

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: P196301

Luminaire Tested: **NAV-AF-05-D-UNV-T3-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196301  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)  
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-T3-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20271.8 lumens  
Efficiency: N/A  
Efficacy: 125.1 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type III - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G3

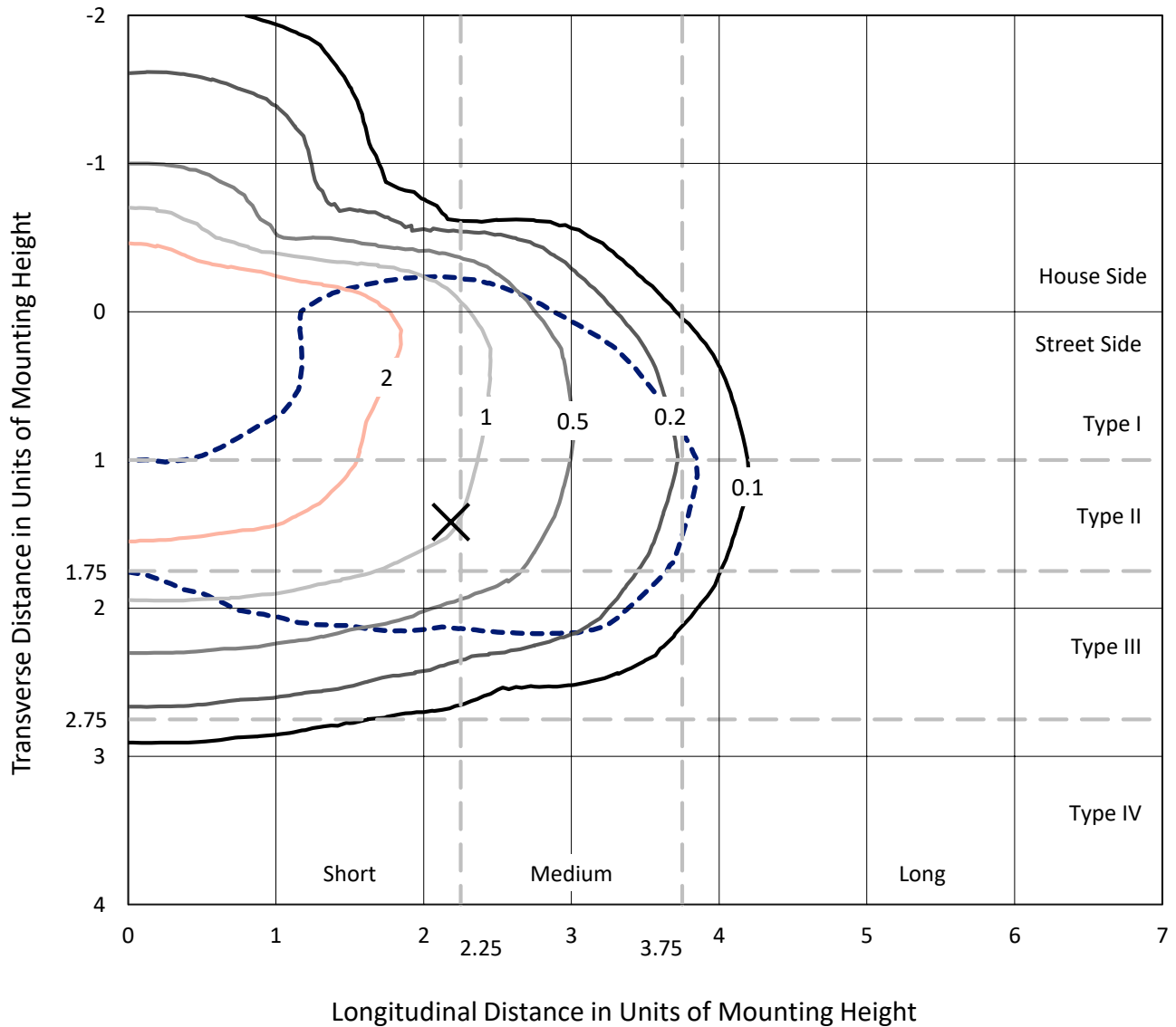
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

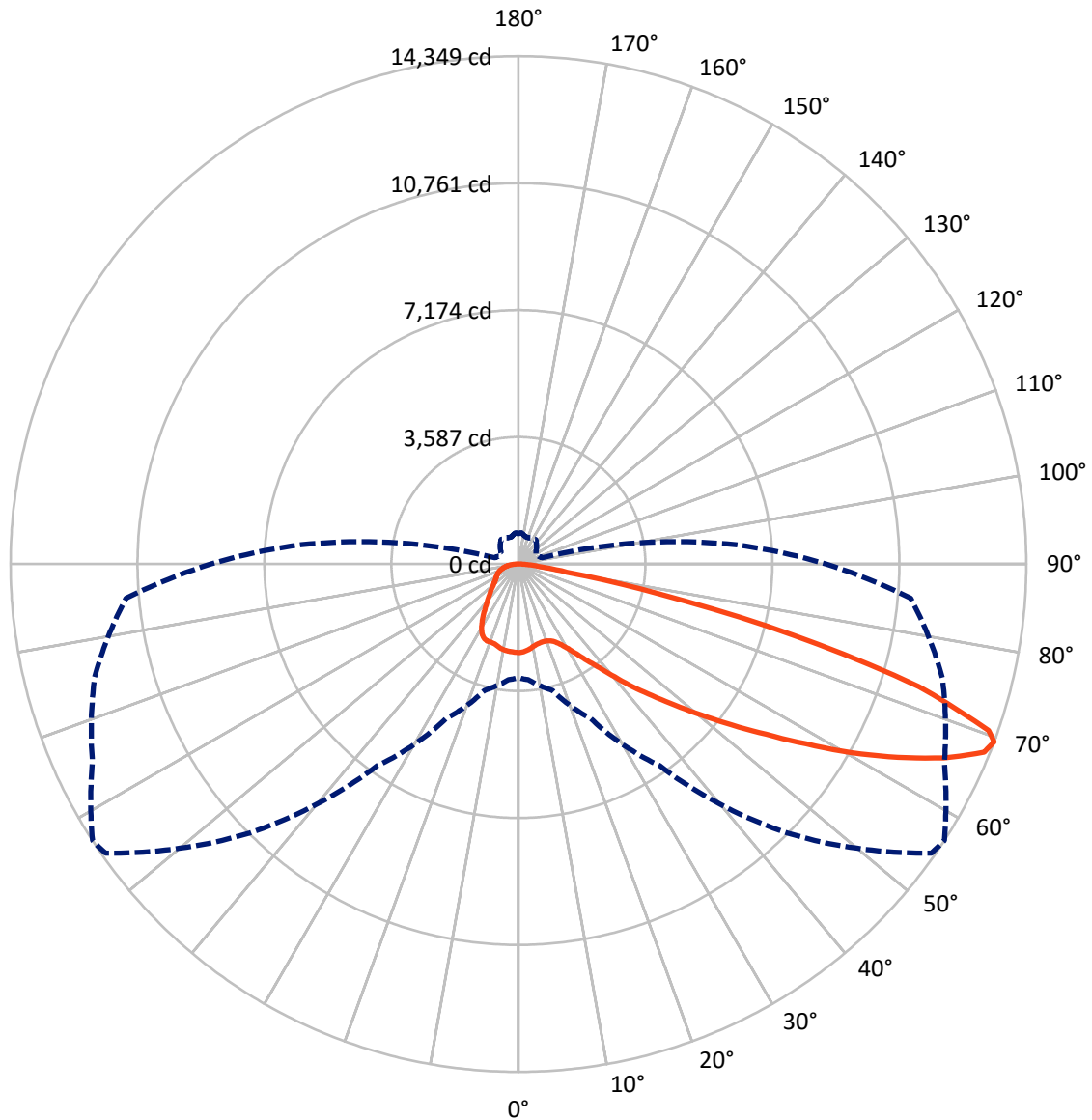
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc  
 Type III - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral      - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4473.3	0.0	4473.3
	% Fixture	22.1	0.0	22.1
<b>Street Side</b>	Lumens	15798.5	0.0	15798.5
	% Fixture	77.9	0.0	77.9
<b>Total</b>	Lumens	20271.8	0.0	20271.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	234.5	1.2
10°-20°	666.7	3.3
20°-30°	1109.1	5.5
30°-40°	1811.1	8.9
40°-50°	3056.8	15.1
50°-60°	4755.0	23.5
60°-70°	5664.2	27.9
70°-80°	2638.8	13.0
80°-90°	335.6	1.7
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°	20271.8	100.0
0°-180°	20271.8	100.0



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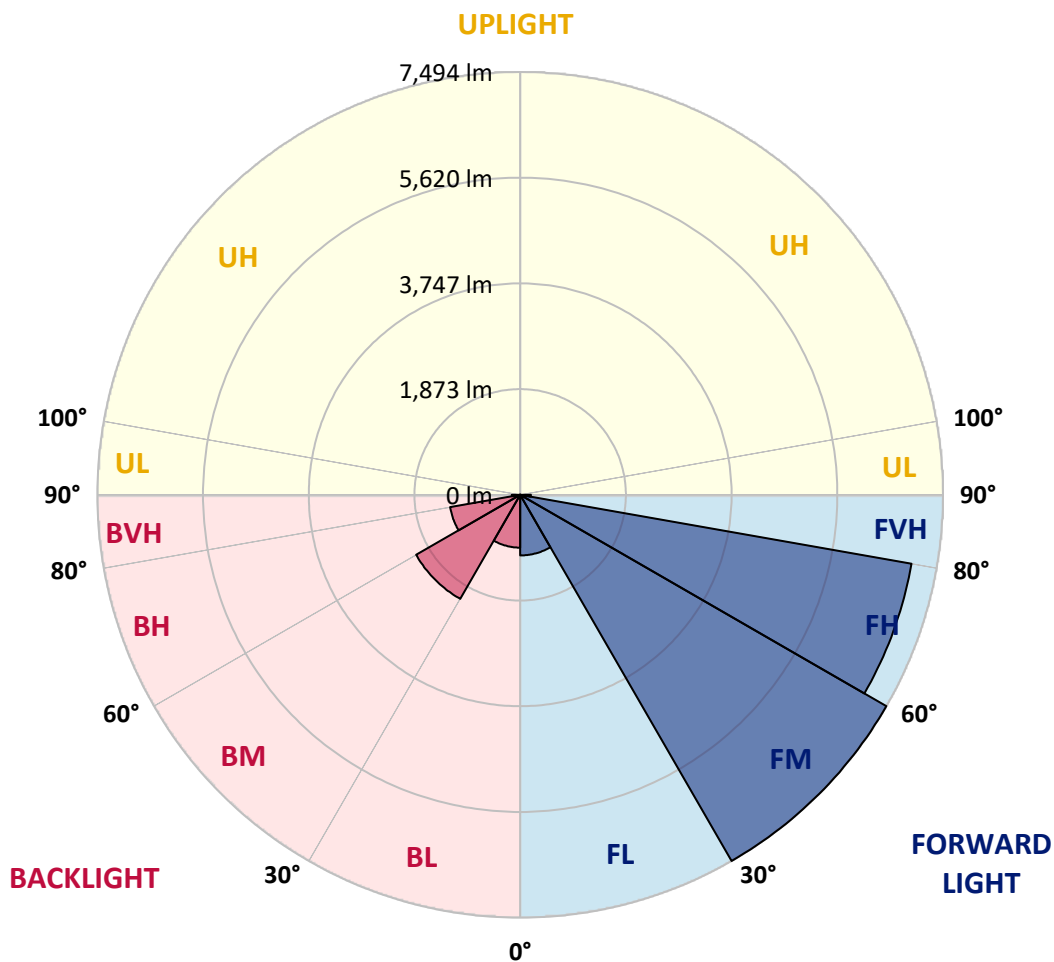
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1073.6	5.3			
FM	(30°-60°)	7493.9	37.0			
FH	(60°-80°)	7042.5	34.7			G3/7500
FVH	(80°-90°)	188.7	0.9			G2/225
