

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: P196389

Luminaire Tested: **NAV-AF-03-D-UNV-T4W-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196389  
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-03-D-UNV-T4W-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 20086.7 lumens  
Efficiency: N/A  
Efficacy: 105.2 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G4

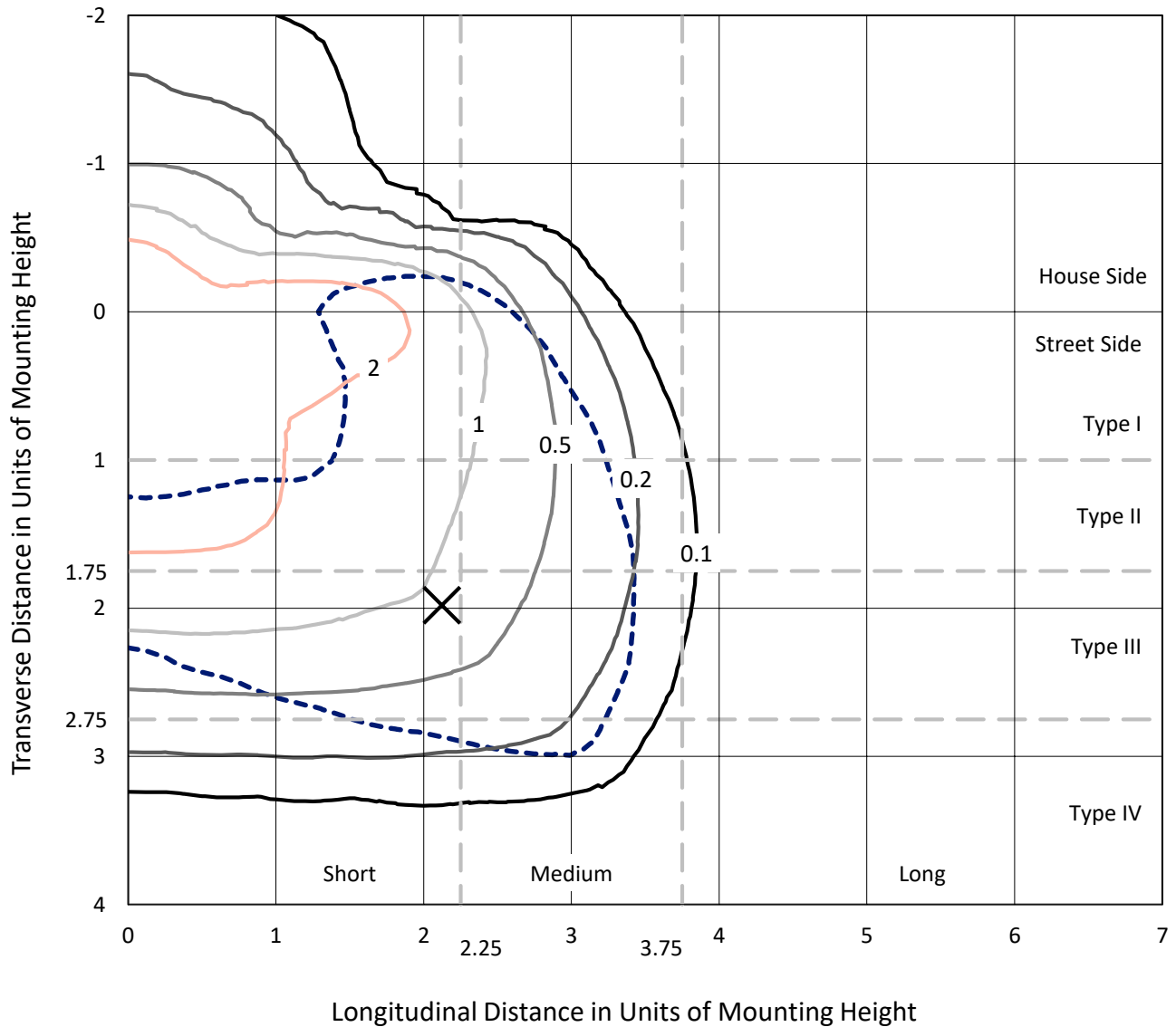
Input Watts (W): 191  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

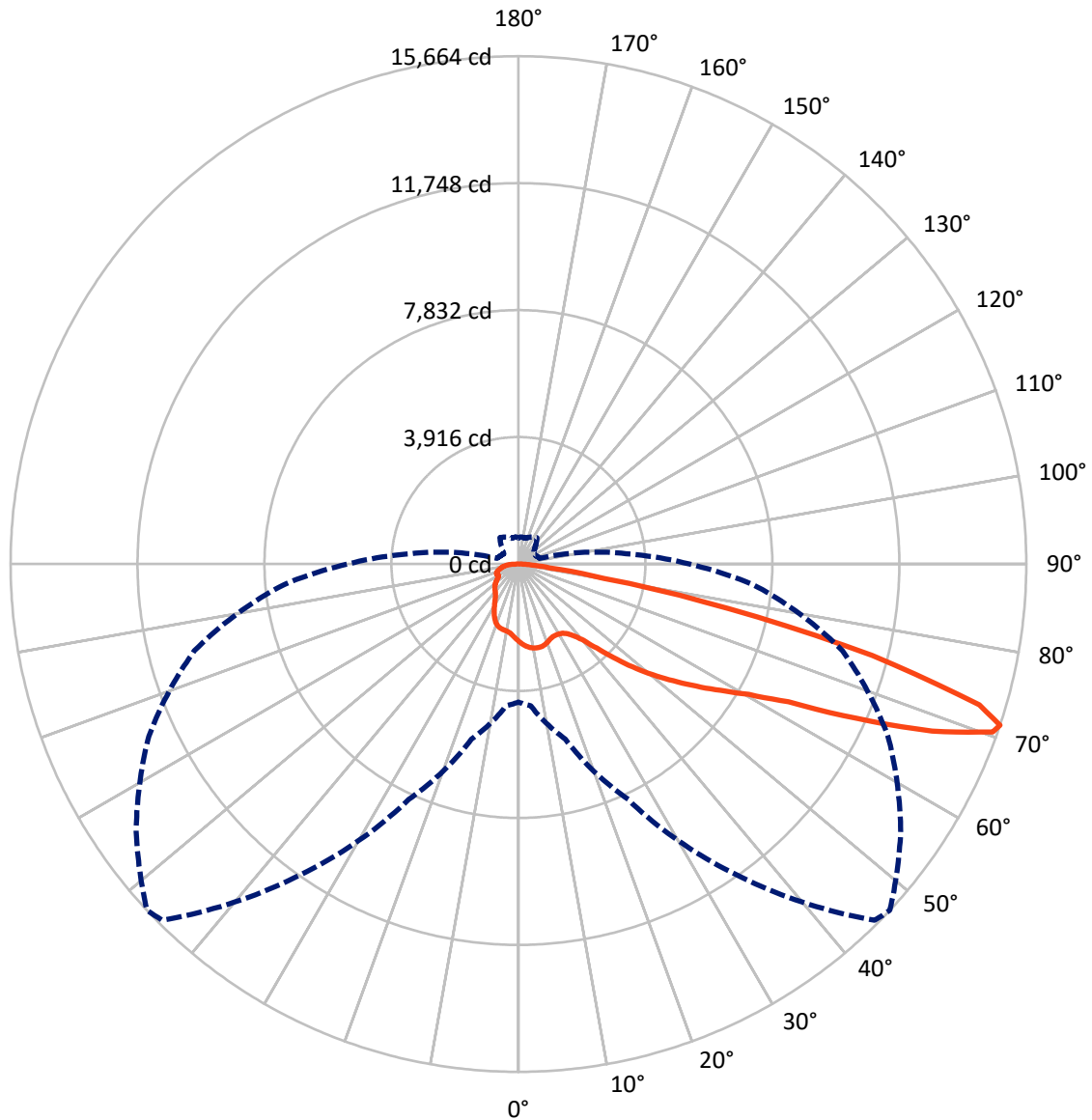
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 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	4304.9	0.0	4304.9
	% Fixture	21.4	0.0	21.4
<b>Street Side</b>	Lumens	15781.8	0.0	15781.8
	% Fixture	78.6	0.0	78.6
<b>Total</b>	Lumens	20086.7	0.0	20086.7
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	228.1	1.1
10°-20°	667.2	3.3
20°-30°	991.5	4.9
30°-40°	1423.6	7.1
40°-50°	2524.1	12.6
50°-60°	4319.1	21.5
60°-70°	6131.6	30.5
70°-80°	3358.2	16.7
80°-90°	443.3	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°	20086.7	100.0
0°-180°	20086.7	100.0

**Coefficient of Utilization**



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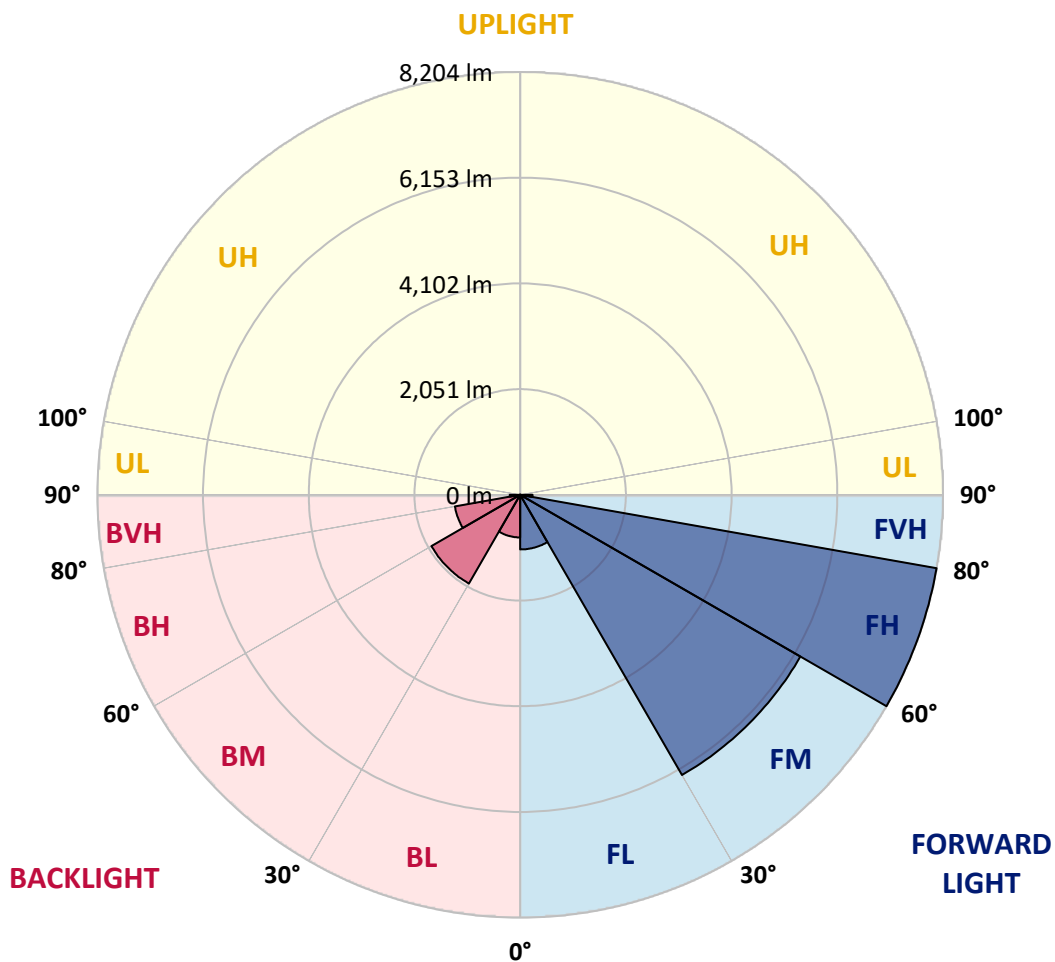
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1060.1	5.3			
FM	(30°-60°)	6277.7	31.3			
FH	(60°-80°)	8203.6	40.8			G4/12000
FVH	(80°-90°)	240.4	1.2			G3/500
BL	(0°-30°)	826.7	4.1	B2/1000		
BM	(30°-60°)	1989.1	9.9	B2/2500		
BH	(60°-80°)	1286.2	6.4	B3/2500		G3/2500
