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: P821224

Luminaire Tested: **TT-D3-735-24VDC-MQ-HSS**

Issue Date: 12/2/2020

Report Generated By 670245763

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Scaled Data Report

**Test Information**

| | |
|---|---|
| Test Method: | LM-79-08 |
| Report Number: | P821224 |
| | TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-2010-017-1) |
| Test Lab: | INNOVATION CENTER |
| Issue Date: | 12/2/2020 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS (FORMERLY EATON) |
| Product Line: | McGRAW-EDISON |
| Catalog Number: | TT-D3-735-24VDC-MQ-HSS |
| Description: | TOPTIER LED PARKING GARAGE LUMINAIRE |
| | 3500K, 70 CRI LEDS AND MEDIUM DISTRIBUTION WITH HOUSE SIDE SHIELD |
| Light Source: | - |
| Ballast/Driver: | ELECTRONIC DRIVER |

**Summary**

| | |
|---|---|
| Lumens per Lamp: | N/A |
| Luminaire Lumens: | 5348.9 lumens |
| Efficiency: | N/A |
| Efficacy: | 116.3 lumens/watt |
| Luminous Opening: | Circular (Dia: 1.12' x H: 0') |
| IES Classification: | Type IV - Short |
| BUG Rating: | B2 - U2 - G2 |

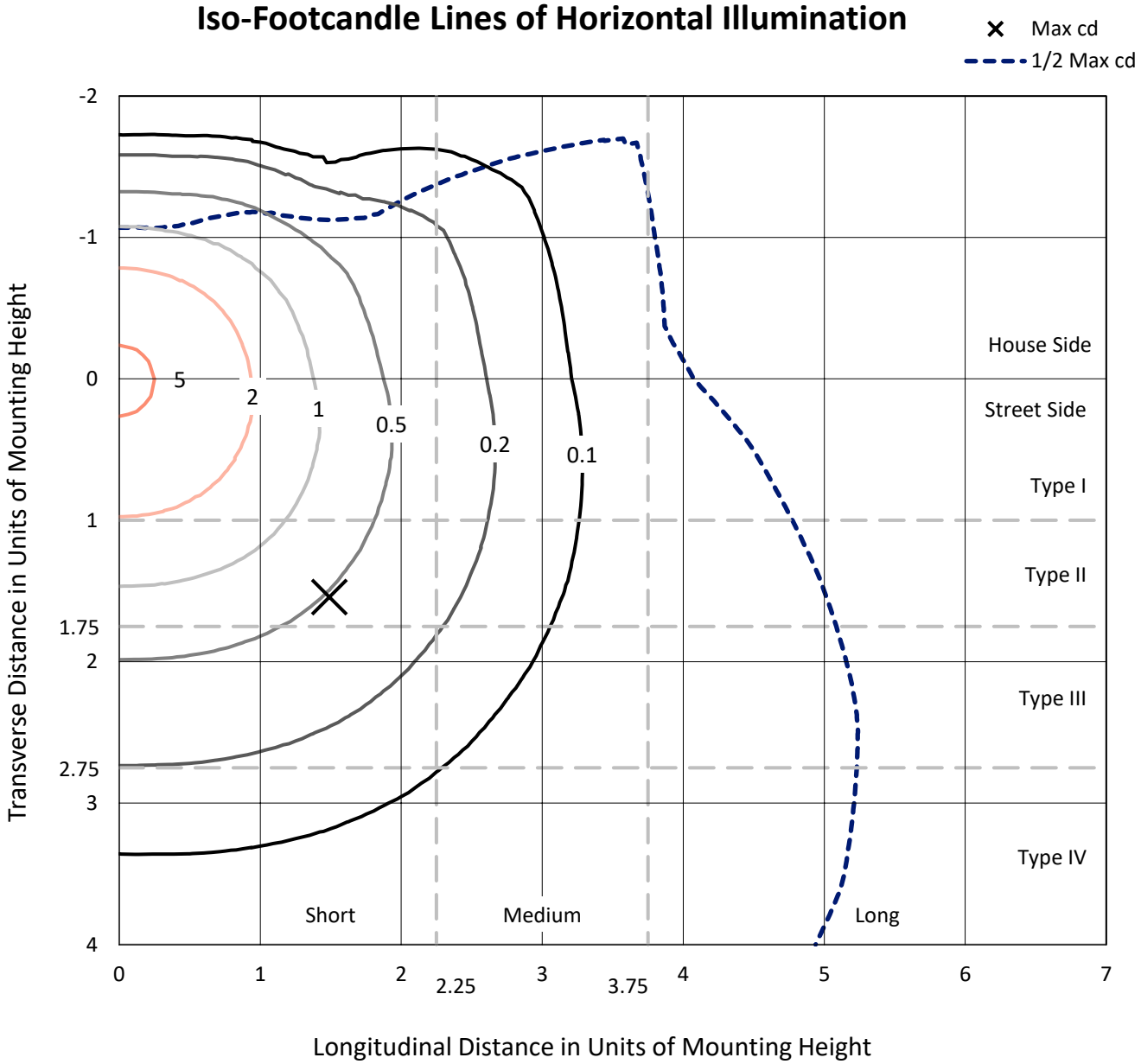
| | |
|---|---|
| Input Watts (W): | 46 |
| Input Voltage (V): | NR |
| Input Current (Ain): | NR |
| Voltage Rise (V): | NR |
| Power Factor: | NR |
| Total Harmonic Distortion (THDi): | NR |
| Frequency (hertz): | 60 |
| Stabilization Time: | NR |
| Operation Time: | NR |
| Ambient Temperature (°C): | NR |
| Test Distance: | 25 FT |

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## Iso-Footcandle Lines of Horizontal Illumination



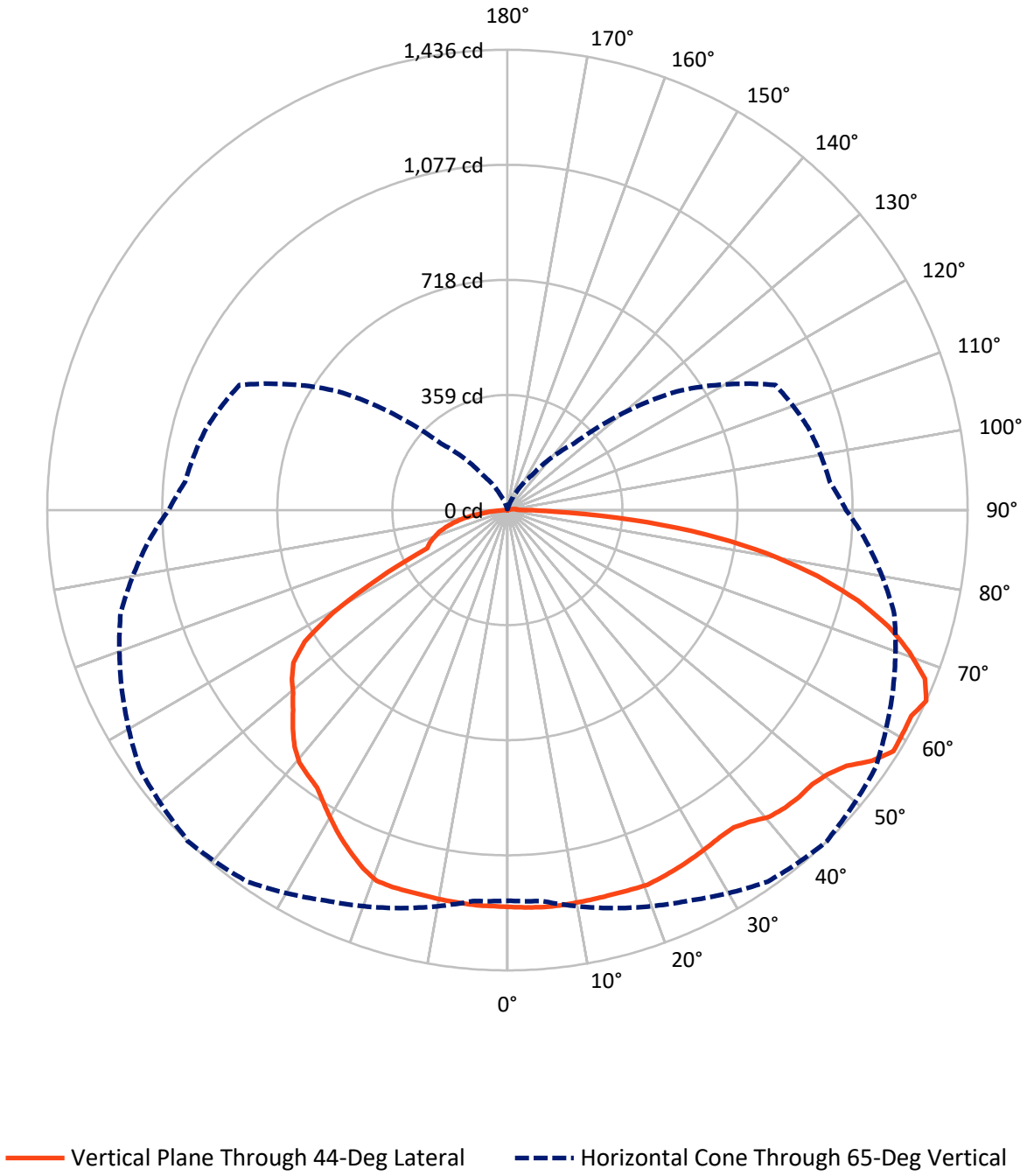

Based on 15 foot mounting height. Maximum calculated value = 5.5 fc
Type IV - Short - N/A

