

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: LUMARK

Report Number: P197342

Luminaire Tested: **NAV-AF-02-D-UNV-T4W-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197342
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-T4W-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9821 lumens
Efficiency: N/A
Efficacy: 86.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

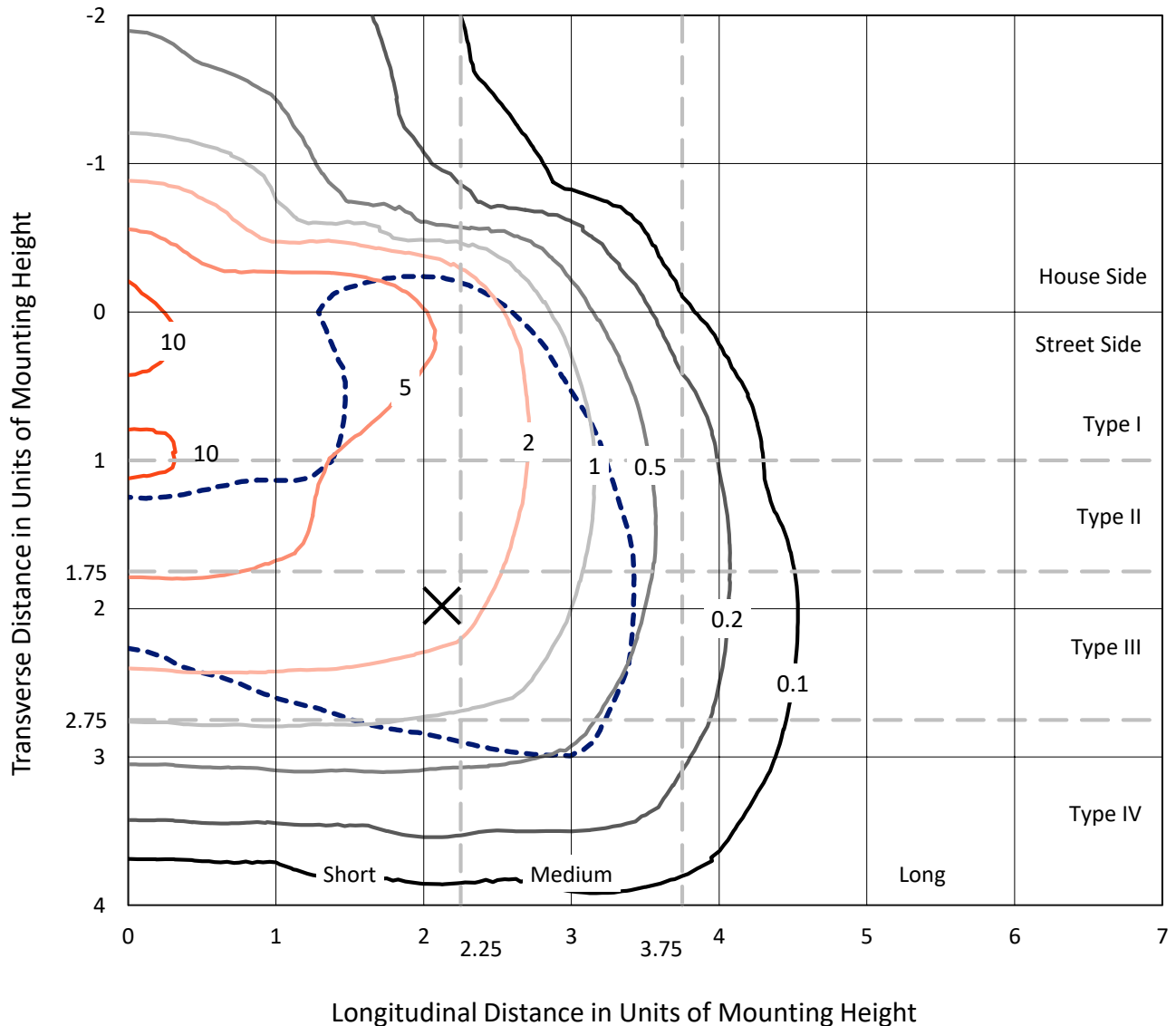
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

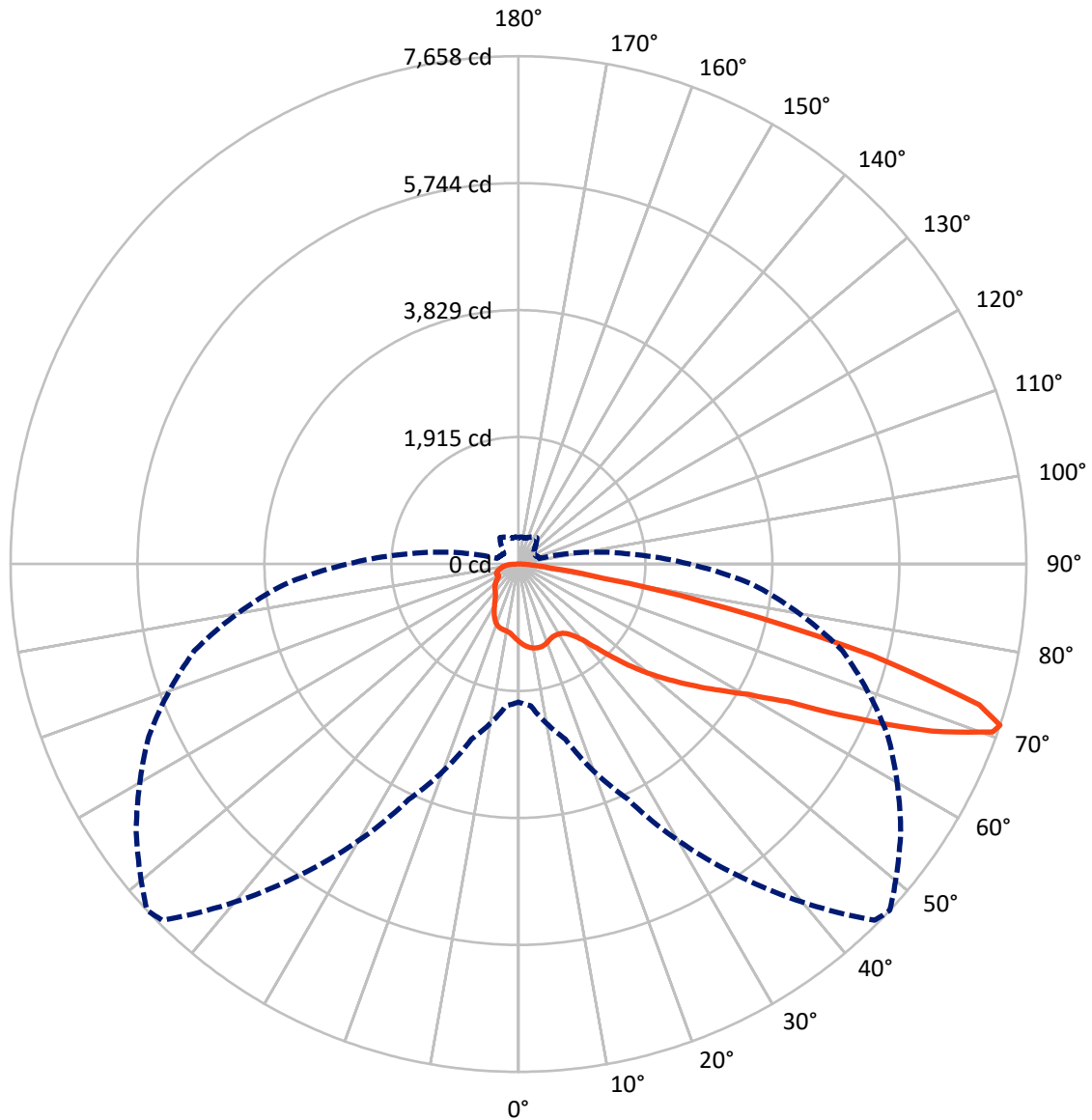
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.4 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2104.8	0.0	2104.8
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	7716.2	0.0	7716.2
	% Fixture	78.6	0.0	78.6
Total	Lumens	9821.0	0.0	9821.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	111.5	1.1
10°-20°	326.2	3.3
20°-30°	484.8	4.9
30°-40°	696.0	7.1
40°-50°	1234.1	12.6
50°-60°	2111.7	21.5
60°-70°	2997.9	30.5
70°-80°	1641.9	16.7
80°-90°	216.7	2.2
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°	9821.0	100.0
0°-180°	9821.0	100.0



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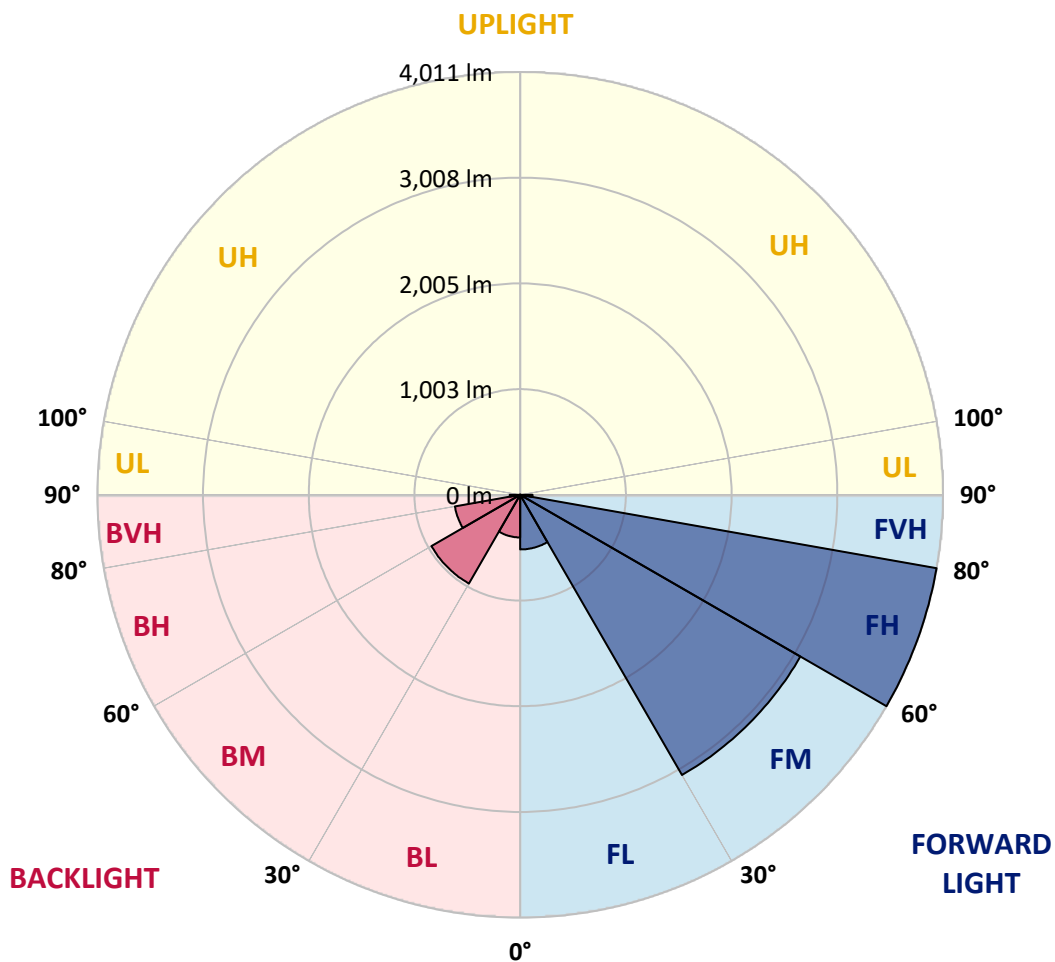
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	518.3	5.3			
FM	(30°-60°)	3069.4	31.3			
FH	(60°-80°)	4011.0	40.8			G2/5000
FVH	(80°-90°)	117.6	1.2			G2/225
BL	(0°-30°)	404.2	4.1	B1/500		
BM	(30°-60°)	972.5	9.9	B1/1000		
BH	(60°-80°)	628.9	6.4	B2/1000		G2/1000
