

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: P196132

Luminaire Tested: **NAV-AF-04-D-UNV-SL3-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196132
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
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-SL3-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 16421.4 lumens
Efficiency: N/A
Efficacy: 127.3 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G3

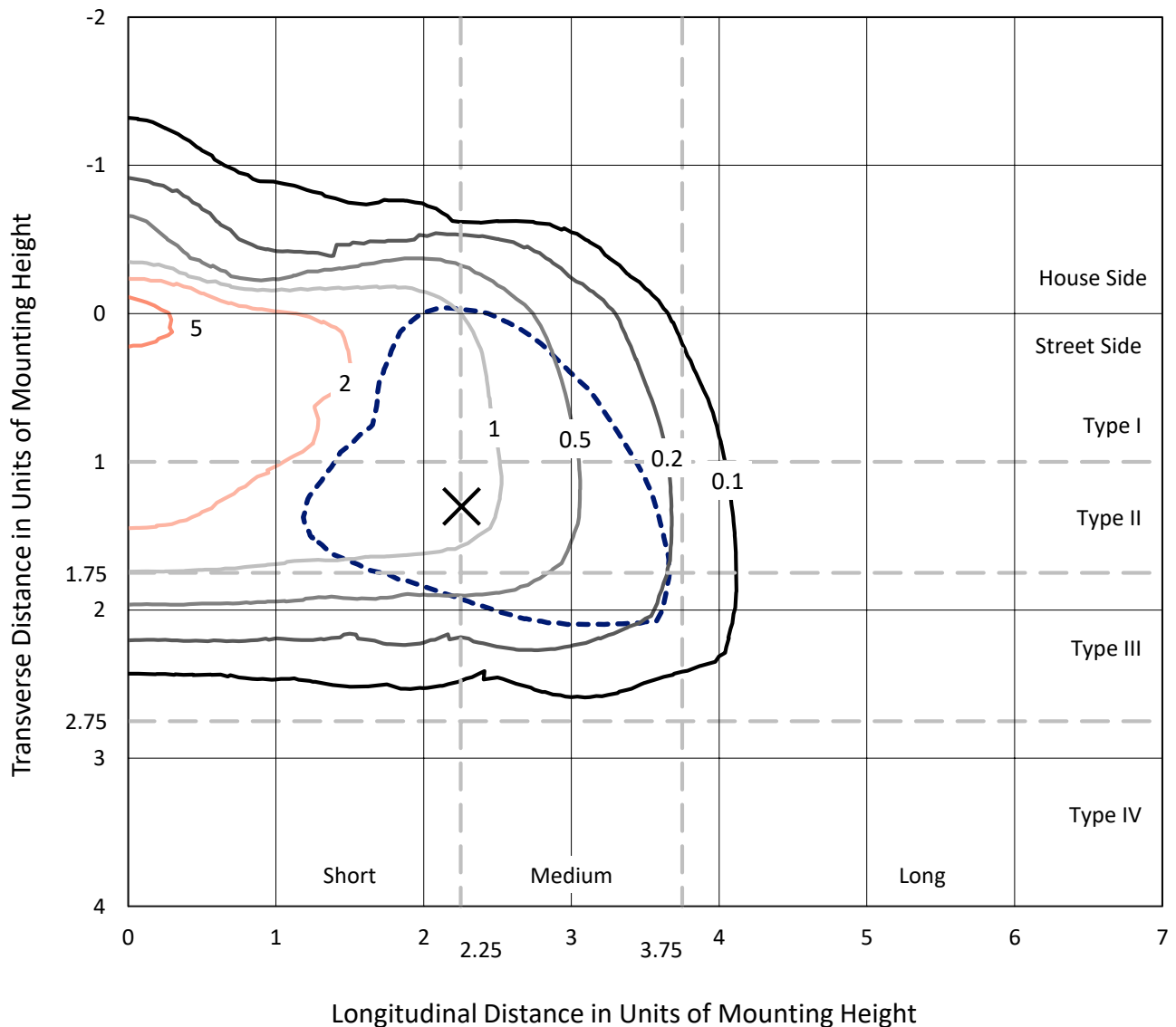
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

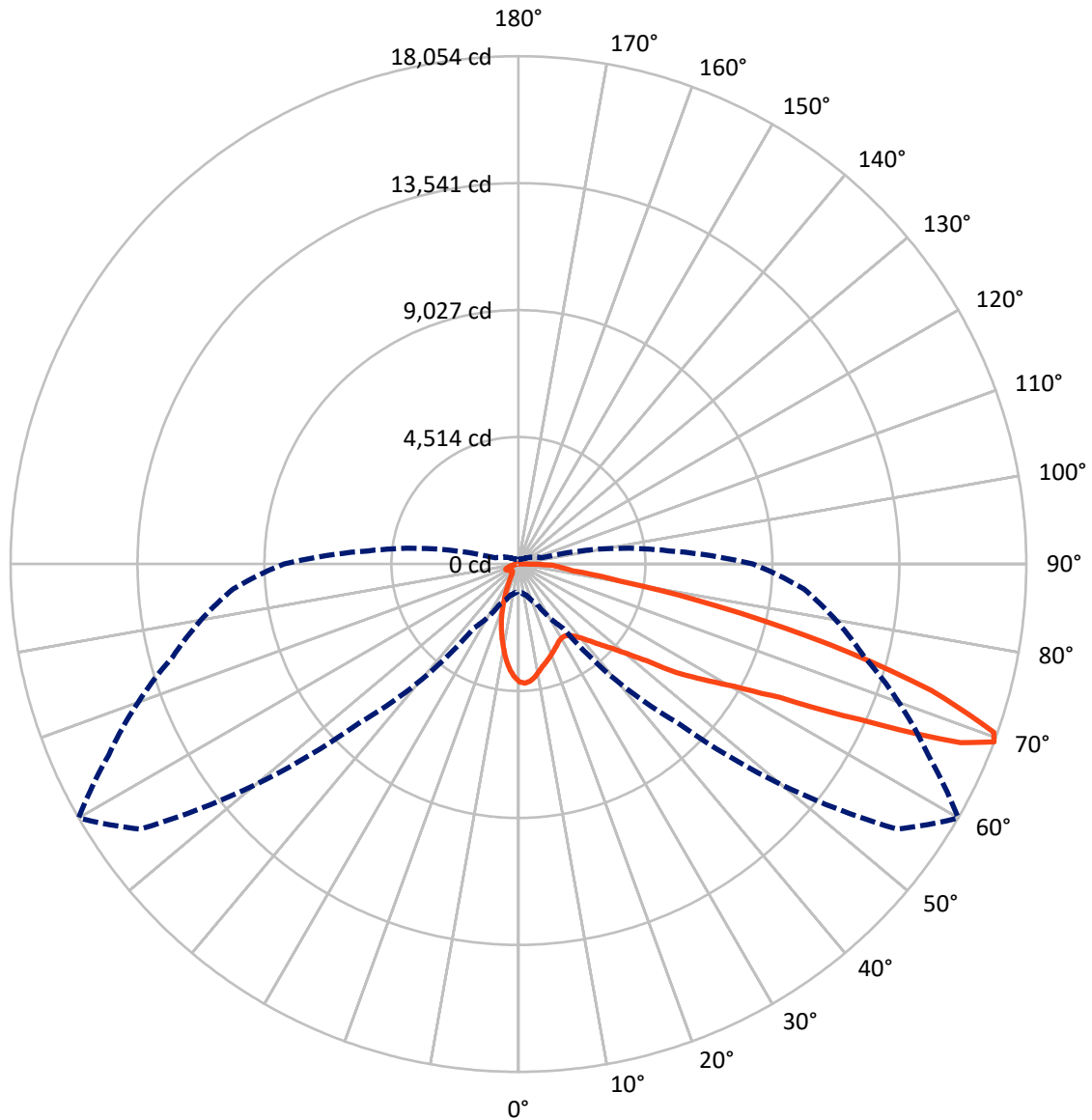
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.7 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2342.2	0.0	2342.2
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	14079.2	0.0	14079.2
	% Fixture	85.7	0.0	85.7
Total	Lumens	16421.4	0.0	16421.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	355.5	2.2
10°-20°	761.1	4.6
20°-30°	970.9	5.9
30°-40°	1336.0	8.1
40°-50°	2164.1	13.2
50°-60°	3396.5	20.7
60°-70°	4528.1	27.6
70°-80°	2518.7	15.3
80°-90°	390.6	2.4
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°	16421.4	100.0
0°-180°	16421.4	100.0



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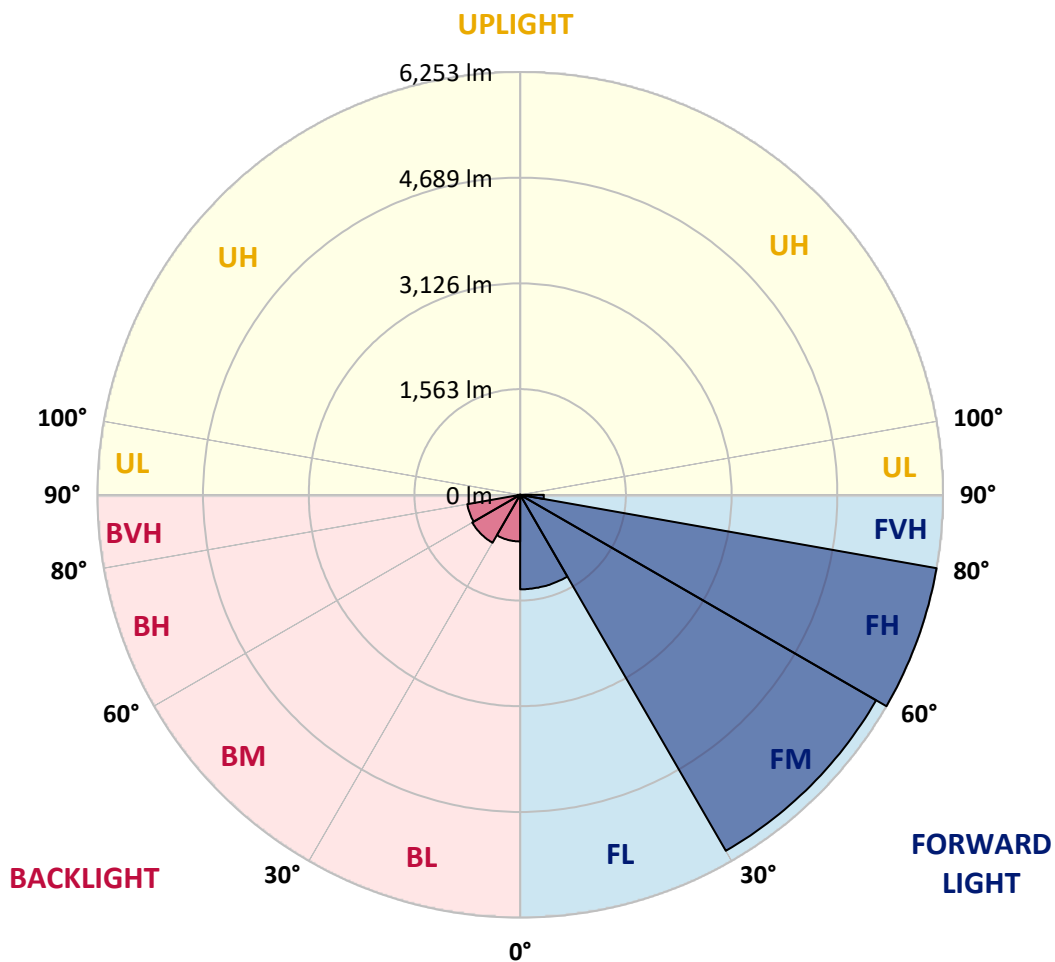
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1397.1	8.5			
FM	(30°-60°)	6078.4	37.0			
FH	(60°-80°)	6252.6	38.1			G3/7500
FVH	(80°-90°)	351.0	2.1			G3/500
BL	(0°-30°)	690.3	4.2	B2/1000		
BM	(30°-60°)	818.2	5.0	B1/1000		
