

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: P195227

Luminaire Tested: **NAV-AF-05-D-UNV-SL4-7060-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195227
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-SL4-7060-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 5700K, 800mA 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: 23176 lumens
Efficiency: N/A
Efficacy: 110.4 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

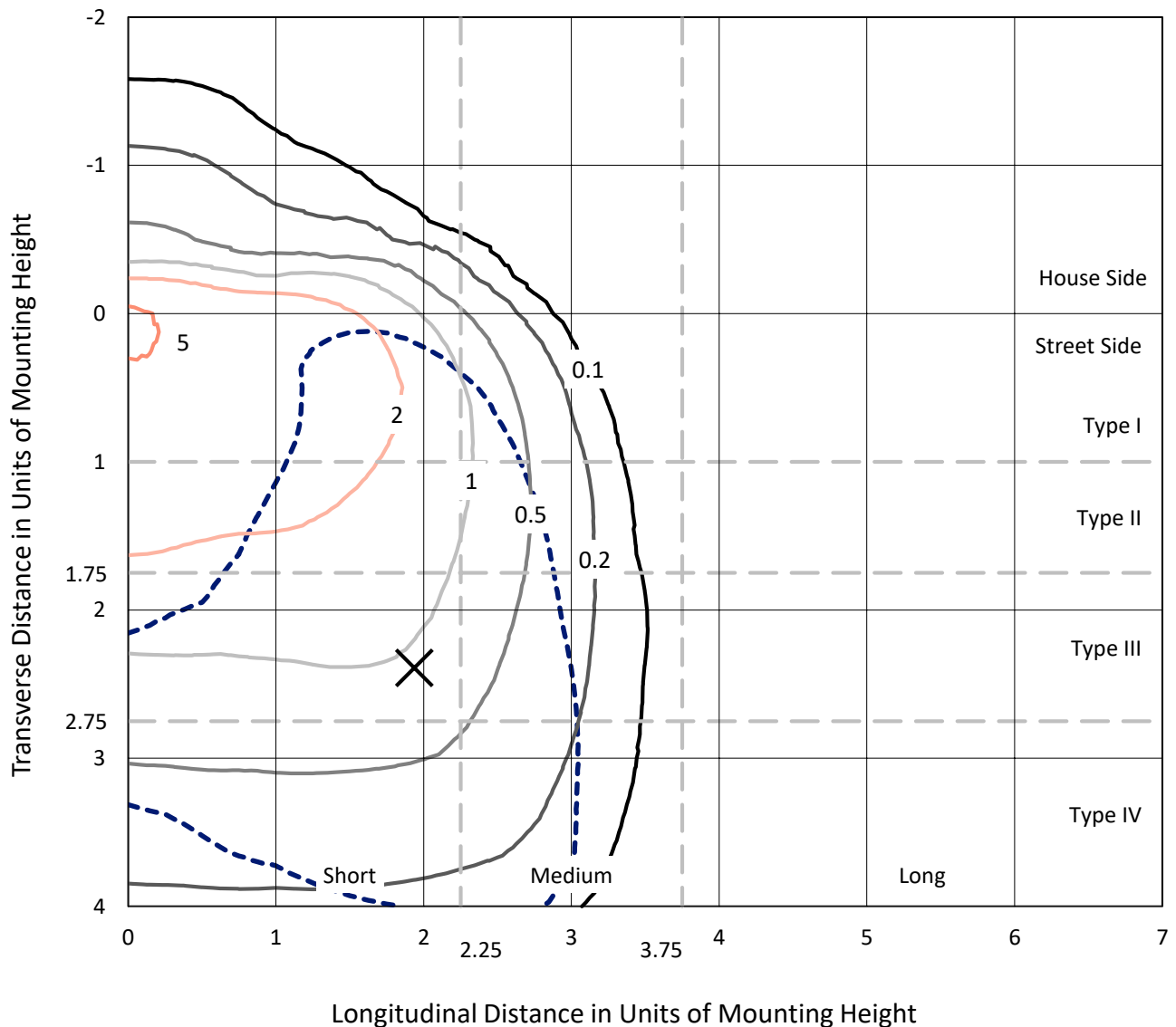
Input Watts (W): 210
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

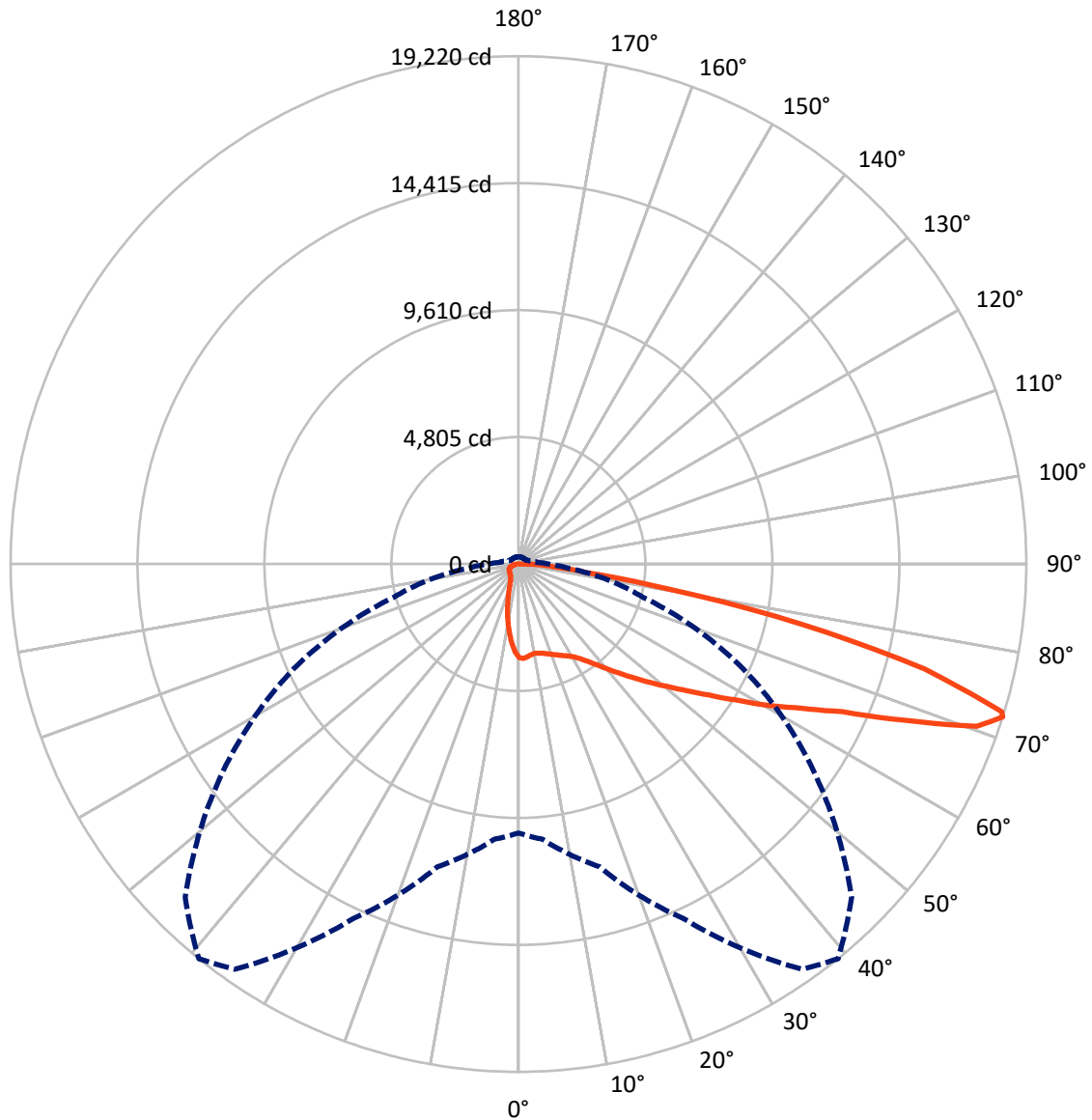
× Max cd
 - - - 1/2 Max cd



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	2657.4	0.0	2657.4
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	20518.6	0.0	20518.6
	% Fixture	88.5	0.0	88.5
Total	Lumens	23176.0	0.0	23176.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	304.2	1.3
10°-20°	764.3	3.3
20°-30°	1191.1	5.1
30°-40°	1833.9	7.9
40°-50°	2989.6	12.9
50°-60°	4645.5	20.0
60°-70°	6217.9	26.8
70°-80°	4471.6	19.3
80°-90°	758.0	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°	23176.0	100.0
0°-180°	23176.0	100.0



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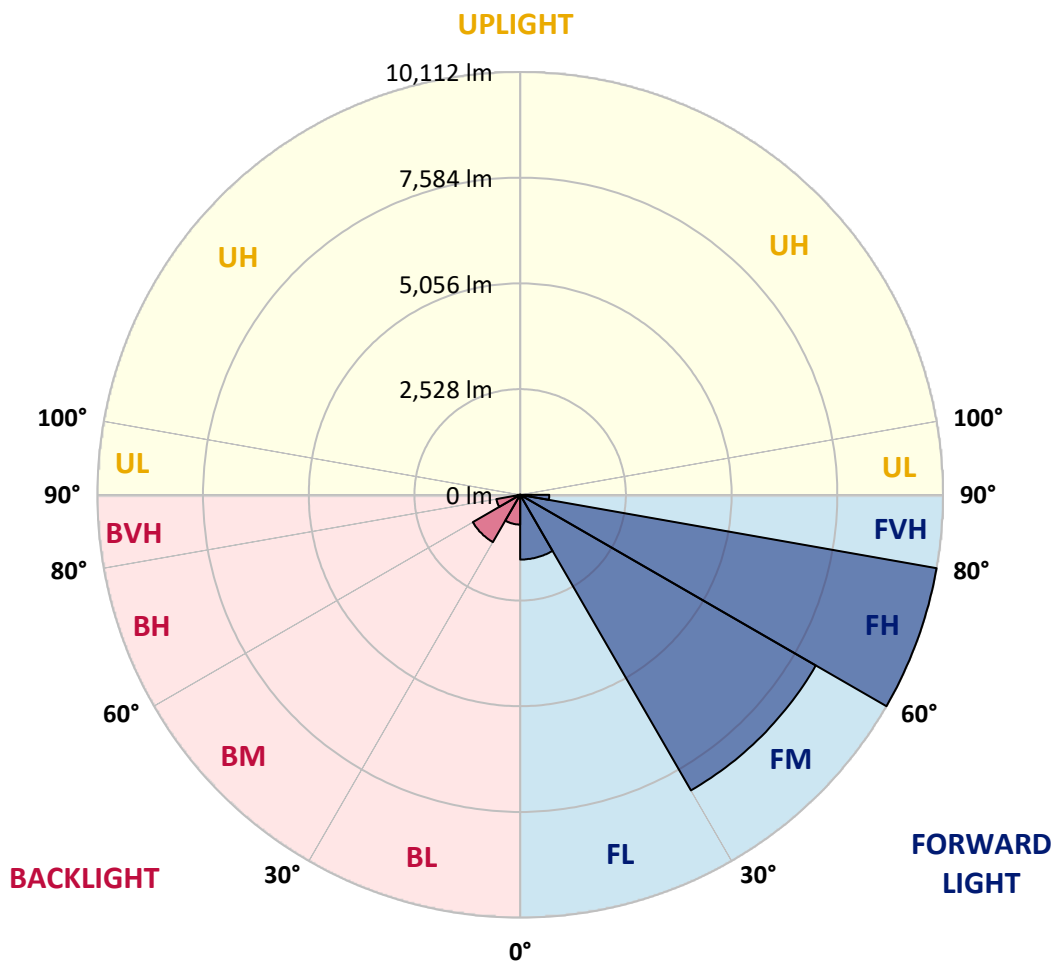
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1548.1	6.7			
FM	(30°-60°)	8163.0	35.2			
FH	(60°-80°)	10112.1	43.6			G4/12000
FVH	(80°-90°)	695.4	3.0			G4/750
BL	(0°-30°)	711.4	3.1	B2/1000		
BM	(30°-60°)	1306.0	5.6	B2/2500		
BH	(60°-80°)	577.4	2.5	B2/1000		G2/1000
