

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: P196252

Luminaire Tested: **NAV-AF-04-D-UNV-T2-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196252
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-04-D-UNV-T2-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 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: 16095.1 lumens
Efficiency: N/A
Efficacy: 124.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B3 - U0 - G3

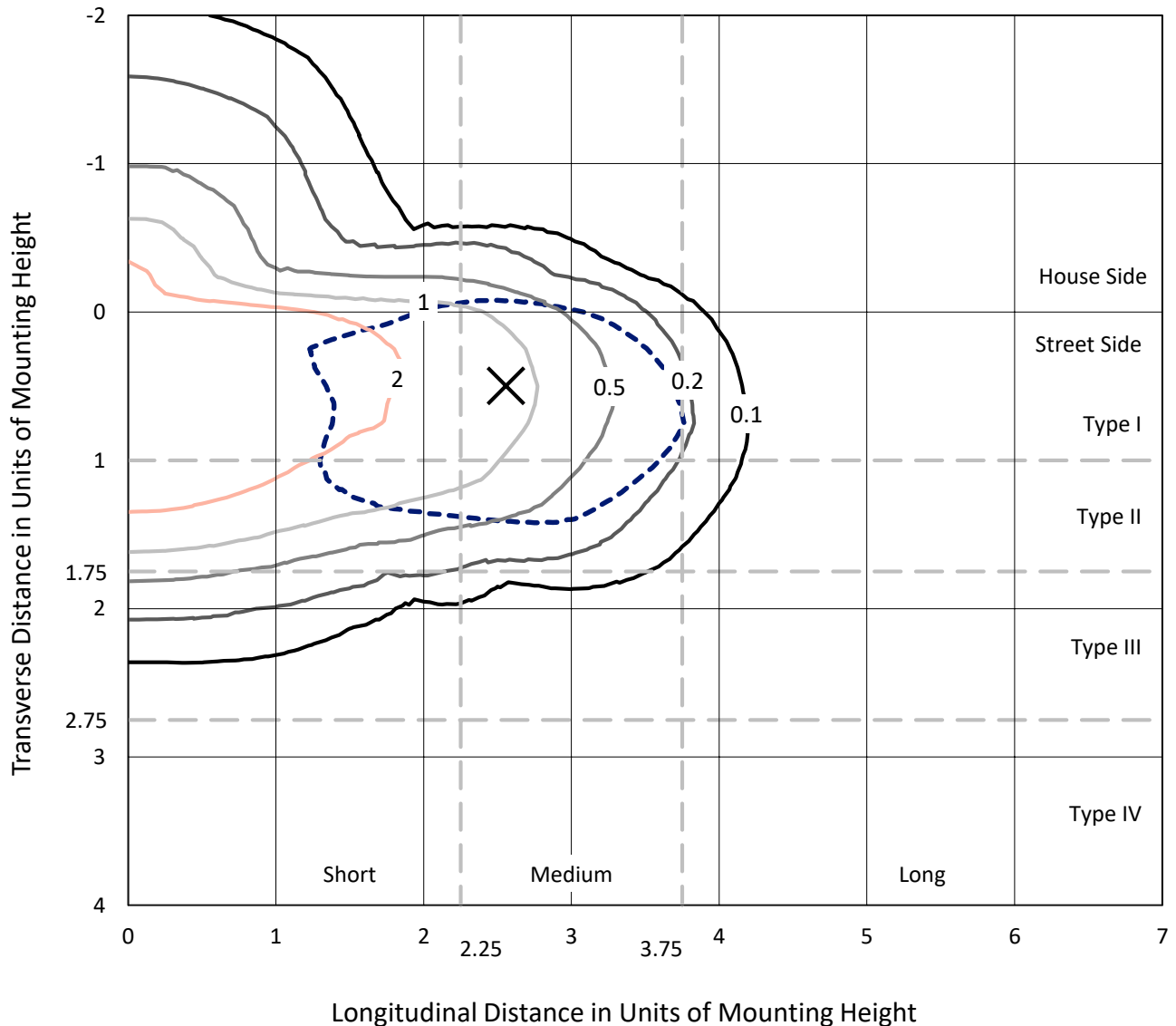
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

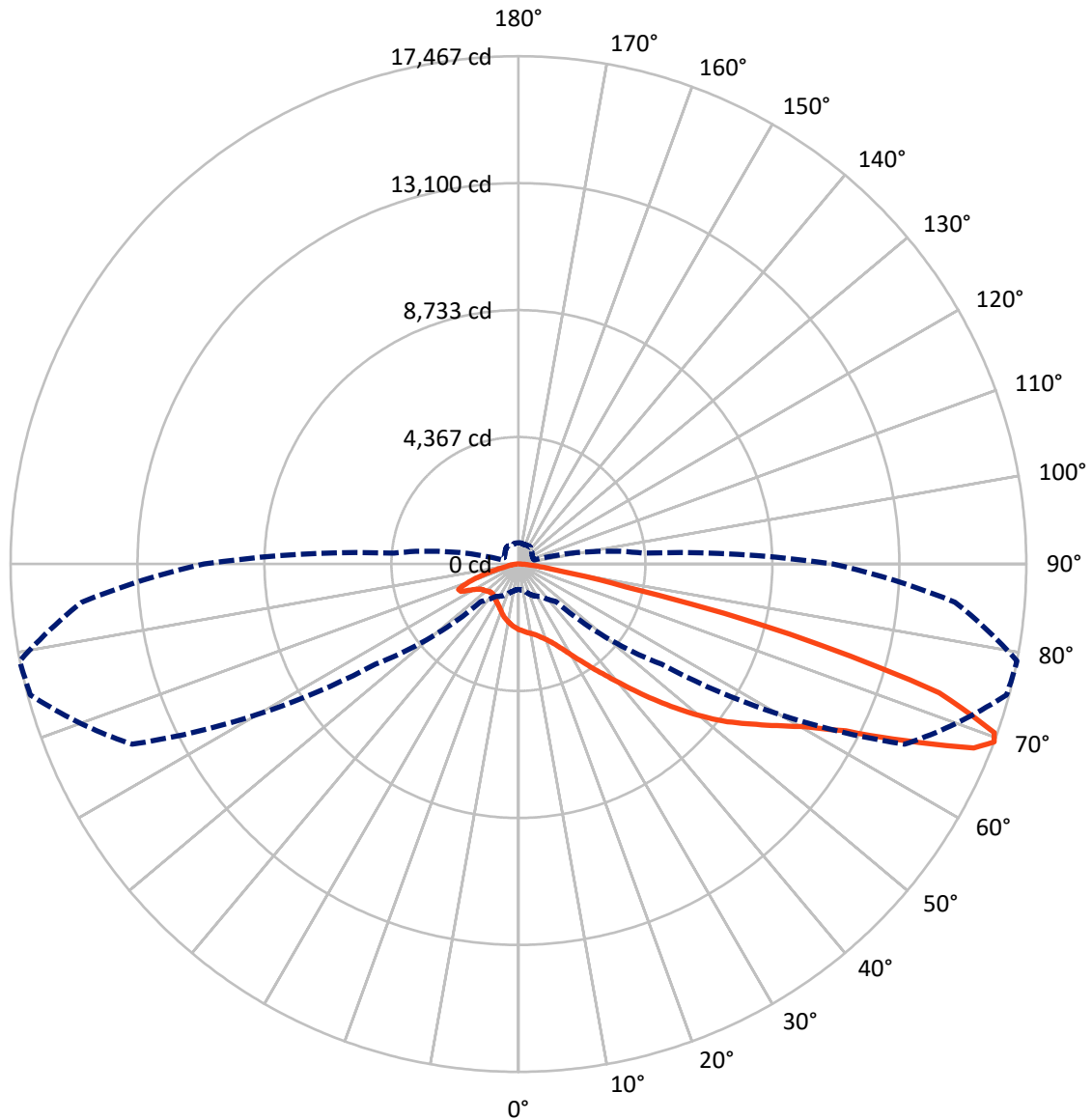
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.4 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	3027.8	0.0	3027.8
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	13067.3	0.0	13067.3
	% Fixture	81.2	0.0	81.2
Total	Lumens	16095.1	0.0	16095.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	209.4	1.3
10°-20°	600.3	3.7
20°-30°	992.0	6.2
30°-40°	1606.3	10.0
40°-50°	2566.0	15.9
50°-60°	3674.8	22.8
60°-70°	4094.2	25.4
70°-80°	2048.3	12.7
80°-90°	304.0	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°	16095.1	100.0
0°-180°	16095.1	100.0

Coefficient of Utilization



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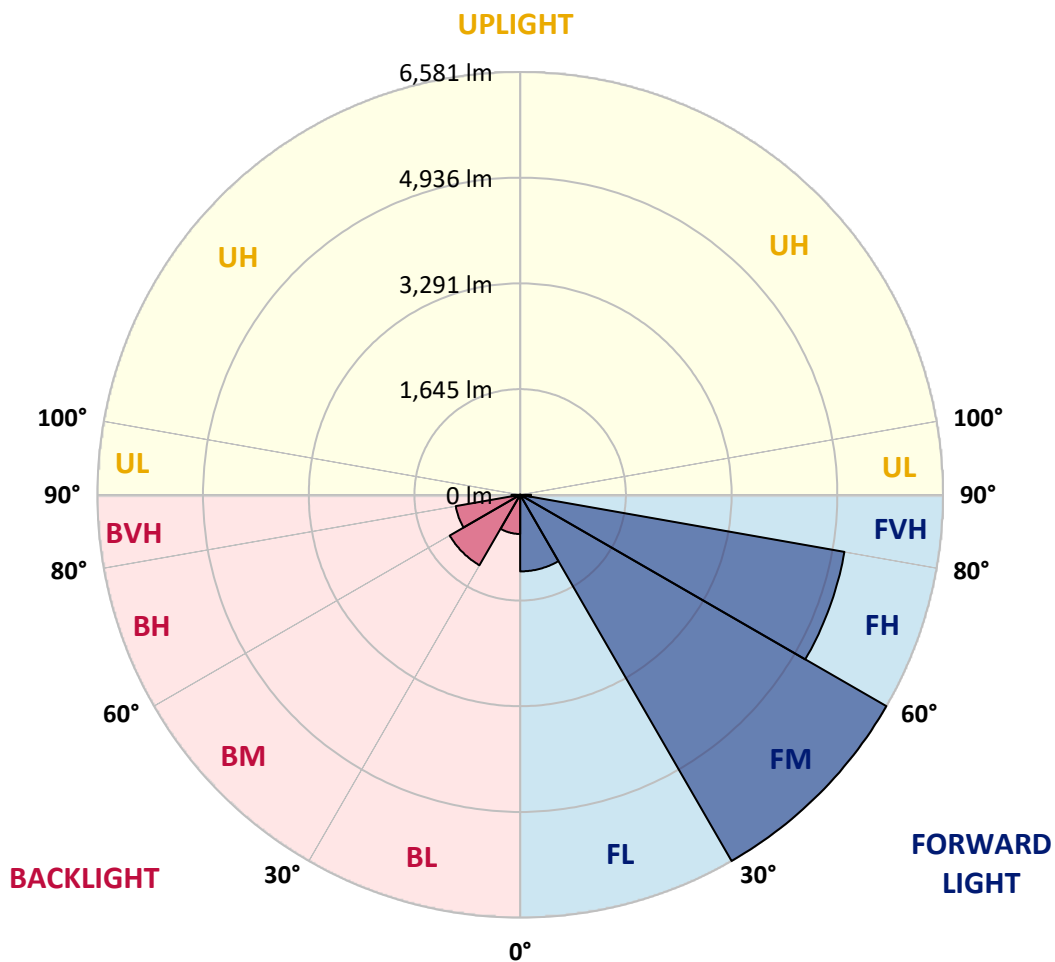
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1191.7	7.4			
FM (30°-60°)	6581.3	40.9			
FH (60°-80°)	5124.5	31.8			G3/7500
FVH (80°-90°)	169.9	1.1			G2/225
BL (0°-30°)	609.9	3.8	B2/1000		
BM (30°-60°)	1265.7	7.9	B2/2500		
