

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: P197153

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197153
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 23408 lumens
Efficiency: N/A
Efficacy: 83.9 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

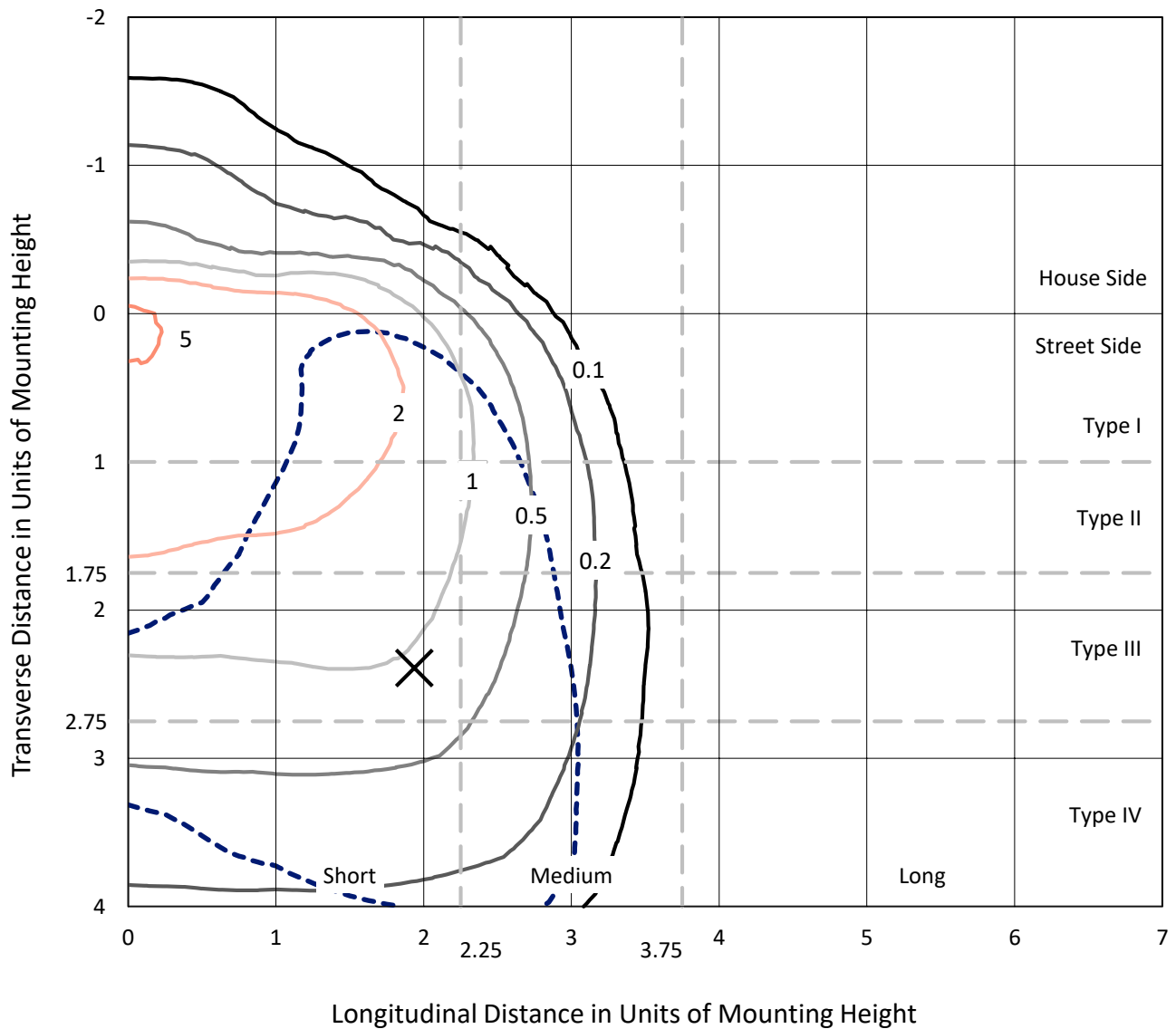
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

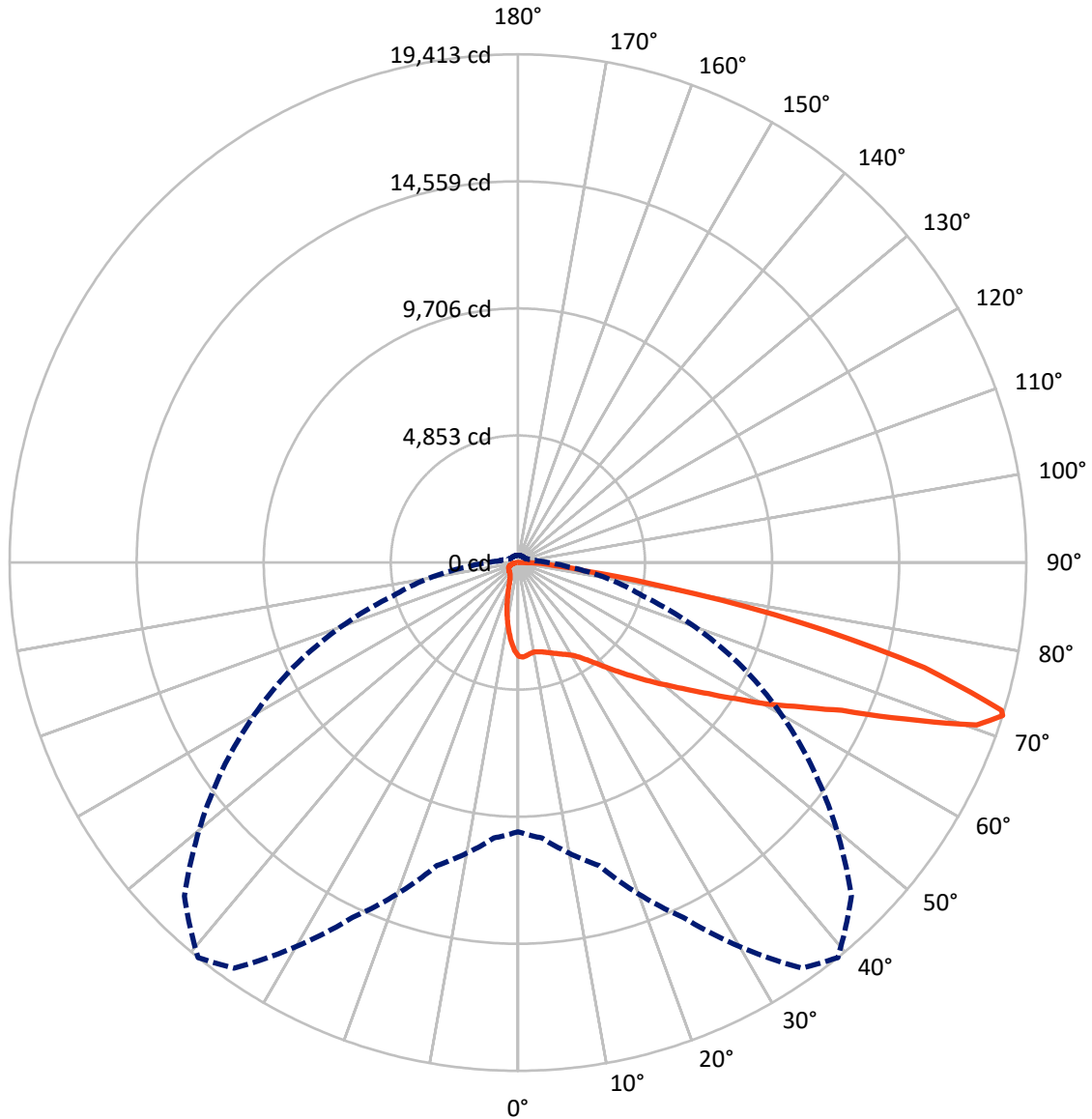
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.7 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	2684.0	0.0	2684.0
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	20724.0	0.0	20724.0
	% Fixture	88.5	0.0	88.5
Total	Lumens	23408.0	0.0	23408.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	307.2	1.3
10°-20°	771.9	3.3
20°-30°	1203.0	5.1
30°-40°	1852.2	7.9
40°-50°	3019.5	12.9
50°-60°	4692.1	20.0
60°-70°	6280.1	26.8
70°-80°	4516.3	19.3
80°-90°	765.6	3.3
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°	23408.0	100.0
0°-180°	23408.0	100.0

Coefficient of Utilization



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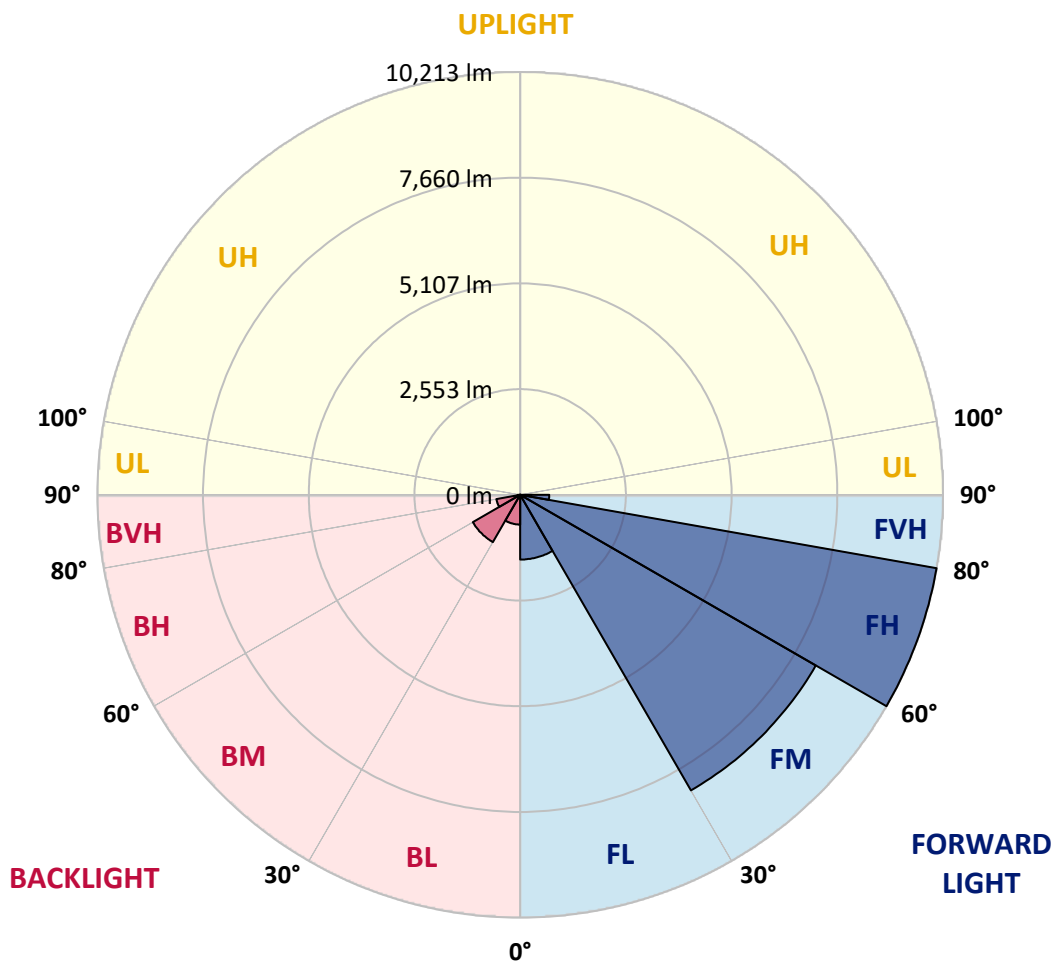
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1563.6	6.7			
FM	(30°-60°)	8244.8	35.2			
FH	(60°-80°)	10213.3	43.6			G4/12000
FVH	(80°-90°)	702.3	3.0			G4/750
BL	(0°-30°)	718.5	3.1	B2/1000		
BM	(30°-60°)	1319.1	5.6	B2/2500		
BH	(60°-80°)	583.2	2.5	B2/1000		G2/1000
BVH	(80°-90°)	63.3	0.3			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°	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8
