

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: P196373

Luminaire Tested: **NAV-AF-05-D-UNV-T4W-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196373  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)  
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-T4W-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(5) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20027.3 lumens  
Efficiency: N/A  
Efficacy: 123.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G4

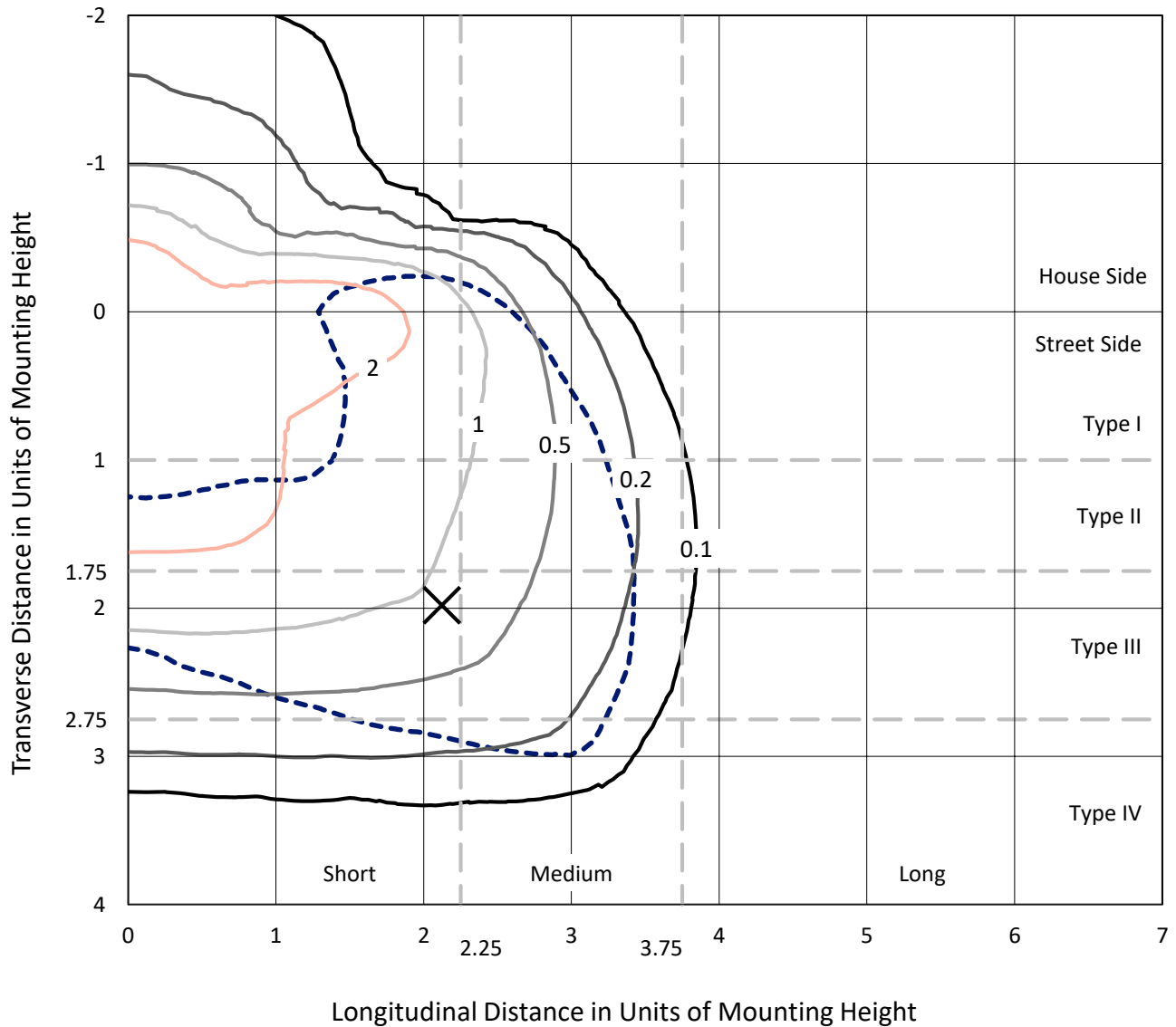
Input Watts (W): 162  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

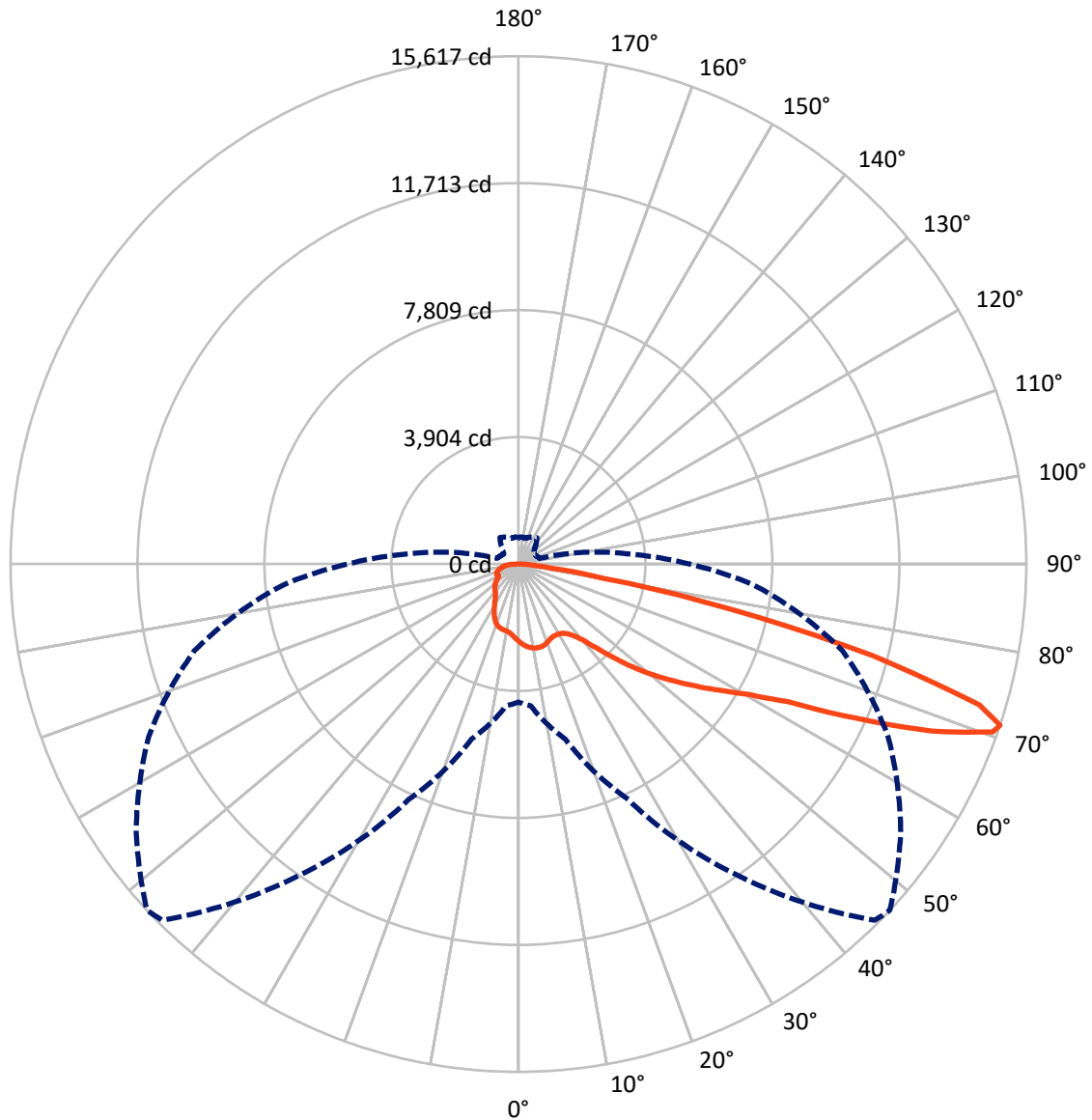
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.4 fc  
 Type IV - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral    - - - Horizontal Cone Through 71-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	4292.1	0.0	4292.1
	% Fixture	21.4	0.0	21.4
<b>Street Side</b>	Lumens	15735.2	0.0	15735.2
	% Fixture	78.6	0.0	78.6
<b>Total</b>	Lumens	20027.3	0.0	20027.3
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	227.4	1.1
10°-20°	665.3	3.3
20°-30°	988.5	4.9
30°-40°	1419.4	7.1
40°-50°	2516.6	12.6
50°-60°	4306.3	21.5
60°-70°	6113.5	30.5
70°-80°	3348.3	16.7
80°-90°	442.0	2.2
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°	20027.3	100.0
0°-180°	20027.3	100.0



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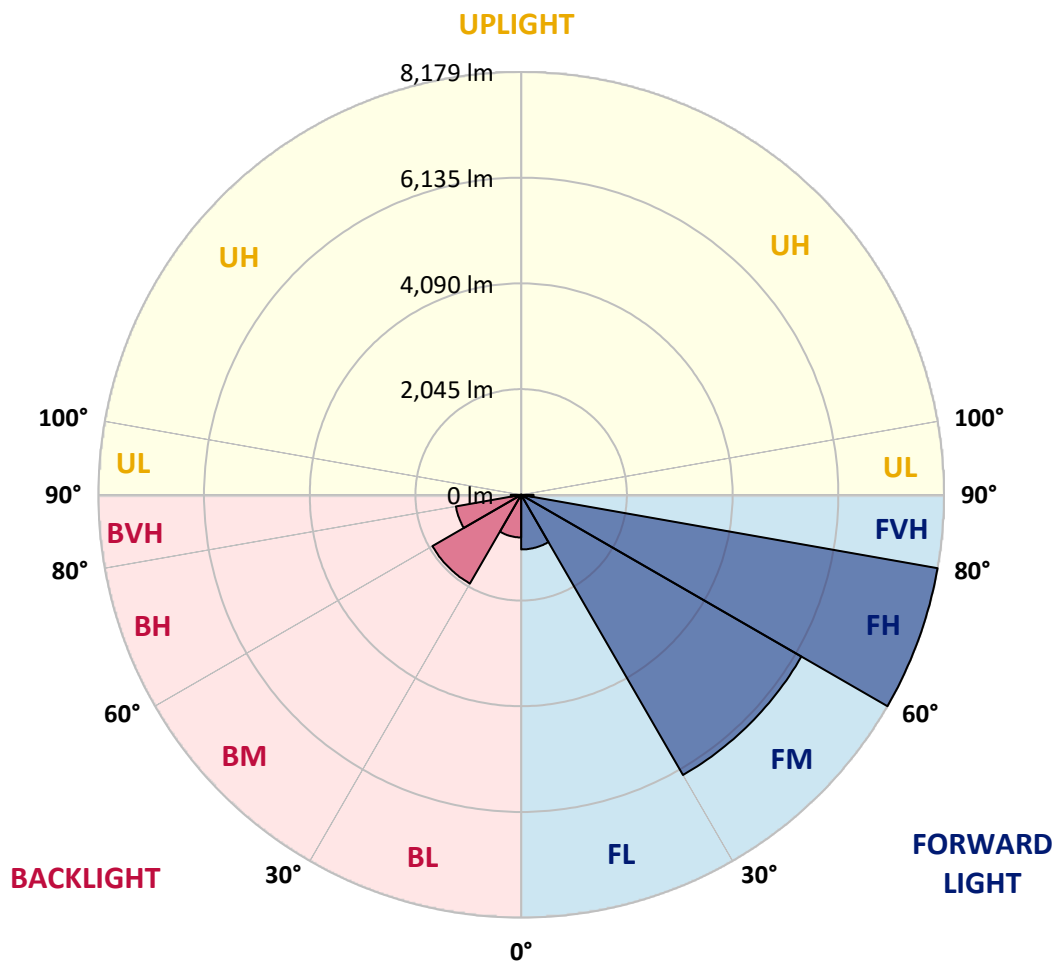
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1057.0	5.3			
FM	(30°-60°)	6259.1	31.3			
