

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: P196383

Luminaire Tested: **NAV-AF-03-D-UNV-T4W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196383
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-03-D-UNV-T4W
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 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: 18310.8 lumens
Efficiency: N/A
Efficacy: 110.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B3 - U0 - G3

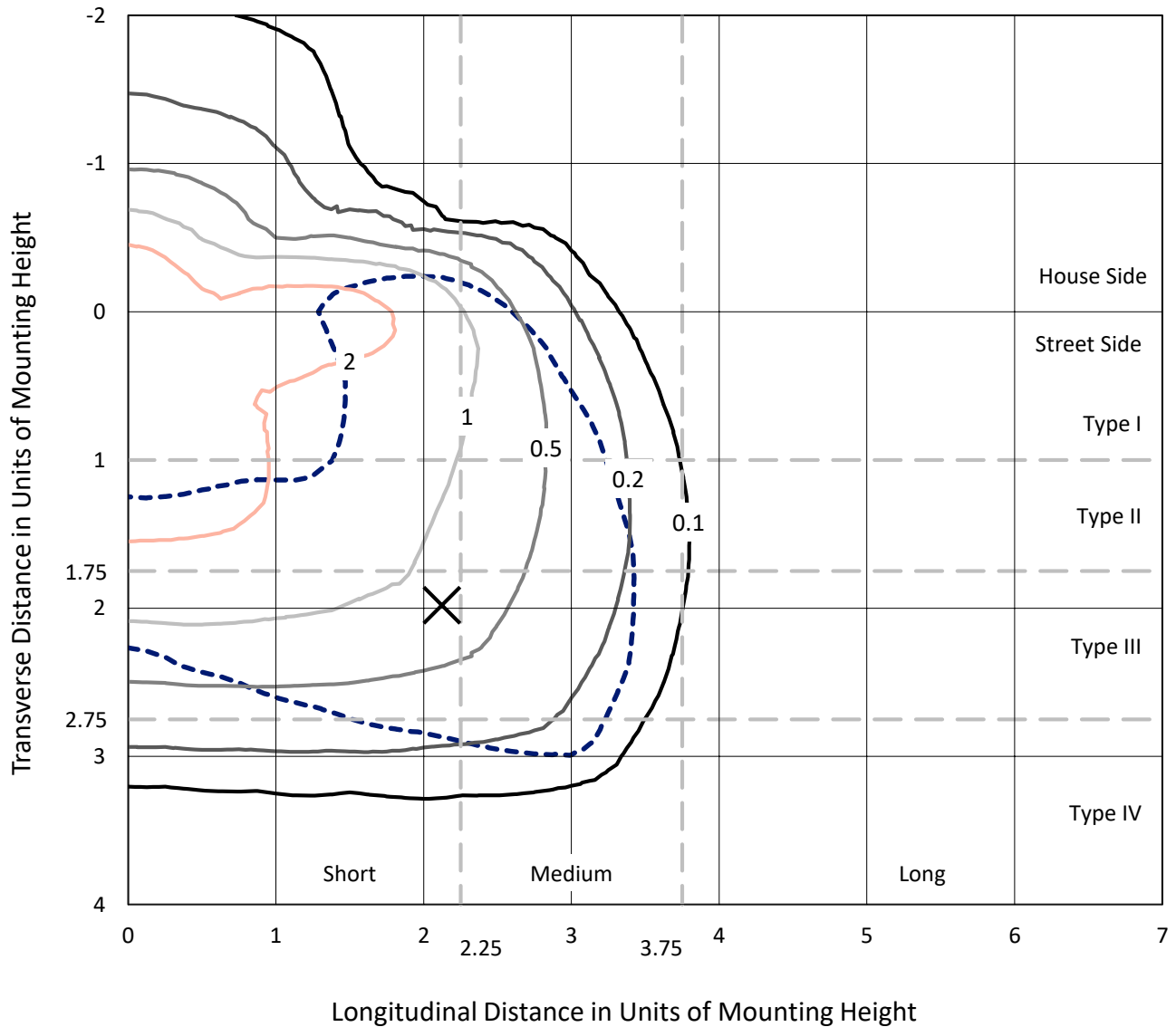
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196383
 CATALOG NUMBER: NAV-AF-03-D-UNV-T4W

