

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: P196199

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196199
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-SL4-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 32190.2 lumens
Efficiency: N/A
Efficacy: 100.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B2 - U0 - G5

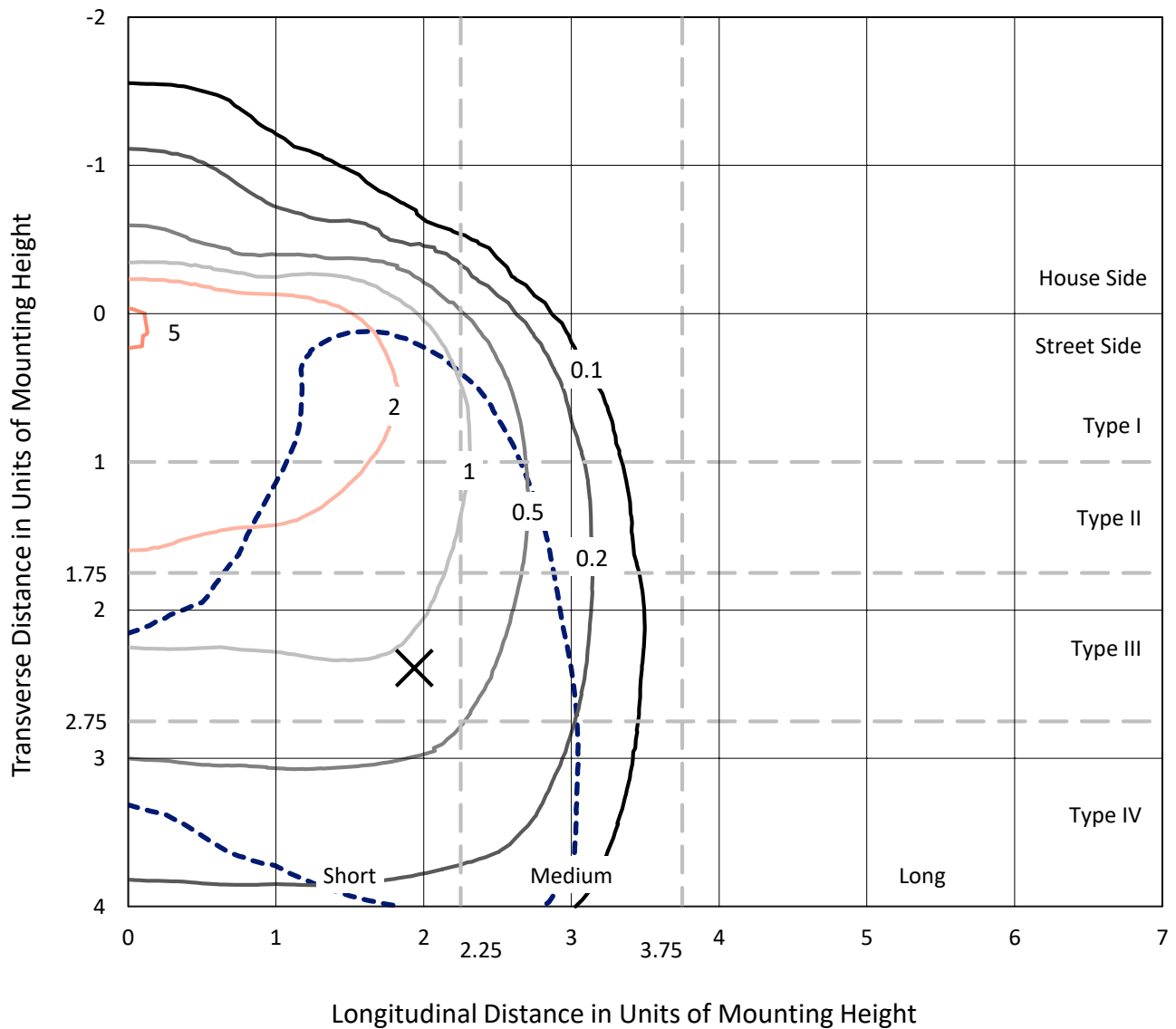
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

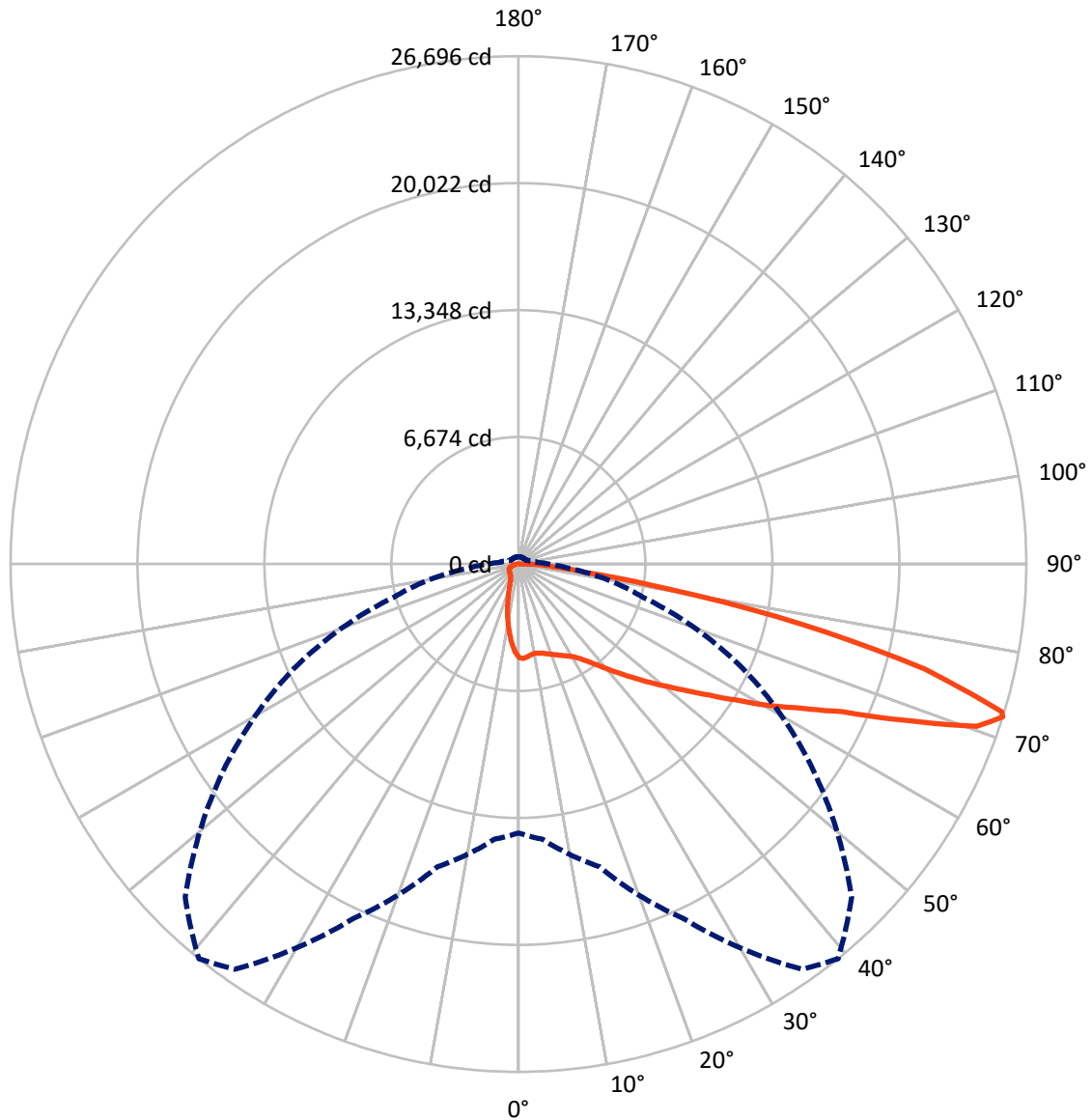
× Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 5.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3691.0	0.0	3691.0
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	28499.2	0.0	28499.2
	% Fixture	88.5	0.0	88.5
Total	Lumens	32190.2	0.0	32190.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	422.5	1.3
10°-20°	1061.6	3.3
20°-30°	1654.3	5.1
30°-40°	2547.2	7.9
40°-50°	4152.4	12.9
50°-60°	6452.4	20.0
60°-70°	8636.3	26.8
70°-80°	6210.8	19.3
80°-90°	1052.9	3.3
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°	32190.2	100.0
0°-180°	32190.2	100.0



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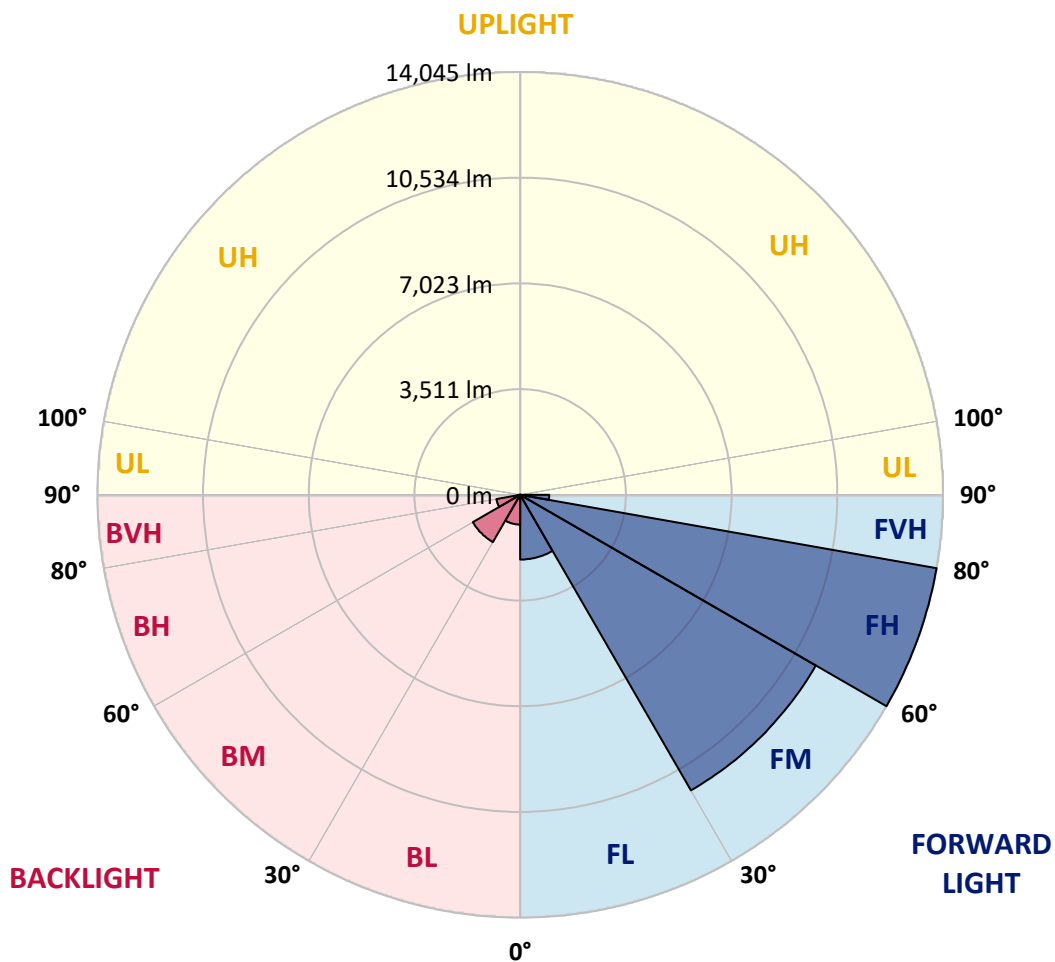
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2150.2	6.7			
FM	(30°-60°)	11338.0	35.2			
FH	(60°-80°)	14045.1	43.6			G5
FVH	(80°-90°)	965.8	3.0			G5
BL	(0°-30°)	988.1	3.1	B2/1000		
BM	(30°-60°)	1814.0	5.6	B2/2500		
BH	(60°-80°)	801.9	2.5	B2/1000		G2/1000
BVH	(80°-90°)	87.0	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G5

