

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: P196328

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196328  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)  
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-T3R-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10238.7 lumens  
Efficiency: N/A  
Efficacy: 120.5 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type III - Medium - Full Cutoff  
BUG Rating: B1 - U0 - G2

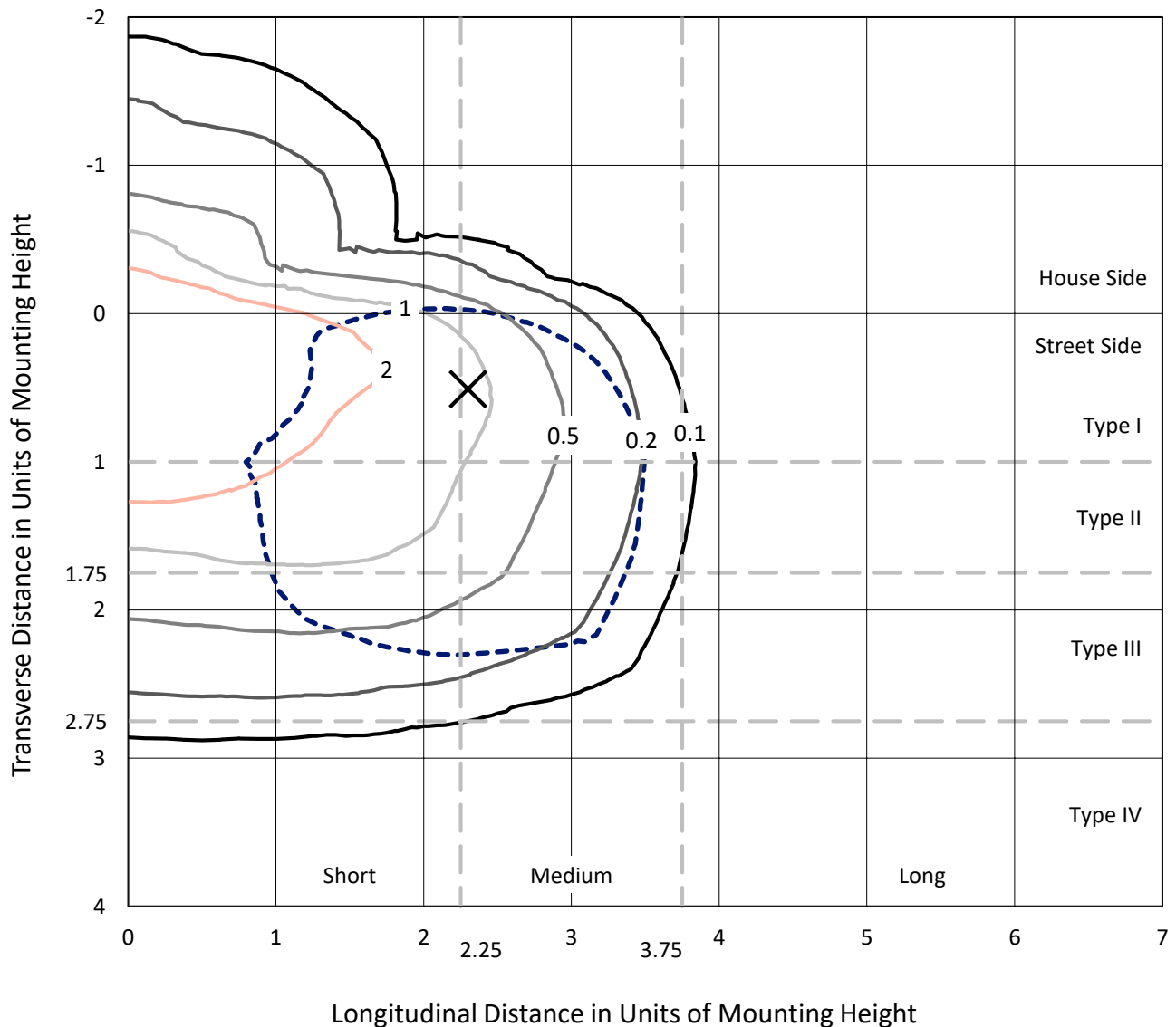
Input Watts (W): 85  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

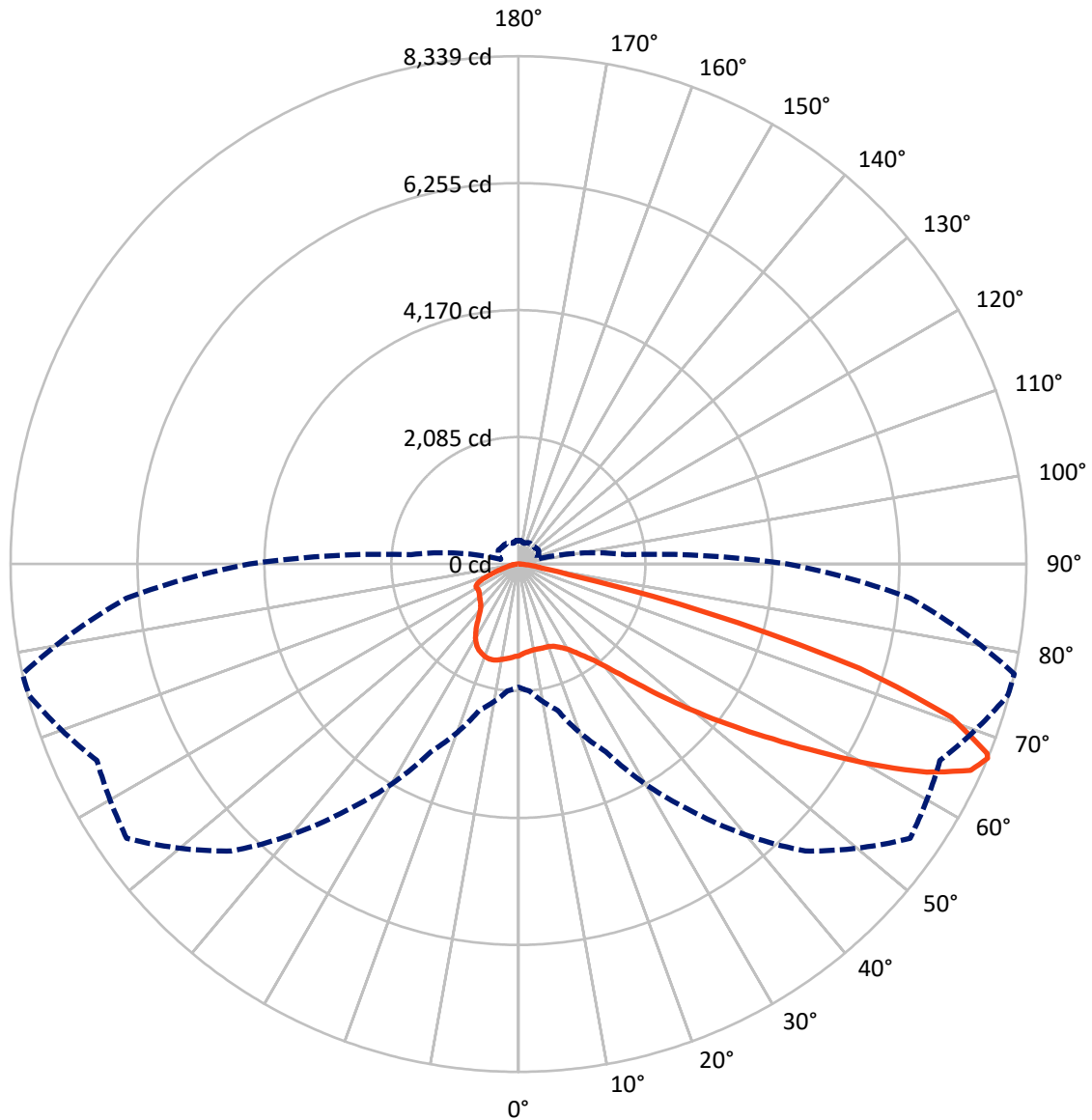
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.5 fc  
 Type III - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral    - - - Horizontal Cone Through 67-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1759.5	0.0	1759.5
	% Fixture	17.2	0.0	17.2
<b>Street Side</b>	Lumens	8479.2	0.0	8479.2
	% Fixture	82.8	0.0	82.8
<b>Total</b>	Lumens	10238.7	0.0	10238.7
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	134.2	1.3
10°-20°	371.7	3.6
20°-30°	631.5	6.2
30°-40°	1010.3	9.9
40°-50°	1555.3	15.2
50°-60°	2157.8	21.1
60°-70°	2878.4	28.1
70°-80°	1369.8	13.4
80°-90°	129.7	1.3
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°	10238.7	100.0
0°-180°	10238.7	100.0



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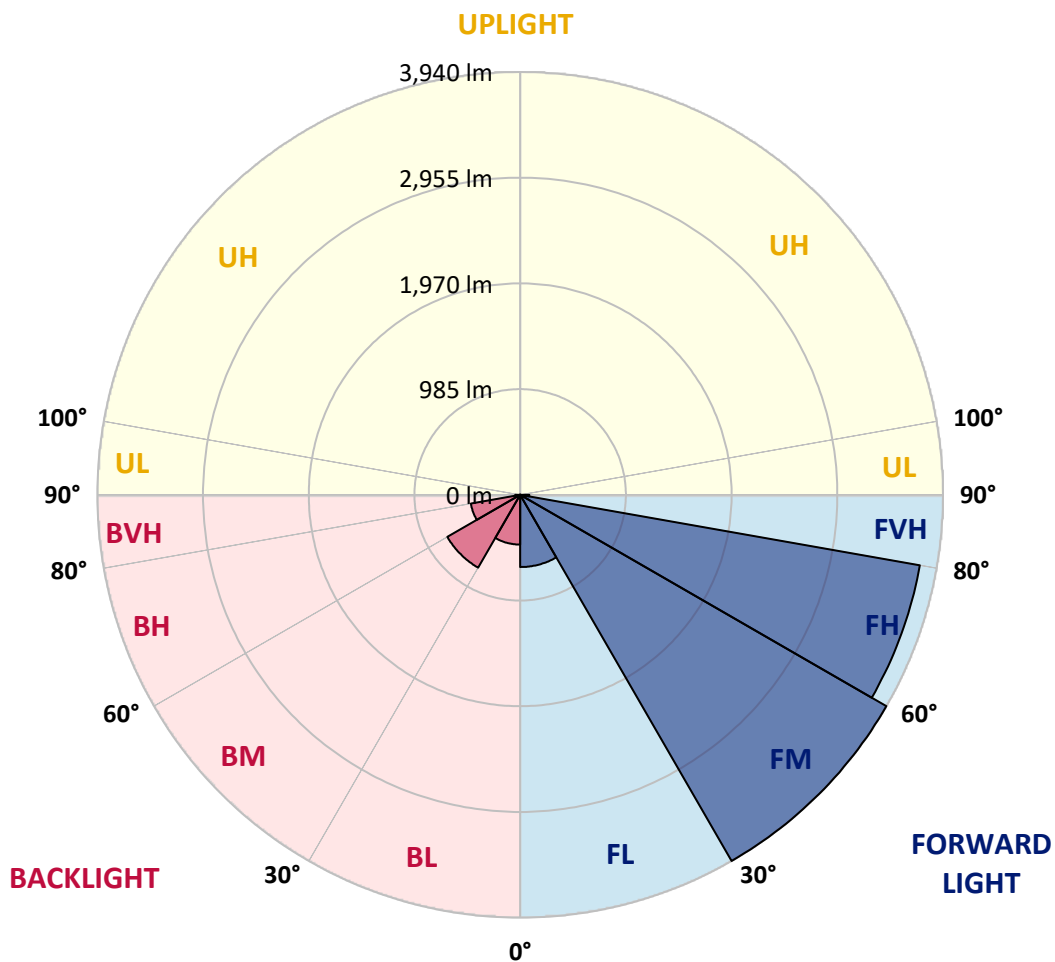
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	673.3	6.6			
FM (30°-60°)	3940.0	38.5			
