

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: P196191

Luminaire Tested: **NAV-AF-03-D-UNV-SL4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196191
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-03-D-UNV-SL4
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA 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: 17677.6 lumens
Efficiency: N/A
Efficacy: 106.5 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

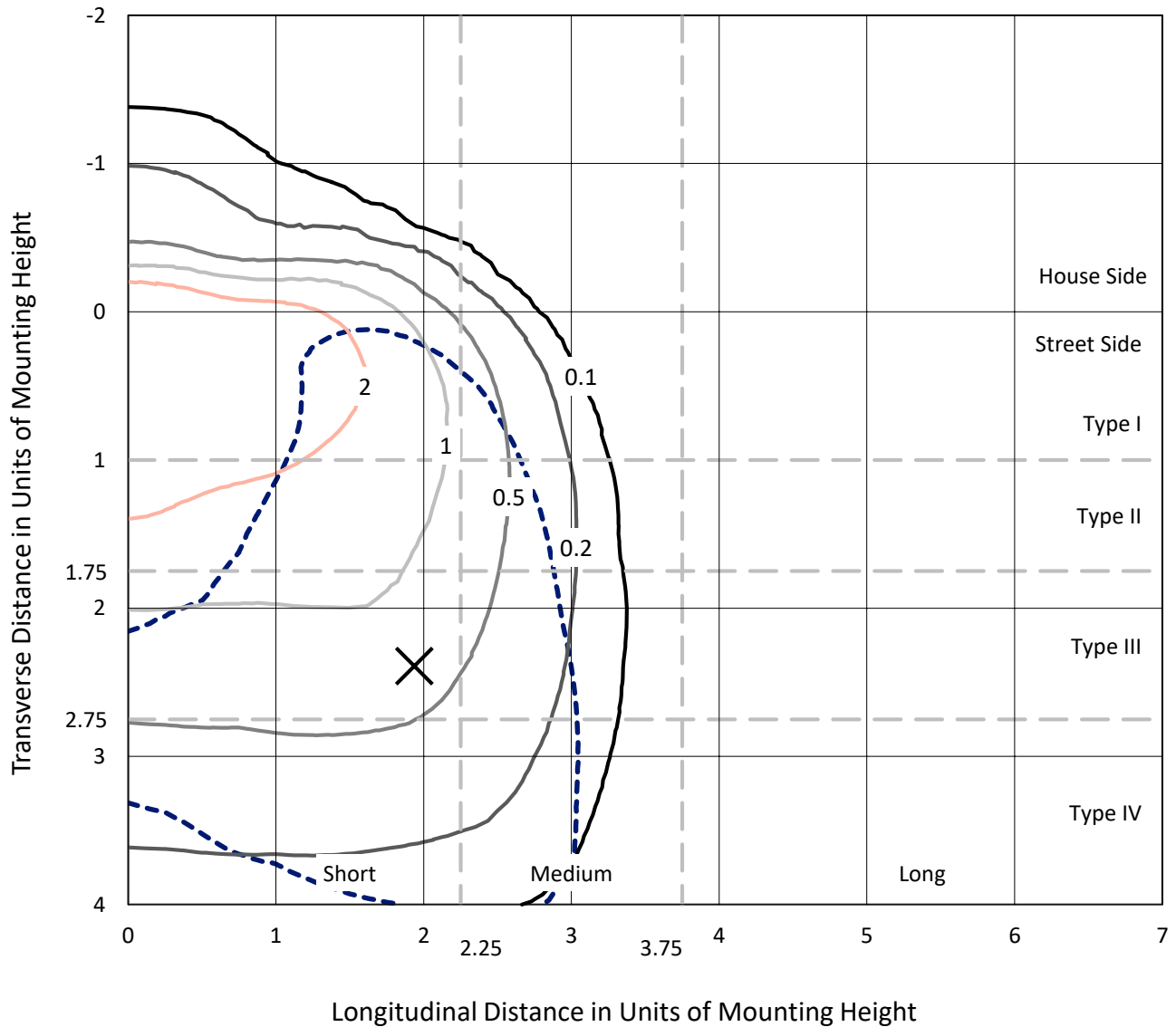
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

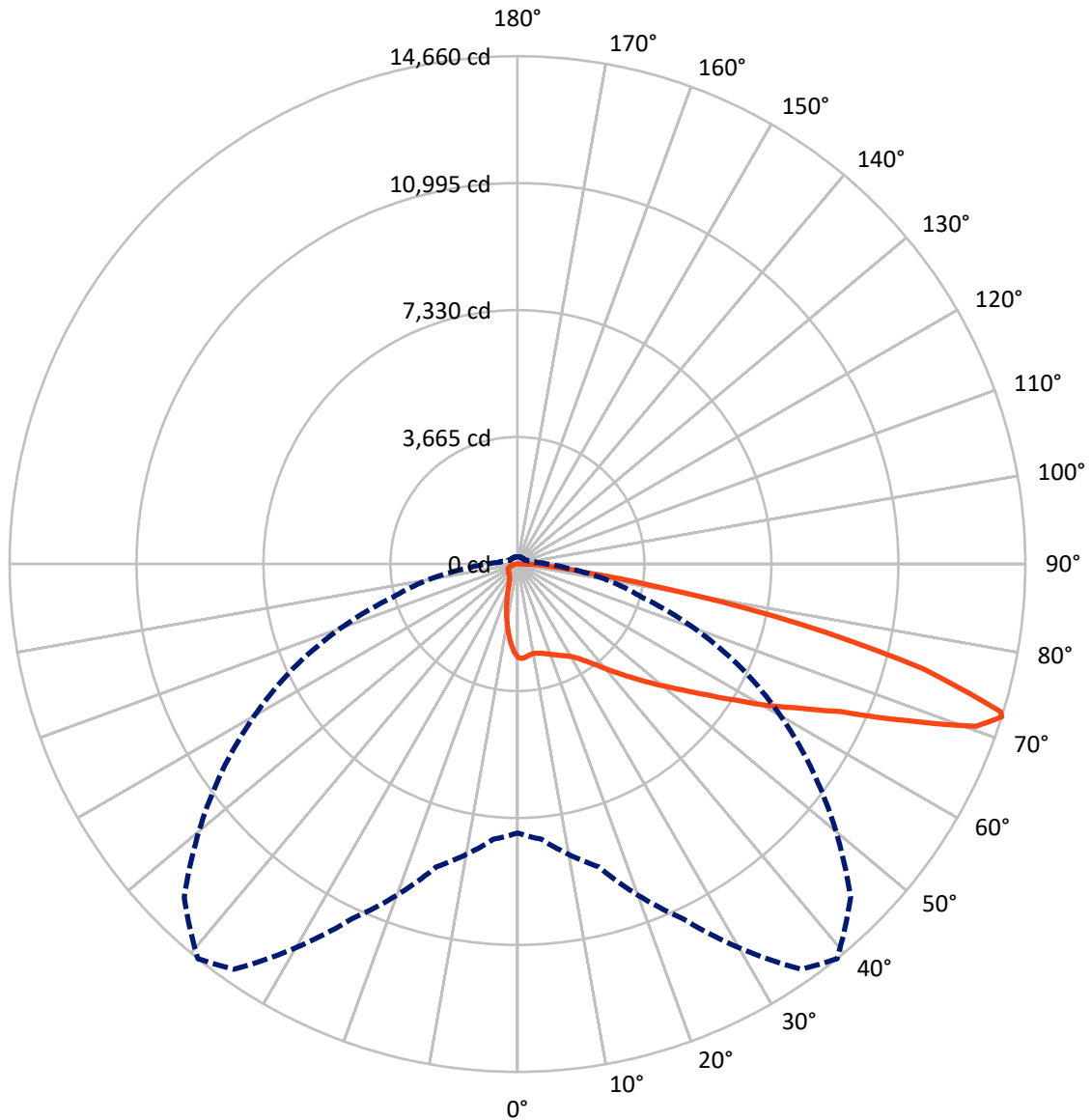
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.3 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	2027.0	0.0	2027.0
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	15650.6	0.0	15650.6
	% Fixture	88.5	0.0	88.5
Total	Lumens	17677.6	0.0	17677.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	232.0	1.3
10°-20°	583.0	3.3
20°-30°	908.5	5.1
30°-40°	1398.8	7.9
40°-50°	2280.3	12.9
50°-60°	3543.4	20.0
60°-70°	4742.7	26.8
70°-80°	3410.7	19.3
80°-90°	578.2	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°	17677.6	100.0
0°-180°	17677.6	100.0



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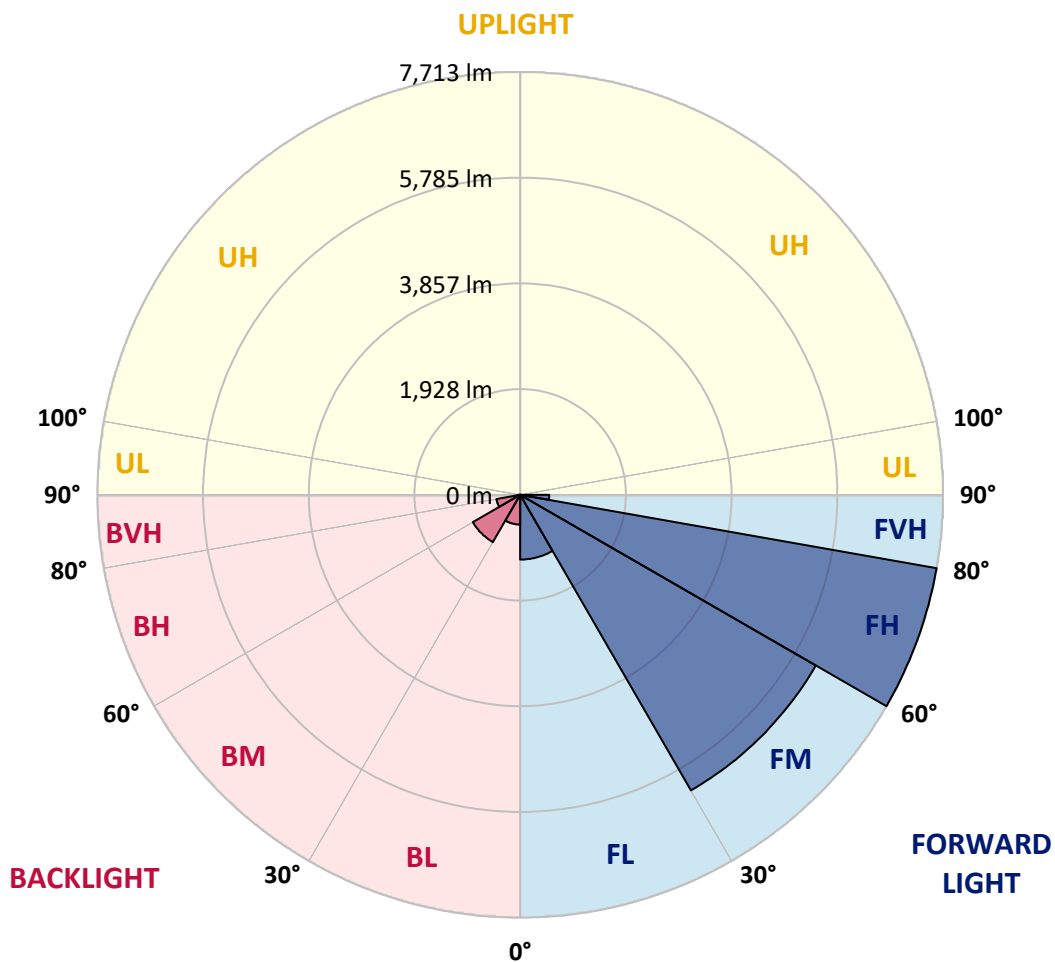
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1180.8	6.7			
FM	(30°-60°)	6226.4	35.2			
FH	(60°-80°)	7713.0	43.6			G4/12000
FVH	(80°-90°)	530.4	3.0			G4/750
BL	(0°-30°)	542.6	3.1	B2/1000		
BM	(30°-60°)	996.2	5.6	B1/1000		