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## Luminous Intensity Polar Plot



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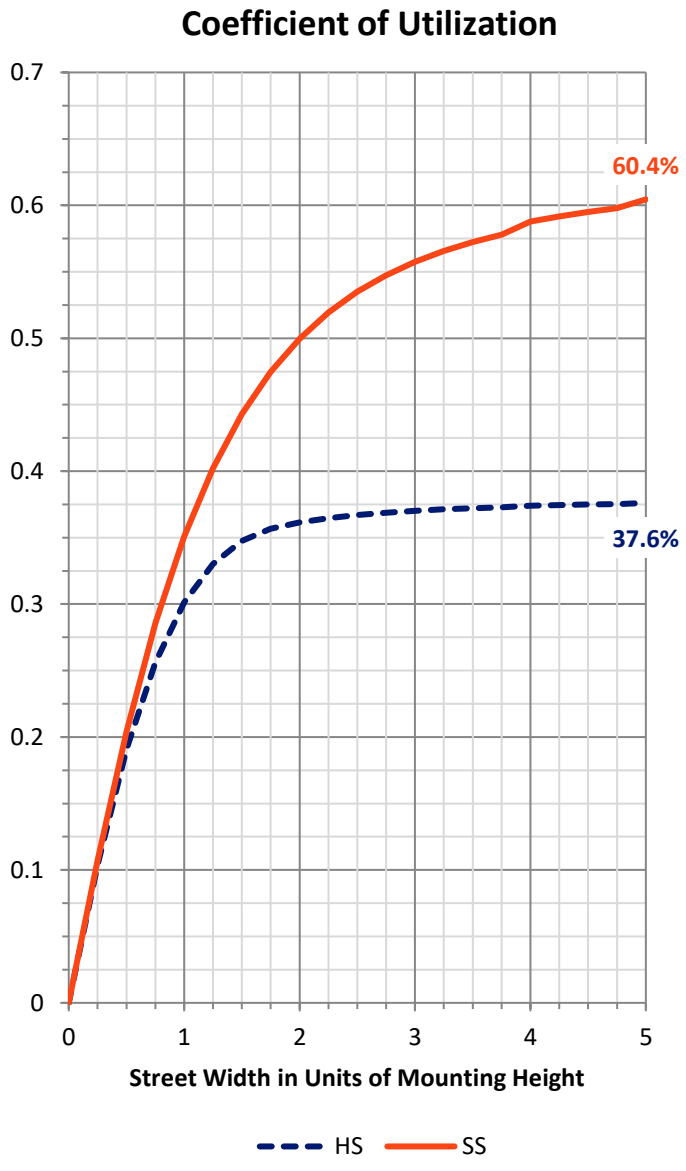
REPORT NUMBER: P821224
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**FLUX DISTRIBUTION:**

| | | Downward | Upward | Total |
|---|---|---|---|---|
| **House Side** | Lumens | 2025.4 | 1.3 | 2026.7 |
| | % Fixture | 37.9 | 0.0 | 37.9 |
| **Street Side** | Lumens | 3304.1 | 18.1 | 3322.1 |
| | % Fixture | 61.8 | 0.3 | 62.1 |
| **Total** | Lumens | 5329.4 | 19.4 | 5348.9 |
| | % Fixture | 99.6 | 0.4 | 100.0 |

**ZONAL LUMENS:**

| Zone | Lumens | % Fixture |
|---|---|---|
| 0°-10° | 118.2 | 2.2 |
| 10°-20° | 350.0 | 6.5 |
| 20°-30° | 557.0 | 10.4 |
| 30°-40° | 713.7 | 13.3 |
| 40°-50° | 845.5 | 15.8 |
| 50°-60° | 926.0 | 17.3 |
| 60°-70° | 880.2 | 16.5 |
| 70°-80° | 700.8 | 13.1 |
| 80°-90° | 238.1 | 4.5 |
| 90°-100° | 12.5 | 0.2 |
| 100°-110° | 4.1 | 0.1 |
| 110°-120° | 0.9 | 0.0 |
| 120°-130° | 0.5 | 0.0 |
| 130°-140° | 0.4 | 0.0 |
| 140°-150° | 0.4 | 0.0 |
| 150°-160° | 0.3 | 0.0 |
| 160°-170° | 0.2 | 0.0 |
| 170°-180° | 0.1 | 0.0 |
| 0°-90° | 5329.4 | 99.6 |
| 0°-180° | 5348.9 | 100.0 |



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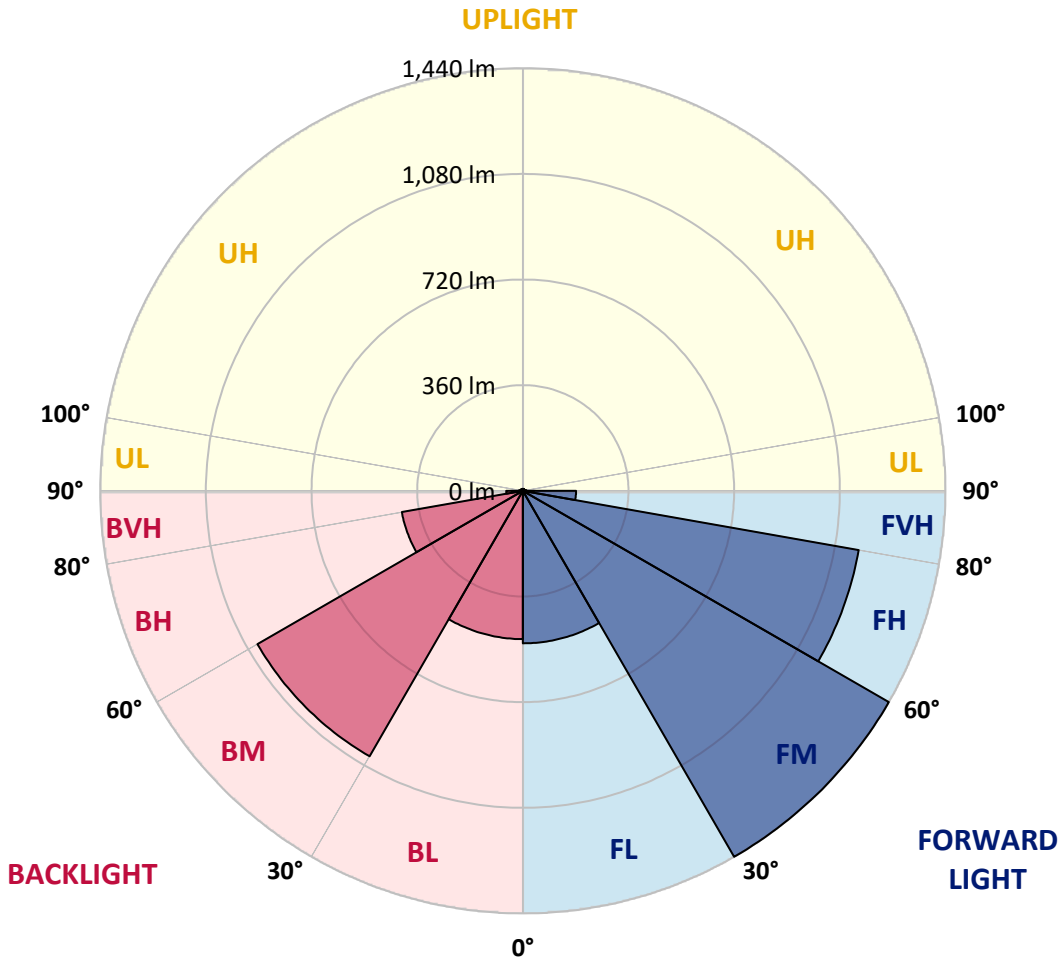
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## LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

| Zone | | Lumens | % Fixture | Zone Rating/Lumen Limit B | U | G |
|---|---|---|---|---|---|---|
| FL | (0°-30°) | 519.9 | 9.7 | | | |
| FM | (30°-60°) | 1440.4 | 26.9 | | | |
| FH | (60°-80°) | 1162.4 | 21.7 | | | G1/1800 |
| FVH | (80°-90°) | 181.3 | 3.4 | | | G2/225 |
| BL | (0°-30°) | 505.4 | 9.4 | B2/1000 | | |
| BM | (30°-60°) | 1044.7 | 19.5 | B2/2500 | | |
| BH | (60°-80°) | 418.5 | 7.8 | B1/500 | | G1/500 |
| BVH | (80°-90°) | 56.7 | 1.1 | | | G1/100 |
| UL | (90°-100°) | 12.5 | 0.2 | | U2/50 | |
| UH | (100°-180°) | 6.9 | 0.1 | | U1/10 | |

