

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: McGRAW-EDISON

Report Number: P323177

Luminaire Tested: **GLEON-SA3D-730-U-SL2-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P323177
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1903-205-21)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: McGRAW-EDISON
Catalog Number: GLEON-SA3D-730-U-SL2-HSS
Description: GALLEON AREA AND ROADWAY LUMINAIRE
(3) 70 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH 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: 17868 lumens
Efficiency: N/A
Efficacy: 93.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium
BUG Rating: B2 - U0 - G3

Input Watts (W): 191
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: 24 FT

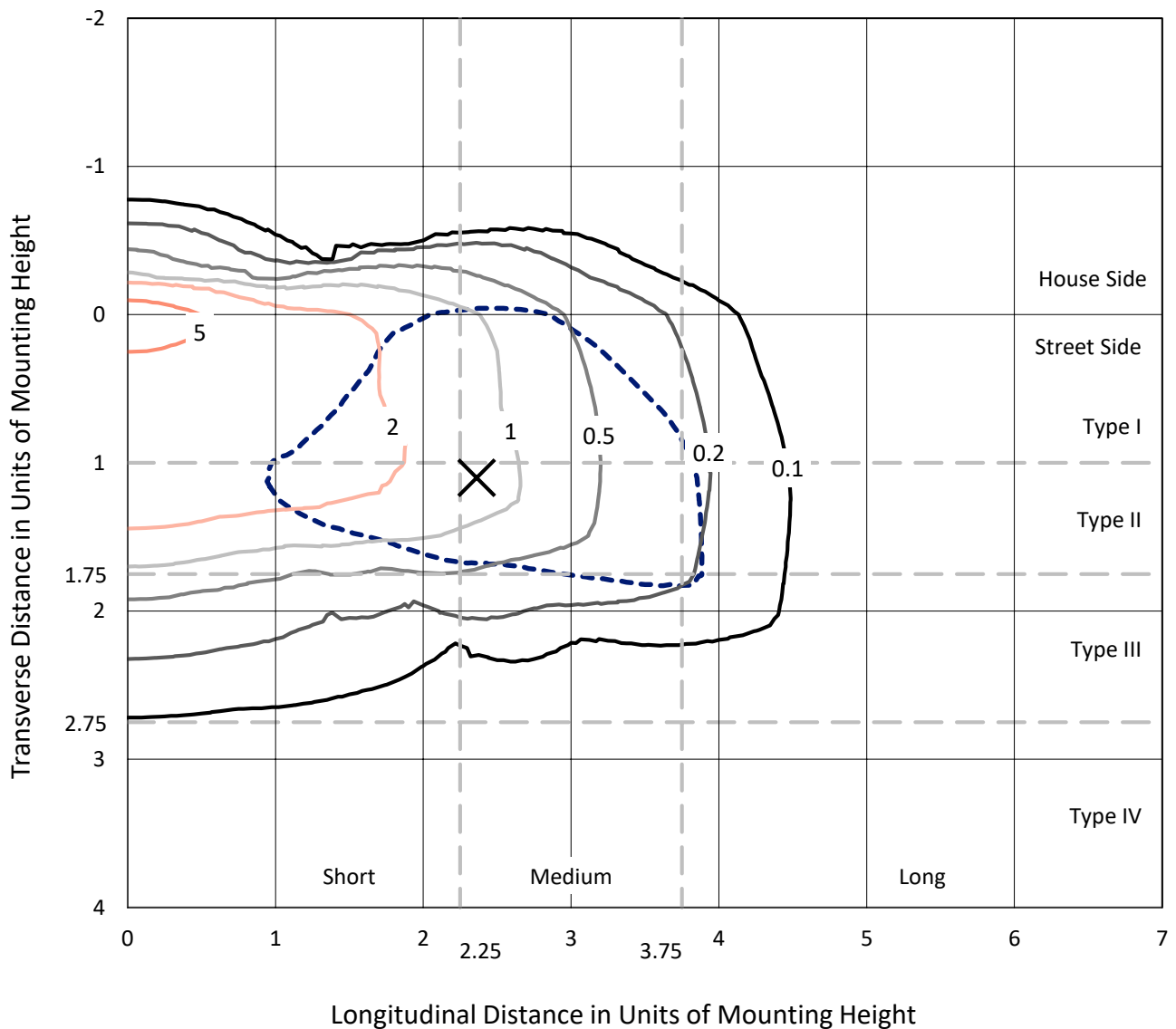




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Iso-Footcandle Lines of Horizontal Illumination

