

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: P196060

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196060
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
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-SL2-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13412.9 lumens
Efficiency: N/A
Efficacy: 104.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B1 - U0 - G2

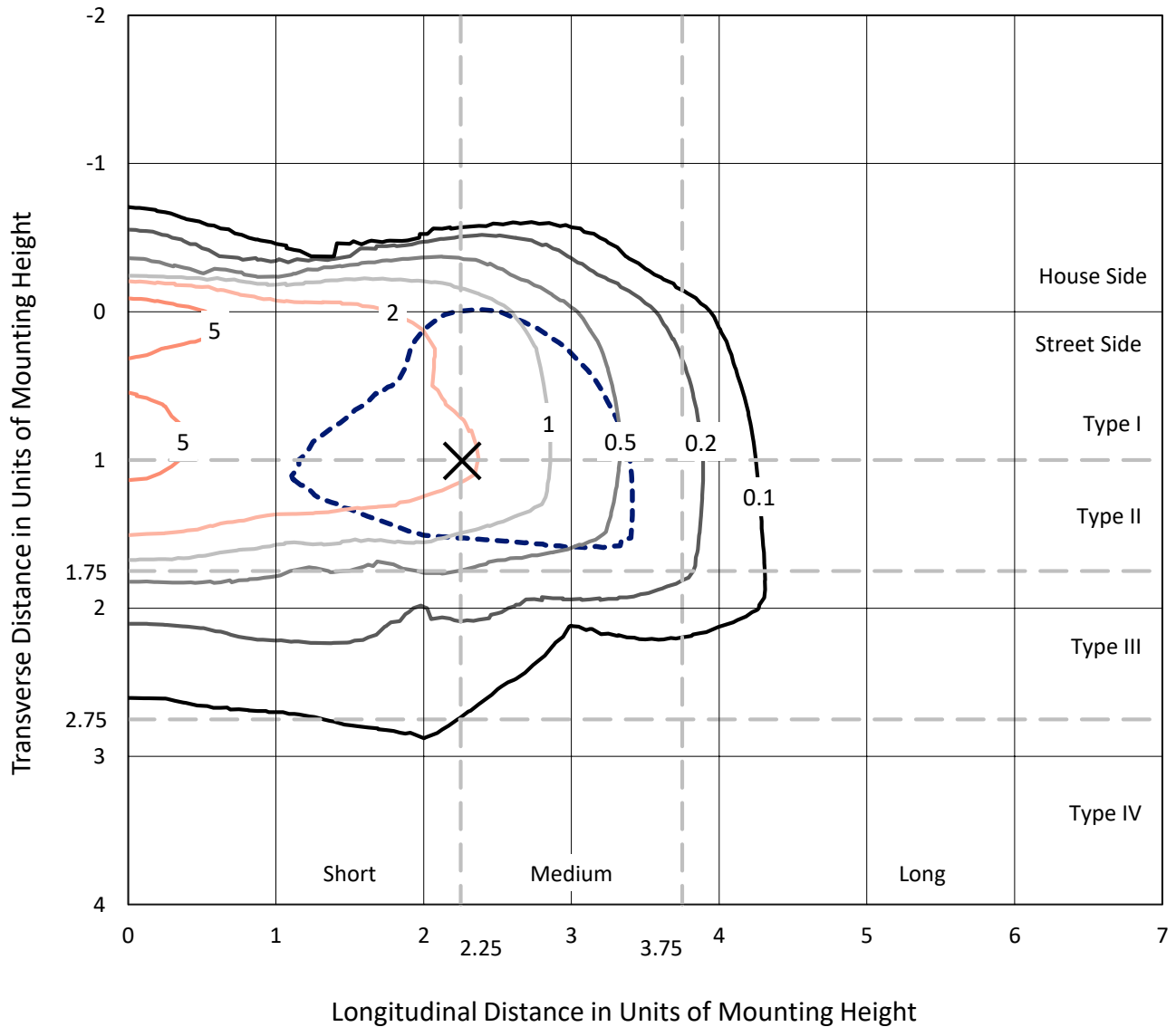
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

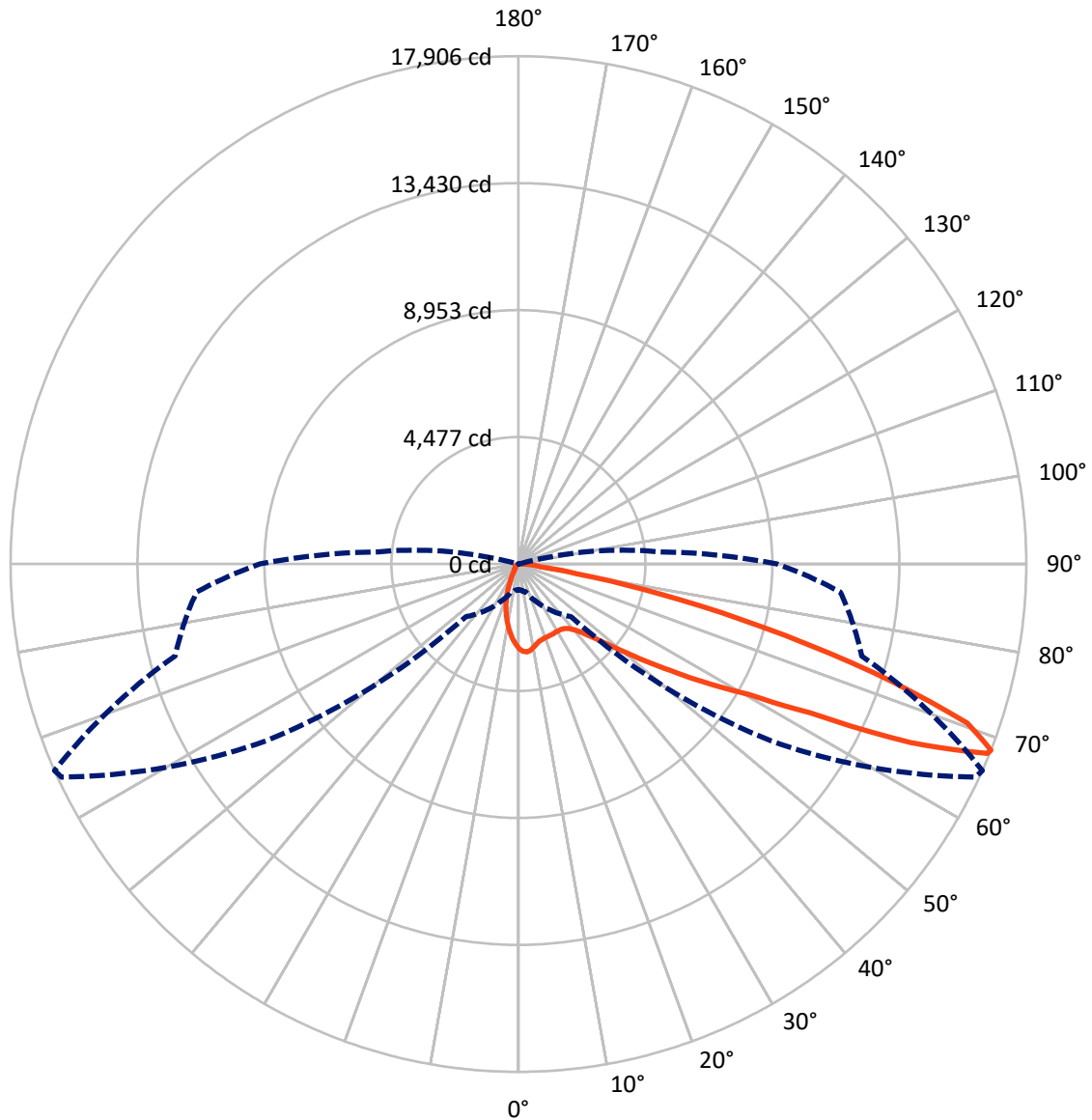
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.5 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1358.6	0.0	1358.6
	% Fixture	10.1	0.0	10.1
Street Side	Lumens	12054.3	0.0	12054.3
	% Fixture	89.9	0.0	89.9
Total	Lumens	13412.9	0.0	13412.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	245.0	1.8
10°-20°	527.1	3.9
20°-30°	763.8	5.7
30°-40°	1169.2	8.7
40°-50°	1999.9	14.9
50°-60°	3128.4	23.3
60°-70°	3602.3	26.9
70°-80°	1802.6	13.4
80°-90°	174.6	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°	13412.9	100.0
0°-180°	13412.9	100.0



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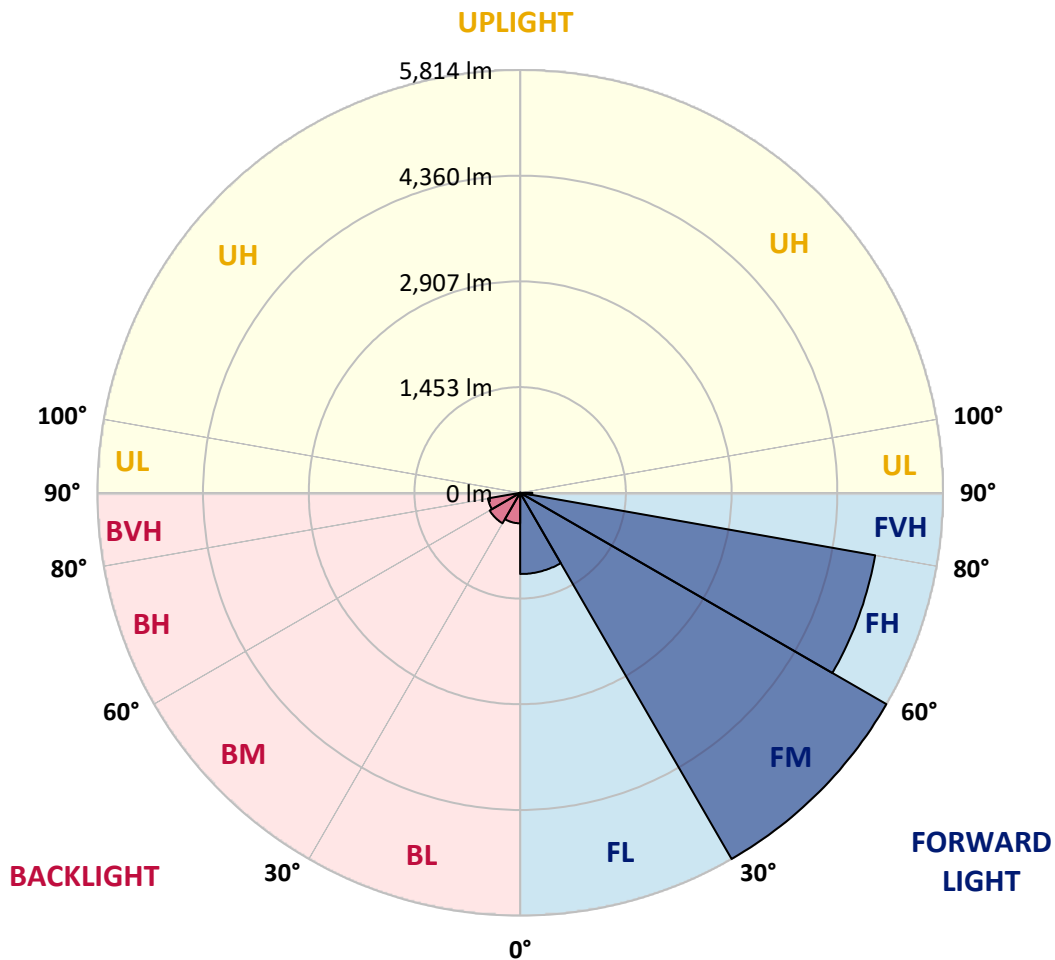
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1116.5	8.3			
FM (30°-60°)	5813.8	43.3			
FH (60°-80°)	4956.0	36.9			G2/5000
FVH (80°-90°)	168.0	1.3			G2/225
BL (0°-30°)	419.3	3.1	B1/500		
BM (30°-60°)	483.8	3.6	B1/1000		