BH	(60°-80°)	794.1	4.8	B2/1000		G2/1000
BVH	(80°-90°)	39.6	0.2			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 III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0
2.5°	4301.6	4313.2	4313.2	4303.7	4298.4	4267.9	4250.0	4237.4	4215.3	4174.2	4137.3
5°	4147.9	4170.0	4179.5	4183.7	4211.1	4201.6	4202.6	4194.2	4175.3	4131.0	4071.0
7.5°	3865.6	3869.8	3886.7	3915.1	3981.5	4027.8	4065.7	4073.1	4068.9	4036.3	3952.0
10°	3587.7	3595.1	3615.0	3663.5	3726.6	3793.0	3875.1	3908.8	3934.1	3923.5	3817.2
12.5°	3357.0	3358.0	3380.2	3436.0	3506.6	3589.7	3701.3	3754.0	3814.1	3838.3	3719.2
15°	3134.8	3149.6	3170.6	3238.0	3325.4	3430.8	3559.3	3631.9	3710.9	3780.3	3643.4
17.5°	2966.4	2977.9	2990.6	3046.3	3147.5	3279.1	3438.1	3516.1	3620.3	3726.6	3565.5
20°	2873.7	2877.9	2868.5	2895.8	2981.1	3123.3	3307.5	3401.3	3525.5	3675.1	3485.5
22.5°	2854.7	2854.7	2820.0	2814.8	2852.6	2972.7	3172.8	3287.6	3439.2	3639.2	3413.9
25°	2943.2	2936.9	2871.6	2811.6	2797.9	2858.9	3044.3	3185.4	3365.5	3638.2	3360.2
27.5°	3110.6	3102.2	3021.1	2920.0	2832.7	2806.3	2945.3	3089.6	3307.5	3674.0	3332.8
30°	3319.2	3316.0	3233.9	3107.5	2963.2	2827.3	2906.3	3040.1	3268.6	3740.3	3331.8
32.5°	3547.6	3532.9	3482.3	3356.0	3168.6	2944.3	2929.5	3042.2	3258.1	3837.2	3356.0
35°	3790.9	3780.3	3767.7	3640.3	3429.6	3150.7	3031.6	3114.9	3309.7	3972.0	3424.4
37.5°	4100.5	4088.9	4109.9	3971.0	3740.3	3421.3	3204.4	3260.1	3414.9	4167.9	3551.9
40°	4651.3	4617.5	4558.6	4344.8	4102.5	3753.0	3453.9	3462.4	3595.1	4430.1	3756.2
