

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: P196066

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-800-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196066  
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-SL2-800-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 800mA 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: 16448 lumens  
Efficiency: N/A  
Efficacy: 96.2 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

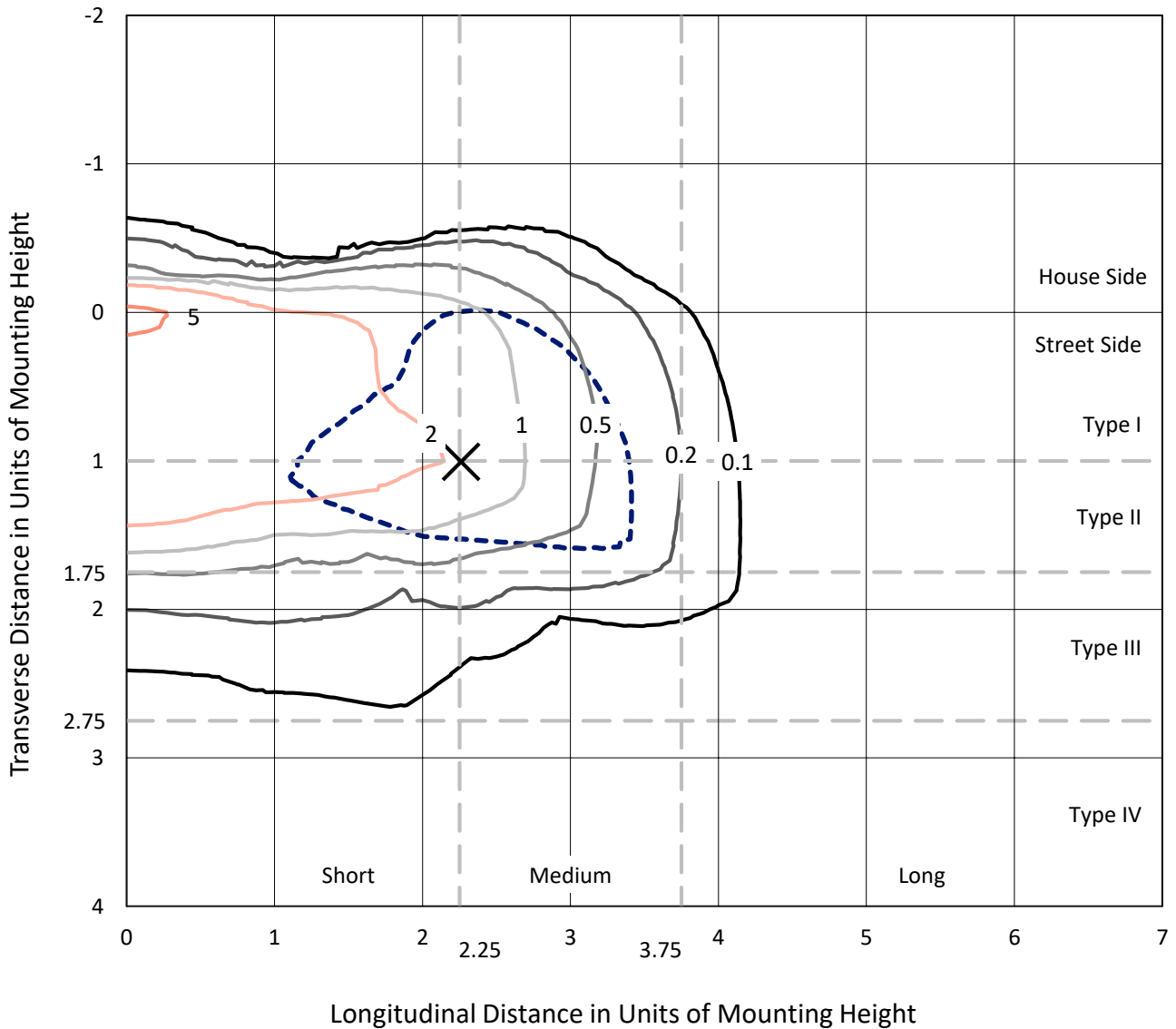
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

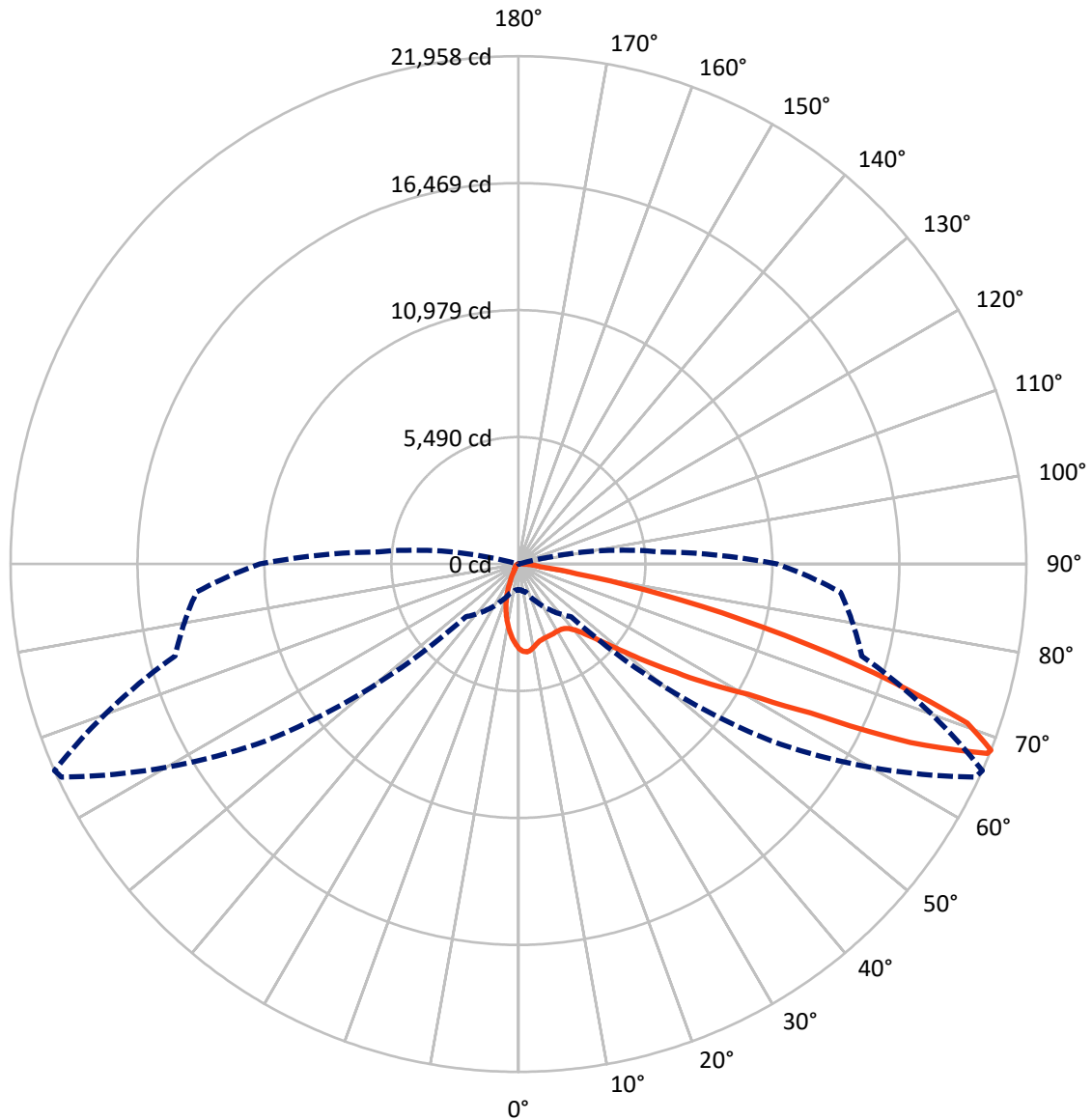
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.9 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
<b>House Side</b>	Lumens	1666.0	0.0	1666.0
	% Fixture	10.1	0.0	10.1
<b>Street Side</b>	Lumens	14782.0	0.0	14782.0
	% Fixture	89.9	0.0	89.9
<b>Total</b>	Lumens	16448.0	0.0	16448.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	300.4	1.8
10°-20°	646.4	3.9
20°-30°	936.6	5.7
30°-40°	1433.8	8.7
40°-50°	2452.4	14.9
50°-60°	3836.3	23.3
60°-70°	4417.4	26.9
70°-80°	2210.5	13.4
80°-90°	214.1	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°	16448.0	100.0
0°-180°	16448.0	100.0

**Coefficient of Utilization**



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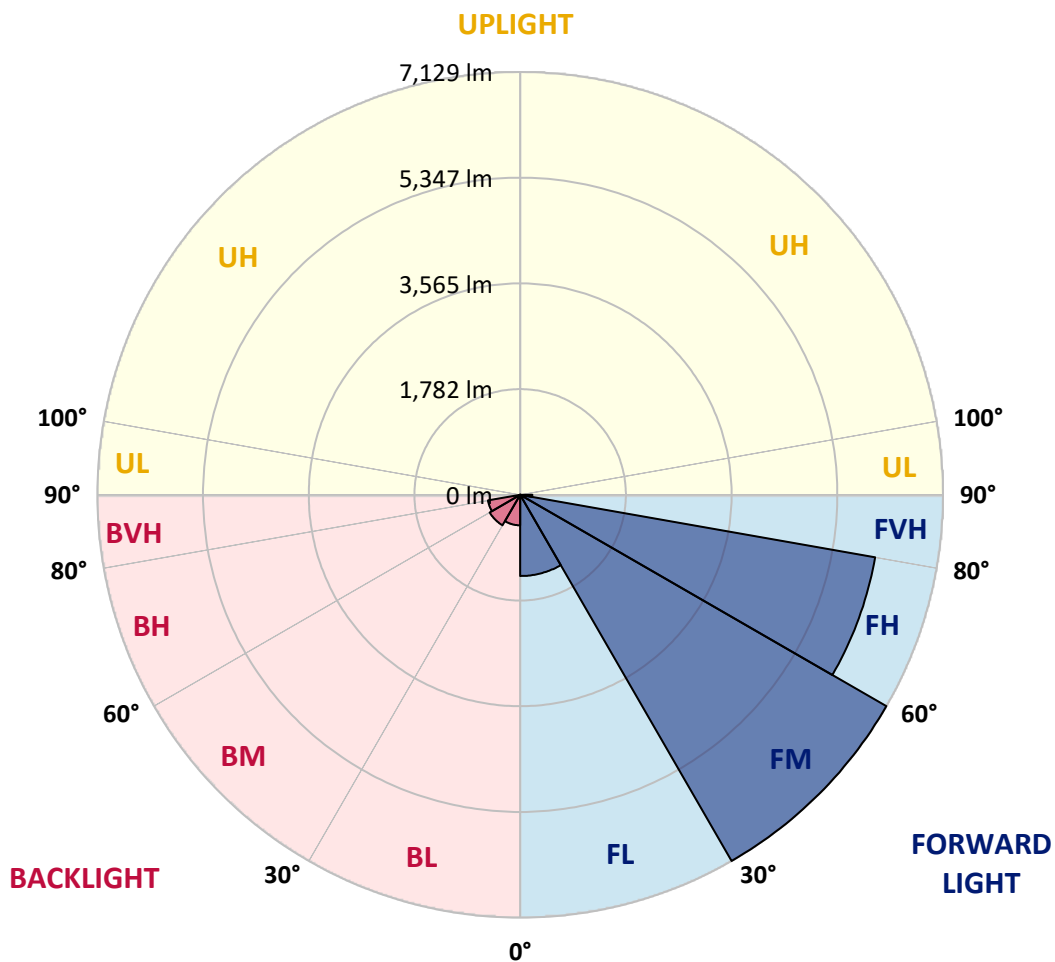
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1369.2	8.3			
FM	(30°-60°)	7129.3	43.3			
FH	(60°-80°)	6077.5	36.9			G3/7500