BH (60°-80°)	448.9	3.3	B1/500		G1/500
BVH (80°-90°)	6.6	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2
2.5°	3143.0	3145.2	3144.1	3147.3	3145.2	3129.4	3112.5	3076.7	3079.9	3033.6	2982.0
5°	2922.0	2939.9	2957.8	2975.7	3018.8	3056.7	3102.0	3112.5	3112.5	3072.5	2996.7
7.5°	2696.6	2697.6	2717.7	2741.9	2799.8	2869.3	2974.5	3069.4	3071.4	3081.9	2998.8
10°	2527.1	2532.3	2546.0	2572.3	2630.3	2698.7	2816.6	2965.1	2976.7	3054.6	2977.7
12.5°	2395.4	2401.8	2416.5	2447.1	2499.7	2570.3	2694.5	2864.1	2879.8	3028.2	2971.5
15°	2294.4	2302.8	2314.4	2344.9	2401.8	2476.6	2612.4	2796.6	2815.6	3017.8	2991.4
17.5°	2252.2	2252.2	2251.2	2272.3	2329.2	2405.0	2547.0	2760.8	2785.1	3026.2	3025.2
20°	2270.1	2267.0	2244.9	2239.6	2274.3	2350.2	2495.5	2737.6	2765.0	3041.9	3066.2
22.5°	2365.0	2358.6	2309.1	2268.1	2257.6	2308.1	2460.7	2721.9	2754.5	3074.6	3120.9
25°	2566.1	2547.0	2478.6	2386.0	2302.8	2297.5	2436.6	2713.5	2748.2	3112.5	3181.0
27.5°	2827.1	2821.9	2712.4	2588.2	2428.1	2332.3	2429.2	2707.1	2741.9	3139.9	3229.4
30°	3151.5	3153.6	3027.2	2865.1	2622.9	2430.2	2452.3	2704.0	2739.8	3142.0	3250.4
32.5°	3486.3	3488.5	3383.1	3209.4	2889.3	2598.7	2517.6	2718.7	2751.3	3133.6	3249.4
35°	3808.5	3811.7	3748.5	3608.5	3245.2	2832.4	2640.8	2769.2	2792.5	3138.8	3247.3
37.5°	4216.0	4228.7	4150.7	4020.2	3691.6	3175.6	2842.0	2871.4	2890.3	3182.0	3263.1
40°	4911.0	4894.1	4670.9	4449.7	4176.0	3593.7	3132.5	3047.3	3053.5	3293.6	3323.2
