

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: INVUE

Report Number: P366732

Luminaire Tested: **MSA-SA1B-727-U-5NQ**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P366732  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-5)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA1B-727-U-5NQ  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V NARROW OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4334 lumens  
Efficiency: N/A  
Efficacy: 98.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')  
IES Classification: Type V - Short  
BUG Rating: B2 - U0 - G1

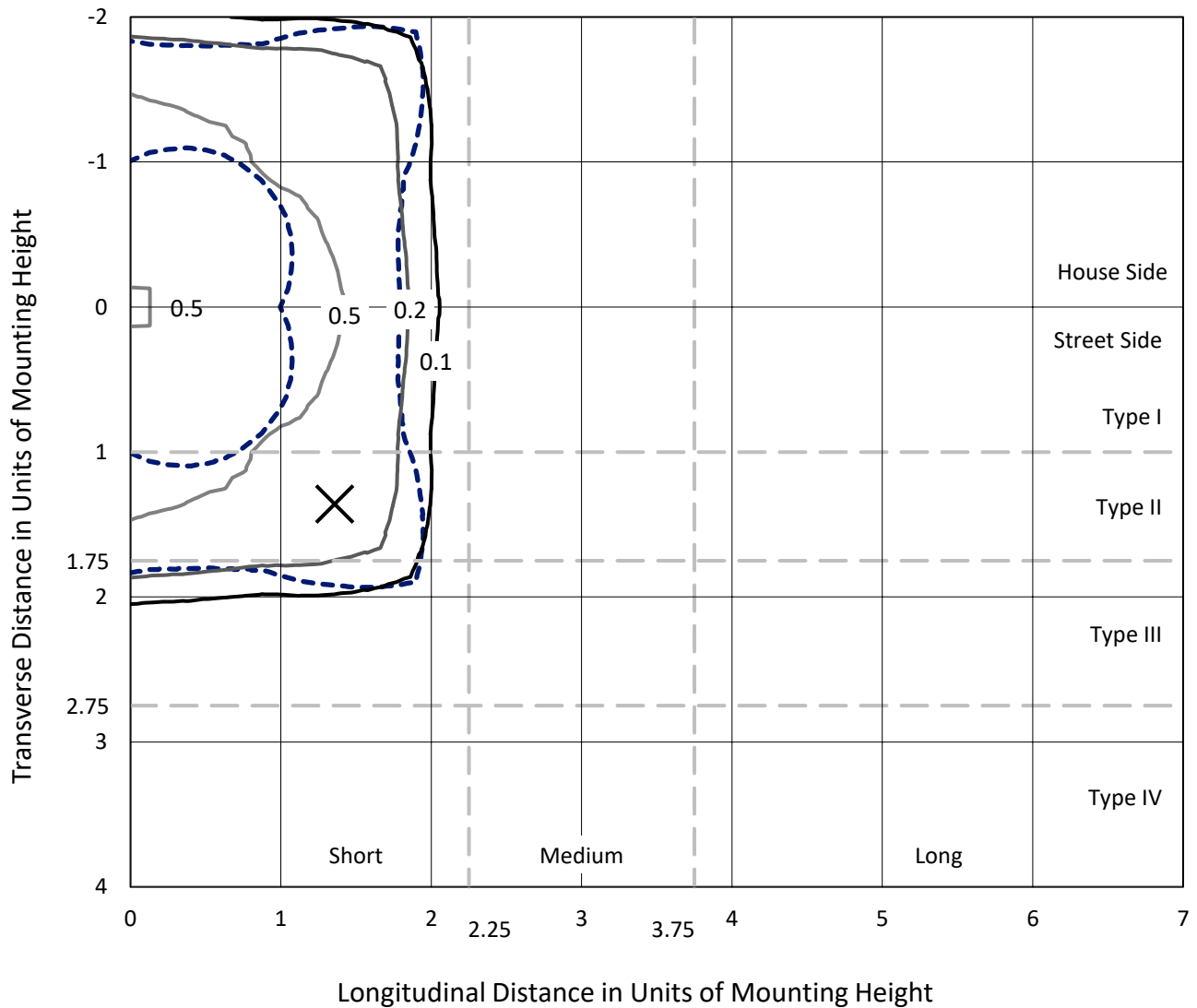
Input Watts (W): 44  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

