

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: P196365

Luminaire Tested: **NAV-AF-03-D-UNV-T4FT-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196365
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-T4FT-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20487.7 lumens
Efficiency: N/A
Efficacy: 107.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B3 - U0 - G4

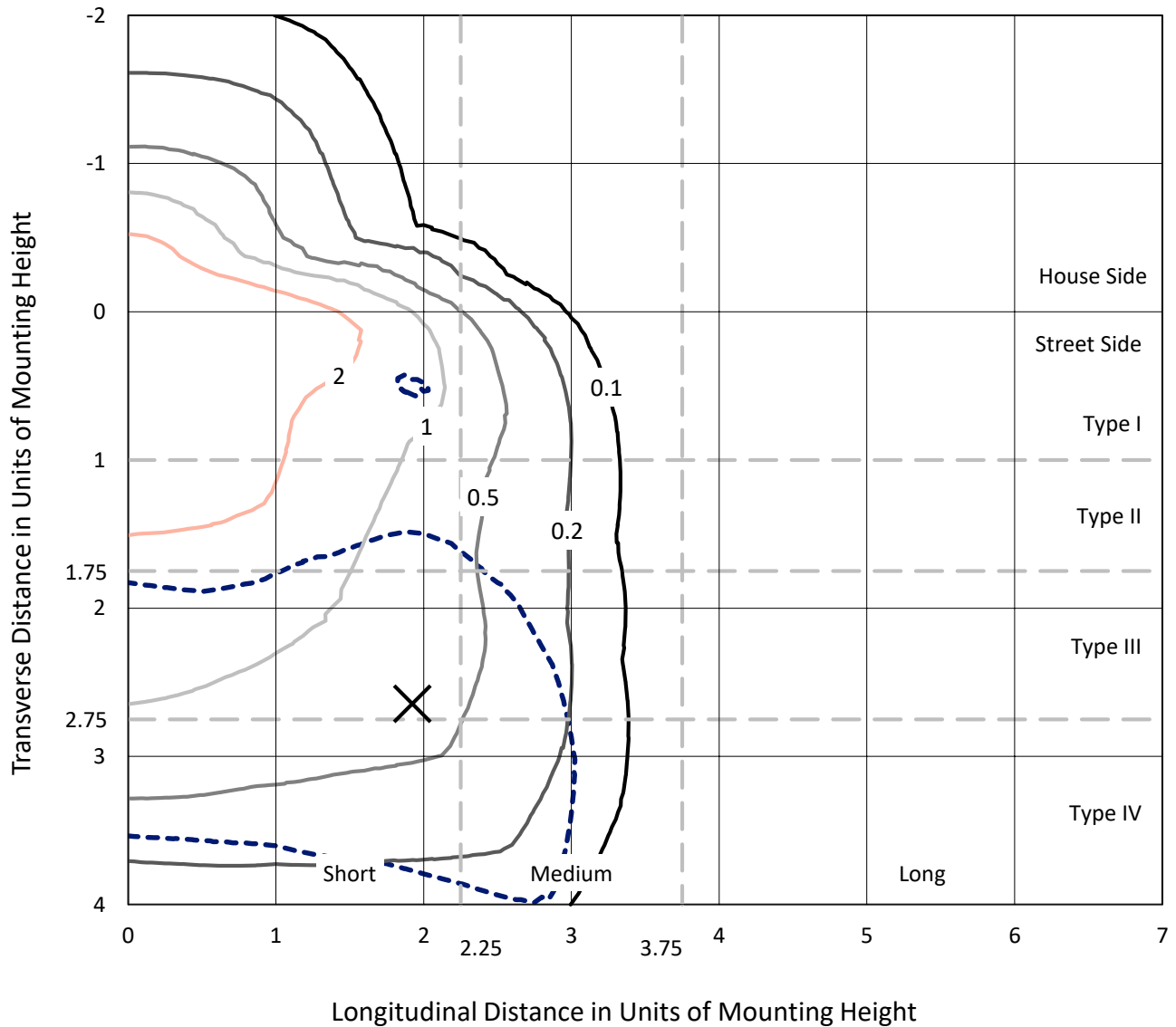
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196365
 CATALOG NUMBER: NAV-AF-03-D-UNV-T4FT-1200

