

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: P196316

Luminaire Tested: **NAV-AF-02-D-UNV-T3-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196316  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)  
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-T3-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13672.8 lumens  
Efficiency: N/A  
Efficacy: 106.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type III - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G2

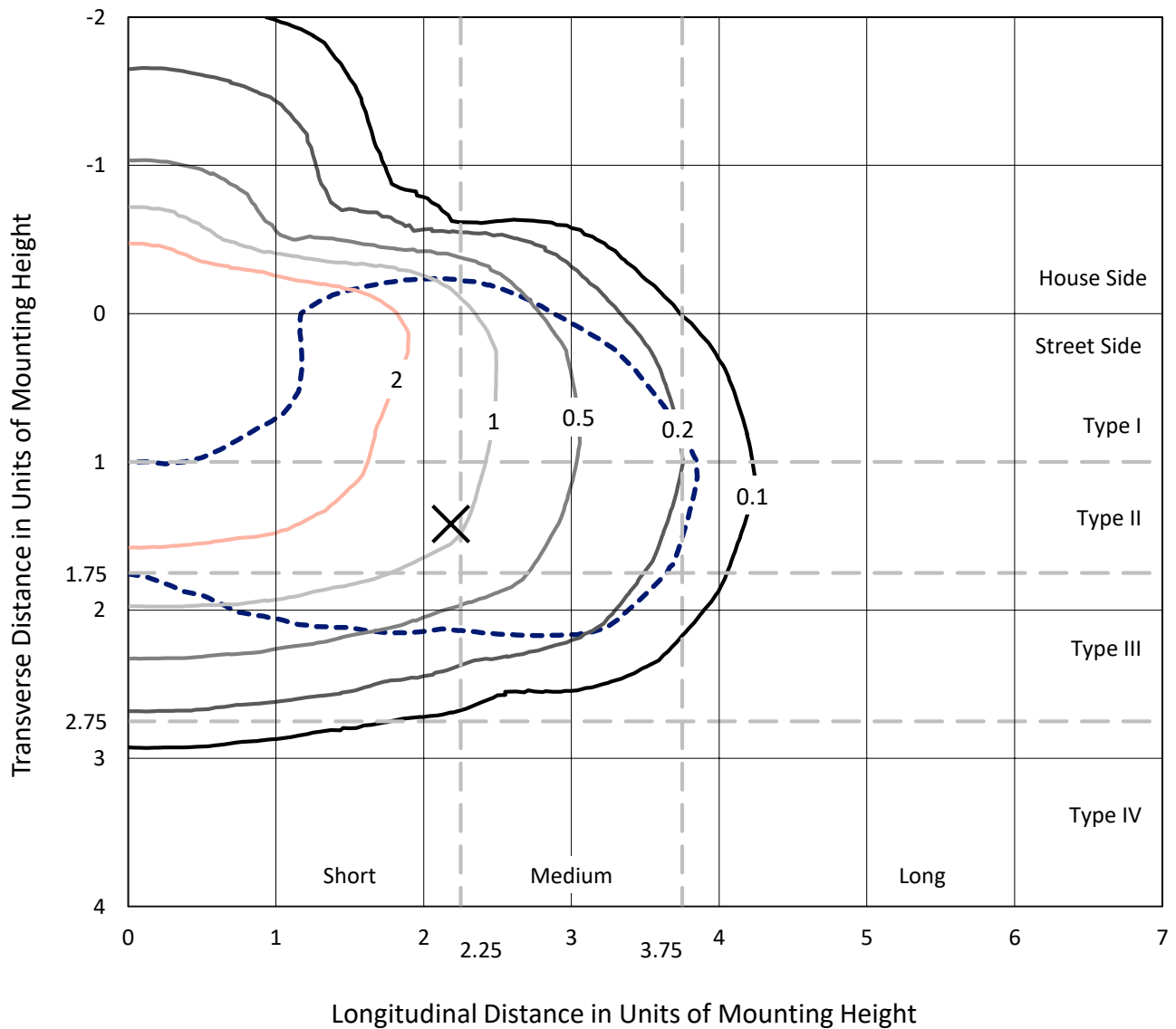
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

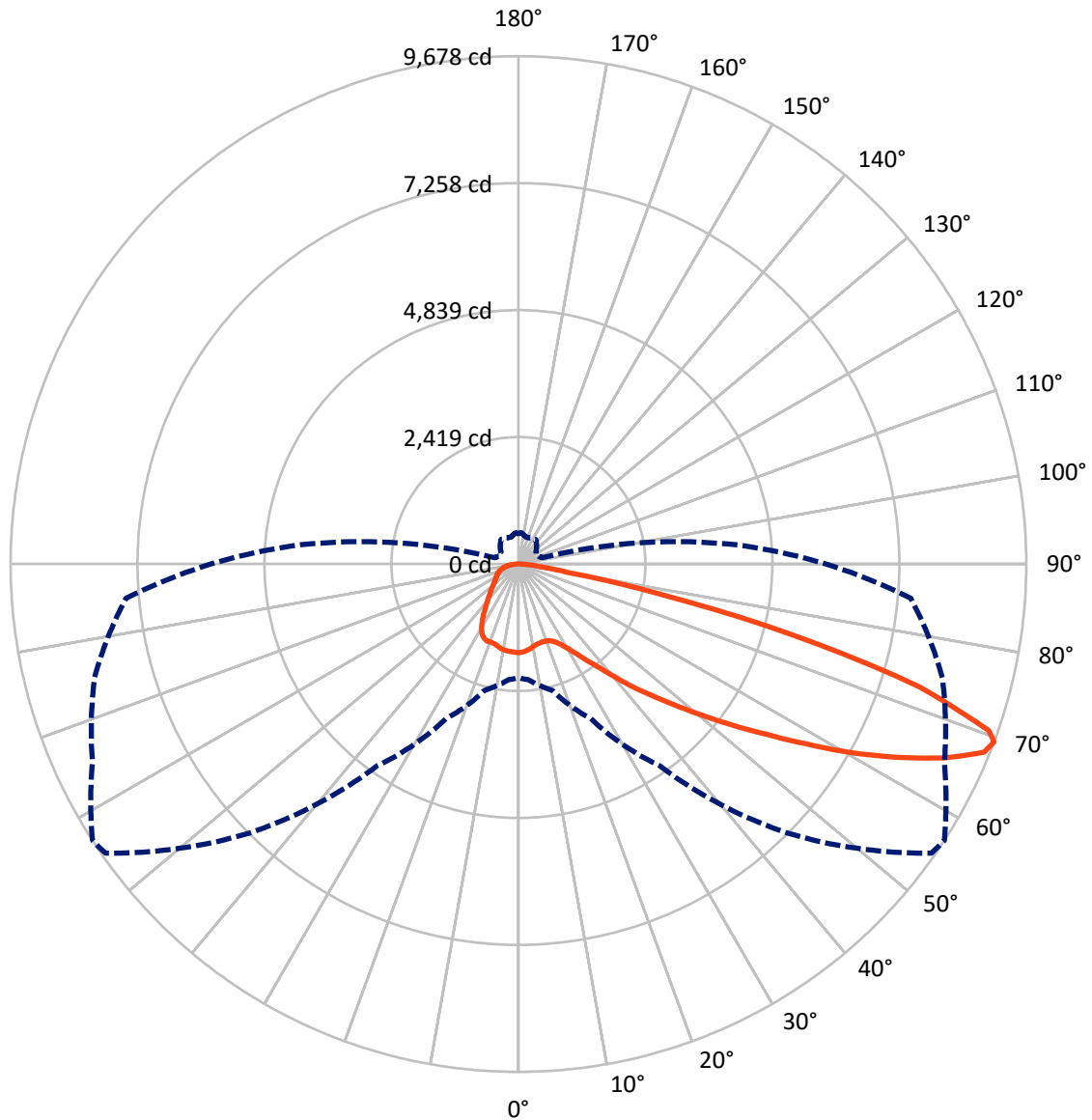
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.3 fc  
 Type III - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral      - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3017.1	0.0	3017.1
	% Fixture	22.1	0.0	22.1
<b>Street Side</b>	Lumens	10655.7	0.0	10655.7
	% Fixture	77.9	0.0	77.9
<b>Total</b>	Lumens	13672.8	0.0	13672.8
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.2	1.2
10°-20°	449.7	3.3
20°-30°	748.1	5.5
30°-40°	1221.6	8.9
40°-50°	2061.7	15.1
50°-60°	3207.1	23.5
60°-70°	3820.3	27.9
70°-80°	1779.8	13.0
80°-90°	226.4	1.7
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°	13672.8	100.0
0°-180°	13672.8	100.0



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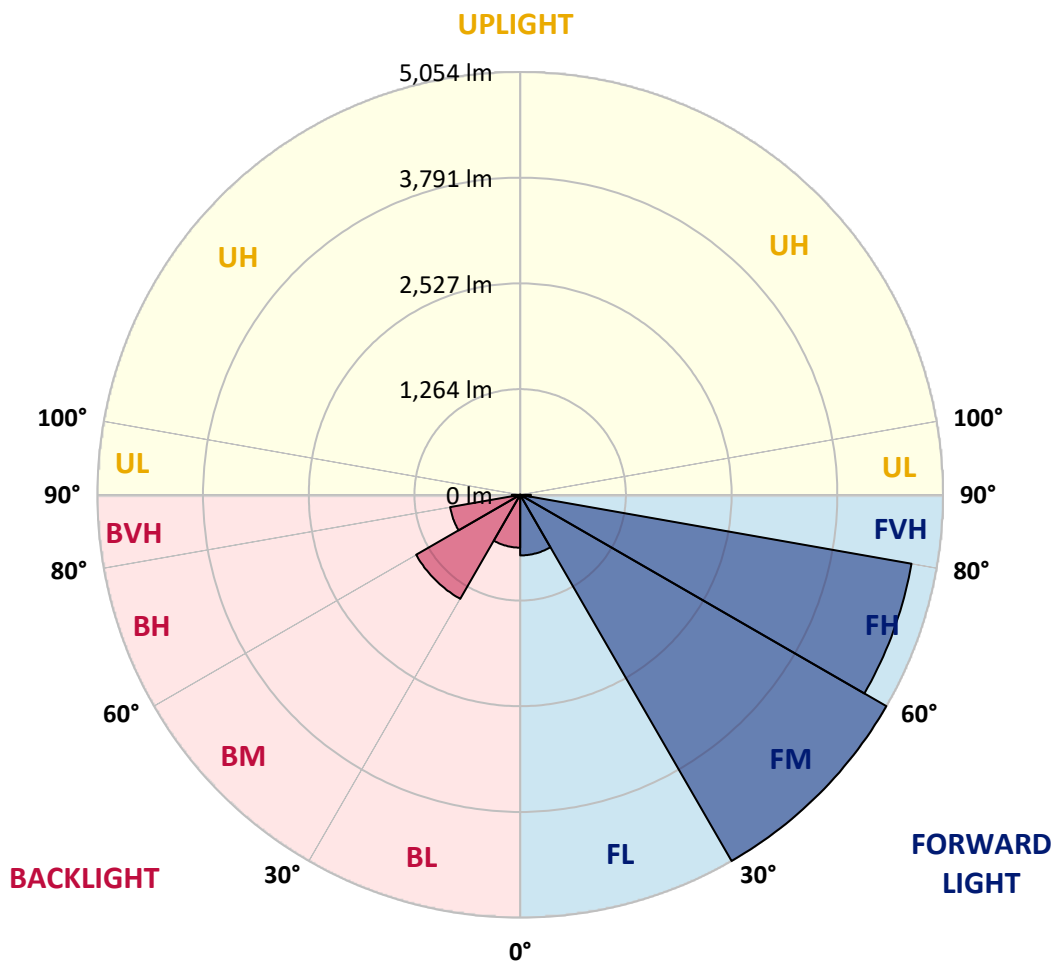
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	724.1	5.3			
FM	(30°-60°)	5054.4	37.0			
FH	(60°-80°)	4749.9	34.7			G2/5000
