

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: P196251

Luminaire Tested: **NAV-AF-03-D-UNV-T2-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196251
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-03-D-UNV-T2-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11950.1 lumens
Efficiency: N/A
Efficacy: 124.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

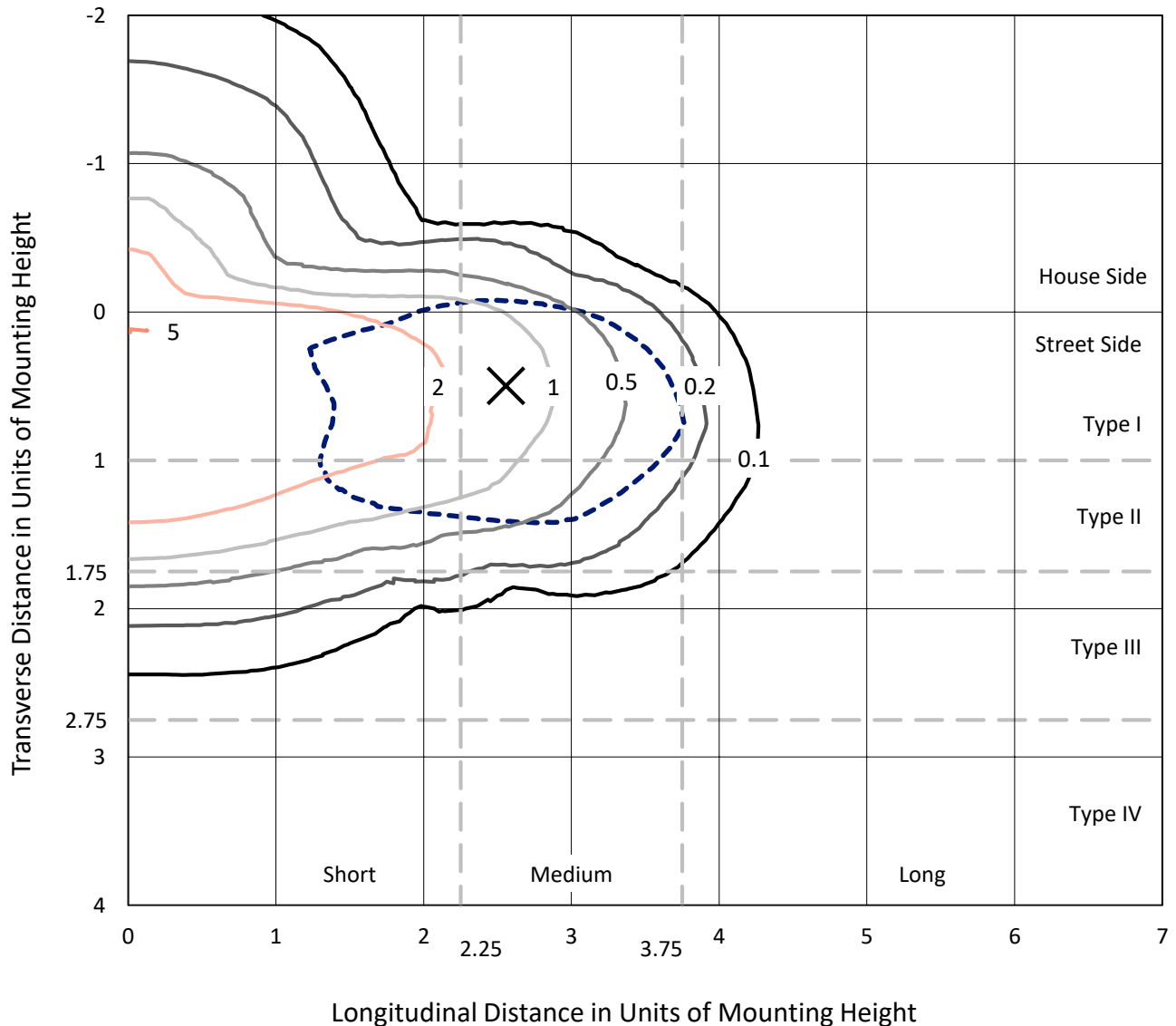
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

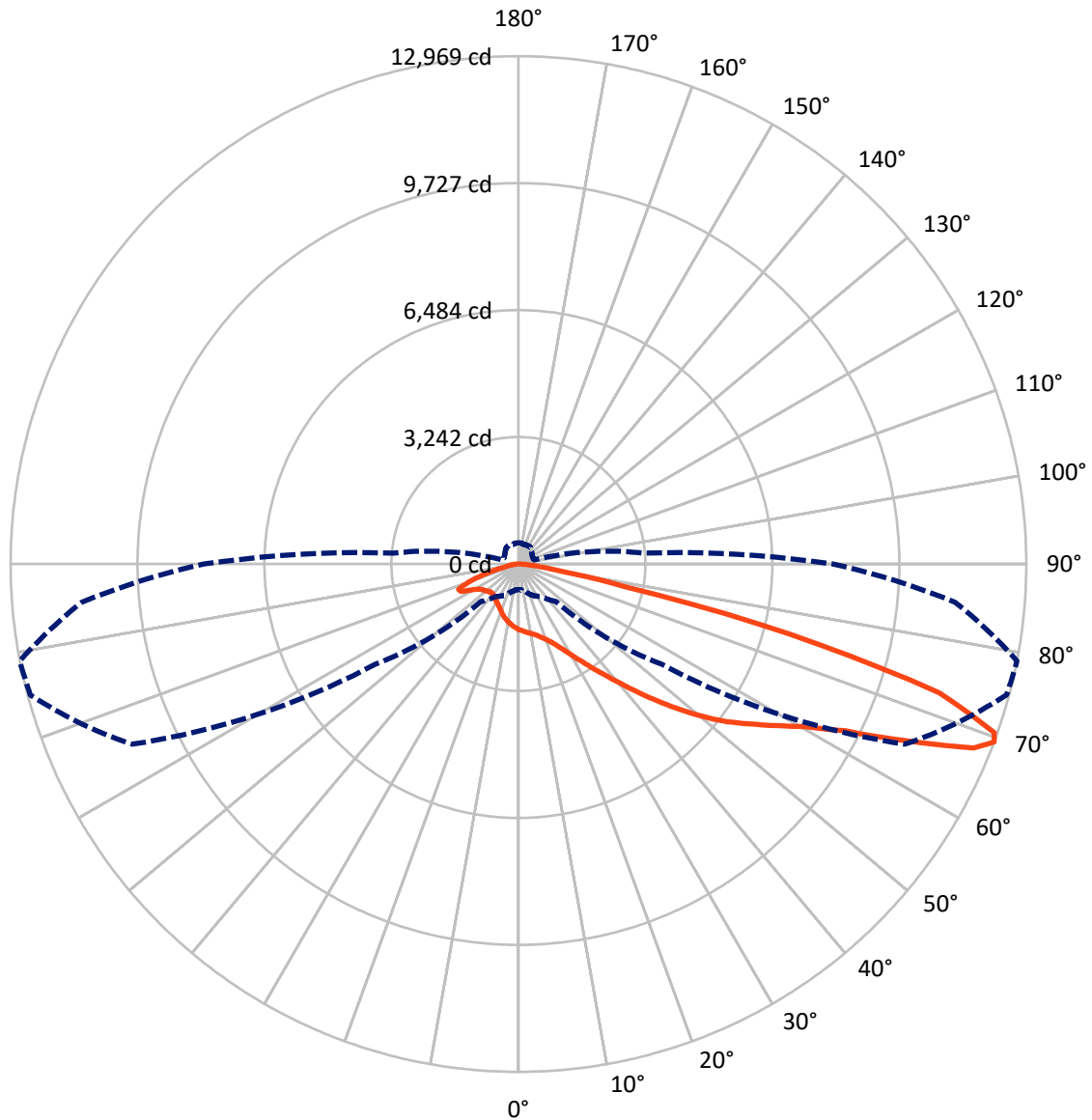
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.1 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
House Side	Lumens	2248.0	0.0	2248.0
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	9702.1	0.0	9702.1
	% Fixture	81.2	0.0	81.2
Total	Lumens	11950.1	0.0	11950.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	155.5	1.3
10°-20°	445.7	3.7
20°-30°	736.5	6.2
30°-40°	1192.6	10.0
40°-50°	1905.2	15.9
50°-60°	2728.4	22.8
60°-70°	3039.8	25.4
70°-80°	1520.8	12.7
80°-90°	225.7	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°	11950.1	100.0
0°-180°	11950.1	100.0

Coefficient of Utilization



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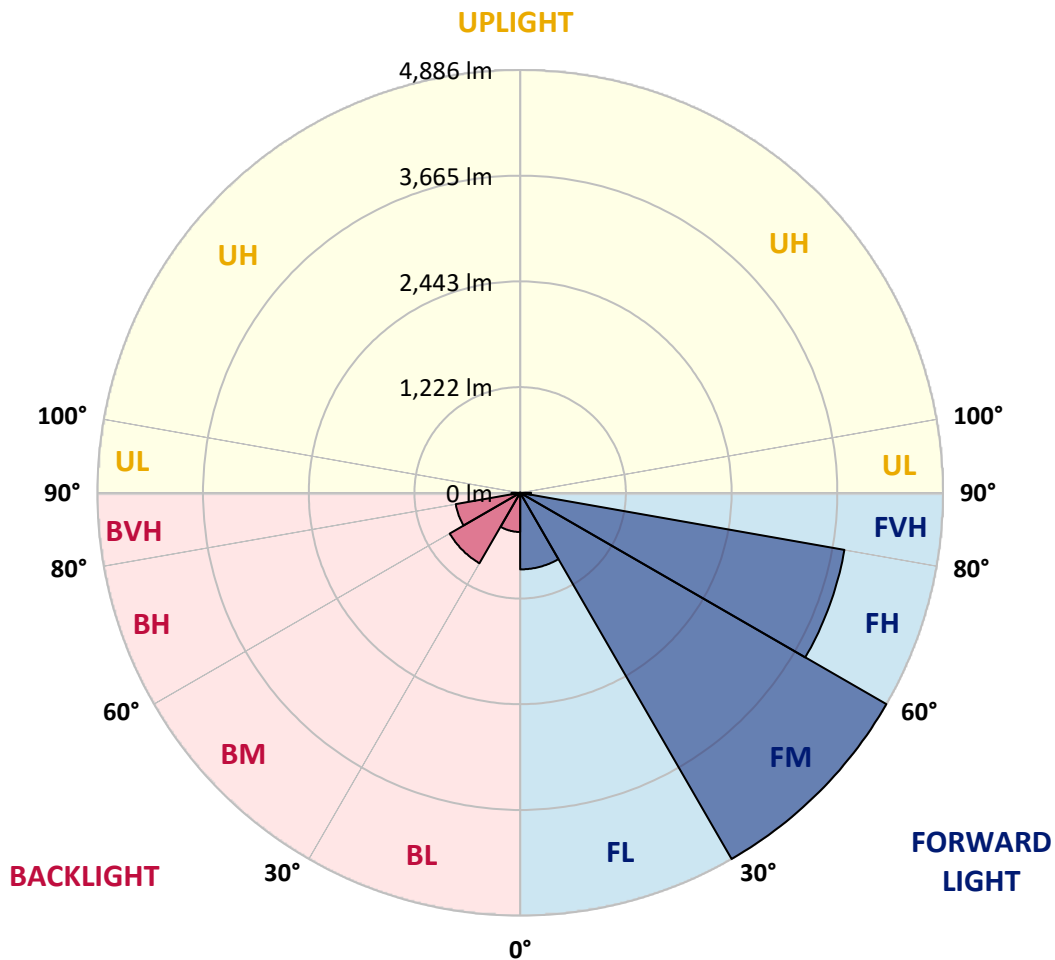
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	884.8	7.4			
FM (30°-60°)	4886.4	40.9			
FH (60°-80°)	3804.8	31.8			G2/5000
FVH (80°-90°)	126.1	1.1			G2/225
BL (0°-30°)	452.9	3.8	B1/500		
BM (30°-60°)	939.7	7.9	B1/1000		
BH (60°-80°)	755.9	6.3	B2/1000		G2/1000