Iso-Footcandle Lines of Horizontal Illumination

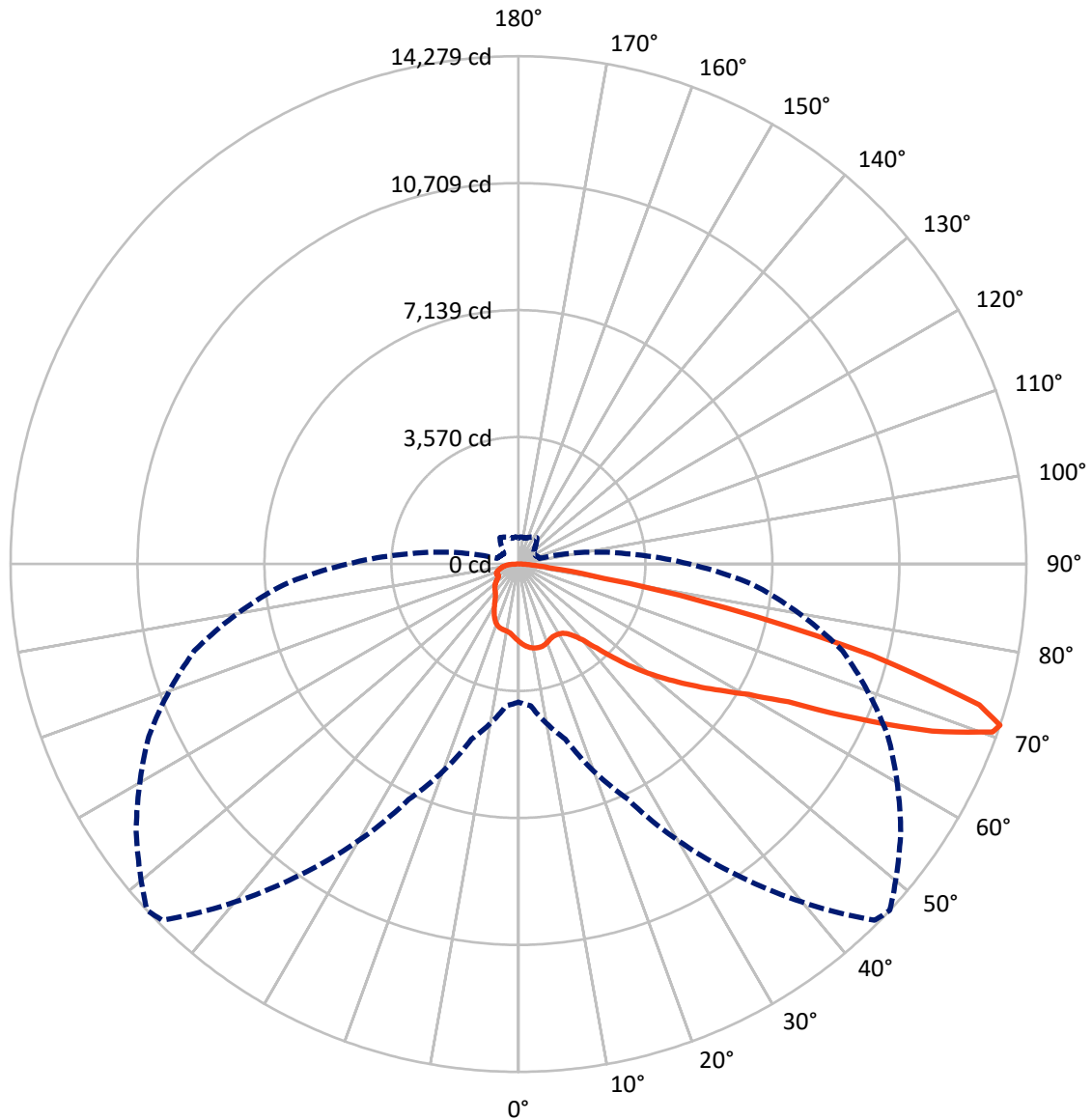
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4 fc
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P196383
CATALOG NUMBER: NAV-AF-03-D-UNV-T4W

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196383

CATALOG NUMBER: NAV-AF-03-D-UNV-T4W

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3924.3	0.0	3924.3
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	14386.6	0.0	14386.6
	% Fixture	78.6	0.0	78.6
Total	Lumens	18310.8	0.0	18310.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	207.9	1.1
10°-20°	608.2	3.3
20°-30°	903.8	4.9
30°-40°	1297.7	7.1
40°-50°	2300.9	12.6
50°-60°	3937.2	21.5
60°-70°	5589.5	30.5
70°-80°	3061.3	16.7
80°-90°	404.1	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°	18310.8	100.0
0°-180°	18310.8	100.0



