

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: P196263

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196263
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 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: 18137.9 lumens
Efficiency: N/A
Efficacy: 109.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B3 - U0 - G3

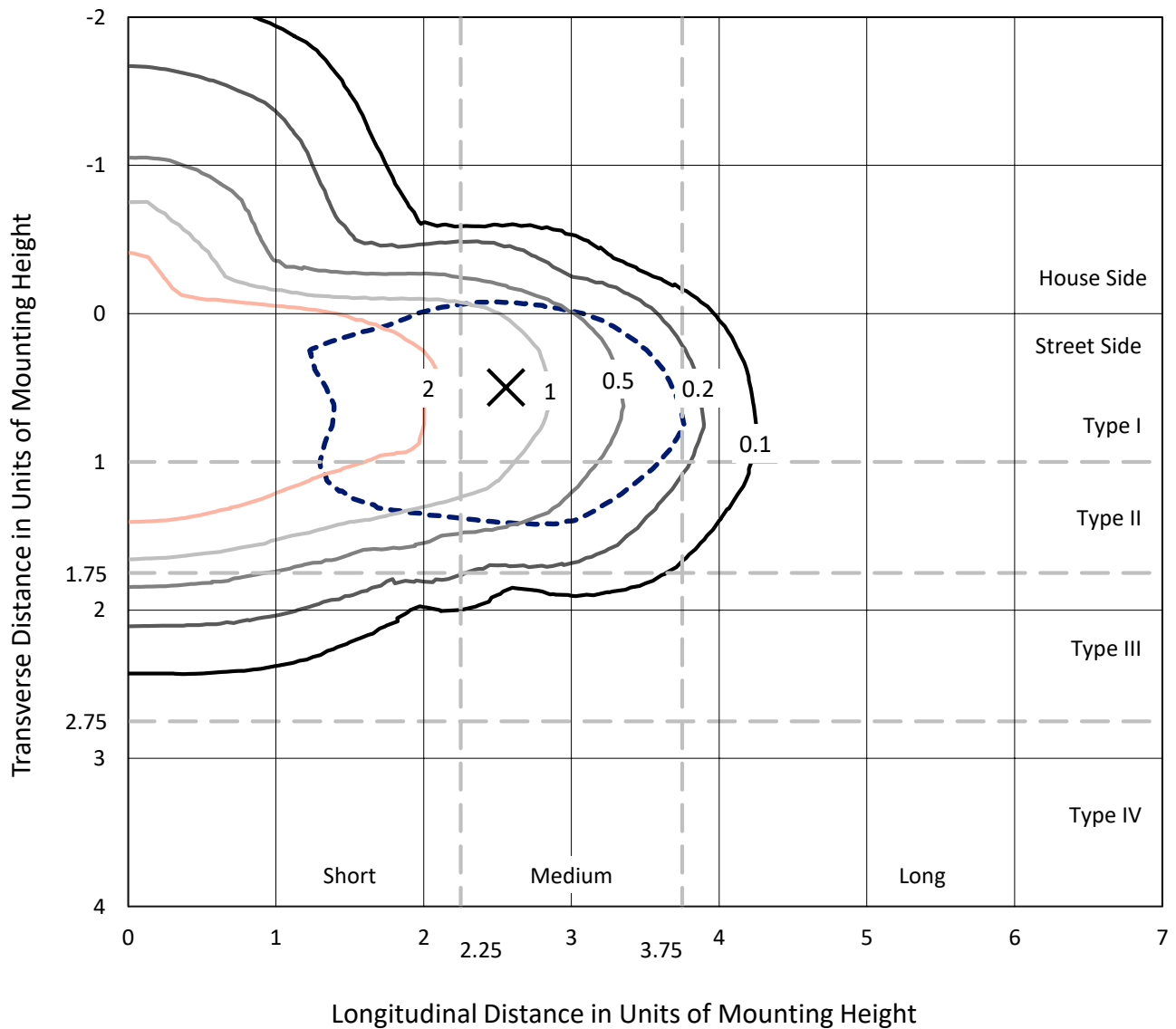
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

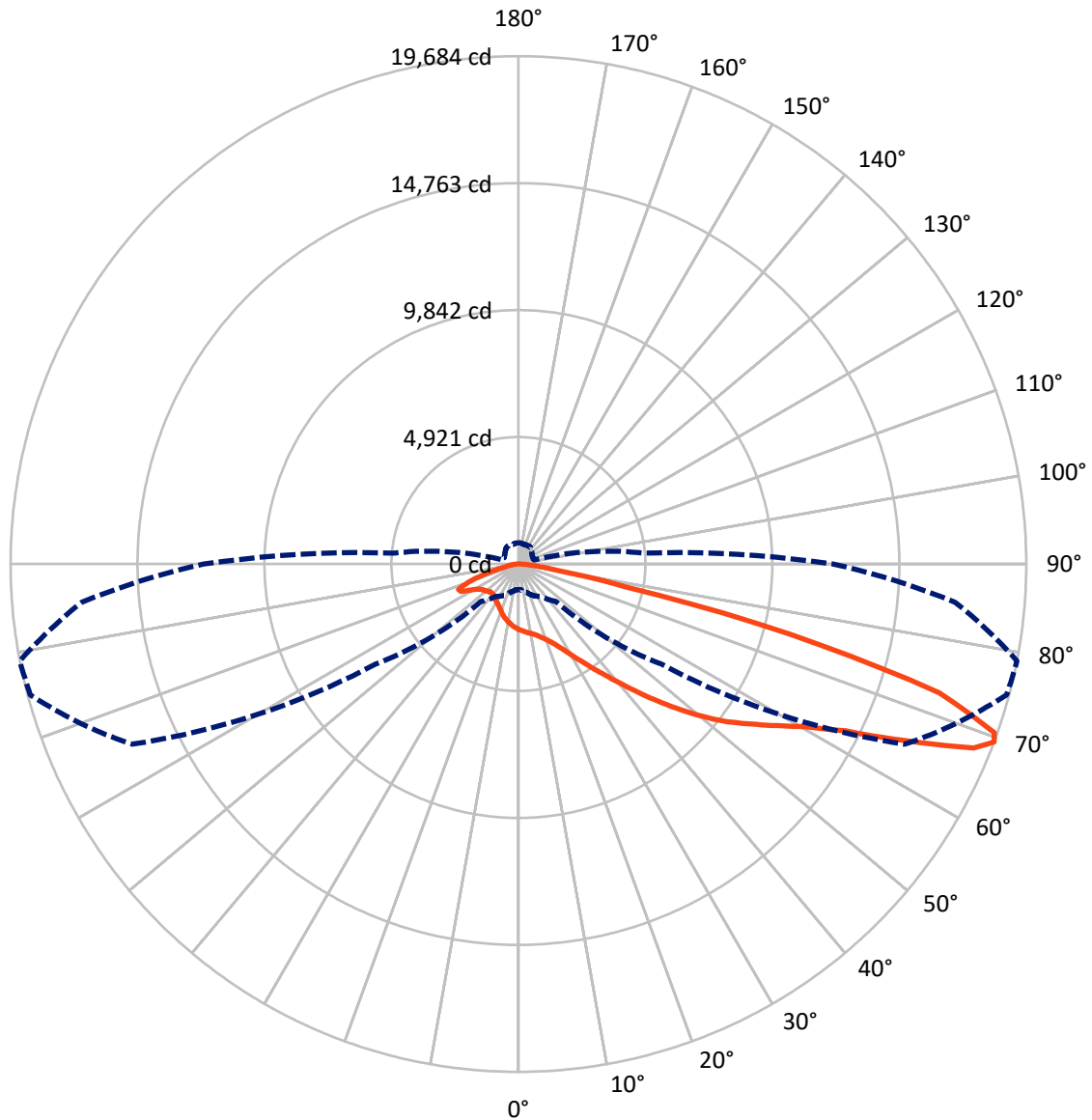


Based on 25 foot mounting height. Maximum calculated value = 4.9 fc
 Type II - Medium - Full Cutoff

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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	3412.1	0.0	3412.1
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	14725.9	0.0	14725.9
	% Fixture	81.2	0.0	81.2
Total	Lumens	18137.9	0.0	18137.9
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	236.0	1.3
10°-20°	676.5	3.7
20°-30°	1117.9	6.2
30°-40°	1810.1	10.0
40°-50°	2891.7	15.9
50°-60°	4141.2	22.8
60°-70°	4613.9	25.4
70°-80°	2308.3	12.7
80°-90°	342.6	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°	18137.9	100.0
0°-180°	18137.9	100.0



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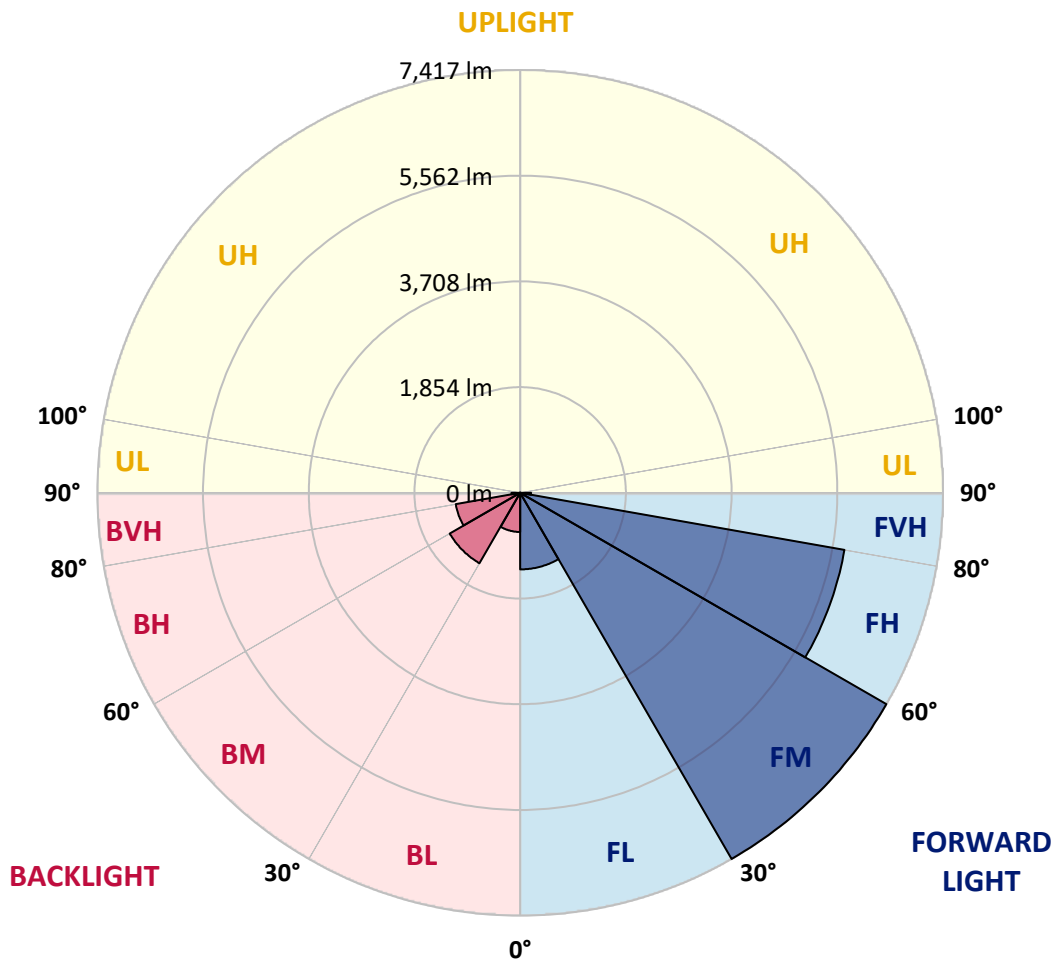
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1343.0	7.4			
FM (30°-60°)	7416.6	40.9			
FH (60°-80°)	5774.9	31.8			G3/7500
FVH (80°-90°)	191.4	1.1			G2/225
BL (0°-30°)	687.4	3.8	B2/1000		
BM (30°-60°)	1426.3	7.9	B2/2500		
BH (60°-80°)	1147.3	6.3	B3/2500		G3/2500
