

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: P368160

Luminaire Tested: **MSA-SA3D-760-U-T4W**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368160
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-SA3D-760-U-T4W
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20182 lumens
Efficiency: N/A
Efficacy: 105.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B3 - U0 - G4

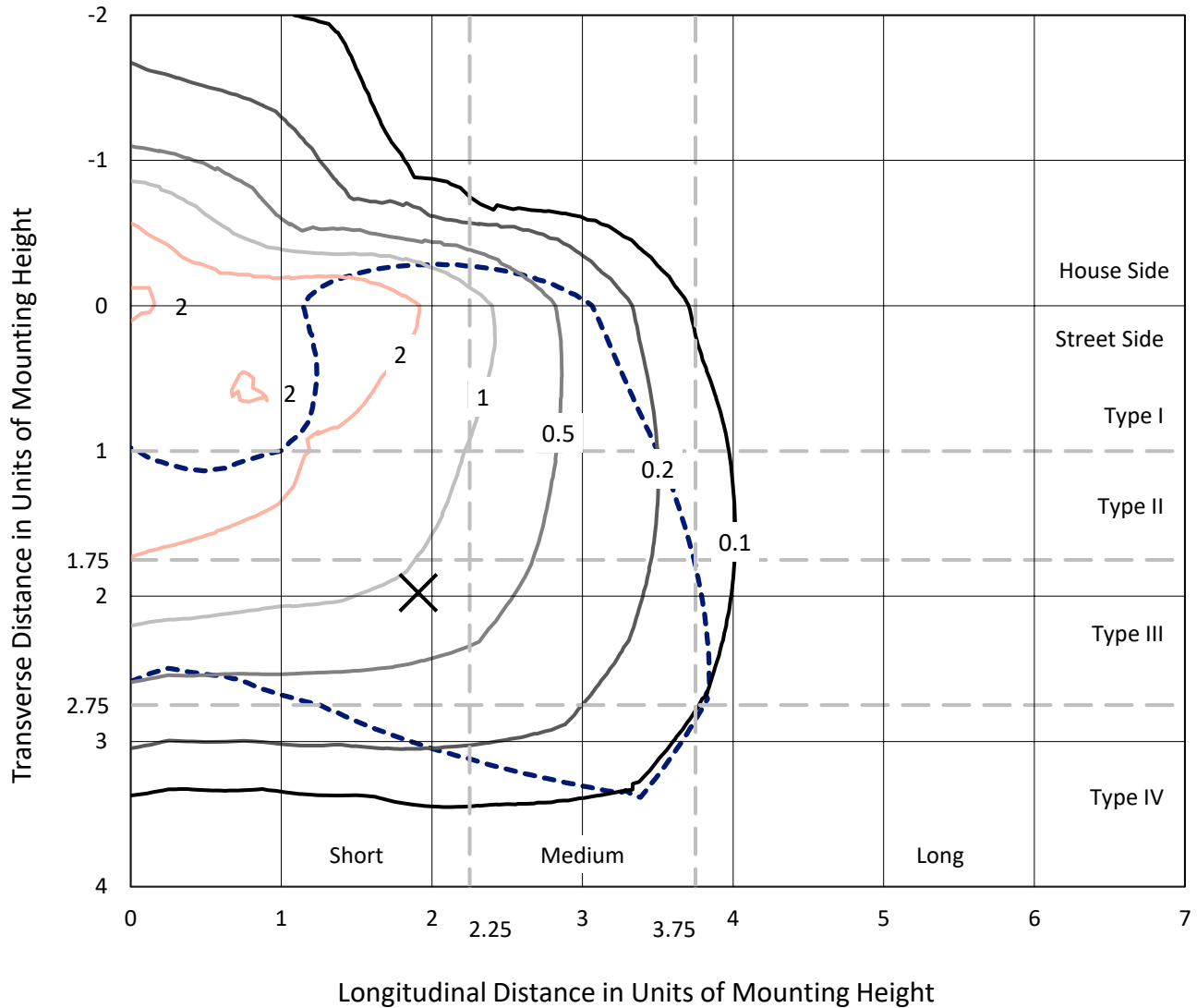
Input Watts (W): 192
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

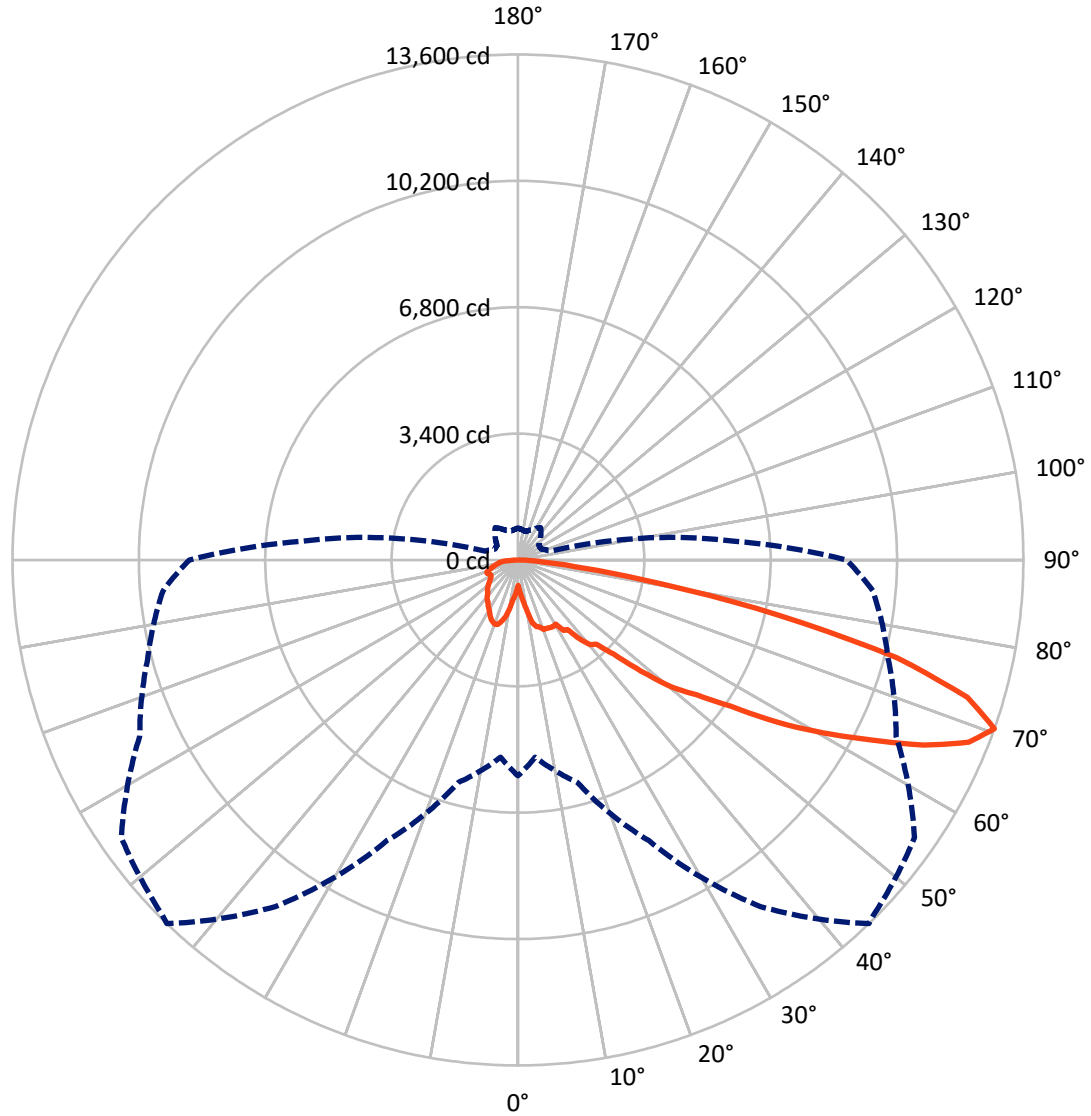
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.9 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
House Side	Lumens	4452.9	0.0	4452.9
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	15729.0	0.0	15729.0
	% Fixture	77.9	0.0	77.9
Total	Lumens	20182.0	0.0	20182.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	107.6	0.5
10°-20°	495.3	2.5
20°-30°	925.6	4.6
30°-40°	1485.7	7.4
40°-50°	2507.8	12.4
50°-60°	4468.8	22.1
60°-70°	6112.7	30.3
70°-80°	3594.6	17.8
80°-90°	484.0	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°	20182.0	100.0
0°-180°	20182.0	100.0

Coefficient of Utilization



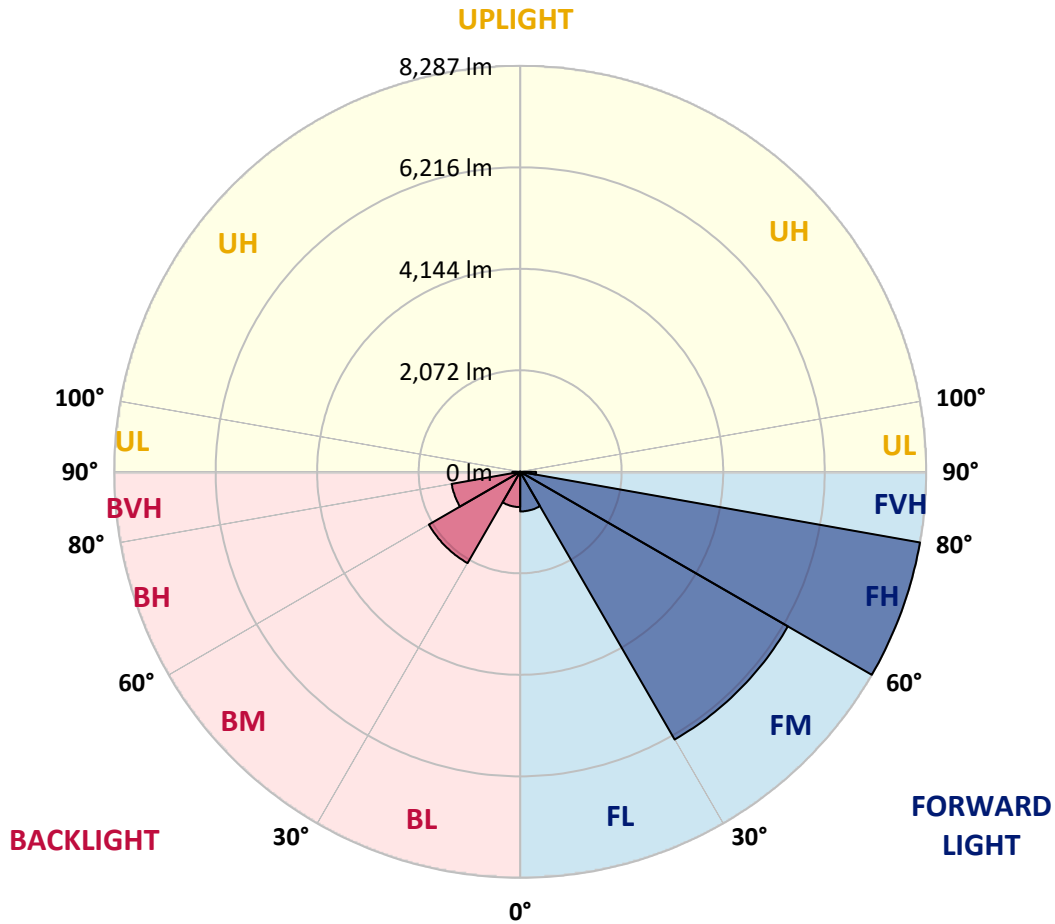
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	808.8	4.0			
FM (30°-60°)	6310.4	31.3			
FH (60°-80°)	8287.3	41.1			G4/12000
FVH (80°-90°)	322.6	1.6			G3/500
BL (0°-30°)	719.7	3.6	B2/1000		
BM (30°-60°)	2151.9	10.7	B2/2500		
BH (60°-80°)	1419.9	7.0	B3/2500		G3/2500