FH (60°-80°)	3781.7	36.9			G2/5000
FVH (80°-90°)	84.2	0.8			G1/100
BL (0°-30°)	464.1	4.5	B1/500		
BM (30°-60°)	783.4	7.7	B1/1000		
BH (60°-80°)	466.5	4.6	B1/500		G1/500
BVH (80°-90°)	45.5	0.4			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G2**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9
2.5°	1351.2	1357.6	1358.2	1376.5	1384.8	1405.6	1428.3	1448.6	1466.4	1472.7	1484.1
5°	1215.8	1215.8	1217.6	1229.7	1253.1	1286.7	1334.1	1386.0	1440.4	1453.7	1487.3
7.5°	1144.9	1146.1	1147.4	1159.4	1177.8	1207.5	1255.0	1325.8	1416.4	1438.5	1497.4
10°	1151.2	1149.3	1142.9	1140.4	1148.1	1167.0	1208.1	1280.9	1396.1	1430.3	1515.7
12.5°	1250.6	1246.8	1225.9	1195.5	1167.7	1160.6	1189.2	1258.1	1386.6	1430.3	1546.7
15°	1420.8	1423.3	1382.2	1318.9	1246.2	1196.8	1193.0	1249.9	1383.4	1434.1	1582.8
17.5°	1642.3	1643.6	1586.6	1494.8	1373.9	1272.0	1218.9	1249.9	1383.4	1437.9	1617.6
20°	1877.7	1868.8	1804.3	1689.1	1532.2	1376.5	1266.4	1257.5	1387.2	1443.6	1650.5
22.5°	2079.7	2071.4	2003.7	1882.8	1703.1	1500.0	1330.3	1282.9	1408.1	1467.0	1696.8
25°	2256.2	2261.2	2195.5	2059.4	1873.3	1639.2	1425.9	1341.1	1451.8	1509.4	1753.6
27.5°	2470.7	2461.2	2385.3	2255.6	2048.6	1783.4	1545.5	1414.4	1503.7	1560.6	1823.3
30°	2718.8	2714.4	2611.9	2478.3	2241.6	1944.8	1663.8	1493.6	1571.5	1630.9	1910.7
32.5°	3020.1	3019.4	2909.3	2745.4	2458.7	2127.1	1803.7	1601.8	1670.2	1730.3	2026.5
35°	3361.2	3360.6	3246.6	3030.2	2708.7	2329.0	1968.3	1733.4	1792.3	1855.6	2164.5
37.5°	3597.9	3594.0	3534.6	3324.5	2985.3	2563.7	2173.9	1910.7	1930.9	2001.8	2330.9
