

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: P196262

Luminaire Tested: **NAV-AF-02-D-UNV-T2**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196262  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)  
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-T2  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 12195.6 lumens  
Efficiency: N/A  
Efficacy: 107.9 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type II - 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

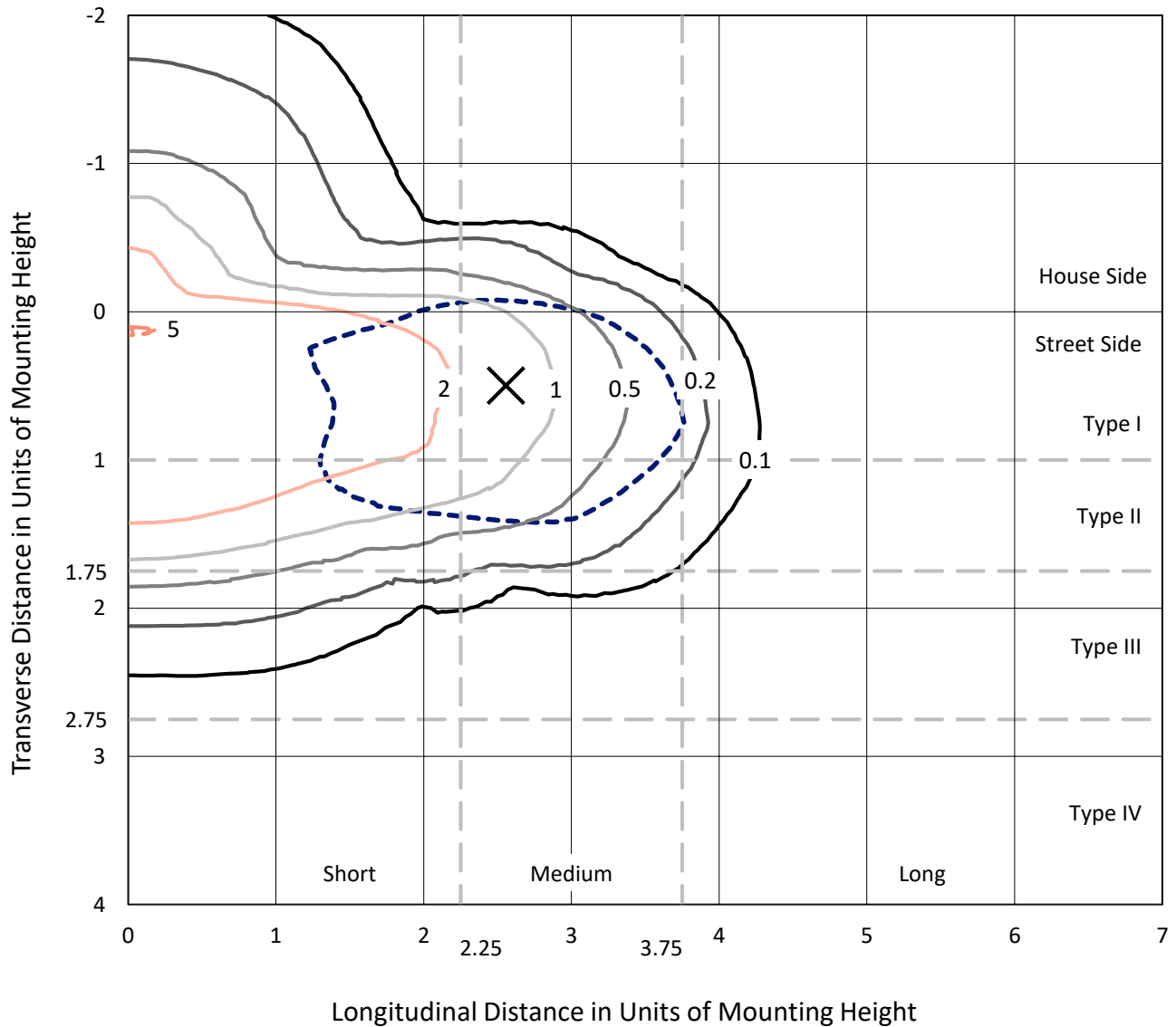


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### Iso-Footcandle Lines of Horizontal Illumination

