

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: P195854

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195854
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 12389 lumens
Efficiency: N/A
Efficacy: 109.6 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

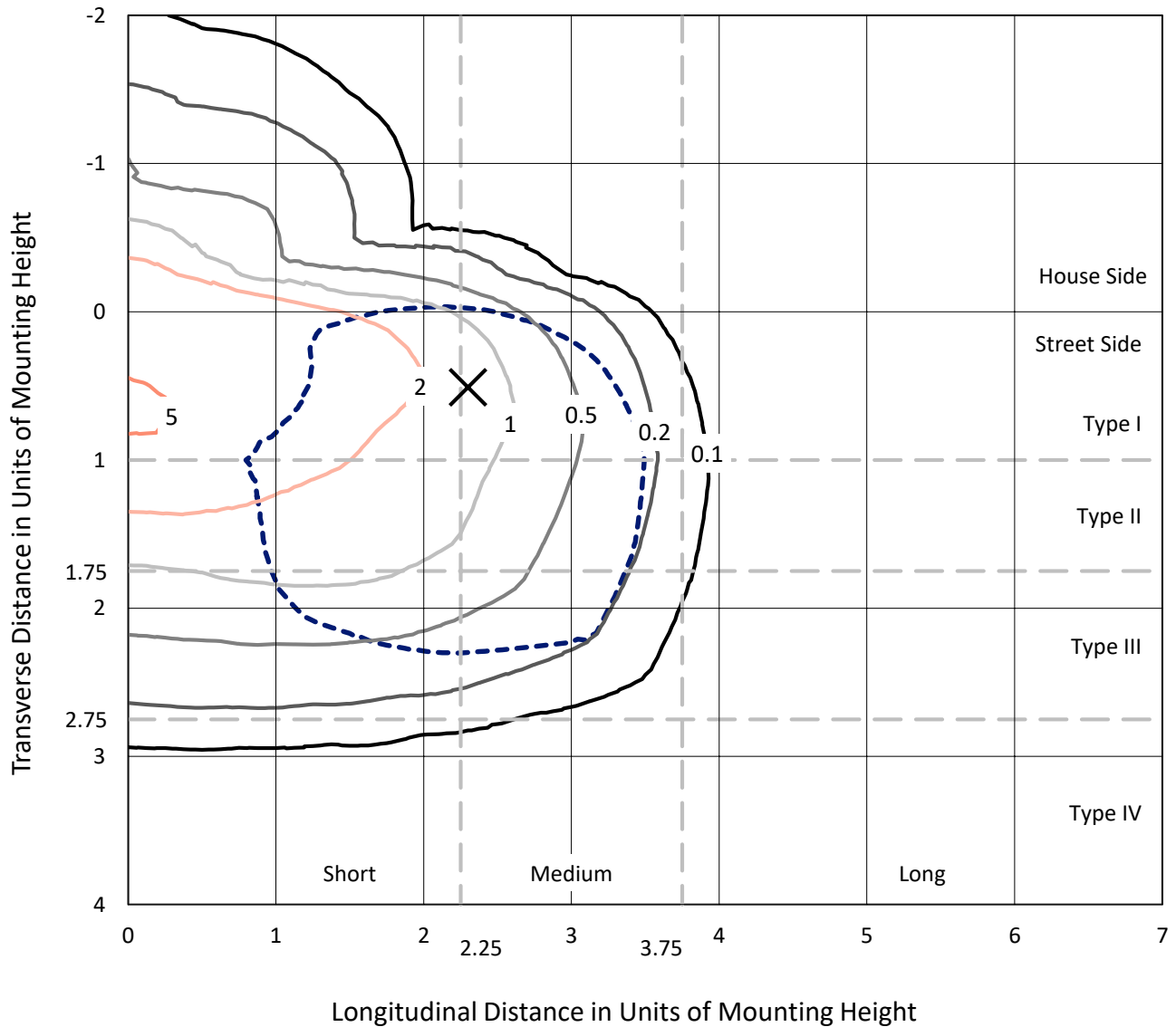
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

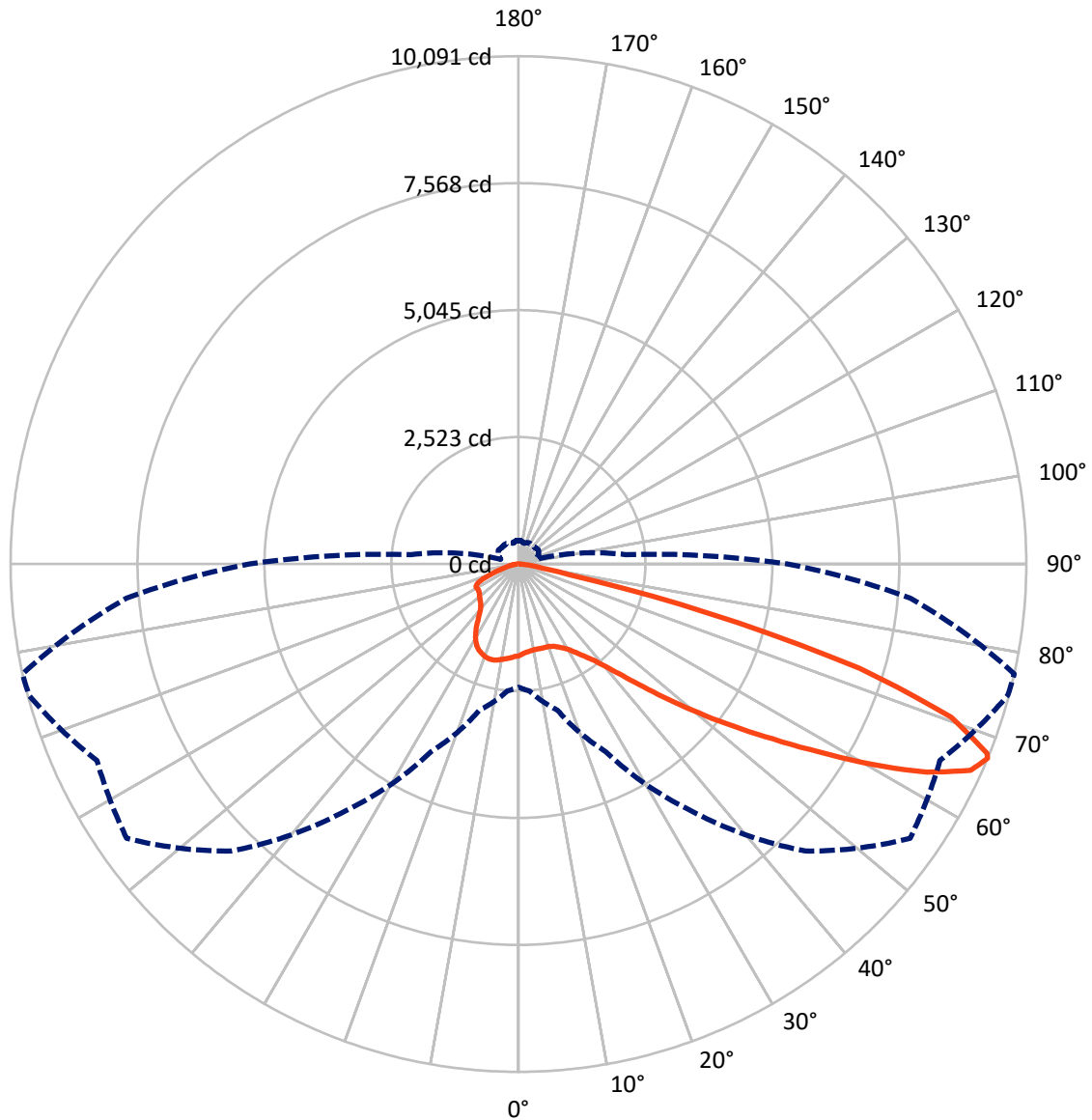
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.5 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
House Side	Lumens	2129.0	0.0	2129.0
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	10260.0	0.0	10260.0
	% Fixture	82.8	0.0	82.8
Total	Lumens	12389.0	0.0	12389.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	162.4	1.3
10°-20°	449.7	3.6
20°-30°	764.1	6.2
30°-40°	1222.4	9.9
40°-50°	1881.9	15.2
50°-60°	2611.0	21.1
60°-70°	3482.9	28.1
70°-80°	1657.5	13.4
80°-90°	156.9	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°	12389.0	100.0
0°-180°	12389.0	100.0



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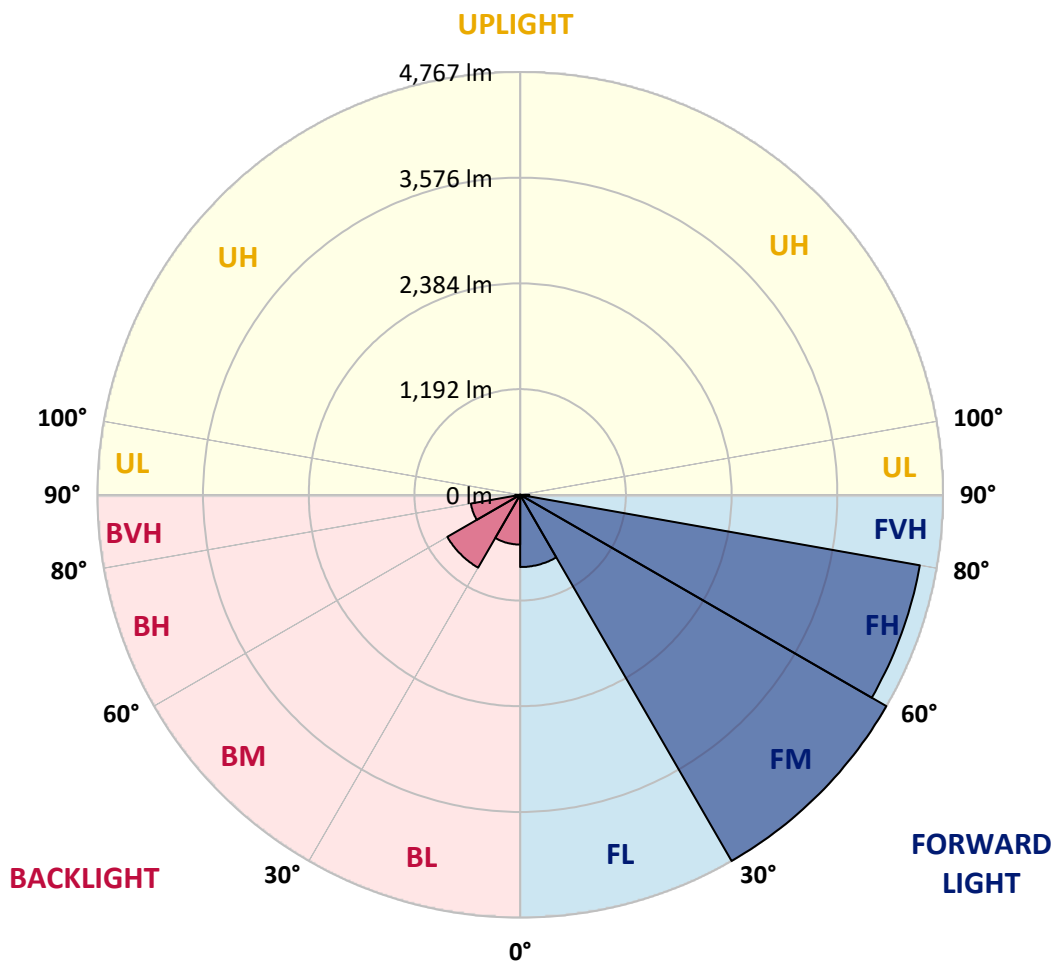
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	814.7	6.6			
FM	(30°-60°)	4767.4	38.5			
FH	(60°-80°)	4575.9	36.9			G2/5000
FVH	(80°-90°)	101.9	0.8			G2/225
BL	(0°-30°)	561.6	4.5	B2/1000		
BM	(30°-60°)	948.0	7.7	B1/1000		
BH	(60°-80°)	564.5	4.6	B2/1000		G2/1000
BVH	(80°-90°)	55.0	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°	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3
