

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: P195604

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-7050-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195604
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-04-D-UNV-SL2-7050-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 5000K, 615mA 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: 15759 lumens
Efficiency: N/A
Efficacy: 122.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G3

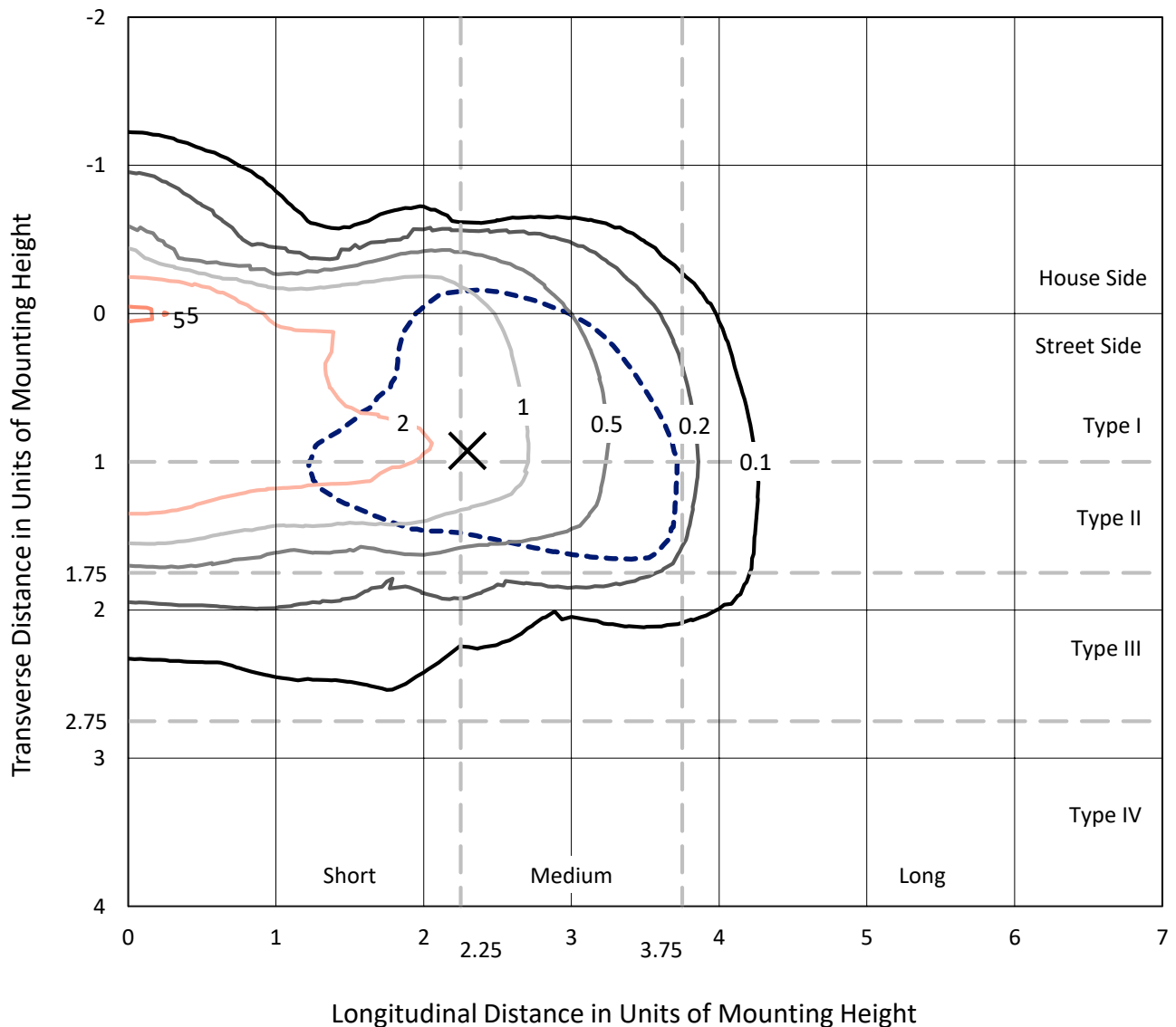
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

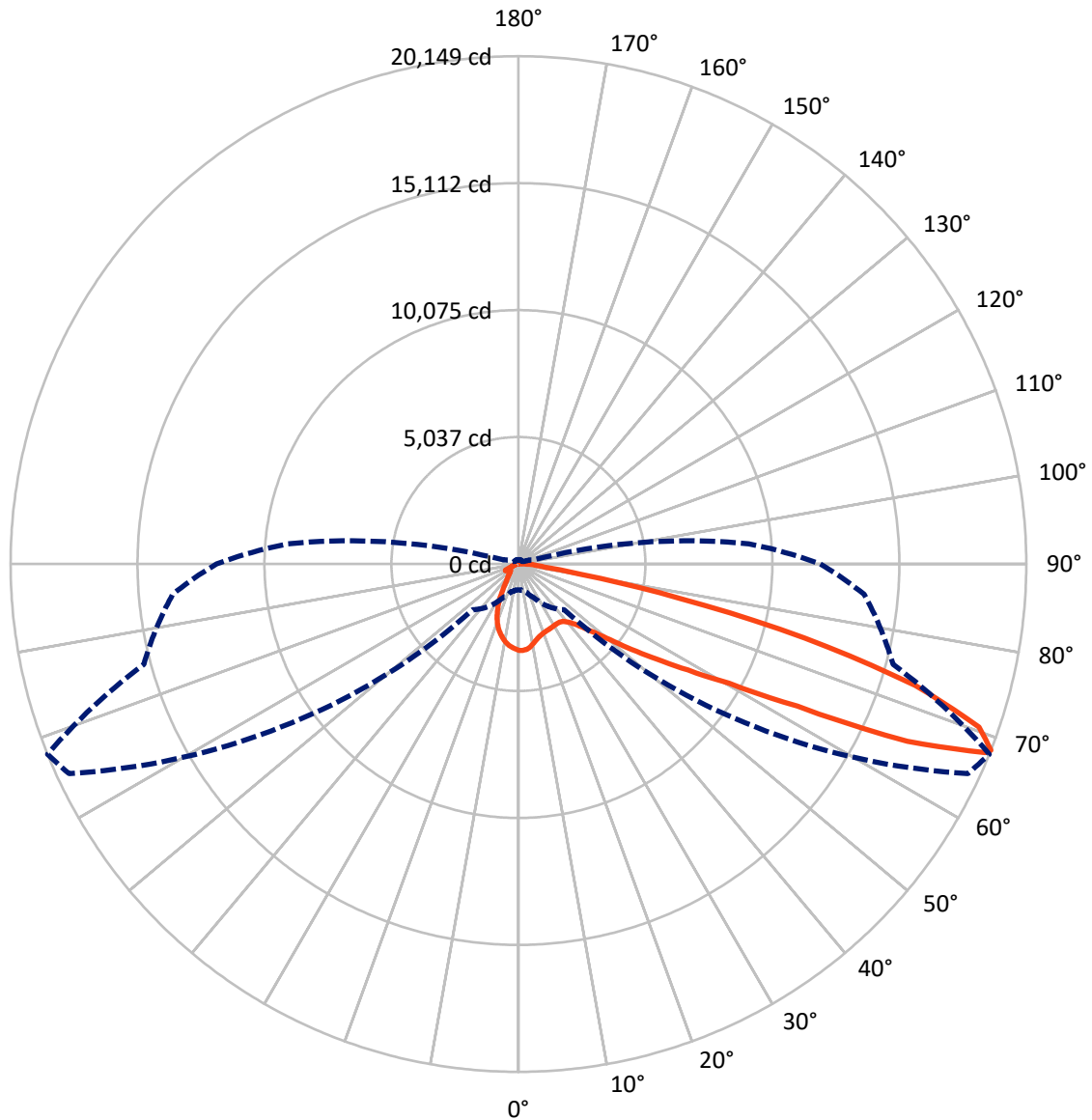
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.5 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	2578.2	0.0	2578.2
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	13180.8	0.0	13180.8
	% Fixture	83.6	0.0	83.6
Total	Lumens	15759.0	0.0	15759.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	293.8	1.9
10°-20°	681.5	4.3
20°-30°	921.6	5.8
30°-40°	1299.5	8.2
40°-50°	2136.8	13.6
50°-60°	3312.2	21.0
60°-70°	4294.6	27.3
70°-80°	2464.4	15.6
80°-90°	354.6	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°	15759.0	100.0
0°-180°	15759.0	100.0



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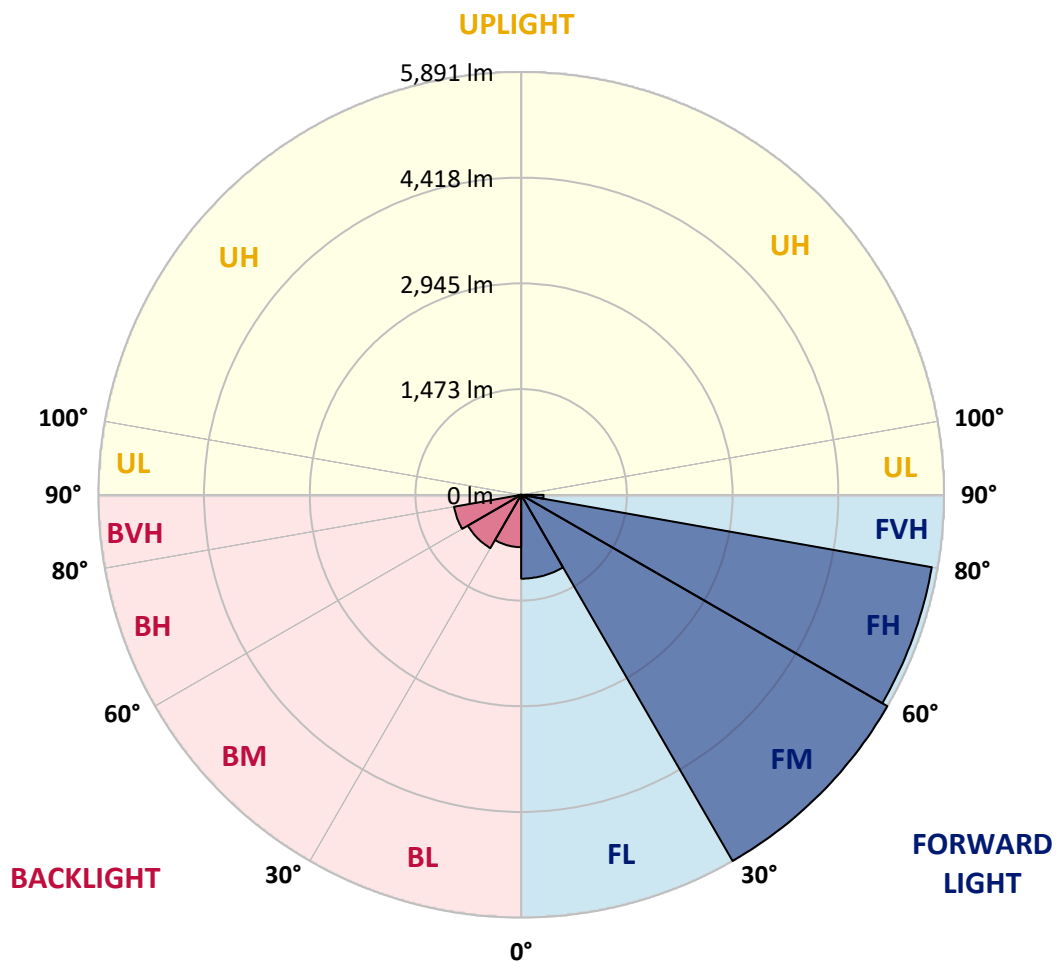
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1168.0	7.4			
FM (30°-60°)	5891.0	37.4			
FH (60°-80°)	5809.5	36.9			G3/7500
FVH (80°-90°)	312.3	2.0			G3/500
BL (0°-30°)	728.9	4.6	B2/1000		
BM (30°-60°)	857.5	5.4	B1/1000		
