

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: P196169

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196169
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24285)
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-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25058.2 lumens
Efficiency: N/A
Efficacy: 89.8 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 - G4

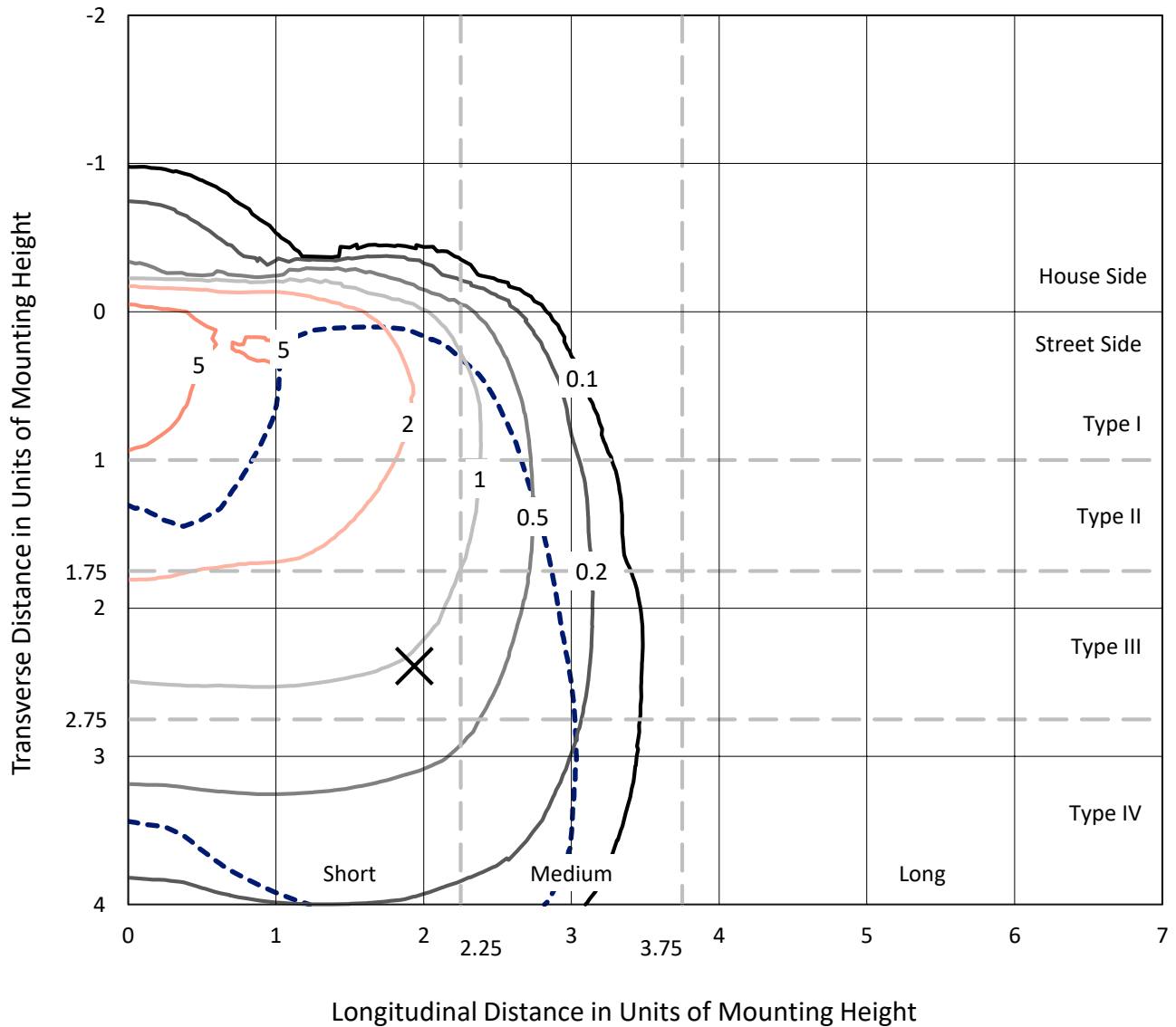
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

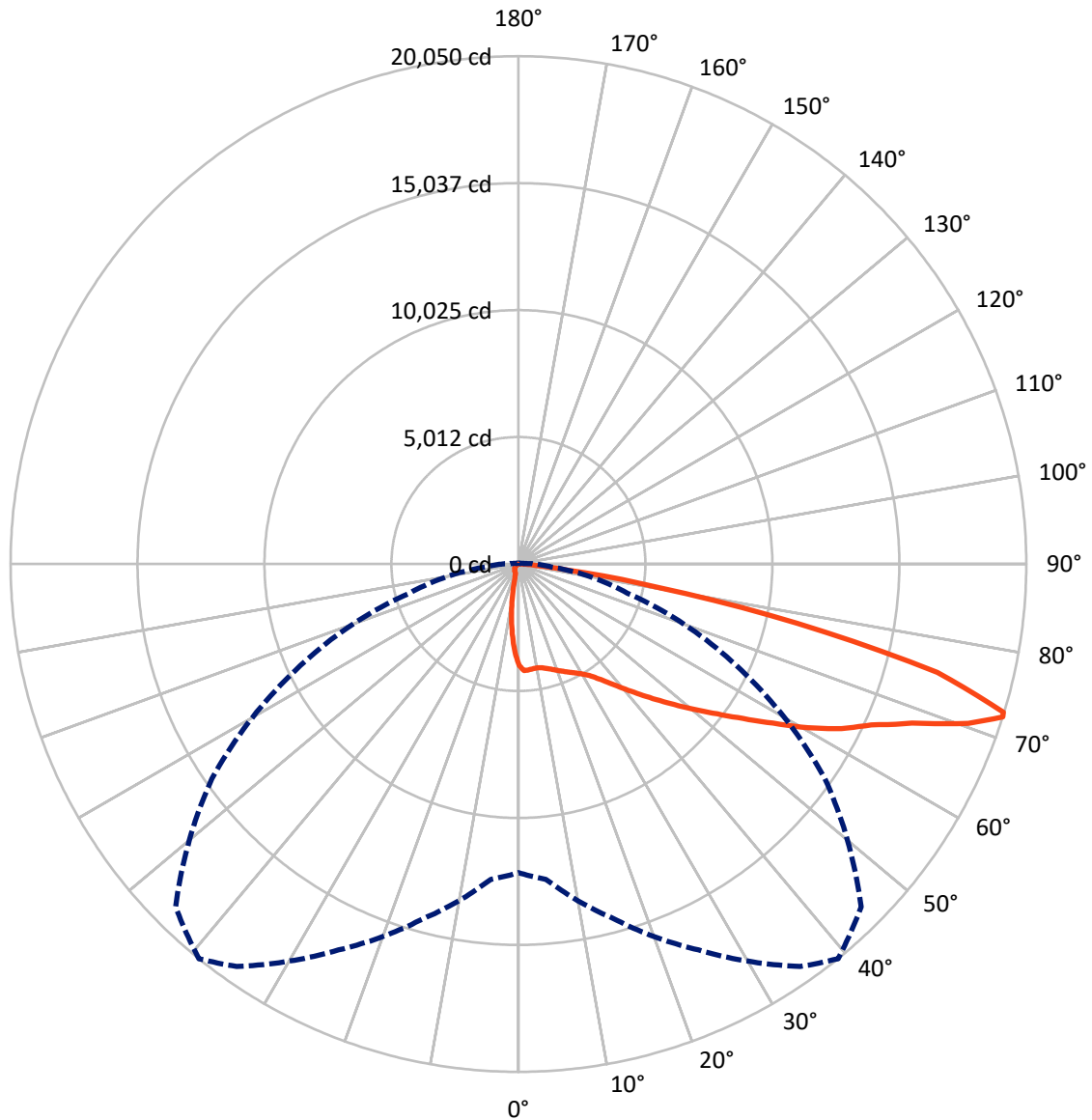
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.7 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	1642.3	0.0	1642.3
	% Fixture	6.6	0.0	6.6
Street Side	Lumens	23415.9	0.0	23415.9
	% Fixture	93.4	0.0	93.4
Total	Lumens	25058.2	0.0	25058.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	326.2	1.3
10°-20°	789.8	3.2
20°-30°	1311.7	5.2
30°-40°	2090.6	8.3
40°-50°	3450.7	13.8
50°-60°	5211.2	20.8
60°-70°	6788.5	27.1
70°-80°	4587.1	18.3
80°-90°	502.4	2.0
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°	25058.2	100.0
0°-180°	25058.2	100.0

Coefficient of Utilization



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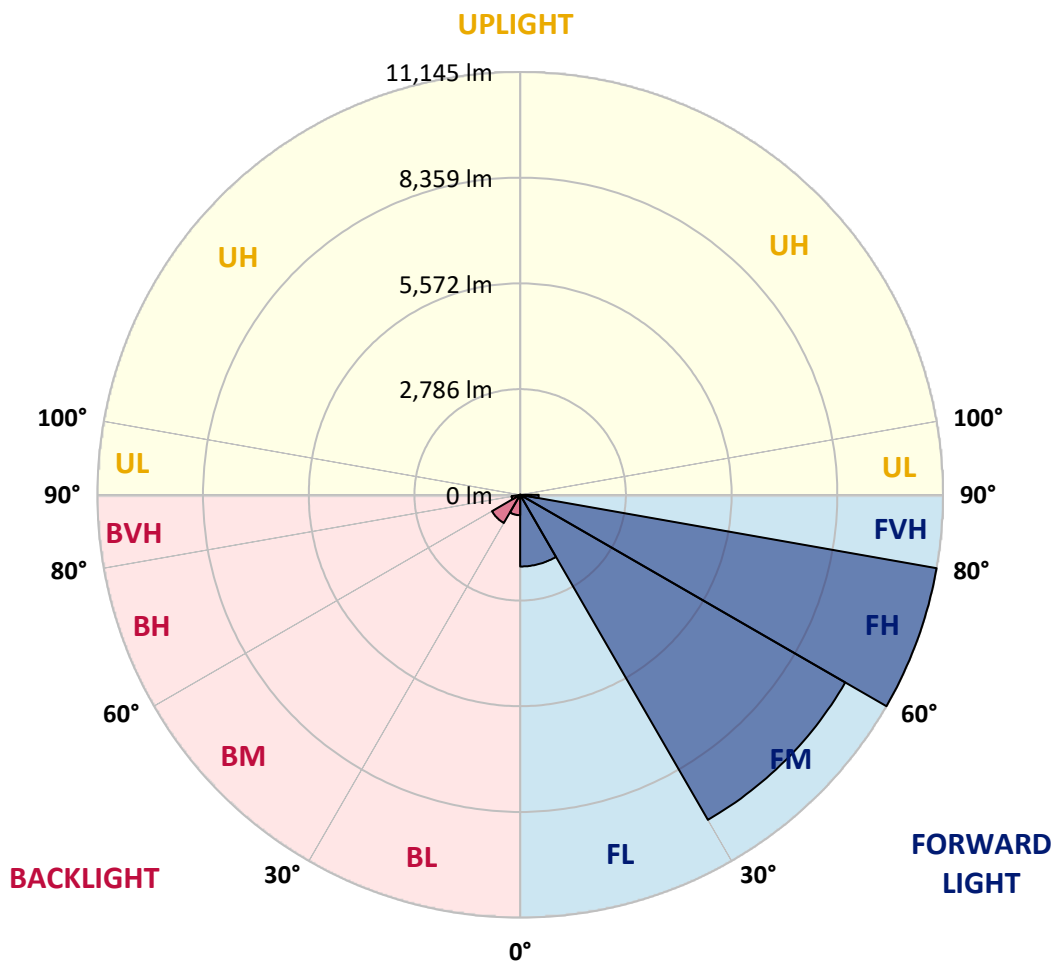
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1890.0	7.5			
FM	(30°-60°)	9893.3	39.5			
FH	(60°-80°)	11144.7	44.5			G4/12000
FVH	(80°-90°)	487.9	1.9			G3/500
BL	(0°-30°)	537.7	2.1	B2/1000		
BM	(30°-60°)	859.2	3.4	B1/1000		
BH	(60°-80°)	230.8	0.9	B1/500		G1/500
