

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: P195988

Luminaire Tested: **NAV-AF-04-D-UNV-AFL-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195988
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-04-D-UNV-AFL-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 13801.6 lumens
Efficiency: N/A
Efficacy: 107.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B1 - U0 - G2

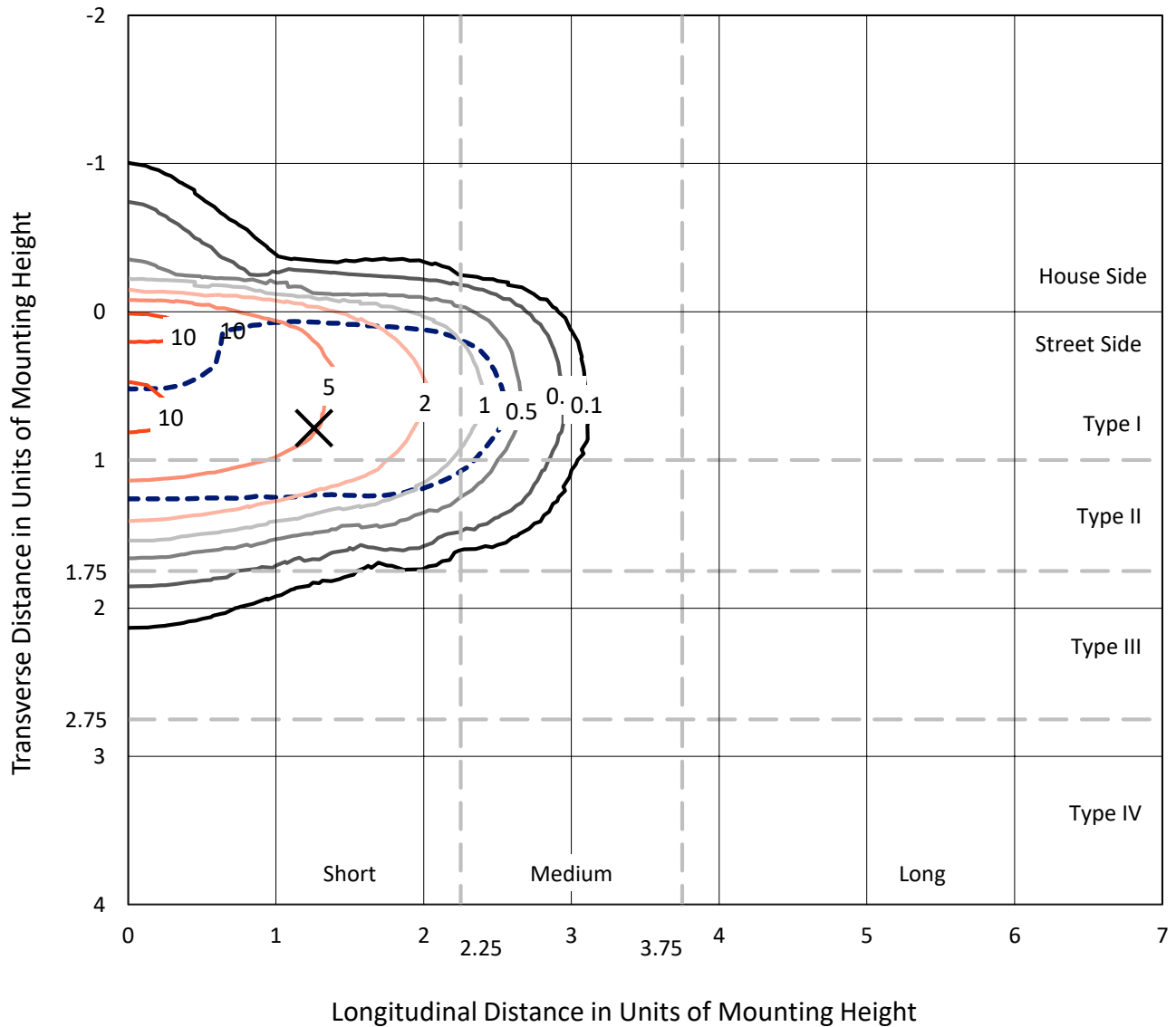
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

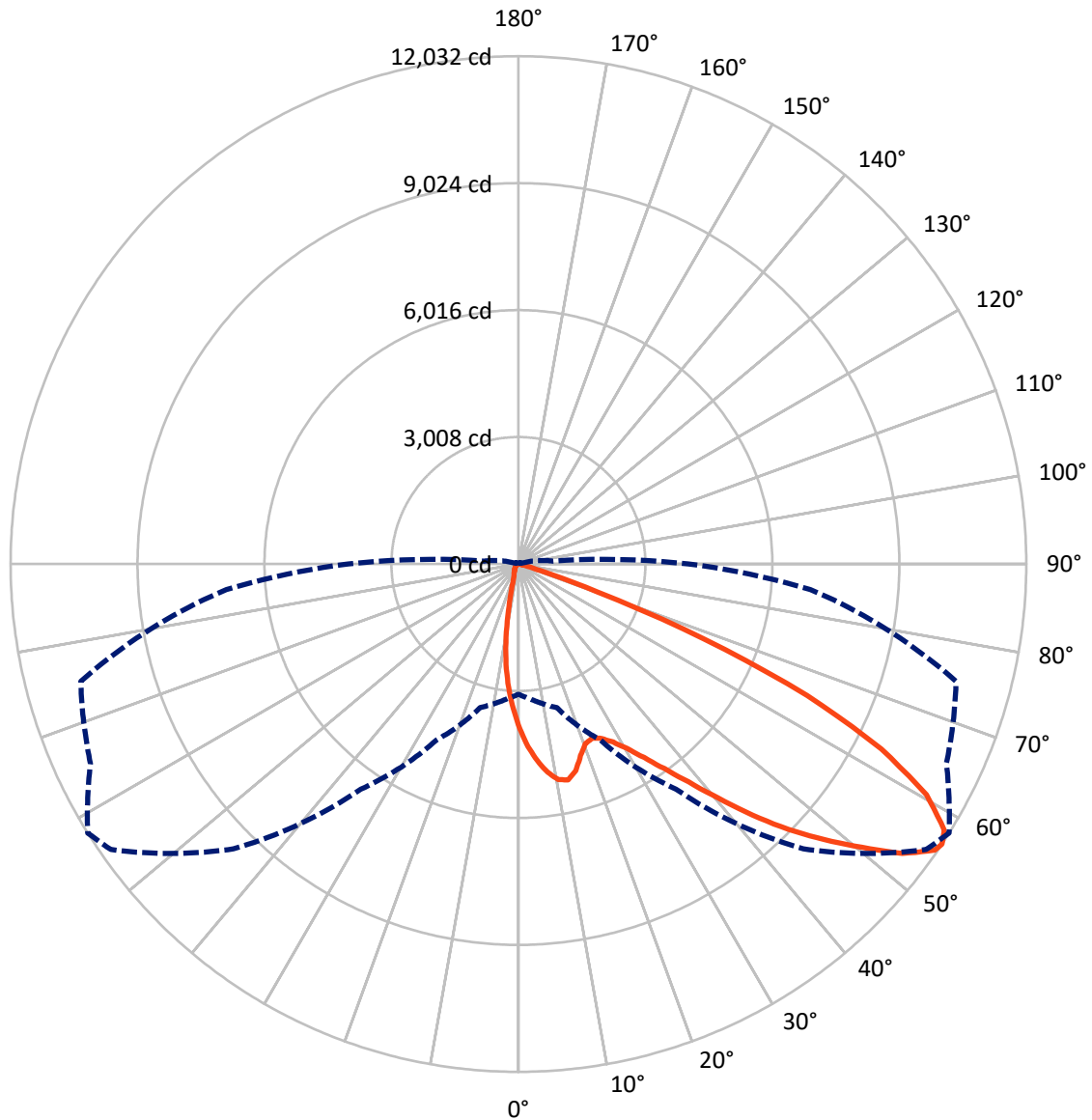
✕ Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 12.1 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	861.5	0.0	861.5
	% Fixture	6.2	0.0	6.2
Street Side	Lumens	12940.1	0.0	12940.1
	% Fixture	93.8	0.0	93.8
Total	Lumens	13801.6	0.0	13801.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	333.3	2.4
10°-20°	775.6	5.6
20°-30°	1305.1	9.5
30°-40°	2234.9	16.2
40°-50°	3372.6	24.4
50°-60°	3505.7	25.4
60°-70°	1968.0	14.3
70°-80°	269.7	2.0
80°-90°	36.5	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°	13801.6	100.0
0°-180°	13801.6	100.0



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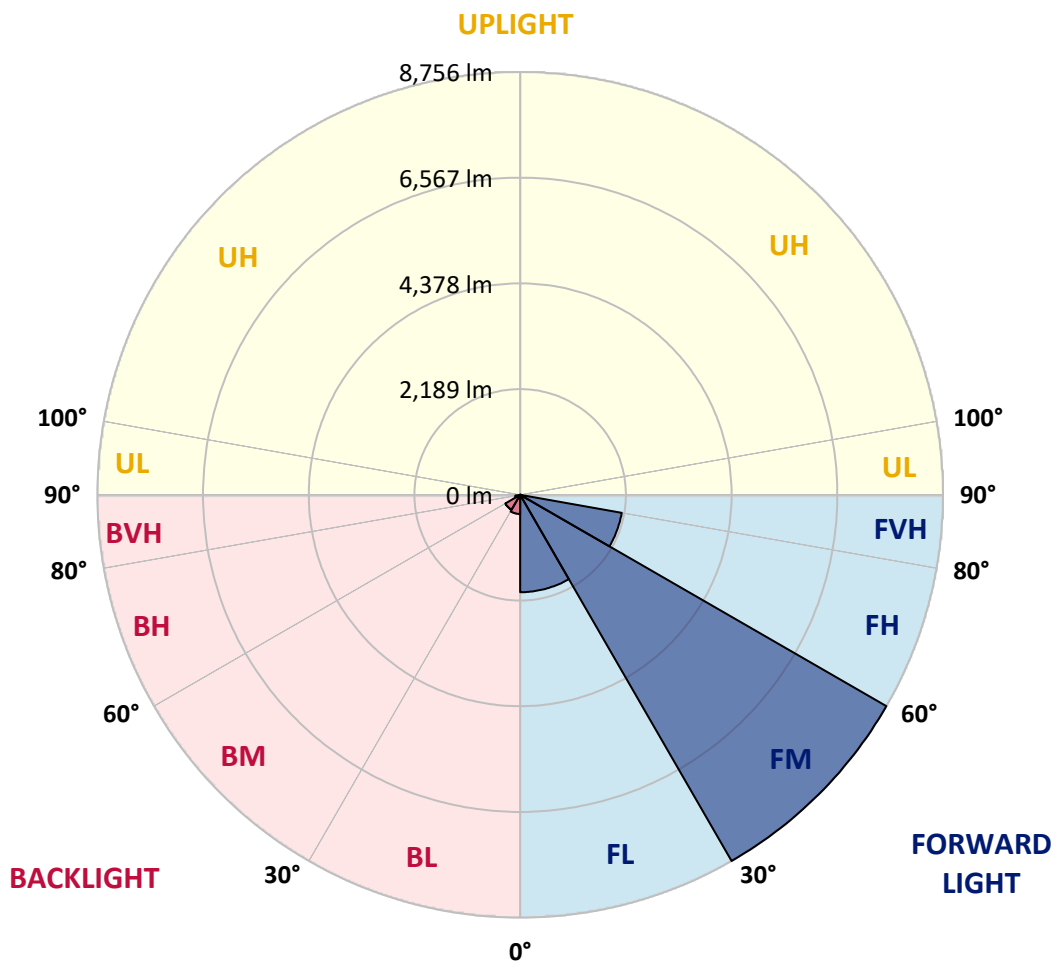
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	2016.7	14.6			
FM	(30°-60°)	8756.3	63.4			
FH	(60°-80°)	2135.6	15.5			G2/5000
FVH	(80°-90°)	31.5	0.2			G1/100
BL	(0°-30°)	397.4	2.9	B1/500		
BM	(30°-60°)	356.9	2.6	B1/1000		