42.5°	5720.6	5699.6	5317.4	4936.2	4674.1	4098.0	3504.2	3316.8	3315.8	3481.1	3453.7
45°	6417.7	6405.1	6002.9	5494.3	5225.7	4655.1	3962.3	3705.3	3692.6	3805.4	3691.6
47.5°	6912.6	6902.1	6597.8	6088.2	5863.9	5267.9	4534.0	4235.0	4208.6	4229.7	4078.1
50°	6961.1	6949.5	6843.1	6515.7	6609.4	6167.2	5240.6	4928.9	4895.1	4862.5	4662.5
52.5°	6508.3	6507.2	6563.0	6542.0	7131.6	7324.3	6107.1	5787.0	5747.0	5663.8	5464.8
55°	5582.8	5577.4	5789.1	6096.6	7120.0	8518.4	7428.6	6808.4	6755.8	6589.3	6328.3
57.5°	4079.1	4051.7	4494.0	5145.7	6619.9	9040.6	9527.0	8077.2	7989.8	7462.2	7060.0
60°	2252.2	2262.8	2831.4	3603.2	5435.3	8937.4	11458.2	9556.6	9327.1	8215.1	7809.7
62.5°	1262.5	1288.8	1712.1	2341.7	3465.2	8100.3	12494.3	12102.6	11549.8	9093.3	8757.4
65°	955.0	970.8	1183.6	1806.8	2184.9	5660.7	12659.6	15662.6	15185.7	10424.2	10266.2
67.5°	899.2	911.9	1016.1	1498.3	1990.0	2935.7	11415.0	17768.6	17828.6	12239.5	11435.1
68°	905.5	921.4	1025.6	1441.4	1986.9	2626.0	10884.4	17779.1	17906.4	12532.2	11395.1
70°	831.9	836.1	1084.5	1414.1	1925.8	2069.0	7874.0	16560.9	16789.3	12880.8	10344.2
72.5°	318.0	319.1	486.4	1224.6	2017.5	2080.6	3966.5	13089.3	13100.8	11209.7	8064.5
75°	165.3	139.0	152.7	383.3	1926.9	2028.0	1990.0	8937.4	8881.7	7581.3	4941.5
77.5°	113.8	96.9	102.1	132.7	801.3	2027.0	1437.2	5139.4	5127.8	3225.2	1409.9
80°	64.2	55.9	61.1	111.6	281.1	1902.7	1339.3	2209.1	2081.7	566.5	228.5
