

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: P196312

Luminaire Tested: **NAV-AF-04-D-UNV-T3**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196312
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
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-T3
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 24964.1 lumens
Efficiency: N/A
Efficacy: 111.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

Input Watts (W): 225
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

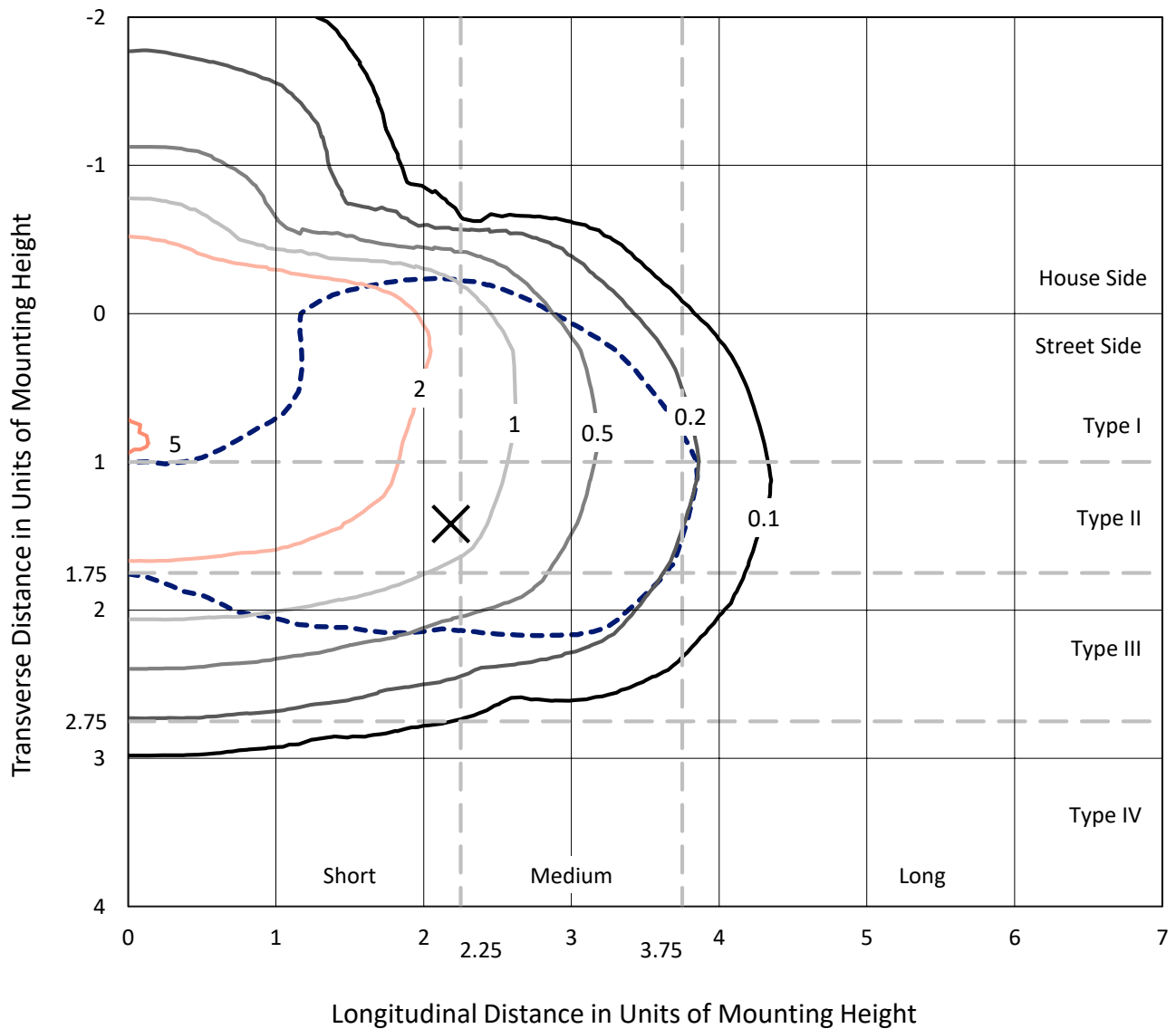


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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

