

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: P195989

Luminaire Tested: **NAV-AF-05-D-UNV-AFL-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195989
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24283)
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-AFL-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17010.6 lumens
Efficiency: N/A
Efficacy: 105.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B1 - U0 - G2

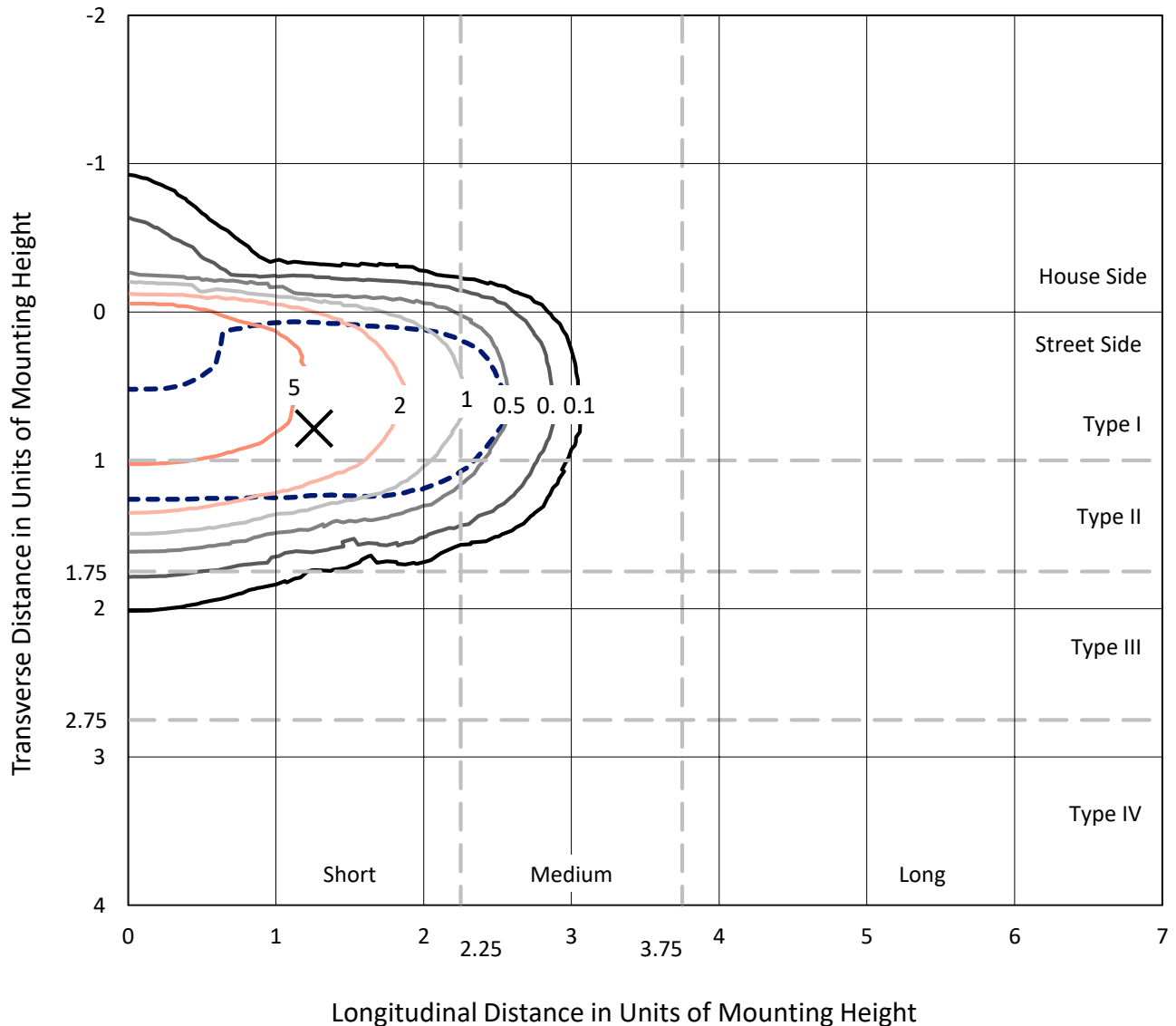
Input Watts (W): 162
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

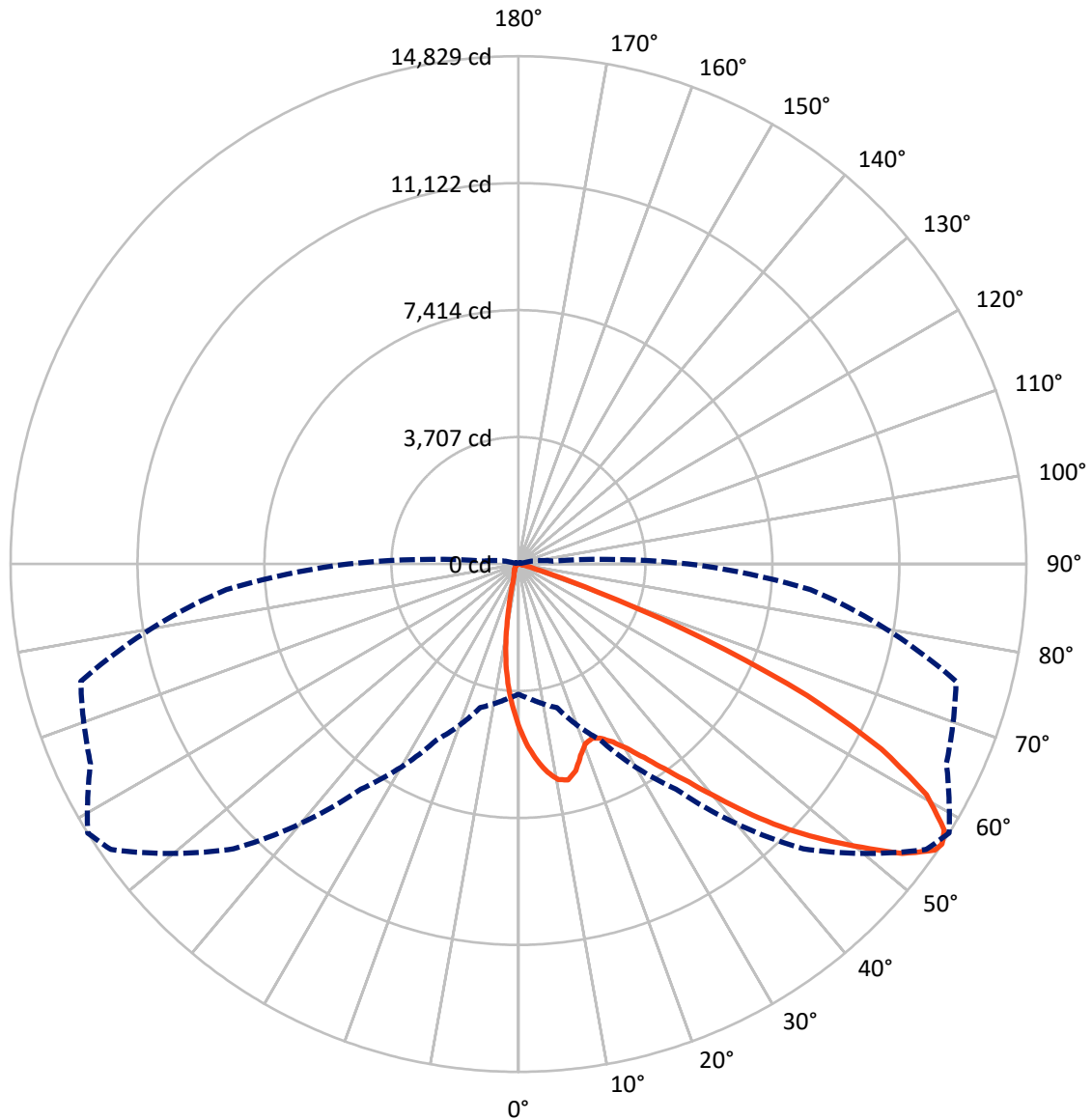
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 9.6 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 58-Deg Lateral - - - Horizontal Cone Through 56-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1061.8	0.0	1061.8
	% Fixture	6.2	0.0	6.2
Street Side	Lumens	15948.8	0.0	15948.8
	% Fixture	93.8	0.0	93.8
Total	Lumens	17010.6	0.0	17010.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	410.8	2.4
10°-20°	956.0	5.6
20°-30°	1608.6	9.5
30°-40°	2754.6	16.2
40°-50°	4156.7	24.4
50°-60°	4320.8	25.4
60°-70°	2425.6	14.3
70°-80°	332.4	2.0
80°-90°	45.0	0.3
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°	17010.6	100.0
0°-180°	17010.6	100.0



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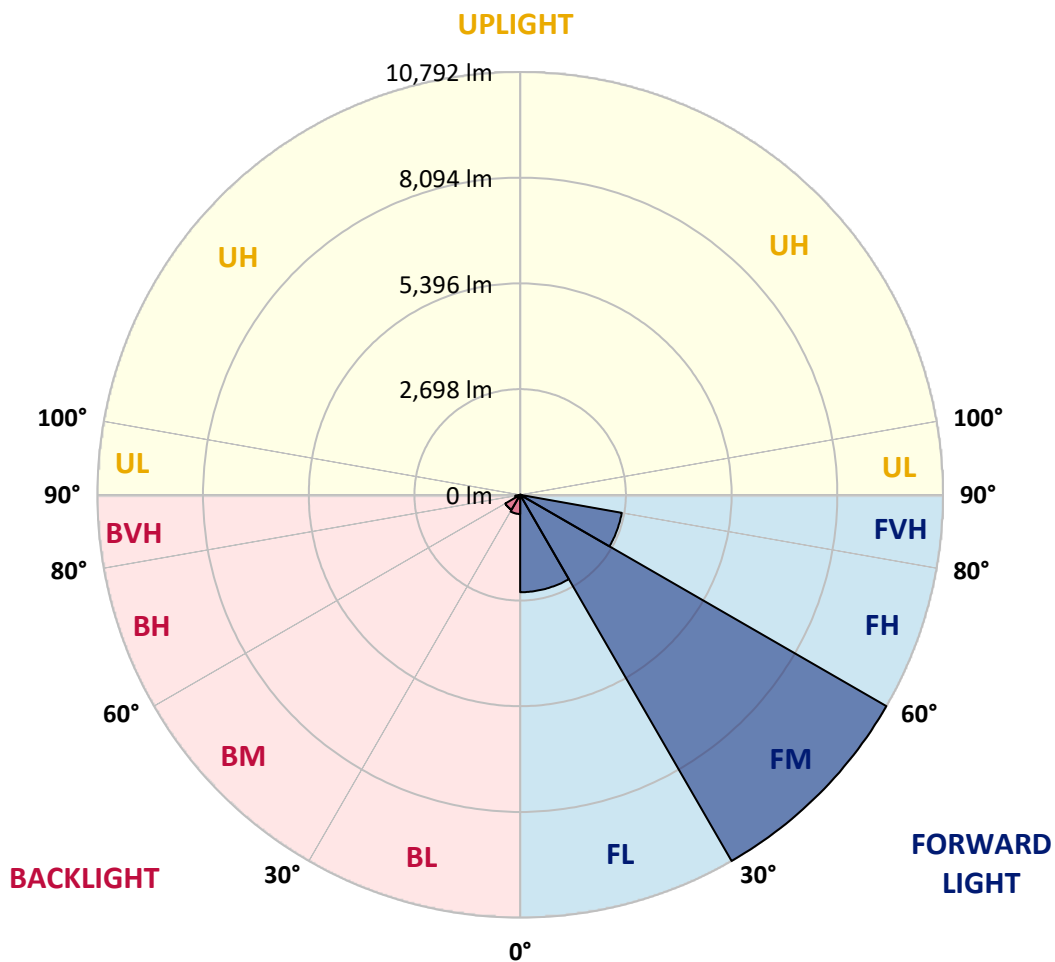
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2485.6	14.6			
FM	(30°-60°)	10792.3	63.4			