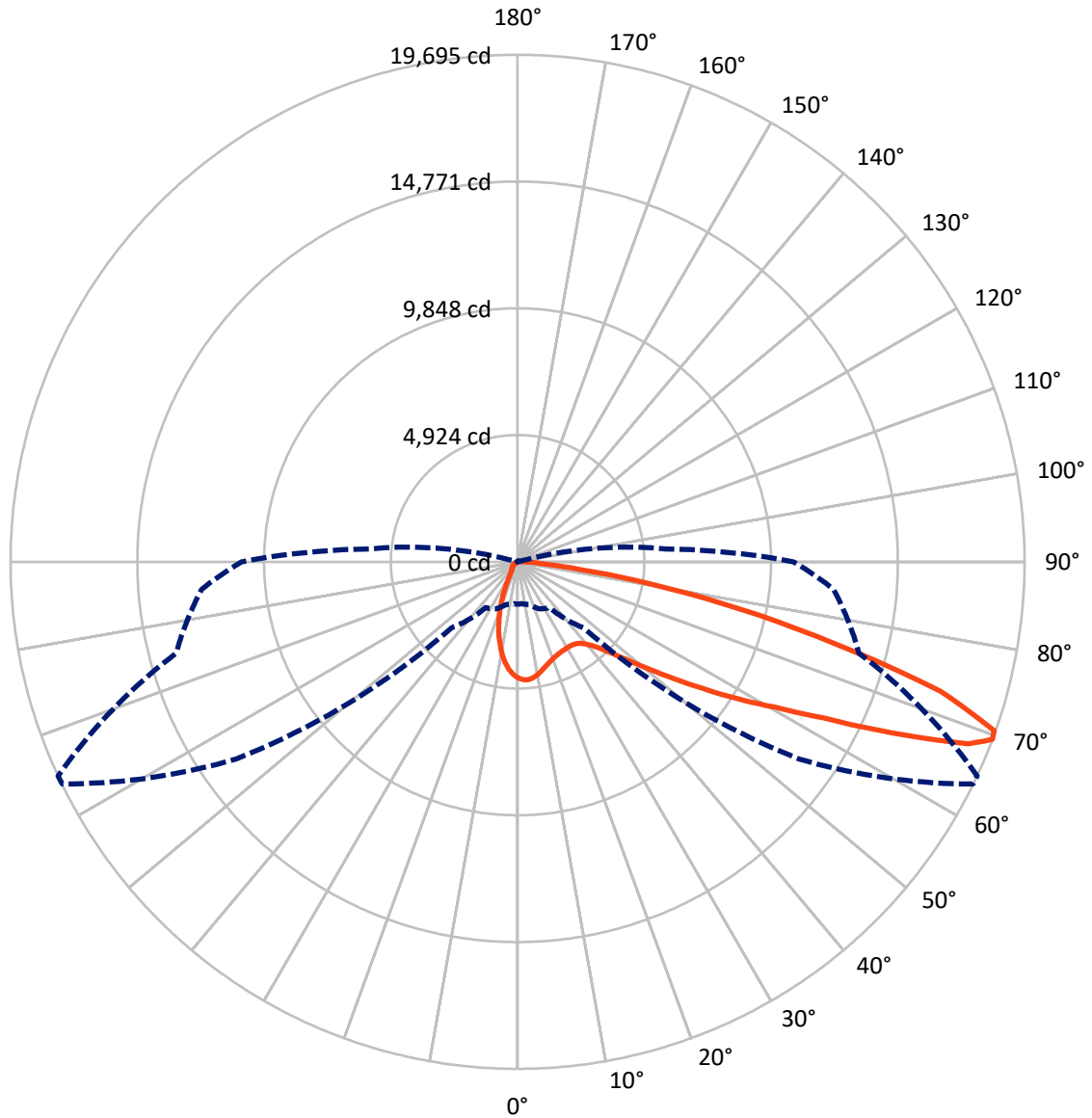
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.2 fc
 Type III - Medium - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 65-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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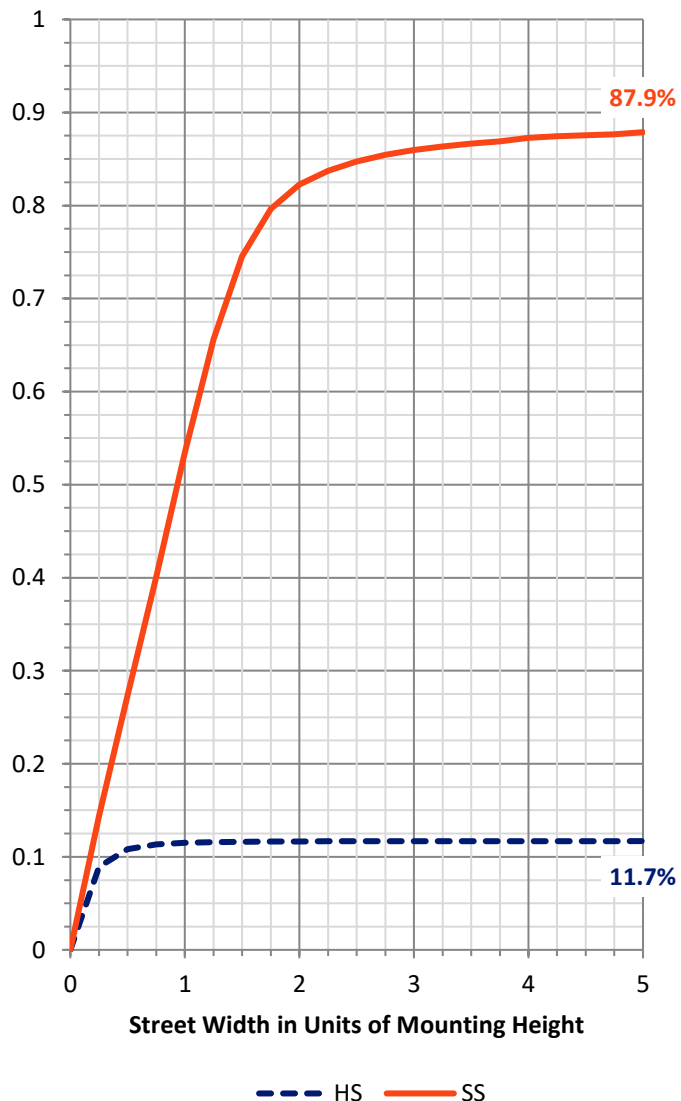
FLUX DISTRIBUTION:

| | | Downward | Upward | Total |
|--------------------|-----------|----------|--------|---------|
| House Side | Lumens | 2106.2 | 0.0 | 2106.2 |
| | % Fixture | 11.8 | 0.0 | 11.8 |
| Street Side | Lumens | 15761.8 | 0.0 | 15761.8 |
| | % Fixture | 88.2 | 0.0 | 88.2 |
| Total | Lumens | 17868.0 | 0.0 | 17868.0 |
| | % Fixture | 100.0 | 0.0 | 100.0 |

ZONAL LUMENS:

| Zone | Lumens | % Fixture |
|-----------|---------|-----------|
| 0°-10° | 377.6 | 2.1 |
| 10°-20° | 826.5 | 4.6 |
| 20°-30° | 1144.8 | 6.4 |
| 30°-40° | 1596.2 | 8.9 |
| 40°-50° | 2481.0 | 13.9 |
| 50°-60° | 3982.9 | 22.3 |
| 60°-70° | 4505.3 | 25.2 |
| 70°-80° | 2646.0 | 14.8 |
| 80°-90° | 307.8 | 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° | 17868.0 | 100.0 |
| 0°-180° | 17868.0 | 100.0 |

Coefficient of Utilization

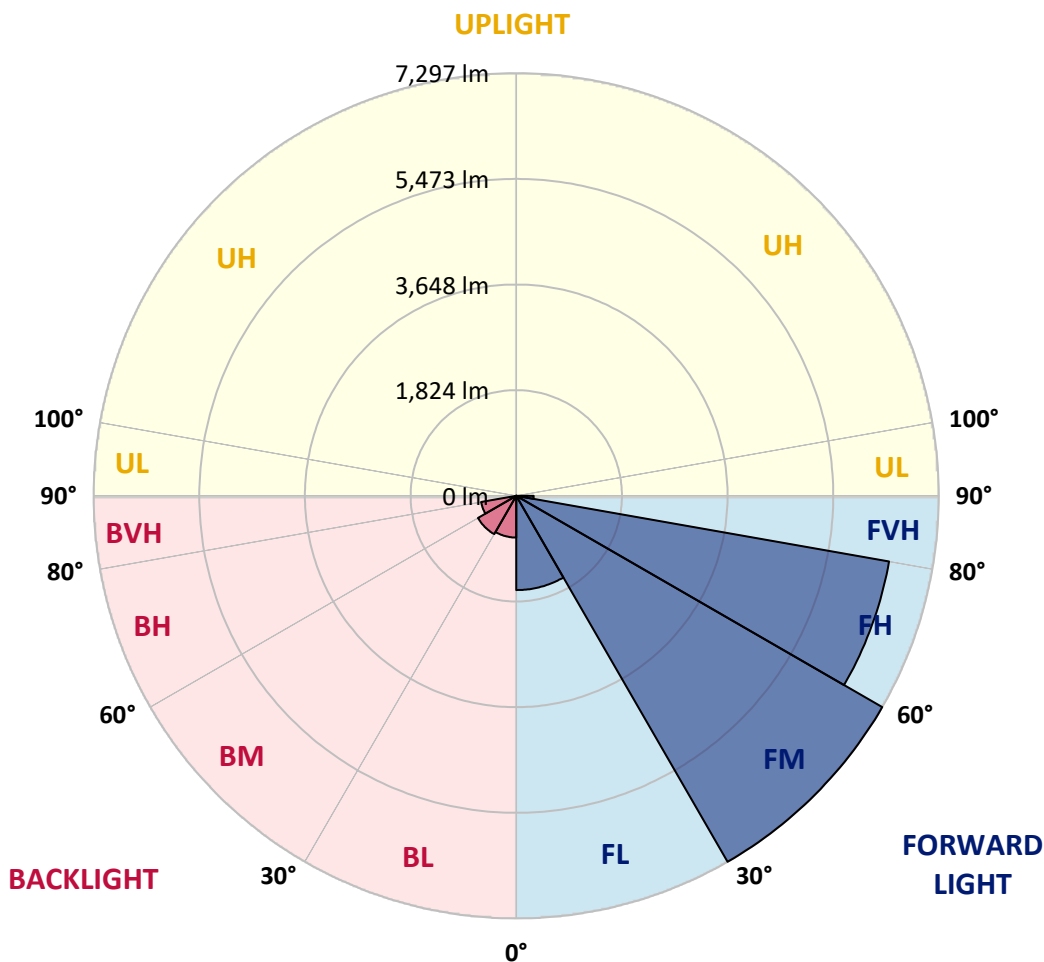


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | Lumens | % Fixture | Zone Rating/Lumen Limit | | |
|----------------|--------|-----------|-------------------------|------|---------|
| | | | B | U | G |
| FL (0°-30°) | 1628.2 | 9.1 | | | |
| FM (30°-60°) | 7296.8 | 40.8 | | | |
| FH (60°-80°) | 6535.9 | 36.6 | | | G3/7500 |
| FVH (80°-90°) | 300.9 | 1.7 | | | G3/500 |
| BL (0°-30°) | 720.7 | 4.0 | B2/1000 | | |
| BM (30°-60°) | 763.2 | 4.3 | B1/1000 | | |
| BH (60°-80°) | 615.4 | 3.4 | B2/1000 | | G2/1000 |
| BVH (80°-90°) | 6.9 | 0.0 | | | G0/10 |
| UL (90°-100°) | 0.0 | 0.0 | | U0/0 | |
| UH (100°-180°) | 0.0 | 0.0 | | U0/0 | |