FVH	(80°-90°)	206.0	1.3			G2/225
BL	(0°-30°)	514.2	3.1	B2/1000		
BM	(30°-60°)	593.3	3.6	B1/1000		
BH	(60°-80°)	550.4	3.3	B2/1000		G2/1000
BVH	(80°-90°)	8.1	0.0			G0/10
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°	66°	75°	85°
0°	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4
2.5°	3854.3	3856.8	3855.6	3859.4	3856.8	3837.5	3816.8	3772.9	3776.8	3720.0	3656.7
5°	3583.1	3605.1	3627.0	3649.0	3702.0	3748.4	3803.9	3816.8	3816.8	3767.7	3674.7
7.5°	3306.8	3308.1	3332.7	3362.3	3433.3	3518.5	3647.6	3763.8	3766.5	3779.4	3677.4
10°	3098.9	3105.4	3122.1	3154.5	3225.5	3309.3	3454.0	3636.1	3650.3	3745.8	3651.5
12.5°	2937.5	2945.3	2963.4	3000.8	3065.4	3151.8	3304.2	3512.1	3531.4	3713.5	3643.9
15°	2813.5	2823.9	2838.1	2875.5	2945.3	3036.9	3203.5	3429.4	3452.7	3700.6	3668.3
17.5°	2761.9	2761.9	2760.6	2786.4	2856.2	2949.2	3123.5	3385.6	3415.2	3711.0	3709.6
20°	2783.9	2780.0	2752.9	2746.4	2789.0	2882.0	3060.2	3357.1	3390.8	3730.3	3760.1
22.5°	2900.1	2892.3	2831.6	2781.3	2768.4	2830.3	3017.6	3337.8	3377.8	3770.4	3827.2
25°	3146.7	3123.5	3039.5	2925.8	2823.9	2817.4	2987.8	3327.5	3370.1	3816.8	3900.7
27.5°	3466.9	3460.4	3326.1	3173.8	2977.5	2860.1	2978.8	3319.7	3362.3	3850.4	3960.1
30°	3864.6	3867.2	3712.3	3513.4	3216.5	2980.2	3007.3	3315.8	3359.8	3852.9	3985.9
32.5°	4275.2	4277.8	4148.7	3935.6	3543.1	3186.7	3087.3	3333.9	3373.9	3842.6	3984.7
35°	4670.3	4674.2	4596.7	4425.0	3979.5	3473.3	3238.4	3395.9	3424.3	3849.2	3982.1