REPORT NUMBER: P196383

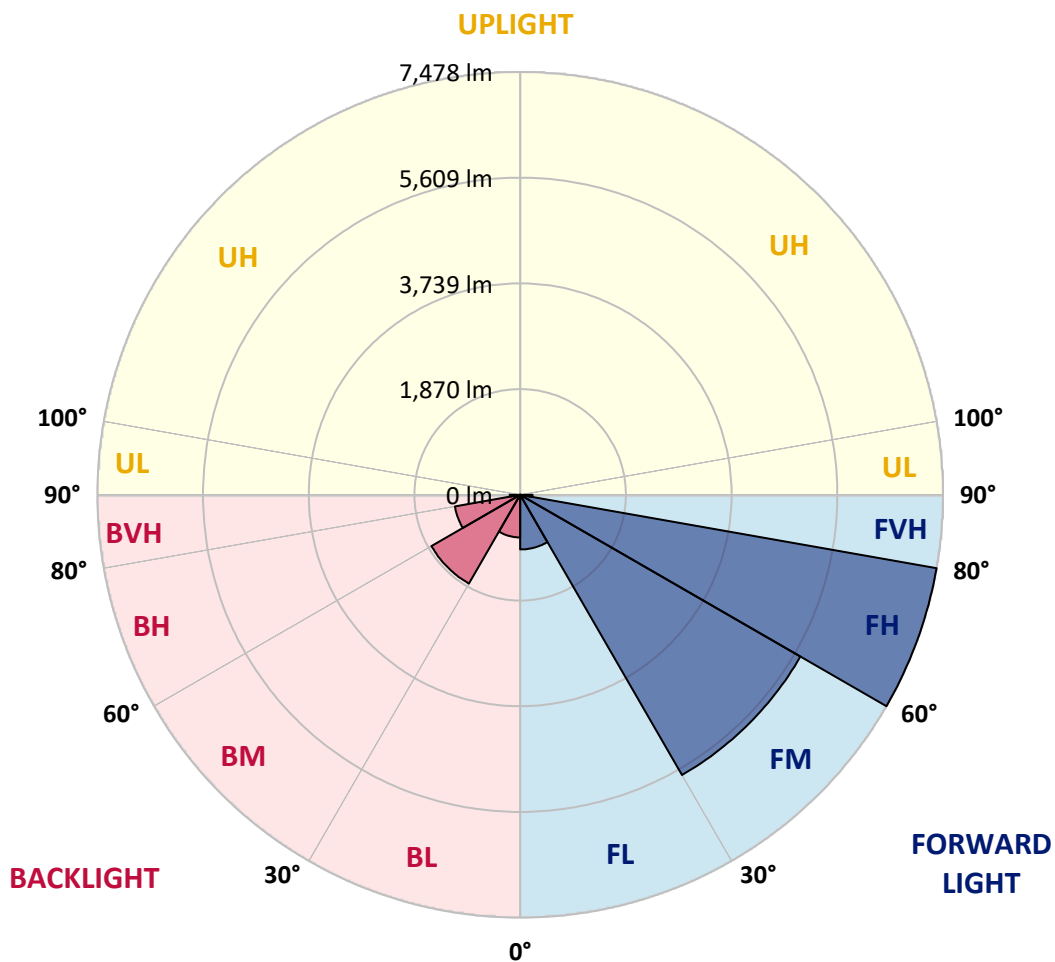
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	966.4	5.3			
FM	(30°-60°)	5722.7	31.3			
FH	(60°-80°)	7478.3	40.8			G3/7500
FVH	(80°-90°)	219.2	1.2			G2/225
BL	(0°-30°)	753.6	4.1	B2/1000		
BM	(30°-60°)	1813.2	9.9	B2/2500		
BH	(60°-80°)	1172.5	6.4	B3/2500		G3/2500
BVH	(80°-90°)	184.9	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-G3