BUG Rating: B2-U0-G3
 Type III Medium





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CATALOG NUMBER: GLEON-SA3D-730-U-SL2-HSS

CANDELA DISTRIBUTION (FULL):

| | 0° | 5° | 15° | 25° | 35° | 45° | 55° | 64° | 65° | 75° | 85° |
|-------|--------|--------|--------|--------|--------|---------|---------|---------|---------|---------|---------|
| 0° | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 |
| 2.5° | 4555.3 | 4544.0 | 4553.1 | 4572.7 | 4582.6 | 4582.6 | 4590.1 | 4581.1 | 4584.1 | 4562.2 | 4530.4 |
| 5° | 4270.3 | 4252.9 | 4277.9 | 4333.1 | 4401.1 | 4459.3 | 4545.5 | 4590.9 | 4595.4 | 4596.2 | 4559.1 |
| 7.5° | 3963.3 | 3947.5 | 3984.5 | 4049.5 | 4137.2 | 4245.4 | 4395.8 | 4527.4 | 4534.9 | 4606.0 | 4578.8 |
| 10° | 3713.8 | 3702.5 | 3745.6 | 3815.2 | 3918.0 | 4038.9 | 4223.4 | 4406.4 | 4428.3 | 4585.6 | 4575.8 |
| 12.5° | 3515.7 | 3506.7 | 3547.5 | 3627.6 | 3732.7 | 3866.6 | 4059.4 | 4271.8 | 4301.3 | 4539.5 | 4560.6 |
| 15° | 3371.3 | 3369.8 | 3403.8 | 3481.0 | 3597.4 | 3722.2 | 3919.5 | 4147.1 | 4181.1 | 4489.6 | 4558.4 |
| 17.5° | 3295.7 | 3298.0 | 3322.9 | 3388.7 | 3488.5 | 3612.5 | 3801.5 | 4042.0 | 4079.0 | 4445.0 | 4569.7 |
| 20° | 3288.2 | 3290.4 | 3304.0 | 3341.1 | 3422.0 | 3531.6 | 3705.5 | 3953.5 | 3992.1 | 4411.7 | 4587.9 |
| 22.5° | 3354.7 | 3353.2 | 3357.0 | 3353.2 | 3398.6 | 3481.7 | 3642.0 | 3885.5 | 3930.1 | 4389.8 | 4602.2 |
| 25° | 3482.5 | 3480.2 | 3478.7 | 3450.7 | 3420.5 | 3465.1 | 3615.5 | 3846.9 | 3889.2 | 4373.9 | 4610.5 |
| 27.5° | 3660.2 | 3658.6 | 3656.4 | 3610.3 | 3519.5 | 3491.6 | 3618.6 | 3832.5 | 3868.1 | 4361.0 | 4609.0 |
| 30° | 3893.8 | 3904.4 | 3901.3 | 3837.1 | 3695.7 | 3572.5 | 3650.3 | 3825.0 | 3856.0 | 4336.1 | 4593.2 |
| 32.5° | 4168.2 | 4189.4 | 4206.0 | 4137.2 | 3960.3 | 3732.7 | 3723.7 | 3833.3 | 3856.0 | 4317.2 | 4564.4 |
| 35° | 4453.3 | 4480.5 | 4541.7 | 4517.5 | 4284.7 | 3973.9 | 3849.9 | 3883.2 | 3902.1 | 4327.8 | 4550.8 |
| 37.5° | 4733.8 | 4766.3 | 4899.4 | 4969.7 | 4709.6 | 4293.0 | 4046.5 | 4006.4 | 4016.3 | 4392.0 | 4565.9 |
| 40° | 5059.6 | 5108.8 | 5310.7 | 5424.1 | 5216.9 | 4720.2 | 4340.6 | 4218.1 | 4221.9 | 4533.4 | 4636.2 |