Iso-Footcandle Lines of Horizontal Illumination

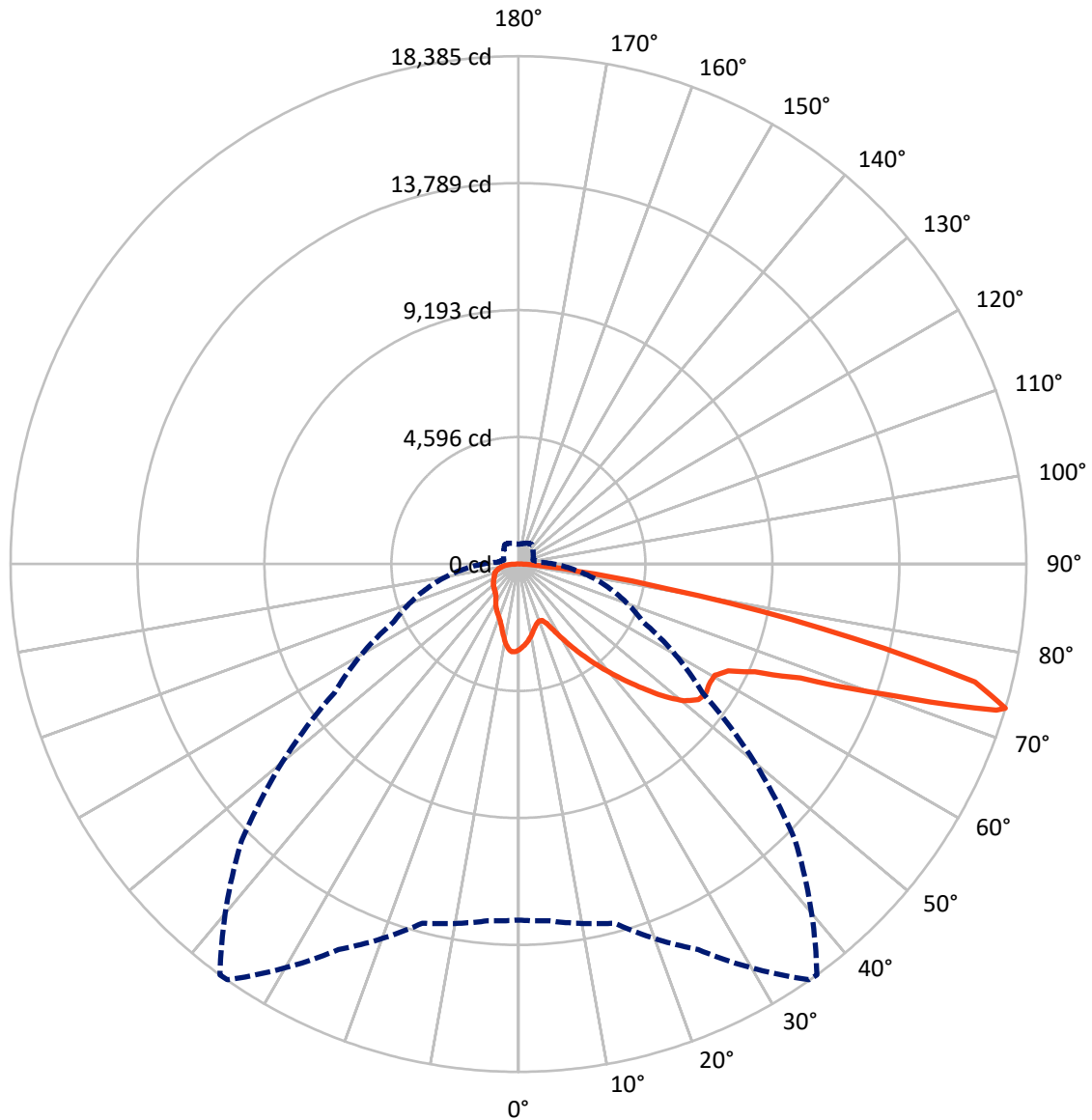
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5 fc
 Type IV - Short - Non-Cutoff

