

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: P196661

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196661
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SL4-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18279.1 lumens
Efficiency: N/A
Efficacy: 112.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G4

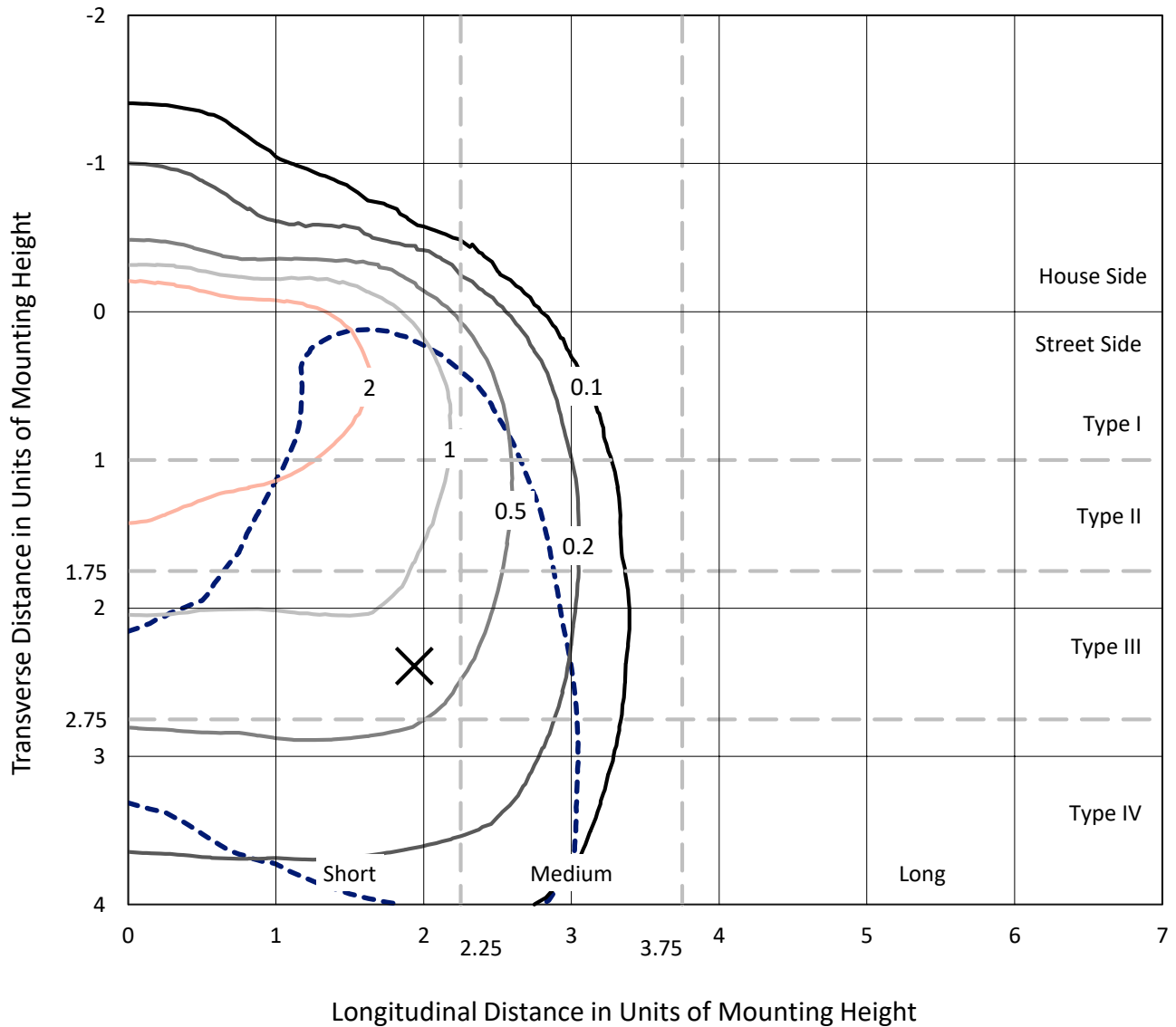
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

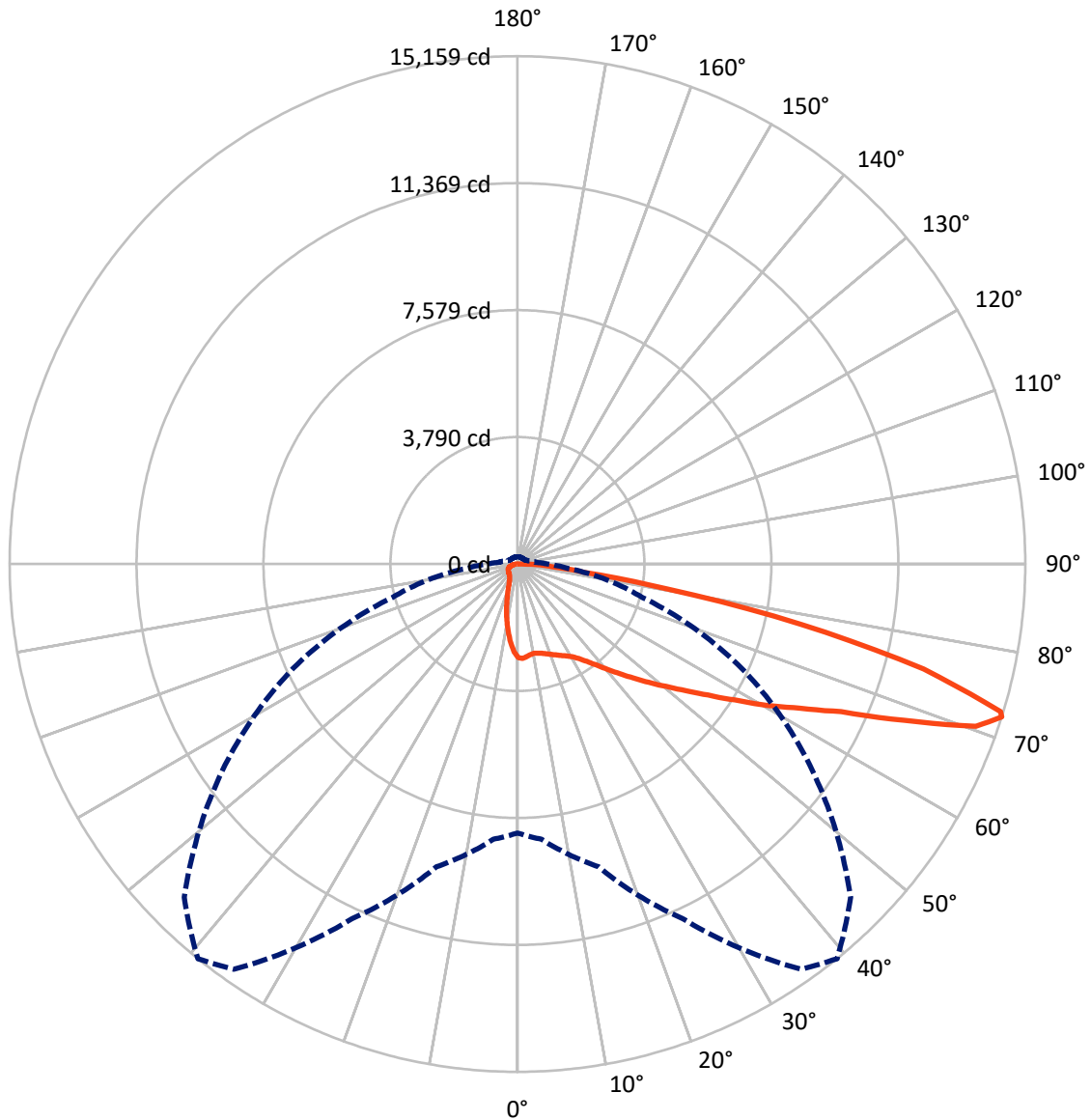
× Max cd
 - - - 1/2 Max cd



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 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2095.9	0.0	2095.9
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	16183.1	0.0	16183.1
	% Fixture	88.5	0.0	88.5
Total	Lumens	18279.1	0.0	18279.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	239.9	1.3
10°-20°	602.8	3.3
20°-30°	939.4	5.1
30°-40°	1446.4	7.9
40°-50°	2357.9	12.9
50°-60°	3664.0	20.0
60°-70°	4904.1	26.8
70°-80°	3526.7	19.3
80°-90°	597.9	3.3
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°	18279.1	100.0
0°-180°	18279.1	100.0

Coefficient of Utilization



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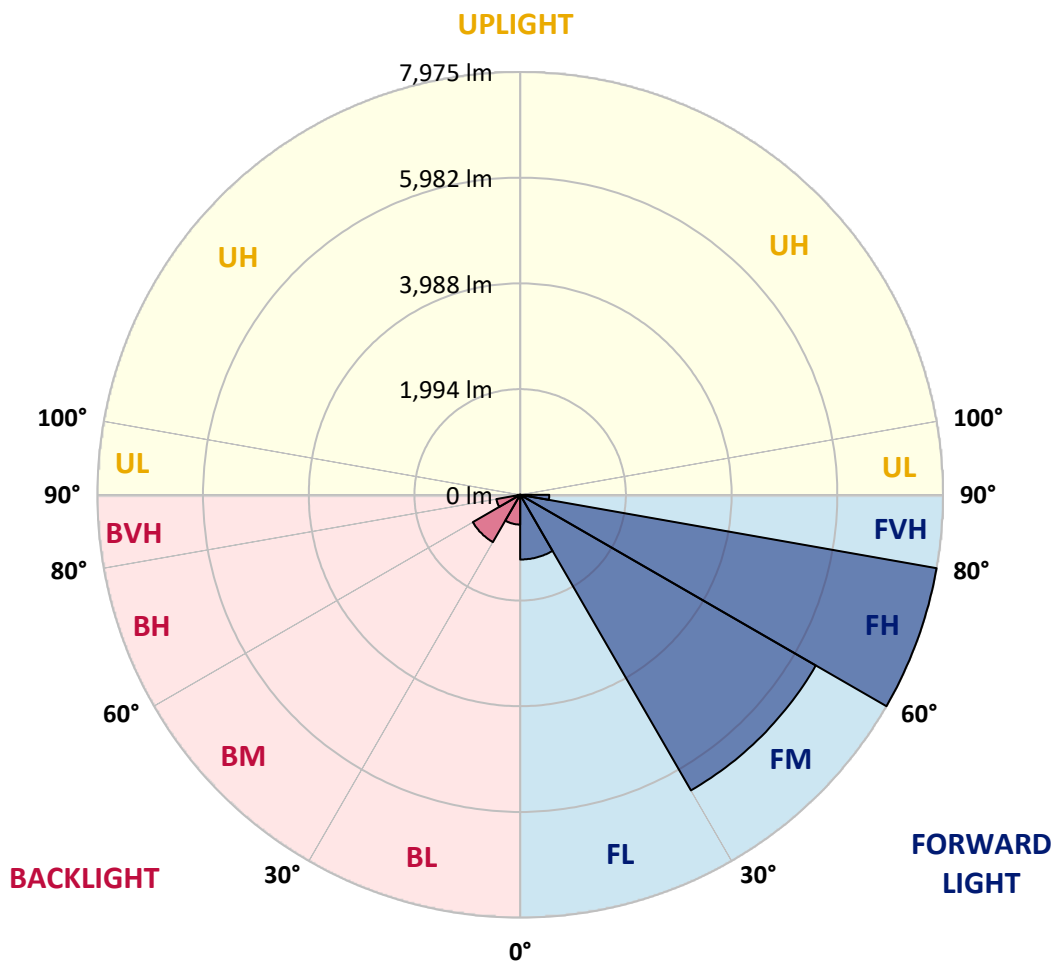
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1221.0	6.7			
FM	(30°-60°)	6438.2	35.2			
FH	(60°-80°)	7975.4	43.6			G4/12000
FVH	(80°-90°)	548.4	3.0			G4/750
BL	(0°-30°)	561.1	3.1	B2/1000		
BM	(30°-60°)	1030.0	5.6	B2/2500		
BH	(60°-80°)	455.4	2.5	B1/500		G1/500
BVH	(80°-90°)	49.4	0.3			G1/100
