

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: P196317

Luminaire Tested: **NAV-AF-03-D-UNV-T3-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196317
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-03-D-UNV-T3-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20333.2 lumens
Efficiency: N/A
Efficacy: 106.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

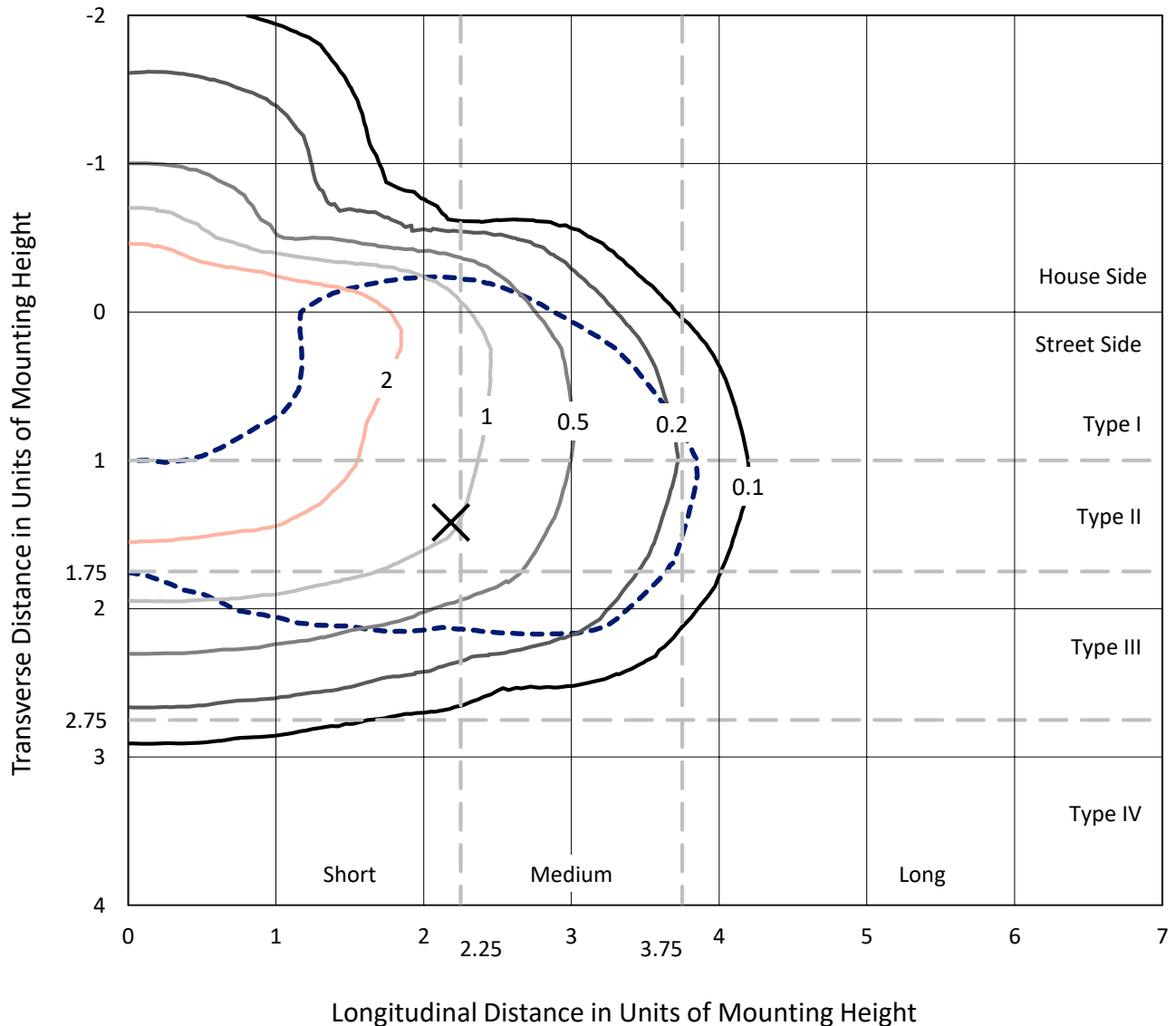
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

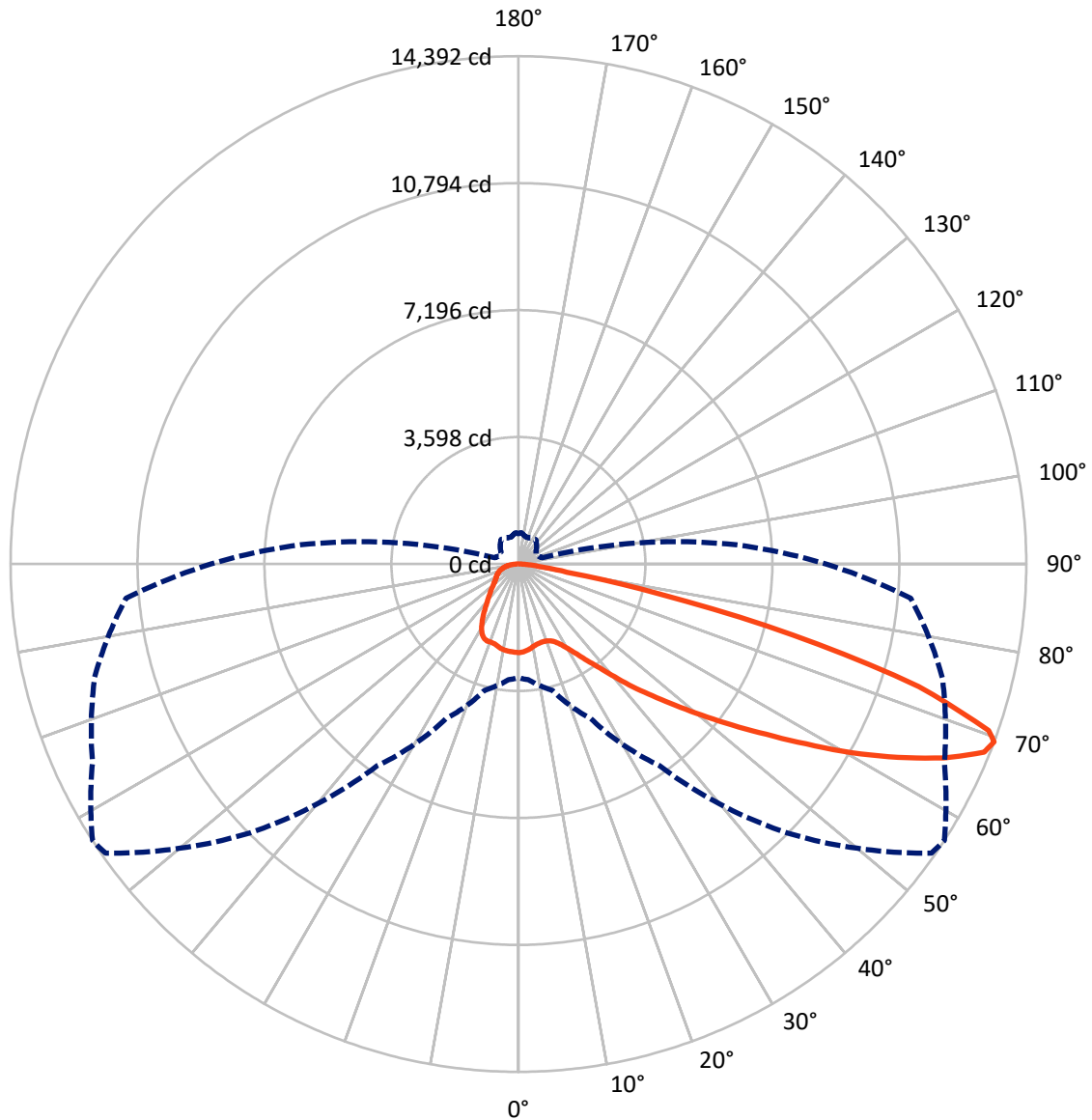
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 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	4486.8	0.0	4486.8
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	15846.4	0.0	15846.4
	% Fixture	77.9	0.0	77.9
Total	Lumens	20333.2	0.0	20333.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	235.2	1.2
10°-20°	668.8	3.3
20°-30°	1112.5	5.5
30°-40°	1816.6	8.9
40°-50°	3066.0	15.1
50°-60°	4769.4	23.5
60°-70°	5681.4	27.9
70°-80°	2646.7	13.0
80°-90°	336.6	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°	20333.2	100.0
0°-180°	20333.2	100.0



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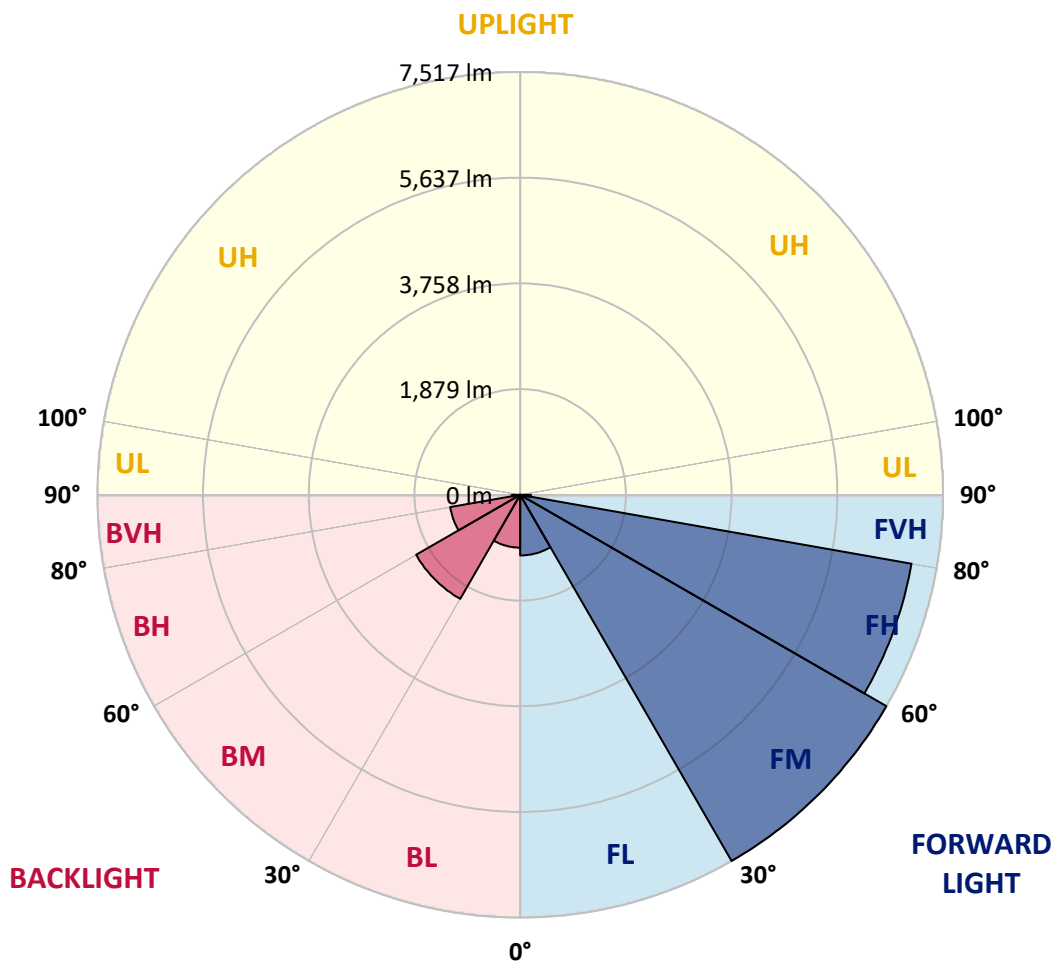
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1076.8	5.3			
FM	(30°-60°)	7516.6	37.0			
FH	(60°-80°)	7063.8	34.7			G3/7500
FVH	(80°-90°)	189.2	0.9			G2/225
BL	(0°-30°)	939.6	4.6	B2/1000		
BM	(30°-60°)	2135.5	10.5	B2/2500		
BH	(60°-80°)	1264.3	6.2	B3/2500		G3/2500
BVH	(80°-90°)	147.4	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-G3

