

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: P368588

Luminaire Tested: **MSA-SA4D-727-U-SL4**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368588
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-SA4D-727-U-SL4
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) 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: 21431 lumens
Efficiency: N/A
Efficacy: 82.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G4

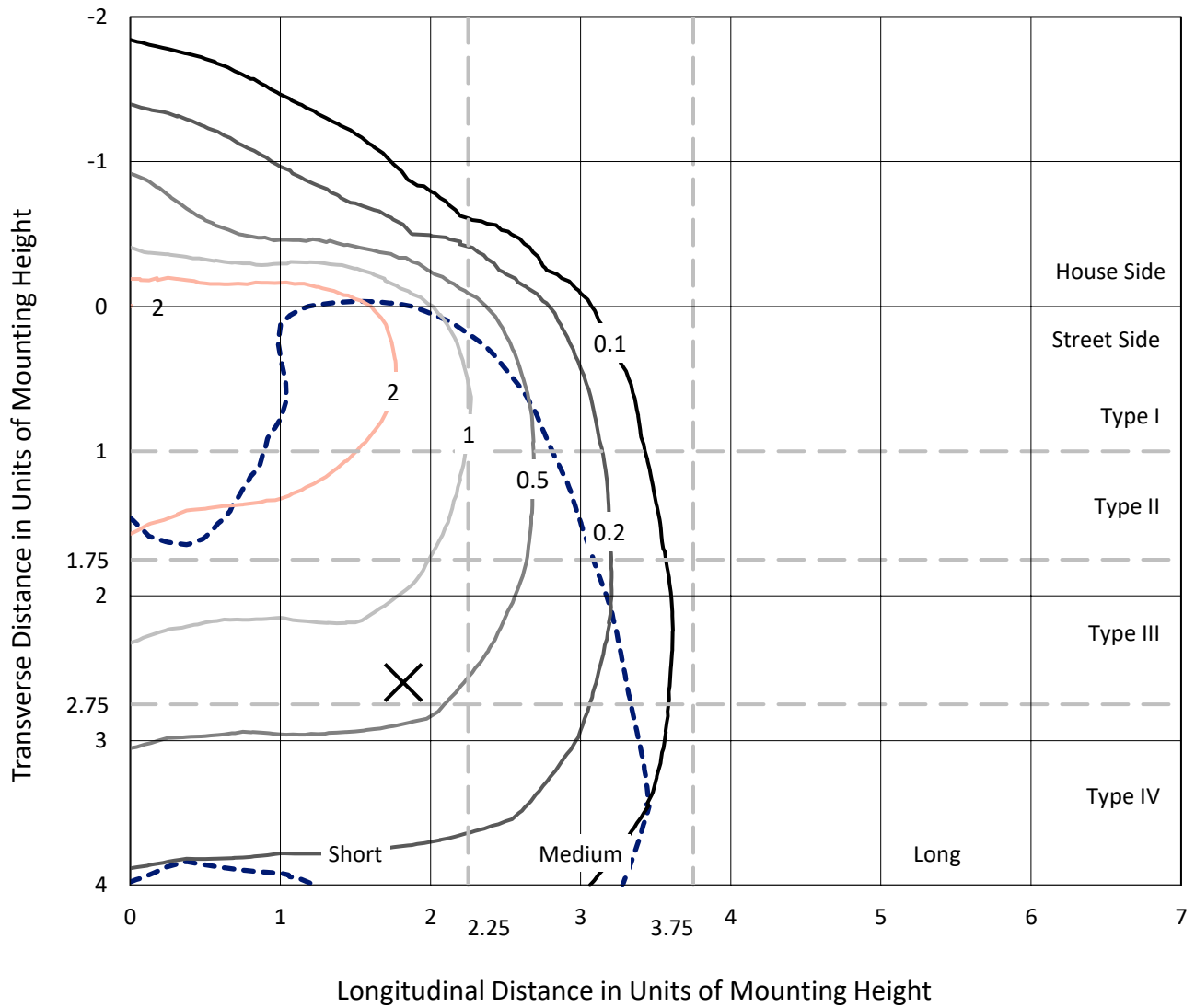
Input Watts (W): 259
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

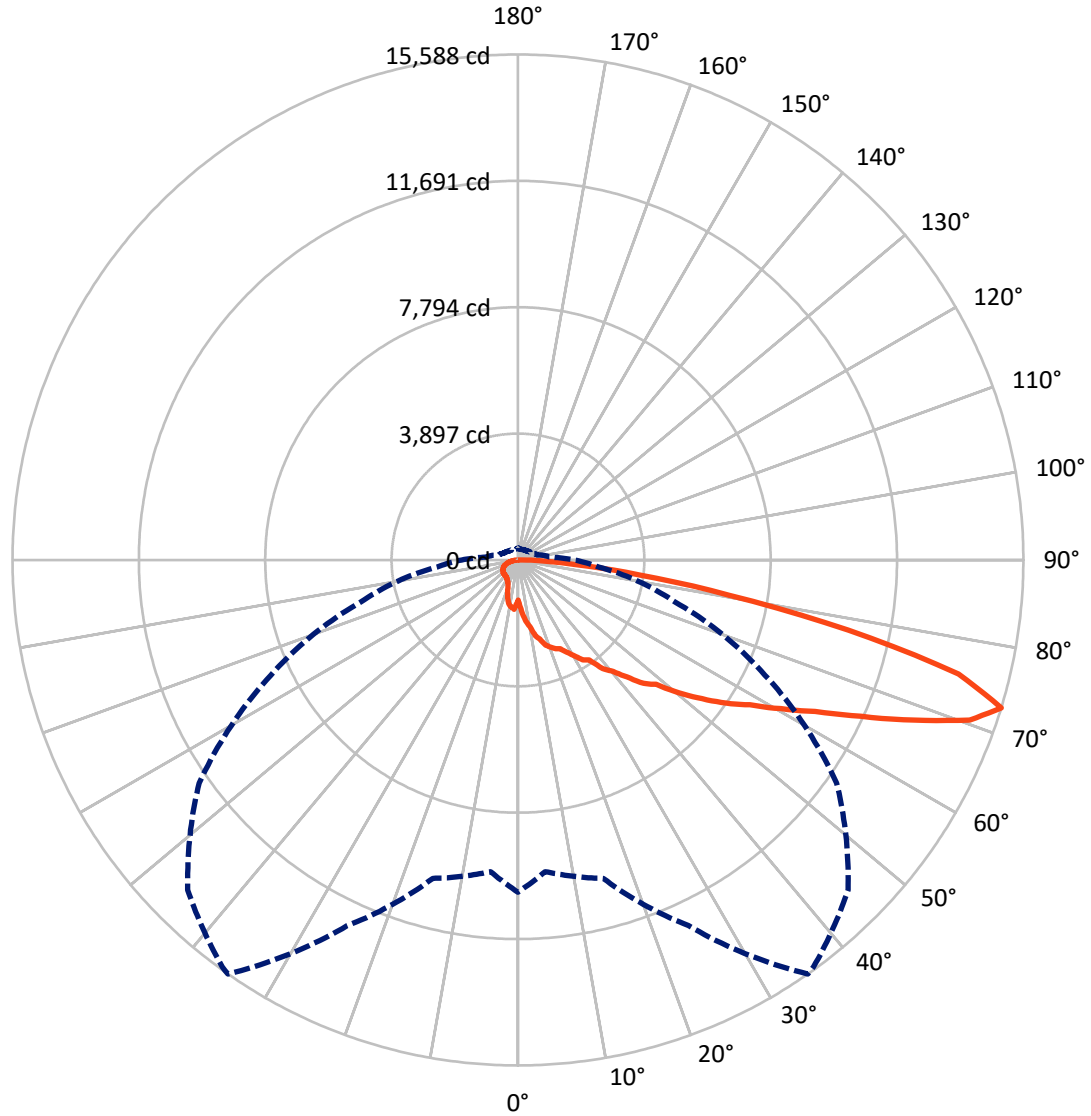
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 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	2876.0	0.0	2876.0
	% Fixture	13.4	0.0	13.4
Street Side	Lumens	18555.0	0.0	18555.0
	% Fixture	86.6	0.0	86.6
Total	Lumens	21431.0	0.0	21431.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.6	0.8
10°-20°	579.8	2.7
20°-30°	1007.5	4.7
30°-40°	1683.8	7.9
40°-50°	2922.5	13.6
50°-60°	4418.1	20.6
60°-70°	5723.5	26.7
70°-80°	4223.4	19.7
80°-90°	707.8	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°	21431.0	100.0
0°-180°	21431.0	100.0

Coefficient of Utilization



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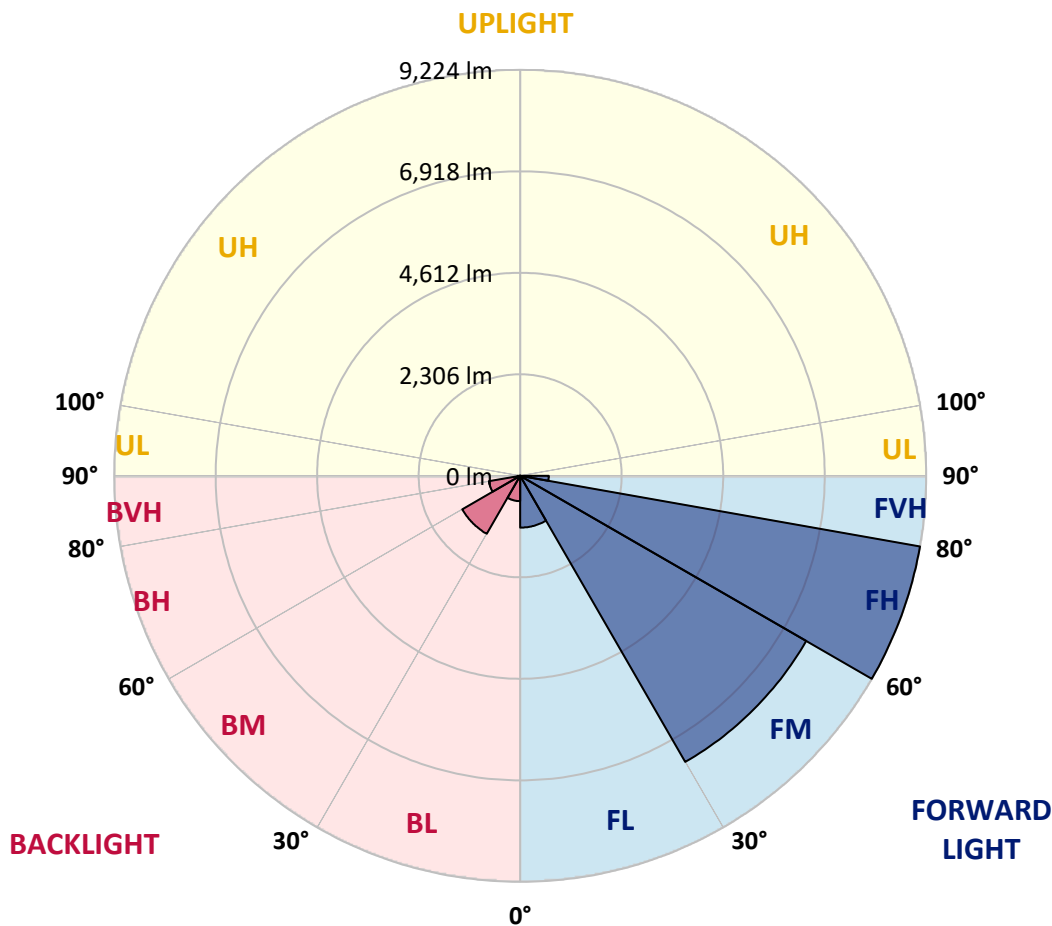
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1177.0	5.5			
FM (30°-60°)	7504.4	35.0			
FH (60°-80°)	9223.7	43.0			G4/12000
FVH (80°-90°)	649.9	3.0			G4/750
BL (0°-30°)	574.9	2.7	B2/1000		
