

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: P195221

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7060-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195221
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-SL4-7060-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5700K, 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: 18900 lumens
Efficiency: N/A
Efficacy: 116.7 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

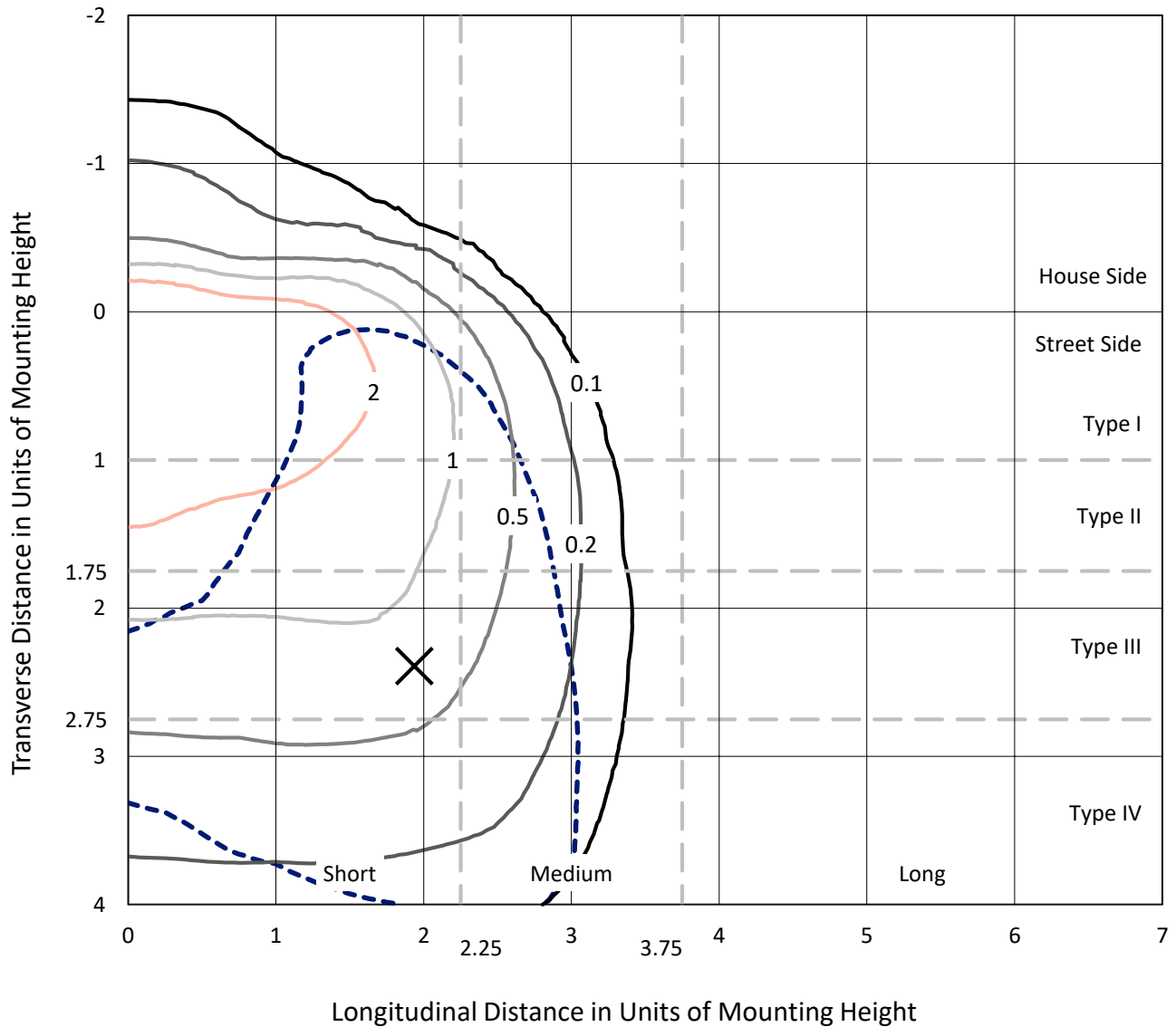
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

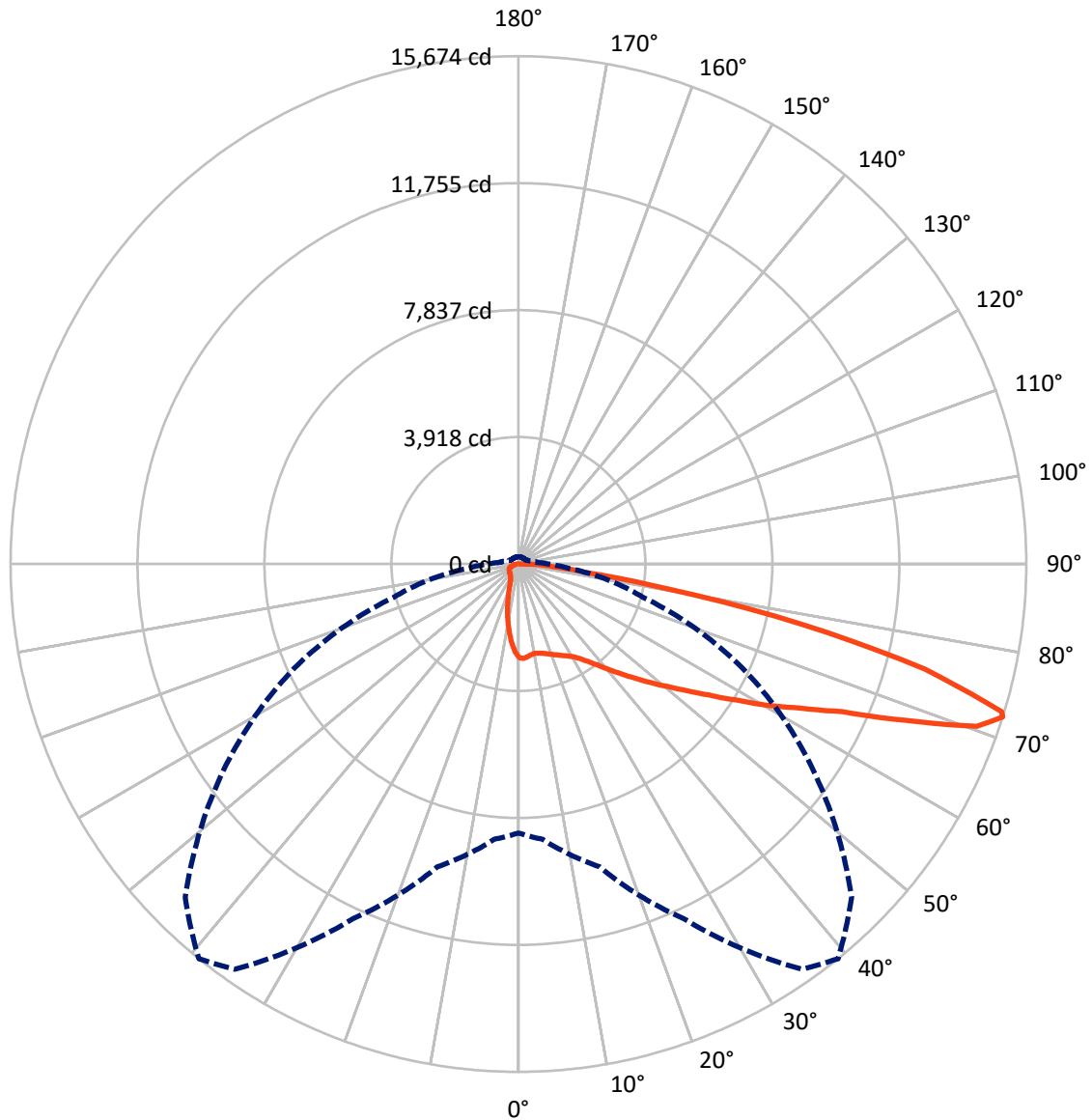
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.6 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	2167.1	0.0	2167.1
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	16732.9	0.0	16732.9
	% Fixture	88.5	0.0	88.5
Total	Lumens	18900.0	0.0	18900.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	248.0	1.3
10°-20°	623.3	3.3
20°-30°	971.3	5.1
30°-40°	1495.5	7.9
40°-50°	2438.0	12.9
50°-60°	3788.4	20.0
60°-70°	5070.7	26.8
70°-80°	3646.6	19.3
80°-90°	618.2	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°	18900.0	100.0
0°-180°	18900.0	100.0

Coefficient of Utilization



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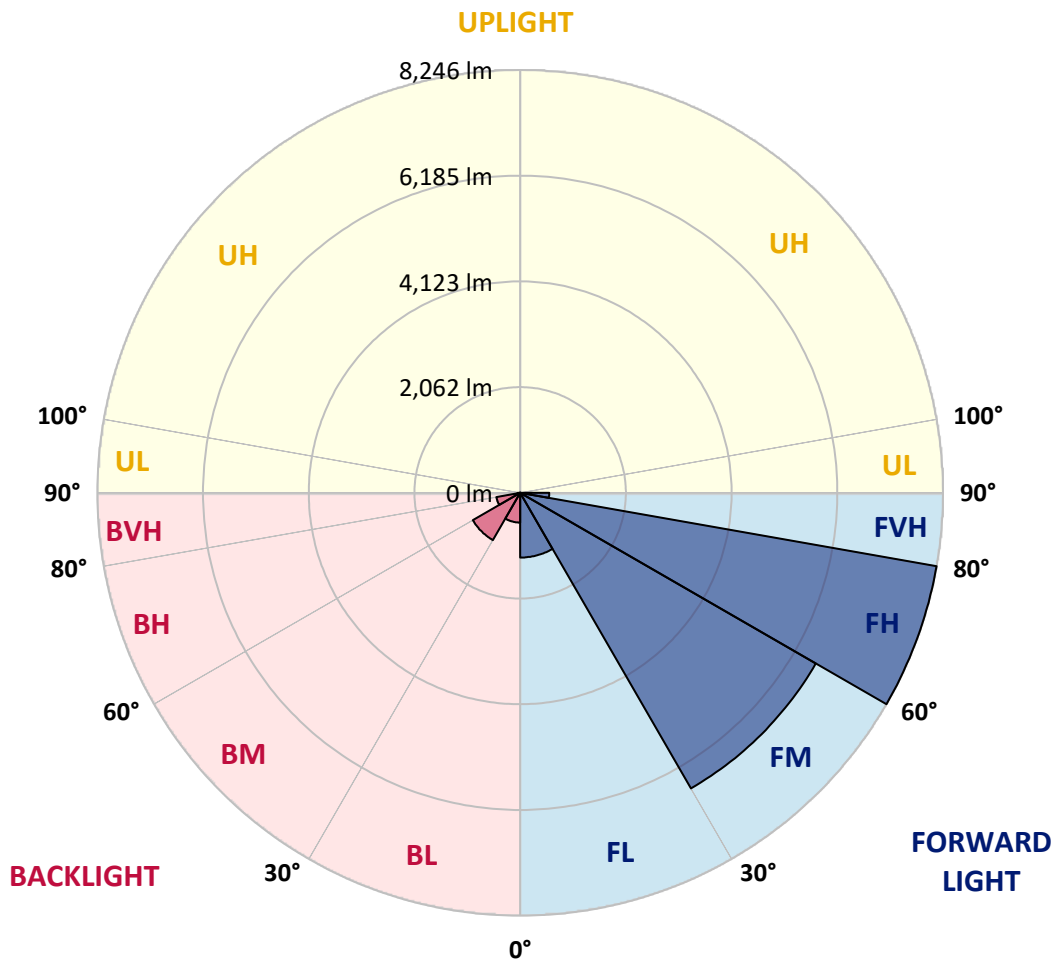
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1262.5	6.7			
FM	(30°-60°)	6656.9	35.2			
FH	(60°-80°)	8246.4	43.6			G4/12000
FVH	(80°-90°)	567.1	3.0			G4/750
BL	(0°-30°)	580.1	3.1	B2/1000		