**BUG Rating: B2-U2-G2**
Type IV Short



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**CANDELA DISTRIBUTION (FULL):**

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 |
| 2.5° | 1243.0 | 1242.0 | 1242.0 | 1242.0 | 1242.0 | 1241.1 | 1242.0 | 1240.1 | 1241.1 | 1238.3 | 1238.3 |
| 5° | 1245.8 | 1243.9 | 1244.9 | 1244.9 | 1244.9 | 1243.9 | 1244.9 | 1242.0 | 1243.0 | 1239.2 | 1238.3 |
| 7.5° | 1246.8 | 1245.8 | 1245.8 | 1245.8 | 1245.8 | 1243.9 | 1244.9 | 1243.0 | 1242.0 | 1239.2 | 1237.3 |
| 10° | 1246.8 | 1245.8 | 1245.8 | 1245.8 | 1244.9 | 1243.0 | 1243.9 | 1241.1 | 1241.1 | 1237.3 | 1235.4 |
| 12.5° | 1246.8 | 1245.8 | 1246.8 | 1244.9 | 1244.9 | 1243.0 | 1243.0 | 1240.1 | 1240.1 | 1235.4 | 1233.5 |
| 15° | 1245.8 | 1244.9 | 1244.9 | 1245.8 | 1244.9 | 1243.0 | 1243.0 | 1240.1 | 1239.2 | 1233.5 | 1231.6 |
| 17.5° | 1244.9 | 1243.9 | 1244.9 | 1245.8 | 1246.8 | 1244.9 | 1245.8 | 1241.1 | 1239.2 | 1233.5 | 1230.7 |
| 20° | 1245.8 | 1244.9 | 1245.8 | 1247.7 | 1247.7 | 1247.7 | 1247.7 | 1243.0 | 1239.2 | 1233.5 | 1228.8 |
| 22.5° | 1243.0 | 1243.0 | 1243.0 | 1243.0 | 1244.9 | 1242.0 | 1242.0 | 1239.2 | 1234.5 | 1229.7 | 1225.0 |
| 25° | 1236.4 | 1236.4 | 1237.3 | 1238.3 | 1238.3 | 1236.4 | 1235.4 | 1232.6 | 1228.8 | 1223.1 | 1217.5 |
| 27.5° | 1228.8 | 1228.8 | 1229.7 | 1229.7 | 1231.6 | 1229.7 | 1228.8 | 1225.0 | 1221.2 | 1214.6 | 1208.0 |
| 30° | 1220.3 | 1220.3 | 1220.3 | 1222.2 | 1223.1 | 1223.1 | 1222.2 | 1217.5 | 1212.7 | 1205.2 | 1196.7 |
| 32.5° | 1210.8 | 1210.8 | 1213.7 | 1215.6 | 1216.5 | 1216.5 | 1216.5 | 1210.8 | 1205.2 | 1195.7 | 1183.4 |
| 35° | 1203.3 | 1203.3 | 1207.1 | 1213.7 | 1217.5 | 1215.6 | 1214.6 | 1210.8 | 1202.3 | 1191.9 | 1172.1 |
| 37.5° | 1208.0 | 1208.0 | 1216.5 | 1226.0 | 1234.5 | 1232.6 | 1232.6 | 1226.0 | 1214.6 | 1197.6 | 1173.0 |
| 40° | 1219.4 | 1220.3 | 1233.5 | 1245.8 | 1256.2 | 1258.1 | 1258.1 | 1250.5 | 1233.5 | 1211.8 | 1177.8 |
| 42.5° | 1222.2 | 1224.1 | 1237.3 | 1255.3 | 1264.7 | 1269.4 | 1269.4 | 1259.1 | 1241.1 | 1215.6 | 1175.9 |
| 45° | 1222.2 | 1223.1 | 1238.3 | 1257.2 | 1272.3 | 1276.1 | 1276.1 | 1264.7 | 1242.0 | 1217.5 | 1169.3 |
| 47.5° | 1222.2 | 1221.2 | 1234.5 | 1260.9 | 1276.1 | 1278.9 | 1278.9 | 1266.6 | 1244.9 | 1213.7 | 1159.8 |
| 50° | 1219.4 | 1224.1 | 1243.9 | 1264.7 | 1291.2 | 1295.0 | 1294.0 | 1280.8 | 1250.5 | 1218.4 | 1152.2 |
| 52.5° | 1226.0 | 1225.0 | 1251.5 | 1293.1 | 1316.7 | 1325.2 | 1326.2 | 1309.1 | 1278.0 | 1231.6 | 1147.5 |
| 55° | 1253.4 | 1254.3 | 1279.8 | 1328.1 | 1364.0 | 1380.0 | 1378.2 | 1356.4 | 1312.0 | 1258.1 | 1160.7 |
| 57.5° | 1262.8 | 1272.3 | 1309.1 | 1350.7 | 1405.6 | 1419.7 | 1419.7 | 1393.3 | 1339.4 | 1278.9 | 1170.2 |
| 60° | 1243.9 | 1247.7 | 1293.1 | 1364.0 | 1414.1 | 1416.9 | 1417.9 | 1398.9 | 1342.2 | 1267.6 | 1151.3 |
| 62.5° | 1239.2 | 1246.8 | 1281.7 | 1361.1 | 1393.3 | 1414.1 | 1413.1 | 1387.6 | 1339.4 | 1259.1 | 1144.7 |
| 65° | 1218.4 | 1224.1 | 1285.5 | 1344.1 | 1415.0 | 1435.8 | 1431.1 | 1401.8 | 1327.1 | 1249.6 | 1123.9 |
| 67.5° | 1175.9 | 1181.5 | 1238.3 | 1320.5 | 1384.8 | 1404.6 | 1409.3 | 1375.3 | 1297.8 | 1205.2 | 1079.5 |
| 70° | 1105.0 | 1113.5 | 1171.1 | 1251.5 | 1319.5 | 1330.9 | 1329.0 | 1308.2 | 1230.7 | 1131.4 | 1014.2 |
| 72.5° | 1005.7 | 1019.0 | 1091.7 | 1168.3 | 1226.9 | 1243.9 | 1236.4 | 1212.7 | 1149.4 | 1042.6 | 925.4 |
| 75° | 900.8 | 913.1 | 970.8 | 1056.8 | 1118.2 | 1129.6 | 1123.9 | 1095.5 | 1031.3 | 926.3 | 820.5 |
| 77.5° | 786.4 | 796.8 | 846.0 | 933.9 | 979.3 | 988.7 | 991.6 | 953.7 | 893.2 | 798.7 | 704.2 |
| 80° | 632.4 | 637.1 | 703.3 | 760.9 | 800.6 | 819.5 | 817.6 | 789.3 | 728.8 | 650.3 | 555.8 |
| 82.5° | 466.9 | 470.7 | 521.8 | 570.9 | 606.8 | 623.9 | 614.4 | 586.0 | 537.8 | 470.7 | 398.9 |
| 85° | 286.4 | 279.8 | 321.4 | 358.2 | 380.0 | 391.3 | 381.9 | 365.8 | 323.3 | 270.3 | 220.2 |
| 87.5° | 103.0 | 97.4 | 116.3 | 121.9 | 146.5 | 142.7 | 151.2 | 121.9 | 98.3 | 69.9 | 49.2 |
| 90° | 45.4 | 45.4 | 44.4 | 42.5 | 38.8 | 35.0 | 34.0 | 28.4 | 20.8 | 13.2 | 4.7 |
| 92.5° | 41.6 | 41.6 | 40.6 | 38.8 | 35.0 | 31.2 | 31.2 | 25.5 | 18.9 | 12.3 | 4.7 |
| 95° | 35.0 | 35.0 | 34.0 | 32.1 | 29.3 | 26.5 | 26.5 | 20.8 | 16.1 | 10.4 | 3.8 |
| 97.5° | 27.4 | 27.4 | 26.5 | 25.5 | 22.7 | 20.8 | 20.8 | 17.0 | 12.3 | 7.6 | 2.8 |
| 100° | 20.8 | 20.8 | 19.8 | 18.9 | 18.0 | 16.1 | 15.1 | 12.3 | 9.5 | 5.7 | 1.9 |
| 102.5° | 15.1 | 15.1 | 15.1 | 14.2 | 12.3 | 11.3 | 11.3 | 9.5 | 6.6 | 4.7 | 1.9 |
| 105° | 10.4 | 10.4 | 10.4 | 9.5 | 8.5 | 7.6 | 7.6 | 6.6 | 4.7 | 2.8 | 0.9 |
| 107.5° | 6.6 | 6.6 | 6.6 | 6.6 | 5.7 | 4.7 | 4.7 | 3.8 | 2.8 | 1.9 | 0.9 |
| 110° | 3.8 | 2.8 | 3.8 | 3.8 | 3.8 | 2.8 | 2.8 | 1.9 | 1.9 | 0.9 | 0.9 |

