

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: P196358

Luminaire Tested: **NAV-AF-02-D-UNV-T4FT**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196358  
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-02-D-UNV-T4FT  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1050mA 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: 12558.8 lumens  
Efficiency: N/A  
Efficacy: 111.1 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short - Non-Cutoff  
BUG Rating: B2 - U0 - G3

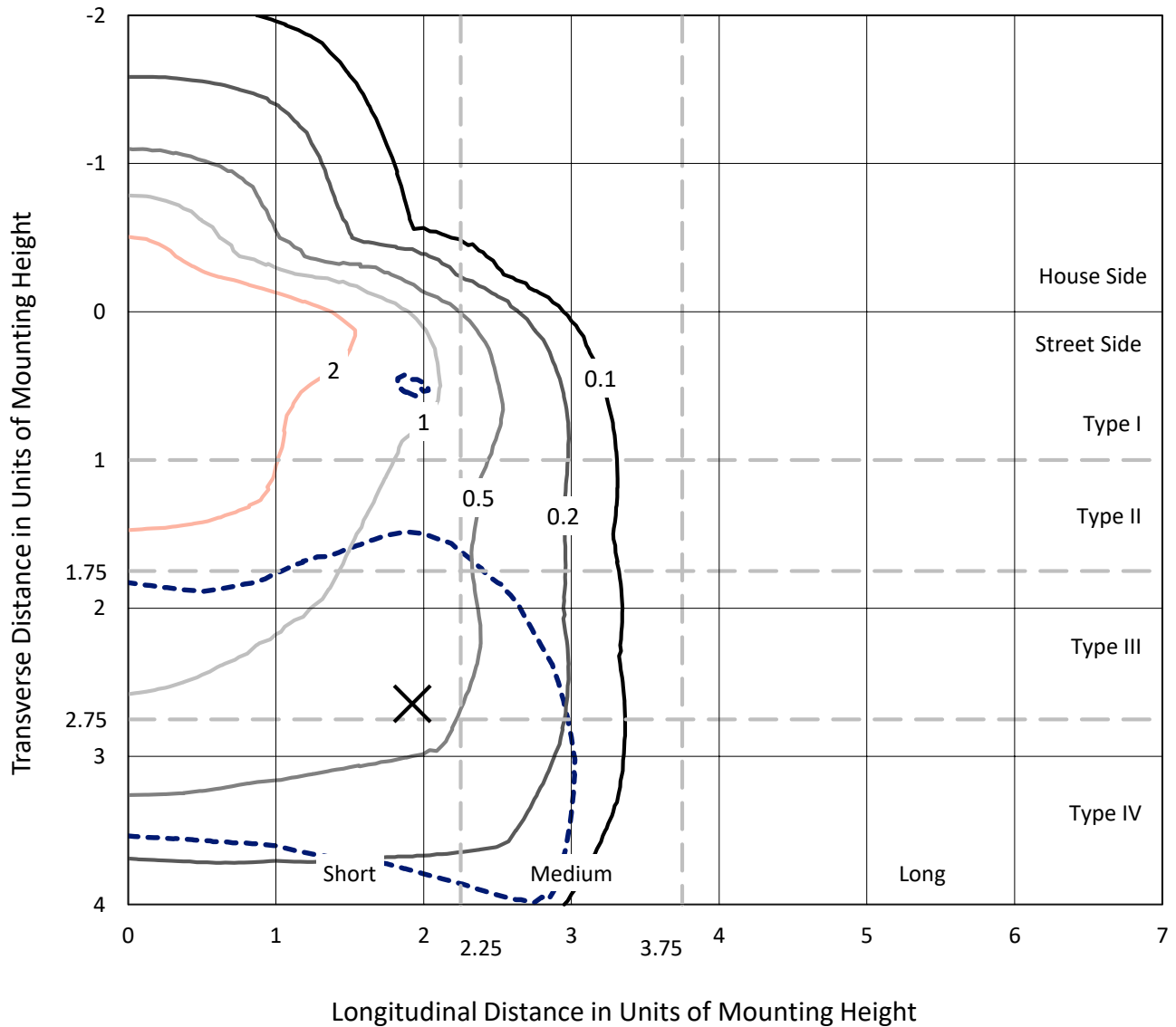
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

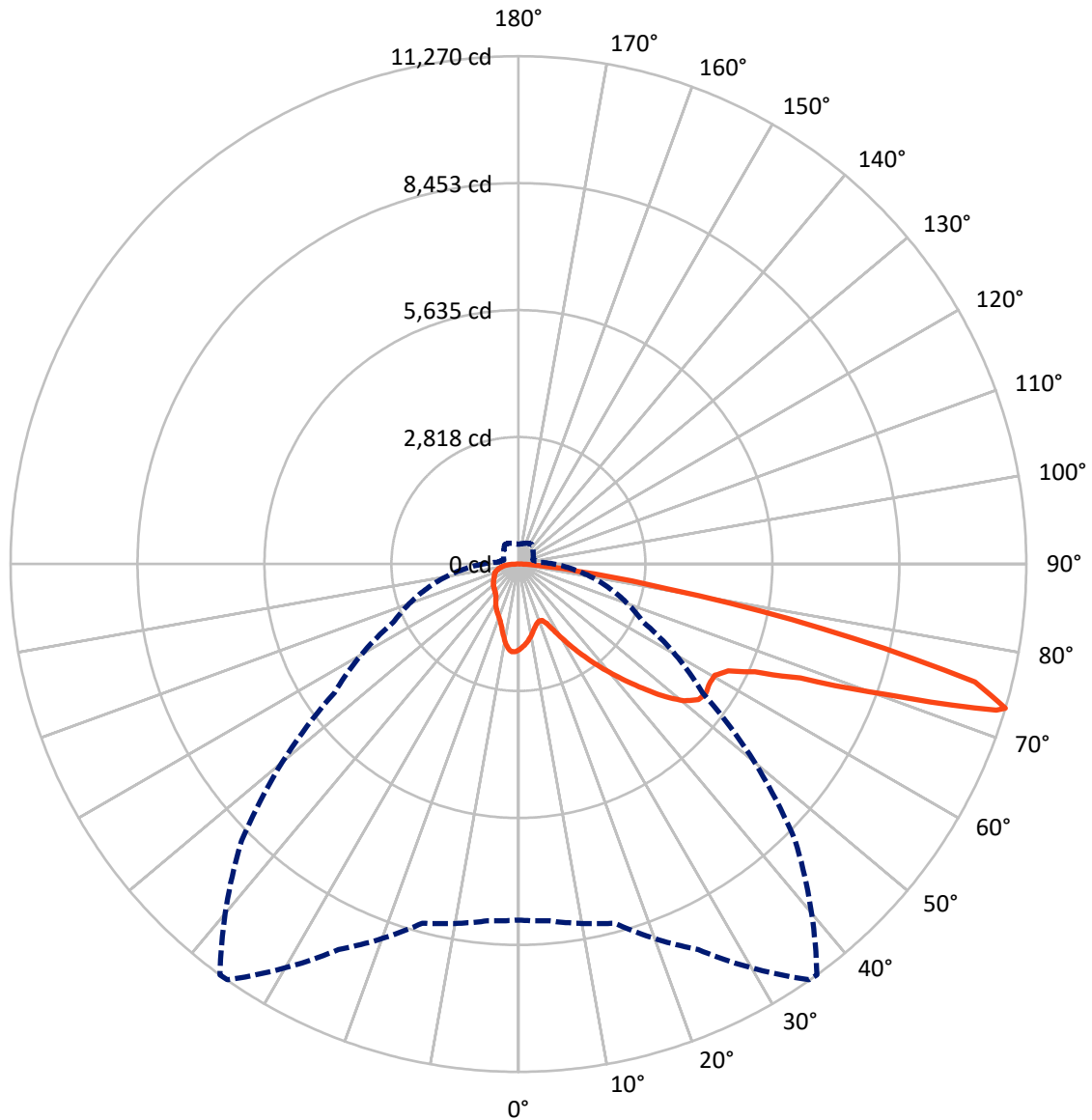


Based on 20 foot mounting height. Maximum calculated value = 4.8 fc  
 Type IV - Short - Non-Cutoff

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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	2421.7	0.0	2421.7
	% Fixture	19.3	0.0	19.3
<b>Street Side</b>	Lumens	10137.1	0.0	10137.1
	% Fixture	80.7	0.0	80.7
<b>Total</b>	Lumens	12558.8	0.0	12558.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	172.8	1.4
10°-20°	433.9	3.5
20°-30°	695.7	5.5
30°-40°	1150.8	9.2
40°-50°	1780.7	14.2
50°-60°	2383.9	19.0
60°-70°	3114.1	24.8
70°-80°	2543.7	20.3
80°-90°	283.1	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°	12558.8	100.0
0°-180°	12558.8	100.0



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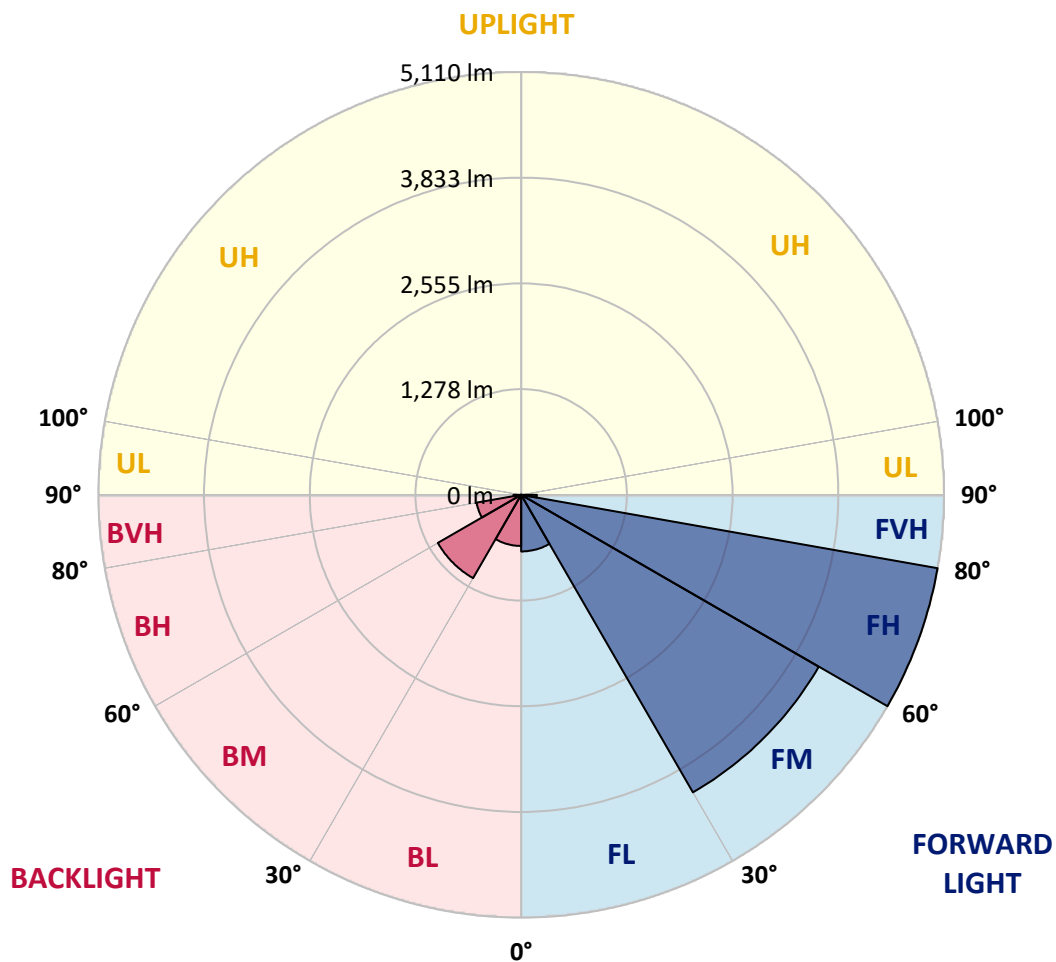
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	684.3	5.4			
FM (30°-60°)	4152.4	33.1			
FH (60°-80°)	5110.5	40.7			G3/7500