FH	(60°-80°)	2632.1	15.5			G2/5000
FVH	(80°-90°)	38.8	0.2			G1/100
BL	(0°-30°)	489.8	2.9	B1/500		
BM	(30°-60°)	439.8	2.6	B1/1000		
BH	(60°-80°)	126.0	0.7	B1/500		G1/500
BVH	(80°-90°)	6.2	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	58°	65°	75°	85°
0°	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3
2.5°	5794.8	5759.7	5723.4	5655.9	5593.6	5497.5	5365.2	5332.7	5228.9	5057.7	4898.0
5°	6294.4	6288.0	6263.3	6208.8	6141.3	6024.5	5875.2	5775.3	5614.4	5344.4	5036.9
7.5°	5998.6	6053.1	6142.6	6269.8	6355.5	6343.7	6229.6	6142.6	5982.9	5614.4	5173.2
10°	5056.3	5066.7	5190.0	5457.3	5880.4	6275.0	6424.2	6400.9	6254.2	5850.6	5292.5
12.5°	4724.1	4730.5	4759.1	4844.8	5120.0	5670.2	6346.4	6468.3	6456.7	6076.4	5419.7
15°	4750.1	4754.0	4761.7	4788.9	4866.9	5143.3	5951.8	6262.0	6586.5	6290.5	5544.3
17.5°	4955.1	4952.5	4927.9	4901.9	4926.5	5017.4	5549.5	5876.5	6559.2	6471.0	5646.8
20°	5354.8	5367.8	5284.8	5169.3	5109.5	5113.4	5351.0	5596.3	6406.0	6611.1	5723.4
22.5°	5916.7	5925.9	5789.6	5589.7	5414.5	5326.3	5392.5	5522.2	6229.6	6740.9	5785.7
25°	6587.8	6587.8	6397.0	6112.7	5841.6	5648.1	5591.0	5640.3	6162.1	6887.5	5848.0
27.5°	7312.0	7337.9	7088.7	6716.3	6358.0	6075.1	5896.0	5887.0	6214.0	7071.9	5918.1
30°	8099.7	8123.0	7827.2	7371.7	6947.3	6585.1	6310.1	6250.3	6412.6	7319.7	6020.6
32.5°	8883.6	8903.0	8576.0	8111.4	7616.9	7191.2	6829.1	6734.4	6769.5	7681.8	6171.2
35°	9880.4	9884.3	9470.3	8917.4	8389.1	7889.5	7431.3	7337.9	7299.0	8138.7	6387.9
