

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: P196814

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196814
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-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11982.5 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 - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

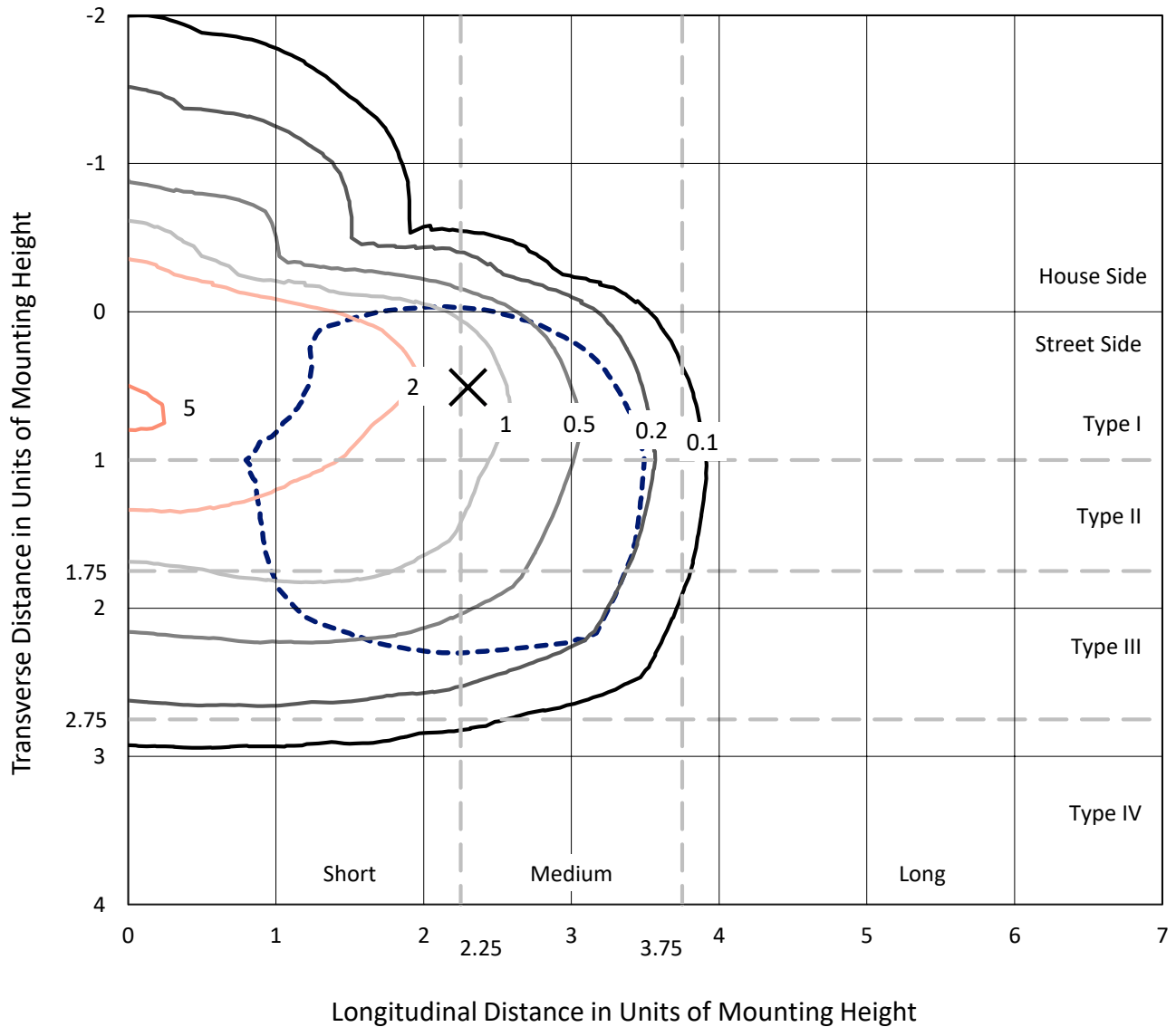
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

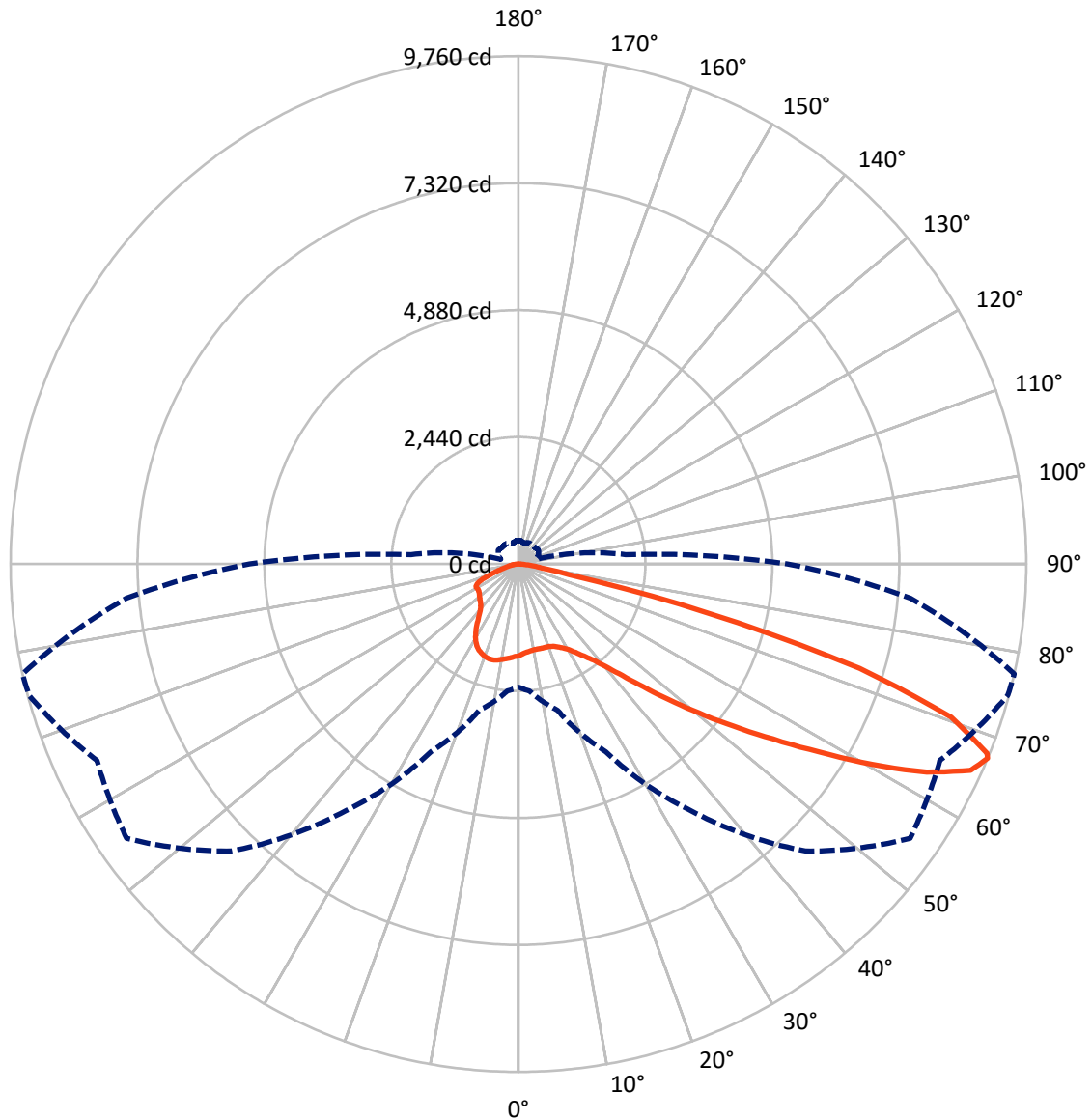
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.3 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
House Side	Lumens	2059.2	0.0	2059.2
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	9923.3	0.0	9923.3
	% Fixture	82.8	0.0	82.8
Total	Lumens	11982.5	0.0	11982.5
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	157.1	1.3
10°-20°	435.0	3.6
20°-30°	739.1	6.2
30°-40°	1182.3	9.9
40°-50°	1820.2	15.2
50°-60°	2525.3	21.1
60°-70°	3368.6	28.1
70°-80°	1603.1	13.4
80°-90°	151.8	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°	11982.5	100.0
0°-180°	11982.5	100.0



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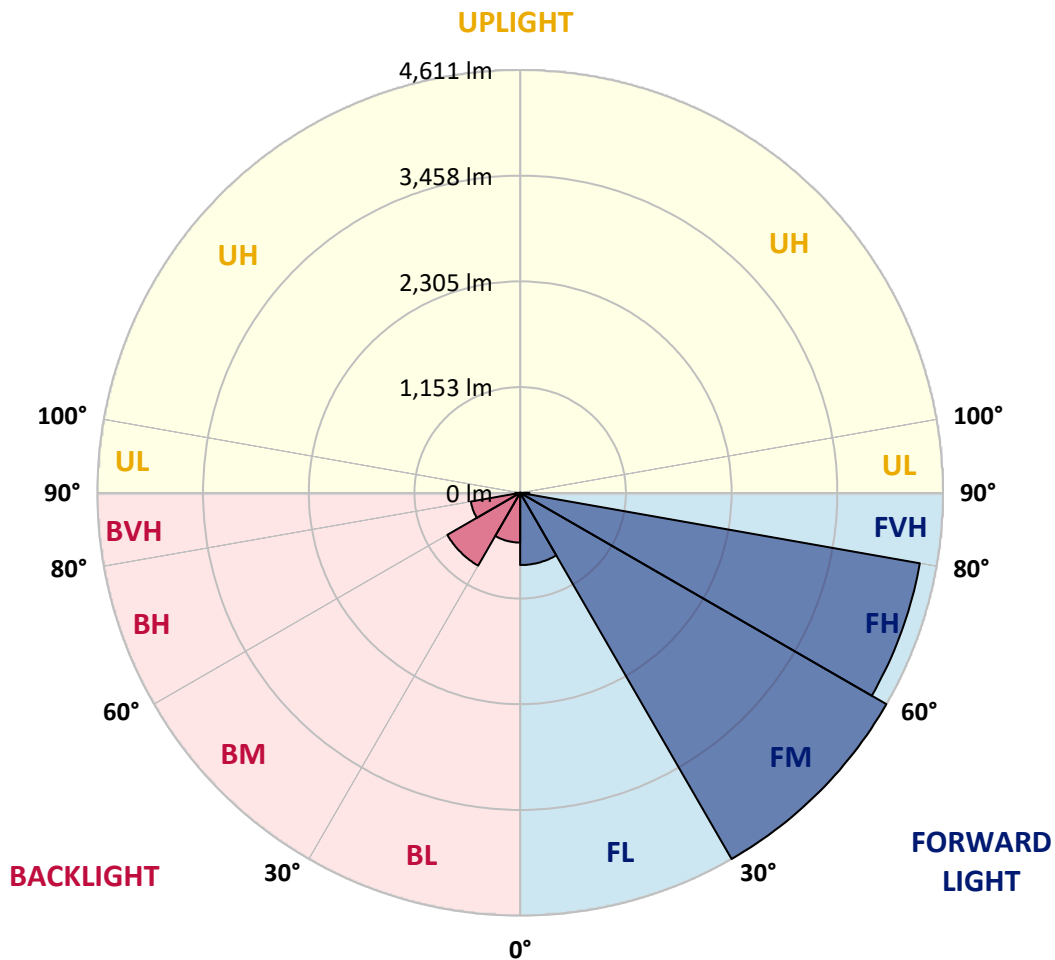
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	788.0	6.6			
FM	(30°-60°)	4611.0	38.5			
FH	(60°-80°)	4425.8	36.9			G2/5000
FVH	(80°-90°)	98.6	0.8			G1/100
BL	(0°-30°)	543.1	4.5	B2/1000		
BM	(30°-60°)	916.9	7.7	B1/1000		
BH	(60°-80°)	546.0	4.6	B2/1000		G2/1000