FVH (80°-90°)	189.9	1.5			G2/225
BL (0°-30°)	618.2	4.9	B2/1000		
BM (30°-60°)	1163.0	9.3	B2/2500		
BH (60°-80°)	547.3	4.4	B2/1000		G2/1000
BVH (80°-90°)	93.2	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°	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3
2.5°	1829.6	1834.5	1835.3	1840.8	1840.8	1840.1	1842.4	1852.1	1856.8	1868.0	1877.5
5°	1739.5	1745.1	1747.5	1757.0	1769.0	1769.8	1778.6	1796.9	1814.5	1839.3	1860.0
7.5°	1638.2	1644.6	1650.9	1670.9	1688.5	1690.0	1706.8	1736.4	1759.5	1789.8	1827.3
10°	1540.1	1541.6	1548.0	1573.5	1596.7	1599.1	1623.0	1656.6	1687.7	1729.9	1772.3
12.5°	1459.4	1464.3	1462.6	1481.7	1501.7	1503.3	1535.2	1577.5	1623.0	1670.9	1721.1
15°	1431.5	1430.7	1413.9	1413.1	1421.9	1423.5	1454.6	1504.1	1555.2	1614.2	1678.9
17.5°	1450.6	1444.3	1400.4	1373.2	1367.7	1369.2	1392.4	1446.7	1500.9	1568.8	1646.1
20°	1556.0	1531.3	1428.3	1362.9	1344.6	1344.6	1358.1	1402.0	1461.8	1540.9	1638.2
22.5°	1805.7	1767.5	1548.0	1431.5	1366.9	1360.5	1350.1	1383.6	1449.8	1544.9	1670.9
25°	2120.2	2101.8	1767.5	1614.2	1480.9	1460.3	1391.6	1403.6	1474.6	1587.9	1760.3
27.5°	2411.4	2379.5	2055.5	1880.0	1691.7	1659.7	1514.5	1465.8	1533.6	1667.7	1889.5
30°	2581.3	2559.8	2351.6	2184.0	1959.8	1919.1	1710.8	1588.7	1639.0	1799.4	2073.0
32.5°	2766.5	2753.7	2648.3	2496.0	2250.2	2203.1	1964.6	1788.9	1800.2	1974.1	2294.1
35°	2946.0	2962.8	2902.9	2791.2	2563.0	2519.1	2305.2	2050.7	1998.8	2170.4	2530.3
37.5°	3161.4	3165.4	3127.9	3055.3	2891.8	2855.9	2679.5	2330.0	2215.1	2379.5	2758.5