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°	39°	45°	55°	65°	75°	85°
0°	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6
2.5°	2851.6	2852.9	2849.3	2838.1	2828.4	2823.5	2814.8	2800.1	2780.5	2767.0	2755.9
5°	2824.7	2828.4	2825.9	2807.5	2790.3	2780.5	2767.0	2746.1	2720.3	2709.3	2683.5
7.5°	2803.8	2806.3	2798.9	2778.0	2744.9	2732.7	2708.1	2681.1	2657.8	2641.9	2611.2
10°	2789.1	2791.6	2785.4	2764.6	2727.7	2713.0	2683.5	2654.1	2623.5	2603.7	2569.4
12.5°	2768.2	2773.1	2773.1	2763.2	2738.8	2729.0	2699.5	2667.6	2639.3	2618.5	2575.6
15°	2764.6	2770.7	2781.7	2780.5	2773.1	2765.8	2742.4	2710.5	2686.0	2661.4	2608.7
17.5°	2795.2	2808.7	2830.8	2838.1	2833.3	2817.4	2790.3	2760.9	2733.8	2710.5	2645.5
20°	2872.5	2879.8	2913.1	2927.7	2903.2	2879.8	2844.3	2806.3	2781.7	2763.2	2679.9
22.5°	2989.2	2998.9	3025.9	3027.1	2975.5	2947.4	2901.9	2855.4	2832.0	2824.7	2726.4
25°	3175.6	3173.1	3180.5	3149.8	3056.6	3023.4	2968.2	2914.3	2898.3	2913.1	2795.2
27.5°	3398.9	3392.8	3369.4	3289.7	3148.7	3105.7	3039.4	2991.5	2991.5	3025.9	2888.5
30°	3656.6	3650.5	3574.4	3440.7	3257.8	3208.7	3138.8	3088.5	3114.2	3180.5	3014.9
32.5°	3929.1	3906.9	3800.1	3621.1	3413.7	3359.7	3292.2	3240.6	3289.7	3402.7	3196.5
35°	4185.5	4173.1	4041.9	3829.6	3614.9	3569.5	3522.8	3459.0	3537.6	3713.0	3452.9
37.5°	4450.5	4440.8	4279.9	4054.2	3860.3	3829.6	3790.3	3746.2	3872.5	4103.2	3800.1
40°	4746.2	4726.5	4524.1	4298.4	4146.2	4131.5	4110.7	4098.4	4302.1	4645.6	4239.5
