

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: P196070

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-HSS**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196070  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24258)  
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-SL2-HSS  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 10165.1 lumens  
Efficiency: N/A  
Efficacy: 90.0 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - Medium - Semi-Cutoff  
BUG Rating: B1 - U0 - G2

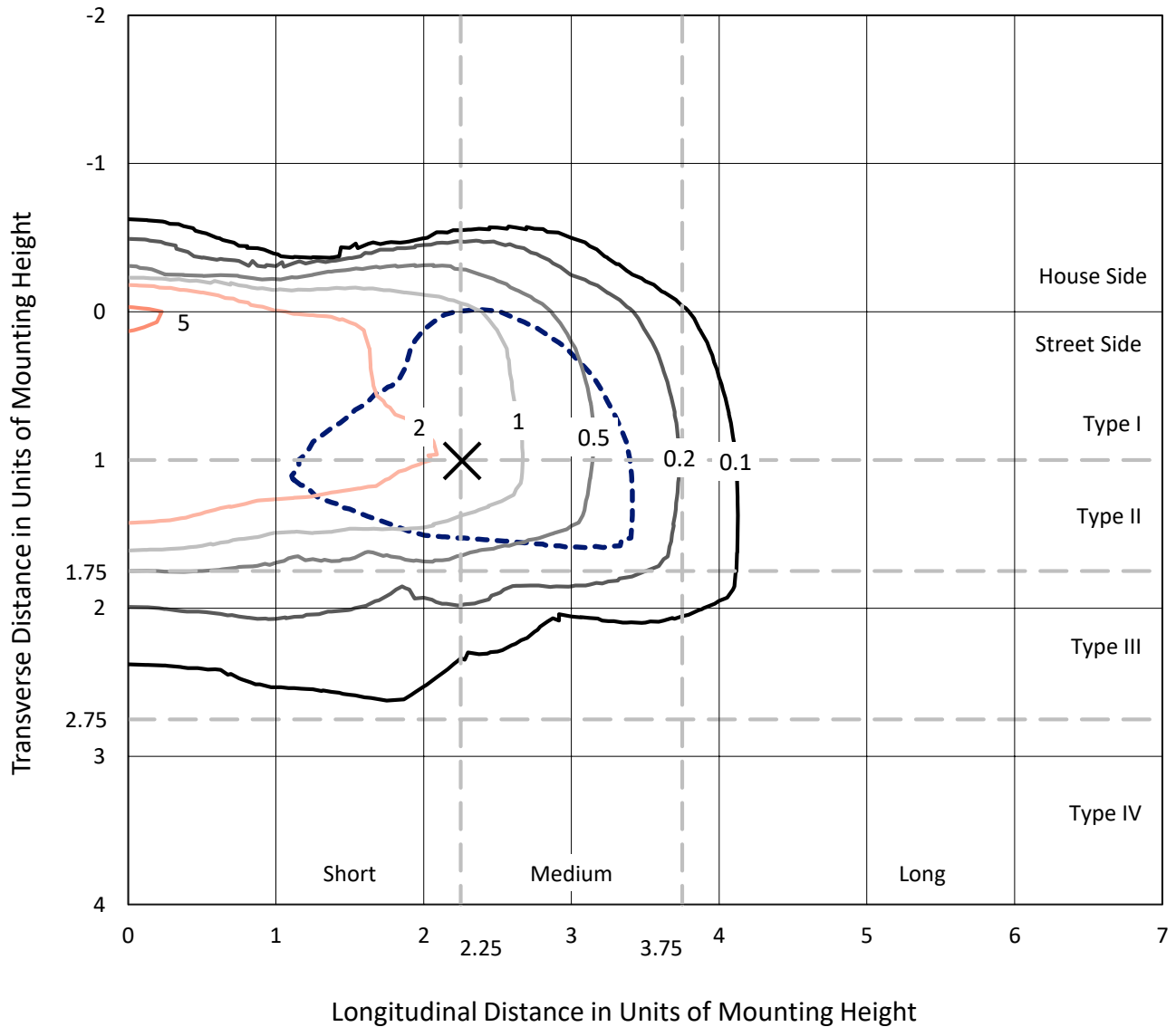
Input Watts (W): 113  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

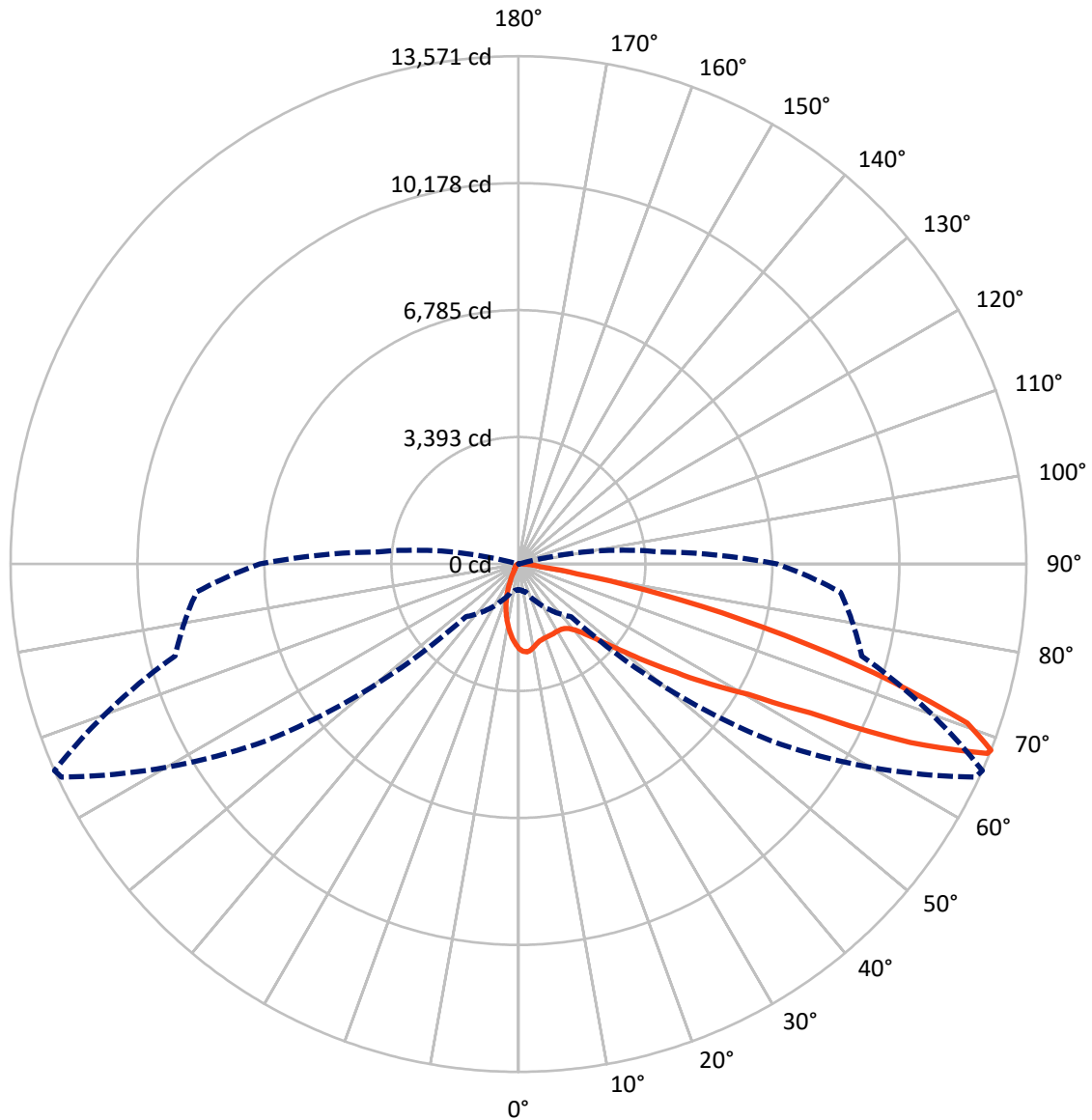
× Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.7 fc  
 Type II - Medium - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 66-Deg Lateral      - - - Horizontal Cone Through 68-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1029.6	0.0	1029.6
	% Fixture	10.1	0.0	10.1
<b>Street Side</b>	Lumens	9135.4	0.0	9135.4
	% Fixture	89.9	0.0	89.9
<b>Total</b>	Lumens	10165.1	0.0	10165.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	185.7	1.8
10°-20°	399.5	3.9
20°-30°	578.9	5.7
30°-40°	886.1	8.7
40°-50°	1515.6	14.9
50°-60°	2370.9	23.3
60°-70°	2730.0	26.9
70°-80°	1366.1	13.4
80°-90°	132.3	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°	10165.1	100.0
0°-180°	10165.1	100.0



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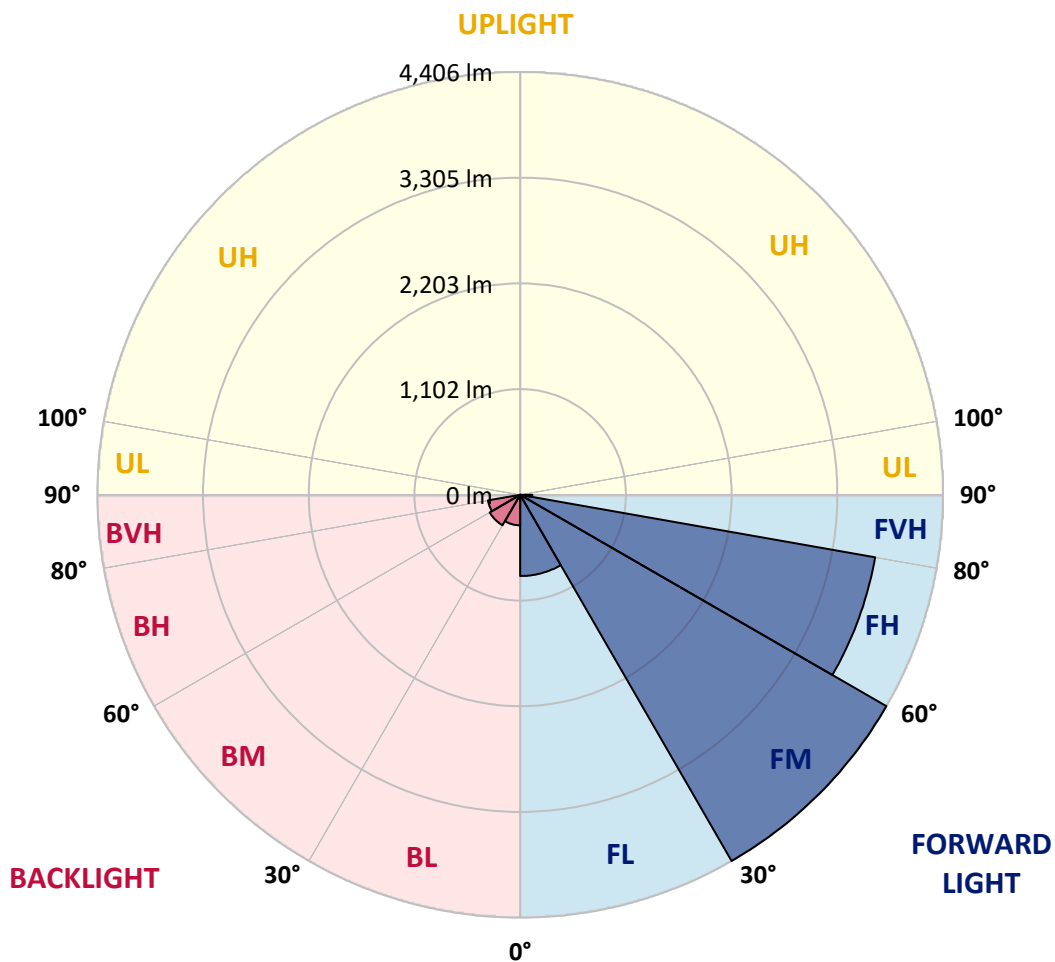
