

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: P197056

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197056
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-SL2-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 1050mA 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: 19517 lumens
Efficiency: N/A
Efficacy: 86.7 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B3 - U0 - G3

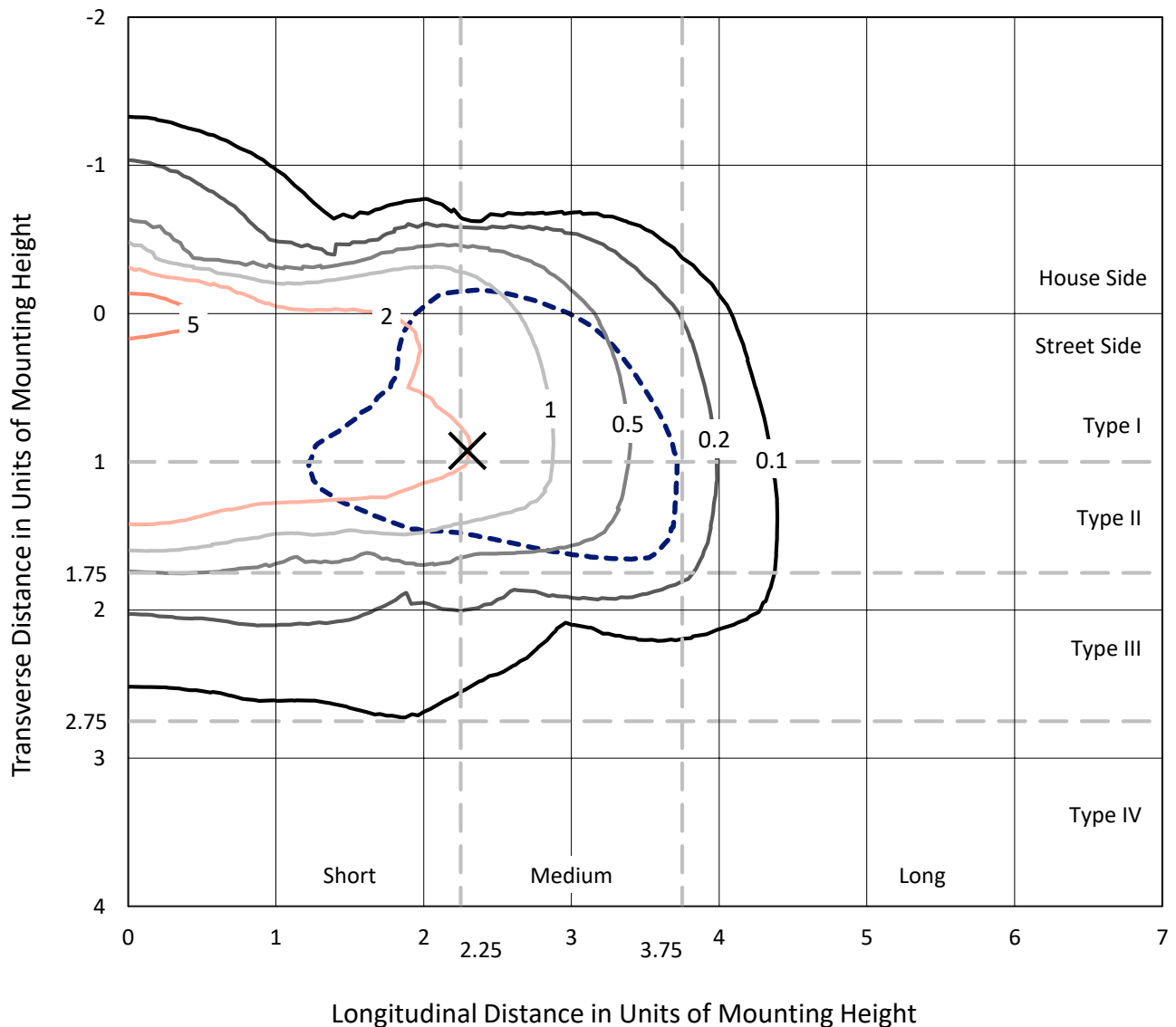
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

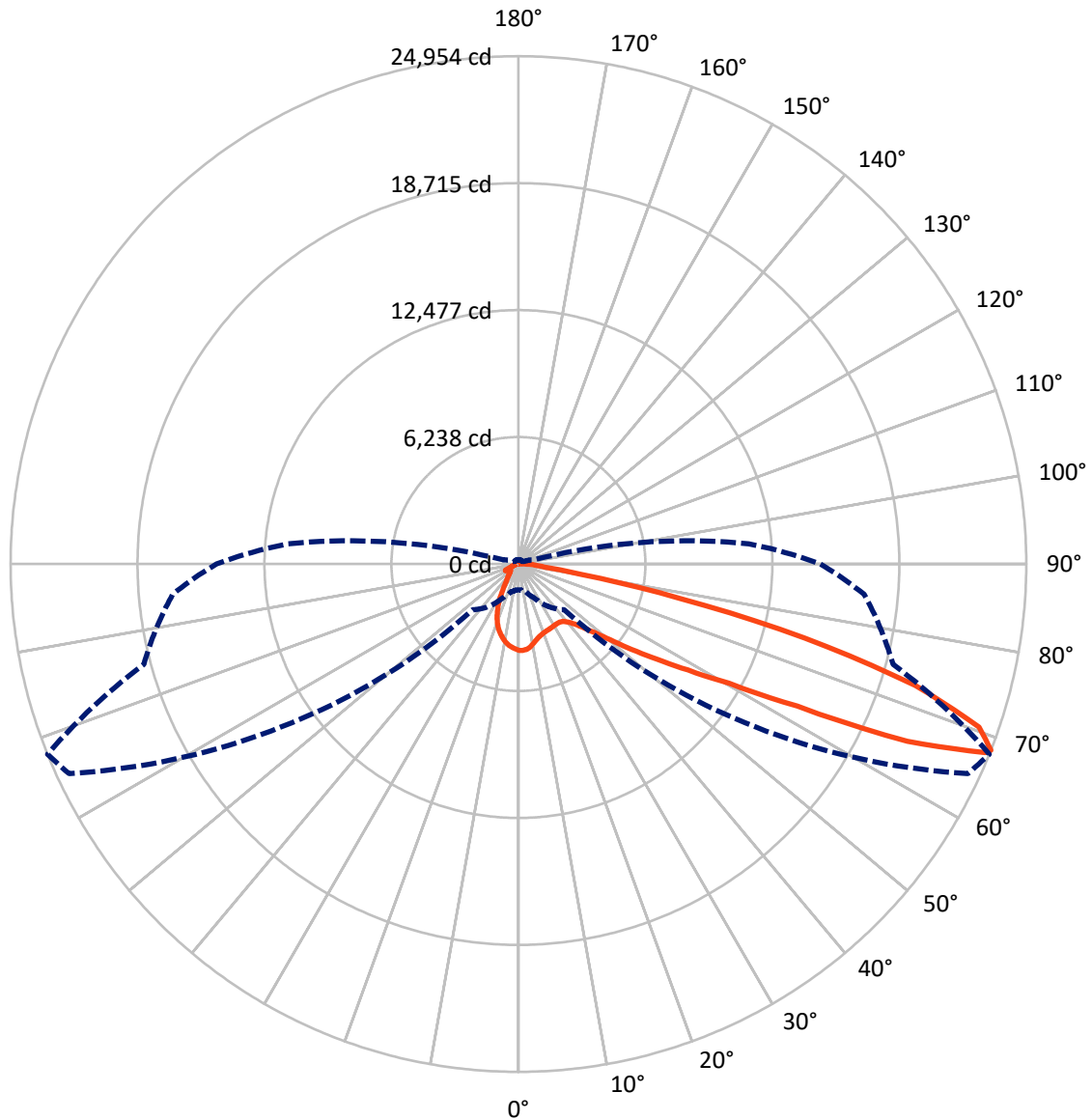
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.8 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	3193.0	0.0	3193.0
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	16324.0	0.0	16324.0
	% Fixture	83.6	0.0	83.6
Total	Lumens	19517.0	0.0	19517.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	363.9	1.9
10°-20°	844.0	4.3
20°-30°	1141.4	5.8
30°-40°	1609.3	8.2
40°-50°	2646.4	13.6
50°-60°	4102.1	21.0
60°-70°	5318.7	27.3
70°-80°	3052.1	15.6
80°-90°	439.1	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°	19517.0	100.0
0°-180°	19517.0	100.0

Coefficient of Utilization



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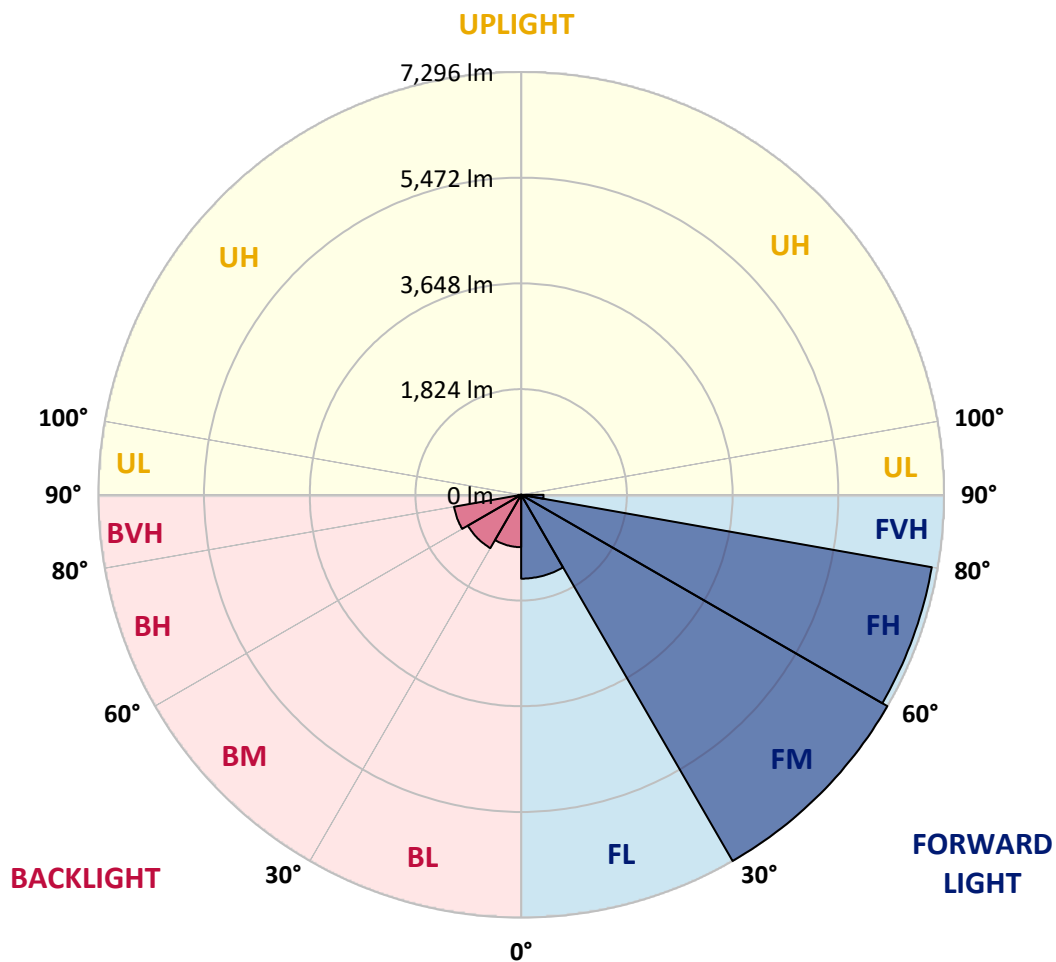
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1446.5	7.4			
FM (30°-60°)	7295.8	37.4			
FH (60°-80°)	7194.9	36.9			G3/7500
FVH (80°-90°)	386.8	2.0			G3/500
BL (0°-30°)	902.7	4.6	B2/1000		
BM (30°-60°)	1062.0	5.4	B2/2500		