REPORT NUMBER: P196365
CATALOG NUMBER: NAV-AF-03-D-UNV-T4FT-1200

Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

REPORT NUMBER: P196365

CATALOG NUMBER: NAV-AF-03-D-UNV-T4FT-1200

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3950.6	0.0	3950.6
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	16537.0	0.0	16537.0
	% Fixture	80.7	0.0	80.7
Total	Lumens	20487.7	0.0	20487.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	281.9	1.4
10°-20°	707.9	3.5
20°-30°	1135.0	5.5
30°-40°	1877.4	9.2
40°-50°	2905.0	14.2
50°-60°	3888.9	19.0
60°-70°	5080.1	24.8
70°-80°	4149.6	20.3
80°-90°	461.9	2.3
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°	20487.7	100.0
0°-180°	20487.7	100.0



REPORT NUMBER: P196365

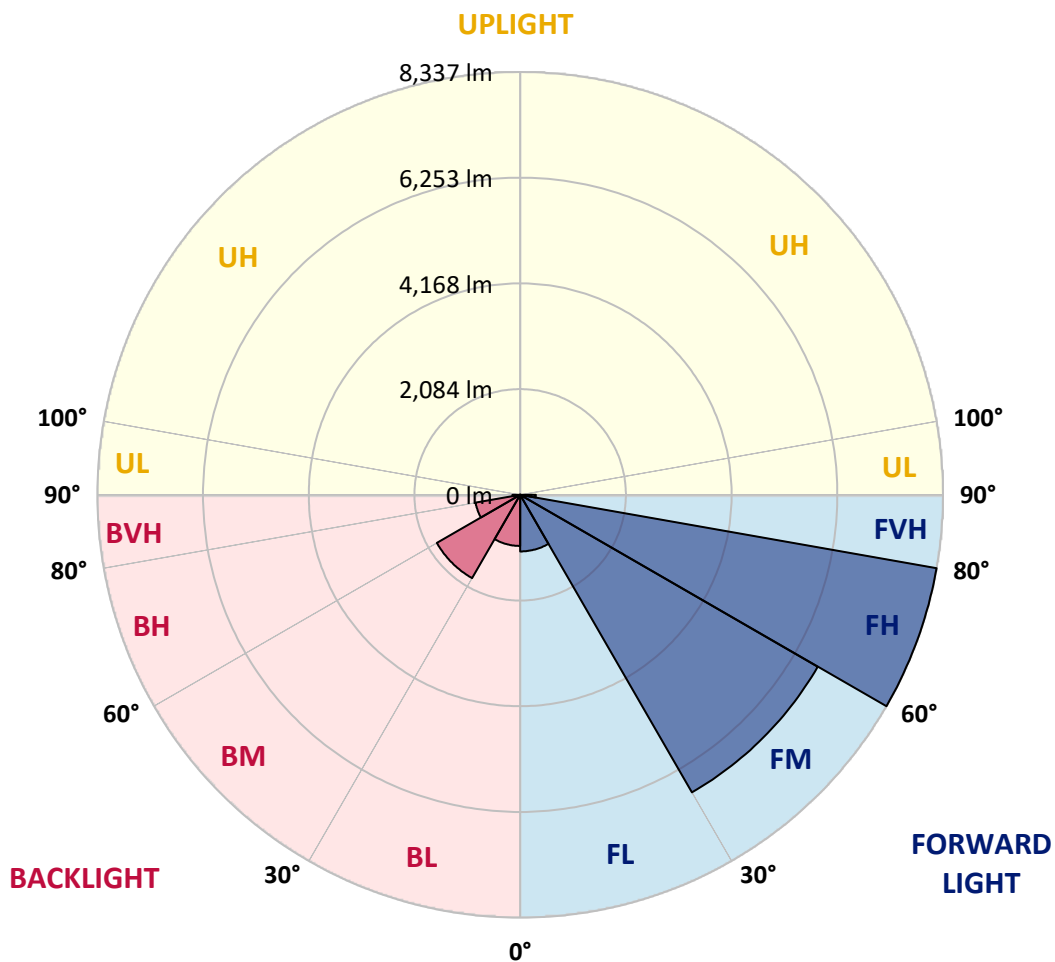
CATALOG NUMBER: NAV-AF-03-D-UNV-T4FT-1200