BVH (80°-90°)	161.4	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	44°	45°	55°	65°	75°	85°
0°	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0
2.5°	832.5	815.9	776.2	789.5	806.0	812.6	811.0	809.3	783.7	774.6	820.1
5°	1131.2	1094.8	1065.8	1054.3	1016.2	986.4	968.2	1016.2	1008.7	1021.2	1052.6
7.5°	1412.6	1389.4	1324.0	1300.9	1223.1	1171.8	1166.0	1204.0	1214.0	1194.1	1247.9
10°	1593.8	1554.1	1540.8	1485.4	1431.6	1423.3	1418.4	1401.0	1377.0	1375.3	1327.3
12.5°	1734.5	1755.2	1765.9	1702.2	1703.9	1733.7	1717.9	1647.6	1607.0	1535.9	1541.7
15°	1986.9	2016.7	1931.4	1890.9	1813.1	1857.8	1852.0	1793.2	1787.4	1741.1	1687.3
17.5°	2207.0	2220.2	2077.9	1985.2	1958.7	1894.2	1911.6	1913.2	1837.1	1919.8	1871.8
20°	2225.2	2272.4	2108.5	1924.0	2003.4	1995.1	1997.6	1981.1	1880.9	2017.5	1999.3
22.5°	2314.6	2242.6	2095.3	1960.4	1981.1	1993.5	2005.1	1985.2	1979.4	2055.6	2111.0
25°	2298.0	2274.8	2125.9	2011.7	2014.2	2016.7	2022.5	2082.0	2075.4	2178.9	2207.8
27.5°	2452.8	2417.2	2135.0	2106.9	2042.3	2028.2	1988.5	2112.7	2209.5	2207.0	2366.7
30°	2747.4	2711.0	2346.8	2264.9	2148.2	2004.2	2080.4	2245.9	2322.0	2347.7	2550.4
32.5°	3207.5	3267.0	2763.9	2433.7	2288.9	2257.5	2249.2	2232.6	2421.3	2547.9	2732.5
35°	3867.8	3820.7	3255.5	2795.4	2437.0	2302.2	2320.4	2421.3	2645.6	2727.5	2898.0
37.5°	4624.2	4526.5	3885.2	3205.0	2864.0	2695.2	2634.8	2732.5	2782.1	2846.7	3195.0
40°	5392.9	5154.6	4503.4	3743.7	3120.6	2993.1	2940.2	2820.2	2936.9	3067.6	3510.3
