

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: P196347

Luminaire Tested: **NAV-AF-03-D-UNV-T4FT-600**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196347  
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-03-D-UNV-T4FT-600  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 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: 12305.1 lumens  
Efficiency: N/A  
Efficacy: 128.2 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G3

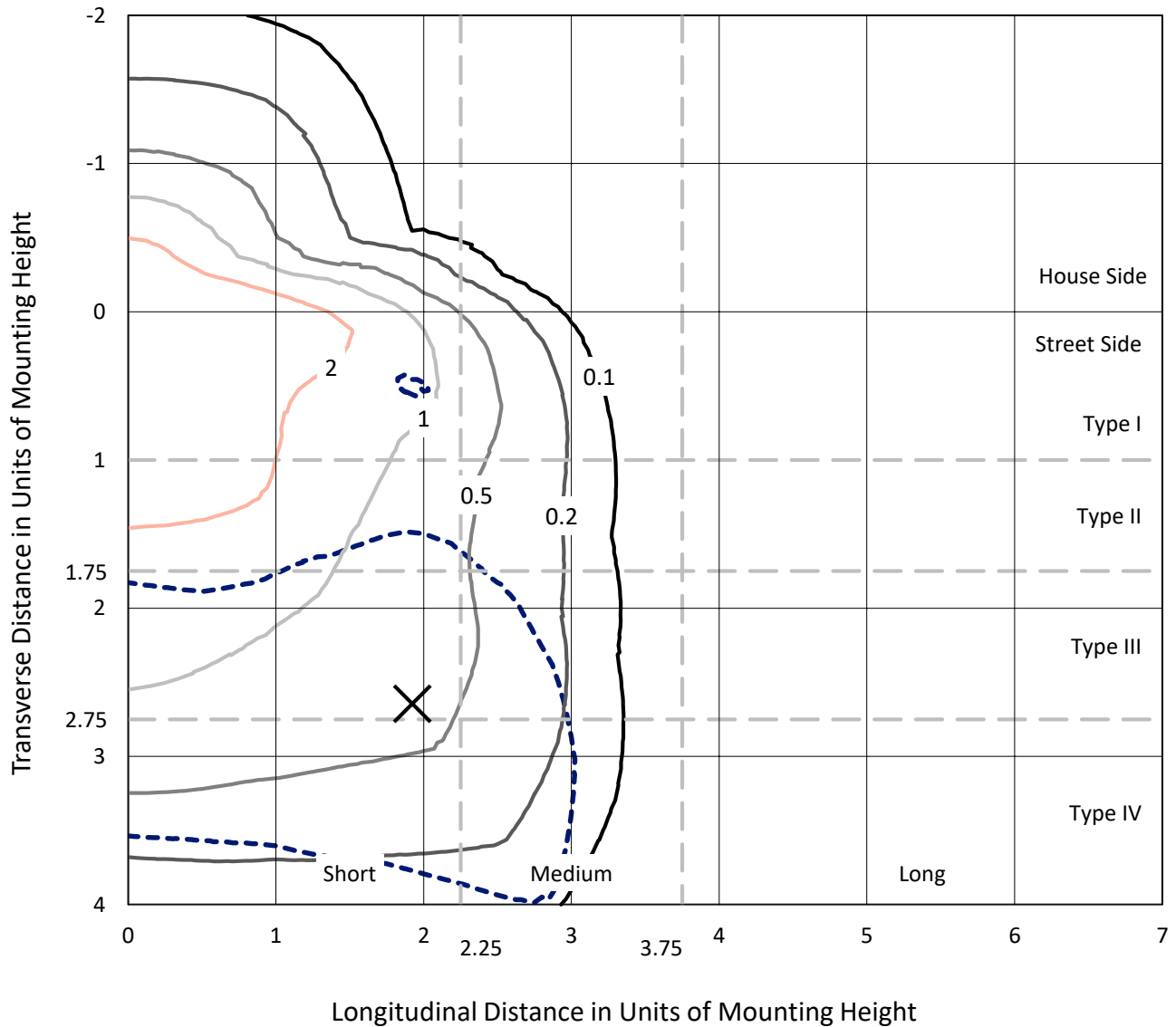
Input Watts (W): 96  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

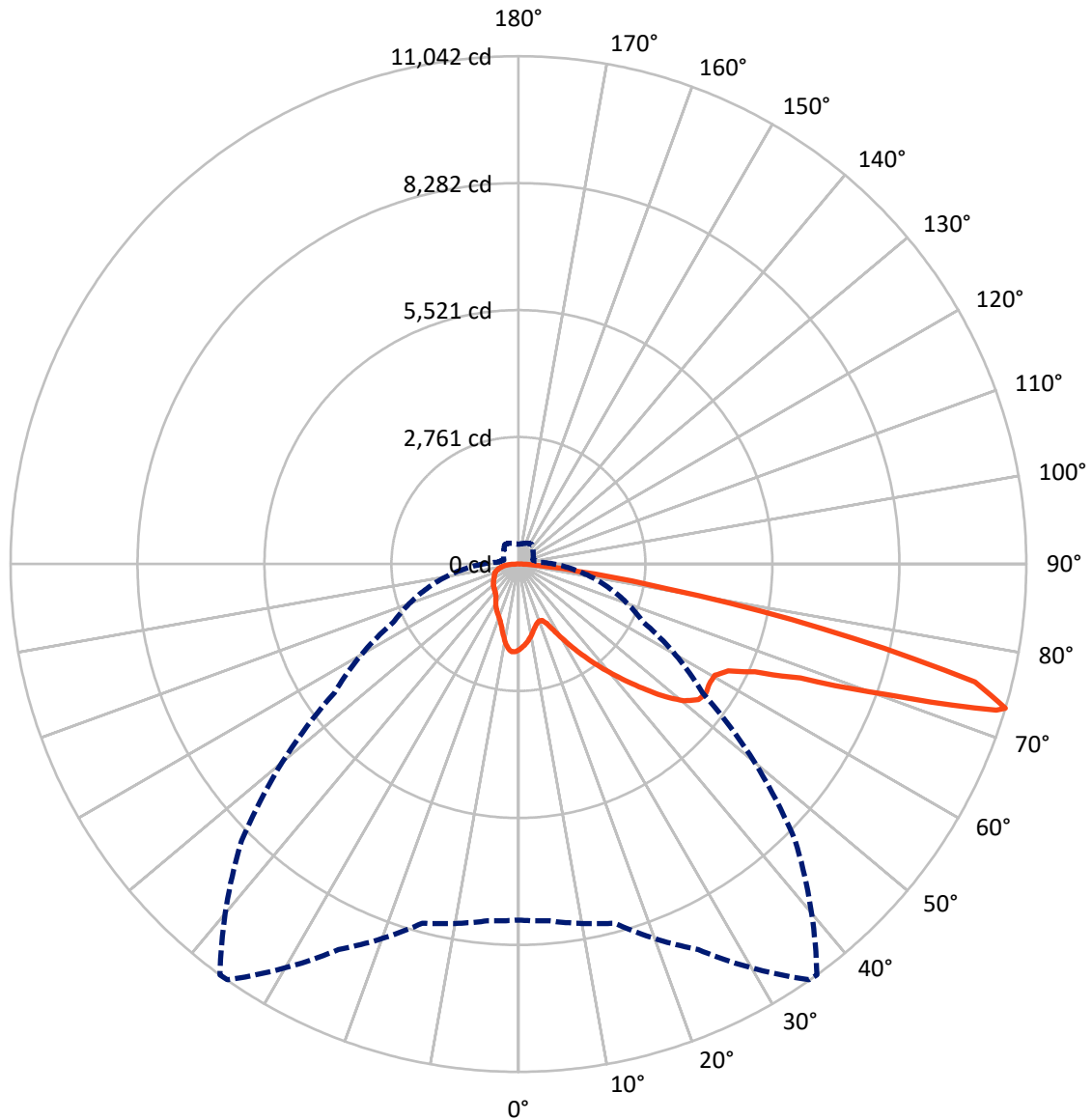
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.7 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	2372.8	0.0	2372.8
	% Fixture	19.3	0.0	19.3
<b>Street Side</b>	Lumens	9932.3	0.0	9932.3
	% Fixture	80.7	0.0	80.7
<b>Total</b>	Lumens	12305.1	0.0	12305.1
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	169.3	1.4
10°-20°	425.2	3.5
20°-30°	681.7	5.5
30°-40°	1127.6	9.2
40°-50°	1744.8	14.2
50°-60°	2335.7	19.0
60°-70°	3051.2	24.8
70°-80°	2492.3	20.3
80°-90°	277.4	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°	12305.1	100.0
0°-180°	12305.1	100.0

**Coefficient of Utilization**



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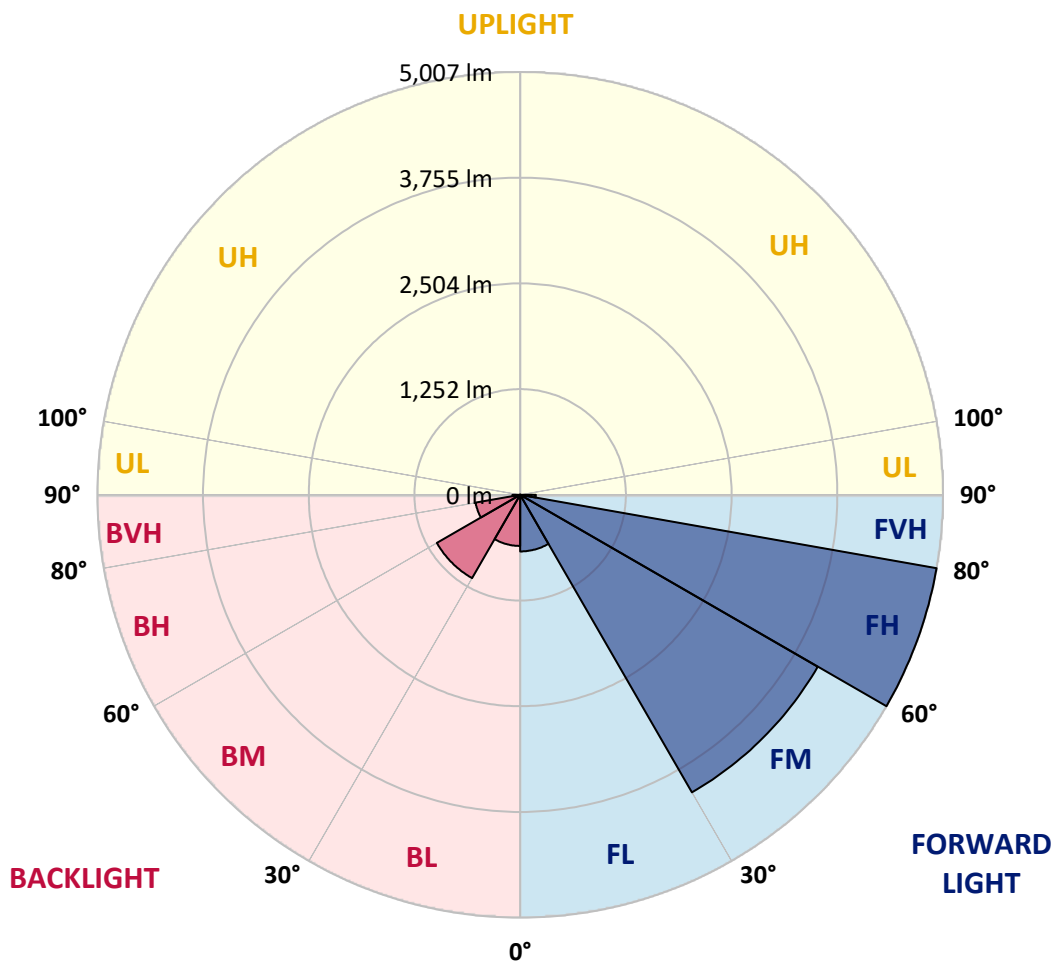
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	670.5	5.4			
FM (30°-60°)	4068.5	33.1			
FH (60°-80°)	5007.3	40.7			G3/7500
FVH (80°-90°)	186.0	1.5			G2/225
BL (0°-30°)	605.7	4.9	B2/1000		