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4
2.5°	2498.0	2498.0	2504.6	2504.6	2504.6	2501.9	2494.2	2496.7	2491.5	2487.6	2481.2
5°	2447.3	2449.9	2457.7	2460.3	2464.2	2465.5	2465.5	2464.2	2465.5	2465.5	2461.6
7.5°	2377.0	2379.6	2388.7	2393.9	2405.6	2416.0	2421.2	2421.2	2427.8	2433.0	2434.2
10°	2334.1	2334.1	2339.2	2339.2	2348.4	2353.5	2370.5	2369.2	2387.4	2404.3	2412.1
12.5°	2328.8	2328.8	2326.2	2317.1	2311.9	2310.6	2327.5	2330.1	2357.5	2387.4	2401.7
15°	2345.7	2345.7	2338.0	2319.7	2300.2	2291.1	2308.0	2313.2	2343.2	2378.3	2400.5
17.5°	2400.5	2399.1	2382.1	2345.7	2311.9	2297.5	2302.8	2308.0	2335.3	2375.7	2403.0
20°	2521.5	2521.5	2485.1	2418.7	2360.0	2326.2	2318.4	2322.3	2341.8	2379.6	2414.8
22.5°	2733.6	2737.5	2672.5	2563.1	2462.9	2391.4	2360.0	2363.9	2373.0	2409.6	2448.5
25°	3046.0	3035.7	2943.2	2788.4	2632.2	2509.8	2446.0	2449.9	2449.9	2483.7	2524.1
27.5°	3376.8	3379.3	3246.5	3079.9	2874.3	2692.0	2590.4	2589.2	2587.9	2620.4	2663.4
30°	3750.3	3751.7	3598.0	3405.4	3169.7	2936.7	2784.5	2783.1	2771.4	2811.8	2867.7
32.5°	4159.1	4157.8	3979.4	3762.0	3500.4	3236.1	3038.3	3036.9	3027.8	3082.6	3150.2
35°	4612.1	4612.1	4435.0	4166.9	3884.5	3590.3	3361.1	3359.8	3365.0	3439.2	3503.0
37.5°	5157.5	5169.2	4955.7	4630.3	4321.8	4008.0	3741.2	3733.4	3694.4	3819.3	3924.8
40°	5726.4	5758.9	5537.6	5157.5	4824.2	4500.2	4206.0	4200.7	4166.9	4299.7	4470.2
42.5°	6342.1	6416.3	6170.2	5782.3	5419.2	5069.0	4773.5	4759.2	4629.0	4836.0	5102.8