40°	3643.4	3666.3	3717.5	3593.4	3287.2	2824.5	2380.2	2101.1	2120.2	2211.2	2540.4
42.5°	3594.0	3623.8	3794.0	3828.9	3589.0	3140.4	2638.5	2365.1	2389.1	2502.3	2786.5
45°	3551.1	3577.0	3790.2	3959.2	3887.1	3484.6	2960.6	2687.2	2732.7	2873.3	3067.5
47.5°	3477.6	3501.7	3715.6	3982.7	4057.3	3816.2	3348.5	3074.5	3152.9	3323.3	3387.8
50°	3473.8	3484.6	3613.7	3904.2	4116.3	4068.1	3778.3	3527.6	3647.8	3844.0	3742.2
52.5°	3377.7	3453.0	3570.0	3778.9	4117.5	4215.0	4201.7	4024.4	4209.9	4426.9	4130.8
55°	2789.1	2875.8	3424.4	3717.5	4109.9	4340.9	4588.3	4552.8	4842.8	5071.2	4566.1
57.5°	2604.2	2641.0	3004.2	3735.8	4173.1	4549.1	4975.0	5120.6	5566.8	5816.1	5088.3
60°	2553.6	2592.3	2920.1	3744.7	4344.7	4928.2	5499.7	5761.7	6418.0	6682.5	5681.3
62.5°	2497.3	2547.4	2926.4	3752.9	4645.9	5488.9	6195.8	6457.2	7292.0	7528.0	6236.9
65°	2332.7	2399.2	2809.3	3701.0	4975.6	6192.6	7116.1	7182.4	8014.1	8164.1	6572.4
67°	2020.7	2093.6	2487.8	3401.1	4945.3	6666.7	7852.1	7636.2	8321.0	8339.4	6463.5
67.5°	1922.0	1997.3	2379.0	3276.4	4858.6	6728.7	7982.4	7698.9	8318.4	8298.2	6362.2
70°	1294.2	1379.0	1684.7	2405.6	3897.2	6262.3	7950.8	7505.9	7772.9	7540.7	5466.1
72.5°	642.4	644.9	840.5	1317.7	2361.3	4491.5	6632.5	6421.2	6300.9	5862.3	4011.2
75°	309.4	315.2	396.8	582.3	995.5	2318.8	4523.2	4332.6	3689.0	3194.1	2007.4
77.5°	236.1	241.7	308.2	379.1	415.1	756.3	2240.4	1810.6	1068.9	853.8	565.8
80°	182.3	193.0	260.1	291.1	274.7	303.1	704.4	554.4	415.8	381.7	280.4