BM (30°-60°)	1139.5	9.3	B2/2500		
BH (60°-80°)	536.2	4.4	B2/1000		G2/1000
BVH (80°-90°)	91.4	0.7			G1/100
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°	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8
2.5°	1792.7	1797.4	1798.1	1803.7	1803.7	1802.8	1805.2	1814.6	1819.3	1830.3	1839.7
5°	1704.3	1709.9	1712.2	1721.5	1733.3	1734.1	1742.7	1760.7	1777.9	1802.1	1822.4
7.5°	1605.1	1611.4	1617.6	1637.1	1654.3	1655.9	1672.3	1701.3	1723.9	1753.6	1790.4
10°	1509.0	1510.5	1516.7	1541.8	1564.4	1566.8	1590.2	1623.0	1653.6	1695.0	1736.5
12.5°	1430.0	1434.7	1433.1	1451.9	1471.4	1472.9	1504.2	1545.7	1590.2	1637.1	1686.4
15°	1402.6	1401.9	1385.4	1384.6	1393.2	1394.8	1425.3	1473.8	1523.8	1581.6	1644.9
17.5°	1421.4	1415.0	1372.1	1345.5	1340.1	1341.6	1364.3	1417.4	1470.6	1537.1	1612.9
20°	1524.5	1500.4	1399.5	1335.4	1317.4	1317.4	1330.7	1373.6	1432.3	1509.7	1605.1
22.5°	1769.3	1731.8	1516.7	1402.6	1339.2	1333.0	1322.9	1355.7	1420.6	1513.6	1637.1
25°	2077.3	2059.3	1731.8	1581.6	1451.1	1430.7	1363.5	1375.3	1444.8	1555.8	1724.7
27.5°	2362.7	2331.4	2014.0	1841.9	1657.5	1626.2	1483.9	1436.2	1502.6	1634.0	1851.3
30°	2529.1	2508.1	2304.0	2139.8	1920.2	1880.3	1676.2	1556.6	1605.8	1763.1	2031.2
32.5°	2710.6	2698.0	2594.8	2445.6	2204.8	2158.6	1924.9	1752.8	1763.8	1934.2	2247.7
35°	2886.5	2902.9	2844.3	2734.9	2511.2	2468.2	2258.7	2009.3	1958.4	2126.5	2479.1
37.5°	3097.6	3101.5	3064.8	2993.6	2833.4	2798.2	2625.4	2282.9	2170.3	2331.4	2702.7
40°	3519.0	3457.2	3313.3	3257.1	3161.6	3139.7	2942.8	2533.8	2367.3	2541.7	2913.9