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	846.2	8.3			
FM (30°-60°)	4406.0	43.3			
FH (60°-80°)	3756.0	36.9			G2/5000
FVH (80°-90°)	127.3	1.3			G2/225
BL (0°-30°)	317.8	3.1	B1/500		
BM (30°-60°)	366.6	3.6	B1/1000		
BH (60°-80°)	340.2	3.3	B1/500		G1/500
BVH (80°-90°)	5.0	0.0			G0/10
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

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

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	66°	75°	85°
0°	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7
2.5°	2381.9	2383.6	2382.8	2385.2	2383.6	2371.6	2358.8	2331.7	2334.1	2299.0	2259.9
5°	2214.4	2228.0	2241.5	2255.1	2287.8	2316.6	2350.8	2358.8	2358.8	2328.5	2271.1
7.5°	2043.7	2044.5	2059.6	2077.9	2121.8	2174.5	2254.3	2326.1	2327.7	2335.7	2272.7
10°	1915.2	1919.2	1929.5	1949.4	1993.3	2045.2	2134.6	2247.1	2255.9	2314.9	2256.7
12.5°	1815.4	1820.2	1831.4	1854.5	1894.4	1947.9	2042.0	2170.5	2182.5	2295.0	2251.9
15°	1738.8	1745.2	1754.0	1777.1	1820.2	1876.9	1979.8	2119.5	2133.8	2287.0	2267.1
17.5°	1706.9	1706.9	1706.1	1722.0	1765.1	1822.6	1930.3	2092.3	2110.7	2293.5	2292.6
20°	1720.5	1718.0	1701.3	1697.3	1723.7	1781.1	1891.2	2074.7	2095.5	2305.4	2323.7
22.5°	1792.3	1787.5	1750.0	1718.9	1710.9	1749.1	1864.8	2062.8	2087.5	2330.1	2365.3
25°	1944.7	1930.3	1878.4	1808.3	1745.2	1741.2	1846.5	2056.4	2082.7	2358.8	2410.7
27.5°	2142.6	2138.6	2055.6	1961.4	1840.2	1767.6	1840.9	2051.6	2077.9	2379.6	2447.4
30°	2388.4	2389.9	2294.2	2171.3	1987.8	1841.7	1858.5	2049.2	2076.4	2381.2	2463.4