Type IV Short





REPORT NUMBER: P196383

CATALOG NUMBER: NAV-AF-03-D-UNV-T4W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5
2.5°	2310.3	2305.6	2308.0	2299.7	2279.5	2258.2	2258.2	2235.7	2211.8	2188.1	2162.0
5°	2454.0	2446.8	2440.9	2414.8	2375.6	2331.7	2324.7	2279.5	2230.9	2182.2	2134.7
7.5°	2573.8	2566.7	2548.9	2501.4	2444.4	2379.2	2370.9	2311.6	2247.5	2179.8	2113.4
10°	2659.3	2654.5	2620.1	2559.5	2493.1	2416.0	2401.8	2341.2	2265.3	2181.0	2096.7
12.5°	2706.7	2699.6	2658.0	2586.8	2508.6	2430.2	2416.0	2357.8	2271.3	2178.7	2080.2
15°	2687.7	2684.1	2645.0	2572.6	2494.3	2426.6	2414.8	2355.4	2267.7	2170.3	2064.7
17.5°	2607.0	2615.4	2584.5	2513.3	2449.3	2401.8	2388.7	2332.9	2249.9	2150.1	2041.0
20°	2495.5	2505.0	2489.6	2417.1	2380.4	2349.5	2342.5	2297.3	2220.2	2120.5	2012.6
22.5°	2376.8	2385.1	2386.3	2318.7	2306.9	2295.0	2289.1	2256.9	2194.0	2102.7	1993.5
25°	2295.0	2304.4	2306.9	2247.5	2254.6	2258.2	2256.9	2234.4	2189.3	2102.7	1995.9
27.5°	2273.6	2278.3	2276.0	2221.3	2234.4	2254.6	2255.8	2251.0	2208.3	2126.4	2029.1
30°	2347.2	2349.5	2319.8	2238.0	2251.0	2277.2	2278.3	2276.0	2248.7	2188.1	2103.9
32.5°	2665.2	2662.8	2560.8	2349.5	2304.4	2313.9	2317.5	2338.9	2341.2	2290.2	2211.8
35°	3149.4	3148.1	3029.5	2668.8	2456.3	2406.5	2411.2	2444.4	2474.1	2439.7	2394.6
37.5°	3682.1	3685.7	3613.3	3124.4	2783.9	2576.2	2571.4	2596.4	2649.7	2661.6	2667.5
40°	4273.1	4290.9	4287.3	3647.7	3243.1	2865.7	2818.2	2789.8	2893.0	2958.3	3042.6
42.5°	4948.2	4943.5	4945.9	4222.0	3767.5	3321.4	3233.5	3100.7	3220.6	3333.3	3518.3
45°	5528.5	5547.5	5561.7	4833.1	4354.9	3842.3	3753.3	3511.3	3619.2	3787.7	4070.1
47.5°	6112.3	6079.1	6105.2	5513.1	5008.8	4436.8	4321.7	3995.3	4096.2	4333.5	4763.2
50°	6792.3	6776.8	6658.2	6400.7	5799.0	5039.6	4888.9	4500.9	4648.0	4964.9	5618.7
52.5°	7402.2	7319.1	7226.5	7098.5	6576.2	5649.6	5458.5	5026.6	5297.1	5689.9	6680.7
55°	7625.3	7569.5	7681.0	7847.2	7398.6	6271.3	6057.7	5640.0	6029.3	6519.4	7930.2
57.5°	7862.6	7881.6	8133.2	8469.0	8177.1	6934.7	6703.3	6366.2	6832.6	7447.3	9326.9
60°	7981.3	8057.2	8559.1	9189.3	8917.5	7662.1	7440.1	7200.4	7723.8	8472.5	10720.0
62.5°	8001.4	8103.5	8814.3	9442.0	9936.8	8776.3	8520.0	8260.1	8836.9	9605.7	11728.6
65°	7631.2	7787.8	8791.8	9752.9	10866.0	10638.1	10475.5	10022.3	10327.2	10603.7	11900.7
67.5°	6543.1	6713.9	7921.9	9624.7	11611.2	12569.9	12539.1	11869.8	11478.2	10989.4	10625.1
70°	4802.2	4939.9	6100.5	8228.1	11286.0	14086.4	14141.1	13067.2	11799.8	10170.6	7900.6
71°	3883.8	4002.5	5096.5	7304.9	10652.4	14164.8	14278.7	13120.6	11465.2	9431.3	6614.3
72.5°	2417.1	2483.6	3384.2	5513.1	9172.6	13357.9	13550.1	12437.0	10411.5	7971.8	4675.3
75°	912.5	938.7	1255.5	2431.5	5475.1	10035.4	10267.9	9399.3	7314.4	4550.7	1956.7
77.5°	490.1	503.1	623.0	1011.0	2194.0	5752.8	6051.8	5361.2	3508.8	1592.4	799.7
80°	328.7	337.0	430.8	599.2	1008.6	2190.5	2439.7	2152.5	1313.6	909.0	569.6
82.5°	212.4	217.2	293.1	393.9	651.4	770.1	879.3	918.4	820.0	651.4	344.1
85°	140.0	143.6	193.4	251.5	403.5	379.7	389.2	509.0	558.9	429.5	175.6
87.5°	80.7	83.1	116.3	129.3	181.6	142.4	154.3	242.0	332.3	280.1	100.9
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196383

