

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: P196078

Luminaire Tested: **NAV-AF-04-D-UNV-SL2-1200-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196078
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)
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-SL2-1200-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 22332.1 lumens
Efficiency: N/A
Efficacy: 86.6 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B2 - U0 - G4

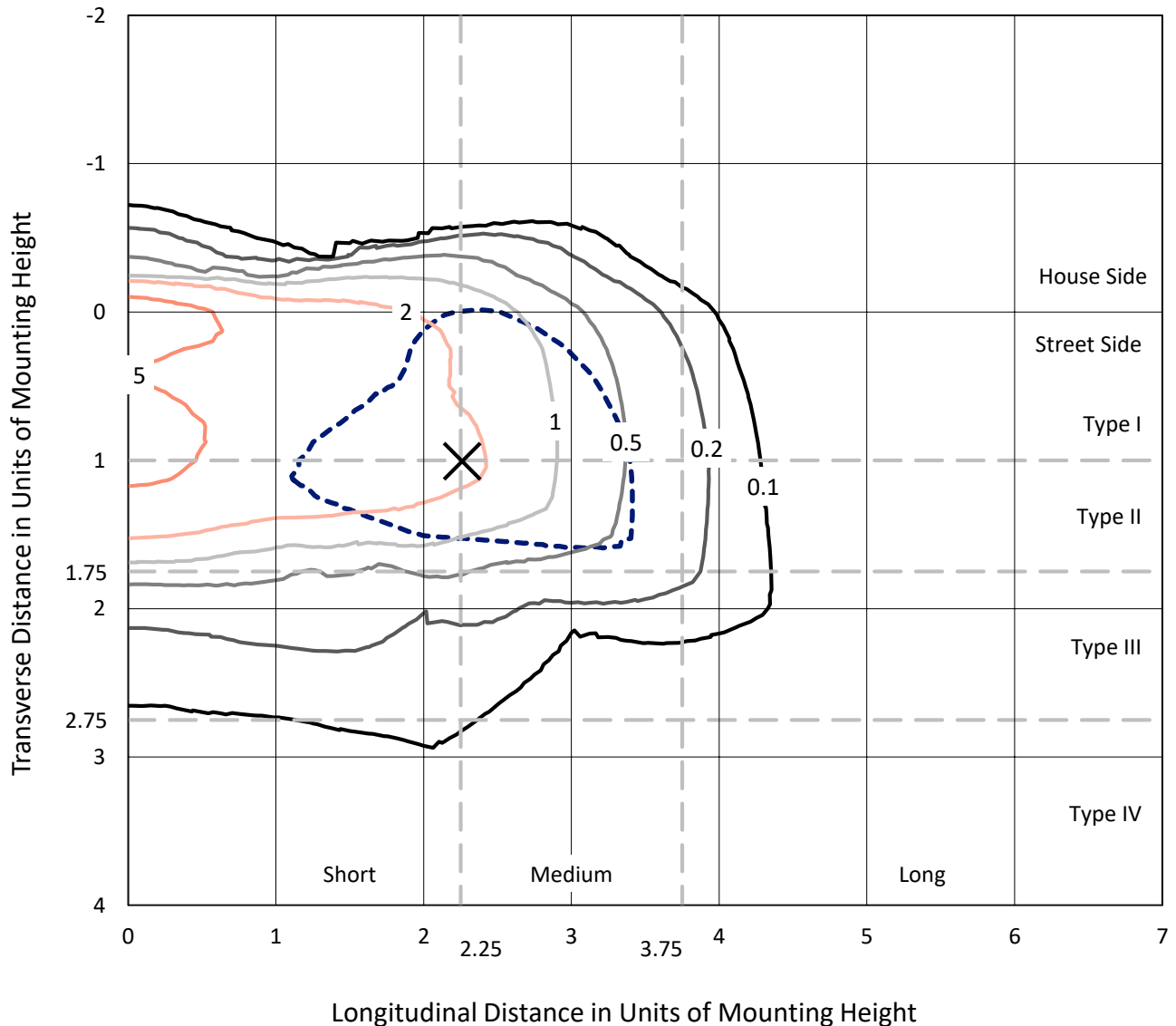
Input Watts (W): 258
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

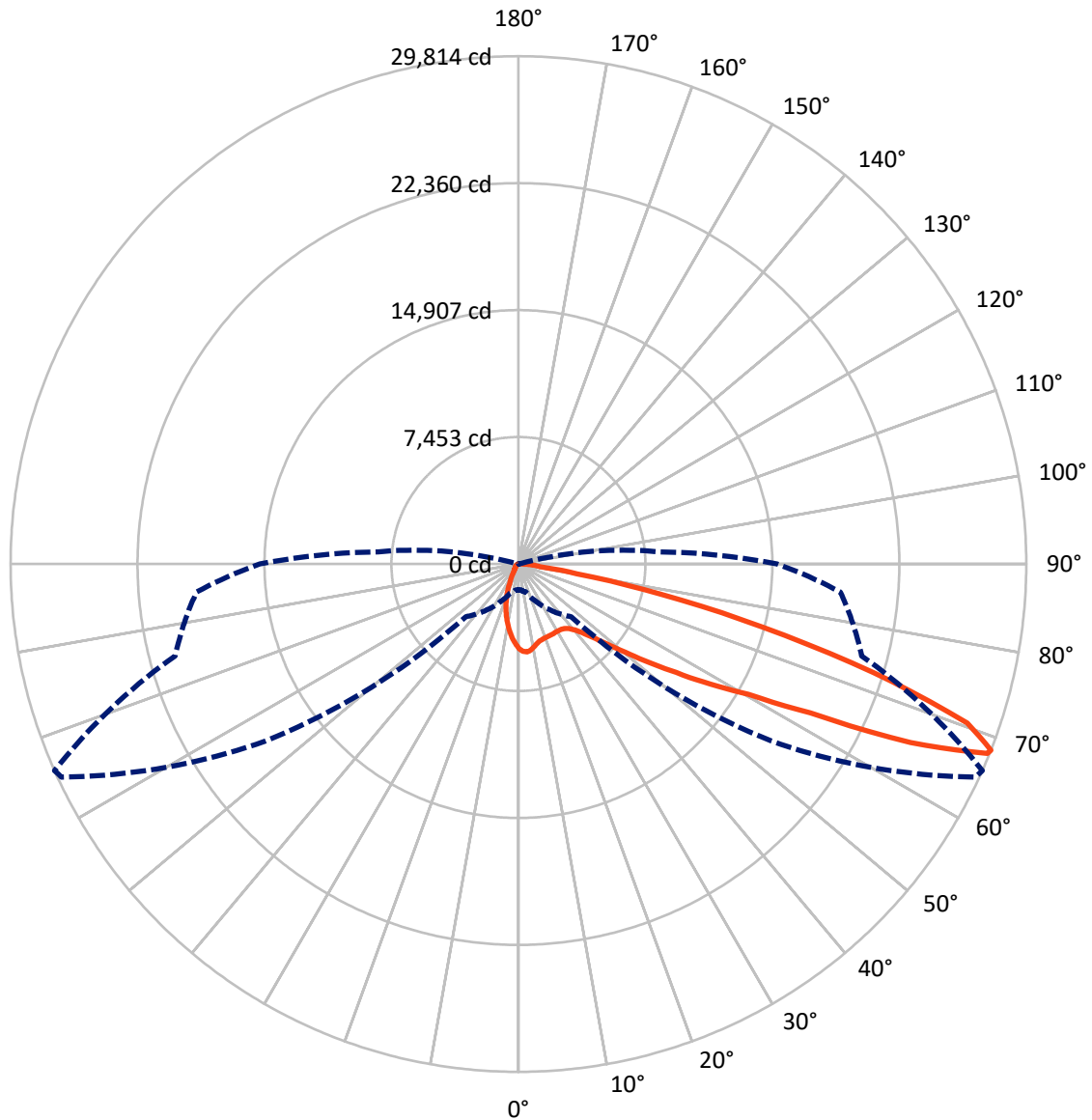
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2262.0	0.0	2262.0
	% Fixture	10.1	0.0	10.1
Street Side	Lumens	20070.0	0.0	20070.0
	% Fixture	89.9	0.0	89.9
Total	Lumens	22332.1	0.0	22332.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	407.9	1.8
10°-20°	877.6	3.9
20°-30°	1271.7	5.7
30°-40°	1946.7	8.7
40°-50°	3329.8	14.9
50°-60°	5208.7	23.3
60°-70°	5997.7	26.9
70°-80°	3001.3	13.4
80°-90°	290.7	1.3
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°	22332.1	100.0
0°-180°	22332.1	100.0

Coefficient of Utilization



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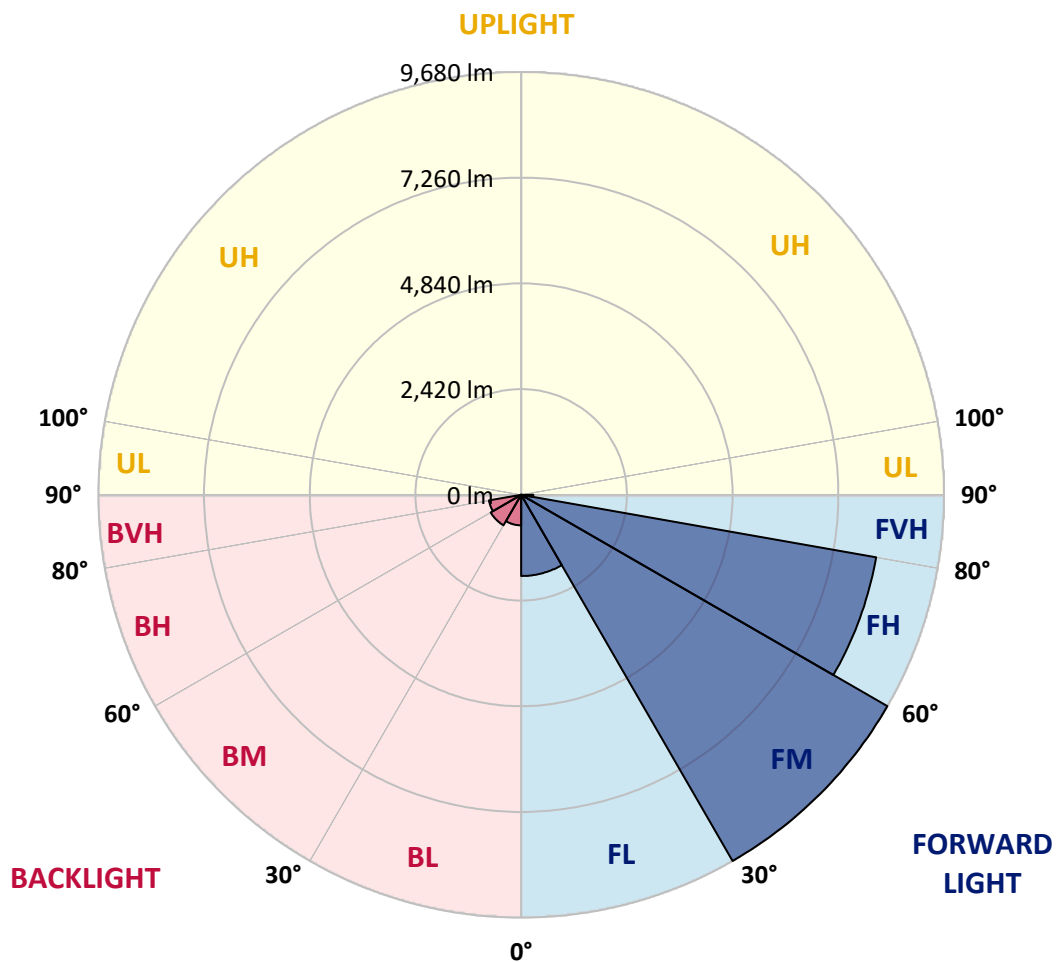
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1859.0	8.3			
FM	(30°-60°)	9679.7	43.3			
FH	(60°-80°)	8251.6	36.9			G4/12000
FVH	(80°-90°)	279.7	1.3			G3/500
BL	(0°-30°)	698.2	3.1	B2/1000		
BM	(30°-60°)	805.5	3.6	B1/1000		
