

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: P196360

Luminaire Tested: **NAV-AF-04-D-UNV-T4FT**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196360
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
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-T4FT
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 25154.4 lumens
Efficiency: N/A
Efficacy: 111.8 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-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

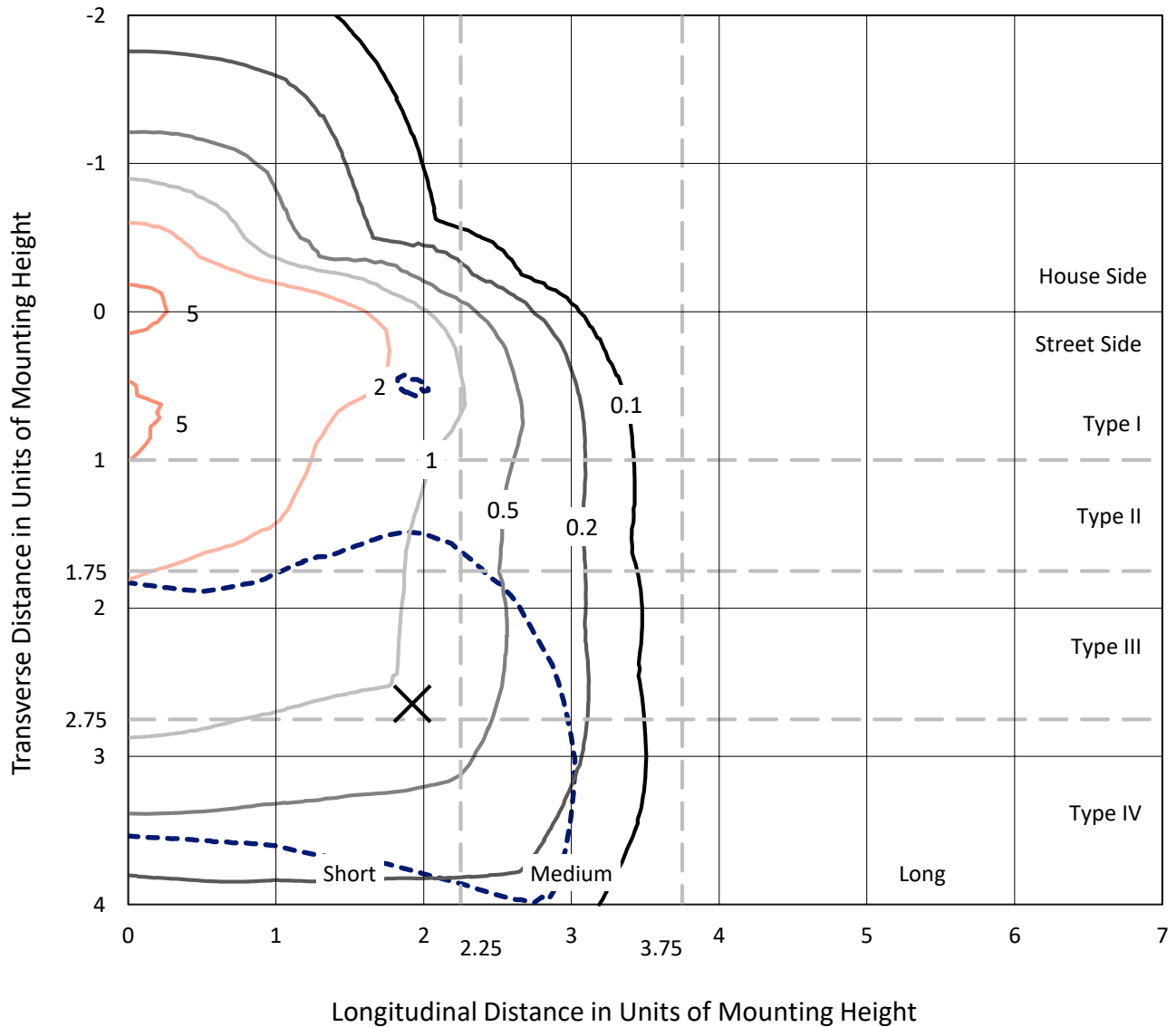


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Iso-Footcandle Lines of Horizontal Illumination

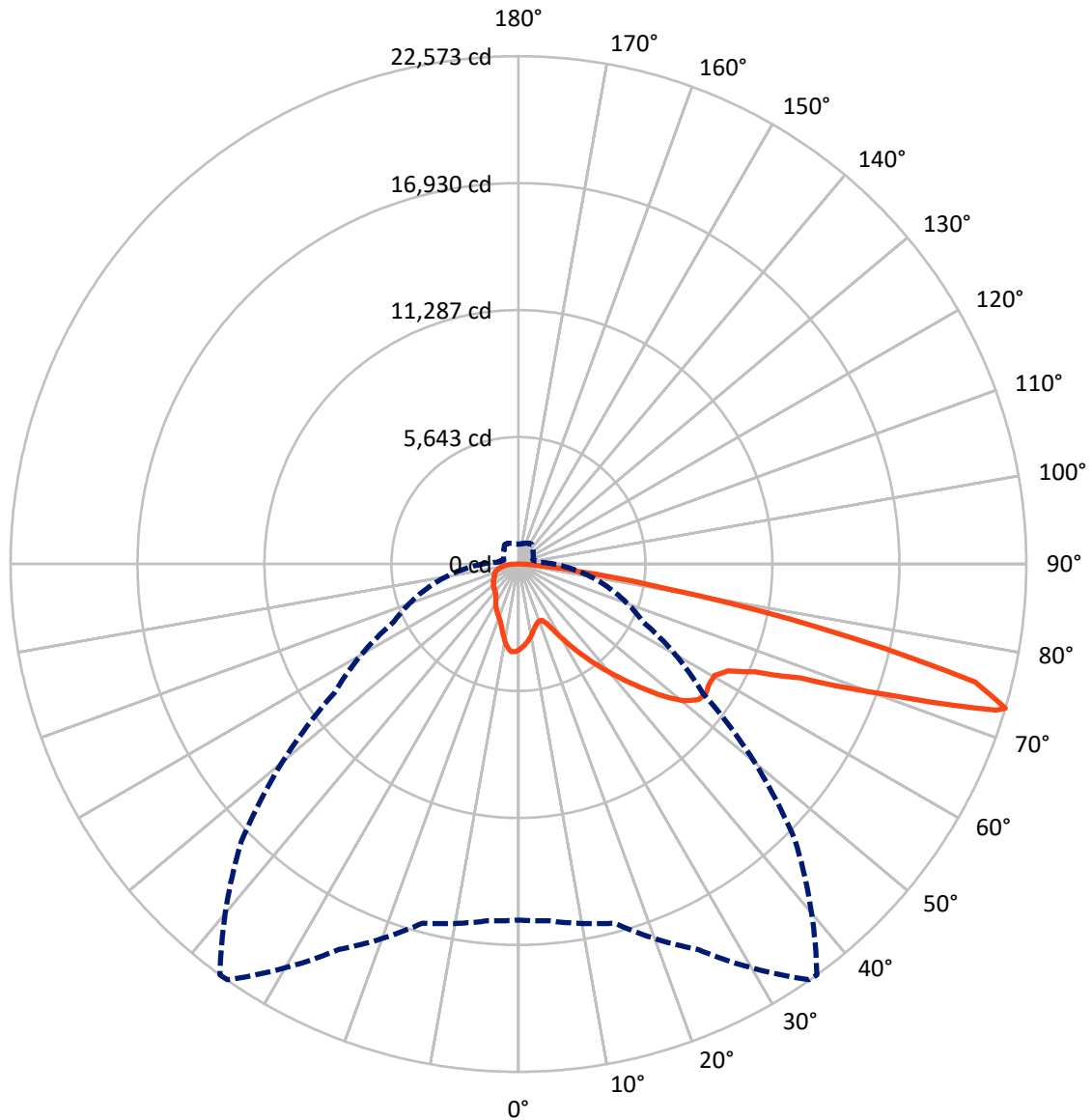
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.1 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4850.5	0.0	4850.5
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	20303.9	0.0	20303.9
	% Fixture	80.7	0.0	80.7
Total	Lumens	25154.4	0.0	25154.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	346.1	1.4
10°-20°	869.2	3.5
20°-30°	1393.5	5.5
30°-40°	2305.0	9.2
40°-50°	3566.7	14.2
50°-60°	4774.7	19.0
60°-70°	6237.3	24.8
70°-80°	5094.8	20.3
80°-90°	567.1	2.3
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°	25154.4	100.0
0°-180°	25154.4	100.0



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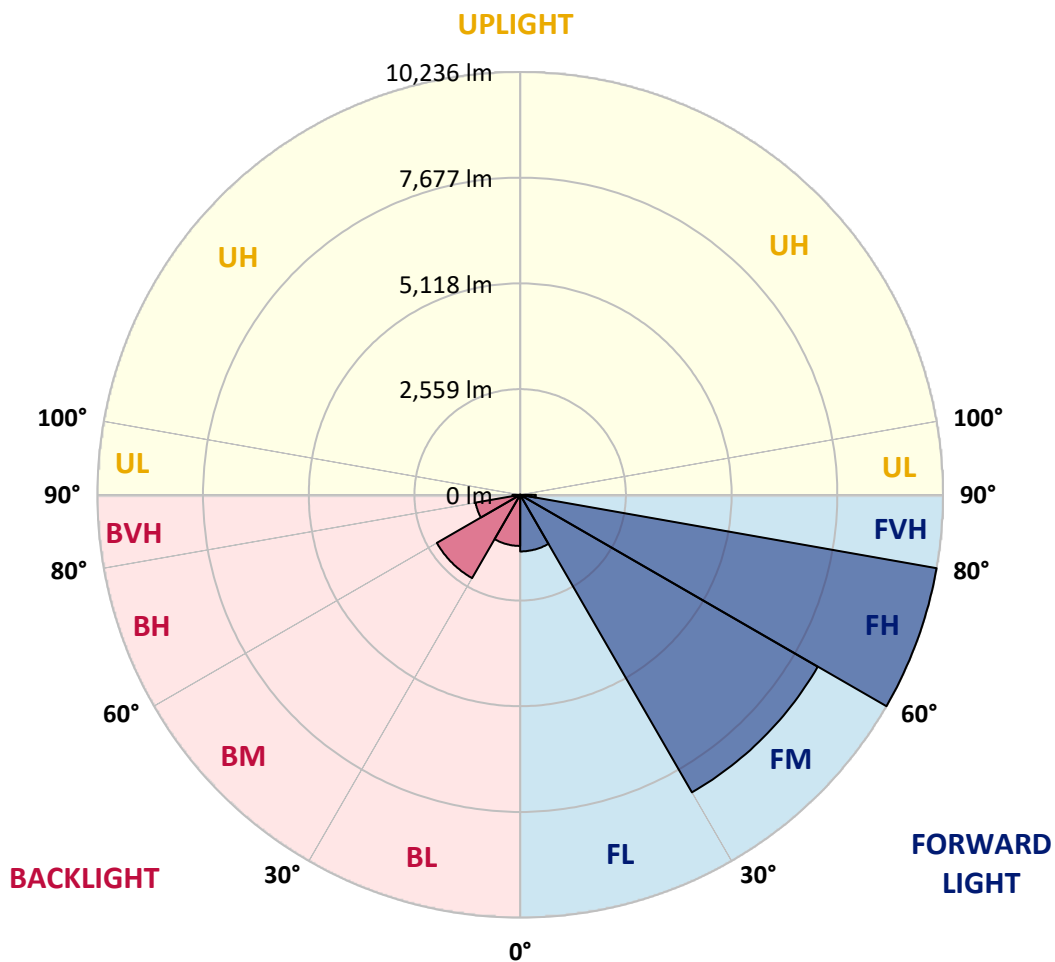
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1370.6	5.4			
FM (30°-60°)	8316.9	33.1			
FH (60°-80°)	10236.0	40.7			G4/12000
FVH (80°-90°)	380.3	1.5			G3/500
BL (0°-30°)	1238.1	4.9	B3/2500		