2.5°	1635.0	1642.6	1643.4	1665.6	1675.5	1700.8	1728.4	1752.9	1774.3	1782.0	1795.8
5°	1471.1	1471.1	1473.4	1487.9	1516.3	1556.8	1614.3	1677.1	1742.9	1759.0	1799.6
7.5°	1385.3	1386.8	1388.4	1402.9	1425.1	1461.1	1518.6	1604.3	1713.8	1740.6	1811.8
10°	1393.0	1390.7	1383.0	1379.9	1389.1	1412.1	1461.9	1549.9	1689.3	1730.7	1834.1
12.5°	1513.2	1508.6	1483.3	1446.6	1412.9	1404.5	1438.9	1522.4	1677.8	1730.7	1871.6
15°	1719.2	1722.3	1672.5	1595.9	1507.8	1448.1	1443.5	1512.4	1674.0	1735.3	1915.2
17.5°	1987.2	1988.7	1919.8	1808.8	1662.5	1539.2	1474.9	1512.4	1674.0	1739.9	1957.3
20°	2272.1	2261.4	2183.3	2043.9	1854.0	1665.6	1532.3	1521.6	1678.6	1746.8	1997.2
22.5°	2516.4	2506.4	2424.5	2278.2	2060.7	1814.9	1609.7	1552.2	1703.9	1775.1	2053.1
25°	2730.0	2736.2	2656.5	2491.9	2266.7	1983.4	1725.3	1622.7	1756.7	1826.4	2122.0
27.5°	2989.6	2978.1	2886.2	2729.3	2478.8	2158.0	1870.0	1711.5	1819.5	1888.4	2206.2
30°	3289.8	3284.5	3160.4	2998.8	2712.4	2353.3	2013.3	1807.3	1901.4	1973.4	2311.9
32.5°	3654.3	3653.6	3520.3	3322.0	2975.1	2573.8	2182.5	1938.2	2020.9	2093.7	2452.0
35°	4067.1	4066.3	3928.5	3666.6	3277.6	2818.1	2381.6	2097.5	2168.7	2245.3	2619.0
37.5°	4353.5	4348.9	4276.9	4022.7	3612.2	3102.2	2630.5	2311.9	2336.4	2422.2	2820.4
40°	4408.6	4436.2	4498.2	4348.1	3977.5	3417.7	2880.1	2542.4	2565.4	2675.7	3073.9
42.5°	4348.9	4384.9	4590.9	4633.0	4342.8	3799.8	3192.6	2861.7	2890.8	3027.9	3371.8