BH	(60°-80°)	440.4	2.5	B1/500		G1/500
BVH	(80°-90°)	47.8	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°	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7
2.5°	2757.9	2759.0	2755.4	2744.8	2735.3	2730.6	2722.3	2708.0	2689.0	2675.9	2665.3
5°	2731.7	2735.3	2732.9	2715.1	2698.5	2689.0	2675.9	2655.8	2630.8	2620.2	2595.2
7.5°	2711.5	2713.9	2706.8	2686.7	2654.6	2642.7	2619.0	2592.9	2570.4	2554.9	2525.3
10°	2697.3	2699.7	2693.7	2673.6	2638.0	2623.8	2595.2	2566.8	2537.1	2518.1	2484.8
12.5°	2677.2	2681.9	2681.9	2672.4	2648.6	2639.2	2610.7	2579.9	2552.6	2532.4	2490.8
15°	2673.6	2679.5	2690.2	2689.0	2681.9	2674.8	2652.2	2621.4	2597.7	2573.9	2522.9
17.5°	2703.2	2716.3	2737.6	2744.8	2740.1	2724.6	2698.5	2670.0	2643.9	2621.4	2558.5
20°	2778.0	2785.1	2817.2	2831.4	2807.7	2785.1	2750.7	2713.9	2690.2	2672.4	2591.7
22.5°	2890.8	2900.3	2926.4	2927.5	2877.7	2850.4	2806.5	2761.4	2738.8	2731.7	2636.8
25°	3071.1	3068.8	3075.9	3046.2	2956.0	2924.0	2870.6	2818.3	2802.9	2817.2	2703.2
27.5°	3287.0	3281.1	3258.6	3181.5	3045.0	3003.5	2939.3	2893.1	2893.1	2926.4	2793.5
30°	3536.3	3530.4	3456.8	3327.5	3150.6	3103.1	3035.5	2986.9	3011.8	3075.9	2915.6
32.5°	3799.8	3778.4	3675.2	3501.9	3301.4	3249.1	3183.8	3134.0	3181.5	3290.6	3091.3
35°	4047.7	4035.8	3908.9	3703.6	3495.9	3452.0	3406.9	3345.3	3421.2	3590.9	3339.3
37.5°	4304.1	4294.6	4139.2	3920.8	3733.3	3703.6	3665.6	3622.9	3745.1	3968.2	3675.2
40°	4590.1	4571.1	4375.3	4157.0	4009.8	3995.5	3975.4	3963.5	4160.4	4492.8	4100.0
