

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: P196335

Luminaire Tested: **NAV-AF-03-D-UNV-T3R**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196335
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18846.8 lumens
Efficiency: N/A
Efficacy: 113.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G3

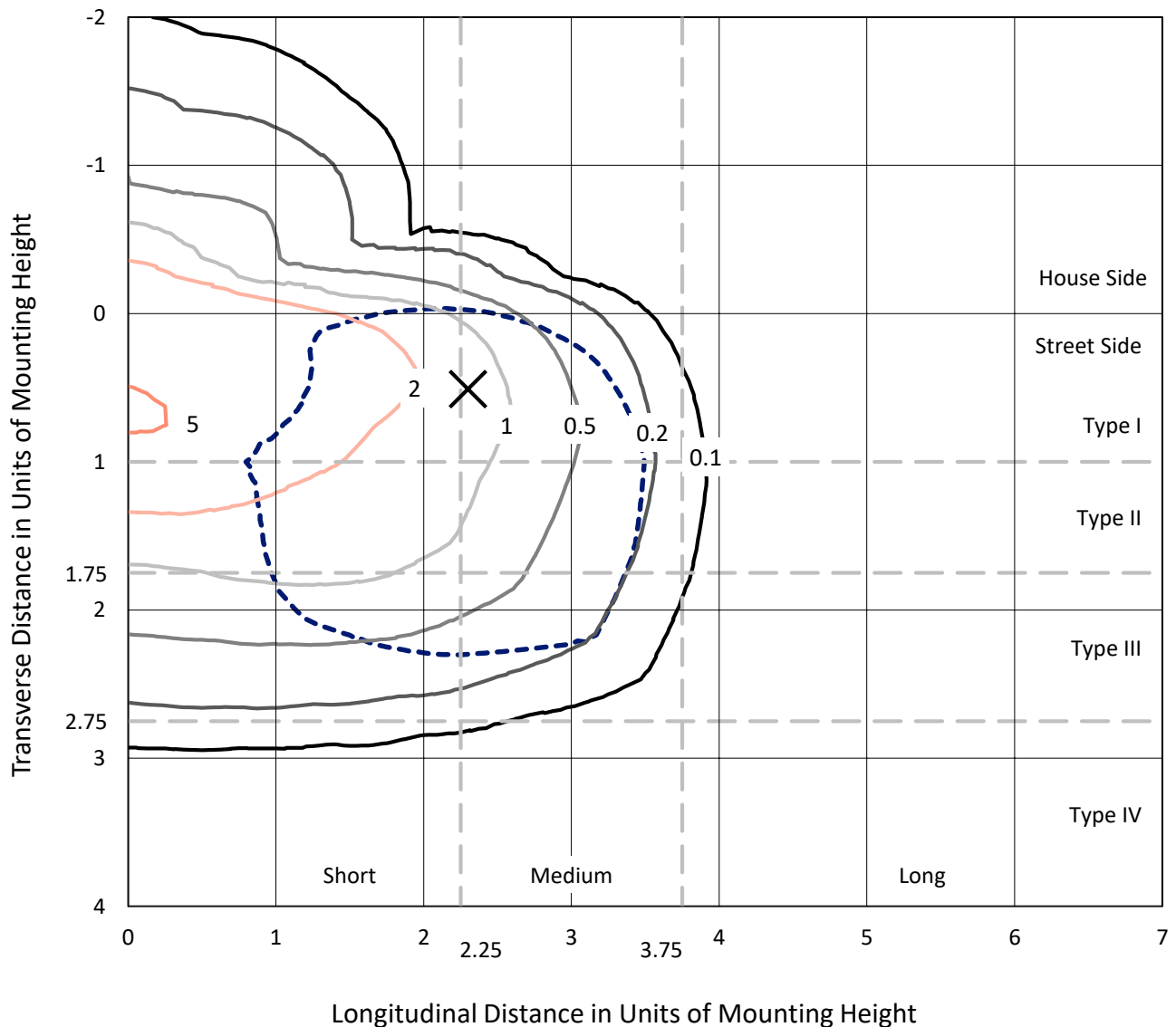
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

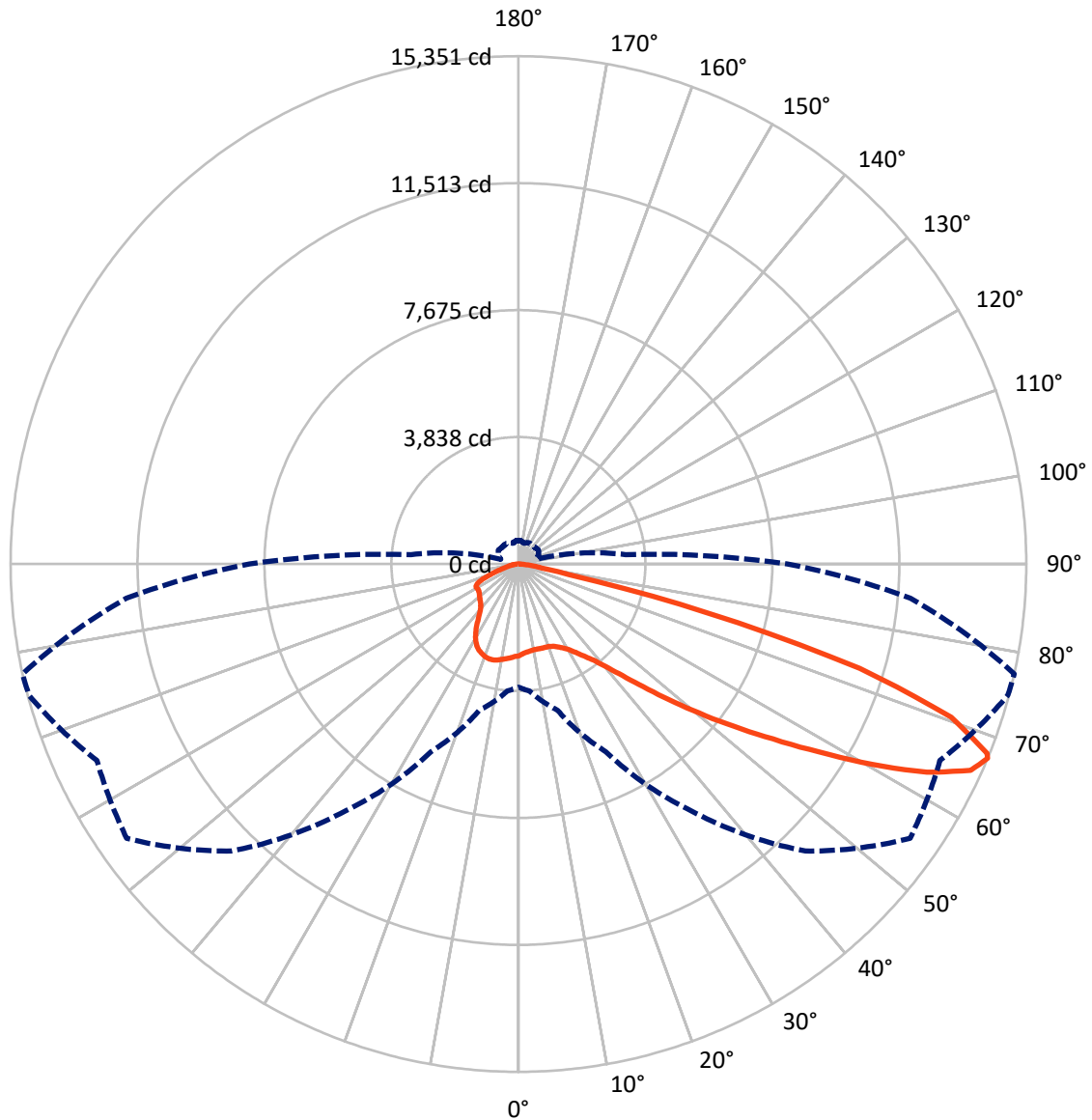
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3238.8	0.0	3238.8
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	15608.0	0.0	15608.0
	% Fixture	82.8	0.0	82.8
Total	Lumens	18846.8	0.0	18846.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	247.0	1.3
10°-20°	684.2	3.6
20°-30°	1162.4	6.2
30°-40°	1859.6	9.9
40°-50°	2862.9	15.2
50°-60°	3972.0	21.1
60°-70°	5298.4	28.1
70°-80°	2521.5	13.4
80°-90°	238.7	1.3
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°	18846.8	100.0
0°-180°	18846.8	100.0



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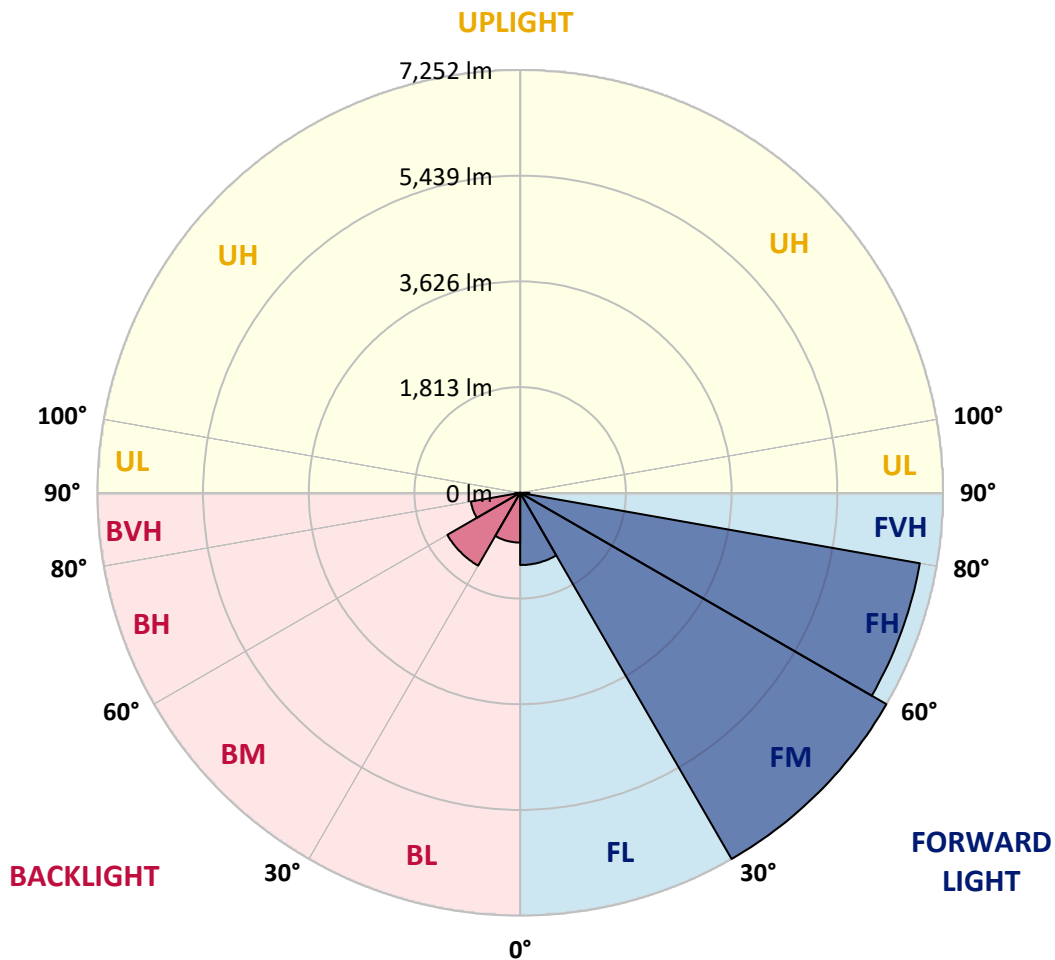
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1239.4	6.6			
FM	(30°-60°)	7252.5	38.5			
FH	(60°-80°)	6961.1	36.9			G3/7500
FVH	(80°-90°)	155.1	0.8			G2/225
BL	(0°-30°)	854.3	4.5	B2/1000		
BM	(30°-60°)	1442.1	7.7	B2/2500		
BH	(60°-80°)	858.8	4.6	B2/1000		G2/1000
BVH	(80°-90°)	83.7	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7
2.5°	2487.2	2498.9	2500.0	2533.7	2548.9	2587.3	2629.3	2666.6	2699.2	2710.8	2731.8