BH	(60°-80°)	747.4	3.3	B2/1000		G2/1000
BVH	(80°-90°)	11.0	0.0			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 II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3
2.5°	5233.1	5236.6	5234.8	5240.1	5236.6	5210.3	5182.3	5122.6	5127.8	5050.7	4964.9
5°	4864.9	4894.7	4924.5	4954.4	5026.2	5089.3	5164.7	5182.3	5182.3	5115.6	4989.4
7.5°	4489.7	4491.5	4524.8	4565.1	4661.6	4777.3	4952.6	5110.4	5113.8	5131.4	4992.9
10°	4207.5	4216.3	4239.0	4282.9	4379.4	4493.2	4689.6	4936.8	4956.1	5085.8	4957.8
12.5°	3988.4	3998.9	4023.5	4074.3	4161.9	4279.4	4486.3	4768.5	4794.8	5042.0	4947.3
15°	3820.1	3834.1	3853.4	3904.2	3998.9	4123.3	4349.5	4656.3	4687.9	5024.4	4980.6
17.5°	3749.9	3749.9	3748.2	3783.3	3877.9	4004.1	4240.8	4596.7	4637.0	5038.4	5036.7
20°	3779.7	3774.5	3737.7	3728.9	3786.8	3913.0	4154.9	4558.2	4603.7	5064.7	5105.1
22.5°	3937.5	3927.0	3844.6	3776.2	3758.7	3842.8	4097.0	4531.9	4586.2	5119.2	5196.3
25°	4272.4	4240.8	4126.9	3972.6	3834.1	3825.3	4056.7	4517.8	4575.7	5182.3	5296.2
27.5°	4707.1	4698.4	4516.0	4309.2	4042.7	3883.1	4044.4	4507.3	4565.1	5227.8	5376.8
30°	5247.1	5250.6	5040.3	4770.2	4367.1	4046.2	4083.0	4502.0	4561.6	5231.4	5411.9
32.5°	5804.6	5808.1	5632.8	5343.5	4810.5	4326.7	4191.7	4526.6	4580.9	5217.3	5410.2
35°	6341.1	6346.3	6241.1	6008.0	5403.1	4715.9	4396.8	4610.7	4649.3	5226.1	5406.6
37.5°	7019.5	7040.6	6910.9	6693.5	6146.5	5287.4	4731.7	4780.8	4812.4	5298.0	5432.9
