

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: P195542

Luminaire Tested: **NAV-AF-02-D-UNV-AFL-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195542
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12480 lumens
Efficiency: N/A
Efficacy: 110.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B2 - U0 - G2

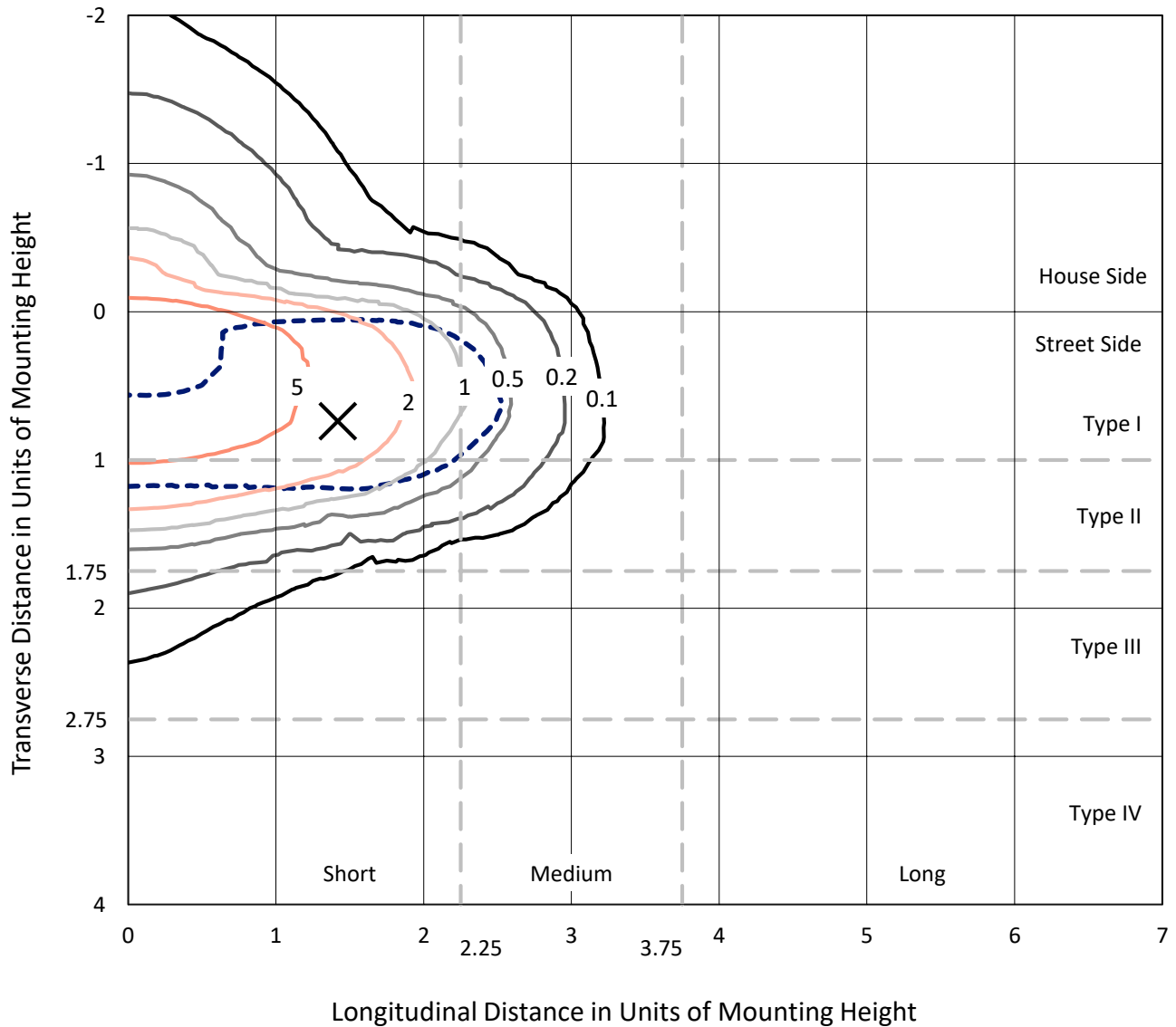
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

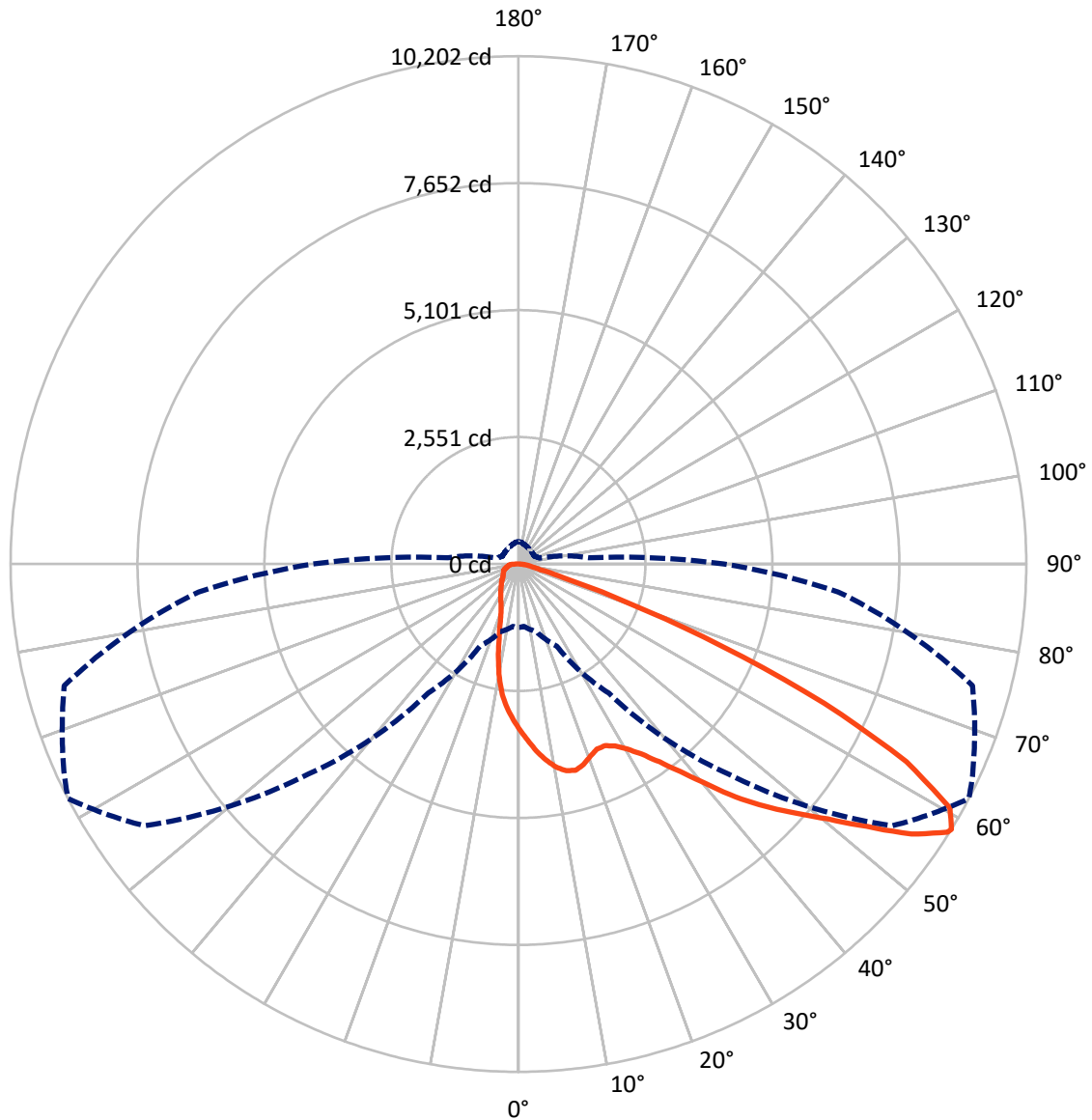
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.7 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
House Side	Lumens	1916.1	0.0	1916.1
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	10563.9	0.0	10563.9
	% Fixture	84.6	0.0	84.6
Total	Lumens	12480.0	0.0	12480.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	297.8	2.4
10°-20°	751.7	6.0
20°-30°	1218.1	9.8
30°-40°	1944.9	15.6
40°-50°	2828.9	22.7
50°-60°	2960.2	23.7
60°-70°	1804.6	14.5
70°-80°	504.7	4.0
80°-90°	169.2	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°	12480.0	100.0
0°-180°	12480.0	100.0



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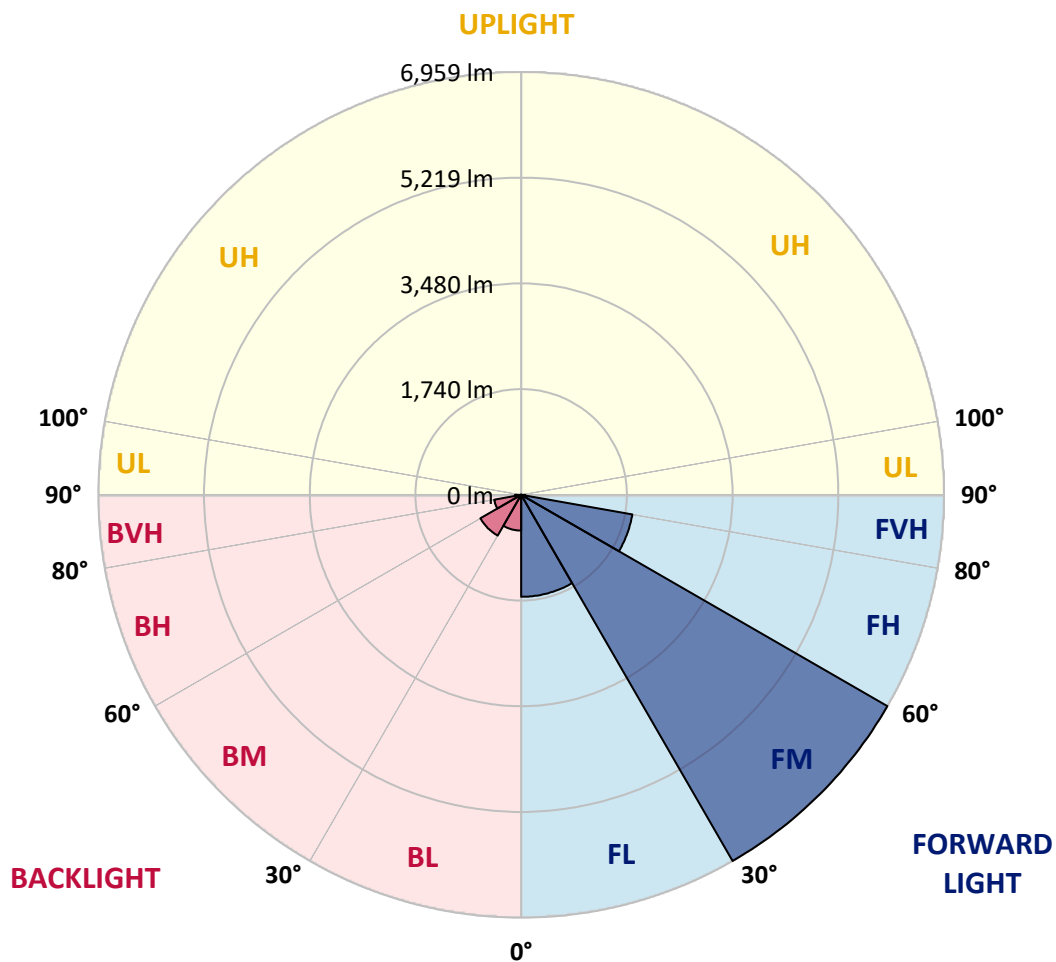
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1678.6	13.5			
FM (30°-60°)	6959.0	55.8			
FH (60°-80°)	1858.2	14.9			G2/5000
FVH (80°-90°)	68.1	0.5			G1/100
BL (0°-30°)	589.0	4.7	B2/1000		
BM (30°-60°)	774.9	6.2	B1/1000		
BH (60°-80°)	451.1	3.6	B1/500		G1/500