42.5°	6135.2	5950.7	5176.1	4386.7	3552.5	3098.2	3069.3	2951.8	3313.4	3451.6	3965.5
45°	6913.1	6485.3	5865.5	5112.4	4183.9	3613.8	3570.7	3359.7	3823.1	4111.1	4607.6
47.5°	7436.1	7039.7	6496.8	5701.6	4712.7	4476.0	4394.1	4033.3	4453.7	4827.7	5599.8
50°	7930.9	7523.0	6952.8	6346.2	5670.2	5397.9	5223.3	4622.5	5239.0	5848.1	6871.7
52.5°	8639.3	8274.4	7482.4	6995.8	6698.8	6029.3	5899.4	5569.2	6157.6	6979.3	8261.9
55°	9396.5	8899.1	8181.7	7911.9	7791.9	6934.6	6828.7	6618.5	7380.6	8137.0	9613.3
57.5°	9730.8	9211.9	8816.4	8655.0	8645.1	8250.4	8128.7	7982.2	8631.0	9130.0	10885.2
60°	9996.4	9439.5	9281.4	9371.6	9699.3	9439.5	9281.4	9152.4	9648.9	10111.4	11922.9
62.5°	9947.6	9389.0	9470.1	9744.9	10581.5	10657.6	10536.0	10223.2	10657.6	10915.8	12517.9
65°	9159.8	8643.4	9115.9	9768.0	11401.5	12009.8	12003.2	11184.7	11335.3	11335.3	12455.0
67.5°	7779.5	7244.9	8018.7	9563.6	11968.4	13081.4	13083.1	12204.2	11397.4	11293.1	11481.8
70°	5809.2	5325.1	6194.8	8329.0	11383.3	13600.3	13525.0	13026.8	11226.9	10315.8	9590.9
72.5°	3469.8	3157.0	3957.2	6063.2	9710.1	12646.1	12846.4	12079.3	10277.8	8578.9	6856.0
75°	1575.6	1439.9	1859.4	3483.0	6932.1	10548.4	10766.0	10194.2	8163.5	6170.0	3962.2
77.5°	674.4	638.0	811.8	1545.0	3822.3	7213.5	7659.5	7285.5	5531.1	3585.6	1752.7
80°	433.6	410.4	499.0	743.1	1775.0	3897.6	4281.6	4141.7	2817.7	1394.4	617.3
82.5°	259.0	251.6	333.5	466.7	968.2	1715.4	1933.1	1984.4	1170.1	625.6	353.4
85°	141.5	143.2	182.9	283.0	580.9	667.8	715.0	777.9	551.1	362.5	171.3
