

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: P196253

Luminaire Tested: **NAV-AF-05-D-UNV-T2-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196253
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-05-D-UNV-T2-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 19837.1 lumens
Efficiency: N/A
Efficacy: 122.5 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Medium - Full Cutoff
BUG Rating: B3 - U0 - G3

Input Watts (W): 162
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

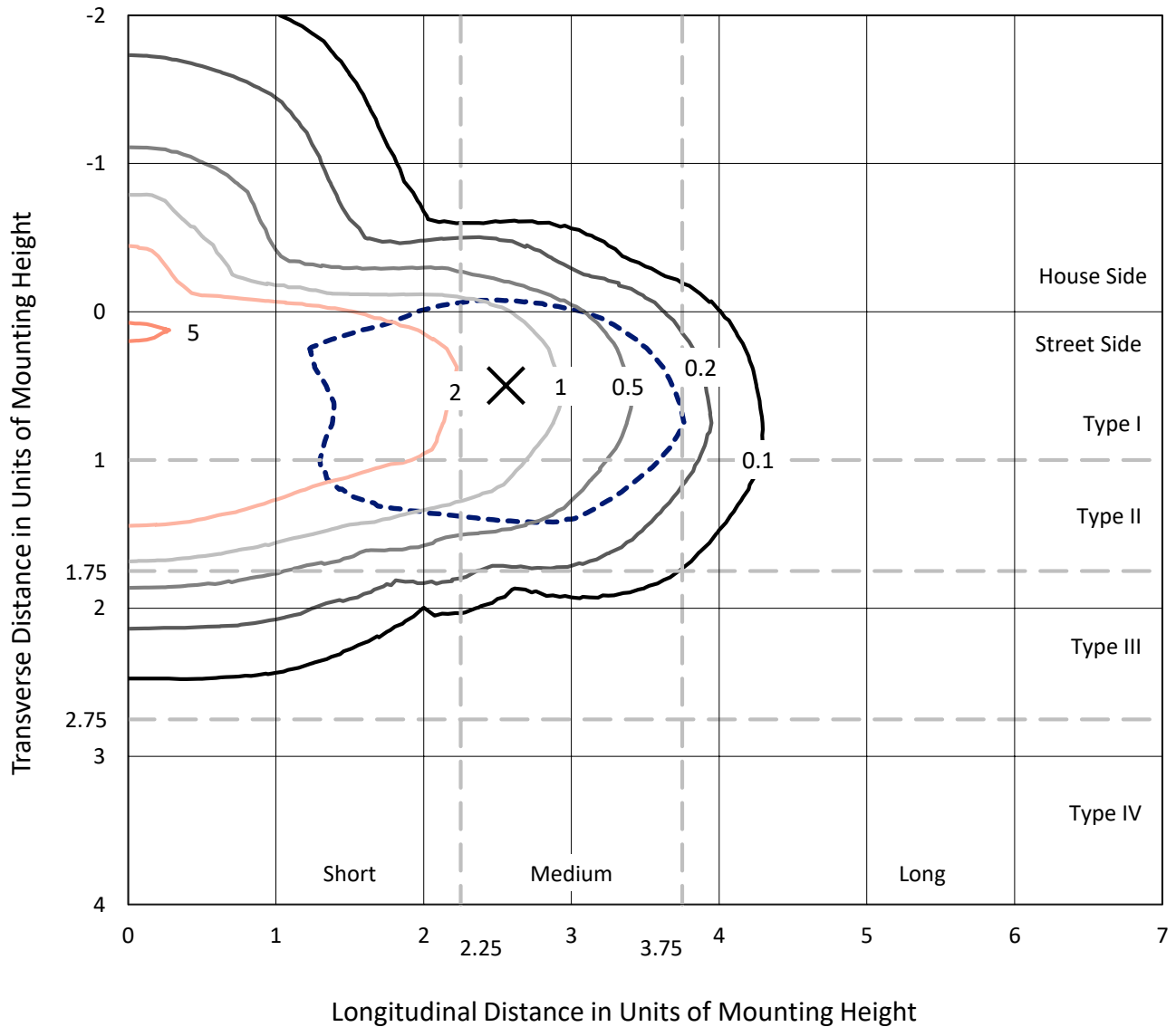


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Iso-Footcandle Lines of Horizontal Illumination

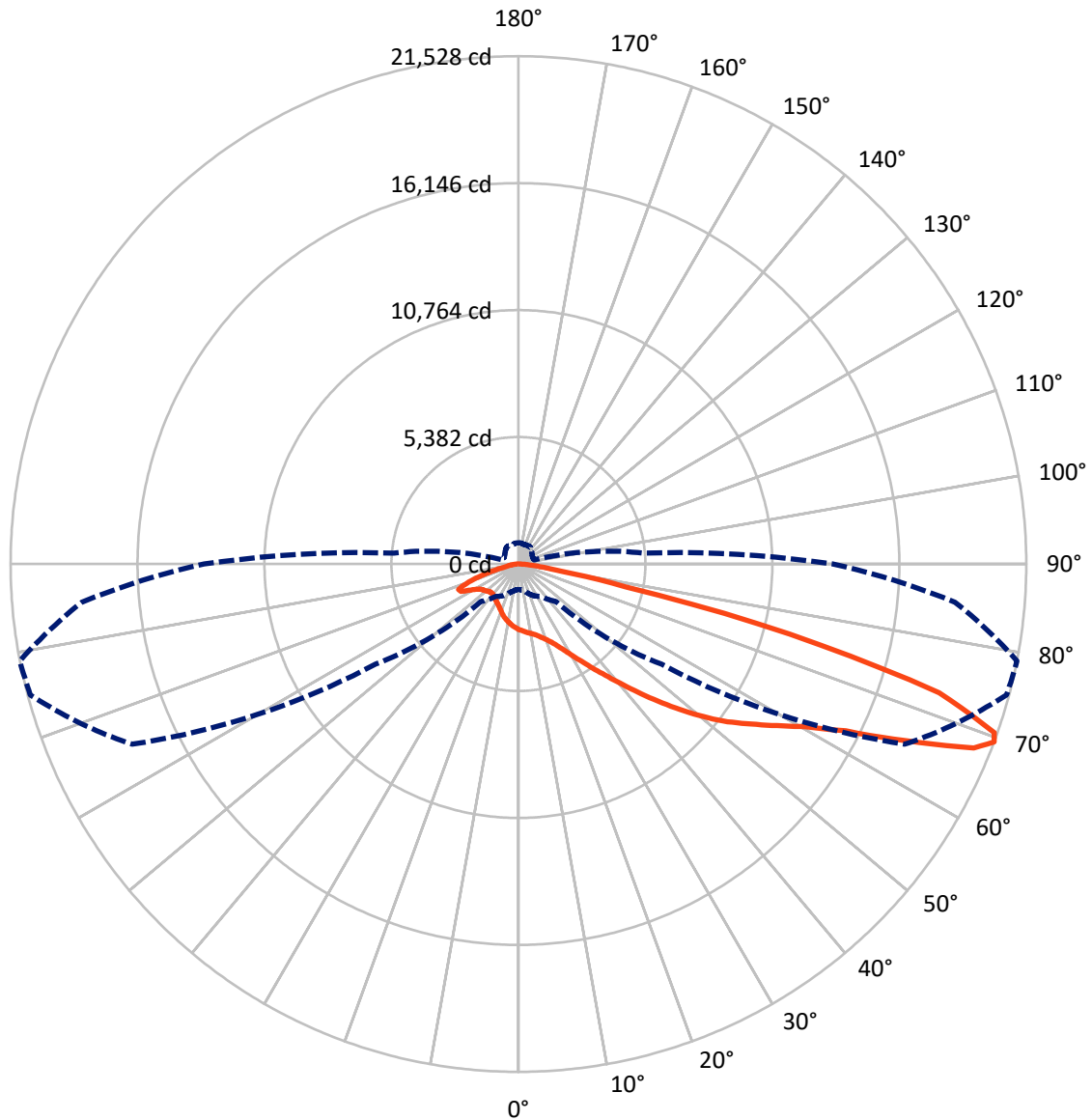
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.4 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3731.7	0.0	3731.7
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	16105.4	0.0	16105.4
	% Fixture	81.2	0.0	81.2
Total	Lumens	19837.1	0.0	19837.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	258.1	1.3
10°-20°	739.9	3.7
20°-30°	1222.6	6.2
30°-40°	1979.7	10.0
40°-50°	3162.5	15.9
50°-60°	4529.1	22.8
60°-70°	5046.1	25.4
70°-80°	2524.5	12.7
80°-90°	374.6	1.9
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°	19837.1	100.0
0°-180°	19837.1	100.0

Coefficient of Utilization



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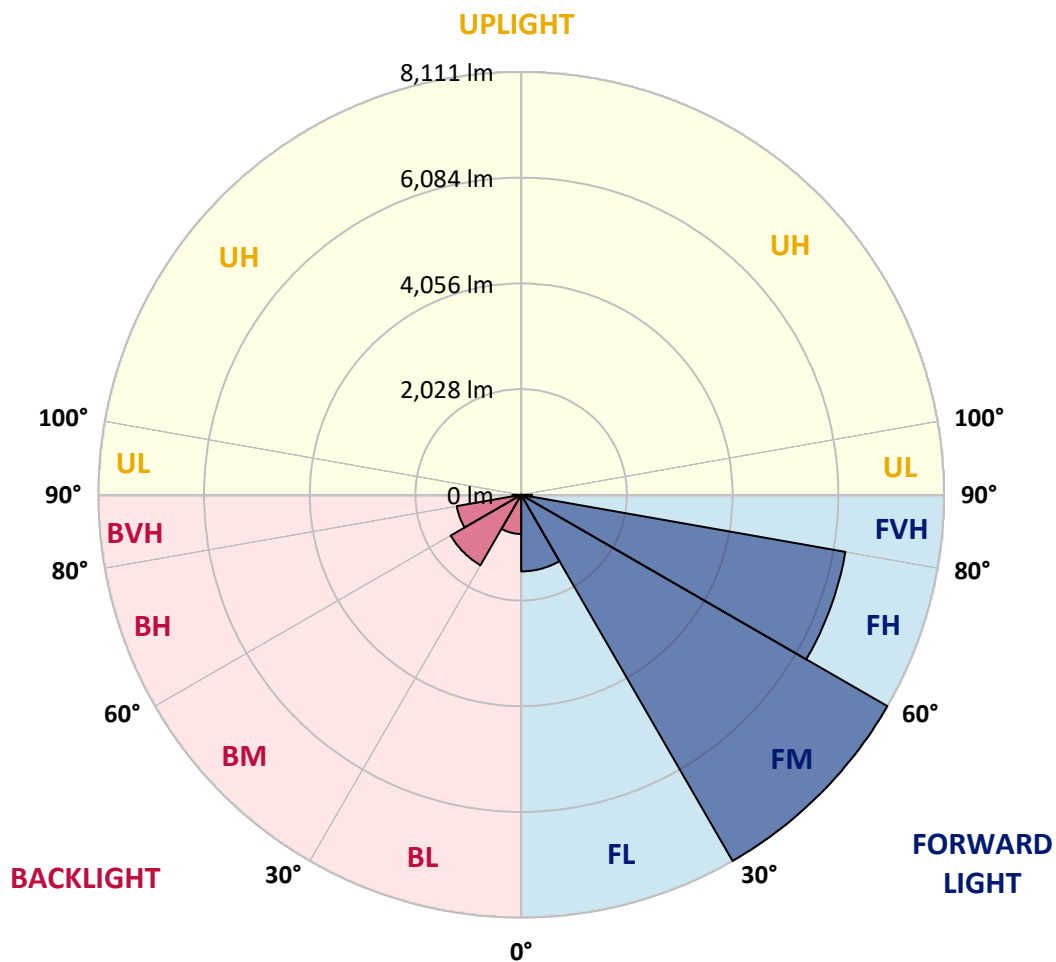
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1468.8	7.4			
FM (30°-60°)	8111.4	40.9			
FH (60°-80°)	6315.8	31.8			G3/7500
FVH (80°-90°)	209.3	1.1			G2/225