32.5°	2642.1	2643.7	2563.9	2432.3	2189.6	1969.4	1908.0	2060.4	2085.2	2374.8	2462.5
35°	2886.4	2888.7	2840.8	2734.7	2459.4	2146.6	2001.3	2098.7	2116.3	2378.8	2461.0
37.5°	3195.1	3204.7	3145.7	3046.7	2797.8	2406.7	2153.7	2176.1	2190.4	2411.5	2473.0
40°	3721.8	3709.0	3539.8	3372.3	3164.8	2723.5	2374.0	2309.4	2314.1	2496.1	2518.4
42.5°	4335.5	4319.5	4029.8	3740.9	3542.3	3105.8	2655.7	2513.7	2512.9	2638.1	2617.4
45°	4863.7	4854.1	4549.3	4163.9	3960.4	3527.9	3002.8	2808.1	2798.5	2883.9	2797.8
47.5°	5238.7	5230.8	5000.2	4613.9	4444.0	3992.3	3436.1	3209.5	3189.6	3205.5	3090.6
50°	5275.5	5266.7	5186.1	4937.9	5009.0	4673.8	3971.6	3735.4	3709.8	3685.1	3533.5
52.5°	4932.4	4931.5	4973.8	4957.8	5404.8	5550.7	4628.3	4385.7	4355.4	4292.4	4141.5
55°	4230.9	4226.9	4387.3	4620.4	5396.0	6455.7	5629.8	5159.8	5119.9	4993.7	4795.9
57.5°	3091.4	3070.7	3405.8	3899.8	5017.0	6851.5	7220.2	6121.3	6055.2	5655.3	5350.4
60°	1706.9	1714.9	2145.7	2730.7	4119.2	6773.3	8683.6	7242.5	7068.6	6225.9	5918.7
62.5°	956.8	976.7	1297.5	1774.7	2626.1	6138.9	9468.8	9172.1	8753.1	6891.4	6636.8
65°	723.7	735.7	896.9	1369.3	1655.9	4289.9	9594.2	11870.0	11508.5	7900.0	7780.4
67.5°	681.5	691.1	770.1	1135.6	1508.2	2224.8	8651.0	13466.0	13511.4	9275.8	8666.1
68°	686.3	698.3	777.2	1092.4	1505.8	1990.2	8248.8	13474.0	13570.6	9497.6	8635.8
70°	630.4	633.6	821.9	1071.6	1459.5	1568.1	5967.3	12550.7	12723.9	9761.7	7839.4
72.5°	241.0	241.8	368.7	928.0	1528.9	1576.8	3006.0	9919.8	9928.6	8495.3	6111.7
