

Classified
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: McGRAW-EDISON

Report Number: P459674

Luminaire Tested: **GLEON-SA1A-AMB-U-SL2-HSS**

Issue Date: 1/6/2021

Test Information

Test Method: LM-79-08
Report Number: P459674
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-2003-697-5)
Test Lab: INNOVATION CENTER
Issue Date: 1/6/2021
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA1A-AMB-U-SL2-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(1) NARROW BAND AMBER, 500mA LIGHTSQUARE WITH 16 LEDS AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 962 lumens
Efficiency: N/A
Efficacy: 42.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B0 - U0 - G1

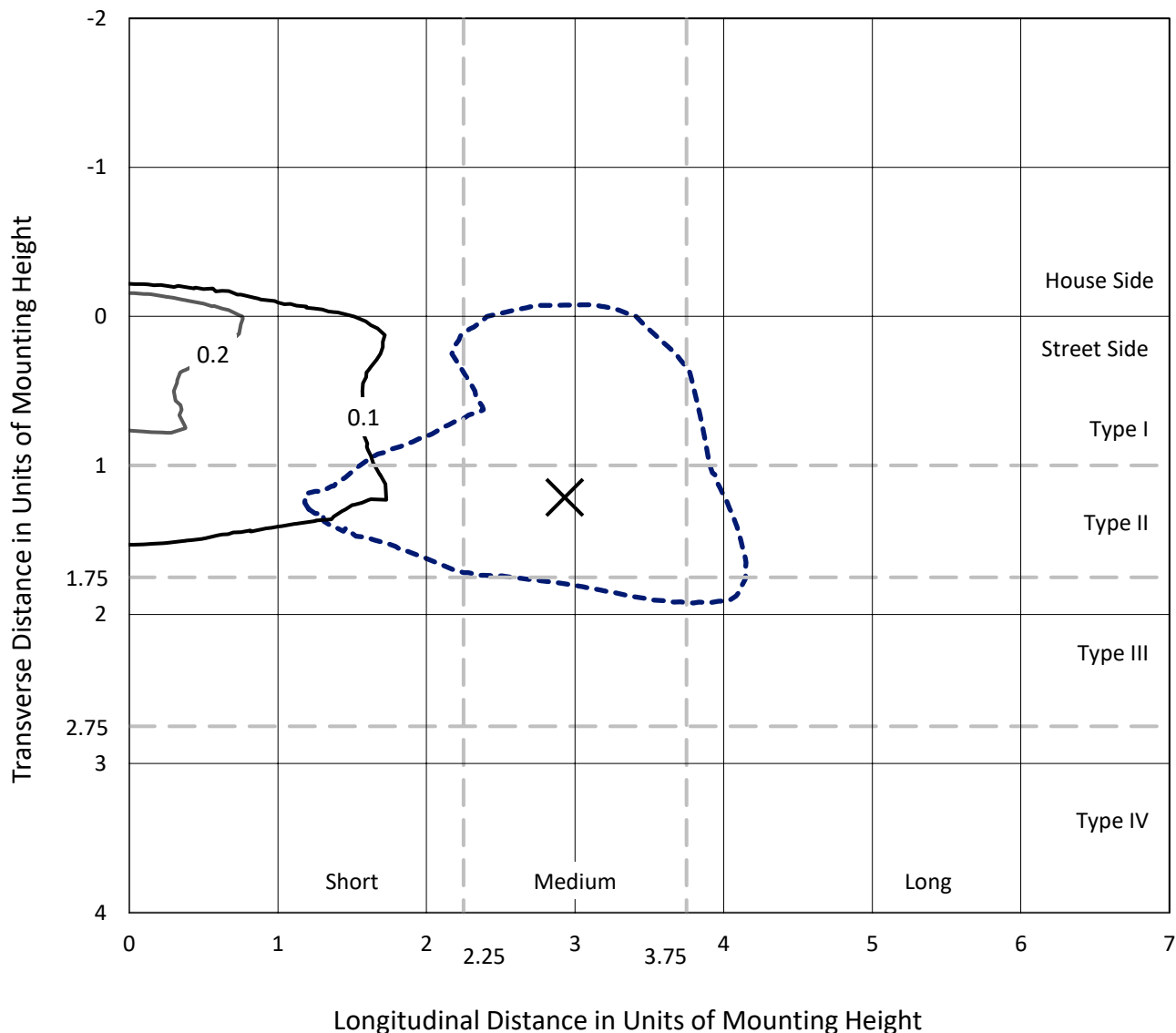
Input Watts (W): 22.6
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

