

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: P196011

Luminaire Tested: **NAV-AF-03-D-UNV-AFL-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196011  
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-03-D-UNV-AFL-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12509.7 lumens  
Efficiency: N/A  
Efficacy: 130.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short - Full Cutoff  
BUG Rating: B2 - U0 - G2

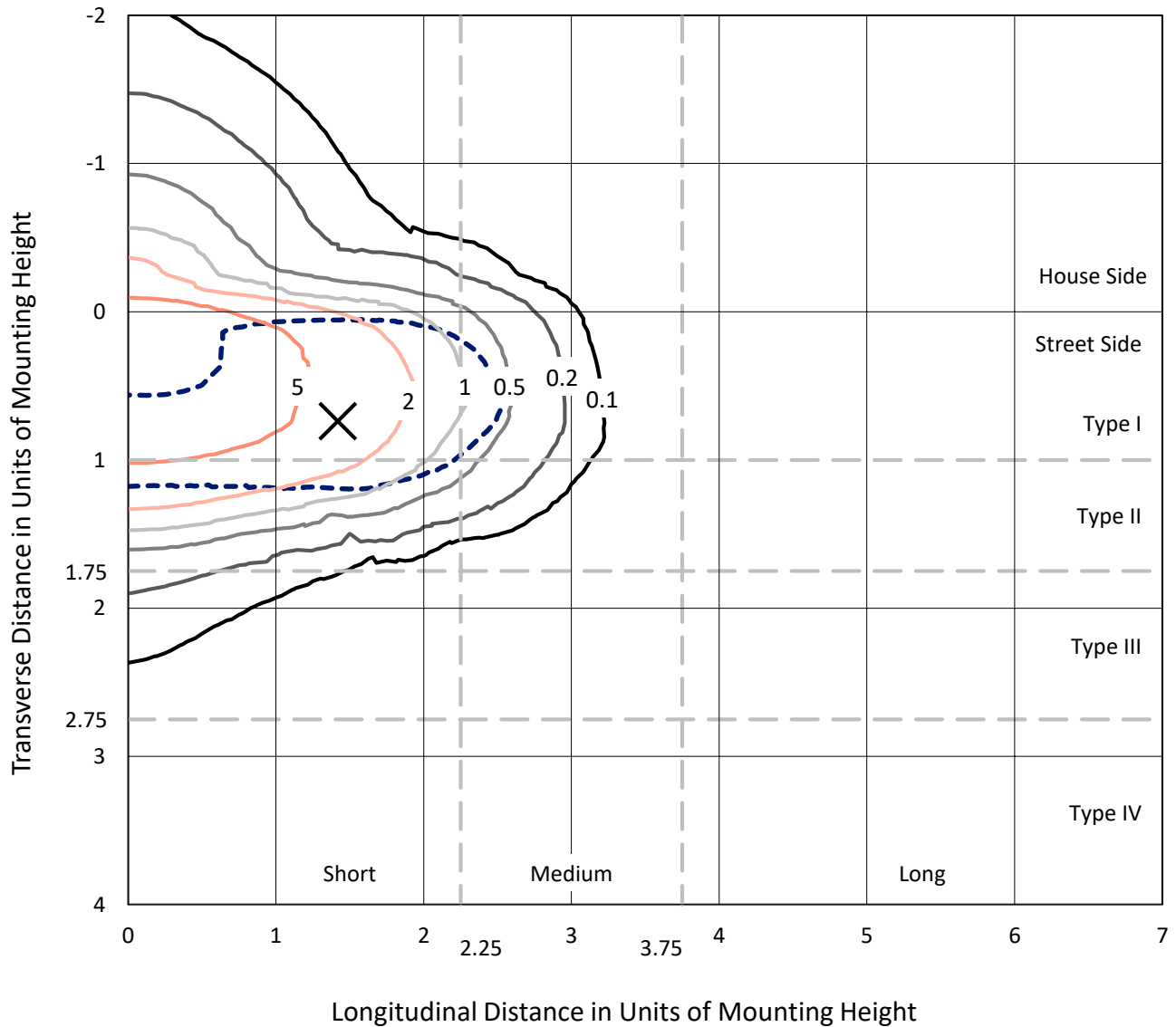
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

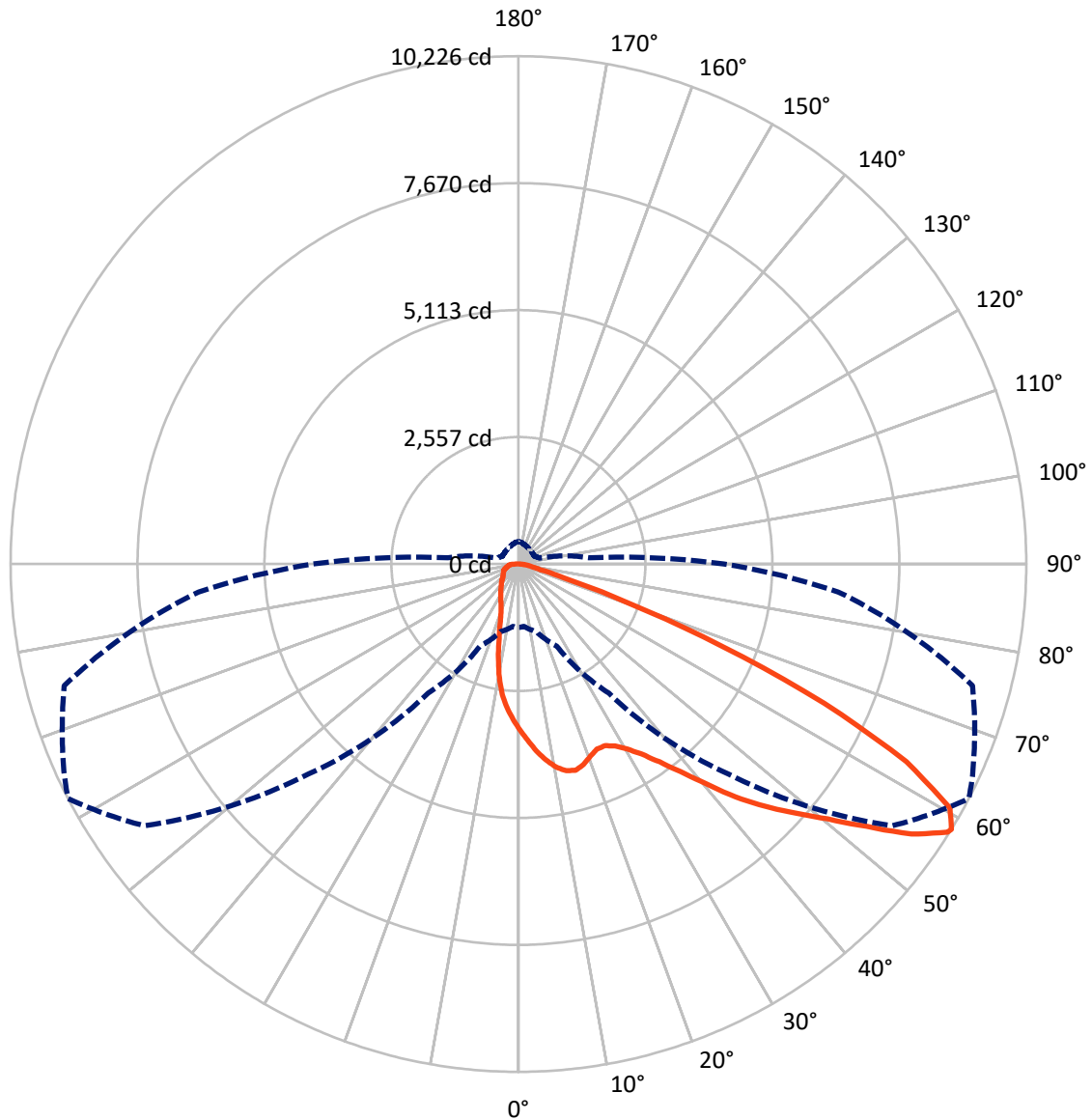
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 9.8 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	1920.7	0.0	1920.7
	% Fixture	15.4	0.0	15.4
<b>Street Side</b>	Lumens	10588.9	0.0	10588.9
	% Fixture	84.6	0.0	84.6
<b>Total</b>	Lumens	12509.7	0.0	12509.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	298.5	2.4
10°-20°	753.4	6.0
20°-30°	1221.0	9.8
30°-40°	1949.5	15.6
40°-50°	2835.6	22.7
50°-60°	2967.2	23.7
60°-70°	1808.9	14.5
70°-80°	505.9	4.0
80°-90°	169.6	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°	12509.7	100.0
0°-180°	12509.7	100.0



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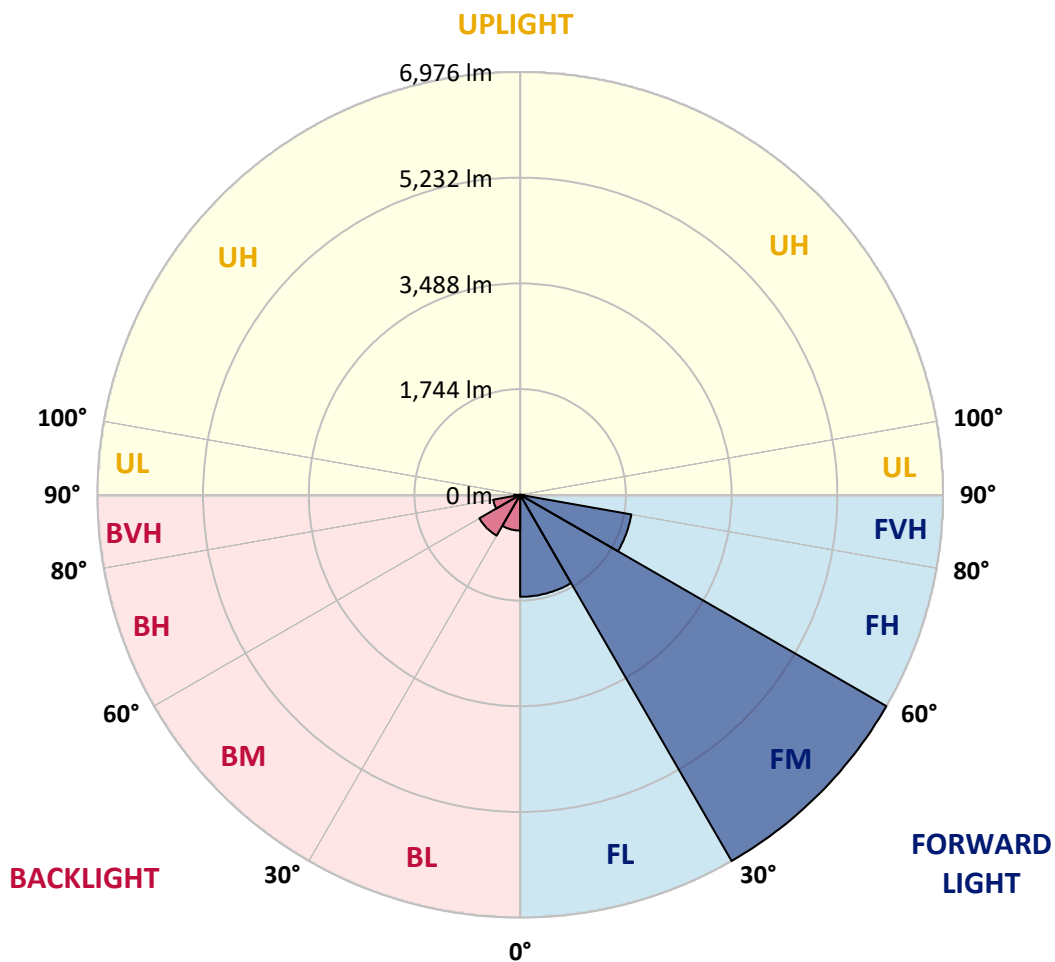
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1682.6	13.5			
FM	(30°-60°)	6975.5	55.8			
FH	(60°-80°)	1862.6	14.9			G2/5000
FVH	(80°-90°)	68.2	0.5			G1/100
BL	(0°-30°)	590.4	4.7	B2/1000		
BM	(30°-60°)	776.8	6.2	B1/1000		