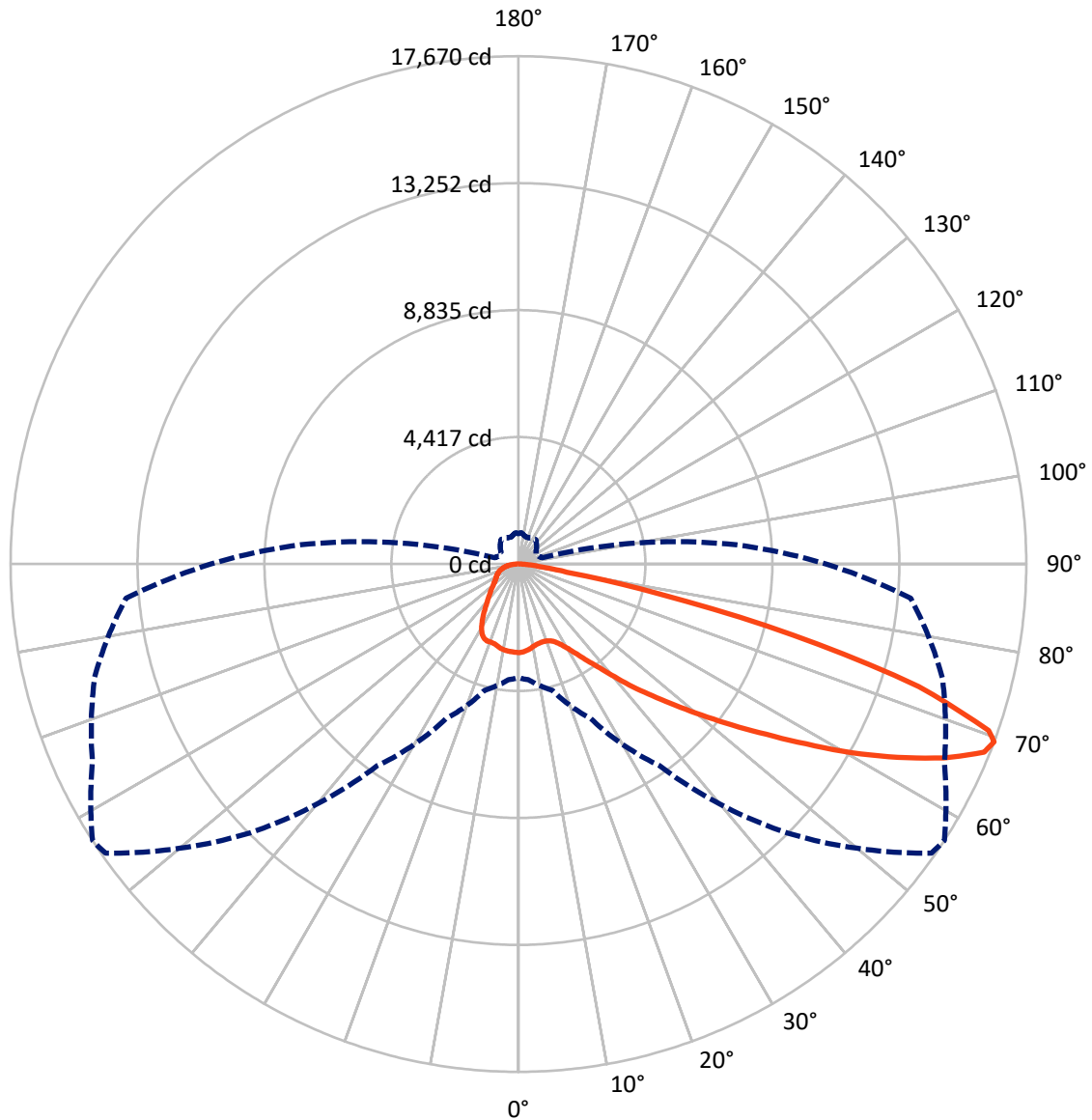


Based on 25 foot mounting height. Maximum calculated value = 5 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5508.7	0.0	5508.7
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	19455.4	0.0	19455.4
	% Fixture	77.9	0.0	77.9
Total	Lumens	24964.1	0.0	24964.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	288.8	1.2
10°-20°	821.1	3.3
20°-30°	1365.8	5.5
30°-40°	2230.3	8.9
40°-50°	3764.3	15.1
50°-60°	5855.6	23.5
60°-70°	6975.3	27.9
70°-80°	3249.5	13.0
80°-90°	413.3	1.7
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°	24964.1	100.0
0°-180°	24964.1	100.0