BVH	(80°-90°)	53.2	0.4			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 Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6
2.5°	1581.3	1588.7	1589.5	1610.9	1620.6	1645.0	1671.6	1695.3	1716.1	1723.4	1736.9
5°	1422.8	1422.8	1425.1	1439.1	1466.5	1505.7	1561.4	1622.1	1685.8	1701.2	1740.5
7.5°	1339.8	1341.3	1342.8	1356.9	1378.5	1413.2	1468.8	1551.7	1657.6	1683.4	1752.4
10°	1347.2	1345.0	1337.7	1334.7	1343.6	1365.7	1414.0	1499.0	1633.9	1673.9	1773.9
12.5°	1463.5	1459.0	1434.7	1399.1	1366.5	1358.3	1391.8	1472.4	1622.8	1673.9	1810.2
15°	1662.8	1665.7	1617.6	1543.5	1458.4	1400.6	1396.2	1462.8	1619.1	1678.3	1852.4
17.5°	1922.0	1923.5	1856.9	1749.5	1608.0	1488.7	1426.5	1462.8	1619.1	1682.8	1893.1
20°	2197.5	2187.2	2111.7	1976.8	1793.2	1610.9	1482.1	1471.7	1623.5	1689.4	1931.6
22.5°	2433.8	2424.1	2344.9	2203.4	1993.1	1755.4	1556.8	1501.3	1647.9	1716.8	1985.7
25°	2640.5	2646.4	2569.3	2410.2	2192.4	1918.3	1668.7	1569.4	1699.1	1766.5	2052.3
27.5°	2891.5	2880.4	2791.6	2639.7	2397.4	2087.2	1808.7	1655.4	1759.8	1826.5	2133.9
30°	3181.8	3176.7	3056.6	2900.4	2623.5	2276.1	1947.2	1747.9	1839.1	1908.6	2236.0
32.5°	3534.4	3533.7	3404.8	3213.0	2877.5	2489.4	2110.9	1874.6	1954.5	2024.9	2371.6
35°	3933.7	3932.9	3799.6	3546.2	3170.0	2725.6	2303.4	2028.6	2097.6	2171.6	2533.0
37.5°	4210.7	4206.2	4136.5	3890.7	3493.7	3000.4	2544.1	2236.0	2259.7	2342.7	2727.8
40°	4264.0	4290.6	4350.6	4205.5	3847.0	3305.5	2785.6	2459.0	2481.2	2587.8	2973.0
