

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: P196858

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-7030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196858
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
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-T4W-7030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 18839.6 lumens
Efficiency: N/A
Efficacy: 110.2 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G4

Input Watts (W): 171
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

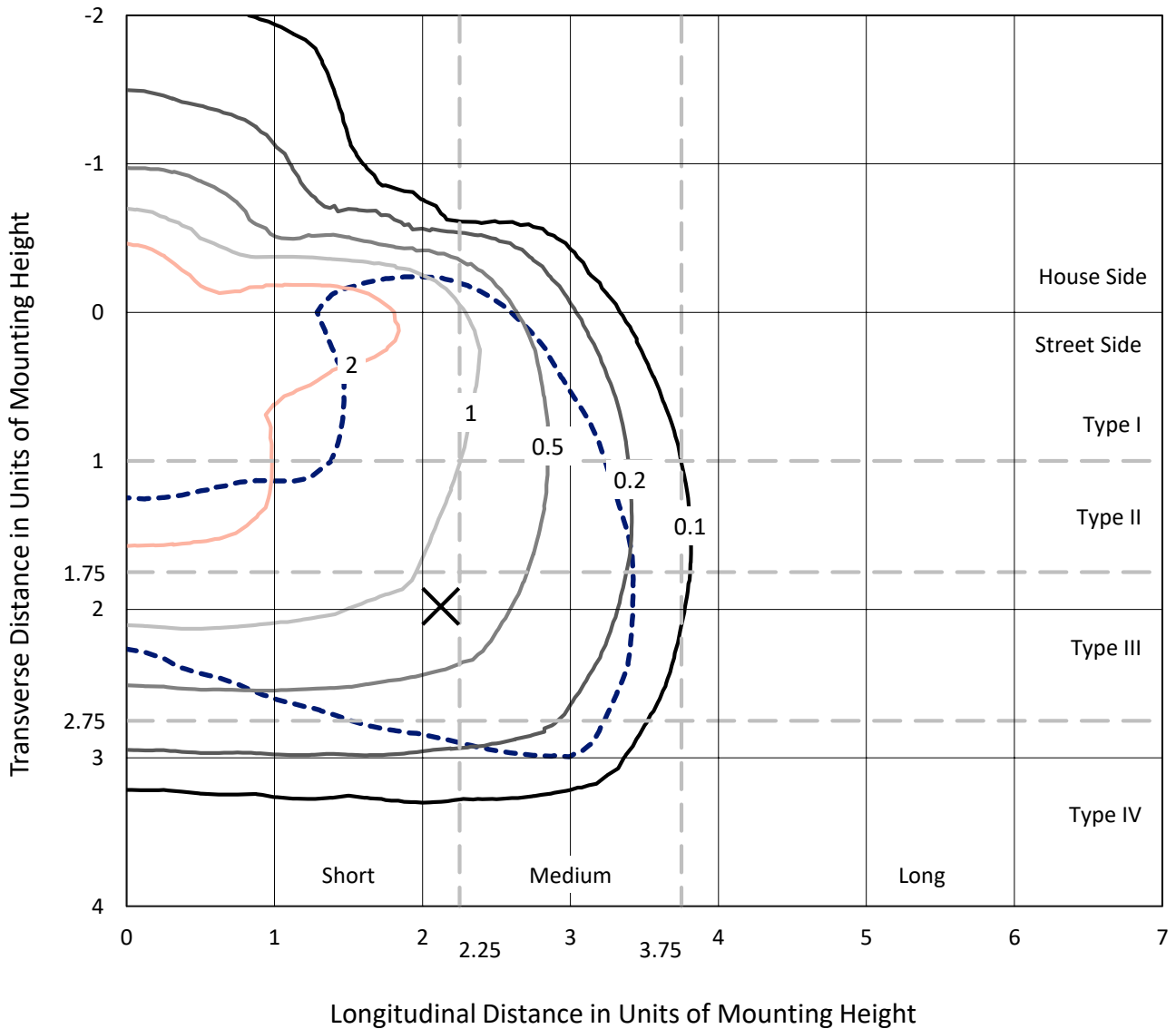


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Iso-Footcandle Lines of Horizontal Illumination

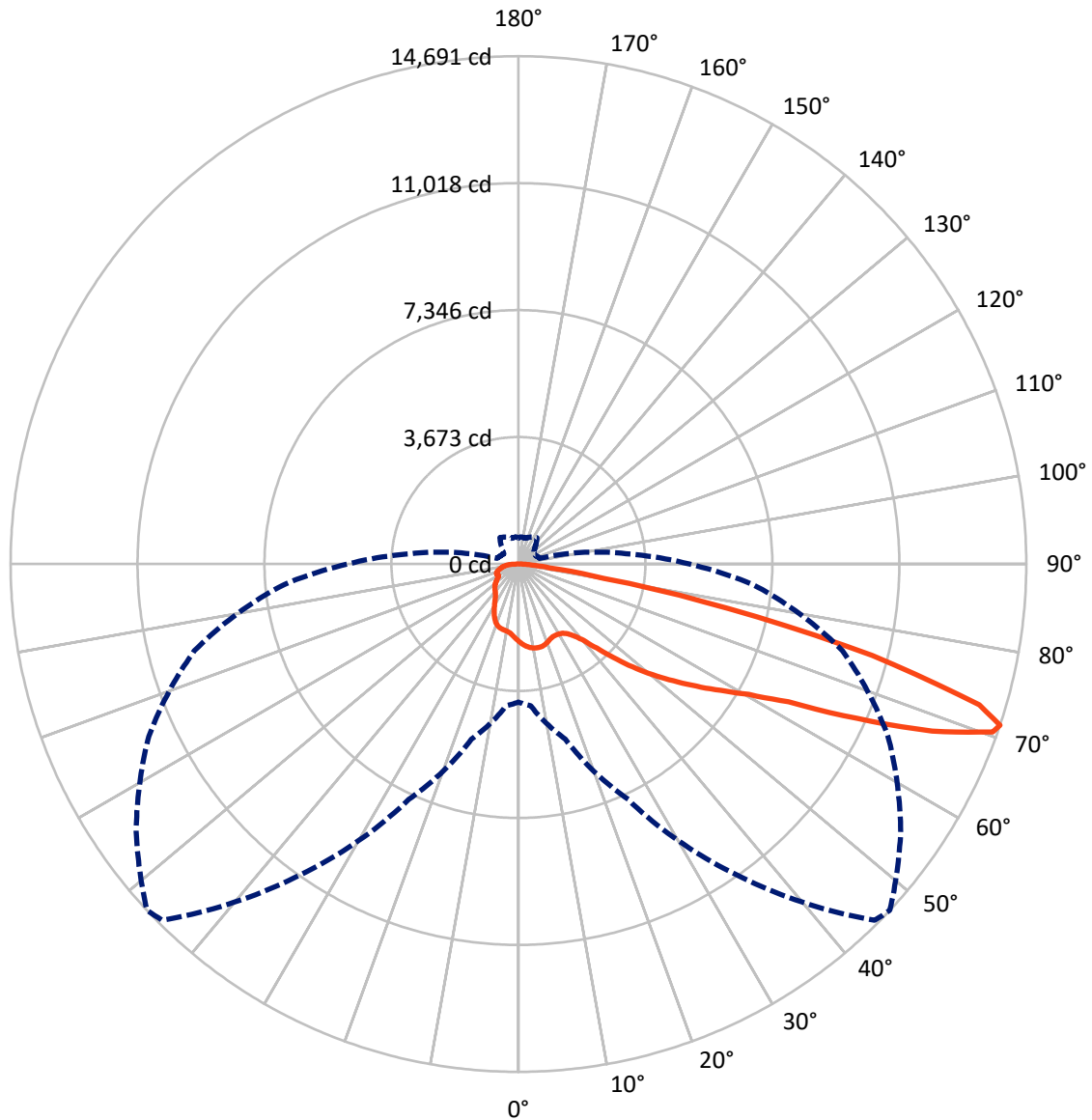
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.1 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	4037.6	0.0	4037.6
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	14802.0	0.0	14802.0
	% Fixture	78.6	0.0	78.6
Total	Lumens	18839.6	0.0	18839.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.9	1.1
10°-20°	625.8	3.3
20°-30°	929.9	4.9
30°-40°	1335.2	7.1
40°-50°	2367.4	12.6
50°-60°	4050.9	21.5
60°-70°	5750.9	30.5
70°-80°	3149.7	16.7
80°-90°	415.8	2.2
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°	18839.6	100.0
0°-180°	18839.6	100.0



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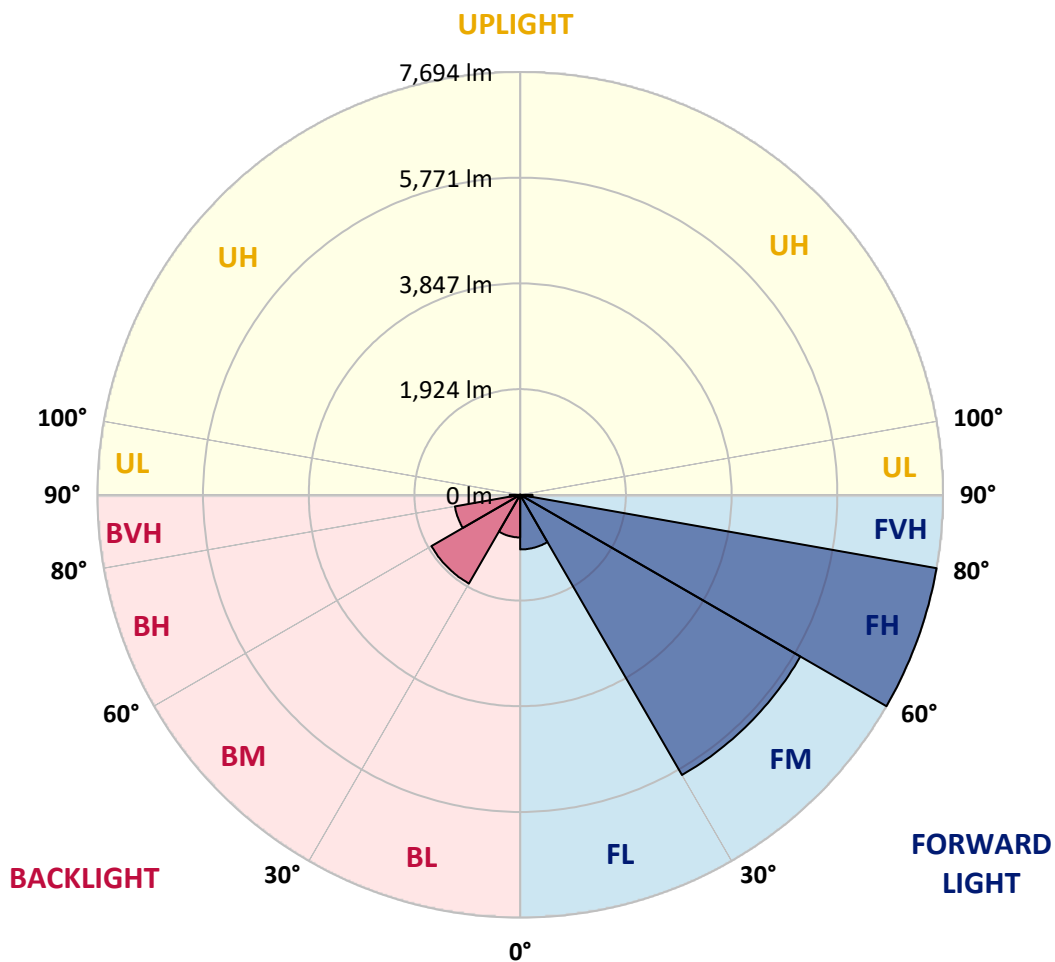
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	994.3	5.3			
FM	(30°-60°)	5887.9	31.3			
FH	(60°-80°)	7694.3	40.8			G4/12000
FVH	(80°-90°)	225.5	1.2			G3/500
