

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: P196372

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196372  
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-04-D-UNV-T4W-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 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: 16249.6 lumens  
Efficiency: N/A  
Efficacy: 126.0 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Semi-Cutoff  
BUG Rating: B3 - U0 - G3

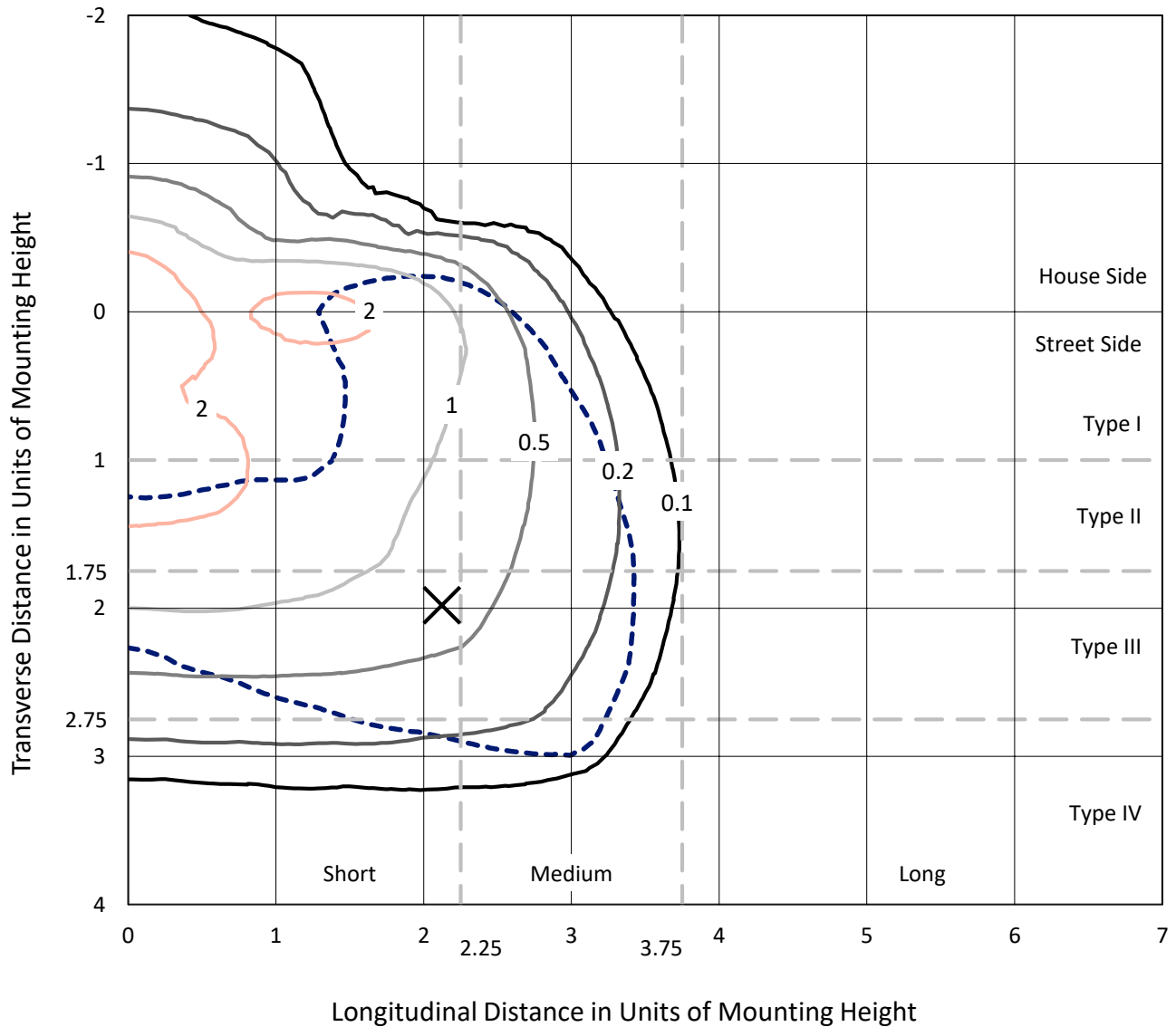
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

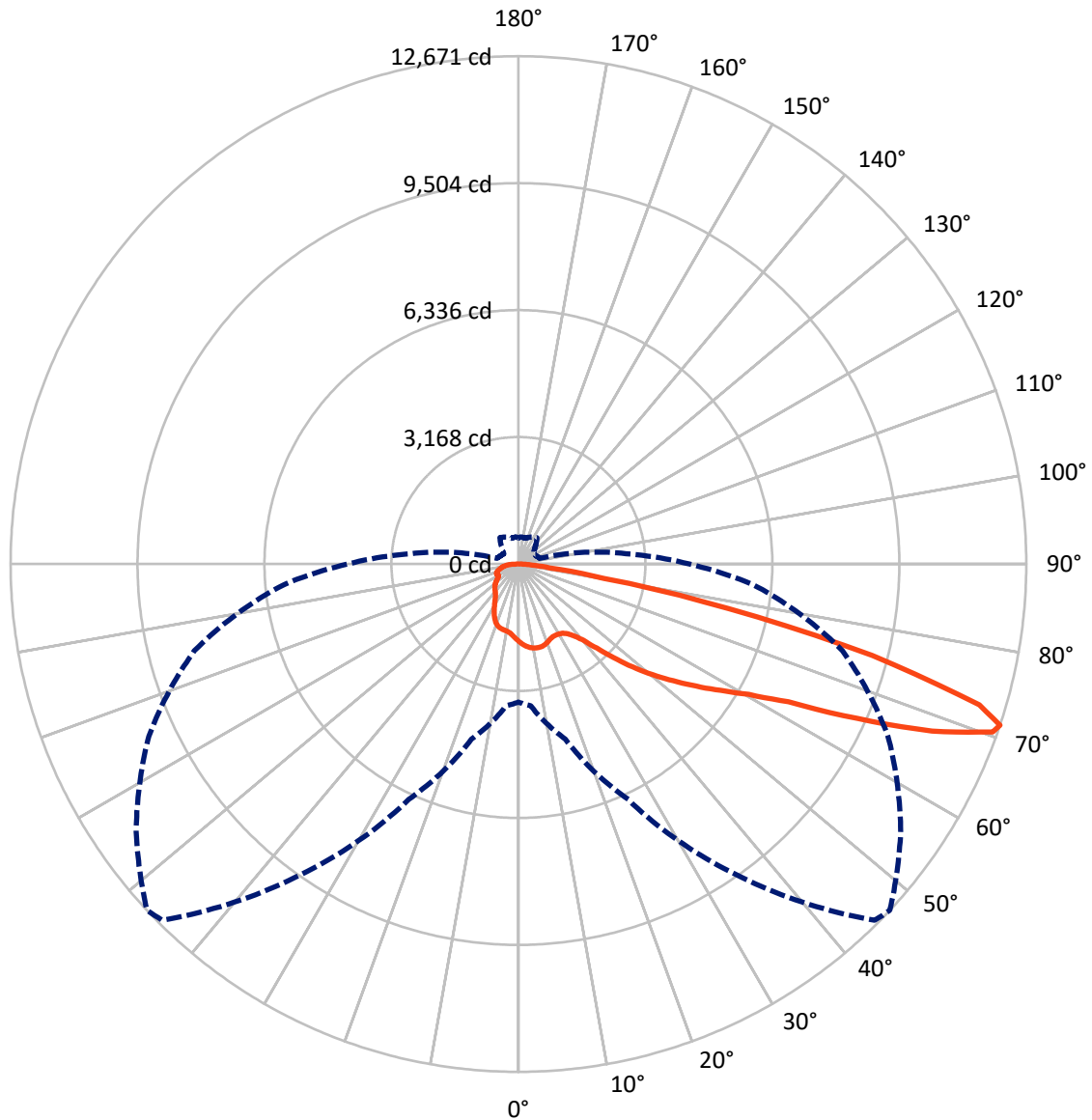
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.5 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	3482.5	0.0	3482.5
	% Fixture	21.4	0.0	21.4
<b>Street Side</b>	Lumens	12767.1	0.0	12767.1
	% Fixture	78.6	0.0	78.6
<b>Total</b>	Lumens	16249.6	0.0	16249.6
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	184.5	1.1
10°-20°	539.8	3.3
20°-30°	802.1	4.9
30°-40°	1151.7	7.1
40°-50°	2041.9	12.6
50°-60°	3494.0	21.5
60°-70°	4960.3	30.5
70°-80°	2716.7	16.7
80°-90°	358.6	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°	16249.6	100.0
0°-180°	16249.6	100.0

**Coefficient of Utilization**



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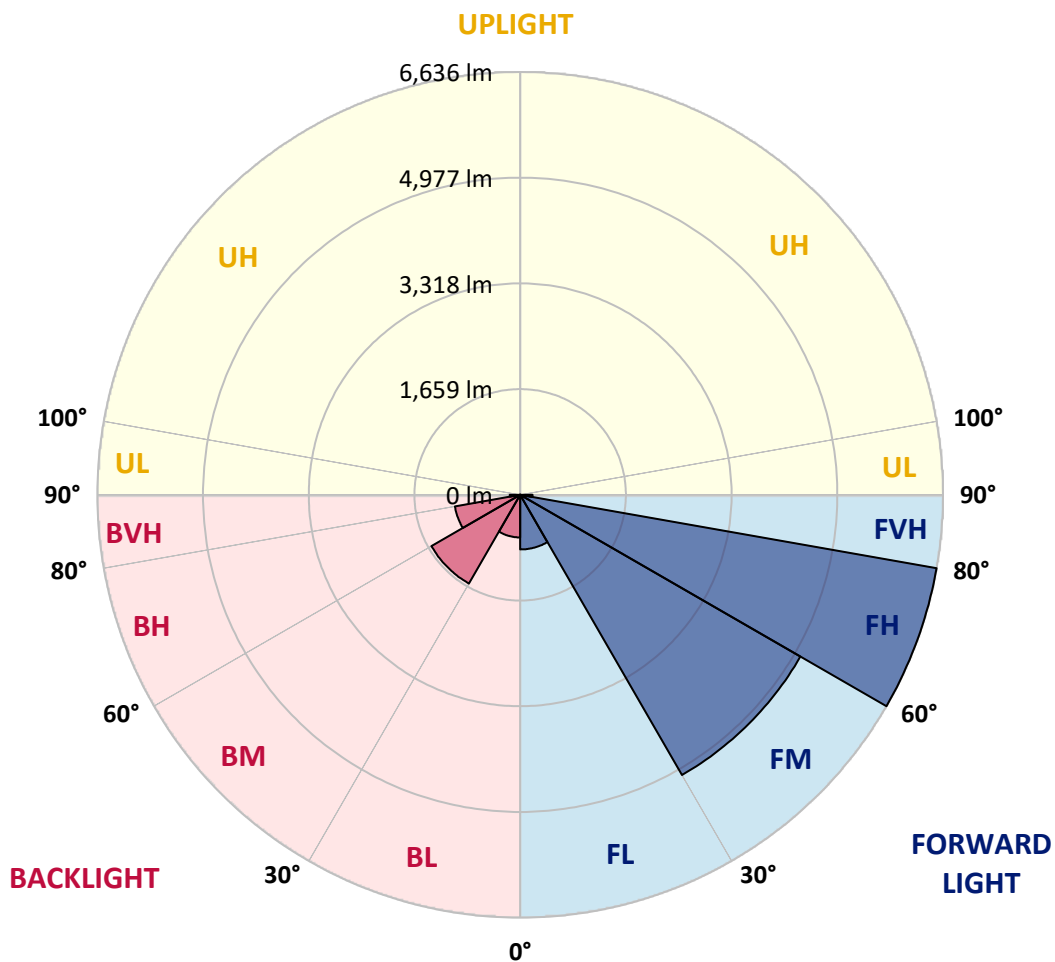
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	857.6	5.3			
FM	(30°-60°)	5078.5	31.3			
FH	(60°-80°)	6636.5	40.8			G3/7500
FVH	(80°-90°)	194.5	1.2			G2/225
BL	(0°-30°)	668.8	4.1	B2/1000		
BM	(30°-60°)	1609.1	9.9	B2/2500		