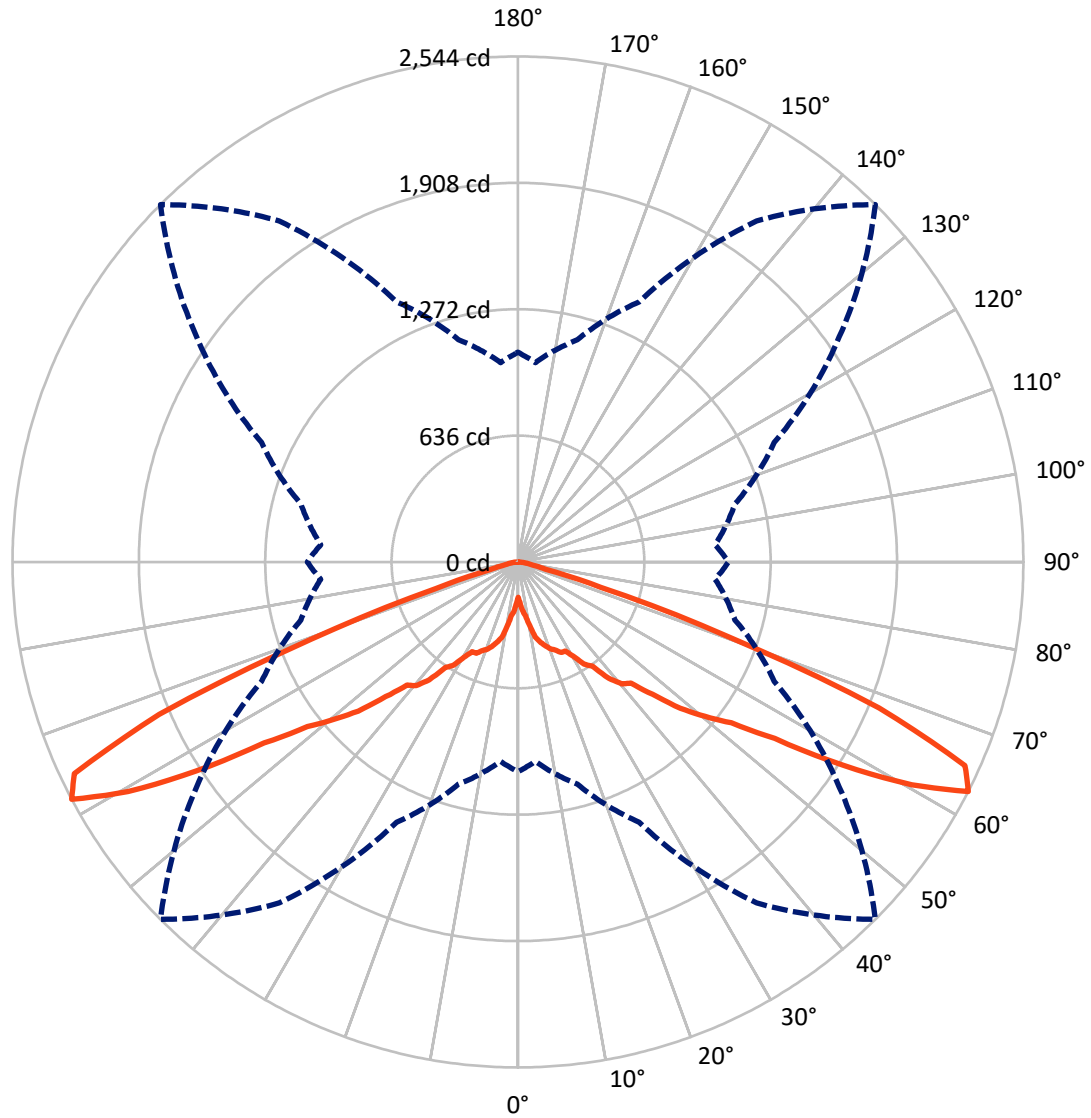
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 0.7 fc  
 Type V - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral      - - - Horizontal Cone Through 62.5-Deg Vertical

