

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: P368104

Luminaire Tested: **MSA-SA3D-740-U-SL4**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368104  
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-SA3D-740-U-SL4  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 19389 lumens  
Efficiency: N/A  
Efficacy: 101.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G4

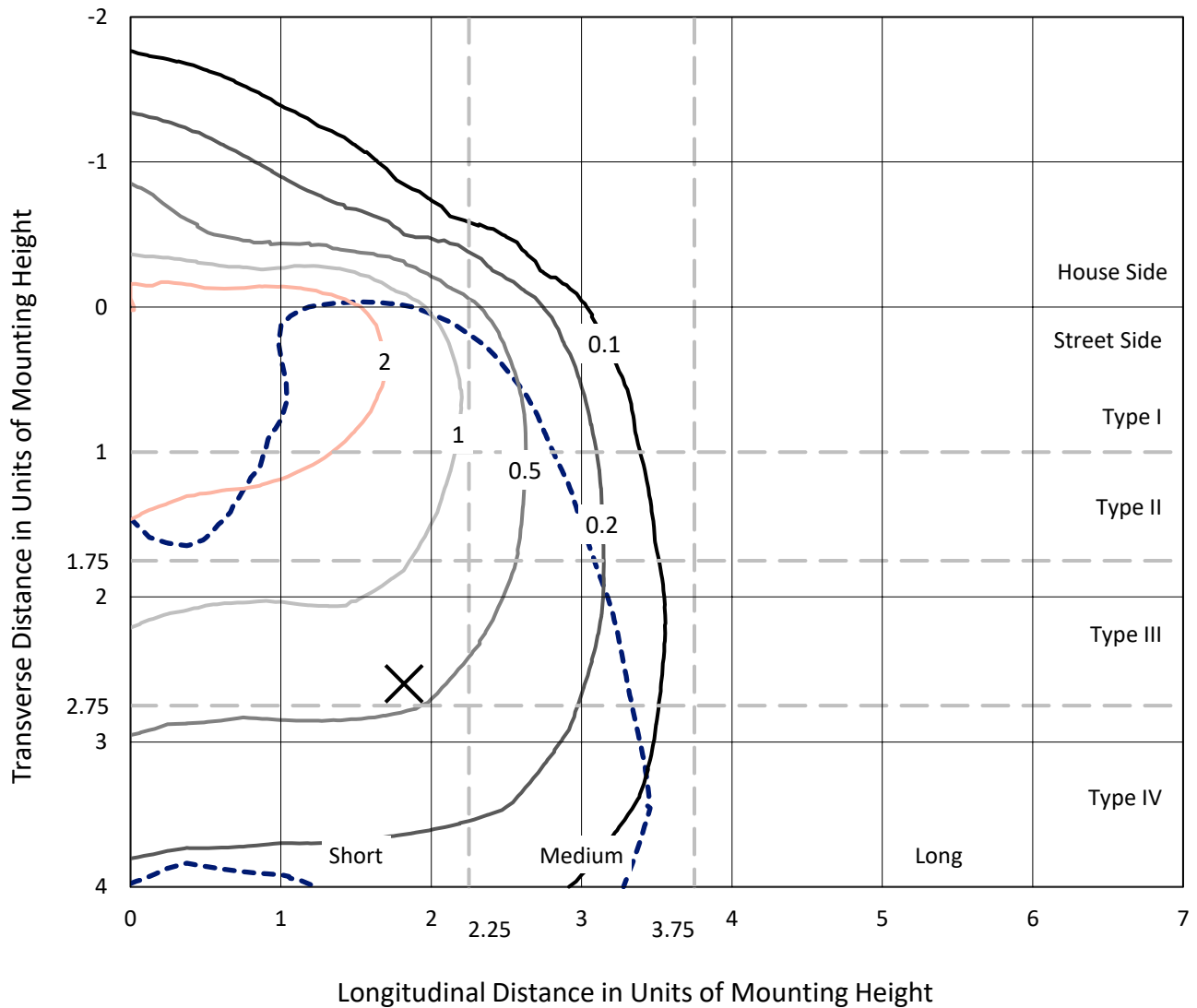
Input Watts (W): 192  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 24 FT



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### Iso-Footcandle Lines of Horizontal Illumination

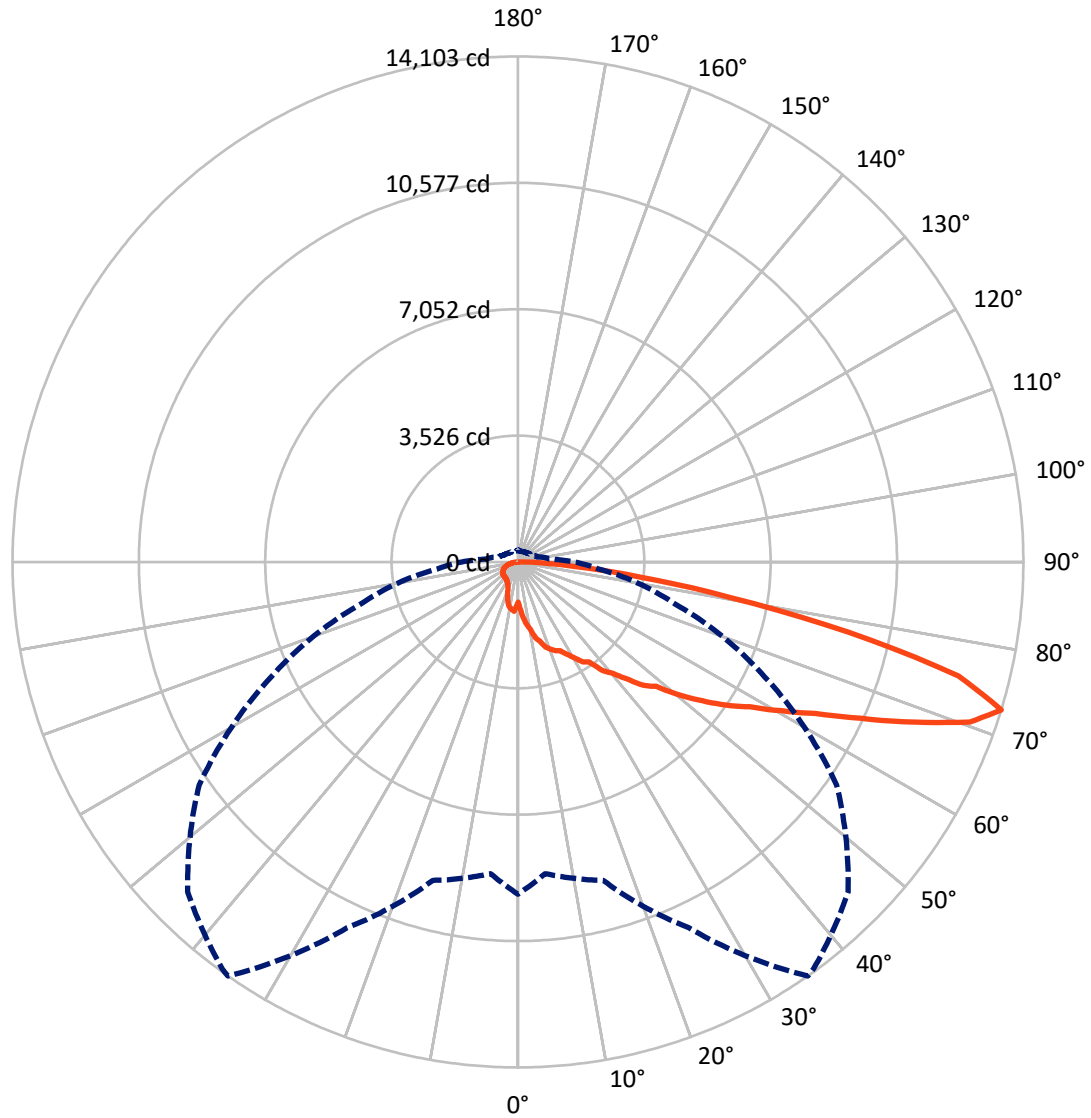
✕ Max cd  
 - - - 1/2 Max cd



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

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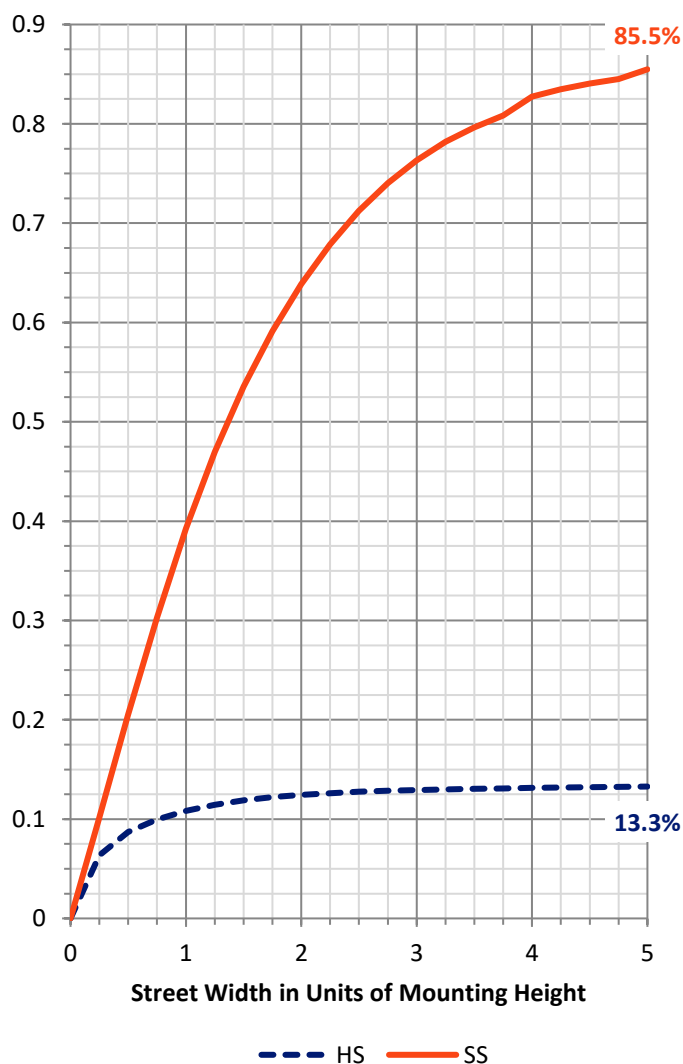
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2601.9	0.0	2601.9
	% Fixture	13.4	0.0	13.4
<b>Street Side</b>	Lumens	16787.1	0.0	16787.1
	% Fixture	86.6	0.0	86.6
<b>Total</b>	Lumens	19389.0	0.0	19389.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	148.9	0.8
10°-20°	524.6	2.7
20°-30°	911.5	4.7
30°-40°	1523.4	7.9
40°-50°	2644.0	13.6
50°-60°	3997.1	20.6
60°-70°	5178.2	26.7
70°-80°	3820.9	19.7