2.5°	3651.8	3653.4	3648.7	3634.5	3622.0	3615.7	3604.7	3585.8	3560.7	3543.4	3529.3
5°	3617.2	3622.0	3618.8	3595.2	3573.3	3560.7	3543.4	3516.7	3483.7	3469.5	3436.5
7.5°	3590.5	3593.7	3584.3	3557.5	3515.1	3499.4	3468.0	3433.4	3403.5	3383.1	3343.8
10°	3571.7	3574.8	3567.0	3540.3	3493.1	3474.3	3436.5	3398.8	3359.5	3334.4	3290.4
12.5°	3545.0	3551.3	3551.3	3538.7	3507.3	3494.7	3457.0	3416.1	3380.0	3353.3	3298.3
15°	3540.3	3548.1	3562.3	3560.7	3551.3	3541.8	3512.0	3471.1	3439.7	3408.3	3340.7
17.5°	3579.5	3596.8	3625.1	3634.5	3628.2	3607.8	3573.3	3535.5	3501.0	3471.1	3387.8
20°	3678.5	3688.0	3730.4	3749.2	3717.8	3688.0	3642.4	3593.7	3562.3	3538.7	3431.8
22.5°	3827.8	3840.4	3874.9	3876.5	3810.5	3774.4	3716.2	3656.5	3626.7	3617.2	3491.5
25°	4066.7	4063.5	4072.9	4033.7	3914.2	3871.8	3801.1	3732.0	3711.5	3730.4	3579.5
27.5°	4352.6	4344.8	4314.9	4212.8	4032.1	3977.1	3892.2	3831.0	3831.0	3874.9	3699.0
30°	4682.6	4674.8	4577.3	4406.1	4171.9	4109.1	4019.5	3955.1	3988.1	4072.9	3860.8
32.5°	5031.5	5003.2	4866.5	4637.1	4371.5	4302.4	4215.9	4149.9	4212.8	4357.4	4093.4
35°	5359.9	5344.2	5176.0	4904.2	4629.2	4571.1	4511.3	4429.6	4530.2	4754.9	4421.8
37.5°	5699.3	5686.7	5480.9	5191.7	4943.5	4904.2	4853.9	4797.3	4959.2	5254.6	4866.5
40°	6078.0	6052.8	5793.6	5504.4	5309.6	5290.7	5264.0	5248.3	5509.2	5949.1	5429.0
42.5°	6507.0	6458.2	6123.6	5848.6	5708.7	5724.4	5710.3	5773.1	6172.3	6750.5	6098.4
45°	6997.2	6899.8	6452.0	6214.7	6150.3	6213.1	6243.0	6403.3	6956.4	7676.0	6846.4