BM	(30°-60°)	1065.0	5.6	B2/2500		
BH	(60°-80°)	470.8	2.5	B1/500		G1/500
BVH	(80°-90°)	51.1	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°	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4
2.5°	2948.5	2949.8	2946.0	2934.6	2924.4	2919.4	2910.5	2895.3	2875.0	2861.0	2849.6
5°	2920.6	2924.4	2921.9	2902.9	2885.1	2875.0	2861.0	2839.4	2812.8	2801.4	2774.7
7.5°	2899.1	2901.6	2894.0	2872.4	2838.2	2825.5	2800.1	2772.2	2748.1	2731.6	2699.9
10°	2883.8	2886.4	2880.0	2858.5	2820.4	2805.2	2774.7	2744.3	2712.6	2692.3	2656.7
12.5°	2862.3	2867.3	2867.3	2857.2	2831.8	2821.7	2791.2	2758.2	2729.0	2707.5	2663.1
15°	2858.5	2864.8	2876.2	2875.0	2867.3	2859.7	2835.6	2802.6	2777.3	2751.9	2697.3
17.5°	2890.2	2904.1	2927.0	2934.6	2929.5	2913.0	2885.1	2854.7	2826.7	2802.6	2735.4
20°	2970.1	2977.7	3012.0	3027.2	3001.8	2977.7	2940.9	2901.6	2876.2	2857.2	2770.9
22.5°	3090.6	3100.8	3128.7	3130.0	3076.7	3047.5	3000.6	2952.3	2928.2	2920.6	2819.1
25°	3283.5	3280.9	3288.6	3256.8	3160.4	3126.2	3069.1	3013.2	2996.7	3012.0	2890.2
27.5°	3514.4	3508.0	3483.9	3401.5	3255.6	3211.2	3142.7	3093.2	3093.2	3128.7	2986.6
30°	3780.8	3774.5	3695.8	3557.5	3368.5	3317.7	3245.4	3193.4	3220.0	3288.6	3117.3
32.5°	4062.5	4039.6	3929.3	3744.0	3529.6	3473.8	3404.0	3350.7	3401.5	3518.2	3305.1
35°	4327.7	4315.0	4179.2	3959.7	3737.7	3690.7	3642.5	3576.6	3657.8	3839.2	3570.2
37.5°	4601.7	4591.5	4425.3	4191.9	3991.4	3959.7	3919.1	3873.4	4004.1	4242.6	3929.3
40°	4907.5	4887.2	4677.8	4444.4	4287.1	4271.8	4250.3	4237.6	4448.2	4803.4	4383.5
