

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: P270557

Luminaire Tested: **NAV-AF-04-D-UNV-T4W-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270557
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-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20945.8 lumens
Efficiency: N/A
Efficacy: 93.1 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

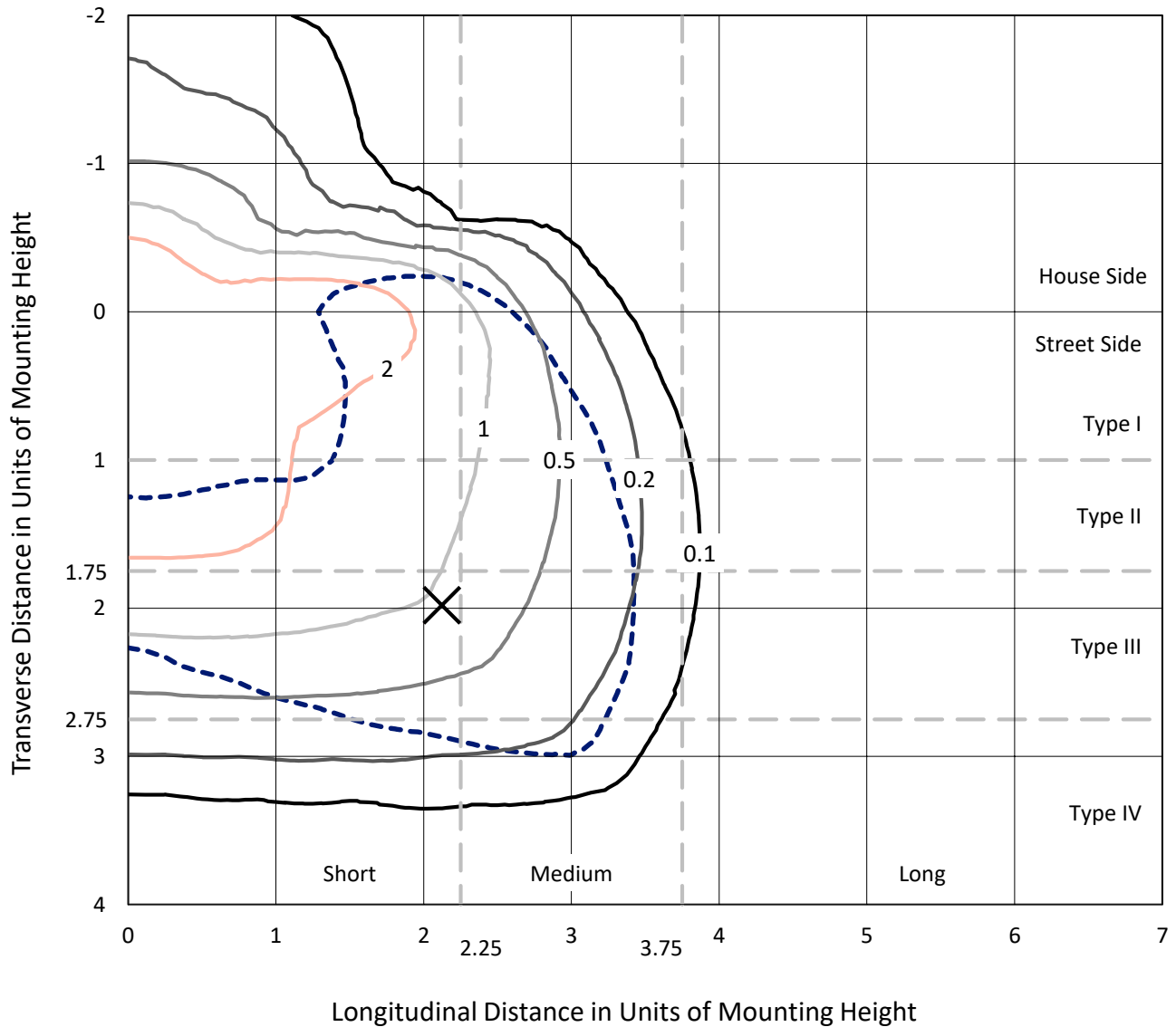
Input Watts (W): 225
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

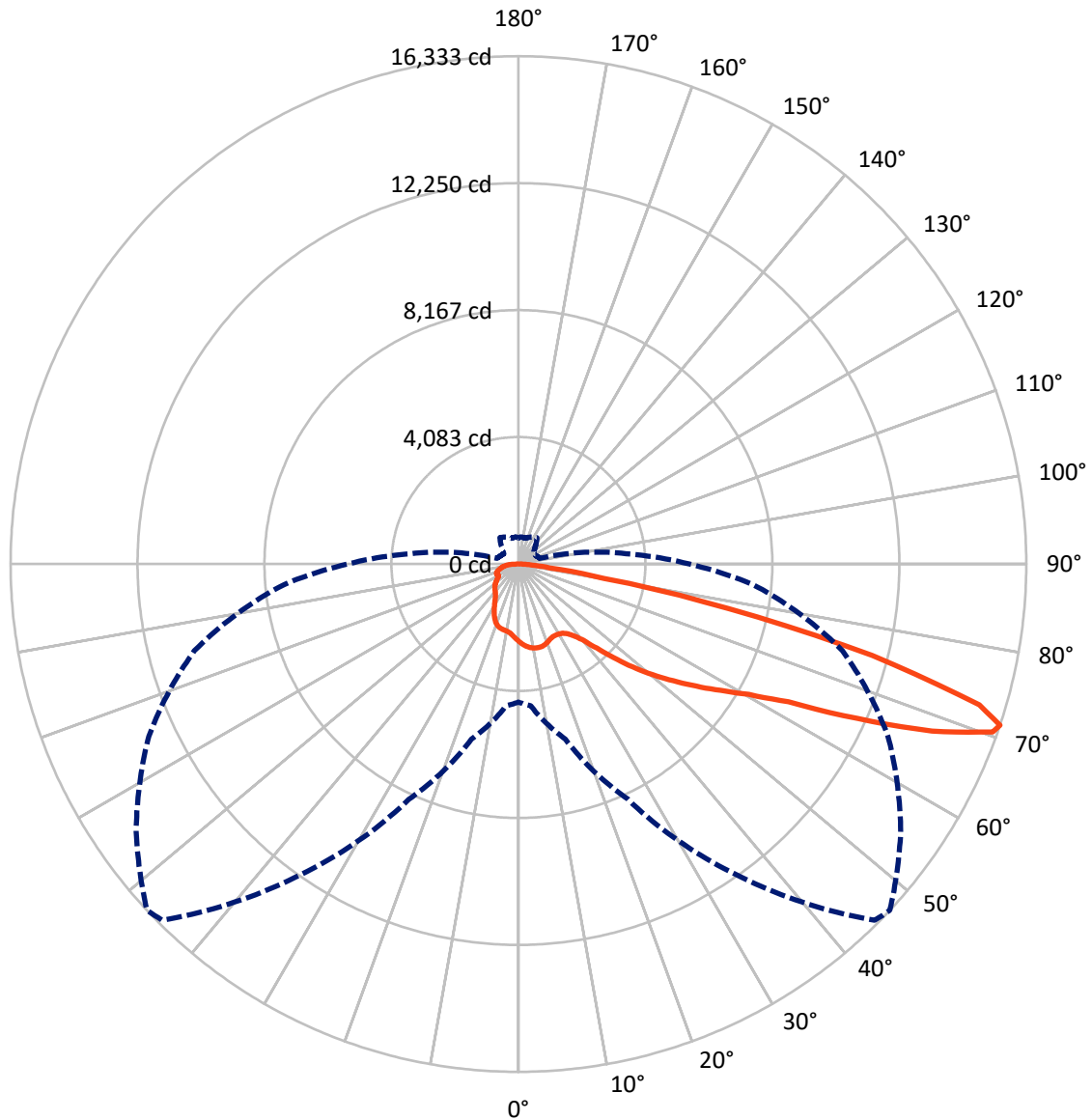
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.6 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	4489.0	0.0	4489.0
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	16456.8	0.0	16456.8
	% Fixture	78.6	0.0	78.6
Total	Lumens	20945.8	0.0	20945.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	237.8	1.1
10°-20°	695.8	3.3
20°-30°	1033.9	4.9
30°-40°	1484.5	7.1
40°-50°	2632.0	12.6
50°-60°	4503.8	21.5
60°-70°	6393.9	30.5
70°-80°	3501.9	16.7
80°-90°	462.3	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°	20945.8	100.0
0°-180°	20945.8	100.0



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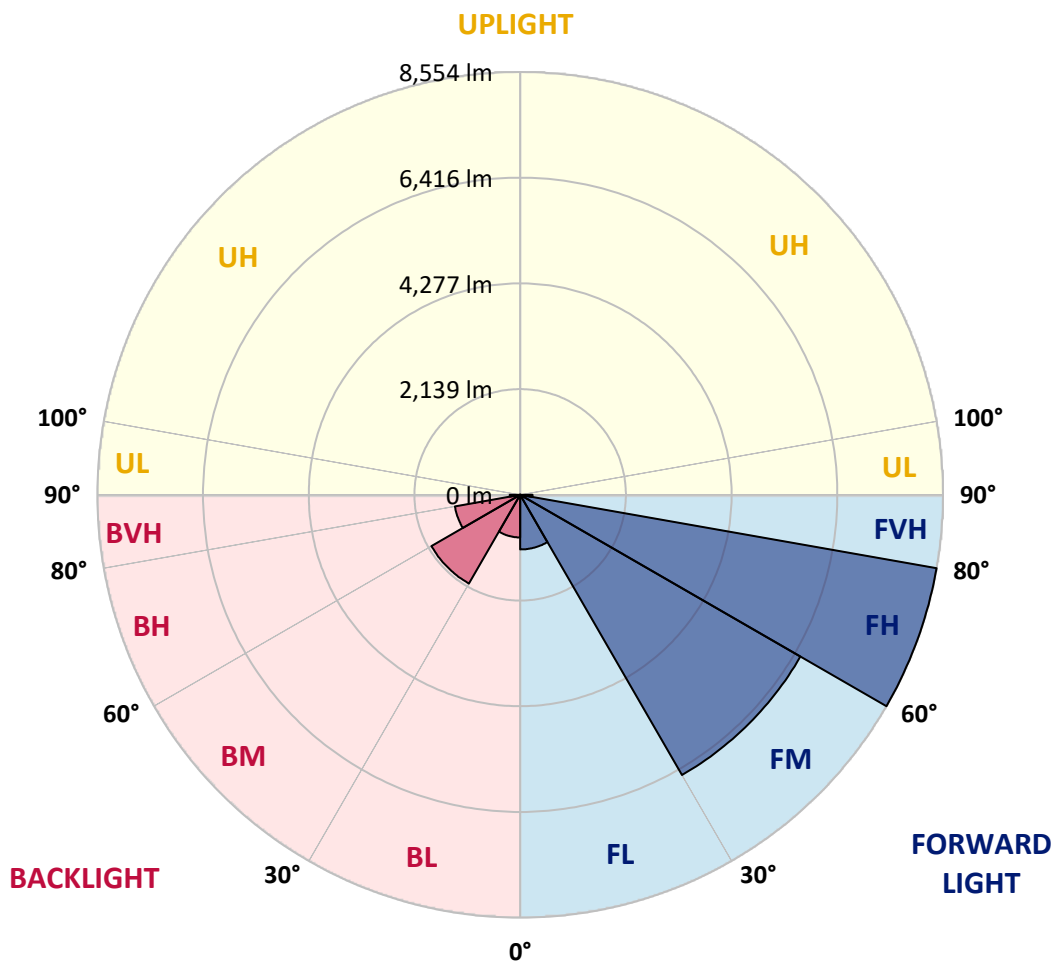
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1105.4	5.3			
FM	(30°-60°)	6546.2	31.3			
FH	(60°-80°)	8554.5	40.8			G4/12000
FVH	(80°-90°)	250.7	1.2			G3/500
BL	(0°-30°)	862.0	4.1	B2/1000		
BM	(30°-60°)	2074.2	9.9	B2/2500		
BH	(60°-80°)	1341.3	6.4	B3/2500		G3/2500