47.5°	7456.1	7330.3	6811.8	6612.2	6648.4	6756.8	6841.7	7124.5	7815.9	8590.6	7610.0
50°	7878.8	7737.3	7196.8	7023.9	7199.9	7353.9	7529.9	7929.0	8730.4	9531.8	8310.9
52.5°	8191.4	8089.3	7581.8	7473.3	7833.2	8037.5	8318.7	8823.1	9654.4	10429.1	8936.3
55°	8433.4	8378.4	7957.3	7988.7	8549.7	8842.0	9183.0	9762.8	10631.8	11233.6	9439.1
57.5°	8713.1	8672.3	8386.3	8611.0	9439.1	9806.8	10209.1	10853.3	11562.0	11942.3	9833.5
60°	9008.6	9008.6	8864.0	9360.5	10551.6	10972.7	11373.4	11874.7	12489.1	12580.2	9993.8
62.5°	9231.7	9289.8	9341.7	10158.8	11607.6	12130.8	12570.8	13051.6	13449.2	12894.5	9616.7
65°	9555.4	9679.5	9971.8	11081.2	12914.9	13600.0	14194.0	14597.8	14227.0	12644.7	8386.3
67.5°	10111.6	10295.5	10917.7	12454.5	14916.8	15942.9	16519.6	15821.9	14074.6	11071.7	6423.7
70°	10612.9	10872.2	11936.0	14197.1	17519.0	18584.4	18318.8	15537.5	12258.1	8116.0	3951.9
72°	10279.8	10562.6	11983.1	14956.1	18909.6	19412.5	18012.4	13769.7	9472.1	4952.9	1948.5
72.5°	10061.4	10355.2	11830.7	14937.3	18947.3	19307.2	17586.6	13067.3	8598.4	4333.8	1576.1
75°	8405.2	8656.6	10172.9	13238.6	16697.2	16037.2	13724.2	8457.0	3951.9	1400.1	810.8
77.5°	5488.7	5680.4	7014.5	9172.0	11695.6	11060.7	8353.3	3959.8	1481.8	850.1	609.7
80°	2757.7	2894.4	3754.0	4822.5	6312.1	5807.7	3856.1	1915.5	991.5	614.4	479.3
82.5°	1918.6	2044.3	2584.9	2462.3	2638.3	2553.4	1813.3	1598.1	741.7	388.1	251.4
85°	1609.1	1739.5	2138.6	1755.2	1436.2	1308.9	1299.5	1510.1	490.3	191.7	212.1
