

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: P196100

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196100
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-SL2-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13399.6 lumens
Efficiency: N/A
Efficacy: 103.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G3

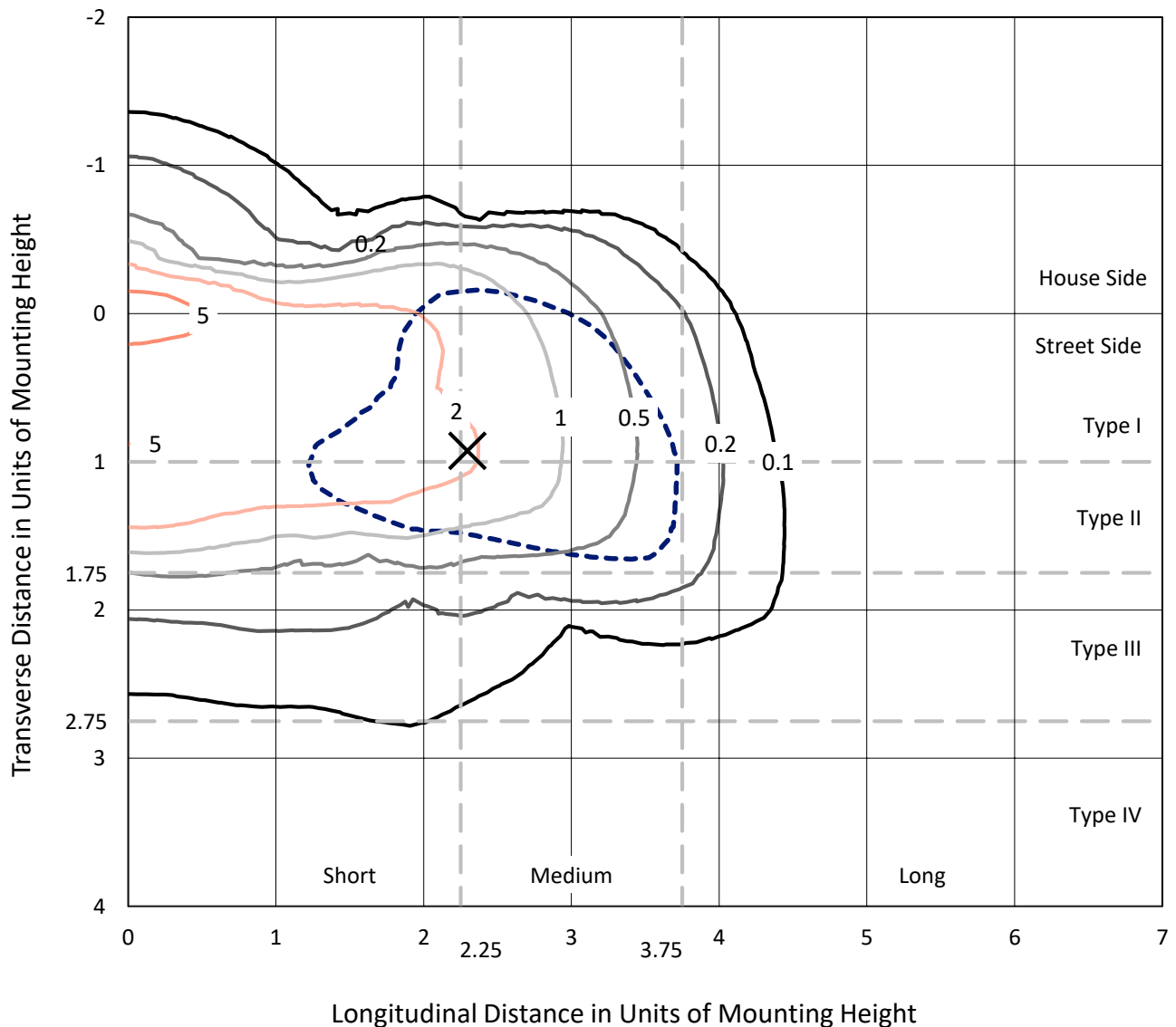
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

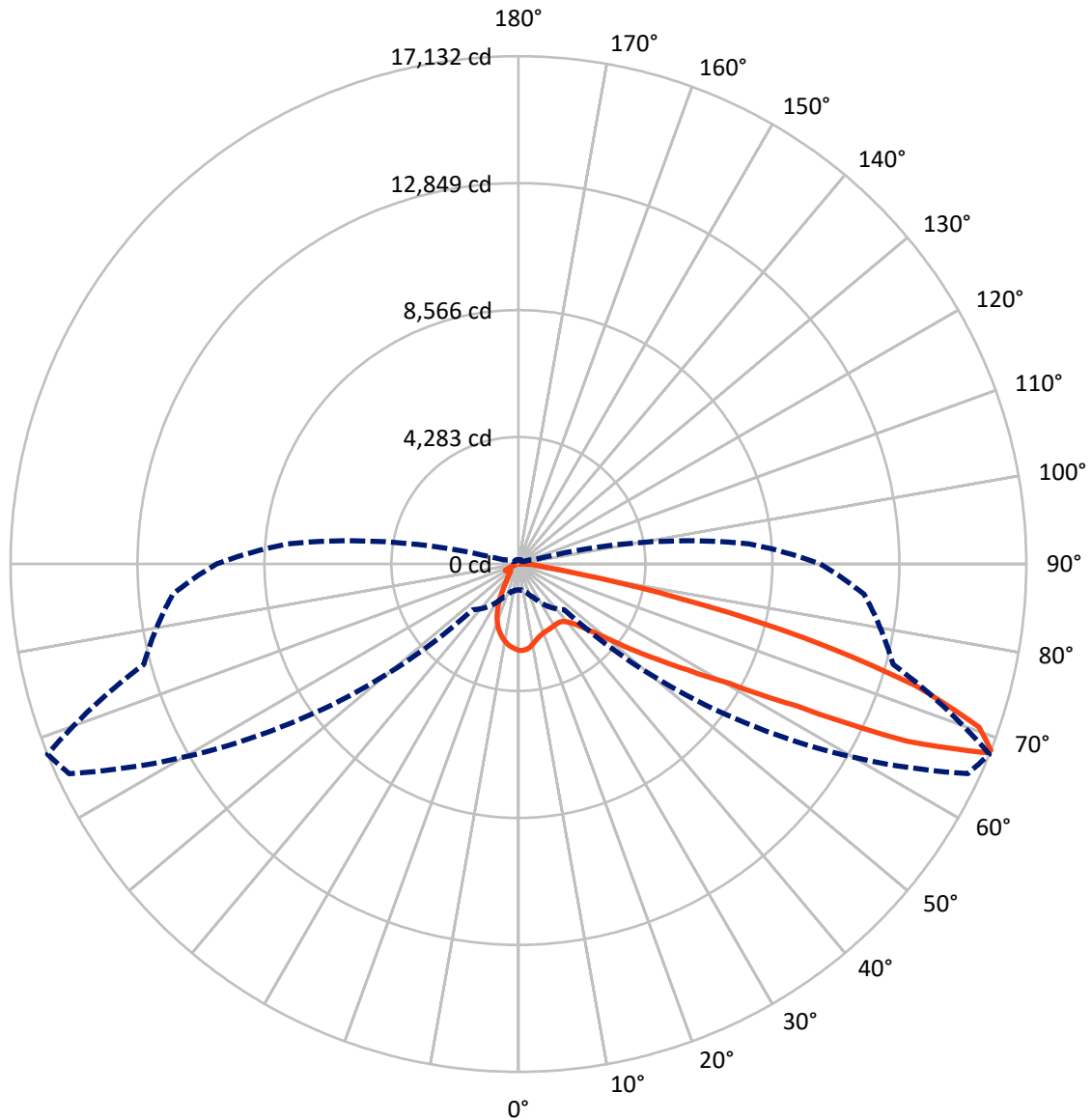
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 7.3 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2192.2	0.0	2192.2
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	11207.4	0.0	11207.4
	% Fixture	83.6	0.0	83.6
Total	Lumens	13399.6	0.0	13399.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	249.8	1.9
10°-20°	579.4	4.3
20°-30°	783.7	5.8
30°-40°	1104.9	8.2
40°-50°	1816.9	13.6
50°-60°	2816.3	21.0
60°-70°	3651.6	27.3
70°-80°	2095.5	15.6
80°-90°	301.5	2.3
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°	13399.6	100.0
0°-180°	13399.6	100.0



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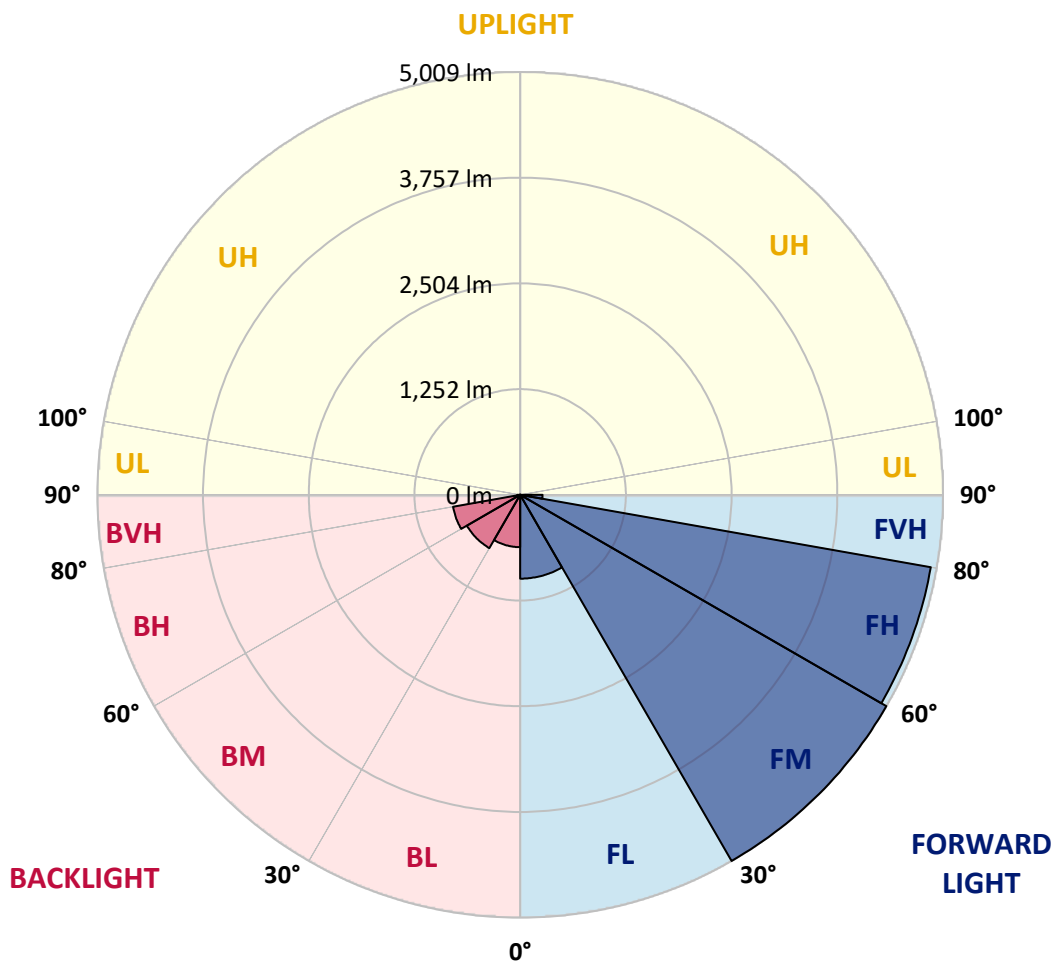
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	993.1	7.4			
FM	(30°-60°)	5009.0	37.4			
FH	(60°-80°)	4939.7	36.9			G2/5000
FVH	(80°-90°)	265.6	2.0			G3/500
BL	(0°-30°)	619.8	4.6	B2/1000		
BM	(30°-60°)	729.1	5.4	B1/1000		
BH	(60°-80°)	807.4	6.0	B2/1000		G2/1000