BH	(60°-80°)	452.2	3.6	B1/500		G1/500
BVH	(80°-90°)	101.4	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°	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0
2.5°	3791.2	3788.8	3756.7	3735.6	3710.5	3652.8	3594.9	3551.9	3530.0	3446.3	3365.0
5°	4104.6	4095.3	4077.3	4054.6	4021.7	3949.0	3857.5	3778.6	3747.4	3598.7	3449.5
7.5°	3938.9	3953.7	4009.3	4071.8	4137.4	4142.1	4077.3	3983.5	3949.0	3750.4	3531.5
10°	3480.0	3473.7	3543.3	3665.2	3881.8	4096.0	4203.1	4157.0	4121.1	3894.3	3613.7
12.5°	3340.8	3339.2	3351.0	3382.2	3518.2	3812.2	4171.1	4271.1	4258.6	4046.8	3701.2
15°	3383.0	3384.5	3383.8	3387.7	3425.2	3565.2	3992.1	4309.5	4348.6	4197.7	3790.3
17.5°	3518.2	3512.8	3495.6	3476.8	3482.3	3532.4	3798.9	4243.8	4361.0	4332.2	3865.4
20°	3727.0	3727.0	3680.9	3628.5	3594.1	3605.1	3718.4	4131.2	4303.2	4446.3	3921.7
22.5°	3988.9	3992.8	3924.9	3829.4	3751.3	3721.5	3764.6	4047.5	4232.9	4551.8	3971.7
25°	4314.2	4313.4	4214.0	4077.3	3953.7	3882.6	3881.8	4051.5	4211.0	4675.4	4024.1
27.5°	4716.8	4680.1	4564.3	4369.6	4195.3	4086.7	4037.4	4150.0	4257.1	4827.0	4094.5
30°	5171.0	5133.6	4981.9	4731.7	4495.6	4336.8	4255.6	4320.4	4397.9	5020.1	4200.8
32.5°	5620.6	5629.2	5451.0	5168.7	4865.4	4641.7	4521.3	4561.2	4615.1	5256.2	4344.7
35°	6278.9	6278.2	6045.1	5692.5	5332.1	5022.5	4870.1	4891.1	4940.4	5589.3	4546.4
37.5°	6769.9	6762.1	6611.9	6300.0	5894.2	5522.9	5302.4	5305.5	5347.8	6007.6	4812.2
40°	6819.9	6818.4	6817.6	6773.1	6495.5	6145.2	5869.3	5812.2	5829.4	6451.8	5094.4