40°	8176.5	8148.5	7776.9	7408.7	6952.9	5983.4	5215.5	5073.5	5084.1	5483.7	5532.8
42.5°	9524.7	9489.7	8853.2	8218.7	7782.1	6823.2	5834.4	5522.3	5520.6	5795.8	5750.2
45°	10685.3	10664.3	9994.5	9147.8	8700.7	7750.6	6597.0	6169.2	6148.2	6335.7	6146.5
47.5°	11509.2	11491.7	10985.1	10136.5	9763.1	8770.9	7549.0	7051.1	7007.2	7042.3	6789.8
50°	11589.9	11570.6	11393.5	10848.3	11004.4	10268.1	8725.3	8206.4	8150.3	8095.9	7762.9
52.5°	10836.0	10834.3	10927.3	10892.2	11873.9	12194.7	10168.1	9635.2	9568.6	9430.1	9098.7
55°	9295.0	9286.3	9638.7	10150.6	11854.7	14182.8	12368.3	11335.7	11248.1	10971.0	10536.3
57.5°	6791.6	6746.1	7482.4	8567.5	11021.9	15052.3	15862.3	13448.2	13302.8	12424.4	11754.7
60°	3749.9	3767.4	4714.2	5999.2	9049.6	14880.6	19077.5	15911.4	15529.2	13677.9	13002.9
62.5°	2102.0	2145.8	2850.6	3899.0	5769.5	13486.8	20802.6	20150.4	19230.0	15140.0	14580.7
65°	1590.1	1616.4	1970.5	3008.4	3637.7	9424.8	21077.8	26077.7	25283.6	17355.9	17093.0
67.5°	1497.2	1518.2	1691.8	2494.7	3313.4	4887.8	19005.6	29583.9	29683.9	20378.3	19039.0
68°	1507.7	1534.0	1707.5	2400.0	3308.1	4372.3	18122.1	29601.5	29813.6	20865.6	18972.4
70°	1385.0	1392.0	1805.7	2354.4	3206.4	3444.9	13109.8	27573.1	27953.6	21446.0	17222.7
72.5°	529.5	531.2	810.0	2038.8	3359.0	3464.2	6604.1	21793.0	21812.4	18663.7	13427.2
75°	275.3	231.4	254.2	638.1	3208.2	3376.6	3313.4	14880.6	14787.6	12622.5	8227.4
77.5°	189.3	161.3	170.0	220.9	1334.1	3374.7	2393.0	8557.0	8537.8	5369.8	2347.5
80°	106.9	92.9	101.7	185.9	468.1	3167.9	2229.9	3678.0	3466.0	943.2	380.4
