

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: P196340

Luminaire Tested: **NAV-AF-02-D-UNV-T3R-1200**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196340  
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-1200  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 13901.9 lumens  
Efficiency: N/A  
Efficacy: 107.8 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 - G3

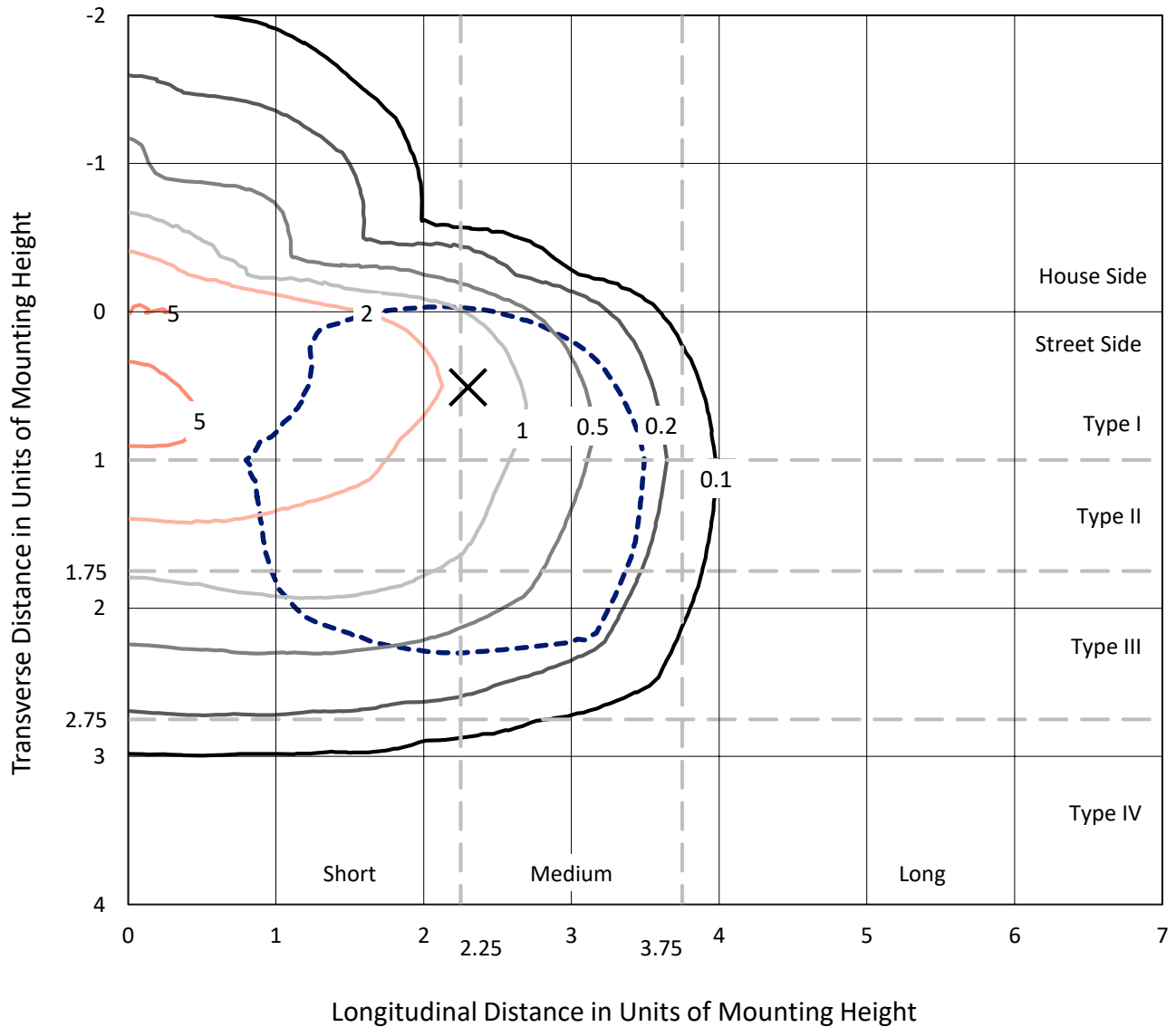
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

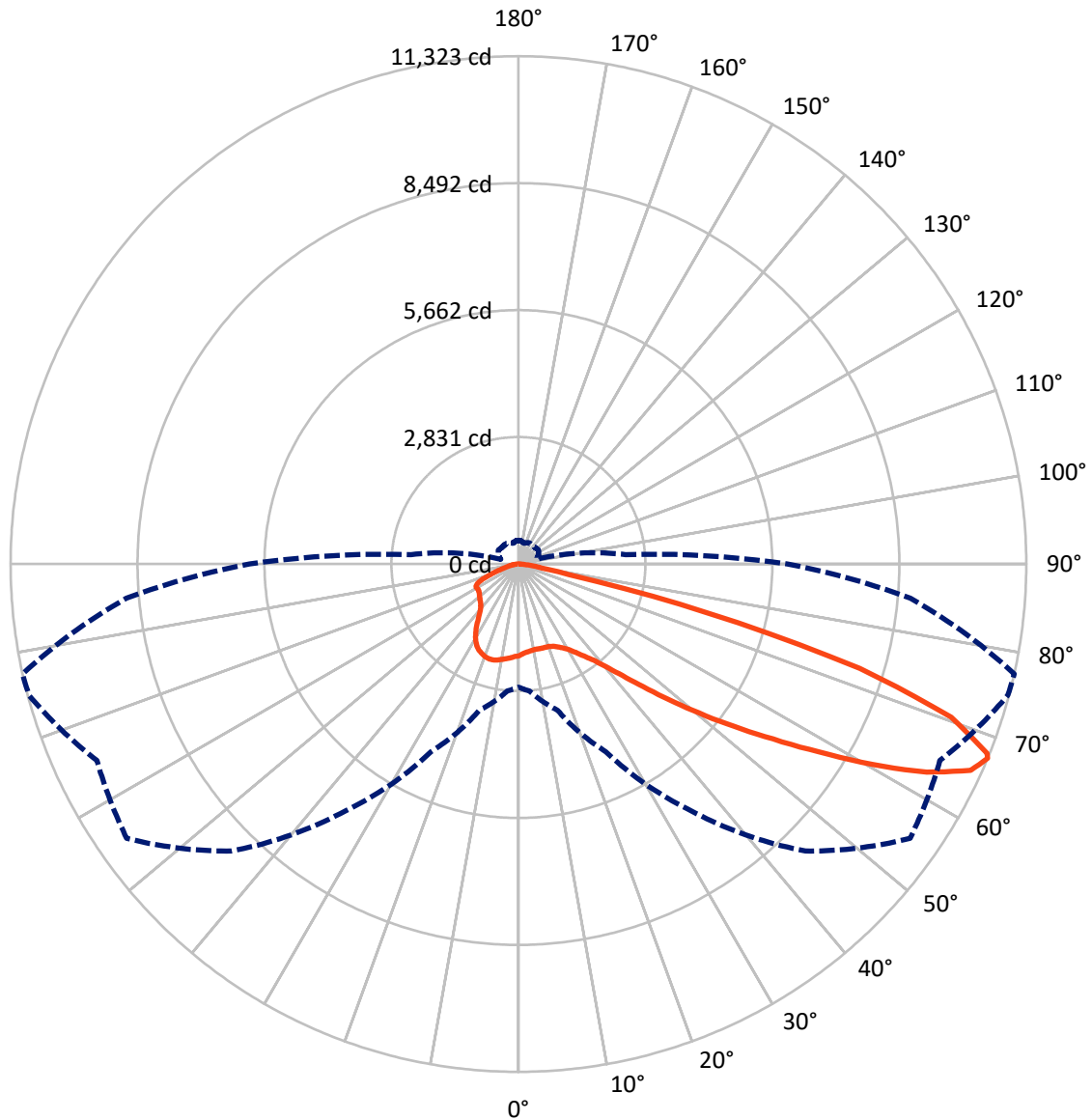
✕ Max cd  
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 6.1 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
<b>House Side</b>	Lumens	2389.0	0.0	2389.0
	% Fixture	17.2	0.0	17.2
<b>Street Side</b>	Lumens	11512.9	0.0	11512.9
	% Fixture	82.8	0.0	82.8
<b>Total</b>	Lumens	13901.9	0.0	13901.9
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	182.2	1.3
10°-20°	504.6	3.6
20°-30°	857.4	6.2
30°-40°	1371.7	9.9
40°-50°	2111.8	15.2
50°-60°	2929.9	21.1
60°-70°	3908.2	28.1
70°-80°	1859.9	13.4
80°-90°	176.1	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°	13901.9	100.0
0°-180°	13901.9	100.0



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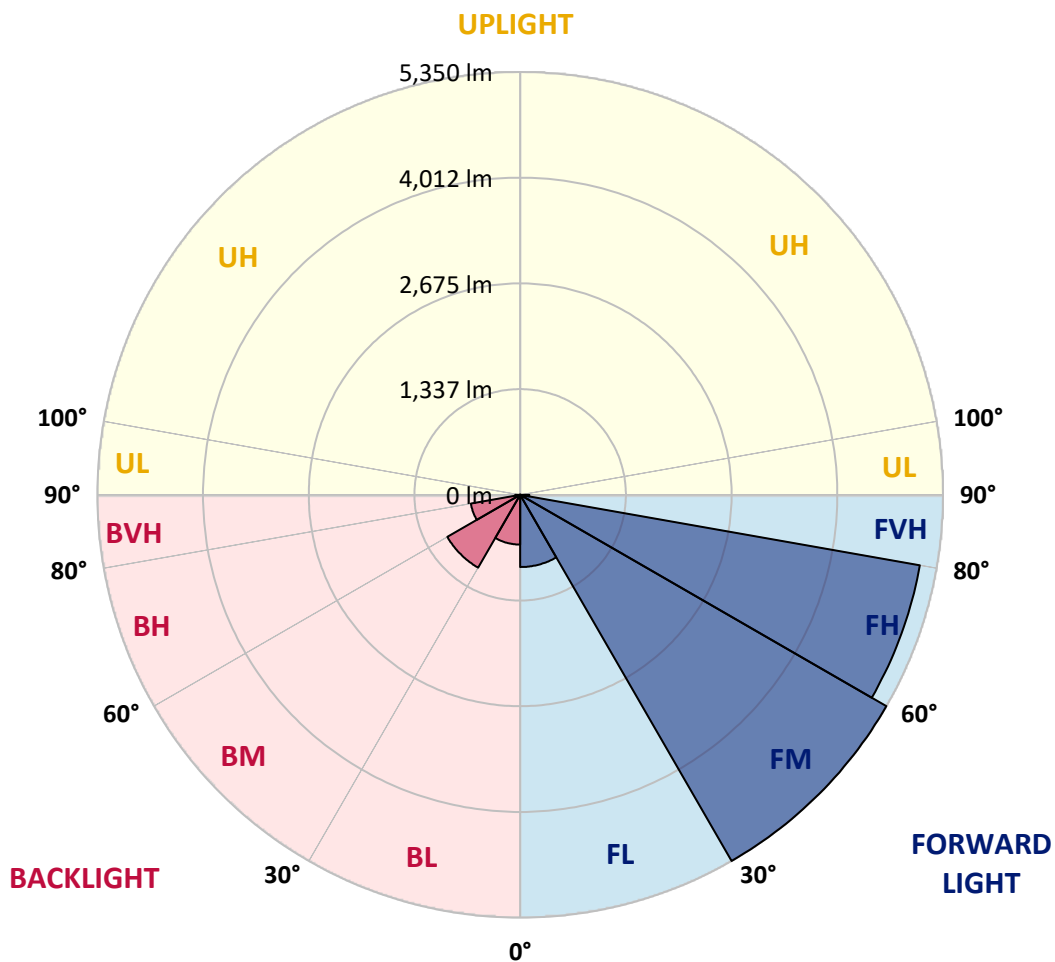
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	914.2	6.6			
FM	(30°-60°)	5349.6	38.5			
FH	(60°-80°)	5134.7	36.9			G3/7500
FVH	(80°-90°)	114.4	0.8			G2/225
BL	(0°-30°)	630.1	4.5	B2/1000		
BM	(30°-60°)	1063.7	7.7	B2/2500		
