

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: P196143

Luminaire Tested: **NAV-AF-03-D-UNV-SL3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196143
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24262)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-03-D-UNV-SL3
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18505.2 lumens
Efficiency: N/A
Efficacy: 111.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B2 - U0 - G3

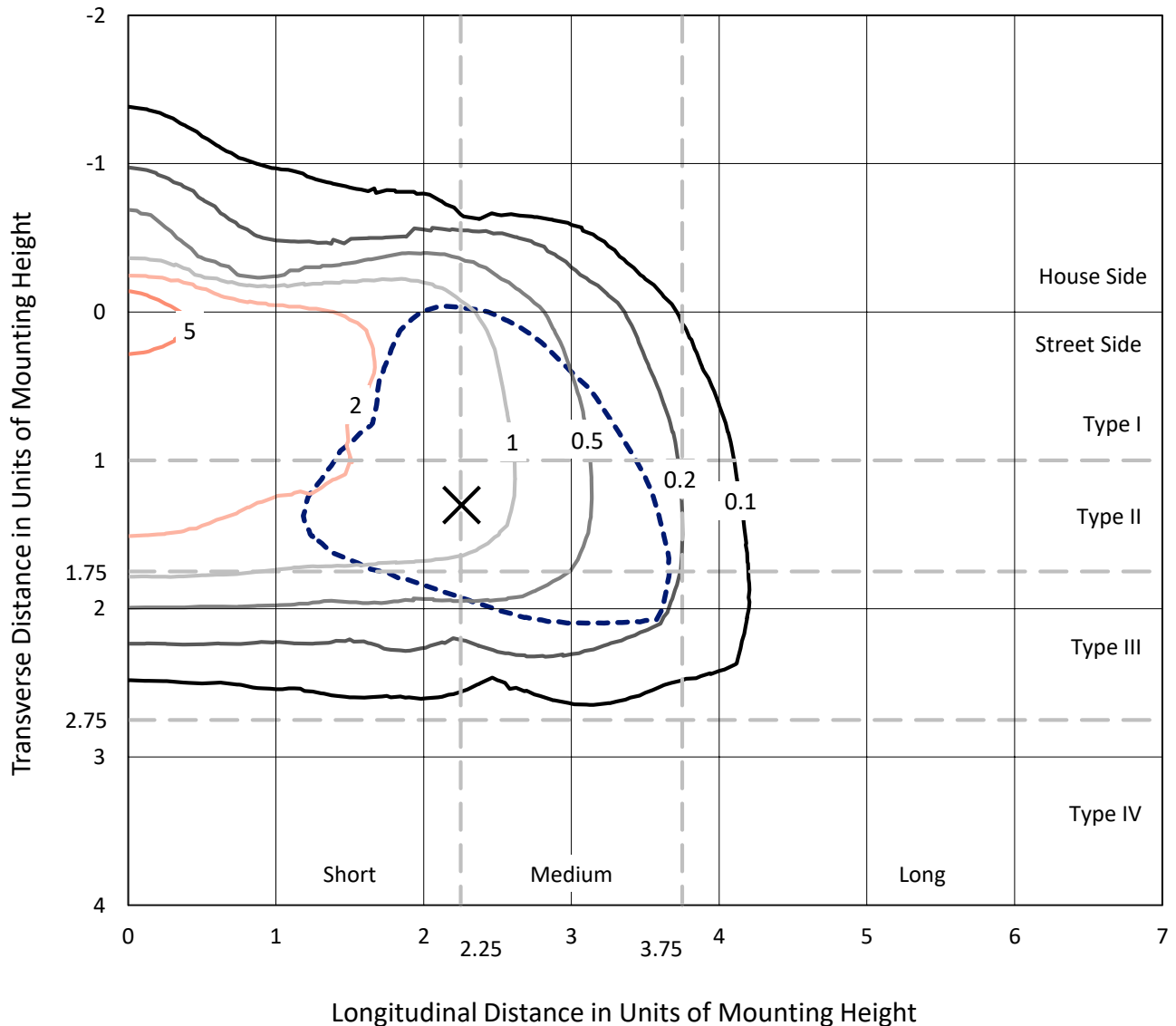
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

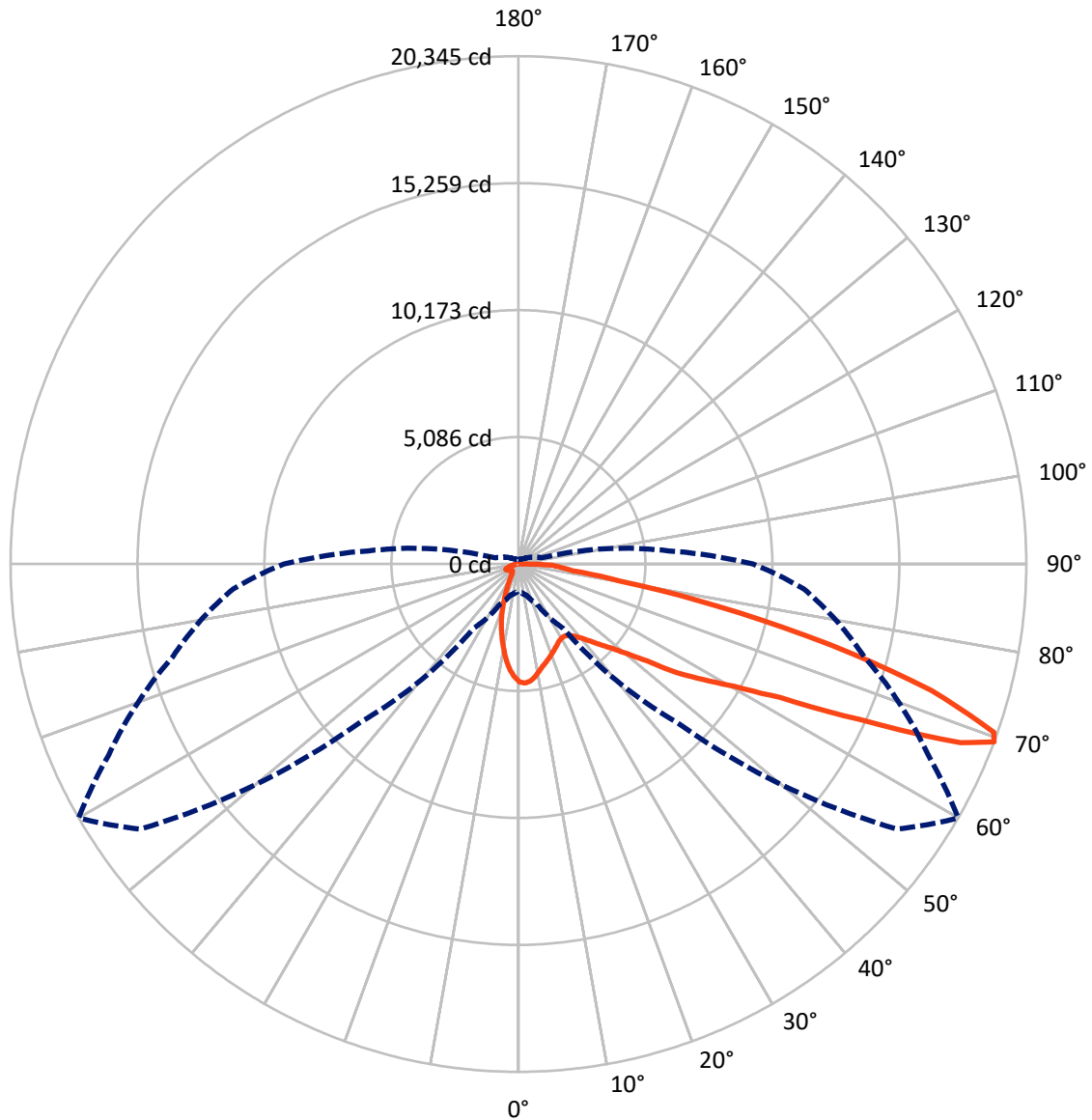
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.6 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 60-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2639.4	0.0	2639.4
	% Fixture	14.3	0.0	14.3
Street Side	Lumens	15865.7	0.0	15865.7
	% Fixture	85.7	0.0	85.7
Total	Lumens	18505.2	0.0	18505.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	400.6	2.2
10°-20°	857.6	4.6
20°-30°	1094.1	5.9
30°-40°	1505.6	8.1
40°-50°	2438.7	13.2
50°-60°	3827.5	20.7
60°-70°	5102.7	27.6
70°-80°	2838.3	15.3
80°-90°	440.2	2.4
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°	18505.2	100.0
0°-180°	18505.2	100.0

Coefficient of Utilization



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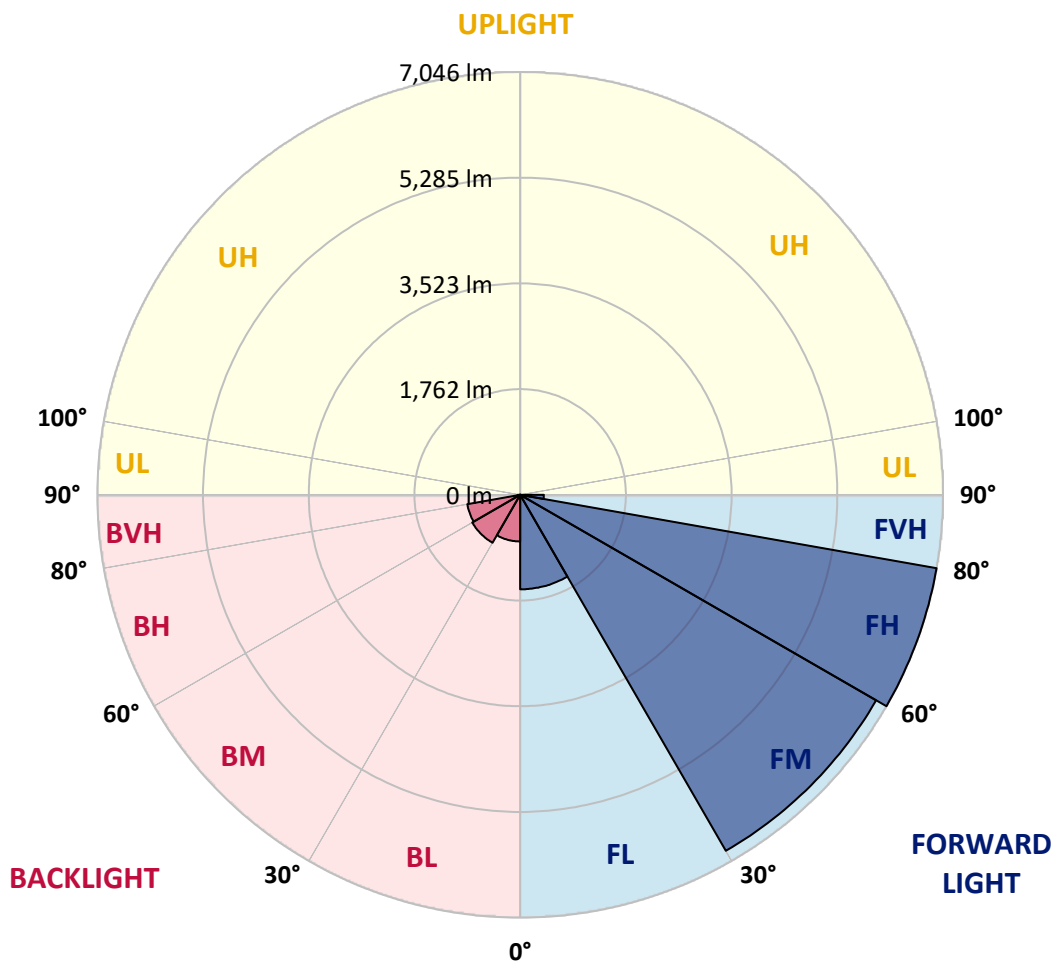
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1574.4	8.5			
FM	(30°-60°)	6849.7	37.0			
FH	(60°-80°)	7046.1	38.1			G3/7500
FVH	(80°-90°)	395.6	2.1			G3/500
BL	(0°-30°)	777.9	4.2	B2/1000		