BVH	(80°-90°)	202.9	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°	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6
2.5°	2534.5	2529.2	2531.8	2522.7	2500.6	2477.2	2477.2	2452.4	2426.4	2400.4	2371.7
5°	2691.9	2684.1	2677.6	2649.0	2606.1	2557.9	2550.0	2500.6	2447.2	2393.8	2341.7
7.5°	2823.4	2815.6	2796.0	2744.0	2681.6	2610.0	2600.9	2535.7	2465.4	2391.2	2318.3
10°	2917.1	2911.9	2874.2	2807.8	2734.9	2650.3	2634.7	2568.3	2485.0	2392.6	2300.1
12.5°	2969.2	2961.4	2915.8	2837.8	2751.8	2665.9	2650.3	2586.5	2491.5	2389.9	2281.9
15°	2948.3	2944.5	2901.5	2822.1	2736.2	2662.0	2649.0	2583.9	2487.6	2380.8	2265.0
17.5°	2859.9	2869.0	2835.1	2757.1	2686.8	2634.7	2620.4	2559.1	2468.1	2358.7	2238.9
20°	2737.5	2748.0	2731.0	2651.6	2611.2	2577.4	2569.6	2520.1	2435.5	2326.2	2207.7
22.5°	2607.3	2616.4	2617.7	2543.6	2530.6	2517.5	2511.0	2475.8	2406.9	2306.7	2186.9
25°	2517.5	2527.9	2530.6	2465.4	2473.3	2477.2	2475.8	2451.1	2401.7	2306.7	2189.5
27.5°	2494.1	2499.3	2496.7	2436.8	2451.1	2473.3	2474.5	2469.3	2422.4	2332.6	2225.9
30°	2574.8	2577.4	2544.9	2455.0	2469.3	2497.9	2499.3	2496.7	2466.7	2400.4	2308.0
32.5°	2923.6	2921.0	2809.1	2577.4	2527.9	2538.4	2542.2	2565.7	2568.3	2512.3	2426.4
35°	3454.7	3453.5	3323.3	2927.6	2694.6	2639.8	2645.0	2681.6	2714.1	2676.3	2626.8
37.5°	4039.2	4043.1	3963.7	3427.4	3053.8	2826.0	2820.8	2848.1	2906.7	2919.7	2926.3
40°	4687.5	4707.0	4703.1	4001.5	3557.6	3143.6	3091.6	3060.4	3173.6	3245.2	3337.6
42.5°	5428.2	5423.0	5425.5	4631.5	4132.9	3643.4	3547.2	3401.4	3532.9	3656.5	3859.6