BH	(60°-80°)	633.4	4.6	B2/1000		G2/1000
BVH	(80°-90°)	61.7	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-G3**

Type III Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0
2.5°	1834.6	1843.2	1844.1	1868.9	1880.2	1908.5	1939.4	1966.9	1991.0	1999.6	2015.1
5°	1650.7	1650.7	1653.3	1669.7	1701.4	1747.0	1811.4	1881.8	1955.8	1973.8	2019.4
7.5°	1554.5	1556.2	1558.0	1574.2	1599.2	1639.6	1704.0	1800.2	1923.1	1953.2	2033.1
10°	1563.1	1560.5	1551.9	1548.4	1558.8	1584.6	1640.4	1739.2	1895.6	1942.0	2058.1
12.5°	1698.0	1692.8	1664.4	1623.2	1585.4	1576.0	1614.6	1708.3	1882.7	1942.0	2100.1
15°	1929.1	1932.6	1876.7	1790.8	1692.0	1625.0	1619.7	1697.1	1878.4	1947.2	2149.1
17.5°	2229.9	2231.6	2154.2	2029.6	1865.6	1727.2	1655.0	1697.1	1878.4	1952.3	2196.4
20°	2549.5	2537.5	2449.9	2293.5	2080.4	1868.9	1719.5	1707.4	1883.6	1960.1	2241.1
22.5°	2823.7	2812.5	2720.5	2556.5	2312.4	2036.6	1806.2	1741.8	1911.9	1991.9	2303.8
25°	3063.4	3070.3	2980.9	2796.1	2543.6	2225.6	1936.0	1820.9	1971.2	2049.5	2381.1
27.5°	3354.7	3341.8	3238.7	3062.5	2781.5	2421.5	2098.4	1920.5	2041.7	2119.0	2475.6
30°	3691.5	3685.6	3546.4	3365.0	3043.7	2640.6	2259.1	2028.0	2133.7	2214.4	2594.2
32.5°	4100.6	4099.7	3950.2	3727.6	3338.4	2888.1	2449.0	2174.9	2267.7	2349.3	2751.4
35°	4563.8	4562.9	4408.2	4114.3	3677.8	3162.2	2672.5	2353.6	2433.5	2519.4	2938.8
37.5°	4885.1	4880.0	4799.2	4513.9	4053.3	3481.0	2951.7	2594.2	2621.7	2718.0	3164.8
40°	4947.0	4977.9	5047.5	4879.1	4463.2	3835.0	3231.8	2852.9	2878.7	3002.4	3449.2