BVH	(80°-90°)	14.5	0.1			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G4

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7
2.5°	4270.7	4278.6	4268.8	4251.1	4225.4	4209.6	4188.1	4140.7	4081.7	4030.4	3971.3
5°	4304.3	4308.2	4296.4	4262.8	4223.5	4201.8	4174.3	4123.0	4061.9	3991.0	3884.7
7.5°	4314.1	4312.1	4298.3	4257.0	4195.9	4168.3	4121.1	4058.0	3994.9	3930.0	3809.8
10°	4310.2	4310.2	4300.3	4260.9	4192.0	4166.4	4113.2	4046.2	3967.4	3902.4	3774.4
12.5°	4296.4	4304.3	4298.3	4276.7	4225.4	4205.8	4158.5	4091.5	4016.6	3949.6	3813.8
15°	4314.1	4326.0	4337.7	4329.8	4300.3	4282.6	4239.2	4170.3	4109.2	4038.3	3892.5
17.5°	4385.0	4410.7	4438.2	4440.1	4408.6	4377.1	4327.9	4257.0	4197.9	4132.8	3975.3
20°	4519.0	4538.6	4589.9	4599.7	4536.7	4491.4	4422.4	4339.7	4280.6	4225.4	4052.1
22.5°	4718.0	4739.6	4781.0	4767.2	4660.8	4607.6	4520.9	4426.4	4365.3	4333.8	4140.7
25°	5019.3	5025.2	5035.1	4974.0	4798.7	4739.6	4633.3	4526.9	4477.6	4473.7	4266.8
27.5°	5373.9	5381.7	5338.5	5202.5	4952.3	4875.5	4755.4	4658.8	4635.2	4664.8	4426.4
30°	5779.7	5781.7	5661.5	5440.9	5129.6	5044.9	4920.8	4814.4	4836.1	4909.0	4631.2
32.5°	6195.4	6175.7	6010.1	5722.6	5371.9	5269.5	5163.1	5056.8	5119.8	5267.5	4930.6
35°	6575.5	6567.7	6372.7	6037.8	5687.1	5596.5	5519.6	5407.4	5509.8	5750.1	5338.5
37.5°	6955.8	6949.8	6727.2	6378.5	6075.2	6010.1	5953.1	5866.4	6033.8	6386.4	5884.1
40°	7375.4	7365.5	7091.7	6756.8	6526.3	6490.8	6457.4	6419.9	6705.5	7196.0	6563.8