BL	(0°-30°)	775.3	4.1	B2/1000		
BM	(30°-60°)	1865.6	9.9	B2/2500		
BH	(60°-80°)	1206.4	6.4	B3/2500		G3/2500
BVH	(80°-90°)	190.3	1.0			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°	45°	47°	55°	65°	75°	85°
0°	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4
2.5°	2377.1	2372.2	2374.6	2366.1	2345.4	2323.4	2323.4	2300.1	2275.8	2251.3	2224.5
5°	2524.8	2517.5	2511.5	2484.5	2444.2	2399.0	2391.6	2345.4	2295.3	2245.3	2196.4
7.5°	2648.1	2640.8	2622.4	2573.6	2515.0	2447.9	2439.3	2378.3	2312.4	2242.8	2174.4
10°	2736.1	2731.2	2695.8	2633.4	2565.1	2485.7	2471.1	2408.8	2330.7	2243.9	2157.4
12.5°	2784.9	2777.6	2734.8	2661.5	2580.9	2500.4	2485.7	2425.9	2336.8	2241.6	2140.3
15°	2765.4	2761.6	2721.3	2647.0	2566.3	2496.7	2484.5	2423.5	2333.1	2233.0	2124.3
17.5°	2682.4	2690.8	2659.2	2585.8	2519.9	2471.1	2457.7	2400.3	2314.7	2212.3	2100.0
20°	2567.6	2577.3	2561.5	2487.0	2449.1	2417.4	2410.0	2363.6	2284.3	2181.7	2070.7
22.5°	2445.4	2454.0	2455.2	2385.6	2373.4	2361.2	2355.1	2322.1	2257.4	2163.5	2051.2
25°	2361.2	2370.9	2373.4	2312.4	2319.7	2323.4	2322.1	2299.0	2252.6	2163.5	2053.5
27.5°	2339.2	2344.1	2341.7	2285.4	2299.0	2319.7	2320.8	2316.1	2272.0	2187.8	2087.7
30°	2414.9	2417.4	2386.9	2302.6	2316.1	2342.8	2344.1	2341.7	2313.6	2251.3	2164.7
32.5°	2742.1	2739.6	2634.7	2417.4	2370.9	2380.8	2384.4	2406.4	2408.8	2356.2	2275.8
35°	3240.3	3239.0	3116.9	2745.8	2527.2	2476.0	2480.8	2515.0	2545.5	2510.1	2463.8
37.5°	3788.4	3792.1	3717.6	3214.6	2864.2	2650.5	2645.7	2671.3	2726.2	2738.5	2744.6