80°-90°	640.4	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°	19389.0	100.0
0°-180°	19389.0	100.0

**Coefficient of Utilization**



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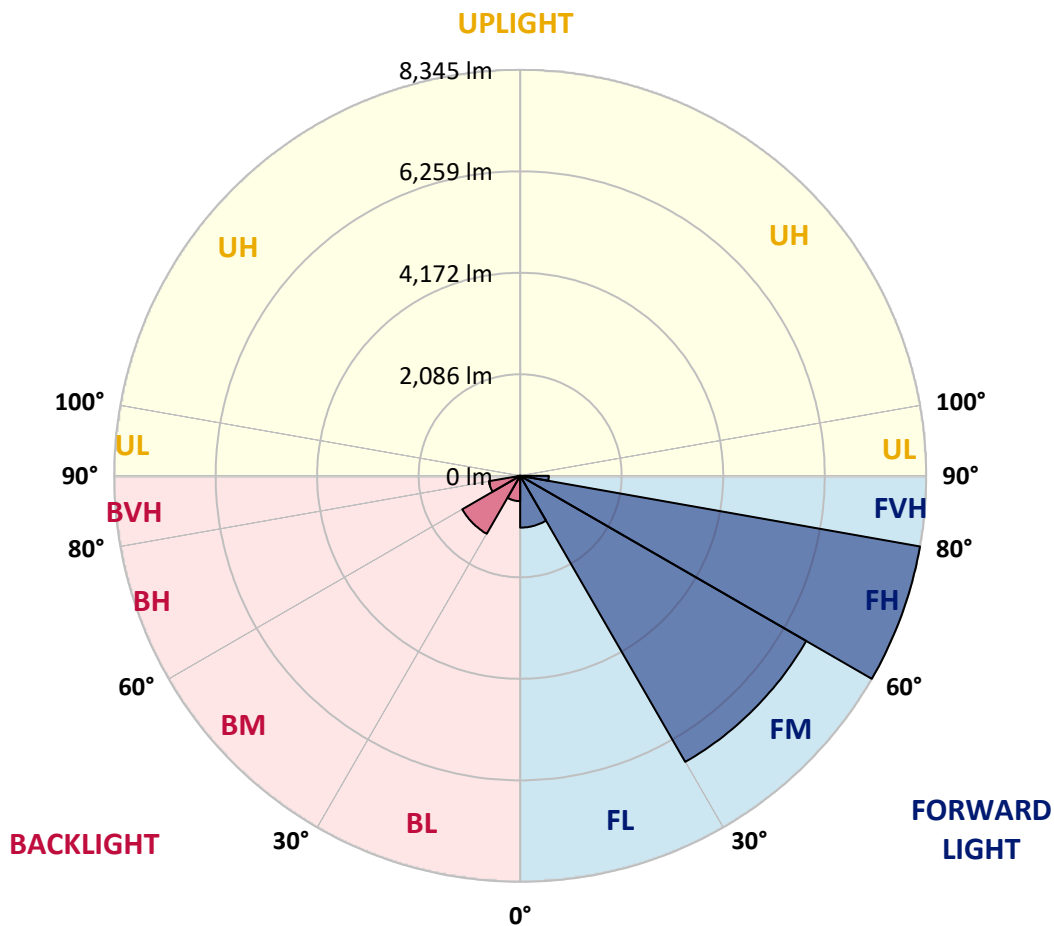
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1064.9	5.5			
FM (30°-60°)	6789.3	35.0			
FH (60°-80°)	8344.9	43.0			G4/12000
FVH (80°-90°)	588.0	3.0			G4/750
BL (0°-30°)	520.1	2.7	B2/1000		
BM (30°-60°)	1375.2	7.1	B2/2500		
BH (60°-80°)	654.3	3.4	B2/1000		G2/1000
BVH (80°-90°)	52.4	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°	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5
2.5°	1397.7	1330.7	1272.8	1270.3	1324.1	1344.8	1336.5	1318.3	1296.8	1251.3	1350.6
5°	1751.1	1655.1	1636.9	1615.4	1566.5	1579.8	1500.3	1560.8	1579.8	1623.6	1689.9
7.5°	1959.6	1903.4	1859.5	1841.3	1756.9	1747.0	1688.2	1774.3	1810.7	1804.9	1903.4
10°	2041.6	1990.3	1993.6	1934.0	1906.7	1918.3	1924.9	1926.5	1948.9	1967.1	1917.4
12.5°	2083.8	2103.6	2176.4	2135.9	2170.7	2184.7	2254.2	2183.1	2185.6	2092.0	2143.3
15°	2296.4	2346.1	2303.9	2302.2	2291.5	2314.6	2374.2	2326.2	2363.5	2333.7	2267.5
17.5°	2553.0	2567.9	2486.8	2453.7	2496.7	2489.3	2474.4	2481.8	2389.1	2561.3	2480.2
20°	2631.6	2690.4	2583.6	2453.7	2596.0	2615.0	2611.7	2579.5	2420.6	2668.8	2590.2