42.5°	5081.2	5043.2	4781.8	4567.0	4457.9	4470.2	4459.1	4508.1	4819.9	5271.4	4762.2
45°	5464.0	5388.0	5038.3	4853.0	4802.7	4851.7	4875.0	5000.2	5432.2	5994.2	5346.3
47.5°	5822.3	5724.2	5319.3	5163.5	5191.7	5276.3	5342.6	5563.5	6103.3	6708.3	5942.6
50°	6152.4	6042.0	5619.9	5485.0	5622.4	5742.5	5880.0	6191.7	6817.4	7443.3	6489.9
52.5°	6396.6	6316.9	5920.5	5835.9	6116.9	6276.4	6496.0	6889.9	7539.0	8143.9	6978.3
55°	6585.6	6542.7	6213.8	6238.3	6676.4	6904.6	7170.9	7623.7	8302.3	8772.2	7370.8
57.5°	6804.0	6772.1	6548.8	6724.3	7370.8	7658.0	7972.1	8475.2	9028.6	9325.6	7678.8
60°	7034.6	7034.6	6921.8	7309.6	8239.7	8568.5	8881.3	9272.9	9752.6	9823.8	7804.1
62.5°	7208.9	7254.4	7294.8	7932.9	9064.2	9472.9	9816.4	10191.9	10502.3	10069.3	7509.6
65°	7461.8	7558.7	7786.9	8653.2	10085.1	10620.1	11084.0	11399.3	11109.7	9874.1	6548.8
67.5°	7896.0	8039.7	8525.6	9725.6	11648.3	12449.6	12900.0	12355.1	10990.7	8645.8	5016.2
70°	8287.6	8490.0	9320.7	11086.4	13680.4	14512.4	14305.0	12133.1	9572.2	6337.7	3086.0
72°	8027.4	8248.2	9357.5	11679.0	14766.4	15158.9	14065.7	10752.6	7396.7	3867.7	1521.6
72.5°	7856.9	8086.3	9238.5	11664.3	14795.8	15076.8	13733.2	10204.2	6714.4	3384.2	1230.7
75°	6563.5	6759.9	7943.9	10337.9	13038.7	12523.3	10717.0	6603.9	3086.0	1093.3	633.1
77.5°	4286.1	4435.8	5477.6	7162.3	9133.0	8637.2	6523.0	3092.1	1157.0	663.9	476.1
80°	2153.5	2260.2	2931.4	3765.8	4929.0	4535.2	3011.1	1495.8	774.3	479.7	374.2
82.5°	1498.3	1596.4	2018.4	1922.8	2060.2	1994.0	1416.0	1248.0	579.2	303.0	196.3