BVH (80°-90°)	151.1	0.8			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G3

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3
2.5°	2794.5	2788.6	2787.4	2769.6	2760.1	2740.0	2692.5	2643.8	2598.7	2575.0	2550.1
5°	3028.2	3016.4	3010.4	2980.8	2954.7	2909.6	2834.9	2757.8	2677.1	2635.5	2585.7
7.5°	3169.5	3170.6	3170.6	3146.9	3120.8	3066.3	2971.4	2865.7	2745.9	2691.3	2612.9
10°	3181.4	3182.5	3200.3	3206.2	3212.2	3183.7	3096.0	2963.0	2808.7	2737.5	2635.5
12.5°	3063.8	3072.2	3101.9	3144.6	3205.1	3235.9	3197.9	3067.4	2889.4	2802.8	2678.2
15°	2906.1	2914.4	2952.3	3017.6	3114.9	3218.1	3271.5	3187.3	2995.1	2893.0	2741.1
17.5°	2829.0	2838.4	2864.6	2916.7	3011.7	3150.5	3310.7	3315.5	3119.7	3002.2	2815.9
20°	2792.1	2799.3	2832.4	2875.2	2947.6	3080.5	3314.3	3450.7	3268.0	3131.6	2907.2
22.5°	2876.4	2878.8	2895.4	2919.1	2967.8	3069.8	3311.9	3590.8	3453.1	3294.1	3024.8
25°	3123.2	3107.8	3096.0	3066.3	3078.2	3150.5	3349.9	3740.2	3690.4	3507.7	3181.4
27.5°	3415.1	3412.8	3381.9	3313.0	3269.1	3315.5	3457.9	3907.6	3981.1	3779.4	3386.7
30°	3740.2	3741.4	3709.4	3625.1	3536.1	3540.9	3629.9	4101.0	4328.8	4106.9	3639.4
32.5°	4080.9	4102.2	4042.9	3958.6	3850.6	3816.2	3876.7	4334.8	4731.1	4493.8	3932.5
35°	4487.9	4491.4	4426.1	4302.7	4194.7	4140.2	4195.9	4626.7	5195.1	4948.2	4289.6
37.5°	4910.3	4912.6	4845.0	4687.2	4550.7	4515.1	4576.9	4981.5	5686.4	5465.6	4709.8
40°	5255.6	5280.5	5227.1	5078.7	4941.2	4919.8	5008.8	5406.3	6314.1	6078.0	5209.3
42.5°	5647.2	5675.6	5611.6	5457.3	5348.2	5341.0	5479.8	5890.5	6938.3	6786.4	5775.4