22.5°	2860.0	2780.6	2696.1	2613.4	2686.2	2697.0	2678.8	2601.8	2548.8	2643.2	2705.3
25°	2963.4	2944.4	2836.8	2826.9	2746.6	2708.6	2740.0	2717.7	2665.5	2833.5	2764.8
27.5°	3200.1	3177.8	2930.3	3032.1	2915.4	2905.5	2739.2	2813.7	2865.8	2853.4	2956.0
30°	3468.2	3493.9	3132.3	3234.1	3099.2	3081.0	2913.8	3008.1	3043.7	3055.3	3183.6
32.5°	3766.2	3836.5	3477.4	3393.8	3321.8	3334.2	3192.7	3020.5	3158.7	3429.4	3484.8
35°	4088.9	4117.9	3741.3	3615.6	3427.7	3414.5	3416.9	3438.5	3578.3	3887.0	3930.0
37.5°	4685.6	4551.5	4221.3	3902.7	3839.8	3716.5	3800.1	3866.3	4006.2	4479.5	4659.9
40°	5053.0	4953.7	4450.5	4266.0	4092.2	4103.8	4260.2	4259.4	4589.6	5077.8	5353.4
42.5°	5393.1	5284.7	4810.5	4625.2	4460.5	4501.0	4545.7	4624.3	5257.4	6044.4	6170.2
45°	5667.0	5429.5	5088.6	5047.2	4911.5	4857.7	5047.2	5173.0	6056.0	6826.4	6899.3
47.5°	5853.2	5657.9	5324.4	5288.0	5187.9	5319.5	5836.7	5917.8	6675.0	7611.8	7606.0
50°	6136.3	5869.0	5567.7	5548.7	5830.9	5901.2	6531.8	6523.6	7277.4	8263.9	8127.3
52.5°	6462.3	6125.5	5798.6	6003.0	6433.4	6468.1	7015.1	7237.7	7935.3	8892.8	8536.1
55°	6837.2	6460.7	6144.5	6417.6	7058.1	6955.5	7509.2	8052.9	8758.8	9555.7	8831.6
57.5°	7301.4	6844.6	6588.9	7004.4	7628.3	7719.4	8216.7	8901.1	9421.6	9967.8	9046.7