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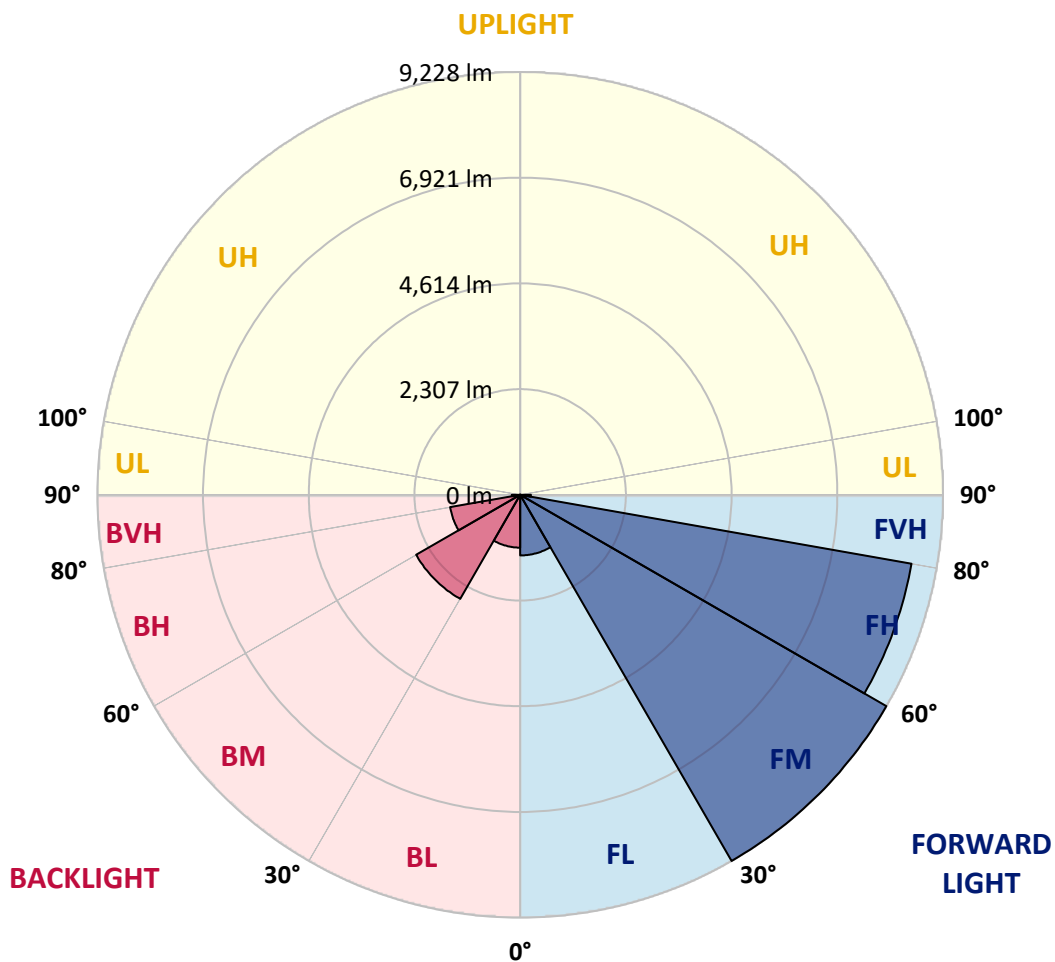
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1322.1	5.3			
FM	(30°-60°)	9228.5	37.0			
FH	(60°-80°)	8672.6	34.7			G4/12000
FVH	(80°-90°)	232.3	0.9			G3/500
BL	(0°-30°)	1153.6	4.6	B3/2500		
BM	(30°-60°)	2621.8	10.5	B3/5000		
BH	(60°-80°)	1552.3	6.2	B3/2500		G3/2500
BVH	(80°-90°)	181.0	0.7			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B3-U0-G4