85°	1256.5	1358.3	1670.0	1370.6	1121.5	1022.1	1014.8	1179.2	382.9	149.6	165.6
87.5°	1095.8	1250.4	1378.0	1001.3	769.4	678.6	747.3	1081.0	121.5	82.2	50.3
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°	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6	2791.6
2.5°	2737.6	2733.8	2715.4	2687.2	2666.4	2653.0	2627.1	2625.9	2628.3	2606.3	2614.9
5°	2660.3	2645.5	2597.6	2532.6	2479.8	2429.6	2374.3	2355.9	2340.0	2306.9	2310.5
7.5°	2579.3	2553.5	2470.1	2363.3	2261.4	2168.2	2076.2	2030.8	1996.3	1953.4	1953.4
10°	2531.4	2490.9	2363.3	2207.5	2045.5	1909.3	1771.8	1689.7	1629.5	1574.3	1570.6
12.5°	2529.0	2467.6	2289.6	2075.0	1852.8	1661.4	1473.7	1347.2	1257.7	1192.7	1186.5
15°	2548.6	2462.7	2228.4	1951.1	1671.2	1422.1	1190.3	1029.6	915.4	842.9	835.7
17.5°	2565.7	2456.5	2162.0	1821.0	1494.5	1191.5	933.8	766.9	659.0	600.1	594.0
20°	2581.7	2443.0	2077.3	1683.4	1299.4	975.4	730.1	595.1	523.9	490.8	487.2
22.5°	2605.1	2430.8	1989.1	1528.9	1108.0	793.9	602.4	505.6	467.5	451.6	449.0
25°	2643.1	2432.0	1903.2	1370.6	932.5	661.3	521.5	461.4	440.6	429.5	429.5
27.5°	2698.2	2446.8	1818.5	1209.8	784.1	570.6	473.6	438.0	424.6	415.9	413.5
30°	2779.2	2473.7	1728.9	1057.7	666.3	507.9	445.4	423.4	412.2	405.0	403.7
32.5°	2897.1	2521.6	1634.4	919.1	576.7	463.8	424.6	411.1	402.5	396.3	395.1
35°	3072.6	2606.3	1542.4	801.3	512.9	431.9	407.4	396.3	391.4	389.0	387.8
37.5°	3330.2	2742.4	1455.4	709.2	471.2	411.1	390.2	384.0	381.7	381.7	381.7
40°	3654.1	2921.6	1376.7	644.2	447.9	395.1	377.9	373.0	373.0	374.2	374.2