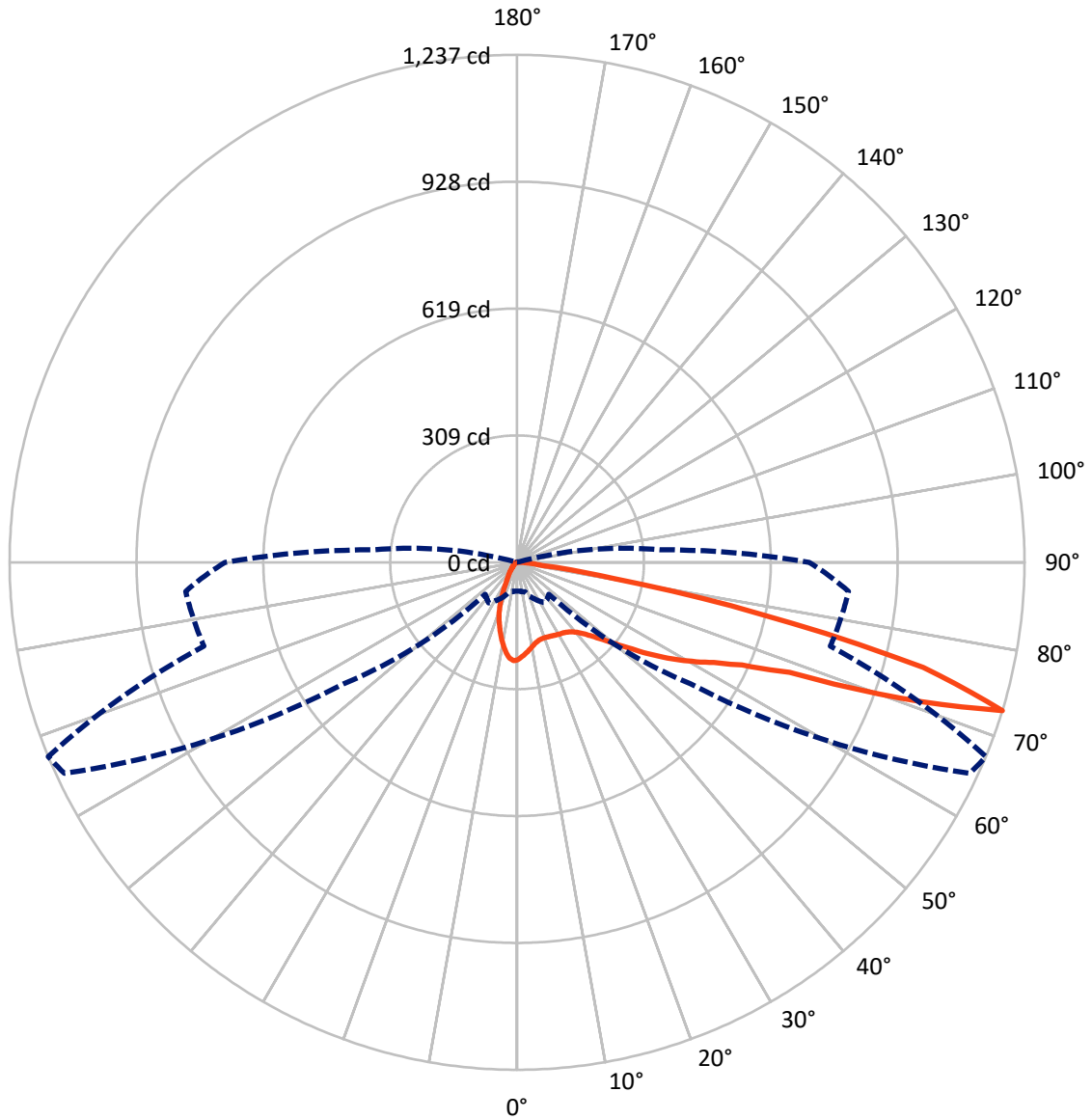
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.4 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 67.5-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical



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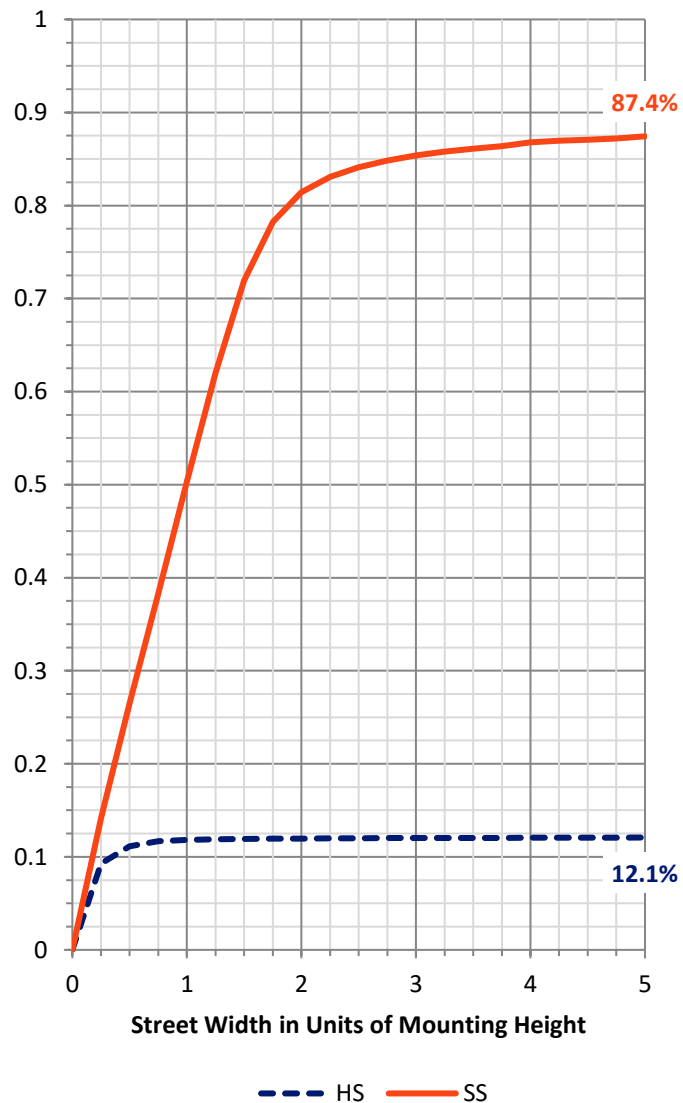
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|-------|
| House Side | Lumens | 117.4 | 0.0 | 117.4 |
| | % Fixture | 12.2 | 0.0 | 12.2 |
| Street Side | Lumens | 844.6 | 0.0 | 844.6 |
| | % Fixture | 87.8 | 0.0 | 87.8 |
| Total | Lumens | 962.0 | 0.0 | 962.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10° | 19.6 | 2.0 |
| 10°-20° | 41.4 | 4.3 |
| 20°-30° | 58.4 | 6.1 |
| 30°-40° | 83.7 | 8.7 |
| 40°-50° | 126.3 | 13.1 |
| 50°-60° | 202.4 | 21.0 |
| 60°-70° | 239.3 | 24.9 |
| 70°-80° | 174.8 | 18.2 |
| 80°-90° | 16.2 | 1.7 |
| 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° | 962.0 | 100.0 |
| 0°-180° | 962.0 | 100.0 |