BVH (80°-90°)	101.1	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1
2.5°	3782.1	3779.8	3747.8	3726.7	3701.8	3644.1	3586.4	3543.5	3521.6	3438.2	3357.0
5°	4094.9	4085.5	4067.6	4045.0	4012.2	3939.7	3848.4	3769.6	3738.4	3590.3	3441.3
7.5°	3929.5	3944.4	3999.7	4062.1	4127.7	4132.3	4067.6	3974.0	3939.7	3741.6	3523.2
10°	3471.7	3465.5	3534.9	3656.6	3872.6	4086.3	4193.2	4147.2	4111.3	3885.1	3605.1
12.5°	3332.9	3331.3	3343.0	3374.2	3509.9	3803.2	4161.2	4261.0	4248.6	4037.2	3692.4
15°	3375.0	3376.5	3375.8	3379.7	3417.1	3556.7	3982.6	4299.3	4338.3	4187.7	3781.3
17.5°	3509.9	3504.5	3487.3	3468.6	3474.0	3524.0	3789.9	4233.7	4350.7	4321.9	3856.2
20°	3718.2	3718.2	3672.1	3619.9	3585.6	3596.5	3709.6	4121.4	4293.0	4435.8	3912.4
22.5°	3979.5	3983.4	3915.5	3820.3	3742.3	3712.7	3755.6	4038.0	4222.8	4541.0	3962.3
25°	4303.9	4303.2	4204.1	4067.6	3944.4	3873.4	3872.6	4041.9	4201.0	4664.3	4014.6
27.5°	4705.6	4669.0	4553.5	4359.3	4185.4	4077.0	4027.8	4140.1	4247.0	4815.6	4084.8
30°	5158.8	5121.4	4970.0	4720.4	4484.9	4326.6	4245.4	4310.2	4387.4	5008.3	4190.8
32.5°	5607.3	5615.9	5438.0	5156.5	4853.8	4630.7	4510.6	4550.4	4604.2	5243.8	4334.4
35°	6264.0	6263.2	6030.8	5679.0	5319.5	5010.6	4858.5	4879.6	4928.7	5576.1	4535.6
37.5°	6753.9	6746.1	6596.3	6285.1	5880.3	5509.8	5289.8	5292.9	5335.1	5993.4	4800.8
40°	6803.8	6802.2	6801.4	6757.0	6480.1	6130.6	5855.3	5798.4	5815.5	6436.4	5082.4
42.5°	6422.4	6479.3	6643.1	6894.3	6971.5	6788.2	6527.7	6400.5	6363.1	6944.9	5380.3