× Max cd  
 - - - 1/2 Max cd

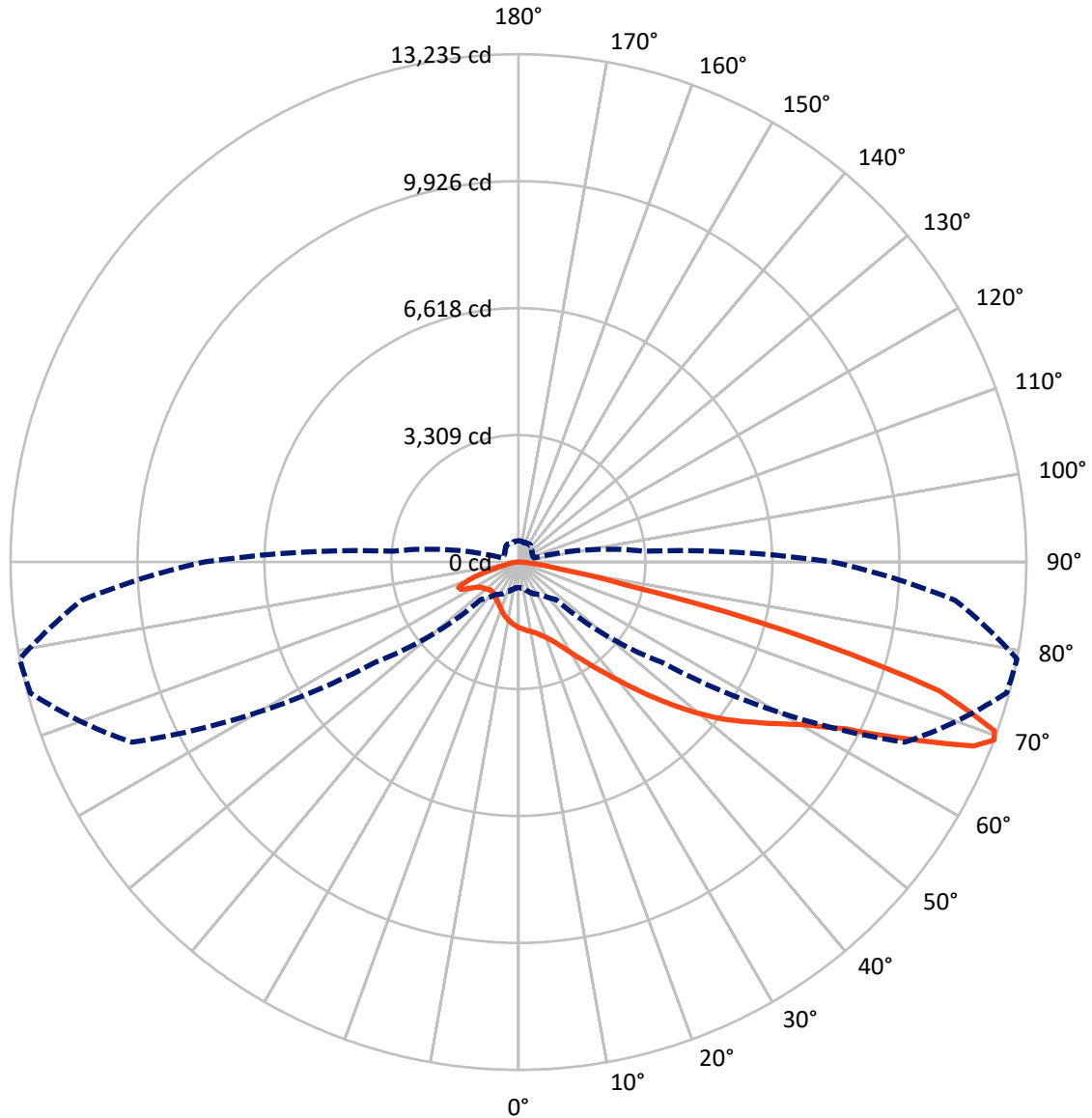


Based on 20 foot mounting height. Maximum calculated value = 5.2 fc  
 Type II - Medium - Full Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral      - - - Horizontal Cone Through 69-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2294.2	0.0	2294.2
	% Fixture	18.8	0.0	18.8
<b>Street Side</b>	Lumens	9901.4	0.0	9901.4
	% Fixture	81.2	0.0	81.2
<b>Total</b>	Lumens	12195.6	0.0	12195.6
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	158.7	1.3
10°-20°	454.9	3.7
20°-30°	751.6	6.2
30°-40°	1217.1	10.0
40°-50°	1944.3	15.9
50°-60°	2784.4	22.8
60°-70°	3102.3	25.4
70°-80°	1552.0	12.7
80°-90°	230.3	1.9
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°	12195.6	100.0
0°-180°	12195.6	100.0