45°	7149.2	7197.4	6840.7	6489.2	6146.8	5747.2	5395.8	5318.9	5188.7	5454.3	5800.5
47.5°	7698.5	7675.1	7452.5	7216.8	6996.9	6614.2	6074.0	5976.3	5817.5	6169.0	6550.4
50°	8039.6	8056.5	7931.6	7919.8	7908.1	7641.2	6839.3	6722.2	6538.7	6955.2	7400.4
52.5°	8264.7	8188.0	8210.1	8475.7	8797.2	8669.6	7705.0	7574.8	7386.1	7802.7	8305.1
55°	8171.0	8069.5	8273.8	8797.2	9553.5	9582.1	8655.3	8521.2	8359.8	8703.5	9393.3
57.5°	7783.1	7833.9	8156.7	8884.4	10070.2	10399.6	9747.5	9610.7	9293.1	9642.0	10426.9
60°	7237.7	7340.5	7833.9	8746.4	10432.2	11036.2	10946.4	10855.2	10308.5	10555.8	11512.6
62.5°	6651.9	6753.4	7360.0	8510.7	10269.4	11599.9	12123.1	12067.1	11429.3	11435.8	12201.2
65°	5786.2	5827.9	6447.6	7867.7	9817.8	12108.8	13301.2	13251.7	12500.7	12186.9	12393.9
67.5°	4369.9	4422.0	4931.0	6210.6	8443.1	11832.9	14242.3	14234.6	13145.0	12465.5	11935.7
69°	3227.0	3290.8	3706.0	4821.7	6981.2	10781.1	14286.6	14392.1	13319.4	12436.8	11161.1
70°	2361.4	2434.2	2818.2	3827.2	5814.9	9619.9	13907.8	14134.3	13253.0	12255.9	10557.2
72.5°	1003.6	1028.4	1217.1	1727.5	2949.8	5800.5	11391.6	11868.0	11969.5	10981.5	8247.8
75°	628.7	636.6	710.7	886.5	1312.1	2399.1	7377.0	8026.6	8936.5	8520.0	5522.0
77.5°	473.8	480.4	523.3	610.5	814.9	895.6	3422.3	4081.0	5118.4	5011.7	2748.0
80°	363.1	367.1	395.8	443.9	574.1	561.1	1110.4	1395.5	2136.1	1884.9	972.4
82.5°	285.1	286.4	311.1	320.2	400.9	377.5	557.1	620.9	863.1	717.3	475.2
85°	252.6	256.5	281.2	234.4	256.5	227.8	305.9	331.9	458.2	432.2	179.6