42.5°	4880.0	4920.4	5151.5	5198.7	4873.1	4263.9	3582.4	3211.2	3243.9	3397.6	3783.5
45°	4821.6	4856.8	5146.4	5375.8	5277.8	4731.4	4019.8	3648.6	3710.4	3901.2	4165.0
47.5°	4721.8	4754.5	5045.0	5407.6	5509.0	5181.6	4546.6	4174.5	4281.0	4512.2	4599.8
50°	4716.7	4731.4	4906.6	5301.0	5588.9	5523.6	5130.0	4789.8	4953.0	5219.4	5081.0
52.5°	4586.1	4688.4	4847.4	5130.9	5590.6	5722.9	5704.9	5464.3	5716.0	6010.8	5608.6
55°	3787.0	3904.7	4649.7	5047.5	5580.3	5893.9	6230.0	6181.8	6575.3	6885.6	6199.9
57.5°	3536.0	3585.9	4079.1	5072.4	5666.2	6176.7	6755.0	6952.6	7558.4	7897.0	6908.8
60°	3467.3	3519.7	3964.9	5084.5	5899.1	6691.3	7467.3	7823.1	8714.2	9073.4	7714.0
62.5°	3390.8	3458.7	3973.4	5095.6	6308.1	7452.7	8412.5	8767.4	9900.8	10221.4	8468.4
65°	3167.4	3257.6	3814.5	5025.1	6755.8	8408.2	9662.0	9752.2	10881.3	11085.0	8923.8
67°	2743.8	2842.6	3377.9	4617.9	6714.5	9051.9	10661.3	10368.3	11298.1	11323.0	8776.0
67.5°	2609.6	2711.9	3230.1	4448.6	6596.8	9136.1	10838.4	10453.4	11294.6	11267.2	8638.5
70°	1757.2	1872.4	2287.4	3266.2	5291.6	8502.8	10795.4	10191.4	10553.9	10238.6	7421.8
72.5°	872.2	875.6	1141.1	1789.0	3206.0	6098.4	9005.4	8718.5	8555.2	7959.7	5446.3
75°	420.2	427.9	538.8	790.5	1351.7	3148.4	6141.4	5882.8	5008.9	4336.9	2725.7
77.5°	320.5	328.3	418.5	514.7	563.7	1026.8	3041.9	2458.5	1451.4	1159.2	768.2
80°	247.5	262.1	353.1	395.3	373.0	411.6	956.4	752.8	564.6	518.1	380.6
82.5°	193.3	201.9	299.9	299.9	257.8	275.8	445.1	434.9	350.6	316.2	204.5
