

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: P196341

Luminaire Tested: **NAV-AF-03-D-UNV-T3R-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196341
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20674.9 lumens
Efficiency: N/A
Efficacy: 108.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G4

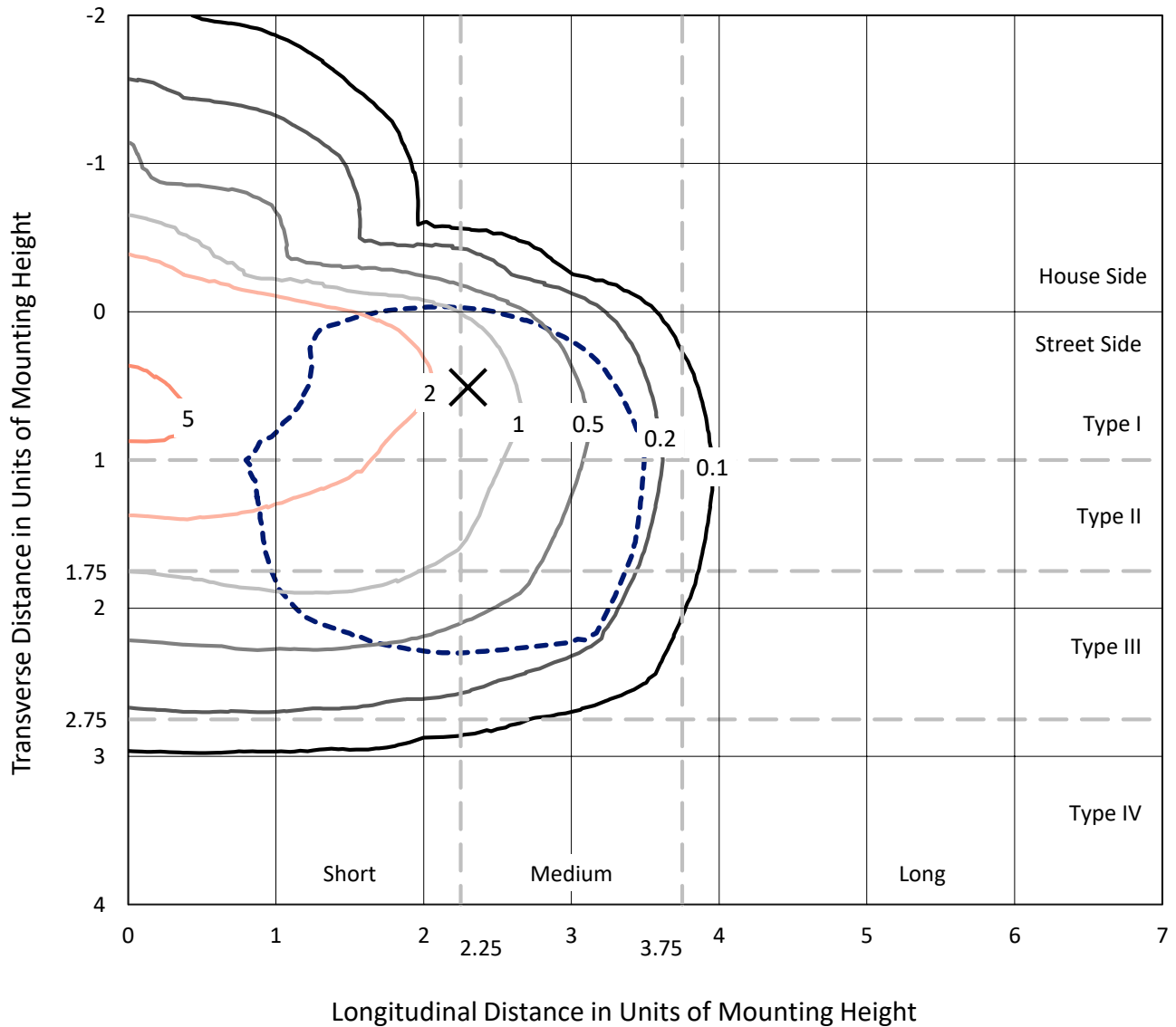
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

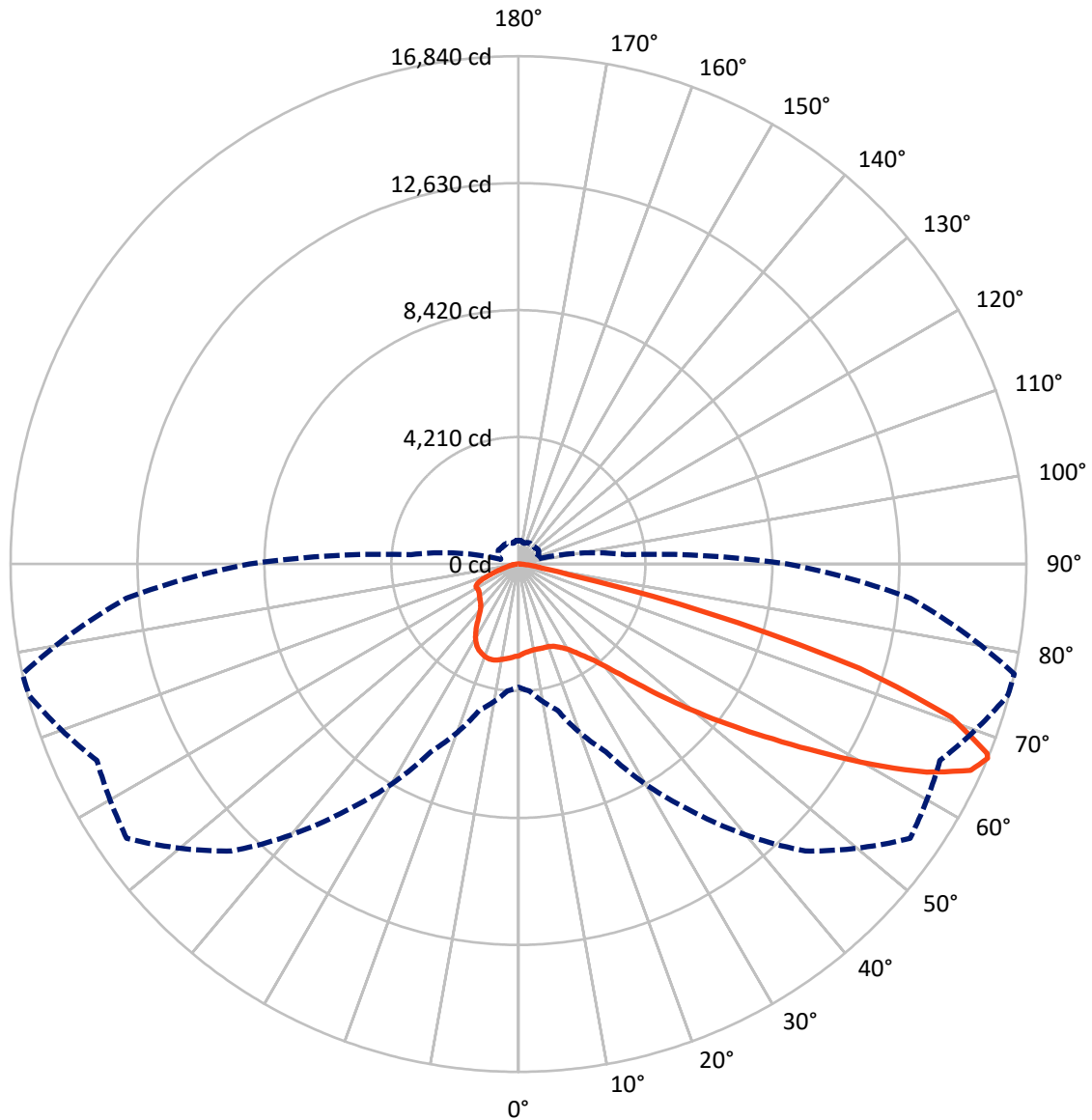
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.9 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3553.0	0.0	3553.0
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	17121.9	0.0	17121.9
	% Fixture	82.8	0.0	82.8
Total	Lumens	20674.9	0.0	20674.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	271.0	1.3
10°-20°	750.5	3.6
20°-30°	1275.2	6.2
30°-40°	2040.0	9.9
40°-50°	3140.6	15.2
50°-60°	4357.3	21.1
60°-70°	5812.3	28.1
70°-80°	2766.1	13.4
80°-90°	261.9	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°	20674.9	100.0
0°-180°	20674.9	100.0



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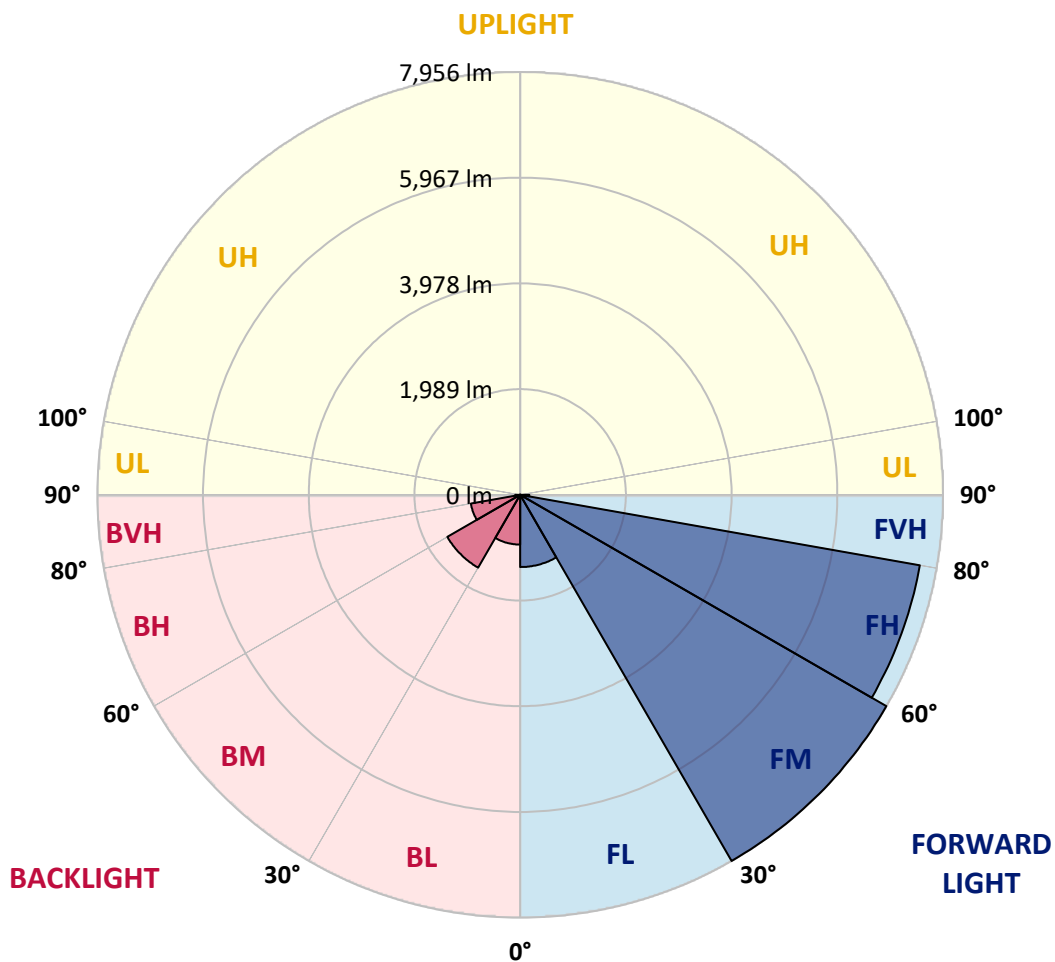
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1359.6	6.6			
FM	(30°-60°)	7955.9	38.5			
FH	(60°-80°)	7636.3	36.9			G4/12000
FVH	(80°-90°)	170.1	0.8			G2/225
BL	(0°-30°)	937.1	4.5	B2/1000		
BM	(30°-60°)	1582.0	7.7	B2/2500		
BH	(60°-80°)	942.1	4.6	B2/1000		G2/1000
BVH	(80°-90°)	91.8	0.4			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 III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8
