 246.5 | 191.5 |
| 42.5° | 308.6 | 313.9 | 322.8 | 328.1 | 319.2 | 317.4 | 313.9 | 297.9 | 289.1 | 266.0 | 202.2 |
| 45° | 306.8 | 308.6 | 326.3 | 328.1 | 324.5 | 324.5 | 329.9 | 317.4 | 312.1 | 287.3 | 214.6 |
| 47.5° | 294.4 | 294.4 | 305.0 | 319.2 | 321.0 | 329.9 | 344.0 | 340.5 | 336.9 | 310.3 | 230.5 |
| 50° | 271.3 | 269.6 | 289.1 | 303.3 | 312.1 | 331.6 | 356.5 | 363.5 | 358.2 | 333.4 | 244.7 |
| 52.5° | 225.2 | 227.0 | 251.8 | 285.5 | 301.5 | 329.9 | 365.3 | 384.8 | 379.5 | 354.7 | 257.1 |
| 55° | 188.0 | 189.8 | 214.6 | 258.9 | 289.1 | 322.8 | 372.4 | 404.3 | 400.8 | 374.2 | 271.3 |
| 57.5° | 149.0 | 152.5 | 175.6 | 221.7 | 267.8 | 305.0 | 374.2 | 422.1 | 420.3 | 395.5 | 283.7 |
| 60° | 115.3 | 118.8 | 136.6 | 186.2 | 244.7 | 290.8 | 365.3 | 432.7 | 436.3 | 413.2 | 292.6 |
| 62.5° | 90.4 | 94.0 | 106.4 | 150.7 | 216.4 | 271.3 | 344.0 | 438.0 | 443.4 | 423.8 | 297.9 |
| 65° | 72.7 | 74.5 | 83.4 | 120.6 | 189.8 | 248.3 | 317.4 | 422.1 | 439.8 | 423.8 | 297.9 |
| 67.5° | 58.5 | 62.1 | 69.2 | 94.0 | 159.6 | 219.9 | 283.7 | 393.7 | 418.5 | 416.8 | 287.3 |
| 70° | 49.7 | 49.7 | 56.7 | 74.5 | 131.2 | 182.7 | 243.0 | 354.7 | 390.2 | 393.7 | 260.7 |
| 72.5° | 40.8 | 40.8 | 46.1 | 60.3 | 106.4 | 145.4 | 200.4 | 305.0 | 345.8 | 358.2 | 227.0 |
| 75° | 35.5 | 35.5 | 39.0 | 49.7 | 83.4 | 111.7 | 152.5 | 244.7 | 282.0 | 303.3 | 186.2 |
| 77.5° | 30.1 | 30.1 | 33.7 | 39.0 | 58.5 | 83.4 | 117.0 | 184.4 | 214.6 | 234.1 | 140.1 |
| 80° | 24.8 | 24.8 | 28.4 | 31.9 | 42.6 | 55.0 | 78.0 | 122.4 | 136.6 | 147.2 | 90.4 |
| 82.5° | 23.1 | 23.1 | 23.1 | 26.6 | 31.9 | 37.2 | 49.7 | 67.4 | 76.3 | 85.1 | 56.7 |
| 85° | 17.7 | 17.7 | 17.7 | 21.3 | 23.1 | 26.6 | 31.9 | 39.0 | 42.6 | 51.4 | 33.7 |
| 87.5° | 10.6 | 10.6 | 10.6 | 12.4 | 14.2 | 16.0 | 17.7 | 19.5 | 21.3 | 24.8 | 14.2 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |



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 CATALOG NUMBER: MEM2-HTN-SA-30-AMB-U-T2U-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 | 122.4 |
| 2.5° | 122.4 | 122.4 | 118.8 | 117.0 | 115.3 | 113.5 | 111.7 | 110.0 | 108.2 | 110.0 | 108.2 |
| 5° | 122.4 | 120.6 | 115.3 | 110.0 | 104.6 | 99.3 | 95.8 | 92.2 | 90.4 | 88.7 | 88.7 |
| 7.5° | 122.4 | 118.8 | 111.7 | 102.9 | 94.0 | 86.9 | 79.8 | 74.5 | 72.7 | 70.9 | 70.9 |
| 10° | 122.4 | 117.0 | 106.4 | 95.8 | 83.4 | 74.5 | 67.4 | 62.1 | 58.5 | 56.7 | 56.7 |
| 12.5° | 124.1 | 117.0 | 102.9 | 86.9 | 72.7 | 63.8 | 55.0 | 49.7 | 47.9 | 46.1 | 46.1 |
| 15° | 124.1 | 117.0 | 99.3 | 79.8 | 63.8 | 53.2 | 46.1 | 42.6 | 40.8 | 39.0 | 39.0 |
| 17.5° | 125.9 | 117.0 | 95.8 | 72.7 | 55.0 | 46.1 | 40.8 | 37.2 | 35.5 | 33.7 | 33.7 |
| 20° | 127.7 | 117.0 | 90.4 | 65.6 | 47.9 | 39.0 | 35.5 | 31.9 | 30.1 | 30.1 | 30.1 |
| 22.5° | 131.2 | 118.8 | 86.9 | 60.3 | 42.6 | 35.5 | 31.9 | 30.1 | 28.4 | 28.4 | 28.4 |
| 25° | 134.8 | 118.8 | 83.4 | 53.2 | 39.0 | 31.9 | 28.4 | 26.6 | 26.6 | 24.8 | 24.8 |
| 27.5° | 136.6 | 120.6 | 79.8 | 47.9 | 33.7 | 28.4 | 26.6 | 24.8 | 24.8 | 24.8 | 24.8 |
| 30° | 141.9 | 122.4 | 78.0 | 44.3 | 31.9 | 26.6 | 24.8 | 23.1 | 23.1 | 23.1 | 23.1 |
| 32.5° | 149.0 | 127.7 | 76.3 | 42.6 | 30.1 | 24.8 | 23.1 | 21.3 | 21.3 | 21.3 | 21.3 |
| 35° | 154.3 | 131.2 | 76.3 | 40.8 | 28.4 | 23.1 | 21.3 | 21.3 | 21.3 | 21.3 | 21.3 |
| 37.5° | 163.2 | 138.3 | 74.5 | 39.0 | 28.4 | 23.1 | 21.3 | 19.5 | 19.5 | 19.5 | 19.5 |
| 40° | 166.7 | 140.1 | 70.9 | 37.2 | 28.4 | 21.3 | 19.5 | 19.5 | 19.5 | 17.7 | 17.7 |
| 42.5° | 175.6 | 145.4 | 69.2 | 37.2 | 26.6 | 21.3 | 17.7 | 17.7 | 17.7 | 17.7 | 17.7 |
| 45° | 188.0 | 154.3 | 69.2 | 37.2 | 26.6 | 21.3 | 17.7 | 16.0 | 16.0 | 16.0 | 16.0 |
| 47.5° | 198.6 | 163.2 | 69.2 | 37.2 | 26.6 | 19.5 | 17.7 | 16.0 | 16.0 | 14.2 | 14.2 |
| 50° | 209.3 | 170.2 | 67.4 | 37.2 | 24.8 | 19.5 | 16.0 | 14.2 | 14.2 | 14.2 | 14.2 |
| 52.5° | 221.7 | 175.6 | 67.4 | 35.5 | 24.8 | 17.7 | 14.2 | 14.2 | 12.4 | 12.4 | 12.4 |
| 55° | 234.1 | 180.9 | 67.4 | 35.5 | 23.1 | 16.0 | 14.2 | 12.4 | 12.4 | 10.6 | 10.6 |
| 57.5° | 243.0 | 186.2 | 65.6 | 33.7 | 21.3 | 16.0 | 12.4 | 12.4 | 10.6 | 10.6 | 10.6 |
| 60° | 250.1 | 189.8 | 62.1 | 28.4 | 17.7 | 14.2 | 12.4 | 10.6 | 8.9 | 8.9 | 8.9 |
| 62.5° | 253.6 | 189.8 | 60.3 | 21.3 | 16.0 | 12.4 | 10.6 | 8.9 | 8.9 | 8.9 | 8.9 |
| 65° | 250.1 | 182.7 | 55.0 | 16.0 | 14.2 | 12.4 | 10.6 | 8.9 | 7.1 | 7.1 | 7.1 |
| 67.5° | 241.2 | 173.8 | 46.1 | 14.2 | 12.4 | 10.6 | 8.9 | 7.1 | 7.1 | 7.1 | 7.1 |
| 70° | 216.4 | 156.1 | 33.7 | 10.6 | 10.6 | 8.9 | 8.9 | 7.1 | 5.3 | 5.3 | 5.3 |
| 72.5° | 189.8 | 131.2 | 23.1 | 8.9 | 8.9 | 7.1 | 7.1 | 5.3 | 5.3 | 5.3 | 5.3 |
| 75° | 150.7 | 99.3 | 16.0 | 7.1 | 7.1 | 7.1 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 |
| 77.5° | 108.2 | 63.8 | 12.4 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 3.5 | 3.5 |
| 80° | 67.4 | 37.2 | 8.9 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 5.3 | 3.5 | 3.5 |
| 82.5° | 39.0 | 21.3 | 7.1 | 3.5 | 3.5 | 3.5 | 5.3 | 5.3 | 5.3 | 3.5 | 3.5 |
| 85° | 19.5 | 10.6 | 5.3 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 | 3.5 |
| 87.5° | 7.1 | 3.5 | 1.8 | 1.8 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 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: SP1-2407-157-1