BH	(60°-80°)	1040.5	6.4	B3/2500		G3/2500
BVH	(80°-90°)	164.1	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-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4
2.5°	2050.3	2046.1	2048.2	2040.8	2022.9	2004.0	2004.0	1983.9	1962.8	1941.9	1918.6
5°	2177.7	2171.4	2166.1	2143.0	2108.2	2069.2	2062.9	2022.9	1979.7	1936.5	1894.4
7.5°	2284.0	2277.7	2261.9	2219.8	2169.3	2111.4	2104.0	2051.3	1994.4	1934.5	1875.5
10°	2359.8	2355.7	2325.2	2271.5	2212.4	2144.0	2131.4	2077.7	2010.3	1935.5	1860.7
12.5°	2402.0	2395.6	2358.8	2295.6	2226.1	2156.7	2144.0	2092.4	2015.5	1933.4	1846.0
15°	2385.1	2382.0	2347.3	2283.0	2213.5	2153.5	2143.0	2090.3	2012.3	1926.0	1832.3
17.5°	2313.5	2320.9	2293.6	2230.3	2173.5	2131.4	2119.8	2070.2	1996.6	1908.1	1811.2
20°	2214.6	2223.0	2209.3	2145.0	2112.4	2085.1	2078.7	2038.7	1970.3	1881.8	1786.0
22.5°	2109.2	2116.6	2117.7	2057.7	2047.1	2036.6	2031.4	2002.9	1947.1	1866.0	1769.1
25°	2036.6	2045.0	2047.1	1994.4	2000.8	2004.0	2002.9	1982.9	1942.9	1866.0	1771.2
27.5°	2017.7	2021.9	2019.7	1971.3	1982.9	2000.8	2001.8	1997.6	1959.8	1887.0	1800.7
30°	2082.9	2085.1	2058.7	1986.1	1997.6	2020.8	2021.9	2019.7	1995.6	1941.9	1867.1
32.5°	2365.2	2363.0	2272.5	2085.1	2045.0	2053.5	2056.6	2075.6	2077.7	2032.4	1962.8
35°	2794.8	2793.8	2688.4	2368.3	2179.8	2135.6	2139.8	2169.3	2195.6	2165.1	2125.1
37.5°	3267.6	3270.8	3206.5	2772.7	2470.4	2286.2	2282.0	2304.1	2351.5	2362.0	2367.2
40°	3792.1	3807.8	3804.7	3237.0	2878.0	2543.2	2501.0	2475.7	2567.3	2625.3	2700.0