5°	2237.9	2237.9	2241.4	2263.5	2306.7	2368.3	2455.7	2551.2	2651.5	2675.9	2737.6
7.5°	2107.4	2109.7	2112.1	2134.2	2167.9	2222.8	2310.1	2440.6	2607.2	2647.9	2756.2
10°	2119.0	2115.6	2103.9	2099.3	2113.2	2148.2	2223.9	2357.9	2569.9	2632.8	2790.1
12.5°	2301.9	2295.0	2256.5	2200.6	2149.3	2136.5	2188.9	2316.0	2552.5	2632.8	2847.2
15°	2615.3	2620.0	2544.3	2427.8	2293.8	2202.9	2196.0	2300.8	2546.6	2639.8	2913.6
17.5°	3023.0	3025.4	2920.5	2751.6	2529.1	2341.5	2243.7	2300.8	2546.6	2646.8	2977.6
20°	3456.4	3440.1	3321.3	3109.3	2820.4	2533.7	2331.1	2314.7	2553.6	2657.2	3038.2
22.5°	3828.1	3812.9	3688.2	3465.8	3134.9	2760.9	2448.7	2361.4	2592.1	2700.4	3123.3
25°	4153.1	4162.4	4041.3	3790.7	3448.3	3017.2	2624.7	2468.6	2672.5	2778.4	3228.1
27.5°	4548.0	4530.5	4390.7	4152.0	3771.0	3282.9	2844.8	2603.7	2767.9	2872.8	3356.2
30°	5004.7	4996.5	4807.8	4562.0	4126.3	3579.9	3062.7	2749.3	2892.6	3002.1	3517.0
32.5°	5559.1	5558.0	5355.4	5053.6	4525.8	3915.4	3320.1	2948.6	3074.3	3185.0	3730.2
35°	6187.1	6185.9	5976.2	5577.8	4986.0	4287.1	3623.0	3190.8	3299.1	3415.6	3984.2
37.5°	6622.8	6615.8	6506.3	6119.5	5495.1	4719.3	4001.6	3517.0	3554.2	3684.8	4290.6
40°	6706.7	6748.6	6842.9	6614.6	6050.8	5199.2	4381.4	3867.7	3902.6	4070.3	4676.1
42.5°	6615.8	6670.6	6983.9	7048.0	6606.4	5780.5	4856.7	4353.5	4397.7	4606.2	5129.3
45°	6536.6	6584.3	6976.9	7288.0	7155.1	6414.2	5449.7	4946.4	5030.3	5288.9	5646.6
