

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: P367654

Luminaire Tested: **MSA-SA2D-830-U-T4W**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P367654  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-14)  
Test Lab: INNOVATION CENTER  
Issue Date: 12/2/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2D-830-U-T4W  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10867 lumens  
Efficiency: N/A  
Efficacy: 84.2 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G2

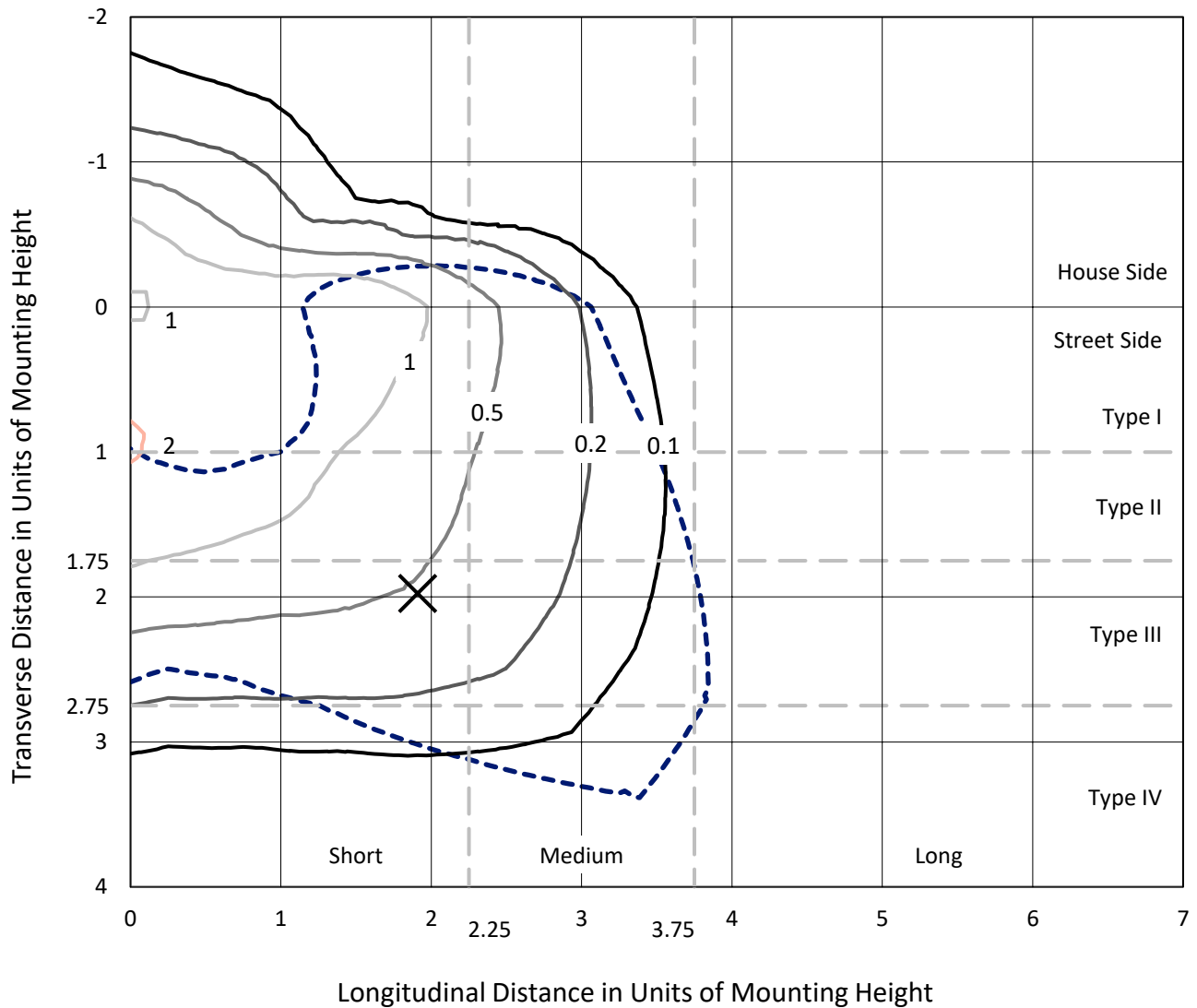
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

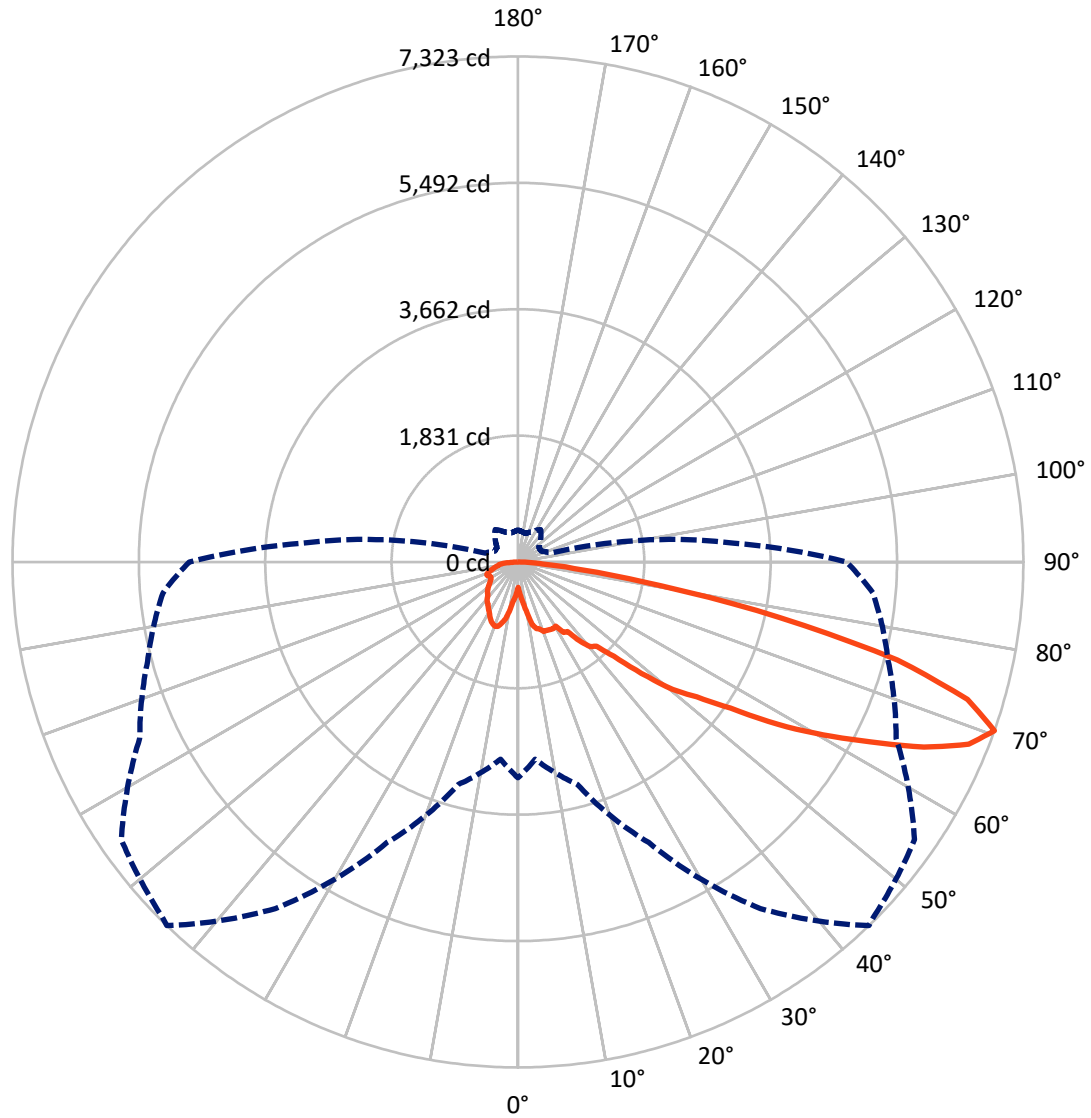
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 2.1 fc  
 Type IV - Short - N/A

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### Luminous Intensity Polar Plot



— Vertical Plane Through 44-Deg Lateral      - - - Horizontal Cone Through 70-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2397.7	0.0	2397.7
	% Fixture	22.1	0.0	22.1
<b>Street Side</b>	Lumens	8469.3	0.0	8469.3
	% Fixture	77.9	0.0	77.9
<b>Total</b>	Lumens	10867.0	0.0	10867.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	57.9	0.5
10°-20°	266.7	2.5
20°-30°	498.4	4.6
30°-40°	800.0	7.4
40°-50°	1350.3	12.4
50°-60°	2406.2	22.1
60°-70°	3291.4	30.3
70°-80°	1935.5	17.8
80°-90°	260.6	2.4
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°	10867.0	100.0
0°-180°	10867.0	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°)	435.5	4.0			
FM (30°-60°)	3397.8	31.3			
FH (60°-80°)	4462.3	41.1			G2/5000
FVH (80°-90°)	173.7	1.6			G2/225
BL (0°-30°)	387.5	3.6	B1/500		
BM (30°-60°)	1158.7	10.7	B2/2500		
BH (60°-80°)	764.6	7.0	B2/1000		G2/1000
BVH (80°-90°)	86.9	0.8			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**  
 Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4
2.5°	448.3	439.3	418.0	425.1	434.0	437.6	436.7	435.8	422.0	417.1	441.6