60°	7791.4	7255.1	7020.9	7416.5	8426.9	8531.2	9017.8	9606.2	10164.8	10355.9	9006.2
62.5°	8258.9	7678.8	7467.0	7955.2	9312.4	9570.6	9929.7	10304.6	10782.9	10450.3	8515.5
65°	8779.4	8198.5	8065.3	8797.7	10513.2	10769.7	11238.9	11126.4	10994.8	10115.9	7703.6
67.5°	9330.6	8740.6	8765.4	9775.0	11929.1	11973.0	12693.7	11945.6	10745.7	9230.5	6340.7
70°	9626.9	9022.7	9278.5	10816.9	13369.9	13307.0	13454.3	12165.8	9730.3	7296.5	4370.3
72.5°	9267.7	8729.0	9197.4	11255.5	14103.1	14035.2	13027.2	10859.1	7607.6	4537.4	2265.8
75°	7846.8	7327.1	8043.8	10033.2	12696.2	12759.1	11086.6	8075.2	4355.4	1824.7	940.9
77.5°	5331.9	5063.8	5677.8	7478.5	9430.7	9648.4	8225.8	4722.0	1828.9	755.6	569.4
80°	2817.8	2690.4	3143.9	4308.2	5971.6	6133.8	4837.0	2351.9	936.8	489.1	406.3
82.5°	1531.0	1477.2	1720.5	2215.3	3392.9	3534.5	2508.3	1562.4	631.4	306.2	248.3
85°	1028.6	1008.0	1169.3	1190.0	1604.6	1651.0	1314.1	1203.3	379.0	149.8	163.9
87.5°	514.7	494.0	615.7	543.7	612.4	613.2	602.5	768.0	96.0	49.7	29.8
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°	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5	1120.5
2.5°	1352.2	1323.2	1223.1	1222.3	1237.2	1227.3	1234.7	1194.2	1176.8	1256.2	1252.1
5°	1680.7	1593.9	1510.3	1481.3	1447.4	1373.7	1377.9	1378.7	1366.3	1413.5	1416.8