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**FLUX DISTRIBUTION:**

|                    |           | Downward | Upward | Total  |
|--------------------|-----------|----------|--------|--------|
| <b>House Side</b>  | Lumens    | 2167.0   | 0.0    | 2167.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Street Side</b> | Lumens    | 2167.0   | 0.0    | 2167.0 |
|                    | % Fixture | 50.0     | 0.0    | 50.0   |
| <b>Total</b>       | Lumens    | 4334.0   | 0.0    | 4334.0 |
|                    | % Fixture | 100.0    | 0.0    | 100.0  |

**ZONAL LUMENS:**

| Zone      | Lumens | % Fixture |
|-----------|--------|-----------|
| 0°-10°    | 26.7   | 0.6       |
| 10°-20°   | 117.8  | 2.7       |
| 20°-30°   | 246.8  | 5.7       |
| 30°-40°   | 465.0  | 10.7      |
| 40°-50°   | 844.0  | 19.5      |
| 50°-60°   | 1426.1 | 32.9      |
| 60°-70°   | 1066.1 | 24.6      |
| 70°-80°   | 119.3  | 2.8       |
| 80°-90°   | 22.2   | 0.5       |
| 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°    | 4334.0 | 100.0     |
| 0°-180°   | 4334.0 | 100.0     |

**Coefficient of Utilization**



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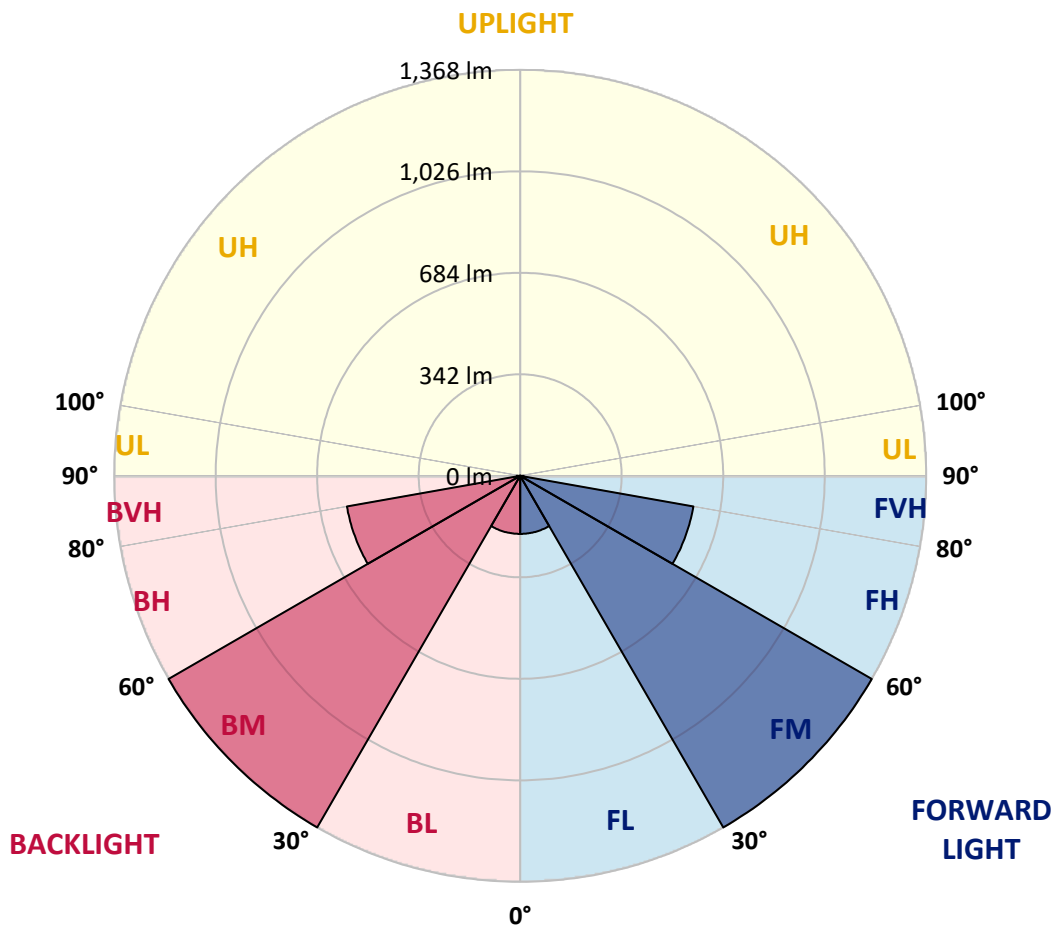
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