BL	(0°-30°)	936.8	4.6	B2/1000		
BM	(30°-60°)	2129.0	10.5	B2/2500		
BH	(60°-80°)	1260.5	6.2	B3/2500		G3/2500
BVH	(80°-90°)	147.0	0.7			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G3**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8
2.5°	2490.5	2490.5	2497.0	2497.0	2497.0	2494.4	2486.6	2489.2	2484.0	2480.1	2473.6
5°	2439.8	2442.5	2450.3	2452.8	2456.7	2458.0	2458.0	2456.7	2458.0	2458.0	2454.2
7.5°	2369.8	2372.4	2381.5	2386.6	2398.4	2408.7	2414.0	2414.0	2420.4	2425.6	2427.0
10°	2327.0	2327.0	2332.1	2332.1	2341.2	2346.4	2363.3	2362.0	2380.2	2397.1	2404.9
12.5°	2321.8	2321.8	2319.2	2310.1	2304.9	2303.6	2320.5	2323.1	2350.3	2380.2	2394.4
15°	2338.7	2338.7	2330.9	2312.7	2293.3	2284.1	2301.0	2306.2	2336.1	2371.1	2393.2
17.5°	2393.2	2391.9	2375.0	2338.7	2304.9	2290.6	2295.8	2301.0	2328.2	2368.5	2395.8
20°	2513.9	2513.9	2477.5	2411.3	2352.9	2319.2	2311.4	2315.3	2334.8	2372.4	2407.4
22.5°	2725.4	2729.3	2664.4	2555.4	2455.5	2384.1	2352.9	2356.9	2365.9	2402.3	2441.2
25°	3036.8	3026.5	2934.3	2779.9	2624.2	2502.1	2438.6	2442.5	2442.5	2476.3	2516.5
27.5°	3366.5	3369.1	3236.7	3070.6	2865.6	2683.9	2582.6	2581.3	2580.1	2612.5	2655.4
30°	3739.0	3740.3	3587.2	3395.1	3160.2	2927.9	2776.0	2774.8	2763.1	2803.3	2859.0
32.5°	4146.5	4145.2	3967.4	3750.6	3489.8	3226.4	3029.1	3027.8	3018.7	3073.3	3140.7
35°	4598.2	4598.2	4421.6	4154.3	3872.7	3579.4	3351.0	3349.7	3354.9	3428.8	3492.5
37.5°	5142.0	5153.6	4940.8	4616.4	4308.8	3996.0	3729.9	3722.1	3683.2	3807.8	3912.9
40°	5709.1	5741.5	5520.9	5142.0	4809.7	4486.6	4193.3	4188.1	4154.3	4286.7	4456.7
