

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: P196348

Luminaire Tested: **NAV-AF-04-D-UNV-T4FT-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196348  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)  
Test Lab: INNOVATION CENTER P2  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: LUMARK  
Catalog Number: NAV-AF-04-D-UNV-T4FT-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 16572.8 lumens  
Efficiency: N/A  
Efficacy: 128.5 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G3

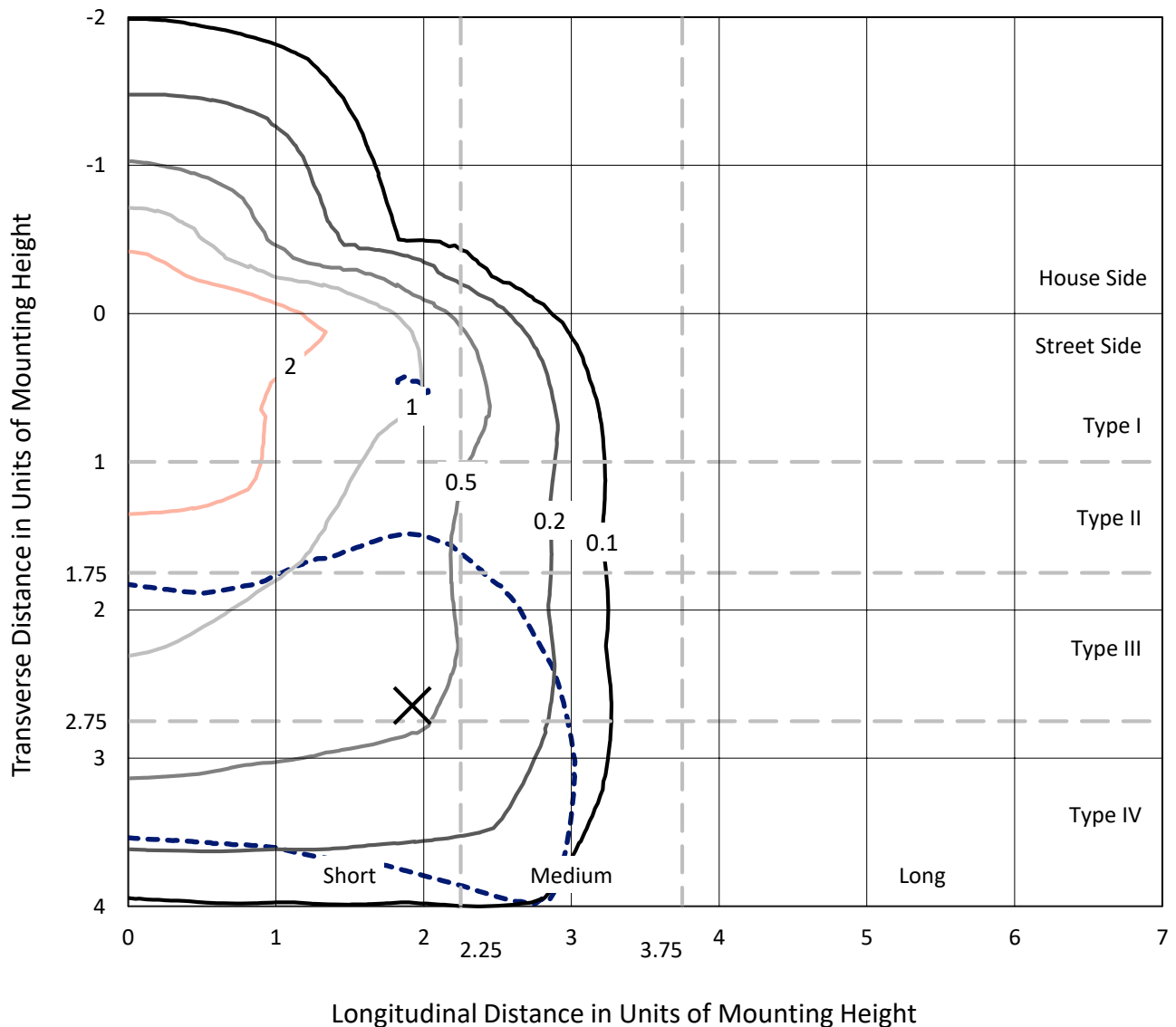
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

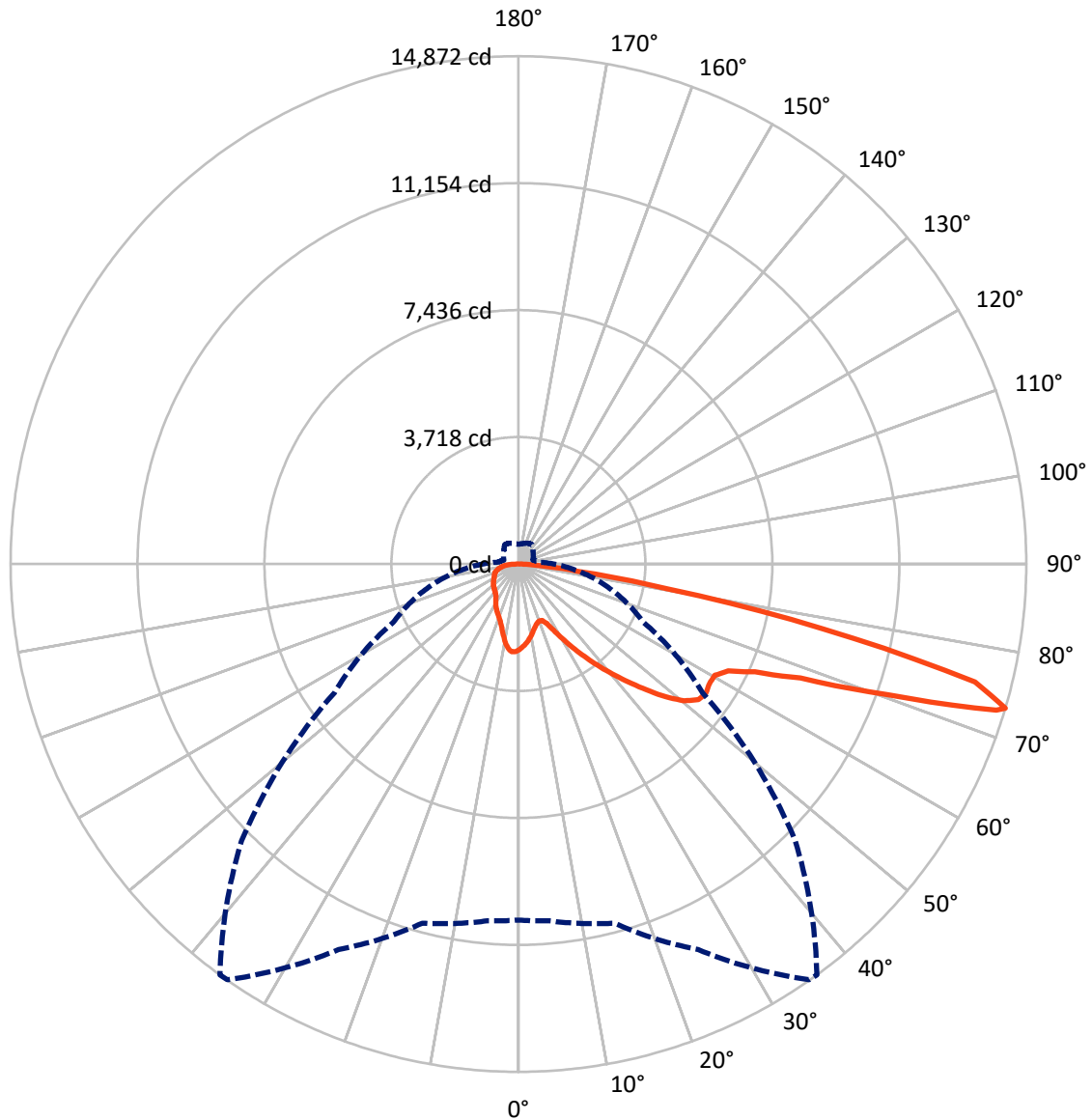
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4 fc  
 Type IV - Short - Non-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral      - - - Horizontal Cone Through 73-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3195.7	0.0	3195.7
	% Fixture	19.3	0.0	19.3
<b>Street Side</b>	Lumens	13377.1	0.0	13377.1
	% Fixture	80.7	0.0	80.7
<b>Total</b>	Lumens	16572.8	0.0	16572.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	228.0	1.4
10°-20°	572.6	3.5
20°-30°	918.1	5.5
30°-40°	1518.6	9.2
40°-50°	2349.9	14.2
50°-60°	3145.8	19.0
60°-70°	4109.4	24.8
70°-80°	3356.7	20.3
80°-90°	373.6	2.3
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°	16572.8	100.0
0°-180°	16572.8	100.0



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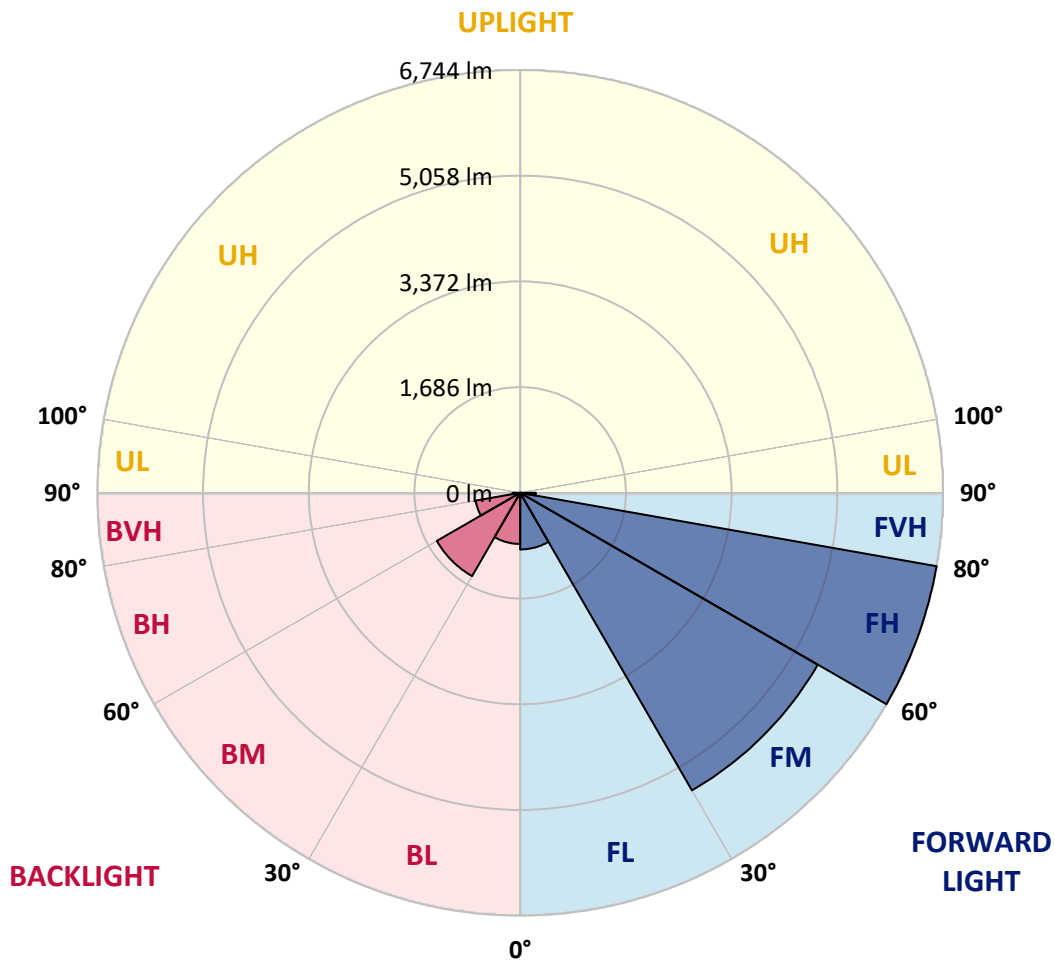
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	903.0	5.4			
FM (30°-60°)	5479.5	33.1			