BM	(30°-60°)	922.1	5.0	B1/1000		
BH	(60°-80°)	894.9	4.8	B2/1000		G2/1000
BVH	(80°-90°)	44.6	0.2			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G3

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	60°	65°	75°	85°
0°	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6
2.5°	4847.5	4860.4	4860.4	4849.8	4843.9	4809.5	4789.3	4775.0	4750.2	4703.8	4662.3
5°	4674.2	4699.1	4709.8	4714.6	4745.4	4734.7	4735.9	4726.4	4705.1	4655.2	4587.5
7.5°	4356.1	4360.9	4379.9	4412.0	4486.7	4538.9	4581.6	4590.0	4585.2	4548.4	4453.5
10°	4042.9	4051.2	4073.7	4128.3	4199.5	4274.3	4366.9	4404.8	4433.3	4421.4	4301.6
12.5°	3783.0	3784.2	3809.2	3872.0	3951.6	4045.3	4171.1	4230.4	4298.0	4325.3	4191.2
15°	3532.7	3549.2	3573.0	3649.0	3747.4	3866.0	4010.9	4092.7	4181.7	4260.1	4105.8
17.5°	3342.8	3355.8	3370.1	3432.9	3546.9	3695.2	3874.4	3962.2	4079.6	4199.5	4017.9
20°	3238.4	3243.1	3232.4	3263.3	3359.4	3519.6	3727.2	3832.9	3972.8	4141.4	3927.8
22.5°	3217.0	3217.0	3177.8	3171.9	3214.6	3349.9	3575.3	3704.7	3875.6	4101.0	3847.1
25°	3316.7	3309.6	3236.0	3168.4	3152.9	3221.8	3430.6	3589.6	3792.5	4099.9	3786.6
27.5°	3505.3	3495.8	3404.5	3290.5	3192.1	3162.5	3319.1	3481.6	3727.2	4140.2	3755.8
30°	3740.3	3736.7	3644.2	3501.8	3339.2	3186.2	3275.2	3425.9	3683.3	4215.0	3754.5
32.5°	3997.8	3981.2	3924.2	3781.8	3570.6	3317.8	3301.3	3428.2	3671.5	4324.1	3781.8
35°	4271.9	4260.1	4245.9	4102.2	3864.9	3550.5	3416.3	3510.1	3729.6	4476.0	3859.0
37.5°	4620.8	4607.8	4631.5	4474.8	4215.0	3855.4	3610.9	3673.8	3848.2	4696.8	4002.5
