

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: P196324

Luminaire Tested: **NAV-AF-04-D-UNV-T3R-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196324
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-04-D-UNV-T3R-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16725.2 lumens
Efficiency: N/A
Efficacy: 129.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G3

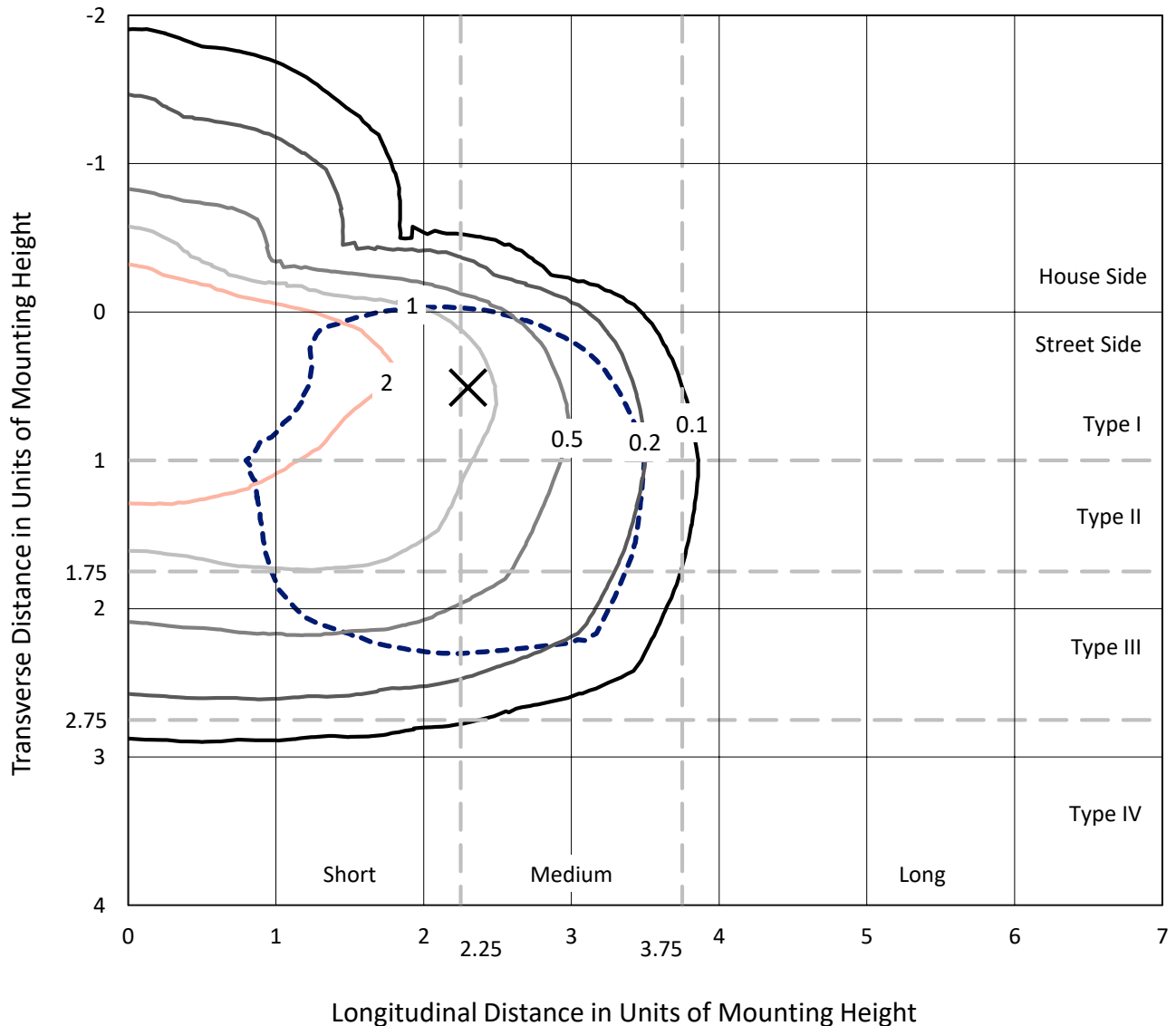
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

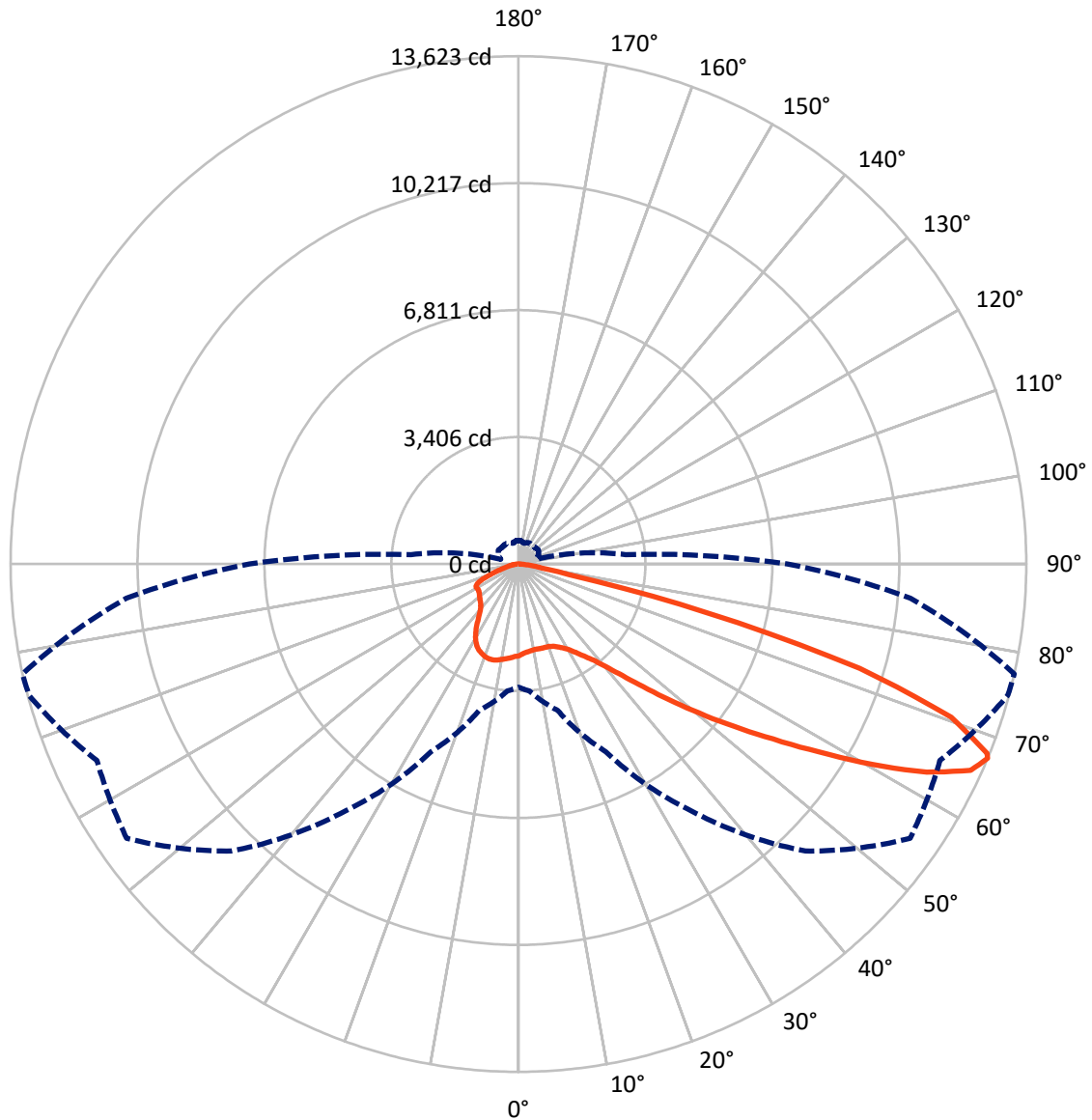
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.7 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	2874.2	0.0	2874.2
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	13851.0	0.0	13851.0
	% Fixture	82.8	0.0	82.8
Total	Lumens	16725.2	0.0	16725.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	219.2	1.3
10°-20°	607.1	3.6
20°-30°	1031.6	6.2
30°-40°	1650.3	9.9
40°-50°	2540.6	15.2
50°-60°	3524.9	21.1
60°-70°	4702.0	28.1
70°-80°	2237.7	13.4
80°-90°	211.9	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°	16725.2	100.0
0°-180°	16725.2	100.0



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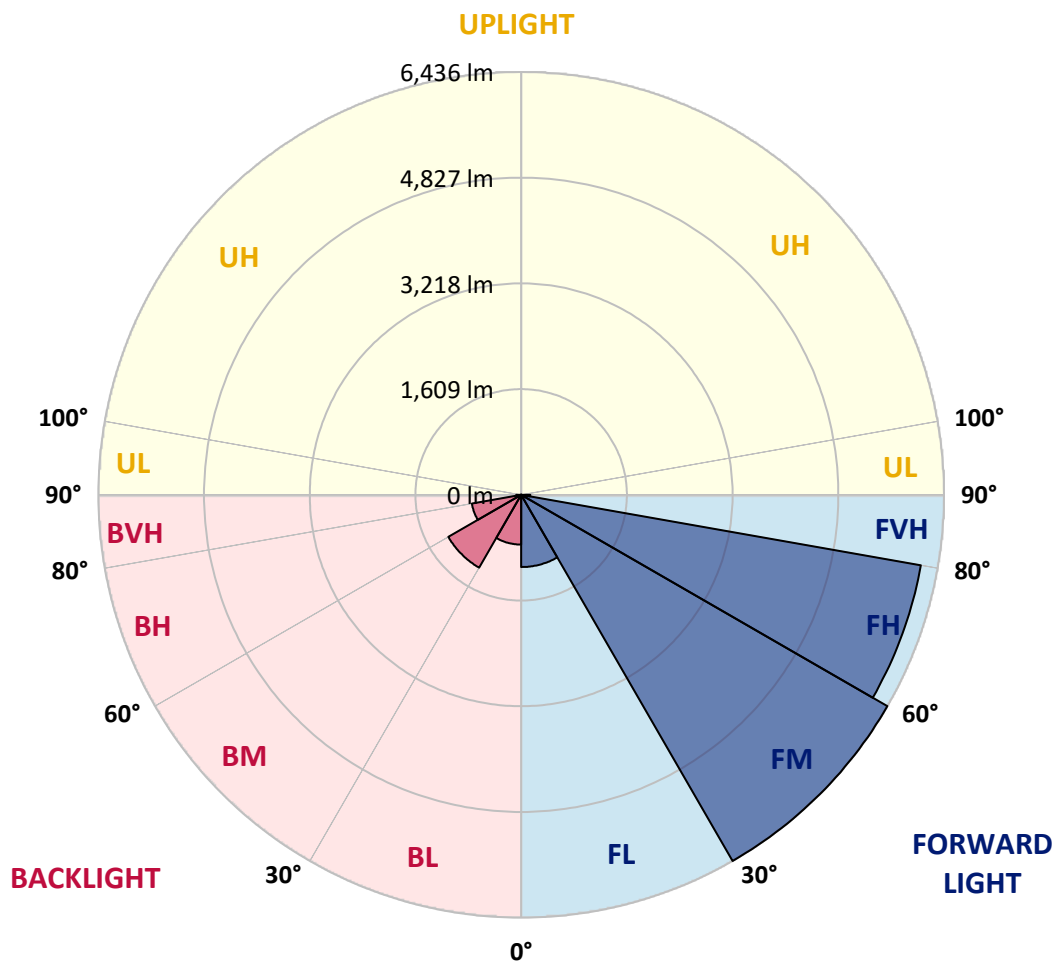
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1099.8	6.6			
FM	(30°-60°)	6436.0	38.5			
FH	(60°-80°)	6177.5	36.9			G3/7500
FVH	(80°-90°)	137.6	0.8			G2/225
BL	(0°-30°)	758.1	4.5	B2/1000		
BM	(30°-60°)	1279.8	7.7	B2/2500		
BH	(60°-80°)	762.1	4.6	B2/1000		G2/1000