FVH	(80°-90°)	127.2	0.9			G2/225
BL	(0°-30°)	631.8	4.6	B2/1000		
BM	(30°-60°)	1436.0	10.5	B2/2500		
BH	(60°-80°)	850.2	6.2	B2/1000		G2/1000
BVH	(80°-90°)	99.1	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-G2**

Type III Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4
2.5°	1679.8	1679.8	1684.2	1684.2	1684.2	1682.4	1677.1	1678.9	1675.4	1672.7	1668.4
5°	1645.6	1647.4	1652.7	1654.4	1657.0	1657.9	1657.9	1657.0	1657.9	1657.9	1655.2
7.5°	1598.4	1600.1	1606.2	1609.7	1617.6	1624.7	1628.1	1628.1	1632.5	1636.0	1636.9
10°	1569.5	1569.5	1573.0	1573.0	1579.1	1582.6	1594.0	1593.1	1605.4	1616.8	1622.0
12.5°	1565.9	1565.9	1564.2	1558.1	1554.6	1553.8	1565.1	1566.9	1585.3	1605.4	1615.0
15°	1577.4	1577.4	1572.1	1559.9	1546.7	1540.6	1552.0	1555.5	1575.7	1599.3	1614.1
17.5°	1614.1	1613.3	1601.8	1577.4	1554.6	1545.0	1548.4	1552.0	1570.3	1597.5	1615.9
20°	1695.5	1695.5	1671.0	1626.4	1587.0	1564.2	1559.0	1561.6	1574.7	1600.1	1623.7
22.5°	1838.2	1840.8	1797.1	1723.6	1656.2	1608.0	1587.0	1589.6	1595.7	1620.3	1646.5
25°	2048.3	2041.3	1979.1	1875.0	1769.9	1687.7	1644.8	1647.4	1647.4	1670.2	1697.3
27.5°	2270.6	2272.4	2183.1	2071.1	1932.8	1810.2	1741.9	1741.1	1740.1	1762.0	1791.0
30°	2521.9	2522.7	2419.5	2289.9	2131.4	1974.8	1872.3	1871.5	1863.6	1890.7	1928.4
32.5°	2796.7	2795.8	2675.9	2529.8	2353.8	2176.1	2043.0	2042.1	2036.1	2072.8	2118.3
35°	3101.3	3101.3	2982.3	2802.0	2612.0	2414.2	2260.1	2259.3	2262.8	2312.7	2355.5
37.5°	3468.1	3476.0	3332.4	3113.6	2906.1	2695.2	2515.7	2510.4	2484.2	2568.2	2639.1