BVH	(80°-90°)	211.5	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°	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8
2.5°	2642.9	2637.5	2640.1	2630.6	2607.5	2583.0	2583.0	2557.4	2530.2	2502.9	2473.2
5°	2807.1	2798.8	2792.1	2762.3	2717.6	2667.2	2659.2	2607.5	2551.8	2496.2	2442.0
7.5°	2944.1	2936.0	2915.7	2861.5	2796.2	2721.5	2712.1	2644.3	2570.9	2493.5	2417.5
10°	3041.9	3036.5	2997.1	2927.8	2851.8	2763.6	2747.3	2678.1	2591.3	2495.0	2398.6
12.5°	3096.2	3088.1	3040.6	2959.0	2869.5	2780.0	2763.6	2697.2	2598.1	2492.2	2379.5
15°	3074.4	3070.3	3025.6	2942.8	2853.2	2775.9	2762.3	2694.5	2593.9	2482.6	2361.9
17.5°	2982.2	2991.6	2956.4	2874.9	2801.6	2747.3	2732.5	2668.7	2573.6	2459.6	2334.8
20°	2854.5	2865.5	2847.7	2765.1	2722.9	2687.5	2679.5	2627.9	2539.7	2425.7	2302.1
22.5°	2718.8	2728.3	2729.7	2652.3	2638.7	2625.1	2618.4	2581.8	2509.9	2405.3	2280.3
25°	2625.1	2636.0	2638.7	2570.9	2579.0	2583.0	2581.8	2555.9	2504.4	2405.3	2283.1
27.5°	2600.8	2606.3	2603.5	2541.0	2555.9	2579.0	2580.4	2574.9	2526.2	2432.4	2321.1
30°	2684.9	2687.5	2653.8	2560.0	2574.9	2604.8	2606.3	2603.5	2572.2	2502.9	2406.6
32.5°	3048.7	3046.0	2929.3	2687.5	2636.0	2646.9	2651.0	2675.4	2678.1	2619.7	2530.2
35°	3602.6	3601.1	3465.4	3052.8	2809.8	2752.8	2758.2	2796.2	2830.2	2790.8	2739.2
37.5°	4212.0	4216.0	4133.2	3573.9	3184.4	2946.9	2941.5	2969.9	3031.1	3044.6	3051.5
40°	4887.9	4908.2	4904.2	4172.5	3709.7	3278.1	3223.7	3191.1	3309.4	3383.9	3480.4
42.5°	5660.3	5654.9	5657.5	4829.6	4309.7	3799.3	3699.0	3546.9	3683.9	3812.9	4024.6