BVH	(80°-90°)	99.2	1.0			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°	45°	47°	55°	65°	75°	85°
0°	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9
2.5°	1239.2	1236.6	1237.9	1233.4	1222.6	1211.2	1211.2	1199.1	1186.3	1173.6	1159.6
5°	1316.2	1312.4	1309.2	1295.2	1274.2	1250.6	1246.8	1222.6	1196.5	1170.4	1145.0
7.5°	1380.5	1376.6	1367.1	1341.6	1311.1	1276.1	1271.6	1239.8	1205.4	1169.2	1133.5
10°	1426.3	1423.7	1405.3	1372.8	1337.2	1295.8	1288.2	1255.7	1215.0	1169.8	1124.6
12.5°	1451.7	1447.9	1425.6	1387.5	1345.5	1303.4	1295.8	1264.6	1218.2	1168.5	1115.7
15°	1441.6	1439.6	1418.6	1379.8	1337.8	1301.5	1295.2	1263.3	1216.3	1164.1	1107.4
17.5°	1398.3	1402.7	1386.2	1348.0	1313.6	1288.2	1281.2	1251.3	1206.7	1153.2	1094.7
20°	1338.4	1343.5	1335.3	1296.4	1276.7	1260.2	1256.3	1232.2	1190.8	1137.3	1079.4
22.5°	1274.8	1279.3	1279.9	1243.6	1237.3	1230.9	1227.7	1210.5	1176.8	1127.8	1069.2
25°	1230.9	1236.0	1237.3	1205.4	1209.3	1211.2	1210.5	1198.4	1174.2	1127.8	1070.5
27.5°	1219.4	1222.0	1220.7	1191.4	1198.4	1209.3	1209.9	1207.3	1184.4	1140.5	1088.3
30°	1258.9	1260.2	1244.3	1200.3	1207.3	1221.3	1222.0	1220.7	1206.1	1173.6	1128.4
32.5°	1429.5	1428.2	1373.5	1260.2	1236.0	1241.1	1243.0	1254.4	1255.7	1228.3	1186.3
35°	1689.1	1688.5	1624.9	1431.4	1317.4	1290.7	1293.3	1311.1	1327.0	1308.5	1284.4
37.5°	1974.9	1976.8	1938.0	1675.8	1493.1	1381.7	1379.2	1392.5	1421.2	1427.6	1430.7
40°	2291.8	2301.4	2299.5	1956.4	1739.4	1537.0	1511.6	1496.3	1551.7	1586.7	1631.9
