

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: P196264

Luminaire Tested: **NAV-AF-04-D-UNV-T2**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196264  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-T2  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 24429.1 lumens  
Efficiency: N/A  
Efficacy: 108.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Full Cutoff  
BUG Rating: B3 - U0 - G4

Input Watts (W): 225  
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

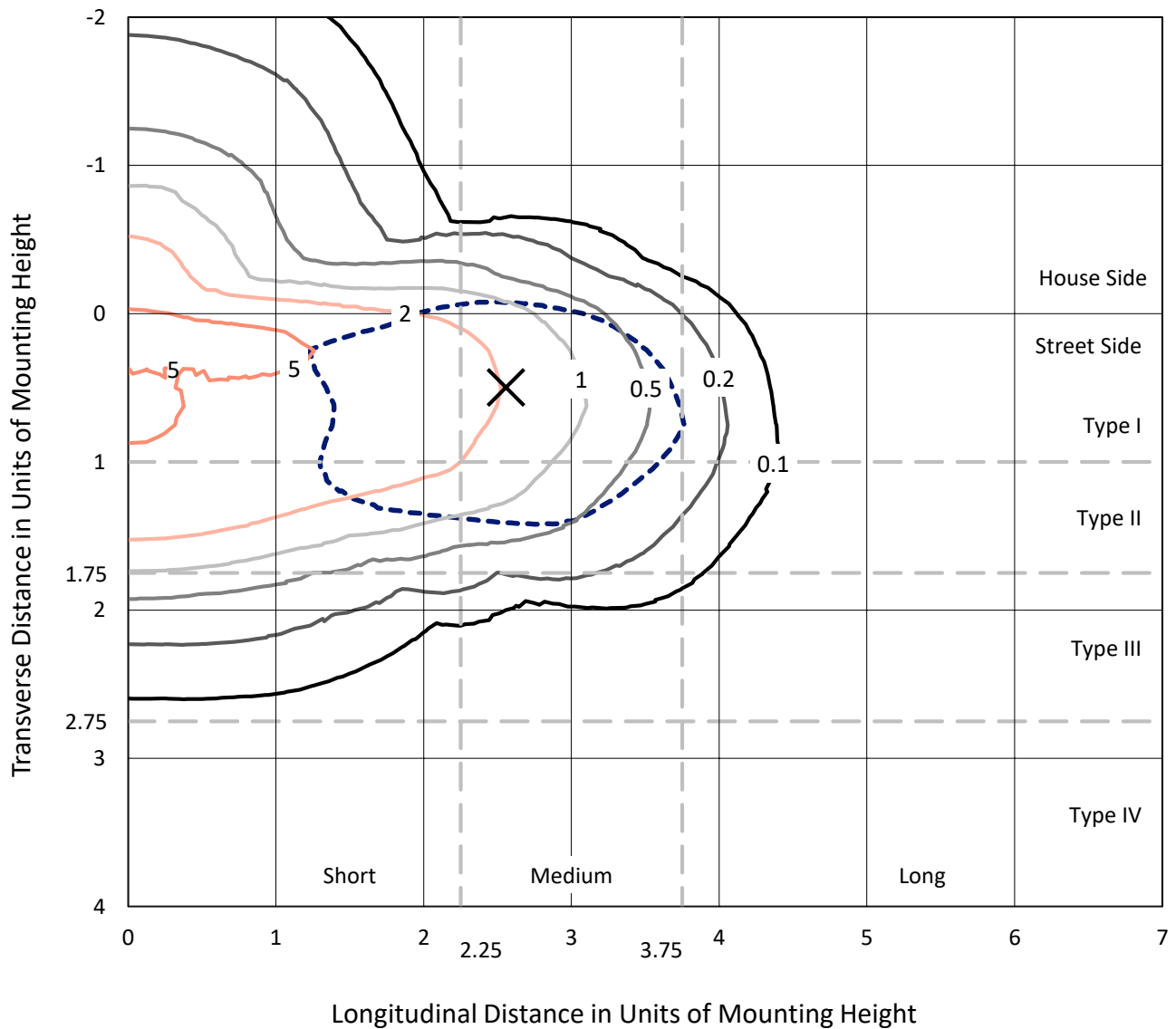


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

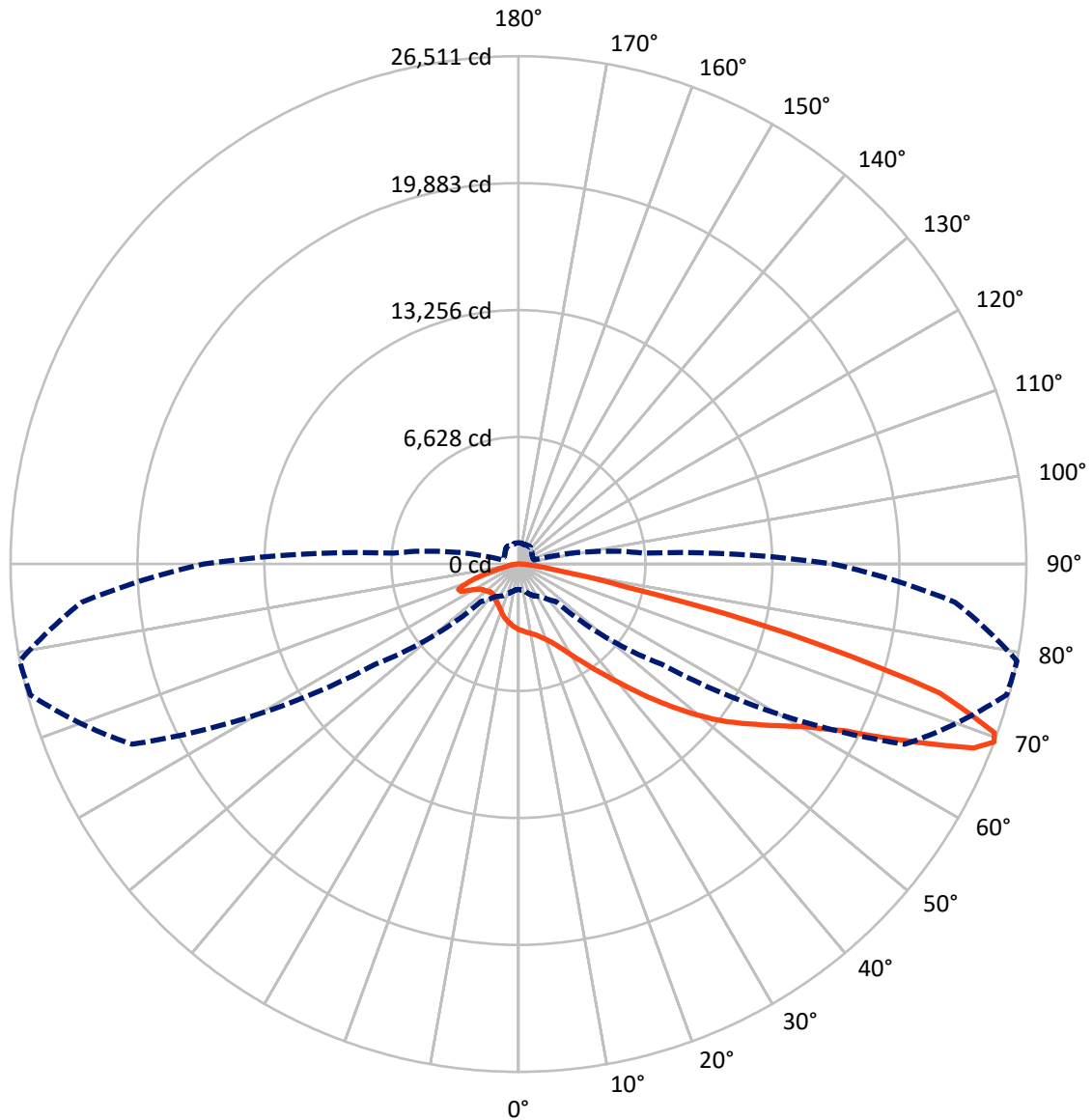


Based on 25 foot mounting height. Maximum calculated value = 6.6 fc  
 Type II - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral      - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4595.6	0.0	4595.6
	% Fixture	18.8	0.0	18.8
<b>Street Side</b>	Lumens	19833.5	0.0	19833.5
	% Fixture	81.2	0.0	81.2
<b>Total</b>	Lumens	24429.1	0.0	24429.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	317.8	1.3
10°-20°	911.2	3.7
20°-30°	1505.6	6.2
30°-40°	2438.0	10.0
40°-50°	3894.6	15.9
50°-60°	5577.5	22.8
60°-70°	6214.2	25.4
70°-80°	3108.9	12.7
80°-90°	461.4	1.9
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°	24429.1	100.0
0°-180°	24429.1	100.0