42.5°	7893.4	7850.0	7477.8	7168.5	7022.8	7032.6	7034.5	7072.0	7519.1	8159.4	7365.5
45°	8488.3	8391.8	7865.9	7609.7	7568.4	7627.4	7686.6	7842.1	8466.7	9268.4	8251.9
47.5°	9065.5	8909.9	8313.0	8084.5	8169.2	8291.3	8433.2	8736.5	9530.4	10428.7	9055.7
50°	9561.9	9402.4	8756.3	8567.1	8837.0	9018.2	9270.4	9729.4	10653.2	11409.7	9561.9
52.5°	9952.0	9825.9	9225.1	9098.9	9577.7	9825.9	10221.8	10824.7	11713.1	12055.8	9916.5
55°	10239.5	10176.5	9674.3	9691.9	10401.1	10759.6	11252.0	11933.6	12607.4	12558.2	10182.5
57.5°	10564.6	10515.3	10145.0	10391.2	11392.0	11854.9	12424.1	12971.8	13257.4	12962.0	10442.5
60°	10897.5	10913.2	10716.3	11238.3	12617.3	13129.4	13625.8	13761.8	13815.0	13371.7	10716.3
62.5°	11149.7	11216.7	11234.4	12152.3	13874.1	14311.4	14526.1	14429.5	14417.8	13921.3	10694.6
65°	11439.2	11614.6	11906.1	13155.0	15016.6	15304.2	15457.8	15597.7	15302.2	14084.8	9642.6
67.5°	11939.6	12215.4	12871.4	14384.2	16336.4	16762.0	17197.2	17049.5	15434.2	12424.1	7345.8
70°	12613.3	12950.1	14108.4	15989.7	18127.1	18840.2	19204.6	16933.3	13103.8	8584.8	3874.8
72°	12187.8	12493.1	14490.6	16809.2	19395.7	20049.7	19137.7	14770.4	9498.9	4450.0	1298.1
72.5°	11774.2	12089.3	14368.5	16799.3	19521.8	20022.1	18702.3	13917.3	8405.6	3463.1	894.4
75°	8169.2	8567.1	12317.9	15101.3	17628.7	17079.1	14309.3	8427.3	3045.4	594.9	295.5
77.5°	4223.5	4530.8	7471.8	10671.0	12286.3	11252.0	8456.8	3656.1	843.1	315.2	195.0
80°	2618.0	2769.6	3494.6	5257.7	6382.5	5582.8	3731.0	1477.4	539.7	187.1	155.6