37.5°	5170.0	5185.5	5090.0	4929.8	4527.0	3894.3	3485.0	3521.1	3544.4	3902.0	4001.5
40°	6022.2	6001.6	5727.8	5456.6	5121.0	4406.9	3841.4	3736.7	3744.5	4038.9	4075.0
42.5°	7015.2	6989.3	6520.6	6053.2	5731.7	5025.5	4297.1	4067.4	4066.0	4268.8	4235.2
45°	7870.0	7854.4	7361.3	6737.6	6408.3	5708.5	4858.8	4543.7	4528.3	4666.5	4527.0
47.5°	8476.8	8463.9	8090.7	7465.8	7190.7	6459.9	5559.9	5193.2	5161.0	5186.8	5000.9
50°	8536.2	8522.0	8391.6	7990.1	8104.9	7562.7	6426.4	6044.2	6002.9	5962.8	5717.5
52.5°	7981.0	7979.7	8048.2	8022.3	8745.4	8981.7	7489.0	7096.5	7047.4	6945.4	6701.4
55°	6846.0	6839.6	7099.1	7476.1	8731.2	10446.0	9109.5	8349.0	8284.5	8080.4	7760.2
57.5°	5002.1	4968.6	5510.9	6310.2	8117.8	11086.3	11682.9	9904.9	9797.7	9150.8	8657.5
60°	2761.9	2774.9	3472.1	4418.5	6665.2	10959.8	14050.9	11719.0	11437.6	10074.0	9577.0
62.5°	1548.1	1580.5	2099.5	2871.6	4249.3	9933.3	15321.6	14841.2	14163.4	11150.9	10739.0
65°	1171.2	1190.5	1451.4	2215.7	2679.3	6941.5	15524.3	19206.8	18621.9	12783.0	12589.4
67.5°	1102.7	1118.2	1246.1	1837.4	2440.4	3599.9	13998.1	21789.3	21862.8	15009.0	14022.6
68°	1110.4	1129.8	1257.6	1767.7	2436.6	3220.2	13347.3	21802.2	21958.4	15368.0	13973.5
70°	1020.1	1025.2	1329.9	1734.1	2361.6	2537.2	9655.7	20308.2	20588.4	15795.4	12684.9
72.5°	389.9	391.3	596.6	1501.7	2474.0	2551.4	4864.0	16051.1	16065.2	13746.3	9889.4
75°	202.7	170.4	187.2	470.0	2362.9	2486.9	2440.4	10959.8	10891.4	9296.8	6059.7
77.5°	139.4	118.8	125.2	162.6	982.6	2485.6	1762.5	6302.4	6288.2	3955.0	1728.9