87.5°	47.2	54.6	73.6	115.0	206.9	188.7	189.5	220.1	232.5	150.6	54.6
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°	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0	686.0
2.5°	827.5	812.6	774.6	777.0	791.1	794.4	798.6	774.6	769.6	815.1	819.2
5°	1057.6	1008.7	986.4	979.0	957.4	950.0	989.7	1007.9	1026.1	1061.7	1079.1
7.5°	1242.1	1187.5	1146.9	1109.7	1078.3	1060.1	1127.1	1178.4	1209.8	1282.7	1315.8
10°	1326.5	1279.3	1264.4	1234.7	1258.7	1313.3	1325.7	1327.3	1396.9	1395.2	1409.3
12.5°	1494.5	1463.9	1415.1	1425.8	1488.7	1545.0	1529.3	1553.3	1578.1	1637.7	1610.4
15°	1647.6	1639.3	1593.8	1601.2	1613.7	1684.0	1693.1	1717.1	1755.2	1802.3	1770.1
17.5°	1836.3	1833.0	1722.1	1712.1	1741.1	1809.8	1788.3	1746.1	1871.8	1922.3	1909.1
20°	1964.5	1939.7	1797.4	1755.2	1828.8	1837.9	1813.1	1746.1	1855.3	1965.4	1995.1
22.5°	2071.3	2042.3	1895.8	1813.1	1798.2	1802.3	1802.3	1789.9	1843.7	1933.9	1933.1
25°	2157.3	2184.6	1998.5	1919.0	1839.6	1740.3	1727.9	1738.6	1769.2	1943.0	1937.2
27.5°	2373.3	2298.0	2033.2	1973.6	1810.6	1654.2	1688.1	1704.7	1714.6	1904.9	1936.4
30°	2514.0	2537.2	2157.3	2005.9	1768.4	1558.2	1569.8	1617.8	1675.7	1900.8	1909.9
32.5°	2703.5	2653.9	2351.0	1952.1	1655.9	1500.3	1478.8	1543.3	1629.4	1833.8	1858.6
35°	2879.8	2938.5	2432.9	1942.2	1577.3	1413.4	1436.6	1458.9	1548.3	1759.3	1788.3
37.5°	3293.5	3159.5	2663.0	1894.2	1511.9	1369.5	1344.7	1378.6	1454.8	1617.8	1684.8
40°	3608.0	3616.3	2712.6	1833.8	1386.9	1306.7	1253.7	1287.6	1319.9	1449.8	1478.8
