

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: P195230

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195230
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7060
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11620 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

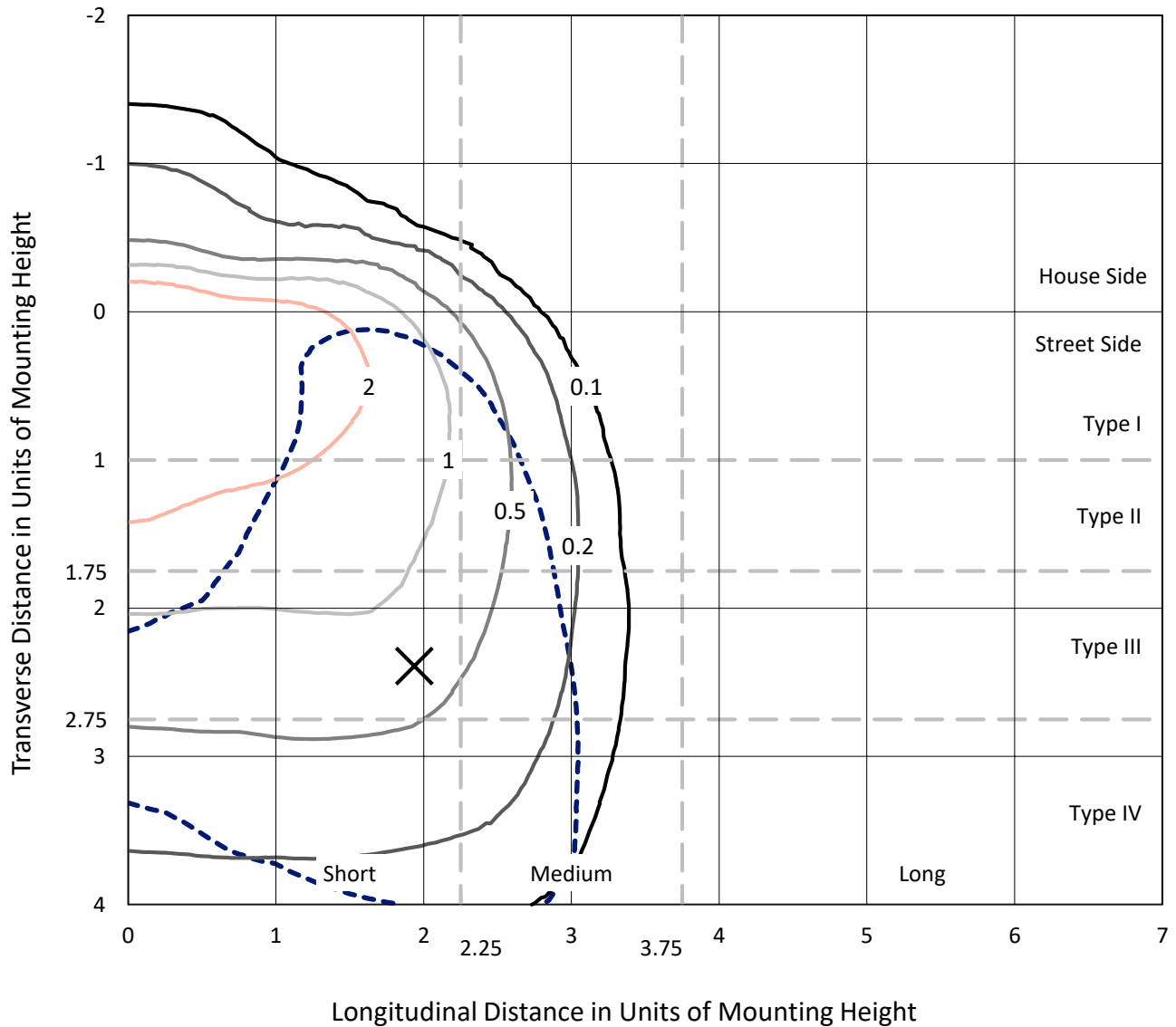
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

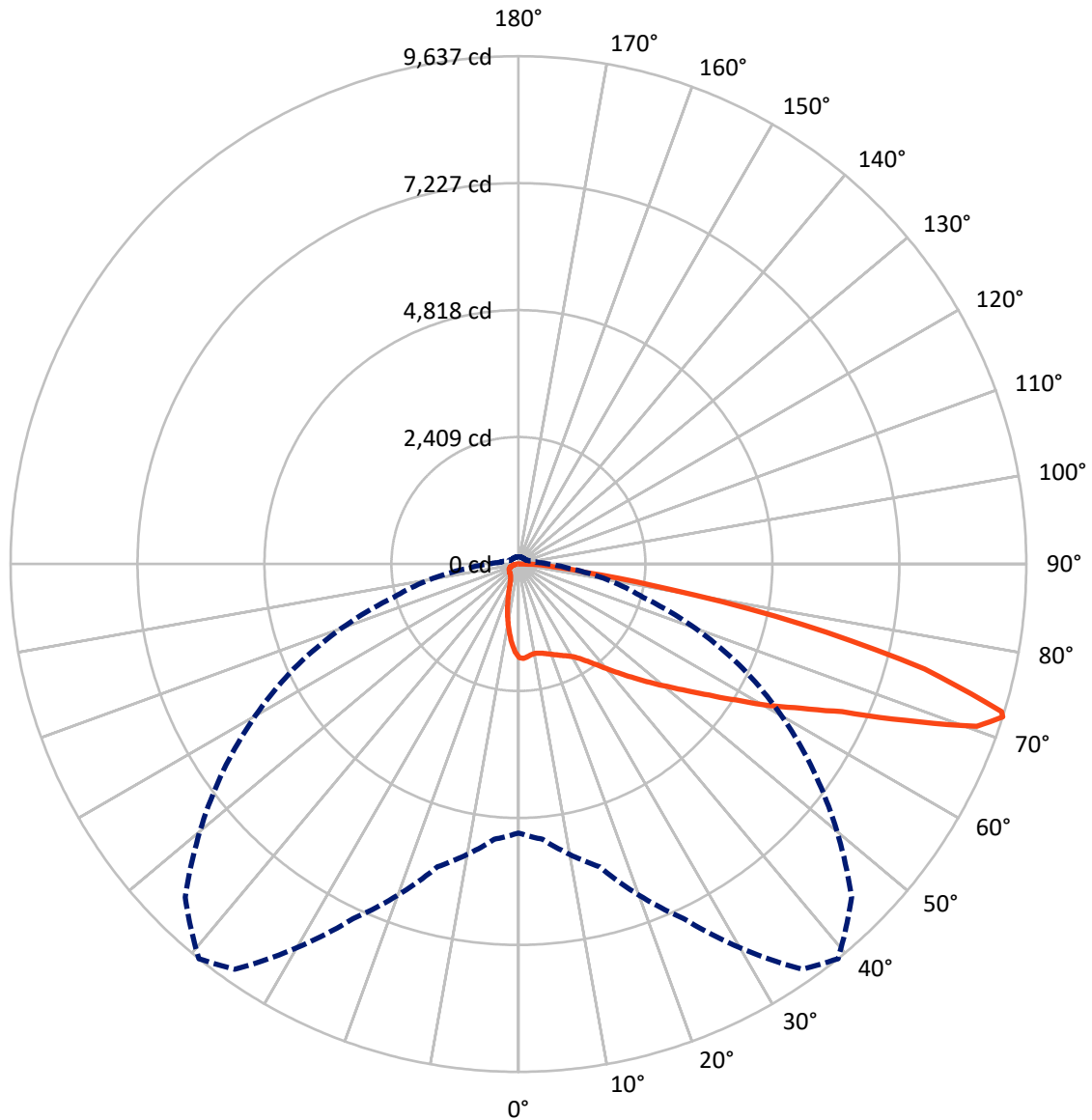
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.4 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1332.4	0.0	1332.4
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	10287.6	0.0	10287.6
	% Fixture	88.5	0.0	88.5
Total	Lumens	11620.0	0.0	11620.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.5	1.3
10°-20°	383.2	3.3
20°-30°	597.2	5.1
30°-40°	919.5	7.9
40°-50°	1498.9	12.9
50°-60°	2329.2	20.0
60°-70°	3117.5	26.8
70°-80°	2242.0	19.3
80°-90°	380.1	3.3
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°	11620.0	100.0
0°-180°	11620.0	100.0



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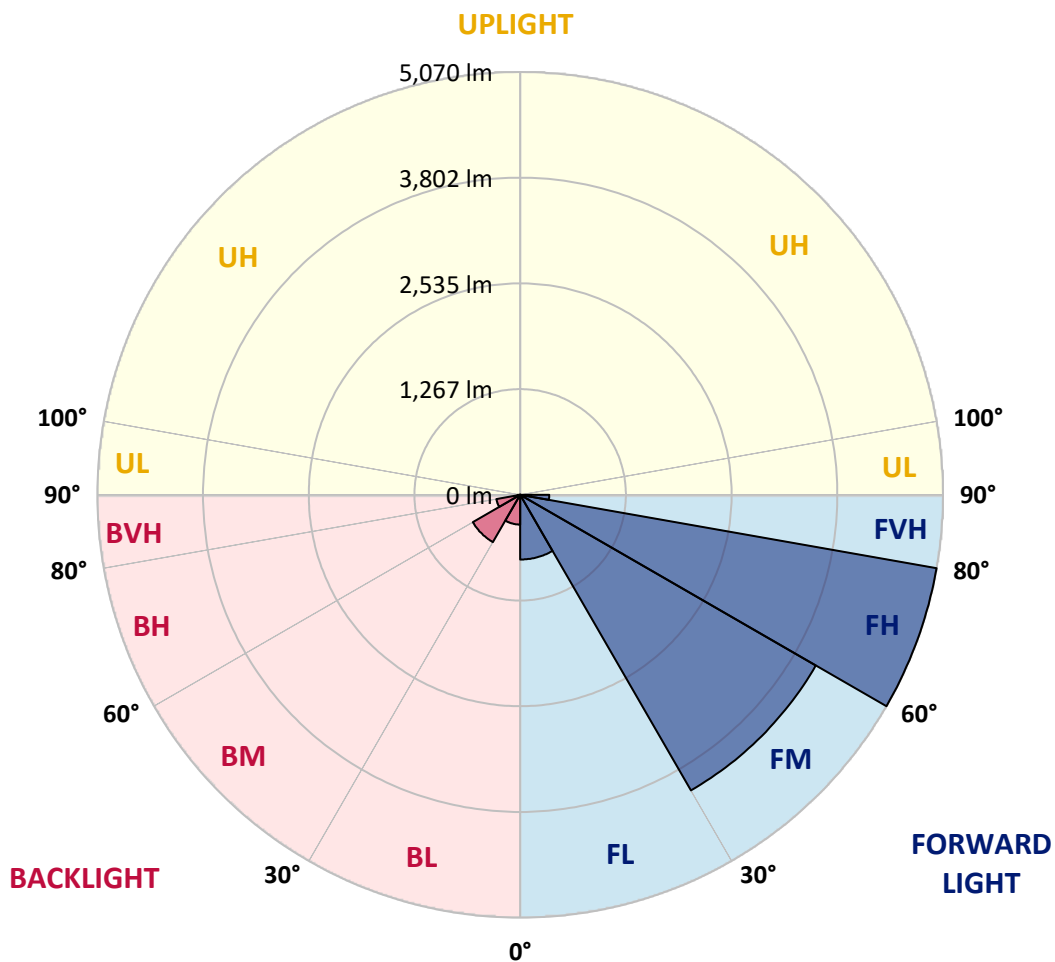
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	776.2	6.7			
FM	(30°-60°)	4092.8	35.2			
FH	(60°-80°)	5070.0	43.6			G3/7500
FVH	(80°-90°)	348.6	3.0			G3/500
BL	(0°-30°)	356.7	3.1	B1/500		
BM	(30°-60°)	654.8	5.6	B1/1000		
BH	(60°-80°)	289.5	2.5	B1/500		G1/500
BVH	(80°-90°)	31.4	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6