BH (60°-80°)	1176.0	6.0	B3/2500		G3/2500
BVH (80°-90°)	52.3	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7
2.5°	4133.3	4166.4	4166.4	4190.6	4212.3	4230.2	4245.5	4245.5	4245.5	4235.3	4226.3
5°	3698.5	3743.1	3749.5	3810.7	3891.0	3989.2	4098.8	4195.7	4214.9	4250.5	4264.6
7.5°	3396.4	3410.4	3434.6	3476.7	3558.3	3679.4	3851.5	4068.2	4120.5	4232.7	4291.3
10°	3182.2	3193.6	3214.0	3256.1	3330.1	3439.7	3609.3	3891.0	3977.7	4176.6	4292.6
12.5°	3025.4	3034.3	3053.4	3091.7	3166.9	3265.0	3438.4	3731.7	3838.8	4120.5	4310.5
15°	2903.0	2918.3	2933.6	2970.5	3047.0	3141.4	3317.3	3615.6	3731.7	4075.9	4343.6
17.5°	2854.5	2862.2	2864.7	2883.8	2952.7	3048.3	3224.2	3534.1	3653.9	4040.2	4369.1
20°	2885.1	2886.4	2860.9	2848.1	2887.7	2975.6	3146.5	3472.9	3595.2	4008.3	4379.3
22.5°	3019.0	3019.0	2952.7	2896.6	2869.8	2924.6	3094.2	3430.8	3563.4	3984.1	4379.3
25°	3274.0	3262.5	3159.2	3048.3	2929.7	2906.8	3061.1	3404.0	3539.2	3971.3	4362.7
27.5°	3609.3	3599.1	3467.8	3303.3	3089.1	2945.0	3049.6	3382.3	3514.9	3952.2	4327.0
30°	4017.2	4008.3	3859.2	3643.7	3327.5	3066.2	3076.4	3367.0	3495.8	3920.3	4267.1
32.5°	4423.9	4418.8	4300.3	4079.7	3656.4	3271.4	3146.5	3364.5	3485.6	3882.1	4194.5
35°	4833.2	4833.2	4760.5	4574.4	4098.8	3579.9	3293.1	3411.7	3504.7	3861.7	4132.0
37.5°	5437.5	5413.3	5278.1	5085.6	4656.0	3980.3	3530.2	3511.1	3578.7	3896.1	4111.6
40°	6373.3	6303.2	5965.3	5641.5	5264.1	4492.8	3877.0	3703.6	3744.4	4013.4	4160.0
42.5°	7352.4	7241.5	6794.0	6276.4	5892.6	5125.1	4332.1	4016.0	4014.7	4240.4	4314.3