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**CANDELA DISTRIBUTION (continued):**

| | 0° | 5° | 15° | 25° | 35° | 44° | 45° | 55° | 65° | 75° | 85° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 1.9 | 1.9 | 1.9 | 1.9 | 1.9 | *1.9* | 1.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 115° | 0.9 | 0.9 | 0.9 | 1.9 | 1.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 117.5° | 0.0 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 120° | 0.0 | 0.0 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 122.5° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 125° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 127.5° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 130° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 132.5° | 0.0 | 0.0 | 0.0 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 135° | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 137.5° | 0.0 | 0.0 | 0.0 | 0.0 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 140° | 0.0 | 0.9 | 0.9 | 0.0 | 0.0 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 142.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 145° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 147.5° | 0.9 | 0.9 | 0.0 | 0.0 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 150° | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 152.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 155° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 157.5° | 0.9 | 0.9 | 0.9 | 0.0 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 160° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 162.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 165° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 167.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 170° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 172.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 175° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 177.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |
| 180° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | *0.9* | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |

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**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 0° | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 | 1238.3 |
| 2.5° | 1238.3 | 1237.3 | 1236.4 | 1237.3 | 1236.4 | 1236.4 | 1235.4 | 1235.4 | 1234.5 | 1234.5 | 1233.5 |
| 5° | 1238.3 | 1237.3 | 1236.4 | 1237.3 | 1235.4 | 1236.4 | 1236.4 | 1235.4 | 1234.5 | 1233.5 | 1232.6 |
| 7.5° | 1237.3 | 1237.3 | 1235.4 | 1236.4 | 1234.5 | 1234.5 | 1233.5 | 1233.5 | 1232.6 | 1232.6 | 1231.6 |
| 10° | 1235.4 | 1234.5 | 1234.5 | 1234.5 | 1232.6 | 1232.6 | 1231.6 | 1230.7 | 1230.7 | 1229.7 | 1228.8 |
| 12.5° | 1233.5 | 1232.6 | 1231.6 | 1231.6 | 1230.7 | 1229.7 | 1228.8 | 1228.8 | 1227.9 | 1226.9 | 1226.0 |
| 15° | 1230.7 | 1229.7 | 1229.7 | 1229.7 | 1228.8 | 1228.8 | 1227.9 | 1226.9 | 1225.0 | 1224.1 | 1223.1 |
| 17.5° | 1229.7 | 1228.8 | 1229.7 | 1229.7 | 1228.8 | 1229.7 | 1227.9 | 1226.0 | 1224.1 | 1223.1 | 1222.2 |
| 20° | 1228.8 | 1228.8 | 1228.8 | 1227.9 | 1226.9 | 1226.0 | 1225.0 | 1224.1 | 1223.1 | 1222.2 | 1221.2 |
| 22.5° | 1224.1 | 1223.1 | 1221.2 | 1215.6 | 1209.0 | 1204.2 | 1203.3 | 1205.2 | 1205.2 | 1205.2 | 1202.3 |
| 25° | 1215.6 | 1212.7 | 1205.2 | 1194.8 | 1183.4 | 1175.9 | 1171.1 | 1171.1 | 1170.2 | 1168.3 | 1167.4 |
| 27.5° | 1205.2 | 1199.5 | 1186.3 | 1173.0 | 1157.0 | 1147.5 | 1136.2 | 1129.6 | 1126.7 | 1125.8 | 1123.9 |
| 30° | 1191.0 | 1182.5 | 1165.5 | 1148.5 | 1128.6 | 1115.4 | 1097.4 | 1086.1 | 1079.5 | 1076.6 | 1074.7 |
| 32.5° | 1174.0 | 1165.5 | 1145.6 | 1124.8 | 1101.2 | 1082.3 | 1059.6 | 1041.6 | 1029.4 | 1023.7 | 1020.9 |
| 35° | 1162.6 | 1150.3 | 1127.7 | 1103.1 | 1079.5 | 1052.0 | 1024.6 | 1000.1 | 981.2 | 974.5 | 970.8 |
| 37.5° | 1157.9 | 1146.6 | 1122.0 | 1097.4 | 1071.0 | 1037.9 | 1005.7 | 970.8 | 945.2 | 933.9 | 930.1 |
| 40° | 1160.7 | 1146.6 | 1119.2 | 1092.7 | 1061.5 | 1024.6 | 982.1 | 938.6 | 905.5 | 889.5 | 885.7 |
| 42.5° | 1154.1 | 1138.1 | 1105.9 | 1077.6 | 1038.8 | 997.2 | 945.2 | 895.1 | 850.7 | 837.5 | 831.8 |
| 45° | 1142.8 | 1122.9 | 1088.0 | 1052.0 | 1011.4 | 960.4 | 906.5 | 842.2 | 789.3 | 773.2 | 768.5 |
| 47.5° | 1131.4 | 1104.0 | 1062.4 | 1029.4 | 980.2 | 920.7 | 857.3 | 785.5 | 719.3 | 703.3 | 700.4 |
| 50° | 1114.4 | 1088.9 | 1044.5 | 1005.7 | 955.6 | 886.6 | 814.8 | 725.0 | 650.3 | 622.9 | 615.3 |
| 52.5° | 1106.9 | 1073.8 | 1031.3 | 1001.0 | 940.5 | 862.1 | 771.3 | 674.9 | 567.1 | 533.1 | 525.6 |
| 55° | 1114.4 | 1072.8 | 1027.5 | 998.2 | 928.2 | 830.9 | 719.3 | 596.4 | 471.7 | 435.8 | 425.4 |
| 57.5° | 1101.2 | 1065.3 | 1019.9 | 986.8 | 896.1 | 766.6 | 643.7 | 485.9 | 356.4 | 310.0 | 306.3 |
| 60° | 1084.2 | 1033.1 | 990.6 | 960.4 | 829.0 | 645.6 | 501.0 | 346.0 | 214.6 | 174.9 | 167.3 |
| 62.5° | 1077.6 | 1024.6 | 975.5 | 938.6 | 739.2 | 474.5 | 305.3 | 174.9 | 88.9 | 62.4 | 56.7 |
| 65° | *1056.8* | *1009.5* | *974.5* | *922.5* | *645.6* | *293.0* | *131.4* | *52.0* | *3.8* | *2.8* | *2.8* |
| 67.5° | 1017.1 | 968.9 | 945.2 | 915.0 | 636.1 | 279.8 | 119.1 | 47.3 | 1.9 | 0.0 | 0.0 |
| 70° | 949.0 | 911.2 | 895.1 | 879.1 | 608.7 | 259.0 | 108.7 | 42.5 | 0.9 | 0.0 | 0.0 |
| 72.5° | 859.2 | 833.7 | 830.9 | 829.0 | 569.0 | 239.1 | 97.4 | 37.8 | 0.9 | 0.0 | 0.0 |
| 75° | 769.4 | 738.2 | 743.0 | 754.3 | 519.9 | 211.7 | 84.1 | 33.1 | 0.9 | 0.0 | 0.0 |
| 77.5° | 656.0 | 633.3 | 644.6 | 663.6 | 455.6 | 179.6 | 69.0 | 26.5 | 0.9 | 0.0 | 0.0 |
| 80° | 516.1 | 501.0 | 526.5 | 543.5 | 372.4 | 142.7 | 52.0 | 18.9 | 0.0 | 0.0 | 0.0 |
| 82.5° | 366.8 | 358.2 | 381.9 | 403.6 | 277.0 | 101.1 | 35.9 | 12.3 | 0.0 | 0.0 | 0.0 |
| 85° | 197.6 | 192.8 | 215.5 | 239.1 | 166.4 | 57.7 | 18.0 | 5.7 | 0.0 | 0.0 | 0.0 |
| 87.5° | 49.2 | 45.4 | 46.3 | 55.8 | 40.6 | 12.3 | 2.8 | 0.9 | 0.0 | 0.0 | 0.0 |
| 90° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 92.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 95° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 97.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 100° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 102.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 105° | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 107.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 110° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |

Cooper Lighting Solutions Photometric Lab
1121 Highway 74 South
Peachtree City, GA 30269

Scaled Data Report

REPORT NUMBER: P821224
CATALOG NUMBER: TT-D3-735-24VDC-MQ-HSS

**CANDELA DISTRIBUTION (continued):**

| | 90° | 95° | 105° | 115° | 125° | 135° | 145° | 155° | 165° | 175° | 180° |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 112.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 115° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 117.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 120° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 122.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 125° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 127.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 130° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 132.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 135° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 137.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 140° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 142.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 145° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 147.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 150° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 152.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 155° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 157.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 160° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 162.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 165° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 167.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 170° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 172.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 175° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 177.5° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 |
| 180° | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 | 0.9 |