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6
2.5°	3067.0	3067.0	3075.0	3075.0	3075.0	3071.8	3062.2	3065.4	3059.0	3054.2	3046.2
5°	3004.6	3007.9	3017.4	3020.7	3025.4	3027.0	3027.0	3025.4	3027.0	3027.0	3022.2
7.5°	2918.4	2921.5	2932.7	2939.1	2953.5	2966.3	2972.7	2972.7	2980.7	2987.0	2988.7
10°	2865.6	2865.6	2872.0	2872.0	2883.2	2889.5	2910.4	2908.8	2931.2	2951.9	2961.5
12.5°	2859.2	2859.2	2856.0	2844.8	2838.4	2836.8	2857.6	2860.8	2894.3	2931.2	2948.8
15°	2880.0	2880.0	2870.4	2848.0	2824.1	2812.9	2833.7	2840.0	2876.7	2919.9	2947.1
17.5°	2947.1	2945.5	2924.7	2880.0	2838.4	2820.9	2827.2	2833.7	2867.2	2916.7	2950.3
20°	3095.8	3095.8	3051.0	2969.5	2897.6	2856.0	2846.5	2851.2	2875.2	2921.5	2964.7
22.5°	3356.3	3361.0	3281.1	3146.9	3023.8	2936.0	2897.6	2902.3	2913.6	2958.3	3006.2
25°	3739.8	3727.0	3613.6	3423.4	3231.6	3081.3	3003.1	3007.9	3007.9	3049.4	3098.9
27.5°	4145.8	4149.0	3985.9	3781.3	3528.9	3305.2	3180.5	3178.8	3177.3	3217.2	3270.0
30°	4604.5	4606.0	4417.5	4180.9	3891.6	3605.6	3418.6	3417.0	3402.6	3452.2	3520.9
32.5°	5106.3	5104.7	4885.7	4618.8	4297.6	3973.1	3730.2	3728.7	3717.4	3784.6	3867.7
35°	5662.4	5662.4	5445.2	5115.9	4769.1	4407.9	4126.6	4124.9	4131.4	4222.5	4300.8
37.5°	6332.2	6346.5	6084.4	5684.8	5306.0	4920.9	4593.3	4583.6	4535.8	4689.2	4818.6
40°	7030.5	7070.5	6798.8	6332.2	5923.0	5525.1	5163.9	5157.4	5115.9	5278.9	5488.2
42.5°	7786.5	7877.6	7575.6	7099.3	6653.4	6223.4	5860.7	5843.1	5683.2	5937.4	6265.0
45°	8777.4	8836.6	8398.6	7967.2	7546.8	7056.1	6624.6	6530.3	6370.5	6696.5	7121.7
47.5°	9451.9	9423.1	9149.8	8860.5	8590.4	8120.5	7457.3	7337.4	7142.4	7573.9	8042.2
50°	9870.6	9891.3	9738.0	9723.6	9709.1	9381.5	8397.0	8253.2	8027.8	8539.3	9085.8
52.5°	10147.1	10052.7	10080.0	10406.0	10800.7	10644.1	9459.8	9300.1	9068.3	9579.7	10196.6
55°	10032.0	9907.4	10158.3	10800.7	11729.4	11764.4	10626.5	10461.9	10263.8	10685.6	11532.7
57.5°	9555.7	9618.1	10014.4	10907.8	12363.8	12768.2	11967.4	11799.6	11409.7	11838.0	12801.7
60°	8886.1	9012.3	9618.1	10738.4	12808.1	13549.7	13439.4	13327.5	12656.3	12960.0	14134.6
62.5°	8166.9	8291.5	9036.3	10449.1	12608.3	14241.7	14884.1	14815.5	14032.3	14040.3	14980.1
65°	7104.1	7155.2	7916.0	9659.6	12053.7	14866.6	16330.6	16269.8	15347.6	14962.5	15216.6
67.5°	5365.2	5429.1	6054.0	7625.1	10366.1	14527.7	17486.1	17476.5	16138.8	15304.5	14654.1
69°	3962.0	4040.2	4550.1	5919.8	8571.2	13236.5	17540.4	17669.8	16353.0	15269.4	13703.1
70°	2899.1	2988.7	3460.1	4698.7	7139.3	11810.8	17075.3	17353.4	16271.5	15047.2	12961.5
72.5°	1232.2	1262.6	1494.3	2120.8	3621.6	7121.7	13986.0	14570.9	14695.6	13482.6	10126.3
75°	771.9	781.5	872.6	1088.4	1611.0	2945.5	9057.1	9854.6	10971.8	10460.3	6779.6
77.5°	581.8	589.7	642.5	749.5	1000.4	1099.6	4201.7	5010.4	6284.2	6153.2	3373.8
80°	445.9	450.7	485.9	545.0	704.8	688.9	1363.3	1713.2	2622.6	2314.2	1193.9
82.5°	350.1	351.6	382.0	393.1	492.2	463.5	684.0	762.3	1059.6	880.7	583.4
85°	310.1	314.9	345.2	287.7	314.9	279.7	375.6	407.5	562.6	530.6	220.5
87.5°	158.3	166.2	289.3	246.1	158.3	132.7	164.6	177.4	228.5	247.8	107.1