BVH	(80°-90°)	35.9	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-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6
2.5°	2837.8	2860.5	2860.5	2877.2	2892.0	2904.3	2914.8	2914.8	2914.8	2907.7	2901.6
5°	2539.3	2569.9	2574.3	2616.3	2671.4	2738.8	2814.1	2880.6	2893.7	2918.3	2927.9
7.5°	2331.8	2341.4	2358.1	2387.0	2443.0	2526.2	2644.3	2793.1	2829.0	2906.0	2946.3
10°	2184.7	2192.6	2206.6	2235.6	2286.3	2361.6	2478.0	2671.4	2731.0	2867.5	2947.1
12.5°	2077.1	2083.2	2096.3	2122.6	2174.3	2241.7	2360.7	2562.0	2635.5	2829.0	2959.4
15°	1993.1	2003.6	2014.1	2039.5	2091.9	2156.8	2277.5	2482.4	2562.0	2798.4	2982.2
17.5°	1959.8	1965.1	1966.8	1979.9	2027.2	2092.9	2213.7	2426.3	2508.6	2773.8	2999.7
20°	1980.8	1981.7	1964.2	1955.5	1982.6	2042.9	2160.3	2384.3	2468.4	2751.9	3006.7
22.5°	2072.7	2072.7	2027.2	1988.7	1970.3	2008.0	2124.4	2355.4	2446.5	2735.4	3006.7
25°	2247.8	2240.0	2169.0	2092.9	2011.4	1995.7	2101.7	2337.0	2429.8	2726.6	2995.3
27.5°	2478.0	2470.9	2380.8	2267.9	2120.9	2022.0	2093.8	2322.2	2413.2	2713.5	2970.8
30°	2758.1	2751.9	2649.5	2501.6	2284.6	2105.1	2112.1	2311.7	2400.0	2691.6	2929.6
32.5°	3037.3	3033.8	2952.4	2800.9	2510.4	2246.0	2160.3	2309.9	2393.1	2665.3	2879.7
35°	3318.2	3318.2	3268.4	3140.6	2814.1	2457.8	2260.9	2342.4	2406.2	2651.3	2836.8
37.5°	3733.2	3716.6	3623.8	3491.6	3196.6	2732.7	2423.7	2410.6	2457.0	2674.9	2822.8
40°	4375.7	4327.5	4095.6	3873.2	3614.1	3084.6	2661.8	2542.7	2570.8	2755.4	2856.1
42.5°	5047.9	4971.7	4664.5	4309.1	4045.7	3518.7	2974.3	2757.2	2756.3	2911.2	2962.1