45°	5878.7	5907.6	6194.6	6759.3	7218.7	7405.9	7210.1	6941.8	6877.9	7439.5	5622.9
47.5°	5626.0	5613.5	5779.7	6395.1	7194.5	7897.3	7911.3	7471.4	7363.0	7866.1	5829.6
50°	5083.9	5067.5	5277.4	5859.2	6930.9	8141.4	8631.3	8048.6	7848.2	8271.7	6016.8
52.5°	4003.6	3988.0	4269.6	5019.2	6341.2	8050.2	9238.1	8756.8	8415.2	8662.5	6191.5
55°	2605.1	2606.7	2875.0	3648.0	5131.5	7518.2	9522.8	9575.0	9192.1	9053.2	6332.7
57.5°	1434.4	1421.1	1612.2	2087.2	3530.2	6310.0	9285.7	10164.7	9965.0	9388.6	6434.8
58°	1275.3	1259.7	1407.1	1816.6	3165.2	5969.2	9166.3	10202.1	10064.1	9444.0	6449.7
60°	908.7	882.2	859.5	1024.1	1823.6	4303.9	8370.8	9959.6	10093.0	9554.8	6435.6
62.5°	765.9	735.5	654.4	648.2	858.8	2105.2	6619.7	8746.7	9120.3	9299.7	6209.4
65°	711.3	680.9	574.1	535.8	582.6	908.7	4093.3	6753.9	7253.0	8412.9	5640.0
67.5°	672.3	636.5	521.8	471.9	481.2	543.6	1737.0	4417.0	4995.8	6560.4	4524.7
70°	637.2	597.5	480.5	422.7	414.9	413.4	678.6	2306.4	2864.1	4293.0	3031.0
72.5°	597.5	558.5	443.8	382.2	365.0	335.4	407.9	953.1	1306.5	2104.4	1389.1
75°	539.7	507.8	403.3	348.7	319.0	272.2	301.1	457.1	563.1	805.7	645.0
77.5°	475.0	449.3	361.9	320.6	280.8	222.3	230.1	309.7	347.9	453.9	373.6
80°	336.2	345.5	315.9	282.4	247.3	179.4	177.1	227.0	249.6	305.0	251.2
82.5°	231.7	238.7	257.4	223.1	199.7	139.6	130.3	157.6	169.3	184.1	121.7
85°	165.4	160.7	178.6	159.9	146.6	88.9	83.5	99.8	106.9	112.3	58.5
87.5°	100.6	99.8	103.0	82.7	76.4	45.2	41.3	47.6	50.7	49.1	28.1