45°	4296.8	4328.2	4586.3	4790.8	4703.5	4216.4	3582.3	3251.5	3306.7	3476.7	3711.8
47.5°	4208.0	4237.1	4495.9	4819.1	4909.5	4617.7	4051.8	3720.2	3815.1	4021.1	4099.2
50°	4203.4	4216.4	4372.6	4724.1	4980.7	4922.5	4571.7	4268.5	4414.0	4651.4	4528.1
52.5°	4087.0	4178.1	4319.8	4572.5	4982.2	5100.1	5084.0	4869.6	5094.0	5356.7	4998.3
55°	3374.8	3479.7	4143.7	4498.2	4973.0	5252.5	5551.9	5509.1	5859.8	6136.2	5525.1
57.5°	3151.2	3195.6	3635.2	4520.4	5049.6	5504.5	6019.8	6196.0	6735.8	7037.6	6156.9
60°	3089.9	3136.7	3533.3	4531.2	5257.1	5963.2	6654.7	6971.7	7765.8	8085.9	6874.5
62.5°	3021.8	3082.3	3541.0	4541.1	5621.6	6641.7	7497.0	7813.3	8823.4	9109.0	7546.8
65°	2822.7	2903.1	3399.3	4478.3	6020.6	7493.2	8610.5	8690.9	9697.1	9878.6	7952.7
67°	2445.2	2533.2	3010.3	4115.3	5983.8	8066.8	9501.1	9240.0	10068.5	10090.8	7821.0
67.5°	2325.7	2416.8	2878.6	3964.5	5878.9	8141.8	9658.9	9315.8	10065.5	10041.0	7698.4
70°	1566.0	1668.6	2038.5	2910.8	4715.7	7577.4	9620.6	9082.2	9405.4	9124.3	6614.1
72.5°	777.3	780.3	1017.0	1594.4	2857.1	5434.8	8025.4	7769.7	7624.2	7093.5	4853.5
75°	374.5	381.4	480.1	704.5	1204.6	2805.8	5473.1	5242.6	4463.8	3864.9	2429.1
77.5°	285.6	292.5	372.9	458.7	502.4	915.1	2710.9	2190.9	1293.4	1033.0	684.6
80°	220.5	233.6	314.7	352.3	332.4	366.8	852.3	670.8	503.1	461.8	339.2
82.5°	172.3	180.0	267.3	267.3	229.7	245.8	396.7	387.5	312.4	281.8	182.3
85°	121.8	137.1	215.2	199.1	150.9	152.4	237.4	227.4	160.8	129.4	71.2