BH (60°-80°)	949.5	6.0	B2/1000		G2/1000
BVH (80°-90°)	42.3	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°	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0
2.5°	3337.4	3364.2	3364.2	3383.7	3401.2	3415.6	3428.0	3428.0	3428.0	3419.8	3412.5
5°	2986.4	3022.4	3027.5	3077.0	3141.8	3221.1	3309.6	3387.8	3403.3	3432.1	3443.4
7.5°	2742.4	2753.7	2773.3	2807.2	2873.1	2970.9	3109.9	3284.9	3327.1	3417.7	3465.0
10°	2569.4	2578.7	2595.2	2629.2	2688.9	2777.4	2914.3	3141.8	3211.8	3372.4	3466.1
12.5°	2442.8	2450.0	2465.5	2496.4	2557.1	2636.4	2776.4	3013.1	3099.6	3327.1	3480.5
15°	2344.0	2356.4	2368.7	2398.6	2460.3	2536.5	2678.6	2919.5	3013.1	3291.1	3507.3
17.5°	2304.9	2311.1	2313.1	2328.6	2384.2	2461.4	2603.4	2853.6	2950.3	3262.3	3527.8
20°	2329.6	2330.6	2310.0	2299.7	2331.6	2402.7	2540.6	2804.2	2903.0	3236.5	3536.1
22.5°	2437.7	2437.7	2384.2	2338.9	2317.2	2361.5	2498.4	2770.2	2877.2	3217.0	3536.1
25°	2643.6	2634.3	2550.9	2461.4	2365.6	2347.1	2471.7	2748.6	2857.7	3206.7	3522.7
27.5°	2914.3	2906.1	2800.0	2667.2	2494.3	2378.0	2462.4	2731.1	2838.1	3191.2	3493.9
30°	3243.7	3236.5	3116.1	2942.1	2686.8	2475.8	2484.0	2718.7	2822.7	3165.5	3445.5
32.5°	3572.1	3568.0	3472.3	3294.2	2952.4	2641.5	2540.6	2716.7	2814.5	3134.6	3386.8
35°	3902.6	3902.6	3843.9	3693.6	3309.6	2890.6	2659.0	2754.7	2829.9	3118.1	3336.4
37.5°	4390.5	4370.9	4261.8	4106.4	3759.5	3213.9	2850.5	2835.0	2889.6	3145.9	3319.9
40°	5146.1	5089.5	4816.7	4555.2	4250.5	3627.7	3130.5	2990.5	3023.4	3240.6	3359.0