BH (60°-80°)	1018.0	6.3	B3/2500		G3/2500
BVH (80°-90°)	134.1	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°	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7
2.5°	2479.7	2474.5	2473.5	2457.6	2449.3	2431.3	2389.2	2346.0	2306.0	2285.0	2262.9
5°	2687.2	2676.7	2671.4	2645.1	2621.9	2581.9	2515.5	2447.1	2375.5	2338.7	2294.5
7.5°	2812.5	2813.6	2813.6	2792.6	2769.3	2720.9	2636.7	2543.0	2436.6	2388.2	2318.7
10°	2823.0	2824.1	2839.9	2845.1	2850.5	2825.2	2747.2	2629.3	2492.4	2429.2	2338.7
12.5°	2718.8	2726.2	2752.5	2790.4	2844.1	2871.5	2837.8	2722.0	2564.0	2487.1	2376.6
15°	2578.8	2586.1	2619.8	2677.8	2764.1	2855.7	2903.0	2828.4	2657.7	2567.2	2432.4
17.5°	2510.3	2518.7	2541.9	2588.3	2672.5	2795.7	2937.8	2942.0	2768.3	2664.1	2498.8
20°	2477.7	2484.0	2513.5	2551.3	2615.6	2733.5	2941.0	3062.1	2900.0	2778.8	2579.8
22.5°	2552.5	2554.5	2569.2	2590.3	2633.5	2724.1	2938.8	3186.3	3064.1	2923.1	2684.0
25°	2771.5	2757.8	2747.2	2720.9	2731.5	2795.7	2972.6	3319.0	3274.8	3112.6	2823.0
27.5°	3030.5	3028.3	3001.0	2940.0	2901.0	2942.0	3068.4	3467.5	3532.8	3353.7	3005.2
30°	3319.0	3320.1	3291.7	3216.9	3137.9	3142.1	3221.1	3639.1	3841.3	3644.4	3229.5
32.5°	3621.2	3640.2	3587.5	3512.7	3417.0	3386.4	3440.1	3846.6	4198.3	3987.7	3489.6
35°	3982.3	3985.5	3927.6	3818.2	3722.3	3673.8	3723.3	4105.6	4609.9	4390.9	3806.5
37.5°	4357.3	4359.4	4299.4	4159.3	4038.2	4006.6	4061.3	4420.5	5045.9	4850.0	4179.3
40°	4663.6	4685.8	4638.4	4506.8	4384.7	4365.6	4444.6	4797.4	5602.9	5393.4	4622.6