| Zone           | Lumens | % Fixture | Zone Rating/Lumen Limit |      |        |
|----------------|--------|-----------|-------------------------|------|--------|
|                |        |           | B                       | U    | G      |
| FL (0°-30°)    | 195.6  | 4.5       |                         |      |        |
| FM (30°-60°)   | 1367.6 | 31.6      |                         |      |        |
| FH (60°-80°)   | 592.7  | 13.7      |                         |      | G0/660 |
| FVH (80°-90°)  | 11.1   | 0.3       |                         |      | G1/100 |
| BL (0°-30°)    | 195.6  | 4.5       | B1/500                  |      |        |
| BM (30°-60°)   | 1367.6 | 31.6      | B2/2500                 |      |        |
| BH (60°-80°)   | 592.7  | 13.7      | B2/1000                 |      | G0/660 |
| BVH (80°-90°)  | 11.1   | 0.3       |                         |      | G1/100 |
| UL (90°-100°)  | 0.0    | 0.0       |                         | U0/0 |        |
| UH (100°-180°) | 0.0    | 0.0       |                         | U0/0 |        |

**BUG Rating: B2-U0-G1**

Type V Short





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**CANDELA DISTRIBUTION (FULL):**

|       | 0°     | 5°     | 15°    | 25°    | 35°    | 45°    | 55°    | 65°    | 75°    | 85°    | 90°    |
|-------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| 0°    | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  | 177.2  |
| 2.5°  | 215.5  | 211.6  | 198.0  | 202.8  | 207.7  | 207.0  | 205.8  | 202.1  | 198.7  | 212.6  | 215.5  |
| 5°    | 274.7  | 265.9  | 261.1  | 257.3  | 256.4  | 246.9  | 259.9  | 258.5  | 262.9  | 270.3  | 277.5  |
| 7.5°  | 322.0  | 313.7  | 301.2  | 298.5  | 284.2  | 273.7  | 284.9  | 298.9  | 303.3  | 316.9  | 325.0  |
| 10°   | 339.2  | 332.0  | 334.3  | 322.5  | 321.8  | 324.8  | 322.3  | 325.5  | 337.1  | 335.5  | 341.5  |
| 12.5° | 378.0  | 379.3  | 371.9  | 368.9  | 374.9  | 387.9  | 376.8  | 372.9  | 370.1  | 382.1  | 385.8  |
| 15°   | 414.4  | 421.6  | 409.4  | 407.5  | 405.0  | 417.2  | 405.2  | 411.0  | 416.1  | 418.6  | 417.2  |
| 17.5° | 465.8  | 466.2  | 452.6  | 430.9  | 439.0  | 442.9  | 437.6  | 427.6  | 451.7  | 463.9  | 464.6  |
| 20°   | 499.7  | 500.9  | 474.1  | 440.3  | 463.2  | 466.7  | 464.1  | 443.1  | 475.2  | 495.5  | 494.6  |
| 22.5° | 536.2  | 532.0  | 495.6  | 471.0  | 479.1  | 481.2  | 475.5  | 472.9  | 495.5  | 532.3  | 526.9  |
| 25°   | 560.7  | 568.5  | 532.3  | 516.5  | 509.6  | 504.6  | 511.9  | 513.3  | 536.4  | 569.9  | 551.4  |
| 27.5° | 619.3  | 605.8  | 549.2  | 555.2  | 540.6  | 507.3  | 539.0  | 556.5  | 551.5  | 608.7  | 622.6  |