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: SP1-2407-176-4

Test Date: 09/24/2024

Luminaire Tested: MEM2-HTN-VA-30-735-U-WQ

Data in this report applies to families of products including MEM2-HTN-VA-30-735-U-WQ

Report Generated By FNC07603 / LDUCLS01DT446
Version: v7.04

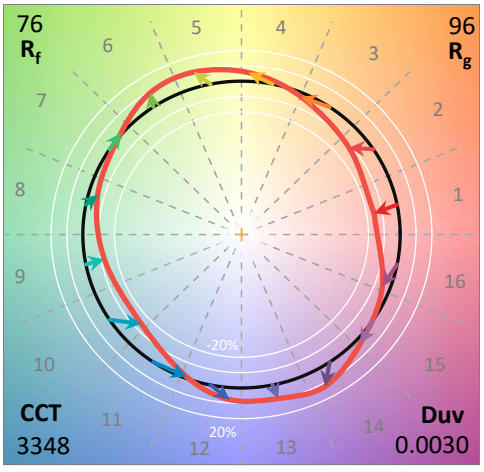
## Test Information

| | |
|---|---|
| Test Method: | LM-79-2019 |
| Report Number: | SP1-2407-176-4 |
| Test Lab: | COOPER LIGHTING SOLUTIONS |
| Photometer: | SP1 - 76IN SPHERE |
| Measurement Geometry: | 4π |
| Issue Date: | 09/27/2024 |
| Manufacturer: | COOPER LIGHTING SOLUTIONS |
| Product Line: | Streetworks |
| Catalog Number: | **MEM2-HTN-VA-30-735-U-WQ** |
| Description: | EPIC MODERN VISUAL COMFORT 30W WAVESTREAM WIDE |

## Spectral Parameters

| | | | | | |
|---|---|---|---|---|---|
| CCT (K): | 3348 | CRI (Ra): | 73.4 | | |
| CIE u': | 0.2384 | R1: | 70.8 | R9: | -19.2 |
| CIE v': | 0.5184 | R2: | 79.9 | R10: | 52.5 |
| Duv: | 0.0030 | R3: | 87.6 | R11: | 68.0 |
| CIE x: | 0.4177 | R4: | 72.6 | R12: | 42.6 |
| CIE y: | 0.4036 | R5: | 69.3 | R13: | 72.0 |
| CIE z: | 0.1787 | R6: | 71.3 | R14: | 92.6 |
| Peak Wavelength (nm): | 593 | R7: | 82.1 | R15: | 63.8 |
| Dominant Wavelength (nm): | 580 | R8: | 53.3 | | |
| Purity: | 46.5223 | | | | |

| | |
|---|---|
| Rf: | 75.8 |
| Rg: | 95.8 |




## Test Conditions

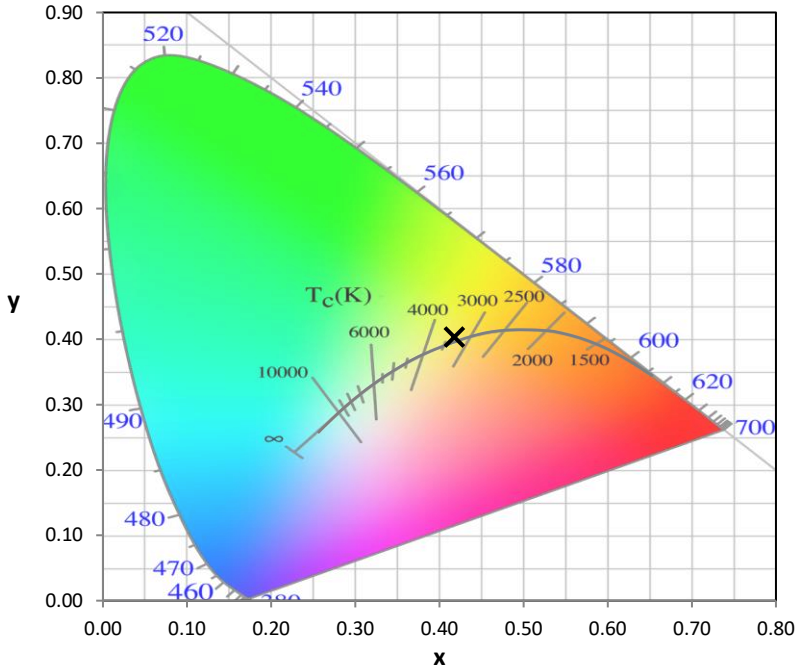
| | |
|---|---|
| Stabilization Time: | 30M |
| Operation Time: | 1H 30M |
| Sphere Temperature (°C): | 25.2 |

REPORT NUMBER: SP1-2407-176-4

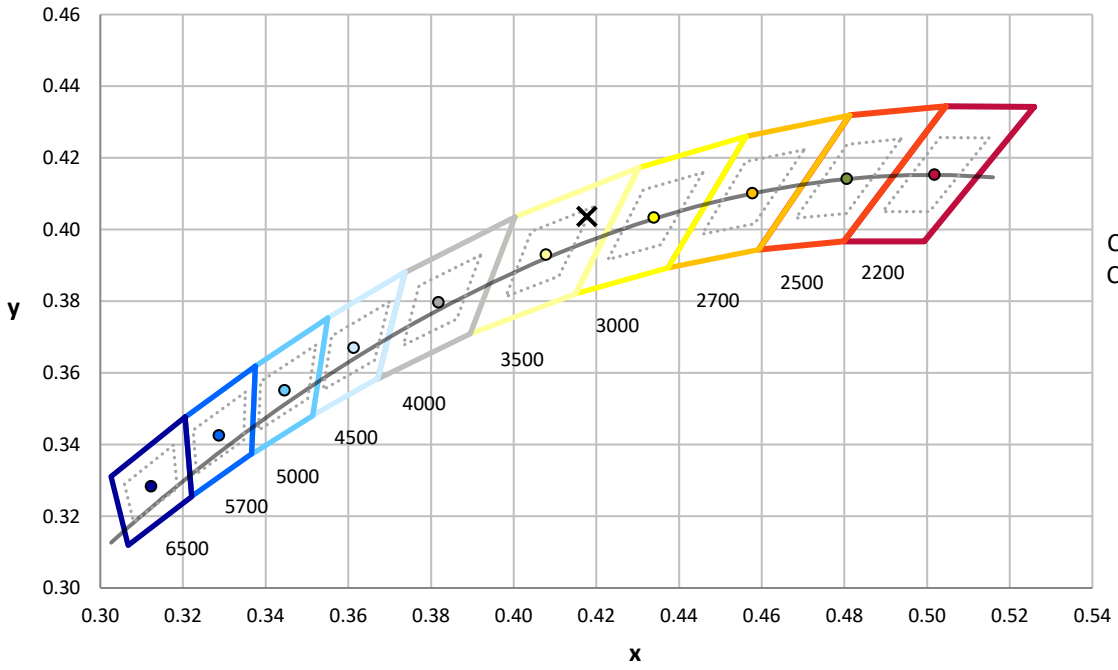
| Measurement and Test Equipment | | | |
|---|---|---|---|
| Instrument | Identification Number | Calibration Date | Calibration Due Date |
| Photometer | IN0058 | 6/18/2024 | 12/18/2024 |
| Power Meter | INXT2011004 | 2/8/2024 | 2/8/2025 |
| AC Power Source | IN0063 | 10/24/2023 | 10/24/2024 |
| DC 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: SP1-2407-176-4