45°	8192.6	8135.2	7650.7	6994.2	6610.4	5836.5	4907.1	4480.0	4434.1	4592.2	4611.3
47.5°	8680.9	8642.6	8350.7	7754.0	7462.0	6676.7	5636.4	5123.9	5037.2	5131.5	5102.2
50°	8545.7	8582.7	8498.5	8193.8	8377.4	7857.3	6565.8	6006.1	5841.6	5936.0	5864.6
52.5°	7834.3	7933.8	8009.0	8067.6	8904.0	9436.9	7733.6	7107.6	6971.2	6954.6	6885.8
55°	6553.0	6711.1	6948.3	7379.2	8762.5	10705.4	9773.5	8439.9	8241.0	8136.5	8163.2
57.5°	4459.6	4699.3	5210.6	6030.3	8026.8	11246.0	12789.9	10161.0	9824.5	9452.2	9538.9
60°	2456.8	2656.9	3265.0	4091.2	6347.8	11165.7	15463.4	12958.2	11898.7	10912.0	11090.4
62.5°	1589.8	1633.2	2085.8	2794.6	3896.1	9857.6	16948.7	17633.3	15388.2	12837.1	13088.2
65°	1277.5	1308.1	1529.9	2254.0	2714.3	6341.4	17014.9	22483.0	21002.9	15453.2	15460.8
67.5°	1248.1	1262.2	1390.9	1895.8	2546.0	3452.5	14707.4	24395.4	24738.4	18541.0	17048.1
68°	1266.0	1282.6	1412.6	1837.1	2544.7	3182.2	13593.1	24366.1	24953.8	19057.4	17048.1
70°	1116.8	1137.2	1440.6	1900.9	2436.4	2736.0	9308.1	23072.0	24018.0	20244.3	16176.1
72.5°	583.9	567.3	712.7	1500.6	2742.3	2850.7	4917.3	19275.4	20379.4	18748.8	13975.6
75°	455.1	414.3	399.0	592.8	2412.1	2956.5	2855.8	13700.2	14534.0	13515.3	9341.3
77.5°	428.4	378.6	349.3	350.6	1062.0	3076.4	2310.1	8062.5	8062.5	6447.2	2980.7
80°	344.2	298.3	279.2	318.7	512.5	2835.4	2410.9	3674.3	3133.7	1666.3	821.0
82.5°	226.9	202.7	204.0	258.8	388.8	1893.2	2792.1	1814.2	1362.9	738.2	483.2
85°	144.1	123.7	137.7	181.0	290.7	844.0	2764.0	1260.9	902.6	414.3	241.0
