

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: P367642

Luminaire Tested: **MSA-SA2D-830-U-SL4**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367642
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-20)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2D-830-U-SL4
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL LIGHT ELIMINATOR OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10440 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G3

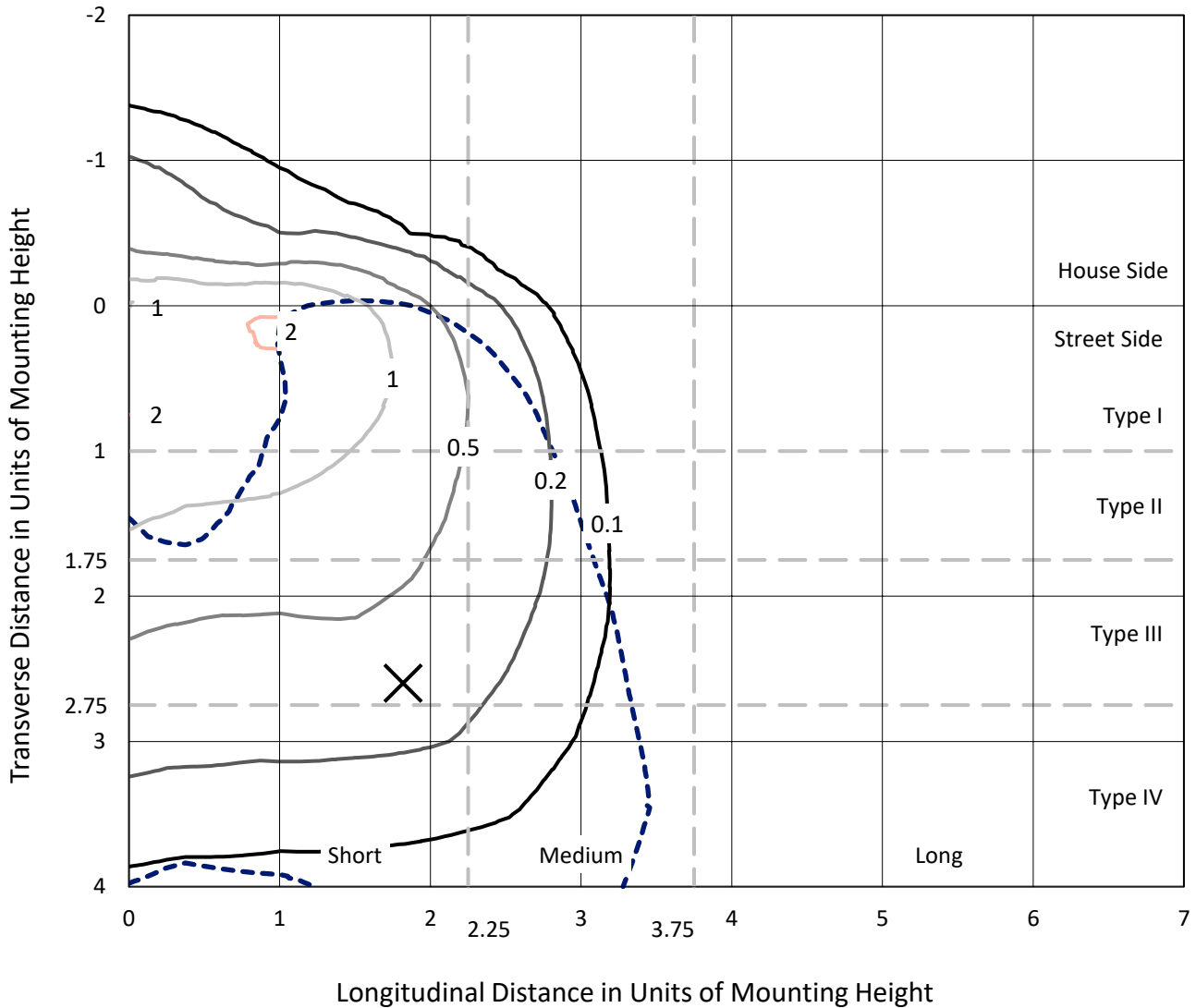
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

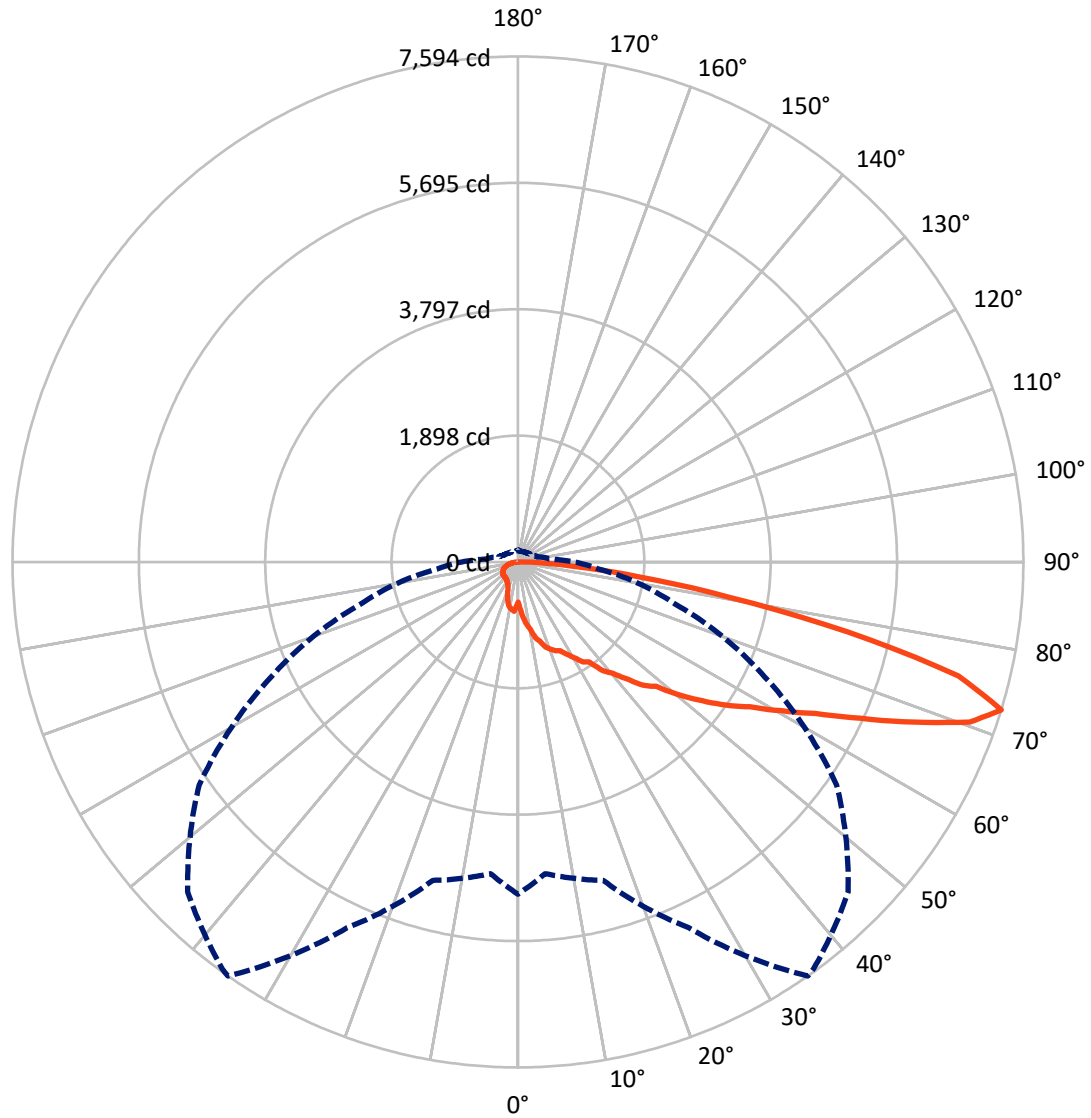
× Max cd
 - - - 1/2 Max cd



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 35-Deg Lateral - - - Horizontal Cone Through 72.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1401.0	0.0	1401.0
	% Fixture	13.4	0.0	13.4
Street Side	Lumens	9039.0	0.0	9039.0
	% Fixture	86.6	0.0	86.6
Total	Lumens	10440.0	0.0	10440.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	80.2	0.8
10°-20°	282.5	2.7
20°-30°	490.8	4.7
30°-40°	820.3	7.9
40°-50°	1423.7	13.6
50°-60°	2152.2	20.6
60°-70°	2788.2	26.7
70°-80°	2057.4	19.7
80°-90°	344.8	3.3
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°	10440.0	100.0
0°-180°	10440.0	100.0

Coefficient of Utilization



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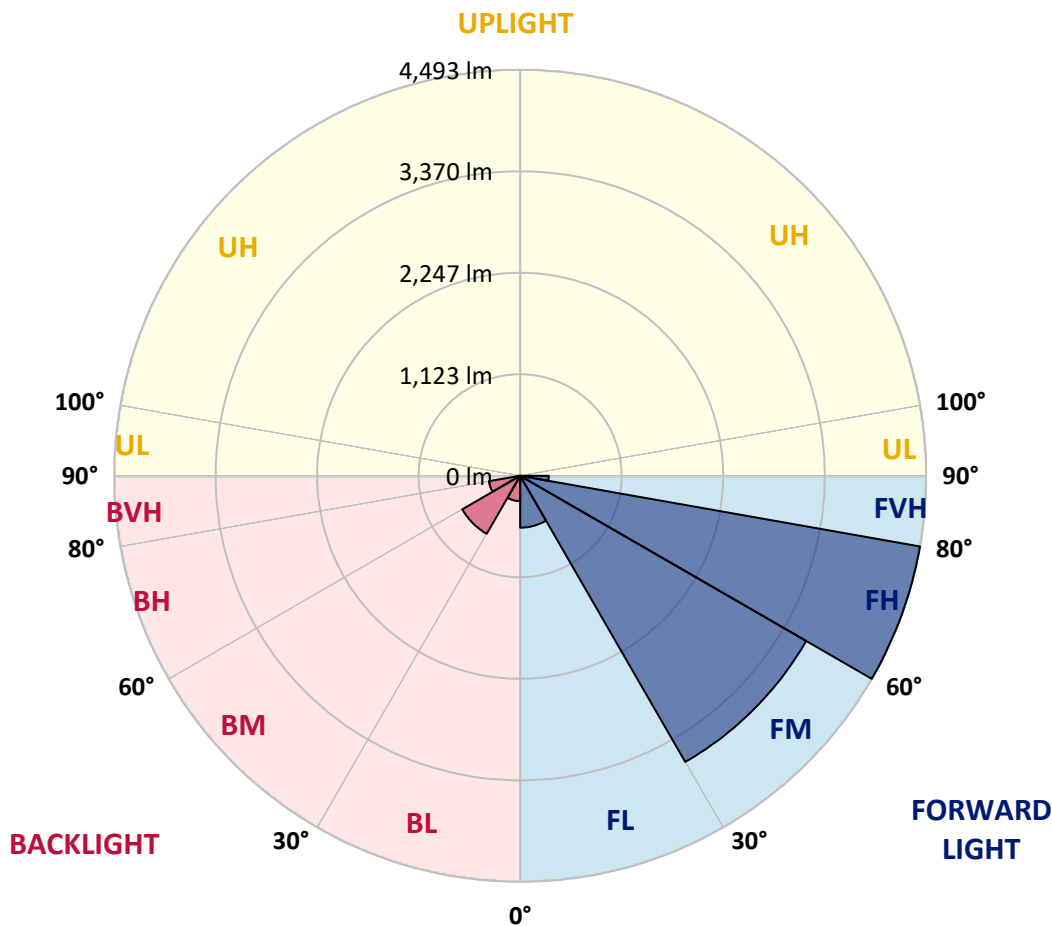
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	573.4	5.5			