## CIE 1931 Chromaticity Diagram




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

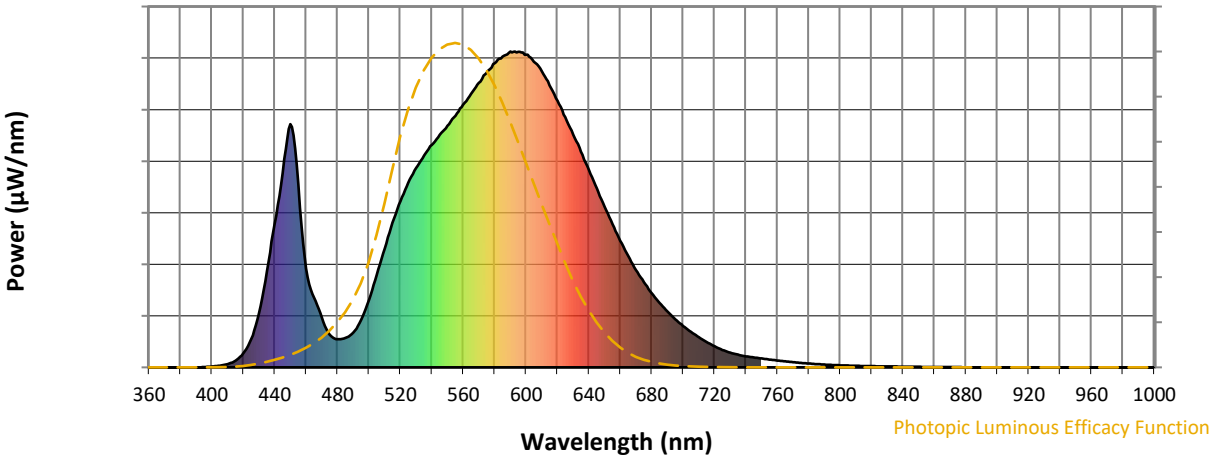



CCT = 3348K
CIE x = 0.4177
CIE y = 0.4036
Duv = 0.0030

Point lies inside the ANSI 3500K 4-step quadrangle

REPORT NUMBER: SP1-2407-176-4

## Photopic Flux vs. Wavelength

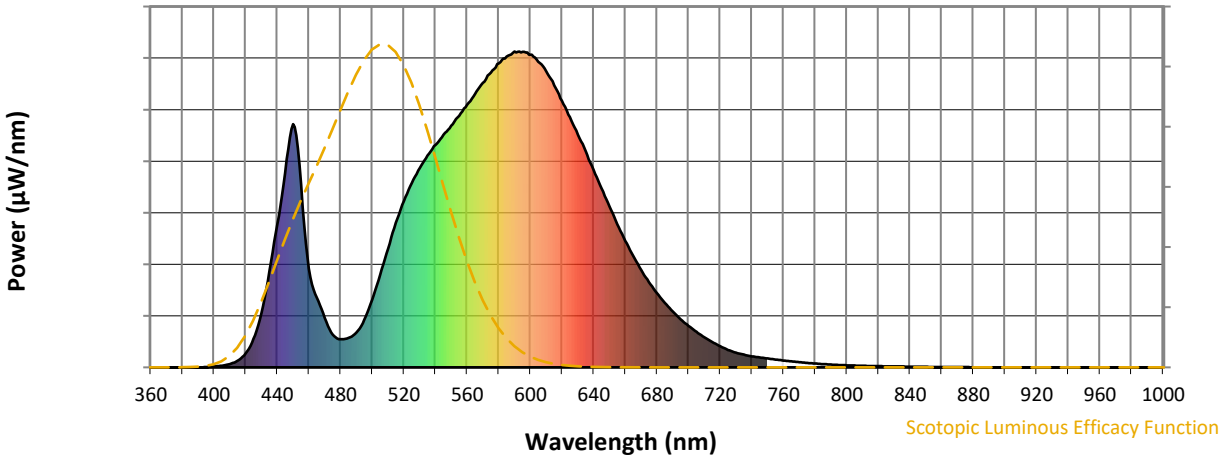



## Photopic Lumens: NR

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-176-4

## Scotopic Flux vs. Wavelength

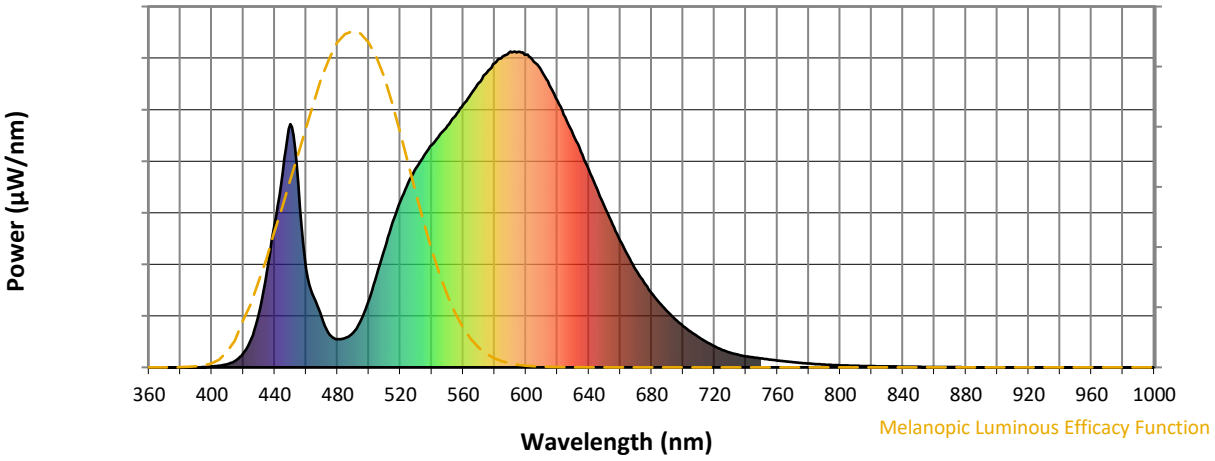



**Scotopic Lumens: NR** **S/P: 1.31**

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

REPORT NUMBER: SP1-2407-176-4

## Melanopic Flux vs. Wavelength




**Melanopic Lumens: NR** **M/P: 2.4**

| 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 | 110 | NR | 620 | 844 | NR | 750 | 28 | NR | 880 | 0 | NR |
| 365 | 0 | NR | 495 | 150 | NR | 625 | 792 | NR | 755 | 25 | NR | 885 | 0 | NR |
| 370 | 0 | NR | 500 | 214 | NR | 630 | 737 | NR | 760 | 22 | NR | 890 | 0 | NR |
| 375 | 0 | NR | 505 | 293 | NR | 635 | 683 | NR | 765 | 19 | NR | 895 | 0 | NR |
| 380 | 0 | NR | 510 | 376 | NR | 640 | 625 | NR | 770 | 16 | NR | 900 | 0 | NR |
| 385 | 0 | NR | 515 | 458 | NR | 645 | 566 | NR | 775 | 14 | NR | 905 | 0 | NR |
| 390 | 0 | NR | 520 | 526 | NR | 650 | 509 | NR | 780 | 12 | NR | 910 | 0 | NR |
| 395 | 1 | NR | 525 | 584 | NR | 655 | 453 | NR | 785 | 10 | NR | 915 | 0 | NR |
| 400 | 3 | NR | 530 | 631 | NR | 660 | 401 | NR | 790 | 9 | NR | 920 | 0 | NR |
| 405 | 5 | NR | 535 | 671 | NR | 665 | 353 | NR | 795 | 8 | NR | 925 | 0 | NR |
| 410 | 10 | NR | 540 | 704 | NR | 670 | 308 | NR | 800 | 7 | NR | 930 | 0 | NR |
| 415 | 21 | NR | 545 | 737 | NR | 675 | 269 | NR | 805 | 6 | NR | 935 | 0 | NR |
| 420 | 44 | NR | 550 | 766 | NR | 680 | 235 | NR | 810 | 5 | NR | 940 | 0 | NR |
| 425 | 90 | NR | 555 | 797 | NR | 685 | 204 | NR | 815 | 4 | NR | 945 | 0 | NR |
| 430 | 171 | NR | 560 | 832 | NR | 690 | 177 | NR | 820 | 4 | NR | 950 | 0 | NR |
| 435 | 305 | NR | 565 | 866 | NR | 695 | 152 | NR | 825 | 3 | NR | 955 | 0 | NR |
| 440 | 455 | NR | 570 | 901 | NR | 700 | 131 | NR | 830 | 3 | NR | 960 | 0 | NR |
| 445 | 615 | NR | 575 | 933 | NR | 705 | 112 | NR | 835 | 3 | NR | 965 | 0 | NR |
| 450 | 771 | NR | 580 | 963 | NR | 710 | 96 | NR | 840 | 2 | NR | 970 | 0 | NR |
| 455 | 579 | NR | 585 | 984 | NR | 715 | 80 | NR | 845 | 2 | NR | 975 | 0 | NR |
| 460 | 313 | NR | 590 | 1000 | NR | 720 | 67 | NR | 850 | 2 | NR | 980 | 0 | NR |
| 465 | 221 | NR | 595 | 999 | NR | 725 | 55 | NR | 855 | 1 | NR | 985 | 0 | NR |
| 470 | 156 | NR | 600 | 990 | NR | 730 | 46 | NR | 860 | 1 | NR | 990 | 0 | NR |
| 475 | 103 | NR | 605 | 968 | NR | 735 | 40 | NR | 865 | 1 | NR | 995 | 0 | NR |
| 480 | 89 | NR | 610 | 937 | NR | 740 | 35 | NR | 870 | 1 | NR | 1000 | 0 | NR |
| 485 | 93 | NR | 615 | 893 | NR | 745 | 31 | NR | 875 | 1 | NR | | | |