FH (60°-80°)	6743.9	40.7			G3/7500
FVH (80°-90°)	250.6	1.5			G3/500
BL (0°-30°)	815.7	4.9	B2/1000		
BM (30°-60°)	1534.8	9.3	B2/2500		
BH (60°-80°)	722.2	4.4	B2/1000		G2/1000
BVH (80°-90°)	123.0	0.7			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3
2.5°	2414.5	2420.8	2421.8	2429.2	2429.2	2428.2	2431.3	2443.9	2450.3	2465.0	2477.7
5°	2295.5	2302.9	2306.0	2318.6	2334.5	2335.5	2347.1	2371.3	2394.5	2427.2	2454.5
7.5°	2161.8	2170.2	2178.6	2205.0	2228.1	2230.2	2252.3	2291.3	2321.8	2361.8	2411.3
10°	2032.3	2034.3	2042.7	2076.5	2107.0	2110.1	2141.8	2185.9	2227.1	2282.8	2338.7
12.5°	1925.9	1932.3	1930.1	1955.4	1981.7	1983.8	2026.0	2081.7	2141.8	2205.0	2271.3
15°	1889.1	1888.0	1865.9	1864.8	1876.4	1878.5	1919.6	1984.8	2052.2	2130.2	2215.5
17.5°	1914.4	1905.9	1848.0	1812.2	1804.8	1806.9	1837.4	1909.0	1980.6	2070.1	2172.3
20°	2053.3	2020.6	1884.8	1798.4	1774.3	1774.3	1792.2	1850.1	1929.1	2033.3	2161.8
22.5°	2382.9	2332.3	2042.7	1889.1	1803.8	1795.3	1781.7	1825.9	1913.2	2038.5	2205.0
25°	2797.8	2773.5	2332.3	2130.2	1954.3	1926.9	1836.4	1852.2	1945.9	2095.4	2322.9
27.5°	3182.1	3139.9	2712.5	2480.9	2232.3	2190.2	1998.5	1934.3	2023.8	2200.8	2493.4
30°	3406.4	3378.0	3103.1	2882.0	2586.1	2532.4	2257.6	2096.4	2162.8	2374.5	2735.7
32.5°	3650.7	3633.8	3494.8	3293.7	2969.4	2907.2	2592.5	2360.8	2375.5	2605.0	3027.3
35°	3887.6	3909.7	3830.7	3683.3	3382.2	3324.3	3042.1	2706.1	2637.7	2864.1	3339.0
37.5°	4171.9	4177.1	4127.7	4031.9	3816.0	3768.7	3535.9	3074.7	2923.1	3139.9	3640.2
40°	4739.4	4656.3	4462.5	4386.7	4258.2	4228.8	3963.4	3412.7	3188.4	3423.2	3924.4