Coefficient of Utilization

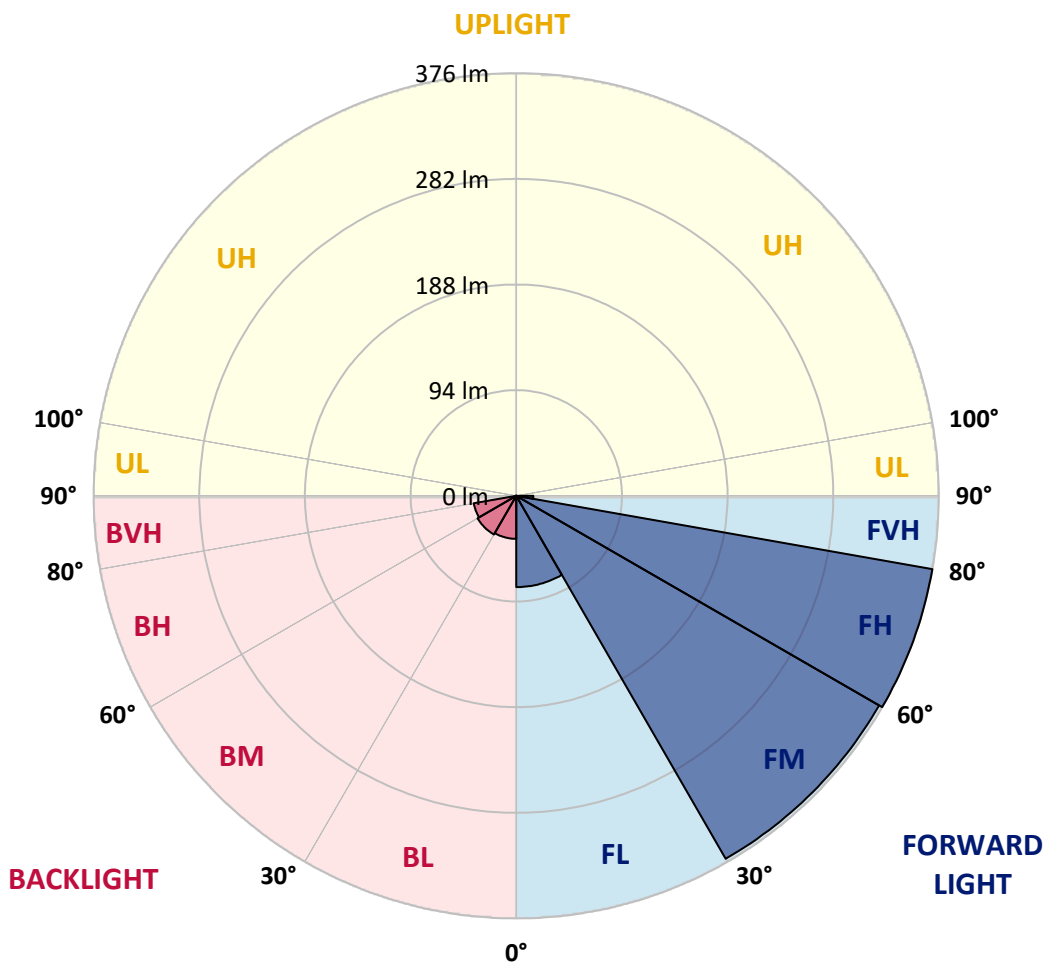


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|--------|
| | | | B | U | G |
| FL (0°-30°) | 81.1 | 8.4 | | | |
| FM (30°-60°) | 372.6 | 38.7 | | | |
| FH (60°-80°) | 375.7 | 39.1 | | | G0/660 |
| FVH (80°-90°) | 15.2 | 1.6 | | | G1/100 |
| BL (0°-30°) | 38.3 | 4.0 | B0/110 | | |
| BM (30°-60°) | 39.7 | 4.1 | B0/220 | | |
| BH (60°-80°) | 38.3 | 4.0 | B0/110 | | G0/110 |
| BVH (80°-90°) | 1.0 | 0.1 | | | 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 III Medium