**Coefficient of Utilization**



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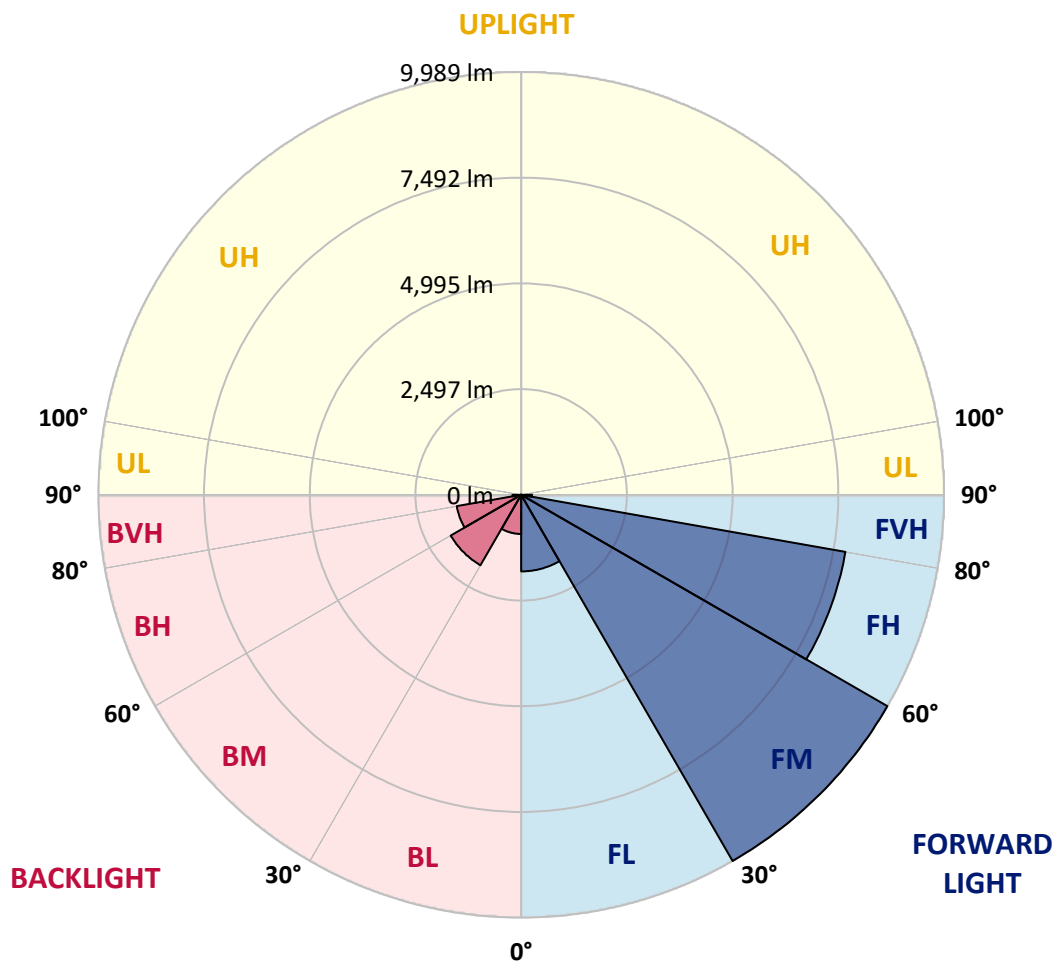
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1808.8	7.4			
FM (30°-60°)	9989.1	40.9			
FH (60°-80°)	7777.9	31.8			G4/12000
FVH (80°-90°)	257.8	1.1			G3/500
BL (0°-30°)	925.8	3.8	B2/1000		
BM (30°-60°)	1921.0	7.9	B2/2500		
BH (60°-80°)	1545.2	6.3	B3/2500		G3/2500
BVH (80°-90°)	203.6	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 II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2
2.5°	3763.8	3755.8	3754.2	3730.2	3717.4	3690.3	3626.4	3560.8	3500.1	3468.1	3434.6
5°	4078.6	4062.6	4054.7	4014.7	3979.6	3918.8	3818.2	3714.2	3605.6	3549.6	3482.5
7.5°	4268.9	4270.4	4270.4	4238.5	4203.3	4129.8	4001.9	3859.7	3698.3	3624.7	3519.3
10°	4284.8	4286.4	4310.4	4318.4	4326.4	4288.0	4169.8	3990.7	3783.0	3687.1	3549.6
12.5°	4126.6	4137.7	4177.7	4235.3	4316.8	4358.4	4307.2	4131.4	3891.6	3775.0	3607.1
15°	3914.0	3925.3	3976.3	4064.3	4195.3	4334.3	4406.3	4292.8	4033.9	3896.4	3691.8
17.5°	3810.2	3823.0	3858.1	3928.4	4056.3	4243.3	4459.0	4465.4	4201.7	4043.5	3792.6
20°	3760.6	3770.2	3814.9	3872.5	3970.0	4149.0	4463.9	4647.6	4401.5	4217.7	3915.7
22.5°	3874.1	3877.3	3899.7	3931.6	3997.2	4134.6	4460.6	4836.2	4650.8	4436.6	4073.9
25°	4206.5	4185.7	4169.8	4129.8	4145.8	4243.3	4511.7	5037.6	4970.4	4724.3	4284.8
27.5°	4599.7	4596.4	4554.9	4462.2	4403.1	4465.4	4657.2	5262.9	5362.0	5090.3	4561.3
30°	5037.6	5039.2	4996.0	4882.5	4762.7	4769.1	4889.0	5523.4	5830.3	5531.4	4901.8
32.5°	5496.3	5525.1	5445.2	5331.6	5186.3	5139.8	5221.3	5838.3	6372.1	6052.5	5296.5
35°	6044.4	6049.2	5961.3	5795.1	5649.7	5576.2	5651.3	6231.4	6997.0	6664.5	5777.5
37.5°	6613.4	6616.7	6525.5	6312.9	6129.1	6081.2	6164.3	6709.3	7658.6	7361.4	6343.3
40°	7078.5	7112.1	7040.2	6840.4	6655.0	6626.2	6746.1	7281.5	8504.1	8186.1	7016.2
42.5°	7605.9	7644.3	7558.0	7350.2	7203.1	7193.6	7380.6	7933.5	9344.8	9140.2	7778.5
45°	8200.5	8254.8	8134.9	7901.6	7776.9	7987.9	7999.1	8655.9	10313.3	10207.8	8636.8
47.5°	8849.3	8894.0	8796.6	8545.6	8409.8	8715.0	8604.8	9437.4	11360.1	11352.1	9565.3
50°	9349.6	9399.1	9408.7	9298.4	9156.2	9194.5	9269.7	10259.0	12403.8	12528.4	10525.9