FH	(60°-80°)	8179.4	40.8			G4/12000
FVH	(80°-90°)	239.7	1.2			G3/500
BL	(0°-30°)	824.2	4.1	B2/1000		
BM	(30°-60°)	1983.2	9.9	B2/2500		
BH	(60°-80°)	1282.4	6.4	B3/2500		G3/2500
BVH	(80°-90°)	202.3	1.0			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6
2.5°	2527.0	2521.8	2524.3	2515.2	2493.2	2469.8	2469.8	2445.2	2419.2	2393.3	2364.8
5°	2684.0	2676.2	2669.7	2641.2	2598.3	2550.3	2542.5	2493.2	2439.9	2386.7	2334.9
7.5°	2815.1	2807.3	2787.8	2735.9	2673.6	2602.2	2593.2	2528.2	2458.2	2384.2	2311.5
10°	2908.6	2903.3	2865.7	2799.5	2726.8	2642.5	2626.8	2560.7	2477.6	2385.5	2293.4
12.5°	2960.4	2952.6	2907.2	2829.4	2743.7	2658.0	2642.5	2578.9	2484.1	2382.9	2275.1
15°	2939.7	2935.8	2892.9	2813.7	2728.1	2654.1	2641.2	2576.3	2480.2	2373.8	2258.3
17.5°	2851.4	2860.5	2826.7	2748.9	2678.8	2626.8	2612.6	2551.6	2460.7	2351.8	2232.3
20°	2729.4	2739.8	2722.9	2643.7	2603.5	2569.8	2562.0	2512.7	2428.3	2319.3	2201.2
22.5°	2599.6	2608.7	2610.1	2536.0	2523.0	2510.1	2503.6	2468.6	2399.7	2299.8	2180.4
25°	2510.1	2520.4	2523.0	2458.2	2465.9	2469.8	2468.6	2443.9	2394.5	2299.8	2183.0
27.5°	2486.7	2491.9	2489.4	2429.6	2443.9	2465.9	2467.3	2462.0	2415.3	2325.8	2219.4
30°	2567.2	2569.8	2537.3	2447.8	2462.0	2490.6	2491.9	2489.4	2459.5	2393.3	2301.1
32.5°	2915.0	2912.4	2800.8	2569.8	2520.4	2530.9	2534.8	2558.1	2560.7	2504.9	2419.2
35°	3444.6	3443.3	3313.4	2918.9	2686.6	2632.1	2637.3	2673.6	2706.0	2668.4	2619.1
37.5°	4027.3	4031.1	3952.0	3417.3	3044.8	2817.7	2812.5	2839.7	2898.1	2911.1	2917.6
40°	4673.7	4693.1	4689.2	3989.6	3547.1	3134.3	3082.5	3051.3	3164.2	3235.6	3327.8