BM (30°-60°)	1520.0	7.1	B2/2500		
BH (60°-80°)	723.2	3.4	B2/1000		G2/1000
BVH (80°-90°)	57.9	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-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5
2.5°	1544.9	1470.8	1406.8	1404.1	1463.5	1486.4	1477.2	1457.1	1433.3	1383.0	1492.8
5°	1935.5	1829.4	1809.3	1785.5	1731.5	1746.2	1658.4	1725.1	1746.2	1794.6	1867.8
7.5°	2166.0	2103.8	2055.3	2035.2	1941.9	1930.9	1866.0	1961.1	2001.4	1995.0	2103.8
10°	2256.6	2199.9	2203.5	2137.7	2107.5	2120.3	2127.6	2129.4	2154.1	2174.2	2119.4
12.5°	2303.2	2325.2	2405.7	2360.8	2399.3	2414.8	2491.6	2413.0	2415.7	2312.4	2369.1
15°	2538.3	2593.2	2546.5	2544.7	2532.8	2558.4	2624.3	2571.2	2612.4	2579.5	2506.3
17.5°	2821.9	2838.3	2748.7	2712.1	2759.7	2751.4	2735.0	2743.2	2640.7	2831.0	2741.4
20°	2908.8	2973.7	2855.7	2712.1	2869.4	2890.5	2886.8	2851.1	2675.5	2949.9	2863.0
22.5°	3161.2	3073.4	2980.1	2888.6	2969.1	2981.0	2960.9	2875.8	2817.3	2921.6	2990.2
25°	3275.5	3254.5	3135.6	3124.6	3035.9	2993.8	3028.6	3003.9	2946.3	3131.9	3056.0
27.5°	3537.2	3512.5	3239.0	3351.5	3222.5	3211.5	3027.7	3110.0	3167.6	3153.9	3267.3
30°	3833.5	3861.9	3462.1	3574.7	3425.6	3405.4	3220.7	3324.9	3364.3	3377.1	3518.9
32.5°	4162.8	4240.6	3843.6	3751.2	3671.6	3685.3	3528.9	3338.7	3491.4	3790.5	3851.8
35°	4519.5	4551.6	4135.4	3996.3	3788.7	3774.1	3776.8	3800.6	3955.2	4296.4	4343.9
37.5°	5179.0	5030.9	4665.9	4313.7	4244.2	4107.9	4200.3	4273.5	4428.1	4951.3	5150.7