42.5°	5353.3	5223.8	4920.6	4796.3	4744.8	4717.3	4319.3	3638.0	3436.9	3706.5	4203.5
45°	5848.2	5742.9	5446.0	5292.2	5298.6	5254.4	4630.0	3839.1	3706.5	3990.8	4515.2
47.5°	6335.7	6159.9	5827.1	5805.0	5878.8	5813.5	4926.8	4040.2	3987.7	4300.4	4826.9
50°	6367.4	6207.3	6072.5	6249.4	6375.7	6294.7	5196.5	4303.6	4279.3	4675.2	5229.1
52.5°	5983.0	5959.8	6165.2	6463.2	6672.7	6600.1	5416.5	4574.1	4577.3	5143.8	5718.7
55°	5843.0	5813.5	6059.9	6426.3	6709.5	6666.4	5580.8	4879.5	4907.9	5712.4	6244.2
57.5°	6078.9	6005.1	6053.6	6356.8	6623.2	6597.9	5751.3	5218.6	5270.1	6367.4	6729.6
60°	6810.7	6660.1	6403.2	6460.0	6626.4	6611.6	5995.6	5596.6	5682.9	7049.7	7037.1
62.5°	7906.8	7736.3	7212.9	6960.2	6923.3	6894.9	6399.0	6061.0	6104.2	7542.5	6858.1
65°	9109.3	8926.1	8303.8	7890.0	7673.1	7612.0	7049.7	6621.2	6350.5	7541.4	6161.0
67.5°	10459.3	10265.5	9645.3	9250.4	9015.6	8911.3	8105.9	7073.9	6270.5	6903.3	4930.0
70°	11841.8	11657.5	11373.3	11511.2	11614.4	11455.3	9769.5	7224.5	5695.6	5412.3	3310.6
72.5°	11107.9	11093.1	11309.0	12616.8	14605.9	14637.5	11431.2	6799.0	4400.4	3216.9	1764.8
73°	10426.6	10488.7	10888.9	12453.6	14861.7	14872.3	11463.8	6579.0	4040.2	2771.5	1550.0
75°	5401.8	5822.9	7307.7	10098.1	13761.3	13810.9	10105.4	4980.5	2408.1	1539.4	1044.5
77.5°	1446.8	1427.8	2354.4	4919.5	9174.6	9109.3	6385.3	2411.3	1154.1	965.6	732.8
80°	495.9	502.3	801.3	1799.6	4282.5	4435.1	2771.5	1051.9	759.2	672.9	519.1
82.5°	252.7	261.2	419.1	765.5	1791.1	1753.2	891.9	619.2	508.6	408.6	290.6