BL (0°-30°)	751.8	3.8	B2/1000		
BM (30°-60°)	1559.9	7.9	B2/2500		
BH (60°-80°)	1254.7	6.3	B3/2500		G3/2500
BVH (80°-90°)	165.3	0.8			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 II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8
2.5°	3056.3	3049.8	3048.5	3029.1	3018.6	2996.6	2944.7	2891.5	2842.2	2816.2	2789.0
5°	3312.0	3299.0	3292.5	3260.0	3231.5	3182.2	3100.5	3016.1	2927.8	2882.4	2827.8
7.5°	3466.4	3467.7	3467.7	3441.7	3413.2	3353.5	3249.7	3134.2	3003.1	2943.4	2857.7
10°	3479.4	3480.7	3500.1	3506.7	3513.1	3482.0	3386.0	3240.6	3071.9	2994.0	2882.4
12.5°	3350.9	3360.0	3392.4	3439.2	3505.3	3539.1	3497.6	3354.8	3160.1	3065.4	2929.1
15°	3178.3	3187.4	3228.9	3300.2	3406.7	3519.6	3578.0	3485.9	3275.6	3164.0	2997.9
17.5°	3093.9	3104.3	3132.9	3190.0	3293.8	3445.6	3620.8	3626.1	3411.8	3283.5	3079.7
20°	3053.7	3061.5	3097.8	3144.6	3223.7	3369.1	3624.7	3774.0	3574.1	3424.8	3179.6
22.5°	3145.9	3148.4	3166.6	3192.5	3245.8	3357.4	3622.2	3927.1	3776.5	3602.6	3308.1
25°	3415.8	3399.0	3386.0	3353.5	3366.4	3445.6	3663.7	4090.7	4036.2	3836.3	3479.4
27.5°	3735.1	3732.4	3698.7	3623.4	3575.4	3626.1	3781.7	4273.7	4354.1	4133.4	3703.9
30°	4090.7	4091.9	4056.9	3964.8	3867.5	3872.6	3970.0	4485.1	4734.3	4491.7	3980.3
32.5°	4463.1	4486.5	4421.6	4329.4	4211.4	4173.7	4239.9	4740.9	5174.3	4914.8	4300.9
35°	4908.2	4912.1	4840.8	4705.8	4587.7	4528.0	4589.0	5060.1	5681.8	5411.8	4691.6
37.5°	5370.3	5372.8	5298.9	5126.3	4977.1	4938.1	5005.6	5448.1	6219.0	5977.6	5151.0
40°	5748.0	5775.2	5716.8	5554.5	5404.0	5380.6	5478.0	5912.8	6905.5	6647.3	5697.3