42.5°	4391.2	4387.0	4389.1	3746.8	3343.4	2947.5	2869.6	2751.6	2858.0	2958.1	3122.3
45°	4906.2	4923.1	4935.6	4289.0	3864.7	3409.8	3330.8	3116.0	3211.8	3361.3	3611.9
47.5°	5424.3	5394.7	5418.0	4892.5	4444.9	3937.3	3835.2	3545.6	3635.2	3845.8	4226.9
50°	6027.6	6013.9	5908.7	5680.1	5146.3	4472.3	4338.5	3994.2	4124.8	4406.0	4986.2
52.5°	6568.9	6495.2	6413.1	6299.3	5836.0	5013.6	4844.0	4460.7	4700.8	5049.4	5928.7
55°	6766.9	6717.4	6816.4	6963.8	6565.8	5565.4	5375.8	5005.2	5350.5	5785.5	7037.5
57.5°	6977.5	6994.3	7217.6	7515.6	7256.6	6154.1	5948.7	5649.7	6063.4	6609.0	8277.0
60°	7082.8	7150.2	7595.6	8154.9	7913.6	6799.6	6602.6	6389.9	6854.3	7518.8	9513.2
62.5°	7100.7	7191.2	7822.1	8379.1	8818.2	7788.3	7560.9	7330.3	7842.0	8524.5	10408.3
65°	6772.1	6911.2	7802.0	8655.0	9642.7	9440.6	9296.4	8894.0	9164.7	9410.0	10561.0
67.5°	5806.5	5958.2	7030.1	8541.3	10304.1	11155.0	11127.6	10533.6	10186.1	9752.3	9429.0
70°	4261.7	4383.9	5413.8	7301.8	10015.5	12500.8	12549.2	11596.2	10471.5	9025.7	7011.2
71°	3446.6	3551.9	4522.9	6482.5	9453.2	12570.2	12671.4	11643.5	10174.6	8369.7	5869.7
72.5°	2145.0	2204.0	3003.3	4892.5	8140.0	11854.2	12024.8	11037.0	9239.5	7074.4	4149.0
75°	809.8	833.0	1114.1	2157.7	4858.8	8905.6	9112.0	8341.2	6491.0	4038.4	1736.5
77.5°	435.0	446.5	552.8	897.2	1947.1	5105.1	5370.6	4757.6	3113.9	1413.2	709.7
80°	291.7	299.1	382.3	531.8	895.1	1943.9	2165.1	1910.3	1165.8	806.6	505.4
82.5°	188.5	192.7	260.1	349.6	578.2	683.4	780.3	815.1	727.6	578.2	305.4
85°	124.3	127.5	171.7	223.2	358.0	337.0	345.5	451.7	496.0	381.3	155.9