37.5°	10673.3	10642.2	10380.0	9856.9	9250.9	8729.1	8190.6	8068.6	7975.1	8781.1	6724.1
40°	10860.2	10860.2	10821.3	10664.3	10182.8	9680.5	9158.8	8977.0	8770.7	9537.7	7175.7
42.5°	10373.5	10404.6	10661.6	11003.0	11006.8	10685.0	10175.0	10021.8	9658.4	10399.5	7668.9
45°	9284.6	9293.7	9910.1	10831.6	11457.2	11641.5	11265.1	11053.6	10550.0	11295.0	8120.5
47.5°	8892.7	8921.3	9183.4	10309.9	11490.9	12416.3	12311.2	12020.5	11375.4	12112.6	8542.3
50°	8290.5	8325.6	8646.1	9541.6	11187.3	12913.3	13311.8	13000.3	12126.9	12793.9	8751.2
52.5°	6849.9	6904.4	7357.4	8525.4	10428.1	12934.1	14228.0	14041.1	12896.4	13158.6	8726.6
55°	4713.7	4754.0	5282.1	6655.2	8896.6	12299.4	14622.6	14751.1	13583.0	13240.5	8607.2
56°	3802.6	3953.2	4340.0	5670.2	8024.4	11759.6	14531.7	14828.9	13786.8	13227.5	8555.2
57.5°	2513.9	2542.4	2964.2	4108.9	6443.7	10587.6	14121.6	14662.9	14049.0	13161.3	8517.6
60°	1182.3	1195.3	1347.1	1896.1	3487.2	7715.6	12788.7	13686.9	14145.0	13022.4	8516.4
62.5°	770.9	773.5	791.7	904.6	1426.3	4202.4	10602.0	11894.6	13349.4	13006.8	8491.7
65°	634.6	641.1	619.1	633.3	746.2	1584.7	7478.1	9272.9	11481.9	12640.8	8213.9
67.5°	559.3	560.7	530.8	513.9	546.4	695.6	3767.6	5849.3	8587.7	10740.8	6765.6
70°	510.0	508.7	475.0	436.1	437.4	462.1	1227.7	2429.5	4751.3	6377.5	3884.3
72.5°	453.0	455.5	436.1	381.6	363.4	327.0	462.1	655.4	1617.1	2047.9	1024.0
75°	397.1	391.9	372.5	337.5	303.7	219.3	232.3	279.1	421.8	417.9	220.7
77.5°	301.1	295.9	304.9	288.2	237.5	153.1	127.2	145.4	190.8	177.8	89.5