BH	(60°-80°)	102.2	0.7	B0/110		G0/110
BVH	(80°-90°)	5.0	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°	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7
2.5°	4701.6	4673.1	4643.7	4589.0	4538.4	4460.5	4353.1	4326.8	4242.5	4103.6	3974.0
5°	5107.0	5101.8	5081.7	5037.5	4982.8	4888.0	4767.0	4685.8	4555.3	4336.2	4086.7
7.5°	4866.9	4911.2	4983.8	5087.0	5156.5	5147.1	5054.4	4983.8	4854.3	4555.3	4197.3
10°	4102.4	4110.9	4211.0	4427.8	4771.1	5091.2	5212.3	5193.4	5074.3	4746.9	4294.1
12.5°	3832.9	3838.2	3861.3	3930.8	4154.1	4600.5	5149.1	5248.1	5238.6	4930.1	4397.4
15°	3854.0	3857.1	3863.5	3885.6	3948.7	4173.0	4829.0	5080.7	5344.0	5103.9	4498.4
17.5°	4020.3	4018.3	3998.2	3977.1	3997.2	4070.8	4502.6	4768.0	5321.8	5250.2	4581.6
20°	4344.7	4355.2	4287.8	4194.1	4145.6	4148.8	4341.5	4540.5	5197.6	5363.9	4643.7
22.5°	4800.6	4808.0	4697.4	4535.3	4393.1	4321.5	4375.2	4480.5	5054.4	5469.2	4694.2
25°	5345.0	5345.0	5190.2	4959.6	4739.5	4582.6	4536.3	4576.3	4999.7	5588.3	4744.8
27.5°	5932.6	5953.7	5751.4	5449.3	5158.6	4929.1	4783.7	4776.4	5041.7	5737.7	4801.6
30°	6571.7	6590.7	6350.6	5981.0	5636.7	5342.9	5119.7	5071.2	5202.8	5938.8	4884.8
32.5°	7207.7	7223.6	6958.2	6581.3	6180.1	5834.6	5540.8	5464.0	5492.4	6232.6	5007.0
35°	8016.5	8019.6	7683.7	7235.1	6806.5	6401.1	6029.5	5953.7	5922.1	6603.4	5182.9
37.5°	8659.8	8634.5	8421.9	7997.5	7505.8	7082.4	6645.5	6546.5	6470.7	7124.5	5455.6