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CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5	2177.5
2.5°	2150.1	2140.6	2119.3	2106.3	2100.3	2098.0	2095.6	2100.3	2100.3	2098.0	2093.2
5°	2111.0	2093.2	2057.6	2032.7	2019.6	2016.0	2020.8	2026.8	2030.4	2030.4	2026.8
7.5°	2082.5	2056.4	2009.0	1974.5	1954.3	1948.4	1961.5	1982.9	1997.1	2004.2	2005.4
10°	2058.8	2023.2	1971.0	1935.4	1918.7	1916.4	1933.0	1960.3	1989.9	2003.0	2005.4
12.5°	2037.4	1997.1	1940.1	1906.9	1895.0	1900.9	1923.6	1948.4	1982.9	2001.8	2003.0
15°	2017.3	1975.7	1915.2	1880.8	1878.4	1888.0	1909.2	1929.5	1955.6	1979.3	1979.3
17.5°	1993.5	1948.4	1885.5	1853.5	1853.5	1861.8	1876.1	1886.7	1903.3	1925.9	1924.7
20°	1965.1	1918.7	1854.7	1821.5	1814.3	1809.6	1809.6	1812.0	1826.2	1846.4	1849.9
22.5°	1943.7	1896.2	1828.6	1788.2	1756.2	1725.3	1712.3	1707.5	1720.6	1739.6	1744.3
25°	1943.7	1896.2	1820.2	1752.6	1674.4	1615.0	1590.1	1582.9	1596.0	1613.8	1621.0
27.5°	1975.7	1928.3	1839.3	1720.6	1577.0	1482.1	1452.4	1446.5	1458.3	1472.6	1479.7
30°	2050.5	2004.2	1893.9	1683.8	1469.1	1344.5	1311.2	1305.3	1311.2	1317.2	1325.4
32.5°	2175.1	2135.9	1982.9	1650.6	1359.9	1219.9	1179.5	1170.1	1172.4	1173.5	1180.7
35°	2378.1	2360.3	2101.6	1611.5	1256.6	1117.8	1076.2	1057.3	1056.1	1062.0	1070.3
37.5°	2688.9	2699.6	2254.6	1554.5	1171.2	1045.5	1003.9	984.9	975.4	987.2	996.8
40°	3128.0	3152.8	2431.5	1477.3	1101.2	1002.7	958.8	941.0	927.9	924.3	929.1
42.5°	3698.7	3691.6	2611.8	1378.8	1025.2	974.3	927.9	909.0	887.6	860.3	854.4
45°	4375.1	4273.1	2762.5	1257.8	938.7	946.9	899.5	873.4	840.1	799.7	795.0
47.5°	5173.7	4892.5	2855.1	1128.5	857.9	911.3	867.5	827.1	778.5	752.3	748.8
50°	6136.1	5617.5	2920.3	996.8	785.5	866.2	822.4	769.0	721.5	714.3	713.2
52.5°	7275.2	6473.0	3001.0	878.1	728.5	808.1	777.2	722.6	684.7	688.2	688.2
55°	8486.8	7358.3	3003.4	784.4	678.7	740.4	744.0	700.1	670.4	682.3	685.9
57.5°	9591.5	8131.9	2767.2	717.9	631.3	687.0	733.4	708.4	685.9	727.4	731.0
60°	10555.0	8727.6	2259.4	663.3	592.1	666.9	757.1	759.4	754.7	867.5	875.7
62.5°	10907.5	8733.5	1604.3	617.0	570.8	678.7	806.9	810.5	810.5	914.9	930.3
65°	10413.8	8006.2	1068.0	589.7	556.5	704.8	847.2	831.9	795.0	867.5	850.8
67.5°	8674.2	6232.1	780.8	571.9	536.3	706.0	882.8	843.7	780.8	842.5	814.1
70°	5961.7	3965.7	653.9	555.4	512.6	675.1	901.8	840.1	759.4	785.5	747.6
71°	4798.8	3164.7	620.6	549.4	503.1	657.3	904.2	835.3	748.8	765.4	731.0
72.5°	3161.2	1949.6	580.2	536.3	488.9	626.6	898.3	824.7	734.5	735.7	713.2
75°	1247.2	808.1	522.1	506.7	448.6	576.7	872.2	802.2	707.3	683.5	674.0
77.5°	630.1	528.0	459.2	465.1	401.1	525.7	835.3	765.4	669.2	637.2	630.1
80°	460.4	401.1	392.8	403.5	347.7	475.9	789.1	715.6	620.6	653.9	639.5
82.5°	280.1	244.5	307.3	333.5	290.7	424.8	734.5	657.3	558.9	515.0	498.4
85°	132.9	143.6	221.9	245.6	214.8	339.4	671.7	593.3	487.7	421.3	428.4
87.5°	65.3	79.5	126.9	147.1	141.2	249.2	506.7	460.4	384.4	316.8	309.7
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)