

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: P196982

Luminaire Tested: **NAV-AF-02-D-UNV-AFL-8030**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196982  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)  
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-AFL-8030  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10184 lumens  
Efficiency: N/A  
Efficacy: 90.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B1 - U0 - G1

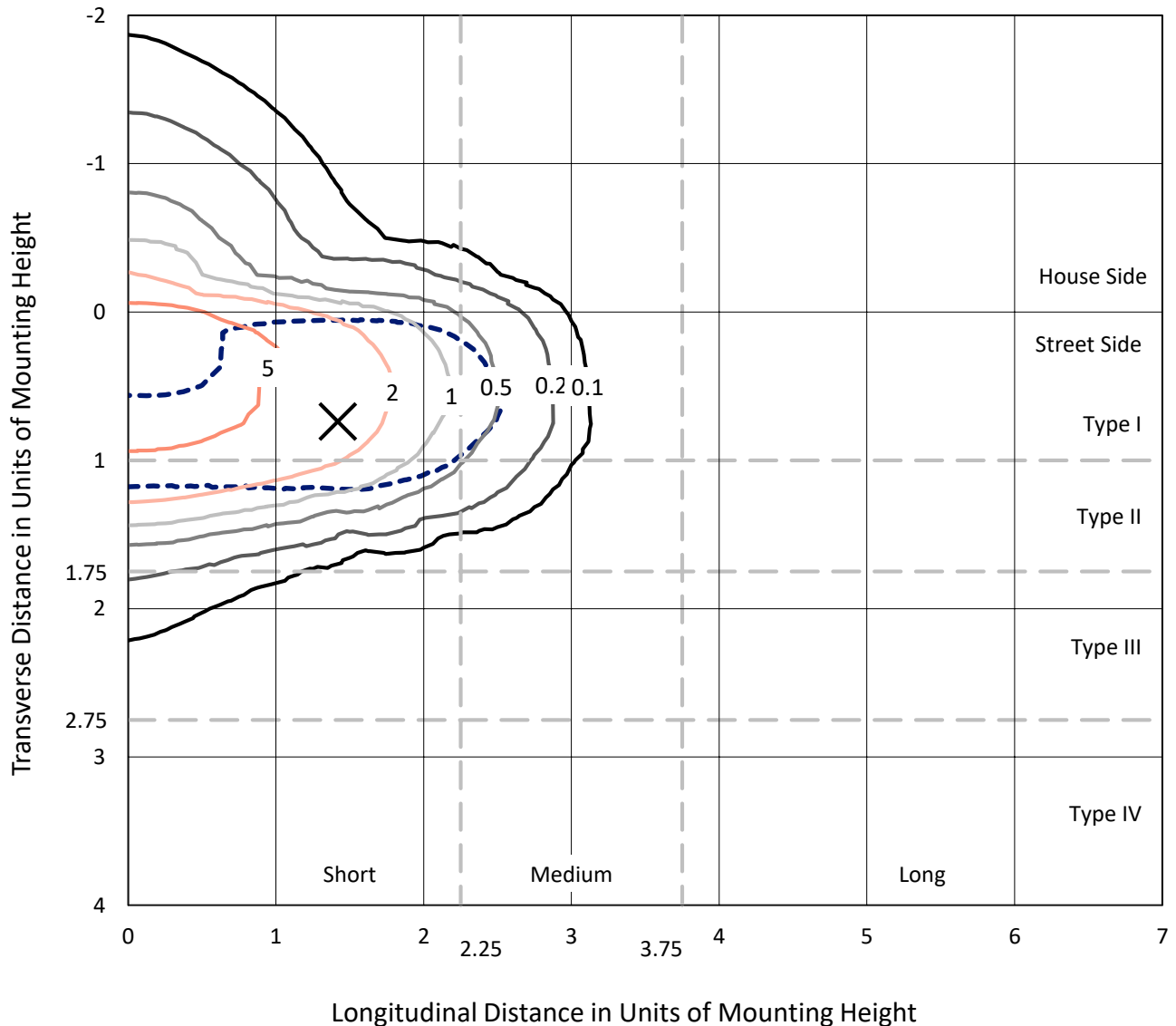
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

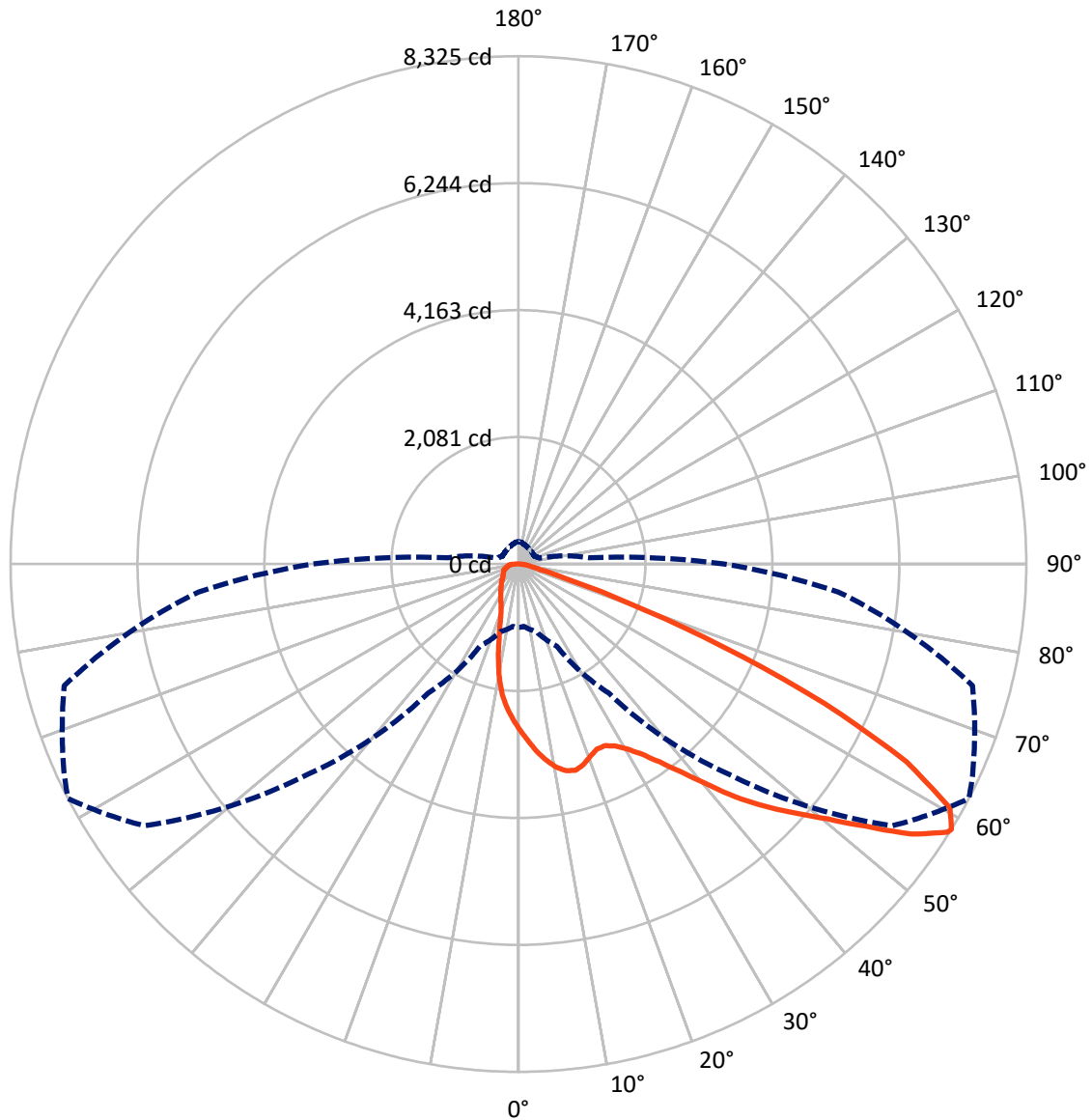
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 8 fc  
 Type II - Short - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral    - - - Horizontal Cone Through 58-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1563.6	0.0	1563.6
	% Fixture	15.4	0.0	15.4
<b>Street Side</b>	Lumens	8620.4	0.0	8620.4
	% Fixture	84.6	0.0	84.6
<b>Total</b>	Lumens	10184.0	0.0	10184.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	243.0	2.4
10°-20°	613.4	6.0
20°-30°	994.0	9.8
30°-40°	1587.1	15.6
40°-50°	2308.4	22.7
50°-60°	2415.6	23.7
60°-70°	1472.6	14.5
70°-80°	411.8	4.0
80°-90°	138.0	1.4
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°	10184.0	100.0
0°-180°	10184.0	100.0



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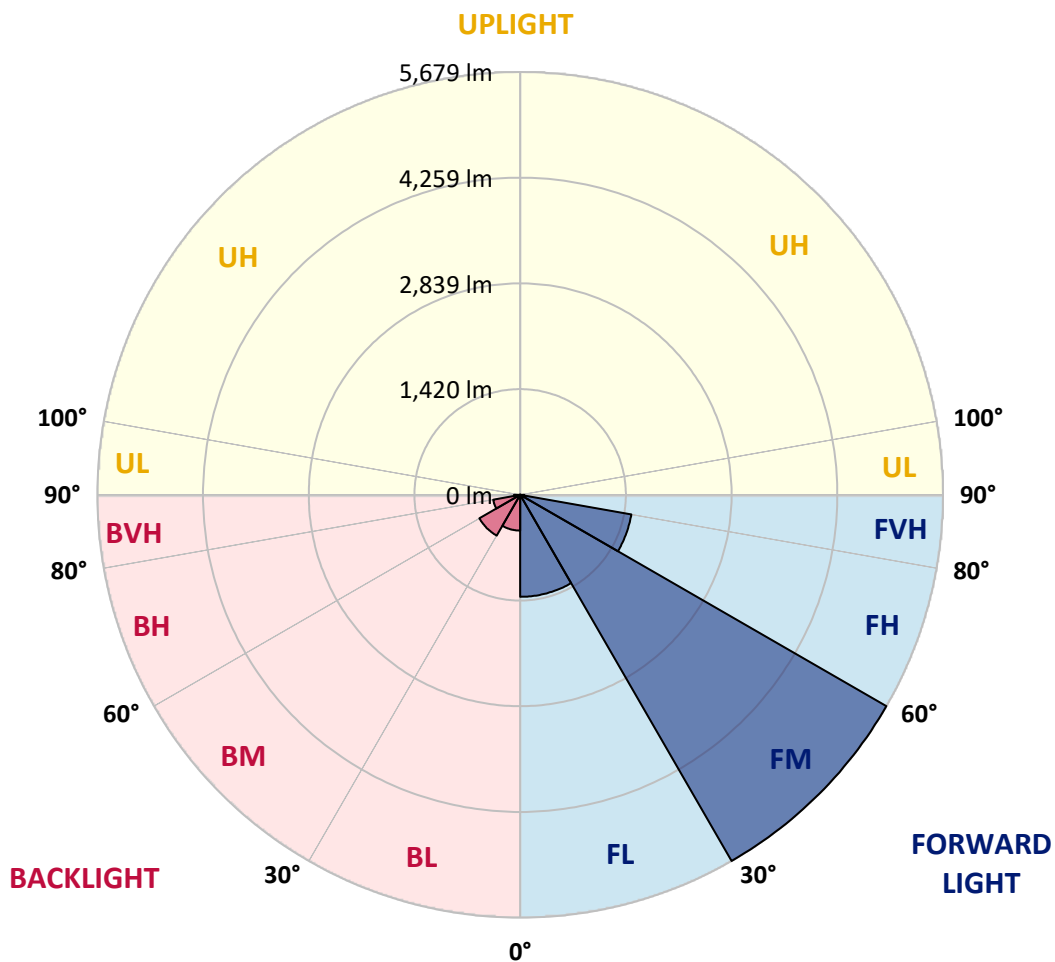
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1369.8	13.5			
FM	(30°-60°)	5678.7	55.8			