42.5°	4206.2	4241.0	4440.2	4480.9	4200.3	3675.2	3087.7	2767.9	2796.0	2928.5	3261.1
45°	4155.7	4186.2	4435.8	4633.5	4549.1	4078.1	3464.8	3144.8	3198.1	3362.6	3589.9
47.5°	4069.9	4098.1	4348.4	4661.0	4748.3	4466.2	3918.8	3598.1	3689.9	3889.2	3964.7
50°	4065.4	4078.1	4229.1	4569.1	4817.2	4761.0	4421.7	4128.5	4269.2	4498.8	4379.5
52.5°	3952.9	4041.1	4178.1	4422.5	4818.7	4932.7	4917.2	4709.8	4926.8	5180.8	4834.2
55°	3264.1	3365.5	4007.7	4350.6	4809.8	5080.1	5369.8	5328.2	5667.5	5934.9	5343.9
57.5°	3047.8	3090.7	3515.9	4372.1	4883.9	5323.8	5822.3	5992.7	6514.8	6806.7	5954.8
60°	2988.6	3033.7	3417.4	4382.5	5084.6	5767.5	6436.4	6742.9	7511.0	7820.6	6648.9
62.5°	2922.6	2981.1	3424.8	4392.1	5437.2	6423.7	7251.0	7556.9	8533.8	8810.1	7299.2
65°	2730.1	2807.9	3287.8	4331.4	5823.1	7247.2	8328.0	8405.8	9379.0	9554.5	7691.8
67°	2364.9	2450.1	2911.5	3980.4	5787.5	7802.1	9189.4	8936.8	9738.2	9759.6	7564.3
67.5°	2249.3	2337.5	2784.2	3834.4	5686.1	7874.7	9341.8	9010.1	9735.2	9711.5	7445.8
70°	1514.7	1613.9	1971.6	2815.3	4560.9	7328.8	9304.8	8784.2	9096.7	8825.0	6397.0
72.5°	751.8	754.8	983.6	1542.0	2763.3	5256.5	7762.1	7514.8	7374.0	6860.7	4694.4
75°	362.2	368.9	464.4	681.4	1165.0	2713.8	5293.5	5070.5	4317.3	3738.1	2349.4
77.5°	276.3	283.0	360.7	443.7	485.8	885.1	2621.9	2119.0	1251.0	999.1	662.1
80°	213.3	225.9	304.4	340.7	321.4	354.8	824.4	648.8	486.6	446.7	328.1
82.5°	166.6	174.0	258.5	258.5	222.3	237.7	383.6	374.8	302.2	272.6	176.2
85°	117.8	132.5	208.1	192.7	145.9	147.4	229.6	219.9	155.5	125.2	68.9