42.5°	3974.8	3878.6	3653.5	3561.2	3522.8	3502.6	3207.1	2701.2	2551.9	2752.0	3121.0
45°	4342.2	4264.1	4043.6	3929.5	3934.2	3901.3	3437.6	2850.6	2752.0	2963.1	3352.4
47.5°	4704.2	4573.6	4326.6	4310.2	4364.9	4316.4	3658.2	2999.8	2960.7	3192.9	3583.9
50°	4727.7	4608.8	4508.8	4640.1	4733.9	4673.8	3858.3	3195.3	3177.3	3471.3	3882.5
52.5°	4442.3	4425.1	4577.6	4798.9	4954.4	4900.4	4021.7	3396.2	3398.5	3819.2	4246.1
55°	4338.3	4316.4	4499.3	4771.5	4981.8	4949.8	4143.7	3623.0	3644.1	4241.4	4636.2
57.5°	4513.5	4458.7	4494.6	4719.9	4917.6	4898.9	4270.3	3874.7	3913.0	4727.7	4996.6
60°	5056.9	4945.0	4754.3	4796.5	4920.0	4909.0	4451.7	4155.3	4219.5	5234.3	5224.9
62.5°	5870.7	5744.1	5355.5	5167.8	5140.4	5119.4	4751.1	4500.2	4532.2	5600.1	5092.0
65°	6763.5	6627.5	6165.4	5858.2	5697.1	5651.8	5234.3	4916.1	4715.2	5599.4	4574.4
67.5°	7765.8	7622.0	7161.5	6868.3	6694.0	6616.5	6018.4	5252.2	4655.8	5125.6	3660.5
70°	8792.4	8655.5	8444.5	8546.9	8623.5	8505.4	7253.7	5364.0	4228.9	4018.6	2458.0
72.5°	8247.4	8236.5	8396.8	9367.8	10844.6	10868.1	8487.4	5048.3	3267.2	2388.5	1310.3
73°	7741.6	7787.7	8084.8	9246.6	11034.6	11042.4	8511.7	4884.8	2999.8	2057.8	1150.8
75°	4010.8	4323.5	5425.8	7497.6	10217.6	10254.4	7503.1	3698.0	1788.0	1143.0	775.6
77.5°	1074.2	1060.2	1748.1	3652.7	6812.0	6763.5	4741.0	1790.4	856.9	716.9	544.1
80°	368.3	373.0	594.9	1336.2	3179.6	3293.0	2057.8	781.0	563.6	499.6	385.4
82.5°	187.6	193.8	311.2	568.4	1329.8	1301.7	662.2	459.7	377.6	303.3	215.7