42.5°	6437.6	6494.7	6658.9	6910.6	6988.1	6804.3	6543.2	6415.7	6378.2	6961.5	5393.1
45°	5892.7	5921.7	6209.3	6775.4	7235.8	7423.6	7227.2	6958.3	6894.2	7457.1	5636.3
47.5°	5639.4	5626.8	5793.4	6410.2	7211.6	7916.1	7930.1	7489.2	7380.5	7884.8	5843.4
50°	5096.0	5079.6	5289.9	5873.2	6947.4	8160.8	8651.8	8067.7	7866.8	8291.3	6031.1
52.5°	4013.1	3997.5	4279.7	5031.1	6356.3	8069.3	9260.1	8777.6	8435.3	8683.0	6206.2
55°	2611.3	2612.9	2881.9	3656.6	5143.7	7536.1	9545.5	9597.8	9213.9	9074.8	6347.7
57.5°	1437.8	1424.5	1616.1	2092.1	3538.6	6325.0	9307.7	10188.9	9988.7	9410.9	6450.1
58°	1278.3	1262.6	1410.4	1820.9	3172.7	5983.3	9188.1	10226.4	10088.0	9466.5	6464.9
60°	910.8	884.2	861.6	1026.5	1827.9	4314.2	8390.7	9983.3	10117.0	9577.5	6450.9
62.5°	767.7	737.2	655.9	649.7	860.8	2110.1	6635.5	8767.5	9142.0	9321.8	6224.1
65°	713.0	682.5	575.4	537.2	584.0	910.8	4103.1	6769.9	7270.3	8432.9	5653.4
67.5°	673.9	638.0	523.0	473.0	482.4	544.9	1741.2	4427.5	5007.7	6576.0	4535.5
70°	638.7	598.8	481.6	423.7	415.9	414.4	680.2	2311.9	2870.9	4303.2	3038.2
72.5°	598.8	559.8	444.9	383.1	365.9	336.1	408.9	955.4	1309.6	2109.4	1392.4
75°	541.0	509.0	404.2	349.4	319.8	272.8	301.8	458.2	564.5	807.6	646.6
77.5°	476.2	450.3	362.7	321.3	281.4	222.8	230.7	310.4	348.7	455.0	374.5
80°	337.0	346.4	316.6	283.1	247.9	179.8	177.5	227.5	250.2	305.7	251.7
82.5°	232.2	239.3	258.0	223.6	200.2	139.9	130.5	157.9	169.7	184.5	121.9
85°	165.7	161.0	179.0	160.3	147.0	89.1	83.7	100.0	107.1	112.6	58.6