BM (30°-60°)	2329.5	9.3	B2/2500		
BH (60°-80°)	1096.1	4.4	B3/2500		G3/2500
BVH (80°-90°)	186.8	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 IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2
2.5°	3664.7	3674.3	3675.9	3687.1	3687.1	3685.5	3690.3	3709.4	3719.0	3741.4	3760.6
5°	3484.1	3495.3	3500.1	3519.3	3543.3	3544.8	3562.4	3599.2	3634.3	3683.9	3725.5
7.5°	3281.1	3293.9	3306.7	3346.7	3381.9	3385.0	3418.6	3477.7	3524.1	3584.8	3659.9
10°	3084.6	3087.8	3100.6	3151.7	3198.1	3202.9	3250.7	3317.9	3380.2	3464.9	3549.6
12.5°	2923.2	2932.7	2929.5	2967.9	3007.9	3011.1	3075.0	3159.7	3250.7	3346.7	3447.3
15°	2867.2	2865.6	2832.0	2830.4	2848.0	2851.3	2913.6	3012.7	3114.9	3233.2	3362.6
17.5°	2905.6	2892.8	2804.8	2750.5	2739.4	2742.5	2788.9	2897.6	3006.2	3142.1	3297.2
20°	3116.5	3067.0	2860.8	2729.7	2693.0	2693.0	2720.1	2808.1	2927.9	3086.1	3281.1
22.5°	3616.7	3540.0	3100.6	2867.2	2737.7	2724.9	2704.2	2771.3	2904.0	3094.1	3346.7
25°	4246.5	4209.7	3540.0	3233.2	2966.3	2924.7	2787.3	2811.3	2953.5	3180.5	3525.7
27.5°	4829.9	4765.9	4117.0	3765.4	3388.2	3324.3	3033.5	2936.0	3071.8	3340.2	3784.6
30°	5170.2	5127.1	4710.0	4374.3	3925.3	3843.7	3426.6	3182.1	3282.8	3604.0	4152.2
32.5°	5541.0	5515.4	5304.5	4999.3	4507.0	4412.7	3934.8	3583.2	3605.6	3954.0	4594.9
35°	5900.6	5934.1	5814.4	5590.5	5133.5	5045.6	4617.3	4107.5	4003.5	4347.1	5067.9
37.5°	6332.2	6340.1	6265.1	6119.6	5791.9	5720.0	5366.8	4666.8	4436.6	4765.9	5525.1
40°	7193.6	7067.4	6773.3	6658.2	6463.2	6418.4	6015.7	5179.8	4839.4	5195.8	5956.5
42.5°	8125.3	7928.8	7468.5	7279.9	7201.6	7160.0	6555.9	5521.9	5216.5	5625.7	6380.0