40°	4396.5	4414.7	4411.2	3753.0	3336.7	2948.5	2899.6	2870.3	2976.5	3043.6	3130.4
42.5°	5091.2	5086.2	5088.6	4343.9	3876.3	3417.3	3327.0	3190.2	3313.5	3429.5	3620.0
45°	5688.1	5707.7	5722.4	4972.7	4480.7	3953.2	3861.7	3612.6	3723.8	3897.1	4187.7
47.5°	6288.9	6254.6	6281.6	5672.3	5153.4	4565.0	4446.6	4110.8	4214.5	4458.7	4900.8
50°	6988.4	6972.5	6850.4	6585.5	5966.5	5185.1	5030.1	4630.9	4782.3	5108.2	5780.9
52.5°	7615.9	7530.4	7435.2	7303.4	6766.2	5812.7	5616.2	5171.7	5450.1	5854.2	6873.6
55°	7845.5	7788.1	7902.8	8073.8	7612.3	6452.5	6232.7	5802.9	6203.4	6707.7	8159.3
57.5°	8089.7	8109.2	8368.0	8713.5	8413.2	7134.9	6896.9	6550.1	7030.0	7662.4	9596.2
60°	8211.7	8289.8	8806.3	9454.6	9175.0	7883.3	7655.0	7408.5	7946.8	8717.1	11029.6
62.5°	8232.4	8337.5	9068.8	9714.7	10223.7	9029.7	8766.0	8498.6	9092.0	9883.1	12067.3
65°	7851.6	8012.7	9045.6	10034.5	11179.7	10945.3	10778.1	10311.7	10625.5	10909.9	12244.3
67.5°	6732.0	6907.8	8150.7	9902.7	11946.4	12932.9	12901.3	12212.6	11809.8	11306.7	10931.9
70°	4940.9	5082.6	6276.6	8465.7	11612.0	14493.2	14549.4	13444.5	12140.6	10464.3	8128.7
71°	3995.9	4118.1	5243.8	7515.8	10960.1	14573.8	14691.0	13499.4	11796.2	9703.7	6805.2
72.5°	2487.0	2555.3	3482.0	5672.3	9437.5	13743.6	13941.4	12796.2	10712.1	8202.0	4810.3
75°	938.9	965.8	1291.7	2501.6	5633.2	10325.1	10564.4	9670.7	7525.6	4682.1	2013.2
77.5°	504.2	517.7	641.1	1040.1	2257.4	5918.9	6226.5	5516.0	3610.2	1638.5	822.8
80°	338.1	346.7	443.1	616.6	1037.8	2253.8	2510.1	2214.6	1351.5	935.3	586.0
82.5°	218.5	223.4	301.5	405.4	670.3	792.3	904.6	945.0	843.6	670.3	354.1