BVH	(80°-90°)	74.3	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°	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5
2.5°	2207.2	2217.6	2218.6	2248.5	2261.9	2296.1	2333.4	2366.4	2395.3	2405.7	2424.3
5°	1986.0	1986.0	1989.0	2008.7	2046.9	2101.8	2179.3	2264.1	2353.0	2374.7	2429.5
7.5°	1870.2	1872.2	1874.4	1894.0	1924.0	1972.6	2050.1	2165.9	2313.7	2349.8	2446.0
10°	1880.5	1877.4	1867.1	1862.9	1875.4	1906.4	1973.6	2092.4	2280.6	2336.4	2476.0
12.5°	2042.8	2036.6	2002.5	1952.9	1907.4	1896.0	1942.6	2055.2	2265.1	2336.4	2526.7
15°	2320.9	2325.1	2257.9	2154.4	2035.6	1955.0	1948.7	2041.8	2259.9	2342.7	2585.6
17.5°	2682.8	2684.8	2591.7	2441.9	2244.5	2077.9	1991.2	2041.8	2259.9	2348.8	2642.4
20°	3067.3	3052.9	2947.4	2759.2	2502.9	2248.5	2068.7	2054.2	2266.1	2358.1	2696.2
22.5°	3397.1	3383.7	3273.0	3075.6	2782.0	2450.2	2173.1	2095.5	2300.2	2396.4	2771.7
25°	3685.6	3693.9	3586.3	3364.1	3060.1	2677.6	2329.2	2190.6	2371.6	2465.6	2864.7
27.5°	4036.1	4020.5	3896.4	3684.6	3346.5	2913.3	2524.5	2310.5	2456.3	2549.4	2978.4
30°	4441.2	4434.1	4266.5	4048.4	3661.8	3176.9	2717.9	2439.8	2567.0	2664.2	3121.1
32.5°	4933.4	4932.4	4752.4	4484.7	4016.4	3474.7	2946.4	2616.6	2728.2	2826.4	3310.3
35°	5490.6	5489.6	5303.5	4950.0	4424.8	3804.5	3215.1	2831.6	2927.8	3031.1	3535.6
37.5°	5877.3	5871.0	5773.8	5430.6	4876.5	4188.0	3551.2	3121.1	3154.2	3270.0	3807.5
40°	5951.6	5988.9	6072.6	5870.0	5369.7	4613.9	3888.1	3432.3	3463.3	3612.1	4149.7
42.5°	5871.0	5919.6	6197.8	6254.6	5862.7	5129.8	4310.0	3863.4	3902.7	4087.7	4551.9