45°	8876.6	8716.7	8266.0	8032.6	8042.2	7975.1	7027.4	5827.1	5625.7	6057.3	6853.2
47.5°	9616.5	9349.6	8844.5	8811.0	8922.9	8823.8	7478.1	6132.4	6052.5	6527.1	7326.3
50°	9664.4	9421.5	9216.9	9485.4	9677.2	9554.2	7887.3	6532.0	6495.1	7096.1	7936.8
52.5°	9081.0	9046.0	9357.5	9809.9	10127.9	10017.7	8221.3	6942.7	6947.5	7807.3	8679.9
55°	8868.5	8823.8	9197.8	9753.9	10183.9	10118.3	8470.5	7406.2	7449.3	8670.3	9477.4
57.5°	9226.5	9114.6	9188.1	9648.5	10052.8	10014.5	8729.5	7920.8	7999.1	9664.4	10214.3
60°	10337.3	10108.7	9718.7	9805.1	10057.6	10035.2	9100.3	8494.6	8625.6	10700.1	10680.9
62.5°	12001.1	11742.1	10947.8	10564.2	10508.3	10465.1	9712.4	9199.4	9264.9	11448.0	10409.2
65°	13826.2	13548.1	12603.6	11975.5	11646.2	11553.5	10700.1	10049.6	9638.9	11446.4	9351.2
67.5°	15875.1	15581.1	14639.7	14040.3	13683.9	13525.8	12303.1	10736.8	9517.4	10477.9	7482.9
70°	17973.6	17693.9	17262.4	17471.7	17628.3	17387.0	14828.3	10965.4	8644.8	8214.8	5024.8
72.5°	16859.7	16837.3	17164.9	19149.8	22168.9	22216.9	17350.3	10319.7	6678.9	4882.5	2678.6
73°	15825.6	15919.9	16527.2	18902.1	22557.3	22573.3	17399.8	9985.6	6132.4	4206.5	2352.6
75°	8198.8	8838.2	11091.7	15326.9	20887.1	20962.2	15338.1	7559.6	3655.1	2336.6	1585.5
77.5°	2196.0	2167.2	3573.6	7466.9	13925.3	13826.2	9691.6	3659.9	1751.6	1465.6	1112.4
80°	752.8	762.3	1216.3	2731.4	6499.9	6731.7	4206.5	1596.6	1152.4	1021.2	787.9
82.5°	383.6	396.4	636.1	1161.9	2718.6	2661.0	1353.7	939.8	771.9	620.1	441.1
85°	204.6	210.9	350.1	602.5	997.3	1008.5	476.3	501.9	490.6	351.6	217.4