85°	144.1	147.7	199.0	258.8	415.0	390.7	400.4	523.8	575.0	442.0	180.8
87.5°	83.0	85.4	119.6	133.1	186.9	146.5	158.8	249.1	341.9	288.1	103.8
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°	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4	2240.4
2.5°	2212.3	2202.4	2180.5	2167.0	2160.9	2158.5	2156.1	2160.9	2160.9	2158.5	2153.6
5°	2172.0	2153.6	2117.0	2091.4	2078.0	2074.3	2079.2	2085.3	2088.9	2088.9	2085.3
7.5°	2142.7	2115.8	2066.9	2031.5	2010.8	2004.7	2018.1	2040.1	2054.7	2062.0	2063.4
10°	2118.2	2081.6	2027.9	1991.2	1974.2	1971.7	1988.8	2016.9	2047.4	2060.8	2063.4
12.5°	2096.2	2054.7	1996.1	1962.0	1949.7	1955.8	1979.1	2004.7	2040.1	2059.6	2060.8
15°	2075.5	2032.8	1970.5	1935.1	1932.7	1942.4	1964.4	1985.1	2012.0	2036.5	2036.5
17.5°	2051.2	2004.7	1940.0	1907.0	1907.0	1915.6	1930.3	1941.2	1958.4	1981.5	1980.4
20°	2021.9	1974.2	1908.2	1874.2	1866.7	1861.9	1861.9	1864.3	1878.9	1899.7	1903.4
22.5°	1999.8	1951.1	1881.5	1839.9	1806.9	1775.1	1761.7	1756.9	1770.3	1789.8	1794.7
25°	1999.8	1951.1	1872.8	1803.3	1722.7	1661.7	1636.0	1628.6	1642.0	1660.4	1667.8
27.5°	2032.8	1983.9	1892.4	1770.3	1622.6	1524.9	1494.3	1488.2	1500.4	1515.1	1522.4
30°	2109.7	2062.0	1948.5	1732.5	1511.5	1383.2	1349.2	1343.1	1349.2	1355.2	1363.8
32.5°	2237.8	2197.6	2040.1	1698.2	1399.2	1255.1	1213.6	1203.8	1206.2	1207.5	1214.8
35°	2446.7	2428.4	2162.2	1658.0	1293.0	1150.1	1107.4	1087.7	1086.6	1092.7	1101.3
37.5°	2766.6	2777.6	2319.7	1599.3	1205.0	1075.6	1032.8	1013.4	1003.5	1015.8	1025.5
40°	3218.2	3243.9	2501.6	1520.1	1133.0	1031.6	986.5	968.1	954.7	951.1	955.9