2.5°	1812.8	1813.6	1811.2	1804.2	1798.0	1794.9	1789.4	1780.0	1767.6	1759.0	1752.0
5°	1795.6	1798.0	1796.4	1784.7	1773.8	1767.6	1759.0	1745.7	1729.3	1722.3	1705.9
7.5°	1782.4	1783.9	1779.3	1766.0	1744.9	1737.1	1721.5	1704.4	1689.6	1679.4	1659.9
10°	1773.0	1774.6	1770.7	1757.4	1734.0	1724.7	1705.9	1687.2	1667.7	1655.2	1633.4
12.5°	1759.8	1762.9	1762.9	1756.6	1741.0	1734.8	1716.1	1695.8	1677.9	1664.6	1637.3
15°	1757.4	1761.3	1768.3	1767.6	1762.9	1758.2	1743.4	1723.1	1707.5	1691.9	1658.4
17.5°	1776.9	1785.5	1799.5	1804.2	1801.1	1791.0	1773.8	1755.1	1737.9	1723.1	1681.8
20°	1826.1	1830.7	1851.8	1861.2	1845.6	1830.7	1808.1	1783.9	1768.3	1756.6	1703.6
22.5°	1900.2	1906.4	1923.6	1924.3	1891.6	1873.6	1844.8	1815.1	1800.3	1795.6	1733.2
25°	2018.7	2017.2	2021.9	2002.4	1943.1	1922.0	1886.9	1852.6	1842.4	1851.8	1776.9
27.5°	2160.7	2156.8	2142.0	2091.3	2001.6	1974.3	1932.1	1901.7	1901.7	1923.6	1836.2
30°	2324.5	2320.6	2272.2	2187.2	2071.0	2039.8	1995.3	1963.4	1979.7	2021.9	1916.5
32.5°	2497.7	2483.6	2415.8	2301.9	2170.1	2135.7	2092.8	2060.1	2091.3	2163.0	2032.0
35°	2660.7	2652.9	2569.4	2434.5	2298.0	2269.1	2239.5	2198.9	2248.8	2360.4	2195.0
37.5°	2829.2	2823.0	2720.8	2577.2	2454.0	2434.5	2409.5	2381.5	2461.8	2608.4	2415.8
40°	3017.2	3004.7	2876.0	2732.5	2635.7	2626.4	2613.1	2605.3	2734.8	2953.2	2695.0
42.5°	3230.1	3205.9	3039.8	2903.3	2833.9	2841.7	2834.7	2865.9	3064.0	3351.0	3027.3