42.5°	5555.7	5447.3	5155.6	4762.9	4484.8	4138.3	3779.3	3739.3	3843.5	4776.5	4053.1
45°	6462.4	6340.2	5847.4	5218.8	4880.8	4552.2	4181.5	4085.8	4153.1	5179.8	4435.3
47.5°	7047.9	6987.9	6431.9	5674.7	5295.6	5002.9	4641.7	4483.8	4532.2	5636.9	4907.1
50°	7219.6	7167.9	6730.9	6031.7	5687.4	5547.4	5211.4	5001.8	5010.3	6170.7	5472.6
52.5°	7091.1	7070.0	6780.4	6252.9	6047.5	6121.2	6000.1	5708.5	5638.9	6756.2	6085.4
55°	6919.4	6926.8	6815.2	6475.1	6414.0	6656.1	7032.1	6797.3	6502.4	7365.9	6723.5
57.5°	6379.2	6384.4	6677.2	6898.4	7113.2	7406.0	7835.5	7736.6	7393.3	8024.0	7438.6
60°	5136.6	5177.7	5829.5	6810.9	7912.4	8883.3	8988.6	8818.0	8341.0	8782.2	8368.4
62.5°	3669.8	3706.7	4461.7	5912.8	7818.7	10555.5	11117.8	10439.6	9626.8	9916.3	9676.2
65°	1928.1	1921.8	2506.2	4085.8	6585.7	10943.0	14472.7	13318.6	11792.8	11475.9	10939.8
67.5°	1077.3	1111.9	1338.4	2060.7	4292.1	9631.0	16615.7	16955.8	14804.5	12713.1	10885.1
69°	996.1	1007.7	1159.4	1593.2	2797.9	7946.1	16431.4	18054.1	16074.4	12718.4	10183.8
70°	967.7	980.4	1118.3	1467.9	2350.3	6510.9	15760.6	17925.6	16383.0	12436.2	9545.7
72.5°	867.7	884.5	1018.2	1319.4	1980.7	3356.0	12695.2	15342.5	14840.3	10869.3	7401.7
75°	740.3	768.7	970.9	1310.0	1876.5	2133.5	8466.4	11430.6	11045.2	7773.4	4199.4
77.5°	306.5	309.5	424.3	959.3	1969.2	2041.8	4550.1	7240.5	6409.7	3408.7	1264.7
80°	213.8	209.6	211.6	280.1	1589.1	2055.5	2334.6	3682.4	2862.1	899.3	591.8
82.5°	180.0	178.0	186.4	175.8	538.1	2332.4	1952.3	1919.7	1347.8	484.4	282.2