42.5°	4914.1	4877.2	4624.5	4416.8	4311.2	4323.1	4312.4	4359.8	4661.3	5098.0	4605.5
45°	5284.3	5210.7	4872.5	4693.3	4644.6	4692.1	4714.7	4835.7	5253.5	5797.0	5170.3
47.5°	5630.7	5535.8	5144.2	4993.5	5020.8	5102.7	5166.8	5380.4	5902.5	6487.6	5747.0
50°	5950.0	5843.2	5434.9	5304.4	5437.4	5553.6	5686.6	5987.9	6593.2	7198.4	6276.3
52.5°	6186.2	6109.0	5725.8	5643.8	5915.6	6069.9	6282.2	6663.2	7291.0	7876.0	6748.6
55°	6368.9	6327.4	6009.3	6033.1	6456.7	6677.4	6934.9	7372.8	8029.0	8483.5	7128.3
57.5°	6580.1	6549.2	6333.3	6503.0	7128.3	7406.1	7709.9	8196.4	8731.6	9018.7	7426.2
60°	6803.2	6803.2	6694.1	7069.0	7968.6	8286.5	8589.2	8967.7	9431.7	9500.6	7547.2
62.5°	6971.7	7015.6	7054.8	7671.8	8766.0	9161.1	9493.4	9856.5	10156.8	9737.9	7262.4
65°	7216.2	7309.9	7530.7	8368.5	9753.3	10270.7	10719.3	11024.2	10744.2	9549.1	6333.3
67.5°	7636.2	7775.1	8245.0	9405.6	11265.1	12040.0	12475.5	11948.7	10629.1	8361.3	4851.1
70°	8014.8	8210.6	9014.0	10721.6	13230.2	14034.8	13834.3	11733.9	9257.3	6129.2	2984.5
72°	7763.3	7976.9	9049.6	11294.8	14280.5	14660.2	13602.9	10398.8	7153.3	3740.4	1471.5
72.5°	7598.3	7820.2	8934.5	11280.6	14308.9	14580.7	13281.3	9868.4	6493.5	3272.8	1190.2
75°	6347.5	6537.4	7682.6	9997.7	12609.6	12111.2	10364.4	6386.7	2984.5	1057.3	612.3
77.5°	4145.1	4289.8	5297.4	6926.6	8832.5	8353.0	6308.3	2990.4	1119.0	642.0	460.4
80°	2082.6	2185.8	2835.0	3641.9	4766.8	4386.0	2912.1	1446.6	748.8	464.0	361.9
82.5°	1448.9	1543.8	1952.1	1859.5	1992.4	1928.4	1369.4	1206.9	560.1	293.1	189.9