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0
2.5°	5021.9	5024.0	5017.6	4998.1	4980.8	4972.3	4957.1	4931.1	4896.6	4872.8	4853.4
5°	4974.4	4980.8	4976.6	4944.1	4913.8	4896.6	4872.8	4836.1	4790.7	4771.2	4725.8
7.5°	4937.7	4942.0	4929.0	4892.3	4834.0	4812.3	4769.1	4721.5	4680.5	4652.4	4598.4
10°	4911.7	4916.0	4905.3	4868.5	4803.7	4777.7	4725.8	4674.0	4620.0	4585.4	4524.9
12.5°	4875.0	4883.6	4883.6	4866.3	4823.1	4805.8	4754.0	4697.8	4648.1	4611.4	4535.7
15°	4868.5	4879.3	4898.7	4896.6	4883.6	4870.7	4829.6	4773.4	4730.2	4687.0	4594.1
17.5°	4922.5	4946.3	4985.1	4998.1	4989.5	4961.4	4913.8	4862.0	4814.4	4773.4	4658.9
20°	5058.6	5071.6	5130.0	5155.9	5112.7	5071.6	5009.0	4942.0	4898.7	4866.3	4719.4
22.5°	5263.9	5281.2	5328.8	5330.9	5240.2	5190.5	5110.5	5028.4	4987.3	4974.4	4801.5
25°	5592.4	5588.1	5601.1	5547.1	5382.8	5324.5	5227.2	5132.1	5104.0	5130.0	4922.5
27.5°	5985.7	5974.9	5933.8	5793.4	5544.8	5469.2	5352.5	5268.3	5268.3	5328.8	5086.7
30°	6439.5	6428.6	6294.6	6059.1	5737.1	5650.7	5527.5	5438.9	5484.3	5601.1	5309.3
32.5°	6919.1	6880.3	6692.2	6376.8	6011.6	5916.5	5797.7	5706.9	5793.4	5992.1	5629.1
35°	7370.8	7349.2	7118.0	6744.1	6366.0	6286.0	6203.9	6091.6	6229.9	6538.8	6080.7
37.5°	7837.5	7820.3	7537.2	7139.6	6798.1	6744.1	6675.0	6597.2	6819.8	7226.0	6692.2
40°	8358.3	8323.8	7967.2	7569.6	7301.6	7275.7	7239.0	7217.3	7576.1	8181.2	7465.9
42.5°	8948.3	8881.3	8421.0	8042.8	7850.5	7872.1	7852.7	7939.1	8487.9	9283.2	8386.5
45°	9622.5	9488.5	8872.6	8546.3	8457.8	8544.2	8585.2	8805.7	9566.2	10555.9	9415.0