FH	(60°-80°)	1516.3	14.9			G1/1800
FVH	(80°-90°)	55.5	0.5			G1/100
BL	(0°-30°)	480.7	4.7	B1/500		
BM	(30°-60°)	632.3	6.2	B1/1000		
BH	(60°-80°)	368.1	3.6	B1/500		G1/500
BVH	(80°-90°)	82.5	0.8			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G1**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1
2.5°	3086.3	3084.4	3058.3	3041.1	3020.8	2973.7	2926.6	2891.5	2873.7	2805.6	2739.4
5°	3341.5	3333.9	3319.3	3300.8	3274.1	3214.9	3140.4	3076.1	3050.7	2929.7	2808.2
7.5°	3206.6	3218.7	3263.9	3314.8	3368.3	3372.1	3319.3	3242.9	3214.9	3053.2	2875.0
10°	2833.0	2827.9	2884.5	2983.8	3160.1	3334.5	3421.7	3384.2	3354.9	3170.3	2941.8
12.5°	2719.7	2718.4	2728.0	2753.4	2864.2	3103.5	3395.6	3477.1	3466.9	3294.4	3013.1
15°	2754.1	2755.3	2754.7	2757.9	2788.4	2902.4	3249.9	3508.3	3540.1	3417.3	3085.7
17.5°	2864.2	2859.7	2845.7	2830.4	2834.9	2875.6	3092.7	3454.8	3550.3	3526.8	3146.8
20°	3034.1	3034.1	2996.6	2953.9	2925.9	2934.8	3027.1	3363.2	3503.2	3619.7	3192.6
22.5°	3247.3	3250.5	3195.2	3117.5	3053.9	3029.7	3064.7	3295.1	3445.9	3705.6	3233.3
25°	3512.1	3511.5	3430.7	3319.3	3218.7	3160.8	3160.1	3298.3	3428.1	3806.2	3276.0
27.5°	3839.9	3810.0	3715.8	3557.3	3415.4	3326.9	3286.8	3378.5	3465.7	3929.7	3333.3
30°	4209.7	4179.2	4055.7	3852.0	3659.8	3530.6	3464.4	3517.2	3580.2	4086.9	3419.8
32.5°	4575.7	4582.7	4437.6	4207.8	3960.8	3778.8	3680.8	3713.2	3757.2	4279.1	3536.9
35°	5111.6	5111.0	4921.3	4634.2	4340.8	4088.8	3964.7	3981.8	4021.9	4550.2	3701.2
37.5°	5511.3	5505.0	5382.7	5128.8	4798.5	4496.1	4316.6	4319.2	4353.6	4890.7	3917.6