45°	6088.6	6128.9	6039.9	5866.7	5774.1	5930.8	5939.0	6426.8	7657.3	7579.0	6412.6
47.5°	6570.4	6603.7	6531.2	6345.0	6244.1	6470.7	6388.8	7007.1	8434.5	8428.6	7102.0
50°	6941.8	6978.6	6985.7	6903.8	6798.2	6826.7	6882.5	7617.0	9209.4	9302.0	7815.1
52.5°	6874.1	6909.7	7069.9	7284.7	7454.4	7380.9	7448.5	8264.9	9958.2	10154.0	8492.7
55°	6328.3	6347.3	6647.5	7157.8	7880.4	8231.7	8236.4	8969.7	10670.2	10944.3	9135.9
57.5°	5344.6	5347.0	5737.3	6489.7	7632.4	8783.5	9480.0	9855.0	11413.1	11817.6	9933.3
60°	3781.7	3791.3	4245.8	5229.5	6743.6	8717.0	10817.3	11439.1	12273.4	12799.1	10960.9
62.5°	2245.1	2266.4	2609.4	3398.5	5008.8	7862.6	11607.6	14257.4	13540.7	14238.4	12605.6
65°	1460.8	1478.6	1683.9	2080.2	2959.5	5720.8	11347.8	16986.6	15938.8	16502.4	14969.4
67.5°	1124.9	1139.2	1300.6	1540.3	1815.5	3092.4	9073.0	17558.6	18858.0	19033.5	16964.1
69°	988.5	1000.3	1119.0	1349.2	1528.4	2046.9	6761.4	16520.2	19587.8	19683.8	16989.1
70°	916.1	925.6	1037.1	1236.4	1403.8	1634.0	5174.9	15314.7	19320.8	19566.4	16499.0
72.5°	754.7	763.0	842.5	995.5	1147.4	1164.1	2292.5	11182.8	16268.7	17054.3	13961.9
75°	630.1	634.8	687.0	798.6	929.1	926.8	1171.2	6334.2	9927.3	10863.6	8620.9
77.5°	525.7	529.3	563.6	632.5	733.4	729.8	824.7	2734.0	4383.4	4229.2	2967.8
80°	464.0	466.4	484.2	502.0	566.0	562.4	611.1	1255.5	1783.5	1648.3	1122.6
82.5°	352.4	357.2	447.3	455.6	439.1	423.6	426.0	731.0	913.7	831.9	602.8
85°	199.4	200.5	287.1	335.8	382.1	287.1	276.5	377.4	450.9	395.2	263.4