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°	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1	3332.1
2.5°	3326.6	3288.4	3204.9	3137.9	3065.3	3009.9	2954.6	2923.4	2889.0	2869.5	2867.2
5°	3363.3	3285.3	3107.4	2942.1	2772.1	2619.2	2469.4	2358.7	2268.2	2216.7	2213.6
7.5°	3403.8	3281.4	3006.8	2720.6	2417.9	2116.9	1850.9	1662.9	1542.0	1485.9	1482.0
10°	3435.0	3265.0	2884.4	2439.0	1959.3	1561.5	1319.7	1209.0	1172.3	1163.0	1161.4
12.5°	3472.5	3253.3	2729.9	2077.9	1497.6	1188.7	1115.4	1108.4	1116.2	1120.8	1121.6
15°	3507.6	3230.7	2521.7	1677.7	1172.3	1062.3	1063.9	1078.7	1094.3	1101.3	1102.1
17.5°	3524.0	3175.3	2247.9	1322.1	1025.7	1005.4	1023.3	1042.8	1056.9	1062.3	1062.3
20°	3524.0	3086.4	1930.5	1070.9	949.2	953.1	975.0	989.8	992.9	988.2	985.9
22.5°	3509.1	2976.4	1621.6	934.4	886.8	901.7	918.8	908.7	872.0	843.9	838.5
25°	3495.9	2846.2	1324.4	851.0	832.2	851.7	844.7	775.3	719.1	690.3	685.6
27.5°	3474.0	2688.6	1076.4	782.3	779.2	794.8	725.4	658.3	630.2	614.6	611.5
30°	3468.6	2517.8	900.9	721.5	726.9	705.1	625.5	603.7	597.5	588.9	585.0
32.5°	3486.5	2347.0	790.9	671.6	677.0	605.3	574.8	578.0	577.2	566.3	562.4
35°	3535.7	2180.8	720.7	626.3	610.7	542.1	546.0	555.3	555.3	542.1	537.4
37.5°	3621.5	2026.4	676.2	588.1	534.3	509.3	519.5	531.9	531.9	522.6	518.7
40°	3712.7	1875.9	642.7	557.7	485.9	486.7	496.8	506.2	510.1	511.7	508.5
42.5°	3795.4	1719.9	606.8	524.9	464.1	469.5	474.2	481.2	497.6	508.5	507.0