40°	5241.4	5203.4	5137.0	4896.0	4623.1	4229.2	3892.2	3901.6	4051.2	4992.2	4232.8
42.5°	6260.8	6138.5	5809.8	5367.2	5053.9	4663.5	4258.9	4213.7	4331.3	5382.7	4567.4
45°	7282.4	7144.8	6589.4	5881.0	5500.1	5129.9	4712.1	4604.2	4680.1	5837.1	4998.1
47.5°	7942.2	7874.6	7248.0	6394.8	5967.6	5637.8	5230.8	5052.8	5107.3	6352.1	5529.8
50°	8135.6	8077.5	7585.0	6797.1	6409.1	6251.3	5872.7	5636.6	5646.1	6953.7	6167.0
52.5°	7990.9	7967.2	7640.8	7046.3	6814.9	6898.0	6761.5	6432.8	6354.5	7613.5	6857.7
55°	7797.4	7805.7	7680.0	7296.7	7227.9	7500.8	7924.4	7659.8	7327.5	8300.5	7576.7
57.5°	7188.7	7194.6	7524.5	7773.7	8015.7	8345.6	8829.8	8718.3	8331.4	9042.3	8382.5
60°	5788.5	5834.7	6569.3	7675.2	8916.4	10010.5	10129.2	9936.9	9399.4	9896.6	9430.3
62.5°	4135.5	4177.0	5027.8	6663.0	8810.9	11894.9	12528.6	11764.3	10848.3	11174.6	10904.0
65°	2172.7	2165.6	2824.2	4604.2	7421.3	12331.6	16309.2	15008.6	13289.3	12932.0	12328.1
67.5°	1213.9	1253.1	1508.2	2322.3	4836.7	10853.0	18724.1	19107.3	16683.0	14326.3	12266.3
69°	1122.6	1135.6	1306.5	1795.4	3152.9	8954.4	18516.4	20345.0	18114.1	14332.3	11476.1
70°	1090.6	1104.8	1260.2	1654.2	2648.6	7337.0	17760.5	20200.2	18461.8	14014.2	10756.9
72.5°	977.8	996.8	1147.4	1486.9	2232.1	3781.8	14306.2	17289.4	16723.4	12248.5	8340.9
75°	834.2	866.2	1094.0	1476.2	2114.6	2404.1	9540.7	12881.0	12446.8	8759.8	4732.4
77.5°	345.3	348.8	478.2	1081.1	2219.0	2300.9	5127.4	8159.4	7223.1	3841.2	1425.2
80°	240.9	236.1	238.6	315.7	1790.7	2316.4	2630.8	4149.7	3225.3	1013.4	666.9