82.5°	1355.3	1471.5	2200.4	2121.6	2358.0	1960.1	1377.0	1237.1	332.9	116.2	159.6
85°	445.2	472.8	1351.3	1410.4	1008.6	677.6	610.7	1180.0	96.6	74.9	136.0
87.5°	59.1	68.9	474.8	807.6	496.4	307.3	366.4	415.6	33.5	41.3	37.4
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°	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7	4010.7
2.5°	3931.9	3906.3	3825.5	3744.8	3652.2	3567.5	3500.5	3457.2	3476.9	3411.8	3421.8
5°	3819.6	3754.6	3577.4	3386.3	3179.4	2986.4	2832.8	2718.5	2696.8	2598.3	2602.3
7.5°	3711.3	3604.9	3317.3	3002.2	2659.4	2381.6	2129.5	1908.8	1830.1	1749.2	1702.0
10°	3652.2	3506.5	3098.6	2639.6	2157.1	1749.2	1394.7	1117.0	1000.8	916.1	874.6
12.5°	3669.9	3476.9	2935.2	2310.7	1676.4	1158.3	788.0	585.0	514.1	474.8	460.9
15°	3729.1	3482.8	2787.4	1989.6	1219.4	701.3	462.9	396.0	390.1	388.1	386.1
17.5°	3784.2	3488.7	2631.7	1654.7	815.5	447.1	372.4	366.4	366.4	366.4	366.4
20°	3841.3	3490.7	2460.4	1304.1	535.8	366.4	350.7	346.7	350.7	350.7	350.7
22.5°	3908.3	3504.4	2295.0	963.3	396.0	344.7	334.9	332.9	334.9	334.9	332.9
25°	3991.0	3534.0	2115.7	689.5	358.5	330.9	321.1	319.2	321.1	319.2	319.2
27.5°	4101.3	3573.4	1906.9	494.5	342.8	317.1	307.3	307.3	307.3	305.4	305.4
30°	4243.2	3620.7	1627.1	390.1	327.0	303.4	295.5	295.5	293.5	291.5	291.5
32.5°	4446.1	3697.6	1321.9	352.6	309.2	285.6	277.7	279.8	277.7	275.8	273.8
35°	4733.7	3817.7	1020.4	332.9	291.5	267.9	260.0	260.0	260.0	256.0	256.0
37.5°	5141.5	4000.9	764.3	313.2	273.8	250.2	240.3	240.3	238.3	234.5	236.4