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CATALOG NUMBER: GLEON-SA1A-AMB-U-SL2-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 65° | 67.5° | 75° | 85° |
|-------|-------|-------|-------|-------|-------|-------|-------|--------|--------|-------|-------|
| 0° | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 |
| 2.5° | 222.9 | 224.0 | 224.0 | 225.6 | 226.1 | 226.6 | 229.8 | 230.9 | 230.3 | 233.5 | 235.6 |
| 5° | 208.1 | 208.1 | 209.1 | 211.8 | 213.9 | 215.5 | 219.2 | 222.4 | 222.9 | 226.6 | 232.4 |
| 7.5° | 195.9 | 197.0 | 197.0 | 198.6 | 201.7 | 204.4 | 209.1 | 214.4 | 215.5 | 220.3 | 227.2 |
| 10° | 186.4 | 185.9 | 187.4 | 189.0 | 191.7 | 194.3 | 199.6 | 205.4 | 207.6 | 212.9 | 220.8 |
| 12.5° | 177.4 | 177.9 | 178.4 | 181.1 | 184.3 | 186.9 | 192.2 | 199.1 | 201.2 | 208.1 | 217.6 |
| 15° | 172.1 | 172.1 | 172.6 | 174.2 | 177.4 | 181.1 | 187.4 | 194.9 | 197.5 | 205.4 | 216.6 |
| 17.5° | 170.5 | 170.5 | 170.0 | 170.5 | 173.1 | 176.8 | 184.3 | 193.3 | 195.9 | 204.4 | 218.1 |
| 20° | 171.0 | 171.0 | 170.0 | 169.4 | 171.0 | 174.7 | 183.2 | 192.7 | 195.9 | 206.0 | 222.4 |
| 22.5° | 174.2 | 173.7 | 172.6 | 171.0 | 171.0 | 174.7 | 183.7 | 193.8 | 197.0 | 208.1 | 226.1 |
| 25° | 182.1 | 180.0 | 179.0 | 175.8 | 173.7 | 175.3 | 184.3 | 195.4 | 198.6 | 209.7 | 231.4 |
| 27.5° | 189.6 | 189.0 | 189.0 | 185.9 | 179.0 | 177.4 | 186.4 | 198.0 | 200.7 | 211.8 | 238.3 |
| 30° | 202.3 | 201.2 | 201.2 | 197.5 | 189.0 | 181.6 | 188.5 | 200.1 | 203.3 | 213.4 | 245.2 |
| 32.5° | 218.1 | 218.7 | 217.6 | 212.9 | 202.3 | 189.6 | 192.2 | 202.8 | 205.4 | 214.4 | 252.0 |
| 35° | 235.6 | 236.2 | 238.8 | 233.5 | 219.7 | 201.7 | 198.0 | 207.6 | 209.1 | 216.6 | 257.3 |
| 37.5° | 249.9 | 249.9 | 256.8 | 257.9 | 240.9 | 216.6 | 207.6 | 215.5 | 215.0 | 219.2 | 262.6 |
| 40° | 265.8 | 265.8 | 273.7 | 280.1 | 267.9 | 236.7 | 219.7 | 225.0 | 224.0 | 225.0 | 270.0 |
| 42.5° | 282.7 | 283.8 | 292.3 | 303.4 | 297.0 | 262.6 | 237.2 | 239.9 | 237.7 | 234.6 | 278.0 |
| 45° | 299.2 | 301.8 | 313.5 | 328.3 | 327.8 | 293.3 | 260.0 | 260.5 | 256.8 | 250.4 | 294.4 |
| 47.5° | 318.2 | 320.3 | 336.8 | 355.3 | 360.1 | 328.3 | 289.1 | 287.0 | 282.2 | 272.2 | 316.6 |
| 50° | 350.5 | 351.6 | 363.2 | 384.9 | 393.9 | 366.9 | 321.9 | 318.2 | 312.9 | 300.2 | 346.8 |
| 52.5° | 389.2 | 388.6 | 393.9 | 416.7 | 441.1 | 411.9 | 364.8 | 359.5 | 351.1 | 334.6 | 383.9 |
| 55° | 406.1 | 407.7 | 415.6 | 443.2 | 490.3 | 477.6 | 413.0 | 405.6 | 396.6 | 375.4 | 422.0 |
| 57.5° | 376.5 | 376.5 | 392.4 | 435.8 | 517.8 | 564.4 | 467.0 | 455.4 | 444.2 | 417.2 | 465.4 |
| 60° | 301.3 | 300.7 | 319.8 | 372.2 | 497.2 | 640.2 | 542.2 | 507.3 | 490.3 | 454.3 | 508.8 |
| 62.5° | 211.3 | 207.0 | 215.5 | 259.4 | 407.2 | 641.2 | 682.5 | 561.3 | 538.5 | 492.4 | 554.9 |
| 65° | 151.4 | 148.8 | 150.4 | 162.6 | 233.5 | 579.8 | 837.7 | 643.3 | 602.6 | 532.7 | 610.5 |
| 67.5° | 123.9 | 120.7 | 120.2 | 135.0 | 134.5 | 383.9 | 884.2 | 805.4 | 716.4 | 591.4 | 673.5 |
| 70° | 99.0 | 97.4 | 96.9 | 118.1 | 124.4 | 125.0 | 824.4 | 1151.6 | 993.9 | 678.8 | 757.7 |
| 72.5° | 70.4 | 70.4 | 74.7 | 98.0 | 120.7 | 109.6 | 515.7 | 1217.8 | 1237.4 | 790.5 | 811.2 |
| 75° | 42.4 | 41.8 | 52.4 | 77.8 | 116.5 | 105.9 | 159.4 | 1005.0 | 1023.0 | 740.2 | 627.4 |
| 77.5° | 20.1 | 20.1 | 29.1 | 52.4 | 103.3 | 99.5 | 91.1 | 601.0 | 605.2 | 449.5 | 318.2 |
| 80° | 7.9 | 7.9 | 12.7 | 32.3 | 78.4 | 98.5 | 84.7 | 247.8 | 238.8 | 123.9 | 43.9 |
| 82.5° | 3.2 | 3.2 | 5.3 | 18.0 | 48.7 | 81.0 | 75.2 | 82.1 | 61.4 | 14.3 | 11.6 |
| 85° | 0.5 | 1.1 | 2.1 | 10.6 | 27.5 | 42.9 | 60.9 | 50.8 | 32.3 | 8.5 | 8.5 |
| 87.5° | 0.0 | 0.5 | 1.1 | 3.2 | 7.9 | 18.0 | 30.7 | 23.3 | 14.8 | 2.6 | 3.7 |
| 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: P459674