40°	5552.1	5550.8	5550.1	5513.9	5287.9	5002.8	4778.1	4731.6	4745.6	5252.3	4147.3
42.5°	5240.8	5287.3	5420.9	5625.9	5688.9	5539.3	5326.7	5223.0	5192.4	5667.3	4390.5
45°	4797.2	4820.7	5055.0	5515.8	5890.7	6043.4	5883.7	5664.7	5612.5	6070.8	4588.4
47.5°	4591.0	4580.8	4716.3	5218.5	5870.9	6444.4	6455.9	6096.9	6008.4	6418.9	4757.1
50°	4148.6	4135.2	4306.5	4781.3	5655.8	6643.6	7043.3	6567.9	6404.3	6749.9	4909.8
52.5°	3267.1	3254.3	3484.1	4095.8	5174.6	6569.2	7538.5	7145.8	6867.0	7068.8	5052.4
55°	2125.9	2127.1	2346.1	2976.8	4187.4	6135.1	7770.8	7813.5	7501.0	7387.7	5167.6
57.5°	1170.5	1159.7	1315.6	1703.2	2880.7	5149.2	7577.3	8294.7	8131.7	7661.4	5251.0
58°	1040.7	1027.9	1148.2	1482.4	2582.9	4871.0	7480.0	8325.2	8212.6	7706.6	5263.1
60°	741.5	719.9	701.4	835.7	1488.1	3512.1	6830.8	8127.3	8236.1	7796.9	5251.6
62.5°	625.0	600.2	534.0	528.9	700.8	1717.9	5401.8	7137.5	7442.4	7588.8	5067.1
65°	580.5	555.7	468.5	437.3	475.5	741.5	3340.3	5511.3	5918.7	6865.1	4602.4
67.5°	548.6	519.4	425.8	385.1	392.7	443.6	1417.5	3604.4	4076.7	5353.5	3692.2
70°	520.0	487.5	392.1	345.0	338.6	337.3	553.7	1882.1	2337.2	3503.2	2473.4
72.5°	487.5	455.7	362.2	311.9	297.9	273.7	332.9	777.8	1066.1	1717.2	1133.6
75°	440.4	414.4	329.1	284.5	260.3	222.1	245.7	373.0	459.5	657.5	526.4
77.5°	387.6	366.6	295.3	261.6	229.1	181.4	187.8	252.7	283.9	370.4	304.9
80°	274.3	282.0	257.8	230.4	201.8	146.4	144.5	185.2	203.7	248.9	204.9
82.5°	189.0	194.8	210.0	182.0	162.9	113.9	106.3	128.6	138.1	150.2	99.3