BVH (80°-90°)	99.6	0.8			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 II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0
2.5°	1841.1	1837.2	1836.5	1824.7	1818.5	1805.2	1773.9	1741.9	1712.1	1696.6	1680.1
5°	1995.2	1987.4	1983.4	1963.9	1946.7	1917.0	1867.7	1817.0	1763.8	1736.4	1703.5
7.5°	2088.3	2089.0	2089.0	2073.3	2056.1	2020.2	1957.6	1888.1	1809.1	1773.2	1721.5
10°	2096.0	2096.8	2108.5	2112.5	2116.4	2097.6	2039.8	1952.2	1850.5	1803.7	1736.4
12.5°	2018.6	2024.1	2043.7	2071.8	2111.7	2132.0	2107.0	2020.9	1903.7	1846.6	1764.6
15°	1914.7	1920.1	1945.1	1988.1	2052.2	2120.3	2155.5	2099.9	1973.3	1906.1	1806.0
17.5°	1863.8	1870.1	1887.2	1921.7	1984.2	2075.7	2181.2	2184.4	2055.4	1978.0	1855.2
20°	1839.6	1844.3	1866.2	1894.3	1942.0	2029.5	2183.6	2273.5	2153.1	2063.2	1915.5
22.5°	1895.1	1896.7	1907.6	1923.2	1955.3	2022.6	2182.1	2365.8	2275.0	2170.3	1992.8
25°	2057.8	2047.5	2039.8	2020.2	2028.0	2075.7	2207.0	2464.3	2431.5	2311.1	2096.0
27.5°	2250.1	2248.4	2228.2	2182.8	2153.9	2184.4	2278.2	2574.5	2622.9	2490.1	2231.3
30°	2464.3	2465.0	2443.9	2388.4	2329.8	2332.9	2391.6	2701.9	2852.0	2705.8	2397.8
32.5°	2688.6	2702.7	2663.7	2608.1	2536.9	2514.3	2554.2	2856.0	3117.0	2960.7	2590.9
35°	2956.8	2959.2	2916.1	2834.8	2763.7	2727.7	2764.4	3048.3	3422.8	3260.1	2826.2
37.5°	3235.1	3236.7	3192.1	3088.2	2998.3	2974.7	3015.5	3282.0	3746.5	3601.0	3103.0
40°	3462.6	3479.1	3443.9	3346.2	3255.4	3241.4	3300.0	3561.9	4160.0	4004.4	3432.1