87.5°	1403.2	1601.2	1764.6	1282.2	985.2	869.0	957.0	1384.4	155.6	105.3	64.4
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°	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8	3574.8
2.5°	3505.7	3501.0	3477.4	3441.3	3414.5	3397.3	3364.3	3362.7	3365.8	3337.5	3348.5
5°	3406.7	3387.8	3326.5	3243.3	3175.7	3111.3	3040.6	3017.0	2996.6	2954.1	2958.9
7.5°	3303.0	3270.0	3163.1	3026.4	2896.0	2776.6	2658.7	2600.6	2556.6	2501.6	2501.6
10°	3241.7	3189.8	3026.4	2826.9	2619.4	2445.0	2269.0	2163.7	2086.8	2016.0	2011.3
12.5°	3238.6	3160.0	2932.1	2657.2	2372.7	2127.6	1887.2	1725.3	1610.6	1527.4	1519.5
15°	3263.7	3153.7	2853.6	2498.4	2140.2	1821.2	1524.2	1318.4	1172.2	1079.5	1070.1
17.5°	3285.7	3145.8	2768.7	2331.9	1913.9	1525.8	1195.8	982.1	843.8	768.4	760.5
20°	3306.1	3128.6	2660.3	2155.9	1664.1	1249.2	935.0	762.1	671.0	628.5	623.8
22.5°	3336.0	3112.8	2547.2	1957.9	1418.9	1016.7	771.5	647.4	598.7	578.3	575.1
25°	3384.7	3114.4	2437.2	1755.2	1194.2	847.0	667.8	590.8	564.1	550.0	550.0
27.5°	3455.4	3133.3	2328.7	1549.4	1004.1	730.7	606.5	561.0	543.7	532.7	529.5
30°	3559.1	3167.8	2214.0	1354.5	853.2	650.5	570.4	542.1	528.0	518.5	517.0
32.5°	3710.0	3229.1	2093.0	1176.9	738.5	594.0	543.7	526.4	515.4	507.5	506.0
35°	3934.7	3337.5	1975.2	1026.1	656.8	553.1	521.7	507.5	501.3	498.1	496.5
37.5°	4264.6	3512.0	1863.6	908.2	603.4	526.4	499.7	491.8	488.7	488.7	488.7
40°	4679.5	3741.4	1763.1	825.0	573.5	506.0	484.0	477.7	477.7	479.3	479.3