80°	229.8	227.1	207.7	246.6	216.8	115.5	87.0	89.5	103.8	94.7	44.1
82.5°	166.1	164.8	157.0	151.8	137.6	84.4	66.2	70.1	77.8	66.2	32.4
85°	63.6	63.6	123.3	103.8	94.7	57.1	46.7	50.6	59.7	48.0	22.1
87.5°	10.3	10.3	83.1	68.7	42.9	28.5	29.9	32.4	35.1	28.5	16.9
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°	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3	4816.3
2.5°	4803.3	4716.3	4525.5	4341.2	4180.3	4003.8	3914.2	3810.4	3771.5	3693.6	3701.4
5°	4852.6	4670.9	4288.0	3884.3	3514.6	3138.1	2870.8	2619.1	2478.8	2340.0	2340.0
7.5°	4903.2	4625.5	4033.6	3388.6	2765.6	2120.7	1663.8	1297.8	1094.0	957.8	953.9
10°	4938.2	4567.1	3744.2	2813.7	1894.8	1092.8	659.3	519.1	468.5	446.4	445.2
12.5°	4983.6	4508.7	3414.6	2136.2	1052.5	519.1	411.4	389.3	380.2	375.1	375.1
15°	5022.6	4425.6	3014.8	1436.7	552.9	389.3	354.4	346.5	345.2	343.9	345.2
17.5°	5031.7	4307.4	2536.0	841.0	401.0	340.0	324.5	317.9	317.9	316.7	316.7
20°	5010.9	4151.7	2006.4	519.1	346.5	312.8	295.9	288.2	286.8	286.8	286.8
22.5°	4968.1	3953.2	1483.4	393.2	315.4	288.2	266.1	258.3	258.3	259.5	260.9
25°	4914.9	3718.2	1018.8	338.7	292.1	262.2	240.1	232.3	234.9	237.5	238.8
27.5°	4847.4	3437.9	667.1	293.3	260.9	236.2	216.8	211.5	216.8	221.9	224.5
30°	4779.8	3130.3	451.6	254.4	225.9	207.7	196.0	194.7	202.4	214.1	215.4
32.5°	4735.8	2815.0	341.4	228.4	198.6	183.0	177.8	180.4	192.1	205.1	207.7
35°	4731.9	2507.4	290.7	207.7	180.4	166.1	163.6	171.3	184.3	194.7	197.2