| 42.5° | 5487.6 | 5538.2 | 5756.7 | 5934.4 | 5788.5 | 5260.0 | 4739.8 | 4541.7 | 4538.0 | 4798.0 | 4801.8 |
| 45° | 6009.3 | 6062.2 | 6288.3 | 6485.6 | 6419.8 | 5899.6 | 5250.9 | 5014.3 | 5009.7 | 5215.4 | 5115.6 |
| 47.5° | 6600.5 | 6652.7 | 6854.6 | 7058.0 | 7129.0 | 6646.6 | 5901.9 | 5659.2 | 5648.6 | 5795.3 | 5600.2 |
| 50° | 7107.9 | 7141.9 | 7327.9 | 7601.6 | 7922.1 | 7564.5 | 6711.7 | 6478.0 | 6466.7 | 6565.7 | 6311.7 |
| 52.5° | 7292.3 | 7312.0 | 7501.0 | 7884.3 | 8684.3 | 8807.5 | 7775.5 | 7474.5 | 7466.2 | 7509.3 | 7259.1 |
| 55° | 6918.8 | 6954.4 | 7186.5 | 7755.1 | 9097.1 | 10212.3 | 9118.3 | 8708.5 | 8645.7 | 8552.7 | 8249.5 |
| 57.5° | 5901.2 | 5957.9 | 6207.4 | 6963.4 | 8904.3 | 11326.7 | 11091.6 | 10104.2 | 10011.9 | 9443.4 | 9054.7 |
| 60° | 4421.5 | 4491.1 | 4698.2 | 5514.0 | 7875.3 | 11723.7 | 13247.9 | 11659.4 | 11451.5 | 10152.6 | 9794.9 |
| 62.5° | 3034.1 | 3068.9 | 3209.5 | 3741.1 | 5799.8 | 11073.5 | 15051.9 | 13742.4 | 13362.9 | 10923.8 | 10595.6 |
| 65° | 2317.4 | 2329.5 | 2386.9 | 2569.9 | 3453.7 | 8995.0 | 15769.4 | 16490.7 | 16031.8 | 11846.2 | 11426.5 |
| 67.5° | 1867.5 | 1857.7 | 1937.1 | 2198.7 | 2312.8 | 5487.6 | 14932.5 | 19090.9 | 18876.1 | 13079.3 | 12262.8 |
| 69° | 1646.7 | 1633.1 | 1714.0 | 2018.0 | 2172.2 | 3627.6 | 13349.2 | 19681.4 | 19695.0 | 13730.3 | 12320.2 |
| 70° | 1481.9 | 1491.0 | 1571.1 | 1910.6 | 2124.6 | 2847.4 | 11837.1 | 19530.9 | 19638.3 | 13973.8 | 11975.5 |
| 72.5° | 989.7 | 1013.9 | 1174.9 | 1586.2 | 2042.9 | 2154.8 | 7147.2 | 16759.9 | 17172.7 | 13425.6 | 10274.3 |
| 75° | 558.0 | 576.1 | 767.4 | 1196.1 | 1925.0 | 2052.0 | 3775.1 | 12347.4 | 12746.7 | 11226.9 | 7922.9 |
| 77.5° | 273.7 | 283.5 | 434.0 | 772.0 | 1609.7 | 1955.2 | 2141.2 | 8387.1 | 8843.0 | 7327.9 | 4481.3 |
| 80° | 115.7 | 121.0 | 217.0 | 476.3 | 1150.7 | 1866.0 | 1590.0 | 5161.7 | 5218.4 | 2870.8 | 1193.8 |
| 82.5° | 44.6 | 46.1 | 91.5 | 297.1 | 731.1 | 1454.7 | 1329.9 | 2447.4 | 2388.4 | 540.6 | 272.2 |
| 85° | 5.3 | 6.0 | 33.3 | 178.4 | 406.8 | 748.5 | 1080.4 | 1054.7 | 976.1 | 107.4 | 139.9 |
| 87.5° | 0.0 | 0.0 | 2.3 | 54.4 | 121.0 | 350.8 | 561.8 | 437.8 | 394.7 | 34.8 | 72.6 |
| 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: P323177