42.5°	6176.2	6207.4	6137.3	5968.5	5849.1	5841.4	5993.2	6442.2	7588.1	7422.1	6316.3
45°	6659.0	6703.1	6605.8	6416.3	6315.1	6486.3	6495.4	7028.9	8374.7	8289.0	7013.2
47.5°	7185.9	7222.2	7143.1	6939.3	6829.0	7076.9	6987.4	7663.4	9224.8	9218.2	7767.3
50°	7592.1	7632.3	7640.1	7550.6	7435.0	7466.2	7527.2	8330.5	10072.2	10173.5	8547.3
52.5°	7518.1	7557.0	7732.3	7967.2	8152.7	8072.3	8146.3	9039.1	10891.1	11105.3	9288.3
55°	6921.2	6941.8	7270.2	7828.3	8618.7	9002.8	9008.0	9810.0	11669.7	11969.5	9991.7
57.5°	5845.2	5847.9	6274.8	7097.6	8347.4	9606.2	10368.1	10778.2	12482.1	12924.7	10863.8
60°	4136.1	4146.4	4643.5	5719.4	7375.4	9533.6	11830.7	12510.7	13423.1	13998.0	11987.8
62.5°	2455.4	2478.8	2853.8	3716.9	5478.0	8599.1	12695.0	15592.9	14809.2	15572.2	13786.4
65°	1597.5	1617.1	1841.6	2275.0	3236.7	6256.7	12410.8	18577.9	17432.0	18048.4	16371.7
67.5°	1230.3	1245.9	1422.4	1684.5	1985.6	3382.1	9922.9	19203.4	20624.5	20816.6	18553.3
69°	1081.1	1094.0	1223.9	1475.6	1671.6	2238.7	7394.8	18067.9	21422.6	21527.8	18580.5
70°	1001.9	1012.3	1134.2	1352.3	1535.2	1787.1	5659.7	16749.3	21130.7	21399.3	18044.5
72.5°	825.4	834.5	921.5	1088.8	1255.0	1273.2	2507.4	12230.4	17792.8	18651.9	15269.8
75°	689.2	694.3	751.5	873.4	1016.2	1013.5	1280.9	6927.6	10857.3	11881.3	9428.4
77.5°	574.9	578.8	616.4	691.7	802.0	798.1	901.9	2990.1	4794.1	4625.4	3245.8
80°	507.5	510.0	529.5	549.0	619.1	615.2	668.4	1373.1	1950.6	1802.6	1227.7
82.5°	385.4	390.7	489.3	498.4	480.2	463.3	466.0	799.4	999.3	909.7	659.3
85°	218.0	219.3	314.0	367.2	417.9	314.0	302.4	412.7	493.2	432.2	288.1