2.5°	2728.4	2741.2	2742.4	2779.6	2796.1	2838.3	2884.3	2925.2	2961.0	2973.8	2996.8
5°	2455.0	2455.0	2458.8	2483.0	2530.4	2598.1	2693.9	2798.7	2908.7	2935.5	3003.2
7.5°	2311.8	2314.3	2316.9	2341.2	2378.3	2438.3	2534.2	2677.3	2860.1	2904.8	3023.6
10°	2324.6	2320.8	2308.0	2302.9	2318.2	2356.6	2439.6	2586.5	2819.2	2888.2	3060.7
12.5°	2525.3	2517.6	2475.3	2414.1	2357.8	2343.8	2401.3	2540.6	2800.0	2888.2	3123.3
15°	2869.0	2874.1	2791.0	2663.3	2516.3	2416.6	2408.9	2523.9	2793.6	2895.9	3196.1
17.5°	3316.3	3318.9	3203.8	3018.5	2774.4	2568.6	2461.3	2523.9	2793.6	2903.5	3266.5
20°	3791.7	3773.8	3643.4	3410.8	3093.9	2779.6	2557.2	2539.3	2801.2	2915.0	3332.9
22.5°	4199.3	4182.7	4046.0	3801.9	3439.0	3028.8	2686.3	2590.4	2843.4	2962.3	3426.2
25°	4555.9	4566.1	4433.2	4158.4	3782.8	3309.9	2879.2	2708.0	2931.6	3047.9	3541.1
27.5°	4989.1	4969.9	4816.6	4554.6	4136.7	3601.3	3120.7	2856.2	3036.4	3151.4	3681.8
30°	5490.1	5481.1	5274.1	5004.5	4526.5	3927.1	3359.7	3016.0	3173.2	3293.3	3858.2
32.5°	6098.3	6097.1	5874.7	5543.8	4964.8	4295.2	3642.1	3234.5	3372.5	3493.9	4092.0
35°	6787.2	6785.9	6555.9	6118.8	5469.6	4702.8	3974.5	3500.3	3619.2	3747.0	4370.6
37.5°	7265.1	7257.4	7137.3	6713.1	6028.0	5176.9	4389.8	3858.2	3899.0	4042.2	4706.7
40°	7357.2	7403.2	7506.7	7256.2	6637.6	5703.5	4806.3	4242.8	4281.2	4465.2	5129.7
42.5°	7257.4	7317.6	7661.3	7731.6	7247.2	6341.2	5327.7	4775.6	4824.2	5053.0	5626.8
45°	7170.6	7223.0	7653.6	7994.9	7849.2	7036.4	5978.2	5426.1	5518.2	5801.9	6194.2
