

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: P196359

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196359
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA 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: 18676 lumens
Efficiency: N/A
Efficacy: 112.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

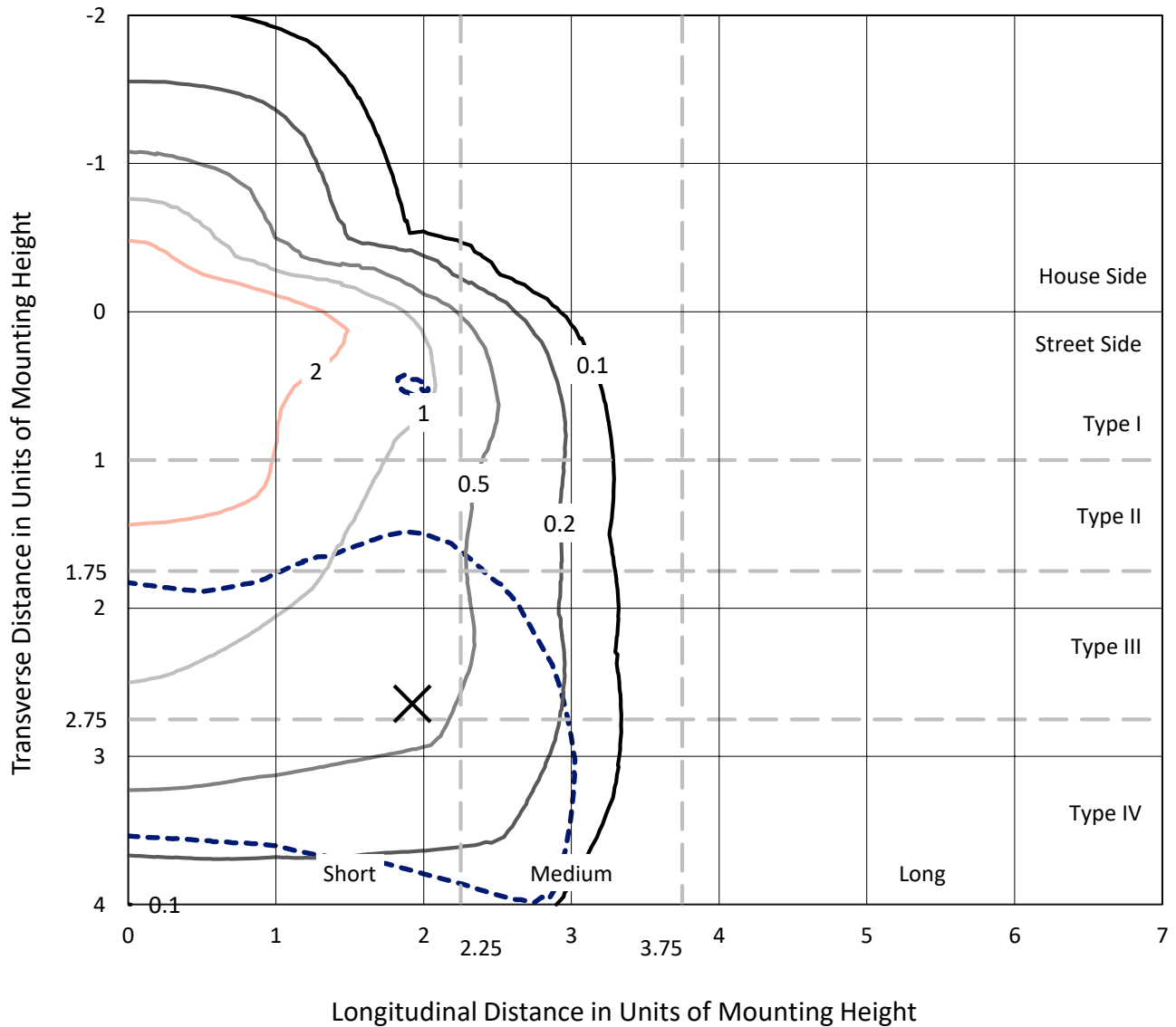
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

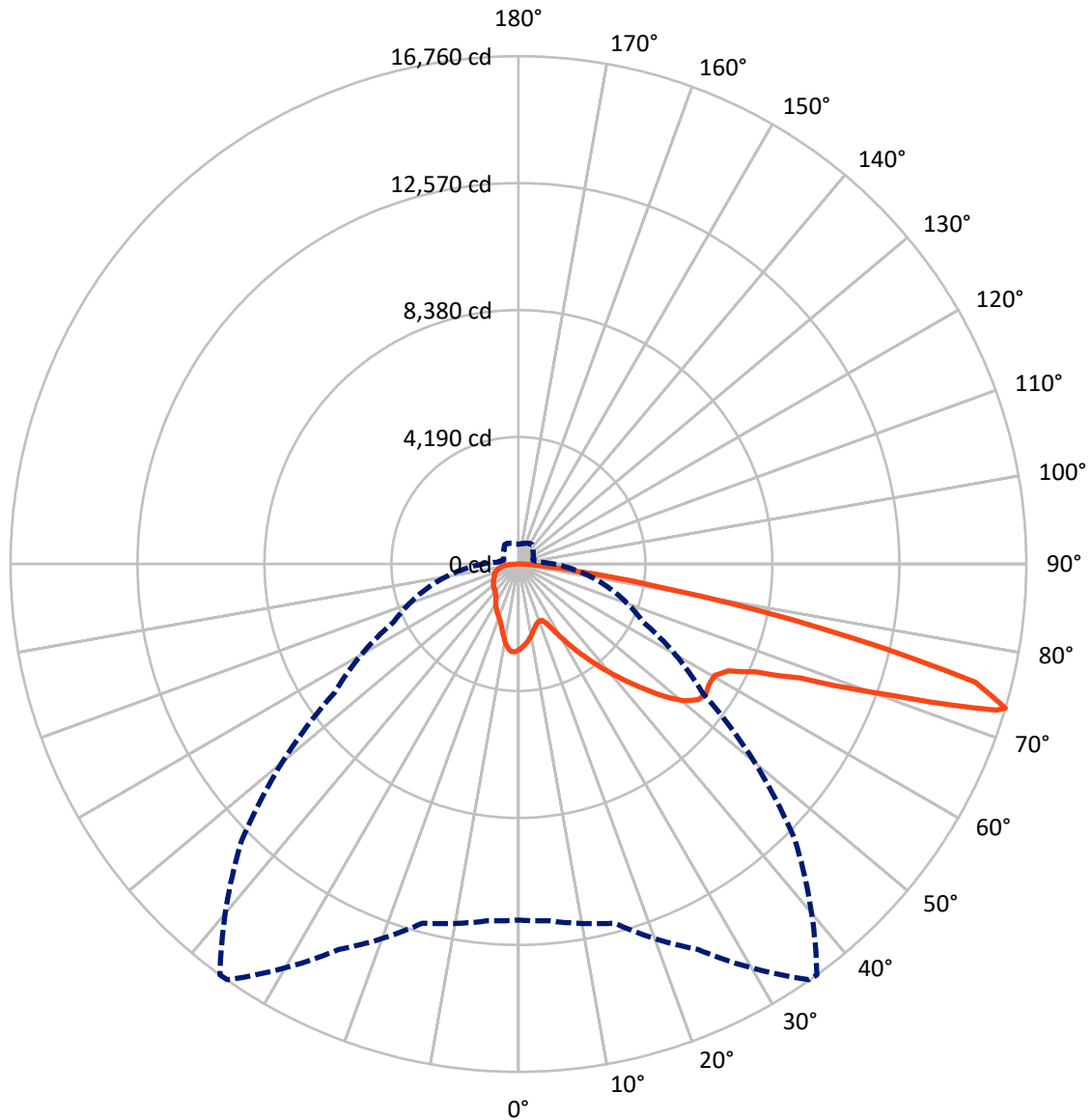


Based on 25 foot mounting height. Maximum calculated value = 4.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3601.3	0.0	3601.3
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	15074.7	0.0	15074.7
	% Fixture	80.7	0.0	80.7
Total	Lumens	18676.0	0.0	18676.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	256.9	1.4
10°-20°	645.3	3.5
20°-30°	1034.6	5.5
30°-40°	1711.3	9.2
40°-50°	2648.1	14.2
50°-60°	3545.0	19.0
60°-70°	4630.9	24.8
70°-80°	3782.7	20.3
80°-90°	421.0	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°	18676.0	100.0
0°-180°	18676.0	100.0



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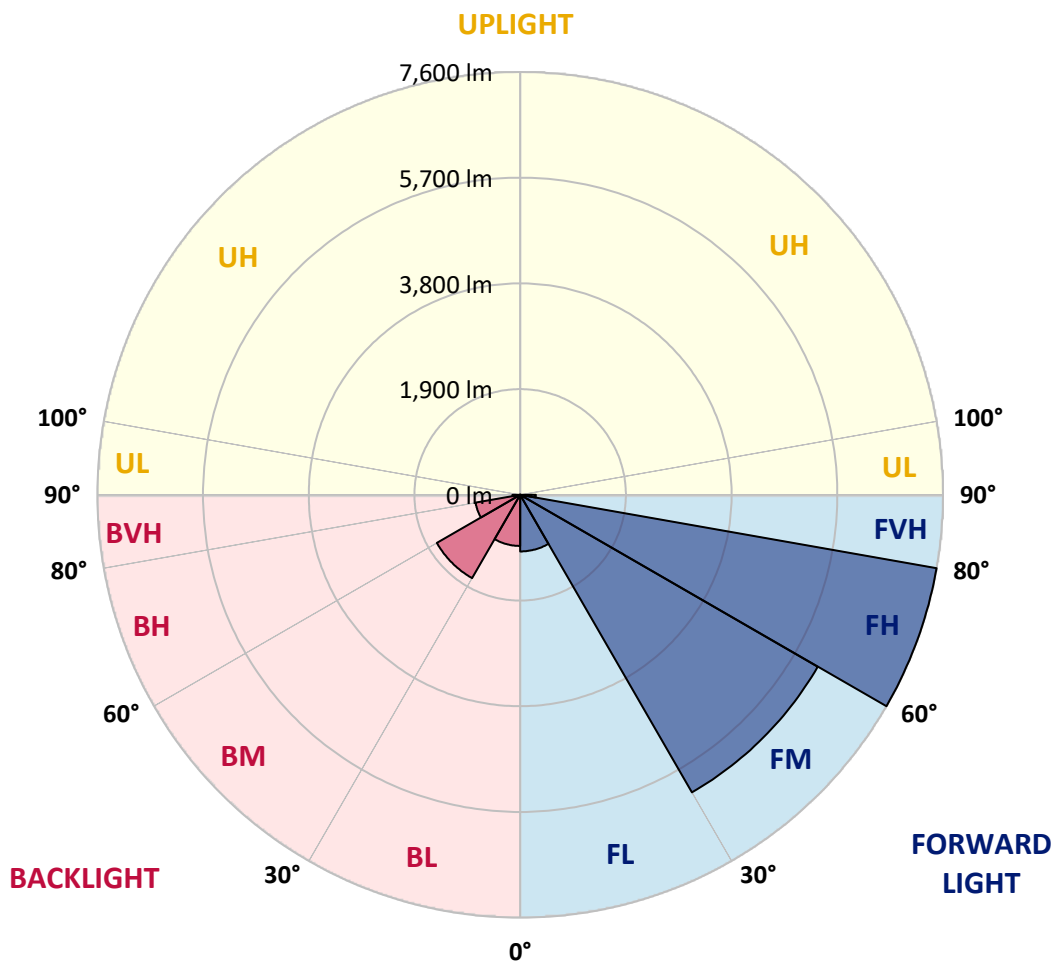
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1017.6	5.4			
FM (30°-60°)	6174.9	33.1			
FH (60°-80°)	7599.8	40.7			G4/12000
FVH (80°-90°)	282.4	1.5			G3/500
BL (0°-30°)	919.3	4.9	B2/1000		
BM (30°-60°)	1729.5	9.3	B2/2500		
BH (60°-80°)	813.8	4.4	B2/1000		G2/1000
BVH (80°-90°)	138.7	0.7			G2/225