47.5°	10253.4	10080.6	9367.5	9093.0	9142.7	9291.9	9408.5	9797.5	10748.2	11813.5	10465.2
50°	10834.7	10640.2	9896.8	9659.2	9901.2	10113.0	10355.0	10903.8	12005.9	13108.0	11428.9
52.5°	11264.7	11124.3	10426.3	10277.2	10772.1	11053.0	11439.8	12133.4	13276.5	14341.9	12289.0
55°	11597.5	11521.9	10942.7	10986.0	11757.4	12159.3	12628.2	13425.6	14620.6	15448.2	12980.4
57.5°	11982.1	11926.0	11532.6	11841.7	12980.4	13486.1	14039.3	14925.3	15899.8	16422.8	13522.9
60°	12388.3	12388.3	12189.6	12872.4	14510.4	15089.4	15640.5	16329.9	17174.7	17300.0	13743.2
62.5°	12695.2	12775.2	12846.5	13970.1	15962.5	16682.1	17287.2	17948.4	18495.1	17732.2	13224.6
65°	13140.4	13311.0	13713.0	15238.6	17760.4	18702.5	19519.3	20074.7	19564.7	17388.6	11532.6
67.5°	13905.3	14158.2	15013.8	17127.2	20513.3	21924.4	22717.4	21758.0	19355.0	15225.6	8833.7
70°	14594.6	14951.2	16414.2	19523.6	24091.7	25556.9	25191.7	21366.9	16857.1	11161.0	5434.6
72°	14136.6	14525.5	16478.9	20567.3	26004.1	26695.6	24770.2	18935.8	13025.8	6811.1	2679.5
72.5°	13836.1	14240.3	16269.3	20541.5	26056.0	26550.9	24184.7	17970.0	11824.4	5959.7	2167.3
75°	11558.6	11904.4	13989.6	18205.5	22961.6	22054.0	18873.2	11629.9	5434.6	1925.4	1115.0
77.5°	7547.9	7811.7	9646.2	12613.1	16083.5	15210.5	11487.3	5445.5	2037.7	1169.0	838.4
80°	3792.4	3980.4	5162.3	6631.8	8680.2	7986.7	5302.8	2634.1	1363.5	845.0	659.1
82.5°	2638.5	2811.3	3554.7	3386.1	3628.1	3511.5	2493.6	2197.6	1020.0	533.8	345.8
85°	2212.7	2392.1	2941.0	2413.8	1975.0	1800.0	1787.1	2076.6	674.2	263.6	291.7