CATALOG NUMBER: GLEON-SA1A-AMB-U-SL2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| 0° | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 | 237.7 |
| 2.5° | 236.2 | 237.2 | 239.3 | 240.4 | 240.9 | 238.8 | 238.8 | 236.7 | 236.2 | 236.2 | 236.2 |
| 5° | 233.5 | 235.6 | 237.2 | 233.5 | 227.7 | 220.3 | 211.8 | 206.5 | 201.2 | 202.3 | 200.1 |
| 7.5° | 230.3 | 233.0 | 230.9 | 218.7 | 203.9 | 190.1 | 175.3 | 166.8 | 156.7 | 155.7 | 153.0 |
| 10° | 225.6 | 228.2 | 220.3 | 199.1 | 176.3 | 156.2 | 134.5 | 121.3 | 110.7 | 102.2 | 100.1 |
| 12.5° | 224.5 | 226.1 | 207.6 | 178.4 | 148.8 | 120.2 | 92.1 | 67.2 | 52.4 | 45.0 | 45.0 |
| 15° | 225.0 | 225.0 | 195.9 | 157.8 | 119.1 | 79.4 | 44.5 | 32.3 | 27.0 | 26.5 | 25.9 |
| 17.5° | 227.7 | 224.5 | 184.3 | 137.7 | 87.4 | 41.3 | 26.5 | 24.4 | 23.3 | 23.3 | 23.3 |
| 20° | 232.4 | 224.5 | 174.2 | 116.5 | 55.1 | 25.9 | 22.8 | 21.7 | 21.2 | 20.7 | 20.7 |
| 22.5° | 237.2 | 222.4 | 161.5 | 92.1 | 31.8 | 21.7 | 20.1 | 19.6 | 18.5 | 18.0 | 18.0 |
| 25° | 242.5 | 220.3 | 149.3 | 66.2 | 22.2 | 19.1 | 17.5 | 16.4 | 15.4 | 14.8 | 14.8 |
| 27.5° | 247.3 | 218.1 | 135.0 | 41.8 | 19.6 | 16.9 | 15.4 | 13.8 | 12.2 | 11.6 | 11.6 |
| 30° | 250.4 | 214.4 | 121.3 | 26.5 | 17.5 | 15.4 | 13.2 | 11.1 | 9.5 | 9.0 | 9.0 |
| 32.5° | 251.0 | 209.7 | 104.3 | 19.6 | 15.9 | 13.2 | 10.6 | 9.0 | 7.9 | 7.4 | 7.4 |
| 35° | 249.4 | 203.9 | 85.8 | 17.5 | 14.3 | 11.6 | 9.0 | 7.4 | 6.4 | 6.4 | 6.4 |
| 37.5° | 247.3 | 198.0 | 66.7 | 15.9 | 12.7 | 10.1 | 7.4 | 6.4 | 5.8 | 5.3 | 5.3 |
| 40° | 246.7 | 192.2 | 44.5 | 14.8 | 11.6 | 8.5 | 6.4 | 5.3 | 4.8 | 4.2 | 4.2 |
| 42.5° | 248.3 | 188.0 | 31.2 | 13.8 | 10.1 | 7.4 | 5.8 | 4.8 | 3.7 | 3.7 | 3.2 |
| 45° | 256.3 | 186.9 | 22.8 | 12.7 | 9.0 | 6.4 | 4.8 | 3.7 | 3.2 | 2.6 | 2.6 |
| 47.5° | 269.5 | 189.0 | 18.5 | 11.6 | 7.9 | 5.3 | 4.2 | 3.2 | 2.6 | 2.1 | 2.1 |
| 50° | 288.6 | 197.0 | 16.9 | 10.6 | 6.4 | 4.8 | 3.2 | 2.6 | 2.1 | 2.1 | 2.1 |
| 52.5° | 318.2 | 209.7 | 15.9 | 9.5 | 5.3 | 3.7 | 2.6 | 2.1 | 1.6 | 1.6 | 1.6 |
| 55° | 350.0 | 224.5 | 15.4 | 8.5 | 4.8 | 3.2 | 2.1 | 1.6 | 1.6 | 1.1 | 1.1 |
| 57.5° | 386.5 | 244.1 | 14.3 | 7.4 | 4.2 | 3.2 | 2.1 | 1.6 | 1.1 | 1.1 | 1.1 |
| 60° | 432.6 | 270.6 | 12.7 | 6.4 | 3.7 | 2.6 | 1.6 | 1.1 | 1.1 | 1.1 | 1.1 |
| 62.5° | 480.2 | 298.1 | 11.1 | 5.3 | 3.2 | 2.1 | 1.6 | 1.1 | 1.1 | 1.1 | 1.1 |
| 65° | 538.5 | 329.9 | 9.5 | 4.2 | 2.6 | 2.1 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 67.5° | 608.9 | 362.2 | 7.4 | 3.7 | 2.6 | 1.6 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 70° | 698.9 | 403.5 | 6.4 | 3.2 | 2.1 | 1.6 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 72.5° | 712.7 | 348.4 | 5.3 | 3.2 | 2.1 | 1.6 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 75° | 487.1 | 166.3 | 4.8 | 2.6 | 2.1 | 2.1 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 77.5° | 212.3 | 39.2 | 4.2 | 2.6 | 2.1 | 2.1 | 2.1 | 1.6 | 1.1 | 0.5 | 0.5 |
| 80° | 24.9 | 7.4 | 3.7 | 2.6 | 2.1 | 2.6 | 2.1 | 1.6 | 1.1 | 0.5 | 0.5 |
| 82.5° | 10.1 | 4.8 | 3.7 | 3.2 | 2.6 | 2.1 | 2.1 | 1.6 | 1.1 | 0.5 | 0.5 |
| 85° | 7.4 | 3.7 | 3.7 | 3.7 | 2.6 | 1.6 | 1.6 | 1.1 | 1.1 | 0.5 | 0.5 |
| 87.5° | 3.7 | 1.6 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 0.5 | 0.5 | 0.5 | 0.5 |
| 90° | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