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°	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9
2.5°	2720.8	2728.0	2729.2	2737.5	2737.5	2736.3	2739.9	2754.1	2761.3	2777.8	2792.0
5°	2586.8	2595.1	2598.7	2612.9	2630.7	2631.8	2644.9	2672.3	2698.3	2735.2	2766.0
7.5°	2436.1	2445.6	2455.1	2484.7	2510.8	2513.2	2538.1	2582.0	2616.5	2661.5	2717.4
10°	2290.2	2292.5	2302.0	2340.0	2374.4	2378.0	2413.6	2463.4	2509.7	2572.5	2635.4
12.5°	2170.3	2177.5	2175.1	2203.5	2233.2	2235.6	2283.0	2345.9	2413.6	2484.7	2559.5
15°	2128.8	2127.6	2102.7	2101.4	2114.5	2116.9	2163.2	2236.8	2312.7	2400.5	2496.6
17.5°	2157.3	2147.8	2082.5	2042.1	2033.8	2036.2	2070.7	2151.4	2232.0	2332.8	2447.9
20°	2313.9	2277.1	2124.1	2026.8	1999.5	1999.5	2019.6	2084.9	2173.9	2291.3	2436.1
22.5°	2685.2	2628.4	2302.0	2128.8	2032.7	2023.2	2007.7	2057.6	2156.1	2297.2	2484.7
25°	3152.8	3125.5	2628.4	2400.5	2202.3	2171.5	2069.4	2087.2	2192.9	2361.4	2617.6
27.5°	3586.0	3538.5	3056.7	2795.6	2515.6	2468.2	2252.2	2179.8	2280.7	2480.0	2809.8
30°	3838.7	3806.6	3497.0	3247.8	2914.3	2853.8	2544.1	2362.5	2437.3	2675.8	3082.8
32.5°	4114.0	4095.0	3938.4	3711.7	3346.3	3276.2	2921.4	2660.4	2677.0	2935.7	3411.5
35°	4381.0	4405.8	4316.9	4150.7	3811.4	3746.1	3428.1	3049.6	2972.5	3227.6	3762.7
37.5°	4701.4	4707.3	4651.5	4543.5	4300.3	4246.9	3984.6	3464.9	3294.0	3538.5	4102.1
40°	5340.9	5247.2	5028.8	4943.4	4798.7	4765.4	4466.4	3845.8	3593.0	3857.6	4422.5
42.5°	6032.8	5886.8	5545.0	5405.0	5346.9	5316.0	4867.5	4099.7	3873.1	4176.8	4737.0