42.5°	2654.0	2651.4	2652.7	2264.5	2020.7	1781.4	1734.3	1663.0	1727.3	1787.8	1887.1
45°	2965.2	2975.4	2983.0	2592.3	2335.8	2060.8	2013.1	1883.2	1941.2	2031.5	2183.0
47.5°	3278.3	3260.5	3274.5	2956.9	2686.4	2379.7	2317.9	2142.9	2197.0	2324.3	2554.7
50°	3643.0	3634.8	3571.1	3433.0	3110.3	2703.0	2622.2	2414.0	2493.0	2662.9	3013.6
52.5°	3970.2	3925.6	3876.0	3807.2	3527.2	3030.1	2927.7	2696.0	2841.1	3051.8	3583.2
55°	4089.8	4059.9	4119.7	4208.8	3968.3	3363.6	3249.1	3025.0	3233.8	3496.6	4253.4
57.5°	4217.1	4227.3	4362.2	4542.3	4385.8	3719.4	3595.3	3414.5	3664.7	3994.3	5002.5
60°	4280.7	4321.5	4590.7	4928.7	4782.9	4109.5	3990.5	3862.0	4142.6	4544.2	5749.7
62.5°	4291.6	4346.3	4727.5	5064.2	5329.6	4707.2	4569.7	4430.3	4739.6	5152.0	6290.6
65°	4093.0	4177.0	4715.4	5231.0	5828.0	5705.8	5618.6	5375.4	5539.0	5687.3	6382.9
67.5°	3509.4	3601.0	4248.9	5162.2	6227.6	6741.9	6725.3	6366.4	6156.4	5894.1	5698.8
70°	2575.7	2649.5	3272.0	4413.1	6053.3	7555.3	7584.5	7008.6	6328.8	5455.0	4237.5
71°	2083.1	2146.7	2733.5	3918.0	5713.4	7597.3	7658.4	7037.2	6149.4	5058.5	3547.6
72.5°	1296.4	1332.1	1815.1	2956.9	4919.7	7164.5	7267.6	6670.6	5584.2	4275.7	2507.6
75°	489.4	503.4	673.4	1304.1	2936.6	5382.4	5507.2	5041.3	3923.1	2440.8	1049.5
77.5°	262.9	269.9	334.1	542.3	1176.8	3085.5	3245.9	2875.5	1882.0	854.1	429.0
80°	176.3	180.8	231.0	321.4	541.0	1174.9	1308.5	1154.5	704.5	487.5	305.5
82.5°	113.9	116.5	157.2	211.3	349.4	413.1	471.6	492.6	439.8	349.4	184.6
85°	75.1	77.0	103.7	134.9	216.4	203.7	208.8	273.0	299.8	230.4	94.2