42.5°	3720.6	3739.4	3697.1	3595.6	3523.7	3519.0	3610.4	3880.9	4571.3	4471.1	3805.1
45°	4011.5	4038.0	3979.4	3865.2	3804.3	3907.5	3913.0	4234.3	5045.0	4993.4	4224.9
47.5°	4328.8	4350.7	4303.0	4180.3	4113.9	4263.2	4209.2	4616.6	5557.1	5553.2	4679.1
50°	4573.6	4597.9	4602.5	4548.6	4479.0	4497.7	4534.5	5018.4	6067.6	6128.6	5149.0
52.5°	4529.0	4552.4	4658.0	4799.5	4911.3	4862.8	4907.4	5445.3	6560.9	6689.9	5595.4
55°	4169.3	4181.9	4379.7	4715.9	5192.0	5423.4	5426.5	5909.7	7030.0	7210.6	6019.1
57.5°	3521.3	3522.8	3780.0	4275.7	5028.6	5786.9	6245.8	6492.9	7519.4	7786.0	6544.5
60°	2491.6	2497.8	2797.3	3445.4	4443.0	5743.2	7127.0	7536.6	8086.2	8432.6	7221.5
62.5°	1479.2	1493.3	1719.2	2239.1	3300.0	5180.2	7647.7	9393.5	8921.3	9380.9	8305.1
65°	962.4	974.2	1109.4	1370.5	1949.8	3769.1	7476.4	11191.6	10501.2	10872.6	9862.5
67.5°	741.1	750.5	856.8	1014.8	1196.1	2037.4	5977.7	11568.4	12424.5	12540.3	11176.8
69°	651.2	659.1	737.2	888.9	1007.0	1348.7	4454.7	10884.3	12905.3	12968.7	11193.1
70°	603.5	609.8	683.3	814.7	924.8	1076.6	3409.5	10090.0	12729.4	12891.2	10870.3
72.5°	497.3	502.7	555.1	655.9	756.0	766.9	1510.5	7367.8	10718.6	11236.2	9198.8
75°	415.1	418.3	452.7	526.2	612.1	610.6	771.6	4173.3	6540.6	7157.5	5679.8
77.5°	346.4	348.7	371.3	416.8	483.1	480.8	543.4	1801.3	2888.0	2786.3	1955.3
80°	305.7	307.3	319.0	330.7	373.0	370.6	402.6	827.2	1175.1	1086.0	739.6
82.5°	232.2	235.3	294.7	300.2	289.3	279.1	280.7	481.6	602.0	548.1	397.1
85°	131.3	132.2	189.2	221.3	251.7	189.2	182.2	248.6	297.1	260.3	173.6