40°	8811.5	8811.5	8779.9	8652.4	8261.8	7854.3	7431.0	7283.6	7116.2	7738.4	5822.0
42.5°	8416.6	8441.9	8650.4	8927.3	8930.5	8669.3	8255.5	8131.2	7836.4	8437.6	6222.1
45°	7533.1	7540.5	8040.7	8788.3	9295.9	9445.4	9140.0	8968.3	8559.8	9164.2	6588.6
47.5°	7215.1	7238.3	7451.0	8365.0	9323.2	10074.0	9988.7	9752.8	9229.5	9827.6	6930.8
50°	6726.5	6755.0	7015.1	7741.6	9076.8	10477.3	10800.6	10547.9	9839.2	10380.4	7100.3
52.5°	5557.7	5602.0	5969.4	6917.1	8460.8	10494.1	11544.0	11392.4	10463.7	10676.3	7080.4
55°	3824.5	3857.1	4285.7	5399.7	7218.2	9979.2	11864.1	11968.3	11020.7	10742.6	6983.5
56°	3085.3	3207.5	3521.2	4600.5	6510.7	9541.2	11790.4	12031.5	11186.0	10732.1	6941.3
57.5°	2039.7	2062.8	2405.1	3333.8	5228.1	8590.3	11457.7	11896.7	11398.6	10678.4	6910.9
60°	959.3	969.9	1093.0	1538.4	2829.4	6260.0	10376.2	11104.8	11476.6	10565.8	6909.7
62.5°	625.4	627.6	642.3	734.0	1157.3	3409.6	8601.9	9650.7	10831.1	10553.1	6889.8
65°	515.0	520.2	502.3	513.8	605.5	1285.7	6067.3	7523.7	9315.8	10256.2	6664.4
67.5°	453.9	454.9	430.7	417.0	443.3	564.4	3056.9	4745.9	6967.6	8714.6	5489.3
70°	413.8	412.8	385.3	353.8	354.9	374.9	996.1	1971.2	3855.0	5174.4	3151.6
72.5°	367.5	369.6	353.8	309.5	294.8	265.4	374.9	531.7	1312.0	1661.6	830.8
75°	322.2	318.0	302.2	273.7	246.4	178.0	188.5	226.4	342.2	339.1	179.0
77.5°	244.3	240.1	247.5	233.7	192.7	124.3	103.2	117.9	154.8	144.2	72.6
80°	186.4	184.2	168.5	200.1	175.8	93.7	70.6	72.6	84.2	76.8	35.8