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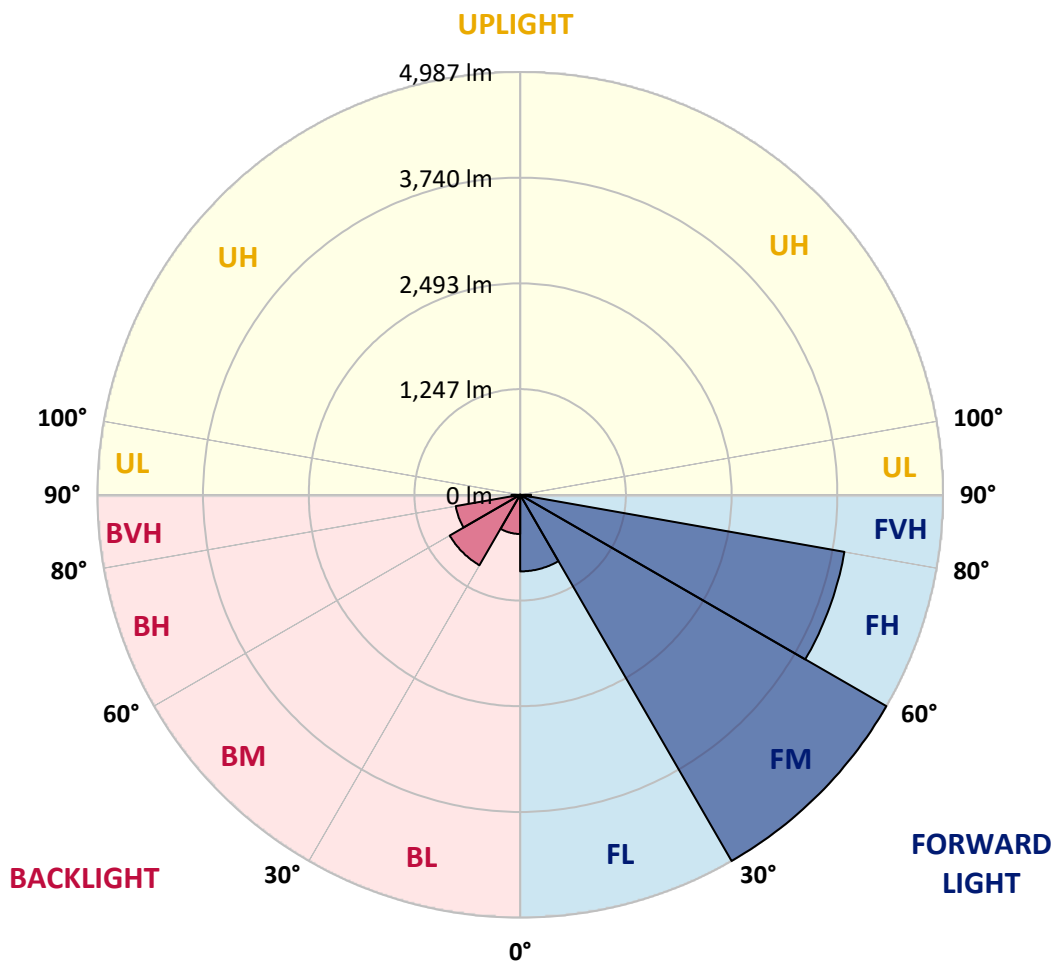
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	903.0	7.4			
FM (30°-60°)	4986.8	40.9			
FH (60°-80°)	3882.9	31.8			G2/5000
FVH (80°-90°)	128.7	1.1			G2/225
BL (0°-30°)	462.2	3.8	B1/500		
BM (30°-60°)	959.0	7.9	B1/1000		
BH (60°-80°)	771.4	6.3	B2/1000		G2/1000
BVH (80°-90°)	101.6	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G2**