82.5°	54.3	45.6	54.3	156.0	291.0	1993.3	2168.7	1442.9	1285.0	224.4	247.1
85°	14.0	14.0	26.3	108.7	180.6	653.9	1944.2	1041.4	936.2	98.2	175.3
87.5°	3.5	1.7	10.5	40.3	64.9	142.0	1078.2	580.3	499.6	50.8	101.7
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°	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3	4975.3
2.5°	4929.8	4880.7	4784.2	4675.6	4598.5	4514.3	4465.2	4405.6	4360.0	4319.7	4349.5
5°	4912.2	4817.6	4603.7	4363.5	4161.9	3969.0	3825.3	3688.6	3585.1	3520.3	3546.6
7.5°	4866.7	4726.4	4379.4	4004.1	3674.5	3364.3	3111.8	2885.6	2710.3	2615.7	2645.5
10°	4789.6	4591.4	4125.2	3604.5	3143.3	2705.1	2329.9	1993.3	1739.1	1619.8	1648.0
12.5°	4733.4	4472.2	3862.2	3218.7	2612.1	1989.8	1491.9	1106.2	908.1	788.9	799.4
15°	4708.8	4379.4	3616.7	2812.0	2031.9	1278.1	806.4	583.8	515.5	490.9	492.7
17.5°	4712.4	4305.7	3383.5	2389.5	1446.4	734.6	494.4	445.3	434.8	429.5	429.5
20°	4721.1	4232.0	3141.6	1949.4	925.7	473.3	411.9	396.2	391.0	383.9	385.7
22.5°	4747.4	4176.0	2897.9	1507.7	569.8	385.7	364.7	350.7	341.9	331.3	333.1
25°	4787.8	4133.8	2657.7	1085.1	401.5	336.6	317.3	298.0	282.2	270.0	271.7
27.5°	4812.4	4074.3	2401.8	739.8	333.1	294.5	268.2	241.9	224.4	213.9	212.2
30°	4794.8	3977.8	2110.8	485.6	294.5	254.2	222.7	192.8	175.3	166.5	166.5
32.5°	4747.4	3853.4	1790.0	354.1	261.3	219.1	180.6	154.3	142.0	136.8	138.5
35°	4693.1	3723.6	1448.1	299.8	234.9	185.9	147.3	126.2	121.0	119.2	119.2