82.5°	203.0	200.5	210.0	198.1	606.4	2628.4	2200.1	2163.2	1518.9	545.8	318.0
85°	134.1	130.5	172.1	180.3	288.4	2087.3	2366.2	1700.5	1132.1	292.0	135.2
87.5°	65.3	66.5	98.5	122.2	153.0	660.9	2266.4	1344.5	874.5	126.9	54.6
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°	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6	4721.6
2.5°	4645.7	4610.1	4578.1	4537.7	4506.9	4480.7	4445.1	4444.0	4438.1	4446.4	4448.7
5°	4542.5	4483.2	4393.0	4292.1	4220.9	4127.2	4035.7	4005.0	3970.5	3966.9	3977.6
7.5°	4387.0	4294.4	4140.2	3985.9	3831.7	3673.8	3524.4	3448.4	3374.8	3352.3	3363.0
10°	4213.7	4096.3	3860.1	3608.6	3391.4	3156.5	2928.6	2781.5	2647.4	2590.4	2604.6
12.5°	4078.5	3928.9	3596.7	3270.4	2945.3	2608.2	2308.0	2017.3	1797.7	1699.2	1705.2
15°	3962.2	3771.1	3349.9	2915.6	2508.6	2046.9	1630.5	1293.4	1101.2	1030.0	1027.7
17.5°	3836.4	3605.0	3092.4	2585.7	2057.7	1486.9	1091.7	892.3	816.4	792.7	792.7
20°	3702.4	3434.1	2823.0	2226.1	1583.0	1038.3	821.1	744.0	715.6	708.4	707.3
22.5°	3577.8	3266.8	2552.5	1842.8	1145.1	788.0	699.0	669.3	664.5	670.4	670.4
25°	3479.3	3119.7	2278.3	1439.4	833.0	659.8	621.9	618.3	636.1	657.5	660.9
27.5°	3405.7	2987.9	2007.8	1051.4	655.0	574.3	561.3	576.7	618.3	660.9	669.3
30°	3354.7	2875.2	1683.9	755.9	545.8	503.1	509.0	536.3	599.2	664.5	682.3
32.5°	3332.1	2783.9	1357.6	580.2	466.4	442.6	458.1	493.7	558.9	624.2	645.6
35°	3353.4	2717.4	1056.1	481.8	408.2	390.4	408.2	445.0	487.7	519.8	532.8
37.5°	3430.6	2693.6	795.0	427.2	370.2	352.4	366.6	391.6	410.6	422.5	428.4
40°	3593.1	2718.6	623.0	398.7	348.8	328.7	332.3	344.1	357.2	366.6	367.9