87.5°	58.6	61.0	90.7	104.8	136.1	111.0	103.9	105.6	128.2	106.3	68.8
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°	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0	1677.0
2.5°	1664.4	1651.1	1619.9	1587.8	1555.8	1535.4	1514.4	1494.8	1487.0	1486.2	1471.4
5°	1671.5	1640.2	1569.1	1491.0	1416.7	1358.8	1310.3	1279.0	1248.5	1243.1	1229.8
7.5°	1673.9	1623.0	1507.3	1382.2	1268.9	1189.2	1140.7	1119.5	1104.7	1100.8	1096.1
10°	1673.0	1601.1	1438.6	1267.3	1138.3	1078.1	1060.1	1064.8	1071.0	1074.2	1074.2
12.5°	1685.6	1591.0	1369.7	1159.4	1053.8	1025.0	1039.0	1063.3	1082.0	1089.9	1091.4
15°	1708.2	1584.8	1293.9	1065.6	994.4	1001.5	1035.9	1071.0	1097.6	1109.4	1112.6
17.5°	1736.4	1576.2	1206.4	988.2	960.0	984.3	1028.9	1073.4	1105.5	1120.3	1122.7
20°	1767.7	1563.6	1115.6	930.4	929.6	960.0	1004.6	1054.7	1089.0	1105.5	1104.7
22.5°	1809.9	1551.9	1031.2	888.1	896.0	924.1	960.9	1006.2	1038.2	1053.1	1050.0
25°	1866.2	1541.0	955.3	850.6	857.6	876.4	902.2	936.6	959.3	967.1	961.6
27.5°	1942.0	1532.4	896.0	816.2	815.4	824.0	839.6	858.5	869.4	867.1	858.5
30°	2035.1	1523.8	852.2	785.7	774.8	774.0	781.0	792.0	799.0	784.9	777.9
32.5°	2139.0	1508.9	813.0	759.1	739.6	732.5	735.7	750.5	779.5	765.4	760.0
35°	2261.7	1491.7	774.0	730.2	715.3	702.1	704.4	736.4	824.0	813.9	808.4
37.5°	2409.6	1476.0	738.1	699.0	698.2	681.7	680.2	718.5	835.8	813.9	809.2
40°	2587.0	1472.9	705.9	664.5	677.1	670.7	665.3	688.8	770.9	726.3	717.7