CATALOG NUMBER: GLEON-SA3D-730-U-SL2-HSS

CANDELA DISTRIBUTION (continued):

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|-------|---------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0° | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 | 4515.3 |
| 2.5° | 4503.9 | 4496.4 | 4455.5 | 4396.6 | 4340.6 | 4271.1 | 4204.5 | 4164.5 | 4132.7 | 4111.5 | 4136.5 |
| 5° | 4516.0 | 4482.8 | 4358.8 | 4200.0 | 4044.2 | 3868.8 | 3705.5 | 3567.2 | 3512.7 | 3452.2 | 3479.5 |
| 7.5° | 4512.3 | 4449.5 | 4226.5 | 3943.7 | 3657.9 | 3362.3 | 3082.5 | 2867.0 | 2755.1 | 2645.5 | 2673.5 |
| 10° | 4493.3 | 4387.5 | 4049.5 | 3630.7 | 3202.7 | 2777.8 | 2380.9 | 2079.2 | 1910.6 | 1757.9 | 1779.8 |
| 12.5° | 4451.8 | 4304.3 | 3840.9 | 3272.3 | 2699.9 | 2139.7 | 1674.7 | 1288.4 | 1081.2 | 989.7 | 1001.0 |
| 15° | 4426.8 | 4223.4 | 3620.1 | 2909.4 | 2163.1 | 1490.2 | 1023.7 | 761.4 | 666.9 | 636.6 | 640.4 |
| 17.5° | 4414.7 | 4145.6 | 3391.7 | 2494.3 | 1614.2 | 948.9 | 661.6 | 583.7 | 563.3 | 558.0 | 559.5 |
| 20° | 4402.6 | 4066.9 | 3156.6 | 2083.7 | 1112.2 | 638.1 | 543.6 | 520.9 | 513.4 | 506.6 | 508.1 |
| 22.5° | 4382.2 | 3991.3 | 2904.1 | 1667.9 | 750.0 | 517.9 | 489.9 | 468.0 | 452.1 | 443.8 | 445.3 |
| 25° | 4357.3 | 3911.9 | 2646.3 | 1242.2 | 547.4 | 462.0 | 435.5 | 404.5 | 385.6 | 370.5 | 371.2 |
| 27.5° | 4317.2 | 3814.4 | 2380.1 | 904.3 | 459.7 | 413.6 | 378.0 | 344.0 | 312.3 | 294.9 | 294.9 |
| 30° | 4261.2 | 3704.0 | 2084.5 | 647.2 | 412.1 | 365.9 | 322.8 | 280.5 | 246.5 | 230.6 | 229.1 |
| 32.5° | 4199.2 | 3589.1 | 1785.8 | 490.7 | 374.3 | 321.3 | 272.2 | 227.6 | 197.3 | 184.5 | 183.7 |
| 35° | 4146.3 | 3465.1 | 1488.0 | 411.3 | 336.5 | 278.2 | 224.6 | 186.8 | 162.6 | 152.0 | 151.2 |
| 37.5° | 4112.3 | 3341.1 | 1197.6 | 367.5 | 302.4 | 238.2 | 188.3 | 154.2 | 136.8 | 128.5 | 127.8 |
| 40° | 4107.0 | 3248.9 | 932.2 | 334.2 | 270.7 | 202.6 | 157.3 | 130.8 | 114.9 | 105.9 | 105.1 |
| 42.5° | 4175.8 | 3195.9 | 715.2 | 306.2 | 238.2 | 171.6 | 133.8 | 111.9 | 95.3 | 86.2 | 85.4 |
| 45° | 4356.5 | 3212.6 | 550.4 | 281.3 | 205.7 | 145.2 | 113.4 | 93.0 | 77.9 | 71.1 | 69.6 |
| 47.5° | 4686.1 | 3327.5 | 437.8 | 256.3 | 174.7 | 123.2 | 96.8 | 77.1 | 64.3 | 57.5 | 56.7 |
| 50° | 5272.9 | 3597.4 | 365.9 | 229.1 | 145.9 | 105.1 | 80.1 | 62.8 | 52.2 | 46.1 | 45.4 |
| 52.5° | 6051.6 | 4078.3 | 326.6 | 202.6 | 121.0 | 89.2 | 65.8 | 49.9 | 40.8 | 36.3 | 35.5 |
| 55° | 6910.5 | 4660.4 | 300.9 | 173.9 | 99.0 | 74.1 | 52.2 | 39.3 | 31.8 | 28.0 | 26.5 |
| 57.5° | 7749.0 | 5164.7 | 276.7 | 145.9 | 82.4 | 60.5 | 41.6 | 31.0 | 25.0 | 21.2 | 20.4 |
| 60° | 8519.4 | 5628.2 | 248.7 | 117.2 | 67.3 | 47.6 | 32.5 | 24.2 | 19.7 | 15.9 | 15.9 |
| 62.5° | 9344.3 | 5986.6 | 210.2 | 91.5 | 55.2 | 36.3 | 26.5 | 21.9 | 15.9 | 13.6 | 12.9 |
| 65° | 10218.3 | 6252.7 | 164.8 | 71.1 | 43.1 | 27.2 | 21.9 | 22.7 | 12.9 | 9.8 | 9.1 |
| 67.5° | 10864.0 | 6199.8 | 121.7 | 55.9 | 33.3 | 21.2 | 21.2 | 24.2 | 11.3 | 7.6 | 6.8 |
| 69° | 10721.9 | 5769.6 | 102.1 | 48.4 | 28.7 | 18.1 | 19.7 | 24.2 | 10.6 | 6.8 | 6.0 |
| 70° | 10309.8 | 5293.3 | 90.0 | 43.1 | 25.7 | 16.6 | 18.9 | 23.4 | 9.8 | 6.8 | 6.0 |
| 72.5° | 8586.0 | 3986.8 | 70.3 | 32.5 | 20.4 | 13.6 | 15.9 | 20.4 | 9.8 | 6.8 | 5.3 |
| 75° | 6458.4 | 2551.8 | 53.7 | 23.4 | 15.1 | 10.6 | 12.1 | 15.1 | 9.8 | 6.0 | 5.3 |
| 77.5° | 3514.2 | 920.1 | 38.6 | 15.9 | 10.6 | 8.3 | 8.3 | 11.3 | 9.1 | 4.5 | 3.0 |
| 80° | 903.5 | 231.4 | 24.2 | 10.6 | 8.3 | 6.0 | 5.3 | 7.6 | 5.3 | 0.8 | 0.0 |
| 82.5° | 223.0 | 52.2 | 12.9 | 7.6 | 6.0 | 2.3 | 2.3 | 3.8 | 2.3 | 0.0 | 0.0 |
| 85° | 122.5 | 25.7 | 8.3 | 5.3 | 3.0 | 0.0 | 0.0 | 0.8 | 0.0 | 0.0 | 0.0 |
| 87.5° | 62.8 | 7.6 | 2.3 | 1.5 | 0.8 | 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 |

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



LM-79-2008: Approved Method: Electrical and Photometric Measurements of Solid-
State Lighting Products

Report Prepared for

Cooper Lighting Solutions

McGRAW-EDISON

Report Number: SP1-1908-441-2-R4

Test Date: 10/03/2019

Luminaire Tested: SA1C-730-U-5WQ

Data in this report applies to families of products SA1C-730-U-5WQ .