47.5°	7022.4	7070.8	7502.8	8042.1	8192.9	7706.0	6761.6	6208.3	6366.7	6710.6	6840.9
50°	7014.7	7036.4	7297.1	7883.7	8311.8	8214.7	7629.4	7123.3	7366.1	7762.3	7556.5
52.5°	6820.4	6972.5	7208.9	7630.6	8314.3	8511.2	8484.3	8126.5	8500.9	8939.3	8341.1
55°	5632.0	5807.0	6914.9	7506.7	8299.0	8765.5	9265.2	9193.6	9778.9	10240.2	9220.4
57.5°	5258.8	5332.8	6066.4	7543.8	8426.8	9185.9	10046.0	10339.9	11240.8	11744.4	10274.7
60°	5156.5	5234.4	5896.5	7561.7	8773.1	9951.4	11105.4	11634.4	12959.7	13493.8	11472.2
62.5°	5042.7	5143.7	5909.3	7578.2	9381.4	11083.7	12511.1	13038.9	14724.6	15201.2	12594.2
65°	4710.5	4844.7	5672.8	7473.5	10047.2	12504.8	14369.3	14503.4	16182.7	16485.6	13271.5
67°	4080.4	4227.4	5023.6	6867.7	9985.8	13461.9	15855.5	15419.8	16802.5	16839.5	13051.7
67.5°	3881.2	4033.2	4803.8	6615.9	9810.8	13587.1	16118.7	15546.3	16797.4	16756.4	12847.2
70°	2613.4	2784.7	3401.9	4857.5	7869.6	12645.3	16054.9	15156.4	15695.7	15226.7	11037.6
72.5°	1297.1	1302.2	1697.1	2660.7	4768.1	9069.6	13392.9	12966.1	12723.3	11837.7	8099.6
75°	624.9	636.4	801.3	1175.7	2010.2	4682.5	9133.5	8748.8	7449.1	6449.8	4053.6
77.5°	476.7	488.2	622.4	765.5	838.3	1527.2	4523.9	3656.2	2158.4	1724.0	1142.5
80°	368.1	389.7	525.3	587.9	554.6	612.1	1422.3	1119.5	839.6	770.6	566.1
82.5°	287.6	300.3	446.0	446.0	383.4	410.2	662.0	646.6	521.4	470.3	304.1
85°	203.2	228.7	359.1	332.3	251.7	254.3	396.2	379.5	268.3	215.9	118.9
87.5°	90.7	116.3	255.6	217.3	134.2	103.5	162.3	139.3	106.1	81.8	54.9