47.5°	6401.4	6445.7	6839.4	7331.1	7468.6	7024.7	6163.8	5659.4	5803.8	6117.1	6236.0
50°	6394.5	6414.2	6651.9	7186.6	7576.9	7488.3	6954.8	6493.5	6714.9	7076.0	6888.3
52.5°	6217.4	6356.0	6571.5	6956.0	7579.2	7758.6	7734.1	7408.0	7749.3	8148.8	7603.7
55°	5134.0	5293.6	6303.6	6842.9	7565.2	7990.5	8445.9	8380.7	8914.2	9334.8	8405.2
57.5°	4793.8	4861.4	5530.1	6876.8	7681.7	8373.7	9157.8	9425.7	10247.0	10705.9	9366.2
60°	4700.6	4771.7	5375.1	6893.1	7997.4	9071.5	10123.4	10605.7	11813.9	12300.8	10457.8
62.5°	4596.9	4688.9	5386.8	6908.2	8552.0	10103.7	11404.9	11886.1	13422.6	13857.2	11480.7
65°	4294.0	4416.4	5171.2	6812.6	9158.9	11399.0	13098.8	13221.1	14751.9	15028.0	12098.0
67°	3719.7	3853.7	4579.4	6260.5	9102.9	12271.6	14453.6	14056.4	15316.8	15350.6	11897.7
67.5°	3538.0	3676.6	4379.0	6031.0	8943.4	12385.8	14693.6	14171.7	15312.1	15274.9	11711.4
70°	2382.4	2538.5	3101.1	4428.0	7173.7	11527.2	14635.4	13816.4	14308.0	13880.4	10061.7
72.5°	1182.4	1187.1	1547.1	2425.4	4346.4	8267.7	12208.7	11819.7	11598.3	10791.0	7383.5
75°	569.7	580.1	730.4	1071.7	1832.5	4268.4	8325.9	7975.3	6790.6	5879.5	3695.2
77.5°	434.5	445.0	567.3	697.9	764.2	1392.1	4123.9	3333.0	1967.6	1571.6	1041.5
80°	335.5	355.3	478.8	535.9	505.5	558.0	1296.6	1020.5	765.4	702.5	516.1
82.5°	262.1	273.7	406.5	406.5	349.4	374.0	603.4	589.4	475.3	428.7	277.2
85°	185.3	208.5	327.3	302.9	229.4	231.8	361.1	346.0	244.7	196.9	108.3
87.5°	82.8	106.0	233.0	198.0	122.3	94.3	147.9	126.9	96.7	74.6	50.1