80°	78.8	68.4	74.9	136.9	344.7	2333.2	1642.4	2709.0	2552.8	694.7	280.2
82.5°	40.0	33.6	40.0	114.9	214.3	1468.1	1597.2	1062.6	946.4	165.3	182.1
85°	10.3	10.3	19.3	80.1	133.0	481.6	1431.9	767.0	689.5	72.3	129.1
87.5°	2.6	1.3	7.8	29.7	47.8	104.5	794.1	427.4	368.0	37.4	74.9
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°	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4	3664.4
2.5°	3630.9	3594.8	3523.8	3443.7	3386.9	3324.9	3288.7	3244.8	3211.2	3181.6	3203.5
5°	3618.0	3548.2	3390.8	3213.8	3065.4	2923.3	2817.4	2716.8	2640.5	2592.8	2612.1
7.5°	3584.4	3481.1	3225.5	2949.2	2706.4	2477.8	2291.9	2125.4	1996.2	1926.5	1948.4
10°	3527.6	3381.7	3038.3	2654.8	2315.1	1992.3	1716.0	1468.1	1280.8	1193.1	1213.7
12.5°	3486.3	3293.9	2844.5	2370.7	1923.9	1465.5	1098.9	814.8	668.8	581.0	588.8
15°	3468.2	3225.5	2663.8	2071.1	1496.5	941.3	593.9	429.9	379.6	361.5	362.8
17.5°	3470.8	3171.2	2492.0	1759.9	1065.3	541.0	364.2	328.0	320.2	316.3	316.3
20°	3477.2	3117.0	2313.8	1435.8	681.8	348.6	303.4	291.8	288.0	282.7	284.1
22.5°	3496.7	3075.7	2134.4	1110.4	419.6	284.1	268.5	258.2	251.7	244.1	245.3
25°	3526.3	3044.7	1957.5	799.2	295.7	248.0	233.7	219.5	207.9	198.9	200.1
27.5°	3544.4	3000.8	1769.0	544.9	245.3	217.0	197.5	178.2	165.3	157.5	156.2
30°	3531.4	2929.7	1554.6	357.6	217.0	187.2	164.0	142.0	129.1	122.7	122.7
32.5°	3496.7	2838.1	1318.4	260.9	192.4	161.4	133.0	113.6	104.5	100.8	102.0
35°	3456.6	2742.5	1066.5	220.8	173.0	136.9	108.4	93.0	89.1	87.8	87.8