82.5°	142.4	148.7	220.9	220.9	189.9	203.2	327.9	320.2	258.2	232.9	150.6
85°	100.7	113.2	177.8	164.6	124.7	125.9	196.2	187.9	132.9	107.0	58.8
87.5°	44.9	57.6	126.5	107.6	66.5	51.2	80.4	68.9	52.5	40.5	27.2
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°	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9	1506.9
2.5°	1496.8	1506.9	1522.7	1532.2	1544.9	1549.9	1555.0	1563.8	1570.7	1568.9	1565.7
5°	1510.7	1527.8	1547.4	1553.7	1553.7	1547.4	1543.5	1544.2	1542.3	1541.1	1537.3
7.5°	1530.9	1554.4	1568.3	1561.9	1542.3	1517.6	1494.2	1480.3	1467.0	1458.7	1461.3
10°	1559.4	1585.4	1586.0	1558.2	1511.3	1457.5	1411.3	1381.6	1353.1	1340.5	1344.3
12.5°	1600.5	1626.5	1604.3	1544.2	1461.9	1377.8	1293.0	1231.5	1176.5	1163.2	1159.4
15°	1644.8	1665.1	1615.8	1514.5	1391.0	1252.5	1110.1	1018.2	956.9	946.1	942.3
17.5°	1683.5	1694.8	1610.0	1461.3	1279.0	1060.7	894.9	832.9	820.2	826.5	826.5
20°	1717.6	1713.9	1585.4	1379.0	1102.4	848.0	751.9	751.3	768.3	784.1	785.4
22.5°	1760.6	1730.9	1546.1	1256.9	891.7	707.6	691.1	707.6	726.5	744.3	746.1
25°	1812.0	1749.9	1493.6	1082.9	717.1	642.4	649.4	663.3	675.2	689.2	689.9
27.5°	1863.2	1764.5	1419.5	878.4	622.2	600.6	608.1	613.9	617.0	625.9	625.9
30°	1922.6	1775.8	1312.5	703.8	578.5	563.9	559.5	556.9	559.5	571.5	572.1
32.5°	1997.3	1796.1	1166.4	603.7	558.2	538.0	515.2	502.5	511.4	532.9	536.6
35°	2082.1	1820.1	991.0	563.9	551.3	525.3	483.5	463.9	467.1	486.7	489.9
37.5°	2188.5	1851.1	818.3	554.4	558.2	524.1	468.9	441.1	427.2	427.8	427.2
40°	2324.6	1882.1	681.6	556.9	573.4	527.2	462.0	418.3	389.2	390.5	393.0