40°	3591.5	3528.5	3381.7	3324.2	3226.9	3204.5	3003.5	2586.1	2416.2	2594.1	2973.9
42.5°	4056.7	3958.6	3728.8	3634.6	3595.5	3574.8	3273.1	2756.9	2604.4	2808.7	3185.4
45°	4431.7	4351.9	4127.0	4010.5	4015.2	3981.7	3508.5	2909.3	2808.7	3024.1	3421.6
47.5°	4801.2	4667.9	4415.8	4399.0	4454.8	4405.4	3733.6	3061.7	3021.8	3258.8	3657.8
50°	4825.2	4703.8	4601.7	4735.8	4831.5	4770.1	3937.8	3261.2	3242.9	3542.9	3962.6
52.5°	4533.9	4516.3	4671.9	4897.8	5056.5	5001.5	4104.6	3466.3	3468.6	3898.0	4333.6
55°	4427.7	4405.4	4592.1	4869.9	5084.5	5051.7	4229.1	3697.7	3719.2	4328.8	4731.8
57.5°	4606.6	4550.7	4587.3	4817.2	5019.0	4999.9	4358.4	3954.6	3993.7	4825.2	5099.6
60°	5161.1	5046.9	4852.3	4895.3	5021.5	5010.3	4543.4	4241.1	4306.5	5342.2	5332.6
62.5°	5991.7	5862.4	5465.9	5274.3	5246.4	5224.9	4849.1	4592.9	4625.7	5715.6	5197.0
65°	6903.0	6764.2	6292.6	5978.9	5814.6	5768.3	5342.2	5017.5	4812.4	5714.8	4668.7
67.5°	7925.9	7779.1	7309.1	7009.9	6832.0	6753.0	6142.5	5360.6	4751.7	5231.3	3735.9
70°	8973.6	8834.0	8618.6	8723.1	8801.3	8680.8	7403.3	5474.6	4316.0	4101.4	2508.7
72.5°	8417.5	8406.3	8569.9	9560.9	11068.2	11092.2	8662.4	5152.3	3334.6	2437.7	1337.3
73°	7901.2	7948.2	8251.5	9437.2	11262.1	11270.1	8687.2	4985.6	3061.7	2100.2	1174.6
75°	4093.4	4412.6	5537.7	7652.3	10428.3	10465.8	7657.8	3774.3	1824.8	1166.6	791.6
77.5°	1096.4	1082.0	1784.2	3727.9	6952.5	6903.0	4838.7	1827.3	874.5	731.7	555.4
80°	375.8	380.6	607.2	1363.7	3245.2	3360.9	2100.2	797.2	575.3	509.8	393.4
82.5°	191.5	197.8	317.6	580.1	1357.3	1328.6	675.9	469.2	385.4	309.6	220.2