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°	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8	3042.8
2.5°	3022.3	3042.8	3074.8	3093.9	3119.5	3129.7	3139.9	3157.8	3171.9	3168.1	3161.6
5°	3050.4	3085.0	3124.6	3137.4	3137.4	3124.6	3116.9	3118.2	3114.4	3111.8	3104.1
7.5°	3091.4	3138.6	3166.7	3154.0	3114.4	3064.6	3017.2	2989.2	2962.3	2945.7	2950.8
10°	3148.8	3201.2	3202.6	3146.3	3051.8	2943.1	2849.8	2789.8	2732.3	2706.7	2714.4
12.5°	3231.9	3284.3	3239.6	3118.2	2952.0	2782.1	2610.9	2486.9	2375.7	2348.9	2341.2
15°	3321.4	3362.2	3262.6	3058.1	2808.9	2529.0	2241.5	2056.2	1932.3	1910.6	1902.9
17.5°	3399.4	3422.4	3251.1	2950.8	2582.7	2141.9	1807.0	1681.7	1656.3	1669.0	1669.0
20°	3468.3	3460.6	3201.2	2784.7	2226.1	1712.4	1518.2	1516.9	1551.4	1583.4	1586.0
22.5°	3555.3	3495.2	3122.0	2538.0	1800.6	1428.8	1395.5	1428.8	1467.1	1502.8	1506.7
25°	3658.8	3533.6	3016.0	2186.6	1447.9	1297.1	1311.2	1339.2	1363.6	1391.7	1393.0
27.5°	3762.3	3562.9	2866.4	1773.8	1256.2	1212.8	1228.2	1239.6	1246.0	1263.9	1263.9
30°	3882.4	3586.0	2650.5	1421.1	1168.0	1138.6	1129.7	1124.6	1129.7	1154.0	1155.2
32.5°	4033.2	3626.8	2355.2	1219.2	1127.2	1086.3	1040.2	1014.7	1032.6	1076.0	1083.7
35°	4204.4	3675.4	2001.3	1138.6	1113.1	1060.7	976.3	936.7	943.2	982.7	989.1
37.5°	4419.1	3738.0	1652.4	1119.5	1127.2	1058.1	946.9	890.7	862.7	863.9	862.7
40°	4693.9	3800.6	1376.4	1124.6	1157.8	1064.5	932.9	844.8	785.9	788.5	793.6
42.5°	4981.5	3841.5	1201.3	1140.0	1194.9	1073.5	927.8	799.9	748.9	792.4	832.0