85°	1215.2	1313.7	1615.0	1325.5	1084.6	988.5	981.4	1140.4	370.2	144.7	160.2
87.5°	1059.7	1209.2	1332.6	968.3	744.1	656.2	722.7	1045.5	117.4	79.5	48.7
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°	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7	2699.7
2.5°	2647.5	2643.9	2626.1	2598.8	2578.7	2565.6	2540.7	2539.5	2541.8	2520.6	2528.8
5°	2572.7	2558.5	2512.2	2449.3	2398.3	2349.6	2296.2	2278.4	2263.0	2231.0	2234.5
7.5°	2494.4	2469.5	2388.8	2285.6	2187.1	2096.8	2007.8	1964.0	1930.7	1889.2	1889.2
10°	2448.1	2408.9	2285.6	2134.8	1978.2	1846.4	1713.5	1634.1	1575.9	1522.5	1519.0
12.5°	2445.8	2386.4	2214.4	2006.6	1791.9	1606.7	1425.2	1302.9	1216.4	1153.5	1147.5
15°	2464.7	2381.6	2155.1	1886.8	1616.3	1375.4	1151.1	995.6	885.3	815.3	808.1
17.5°	2481.4	2375.7	2090.9	1761.0	1445.3	1152.3	903.1	741.6	637.2	580.3	574.4
20°	2496.8	2362.7	2009.1	1628.1	1256.7	943.4	706.0	575.5	506.7	474.6	471.1
22.5°	2519.3	2350.8	1923.6	1478.6	1071.5	767.8	582.7	488.9	452.1	436.7	434.3
25°	2556.1	2352.0	1840.5	1325.5	901.8	639.7	504.3	446.2	426.1	415.3	415.3
27.5°	2609.5	2366.2	1758.7	1170.1	758.3	551.8	458.1	423.6	410.6	402.3	399.9
30°	2687.8	2392.4	1672.0	1023.0	644.4	491.3	430.8	409.4	398.7	391.6	390.5
32.5°	2801.8	2438.6	1580.7	888.8	557.7	448.6	410.6	397.5	389.2	383.3	382.1
35°	2971.5	2520.6	1491.7	774.9	496.0	417.7	393.9	383.3	378.6	376.1	375.0
37.5°	3220.7	2652.2	1407.4	685.9	455.7	397.5	377.4	371.4	369.1	369.1	369.1
40°	3533.9	2825.5	1331.5	623.0	433.1	382.1	365.5	360.8	360.8	361.9	361.9