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



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

Report Prepared for

Cooper Lighting Solutions

STREETWORKS

Report Number: SP1-2005-791-1-R5

Test Date: 05/26/2020

Luminaire Tested: Light Squares Family Amber Color

Data in this report applies to families of products including Light Squares Family Amber Color

Test Information

Test Method: LM-79-2019
 Report Number: SP1-2005-791-1-R5
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 02/07/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: STREETWORKS
 Catalog Number: **Light Squares Family Amber Color**
 Description: Light Squares Family Amber Color

Spectral Parameters

CCT (K): 1525
 CIE u': 0.3546
 CIE v': 0.5459
 Duv: 0.0116
 CIE x: 0.5918
 CIE y: 0.4049
 CIE z: 0.0033
 Peak Wavelength (nm): 597
 Dominant Wavelength (nm): 593
 Purity: 99.6
 Rf: 8.4
 Rg: 12.9

| | | | |
|-----------|--------|------|--------|
| CRI (Ra): | -20.7 | | |
| R1: | -32.5 | R9: | -382.8 |
| R2: | 55.0 | R10: | 34.9 |
| R3: | 15.4 | R11: | -92.4 |
| R4: | -67.7 | R12: | 2.7 |
| R5: | -38.7 | R13: | -12.7 |
| R6: | 47.4 | R14: | 45.0 |
| R7: | -9.2 | | |
| R8: | -135.0 | | |

Test Conditions
 Stabilization Time: 65M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.6/42%
 Sphere Temperature (°C): 25.2

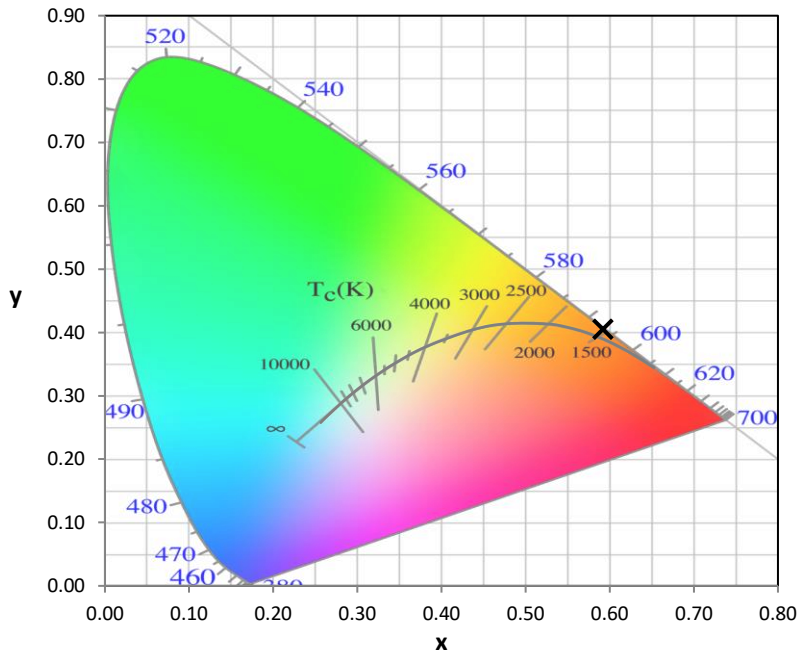


REPORT NUMBER: SP1-2005-791-1-R5

| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | 76INCH SPHERE IN0058 | 1/17/2020 | 7/17/2020 |
| Power Meter | XITRON 2801 IN0071 | 12/3/2019 | 12/3/2020 |
| AC Power Source | CHROMA 61603 IN0063 | 12/3/2019 | 12/3/2020 |
| DC Power Source | AGILENT E3634A IN0208 | 12/3/2019 | 12/3/2020 |
| Sphere Thermometer | ONSET IN0085 | 12/3/2019 | 12/3/2020 |
| Room Thermometer | ONSET IN0046 | 12/3/2019 | 12/3/2020 |

REPORT NUMBER: SP1-2005-791-1-R5

CIE 1931 Chromaticity Diagram



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



Point lies outside the range

REPORT NUMBER: SP1-2005-791-1-R5

Photopic Flux vs. Wavelength



#####

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

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Scotopic Flux vs. Wavelength



Scotopic Lumens: 939.9

S/P: 0.23

| λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) | λ (nm) | Power (µW/nm) | Lumens (φ/nm) |
|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|--------|---------------|---------------|
| 360 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