45°	6324.1	6345.7	6362.1	5528.7	4981.6	4395.1	4293.4	4016.5	4140.0	4332.7	4655.8
47.5°	6991.9	6953.9	6983.8	6306.5	5729.5	5075.2	4943.6	4570.3	4685.6	4957.1	5448.6
50°	7769.7	7752.1	7616.3	7321.7	6633.5	5764.9	5592.5	5148.5	5316.9	5679.4	6427.3
52.5°	8467.3	8372.4	8266.6	8119.9	7522.6	6462.5	6243.9	5750.0	6059.3	6508.7	7642.2
55°	8722.5	8658.8	8786.3	8976.5	8463.3	7173.8	6929.4	6451.6	6896.8	7457.5	9071.4
57.5°	8994.0	9015.7	9303.6	9687.7	9353.7	7932.6	7667.9	7282.4	7815.9	8518.9	10669.1
60°	9129.7	9216.7	9790.8	10511.5	10200.8	8764.7	8510.8	8236.6	8835.2	9691.8	12262.7
62.5°	9152.9	9269.6	10082.7	10800.7	11366.8	10039.3	9746.0	9448.8	10108.4	10988.1	13416.5
65°	8729.4	8908.5	10056.9	11156.4	12429.6	12169.0	11983.0	11464.4	11813.3	12129.6	13613.3
67.5°	7484.7	7680.1	9061.9	11009.7	13282.0	14378.8	14343.4	13577.9	13129.9	12570.7	12154.1
70°	5493.3	5650.8	6978.4	9412.1	12910.1	16113.5	16176.0	14947.5	13497.8	11634.2	9037.5
71°	4442.7	4578.5	5830.0	8356.0	12185.2	16203.2	16333.4	15008.6	13115.1	10788.6	7566.1
72.5°	2765.1	2841.0	3871.2	6306.5	10492.7	15280.1	15500.1	14226.7	11909.6	9119.0	5348.1
75°	1043.8	1073.7	1436.1	2781.3	6263.1	11479.4	11745.5	10751.9	8367.0	5205.6	2238.3
77.5°	560.6	575.5	712.6	1156.5	2509.9	6580.7	6922.7	6132.6	4013.7	1821.7	914.8
80°	376.0	385.6	492.7	685.4	1153.8	2505.7	2790.8	2462.3	1502.7	1039.8	651.5
82.5°	243.0	248.4	335.2	450.7	745.2	881.0	1005.8	1050.6	938.0	745.2	393.6
85°	160.2	164.2	221.3	287.7	461.5	434.4	445.2	582.3	639.4	491.4	201.0