45°	6590.5	6471.8	6137.1	5963.9	5971.0	5921.1	5217.6	4326.4	4176.8	4497.2	5088.2
47.5°	7139.8	6941.6	6566.7	6541.8	6624.8	6551.3	5552.2	4553.1	4493.7	4846.1	5439.4
50°	7175.4	6995.0	6843.1	7042.5	7184.9	7093.6	5855.9	4849.7	4822.4	5268.5	5892.7
52.5°	6742.3	6716.2	6947.6	7283.4	7519.5	7437.7	6103.9	5154.6	5158.2	5796.6	6444.5
55°	6584.5	6551.3	6828.9	7241.9	7561.0	7512.4	6289.0	5498.8	5530.8	6437.3	7036.6
57.5°	6850.3	6767.2	6821.9	7163.5	7463.8	7435.3	6481.2	5880.8	5938.9	7175.4	7583.6
60°	7675.0	7505.3	7215.8	7279.8	7467.3	7450.7	6756.6	6306.8	6404.1	7944.3	7930.1
62.5°	8910.2	8718.0	8128.3	7843.5	7801.9	7769.9	7211.0	6830.1	6878.7	8499.7	7728.4
65°	10265.3	10058.9	9357.5	8891.3	8646.8	8578.0	7944.3	7461.4	7156.5	8498.5	6942.9
67.5°	11786.5	11568.2	10869.4	10424.4	10159.7	10042.3	9134.5	7971.7	7066.2	7779.4	5555.7
70°	13344.6	13136.9	12816.6	12972.0	13088.2	12909.1	11009.3	8141.4	6418.4	6099.1	3730.7
72.5°	12517.5	12500.9	12744.1	14217.9	16459.5	16495.1	12881.8	7661.9	4958.9	3625.1	1988.7
73°	11749.8	11819.8	12270.7	14034.0	16747.8	16759.6	12918.6	7413.9	4553.1	3123.2	1746.7
75°	6087.3	6561.9	8235.1	11379.6	15507.7	15563.6	11387.9	5612.6	2713.8	1734.8	1177.1
77.5°	1630.4	1609.0	2653.2	5543.9	10339.0	10265.3	7195.5	2717.4	1300.5	1088.1	825.8
80°	558.9	566.0	903.0	2027.9	4826.0	4998.0	3123.2	1185.4	855.5	758.2	585.0
82.5°	284.8	294.3	472.3	862.7	2018.4	1975.7	1005.0	697.8	573.2	460.4	327.5
85°	151.9	156.6	259.8	447.3	740.4	748.8	353.6	372.6	364.3	261.1	161.4
87.5°	74.8	77.1	124.6	197.0	274.2	264.6	123.4	161.4	179.2	147.1	89.0