87.5°	54.4	69.7	153.2	130.2	80.4	62.0	97.3	83.5	63.6	49.0	32.9
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°	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3	1823.3
2.5°	1811.1	1823.3	1842.5	1854.0	1869.3	1875.4	1881.5	1892.3	1900.7	1898.4	1894.6
5°	1827.9	1848.6	1872.3	1880.0	1880.0	1872.3	1867.8	1868.5	1866.2	1864.7	1860.1
7.5°	1852.4	1880.8	1897.6	1890.0	1866.2	1836.4	1808.0	1791.2	1775.1	1765.1	1768.2
10°	1886.9	1918.3	1919.1	1885.4	1828.7	1763.6	1707.7	1671.7	1637.2	1621.9	1626.5
12.5°	1936.7	1968.1	1941.3	1868.5	1769.0	1667.1	1564.5	1490.2	1423.6	1407.5	1402.9
15°	1990.3	2014.8	1955.1	1832.5	1683.2	1515.5	1343.2	1232.1	1157.9	1144.8	1140.3
17.5°	2037.0	2050.8	1948.2	1768.2	1547.7	1283.5	1082.8	1007.8	992.5	1000.1	1000.1
20°	2078.3	2073.7	1918.3	1668.6	1334.0	1026.2	909.8	909.0	929.7	948.8	950.3
22.5°	2130.4	2094.4	1870.8	1520.9	1079.0	856.1	836.2	856.1	879.1	900.6	902.9
25°	2192.4	2117.4	1807.3	1310.3	867.6	777.3	785.7	802.5	817.1	833.9	834.7
27.5°	2254.5	2135.0	1717.7	1062.9	752.8	726.7	735.9	742.8	746.6	757.4	757.4
30°	2326.5	2148.8	1588.2	851.6	699.9	682.3	677.0	673.9	677.0	691.5	692.3
32.5°	2416.8	2173.3	1411.3	730.6	675.4	650.9	623.3	608.0	618.8	644.8	649.4
35°	2519.4	2202.4	1199.2	682.3	667.0	635.6	585.1	561.3	565.1	588.9	592.7
37.5°	2648.1	2239.9	990.2	670.8	675.4	634.1	567.4	533.8	516.9	517.7	516.9
40°	2812.7	2277.4	824.8	673.9	693.8	637.9	559.0	506.2	471.0	472.5	475.6
42.5°	2985.0	2302.0	719.8	683.1	716.0	643.3	556.0	479.4	448.8	474.8	498.5