87.5°	92.3	95.0	132.9	148.0	207.7	163.0	176.4	276.9	380.1	320.3	115.4
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°	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8	2490.8
2.5°	2459.6	2448.7	2424.3	2409.3	2402.5	2399.8	2397.1	2402.5	2402.5	2399.8	2394.4
5°	2414.9	2394.4	2353.6	2325.3	2310.4	2306.2	2311.6	2318.4	2322.5	2322.5	2318.4
7.5°	2382.2	2352.3	2298.0	2258.7	2235.6	2228.9	2243.7	2268.2	2284.5	2292.7	2294.0
10°	2355.0	2314.4	2254.7	2214.0	2194.9	2192.1	2211.2	2242.3	2276.3	2291.2	2294.0
12.5°	2330.7	2284.5	2219.4	2181.4	2167.7	2174.5	2200.3	2228.9	2268.2	2289.9	2291.2
15°	2307.6	2260.0	2190.8	2151.5	2148.7	2159.6	2184.0	2207.1	2237.0	2264.1	2264.1
17.5°	2280.3	2228.9	2156.9	2120.2	2120.2	2129.7	2146.1	2158.3	2177.2	2203.1	2201.7
20°	2247.7	2194.9	2121.5	2083.6	2075.4	2070.1	2070.1	2072.7	2089.0	2112.1	2116.1
22.5°	2223.5	2169.0	2091.8	2045.6	2008.9	1973.7	1958.8	1953.3	1968.1	1989.9	1995.3
25°	2223.5	2169.0	2082.2	2004.8	1915.2	1847.5	1818.9	1810.8	1825.6	1846.0	1854.2
27.5°	2260.0	2205.8	2103.9	1968.1	1803.9	1695.5	1661.4	1654.7	1668.2	1684.5	1692.6
30°	2345.6	2292.7	2166.4	1926.1	1680.5	1537.9	1499.9	1493.2	1499.9	1506.6	1516.2
32.5°	2488.0	2443.3	2268.2	1888.1	1555.5	1395.3	1349.3	1338.4	1341.1	1342.4	1350.6
35°	2720.2	2699.9	2404.0	1843.3	1437.5	1278.6	1231.1	1209.5	1208.1	1214.9	1224.4
37.5°	3075.8	3088.1	2579.0	1778.1	1339.7	1195.9	1148.4	1126.7	1115.8	1129.3	1140.2
40°	3578.0	3606.5	2781.3	1689.9	1259.7	1147.0	1096.8	1076.3	1061.4	1057.5	1062.9