42.5°	5253.8	5214.5	4944.3	4722.2	4609.3	4622.0	4610.6	4661.3	4983.6	5450.5	4924.0
45°	5649.7	5571.0	5209.4	5017.8	4965.8	5016.6	5040.7	5170.1	5616.7	6197.8	5527.9
47.5°	6020.1	5918.6	5500.0	5338.8	5368.0	5455.6	5524.1	5752.4	6310.7	6936.2	6144.5
50°	6361.4	6247.2	5810.8	5671.2	5813.3	5937.7	6079.8	6402.0	7049.1	7696.1	6710.3
52.5°	6613.9	6531.4	6121.6	6034.1	6324.6	6489.6	6716.7	7123.9	7795.1	8420.6	7215.3
55°	6809.3	6764.9	6424.9	6450.2	6903.2	7139.2	7414.5	7882.6	8584.3	9070.2	7621.3
57.5°	7035.1	7002.1	6771.2	6952.7	7621.3	7918.2	8243.0	8763.1	9335.3	9642.4	7939.7
60°	7273.7	7273.7	7156.9	7557.8	8519.5	8859.6	9183.1	9587.8	10083.9	10157.5	8069.1
62.5°	7453.8	7500.8	7542.6	8202.4	9372.1	9794.6	10149.9	10538.1	10859.1	10411.2	7764.7
65°	7715.2	7815.4	8051.4	8947.1	10427.7	10980.9	11460.5	11786.5	11487.1	10209.5	6771.2
67.5°	8164.3	8312.7	8815.2	10056.0	12044.1	12872.6	13338.2	12774.9	11364.0	8939.5	5186.6
70°	8569.0	8778.4	9637.3	11463.0	14145.1	15005.3	14790.9	12545.2	9897.4	6553.0	3190.9
72°	8300.1	8528.4	9675.4	12075.8	15267.9	15673.9	14543.5	11117.9	7647.9	3999.0	1573.2
72.5°	8123.7	8361.0	9552.3	12060.6	15298.4	15588.9	14199.7	10550.8	6942.5	3499.2	1272.5
75°	6786.5	6989.5	8213.8	10689.1	13481.6	12948.7	11081.1	6828.3	3190.9	1130.4	654.7
77.5°	4431.7	4586.5	5663.6	7405.6	9443.2	8930.6	6744.6	3197.2	1196.4	686.4	492.3
80°	2226.6	2337.0	3031.0	3893.7	5096.5	4689.2	3113.5	1546.6	800.6	496.1	387.0
82.5°	1549.1	1650.6	2087.1	1988.1	2130.2	2061.7	1464.1	1290.3	598.8	313.4	203.0