42.5°	2801.2	1487.0	682.5	631.7	652.8	667.7	657.5	663.0	696.6	656.7	649.7
45°	3051.4	1525.3	665.3	602.8	627.0	665.3	653.6	648.9	654.4	632.5	627.8
47.5°	3343.0	1593.3	653.6	578.6	602.8	659.1	652.0	642.6	640.3	627.8	624.6
50°	3655.0	1684.8	645.8	556.7	580.9	648.1	651.2	637.9	634.0	628.6	627.0
52.5°	3964.5	1784.1	636.4	537.9	562.9	634.8	652.0	633.3	627.8	624.6	623.1
55°	4272.6	1887.2	619.2	521.5	549.6	619.2	651.2	627.0	620.7	620.7	620.7
57.5°	4672.1	2044.5	596.5	508.2	532.4	598.8	641.1	620.0	611.4	612.1	613.0
60°	5249.1	2307.9	571.5	493.4	509.7	575.4	625.4	607.4	597.3	600.5	601.2
62.5°	6213.0	2768.4	537.2	472.2	486.3	550.3	605.1	590.2	580.9	586.4	587.2
65°	7498.3	3325.8	491.7	445.6	462.1	522.2	579.3	570.0	559.8	573.1	572.2
67.5°	8282.4	3489.2	444.1	417.5	438.6	492.6	547.3	543.4	536.3	559.8	558.2
69°	8025.3	3193.7	416.8	399.5	422.2	472.2	526.9	525.4	519.9	542.6	541.0
70°	7625.8	2917.7	399.5	387.8	413.6	459.7	513.6	513.6	508.2	527.7	523.9
72.5°	6125.4	2164.1	359.7	358.0	383.9	425.3	477.7	481.6	478.4	485.5	481.6
75°	3596.3	1304.1	320.5	325.2	347.9	388.5	437.8	440.9	437.8	437.0	437.8
77.5°	1247.0	584.8	283.1	290.0	309.5	351.1	394.0	400.3	395.6	390.2	391.7
80°	487.8	340.1	242.3	252.6	268.9	308.8	350.3	354.1	347.1	346.4	340.1
82.5°	293.2	207.1	188.4	204.8	225.2	268.1	302.6	301.0	295.5	327.5	286.9
85°	127.5	114.9	137.6	154.1	164.2	200.9	255.6	248.6	235.3	207.1	202.4
87.5°	51.6	59.4	75.8	91.5	98.5	129.8	175.1	168.9	171.2	140.8	139.9
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)