REPORT NUMBER: SP1-2005-791-1-R5

Melanopic Flux vs. Wavelength



Melanopic Lumens: 115.1 M/P: 0.03

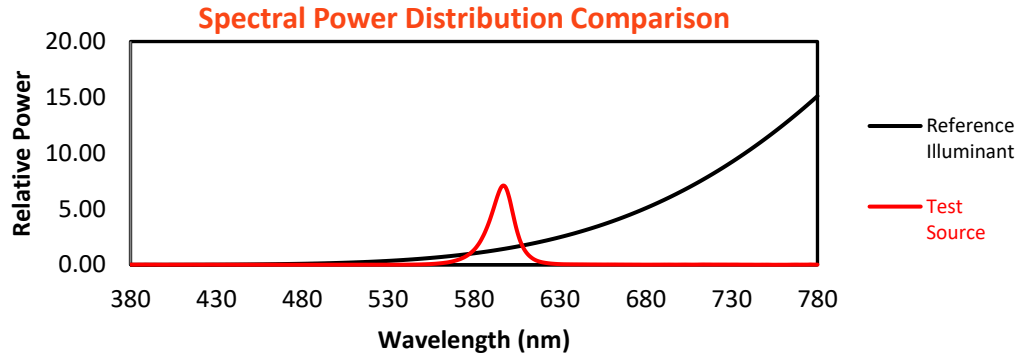
| λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) | λ (nm) | Power ($\mu\text{W}/\text{nm}$) | Lumens (ϕ/nm) |
|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|-------------------|--------------------------------------|--------------------------------|
| 360 | 818 | NR | 490 | 224 | NR | 620 | 13485 | NR | 750 | 666 | NR | 880 | 467 | NR |
| 365 | 765 | NR | 495 | 377 | NR | 625 | 6667 | NR | 755 | 63 | NR | 885 | 232 | NR |
| 370 | 529 | NR | 500 | 342 | NR | 630 | 3617 | NR | 760 | 170 | NR | 890 | 396 | NR |
| 375 | 859 | NR | 505 | 327 | NR | 635 | 2624 | NR | 765 | 772 | NR | 895 | 250 | NR |
| 380 | 838 | NR | 510 | 403 | NR | 640 | 2321 | NR | 770 | 684 | NR | 900 | 194 | NR |
| 385 | 931 | NR | 515 | 396 | NR | 645 | 2019 | NR | 775 | 1108 | NR | 905 | 303 | NR |
| 390 | 814 | NR | 520 | 478 | NR | 650 | 1694 | NR | 780 | 562 | NR | 910 | 335 | NR |
| 395 | 695 | NR | 525 | 468 | NR | 655 | 1437 | NR | 785 | 582 | NR | 915 | 255 | NR |
| 400 | 338 | NR | 530 | 527 | NR | 660 | 1541 | NR | 790 | 675 | NR | 920 | 182 | NR |
| 405 | 555 | NR | 535 | 574 | NR | 665 | 1318 | NR | 795 | 578 | NR | 925 | 228 | NR |
| 410 | 491 | NR | 540 | 823 | NR | 670 | 1092 | NR | 800 | 147 | NR | 930 | 239 | NR |
| 415 | 563 | NR | 545 | 1340 | NR | 675 | 936 | NR | 805 | 559 | NR | 935 | 148 | NR |
| 420 | 360 | NR | 550 | 2313 | NR | 680 | 727 | NR | 810 | 727 | NR | 940 | 308 | NR |
| 425 | 598 | NR | 555 | 4294 | NR | 685 | 833 | NR | 815 | 444 | NR | 945 | 313 | NR |
| 430 | 464 | NR | 560 | 8017 | NR | 690 | 1005 | NR | 820 | 479 | NR | 950 | 345 | NR |
| 435 | 440 | NR | 565 | 14123 | NR | 695 | 1012 | NR | 825 | 224 | NR | 955 | 229 | NR |
| 440 | 368 | NR | 570 | 25560 | NR | 700 | 962 | NR | 830 | 333 | NR | 960 | 363 | NR |
| 445 | 428 | NR | 575 | 45938 | NR | 705 | 994 | NR | 835 | 379 | NR | 965 | 412 | NR |
| 450 | 279 | NR | 580 | 84007 | NR | 710 | 1014 | NR | 840 | 285 | NR | 970 | 272 | NR |
| 455 | 407 | NR | 585 | 155807 | NR | 715 | 1458 | NR | 845 | 333 | NR | 975 | 345 | NR |
| 460 | 365 | NR | 590 | 275552 | NR | 720 | 1076 | NR | 850 | 385 | NR | 980 | 449 | NR |
| 465 | 328 | NR | 595 | 421402 | NR | 725 | 1113 | NR | 855 | 558 | NR | 985 | 501 | NR |
| 470 | 249 | NR | 600 | 396839 | NR | 730 | 1144 | NR | 860 | 663 | NR | 990 | 343 | NR |
| 475 | 277 | NR | 605 | 193475 | NR | 735 | 799 | NR | 865 | 591 | NR | 995 | 152 | NR |
| 480 | 229 | NR | 610 | 75719 | NR | 740 | 692 | NR | 870 | 2634 | NR | 1000 | 132 | NR |
| 485 | 185 | NR | 615 | 30466 | NR | 745 | 414 | NR | 875 | 2146 | NR | | | |