7.5°	1873.6	1769.3	1692.3	1538.4	1417.6	1323.2	1335.7	1349.7	1335.7	1398.6	1421.7
10°	1901.7	1818.9	1727.1	1555.8	1475.5	1390.3	1304.2	1228.1	1219.0	1190.0	1199.1
12.5°	2068.9	2000.2	1808.2	1620.3	1526.8	1396.1	1238.8	1151.9	1079.1	1091.5	1068.4
15°	2206.2	2157.4	1927.4	1681.6	1458.1	1295.9	1128.8	1009.6	944.2	936.8	913.6
17.5°	2392.4	2322.9	1938.1	1639.4	1369.6	1175.1	986.4	851.5	823.4	811.8	800.2
20°	2481.8	2356.9	1899.2	1507.0	1266.1	1031.1	845.8	729.9	721.6	742.3	738.2
22.5°	2559.6	2385.0	1864.5	1426.7	1104.8	885.5	749.8	673.6	664.5	691.0	696.0
25°	2605.1	2465.3	1826.4	1344.8	1004.6	777.1	677.8	634.7	636.4	671.1	667.0
27.5°	2810.3	2493.4	1730.4	1247.9	889.6	696.8	643.0	620.7	611.6	659.6	663.7
30°	2939.4	2677.1	1708.9	1145.3	804.4	638.0	611.6	602.5	600.8	658.7	662.9
32.5°	3179.4	2738.4	1718.8	1033.6	727.4	619.8	588.4	587.6	604.1	659.6	666.2
35°	3512.1	2996.5	1670.8	969.9	685.2	591.7	570.2	576.8	604.9	665.3	674.5
37.5°	4160.9	3239.8	1685.7	910.3	671.1	582.6	565.2	569.4	614.9	680.2	705.1
40°	4674.8	3680.9	1662.5	880.5	652.1	580.9	554.5	571.0	614.0	688.5	710.9
42.5°	5419.6	4032.6	1665.0	850.7	651.3	574.3	552.8	572.7	612.4	681.1	711.7
45°	6058.5	4347.9	1700.6	833.3	643.0	585.1	550.3	575.1	601.6	654.6	688.5