Test Information

Test Method: LM-79-2008
 Report Number: SP1-1908-441-2-R4
 Test Lab: COOPER LIGHTING SOLUTIONS
 Photometer: SP1 - 76IN SPHERE
 Measurement Geometry: 4π
 Issue Date: 10/28/2024
 Manufacturer: COOPER LIGHTING SOLUTIONS
 Product Line: McGRAW-EDISON
 Catalog Number: **SA1C-730-U-5WQ**
 Description: McGRAW EDISON ROADWAY AND AREA LUMINAIRE

THIS IS A REVISION OF SP1-1908-441-2-R3. TO UPDATE THE CATALOG INFORMATION.TESTED IN SITU. (1) 70 CRI, 3000K, 1050MA LIGHTSQUARE WITH 16 LEDS AND TYPE V WIDE OPTICS.

Spectral Parameters

| | | | | | |
|---------------------------|--------|-----------|------|------|-------|
| CCT (K): | 2993 | CRI (Ra): | 71.8 | R9: | -38.3 |
| CIE u': | 0.2508 | R1: | 67.5 | R10: | 62.5 |
| CIE v': | 0.5215 | R2: | 82.9 | R11: | 63.7 |
| Duv: | 0.0000 | R3: | 94.7 | R12: | 57.8 |
| CIE x: | 0.4374 | R4: | 67.7 | R13: | 70.4 |
| CIE y: | 0.4043 | R5: | 67.9 | R14: | 97.3 |
| CIE z: | 0.1583 | R6: | 77.6 | | |
| Peak Wavelength (nm): | 593 | R7: | 76.0 | | |
| Dominant Wavelength (nm): | 582 | R8: | 40.5 | | |
| Purity: | 53 | | | | |
| Rf: | 75.7 | | | | |
| Rg: | 93.9 | | | | |



Test Conditions

Stabilization Time: 53M
 Operation Time: 12H
 Room Temperature (°C) / RH%: 25.0./44%
 Sphere Temperature (°C): 25.7

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| Measurement and Test Equipment | | | |
|--------------------------------|-----------------------|------------------|----------------------|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/28/2019 | 12/28/2019 |
| Power Meter | IN0071 | 12/5/2018 | 12/5/2019 |
| AC Power Source | IN0063 | 12/5/2018 | 12/5/2019 |
| DC Power Source | IN0208 | 12/5/2018 | 12/5/2019 |
| Sphere Thermometer | IN0085 | 12/5/2018 | 12/5/2019 |
| Room Thermometer | IN0046 | 12/5/2018 | 12/5/2019 |

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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

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Photopic Flux vs. Wavelength



#####

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Scotopic Flux vs. Wavelength



Scotopic Lumens: 8494.8

S/P: 1.23

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

REPORT NUMBER: SP1-1908-441-2-R4

Melanopic Flux vs. Wavelength



Melanopic Lumens: 3101.5 M/P: 0.45

| 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 | 2397 | NR | 490 | 24908 | NR | 620 | 118784 | NR | 750 | 5037 | NR | 880 | 2677 | NR |
| 365 | 2084 | NR | 495 | 30998 | NR | 625 | 108951 | NR | 755 | 4413 | NR | 885 | 2940 | NR |
| 370 | 2143 | NR | 500 | 37103 | NR | 630 | 99573 | NR | 760 | 4189 | NR | 890 | 3116 | NR |
| 375 | 2413 | NR | 505 | 42987 | NR | 635 | 90444 | NR | 765 | 3677 | NR | 895 | 3345 | NR |
| 380 | 2172 | NR | 510 | 48702 | NR | 640 | 80749 | NR | 770 | 3366 | NR | 900 | 2312 | NR |
| 385 | 1997 | NR | 515 | 53741 | NR | 645 | 71664 | NR | 775 | 3211 | NR | 905 | 2829 | NR |
| 390 | 1830 | NR | 520 | 57283 | NR | 650 | 63936 | NR | 780 | 2682 | NR | 910 | 2783 | NR |
| 395 | 1861 | NR | 525 | 61876 | NR | 655 | 56611 | NR | 785 | 2804 | NR | 915 | 2662 | NR |
| 400 | 1717 | NR | 530 | 65398 | NR | 660 | 49763 | NR | 790 | 2581 | NR | 920 | 3047 | NR |
| 405 | 1761 | NR | 535 | 69597 | NR | 665 | 42891 | NR | 795 | 2711 | NR | 925 | 2256 | NR |
| 410 | 2680 | NR | 540 | 74214 | NR | 670 | 36939 | NR | 800 | 2609 | NR | 930 | 2976 | NR |
| 415 | 4374 | NR | 545 | 79911 | NR | 675 | 31946 | NR | 805 | 2581 | NR | 935 | 3503 | NR |
| 420 | 8071 | NR | 550 | 86153 | NR | 680 | 27385 | NR | 810 | 2404 | NR | 940 | 4226 | NR |
| 425 | 15169 | NR | 555 | 93952 | NR | 685 | 23504 | NR | 815 | 2556 | NR | 945 | 2930 | NR |
| 430 | 26038 | NR | 560 | 102904 | NR | 690 | 20210 | NR | 820 | 2742 | NR | 950 | 2115 | NR |
| 435 | 41316 | NR | 565 | 112009 | NR | 695 | 17459 | NR | 825 | 2014 | NR | 955 | 2634 | NR |
| 440 | 59674 | NR | 570 | 121662 | NR | 700 | 15207 | NR | 830 | 2488 | NR | 960 | 4200 | NR |
| 445 | 72751 | NR | 575 | 130476 | NR | 705 | 13322 | NR | 835 | 2625 | NR | 965 | 1982 | NR |
| 450 | 65091 | NR | 580 | 137926 | NR | 710 | 11676 | NR | 840 | 2754 | NR | 970 | 3613 | NR |
| 455 | 44894 | NR | 585 | 143406 | NR | 715 | 10626 | NR | 845 | 2708 | NR | 975 | 4034 | NR |
| 460 | 32712 | NR | 590 | 147039 | NR | 720 | 9416 | NR | 850 | 2608 | NR | 980 | 3922 | NR |
| 465 | 25296 | NR | 595 | 147365 | NR | 725 | 8333 | NR | 855 | 2605 | NR | 985 | 1909 | NR |
| 470 | 19318 | NR | 600 | 145800 | NR | 730 | 7134 | NR | 860 | 1765 | NR | 990 | 3617 | NR |
| 475 | 17265 | NR | 605 | 141363 | NR | 735 | 6437 | NR | 865 | 2581 | NR | 995 | 4767 | NR |
| 480 | 18260 | NR | 610 | 134199 | NR | 740 | 5834 | NR | 870 | 3016 | NR | 1000 | 2528 | NR |
| 485 | 20845 | NR | 615 | 127683 | NR | 745 | 5500 | NR | 875 | 3952 | NR | | | |