87.5°	43.3	44.6	62.4	69.4	97.4	76.4	82.7	129.8	178.2	150.2	54.1
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°	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9	1167.9
2.5°	1153.2	1148.2	1136.7	1129.7	1126.5	1125.2	1124.0	1126.5	1126.5	1125.2	1122.7
5°	1132.2	1122.7	1103.6	1090.2	1083.2	1081.3	1083.9	1087.1	1089.0	1089.0	1087.1
7.5°	1117.0	1103.0	1077.5	1059.0	1048.2	1045.0	1052.0	1063.5	1071.1	1075.0	1075.6
10°	1104.2	1085.1	1057.1	1038.0	1029.1	1027.9	1036.8	1051.4	1067.3	1074.3	1075.6
12.5°	1092.8	1071.1	1040.6	1022.8	1016.4	1019.6	1031.7	1045.0	1063.5	1073.7	1074.3
15°	1082.0	1059.7	1027.2	1008.8	1007.5	1012.6	1024.0	1034.9	1048.9	1061.6	1061.6
17.5°	1069.2	1045.0	1011.3	994.1	994.1	998.6	1006.2	1012.0	1020.9	1033.0	1032.3
20°	1054.0	1029.1	994.8	976.9	973.1	970.6	970.6	971.9	979.5	990.3	992.2
22.5°	1042.5	1017.0	980.8	959.1	941.9	925.4	918.4	915.8	922.8	933.0	935.6
25°	1042.5	1017.0	976.3	940.0	898.0	866.2	852.8	849.0	856.0	865.6	869.4
27.5°	1059.7	1034.2	986.5	922.8	845.8	794.9	779.0	775.8	782.2	789.8	793.7
30°	1099.8	1075.0	1015.8	903.1	787.9	721.1	703.3	700.1	703.3	706.5	710.9
32.5°	1166.6	1145.6	1063.5	885.3	729.4	654.3	632.6	627.5	628.8	629.4	633.3
35°	1275.4	1265.9	1127.1	864.3	674.0	599.5	577.3	567.1	566.4	569.6	574.1
37.5°	1442.2	1447.9	1209.3	833.7	628.2	560.7	538.4	528.3	523.2	529.5	534.6
40°	1677.7	1691.0	1304.1	792.4	590.6	537.8	514.2	504.7	497.7	495.8	498.3