87.5°	97.4	101.3	150.6	173.9	225.8	184.3	172.6	175.2	212.9	176.5	114.2
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°	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8	2783.8
2.5°	2763.0	2740.9	2689.0	2635.8	2582.6	2548.9	2513.8	2481.4	2468.4	2467.2	2442.4
5°	2774.7	2722.8	2604.6	2474.9	2351.6	2255.6	2175.1	2123.2	2072.6	2063.5	2041.4
7.5°	2778.5	2694.2	2502.1	2294.5	2106.4	1974.0	1893.5	1858.4	1833.7	1827.3	1819.5
10°	2777.3	2657.8	2388.0	2103.7	1889.6	1789.7	1759.8	1767.6	1778.0	1783.2	1783.2
12.5°	2798.1	2641.1	2273.7	1924.6	1749.5	1701.4	1724.8	1765.0	1796.1	1809.1	1811.7
15°	2835.7	2630.6	2147.9	1768.9	1650.8	1662.5	1719.6	1778.0	1822.1	1841.6	1846.7
17.5°	2882.4	2616.4	2002.5	1640.4	1593.7	1634.0	1707.9	1781.9	1835.1	1859.7	1863.6
20°	2934.3	2595.6	1852.0	1544.3	1543.1	1593.7	1667.6	1750.7	1807.9	1835.1	1833.7
22.5°	3004.4	2576.1	1711.8	1474.3	1487.3	1534.0	1595.0	1670.3	1723.5	1748.1	1742.9
25°	3097.8	2558.0	1585.9	1412.0	1423.6	1454.8	1497.7	1554.8	1592.4	1605.4	1596.3
27.5°	3223.7	2543.7	1487.3	1354.9	1353.6	1367.9	1393.9	1425.0	1443.2	1439.3	1425.0
30°	3378.2	2529.3	1414.6	1304.3	1286.2	1284.8	1296.5	1314.7	1326.4	1303.0	1291.3
32.5°	3550.8	2504.7	1349.7	1260.2	1227.7	1216.0	1221.2	1245.9	1293.9	1270.5	1261.5
35°	3754.5	2476.2	1284.8	1212.1	1187.4	1165.4	1169.3	1222.5	1367.9	1351.0	1341.9
37.5°	3999.8	2450.3	1225.1	1160.2	1158.9	1131.7	1129.0	1192.7	1387.3	1351.0	1343.2
40°	4294.3	2445.1	1171.9	1103.2	1123.9	1113.5	1104.4	1143.4	1279.6	1205.6	1191.3