42.5°	5011.1	5036.4	4979.5	4842.6	4745.8	4739.4	4862.7	5227.0	6156.8	6022.0	5124.9
45°	5402.8	5438.6	5359.6	5206.0	5123.9	5262.8	5270.1	5703.0	6795.0	6725.4	5690.4
47.5°	5830.4	5859.9	5795.6	5630.3	5540.8	5741.9	5669.3	6217.9	7484.6	7479.3	6302.1
50°	6160.0	6192.6	6198.9	6126.2	6032.5	6057.8	6107.3	6759.1	8172.3	8254.4	6935.0
52.5°	6100.0	6131.6	6273.7	6464.2	6614.8	6549.5	6609.6	7334.0	8836.7	9010.4	7536.2
55°	5615.6	5632.4	5898.8	6351.6	6992.9	7304.6	7308.8	7959.5	9468.4	9711.7	8106.9
57.5°	4742.6	4744.8	5091.2	5758.8	6772.8	7794.2	8412.3	8745.0	10127.6	10486.7	8814.6
60°	3355.9	3364.3	3767.6	4640.5	5984.2	7735.2	9599.0	10150.7	10891.1	11357.5	9726.4
62.5°	1992.2	2011.2	2315.6	3015.8	4444.6	6977.0	10300.3	12651.7	12015.6	12634.8	11185.9
65°	1296.2	1312.0	1494.2	1845.9	2626.1	5076.4	10069.7	15073.5	14143.7	14643.8	13283.4
67.5°	998.2	1010.9	1154.1	1366.8	1611.0	2744.1	8051.1	15581.0	16734.0	16889.8	15053.4
69°	877.2	887.7	993.0	1197.3	1356.2	1816.4	5999.9	14659.7	17381.6	17466.9	15075.5
70°	812.9	821.3	920.3	1097.2	1245.6	1449.9	4592.0	13589.8	17144.7	17362.6	14640.7
72.5°	669.7	677.1	747.6	883.4	1018.2	1033.0	2034.3	9923.3	14436.4	15133.5	12389.5
75°	559.1	563.3	609.7	708.7	824.5	822.4	1039.3	5620.8	8809.2	9640.1	7649.9
77.5°	466.5	469.6	500.1	561.2	650.7	647.6	731.8	2426.0	3889.8	3752.8	2633.5
80°	411.7	413.8	429.6	445.4	502.3	499.1	542.3	1114.1	1582.6	1462.6	996.1
82.5°	312.7	316.9	397.0	404.4	389.6	375.9	378.0	648.7	810.8	738.2	534.9
85°	176.9	178.0	254.8	298.0	339.1	254.8	245.3	334.8	400.2	350.7	233.7