42.5°	1983.8	1980.0	1400.8	739.6	549.9	522.5	497.7	487.5	476.1	461.4	458.2
45°	2346.6	2291.8	1481.7	674.6	503.4	507.9	482.4	468.4	450.6	429.0	426.4
47.5°	2774.9	2624.1	1531.3	605.3	460.2	488.8	465.2	443.6	417.5	403.5	401.6
50°	3291.1	3012.9	1566.3	534.6	421.3	464.6	441.1	412.4	387.0	383.1	382.5
52.5°	3902.1	3471.8	1609.6	471.0	390.8	433.4	416.9	387.6	367.2	369.1	369.1
55°	4551.9	3946.6	1610.8	420.7	364.0	397.1	399.1	375.5	359.6	366.0	367.9
57.5°	5144.4	4361.6	1484.2	385.1	338.6	368.5	393.3	380.0	367.9	390.1	392.1
60°	5661.2	4681.1	1211.8	355.8	317.6	357.7	406.1	407.3	404.8	465.2	469.7
62.5°	5850.2	4684.3	860.5	331.0	306.1	364.0	432.8	434.7	434.7	490.7	499.0
65°	5585.5	4294.1	572.8	316.3	298.5	378.0	454.4	446.1	426.4	465.2	456.3
67.5°	4652.4	3342.6	418.8	306.8	287.7	378.7	473.5	452.5	418.8	451.9	436.6
70°	3197.5	2127.0	350.7	297.9	274.9	362.1	483.7	450.6	407.3	421.3	401.0
71°	2573.8	1697.4	332.9	294.7	269.9	352.6	485.0	448.1	401.6	410.5	392.1
72.5°	1695.5	1045.7	311.2	287.7	262.2	336.0	481.8	442.3	394.0	394.6	382.5
75°	668.9	433.4	280.0	271.8	240.6	309.3	467.8	430.2	379.3	366.6	361.5
77.5°	338.0	283.2	246.3	249.5	215.1	281.9	448.1	410.5	359.0	341.8	338.0
80°	246.9	215.1	210.7	216.4	186.5	255.2	423.2	383.8	332.9	350.7	343.0
82.5°	150.2	131.1	164.8	178.8	155.9	227.8	394.0	352.6	299.8	276.2	267.3
85°	71.3	77.0	119.0	131.7	115.2	182.0	360.2	318.2	261.6	225.9	229.8
87.5°	35.0	42.6	68.1	78.9	75.7	133.7	271.8	246.9	206.2	169.9	166.1
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)