FM (30°-60°)	3655.7	35.0			
FH (60°-80°)	4493.3	43.0			G2/5000
FVH (80°-90°)	316.6	3.0			G3/500
BL (0°-30°)	280.0	2.7	B1/500		
BM (30°-60°)	740.5	7.1	B1/1000		
BH (60°-80°)	352.3	3.4	B1/500		G1/500
BVH (80°-90°)	28.2	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3
2.5°	752.6	716.5	685.3	684.0	712.9	724.1	719.6	709.8	698.2	673.7	727.2
5°	942.9	891.2	881.4	869.8	843.5	850.6	807.9	840.4	850.6	874.3	909.9
7.5°	1055.2	1024.9	1001.2	991.4	946.0	940.6	909.0	955.4	975.0	971.8	1024.9
10°	1099.3	1071.6	1073.4	1041.3	1026.6	1032.9	1036.4	1037.3	1049.4	1059.2	1032.4
12.5°	1122.0	1132.7	1171.9	1150.1	1168.8	1176.4	1213.8	1175.5	1176.8	1126.5	1154.1
15°	1236.5	1263.3	1240.5	1239.6	1233.8	1246.3	1278.4	1252.6	1272.6	1256.6	1220.9
17.5°	1374.7	1382.7	1339.0	1321.2	1344.4	1340.3	1332.3	1336.3	1286.4	1379.1	1335.4
20°	1417.0	1448.6	1391.1	1321.2	1397.8	1408.1	1406.3	1388.9	1303.4	1437.0	1394.7
22.5°	1540.0	1497.2	1451.7	1407.2	1446.4	1452.2	1442.4	1400.9	1372.4	1423.2	1456.6
25°	1595.7	1585.4	1527.5	1522.1	1478.9	1458.4	1475.4	1463.3	1435.3	1525.7	1488.7
27.5°	1723.1	1711.1	1577.8	1632.7	1569.8	1564.5	1474.9	1515.0	1543.1	1536.4	1591.7
30°	1867.5	1881.3	1686.6	1741.4	1668.7	1658.9	1568.9	1619.7	1638.9	1645.1	1714.2
32.5°	2027.9	2065.8	1872.4	1827.4	1788.6	1795.3	1719.1	1626.4	1700.8	1846.5	1876.4
35°	2201.7	2217.3	2014.5	1946.8	1845.6	1838.5	1839.9	1851.4	1926.7	2092.9	2116.1
37.5°	2522.9	2450.8	2273.0	2101.4	2067.5	2001.2	2046.2	2081.8	2157.1	2412.0	2509.1