42.5°	4198.0	4017.6	2834.3	1701.4	1308.3	1212.3	1182.5	1197.4	1202.4	1257.0	1305.0
45°	4948.6	4525.7	2882.2	1523.5	1204.9	1173.4	1113.0	1105.6	1078.3	1085.7	1127.9
47.5°	5987.1	5318.5	2847.5	1334.0	1113.0	1122.9	1036.1	1002.1	964.1	973.2	1012.9
50°	7330.2	6331.3	2845.0	1173.4	1050.1	1056.7	985.6	924.3	886.3	905.3	940.1
52.5°	8837.1	7347.5	2856.6	1063.4	981.4	978.1	952.5	878.0	847.4	867.2	907.0
55°	10278.6	8221.4	2942.7	993.8	910.3	916.1	926.0	863.1	829.2	847.4	888.8
57.5°	11533.1	8911.5	2910.4	920.2	844.1	870.5	897.0	842.4	816.8	843.2	884.6
60°	12410.3	9231.8	2655.5	849.9	795.2	831.7	883.0	839.9	836.6	893.7	943.4
62.5°	12730.5	9113.5	2159.0	794.4	766.3	826.7	915.2	894.5	897.9	968.2	1036.9
65°	12263.0	8491.2	1610.4	758.8	743.9	850.7	989.7	926.8	881.3	939.2	1002.1
67.5°	10933.2	7384.8	1176.7	728.2	718.3	888.8	1058.4	923.5	839.1	897.9	949.2
70°	8845.3	5829.0	911.1	689.3	684.4	863.1	1065.0	898.7	793.6	831.7	860.6
72.5°	6060.7	3991.1	754.7	652.1	625.6	764.6	1011.2	843.2	739.0	761.3	785.3
75°	3387.0	2240.1	634.7	605.7	547.8	681.0	948.3	810.1	698.4	705.0	738.1
77.5°	1520.2	969.0	538.7	544.5	477.5	602.4	866.4	757.2	636.4	621.5	654.6
80°	575.1	472.5	436.9	460.1	401.3	522.2	781.2	709.2	571.0	552.0	571.0
82.5°	333.5	286.3	324.4	354.2	318.6	480.0	745.6	665.3	503.1	455.1	471.7
85°	154.7	148.1	194.5	230.1	222.6	374.0	638.0	500.6	358.3	302.9	335.1
87.5°	40.5	45.5	68.7	81.1	82.8	128.3	245.8	186.2	139.9	105.9	101.8
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)