42.5°	4230.9	4222.8	2987.7	1577.2	1172.7	1114.3	1061.4	1039.8	1015.4	984.2	977.4
45°	5004.6	4887.9	3160.0	1438.8	1073.7	1083.1	1028.9	999.0	961.0	914.8	909.4
47.5°	5918.3	5596.5	3265.9	1290.9	981.4	1042.5	992.3	946.2	890.4	860.5	856.5
50°	7019.0	6425.8	3340.5	1140.2	898.6	990.9	940.6	879.6	825.4	817.2	815.8
52.5°	8322.2	7404.5	3432.9	1004.5	833.4	924.4	889.1	826.6	783.2	787.3	787.3
55°	9708.1	8417.2	3435.6	897.2	776.5	847.0	851.1	800.8	767.0	780.4	784.6
57.5°	10971.8	9302.2	3165.4	821.2	722.1	785.9	838.8	810.5	784.6	832.1	836.1
60°	12073.9	9983.7	2584.5	758.8	677.3	762.8	866.1	868.8	863.4	992.3	1001.8
62.5°	12477.1	9990.4	1835.1	705.9	652.9	776.5	923.0	927.1	927.1	1046.5	1064.2
65°	11912.5	9158.3	1221.7	674.6	636.5	806.3	969.2	951.6	909.4	992.3	973.3
67.5°	9922.5	7128.9	893.2	654.2	613.5	807.7	1010.0	965.0	893.2	963.7	931.2
70°	6819.6	4536.4	747.8	635.2	586.5	772.4	1031.7	961.0	868.8	898.6	855.1
71°	5489.3	3620.2	709.9	628.5	575.5	752.1	1034.3	955.5	856.5	875.5	836.1
72.5°	3616.0	2230.2	663.8	613.5	559.3	716.7	1027.5	943.4	840.3	841.6	815.8
75°	1426.6	924.4	597.3	579.5	513.1	659.6	997.7	917.6	809.1	781.9	770.9
77.5°	720.8	604.0	525.2	532.1	458.9	601.3	955.5	875.5	765.5	729.0	720.8
80°	526.6	458.9	449.3	461.5	397.7	544.4	902.6	818.4	709.9	747.8	731.6
82.5°	320.3	279.6	351.5	381.4	332.6	486.0	840.3	752.1	639.4	589.1	570.2
85°	152.1	164.2	253.9	281.0	245.6	388.2	768.3	678.7	557.8	481.9	490.0
87.5°	74.6	91.0	145.3	168.3	161.5	285.0	579.5	526.6	439.8	362.5	354.3
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)