47.5°	6582.3	4699.6	1737.0	816.8	639.7	595.0	547.8	557.8	583.4	624.8	655.4
50°	7009.3	4947.1	1783.4	813.5	639.7	590.0	541.2	540.4	561.9	595.0	624.0
52.5°	7342.0	5121.7	1814.8	817.6	639.7	571.0	532.9	526.3	539.6	563.6	592.5
55°	7582.8	5175.5	1789.2	828.4	638.9	553.6	518.0	512.3	518.9	535.4	562.7
57.5°	7679.6	5034.0	1636.1	809.3	638.9	541.2	499.8	493.2	499.8	512.3	539.6
60°	7437.2	4578.8	1415.1	760.5	626.5	524.7	479.1	475.0	484.9	495.7	522.2
62.5°	6828.9	3973.9	1179.3	702.6	600.8	510.6	459.3	460.1	475.8	490.7	517.2
65°	5883.9	3242.3	983.1	643.8	568.5	488.3	438.6	444.4	466.7	486.6	513.1
67.5°	4630.1	2402.4	827.5	586.7	523.0	451.8	415.4	417.1	432.8	451.8	477.5
70°	3095.0	1528.5	680.2	519.7	463.4	404.7	379.8	374.1	369.9	386.5	408.8
72.5°	1569.9	902.9	558.6	444.4	398.9	353.4	334.3	319.4	307.8	317.8	335.2
75°	822.6	631.4	451.0	369.1	329.4	300.4	286.3	266.5	258.2	264.0	276.4
77.5°	581.8	494.0	364.9	292.1	268.1	238.3	240.8	220.1	213.5	216.8	230.1
80°	446.9	391.4	280.5	221.0	206.9	177.9	186.2	173.8	165.5	163.9	173.8
82.5°	304.5	294.6	199.4	154.8	144.8	124.1	135.7	130.8	120.0	113.4	118.3
85°	205.2	195.3	121.6	89.4	85.2	64.5	82.8	79.4	70.3	60.4	61.2
87.5°	35.6	65.4	34.8	22.3	20.7	7.4	19.0	18.2	16.6	8.3	6.6
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)