85°	102.1	105.4	174.7	300.8	497.9	503.5	237.8	250.5	245.0	175.5	108.5
87.5°	50.2	51.9	83.8	132.5	184.3	177.9	83.0	108.5	120.5	98.9	59.8
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°	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3	1902.3
2.5°	1889.5	1889.5	1899.9	1917.4	1930.2	1942.2	1950.2	1962.9	1970.1	1969.3	1968.6
5°	1876.7	1884.7	1905.5	1927.0	1941.4	1951.0	1951.0	1956.6	1956.6	1954.1	1951.0
7.5°	1847.2	1860.7	1891.1	1910.3	1914.2	1903.9	1883.2	1867.2	1847.2	1836.8	1832.8
10°	1800.2	1817.7	1856.0	1864.7	1844.1	1807.3	1757.0	1714.0	1675.7	1658.1	1652.6
12.5°	1753.8	1777.0	1812.9	1799.4	1749.9	1678.0	1600.7	1541.6	1498.5	1481.7	1476.2
15°	1715.6	1743.5	1771.4	1729.1	1643.0	1543.2	1457.8	1402.8	1370.0	1357.3	1354.1
17.5°	1690.0	1722.8	1732.4	1653.3	1533.6	1421.9	1346.1	1310.2	1295.9	1290.2	1288.7
20°	1691.7	1728.4	1705.2	1579.9	1428.3	1315.8	1265.5	1255.2	1255.2	1255.2	1254.3
22.5°	1735.5	1767.5	1694.0	1511.3	1327.0	1226.4	1204.9	1213.6	1220.1	1220.1	1219.3
25°	1826.5	1844.1	1702.0	1445.0	1232.0	1149.1	1149.8	1166.6	1172.2	1172.2	1170.6
27.5°	1965.3	1951.0	1716.4	1371.7	1138.6	1078.8	1090.0	1105.2	1109.2	1106.7	1105.9
30°	2139.3	2081.8	1728.4	1285.4	1050.9	1013.3	1023.0	1031.7	1028.6	1023.0	1022.1
32.5°	2334.0	2215.1	1721.1	1189.0	973.4	945.5	951.1	955.9	951.1	937.5	937.5
35°	2527.1	2335.6	1682.0	1083.6	912.1	880.1	879.3	894.5	893.6	877.7	878.5
37.5°	2696.2	2430.5	1606.2	987.0	859.4	832.3	835.4	845.1	849.8	828.3	825.8
40°	2843.9	2496.0	1499.3	904.9	817.1	818.7	809.9	794.7	789.2	779.6	778.0