45°	5800.7	5843.1	6191.5	6467.5	6349.7	5692.2	4836.2	4389.6	4464.1	4693.5	5010.9
47.5°	5680.9	5720.1	6069.6	6505.8	6627.8	6233.9	5469.9	5022.3	5150.5	5428.6	5534.1
50°	5674.6	5692.2	5903.1	6377.6	6724.0	6645.4	6171.9	5762.5	5958.9	6279.4	6112.9
52.5°	5517.5	5640.6	5831.7	6172.9	6726.0	6885.2	6863.5	6574.0	6877.0	7231.5	6747.7
55°	4556.0	4697.7	5594.0	6072.6	6713.6	7091.0	7495.2	7437.3	7910.8	8284.0	7458.9
57.5°	4254.1	4314.1	4907.5	6102.6	6816.9	7431.0	8126.8	8364.6	9093.4	9500.8	8311.9
60°	4171.5	4234.5	4770.0	6117.0	7097.1	8050.3	8983.9	9411.9	10483.9	10916.1	9280.6
62.5°	4079.4	4161.2	4780.4	6130.5	7589.3	8966.3	10121.1	10548.1	11911.6	12297.2	10188.3
65°	3810.7	3919.2	4589.2	6045.7	8127.9	10115.9	11624.2	11732.7	13091.2	13336.2	10736.2
67°	3301.0	3419.8	4064.0	5555.7	8078.2	10890.2	12826.6	12474.1	13592.7	13622.6	10558.4
67.5°	3139.7	3262.7	3886.1	5352.1	7936.6	10991.5	13039.6	12576.4	13588.5	13555.4	10393.0
70°	2114.1	2252.6	2752.0	3929.6	6366.2	10229.6	12987.8	12261.1	12697.4	12318.0	8929.0
72.5°	1049.3	1053.4	1372.9	2152.4	3857.1	7337.0	10834.4	10489.1	10292.7	9576.3	6552.3
75°	505.5	514.9	648.2	951.1	1626.2	3787.9	7388.7	7077.5	6026.1	5217.7	3279.3
77.5°	385.7	395.0	503.5	619.3	678.2	1235.4	3659.7	2957.8	1746.1	1394.6	924.2
80°	297.8	315.3	424.9	475.6	448.7	495.2	1150.6	905.6	679.2	623.4	458.0
82.5°	232.6	243.0	360.8	360.8	310.2	331.8	535.5	523.1	421.8	380.4	246.0
85°	164.4	185.1	290.5	268.8	203.7	205.7	320.5	307.1	217.1	174.7	96.2