42.5°	5936.7	5847.1	5485.8	5067.9	4758.0	4138.3	3498.0	3242.7	3241.7	3423.9	3483.6
45°	6615.1	6568.8	6177.6	5647.4	5337.6	4712.7	3962.3	3617.4	3580.3	3708.0	3723.4
47.5°	7009.4	6978.5	6742.7	6261.0	6025.2	5391.1	4551.1	4137.3	4067.3	4143.4	4119.8
50°	6900.2	6930.1	6862.2	6616.1	6764.4	6344.4	5301.5	4849.6	4716.8	4793.0	4735.4
52.5°	6325.8	6406.1	6466.9	6514.2	7189.5	7619.8	6244.5	5739.0	5628.9	5615.5	5559.9
55°	5291.2	5418.9	5610.4	5958.3	7075.2	8644.1	7891.6	6814.8	6654.2	6569.8	6591.4
57.5°	3600.9	3794.5	4207.3	4869.2	6481.3	9080.6	10327.2	8204.5	7932.8	7632.2	7702.2
60°	1983.7	2145.3	2636.4	3303.4	5125.5	9015.7	12485.9	10463.1	9607.6	8810.9	8955.0
62.5°	1283.7	1318.7	1684.1	2256.5	3145.9	7959.5	13685.2	14238.0	12425.2	10365.3	10568.1
65°	1031.5	1056.2	1235.3	1820.0	2191.6	5120.4	13738.7	18153.9	16958.8	12477.7	12483.8
67.5°	1007.8	1019.1	1123.1	1530.8	2055.8	2787.7	11875.5	19698.1	19975.0	14970.9	13765.5
68°	1022.2	1035.6	1140.6	1483.4	2054.7	2569.4	10975.7	19674.4	20149.0	15387.9	13765.5
70°	901.8	918.2	1163.3	1534.9	1967.2	2209.1	7515.8	18629.5	19393.4	16346.3	13061.4
72.5°	471.5	458.1	575.4	1211.6	2214.3	2301.8	3970.5	15563.9	16455.4	15138.7	11284.6
75°	367.5	334.6	322.2	478.7	1947.7	2387.2	2305.9	11062.2	11735.5	10912.9	7542.6
77.5°	345.9	305.7	282.1	283.1	857.5	2484.0	1865.3	6510.1	6510.1	5205.8	2406.8
80°	277.9	240.9	225.4	257.4	413.8	2289.4	1946.6	2966.8	2530.3	1345.5	663.0
82.5°	183.2	163.7	164.7	209.0	314.0	1528.7	2254.4	1464.9	1100.5	596.0	390.2