42.5°	6323.0	6396.9	6151.6	5764.8	5402.8	5053.7	4759.1	4744.9	4615.0	4821.4	5087.4
45°	7127.6	7175.6	6820.0	6469.7	6128.3	5729.9	5379.4	5302.9	5173.1	5437.8	5783.0
47.5°	7675.3	7651.9	7430.0	7195.1	6975.7	6594.1	6055.6	5958.3	5799.9	6150.4	6530.6
50°	8015.3	8032.2	7907.6	7895.9	7884.2	7618.1	6818.7	6701.9	6519.0	6934.2	7378.0
52.5°	8239.9	8163.2	8185.3	8450.1	8770.6	8643.4	7681.7	7551.9	7363.8	7779.1	8280.1
55°	8146.4	8045.1	8248.9	8770.6	9524.7	9553.2	8629.2	8495.5	8334.6	8677.2	9365.0
57.5°	7759.6	7810.2	8132.2	8857.6	10039.9	10368.2	9718.0	9581.8	9265.1	9612.9	10395.5
60°	7215.9	7318.4	7810.2	8720.0	10400.6	11002.9	10913.4	10822.5	10277.4	10524.0	11477.8
62.5°	6631.8	6733.1	7337.8	8485.1	10238.4	11564.9	12086.6	12030.7	11394.9	11401.3	12164.4
65°	5768.8	5810.4	6428.1	7844.0	9788.1	12072.3	13261.0	13211.7	12462.9	12150.1	12356.5
67.5°	4356.7	4408.7	4916.1	6191.8	8417.7	11797.1	14199.4	14191.6	13105.3	12427.8	11899.7
69°	3217.3	3280.9	3694.9	4807.2	6960.2	10748.5	14243.5	14348.6	13279.2	12399.3	11127.5
70°	2354.2	2427.0	2809.7	3815.6	5797.4	9590.9	13865.8	14091.7	13213.0	12218.9	10525.2
72.5°	1000.7	1025.3	1213.4	1722.2	2940.9	5783.0	11357.2	11832.2	11933.4	10948.3	8223.0
75°	626.9	634.6	708.6	883.8	1308.1	2391.9	7354.7	8002.3	8909.5	8494.2	5505.3
77.5°	472.4	478.8	521.7	608.7	812.4	892.9	3412.0	4068.7	5103.0	4996.6	2739.7
80°	362.1	366.0	394.6	442.5	572.3	559.3	1107.0	1391.2	2129.7	1879.3	969.5
82.5°	284.2	285.5	310.2	319.3	399.8	376.3	555.5	619.1	860.4	715.1	473.7