BVH	(80°-90°)	62.7	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°	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4
2.5°	3615.6	3617.2	3612.5	3598.5	3586.1	3579.8	3569.0	3550.3	3525.4	3508.3	3494.3
5°	3581.4	3586.1	3583.0	3559.6	3537.8	3525.4	3508.3	3481.8	3449.2	3435.2	3402.5
7.5°	3554.9	3558.1	3548.7	3522.3	3480.3	3464.7	3433.6	3399.4	3369.8	3349.6	3310.7
10°	3536.3	3539.4	3531.6	3505.2	3458.5	3439.8	3402.5	3365.1	3326.2	3301.4	3257.8
12.5°	3509.8	3516.1	3516.1	3503.6	3472.5	3460.0	3422.7	3382.3	3346.5	3320.0	3265.6
15°	3505.2	3512.9	3526.9	3525.4	3516.1	3506.7	3477.2	3436.7	3405.6	3374.5	3307.6
17.5°	3544.1	3561.2	3589.2	3598.5	3592.3	3572.1	3537.8	3500.5	3466.3	3436.7	3354.3
20°	3642.1	3651.4	3693.4	3712.1	3681.0	3651.4	3606.3	3558.1	3526.9	3503.6	3397.8
22.5°	3789.9	3802.3	3836.5	3838.1	3772.8	3737.0	3679.4	3620.3	3590.7	3581.4	3456.9
25°	4026.3	4023.2	4032.6	3993.7	3875.4	3833.4	3763.4	3695.0	3674.7	3693.4	3544.1
27.5°	4309.5	4301.7	4272.2	4171.0	3992.1	3937.7	3853.7	3793.0	3793.0	3836.5	3662.3
30°	4636.2	4628.4	4532.0	4362.4	4130.6	4068.4	3979.7	3915.9	3948.6	4032.6	3822.5
32.5°	4981.6	4953.6	4818.2	4591.1	4328.2	4259.7	4174.1	4108.8	4171.0	4314.2	4052.8
35°	5306.8	5291.2	5124.7	4855.6	4583.3	4525.8	4466.6	4385.7	4485.3	4707.8	4378.0
37.5°	5642.8	5630.4	5426.5	5140.3	4894.5	4855.6	4805.8	4749.8	4910.0	5202.5	4818.2
40°	6017.7	5992.9	5736.1	5449.9	5257.0	5238.3	5211.9	5196.3	5454.6	5890.2	5375.2
42.5°	6442.5	6394.2	6062.9	5790.6	5652.1	5667.7	5653.7	5715.9	6111.1	6683.6	6038.0