85°	116.3	99.9	111.2	146.2	234.7	681.5	2231.8	1018.1	728.8	334.6	194.6
87.5°	58.7	45.3	55.6	76.2	143.1	195.6	1837.5	909.0	540.4	139.0	106.0
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°	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0	3429.0
2.5°	3412.5	3389.9	3378.6	3360.0	3337.4	3314.8	3299.3	3292.1	3288.0	3290.0	3289.0
5°	3437.3	3407.4	3359.0	3290.0	3219.0	3143.9	3086.2	3042.0	3014.2	3005.9	3003.9
7.5°	3455.8	3412.5	3322.0	3196.4	3074.9	2943.1	2830.9	2741.4	2680.6	2652.8	2651.8
10°	3452.7	3397.1	3254.0	3068.7	2890.6	2697.1	2521.1	2370.8	2261.6	2209.1	2207.1
12.5°	3455.8	3379.6	3170.6	2919.5	2664.2	2387.2	2125.8	1892.1	1729.4	1652.2	1649.1
15°	3468.1	3361.1	3085.2	2752.7	2399.6	2008.4	1634.7	1341.3	1193.1	1142.7	1142.7
17.5°	3467.1	3330.2	2986.4	2559.2	2085.6	1561.6	1115.9	934.7	920.3	966.6	973.8
20°	3446.5	3280.8	2858.7	2329.6	1717.1	1080.9	756.6	730.9	846.2	973.8	988.2
22.5°	3414.6	3217.0	2711.5	2063.0	1287.8	704.1	583.7	622.8	779.3	937.8	960.5
25°	3370.3	3139.7	2542.7	1753.1	856.5	506.5	486.9	535.3	645.5	751.5	768.0
27.5°	3305.5	3042.0	2358.4	1417.5	546.6	416.9	424.1	458.1	505.4	550.7	560.0
30°	3224.2	2927.7	2157.7	1045.9	414.9	372.7	385.0	405.6	426.2	455.0	461.2
32.5°	3141.8	2811.4	1948.7	718.5	362.4	349.0	361.3	372.7	390.2	409.7	413.8
35°	3067.7	2703.3	1733.6	501.3	339.7	333.5	339.7	346.9	364.4	384.0	386.0
37.5°	3014.2	2614.7	1509.1	396.3	326.3	320.2	323.2	326.3	346.9	375.7	378.8
40°	3007.0	2556.1	1281.6	356.2	316.0	307.8	305.7	307.8	334.6	367.5	370.6