87.5°	72.7	56.1	68.8	94.3	177.2	242.2	2275.7	1125.7	669.3	172.1	131.3
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°	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7	4246.7
2.5°	4226.3	4198.3	4184.3	4161.3	4133.3	4105.2	4086.1	4077.2	4072.1	4074.6	4073.3
5°	4256.9	4220.0	4160.0	4074.6	3986.6	3893.6	3822.2	3767.4	3732.9	3722.7	3720.2
7.5°	4279.9	4226.3	4114.1	3958.6	3808.2	3645.0	3506.0	3395.1	3319.9	3285.4	3284.2
10°	4276.0	4207.2	4030.0	3800.5	3579.9	3340.3	3122.3	2936.1	2801.0	2736.0	2733.4
12.5°	4279.9	4185.5	3926.7	3615.6	3299.5	2956.5	2632.7	2343.3	2141.8	2046.2	2042.4
15°	4295.2	4162.6	3820.9	3409.1	2971.8	2487.3	2024.6	1661.2	1477.6	1415.2	1415.2
17.5°	4293.9	4124.3	3698.5	3169.4	2583.0	1934.0	1382.0	1157.6	1139.8	1197.1	1206.1
20°	4268.4	4063.1	3540.4	2885.1	2126.5	1338.7	937.1	905.2	1048.0	1206.1	1223.9
22.5°	4228.9	3984.1	3358.1	2554.9	1594.9	872.0	722.9	771.3	965.1	1161.4	1189.5
25°	4174.1	3888.5	3149.0	2171.2	1060.7	627.3	603.0	663.0	799.4	930.7	951.1
27.5°	4093.7	3767.4	2920.8	1755.6	677.0	516.3	525.3	567.3	626.0	682.1	693.6
30°	3993.0	3625.8	2672.2	1295.3	513.8	461.5	476.8	502.3	527.8	563.5	571.2
32.5°	3891.0	3481.8	2413.4	889.9	448.8	432.2	447.5	461.5	483.2	507.4	512.5
35°	3799.2	3347.9	2146.9	620.9	420.7	413.1	420.7	429.6	451.3	475.5	478.1
37.5°	3732.9	3238.3	1869.0	490.8	404.1	396.5	400.3	404.1	429.6	465.3	469.2
40°	3724.0	3165.6	1587.3	441.1	391.4	381.2	378.6	381.2	414.3	455.1	459.0