87.5°	100.7	103.9	167.8	265.4	369.2	356.4	166.2	217.4	241.3	198.1	119.9
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°	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2	3810.2
2.5°	3784.6	3784.6	3805.4	3840.6	3866.1	3890.1	3906.0	3931.6	3946.0	3944.4	3942.8
5°	3759.0	3775.0	3816.5	3859.7	3888.4	3907.7	3907.7	3918.8	3918.8	3914.0	3907.7
7.5°	3699.9	3727.0	3787.8	3826.1	3834.1	3813.4	3771.8	3739.8	3699.9	3679.1	3671.1
10°	3605.6	3640.8	3717.5	3735.0	3693.5	3619.9	3519.3	3433.0	3356.3	3321.1	3310.0
12.5°	3512.9	3559.3	3631.2	3604.0	3504.9	3361.0	3206.0	3087.8	3001.4	2967.9	2956.7
15°	3436.2	3492.1	3548.0	3463.3	3290.7	3090.9	2919.9	2809.6	2744.2	2718.6	2712.1
17.5°	3385.0	3450.5	3469.7	3311.5	3071.8	2848.0	2696.2	2624.3	2595.5	2584.3	2581.1
20°	3388.2	3461.8	3415.4	3164.5	2860.8	2635.4	2534.8	2514.0	2514.0	2514.0	2512.4
22.5°	3476.1	3540.0	3393.0	3027.0	2657.8	2456.4	2413.3	2430.9	2443.7	2443.7	2442.1
25°	3658.3	3693.5	3409.0	2894.3	2467.7	2301.4	2303.1	2336.6	2347.8	2347.8	2344.6
27.5°	3936.4	3907.7	3437.7	2747.3	2280.7	2160.8	2183.2	2213.6	2221.5	2216.7	2215.1
30°	4284.8	4169.8	3461.8	2574.8	2104.8	2029.7	2048.9	2066.5	2060.1	2048.9	2047.3
32.5°	4674.8	4436.6	3447.3	2381.3	1949.8	1893.9	1905.0	1914.7	1905.0	1877.9	1877.9
35°	5061.6	4678.0	3369.1	2170.4	1826.8	1762.9	1761.2	1791.6	1790.0	1758.0	1759.7
37.5°	5400.4	4868.2	3217.2	1977.0	1721.3	1666.9	1673.3	1692.5	1702.1	1658.9	1654.1
40°	5696.1	4999.3	3003.1	1812.4	1636.6	1639.8	1622.2	1591.8	1580.7	1561.4	1558.3
42.5°	5974.1	5090.3	2776.1	1675.0	1593.5	1630.2	1571.0	1499.1	1468.8	1486.3	1497.5