82.5°	134.8	133.7	127.5	123.2	111.6	68.4	53.7	56.9	63.2	53.7	26.3
85°	51.6	51.6	100.0	84.2	76.8	46.3	38.0	41.0	48.5	39.0	17.9
87.5°	8.4	8.4	67.4	55.9	34.8	23.1	24.2	26.3	28.4	23.1	13.7
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°	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7	3907.7
2.5°	3897.1	3826.6	3671.8	3522.2	3391.7	3248.5	3175.9	3091.6	3060.1	2996.8	3003.2
5°	3937.1	3789.7	3479.1	3151.6	2851.5	2546.1	2329.3	2125.0	2011.2	1898.6	1898.6
7.5°	3978.3	3752.9	3272.7	2749.4	2243.9	1720.6	1350.0	1053.0	887.7	777.1	774.0
10°	4006.7	3705.5	3037.9	2282.9	1537.4	886.6	534.9	421.1	380.1	362.2	361.2
12.5°	4043.5	3658.1	2770.5	1733.2	854.0	421.1	333.8	315.9	308.5	304.3	304.3
15°	4075.1	3590.8	2446.1	1165.7	448.6	315.9	287.4	281.1	280.1	279.1	280.1
17.5°	4082.5	3494.9	2057.6	682.3	325.4	275.9	263.2	258.0	258.0	257.0	257.0
20°	4065.6	3368.6	1627.9	421.1	281.1	253.8	240.1	233.7	232.7	232.7	232.7
22.5°	4030.8	3207.5	1203.6	319.1	255.8	233.7	215.8	209.5	209.5	210.6	211.6
25°	3987.7	3016.8	826.6	274.9	236.9	212.7	194.8	188.5	190.6	192.7	193.7
27.5°	3932.9	2789.4	541.2	237.9	211.6	191.6	175.8	171.7	175.8	180.0	182.2
30°	3878.2	2539.8	366.4	206.4	183.2	168.5	159.0	157.9	164.3	173.7	174.8
32.5°	3842.4	2283.9	276.9	185.4	161.1	148.4	144.2	146.4	155.8	166.3	168.5
35°	3839.2	2034.3	235.9	168.5	146.4	134.8	132.7	139.0	149.6	157.9	160.1