87.5°	71.6	73.8	103.2	114.8	161.1	126.3	136.9	214.8	294.8	248.5	89.5
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°	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4	1932.4
2.5°	1908.1	1899.7	1880.8	1869.1	1863.9	1861.8	1859.7	1863.9	1863.9	1861.8	1857.6
5°	1873.3	1857.6	1826.0	1803.9	1792.3	1789.1	1793.3	1798.7	1801.7	1801.7	1798.7
7.5°	1848.1	1824.9	1782.8	1752.3	1734.4	1729.1	1740.7	1759.7	1772.3	1778.6	1779.6
10°	1827.1	1795.5	1749.1	1717.5	1702.8	1700.7	1715.4	1739.6	1765.9	1777.6	1779.6
12.5°	1808.1	1772.3	1721.7	1692.3	1681.7	1686.9	1707.0	1729.1	1759.7	1776.5	1777.6
15°	1790.2	1753.3	1699.6	1669.0	1667.0	1675.4	1694.3	1712.2	1735.4	1756.5	1756.5
17.5°	1769.1	1729.1	1673.3	1644.9	1644.9	1652.3	1664.9	1674.4	1689.1	1709.1	1708.0
20°	1743.8	1702.8	1645.9	1616.5	1610.1	1605.9	1605.9	1608.0	1620.7	1638.6	1641.7
22.5°	1724.9	1682.8	1622.7	1586.9	1558.5	1531.2	1519.6	1515.3	1527.0	1543.7	1548.0
25°	1724.9	1682.8	1615.3	1555.4	1485.8	1433.2	1411.1	1404.8	1416.4	1432.1	1438.5
27.5°	1753.3	1711.2	1632.2	1527.0	1399.5	1315.3	1288.9	1283.7	1294.2	1306.8	1313.2
30°	1819.6	1778.6	1680.7	1494.3	1303.6	1193.1	1163.6	1158.4	1163.6	1168.9	1176.3
32.5°	1930.2	1895.5	1759.7	1464.8	1206.8	1082.5	1046.7	1038.3	1040.4	1041.5	1047.8
35°	2110.3	2094.5	1864.9	1430.1	1115.2	992.0	955.1	938.3	937.2	942.4	949.8
37.5°	2386.2	2395.6	2000.8	1379.4	1039.3	927.7	890.9	874.0	865.6	876.2	884.5
40°	2775.9	2798.0	2157.7	1311.0	977.2	889.9	850.9	835.0	823.5	820.3	824.5