40°	5585.2	5475.4	4919.3	4715.3	4523.2	4536.0	4708.9	4708.0	5072.9	5612.6	5917.2
42.5°	5961.1	5841.3	5317.2	5112.3	4930.2	4975.1	5024.5	5111.4	5811.1	6681.0	6820.0
45°	6263.9	6001.4	5624.5	5578.8	5428.8	5369.3	5578.8	5717.8	6693.8	7545.4	7625.9
47.5°	6469.7	6253.8	5885.2	5844.9	5734.3	5879.7	6451.4	6541.0	7378.0	8413.4	8407.0
50°	6782.5	6487.1	6154.1	6133.1	6445.0	6522.7	7219.7	7210.6	8043.9	9134.2	8983.3
52.5°	7142.9	6770.6	6409.3	6635.2	7110.9	7149.3	7753.9	8000.0	8771.1	9829.4	9435.2
55°	7557.3	7141.1	6791.7	7093.5	7801.5	7688.1	8300.0	8901.0	9681.2	10562.1	9761.7
57.5°	8070.4	7565.5	7282.9	7742.0	8431.7	8532.3	9082.1	9838.5	10413.9	11017.6	9999.5
60°	8611.9	8019.2	7760.3	8197.6	9314.4	9429.7	9967.5	10617.9	11235.3	11446.6	9954.7
62.5°	9128.7	8487.5	8253.4	8793.0	10293.1	10578.5	10975.5	11389.9	11918.6	11550.9	9412.3
65°	9704.1	9062.0	8914.7	9724.2	11620.4	11903.9	12422.6	12298.2	12152.7	11181.3	8515.0
67.5°	10313.3	9661.1	9688.5	10804.5	13185.4	13233.9	14030.6	13203.7	11877.4	10202.6	7008.4
70°	10640.7	9973.0	10255.6	11956.1	14777.9	14708.4	14871.2	13447.0	10755.1	8064.9	4830.5
72.5°	10243.7	9648.3	10166.0	12440.9	15588.4	15513.3	14399.2	12002.7	8408.9	5015.3	2504.5
75°	8673.2	8098.8	8890.9	11089.8	14033.4	14102.9	12254.3	8925.7	4814.1	2016.9	1040.0
77.5°	5893.4	5597.1	6275.8	8266.2	10423.9	10664.5	9092.1	5219.3	2021.5	835.1	629.3
80°	3114.6	2973.7	3475.0	4761.9	6600.5	6779.8	5346.4	2599.6	1035.4	540.6	449.1
82.5°	1692.2	1632.7	1901.7	2448.7	3750.3	3906.7	2772.5	1727.0	697.9	338.4	274.4