5°	609.1	589.5	573.9	567.7	547.2	531.1	521.3	547.2	543.2	549.8	566.8
7.5°	760.6	748.1	712.9	700.4	658.6	630.9	627.8	648.3	653.7	643.0	671.9
10°	858.2	836.8	829.7	799.8	770.8	766.4	763.7	754.4	741.4	740.5	714.7
12.5°	933.9	945.1	950.9	916.6	917.4	933.5	925.0	887.1	865.3	827.0	830.1
15°	1069.8	1085.9	1040.0	1018.1	976.3	1000.3	997.2	965.6	962.4	937.5	908.5
17.5°	1188.4	1195.5	1118.8	1068.9	1054.7	1019.9	1029.3	1030.2	989.2	1033.7	1007.9
20°	1198.2	1223.6	1135.3	1036.0	1078.7	1074.3	1075.6	1066.7	1012.8	1086.3	1076.5
22.5°	1246.3	1207.5	1128.2	1055.6	1066.7	1073.4	1079.6	1068.9	1065.8	1106.8	1136.7
25°	1237.4	1224.9	1144.7	1083.2	1084.5	1085.9	1089.0	1121.1	1117.5	1173.2	1188.8
27.5°	1320.7	1301.5	1149.6	1134.4	1099.7	1092.1	1070.7	1137.6	1189.7	1188.4	1274.4
30°	1479.3	1459.7	1263.7	1219.5	1156.7	1079.2	1120.2	1209.3	1250.3	1264.1	1373.3
32.5°	1727.1	1759.1	1488.2	1310.4	1232.5	1215.5	1211.1	1202.2	1303.8	1371.9	1471.3
35°	2082.6	2057.2	1752.9	1505.2	1312.2	1239.6	1249.4	1303.8	1424.5	1468.6	1560.4
37.5°	2489.9	2437.3	2092.0	1725.7	1542.1	1451.2	1418.7	1471.3	1498.0	1532.8	1720.4
40°	2903.8	2775.5	2424.8	2015.8	1680.3	1611.7	1583.1	1518.5	1581.4	1651.8	1890.1
42.5°	3303.5	3204.1	2787.1	2362.0	1912.9	1668.2	1652.6	1589.4	1784.1	1858.5	2135.2
45°	3722.4	3492.0	3158.3	2752.8	2252.8	1945.8	1922.7	1809.0	2058.6	2213.6	2481.0
47.5°	4004.0	3790.5	3498.2	3070.0	2537.6	2410.1	2366.0	2171.7	2398.1	2599.5	3015.2
50°	4270.4	4050.7	3743.7	3417.1	3053.1	2906.5	2812.5	2489.0	2821.0	3148.9	3700.1
52.5°	4651.8	4455.3	4028.9	3766.9	3606.9	3246.5	3176.5	2998.7	3315.5	3758.0	4448.6
55°	5059.5	4791.7	4405.4	4260.2	4195.6	3733.9	3676.9	3563.7	3974.1	4381.4	5176.3
57.5°	5239.5	4960.2	4747.2	4660.3	4654.9	4442.4	4376.9	4298.0	4647.4	4916.1	5861.1
60°	5382.6	5082.7	4997.6	5046.2	5222.6	5082.7	4997.6	4928.1	5195.4	5444.5	6419.9