42.5°	2466.9	1902.4	594.9	564.6	591.8	531.6	459.5	396.2	370.8	392.4	412.0
45°	2633.4	1896.8	549.9	571.5	605.7	533.5	450.0	393.6	372.8	437.3	474.0
47.5°	2824.5	1872.0	524.7	574.7	609.5	532.9	443.0	401.9	388.6	500.6	542.4
50°	3032.1	1833.4	504.4	569.6	607.5	530.3	450.6	412.0	395.0	514.5	546.8
52.5°	3259.3	1798.0	483.5	558.2	598.0	522.7	460.1	407.5	377.2	474.0	498.7
55°	3528.3	1789.8	460.1	538.6	582.3	514.5	455.0	393.6	357.6	420.2	435.4
57.5°	3835.9	1841.0	429.7	514.5	560.7	498.1	443.0	386.1	350.6	382.3	390.5
60°	4226.3	1954.3	397.4	489.2	534.2	473.4	432.3	387.9	352.5	376.5	378.5
62.5°	4531.4	2056.2	368.4	458.2	498.7	443.7	420.8	389.8	358.2	384.1	380.9
65°	4642.2	2006.2	332.3	412.0	448.7	410.7	405.1	391.1	358.2	388.6	381.7
67°	4415.0	1767.7	298.1	365.8	401.2	381.7	389.8	386.1	351.9	387.9	375.9
67.5°	4306.7	1683.5	289.2	358.2	388.6	372.8	386.1	383.5	350.0	386.7	372.8
70°	3551.7	1207.5	244.3	300.6	325.3	328.5	362.6	367.0	334.8	363.2	338.0
72.5°	2527.1	755.7	210.7	232.9	262.6	281.0	331.0	344.9	314.6	315.8	294.9
75°	1250.6	405.7	187.9	179.7	204.4	234.2	288.6	314.6	284.8	263.3	256.4
77.5°	422.2	229.8	158.9	145.0	158.9	187.9	239.3	274.7	251.2	222.8	218.3
80°	218.3	167.0	124.1	116.4	125.3	145.6	187.3	228.4	214.5	215.8	177.8
82.5°	136.1	101.9	89.2	88.6	94.9	111.4	138.0	185.5	184.1	157.5	114.6
85°	63.3	58.8	57.0	58.8	60.8	63.3	89.9	132.3	139.8	84.8	75.3
87.5°	26.6	26.0	22.8	24.7	27.2	26.6	36.1	56.4	78.5	53.2	48.7
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)