40°	2720.8	2667.3	2396.4	2297.0	2203.5	2209.7	2293.9	2293.5	2471.3	2734.2	2882.5
42.5°	2903.9	2845.6	2590.2	2490.4	2401.7	2423.6	2447.6	2490.0	2830.8	3254.6	3322.3
45°	3051.4	2923.5	2739.9	2717.7	2644.6	2615.6	2717.7	2785.4	3260.8	3675.7	3714.9
47.5°	3151.7	3046.5	2866.9	2847.3	2793.4	2864.3	3142.8	3186.4	3594.1	4098.6	4095.4
50°	3304.1	3160.1	2997.9	2987.7	3139.6	3177.5	3517.1	3512.6	3918.5	4449.7	4376.2
52.5°	3479.6	3298.3	3122.3	3232.3	3464.0	3482.8	3777.3	3897.2	4272.8	4788.3	4596.3
55°	3681.5	3478.7	3308.5	3455.6	3800.5	3745.2	4043.3	4336.1	4716.2	5145.3	4755.4
57.5°	3931.5	3685.5	3547.8	3771.5	4107.5	4156.5	4424.3	4792.8	5073.1	5367.2	4871.2
60°	4195.3	3906.5	3780.4	3993.4	4537.5	4593.6	4855.6	5172.4	5473.2	5576.1	4849.4
62.5°	4447.0	4134.7	4020.6	4283.5	5014.3	5153.3	5346.7	5548.5	5806.1	5626.9	4585.1
65°	4727.3	4414.5	4342.7	4737.1	5660.8	5798.9	6051.6	5991.0	5920.1	5446.9	4148.0
67.5°	5024.1	4706.3	4719.7	5263.3	6423.2	6446.8	6834.9	6432.1	5786.0	4970.1	3414.1
70°	5183.6	4858.3	4996.0	5824.3	7199.0	7165.1	7244.4	6550.7	5239.3	3928.8	2353.2
72.5°	4990.2	4700.1	4952.3	6060.5	7593.8	7557.2	7014.5	5847.1	4096.3	2443.2	1220.0
75°	4225.1	3945.3	4331.2	5402.4	6836.3	6870.1	5969.6	4348.1	2345.2	982.5	506.6
77.5°	2871.0	2726.6	3057.2	4026.8	5078.0	5195.2	4429.2	2542.6	984.8	406.8	306.6
80°	1517.2	1448.6	1692.8	2319.8	3215.4	3302.7	2604.5	1266.4	504.4	263.3	218.8