85°	1137.0	1114.1	1292.5	1315.3	1773.6	1824.8	1452.5	1330.0	418.9	165.6	181.1
87.5°	568.9	546.1	680.5	601.0	676.9	677.8	665.9	848.8	106.1	54.9	32.9
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°	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5	1238.5
2.5°	1494.6	1462.6	1351.9	1351.0	1367.5	1356.5	1364.7	1319.9	1300.7	1388.5	1383.9
5°	1857.8	1761.7	1669.3	1637.3	1599.8	1518.4	1523.0	1523.9	1510.2	1562.3	1566.0
7.5°	2070.9	1955.6	1870.6	1700.4	1566.9	1462.6	1476.3	1491.9	1476.3	1545.8	1571.5
10°	2102.0	2010.5	1909.0	1719.6	1630.9	1536.7	1441.6	1357.4	1347.4	1315.3	1325.4
12.5°	2286.8	2210.8	1998.6	1791.0	1687.6	1543.1	1369.3	1273.3	1192.8	1206.5	1180.9
15°	2438.6	2384.6	2130.3	1858.7	1611.7	1432.4	1247.7	1115.9	1043.7	1035.4	1009.8
17.5°	2644.4	2567.6	2142.2	1812.0	1513.8	1298.9	1090.3	941.2	910.1	897.3	884.5
20°	2743.2	2605.1	2099.2	1665.7	1399.5	1139.7	934.8	806.8	797.6	820.5	815.9
22.5°	2829.2	2636.2	2060.8	1576.9	1221.1	978.7	828.7	744.6	734.5	763.8	769.3
25°	2879.5	2724.9	2018.7	1486.4	1110.4	858.9	749.1	701.6	703.4	741.8	737.2
27.5°	3106.3	2756.0	1912.6	1379.4	983.3	770.2	710.7	686.0	676.0	729.0	733.6
30°	3249.0	2959.1	1888.9	1265.9	889.1	705.2	676.0	665.9	664.1	728.1	732.7
32.5°	3514.3	3026.7	1899.8	1142.5	804.0	685.1	650.4	649.4	667.7	729.0	736.3
35°	3882.0	3312.1	1846.8	1072.0	757.4	654.0	630.2	637.5	668.6	735.4	745.5
37.5°	4599.1	3581.1	1863.2	1006.2	741.8	644.0	624.7	629.3	679.6	751.9	779.3