Test Date: 08/06/2024

Luminaire Tested: MEM2-HTN-SA-45-AMB-U-5WQ-2

Data in this report applies to families of products including MEM2-HTN-SA-45-AMB-U-5WQ-2

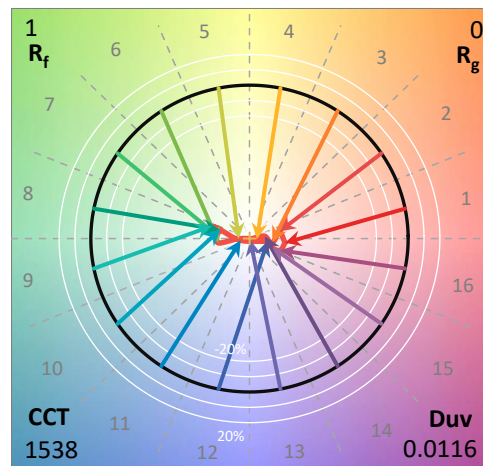
Test Information

Test Method: LM-79-2019
 Report Number: SP1-2407-157-1
 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-45-AMB-U-5WQ-2**
 Description: Epic Modern Light Square 45W 5WQ Optic and Flare Trim AMBER LED

Spectral Parameters

CCT (K): 1538
 CIE u': 0.3530
 CIE v': 0.5469
 Duv: 0.0116
 CIE x: 0.5918
 CIE y: 0.4076
 CIE z: 0.0006
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 592
 Purity: 99.98881
 Rf: 1.1
 Rg: 0

| | | | |
|-----------|--------|------|--------|
| CRI (Ra): | -21.8 | | |
| R1: | -34.3 | R9: | -386.6 |
| R2: | 52.3 | R10: | 28.9 |
| R3: | 17.0 | R11: | -95.5 |
| R4: | -68.4 | R12: | -10.5 |
| R5: | -40.8 | R13: | -15.5 |
| R6: | 41.5 | R14: | 45.9 |
| R7: | -7.2 | R15: | -67.7 |
| R8: | -134.5 | | |



Test Conditions

Stabilization Time: 20M
 Operation Time: 1H 20M
 Sphere Temperature (°C): 24.2

REPORT NUMBER: SP1-2407-157-1

| 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 |

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CIE 1931 Chromaticity Diagram



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



Point lies outside the range

REPORT NUMBER: SP1-2407-157-1

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 | 0 | NR | 620 | 30 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 6 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 3 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 2 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 1 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 0 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 0 | NR | 660 | 0 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 0 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 1 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 3 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 5 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 10 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 19 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 34 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 63 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 113 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 199 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 352 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 614 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 954 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 837 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 417 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 179 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 69 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-1