87.5°	79.0	82.1	122.1	141.1	183.2	149.6	140.0	142.2	172.7	143.2	92.7
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°	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7	2258.7
2.5°	2241.8	2223.9	2181.7	2138.6	2095.4	2068.1	2039.7	2013.3	2002.7	2001.7	1981.8
5°	2251.3	2209.2	2113.3	2008.1	1908.0	1830.1	1764.8	1722.6	1681.6	1674.3	1656.4
7.5°	2254.5	2186.0	2030.1	1861.7	1709.0	1601.6	1536.3	1507.8	1487.9	1482.6	1476.3
10°	2253.4	2156.5	1937.5	1706.9	1533.1	1452.1	1427.8	1434.2	1442.6	1446.8	1446.8
12.5°	2270.2	2142.8	1844.8	1561.5	1419.4	1380.5	1399.4	1432.0	1457.3	1467.8	1470.0
15°	2300.8	2134.4	1742.7	1435.2	1339.3	1348.9	1395.2	1442.6	1478.4	1494.2	1498.4
17.5°	2338.7	2122.8	1624.8	1331.0	1293.1	1325.7	1385.7	1445.7	1488.9	1509.0	1512.1
20°	2380.8	2105.9	1502.6	1253.0	1252.0	1293.1	1353.1	1420.5	1466.8	1488.9	1487.9
22.5°	2437.7	2090.2	1388.9	1196.2	1206.7	1244.6	1294.1	1355.2	1398.4	1418.3	1414.1
25°	2513.5	2075.5	1286.8	1145.6	1155.1	1180.4	1215.2	1261.5	1292.0	1302.5	1295.2
27.5°	2615.6	2063.8	1206.7	1099.4	1098.2	1109.8	1130.9	1156.1	1170.9	1167.8	1156.1
30°	2740.9	2052.2	1147.8	1058.2	1043.5	1042.5	1051.9	1066.6	1076.1	1057.2	1047.7
32.5°	2880.9	2032.3	1095.1	1022.4	996.1	986.6	990.8	1010.9	1049.9	1030.8	1023.5
35°	3046.2	2009.1	1042.5	983.5	963.5	945.6	948.8	992.0	1109.8	1096.2	1088.8
37.5°	3245.3	1988.0	994.0	941.3	940.3	918.2	916.1	967.7	1125.7	1096.2	1089.9
40°	3484.4	1983.8	950.8	895.1	911.9	903.5	896.1	927.7	1038.2	978.2	966.7