85°	134.8	139.0	230.6	397.0	657.0	664.4	313.7	330.6	323.3	231.7	143.2
87.5°	66.3	68.4	110.6	174.8	243.3	234.8	109.6	143.2	159.0	130.5	79.0
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°	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3	2510.3
2.5°	2493.4	2493.4	2507.2	2530.3	2547.1	2562.9	2573.4	2590.3	2599.8	2598.7	2597.7
5°	2476.6	2487.1	2514.5	2543.0	2561.9	2574.6	2574.6	2581.9	2581.9	2578.8	2574.6
7.5°	2437.7	2455.6	2495.6	2520.9	2526.1	2512.4	2485.1	2464.0	2437.7	2424.0	2418.7
10°	2375.5	2398.7	2449.3	2460.8	2433.4	2385.0	2318.6	2261.8	2211.2	2188.1	2180.7
12.5°	2314.4	2345.0	2392.4	2374.5	2309.2	2214.4	2112.3	2034.3	1977.5	1955.4	1948.0
15°	2263.9	2300.7	2337.6	2281.8	2168.0	2036.5	1923.8	1851.1	1808.0	1791.1	1786.9
17.5°	2230.2	2273.4	2286.0	2181.7	2023.8	1876.4	1776.4	1729.0	1710.1	1702.7	1700.6
20°	2232.3	2280.8	2250.2	2084.9	1884.8	1736.4	1670.1	1656.4	1656.4	1656.4	1655.2
22.5°	2290.2	2332.3	2235.5	1994.3	1751.1	1618.4	1590.0	1601.5	1610.0	1610.0	1609.0
25°	2410.3	2433.4	2246.0	1907.0	1625.8	1516.3	1517.3	1539.4	1546.8	1546.8	1544.8
27.5°	2593.5	2574.6	2264.9	1810.1	1502.6	1423.6	1438.4	1458.4	1463.6	1460.5	1459.4
30°	2823.0	2747.2	2280.8	1696.4	1386.8	1337.3	1349.9	1361.5	1357.3	1349.9	1348.9
32.5°	3080.0	2923.1	2271.3	1568.9	1284.6	1247.8	1255.2	1261.5	1255.2	1237.3	1237.3
35°	3334.8	3082.0	2219.7	1430.0	1203.6	1161.5	1160.3	1180.4	1179.4	1158.3	1159.3
37.5°	3558.0	3207.4	2119.7	1302.5	1134.0	1098.2	1102.4	1115.1	1121.5	1093.0	1089.9
40°	3752.8	3293.7	1978.6	1194.1	1078.3	1080.3	1068.8	1048.7	1041.4	1028.8	1026.6