45°	5624.7	5585.3	5252.8	4801.9	4538.4	4007.1	3369.1	3075.8	3044.3	3152.8	3165.9
47.5°	5959.9	5933.7	5733.2	5323.6	5123.1	4583.9	3869.7	3517.8	3458.3	3523.1	3503.0
50°	5867.1	5892.5	5834.8	5625.6	5751.6	5394.5	4507.8	4123.5	4010.7	4075.4	4026.4
52.5°	5378.8	5447.0	5498.7	5539.0	6113.2	6479.0	5309.6	4879.8	4786.2	4774.8	4727.6
55°	4499.0	4607.6	4770.4	5066.3	6016.0	7349.9	6710.0	5794.5	5657.9	5586.2	5604.5
57.5°	3061.8	3226.4	3577.4	4140.2	5510.9	7721.0	8781.0	6976.2	6745.1	6489.5	6549.0
60°	1686.7	1824.1	2241.7	2808.8	4358.2	7665.9	10616.6	8896.6	8169.2	7491.8	7614.2
62.5°	1091.5	1121.3	1432.0	1918.6	2674.9	6767.8	11636.3	12106.3	10564.9	8813.4	8985.9
65°	877.1	898.0	1050.4	1547.5	1863.5	4353.8	11681.8	15436.0	14419.8	10609.5	10614.9
67.5°	856.9	866.5	954.9	1301.6	1748.0	2370.3	10097.5	16749.0	16984.5	12729.6	11704.6
68°	869.2	880.6	969.9	1261.3	1747.1	2184.7	9332.5	16728.8	17132.4	13084.1	11704.6
70°	766.8	780.8	989.1	1305.1	1672.7	1878.4	6390.6	15840.4	16489.9	13898.9	11105.9
72.5°	400.9	389.5	489.3	1030.2	1882.7	1957.2	3376.0	13233.7	13991.7	12872.2	9595.1
75°	312.5	284.5	273.9	407.0	1656.1	2029.8	1960.7	9406.0	9978.5	9279.1	6413.4
77.5°	294.1	259.9	239.9	240.7	729.2	2112.1	1586.1	5535.4	5535.4	4426.4	2046.4
80°	236.3	204.8	191.7	218.8	351.9	1946.7	1655.2	2522.6	2151.5	1144.1	563.6
82.5°	155.8	139.2	140.0	177.7	267.0	1299.9	1916.9	1245.5	935.7	506.8	331.7
85°	98.9	84.9	94.5	124.3	199.6	579.5	1897.7	865.7	619.7	284.5	165.4