85°	251.7	255.6	280.3	233.6	255.6	227.1	304.9	330.9	456.8	430.9	179.1
87.5°	128.5	134.9	234.9	199.9	128.5	107.7	133.7	144.0	185.6	201.1	87.0
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°	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8	2504.8
2.5°	2474.9	2476.3	2480.1	2486.6	2497.0	2510.0	2525.6	2541.1	2550.2	2556.7	2554.1
5°	2454.2	2455.5	2463.3	2474.9	2487.9	2507.4	2533.3	2552.8	2567.1	2576.2	2574.9
7.5°	2428.2	2432.1	2447.7	2460.6	2478.8	2494.4	2515.1	2533.3	2547.7	2556.7	2555.4
10°	2408.7	2412.6	2432.1	2448.9	2464.6	2467.2	2463.3	2458.0	2456.7	2463.3	2460.6
12.5°	2399.6	2407.4	2425.6	2437.3	2430.8	2406.2	2377.6	2365.9	2362.0	2375.0	2376.3
15°	2402.3	2408.7	2424.3	2416.5	2381.5	2340.0	2324.3	2333.5	2341.2	2349.0	2350.3
17.5°	2408.7	2412.6	2416.5	2388.0	2338.7	2311.4	2306.2	2297.1	2273.8	2260.8	2259.5
20°	2420.4	2425.6	2419.1	2373.7	2329.6	2293.3	2231.0	2175.1	2121.9	2093.4	2081.7
22.5°	2460.6	2464.6	2445.1	2401.0	2333.5	2215.4	2089.5	1993.4	1911.7	1867.6	1850.7
25°	2539.8	2546.3	2519.0	2463.3	2286.7	2080.4	1902.6	1772.8	1670.3	1617.1	1602.8
27.5°	2678.7	2685.1	2655.4	2510.0	2177.8	1900.0	1684.6	1556.1	1467.8	1422.4	1415.9
30°	2886.4	2895.5	2868.1	2508.7	2011.6	1670.3	1471.7	1396.4	1345.8	1314.7	1313.4
32.5°	3174.4	3208.2	3096.6	2464.6	1806.5	1438.0	1310.8	1284.8	1260.2	1239.4	1239.4
35°	3540.4	3619.6	3322.4	2372.4	1580.8	1279.6	1221.2	1196.5	1165.4	1143.4	1140.8
37.5°	3977.8	4101.1	3483.4	2208.9	1386.1	1203.1	1166.8	1126.5	1077.2	1034.4	1024.0
40°	4578.7	4607.3	3562.5	1942.8	1240.7	1161.6	1116.1	1065.5	1003.2	955.2	950.0