87.5°	128.9	135.3	235.6	200.5	128.9	108.0	134.1	144.5	186.2	201.7	87.3
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°	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4	2512.4
2.5°	2482.4	2483.7	2487.6	2494.2	2504.6	2517.6	2533.2	2548.8	2557.9	2564.4	2561.9
5°	2461.6	2462.9	2470.7	2482.4	2495.5	2514.9	2541.0	2560.5	2574.9	2584.0	2582.6
7.5°	2435.5	2439.4	2455.1	2468.1	2486.3	2501.9	2522.8	2541.0	2555.3	2564.4	2563.1
10°	2416.0	2419.9	2439.4	2456.4	2472.0	2474.6	2470.7	2465.5	2464.2	2470.7	2468.1
12.5°	2406.9	2414.8	2433.0	2444.6	2438.2	2413.4	2384.8	2373.0	2369.2	2382.1	2383.5
15°	2409.6	2416.0	2431.7	2423.9	2388.7	2347.1	2331.4	2340.5	2348.4	2356.2	2357.5
17.5°	2416.0	2419.9	2423.9	2395.2	2345.7	2318.4	2313.2	2304.1	2280.7	2267.7	2266.3
20°	2427.8	2433.0	2426.4	2380.9	2336.6	2300.2	2237.7	2181.7	2128.4	2099.7	2087.9
22.5°	2468.1	2472.0	2452.5	2408.2	2340.5	2222.1	2095.8	1999.5	1917.4	1873.2	1856.2
25°	2547.6	2554.0	2526.7	2470.7	2293.7	2086.7	1908.3	1778.2	1675.4	1622.0	1607.7
27.5°	2686.8	2693.3	2663.4	2517.6	2184.3	1905.8	1689.7	1560.8	1472.2	1426.7	1420.2
30°	2895.1	2904.2	2876.8	2516.3	2017.7	1675.4	1476.2	1400.7	1349.9	1318.7	1317.4
32.5°	3184.0	3217.9	3106.0	2472.0	1812.1	1442.4	1314.8	1288.7	1264.0	1243.2	1243.2
35°	3551.2	3630.6	3332.5	2379.6	1585.6	1283.5	1225.0	1200.2	1168.9	1146.8	1144.3
37.5°	3989.8	4113.5	3493.9	2215.6	1390.3	1206.7	1170.3	1130.0	1080.4	1037.5	1027.0
40°	4592.5	4621.2	3573.3	1948.7	1244.4	1165.0	1119.5	1068.8	1006.3	958.1	952.9