40°	5167.2	4068.6	1837.6	973.2	720.8	642.1	612.9	631.1	678.7	761.0	785.7
42.5°	5990.4	4457.3	1840.4	940.3	719.9	634.8	611.0	633.0	676.9	752.8	786.6
45°	6696.5	4805.8	1879.7	921.1	710.7	646.7	608.3	635.7	665.0	723.5	761.0
47.5°	7275.5	5194.6	1920.0	902.8	707.1	657.7	605.5	616.5	644.9	690.6	724.4
50°	7747.5	5468.1	1971.2	899.2	707.1	652.2	598.2	597.3	621.1	657.7	689.7
52.5°	8115.2	5661.1	2005.9	903.7	707.1	631.1	589.1	581.8	596.4	622.9	654.9
55°	8381.4	5720.5	1977.6	915.6	706.2	611.9	572.6	566.2	573.5	591.8	622.0
57.5°	8488.4	5564.1	1808.4	894.6	706.2	598.2	552.5	545.2	552.5	566.2	596.4
60°	8220.4	5061.0	1564.1	840.6	692.4	579.9	529.6	525.0	536.0	547.9	577.2
62.5°	7548.1	4392.4	1303.5	776.6	664.1	564.4	507.7	508.6	526.0	542.4	571.7
65°	6503.5	3583.8	1086.7	711.6	628.4	539.7	484.8	491.2	515.9	537.8	567.1
67.5°	5117.8	2655.4	914.7	648.5	578.1	499.4	459.2	461.0	478.4	499.4	527.8
70°	3421.0	1689.5	751.9	574.4	512.2	447.3	419.8	413.4	408.9	427.2	451.9
72.5°	1735.2	997.9	617.4	491.2	440.9	390.6	369.5	353.1	340.3	351.2	370.5
75°	909.2	697.9	498.5	408.0	364.1	332.0	316.5	294.5	285.4	291.8	305.5
77.5°	643.0	546.1	403.4	322.9	296.4	263.4	266.2	243.3	236.0	239.7	254.3
80°	493.9	432.7	310.1	244.2	228.7	196.7	205.8	192.1	182.9	181.1	192.1
82.5°	336.6	325.6	220.4	171.0	160.1	137.2	150.0	144.5	132.6	125.3	130.8
85°	226.8	215.9	134.5	98.8	94.2	71.3	91.5	87.8	77.7	66.8	67.7
87.5°	39.3	72.3	38.4	24.7	22.9	8.2	21.0	20.1	18.3	9.1	7.3
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)