42.5°	5182.2	5088.8	3546.9	1657.3	1157.7	1123.9	1064.2	1008.4	952.6	912.4	912.4
45°	5868.7	5509.2	3428.8	1370.4	1082.4	1081.1	1016.2	963.0	920.1	890.3	883.8
47.5°	6525.4	5886.9	3225.1	1158.9	1004.5	1038.3	985.0	942.2	903.3	874.7	869.5
50°	7322.3	6324.3	3008.3	1011.0	929.2	1000.7	972.1	950.0	912.4	863.1	857.8
52.5°	8113.9	6835.6	2840.9	899.4	863.1	970.8	979.9	982.4	947.4	851.4	844.9
55°	8964.0	7381.9	2664.4	812.4	808.5	956.5	998.0	995.4	978.6	854.0	843.6
57.5°	9772.6	7930.9	2401.0	751.5	765.7	942.2	1001.9	960.3	930.6	867.0	850.1
60°	10442.2	8385.1	2014.2	708.6	729.4	913.7	976.0	913.7	863.1	864.4	848.7
62.5°	10768.0	8512.4	1540.5	659.3	699.5	867.0	938.4	878.6	831.9	869.5	860.4
65°	10520.1	8150.3	1097.9	613.9	663.2	812.4	916.3	848.7	816.3	895.5	885.2
67.5°	9629.8	7163.9	796.9	573.7	628.1	756.6	874.7	821.5	800.8	914.9	891.6
69°	8683.6	6185.4	690.4	550.2	603.4	726.8	847.5	807.2	789.1	887.7	854.0
70°	7897.2	5431.4	637.2	536.0	582.7	709.9	826.7	798.1	777.3	855.3	815.0
72.5°	5662.3	3510.6	536.0	493.2	528.3	672.3	781.3	764.5	733.3	772.2	746.2
75°	3421.1	1832.5	455.5	449.1	471.1	620.3	728.0	707.3	676.2	680.1	667.1
77.5°	1571.7	846.2	381.6	397.1	411.4	555.5	663.2	639.9	611.3	600.9	602.2
80°	689.2	494.5	319.3	338.7	346.5	499.6	593.1	567.1	536.0	591.8	549.0
82.5°	372.5	286.8	249.2	262.2	284.2	434.8	515.3	481.5	451.6	525.6	424.4
85°	150.6	146.7	168.7	181.7	197.2	312.8	430.9	395.9	359.5	321.8	314.0
87.5°	64.9	70.1	83.1	88.3	105.2	194.7	289.4	253.1	254.4	218.0	214.1
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)