87.5°	89.0	92.6	137.7	159.0	206.4	168.5	157.8	160.2	194.6	161.4	104.4
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°	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3	2545.3
2.5°	2526.4	2506.1	2458.7	2410.1	2361.4	2330.6	2298.5	2268.8	2256.9	2255.8	2233.2
5°	2537.0	2489.6	2381.5	2262.9	2150.1	2062.4	1988.8	1941.4	1895.0	1886.7	1866.6
7.5°	2540.6	2463.5	2287.8	2098.0	1925.9	1804.9	1731.3	1699.2	1676.7	1670.8	1663.6
10°	2539.4	2430.2	2183.4	1923.6	1727.8	1636.4	1609.1	1616.2	1625.7	1630.5	1630.5
12.5°	2558.4	2414.8	2078.9	1759.8	1599.6	1555.7	1577.1	1613.8	1642.3	1654.2	1656.6
15°	2592.8	2405.3	1963.9	1617.4	1509.4	1520.1	1572.3	1625.7	1666.1	1683.9	1688.6
17.5°	2635.5	2392.3	1831.0	1500.0	1457.2	1494.0	1561.6	1629.3	1677.9	1700.5	1704.0
20°	2683.0	2373.2	1693.3	1412.1	1411.0	1457.2	1524.8	1600.8	1653.0	1677.9	1676.7
22.5°	2747.0	2355.4	1565.2	1348.0	1359.9	1402.6	1458.4	1527.2	1575.9	1598.4	1593.7
25°	2832.4	2338.9	1450.0	1291.1	1301.7	1330.2	1369.4	1421.6	1456.0	1467.8	1459.5
27.5°	2947.6	2325.8	1359.9	1238.8	1237.7	1250.7	1274.4	1302.9	1319.5	1316.0	1302.9
30°	3088.8	2312.8	1293.4	1192.6	1176.0	1174.8	1185.4	1202.1	1212.7	1191.3	1180.7
32.5°	3246.6	2290.2	1234.1	1152.3	1122.6	1111.8	1116.7	1139.2	1183.0	1161.7	1153.4
35°	3432.9	2264.1	1174.8	1108.3	1085.8	1065.6	1069.2	1117.8	1250.7	1235.3	1226.9
37.5°	3657.2	2240.4	1120.1	1060.8	1059.7	1034.7	1032.4	1090.5	1268.5	1235.3	1228.2
40°	3926.6	2235.7	1071.5	1008.6	1027.7	1018.1	1009.9	1045.5	1170.1	1102.3	1089.3