42.5°	3772.8	2002.7	919.2	850.8	879.2	899.3	885.6	892.9	938.3	884.5	875.0
45°	4109.8	2054.4	896.1	811.8	844.4	896.1	880.2	874.0	881.4	851.9	845.6
47.5°	4502.5	2145.9	880.2	779.2	811.8	887.7	878.2	865.5	862.3	845.6	841.4
50°	4922.7	2269.2	869.8	749.7	782.4	872.9	877.2	859.3	854.0	846.6	844.4
52.5°	5339.7	2402.9	857.1	724.5	758.1	855.0	878.2	852.9	845.6	841.4	839.2
55°	5754.6	2541.9	834.0	702.4	740.2	834.0	877.2	844.4	836.1	836.1	836.1
57.5°	6292.7	2753.6	803.4	684.5	717.1	806.6	863.5	835.0	823.5	824.5	825.5
60°	7069.7	3108.4	769.8	664.4	686.5	775.0	842.4	818.2	804.4	808.6	809.8
62.5°	8368.0	3728.7	723.4	636.0	655.0	741.3	815.0	795.0	782.4	789.7	790.7
65°	10099.2	4479.4	662.4	600.2	622.4	703.4	780.3	767.6	753.9	771.8	770.8
67.5°	11155.3	4699.4	598.1	562.3	590.8	663.4	737.1	731.8	722.3	753.9	751.9
69°	10808.9	4301.4	561.2	538.1	568.7	636.0	709.7	707.6	700.2	730.8	728.6
70°	10270.8	3929.8	538.1	522.3	557.0	619.2	691.8	691.8	684.5	710.7	705.5
72.5°	8250.1	2914.7	484.4	482.2	517.0	572.9	643.3	648.7	644.5	653.9	648.7
75°	4843.8	1756.4	431.7	438.0	468.6	523.3	589.6	593.9	589.6	588.6	589.6
77.5°	1679.5	787.7	381.2	390.7	417.0	472.8	530.7	539.1	532.9	525.5	527.5
80°	657.0	458.1	326.4	340.1	362.2	415.9	471.8	477.0	467.5	466.5	458.1
82.5°	394.9	279.1	253.8	275.9	303.3	361.2	407.5	405.4	398.0	441.2	386.5
85°	171.7	154.8	185.4	207.5	221.2	270.6	344.3	334.8	316.9	279.1	272.7
87.5°	69.5	80.0	102.1	123.2	132.7	174.8	235.9	227.4	230.6	189.6	188.5
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)