45°	6064.7	6085.5	6101.1	5301.9	4777.3	4215.0	4117.3	3851.7	3970.2	4155.0	4464.9
47.5°	6705.1	6668.7	6697.3	6047.8	5494.5	4867.1	4740.9	4382.8	4493.5	4753.9	5225.0
50°	7451.0	7434.1	7303.9	7021.4	6361.4	5528.3	5363.0	4937.4	5098.8	5446.4	6163.6
52.5°	8120.1	8028.9	7927.5	7786.8	7214.1	6197.4	5987.8	5514.0	5810.9	6241.7	7328.6
55°	8364.8	8303.6	8425.9	8608.2	8116.2	6879.5	6645.2	6187.0	6614.0	7151.7	8699.4
57.5°	8625.1	8646.0	8922.0	9290.3	8970.1	7607.2	7353.4	6983.7	7495.3	8169.6	10231.5
60°	8755.3	8838.6	9389.3	10080.5	9782.4	8405.2	8161.7	7898.8	8472.8	9294.2	11759.6
62.5°	8777.4	8889.3	9669.1	10357.7	10900.6	9627.5	9346.3	9061.2	9693.9	10537.3	12866.2
65°	8371.3	8543.2	9644.4	10698.7	11919.7	11669.8	11491.5	10994.3	11328.8	11632.1	13054.9
67.5°	7177.6	7365.0	8690.3	10558.2	12737.3	13789.1	13755.2	13021.0	12591.5	12055.2	11655.5
70°	5268.0	5419.0	6692.1	9026.1	12380.6	15452.6	15512.5	14334.4	12944.2	11157.0	8666.7
71°	4260.5	4390.7	5590.8	8013.3	11685.5	15538.5	15663.5	14393.0	12577.2	10346.0	7255.8
72.5°	2651.6	2724.5	3712.5	6047.8	10062.3	14653.4	14864.3	13643.2	11421.2	8744.9	5128.8
75°	1001.1	1029.7	1377.2	2667.2	6006.1	11008.6	11263.7	10310.8	8023.7	4992.1	2146.6
77.5°	537.6	551.9	683.4	1109.1	2406.9	6310.7	6638.7	5881.1	3849.2	1746.9	877.4
80°	360.6	369.7	472.5	657.3	1106.4	2402.9	2676.3	2361.3	1441.0	997.1	624.8
82.5°	233.0	238.2	321.5	432.2	714.6	844.9	964.5	1007.5	899.5	714.6	377.5
85°	153.6	157.5	212.2	276.0	442.6	416.5	427.0	558.4	613.2	471.2	192.6