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°	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7	2773.7
2.5°	2755.1	2773.7	2802.9	2820.4	2843.7	2853.0	2862.3	2878.6	2891.4	2887.9	2882.1
5°	2780.8	2812.2	2848.3	2860.0	2860.0	2848.3	2841.3	2842.5	2839.0	2836.6	2829.7
7.5°	2818.0	2861.1	2886.8	2875.1	2839.0	2793.6	2750.5	2724.8	2700.4	2685.2	2689.8
10°	2870.5	2918.2	2919.4	2868.1	2781.9	2682.9	2597.9	2543.1	2490.7	2467.4	2474.4
12.5°	2946.2	2994.0	2953.2	2842.5	2691.1	2536.1	2380.0	2267.0	2165.7	2141.1	2134.2
15°	3027.7	3065.0	2974.1	2787.7	2560.5	2305.4	2043.3	1874.5	1761.4	1741.6	1734.6
17.5°	3098.8	3119.8	2963.7	2689.8	2354.4	1952.5	1647.3	1533.1	1509.8	1521.4	1521.4
20°	3161.7	3154.7	2918.2	2538.5	2029.3	1561.0	1384.0	1382.8	1414.2	1443.4	1445.7
22.5°	3240.9	3186.2	2846.0	2313.6	1641.4	1302.4	1272.1	1302.4	1337.4	1370.0	1373.5
25°	3335.2	3221.1	2749.3	1993.2	1319.9	1182.4	1195.2	1220.9	1243.0	1268.7	1269.8
27.5°	3429.6	3247.9	2613.0	1617.0	1145.2	1105.5	1119.5	1130.1	1135.8	1152.1	1152.1
30°	3539.1	3268.8	2416.1	1295.5	1064.8	1038.0	1029.8	1025.2	1029.8	1052.0	1053.1
32.5°	3676.6	3306.2	2147.0	1111.3	1027.5	990.2	948.3	925.0	941.3	980.9	987.9
35°	3832.7	3350.4	1824.3	1038.0	1014.7	966.9	890.1	854.0	859.7	895.9	901.6
37.5°	4028.4	3407.4	1506.3	1020.5	1027.5	964.5	863.3	812.0	786.3	787.5	786.3
40°	4278.9	3464.5	1254.6	1025.2	1055.5	970.4	850.4	770.1	716.5	718.8	723.4
42.5°	4541.0	3501.9	1095.1	1039.1	1089.2	978.6	845.8	729.3	682.6	722.3	758.4