75°	125.3	105.4	115.7	290.4	1460.3	1536.9	1508.2	6773.3	6731.0	5745.5	3744.9
77.5°	86.1	73.4	77.4	100.6	607.2	1536.2	1089.2	3895.0	3886.2	2444.2	1068.5
80°	48.7	42.2	46.2	84.6	213.1	1442.0	1015.1	1674.2	1577.6	429.3	173.2
82.5°	24.8	20.8	24.8	71.0	132.5	907.4	987.1	656.7	584.9	102.2	112.5
85°	6.3	6.3	12.0	49.5	82.1	297.7	885.0	474.0	426.2	44.7	79.8
87.5°	1.6	0.8	4.8	18.3	29.6	64.7	490.7	264.1	227.4	23.1	46.2
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°	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7	2264.7
2.5°	2243.9	2221.5	2177.7	2128.2	2093.2	2054.8	2032.5	2005.3	1984.6	1966.2	1979.8
5°	2236.0	2192.9	2095.5	1986.2	1894.4	1806.6	1741.2	1679.0	1631.9	1602.4	1614.3
7.5°	2215.2	2151.4	1993.3	1822.6	1672.5	1531.4	1416.4	1313.5	1233.7	1190.6	1204.1
10°	2180.1	2089.9	1877.6	1640.6	1430.8	1231.3	1060.5	907.4	791.6	737.3	750.1
12.5°	2154.5	2035.7	1757.9	1465.1	1189.0	905.7	679.0	503.5	413.4	359.1	363.9
15°	2143.4	1993.3	1646.2	1279.9	924.8	581.8	367.0	265.8	234.6	223.4	224.2
17.5°	2145.0	1959.9	1540.2	1087.7	658.4	334.4	225.0	202.6	197.9	195.5	195.5
20°	2149.0	1926.3	1430.0	887.3	421.4	215.4	187.5	180.3	178.0	174.7	175.5
22.5°	2161.0	1900.8	1319.1	686.3	259.3	175.5	166.0	159.6	155.6	150.8	151.6
25°	2179.3	1881.6	1209.7	494.0	182.7	153.2	144.4	135.6	128.5	122.9	123.7
27.5°	2190.4	1854.5	1093.2	336.8	151.6	134.1	122.1	110.2	102.2	97.4	96.6
30°	2182.5	1810.6	960.8	221.1	134.1	115.7	101.4	87.8	79.8	75.8	75.8
32.5°	2161.0	1754.0	814.8	161.2	118.9	99.7	82.1	70.2	64.7	62.2	63.0