42.5°	4251.7	2256.9	1035.9	958.8	990.8	1013.3	998.0	1006.3	1057.3	996.8	986.1
45°	4631.4	2315.1	1009.9	914.9	951.7	1009.9	992.1	984.9	993.2	959.9	952.9
47.5°	5074.0	2418.4	992.1	878.1	914.9	1000.3	989.6	975.4	971.8	952.9	948.1
50°	5547.5	2557.2	980.2	844.9	881.7	983.7	988.5	968.3	962.4	954.0	951.7
52.5°	6017.4	2707.9	965.9	816.4	854.4	963.5	989.6	961.2	952.9	948.1	945.7
55°	6485.0	2864.6	939.8	791.5	834.2	939.8	988.5	951.7	942.1	942.1	942.1
57.5°	7091.3	3103.0	905.4	771.3	808.1	909.0	973.0	941.0	927.9	929.1	930.3
60°	7967.0	3502.9	867.5	748.8	773.7	873.4	949.3	922.0	906.5	911.3	912.5
62.5°	9430.2	4201.9	815.2	716.7	738.1	835.3	918.4	895.9	881.7	890.0	891.2
65°	11380.9	5048.0	746.3	676.4	701.3	792.7	879.3	865.0	849.7	869.8	868.6
67.5°	12571.1	5295.9	674.0	633.6	665.7	747.6	830.6	824.7	814.1	849.7	847.2
69°	12180.8	4847.4	632.5	606.4	640.8	716.7	799.7	797.4	789.1	823.5	821.1
70°	11574.4	4428.6	606.4	588.6	627.7	697.8	779.6	779.6	771.3	801.0	795.0
72.5°	9297.3	3284.6	545.8	543.5	582.7	645.5	725.1	731.0	726.2	736.9	731.0
75°	5458.5	1979.3	486.5	493.7	528.0	589.7	664.5	669.2	664.5	663.3	664.5
77.5°	1892.7	887.6	429.5	440.3	469.9	532.8	598.0	607.5	600.5	592.1	594.5
80°	740.4	516.2	367.9	383.3	408.2	468.7	531.6	537.6	526.8	525.7	516.2
82.5°	445.0	314.5	286.0	310.9	341.8	407.0	459.2	456.8	448.6	497.2	435.5
85°	193.4	174.4	208.9	233.7	249.2	304.9	388.0	377.4	357.2	314.5	307.3
87.5°	78.4	90.2	115.1	138.8	149.6	197.0	265.8	256.4	259.8	213.6	212.4
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)