45°	3186.4	2295.1	665.5	691.5	732.9	645.6	544.5	476.3	451.0	529.2	573.6
47.5°	3417.7	2265.2	634.8	695.3	737.5	644.8	536.0	486.3	470.2	605.7	656.3
50°	3668.9	2218.5	610.3	689.2	735.2	641.7	545.2	498.5	477.9	622.6	661.6
52.5°	3943.8	2175.6	585.1	675.4	723.7	632.5	556.7	493.2	456.4	573.6	603.4
55°	4269.3	2165.6	556.7	651.7	704.5	622.6	550.6	476.3	432.7	508.5	526.9
57.5°	4641.4	2227.7	520.0	622.6	678.5	602.7	536.0	467.1	424.2	462.5	472.5
60°	5113.9	2364.7	480.9	592.0	646.3	572.8	523.0	469.4	426.5	455.6	457.9
62.5°	5483.0	2488.0	445.7	554.4	603.4	536.8	509.2	471.7	433.4	464.8	461.0
65°	5617.0	2427.5	402.0	498.5	542.9	497.0	490.1	473.3	433.4	470.2	461.8
67°	5342.1	2138.8	360.7	442.6	485.5	461.8	471.7	467.1	425.8	469.4	454.9
67.5°	5211.2	2037.0	350.0	433.4	470.2	451.0	467.1	464.1	423.5	467.9	451.0
70°	4297.6	1461.1	295.6	363.7	393.6	397.4	438.8	444.2	405.1	439.6	408.9
72.5°	3057.8	914.3	255.0	281.8	317.8	340.0	400.5	417.4	380.6	382.1	356.9
75°	1513.2	490.9	227.4	217.5	247.3	283.3	349.2	380.6	344.6	318.6	310.1
77.5°	510.8	278.0	192.2	175.4	192.2	227.4	289.5	332.4	304.0	269.6	264.2
80°	264.2	202.2	150.1	140.9	151.6	176.1	226.7	276.4	259.6	261.1	215.2
82.5°	164.6	123.3	108.0	107.2	114.9	134.8	166.9	224.4	222.8	190.7	138.6
85°	76.6	71.2	68.9	71.2	73.5	76.6	108.7	160.0	169.2	102.6	91.1
87.5°	32.2	31.4	27.6	29.9	32.9	32.2	43.6	68.2	95.0	64.3	59.0
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)