35°	2136.2	1694.9	659.1	136.5	106.9	84.6	67.0	57.5	55.0	54.2	54.2
37.5°	2122.6	1643.9	509.9	123.7	95.7	70.2	55.0	49.5	47.1	47.1	47.1
40°	2137.8	1604.7	377.5	114.2	84.6	58.2	46.2	42.2	41.5	41.5	41.5
42.5°	2202.4	1591.2	276.1	106.2	73.4	48.7	39.9	36.7	35.9	36.7	36.7
45°	2328.5	1620.7	209.1	98.1	63.0	39.9	34.3	31.9	31.9	32.7	32.7
47.5°	2542.3	1696.6	171.5	90.1	52.7	33.6	29.6	27.9	27.9	28.7	28.7
50°	2874.4	1836.9	154.1	81.4	43.9	28.7	24.8	23.9	23.9	24.8	25.6
52.5°	3378.7	2104.3	145.3	72.6	35.9	23.9	20.8	19.9	20.8	21.6	21.6
55°	3939.7	2446.6	134.8	63.8	30.3	19.9	16.8	16.8	17.6	19.1	19.1
57.5°	4462.3	2777.0	125.3	52.7	26.3	16.0	13.6	13.6	15.1	16.8	16.8
60°	5014.5	3101.0	112.5	42.2	22.3	12.8	11.2	11.2	13.6	15.1	16.0
62.5°	5696.8	3477.6	95.7	33.6	17.6	9.6	8.0	10.3	12.8	15.1	15.1
65°	6683.1	3946.0	75.0	26.3	13.6	7.2	6.3	9.6	12.0	14.3	15.1
67.5°	7041.4	3886.2	56.7	21.6	10.3	5.6	5.6	8.8	12.0	14.3	14.3
68°	6910.5	3755.4	54.2	20.8	9.6	5.6	5.6	8.8	12.0	14.3	14.3
70°	6021.6	3069.9	44.7	16.0	8.0	4.8	4.8	8.0	12.0	13.6	14.3
72.5°	4508.7	2039.7	38.3	10.3	7.2	4.8	4.0	8.0	11.2	13.6	13.6
75°	2586.2	846.7	32.7	8.0	6.3	4.0	4.0	7.2	11.2	13.6	13.6
77.5°	731.0	197.9	26.3	6.3	5.6	4.0	3.2	7.2	10.3	12.8	12.8
80°	134.1	59.0	20.8	5.6	4.8	4.0	3.2	7.2	10.3	12.8	12.8
82.5°	88.6	27.9	15.1	5.6	4.8	4.0	3.2	6.3	9.6	12.0	12.0
85°	66.2	19.9	9.6	5.6	4.8	4.0	3.2	6.3	9.6	12.0	12.0
87.5°	36.7	8.8	7.2	6.3	5.6	4.0	3.2	5.6	8.8	11.2	11.2
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)