37.5°	3434.7	2659.9	825.1	200.1	155.0	113.6	89.1	80.1	76.2	76.2	76.2
40°	3459.2	2596.7	610.7	184.6	136.9	94.2	74.9	68.4	67.1	67.1	67.1
42.5°	3563.8	2574.7	446.7	171.8	118.8	78.8	64.5	59.4	58.1	59.4	59.4
45°	3767.7	2622.4	338.3	158.9	102.0	64.5	55.5	51.7	51.7	53.0	53.0
47.5°	4113.8	2745.1	277.6	145.9	85.2	54.2	47.8	45.2	45.2	46.4	46.4
50°	4650.9	2972.4	249.2	131.7	71.0	46.4	40.0	38.8	38.8	40.0	41.3
52.5°	5467.0	3404.9	235.0	117.5	58.1	38.8	33.6	32.3	33.6	34.9	34.9
55°	6374.7	3958.8	218.2	103.3	49.1	32.3	27.1	27.1	28.4	31.0	31.0
57.5°	7220.5	4493.4	202.7	85.2	42.7	25.8	22.0	22.0	24.6	27.1	27.1
60°	8113.9	5017.7	182.1	68.4	36.1	20.7	18.1	18.1	22.0	24.6	25.8
62.5°	9218.0	5627.2	155.0	54.2	28.4	15.4	12.9	16.8	20.7	24.6	24.6
65°	10813.9	6385.1	121.4	42.7	22.0	11.7	10.3	15.4	19.3	23.2	24.6
67.5°	11393.6	6288.2	91.7	34.9	16.8	9.0	9.0	14.2	19.3	23.2	23.2
68°	11181.9	6076.4	87.8	33.6	15.4	9.0	9.0	14.2	19.3	23.2	23.2
70°	9743.5	4967.3	72.3	25.8	12.9	7.8	7.8	12.9	19.3	22.0	23.2
72.5°	7295.4	3300.3	62.0	16.8	11.7	7.8	6.4	12.9	18.1	22.0	22.0
75°	4184.8	1369.9	53.0	12.9	10.3	6.4	6.4	11.7	18.1	22.0	22.0
77.5°	1182.7	320.2	42.7	10.3	9.0	6.4	5.1	11.7	16.8	20.7	20.7
80°	217.0	95.5	33.6	9.0	7.8	6.4	5.1	11.7	16.8	20.7	20.7
82.5°	143.3	45.2	24.6	9.0	7.8	6.4	5.1	10.3	15.4	19.3	19.3
85°	107.2	32.3	15.4	9.0	7.8	6.4	5.1	10.3	15.4	19.3	19.3
87.5°	59.4	14.2	11.7	10.3	9.0	6.4	5.1	9.0	14.2	18.1	18.1
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)