87.5°	49.9	38.5	47.3	64.8	121.6	166.3	1562.5	772.9	459.5	118.2	90.1
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°	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6	2915.6
2.5°	2901.6	2882.4	2872.8	2857.0	2837.8	2818.4	2805.3	2799.2	2795.7	2797.5	2796.6
5°	2922.7	2897.3	2856.1	2797.5	2737.1	2673.2	2624.2	2586.5	2562.9	2555.8	2554.1
7.5°	2938.4	2901.6	2824.6	2717.8	2614.6	2502.5	2407.1	2330.9	2279.3	2255.7	2254.8
10°	2935.8	2888.5	2766.9	2609.2	2457.8	2293.3	2143.6	2015.8	1923.0	1878.4	1876.6
12.5°	2938.4	2873.7	2696.0	2482.4	2265.3	2029.8	1807.6	1608.8	1470.5	1404.8	1402.3
15°	2948.9	2857.9	2623.3	2340.6	2040.4	1707.7	1390.0	1140.5	1014.5	971.6	971.6
17.5°	2948.0	2831.6	2539.3	2176.0	1773.4	1327.8	948.8	794.7	782.6	821.9	828.1
20°	2930.5	2789.6	2430.7	1980.8	1460.1	919.0	643.3	621.4	719.5	828.1	840.3
22.5°	2903.3	2735.4	2305.5	1754.2	1095.0	598.7	496.3	529.6	662.6	797.4	816.6
25°	2865.8	2669.7	2162.0	1490.6	728.2	430.7	414.0	455.1	548.8	638.9	652.9
27.5°	2810.6	2586.5	2005.3	1205.3	464.8	354.5	360.6	389.5	429.7	468.3	476.2
30°	2741.4	2489.4	1834.7	889.4	352.7	316.9	327.3	344.8	362.3	386.9	392.1
32.5°	2671.4	2390.4	1657.0	611.0	308.1	296.8	307.2	316.9	331.7	348.4	351.9
35°	2608.4	2298.6	1474.0	426.3	288.9	283.6	288.9	295.0	309.9	326.5	328.3
37.5°	2562.9	2223.3	1283.2	337.0	277.4	272.2	274.9	277.4	295.0	319.5	322.1
40°	2556.8	2173.4	1089.7	302.9	268.7	261.7	259.9	261.7	284.5	312.5	315.1