40°	3850.6	3872.5	3723.6	3468.1	3244.0	3026.1	2828.3	2824.7	2802.0	2891.3	3005.9
42.5°	4264.7	4314.5	4149.1	3888.2	3644.1	3408.6	3209.8	3200.2	3112.7	3251.9	3431.3
45°	4807.4	4839.8	4599.9	4363.6	4133.3	3864.6	3628.3	3576.6	3489.1	3667.7	3900.5
47.5°	5176.7	5161.0	5011.3	4852.9	4705.0	4447.6	4084.3	4018.7	3911.9	4148.3	4404.7
50°	5406.1	5417.4	5333.5	5325.6	5317.7	5138.3	4599.0	4520.2	4396.8	4676.9	4976.3
52.5°	5557.5	5505.8	5520.8	5699.4	5915.5	5829.8	5181.1	5093.6	4966.6	5246.8	5584.7
55°	5494.5	5426.2	5563.6	5915.5	6424.1	6443.4	5820.1	5730.0	5621.4	5852.5	6316.4
57.5°	5233.6	5267.8	5484.9	5974.1	6771.6	6993.1	6554.6	6462.6	6249.0	6483.7	7011.5
60°	4866.9	4936.0	5267.8	5881.4	7015.0	7421.1	7360.7	7299.5	6931.8	7098.2	7741.5
62.5°	4473.0	4541.3	4949.1	5723.0	6905.5	7800.1	8152.0	8114.4	7685.4	7689.8	8204.6
65°	3890.9	3918.9	4335.6	5290.5	6601.8	8142.4	8944.2	8910.9	8405.9	8195.0	8334.1
67.5°	2938.5	2973.5	3315.8	4176.2	5677.5	7956.8	9577.1	9571.9	8839.2	8382.3	8026.0
69°	2170.0	2212.8	2492.1	3242.2	4694.4	7249.6	9606.8	9677.7	8956.4	8363.0	7505.2
70°	1587.8	1636.9	1895.1	2573.5	3910.1	6468.7	9352.1	9504.4	8911.8	8241.3	7099.0
72.5°	674.8	691.5	818.5	1161.6	1983.5	3900.5	7660.1	7980.4	8048.8	7384.4	5546.1
75°	422.8	428.0	477.9	596.1	882.3	1613.3	4960.5	5397.3	6009.2	5729.1	3713.2
77.5°	318.6	323.0	351.9	410.5	548.0	602.2	2301.2	2744.2	3441.8	3370.0	1847.9
80°	244.2	246.8	266.1	298.5	386.1	377.3	746.7	938.4	1436.4	1267.5	653.9
82.5°	191.7	192.6	209.2	215.3	269.6	253.9	374.6	417.6	580.3	482.3	319.5