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1116.3	5.4			
FM	(30°-60°)	6773.9	33.1			
FH	(60°-80°)	8337.0	40.7			G4/12000
FVH	(80°-90°)	309.8	1.5			G3/500
BL	(0°-30°)	1008.4	4.9	B3/2500		
BM	(30°-60°)	1897.3	9.3	B2/2500		
BH	(60°-80°)	892.8	4.4	B2/1000		G2/1000
BVH	(80°-90°)	152.1	0.7			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





REPORT NUMBER: P196365
 CATALOG NUMBER: NAV-AF-03-D-UNV-T4FT-1200

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3
2.5°	2984.9	2992.6	2994.0	3003.1	3003.1	3001.7	3005.6	3021.3	3029.1	3047.3	3062.9
5°	2837.8	2846.9	2850.8	2866.4	2885.9	2887.2	2901.5	2931.5	2960.1	3000.4	3034.3
7.5°	2672.5	2682.8	2693.2	2725.8	2754.4	2757.1	2784.4	2832.6	2870.3	2919.7	2980.9
10°	2512.3	2514.9	2525.4	2567.0	2604.7	2608.6	2647.7	2702.3	2753.2	2822.1	2891.1
12.5°	2380.8	2388.7	2386.0	2417.2	2449.9	2452.4	2504.5	2573.4	2647.7	2725.8	2807.8
15°	2335.3	2334.0	2306.7	2305.3	2319.6	2322.3	2373.0	2453.8	2537.0	2633.4	2738.8
17.5°	2366.5	2356.1	2284.6	2240.3	2231.2	2233.7	2271.5	2360.0	2448.5	2559.2	2685.5
20°	2538.4	2497.9	2330.1	2223.3	2193.4	2193.4	2215.5	2287.1	2384.7	2513.6	2672.5
22.5°	2945.8	2883.3	2525.4	2335.3	2229.8	2219.4	2202.5	2257.1	2365.2	2520.1	2725.8
25°	3458.7	3428.7	2883.3	2633.4	2416.0	2382.1	2270.2	2289.7	2405.6	2590.4	2871.6
27.5°	3933.8	3881.7	3353.2	3066.8	2759.6	2707.5	2470.6	2391.2	2501.9	2720.5	3082.5
30°	4211.1	4175.9	3836.2	3562.8	3197.0	3130.6	2790.9	2591.7	2673.7	2935.4	3381.9
32.5°	4513.1	4492.2	4320.4	4071.8	3670.9	3594.0	3204.8	2918.5	2936.7	3220.5	3742.5
35°	4805.9	4833.2	4735.6	4553.4	4181.1	4109.5	3760.7	3345.4	3260.8	3540.6	4127.7
37.5°	5157.4	5163.9	5102.7	4984.2	4717.4	4658.8	4371.2	3801.0	3613.6	3881.7	4500.1
40°	5859.1	5756.1	5516.7	5423.0	5264.1	5227.7	4899.6	4218.9	3941.6	4231.8	4851.4
42.5°	6617.9	6457.8	6082.9	5929.3	5865.5	5831.6	5339.6	4497.4	4248.8	4582.0	5196.5
45°	7229.7	7099.6	6732.4	6542.4	6550.3	6495.5	5723.6	4746.1	4582.0	4933.5	5581.7
47.5°	7832.4	7615.1	7203.7	7176.3	7267.5	7186.7	6090.8	4994.7	4929.6	5316.2	5967.1
50°	7871.5	7673.6	7507.0	7725.6	7881.8	7781.7	6423.9	5320.1	5290.2	5779.6	6464.3