37.5°	4663.3	3611.4	1120.2	271.7	210.4	154.3	121.0	108.7	103.4	103.4	103.4
40°	4696.6	3525.5	829.2	250.7	185.9	128.0	101.7	92.9	91.1	91.1	91.1
42.5°	4838.7	3495.7	606.6	233.1	161.3	106.9	87.7	80.6	78.9	80.6	80.6
45°	5115.6	3560.6	459.3	215.6	138.5	87.7	75.4	70.2	70.2	71.9	71.9
47.5°	5585.4	3727.1	377.0	198.1	115.7	73.7	64.9	61.4	61.4	63.1	63.1
50°	6314.8	4035.6	338.4	178.8	96.5	63.1	54.3	52.6	52.6	54.3	56.1
52.5°	7422.7	4623.0	319.1	159.6	78.9	52.6	45.6	43.8	45.6	47.4	47.4
55°	8655.2	5375.1	296.2	140.2	66.6	43.8	36.8	36.8	38.6	42.0	42.0
57.5°	9803.4	6100.9	275.3	115.7	57.9	35.1	29.8	29.8	33.3	36.8	36.8
60°	11016.7	6812.6	247.1	92.9	49.1	28.0	24.6	24.6	29.8	33.3	35.1
62.5°	12515.6	7640.1	210.4	73.7	38.6	21.1	17.5	22.8	28.0	33.3	33.3
65°	14682.4	8669.2	164.8	57.9	29.8	15.8	14.0	21.1	26.3	31.5	33.3
67.5°	15469.6	8537.8	124.5	47.4	22.8	12.3	12.3	19.3	26.3	31.5	31.5
68°	15182.0	8250.2	119.2	45.6	21.1	12.3	12.3	19.3	26.3	31.5	31.5
70°	13229.1	6744.3	98.2	35.1	17.5	10.5	10.5	17.5	26.3	29.8	31.5
72.5°	9905.1	4481.0	84.2	22.8	15.8	10.5	8.8	17.5	24.6	29.8	29.8
75°	5681.9	1860.0	71.9	17.5	14.0	8.8	8.8	15.8	24.6	29.8	29.8
77.5°	1605.8	434.8	57.9	14.0	12.3	8.8	7.1	15.8	22.8	28.0	28.0
80°	294.5	129.7	45.6	12.3	10.5	8.8	7.1	15.8	22.8	28.0	28.0
82.5°	194.6	61.4	33.3	12.3	10.5	8.8	7.1	14.0	21.1	26.3	26.3
85°	145.5	43.8	21.1	12.3	10.5	8.8	7.1	14.0	21.1	26.3	26.3
87.5°	80.6	19.3	15.8	14.0	12.3	8.8	7.1	12.3	19.3	24.6	24.6
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)