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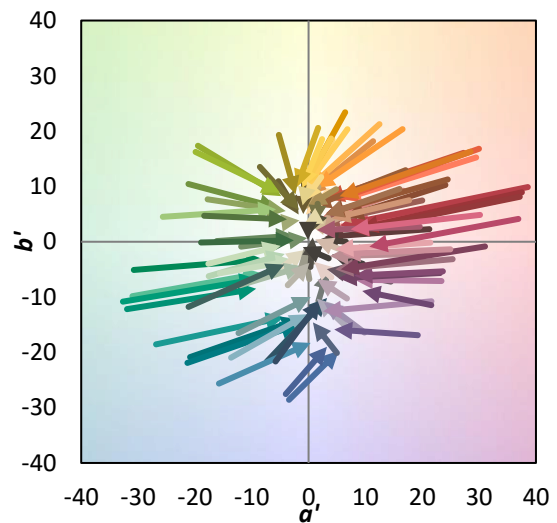
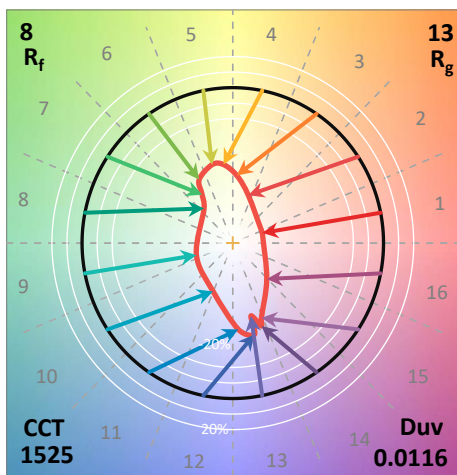
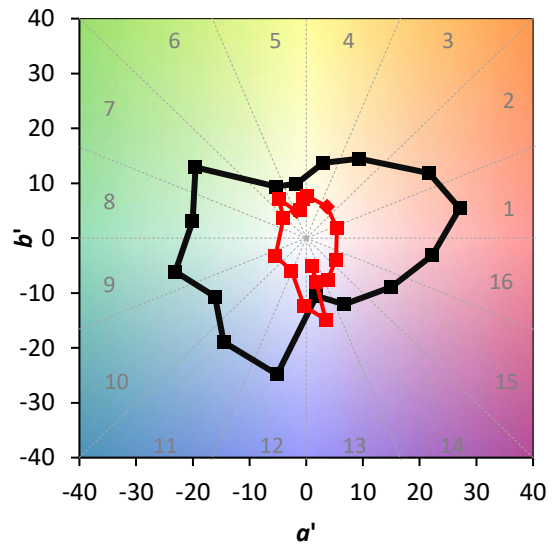
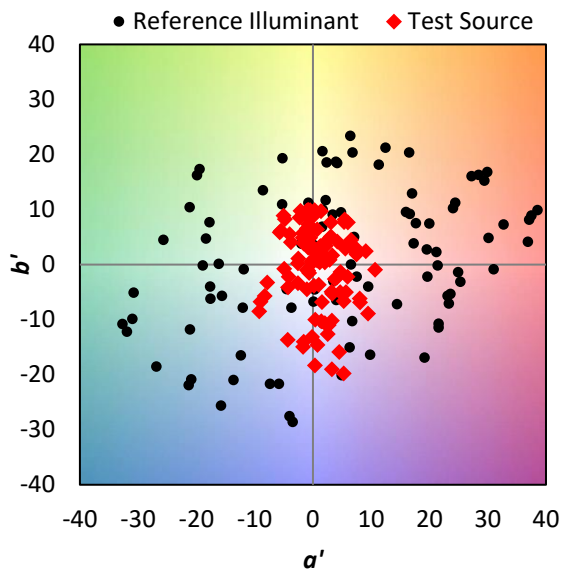
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Summary

$R_f = 8.4$
 $R_g = 12.9$
 CIE $R_a = -20.7$
 $R_9 = -382.8$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 90 | CES26 = 15 | CES51 = 20 | CES76 = 12 |
| CES02 = 69 | CES27 = 67 | CES52 = 2 | CES77 = 33 |
| CES03 = 31 | CES28 = 58 | CES53 = 0 | CES78 = 19 |
| CES04 = 77 | CES29 = 32 | CES54 = 14 | CES79 = 47 |
| CES05 = 52 | CES30 = 61 | CES55 = 10 | CES80 = 37 |
| CES06 = 56 | CES31 = 36 | CES56 = 0 | CES81 = 4 |
| CES07 = 41 | CES32 = 24 | CES57 = 0 | CES82 = 72 |
| CES08 = 38 | CES33 = 64 | CES58 = 0 | CES83 = 58 |
| CES09 = 29 | CES34 = 25 | CES59 = 13 | CES84 = 61 |
| CES10 = 87 | CES35 = 53 | CES60 = 67 | CES85 = 21 |
| CES11 = 70 | CES36 = 88 | CES61 = 22 | CES86 = 0 |
| CES12 = 75 | CES37 = 31 | CES62 = 61 | CES87 = 17 |
| CES13 = 47 | CES38 = 86 | CES63 = 62 | CES88 = 5 |
| CES14 = 76 | CES39 = 88 | CES64 = 0 | CES89 = 1 |
| CES15 = 74 | CES40 = 74 | CES65 = 1 | CES90 = 5 |
| CES16 = 49 | CES41 = 91 | CES66 = 0 | CES91 = 54 |
| CES17 = 55 | CES42 = 2 | CES67 = 0 | CES92 = 0 |
| CES18 = 59 | CES43 = 3 | CES68 = 7 | CES93 = 3 |
| CES19 = 80 | CES44 = 98 | CES69 = 57 | CES94 = 0 |
| CES20 = 71 | CES45 = 3 | CES70 = 3 | CES95 = 0 |
| CES21 = 94 | CES46 = 11 | CES71 = 5 | CES96 = 2 |
| CES22 = 86 | CES47 = 83 | CES72 = 62 | CES97 = 1 |
| CES23 = 93 | CES48 = 0 | CES73 = 1 | CES98 = 0 |
| CES24 = 95 | CES49 = 7 | CES74 = 66 | CES99 = 0 |
| CES25 = 78 | CES50 = 10 | CES75 = 12 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)