85°	134.9	131.1	145.8	130.5	119.7	72.6	68.1	81.5	87.2	91.7	47.7
87.5°	82.1	81.5	84.0	67.5	62.4	36.9	33.7	38.8	41.4	40.1	22.9
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°	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1	2719.1
2.5°	2714.6	2683.4	2615.3	2560.6	2501.4	2456.2	2411.0	2385.5	2357.5	2341.6	2339.7
5°	2744.5	2680.9	2535.8	2400.8	2262.1	2137.3	2015.1	1924.7	1850.9	1808.9	1806.3
7.5°	2777.6	2677.7	2453.6	2220.1	1973.1	1727.4	1510.4	1357.0	1258.3	1212.5	1209.3
10°	2803.1	2664.3	2353.7	1990.3	1598.8	1274.2	1076.9	986.6	956.6	949.0	947.7
12.5°	2833.6	2654.8	2227.7	1695.6	1222.0	970.0	910.2	904.4	910.8	914.6	915.3
15°	2862.3	2636.3	2057.8	1369.1	956.6	866.9	868.2	880.3	893.0	898.7	899.4
17.5°	2875.6	2591.1	1834.3	1078.8	837.0	820.4	835.1	851.0	862.4	866.9	866.9
20°	2875.6	2518.6	1575.3	873.9	774.6	777.8	795.6	807.7	810.2	806.4	804.5
22.5°	2863.5	2428.8	1323.3	762.5	723.7	735.8	749.8	741.5	711.6	688.7	684.2
25°	2852.7	2322.5	1080.8	694.4	679.1	695.0	689.3	632.7	586.8	563.3	559.5
27.5°	2834.9	2194.0	878.3	638.4	635.8	648.6	591.9	537.2	514.3	501.5	499.0
30°	2830.4	2054.6	735.1	588.7	593.2	575.4	510.5	492.6	487.5	480.5	477.4
32.5°	2845.1	1915.2	645.4	548.0	552.5	493.9	469.1	471.6	471.0	462.1	458.9
35°	2885.2	1779.6	588.1	511.1	498.4	442.4	445.5	453.2	453.2	442.4	438.5
37.5°	2955.2	1653.6	551.8	479.9	436.0	415.6	423.9	434.1	434.1	426.4	423.3
40°	3029.7	1530.7	524.5	455.1	396.5	397.2	405.4	413.1	416.3	417.5	415.0