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°	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6	3084.6
2.5°	3047.8	3049.4	3054.2	3062.2	3075.0	3090.9	3110.1	3129.3	3140.5	3148.4	3145.3
5°	3022.2	3023.8	3033.5	3047.8	3063.7	3087.8	3119.7	3143.7	3161.2	3172.5	3170.8
7.5°	2990.3	2995.1	3014.2	3030.2	3052.6	3071.8	3097.4	3119.7	3137.3	3148.4	3146.9
10°	2966.3	2971.1	2995.1	3015.9	3035.0	3038.2	3033.5	3027.0	3025.4	3033.5	3030.2
12.5°	2955.1	2964.7	2987.0	3001.4	2993.5	2963.1	2927.9	2913.6	2908.8	2924.7	2926.4
15°	2958.3	2966.3	2985.5	2975.9	2932.7	2881.6	2862.4	2873.6	2883.2	2892.8	2894.3
17.5°	2966.3	2971.1	2975.9	2940.7	2880.0	2846.5	2840.0	2828.9	2800.1	2784.1	2782.5
20°	2980.7	2987.0	2979.0	2923.2	2868.8	2824.1	2747.3	2678.6	2613.1	2577.9	2563.5
22.5°	3030.2	3035.0	3011.1	2956.7	2873.6	2728.1	2573.1	2454.9	2354.2	2299.8	2279.0
25°	3127.7	3135.7	3102.1	3033.5	2816.1	2562.0	2343.0	2183.2	2056.9	1991.4	1973.8
27.5°	3298.7	3306.7	3270.0	3090.9	2681.8	2339.8	2074.4	1916.3	1807.6	1751.6	1743.6
30°	3554.4	3565.6	3532.0	3089.3	2477.3	2056.9	1812.4	1719.7	1657.4	1619.0	1617.4
32.5°	3909.2	3950.8	3813.4	3035.0	2224.7	1770.8	1614.2	1582.2	1551.9	1526.3	1526.3
35°	4359.9	4457.4	4091.4	2921.5	1946.7	1575.9	1503.9	1473.6	1435.2	1408.0	1404.8
37.5°	4898.5	5050.4	4289.6	2720.1	1706.9	1481.5	1436.8	1387.2	1326.6	1273.8	1261.0
40°	5638.5	5673.7	4387.1	2392.6	1527.9	1430.4	1374.4	1312.1	1235.4	1176.3	1169.8
42.5°	6381.7	6266.6	4367.9	2040.9	1425.6	1384.1	1310.5	1241.9	1173.1	1123.5	1123.5
45°	7227.1	6784.4	4222.5	1687.8	1332.9	1331.3	1251.4	1185.9	1133.1	1096.4	1088.4
47.5°	8035.8	7249.6	3971.6	1427.2	1237.1	1278.6	1213.0	1160.3	1112.4	1077.2	1070.8
50°	9017.1	7788.1	3704.6	1245.0	1144.3	1232.2	1197.1	1169.8	1123.5	1062.8	1056.4
52.5°	9992.1	8417.8	3498.5	1107.5	1062.8	1195.4	1206.7	1209.8	1166.7	1048.4	1040.4
55°	11038.9	9090.7	3281.1	1000.4	995.6	1177.9	1229.1	1225.8	1205.0	1051.6	1038.8
57.5°	12034.6	9766.7	2956.7	925.4	943.0	1160.3	1233.8	1182.6	1145.9	1067.7	1046.8
60°	12859.2	10326.1	2480.5	872.6	898.2	1125.1	1201.9	1125.1	1062.8	1064.4	1045.3
62.5°	13260.4	10482.7	1897.1	811.9	861.4	1067.7	1155.5	1082.0	1024.5	1070.8	1059.6
65°	12955.2	10036.8	1352.1	756.0	816.7	1000.4	1128.3	1045.3	1005.3	1102.7	1090.0
67.5°	11858.8	8822.1	981.3	706.4	773.6	931.8	1077.2	1011.7	986.1	1126.8	1097.9
69°	10693.6	7617.1	850.3	677.6	743.2	895.0	1043.6	994.1	971.7	1093.2	1051.6
70°	9725.2	6688.6	784.7	660.1	717.6	874.2	1018.0	983.0	957.4	1053.2	1003.7
72.5°	6973.0	4323.2	660.1	607.3	650.5	827.9	962.1	941.3	903.0	950.9	919.0
75°	4212.9	2256.7	561.0	553.0	580.1	763.9	896.6	871.0	832.7	837.5	821.5
77.5°	1935.4	1042.1	469.8	489.1	506.7	684.0	816.7	787.9	752.8	740.0	741.5
80°	848.6	609.0	393.1	417.2	426.7	615.3	730.4	698.5	660.1	728.8	676.1
82.5°	458.7	353.2	306.9	322.8	350.1	535.4	634.5	592.9	556.2	647.3	522.6
85°	185.4	180.6	207.8	223.7	243.0	385.1	530.6	487.4	442.7	396.4	386.8
87.5°	79.9	86.3	102.3	108.6	129.5	239.8	356.4	311.7	313.2	268.5	263.7
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)