42.5°	3805.5	3798.2	2687.2	1418.7	1054.9	1002.4	954.7	935.3	913.2	885.1	879.0
45°	4501.5	4396.5	2842.3	1294.1	965.8	974.3	925.4	898.5	864.4	822.8	818.1
47.5°	5323.1	5033.8	2937.4	1161.1	882.7	937.7	892.4	850.9	800.9	774.0	770.4
50°	6313.2	5779.7	3004.6	1025.5	808.2	891.2	846.1	791.1	742.3	735.0	733.7
52.5°	7485.4	6660.0	3087.6	903.5	749.6	831.5	799.7	743.5	704.5	708.1	708.1
55°	8731.8	7570.8	3090.1	807.0	698.3	761.9	765.5	720.3	689.8	702.0	705.7
57.5°	9868.6	8366.7	2847.1	738.6	649.5	706.9	754.6	728.9	705.7	748.4	752.0
60°	10859.9	8979.7	2324.6	682.5	609.2	686.1	778.9	781.4	776.5	892.4	901.1
62.5°	11222.4	8985.8	1650.7	634.9	587.3	698.3	830.3	833.8	833.8	941.3	957.2
65°	10714.6	8237.4	1098.8	606.8	572.6	725.3	871.7	855.8	818.1	892.4	875.3
67.5°	8924.8	6412.1	803.4	588.5	551.9	726.5	908.4	868.1	803.4	866.9	837.6
70°	6133.9	4080.2	672.7	571.4	527.4	694.7	927.8	864.4	781.4	808.2	769.1
71°	4937.3	3256.2	638.5	565.3	517.7	676.5	930.4	859.6	770.4	787.4	752.0
72.5°	3252.4	2005.9	597.0	551.9	503.0	644.6	924.3	848.5	755.7	756.9	733.7
75°	1283.1	831.5	537.2	521.2	461.5	593.4	897.3	825.4	727.6	703.2	693.5
77.5°	648.4	543.3	472.4	478.5	412.7	540.9	859.6	787.4	688.6	655.7	648.4
80°	473.7	412.7	404.2	415.0	357.8	489.6	811.9	736.2	638.5	672.7	658.1
82.5°	288.1	251.6	316.2	343.1	299.2	437.0	755.7	676.5	575.0	529.9	512.8
85°	136.8	147.7	228.4	252.7	221.0	349.2	691.1	610.4	501.8	433.4	440.8
87.5°	67.2	81.8	130.7	151.5	145.4	256.4	521.2	473.7	395.5	326.0	318.6
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)