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°	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9	2828.9
2.5°	2809.8	2809.8	2825.3	2851.4	2870.4	2888.2	2900.1	2919.1	2929.7	2928.5	2927.4
5°	2790.9	2802.8	2833.6	2865.7	2887.0	2901.3	2901.3	2909.6	2909.6	2906.0	2901.3
7.5°	2747.0	2767.2	2812.3	2840.7	2846.7	2831.2	2800.4	2776.7	2747.0	2731.6	2725.7
10°	2677.0	2703.0	2760.0	2773.1	2742.2	2687.7	2612.9	2548.8	2491.9	2465.7	2457.4
12.5°	2608.1	2642.6	2696.0	2675.8	2602.2	2495.4	2380.3	2292.5	2228.5	2203.5	2195.3
15°	2551.2	2592.8	2634.3	2571.4	2443.2	2294.9	2167.9	2086.1	2037.4	2018.4	2013.7
17.5°	2513.2	2561.9	2576.1	2458.7	2280.7	2114.5	2001.8	1948.4	1927.0	1918.7	1916.4
20°	2515.6	2570.2	2535.8	2349.5	2124.1	1956.7	1881.9	1866.6	1866.6	1866.6	1865.4
22.5°	2580.9	2628.4	2519.1	2247.4	1973.4	1823.8	1791.8	1804.8	1814.3	1814.3	1813.2
25°	2716.1	2742.2	2531.0	2148.9	1832.1	1708.7	1709.9	1734.8	1743.1	1743.1	1740.8
27.5°	2922.6	2901.3	2552.4	2039.8	1693.3	1604.3	1620.9	1643.5	1649.4	1645.8	1644.6
30°	3181.3	3095.9	2570.2	1911.6	1562.8	1507.0	1521.2	1534.3	1529.5	1521.2	1520.0
32.5°	3470.9	3294.0	2559.5	1768.1	1447.7	1406.1	1414.4	1421.6	1414.4	1394.3	1394.3
35°	3758.0	3473.2	2501.3	1611.5	1356.3	1308.9	1307.6	1330.1	1329.0	1305.3	1306.4
37.5°	4009.6	3614.4	2388.7	1467.8	1278.0	1237.7	1242.4	1256.6	1263.8	1231.7	1228.2
40°	4229.1	3711.7	2229.6	1345.6	1215.1	1217.4	1204.4	1181.8	1173.5	1159.3	1157.0