45°	3473.5	3425.1	3202.8	3085.0	3053.1	3084.3	3099.1	3178.6	3453.2	3810.5	3398.6
47.5°	3701.3	3638.9	3381.5	3282.4	3300.3	3354.2	3396.3	3536.7	3879.9	4264.5	3777.7
50°	3911.1	3840.9	3572.6	3486.8	3574.1	3650.6	3737.9	3936.1	4333.9	4731.7	4125.6
52.5°	4066.3	4015.6	3763.7	3709.9	3888.5	3989.9	4129.5	4379.9	4792.5	5177.1	4436.1
55°	4186.5	4159.2	3950.1	3965.7	4244.2	4389.3	4558.5	4846.4	5277.7	5576.5	4685.7
57.5°	4325.3	4305.0	4163.1	4274.6	4685.7	4868.2	5067.9	5387.7	5739.5	5928.3	4881.5
60°	4471.9	4471.9	4400.2	4646.7	5237.9	5447.0	5645.9	5894.7	6199.7	6245.0	4961.0
62.5°	4582.7	4611.6	4637.3	5042.9	5762.1	6021.9	6240.3	6479.0	6676.3	6401.0	4773.8
65°	4743.4	4805.0	4950.1	5500.8	6411.1	6751.2	7046.1	7246.5	7062.4	6277.0	4163.1
67.5°	5019.5	5110.8	5419.7	6182.6	7404.9	7914.2	8200.5	7854.2	6986.8	5496.1	3188.8
70°	5268.4	5397.1	5925.2	7047.6	8696.6	9225.5	9093.7	7713.0	6085.1	4028.9	1961.8
72°	5103.0	5243.4	5948.6	7424.4	9387.0	9636.6	8941.6	6835.5	4702.1	2458.7	967.2
72.5°	4994.6	5140.4	5872.9	7415.0	9405.7	9584.3	8730.2	6486.8	4268.4	2151.3	782.4
75°	4172.4	4297.2	5050.0	6571.8	8288.7	7961.1	6812.8	4198.2	1961.8	695.0	402.5
77.5°	2724.7	2819.8	3482.1	4553.1	5805.8	5490.7	4146.7	1965.7	735.6	422.0	302.7
80°	1369.0	1436.8	1863.5	2393.9	3133.4	2883.0	1914.2	950.9	492.2	305.0	237.9
82.5°	952.4	1014.8	1283.2	1222.3	1309.7	1267.6	900.2	793.3	368.2	192.7	124.8
85°	798.8	863.5	1061.6	871.3	713.0	649.8	645.1	749.6	243.4	95.2	105.3