40°	5645.8	4231.3	553.5	295.5	256.0	230.5	222.6	218.7	214.7	210.8	210.8
42.5°	6252.5	4456.0	415.6	277.7	238.3	214.7	204.9	200.9	193.0	189.1	187.1
45°	6932.1	4694.3	344.7	256.0	218.7	197.0	189.1	181.3	171.3	165.5	163.5
47.5°	7505.4	4840.1	307.3	234.5	199.0	179.2	171.3	159.6	147.7	143.8	143.8
50°	7850.0	4779.0	275.8	212.8	179.2	161.5	151.7	136.0	128.1	124.1	122.1
52.5°	8043.2	4597.8	250.2	195.0	161.5	141.9	128.1	114.3	110.3	106.4	106.4
55°	8175.1	4335.8	222.6	177.3	145.8	124.1	108.3	98.5	94.5	92.6	90.6
57.5°	8301.1	4016.6	197.0	161.5	130.0	110.3	92.6	88.7	80.8	78.8	78.8
60°	8338.6	3577.4	173.4	143.8	116.2	96.6	80.8	74.9	67.0	65.0	65.0
62.5°	7861.9	2846.5	153.6	122.1	102.4	82.8	70.9	63.0	55.1	55.1	55.1
65°	6569.6	1932.5	132.0	106.4	90.6	70.9	61.1	51.2	47.3	47.3	47.3
67.5°	4576.1	1077.6	112.3	90.6	76.8	59.1	51.2	43.4	41.3	43.4	43.4
70°	2062.5	427.5	94.5	74.9	63.0	49.2	43.4	37.4	41.3	41.3	41.3
72°	618.6	228.5	78.8	61.1	51.2	43.4	37.4	35.5	39.4	41.3	41.3
72.5°	459.0	204.9	74.9	59.1	51.2	41.3	35.5	35.5	39.4	41.3	41.3
75°	236.4	139.8	57.1	43.4	37.4	33.5	29.6	33.5	39.4	39.4	39.4
77.5°	185.2	114.3	47.3	33.5	31.5	29.6	27.6	31.5	35.5	35.5	35.5
80°	173.4	74.9	37.4	31.5	27.6	25.6	25.6	27.6	31.5	33.5	33.5
82.5°	175.3	61.1	33.5	29.6	25.6	23.6	23.6	25.6	29.6	31.5	31.5
85°	112.3	41.3	29.6	25.6	23.6	21.7	21.7	23.6	27.6	29.6	29.6
87.5°	37.4	31.5	25.6	23.6	19.7	19.7	19.7	19.7	23.6	25.6	27.6
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)