42.5°	3077.0	2559.2	1059.3	339.7	307.8	298.5	290.3	294.4	318.1	343.8	345.9
45°	3242.7	2631.2	866.8	332.5	300.6	293.4	281.0	283.1	294.4	307.8	309.9
47.5°	3535.0	2788.7	719.6	328.4	294.4	288.2	272.8	266.6	267.7	274.9	274.9
50°	4002.4	3052.2	630.0	324.3	289.3	277.9	260.4	248.1	245.0	249.1	250.2
52.5°	4699.3	3504.2	586.8	316.0	280.0	264.6	245.0	232.7	227.5	231.6	231.6
55°	5641.3	4225.8	566.2	304.7	268.7	248.1	230.6	220.3	216.2	219.3	219.3
57.5°	6714.9	5163.6	601.2	289.3	254.3	230.6	218.2	211.0	207.9	211.0	212.1
60°	7990.4	6390.7	842.1	269.7	238.8	215.2	207.9	203.8	201.8	204.9	204.9
62.5°	9685.9	8023.3	1303.3	254.3	222.4	200.7	198.7	196.6	194.6	197.6	197.6
65°	11516.2	9508.8	1341.3	245.0	207.9	188.4	189.4	189.4	187.4	190.4	190.4
67.5°	12098.8	9380.1	749.4	233.7	190.4	176.0	180.1	180.1	179.1	182.2	181.2
68°	11975.3	9176.3	652.7	230.6	187.4	172.9	177.1	178.1	177.1	180.1	179.1
70°	11055.0	8056.3	429.3	213.1	174.0	162.6	168.8	169.9	168.8	172.9	171.9
72.5°	9125.9	6042.7	317.1	186.3	157.5	149.3	155.4	156.5	157.5	161.6	160.6
75°	5795.7	3337.4	250.2	158.5	141.0	133.8	140.0	143.1	145.1	151.3	148.2
77.5°	1587.4	1013.0	202.8	134.9	121.5	118.4	122.5	126.6	128.7	135.9	130.7
80°	555.9	447.8	168.8	114.3	100.9	99.9	104.0	108.1	110.1	116.3	110.1
82.5°	337.7	292.4	134.9	89.6	79.3	78.2	83.4	87.5	89.6	89.6	85.4
85°	176.0	154.4	98.8	62.8	54.6	51.5	60.7	65.9	66.9	65.9	62.8
87.5°	98.8	87.5	52.5	29.9	24.7	25.7	31.9	39.1	42.2	41.2	39.1
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)