42.5°	3851.8	2800.4	554.1	388.0	335.8	309.7	303.8	312.1	326.3	339.4	341.8
45°	4195.9	2937.0	547.1	391.6	329.9	294.3	282.4	290.7	309.7	331.0	334.6
47.5°	4640.9	3152.9	580.2	410.6	333.5	286.0	268.2	276.5	301.4	329.9	334.6
50°	5167.8	3451.9	642.0	439.1	350.1	286.0	262.3	269.3	295.4	327.5	332.3
52.5°	5788.5	3868.5	706.0	467.5	373.8	296.7	264.6	263.4	287.1	316.8	322.7
55°	6473.1	4385.8	767.7	492.4	386.9	310.9	270.6	256.4	275.3	299.0	303.8
57.5°	7278.9	5094.3	875.7	516.2	393.9	321.6	277.6	249.2	259.8	276.5	280.1
60°	8371.7	6134.9	1085.8	556.5	407.0	326.3	278.9	242.0	240.9	252.8	253.9
62.5°	9796.9	7353.6	1286.4	604.1	433.1	327.5	274.2	237.3	225.5	229.0	229.0
65°	10810.3	7802.1	1228.2	644.4	456.8	326.3	269.3	233.7	213.6	207.7	207.7
67.5°	10233.6	6892.0	1043.1	655.0	459.2	313.2	258.7	225.5	203.0	188.6	188.6
69°	9386.4	6041.2	957.6	636.1	440.3	297.9	246.8	217.2	195.8	179.2	179.2
70°	8695.7	5396.9	905.4	613.5	417.7	284.8	236.1	208.9	188.6	174.4	173.3
72.5°	6492.2	3601.5	773.7	529.3	342.9	240.9	206.4	186.3	169.7	160.2	160.2
75°	3425.9	1804.9	633.7	431.9	264.6	192.2	169.7	156.6	147.1	146.0	144.7
77.5°	1122.6	816.4	455.6	325.1	194.6	149.6	135.2	126.9	125.8	130.5	130.5
80°	606.4	487.7	293.1	219.5	135.2	111.5	104.4	103.2	106.8	114.0	114.0
82.5°	294.3	240.9	174.4	135.2	92.6	81.8	81.8	83.1	87.8	96.2	96.2
85°	126.9	114.0	100.9	75.9	57.0	51.0	58.1	64.0	67.6	73.6	75.9
87.5°	60.6	53.4	46.2	29.7	25.0	26.1	30.9	38.0	45.1	49.8	51.0
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)