87.5°	73.4	94.1	206.7	175.7	108.5	83.8	131.2	112.7	85.8	66.2	44.5
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°	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5	2461.5
2.5°	2445.0	2461.5	2487.4	2502.9	2523.5	2531.8	2540.1	2554.5	2566.0	2562.8	2557.7
5°	2467.8	2495.6	2527.7	2538.0	2538.0	2527.7	2521.5	2522.5	2519.4	2517.4	2511.1
7.5°	2500.8	2539.1	2561.8	2551.4	2519.4	2479.1	2440.9	2418.1	2396.4	2383.0	2387.1
10°	2547.4	2589.7	2590.7	2545.3	2468.8	2380.9	2305.4	2256.8	2210.3	2189.6	2195.9
12.5°	2614.6	2656.9	2620.7	2522.5	2388.1	2250.6	2112.1	2011.8	1921.8	1900.1	1894.0
15°	2686.9	2719.9	2639.3	2473.9	2272.3	2045.9	1813.3	1663.4	1563.2	1545.6	1539.3
17.5°	2750.0	2768.5	2630.0	2387.1	2089.4	1732.7	1461.8	1360.5	1339.9	1350.2	1350.2
20°	2805.7	2799.6	2589.7	2252.6	1800.9	1385.3	1228.2	1227.1	1255.1	1280.9	1283.0
22.5°	2876.0	2827.5	2525.6	2053.2	1456.7	1155.8	1128.9	1155.8	1186.8	1215.8	1218.8
25°	2959.8	2858.5	2439.8	1768.9	1171.3	1049.3	1060.7	1083.4	1103.0	1125.9	1126.9
27.5°	3043.6	2882.3	2318.8	1434.9	1016.2	981.1	993.5	1002.8	1008.0	1022.4	1022.4
30°	3140.8	2900.9	2144.1	1149.6	944.9	921.2	913.9	909.7	913.9	933.5	934.6
32.5°	3262.7	2933.9	1905.3	986.2	911.9	878.7	841.5	820.8	835.3	870.4	876.7
35°	3401.2	2973.2	1618.9	921.2	900.5	858.1	789.8	757.8	762.9	795.0	800.2
37.5°	3574.9	3023.9	1336.7	905.6	911.9	856.0	766.1	720.6	697.9	698.9	697.9
40°	3797.2	3074.6	1113.4	909.7	936.6	861.1	754.7	683.3	635.8	637.9	642.0