62.5°	5356.3	5055.5	5099.2	5247.1	5697.6	5738.6	5673.1	5504.7	5738.6	5877.6	6740.2
65°	4932.1	4654.1	4908.5	5259.6	6139.2	6466.7	6463.1	6022.4	6103.5	6103.5	6706.4
67.5°	4188.9	3901.0	4317.6	5149.5	6444.4	7043.7	7044.6	6571.4	6136.9	6080.8	6182.4
70°	3128.0	2867.3	3335.6	4484.7	6129.4	7323.1	7282.5	7014.3	6045.1	5554.6	5164.2
72.5°	1868.3	1699.9	2130.8	3264.7	5228.4	6809.3	6917.1	6504.1	5534.1	4619.3	3691.6
75°	848.4	775.3	1001.2	1875.4	3732.6	5679.8	5797.0	5489.1	4395.6	3322.2	2133.4
77.5°	363.1	343.5	437.1	831.9	2058.1	3884.1	4124.3	3922.9	2978.2	1930.7	943.7
80°	233.5	221.0	268.7	400.1	955.8	2098.7	2305.4	2230.1	1517.2	750.8	332.4
82.5°	139.5	135.5	179.6	251.3	521.3	923.7	1040.9	1068.5	630.0	336.9	190.3
85°	76.2	77.1	98.5	152.4	312.8	359.6	385.0	418.8	296.8	195.2	92.2
87.5°	25.4	29.4	39.7	61.9	111.4	101.6	102.0	118.5	125.2	81.1	29.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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**CANDELA DISTRIBUTION (continued):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4	369.4
2.5°	445.6	437.6	417.1	418.4	426.0	427.8	430.0	417.1	414.4	438.9	441.1
5°	569.4	543.2	531.1	527.1	515.5	511.5	532.9	542.7	552.5	571.7	581.0
7.5°	668.8	639.4	617.6	597.5	580.6	570.8	606.9	634.5	651.4	690.6	708.5
10°	714.3	688.9	680.8	664.8	677.7	707.1	713.8	714.7	752.1	751.2	758.8
12.5°	804.7	788.2	761.9	767.7	801.6	831.9	823.4	836.3	849.7	881.8	867.1
15°	887.1	882.7	858.2	862.2	868.9	906.8	911.7	924.6	945.1	970.5	953.1
17.5°	988.7	987.0	927.2	921.9	937.5	974.5	962.9	940.2	1007.9	1035.1	1027.9
20°	1057.8	1044.4	967.8	945.1	984.7	989.6	976.3	940.2	999.0	1058.2	1074.3
22.5°	1115.3	1099.7	1020.8	976.3	968.2	970.5	970.5	963.8	992.7	1041.3	1040.9
25°	1161.6	1176.3	1076.1	1033.3	990.5	937.0	930.4	936.2	952.6	1046.2	1043.1
27.5°	1277.9	1237.4	1094.8	1062.7	974.9	890.7	909.0	917.9	923.2	1025.7	1042.7