42.5°	3097.1	1403.4	495.2	428.4	378.7	383.2	387.0	392.7	406.1	415.0	413.7
45°	3136.6	1275.5	463.4	395.3	366.6	368.5	367.3	377.4	393.3	406.7	406.7
47.5°	3172.9	1170.5	437.3	362.2	354.5	354.5	350.7	360.9	375.5	391.4	392.7
50°	3207.2	1102.4	418.8	336.7	339.2	337.3	336.1	345.6	365.3	384.4	387.6
52.5°	3242.3	1079.5	402.3	318.2	323.3	320.8	322.1	335.4	357.7	377.4	380.6
55°	3291.3	1094.1	385.1	305.5	308.1	307.4	312.5	327.8	347.5	367.3	368.5
57.5°	3351.7	1147.6	370.4	296.0	293.4	297.2	305.5	320.2	339.2	362.8	364.7
58°	3363.8	1160.3	367.9	293.4	290.2	296.0	304.2	318.2	338.0	362.8	364.7
60°	3382.3	1205.5	361.5	288.3	279.4	289.6	299.8	313.8	335.4	366.0	369.8
62.5°	3293.2	1214.4	359.6	282.6	268.0	280.7	292.8	308.7	332.9	376.8	385.1
65°	2984.5	1122.8	346.2	273.1	258.4	273.7	286.4	304.9	340.5	409.3	413.1
67.5°	2395.7	932.4	313.8	258.4	247.6	265.4	281.3	304.9	343.7	414.4	416.9
70°	1647.2	700.8	273.1	242.5	234.9	255.2	279.4	311.9	332.9	392.1	384.4
72.5°	860.5	487.5	239.3	224.0	219.6	246.3	297.9	304.9	320.2	366.0	358.3
75°	433.4	331.6	210.7	203.0	202.4	243.1	333.5	293.4	306.8	344.3	360.9
77.5°	255.9	259.7	187.8	183.3	186.5	237.4	334.2	282.0	291.5	317.0	334.8
80°	175.0	214.5	169.9	168.7	171.2	218.3	308.1	268.0	273.7	299.8	318.9
82.5°	98.7	118.4	148.9	157.2	155.9	178.9	266.1	243.8	250.8	354.5	374.9
85°	47.7	71.3	124.8	147.0	133.0	119.0	216.4	216.4	218.3	254.0	257.1
87.5°	17.8	31.8	84.0	116.5	92.9	71.3	147.0	153.4	170.6	175.7	179.5
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)