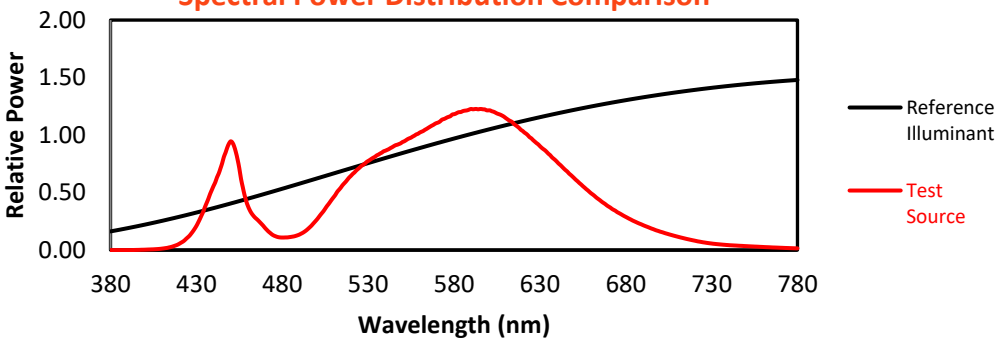
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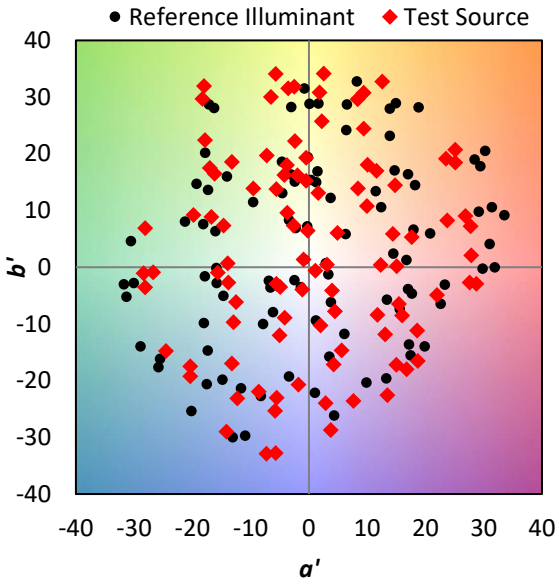
## Summary

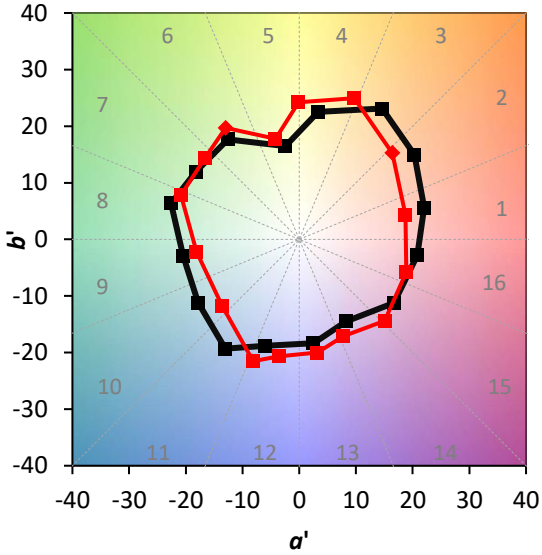
$R_f$ = 75.8
$R_g$ = 95.8
CIE $R_a$ = 73.4
$R_9$ = -19.2

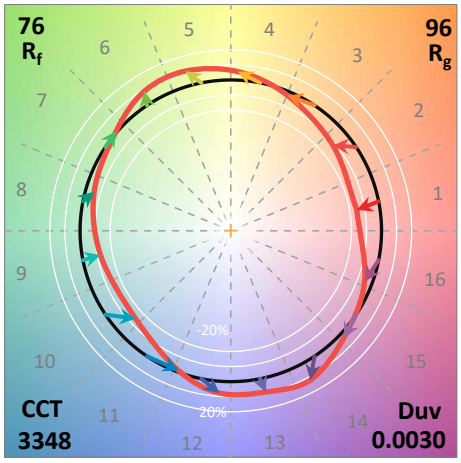
## Spectral Power Distribution Comparison

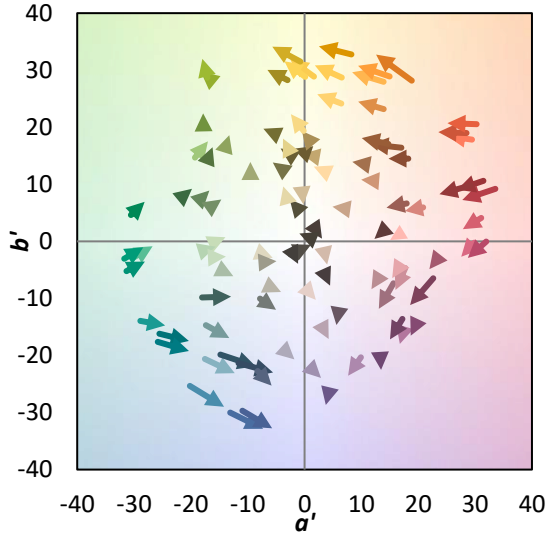



## Color Vector Graphics



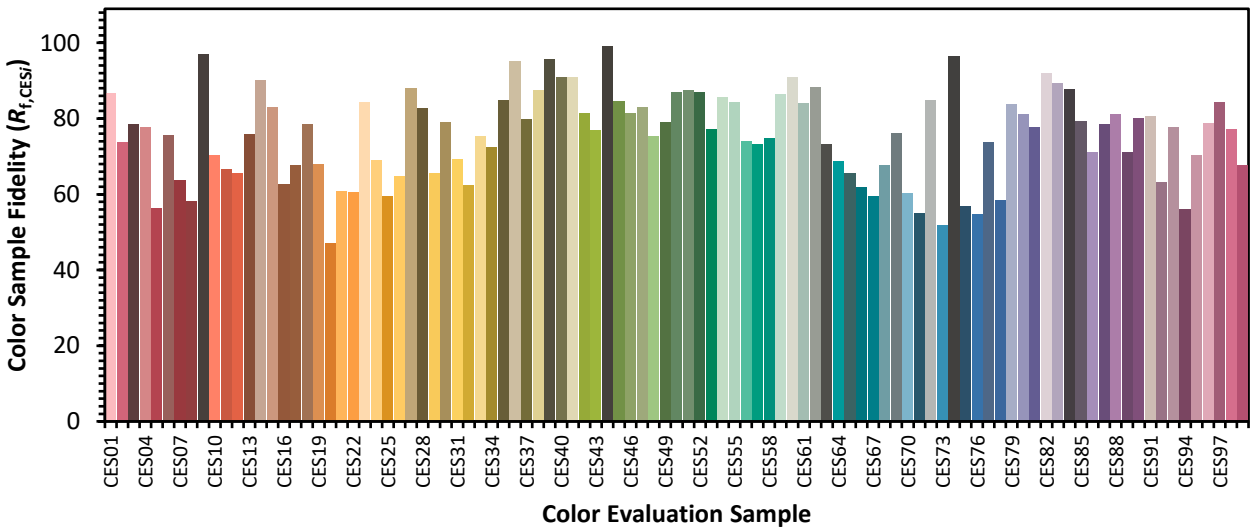



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## Individual Sample Fidelity Index ($R_{f,i}$)

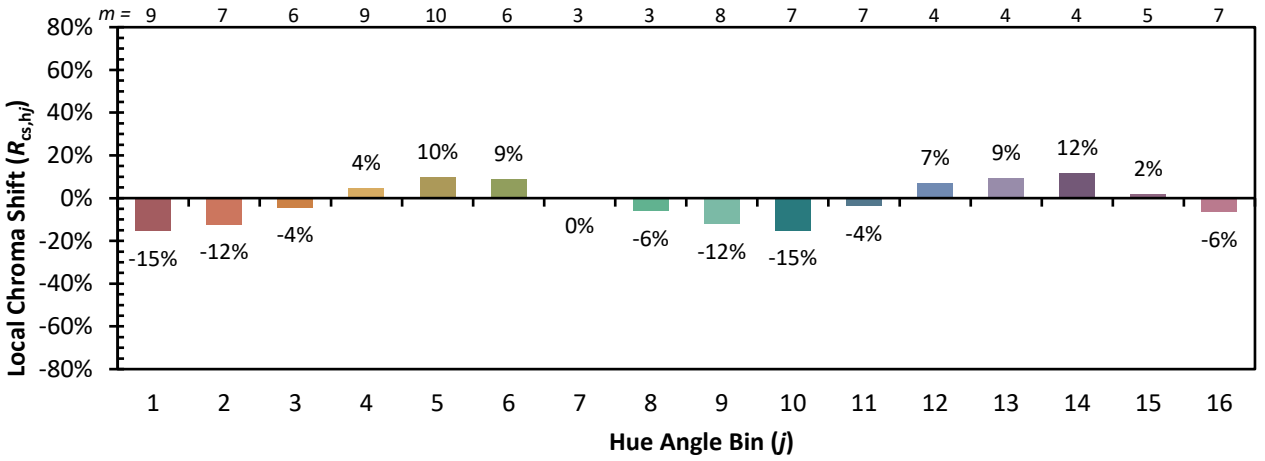
| | | | |
|---|---|---|---|
| CES01 = 86 | CES26 = 65 | CES51 = 88 | CES76 = 55 |
| CES02 = 62 | CES27 = 88 | CES52 = 87 | CES77 = 74 |
| CES03 = 31 | CES28 = 83 | CES53 = 77 | CES78 = 58 |
| CES04 = 70 | CES29 = 66 | CES54 = 86 | CES79 = 84 |
| CES05 = 48 | CES30 = 79 | CES55 = 84 | CES80 = 81 |
| CES06 = 51 | CES31 = 69 | CES56 = 74 | CES81 = 78 |
| CES07 = 41 | CES32 = 62 | CES57 = 73 | CES82 = 92 |
| CES08 = 40 | CES33 = 75 | CES58 = 75 | CES83 = 89 |
| CES09 = 29 | CES34 = 73 | CES59 = 87 | CES84 = 88 |
| CES10 = 75 | CES35 = 85 | CES60 = 91 | CES85 = 79 |
| CES11 = 58 | CES36 = 95 | CES61 = 84 | CES86 = 71 |
| CES12 = 64 | CES37 = 80 | CES62 = 88 | CES87 = 79 |
| CES13 = 43 | CES38 = 88 | CES63 = 73 | CES88 = 81 |
| CES14 = 74 | CES39 = 96 | CES64 = 69 | CES89 = 71 |
| CES15 = 71 | CES40 = 91 | CES65 = 66 | CES90 = 80 |
| CES16 = 47 | CES41 = 91 | CES66 = 62 | CES91 = 81 |
| CES17 = 50 | CES42 = 81 | CES67 = 60 | CES92 = 63 |
| CES18 = 56 | CES43 = 77 | CES68 = 68 | CES93 = 78 |
| CES19 = 72 | CES44 = 99 | CES69 = 76 | CES94 = 56 |
| CES20 = 65 | CES45 = 85 | CES70 = 60 | CES95 = 70 |
| CES21 = 87 | CES46 = 82 | CES71 = 55 | CES96 = 79 |
| CES22 = 79 | CES47 = 83 | CES72 = 85 | CES97 = 84 |
| CES23 = 92 | CES48 = 75 | CES73 = 52 | CES98 = 77 |
| CES24 = 91 | CES49 = 79 | CES74 = 96 | CES99 = 68 |
| CES25 = 72 | CES50 = 87 | CES75 = 57 | |