52.5°	7396.3	7367.7	7621.5	7990.0	8249.0	8159.2	6696.0	5654.7	5658.6	6358.9	7069.6
55°	7223.2	7186.7	7491.4	7944.3	8294.5	8241.1	6899.1	6032.1	6067.3	7061.8	7719.2
57.5°	7514.8	7423.7	7483.5	7858.4	8187.8	8156.5	7109.9	6451.3	6515.1	7871.5	8319.2
60°	8419.5	8233.3	7915.7	7986.0	8191.7	8173.5	7412.0	6918.6	7025.3	8714.9	8699.4
62.5°	9774.6	9563.7	8916.8	8604.3	8558.7	8523.6	7910.5	7492.7	7546.0	9324.2	8478.0
65°	11261.2	11034.7	10265.3	9753.7	9485.6	9410.1	8714.9	8185.1	7850.6	9322.9	7616.3
67.5°	12929.9	12690.4	11923.7	11435.6	11145.3	11016.4	10020.6	8744.9	7751.7	8534.1	6094.6
70°	14639.0	14411.2	14059.8	14230.4	14357.9	14161.3	12077.3	8931.1	7041.0	6690.8	4092.6
72.5°	13731.8	13713.6	13980.4	15597.1	18056.1	18095.1	14131.3	8405.2	5439.8	3976.7	2181.6
73°	12889.6	12966.4	13461.0	15395.4	18372.4	18385.4	14171.8	8133.1	4994.7	3426.1	1916.1
75°	6677.8	7198.5	9033.9	12483.5	17012.1	17073.3	12492.6	6157.1	2977.0	1903.1	1291.3
77.5°	1788.5	1765.1	2910.6	6081.6	11341.9	11261.2	7893.6	2980.9	1426.7	1193.7	906.0
80°	613.2	620.9	990.6	2224.6	5294.1	5482.8	3426.1	1300.4	938.6	831.8	641.7
82.5°	312.4	322.8	518.1	946.3	2214.2	2167.3	1102.5	765.4	628.7	505.0	359.3
85°	166.6	171.9	285.1	490.7	812.2	821.4	387.9	408.8	399.7	286.4	177.1
87.5°	82.0	84.6	136.7	216.0	300.6	290.3	135.3	177.1	196.5	161.4	97.6
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196365
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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3	3103.3
2.5°	3082.5	3082.5	3099.3	3128.0	3148.8	3168.4	3181.4	3202.2	3213.9	3212.7	3211.3
5°	3061.6	3074.7	3108.4	3143.6	3167.1	3182.7	3182.7	3191.8	3191.8	3187.9	3182.7
7.5°	3013.5	3035.6	3085.0	3116.3	3122.8	3105.9	3072.0	3046.0	3013.5	2996.5	2990.1
10°	2936.7	2965.3	3027.8	3042.2	3008.3	2948.3	2866.4	2796.0	2733.6	2705.0	2695.9
12.5°	2861.2	2898.9	2957.5	2935.4	2854.6	2737.5	2611.3	2514.9	2444.6	2417.2	2408.1
15°	2798.7	2844.2	2889.8	2820.8	2680.2	2517.5	2378.3	2288.4	2235.0	2214.2	2209.0
17.5°	2757.1	2810.4	2826.0	2697.1	2501.9	2319.6	2196.0	2137.5	2114.0	2104.8	2102.3
20°	2759.6	2819.6	2781.8	2577.4	2330.1	2146.6	2064.5	2047.6	2047.6	2047.6	2046.3
22.5°	2831.2	2883.3	2763.5	2465.4	2164.8	2000.7	1965.6	1979.9	1990.4	1990.4	1989.0