85°	119.0	115.8	152.7	160.1	255.8	1852.3	2099.7	1509.0	1004.5	259.0	120.1
87.5°	57.9	58.9	87.4	108.4	135.8	586.6	2011.2	1193.1	776.1	112.6	48.5
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°	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0	4190.0
2.5°	4122.6	4091.0	4062.5	4026.7	3999.4	3976.2	3944.6	3943.6	3938.3	3945.7	3947.8
5°	4030.9	3978.4	3898.3	3808.8	3745.6	3662.4	3581.4	3553.9	3523.5	3520.3	3529.7
7.5°	3893.0	3810.9	3674.0	3537.1	3400.2	3260.1	3127.5	3060.1	2994.8	2974.7	2984.3
10°	3739.3	3635.1	3425.5	3202.2	3009.5	2801.0	2598.9	2468.3	2349.3	2298.8	2311.4
12.5°	3619.2	3486.5	3191.7	2902.1	2613.6	2314.5	2048.2	1790.2	1595.3	1507.9	1513.1
15°	3516.1	3346.5	2972.7	2587.2	2226.0	1816.5	1446.9	1147.8	977.2	914.0	912.0
17.5°	3404.4	3199.1	2744.2	2294.6	1826.0	1319.4	968.7	791.9	724.5	703.4	703.4
20°	3285.4	3047.5	2505.1	1975.5	1404.7	921.4	728.6	660.2	634.9	628.7	627.6
22.5°	3174.8	2898.9	2265.0	1635.4	1016.2	699.2	620.2	593.9	589.7	594.9	594.9
25°	3087.5	2768.4	2021.8	1277.4	739.2	585.4	551.8	548.6	564.5	583.4	586.6
27.5°	3022.2	2651.5	1781.7	932.9	581.2	509.6	498.1	511.8	548.6	586.6	593.9
30°	2976.9	2551.4	1494.2	670.7	484.4	446.5	451.7	476.0	531.7	589.7	605.5
32.5°	2956.8	2470.4	1204.6	515.0	413.9	392.8	406.4	438.0	495.9	553.9	572.9
35°	2975.9	2411.4	937.2	427.5	362.2	346.5	362.2	394.9	432.8	461.2	472.8
37.5°	3044.3	2390.3	705.5	379.1	328.6	312.7	325.4	347.5	364.4	374.9	380.1
40°	3188.5	2412.5	552.8	353.8	309.5	291.6	294.8	305.4	316.9	325.4	326.4