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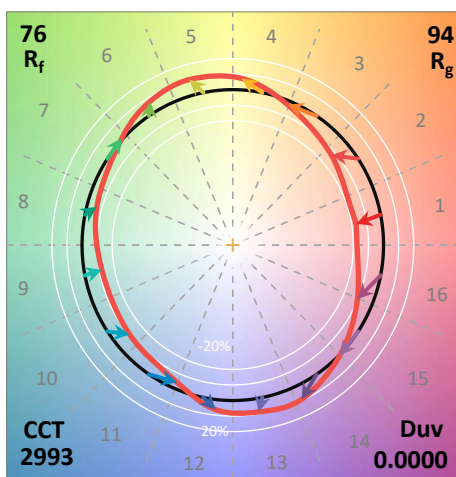
TM-30-18

Summary

$R_f = 75.7$
 $R_g = 93.9$
CIE $R_a = 71.8$
 $R_9 = -38.3$



Color Vector Graphics



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

| | | | |
|------------|------------|------------|------------|
| CES01 = 86 | CES26 = 67 | CES51 = 87 | CES76 = 63 |
| CES02 = 63 | CES27 = 88 | CES52 = 86 | CES77 = 80 |
| CES03 = 31 | CES28 = 87 | CES53 = 78 | CES78 = 67 |
| CES04 = 71 | CES29 = 66 | CES54 = 84 | CES79 = 87 |
| CES05 = 49 | CES30 = 73 | CES55 = 84 | CES80 = 86 |
| CES06 = 51 | CES31 = 70 | CES56 = 75 | CES81 = 71 |
| CES07 = 41 | CES32 = 65 | CES57 = 74 | CES82 = 94 |
| CES08 = 40 | CES33 = 73 | CES58 = 76 | CES83 = 90 |
| CES09 = 29 | CES34 = 79 | CES59 = 85 | CES84 = 89 |
| CES10 = 76 | CES35 = 89 | CES60 = 93 | CES85 = 77 |
| CES11 = 59 | CES36 = 97 | CES61 = 84 | CES86 = 61 |
| CES12 = 65 | CES37 = 87 | CES62 = 91 | CES87 = 78 |
| CES13 = 43 | CES38 = 81 | CES63 = 77 | CES88 = 77 |
| CES14 = 74 | CES39 = 95 | CES64 = 72 | CES89 = 67 |
| CES15 = 71 | CES40 = 92 | CES65 = 68 | CES90 = 76 |
| CES16 = 47 | CES41 = 88 | CES66 = 69 | CES91 = 89 |
| CES17 = 50 | CES42 = 89 | CES67 = 67 | CES92 = 58 |
| CES18 = 56 | CES43 = 79 | CES68 = 72 | CES93 = 74 |
| CES19 = 73 | CES44 = 99 | CES69 = 81 | CES94 = 49 |
| CES20 = 66 | CES45 = 85 | CES70 = 66 | CES95 = 68 |
| CES21 = 87 | CES46 = 80 | CES71 = 67 | CES96 = 76 |
| CES22 = 79 | CES47 = 82 | CES72 = 88 | CES97 = 82 |
| CES23 = 92 | CES48 = 69 | CES73 = 59 | CES98 = 75 |
| CES24 = 91 | CES49 = 80 | CES74 = 95 | CES99 = 62 |
| CES25 = 73 | CES50 = 87 | CES75 = 69 | |



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Color Rendition by Hue-Angle Bin



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Measure Comparisons



(END OF REPORT)