87.5°	100.9	100.0	103.2	82.9	76.6	45.3	41.4	47.7	50.8	49.3	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°	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0	3340.0
2.5°	3334.5	3296.3	3212.6	3145.4	3072.6	3017.1	2961.5	2930.3	2895.9	2876.3	2874.0
5°	3371.2	3293.1	3114.8	2949.1	2778.6	2625.4	2475.3	2364.2	2273.6	2222.0	2218.9
7.5°	3412.0	3289.2	3014.0	2727.1	2423.7	2121.9	1855.3	1666.9	1545.7	1489.4	1485.5
10°	3443.2	3272.7	2891.3	2444.8	1964.0	1565.2	1322.9	1211.9	1175.1	1165.8	1164.1
12.5°	3480.7	3261.1	2736.4	2082.8	1501.1	1191.5	1118.0	1111.0	1118.8	1123.5	1124.3
15°	3515.9	3238.4	2527.7	1681.7	1175.1	1064.9	1066.4	1081.3	1096.9	1104.0	1104.7
17.5°	3532.4	3182.8	2253.3	1325.2	1028.1	1007.8	1025.8	1045.4	1059.4	1064.9	1064.9
20°	3532.4	3093.7	1935.0	1073.5	951.4	955.4	977.3	992.2	995.2	990.6	988.3
22.5°	3517.5	2983.4	1625.5	936.6	888.9	903.8	921.0	910.8	874.1	846.0	840.5
25°	3504.2	2852.9	1327.6	852.9	834.2	853.8	846.7	777.1	720.9	691.9	687.2
27.5°	3482.3	2695.0	1078.9	784.2	781.0	796.7	727.1	659.9	631.7	616.1	613.0
30°	3476.8	2523.7	903.1	723.2	728.6	706.8	627.1	605.2	598.8	590.2	586.4
32.5°	3494.8	2352.6	792.8	673.2	678.6	606.7	576.2	579.3	578.6	567.6	563.7
35°	3544.0	2186.0	722.4	627.8	612.1	543.4	547.3	556.7	556.7	543.4	538.7
37.5°	3630.0	2031.2	677.8	589.5	535.5	510.6	520.7	533.2	533.2	523.9	520.0
40°	3721.5	1880.3	644.3	559.0	487.1	487.8	498.1	507.4	511.3	512.9	509.7