82.5°	824.3	795.4	926.4	1192.9	1826.9	1903.1	1350.6	841.3	340.0	164.9	133.7
85°	553.9	542.7	629.6	640.8	864.0	889.0	707.6	647.9	204.1	80.7	88.2
87.5°	277.2	266.0	331.5	292.8	329.7	330.2	324.4	413.5	51.7	26.7	16.0
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°	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3	603.3
2.5°	728.1	712.5	658.6	658.1	666.2	660.8	664.8	643.0	633.6	676.4	674.2
5°	905.0	858.2	813.2	797.6	779.3	739.7	741.9	742.4	735.7	761.1	762.9
7.5°	1008.8	952.7	911.2	828.4	763.3	712.5	719.2	726.8	719.2	753.1	765.5
10°	1024.0	979.4	930.0	837.7	794.5	748.6	702.3	661.3	656.4	640.8	645.7
12.5°	1114.0	1077.0	973.6	872.5	822.1	751.7	667.1	620.3	581.1	587.7	575.3
15°	1187.9	1161.7	1037.8	905.4	785.1	697.8	607.8	543.6	508.4	504.4	491.9
17.5°	1288.2	1250.8	1043.6	882.7	737.5	632.7	531.1	458.5	443.4	437.1	430.9
20°	1336.3	1269.0	1022.6	811.4	681.8	555.2	455.4	393.0	388.6	399.7	397.5
22.5°	1378.2	1284.2	1003.9	768.2	594.9	476.8	403.7	362.7	357.8	372.1	374.7
25°	1402.7	1327.4	983.4	724.1	540.9	418.4	364.9	341.8	342.7	361.4	359.1
27.5°	1513.2	1342.6	931.7	672.0	479.0	375.2	346.2	334.2	329.3	355.1	357.4
30°	1582.7	1441.5	920.1	616.7	433.1	343.6	329.3	324.4	323.5	354.7	356.9
32.5°	1712.0	1474.5	925.5	556.5	391.7	333.7	316.8	316.4	325.3	355.1	358.7
35°	1891.1	1613.5	899.7	522.2	369.0	318.6	307.0	310.6	325.7	358.3	363.2
37.5°	2240.4	1744.5	907.7	490.2	361.4	313.7	304.3	306.6	331.1	366.3	379.6