85°	1299.2	1404.5	1726.7	1417.2	1159.6	1056.9	1049.2	1219.3	395.8	154.8	171.3
87.5°	1133.0	1292.8	1424.8	1035.3	795.5	701.6	772.7	1117.8	125.6	85.0	52.0
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°	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4	2886.4
2.5°	2830.5	2826.7	2807.7	2778.5	2757.0	2743.0	2716.4	2715.1	2717.6	2694.8	2703.7
5°	2750.6	2735.4	2685.9	2618.7	2564.1	2512.1	2455.0	2436.0	2419.5	2385.2	2389.0
7.5°	2666.9	2640.2	2554.0	2443.6	2338.3	2241.9	2146.7	2099.8	2064.2	2019.8	2019.8
10°	2617.4	2575.5	2443.6	2282.5	2115.0	1974.1	1832.1	1747.0	1684.9	1627.8	1624.0
12.5°	2614.9	2551.4	2367.5	2145.4	1915.8	1717.9	1523.7	1393.1	1300.5	1233.2	1226.9
15°	2635.2	2546.3	2304.0	2017.3	1728.0	1470.5	1230.7	1064.5	946.5	871.6	864.0
17.5°	2652.9	2540.0	2235.5	1882.8	1545.3	1231.9	965.5	793.0	681.3	620.4	614.1
20°	2669.4	2526.0	2148.0	1740.7	1343.6	1008.6	754.9	615.3	541.7	507.5	503.7
22.5°	2693.5	2513.4	2056.6	1580.8	1145.7	820.9	622.9	522.7	483.4	466.9	464.4
25°	2732.9	2514.6	1967.8	1417.2	964.2	683.8	539.2	477.0	455.5	444.1	444.1
27.5°	2789.9	2529.9	1880.3	1251.0	810.7	590.0	489.7	452.9	439.0	430.1	427.6
30°	2873.7	2557.8	1787.6	1093.6	688.9	525.3	460.6	437.7	426.3	418.7	417.4
32.5°	2995.5	2607.2	1690.0	950.3	596.3	479.6	439.0	425.0	416.1	409.8	408.5
35°	3176.9	2694.8	1594.8	828.5	530.3	446.6	421.2	409.8	404.7	402.2	400.9
37.5°	3443.3	2835.6	1504.7	733.3	487.2	425.0	403.5	397.1	394.6	394.6	394.6
40°	3778.3	3020.9	1423.5	666.1	463.1	408.5	390.8	385.7	385.7	387.0	387.0