82.5°	32.6	27.4	32.6	93.7	174.8	1197.2	1302.5	866.5	771.8	134.8	148.4
85°	8.4	8.4	15.8	65.3	108.4	392.7	1167.7	625.4	562.3	58.9	105.3
87.5°	2.1	1.0	6.3	24.2	39.0	85.3	647.5	348.5	300.1	30.6	61.1
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°	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2	2988.2
2.5°	2960.9	2931.4	2873.5	2808.2	2761.9	2711.3	2681.9	2646.1	2618.7	2594.5	2612.4
5°	2950.4	2893.5	2765.0	2620.8	2499.7	2383.9	2297.5	2215.4	2153.3	2114.3	2130.1
7.5°	2923.0	2838.8	2630.3	2405.0	2207.0	2020.6	1869.0	1733.2	1627.8	1571.0	1588.9
10°	2876.6	2757.7	2477.6	2164.9	1888.0	1624.8	1399.4	1197.2	1044.5	972.9	989.8
12.5°	2843.0	2686.1	2319.6	1933.2	1568.9	1195.1	896.1	664.4	545.4	473.8	480.2
15°	2828.3	2630.3	2172.2	1688.9	1220.4	767.6	484.4	350.7	309.5	294.8	295.8
17.5°	2830.3	2586.0	2032.2	1435.2	868.7	441.2	297.0	267.4	261.2	258.0	258.0
20°	2835.6	2541.8	1886.9	1170.9	556.0	284.3	247.5	237.9	234.8	230.6	231.7
22.5°	2851.4	2508.2	1740.6	905.5	342.2	231.7	219.0	210.6	205.3	199.0	200.1
25°	2875.6	2482.9	1596.3	651.8	241.1	202.1	190.6	179.0	169.5	162.1	163.2
27.5°	2890.3	2447.1	1442.6	444.4	200.1	176.9	161.1	145.3	134.8	128.5	127.4
30°	2879.8	2389.1	1267.7	291.6	176.9	152.7	133.7	115.8	105.3	100.0	100.0
32.5°	2851.4	2314.4	1075.0	212.7	156.9	131.7	108.4	92.7	85.3	82.1	83.2
35°	2818.7	2236.5	869.7	180.0	141.1	111.6	88.5	75.8	72.6	71.6	71.6