87.5°	696.6	794.9	876.0	636.5	489.1	431.4	475.0	687.2	77.2	52.3	32.0
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°	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6	1774.6
2.5°	1740.3	1737.9	1726.2	1708.3	1695.0	1686.4	1670.1	1669.3	1670.8	1656.8	1662.3
5°	1691.1	1681.8	1651.3	1610.0	1576.5	1544.5	1509.4	1497.7	1487.5	1466.5	1468.8
7.5°	1639.6	1623.3	1570.2	1502.3	1437.6	1378.3	1319.8	1291.0	1269.1	1241.8	1241.8
10°	1609.2	1583.5	1502.3	1403.3	1300.3	1213.7	1126.4	1074.1	1035.9	1000.8	998.4
12.5°	1607.7	1568.7	1455.5	1319.0	1177.9	1056.2	936.8	856.5	799.5	758.2	754.3
15°	1620.1	1565.5	1416.5	1240.3	1062.4	904.1	756.6	654.5	581.9	535.9	531.2
17.5°	1631.1	1561.6	1374.4	1157.6	950.1	757.4	593.6	487.5	418.9	381.4	377.5
20°	1641.2	1553.1	1320.6	1070.2	826.1	620.1	464.1	378.3	333.1	312.0	309.7
22.5°	1656.0	1545.3	1264.4	971.9	704.4	504.7	383.0	321.4	297.2	287.1	285.5
25°	1680.2	1546.0	1209.8	871.3	592.8	420.4	331.5	293.3	280.0	273.0	273.0
27.5°	1715.3	1555.4	1156.0	769.1	498.4	362.7	301.1	278.5	269.9	264.4	262.9
30°	1766.8	1572.6	1099.1	672.4	423.6	322.9	283.2	269.1	262.1	257.4	256.6
32.5°	1841.7	1603.0	1039.0	584.2	366.6	294.9	269.9	261.3	255.9	252.0	251.2
35°	1953.2	1656.8	980.5	509.4	326.1	274.6	259.0	252.0	248.8	247.3	246.5
37.5°	2117.0	1743.4	925.1	450.9	299.5	261.3	248.1	244.2	242.6	242.6	242.6
40°	2322.9	1857.3	875.2	409.5	284.7	251.2	240.3	237.1	237.1	237.9	237.9