Type II Medium





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4
2.5°	1879.0	1875.0	1874.1	1862.2	1855.8	1842.2	1810.3	1777.7	1747.3	1731.3	1714.7
5°	2036.2	2028.2	2024.2	2004.3	1986.7	1956.4	1906.1	1854.2	1800.0	1772.1	1738.6
7.5°	2131.1	2131.9	2131.9	2116.0	2098.4	2061.7	1997.8	1926.8	1846.2	1809.6	1756.9
10°	2139.1	2139.9	2151.9	2155.9	2159.9	2140.7	2081.6	1992.3	1888.6	1840.7	1772.1
12.5°	2060.1	2065.6	2085.6	2114.3	2155.1	2175.8	2150.2	2062.5	1942.8	1884.6	1800.8
15°	1953.9	1959.6	1985.1	2029.0	2094.4	2163.8	2199.8	2143.1	2013.8	1945.2	1843.1
17.5°	1902.1	1908.5	1926.0	1961.2	2025.0	2118.3	2226.0	2229.2	2097.6	2018.6	1893.4
20°	1877.4	1882.1	1904.5	1933.3	1981.9	2071.3	2228.5	2320.2	2197.3	2105.5	1954.8
22.5°	1934.0	1935.6	1946.8	1962.7	1995.5	2064.1	2226.9	2414.4	2321.8	2214.9	2033.7
25°	2100.0	2089.6	2081.6	2061.7	2069.6	2118.3	2252.4	2514.9	2481.4	2358.5	2139.1
27.5°	2296.3	2294.7	2273.9	2227.7	2198.1	2229.2	2325.0	2627.3	2676.9	2541.2	2277.1
30°	2514.9	2515.6	2494.2	2437.5	2377.6	2380.8	2440.7	2757.5	2910.6	2761.5	2447.1
32.5°	2743.9	2758.3	2718.4	2661.7	2589.1	2566.0	2606.7	2914.6	3181.1	3021.5	2644.1
35°	3017.5	3020.0	2976.1	2893.1	2820.5	2783.8	2821.3	3110.9	3493.1	3327.1	2884.3
37.5°	3301.6	3303.2	3257.7	3151.6	3059.9	3035.9	3077.3	3349.4	3823.4	3675.0	3166.7
40°	3533.8	3550.6	3514.7	3414.9	3322.3	3308.0	3367.8	3635.1	4245.5	4086.7	3502.7
42.5°	3797.1	3816.2	3773.2	3669.4	3596.0	3591.2	3684.6	3960.7	4665.2	4563.0	3883.2
45°	4093.8	4121.0	4061.1	3944.7	3882.4	3987.8	3993.3	4321.3	5148.6	5096.0	4311.7
47.5°	4417.8	4440.1	4391.4	4266.2	4198.4	4350.8	4295.8	4711.4	5671.2	5667.2	4775.2
50°	4667.5	4692.3	4697.1	4642.0	4571.0	4590.2	4627.6	5121.5	6192.2	6254.5	5254.8
52.5°	4622.1	4646.0	4753.8	4898.1	5012.3	4962.7	5008.3	5557.2	6695.7	6827.4	5710.3
55°	4255.1	4267.9	4469.7	4812.8	5298.7	5534.8	5538.1	6031.1	7174.5	7358.8	6142.8
57.5°	3593.6	3595.2	3857.6	4363.6	5131.9	5905.8	6374.2	6626.3	7673.9	7946.0	6678.9
60°	2542.9	2549.2	2854.7	3516.2	4534.3	5861.2	7273.4	7691.5	8252.3	8605.8	7370.0
62.5°	1509.6	1523.9	1754.6	2285.1	3367.8	5286.7	7804.8	9586.4	9104.5	9573.6	8475.8
65°	982.1	994.1	1132.2	1398.7	1989.8	3846.5	7630.0	11421.6	10716.9	11095.9	10065.1
67.5°	756.4	766.0	874.4	1035.6	1220.8	2079.2	6100.5	11806.1	12679.8	12797.8	11406.3
69°	664.6	672.6	752.4	907.2	1027.7	1376.3	4546.3	11107.9	13170.4	13235.0	11423.1
70°	615.9	622.4	697.3	831.4	943.9	1098.6	3479.5	10297.3	12991.0	13156.1	11093.6
72.5°	507.5	513.0	566.5	669.4	771.5	782.7	1541.5	7519.1	10938.8	11467.0	9387.7
75°	423.7	426.9	462.0	536.9	624.7	623.2	787.5	4259.1	6675.0	7304.5	5796.6
77.5°	353.4	355.9	379.0	425.2	493.1	490.7	554.5	1838.2	2947.3	2843.6	1995.5
80°	312.0	313.5	325.5	337.5	380.5	378.2	410.9	844.1	1199.2	1108.3	754.8
82.5°	237.0	240.2	300.7	306.4	295.2	284.8	286.4	491.5	614.4	559.3	405.3
85°	134.0	134.8	193.1	225.8	256.9	193.1	185.9	253.7	303.2	265.7	177.2