87.5°	1929.7	2201.9	2426.6	1763.3	1354.9	1195.0	1316.0	1903.7	213.9	144.7	88.6
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°	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0	4916.0
2.5°	4821.0	4814.4	4782.1	4732.4	4695.7	4671.8	4626.5	4624.4	4628.6	4589.8	4604.8
5°	4684.8	4658.9	4574.6	4460.1	4367.2	4278.6	4181.3	4148.9	4120.9	4062.4	4069.0
7.5°	4542.2	4496.8	4349.9	4161.9	3982.6	3818.3	3656.2	3576.2	3515.8	3440.2	3440.2
10°	4457.9	4386.6	4161.9	3887.4	3602.2	3362.3	3120.3	2975.6	2869.7	2772.4	2766.0
12.5°	4453.6	4345.6	4032.3	3654.1	3262.9	2925.8	2595.2	2372.6	2214.9	2100.4	2089.6
15°	4488.2	4336.9	3924.1	3435.8	2943.1	2504.5	2096.0	1813.0	1612.1	1484.5	1471.5
17.5°	4518.4	4326.1	3807.5	3206.7	2632.0	2098.2	1644.4	1350.6	1160.4	1056.7	1045.9
20°	4546.5	4302.3	3658.4	2964.7	2288.3	1717.9	1285.7	1048.0	922.7	864.4	857.8
22.5°	4587.5	4280.7	3502.8	2692.5	1951.3	1398.1	1061.0	890.3	823.3	795.2	790.8
25°	4654.5	4282.9	3351.5	2413.8	1642.2	1164.7	918.4	812.5	775.8	756.3	756.3
27.5°	4751.8	4308.8	3202.4	2130.6	1380.8	1004.8	834.1	771.4	747.7	732.5	728.2
30°	4894.4	4356.3	3044.7	1862.7	1173.3	894.6	784.4	745.5	726.1	713.1	711.0
32.5°	5101.9	4440.6	2878.3	1618.5	1015.6	816.8	747.7	723.9	708.8	698.0	695.8
35°	5410.9	4589.8	2716.2	1411.1	903.3	760.7	717.4	698.0	689.4	685.0	682.8
37.5°	5864.7	4829.6	2562.8	1249.0	829.8	723.9	687.1	676.4	672.1	672.1	672.1
40°	6435.2	5145.0	2424.5	1134.5	788.7	695.8	665.5	656.9	656.9	659.1	659.1