25°	2979.7	3008.3	2776.6	2357.4	2009.9	1874.5	1875.8	1903.1	1912.2	1912.2	1909.6
27.5°	3206.1	3182.7	2800.0	2237.6	1857.6	1759.9	1778.1	1802.8	1809.4	1805.5	1804.2
30°	3489.9	3396.2	2819.6	2097.0	1714.4	1653.2	1668.8	1683.2	1677.9	1668.8	1667.5
32.5°	3807.5	3613.6	2807.8	1939.5	1588.1	1542.5	1551.6	1559.5	1551.6	1529.5	1529.5
35°	4122.5	3810.1	2744.0	1767.8	1487.9	1435.8	1434.5	1459.2	1457.9	1431.9	1433.2
37.5°	4398.5	3965.1	2620.4	1610.2	1402.0	1357.7	1362.9	1378.5	1386.3	1351.2	1347.2
40°	4639.3	4071.8	2445.9	1476.1	1332.9	1335.6	1321.2	1296.5	1287.4	1271.7	1269.2
42.5°	4865.8	4145.9	2261.0	1364.2	1297.8	1327.8	1279.6	1221.0	1196.2	1210.6	1219.7
45°	5088.4	4229.3	2082.7	1271.7	1253.5	1304.4	1238.0	1172.8	1144.2	1150.7	1159.8
47.5°	5360.5	4345.1	1867.9	1172.8	1185.9	1261.4	1211.9	1141.6	1098.6	1072.6	1064.8
50°	5718.4	4513.1	1589.4	1066.1	1114.3	1214.5	1189.8	1096.1	1049.1	997.1	984.1
52.5°	6166.2	4671.8	1308.3	980.2	1055.7	1174.1	1153.3	1057.0	999.7	937.2	926.8
55°	6612.7	4694.0	1066.1	906.0	989.3	1119.5	1109.1	1025.7	945.0	894.3	883.8
57.5°	6925.1	4484.4	903.4	843.5	925.6	1051.8	1068.7	988.0	899.5	860.4	854.0
60°	6930.3	3983.3	804.4	801.9	877.4	993.2	1027.0	943.8	870.8	844.9	839.6
62.5°	6379.7	3210.0	740.7	770.6	842.2	945.0	995.8	919.0	864.3	854.0	848.7
65°	5347.5	2371.7	689.9	741.9	809.7	904.7	969.8	911.2	861.7	857.8	854.0
67.5°	3948.1	1625.9	646.9	705.5	773.2	863.1	945.0	899.5	846.1	861.7	856.5
70°	2483.6	1085.7	606.6	663.9	725.1	814.9	912.5	878.6	826.5	817.4	800.6
72.5°	1402.0	784.9	558.4	610.5	662.6	751.1	868.3	843.5	782.4	745.8	729.0
73°	1266.6	743.3	546.8	597.5	648.2	738.1	857.8	833.1	769.4	729.0	713.3
75°	926.8	607.9	493.4	544.1	588.4	678.2	808.3	781.0	712.1	663.9	653.5
77.5°	671.7	468.6	424.3	469.9	509.0	594.8	734.2	703.0	635.3	609.2	598.8
80°	484.3	355.4	351.5	395.7	429.5	516.8	654.8	622.3	557.1	633.9	617.0
82.5°	289.0	227.8	257.8	307.2	342.4	433.4	568.9	531.1	468.6	473.8	403.6
85°	138.0	128.9	160.1	201.7	226.5	296.8	473.8	443.9	374.9	307.2	300.6
87.5°	61.2	58.6	76.8	89.8	121.0	178.3	324.2	287.7	272.1	162.8	127.6
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)