42.5°	3804.5	1724.0	608.2	526.2	465.2	470.7	475.4	482.4	498.8	509.7	508.2
45°	3852.8	1566.8	569.2	485.5	450.3	452.7	451.1	463.6	483.1	499.6	499.6
47.5°	3897.4	1437.8	537.2	444.9	435.5	435.5	430.8	443.3	461.2	480.8	482.4
50°	3939.7	1354.2	514.4	413.6	416.8	414.4	412.8	424.5	448.8	472.2	476.2
52.5°	3982.7	1325.9	494.1	390.9	397.2	394.0	395.6	412.0	439.4	463.6	467.5
55°	4042.9	1344.0	473.0	375.3	378.4	377.7	383.9	402.6	426.9	451.1	452.7
57.5°	4117.2	1409.6	455.0	363.6	360.4	365.1	375.3	393.2	416.8	445.6	448.0
58°	4132.0	1425.3	451.9	360.4	356.5	363.6	373.7	390.9	415.1	445.6	448.0
60°	4154.7	1480.8	444.1	354.1	343.2	355.8	368.3	385.4	412.0	449.6	454.3
62.5°	4045.3	1491.8	441.7	347.1	329.2	344.8	359.7	379.2	408.9	462.9	473.0
65°	3666.1	1379.1	425.3	335.4	317.4	336.1	351.8	374.5	418.3	502.7	507.4
67.5°	2942.8	1145.4	385.4	317.4	304.1	326.0	345.6	374.5	422.2	509.0	512.1
70°	2023.4	860.8	335.4	297.9	288.5	313.5	343.2	383.1	408.9	481.6	472.2
72.5°	1057.0	598.8	294.0	275.2	269.8	302.6	365.9	374.5	393.2	449.6	440.2
75°	532.4	407.3	258.8	249.4	248.6	298.7	409.7	360.4	376.9	423.0	443.3
77.5°	314.3	319.0	230.7	225.2	229.0	291.6	410.5	346.4	358.0	389.3	411.2
80°	215.0	263.5	208.8	207.1	210.3	268.2	378.4	329.2	336.1	368.3	391.7
82.5°	121.2	145.5	182.9	193.1	191.6	219.7	326.8	299.4	308.0	435.5	460.5
85°	58.6	87.6	153.2	180.7	163.4	146.2	265.9	265.9	268.2	312.0	315.9
87.5°	21.9	39.1	103.2	143.1	114.2	87.6	180.7	188.4	209.5	215.7	220.4
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)