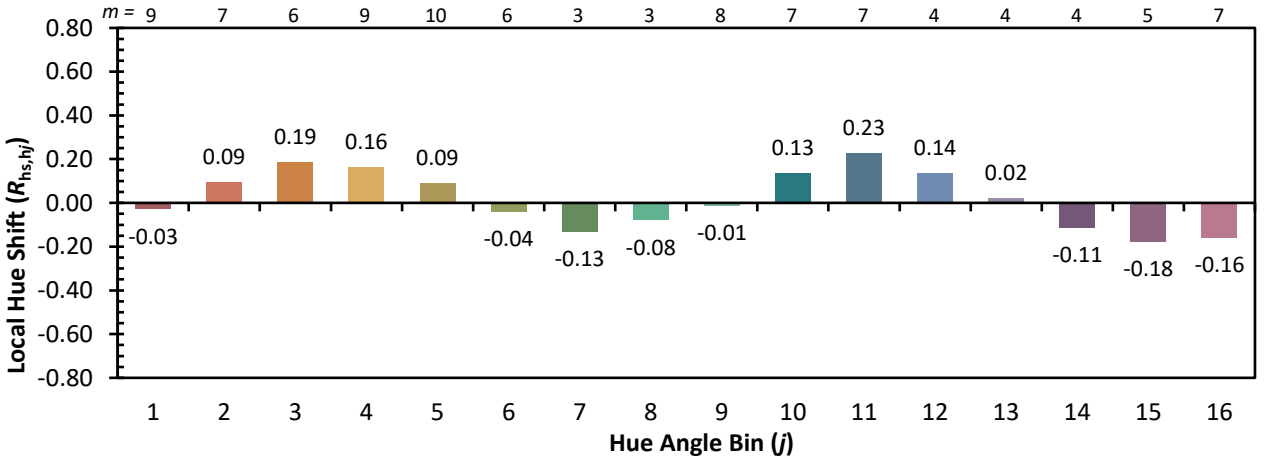


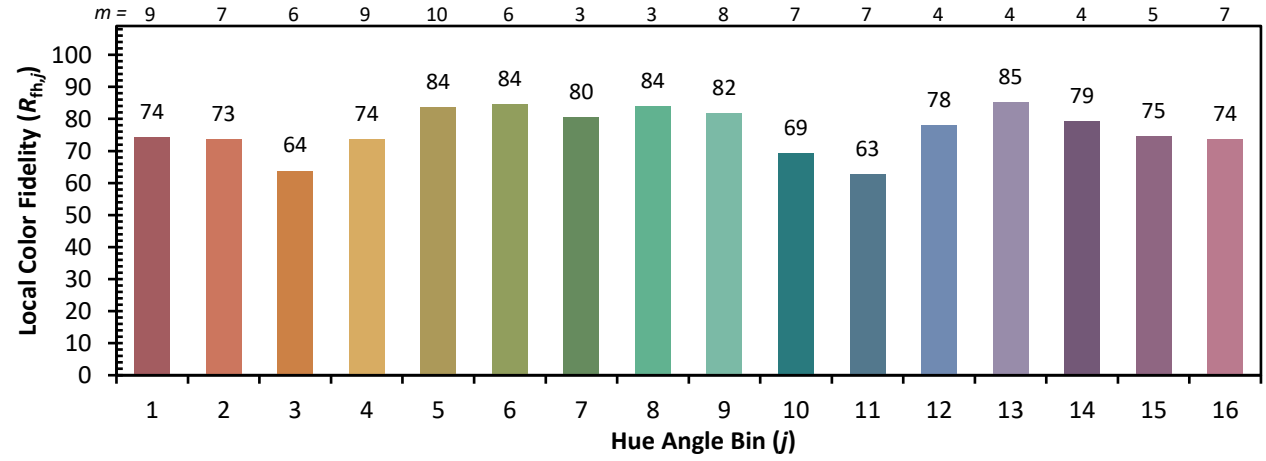
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## Color Rendition by Hue-Angle Bin



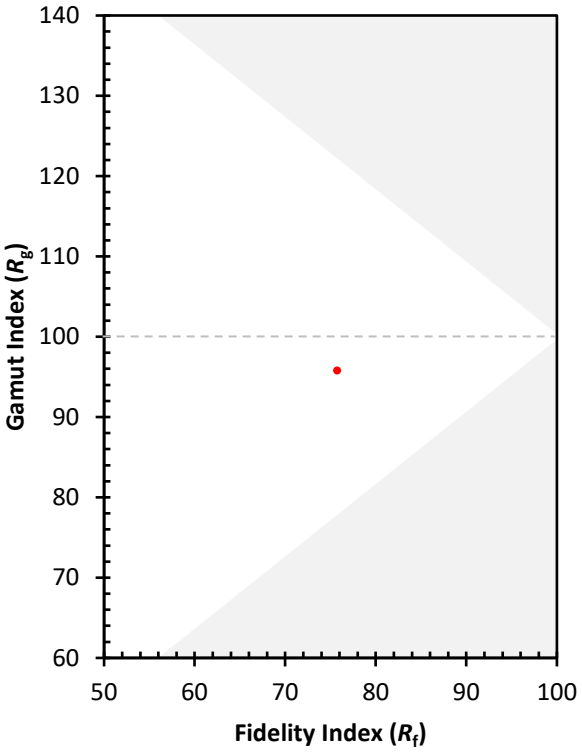



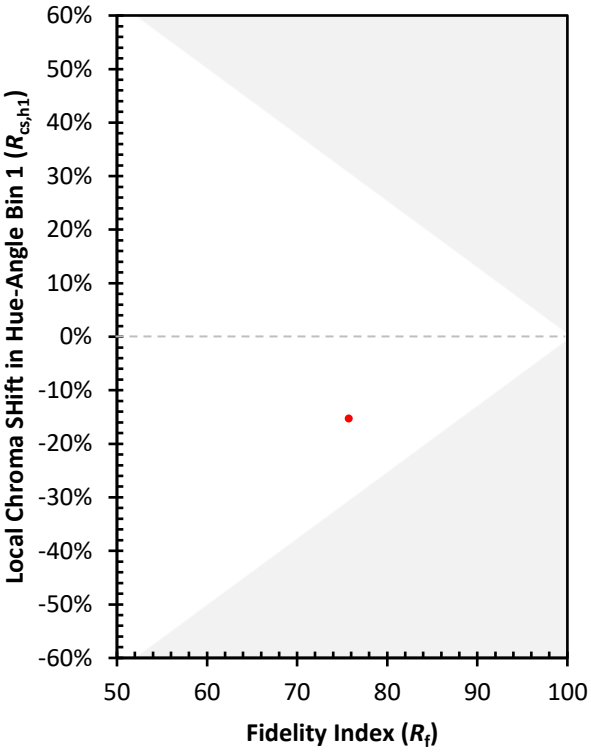



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## Measure Comparisons




(END OF REPORT)