42.5°	5412.1	5406.9	5409.5	4617.8	4120.8	3632.7	3536.6	3391.3	3522.4	3645.7	3848.1
45°	6046.8	6067.5	6083.1	5286.2	4763.2	4202.5	4105.1	3840.4	3958.5	4142.7	4451.7
47.5°	6685.3	6649.0	6677.5	6029.9	5478.3	4852.7	4726.9	4369.9	4480.2	4739.8	5209.7
50°	7429.0	7412.1	7282.3	7000.7	6342.7	5512.1	5347.2	4922.8	5083.8	5430.2	6145.4
52.5°	8096.0	8005.2	7904.0	7763.8	7192.8	6179.1	5970.1	5497.7	5793.7	6223.2	7306.9
55°	8340.1	8279.0	8401.1	8582.8	8092.2	6859.2	6625.7	6168.8	6594.5	7130.5	8673.6
57.5°	8599.6	8620.4	8895.6	9262.9	8943.6	7584.8	7331.7	6963.0	7473.1	8145.5	10201.3
60°	8729.5	8812.5	9361.5	10050.7	9753.4	8380.3	8137.6	7875.5	8447.8	9266.8	11725.0
62.5°	8751.5	8863.2	9640.6	10327.1	10868.3	9599.1	9318.7	9034.5	9665.2	10506.2	12828.1
65°	8346.6	8517.9	9615.9	10667.1	11884.5	11635.3	11457.6	10961.7	11295.3	11597.7	13016.3
67.5°	7156.5	7343.4	8664.6	10527.0	12699.6	13748.3	13714.6	12982.6	12554.3	12019.6	11621.1
70°	5252.4	5403.0	6672.3	8999.4	12344.0	15407.0	15466.7	14292.2	12906.0	11124.0	8641.2
71°	4247.9	4377.7	5574.4	7989.7	11650.9	15492.6	15617.2	14350.5	12539.9	10315.4	7234.3
72.5°	2643.7	2716.4	3701.5	6029.9	10032.5	14610.1	14820.3	13602.9	11387.5	8719.0	5113.6
75°	998.1	1026.6	1373.1	2659.4	5988.4	10976.1	11230.5	10280.5	8000.1	4977.3	2140.2
77.5°	536.0	550.2	681.4	1105.8	2399.7	6292.1	6619.1	5863.8	3837.8	1741.8	874.7
80°	359.5	368.6	471.2	655.4	1103.2	2395.9	2668.4	2354.3	1436.7	994.2	623.0
82.5°	232.3	237.5	320.6	430.9	712.5	842.3	961.7	1004.5	896.8	712.5	376.3