37.5°	2800.8	2169.1	672.8	163.2	126.3	92.7	72.6	65.3	62.1	62.1	62.1
40°	2820.9	2117.5	498.1	150.6	111.6	76.8	61.1	55.9	54.7	54.7	54.7
42.5°	2906.1	2099.6	364.3	140.0	96.9	64.2	52.7	48.4	47.4	48.4	48.4
45°	3072.5	2138.6	275.9	129.5	83.2	52.7	45.3	42.1	42.1	43.2	43.2
47.5°	3354.7	2238.5	226.4	119.0	69.5	44.2	39.0	36.8	36.8	38.0	38.0
50°	3792.7	2423.9	203.3	107.4	57.9	38.0	32.6	31.6	31.6	32.6	33.7
52.5°	4458.2	2776.6	191.6	95.9	47.4	31.6	27.4	26.3	27.4	28.4	28.4
55°	5198.4	3228.3	178.0	84.2	40.0	26.3	22.1	22.1	23.1	25.3	25.3
57.5°	5888.1	3664.3	165.3	69.5	34.8	21.1	17.9	17.9	20.0	22.1	22.1
60°	6616.8	4091.8	148.4	55.9	29.5	16.9	14.7	14.7	17.9	20.0	21.1
62.5°	7517.1	4588.8	126.3	44.2	23.1	12.7	10.5	13.7	16.9	20.0	20.0
65°	8818.4	5206.8	99.0	34.8	17.9	9.5	8.4	12.7	15.8	18.9	20.0
67.5°	9291.3	5127.8	74.8	28.4	13.7	7.4	7.4	11.6	15.8	18.9	18.9
68°	9118.6	4955.2	71.6	27.4	12.7	7.4	7.4	11.6	15.8	18.9	18.9
70°	7945.6	4050.7	58.9	21.1	10.5	6.3	6.3	10.5	15.8	17.9	18.9
72.5°	5949.2	2691.4	50.5	13.7	9.5	6.3	5.2	10.5	14.7	17.9	17.9
75°	3412.6	1117.2	43.2	10.5	8.4	5.2	5.2	9.5	14.7	17.9	17.9
77.5°	964.5	261.2	34.8	8.4	7.4	5.2	4.2	9.5	13.7	16.9	16.9
80°	176.9	77.9	27.4	7.4	6.3	5.2	4.2	9.5	13.7	16.9	16.9
82.5°	116.9	36.8	20.0	7.4	6.3	5.2	4.2	8.4	12.7	15.8	15.8
85°	87.4	26.3	12.7	7.4	6.3	5.2	4.2	8.4	12.7	15.8	15.8
87.5°	48.4	11.6	9.5	8.4	7.4	5.2	4.2	7.4	11.6	14.7	14.7
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)