42.5°	4650.0	2468.4	1133.0	1048.6	1083.6	1108.3	1091.5	1100.5	1156.3	1090.2	1078.5
45°	5065.2	2532.0	1104.4	1000.5	1040.9	1104.4	1084.9	1077.2	1086.3	1050.0	1042.1
47.5°	5549.4	2644.9	1084.9	960.3	1000.5	1094.0	1082.4	1066.8	1062.8	1042.1	1037.0
50°	6067.2	2796.7	1072.0	924.0	964.2	1075.8	1081.1	1059.0	1052.5	1043.4	1040.9
52.5°	6581.2	2961.5	1056.4	892.8	934.4	1053.8	1082.4	1051.2	1042.1	1037.0	1034.3
55°	7092.4	3132.9	1027.9	865.6	912.4	1027.9	1081.1	1040.9	1030.4	1030.4	1030.4
57.5°	7755.6	3393.7	990.2	843.5	883.8	994.1	1064.2	1029.2	1014.9	1016.2	1017.4
60°	8713.4	3831.1	948.7	818.9	846.2	955.1	1038.2	1008.4	991.5	996.7	998.0
62.5°	10313.6	4595.5	891.6	783.9	807.2	913.6	1004.5	979.9	964.2	973.3	974.7
65°	12447.2	5520.8	816.3	739.7	767.0	867.0	961.7	946.1	929.2	951.2	950.0
67.5°	13748.9	5792.0	737.1	693.0	728.0	817.6	908.5	901.9	890.3	929.2	926.6
69°	13321.9	5301.4	691.7	663.2	700.8	783.9	874.7	872.2	863.1	900.7	898.0
70°	12658.7	4843.4	663.2	643.7	686.5	763.1	852.6	852.6	843.5	876.1	869.5
72.5°	10168.2	3592.3	597.0	594.4	637.2	706.0	793.0	799.4	794.2	805.9	799.4
75°	5969.8	2164.8	532.1	539.9	577.6	645.0	726.8	731.9	726.8	725.5	726.8
77.5°	2069.9	970.8	469.8	481.5	513.9	582.7	654.1	664.5	656.7	647.6	650.2
80°	809.9	564.6	402.3	419.2	446.4	512.6	581.4	587.9	576.2	574.9	564.6
82.5°	486.7	343.9	312.8	340.0	373.8	445.2	502.3	499.6	490.6	543.8	476.3
85°	211.5	190.8	228.4	255.6	272.5	333.5	424.4	412.7	390.7	343.9	336.1
87.5°	85.6	98.6	125.9	151.8	163.6	215.4	290.7	280.3	284.2	233.6	232.3
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)