85°	100.0	103.2	171.2	294.7	487.8	493.4	233.0	245.5	240.0	172.0	106.3
87.5°	49.2	50.8	82.0	129.8	180.6	174.3	81.3	106.3	118.0	97.0	58.6
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°	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8	1863.8
2.5°	1851.3	1851.3	1861.6	1878.8	1891.2	1903.0	1910.8	1923.2	1930.3	1929.5	1928.8
5°	1838.9	1846.6	1867.0	1888.1	1902.2	1911.6	1911.6	1917.0	1917.0	1914.7	1911.6
7.5°	1809.9	1823.2	1852.9	1871.7	1875.6	1865.5	1845.1	1829.4	1809.9	1799.8	1795.9
10°	1763.8	1781.0	1818.5	1827.1	1806.8	1770.8	1721.5	1679.4	1641.8	1624.7	1619.1
12.5°	1718.5	1741.2	1776.3	1763.1	1714.6	1644.2	1568.3	1510.5	1468.2	1451.9	1446.4
15°	1680.9	1708.3	1735.6	1694.2	1609.8	1512.0	1428.3	1374.4	1342.4	1329.8	1326.8
17.5°	1655.9	1688.0	1697.4	1619.9	1502.6	1393.2	1318.9	1283.7	1269.7	1264.2	1262.6
20°	1657.5	1693.4	1670.8	1548.0	1399.5	1289.2	1239.9	1229.8	1229.8	1229.8	1229.0
22.5°	1700.5	1731.8	1659.8	1480.7	1300.2	1201.7	1180.6	1189.2	1195.4	1195.4	1194.6
25°	1789.6	1806.8	1667.6	1415.9	1207.1	1125.9	1126.6	1143.0	1148.5	1148.5	1146.9
27.5°	1925.6	1911.6	1681.7	1344.0	1115.6	1057.0	1068.0	1082.8	1086.7	1084.4	1083.6
30°	2096.0	2039.8	1693.4	1259.6	1029.7	992.9	1002.3	1010.9	1007.8	1002.3	1001.5
32.5°	2286.8	2170.3	1686.4	1164.9	953.8	926.5	931.9	936.6	931.9	918.6	918.6
35°	2476.1	2288.3	1648.1	1061.7	893.6	862.3	861.5	876.5	875.6	860.0	860.8
37.5°	2641.8	2381.4	1573.8	967.1	842.0	815.4	818.6	828.0	832.7	811.5	809.2
40°	2786.4	2445.6	1469.1	886.6	800.6	802.2	793.5	778.7	773.2	763.8	762.3