42.5°	4048.0	3146.1	1309.3	600.1	434.5	384.0	369.3	366.9	365.7	365.7	366.9
45°	4505.8	3411.2	1267.5	565.6	424.6	377.9	363.2	361.9	357.1	354.6	354.6
47.5°	4965.9	3694.6	1265.1	546.1	412.2	370.6	357.1	357.1	347.2	342.3	343.6
50°	5395.3	3948.6	1292.1	541.2	405.0	359.6	350.9	352.2	338.7	332.5	331.3
52.5°	5741.3	4142.6	1325.2	547.3	405.0	349.7	339.9	346.1	331.3	324.0	322.8
55°	6008.8	4277.5	1337.5	560.7	409.8	341.1	330.1	339.9	328.9	319.0	319.0
57.5°	6200.3	4320.4	1284.7	566.9	417.2	339.9	320.2	338.7	332.5	320.2	320.2
60°	6130.3	4071.3	1088.4	543.6	415.9	337.4	312.9	341.1	344.8	331.3	331.3
62.5°	5584.3	3406.2	873.6	490.8	395.1	328.9	304.3	338.7	353.4	348.5	346.1
65°	4546.3	2498.3	677.3	428.2	359.6	310.4	285.9	316.7	333.8	338.7	339.9
67.5°	3203.8	1581.6	526.4	364.5	315.3	283.4	265.1	279.8	285.9	288.3	293.3
70°	1752.2	856.5	418.5	306.8	270.0	256.4	243.0	244.2	241.7	239.3	241.7
72°	879.7	559.5	353.4	266.3	239.3	230.6	224.5	220.9	220.9	217.2	218.4
72.5°	757.0	520.3	341.1	256.4	231.9	224.5	219.6	216.0	214.7	212.3	213.5
75°	504.3	412.2	284.7	214.7	197.5	192.7	195.1	191.4	192.7	190.2	191.4
77.5°	407.4	354.6	241.7	181.6	169.4	161.9	166.8	168.2	170.6	168.2	166.8
80°	341.1	301.9	202.4	149.6	141.2	134.9	137.4	146.0	147.3	139.9	138.6
82.5°	220.9	243.0	159.5	116.6	107.9	105.6	111.7	120.3	122.7	112.9	110.5
85°	185.3	195.1	115.4	79.8	71.1	68.8	81.0	89.6	95.7	85.9	83.5
87.5°	51.6	95.7	56.5	38.0	31.9	31.9	39.3	46.7	55.1	56.5	56.5
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)