42.5°	5197.8	5104.1	3557.6	1662.3	1161.2	1127.3	1067.4	1011.5	955.4	915.1	915.1
45°	5886.5	5525.9	3439.2	1374.6	1085.7	1084.3	1019.3	965.9	922.9	893.0	886.5
47.5°	6545.1	5904.7	3234.9	1162.5	1007.5	1041.4	988.1	945.1	906.0	877.4	872.2
50°	7344.5	6343.4	3017.4	1014.1	932.0	1003.6	975.0	952.9	915.1	865.6	860.4
52.5°	8138.5	6856.3	2849.5	902.1	865.6	973.7	982.9	985.4	950.3	854.0	847.4
55°	8991.1	7404.3	2672.5	814.9	811.0	959.4	1001.1	998.4	981.5	856.5	846.1
57.5°	9802.1	7955.0	2408.2	753.7	768.0	945.1	1004.9	963.3	933.3	869.6	852.6
60°	10473.8	8410.6	2020.3	710.7	731.6	916.5	978.9	916.5	865.6	867.0	851.3
62.5°	10800.5	8538.2	1545.2	661.2	701.6	869.6	941.1	881.3	834.4	872.2	863.1
65°	10551.9	8174.9	1101.3	615.7	665.2	814.9	919.0	851.3	818.8	898.3	887.8
67.5°	9658.9	7185.6	799.2	575.4	630.0	758.9	877.4	824.0	803.2	917.7	894.3
69°	8709.9	6204.1	692.5	552.0	605.3	729.0	850.1	809.7	791.5	890.4	856.5
70°	7921.1	5447.8	639.1	537.7	584.5	712.1	829.2	800.6	779.7	857.8	817.5
72.5°	5679.5	3521.2	537.7	494.7	529.8	674.3	783.7	766.7	735.5	774.6	748.5
75°	3431.4	1838.0	457.0	450.4	472.5	622.3	730.3	709.4	678.2	682.1	669.1
77.5°	1576.4	848.7	382.7	398.3	412.7	557.1	665.2	641.8	613.2	602.7	604.1
80°	691.2	495.9	320.2	339.7	347.6	501.1	594.8	568.9	537.7	593.6	550.7
82.5°	373.6	287.7	249.9	263.0	285.1	436.1	516.8	482.9	453.0	527.2	425.6
85°	151.0	147.1	169.2	182.3	197.8	313.7	432.2	397.0	360.6	322.8	315.1
87.5°	65.1	70.3	83.3	88.5	105.5	195.3	290.3	253.8	255.1	218.7	214.8
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)