Scotopic Flux vs. Wavelength



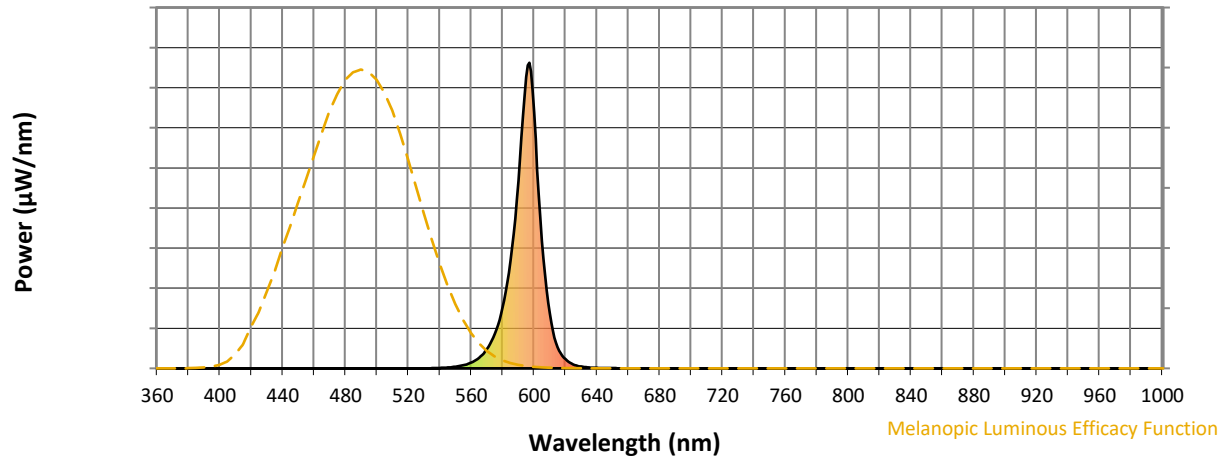
Scotopic Lumens: NR

S/P: 0.22

| 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 | 0 | NR | 620 | 30 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 6 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 3 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 2 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 1 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 0 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 0 | NR | 660 | 0 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 0 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 1 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 3 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 5 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 10 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 19 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 34 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 63 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 113 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 199 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 352 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 614 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 954 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 837 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 417 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 179 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 69 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