42.5°	4435.5	3779.4	2061.1	1243.6	1183.0	1210.4	1166.5	1113.1	1090.5	1103.6	1111.8
45°	4638.5	3855.3	1898.6	1159.3	1142.7	1189.0	1128.4	1069.1	1043.0	1048.9	1057.2
47.5°	4886.4	3960.9	1702.8	1069.1	1081.0	1149.8	1104.7	1040.6	1001.5	977.7	970.7
50°	5212.8	4114.0	1448.8	971.8	1015.7	1107.1	1084.5	999.1	956.4	908.9	897.0
52.5°	5620.9	4258.7	1192.6	893.5	962.3	1070.3	1051.3	963.5	911.3	854.4	844.9
55°	6027.9	4278.9	971.8	825.8	901.8	1020.5	1011.0	935.1	861.4	815.2	805.7
57.5°	6312.7	4087.8	823.5	769.0	843.6	958.8	974.2	900.6	819.9	784.4	778.5
60°	6317.5	3631.1	733.4	731.0	799.7	905.4	936.2	860.3	793.8	770.1	765.4
62.5°	5815.6	2926.2	675.1	702.5	767.7	861.4	907.8	837.7	787.9	778.5	773.7
65°	4874.6	2162.0	628.9	676.4	738.1	824.7	884.0	830.6	785.5	781.9	778.5
67.5°	3598.9	1482.1	589.7	643.1	704.8	786.8	861.4	819.9	771.3	785.5	780.8
70°	2264.1	989.6	553.0	605.2	660.9	742.9	831.8	801.0	753.5	745.2	729.8
72.5°	1278.0	715.6	509.0	556.5	604.0	684.7	791.5	769.0	713.2	680.0	664.5
73°	1154.6	677.6	498.4	544.6	591.0	672.8	781.9	759.4	701.3	664.5	650.3
75°	844.9	554.1	449.7	496.0	536.3	618.3	736.9	712.0	649.1	605.2	595.7
77.5°	612.3	427.2	386.9	428.4	464.0	542.3	669.2	640.8	579.1	555.4	545.8
80°	441.4	324.0	320.4	360.7	391.6	471.1	596.9	567.2	507.9	577.9	562.4
82.5°	263.4	207.7	235.0	280.1	312.1	395.2	518.5	484.2	427.2	431.9	367.9
85°	125.8	117.4	146.0	183.9	206.4	270.6	431.9	404.7	341.8	280.1	274.2
87.5°	55.8	53.4	70.0	81.8	110.4	162.5	295.4	262.3	248.0	148.3	116.3
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)