52.5°	9258.4	9306.4	9522.1	9811.4	10040.0	9940.9	10032.0	11131.5	13412.2	13675.9	11438.4
55°	8523.3	8548.9	8953.2	9640.4	10613.7	11086.8	11093.2	12080.9	14371.1	14740.3	12304.7
57.5°	7198.4	7201.6	7727.4	8740.6	10279.7	11830.0	12768.2	13273.2	15371.7	15916.6	13378.7
60°	5093.5	5106.3	5718.4	7043.3	9082.7	11740.5	14569.4	15406.8	16530.4	17238.4	14762.7
62.5°	3023.8	3052.6	3514.4	4577.3	6746.1	10589.8	15633.8	19202.5	18237.3	19177.0	16977.8
65°	1967.4	1991.4	2267.9	2801.7	3985.9	7705.0	15283.7	22878.5	21467.2	22226.4	20161.5
67.5°	1515.1	1534.3	1751.6	2074.4	2445.3	4164.9	12220.0	23648.8	25398.8	25635.4	22848.1
69°	1331.3	1347.3	1507.1	1817.2	2058.5	2757.0	9106.6	22250.4	26381.8	26511.2	22881.7
70°	1233.8	1246.6	1396.8	1665.4	1890.7	2200.8	6969.8	20626.6	26022.1	26353.0	22221.6
72.5°	1016.5	1027.7	1134.8	1340.9	1545.5	1567.9	3087.8	15061.6	21911.5	22969.5	18804.6
75°	848.6	855.1	925.4	1075.6	1251.4	1248.2	1577.4	8531.3	13370.7	14631.7	11611.0
77.5°	708.0	712.8	759.1	851.8	987.7	983.0	1110.7	3682.3	5903.9	5696.0	3997.2
80°	624.9	628.1	652.0	676.1	762.3	757.6	823.1	1690.9	2402.1	2219.9	1511.9
82.5°	474.6	481.1	602.5	613.7	591.4	570.6	573.8	984.5	1230.6	1120.3	811.9
85°	268.5	270.1	386.8	452.2	514.6	386.8	372.4	508.2	607.3	532.2	354.8
87.5°	119.9	124.7	185.4	214.2	278.1	227.0	212.6	215.7	262.1	217.4	140.7
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°	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2	3428.2
2.5°	3402.6	3375.4	3311.5	3246.0	3180.5	3138.9	3095.8	3055.8	3039.8	3038.2	3007.9
5°	3417.0	3353.0	3207.7	3047.8	2896.0	2777.7	2678.6	2614.7	2552.4	2541.2	2514.0
7.5°	3421.8	3317.9	3081.3	2825.6	2593.9	2430.8	2331.8	2288.6	2258.3	2250.3	2240.7
10°	3420.1	3273.1	2940.7	2590.7	2327.0	2203.9	2167.2	2176.7	2189.5	2196.0	2196.0
12.5°	3445.7	3252.4	2800.1	2370.2	2154.4	2095.3	2124.1	2173.6	2211.9	2227.9	2231.2
15°	3492.1	3239.6	2645.0	2178.4	2032.9	2047.3	2117.6	2189.5	2243.9	2267.9	2274.2
17.5°	3549.6	3222.0	2466.0	2020.1	1962.6	2012.1	2103.3	2194.3	2259.9	2290.3	2295.0
20°	3613.6	3196.4	2280.7	1901.9	1900.2	1962.6	2053.7	2156.0	2226.4	2259.9	2258.3
22.5°	3699.9	3172.5	2108.1	1815.5	1831.6	1889.1	1964.2	2056.9	2122.4	2152.8	2146.4