| 30°   | 671.3  | 671.6  | 592.3  | 603.7  | 576.6  | 549.6  | 584.0  | 609.2  | 603.0  | 676.2  | 663.0  |
| 32.5° | 737.7  | 740.2  | 666.5  | 635.8  | 617.5  | 612.4  | 608.1  | 636.0  | 674.4  | 733.7  | 734.9  |
| 35°   | 809.5  | 830.7  | 730.5  | 698.2  | 667.0  | 644.5  | 668.8  | 707.4  | 732.5  | 827.1  | 810.4  |
| 37.5° | 949.3  | 913.7  | 831.7  | 771.1  | 751.1  | 742.1  | 755.0  | 777.4  | 831.5  | 913.2  | 941.9  |
| 40°   | 1032.0 | 1022.2 | 910.5  | 859.8  | 782.9  | 806.9  | 799.8  | 861.2  | 906.0  | 1027.8 | 1030.4 |
| 42.5° | 1158.4 | 1108.7 | 1008.4 | 943.9  | 874.7  | 833.1  | 877.2  | 959.6  | 1013.7 | 1116.7 | 1165.3 |
| 45°   | 1258.4 | 1194.6 | 1117.2 | 1068.2 | 980.9  | 950.0  | 965.9  | 1071.3 | 1139.2 | 1209.9 | 1273.9 |
| 47.5° | 1369.0 | 1299.9 | 1222.5 | 1135.4 | 1050.2 | 1100.4 | 1072.4 | 1165.1 | 1231.4 | 1332.8 | 1392.8 |
| 50°   | 1507.9 | 1431.4 | 1332.3 | 1260.4 | 1203.9 | 1221.6 | 1217.2 | 1283.3 | 1365.1 | 1457.5 | 1525.6 |
| 52.5° | 1661.0 | 1574.4 | 1478.8 | 1412.0 | 1388.2 | 1344.5 | 1401.6 | 1428.8 | 1489.1 | 1573.7 | 1653.6 |
| 55°   | 1768.0 | 1681.4 | 1623.6 | 1645.1 | 1638.8 | 1568.6 | 1618.7 | 1621.5 | 1592.4 | 1622.9 | 1703.3 |
| 57.5° | 1751.4 | 1668.7 | 1660.8 | 1742.1 | 1863.6 | 1931.5 | 1854.0 | 1687.6 | 1578.6 | 1564.3 | 1649.5 |
| 60°   | 1531.4 | 1460.7 | 1533.3 | 1716.7 | 2070.6 | 2277.2 | 1979.2 | 1637.7 | 1458.2 | 1384.0 | 1466.1 |
| 62.5° | 1055.3 | 1007.5 | 1158.1 | 1444.8 | 2095.4 | 2544.0 | 1974.7 | 1423.1 | 1130.9 | 996.2  | 1060.1 |
| 65°   | 500.2  | 483.0  | 610.1  | 916.0  | 1745.4 | 2472.8 | 1725.2 | 962.9  | 651.0  | 520.0  | 534.4  |
| 67.5° | 188.1  | 179.5  | 223.9  | 404.7  | 1099.4 | 1961.3 | 1159.7 | 475.0  | 251.8  | 195.7  | 202.4  |
| 70°   | 106.9  | 100.7  | 106.5  | 147.6  | 442.6  | 1110.8 | 500.2  | 162.9  | 107.0  | 97.5   | 103.9  |
| 72.5° | 84.1   | 79.3   | 80.2   | 89.2   | 152.7  | 436.0  | 161.9  | 92.9   | 77.8   | 73.9   | 79.5   |
| 75°   | 69.5   | 65.2   | 65.1   | 70.0   | 89.0   | 141.6  | 91.5   | 71.1   | 62.9   | 60.1   | 64.7   |
| 77.5° | 55.2   | 52.7   | 53.4   | 57.3   | 63.8   | 79.2   | 66.3   | 57.5   | 51.7   | 48.3   | 51.5   |
| 80°   | 40.4   | 40.0   | 42.8   | 46.4   | 47.6   | 53.2   | 49.7   | 46.4   | 41.3   | 36.5   | 37.7   |
| 82.5° | 26.4   | 26.6   | 31.9   | 34.7   | 34.2   | 34.0   | 35.6   | 35.4   | 30.9   | 24.2   | 24.2   |
| 85°   | 15.2   | 15.5   | 19.6   | 21.9   | 21.5   | 17.1   | 22.6   | 22.7   | 19.7   | 14.6   | 14.1   |
| 87.5° | 4.9    | 6.2    | 8.5    | 9.0    | 8.6    | 4.8    | 8.6    | 9.5    | 8.6    | 6.2    | 5.5    |
| 90°   | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    | 0.0    |

(END OF REPORT)