85°	169.8	172.5	189.0	157.5	172.5	153.1	205.7	223.2	308.1	290.6	120.8
87.5°	86.6	91.0	158.5	134.8	86.6	72.6	90.1	97.2	125.2	135.6	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°	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4	1689.4
2.5°	1669.3	1670.2	1672.7	1677.1	1684.2	1692.9	1703.4	1714.0	1720.0	1724.4	1722.6
5°	1655.2	1656.2	1661.4	1669.3	1678.0	1691.1	1708.6	1721.8	1731.4	1737.6	1736.7
7.5°	1637.7	1640.4	1650.8	1659.6	1671.9	1682.4	1696.4	1708.6	1718.3	1724.4	1723.6
10°	1624.7	1627.2	1640.4	1651.8	1662.3	1664.0	1661.4	1657.9	1657.0	1661.4	1659.6
12.5°	1618.5	1623.7	1636.0	1643.9	1639.5	1622.9	1603.6	1595.7	1593.1	1601.8	1602.8
15°	1620.3	1624.7	1635.1	1629.9	1606.2	1578.2	1567.8	1573.8	1579.1	1584.3	1585.3
17.5°	1624.7	1627.2	1629.9	1610.6	1577.4	1559.0	1555.5	1549.4	1533.6	1524.8	1524.0
20°	1632.5	1636.0	1631.6	1601.0	1571.3	1546.7	1504.7	1467.1	1431.2	1411.9	1404.0
22.5°	1659.6	1662.3	1649.1	1619.3	1573.8	1494.2	1409.3	1344.6	1289.3	1259.7	1248.2
25°	1713.0	1717.4	1699.0	1661.4	1542.3	1403.2	1283.3	1195.7	1126.6	1090.7	1081.1
27.5°	1806.7	1811.0	1791.0	1692.9	1468.9	1281.5	1136.2	1049.5	990.0	959.3	955.0
30°	1946.8	1952.9	1934.5	1692.1	1356.7	1126.6	992.7	941.8	907.8	886.7	885.9
32.5°	2141.0	2163.8	2088.6	1662.3	1218.4	969.9	884.1	866.5	850.0	836.0	836.0
35°	2387.9	2441.3	2240.9	1600.1	1066.1	863.1	823.7	807.1	786.0	771.2	769.5
37.5°	2682.9	2766.1	2349.4	1489.8	934.9	811.4	787.0	759.7	726.5	697.7	690.6
40°	3088.2	3107.4	2402.8	1310.4	836.8	783.5	752.8	718.6	676.7	644.3	640.8