42.5°	3936.0	3353.7	1829.0	1103.6	1049.9	1074.0	1035.1	987.7	967.7	979.3	986.6
45°	4116.0	3421.2	1684.8	1028.8	1014.1	1055.1	1001.4	948.7	925.6	930.8	938.3
47.5°	4336.2	3514.9	1511.0	948.7	959.2	1020.3	980.3	923.4	888.7	867.7	861.3
50°	4625.8	3650.7	1285.6	862.3	901.3	982.4	962.4	886.6	848.7	806.6	796.1
52.5°	4988.0	3779.2	1058.2	792.9	854.0	949.8	932.9	855.0	808.6	758.1	749.7
55°	5349.1	3797.1	862.3	732.8	800.3	905.5	897.1	829.7	764.5	723.4	714.9
57.5°	5601.9	3627.5	730.8	682.3	748.7	850.8	864.5	799.2	727.6	696.0	690.8
60°	5606.1	3222.1	650.7	648.7	709.7	803.4	830.8	763.4	704.4	683.4	679.1
62.5°	5160.7	2596.7	599.1	623.4	681.3	764.5	805.6	743.4	699.2	690.8	686.5
65°	4325.6	1918.5	558.1	600.2	655.0	731.8	784.5	737.0	697.0	693.9	690.8
67.5°	3193.7	1315.2	523.3	570.7	625.4	698.2	764.5	727.6	684.5	697.0	692.8
70°	2009.1	878.2	490.7	537.0	586.6	659.2	738.2	710.7	668.6	661.2	647.6
72.5°	1134.0	634.9	451.7	493.9	535.9	607.5	702.4	682.3	632.8	603.3	589.6
73°	1024.6	601.3	442.2	483.3	524.4	597.0	693.9	673.9	622.3	589.6	577.0
75°	749.7	491.7	399.1	440.2	476.0	548.6	653.9	631.8	576.0	537.0	528.6
77.5°	543.3	379.1	343.3	380.1	411.7	481.2	593.9	568.7	513.8	492.8	484.4
80°	391.7	287.4	284.3	320.1	347.5	418.1	529.7	503.3	450.7	512.8	499.1
82.5°	233.7	184.2	208.5	248.5	276.9	350.7	460.1	429.6	379.1	383.3	326.4
85°	111.6	104.2	129.5	163.2	183.2	240.1	383.3	359.1	303.3	248.5	243.3
87.5°	49.5	47.4	62.1	72.6	97.9	144.2	262.2	232.7	220.0	131.7	103.2
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)