45°	6247.5	5192.6	2557.2	1561.4	1539.1	1601.4	1519.9	1440.0	1404.8	1412.8	1424.0
47.5°	6581.5	5334.9	2293.5	1440.0	1456.0	1548.6	1488.0	1401.6	1348.9	1316.9	1307.3
50°	7021.0	5541.0	1951.4	1309.0	1368.1	1491.2	1460.8	1345.7	1288.2	1224.3	1208.2
52.5°	7570.8	5736.0	1606.2	1203.5	1296.2	1441.6	1416.1	1297.7	1227.4	1150.7	1137.9
55°	8119.0	5763.2	1309.0	1112.4	1214.7	1374.4	1361.6	1259.4	1160.3	1097.9	1085.1
57.5°	8502.6	5505.8	1109.2	1035.6	1136.3	1291.4	1312.1	1213.0	1104.4	1056.4	1048.4
60°	8508.9	4890.5	987.7	984.5	1077.2	1219.5	1261.0	1158.7	1069.2	1037.3	1030.8
62.5°	7832.8	3941.2	909.4	946.1	1034.0	1160.3	1222.6	1128.3	1061.2	1048.4	1042.1
65°	6565.5	2911.9	847.1	910.9	994.1	1110.7	1190.7	1118.8	1058.0	1053.2	1048.4
67.5°	4847.4	1996.2	794.3	866.2	949.3	1059.6	1160.3	1104.4	1038.8	1058.0	1051.6
70°	3049.4	1332.9	744.8	815.1	890.2	1000.4	1120.3	1078.8	1014.9	1003.7	983.0
72.5°	1721.3	963.7	685.7	749.5	813.5	922.2	1066.0	1035.6	960.6	915.7	895.0
73°	1555.1	912.6	671.3	733.6	796.0	906.2	1053.2	1022.8	944.6	895.0	875.9
75°	1137.9	746.3	605.7	668.1	722.4	832.7	992.5	958.9	874.2	815.1	802.3
77.5°	824.7	575.4	521.0	576.9	624.9	730.4	901.4	863.1	779.9	748.0	735.2
80°	594.5	436.3	431.5	485.9	527.4	634.5	803.9	763.9	684.0	778.4	757.6
82.5°	354.8	279.7	316.4	377.2	420.3	532.2	698.5	652.0	575.4	581.8	495.4
85°	169.4	158.3	196.6	247.8	278.1	364.4	581.8	545.0	460.3	377.2	369.2
87.5°	75.1	71.9	94.3	110.3	148.6	218.9	397.9	353.2	334.0	199.8	156.6
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)