85°	136.7	153.9	241.4	223.4	169.3	171.0	266.4	255.2	180.4	145.3	79.9
87.5°	61.0	78.2	171.9	146.1	90.2	69.6	109.1	93.7	71.3	55.0	36.9
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°	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0	2046.0
2.5°	2032.3	2046.0	2067.5	2080.4	2097.6	2104.4	2111.3	2123.3	2132.8	2130.2	2125.9
5°	2051.1	2074.3	2101.0	2109.6	2109.6	2101.0	2095.8	2096.7	2094.1	2092.4	2087.2
7.5°	2078.6	2110.4	2129.4	2120.8	2094.1	2060.6	2028.8	2009.9	1991.9	1980.6	1984.1
10°	2117.3	2152.6	2153.4	2115.6	2052.0	1979.0	1916.2	1875.9	1837.2	1820.0	1825.1
12.5°	2173.2	2208.4	2178.4	2096.7	1984.9	1870.7	1755.6	1672.2	1597.4	1579.4	1574.2
15°	2233.3	2260.8	2193.8	2056.3	1888.8	1700.6	1507.2	1382.6	1299.2	1284.6	1279.5
17.5°	2285.8	2301.2	2186.0	1984.1	1736.7	1440.2	1215.1	1130.9	1113.7	1122.3	1122.3
20°	2332.1	2327.0	2152.6	1872.4	1496.9	1151.4	1020.8	1020.0	1043.2	1064.7	1066.4
22.5°	2390.5	2350.2	2099.3	1706.6	1210.8	960.7	938.4	960.7	986.4	1010.6	1013.1
25°	2460.2	2376.0	2028.0	1470.3	973.5	872.2	881.7	900.5	916.9	935.8	936.6
27.5°	2529.8	2395.8	1927.4	1192.7	844.7	815.5	825.8	833.5	837.8	849.9	849.9
30°	2610.6	2411.2	1782.2	955.5	785.4	765.7	759.6	756.2	759.6	775.9	776.8
32.5°	2711.9	2438.7	1583.7	819.8	757.9	730.4	699.5	682.3	694.3	723.5	728.6
35°	2827.1	2471.3	1345.7	765.7	748.5	713.2	656.5	629.8	634.1	660.8	665.1
37.5°	2971.5	2513.5	1111.0	752.8	757.9	711.5	636.8	598.9	580.0	580.9	580.0
40°	3156.2	2555.5	925.5	756.2	778.6	715.8	627.3	568.0	528.5	530.2	533.7