42.5°	2573.3	2000.0	832.3	381.4	276.1	244.2	234.8	233.2	232.5	232.5	233.2
45°	2864.3	2168.5	805.8	359.6	269.9	240.3	230.9	230.1	227.0	225.4	225.4
47.5°	3156.8	2348.7	804.2	347.1	262.1	235.6	227.0	227.0	220.8	217.6	218.4
50°	3429.8	2510.2	821.4	344.0	257.4	228.6	223.1	223.9	215.3	211.4	210.6
52.5°	3649.8	2633.4	842.4	347.9	257.4	222.3	216.1	220.0	210.6	205.9	205.1
55°	3819.8	2719.2	850.2	356.5	260.5	216.9	209.8	216.1	209.0	202.8	202.8
57.5°	3941.5	2746.5	816.7	360.4	265.2	216.1	203.6	215.3	211.4	203.6	203.6
60°	3897.1	2588.2	691.9	345.6	264.4	214.5	198.9	216.9	219.2	210.6	210.6
62.5°	3549.9	2165.4	555.4	312.0	251.2	209.0	193.4	215.3	224.7	221.5	220.0
65°	2890.0	1588.2	430.6	272.2	228.6	197.3	181.7	201.2	212.2	215.3	216.1
67.5°	2036.7	1005.5	334.6	231.7	200.5	180.2	168.5	177.8	181.7	183.3	186.4
70°	1113.9	544.5	266.0	195.0	171.6	163.0	154.4	155.2	153.7	152.1	153.7
72°	559.3	355.7	224.7	169.3	152.1	146.6	142.7	140.4	140.4	138.1	138.8
72.5°	481.3	330.7	216.9	163.0	147.4	142.7	139.6	137.3	136.5	134.9	135.7
75°	320.6	262.1	181.0	136.5	125.6	122.5	124.0	121.7	122.5	120.9	121.7
77.5°	259.0	225.4	153.7	115.4	107.6	103.0	106.1	106.9	108.4	106.9	106.1
80°	216.9	191.9	128.7	95.2	89.7	85.8	87.4	92.8	93.6	88.9	88.1
82.5°	140.4	154.4	101.4	74.1	68.6	67.1	71.0	76.4	78.0	71.8	70.2
85°	117.8	124.0	73.3	50.7	45.2	43.7	51.5	56.9	60.8	54.6	53.0
87.5°	32.8	60.8	35.9	24.2	20.3	20.3	25.0	29.6	35.1	35.9	35.9
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)