42.5°	2922.5	2490.1	1358.1	819.4	779.5	797.5	768.5	733.4	718.5	727.1	732.5
45°	3056.2	2540.1	1250.9	763.8	752.9	783.4	743.5	704.4	687.2	691.1	696.6
47.5°	3219.5	2609.8	1121.9	704.4	712.3	757.6	727.8	685.7	659.9	644.3	639.5
50°	3434.6	2710.6	954.6	640.3	669.2	729.5	714.6	658.3	630.1	598.8	591.1
52.5°	3703.5	2806.0	785.7	588.7	634.0	705.2	692.7	634.8	600.5	562.9	556.7
55°	3971.6	2819.3	640.3	544.1	594.2	672.4	666.1	616.1	567.6	537.2	530.8
57.5°	4159.3	2693.3	542.6	506.7	555.9	631.7	641.9	593.4	540.2	516.8	512.9
60°	4162.4	2392.4	483.1	481.6	526.9	596.5	616.8	566.8	523.0	507.4	504.3
62.5°	3831.7	1928.0	444.9	462.9	505.8	567.6	598.1	552.0	519.1	512.9	509.7
65°	3211.8	1424.5	414.4	445.6	486.3	543.4	582.5	547.3	517.6	515.3	512.9
67.5°	2371.3	976.5	388.5	423.7	464.4	518.3	567.6	540.2	508.2	517.6	514.4
70°	1491.7	652.0	364.4	398.7	435.5	489.4	548.1	527.7	496.4	491.0	480.8
72.5°	842.0	471.5	335.4	366.6	397.9	451.1	521.5	506.7	469.8	448.0	437.8
73°	760.7	446.4	328.4	358.9	389.3	443.2	515.3	500.3	462.1	437.8	428.4
75°	556.7	365.1	296.3	326.8	353.4	407.3	485.5	469.1	427.7	398.7	392.5
77.5°	403.5	281.4	254.9	282.2	305.7	357.3	441.0	422.2	381.6	365.9	359.7
80°	290.8	213.4	211.1	237.6	258.0	310.4	393.2	373.7	334.6	380.7	370.6
82.5°	173.6	136.8	154.8	184.5	205.6	260.3	341.7	319.0	281.4	284.6	242.3
85°	82.9	77.4	96.2	121.2	136.1	178.3	284.6	266.6	225.2	184.5	180.6
87.5°	36.7	35.2	46.1	53.9	72.7	107.1	194.7	172.8	163.4	97.7	76.6
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)