40°	2517.2	1982.0	895.2	474.1	351.1	312.8	298.5	307.5	330.6	370.7	382.8
42.5°	2918.2	2171.4	896.5	458.1	350.7	309.2	297.7	308.3	329.7	366.7	383.2
45°	3262.2	2341.1	915.7	448.7	346.2	315.0	296.3	309.7	323.9	352.5	370.7
47.5°	3544.2	2530.5	935.3	439.8	344.4	320.4	295.0	300.3	314.1	336.4	352.9
50°	3774.2	2663.8	960.3	438.0	344.4	317.7	291.4	291.0	302.6	320.4	336.0
52.5°	3953.3	2757.8	977.2	440.2	344.4	307.5	287.0	283.4	290.5	303.4	319.0
55°	4083.0	2786.7	963.4	446.0	344.0	298.1	278.9	275.8	279.4	288.3	303.0
57.5°	4135.1	2710.5	880.9	435.8	344.0	291.4	269.1	265.6	269.1	275.8	290.5
60°	4004.5	2465.5	762.0	409.5	337.3	282.5	258.0	255.8	261.1	266.9	281.2
62.5°	3677.0	2139.7	635.0	378.3	323.5	274.9	247.3	247.7	256.2	264.2	278.5
65°	3168.2	1745.8	529.4	346.7	306.1	262.9	236.2	239.3	251.3	262.0	276.3
67.5°	2493.1	1293.6	445.6	315.9	281.6	243.3	223.7	224.6	233.0	243.3	257.1
70°	1666.5	823.0	366.3	279.8	249.5	217.9	204.5	201.4	199.2	208.1	220.1
72.5°	845.3	486.1	300.8	239.3	214.8	190.3	180.0	172.0	165.8	171.1	180.5
75°	442.9	340.0	242.8	198.7	177.3	161.8	154.2	143.5	139.0	142.1	148.8
77.5°	313.3	266.0	196.5	157.3	144.4	128.3	129.7	118.5	115.0	116.7	123.9
80°	240.6	210.8	151.1	119.0	111.4	95.8	100.3	93.6	89.1	88.2	93.6
82.5°	164.0	158.6	107.4	83.3	78.0	66.8	73.1	70.4	64.6	61.0	63.7
85°	110.5	105.2	65.5	48.1	45.9	34.8	44.6	42.8	37.9	32.5	33.0
87.5°	19.2	35.2	18.7	12.0	11.1	4.0	10.2	9.8	8.9	4.5	3.6
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)