87.5°	52.6	67.4	148.1	125.8	77.8	60.0	94.1	80.8	61.5	47.4	31.8
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°	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6	1763.6
2.5°	1751.7	1763.6	1782.0	1793.2	1807.9	1813.9	1819.8	1830.2	1838.3	1836.1	1832.4
5°	1768.0	1787.9	1810.9	1818.3	1818.3	1810.9	1806.5	1807.1	1805.0	1803.6	1799.1
7.5°	1791.7	1819.0	1835.3	1827.9	1805.0	1776.1	1748.7	1732.5	1716.8	1707.1	1710.1
10°	1824.9	1855.3	1856.1	1823.5	1768.7	1705.7	1651.7	1616.8	1583.5	1568.8	1573.2
12.5°	1873.1	1903.6	1877.5	1807.1	1710.9	1612.4	1513.1	1441.3	1376.8	1361.4	1356.9
15°	1924.9	1948.6	1891.0	1772.4	1628.0	1465.7	1299.1	1191.7	1119.9	1107.3	1102.9
17.5°	1970.2	1983.5	1884.2	1710.1	1496.9	1241.3	1047.2	974.7	959.9	967.3	967.3
20°	2010.2	2005.7	1855.3	1613.9	1290.3	992.5	879.9	879.2	899.2	917.7	919.2
22.5°	2060.5	2025.6	1809.5	1470.9	1043.5	828.0	808.8	828.0	850.2	871.1	873.2
25°	2120.5	2047.9	1747.9	1267.3	839.1	751.8	759.9	776.2	790.3	806.6	807.3
27.5°	2180.5	2065.0	1661.3	1028.0	728.1	702.9	711.9	718.5	722.1	732.5	732.5
30°	2250.0	2078.3	1536.0	823.6	677.0	659.9	654.8	651.7	654.8	668.7	669.5
32.5°	2337.5	2101.9	1364.9	706.6	653.3	629.6	602.9	588.1	598.4	623.7	628.1
35°	2436.8	2130.1	1159.9	659.9	645.0	614.7	565.9	542.9	546.7	569.6	573.3
37.5°	2561.1	2166.4	957.6	648.8	653.3	613.3	548.8	516.2	500.0	500.7	500.0
40°	2720.4	2202.6	797.7	651.7	671.1	617.0	540.8	489.6	455.5	457.0	460.0