85°	153.1	157.0	211.5	275.2	441.3	415.3	425.6	556.8	611.3	469.8	192.1
87.5°	88.3	90.8	127.2	141.5	198.6	155.7	168.7	264.7	363.4	306.3	110.3
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°	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6	2381.6
2.5°	2351.8	2341.3	2318.0	2303.7	2297.2	2294.6	2292.0	2297.2	2297.2	2294.6	2289.5
5°	2308.9	2289.5	2250.5	2223.3	2209.0	2205.1	2210.3	2216.7	2220.6	2220.6	2216.7
7.5°	2277.8	2249.2	2197.3	2159.7	2137.6	2131.1	2145.3	2168.8	2184.3	2192.1	2193.4
10°	2251.8	2212.8	2155.8	2116.8	2098.7	2096.0	2114.2	2144.1	2176.5	2190.8	2193.4
12.5°	2228.4	2184.3	2122.0	2085.7	2072.7	2079.1	2103.8	2131.1	2168.8	2189.5	2190.8
15°	2206.4	2161.0	2094.8	2057.2	2054.5	2064.9	2088.3	2110.3	2138.9	2164.9	2164.9
17.5°	2180.4	2131.1	2062.3	2027.3	2027.3	2036.4	2051.9	2063.6	2081.8	2106.5	2105.1
20°	2149.2	2098.7	2028.6	1992.2	1984.4	1979.2	1979.2	1981.9	1997.4	2019.5	2023.4
22.5°	2125.9	2074.0	2000.0	1955.9	1920.8	1887.1	1872.8	1867.6	1881.9	1902.7	1907.9
25°	2125.9	2074.0	1991.0	1916.9	1831.3	1766.4	1739.1	1731.3	1745.7	1765.1	1772.9
27.5°	2161.0	2109.0	2011.7	1881.9	1724.9	1621.1	1588.5	1582.1	1595.1	1610.6	1618.4
30°	2242.7	2192.1	2071.4	1841.7	1606.7	1470.5	1434.2	1427.6	1434.2	1440.6	1449.7
32.5°	2379.0	2336.1	2168.8	1805.3	1487.4	1334.2	1290.0	1279.7	1282.3	1283.6	1291.4
35°	2601.0	2581.4	2298.6	1762.5	1374.4	1222.6	1177.2	1156.4	1155.1	1161.6	1170.7
37.5°	2941.0	2952.6	2465.9	1700.2	1281.0	1143.5	1098.0	1077.3	1066.8	1079.8	1090.2
40°	3421.2	3448.5	2659.4	1615.9	1204.4	1096.7	1048.6	1029.2	1015.0	1011.1	1016.2