REPORT NUMBER: SP1-2407-157-1

Melanopic Flux vs. Wavelength



Melanopic Lumens: NR

M/P: 0.12

| λ (nm) | Power W^{\wedge}/nm | Lumens (ϕ/nm) | λ (nm) | Power W^{\wedge}/nm | Lumens (ϕ/nm) | λ (nm) | Power W^{\wedge}/nm | Lumens (ϕ/nm) | λ (nm) | Power W^{\wedge}/nm | Lumens (ϕ/nm) | λ (nm) | Power W^{\wedge}/nm | Lumens (ϕ/nm) |
|----------------|-----------------------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------|----------------------|----------------|-----------------------|----------------------|
| 360 | 0 | NR | 490 | 0 | NR | 620 | 30 | NR | 750 | 0 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 0 | NR | 625 | 13 | NR | 755 | 0 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 0 | NR | 630 | 6 | NR | 760 | 0 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 0 | NR | 635 | 3 | NR | 765 | 0 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 0 | NR | 640 | 2 | NR | 770 | 0 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 0 | NR | 645 | 1 | NR | 775 | 0 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 0 | NR | 650 | 1 | NR | 780 | 0 | NR | 910 | 0 | NR |
| 395 | 0 | NR | 525 | 0 | NR | 655 | 0 | NR | 785 | 0 | NR | 915 | 0 | NR |
| 400 | 0 | NR | 530 | 0 | NR | 660 | 0 | NR | 790 | 0 | NR | 920 | 0 | NR |
| 405 | 0 | NR | 535 | 1 | NR | 665 | 0 | NR | 795 | 0 | NR | 925 | 0 | NR |
| 410 | 0 | NR | 540 | 1 | NR | 670 | 0 | NR | 800 | 0 | NR | 930 | 0 | NR |
| 415 | 0 | NR | 545 | 3 | NR | 675 | 0 | NR | 805 | 0 | NR | 935 | 0 | NR |
| 420 | 0 | NR | 550 | 5 | NR | 680 | 0 | NR | 810 | 0 | NR | 940 | 0 | NR |
| 425 | 0 | NR | 555 | 10 | NR | 685 | 0 | NR | 815 | 0 | NR | 945 | 0 | NR |
| 430 | 0 | NR | 560 | 19 | NR | 690 | 0 | NR | 820 | 0 | NR | 950 | 0 | NR |
| 435 | 0 | NR | 565 | 34 | NR | 695 | 0 | NR | 825 | 0 | NR | 955 | 0 | NR |
| 440 | 0 | NR | 570 | 63 | NR | 700 | 0 | NR | 830 | 0 | NR | 960 | 0 | NR |
| 445 | 0 | NR | 575 | 113 | NR | 705 | 0 | NR | 835 | 0 | NR | 965 | 0 | NR |
| 450 | 0 | NR | 580 | 199 | NR | 710 | 0 | NR | 840 | 0 | NR | 970 | 0 | NR |
| 455 | 0 | NR | 585 | 352 | NR | 715 | 0 | NR | 845 | 0 | NR | 975 | 0 | NR |
| 460 | 0 | NR | 590 | 614 | NR | 720 | 0 | NR | 850 | 0 | NR | 980 | 0 | NR |
| 465 | 0 | NR | 595 | 954 | NR | 725 | 0 | NR | 855 | 0 | NR | 985 | 0 | NR |
| 470 | 0 | NR | 600 | 837 | NR | 730 | 0 | NR | 860 | 0 | NR | 990 | 0 | NR |
| 475 | 0 | NR | 605 | 417 | NR | 735 | 0 | NR | 865 | 0 | NR | 995 | 0 | NR |
| 480 | 0 | NR | 610 | 179 | NR | 740 | 0 | NR | 870 | 0 | NR | 1000 | 0 | NR |
| 485 | 0 | NR | 615 | 69 | NR | 745 | 0 | NR | 875 | 0 | NR | | | |