42.5°	2616.3	2176.0	900.7	288.9	261.7	253.8	246.8	250.3	270.5	292.4	294.1
45°	2757.2	2237.3	737.0	282.7	255.6	249.5	239.0	240.7	250.3	261.7	263.5
47.5°	3005.8	2371.2	611.8	279.3	250.3	245.1	232.0	226.7	227.6	233.7	233.7
50°	3403.2	2595.3	535.7	275.7	245.9	236.3	221.5	210.9	208.3	211.9	212.7
52.5°	3995.7	2979.5	498.9	268.7	238.0	224.9	208.3	197.8	193.4	196.9	196.9
55°	4796.7	3593.1	481.4	259.1	228.4	210.9	196.1	187.3	183.8	186.5	186.5
57.5°	5709.6	4390.5	511.2	245.9	216.1	196.1	185.6	179.4	176.8	179.4	180.3
60°	6794.1	5433.9	716.0	229.3	203.1	182.9	176.8	173.3	171.5	174.2	174.2
62.5°	8235.8	6822.2	1108.2	216.1	189.0	170.7	168.9	167.2	165.4	168.1	168.1
65°	9792.0	8085.2	1140.5	208.3	176.8	160.2	161.0	161.0	159.3	161.9	161.9
67.5°	10287.4	7975.7	637.2	198.7	161.9	149.7	153.1	153.1	152.3	155.0	154.1
68°	10182.5	7802.5	555.0	196.1	159.3	147.1	150.6	151.4	150.6	153.1	152.3
70°	9399.9	6850.1	365.0	181.2	147.9	138.3	143.5	144.4	143.5	147.1	146.2
72.5°	7759.6	5138.1	269.5	158.5	133.9	126.9	132.2	133.1	133.9	137.4	136.6
75°	4928.0	2837.8	212.7	134.8	119.9	113.8	119.1	121.6	123.4	128.7	126.0
77.5°	1349.7	861.3	172.5	114.7	103.3	100.7	104.1	107.6	109.5	115.5	111.2
80°	472.7	380.7	143.5	97.2	85.8	84.9	88.4	91.9	93.7	98.9	93.7
82.5°	287.1	248.6	114.7	76.1	67.4	66.5	70.9	74.4	76.1	76.1	72.6
85°	149.7	131.2	84.0	53.4	46.4	43.8	51.7	56.1	56.9	56.1	53.4
87.5°	84.0	74.4	44.6	25.4	21.0	21.9	27.1	33.2	35.9	35.0	33.2
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)