45°	5317.5	3830.0	1110.5	1154.0	1223.0	1077.3	908.6	794.9	752.7	883.1	957.2
47.5°	5703.5	3780.2	1059.5	1160.3	1230.7	1076.0	894.6	811.5	784.7	1010.9	1095.2
50°	6122.7	3702.3	1018.6	1150.1	1226.8	1070.9	909.9	832.0	797.4	1039.0	1104.2
52.5°	6581.5	3630.7	976.3	1127.2	1207.7	1055.6	929.0	823.0	761.7	957.2	1007.0
55°	7124.5	3614.1	929.0	1087.5	1175.7	1039.0	918.8	794.9	722.0	848.5	879.2
57.5°	7745.7	3717.5	867.8	1039.0	1132.3	1005.8	894.6	779.6	708.0	771.9	788.5
60°	8534.2	3946.3	802.5	987.9	1078.6	955.9	872.9	783.4	711.8	760.4	764.2
62.5°	9150.1	4152.1	743.8	925.3	1007.0	895.8	849.9	787.3	723.3	775.7	769.4
65°	9373.7	4051.1	671.0	832.0	906.0	829.4	817.8	789.8	723.3	784.7	770.6
67°	8915.0	3569.3	601.9	738.7	810.2	770.6	787.3	779.6	710.5	783.4	759.1
67.5°	8696.4	3399.4	584.0	723.3	784.7	752.7	779.6	774.5	706.8	780.8	752.7
70°	7171.8	2438.3	493.3	607.0	656.8	663.3	732.2	741.2	676.1	733.6	682.4
72.5°	5102.9	1525.8	425.5	470.3	530.3	567.4	668.4	696.5	635.2	637.7	595.6
75°	2525.3	819.2	379.5	362.9	412.8	472.8	582.8	635.2	575.1	531.6	517.6
77.5°	852.4	463.9	320.8	292.7	320.8	379.5	483.0	554.6	507.4	449.8	440.9
80°	440.9	337.4	250.5	235.2	253.1	293.9	378.3	461.4	433.2	435.8	359.1
82.5°	274.8	205.7	180.1	178.9	191.7	224.9	278.5	374.4	371.8	318.2	231.3
85°	127.8	118.9	115.0	118.9	122.7	127.8	181.5	267.1	282.4	171.2	152.1
87.5°	53.7	52.4	46.0	49.8	54.9	53.7	72.8	113.8	158.5	107.3	98.4
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)