45°	6927.9	6831.4	6388.0	6153.1	6089.3	6151.5	6181.1	6339.8	6887.4	7600.0	6778.5
47.5°	7382.2	7257.7	6744.3	6546.7	6582.5	6689.8	6773.9	7053.9	7738.4	8505.4	7534.6
50°	7800.7	7660.6	7125.5	6954.3	7128.6	7281.0	7455.3	7850.4	8643.9	9437.3	8228.5
52.5°	8110.3	8009.1	7506.6	7399.3	7755.5	7957.8	8236.3	8735.7	9558.7	10325.7	8847.7
55°	8349.9	8295.4	7878.5	7909.6	8465.0	8754.4	9092.0	9666.0	10526.4	11122.2	9345.5
57.5°	8626.8	8586.3	8303.2	8525.7	9345.5	9709.6	10107.9	10745.7	11447.4	11823.9	9736.0
60°	8919.3	8919.3	8776.1	9267.8	10447.0	10864.0	11260.7	11757.0	12365.3	12455.5	9894.7
62.5°	9140.2	9197.8	9249.1	10058.1	11492.5	12010.6	12446.2	12922.3	13315.9	12766.7	9521.4
65°	9460.7	9583.6	9873.0	10971.3	12786.9	13465.2	14053.3	14453.2	14086.0	12519.3	8303.2
67.5°	10011.4	10193.4	10809.5	12331.1	14769.0	15784.9	16355.9	15665.1	13935.1	10962.0	6360.0
70°	10507.7	10764.4	11817.7	14056.4	17345.4	18400.2	18137.2	15383.5	12136.6	8035.6	3912.8
72°	10177.9	10457.9	11864.4	14807.9	18722.2	19220.1	17833.9	13633.3	9378.2	4903.8	1929.2
72.5°	9961.6	10252.6	11713.4	14789.2	18759.6	19115.8	17412.2	12937.8	8513.2	4290.8	1560.4
75°	8321.8	8570.8	10072.1	13107.4	16531.7	15878.3	13588.2	8373.2	3912.8	1386.2	802.8
77.5°	5434.3	5624.1	6945.0	9081.1	11579.6	10951.1	8270.5	3920.6	1467.1	841.7	603.6
80°	2730.4	2865.7	3716.7	4774.7	6249.6	5750.1	3817.9	1896.5	981.7	608.3	474.5
82.5°	1899.6	2024.1	2559.3	2437.9	2612.1	2528.1	1795.4	1582.2	734.3	384.3	248.9