87.5°	59.8	62.2	92.6	106.9	138.8	113.3	106.1	107.7	130.8	108.5	70.2
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°	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4	1711.4
2.5°	1698.7	1685.1	1653.2	1620.5	1587.7	1567.1	1545.5	1525.5	1517.5	1516.7	1501.6
5°	1705.9	1674.0	1601.3	1521.5	1445.7	1386.7	1337.2	1305.3	1274.2	1268.7	1255.1
7.5°	1708.2	1656.4	1538.3	1410.6	1295.0	1213.5	1164.1	1142.5	1127.4	1123.4	1118.6
10°	1707.4	1634.1	1468.0	1293.3	1161.7	1100.3	1081.9	1086.7	1093.1	1096.3	1096.3
12.5°	1720.2	1623.6	1397.9	1183.2	1075.5	1046.0	1060.4	1085.1	1104.3	1112.3	1113.8
15°	1743.3	1617.3	1320.4	1087.5	1014.9	1022.0	1057.2	1093.1	1120.2	1132.2	1135.4
17.5°	1772.1	1608.5	1231.1	1008.5	979.8	1004.5	1050.0	1095.5	1128.2	1143.4	1145.7
20°	1804.0	1595.7	1138.5	949.5	948.7	979.8	1025.3	1076.3	1111.4	1128.2	1127.4
22.5°	1847.0	1583.7	1052.4	906.3	914.3	943.1	980.6	1026.8	1059.6	1074.7	1071.5
25°	1904.5	1572.6	975.0	868.1	875.2	894.4	920.8	955.8	979.0	986.9	981.4
27.5°	1981.9	1563.8	914.3	833.0	832.2	841.0	856.9	876.1	887.2	884.9	876.1
30°	2076.9	1555.1	869.7	801.9	790.6	789.9	797.1	808.2	815.4	801.1	793.9
32.5°	2183.0	1539.8	829.8	774.7	754.8	747.6	750.8	766.0	795.4	781.1	775.5
35°	2308.3	1522.4	789.9	745.2	730.1	716.5	718.9	751.6	841.0	830.5	825.0
37.5°	2459.1	1506.4	753.2	713.3	712.5	695.7	694.2	733.3	852.9	830.5	825.8
40°	2640.1	1503.2	720.5	678.2	691.0	684.6	679.0	703.0	786.6	741.2	732.4
42.5°	2858.7	1517.5	696.5	644.7	666.2	681.4	671.1	676.6	711.0	670.2	663.1
45°	3114.1	1556.6	679.0	615.2	639.9	679.0	667.1	662.3	667.8	645.5	640.7
47.5°	3411.6	1626.1	667.1	590.4	615.2	672.6	665.4	655.8	653.5	640.7	637.5
50°	3730.1	1719.4	659.1	568.0	592.8	661.4	664.6	651.1	647.1	641.5	639.9
52.5°	4046.0	1820.8	649.5	548.9	574.5	647.8	665.4	646.3	640.7	637.5	635.9
55°	4360.3	1926.0	631.9	532.1	560.9	631.9	664.6	639.9	633.5	633.5	633.5
57.5°	4768.1	2086.4	608.8	518.6	543.4	611.2	654.3	632.7	623.9	624.7	625.5
60°	5356.9	2355.3	583.3	503.5	520.2	587.3	638.3	619.9	609.6	612.7	613.6
62.5°	6340.7	2825.3	548.1	481.9	496.2	561.7	617.6	602.4	592.8	598.4	599.2
65°	7652.4	3394.2	501.9	454.8	471.6	533.0	591.3	581.6	571.3	584.8	584.0
67.5°	8452.6	3560.9	453.2	426.1	447.6	502.7	558.5	554.5	547.4	571.3	569.7
69°	8190.2	3259.3	425.2	407.7	430.9	481.9	537.8	536.1	530.6	553.7	552.1
70°	7782.4	2977.6	407.7	395.8	422.1	469.1	524.2	524.2	518.6	538.6	534.6
72.5°	6251.4	2208.6	367.0	365.4	391.8	434.0	487.5	491.5	488.3	495.5	491.5
75°	3670.2	1330.9	327.1	331.9	355.1	396.5	446.8	450.0	446.8	446.0	446.8
77.5°	1272.7	596.8	288.8	296.0	316.0	358.2	402.1	408.5	403.8	398.1	399.8
80°	497.9	347.1	247.3	257.7	274.5	315.2	357.4	361.4	354.2	353.4	347.1
82.5°	299.2	211.4	192.3	209.1	229.8	273.6	308.7	307.2	301.6	334.3	292.8
85°	130.0	117.3	140.5	157.2	167.6	205.1	260.9	253.7	240.2	211.4	206.6
87.5°	52.7	60.7	77.4	93.4	100.6	132.5	178.7	172.4	174.7	143.6	142.8
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)