42.5°	3810.7	3169.4	1311.9	420.7	381.2	369.7	359.5	364.6	393.9	425.8	428.4
45°	4016.0	3258.7	1073.5	411.8	372.3	363.3	348.1	350.6	364.6	381.2	383.7
47.5°	4378.0	3453.7	891.2	406.7	364.6	357.0	337.9	330.2	331.5	340.4	340.4
50°	4956.8	3780.1	780.2	401.6	358.2	344.2	322.6	307.3	303.4	308.5	309.8
52.5°	5820.0	4339.8	726.7	391.4	346.8	327.7	303.4	288.1	281.8	286.9	286.9
55°	6986.5	5233.5	701.2	377.4	332.8	307.3	285.6	272.8	267.7	271.6	271.6
57.5°	8316.2	6394.9	744.5	358.2	314.9	285.6	270.3	261.4	257.5	261.4	262.6
60°	9895.9	7914.6	1042.9	334.0	295.8	266.5	257.5	252.4	249.9	253.7	253.7
62.5°	11995.6	9936.6	1614.0	314.9	275.4	248.6	246.1	243.5	241.0	244.8	244.8
65°	14262.4	11776.3	1661.2	303.4	257.5	233.3	234.6	234.6	232.0	235.9	235.9
67.5°	14984.0	11617.0	928.1	289.4	235.9	218.0	223.1	223.1	221.8	225.7	224.4
68°	14831.0	11364.5	808.3	285.6	232.0	214.2	219.3	220.6	219.3	223.1	221.8
70°	13691.3	9977.4	531.6	263.9	215.5	201.4	209.1	210.4	209.1	214.2	212.9
72.5°	11302.1	7483.7	392.7	230.8	195.1	184.9	192.5	193.8	195.1	200.2	198.9
75°	7177.7	4133.3	309.8	196.3	174.7	165.7	173.4	177.2	179.8	187.4	183.6
77.5°	1965.9	1254.5	251.2	167.0	150.4	146.6	151.7	156.8	159.4	168.3	161.9
80°	688.5	554.6	209.1	141.5	124.9	123.7	128.8	133.9	136.4	144.1	136.4
82.5°	418.2	362.1	167.0	110.9	98.2	96.9	103.3	108.4	110.9	110.9	105.8
85°	218.0	191.2	122.4	77.8	67.6	63.7	75.2	81.6	82.9	81.6	77.8
87.5°	122.4	108.4	65.0	37.0	30.6	31.9	39.5	48.4	52.3	51.0	48.4
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)