42.5°	3418.1	2485.2	491.7	344.3	298.0	274.9	269.5	276.9	289.6	301.2	303.3
45°	3723.5	2606.3	485.5	347.5	292.8	261.2	250.6	258.0	274.9	293.8	297.0
47.5°	4118.4	2797.9	515.0	364.4	295.9	253.8	237.9	245.3	267.5	292.8	297.0
50°	4585.9	3063.2	569.7	389.6	310.7	253.8	232.7	239.1	262.2	290.6	294.8
52.5°	5136.6	3432.8	626.6	414.9	331.7	263.2	234.9	233.7	254.8	281.1	286.4
55°	5744.3	3892.0	681.3	437.0	343.3	275.9	240.1	227.4	244.3	265.4	269.5
57.5°	6459.2	4520.6	777.1	458.1	349.6	285.4	246.4	221.2	230.6	245.3	248.5
60°	7429.1	5444.1	963.5	493.9	361.2	289.6	247.5	214.8	213.8	224.3	225.4
62.5°	8693.8	6525.6	1141.5	536.0	384.3	290.6	243.3	210.6	200.1	203.3	203.3
65°	9593.0	6923.6	1089.9	571.8	405.4	289.6	239.1	207.5	189.6	184.2	184.2
67.5°	9081.2	6115.9	925.6	581.2	407.5	278.0	229.6	200.1	180.0	167.5	167.5
69°	8329.4	5361.0	849.8	564.5	390.7	264.3	219.0	192.7	173.8	159.0	159.0
70°	7716.5	4789.1	803.4	544.4	370.6	252.8	209.6	185.4	167.5	154.8	153.7
72.5°	5761.1	3195.9	686.6	469.6	304.3	213.8	183.2	165.3	150.6	142.2	142.2
75°	3040.1	1601.6	562.3	383.3	234.9	170.6	150.6	139.0	130.5	129.5	128.5
77.5°	996.1	724.5	404.4	288.6	172.7	132.7	120.1	112.6	111.6	115.8	115.8
80°	538.1	432.8	260.1	194.8	120.1	99.0	92.7	91.7	94.7	101.1	101.1
82.5°	261.2	213.8	154.8	120.1	82.1	72.6	72.6	73.8	77.9	85.3	85.3
85°	112.6	101.1	89.5	67.4	50.5	45.3	51.6	56.9	60.0	65.3	67.4
87.5°	53.7	47.4	41.0	26.3	22.1	23.1	27.4	33.7	40.0	44.2	45.3
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)