42.5°	4029.8	3107.6	971.8	922.2	966.6	868.4	750.5	647.1	605.8	641.0	673.0
45°	4301.7	3098.3	898.4	933.5	989.4	871.6	735.1	643.0	609.0	714.3	774.4
47.5°	4613.9	3058.0	857.0	938.7	995.5	870.4	723.6	656.4	634.7	817.7	886.0
50°	4953.0	2995.0	824.0	930.5	992.5	866.3	736.1	673.0	645.1	840.5	893.2
52.5°	5324.2	2937.1	789.8	911.9	976.9	854.0	751.6	665.7	616.1	774.4	814.7
55°	5763.5	2923.6	751.6	879.7	951.1	840.5	743.3	643.0	584.1	686.5	711.3
57.5°	6266.0	3007.4	701.9	840.5	916.0	813.7	723.6	630.6	572.8	624.4	637.9
60°	6903.8	3192.4	649.3	799.1	872.6	773.2	706.1	633.7	575.8	615.1	618.3
62.5°	7402.2	3358.9	601.7	748.5	814.7	724.7	687.5	636.8	585.1	627.5	622.4
65°	7583.0	3277.2	542.8	673.0	732.9	671.0	661.6	638.9	585.1	634.7	623.4
67°	7211.9	2887.5	486.9	597.5	655.4	623.4	636.8	630.6	574.8	633.7	614.1
67.5°	7035.1	2750.0	472.5	585.1	634.7	609.0	630.6	626.5	571.7	631.7	609.0
70°	5801.8	1972.6	399.1	491.0	531.4	536.5	592.4	599.7	546.9	593.4	552.1
72.5°	4128.0	1234.4	344.2	380.4	429.0	459.0	540.7	563.4	513.8	515.9	481.7
75°	2042.8	662.7	307.1	293.6	333.9	382.5	471.4	513.8	465.2	430.0	418.7
77.5°	689.6	375.3	259.5	236.7	259.5	307.1	390.8	448.7	410.4	363.9	356.7
80°	356.7	272.9	202.6	190.3	204.7	237.7	306.0	373.2	350.5	352.5	290.5
82.5°	222.3	166.4	145.8	144.7	155.1	182.0	225.4	302.9	300.8	257.4	187.1
85°	103.4	96.2	93.1	96.2	99.2	103.4	146.8	216.0	228.4	138.5	123.1
87.5°	43.4	42.4	37.2	40.3	44.5	43.4	58.9	92.0	128.2	86.8	79.6
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)