45°	4847.4	3491.3	1012.3	1052.0	1114.9	982.0	828.3	724.6	686.2	805.0	872.6
47.5°	5199.2	3445.9	965.8	1057.7	1121.9	980.9	815.5	739.8	715.2	921.5	998.4
50°	5581.3	3374.9	928.4	1048.4	1118.4	976.2	829.4	758.4	726.9	947.2	1006.5
52.5°	5999.5	3309.7	890.1	1027.5	1100.9	962.3	846.9	750.2	694.3	872.6	918.0
55°	6494.6	3294.5	846.9	991.3	1071.7	947.2	837.6	724.6	658.2	773.6	801.5
57.5°	7060.8	3388.8	791.0	947.2	1032.2	916.9	815.5	710.6	645.4	703.6	718.8
60°	7779.5	3597.4	731.6	900.5	983.3	871.3	795.7	714.1	648.9	693.2	696.6
62.5°	8341.0	3784.9	678.0	843.4	918.0	816.6	774.7	717.6	659.4	707.2	701.3
65°	8544.9	3693.0	611.6	758.4	825.9	756.1	745.5	720.0	659.4	715.2	702.5
67°	8126.7	3253.7	548.7	673.3	738.6	702.5	717.6	710.6	647.7	714.1	692.0
67.5°	7927.6	3098.8	532.3	659.4	715.2	686.2	710.6	705.9	644.3	711.8	686.2
70°	6537.8	2222.8	449.7	553.3	598.8	604.6	667.5	675.7	616.2	668.7	622.1
72.5°	4651.7	1391.0	387.9	428.7	483.4	517.2	609.3	634.9	579.0	581.3	542.9
75°	2301.9	746.8	346.0	330.8	376.2	431.1	531.2	579.0	524.3	484.6	471.8
77.5°	777.0	422.9	292.4	266.8	292.4	346.0	440.4	505.5	462.5	410.1	401.9
80°	401.9	307.5	228.3	214.3	230.7	267.9	344.8	420.5	395.0	397.2	327.3
82.5°	250.4	187.5	164.3	163.1	174.7	205.0	254.0	341.4	339.0	290.1	210.8
85°	116.5	108.3	104.9	108.3	111.8	116.5	165.4	243.5	257.5	156.1	138.6
87.5°	48.9	47.8	41.9	45.4	50.1	48.9	66.4	103.7	144.4	97.9	89.7
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)