42.5°	2982.7	2541.4	1386.0	836.3	795.5	813.9	784.4	748.5	733.4	742.0	747.7
45°	3119.2	2592.5	1276.7	779.6	768.4	799.5	758.8	718.9	701.4	705.4	711.0
47.5°	3285.9	2663.6	1145.1	718.9	726.9	773.2	742.9	699.8	673.5	657.6	652.7
50°	3505.3	2766.5	974.3	653.6	683.0	744.5	729.4	671.9	643.1	611.2	603.2
52.5°	3779.8	2863.9	801.9	600.9	647.1	719.7	707.0	647.9	612.8	574.5	568.1
55°	4053.5	2877.4	653.6	555.4	606.4	686.2	679.9	628.8	579.3	548.2	541.8
57.5°	4245.0	2748.9	553.7	517.1	567.3	644.8	655.1	605.6	551.4	527.4	523.4
60°	4248.2	2441.7	493.2	491.5	537.8	608.9	629.5	578.5	533.8	517.8	514.6
62.5°	3910.7	1967.7	454.0	472.4	516.3	579.3	610.4	563.3	529.8	523.4	520.3
65°	3277.9	1453.8	422.9	454.8	496.3	554.5	594.4	558.5	528.3	525.8	523.4
67.5°	2420.2	996.7	396.6	432.5	473.9	529.1	579.3	551.4	518.6	528.3	525.1
70°	1522.5	665.5	371.8	406.9	444.5	499.5	559.3	538.6	506.7	501.1	490.7
72.5°	859.4	481.2	342.3	374.2	406.1	460.4	532.2	517.1	479.6	457.3	446.8
73°	776.4	455.6	335.1	366.2	397.4	452.5	525.8	510.7	471.6	446.8	437.3
75°	568.1	372.7	302.4	333.6	360.7	415.7	495.5	478.7	436.5	406.9	400.6
77.5°	411.7	287.2	260.1	288.1	312.0	364.7	450.0	430.9	389.4	373.5	367.0
80°	296.9	217.9	215.4	242.5	263.3	316.8	401.4	381.5	341.6	388.6	378.2
82.5°	177.2	139.6	157.9	188.3	209.8	265.8	348.7	325.6	287.2	290.4	247.3
85°	84.6	79.0	98.1	123.7	138.8	181.9	290.4	272.1	229.9	188.3	184.3
87.5°	37.5	35.9	47.1	55.0	74.2	109.4	198.7	176.4	166.7	99.7	78.2
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)