85°	1593.1	1722.2	2117.4	1737.8	1422.0	1296.0	1286.6	1495.1	485.4	189.8	210.0
87.5°	1389.3	1585.3	1747.1	1269.5	975.5	860.3	947.5	1370.6	154.0	104.2	63.8
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°	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4	3539.4
2.5°	3470.9	3466.3	3442.9	3407.2	3380.7	3363.6	3330.9	3329.4	3332.5	3304.5	3315.4
5°	3372.9	3354.3	3293.6	3211.1	3144.2	3080.4	3010.4	2987.1	2966.9	2924.9	2929.5
7.5°	3270.2	3237.6	3131.8	2996.4	2867.3	2749.1	2632.4	2574.8	2531.2	2476.8	2476.8
10°	3209.6	3158.2	2996.4	2798.8	2593.5	2420.8	2246.5	2142.3	2066.1	1996.1	1991.4
12.5°	3206.5	3128.7	2903.1	2630.8	2349.2	2106.5	1868.5	1708.2	1594.7	1512.2	1504.4
15°	3231.3	3122.4	2825.3	2473.7	2119.0	1803.1	1509.1	1305.3	1160.6	1068.8	1059.5
17.5°	3253.1	3114.7	2741.3	2308.8	1894.9	1510.7	1183.9	972.4	835.5	760.8	753.0
20°	3273.4	3097.6	2633.9	2134.5	1647.6	1236.8	925.7	754.6	664.3	622.3	617.6
22.5°	3302.9	3082.0	2521.9	1938.5	1404.9	1006.6	763.9	641.0	592.8	572.5	569.4
25°	3351.1	3083.5	2413.0	1737.8	1182.4	838.6	661.2	585.0	558.5	544.5	544.5
27.5°	3421.2	3102.2	2305.7	1534.0	994.1	723.4	600.5	555.4	538.3	527.4	524.3
30°	3523.8	3136.4	2192.1	1341.1	844.8	644.1	564.7	536.7	522.7	513.4	511.9
32.5°	3673.2	3197.1	2072.3	1165.3	731.2	588.1	538.3	521.2	510.3	502.5	501.0
35°	3895.7	3304.5	1955.6	1015.9	650.3	547.6	516.5	502.5	496.3	493.2	491.6
37.5°	4222.4	3477.2	1845.2	899.2	597.4	521.2	494.7	487.0	483.8	483.8	483.8
40°	4633.1	3704.3	1745.6	816.8	567.9	501.0	479.2	473.0	473.0	474.5	474.5