25°	3814.9	3150.1	1953.0	1738.8	1753.2	1791.6	1844.4	1914.7	1961.0	1977.0	1965.8
27.5°	3970.0	3132.5	1831.6	1668.5	1666.9	1684.5	1716.5	1754.9	1777.2	1772.5	1754.9
30°	4160.1	3114.9	1742.1	1606.2	1583.8	1582.2	1596.6	1619.0	1633.3	1604.6	1590.2
32.5°	4372.7	3084.6	1662.2	1551.9	1511.9	1497.5	1503.9	1534.3	1593.5	1564.6	1553.5
35°	4623.6	3049.4	1582.2	1492.7	1462.4	1435.2	1440.0	1505.5	1684.5	1663.7	1652.6
37.5°	4925.7	3017.4	1508.8	1428.8	1427.2	1393.7	1390.5	1468.8	1708.5	1663.7	1654.1
40°	5288.5	3011.1	1443.2	1358.5	1384.1	1371.3	1360.1	1408.0	1575.9	1484.7	1467.1
42.5°	5726.4	3039.8	1395.2	1291.4	1334.5	1364.9	1344.1	1355.3	1424.0	1342.5	1328.1
45°	6237.9	3118.2	1360.1	1232.2	1281.8	1360.1	1336.1	1326.6	1337.7	1292.9	1283.4
47.5°	6833.9	3257.2	1336.1	1182.6	1232.2	1347.3	1332.9	1313.8	1309.0	1283.4	1276.9
50°	7471.6	3444.2	1320.1	1137.9	1187.4	1324.9	1331.3	1304.2	1296.2	1284.9	1281.8
52.5°	8104.5	3647.1	1301.0	1099.6	1150.7	1297.7	1332.9	1294.5	1283.4	1276.9	1273.8
55°	8734.3	3858.1	1265.8	1066.0	1123.5	1265.8	1331.3	1281.8	1269.0	1269.0	1269.0
57.5°	9551.0	4179.4	1219.5	1038.8	1088.4	1224.3	1310.5	1267.4	1249.8	1251.4	1253.0
60°	10730.4	4718.0	1168.3	1008.4	1042.1	1176.3	1278.6	1241.9	1221.0	1227.4	1229.1
62.5°	12701.1	5659.3	1097.9	965.4	994.1	1125.1	1237.1	1206.7	1187.4	1198.7	1200.2
65°	15328.5	6798.8	1005.3	910.9	944.6	1067.7	1184.3	1165.1	1144.3	1171.5	1169.8
67.5°	16931.5	7132.8	907.8	853.4	896.6	1006.9	1118.8	1110.7	1096.4	1144.3	1141.1
69°	16405.7	6528.7	851.8	816.7	863.1	965.4	1077.2	1074.0	1062.8	1109.2	1106.0
70°	15589.0	5964.5	816.7	792.7	845.5	939.8	1050.1	1050.1	1038.8	1078.8	1070.8
72.5°	12522.0	4423.9	735.2	732.0	784.7	869.4	976.5	984.5	978.1	992.5	984.5
75°	7351.7	2665.8	655.3	664.8	711.2	794.3	895.0	901.4	895.0	893.4	895.0
77.5°	2549.2	1195.4	578.6	592.9	632.9	717.6	805.5	818.3	808.7	797.5	800.7
80°	997.3	695.2	495.4	516.2	549.8	631.3	716.0	723.9	709.6	708.0	695.2
82.5°	599.3	423.5	385.1	418.7	460.3	548.2	618.5	615.3	604.2	669.6	586.6
85°	260.5	235.0	281.3	314.9	335.6	410.7	522.6	508.2	481.1	423.5	414.0
87.5°	105.5	121.4	155.0	187.0	201.4	265.4	358.0	345.2	350.1	287.7	286.1
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)