42.5°	3914.8	3042.7	1266.2	580.3	420.1	371.4	357.2	354.9	353.6	353.6	354.9
45°	4357.5	3298.9	1225.8	547.1	410.6	365.5	351.3	350.1	345.3	343.0	343.0
47.5°	4802.4	3573.1	1223.4	528.0	398.7	358.3	345.3	345.3	335.8	331.1	332.3
50°	5217.8	3818.7	1249.5	523.3	391.6	347.7	339.4	340.5	327.5	321.6	320.4
52.5°	5552.5	4006.2	1281.7	529.3	391.6	338.2	328.7	334.6	320.4	313.3	312.1
55°	5811.2	4136.7	1293.5	542.3	396.4	329.9	319.3	328.7	318.0	308.5	308.5
57.5°	5996.2	4178.2	1242.5	548.2	403.5	328.7	309.7	327.5	321.6	309.7	309.7
60°	5928.6	3937.4	1052.6	525.7	402.3	326.3	302.6	329.9	333.5	320.4	320.4
62.5°	5400.6	3294.2	845.0	474.6	382.1	318.0	294.3	327.5	341.8	337.1	334.6
65°	4396.6	2416.1	655.0	414.2	347.7	300.2	276.5	306.2	322.7	327.5	328.7
67.5°	3098.4	1529.6	509.1	352.4	304.9	274.2	256.4	270.6	276.5	278.9	283.7
70°	1694.6	828.3	404.7	296.7	261.1	248.1	235.0	236.2	233.7	231.4	233.7
72°	850.9	541.1	341.8	257.5	231.4	223.1	217.2	213.6	213.6	210.0	211.2
72.5°	732.2	503.2	329.9	248.1	224.2	217.2	212.4	208.9	207.7	205.3	206.4
75°	487.7	398.7	275.3	207.7	191.1	186.3	188.6	185.2	186.3	183.9	185.2
77.5°	393.9	343.0	233.7	175.6	163.8	156.6	161.4	162.5	164.9	162.5	161.4
80°	329.9	292.0	195.8	144.7	136.5	130.5	132.9	141.2	142.4	135.2	134.1
82.5°	213.6	235.0	154.3	112.7	104.4	102.1	108.0	116.3	118.7	109.1	106.8
85°	179.2	188.6	111.5	77.1	68.8	66.5	78.4	86.6	92.6	83.1	80.7
87.5°	49.8	92.6	54.6	36.8	30.9	30.9	38.0	45.1	53.4	54.6	54.6
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)