42.5°	5132.5	3989.0	1660.0	760.8	550.7	487.0	468.3	465.2	463.6	463.6	465.2
45°	5712.8	4325.1	1607.1	717.2	538.3	479.2	460.5	459.0	452.7	449.6	449.6
47.5°	6296.2	4684.4	1604.0	692.3	522.7	469.8	452.7	452.7	440.3	434.1	435.6
50°	6840.7	5006.5	1638.2	686.1	513.4	455.8	445.0	446.5	429.4	421.6	420.1
52.5°	7279.5	5252.3	1680.2	693.9	513.4	443.4	431.0	438.7	420.1	410.7	409.2
55°	7618.6	5423.4	1695.8	711.0	519.6	432.5	418.5	431.0	416.9	404.5	404.5
57.5°	7861.3	5477.9	1628.9	718.8	529.0	431.0	406.1	429.4	421.6	406.1	406.1
60°	7772.7	5162.1	1380.0	689.2	527.4	427.8	396.7	432.5	437.2	420.1	420.1
62.5°	7080.3	4318.8	1107.7	622.3	501.0	416.9	385.8	429.4	448.1	441.8	438.7
65°	5764.2	3167.6	858.8	543.0	455.8	393.6	362.5	401.4	423.2	429.4	431.0
67.5°	4062.1	2005.4	667.4	462.1	399.8	359.4	336.0	354.7	362.5	365.6	371.8
70°	2221.6	1085.9	530.5	388.9	342.3	325.2	308.0	309.6	306.5	303.4	306.5
72°	1115.5	709.4	448.1	337.6	303.4	292.5	284.7	280.0	280.0	275.4	276.9
72.5°	959.9	659.6	432.5	325.2	294.0	284.7	278.5	273.8	272.3	269.1	270.7
75°	639.4	522.7	360.9	272.3	250.5	244.3	247.4	242.7	244.3	241.1	242.7
77.5°	516.5	449.6	306.5	230.3	214.7	205.4	211.6	213.1	216.3	213.1	211.6
80°	432.5	382.7	256.7	189.8	178.9	171.1	174.2	185.1	186.7	177.4	175.8
82.5°	280.0	308.0	202.3	147.8	136.9	133.8	141.6	152.5	155.6	143.1	140.0
85°	234.9	247.4	146.2	101.1	90.2	87.1	102.7	113.6	121.4	108.9	105.8
87.5°	65.3	121.4	71.6	48.2	40.5	40.5	49.8	59.1	70.0	71.6	71.6
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)