42.5°	7128.7	5540.5	2305.6	1056.7	765.0	676.4	650.4	646.1	643.9	643.9	646.1
45°	7934.8	6007.3	2232.2	996.1	747.7	665.5	639.7	637.5	628.8	624.5	624.5
47.5°	8745.1	6506.5	2227.9	961.6	726.1	652.5	628.8	628.8	611.5	602.9	605.1
50°	9501.5	6953.7	2275.5	953.0	713.1	633.1	618.0	620.2	596.4	585.6	583.5
52.5°	10110.8	7295.2	2333.8	963.7	713.1	615.8	598.5	609.4	583.5	570.5	568.4
55°	10581.9	7532.9	2355.3	987.6	721.7	600.7	581.2	598.5	579.1	561.8	561.8
57.5°	10919.0	7608.5	2262.5	998.3	734.7	598.5	564.0	596.4	585.6	564.0	564.0
60°	10795.8	7169.9	1916.7	957.3	732.5	594.2	551.1	600.7	607.2	583.5	583.5
62.5°	9834.2	5998.6	1538.5	864.4	695.8	579.1	535.9	596.4	622.4	613.7	609.4
65°	8006.1	4399.6	1192.8	754.1	633.1	546.7	503.5	557.5	587.8	596.4	598.5
67.5°	5642.1	2785.4	927.0	641.8	555.4	499.2	466.8	492.7	503.5	507.8	516.5
70°	3085.7	1508.3	736.8	540.2	475.4	451.6	427.9	430.0	425.6	421.4	425.6
72°	1549.4	985.4	622.4	468.9	421.4	406.2	395.5	388.9	388.9	382.5	384.6
72.5°	1333.3	916.3	600.7	451.6	408.4	395.5	386.8	380.3	378.2	373.8	376.0
75°	888.1	726.1	501.3	378.2	347.9	339.2	343.6	337.1	339.2	334.9	337.1
77.5°	717.4	624.5	425.6	319.8	298.2	285.2	293.9	296.0	300.3	296.0	293.9
80°	600.7	531.6	356.5	263.6	248.5	237.7	242.0	257.2	259.3	246.3	244.2
82.5°	388.9	427.9	280.9	205.3	190.2	185.9	196.6	211.8	216.0	198.8	194.5
85°	326.3	343.6	203.2	140.5	125.3	121.0	142.6	157.7	168.6	151.3	146.9
87.5°	90.7	168.6	99.4	67.0	56.2	56.2	69.2	82.1	97.3	99.4	99.4
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)