37.5°	3888.7	1800.6	213.8	155.8	134.8	123.2	120.0	131.7	141.1	149.6	151.6
40°	3988.8	1591.1	199.1	144.2	125.3	111.6	109.6	119.0	128.5	137.9	141.1
42.5°	4114.0	1395.2	182.2	132.7	114.8	99.0	96.9	104.2	113.8	127.5	129.5
45°	4222.5	1213.0	164.3	120.0	103.2	85.3	84.2	92.7	100.0	112.6	114.8
47.5°	4314.1	1061.4	147.4	106.4	88.5	75.8	74.8	79.0	83.2	94.7	96.9
50°	4265.7	932.9	130.5	87.4	71.6	65.3	64.2	64.2	69.5	81.1	83.2
52.5°	4146.7	852.9	114.8	72.6	58.9	55.9	52.7	53.7	58.9	64.2	65.3
55°	4050.9	815.0	101.1	64.2	49.5	46.3	43.2	42.1	43.2	41.0	39.0
56°	4027.7	810.8	97.9	62.1	47.4	43.2	39.0	36.8	35.8	31.6	30.6
57.5°	4017.1	810.8	92.7	57.9	44.2	39.0	33.7	29.5	25.3	22.1	22.1
60°	4008.7	816.1	86.3	50.5	38.0	31.6	24.2	17.9	14.7	14.7	14.7
62.5°	3990.8	814.0	79.0	42.1	32.6	24.2	14.7	11.6	10.5	11.6	12.7
65°	3789.7	756.1	69.5	33.7	25.3	16.9	8.4	8.4	9.5	11.6	12.7
67.5°	3053.7	572.9	56.9	26.3	17.9	12.7	7.4	7.4	9.5	11.6	12.7
70°	1677.4	302.2	48.5	18.9	13.7	10.5	7.4	6.3	9.5	11.6	12.7
72.5°	409.6	126.3	44.2	14.7	12.7	9.5	6.3	6.3	9.5	11.6	12.7
75°	101.1	94.7	35.8	11.6	10.5	8.4	6.3	6.3	9.5	11.6	12.7
77.5°	47.4	125.3	24.2	10.5	9.5	7.4	6.3	6.3	9.5	11.6	11.6
80°	28.4	94.7	14.7	9.5	8.4	7.4	6.3	6.3	9.5	11.6	12.7
82.5°	16.9	27.4	10.5	9.5	8.4	6.3	6.3	6.3	9.5	11.6	12.7
85°	14.7	13.7	10.5	9.5	8.4	7.4	6.3	6.3	10.5	12.7	12.7
87.5°	11.6	10.5	9.5	8.4	8.4	7.4	6.3	6.3	9.5	11.6	12.7
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)