42.5°	2887.0	2226.3	696.2	660.7	692.4	622.1	537.7	463.7	434.0	459.2	482.2
45°	3081.8	2219.7	643.6	668.7	708.8	624.4	526.6	460.6	436.3	511.8	554.7
47.5°	3305.5	2190.8	614.0	672.5	713.3	623.7	518.4	470.4	454.7	585.8	634.8
50°	3548.5	2145.7	590.3	666.6	711.1	620.7	527.4	482.2	462.1	602.1	639.9
52.5°	3814.3	2104.3	565.9	653.3	700.0	611.8	538.4	477.0	441.4	554.7	583.7
55°	4129.1	2094.6	538.4	630.3	681.4	602.1	532.5	460.6	418.5	491.7	509.5
57.5°	4489.1	2154.6	502.9	602.1	656.2	582.9	518.4	451.8	410.4	447.3	457.0
60°	4946.0	2287.2	465.1	572.5	625.1	554.1	505.9	454.0	412.6	440.7	442.9
62.5°	5303.1	2406.4	431.0	536.3	583.7	519.2	492.5	456.2	419.2	449.6	445.9
65°	5432.7	2347.9	388.9	482.2	525.1	480.7	473.9	457.7	419.2	454.7	446.7
67°	5166.9	2068.6	348.9	428.1	469.6	446.7	456.2	451.8	411.8	454.0	440.0
67.5°	5040.1	1970.2	338.4	419.2	454.7	436.3	451.8	448.8	409.6	452.6	436.3
70°	4156.5	1413.2	285.9	351.9	380.7	384.4	424.4	429.6	391.8	425.1	395.5
72.5°	2957.4	884.4	246.6	272.6	307.3	328.9	387.4	403.6	368.1	369.7	345.2
75°	1463.5	474.7	219.9	210.4	239.3	274.0	337.7	368.1	333.3	308.1	299.9
77.5°	494.1	268.9	186.0	169.6	186.0	219.9	279.9	321.4	294.0	260.7	255.5
80°	255.5	195.6	145.2	136.2	146.6	170.3	219.3	267.3	251.1	252.6	208.1
82.5°	159.2	119.2	104.5	103.7	111.1	130.3	161.4	217.0	215.6	184.4	134.1
85°	74.1	68.9	66.6	68.9	71.1	74.1	105.2	154.8	163.7	99.2	88.2
87.5°	31.1	30.4	26.7	28.9	31.8	31.1	42.2	65.9	91.9	62.2	57.1
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)