30°	1353.7	1366.1	1161.6	1080.1	952.2	839.0	845.3	871.1	902.3	1023.5	1028.4
32.5°	1455.7	1429.0	1265.9	1051.1	891.6	807.8	796.2	831.0	877.3	987.4	1000.8
35°	1550.6	1582.2	1310.0	1045.8	849.3	761.0	773.5	785.6	833.7	947.3	962.9
37.5°	1773.4	1701.2	1433.9	1019.9	814.1	737.4	724.1	742.3	783.3	871.1	907.2
40°	1942.7	1947.2	1460.6	987.4	746.8	703.6	675.0	693.3	710.7	780.7	796.2
42.5°	2260.4	2163.3	1526.1	916.1	704.5	652.8	636.7	644.8	647.4	676.8	702.7
45°	2664.6	2436.9	1551.9	820.3	648.8	631.8	599.3	595.3	580.6	584.6	607.3
47.5°	3223.8	2863.7	1533.2	718.3	599.3	604.6	557.9	539.6	519.1	524.0	545.4
50°	3946.9	3409.1	1531.9	631.8	565.4	569.0	530.7	497.7	477.2	487.5	506.2
52.5°	4758.3	3956.3	1538.1	572.6	528.5	526.7	512.9	472.8	456.3	467.0	488.4
55°	5534.5	4426.8	1584.5	535.1	490.1	493.3	498.6	464.7	446.5	456.3	478.6
57.5°	6210.0	4798.4	1567.1	495.5	454.5	468.7	483.0	453.6	439.8	454.0	476.3
60°	6682.3	4970.9	1429.9	457.6	428.2	447.8	475.4	452.3	450.5	481.2	508.0
62.5°	6854.8	4907.1	1162.5	427.8	412.6	445.1	492.8	481.7	483.5	521.3	558.3
65°	6603.0	4572.1	867.1	408.6	400.6	458.1	532.9	499.0	474.5	505.7	539.6
67.5°	5887.0	3976.3	633.6	392.1	386.8	478.6	569.9	497.3	451.8	483.5	511.1
70°	4762.8	3138.6	490.6	371.2	368.5	464.7	573.5	483.9	427.3	447.8	463.4
72.5°	3263.4	2149.0	406.4	351.1	336.9	411.7	544.5	454.0	397.9	409.9	422.9
75°	1823.7	1206.2	341.8	326.2	295.0	366.7	510.6	436.2	376.1	379.6	397.5
77.5°	818.5	521.8	290.1	293.2	257.1	324.4	466.5	407.7	342.6	334.6	352.5
80°	309.7	254.4	235.3	247.7	216.1	281.2	420.6	381.9	307.4	297.2	307.4
82.5°	179.6	154.2	174.7	190.7	171.5	258.4	401.5	358.2	270.9	245.1	254.0
85°	83.3	79.8	104.7	123.9	119.9	201.4	343.5	269.6	192.9	163.1	180.5
87.5°	21.8	24.5	37.0	43.7	44.6	69.1	132.3	100.3	75.3	57.0	54.8
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)