42.5°	3349.6	2583.1	807.7	766.5	803.4	721.8	623.9	538.0	503.6	532.8	559.5
45°	3575.5	2575.3	746.8	775.9	822.4	724.4	611.0	534.5	506.2	593.8	643.6
47.5°	3835.0	2541.8	712.4	780.2	827.5	723.5	601.5	545.6	527.6	679.8	736.4
50°	4116.9	2489.4	684.9	773.4	824.9	720.1	611.8	559.5	536.2	698.6	742.5
52.5°	4425.4	2441.3	656.5	757.9	812.0	709.8	624.7	553.4	512.2	643.6	677.1
55°	4790.6	2430.1	624.7	731.3	790.5	698.6	617.9	534.5	485.5	570.6	591.2
57.5°	5208.3	2499.7	583.5	698.6	761.4	676.3	601.5	524.2	476.1	519.0	530.2
60°	5738.4	2653.5	539.6	664.2	725.3	642.7	586.9	526.7	478.6	511.3	513.8
62.5°	6152.6	2791.8	500.1	622.2	677.1	602.4	571.4	529.4	486.4	521.6	517.3
65°	6303.0	2724.0	451.1	559.5	609.3	557.7	549.9	531.0	486.4	527.6	518.1
67°	5994.5	2400.0	404.8	496.6	544.8	518.1	529.4	524.2	477.8	526.7	510.5
67.5°	5847.5	2285.8	392.7	486.4	527.6	506.2	524.2	520.8	475.2	525.1	506.2
70°	4822.4	1639.6	331.6	408.2	441.7	446.0	492.3	498.4	454.6	493.3	458.9
72.5°	3431.2	1026.0	286.1	316.2	356.6	381.6	449.4	468.3	427.1	428.8	400.4
75°	1698.0	550.9	255.2	244.1	277.5	317.9	391.8	427.1	386.7	357.4	348.0
77.5°	573.2	311.9	215.6	196.8	215.6	255.2	324.8	373.0	341.2	302.5	296.5
80°	296.5	226.9	168.4	158.1	170.1	197.6	254.3	310.2	291.3	293.0	241.4
82.5°	184.7	138.3	121.1	120.3	128.9	151.2	187.3	251.7	250.0	214.0	155.5
85°	85.9	79.9	77.3	79.9	82.4	85.9	122.0	179.6	189.9	115.2	102.3
87.5°	36.1	35.2	30.9	33.6	36.9	36.1	49.0	76.5	106.6	72.2	66.2
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)