87.5°	88.5	91.1	127.6	141.9	199.2	156.2	169.2	265.6	364.5	307.2	110.7
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°	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6	2388.6
2.5°	2358.7	2348.3	2324.9	2310.5	2304.0	2301.4	2298.8	2304.0	2304.0	2301.4	2296.2
5°	2315.8	2296.2	2257.1	2229.8	2215.5	2211.6	2216.8	2223.3	2227.3	2227.3	2223.3
7.5°	2284.5	2255.9	2203.8	2166.1	2143.9	2137.5	2151.8	2175.2	2190.8	2198.6	2199.9
10°	2258.5	2219.4	2162.1	2123.1	2104.8	2102.3	2120.5	2150.4	2183.0	2197.3	2199.9
12.5°	2235.0	2190.8	2128.2	2091.8	2078.8	2085.4	2110.0	2137.5	2175.2	2196.0	2197.3
15°	2212.9	2167.3	2100.9	2063.2	2060.6	2071.1	2094.5	2116.6	2145.2	2171.2	2171.2
17.5°	2186.9	2137.5	2068.4	2033.3	2033.3	2042.4	2058.0	2069.7	2087.9	2112.7	2111.4
20°	2155.7	2104.8	2034.5	1998.1	1990.4	1985.1	1985.1	1987.7	2003.3	2025.4	2029.3
22.5°	2132.2	2080.2	2005.9	1961.7	1926.5	1892.7	1878.3	1873.1	1887.4	1908.3	1913.5
25°	2132.2	2080.2	1996.8	1922.6	1836.7	1771.6	1744.3	1736.5	1750.8	1770.3	1778.1
27.5°	2167.3	2115.3	2017.7	1887.4	1730.0	1625.9	1593.2	1586.8	1599.8	1615.4	1623.2
30°	2249.4	2198.6	2077.5	1847.1	1611.6	1474.8	1438.4	1431.9	1438.4	1444.9	1454.0
32.5°	2386.0	2343.1	2175.2	1810.7	1491.8	1338.1	1293.9	1283.5	1286.1	1287.4	1295.2
35°	2608.6	2589.1	2305.3	1767.8	1378.5	1226.2	1180.7	1159.8	1158.5	1165.0	1174.1
37.5°	2949.7	2961.4	2473.3	1705.3	1284.8	1146.8	1101.2	1080.4	1070.0	1083.0	1093.4
40°	3431.3	3458.6	2667.2	1620.7	1208.0	1100.0	1051.8	1032.3	1017.9	1014.1	1019.3