42.5°	4185.6	3253.0	1353.7	620.4	449.1	397.1	381.9	379.4	378.1	378.1	379.4
45°	4658.8	3527.1	1310.6	584.9	439.0	390.8	375.5	374.3	369.2	366.7	366.7
47.5°	5134.6	3820.2	1308.1	564.6	426.3	383.2	369.2	369.2	359.1	354.0	355.2
50°	5578.6	4082.8	1336.0	559.5	418.7	371.7	362.9	364.1	350.2	343.8	342.6
52.5°	5936.4	4283.2	1370.2	565.9	418.7	361.6	351.4	357.8	342.6	334.9	333.7
55°	6213.0	4422.8	1382.9	579.8	423.8	352.7	341.3	351.4	340.0	329.9	329.9
57.5°	6410.9	4467.2	1328.4	586.2	431.4	351.4	331.1	350.2	343.8	331.1	331.1
60°	6338.6	4209.7	1125.4	562.0	430.1	348.9	323.5	352.7	356.5	342.6	342.6
62.5°	5774.0	3522.0	903.3	507.5	408.5	340.0	314.6	350.2	365.4	360.3	357.8
65°	4700.7	2583.1	700.3	442.8	371.7	321.0	295.6	327.3	345.1	350.2	351.4
67.5°	3312.7	1635.4	544.3	376.8	326.1	293.1	274.0	289.3	295.6	298.2	303.2
70°	1811.8	885.6	432.6	317.2	279.1	265.2	251.2	252.5	249.9	247.4	249.9
72°	909.7	578.5	365.4	275.3	247.4	238.5	232.2	228.4	228.4	224.6	225.8
72.5°	782.8	537.9	352.7	265.2	239.8	232.2	227.1	223.3	222.0	219.5	220.8
75°	521.4	426.3	294.3	222.0	204.3	199.2	201.7	197.9	199.2	196.7	197.9
77.5°	421.2	366.7	249.9	187.8	175.1	167.5	172.5	173.8	176.4	173.8	172.5
80°	352.7	312.1	209.3	154.8	145.9	139.6	142.1	151.0	152.2	144.6	143.4
82.5°	228.4	251.2	164.9	120.5	111.6	109.1	115.5	124.3	126.9	116.7	114.2
85°	191.6	201.7	119.3	82.5	73.6	71.0	83.7	92.6	99.0	88.8	86.3
87.5°	53.3	99.0	58.4	39.3	33.0	33.0	40.6	48.2	57.1	58.4	58.4
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)