42.5°	4045.5	4037.7	2856.6	1508.1	1121.4	1065.5	1015.0	994.2	970.8	940.9	934.5
45°	4785.3	4673.7	3021.4	1375.8	1026.6	1035.7	983.8	955.2	918.9	874.7	869.6
47.5°	5658.7	5351.1	3122.7	1234.3	938.4	996.8	948.8	904.6	851.4	822.9	819.0
50°	6711.3	6144.1	3194.1	1090.2	859.2	947.5	899.4	841.0	789.1	781.3	780.0
52.5°	7957.2	7079.8	3282.3	960.4	796.9	883.8	850.1	790.4	748.9	752.8	752.8
55°	9282.4	8048.1	3284.9	857.8	742.4	809.9	813.8	765.8	733.3	746.2	750.1
57.5°	10490.7	8894.3	3026.6	785.2	690.5	751.5	802.1	774.8	750.1	795.5	799.4
60°	11544.5	9545.8	2471.1	725.5	647.6	729.4	828.1	830.6	825.4	948.8	957.8
62.5°	11930.0	9552.3	1754.7	674.8	624.3	742.4	882.5	886.5	886.5	1000.7	1017.5
65°	11390.0	8756.7	1168.1	645.1	608.7	770.9	926.7	909.8	869.6	948.8	930.6
67.5°	9487.4	6816.4	854.0	625.5	586.7	772.2	965.6	922.8	854.0	921.5	890.4
70°	6520.5	4337.5	715.1	607.4	560.7	738.5	986.3	918.9	830.6	859.2	817.6
71°	5248.6	3461.5	678.8	600.9	550.2	719.0	989.0	913.7	819.0	837.1	799.4
72.5°	3457.5	2132.4	634.6	586.7	534.7	685.3	982.4	902.0	803.4	804.7	780.0
75°	1364.1	883.8	571.0	554.2	490.6	630.8	953.9	877.4	773.6	747.6	737.1
77.5°	689.2	577.6	502.3	508.7	438.6	575.0	913.7	837.1	732.0	696.9	689.2
80°	503.6	438.6	429.6	441.3	380.2	520.5	863.1	782.7	678.8	715.1	699.6
82.5°	306.3	267.4	336.1	364.7	317.9	464.6	803.4	719.0	611.3	563.2	545.1
85°	145.4	157.0	242.7	268.6	234.9	371.2	734.6	649.0	533.5	460.7	468.5
87.5°	71.4	87.0	138.9	160.9	154.5	272.5	554.2	503.6	420.5	346.6	338.7
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)