42.5°	4057.4	4049.7	2865.1	1512.6	1124.6	1068.7	1017.9	997.1	973.6	943.8	937.2
45°	4799.4	4687.5	3030.4	1379.9	1029.7	1038.8	986.7	958.1	921.6	877.4	872.2
47.5°	5675.4	5366.9	3132.0	1238.0	941.1	999.7	951.5	907.3	854.0	825.3	821.4
50°	6731.1	6162.3	3203.5	1093.4	861.7	950.2	902.0	843.5	791.5	783.6	782.4
52.5°	7980.8	7100.8	3292.1	963.3	799.2	886.5	852.6	792.8	751.1	755.0	755.0
55°	9309.9	8071.9	3294.6	860.4	744.6	812.2	816.2	768.0	735.5	748.5	752.4
57.5°	10521.8	8920.6	3035.6	787.6	692.5	753.7	804.4	777.1	752.4	797.9	801.9
60°	11578.7	9574.1	2478.5	727.6	649.6	731.5	830.5	833.1	827.9	951.5	960.7
62.5°	11965.4	9580.5	1759.9	676.9	626.1	744.6	885.2	889.0	889.0	1003.6	1020.5
65°	11423.8	8782.6	1171.6	646.9	610.5	773.2	929.5	912.5	872.2	951.5	933.3
67.5°	9515.5	6836.6	856.5	627.4	588.4	774.5	968.4	925.6	856.5	924.2	892.9
70°	6539.8	4350.3	717.3	609.2	562.3	740.7	989.3	921.6	833.1	861.7	820.1
71°	5264.1	3471.7	680.8	602.7	551.9	721.2	991.9	916.4	821.4	839.6	801.9
72.5°	3467.8	2138.7	636.6	588.4	536.3	687.3	985.4	904.7	805.8	807.1	782.4
75°	1368.1	886.5	572.8	555.9	492.0	632.6	956.8	879.9	775.8	749.8	739.4
77.5°	691.2	579.3	503.8	510.2	440.0	576.6	916.4	839.6	734.2	699.0	691.2
80°	505.0	440.0	430.9	442.6	381.4	522.0	865.6	784.9	680.8	717.3	701.6
82.5°	307.2	268.1	337.2	365.8	319.0	466.1	805.8	721.2	613.2	565.0	546.8
85°	145.8	157.5	243.5	269.4	235.6	372.3	736.7	650.9	535.0	462.1	469.9
87.5°	71.6	87.3	139.3	161.4	154.9	273.3	555.9	505.0	421.8	347.6	339.7
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)