45°	3843.7	1563.1	567.8	484.4	449.3	451.6	450.0	462.5	482.0	498.4	498.4
47.5°	3888.2	1434.4	535.8	443.8	434.4	434.4	429.8	442.2	460.2	479.7	481.2
50°	3930.3	1350.9	513.2	412.6	415.7	413.4	411.8	423.5	447.7	471.1	475.0
52.5°	3973.2	1322.8	492.9	390.0	396.2	393.1	394.7	411.0	438.3	462.5	466.4
55°	4033.3	1340.8	471.9	374.4	377.5	376.7	383.0	401.7	425.9	450.0	451.6
57.5°	4107.4	1406.3	453.9	362.7	359.6	364.3	374.4	392.3	415.7	444.6	446.9
58°	4122.2	1421.9	450.8	359.6	355.7	362.7	372.8	390.0	414.2	444.6	446.9
60°	4144.8	1477.3	443.0	353.3	342.4	354.9	367.4	384.5	411.0	448.5	453.2
62.5°	4035.6	1488.2	440.7	346.3	328.4	344.0	358.8	378.3	407.9	461.7	471.9
65°	3657.3	1375.9	424.3	334.6	316.7	335.4	351.0	373.6	417.3	501.5	506.2
67.5°	2935.8	1142.7	384.5	316.7	303.4	325.3	344.8	373.6	421.2	507.8	510.9
70°	2018.6	858.8	334.6	297.2	287.8	312.8	342.4	382.2	407.9	480.5	471.1
72.5°	1054.5	597.5	293.3	274.6	269.1	301.9	365.0	373.6	392.3	448.5	439.1
75°	531.2	406.4	258.2	248.8	248.0	298.0	408.7	359.6	376.0	422.0	442.2
77.5°	313.6	318.2	230.1	224.6	228.5	290.9	409.5	345.5	357.2	388.4	410.3
80°	214.5	262.9	208.3	206.7	209.8	267.5	377.5	328.4	335.4	367.4	390.8
82.5°	120.9	145.1	182.5	192.7	191.1	219.2	326.0	298.7	307.3	434.4	459.4
85°	58.5	87.4	152.9	180.2	163.0	145.9	265.2	265.2	267.5	311.2	315.1
87.5°	21.8	39.0	103.0	142.7	113.9	87.4	180.2	188.0	209.0	215.3	220.0
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)