Summary

$R_f = 1.1$
 $R_g = 0$
 $CIE R_a = -21.8$
 $R_g = -386.6$

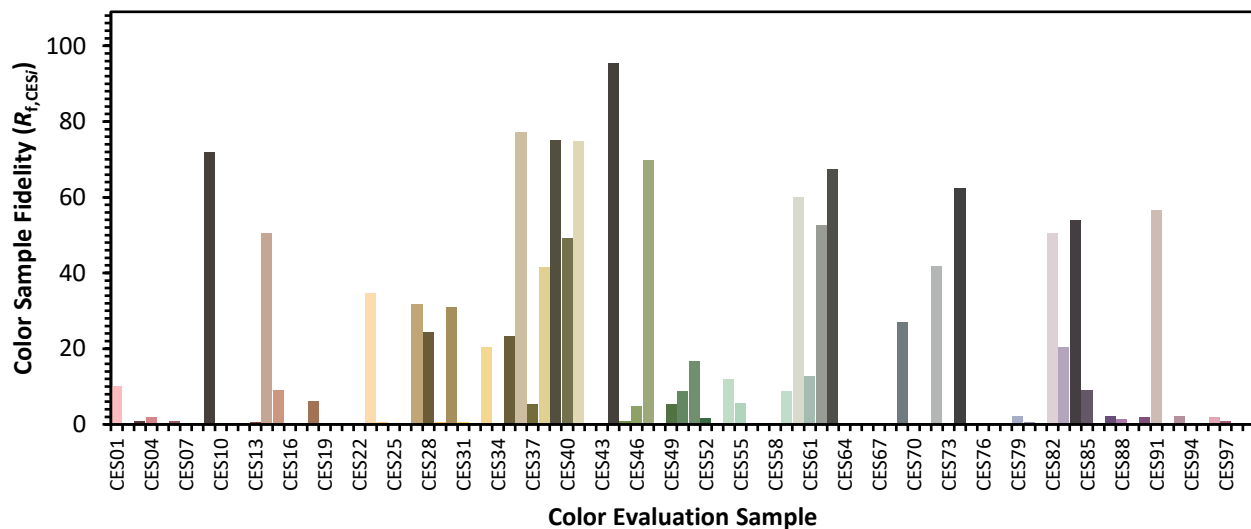


Color Vector Graphics



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

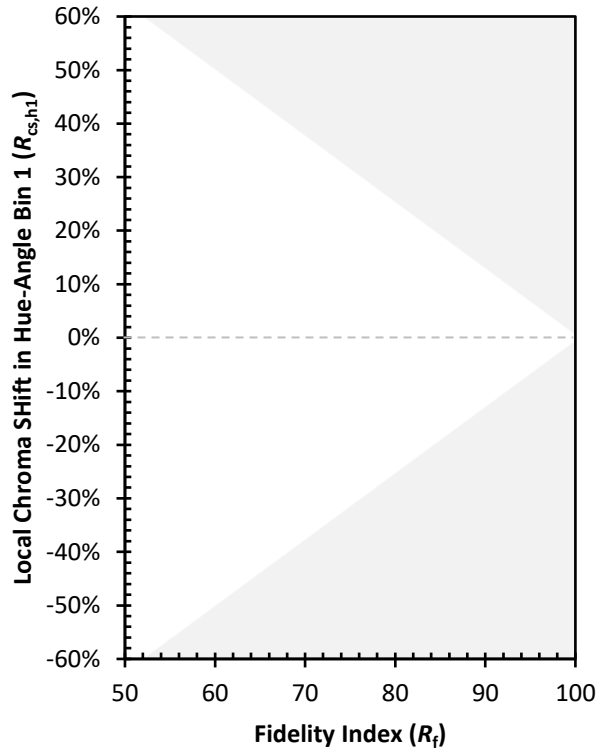
| | | | |
|------------|------------|------------|------------|
| CES01 = 90 | CES26 = 0 | CES51 = 17 | CES76 = 0 |
| CES02 = 70 | CES27 = 32 | CES52 = 2 | CES77 = 0 |
| CES03 = 31 | CES28 = 24 | CES53 = 0 | CES78 = 0 |
| CES04 = 77 | CES29 = 1 | CES54 = 12 | CES79 = 2 |
| CES05 = 52 | CES30 = 31 | CES55 = 6 | CES80 = 1 |
| CES06 = 56 | CES31 = 1 | CES56 = 0 | CES81 = 0 |
| CES07 = 41 | CES32 = 0 | CES57 = 0 | CES82 = 50 |
| CES08 = 38 | CES33 = 21 | CES58 = 0 | CES83 = 21 |
| CES09 = 29 | CES34 = 0 | CES59 = 9 | CES84 = 54 |
| CES10 = 87 | CES35 = 23 | CES60 = 60 | CES85 = 9 |
| CES11 = 70 | CES36 = 77 | CES61 = 13 | CES86 = 0 |
| CES12 = 76 | CES37 = 5 | CES62 = 53 | CES87 = 2 |
| CES13 = 47 | CES38 = 41 | CES63 = 68 | CES88 = 1 |
| CES14 = 77 | CES39 = 75 | CES64 = 0 | CES89 = 0 |
| CES15 = 74 | CES40 = 49 | CES65 = 0 | CES90 = 2 |
| CES16 = 49 | CES41 = 75 | CES66 = 0 | CES91 = 57 |
| CES17 = 56 | CES42 = 0 | CES67 = 0 | CES92 = 0 |
| CES18 = 60 | CES43 = 0 | CES68 = 0 | CES93 = 2 |
| CES19 = 80 | CES44 = 95 | CES69 = 27 | CES94 = 0 |
| CES20 = 71 | CES45 = 1 | CES70 = 0 | CES95 = 0 |
| CES21 = 94 | CES46 = 5 | CES71 = 0 | CES96 = 2 |
| CES22 = 87 | CES47 = 70 | CES72 = 42 | CES97 = 1 |
| CES23 = 94 | CES48 = 0 | CES73 = 0 | CES98 = 0 |
| CES24 = 95 | CES49 = 5 | CES74 = 62 | CES99 = 0 |
| CES25 = 79 | CES50 = 9 | CES75 = 0 | |



Color Rendition by Hue-Angle Bin



Measure Comparisons



(END OF REPORT)