42.5°	3495.2	3432.2	2392.3	1117.8	780.8	758.0	717.8	680.2	642.5	615.4	615.4
45°	3958.3	3715.8	2312.7	924.3	730.1	729.2	685.4	649.5	620.6	600.5	596.1
47.5°	4401.2	3970.6	2175.2	781.6	677.5	700.3	664.4	635.5	609.3	589.9	586.5
50°	4938.7	4265.5	2029.0	681.9	626.8	674.8	655.6	640.8	615.4	582.1	578.6
52.5°	5472.6	4610.4	1916.1	606.6	582.1	654.8	660.9	662.7	639.0	574.2	569.9
55°	6045.9	4978.9	1797.1	548.0	545.3	645.2	673.1	671.4	660.0	576.0	569.0
57.5°	6591.3	5349.2	1619.3	506.8	516.5	635.5	675.8	647.7	627.6	584.7	573.4
60°	7043.0	5655.6	1358.5	477.9	491.9	616.2	658.3	616.2	582.1	583.0	572.4
62.5°	7262.6	5741.3	1039.0	444.7	471.8	584.7	632.9	592.6	561.1	586.5	580.3
65°	7095.5	5497.1	740.5	414.0	447.3	548.0	618.0	572.4	550.6	604.0	597.0
67.5°	6495.0	4831.9	537.5	386.9	423.7	510.4	589.9	554.1	540.1	617.1	601.4
69°	5856.9	4171.9	465.6	371.1	407.0	490.2	571.6	544.4	532.2	598.7	576.0
70°	5326.4	3663.3	429.7	361.5	393.0	478.8	557.6	538.4	524.4	576.8	549.7
72.5°	3819.1	2367.8	361.5	332.7	356.3	453.5	526.9	515.6	494.6	520.8	503.3
75°	2307.4	1235.9	307.3	302.9	317.7	418.4	491.0	477.1	456.0	458.7	449.9
77.5°	1060.1	570.7	257.4	267.8	277.5	374.6	447.3	431.6	412.2	405.3	406.1
80°	464.8	333.5	215.3	228.4	233.7	337.0	400.1	382.5	361.5	399.2	370.3
82.5°	251.2	193.4	168.1	176.9	191.7	293.3	347.5	324.8	304.6	354.6	286.2
85°	101.6	98.9	113.8	122.5	133.1	210.9	290.6	267.0	242.4	217.1	211.9
87.5°	43.8	47.3	56.1	59.5	70.9	131.3	195.2	170.7	171.5	147.1	144.4
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)