42.5°	5183.9	4028.9	1676.6	768.4	556.3	491.8	473.0	469.8	468.3	468.3	469.8
45°	5770.0	4368.4	1623.2	724.4	543.7	484.0	465.1	463.5	457.3	454.1	454.1
47.5°	6359.3	4731.3	1620.1	699.3	528.0	474.5	457.3	457.3	444.7	438.4	440.0
50°	6909.2	5056.6	1654.6	693.0	518.5	460.4	449.4	451.0	433.7	425.8	424.3
52.5°	7352.3	5304.9	1697.1	700.8	518.5	447.8	435.3	443.1	424.3	414.8	413.3
55°	7694.9	5477.7	1712.8	718.1	524.8	436.8	422.7	435.3	421.1	408.6	408.6
57.5°	7940.0	5532.7	1645.2	726.0	534.3	435.3	410.1	433.7	425.8	410.1	410.1
60°	7850.5	5213.7	1393.8	696.1	532.7	432.1	400.7	436.8	441.5	424.3	424.3
62.5°	7151.2	4362.1	1118.8	628.5	506.0	421.1	389.7	433.7	452.5	446.3	443.1
65°	5821.9	3199.3	867.4	548.4	460.4	397.6	366.1	405.4	427.4	433.7	435.3
67.5°	4102.8	2025.5	674.1	466.7	403.8	363.0	339.4	358.3	366.1	369.3	375.6
70°	2243.9	1096.8	535.8	392.8	345.7	328.4	311.1	312.7	309.6	306.4	309.6
72°	1126.7	716.5	452.5	341.0	306.4	295.4	287.6	282.8	282.8	278.1	279.7
72.5°	969.5	666.3	436.8	328.4	297.0	287.6	281.3	276.6	275.0	271.8	273.4
75°	645.8	528.0	364.6	275.0	253.0	246.7	249.8	245.1	246.7	243.6	245.1
77.5°	521.7	454.1	309.6	232.6	216.8	207.4	213.7	215.3	218.4	215.3	213.7
80°	436.8	386.6	259.3	191.7	180.7	172.8	176.0	187.0	188.6	179.1	177.6
82.5°	282.8	311.1	204.3	149.3	138.3	135.1	143.0	154.0	157.1	144.6	141.4
85°	237.3	249.8	147.7	102.1	91.1	88.0	103.7	114.7	122.6	110.0	106.9
87.5°	66.0	122.6	72.3	48.7	40.9	40.9	50.3	59.7	70.7	72.3	72.3
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)