42.5°	3282.3	3276.0	2317.8	1223.7	909.8	864.6	823.5	806.6	787.7	763.4	758.2
45°	3882.6	3792.1	2451.5	1116.2	833.0	840.4	798.2	775.1	745.5	709.7	705.5
47.5°	4591.3	4341.7	2533.6	1001.5	761.4	808.7	769.8	734.0	690.8	667.7	664.5
50°	5445.4	4985.1	2591.5	884.5	697.1	768.7	729.8	682.4	640.3	633.9	632.9
52.5°	6456.3	5744.4	2663.2	779.3	646.6	717.1	689.8	641.3	607.6	610.8	610.8
55°	7531.4	6530.0	2665.3	696.0	602.3	657.1	660.2	621.3	594.9	605.5	608.7
57.5°	8511.8	7216.5	2455.7	637.1	560.3	609.7	650.8	628.7	608.7	645.5	648.7
60°	9366.9	7745.2	2005.0	588.6	525.5	591.8	671.9	673.9	669.7	769.8	777.1
62.5°	9679.7	7750.5	1423.7	547.6	506.6	602.3	716.1	719.2	719.2	811.9	825.6
65°	9241.5	7104.9	947.8	523.3	493.9	625.5	751.9	738.2	705.5	769.8	755.0
67.5°	7697.8	5530.6	692.9	507.6	476.0	626.6	783.5	748.7	692.9	747.7	722.4
70°	5290.5	3519.3	580.2	492.9	454.9	599.1	800.4	745.5	673.9	697.1	663.4
71°	4258.5	2808.5	550.8	487.5	446.5	583.4	802.4	741.3	664.5	679.2	648.7
72.5°	2805.3	1730.1	515.0	476.0	433.8	556.0	797.2	731.8	651.8	652.8	632.9
75°	1106.7	717.1	463.3	449.7	398.0	511.8	774.0	711.9	627.6	606.5	598.1
77.5°	559.1	468.6	407.5	412.8	355.9	466.5	741.3	679.2	593.9	565.5	559.1
80°	408.6	355.9	348.5	358.0	308.5	422.3	700.3	634.9	550.8	580.2	567.6
82.5°	248.5	217.0	272.7	295.9	258.0	377.0	651.8	583.4	496.0	457.1	442.3
85°	117.9	127.5	196.9	218.0	190.6	301.2	596.1	526.5	432.8	373.8	380.1
87.5°	57.9	70.6	112.6	130.5	125.3	221.2	449.7	408.6	341.2	281.2	274.9
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)