37.5°	4792.8	2219.3	263.4	192.1	166.1	151.8	147.9	162.2	173.9	184.3	186.9
40°	4916.2	1961.0	245.3	177.8	154.5	137.6	134.9	146.7	158.4	170.0	173.9
42.5°	5070.6	1719.6	224.5	163.6	141.5	122.0	119.4	128.5	140.1	157.0	159.7
45°	5204.3	1495.1	202.4	147.9	127.2	105.2	103.8	114.2	123.3	138.9	141.5
47.5°	5317.2	1308.3	181.7	131.0	109.0	93.4	92.2	97.4	102.5	116.8	119.4
50°	5257.5	1149.9	160.9	107.7	88.3	80.5	79.2	79.2	85.6	99.9	102.5
52.5°	5110.9	1051.3	141.5	89.5	72.6	68.7	64.9	66.2	72.6	79.2	80.5
55°	4992.7	1004.5	124.6	79.2	61.0	57.1	53.2	51.9	53.2	50.6	48.0
56°	4964.2	999.3	120.7	76.6	58.4	53.2	48.0	45.4	44.1	39.0	37.6
57.5°	4951.2	999.3	114.2	71.4	54.5	48.0	41.5	36.3	31.1	27.2	27.2
60°	4940.9	1005.8	106.4	62.3	46.7	39.0	29.9	22.1	18.2	18.2	18.2
62.5°	4918.8	1003.2	97.4	51.9	40.2	29.9	18.2	14.3	13.0	14.3	15.5
65°	4670.9	931.8	85.6	41.5	31.1	20.8	10.3	10.3	11.7	14.3	15.5
67.5°	3763.7	706.0	70.1	32.4	22.1	15.5	9.1	9.1	11.7	14.3	15.5
70°	2067.5	372.5	59.7	23.3	16.9	13.0	9.1	7.8	11.7	14.3	15.5
72.5°	504.8	155.7	54.5	18.2	15.5	11.7	7.8	7.8	11.7	14.3	15.5
75°	124.6	116.8	44.1	14.3	13.0	10.3	7.8	7.8	11.7	14.3	15.5
77.5°	58.4	154.5	29.9	13.0	11.7	9.1	7.8	7.8	11.7	14.3	14.3
80°	35.1	116.8	18.2	11.7	10.3	9.1	7.8	7.8	11.7	14.3	15.5
82.5°	20.8	33.8	13.0	11.7	10.3	7.8	7.8	7.8	11.7	14.3	15.5
85°	18.2	16.9	13.0	11.7	10.3	9.1	7.8	7.8	13.0	15.5	15.5
87.5°	14.3	13.0	11.7	10.3	10.3	9.1	7.8	7.8	11.7	14.3	15.5
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)