

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: P196026

Luminaire Tested: **NAV-AF-06-D-UNV-AFL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196026
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24160)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-06-D-UNV-AFL
Description: NAVION ROADWAY AND AREA LUMINAIRE
(6) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 37756.1 lumens
Efficiency: N/A
Efficacy: 113.4 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Full Cutoff
BUG Rating: B3 - U0 - G3

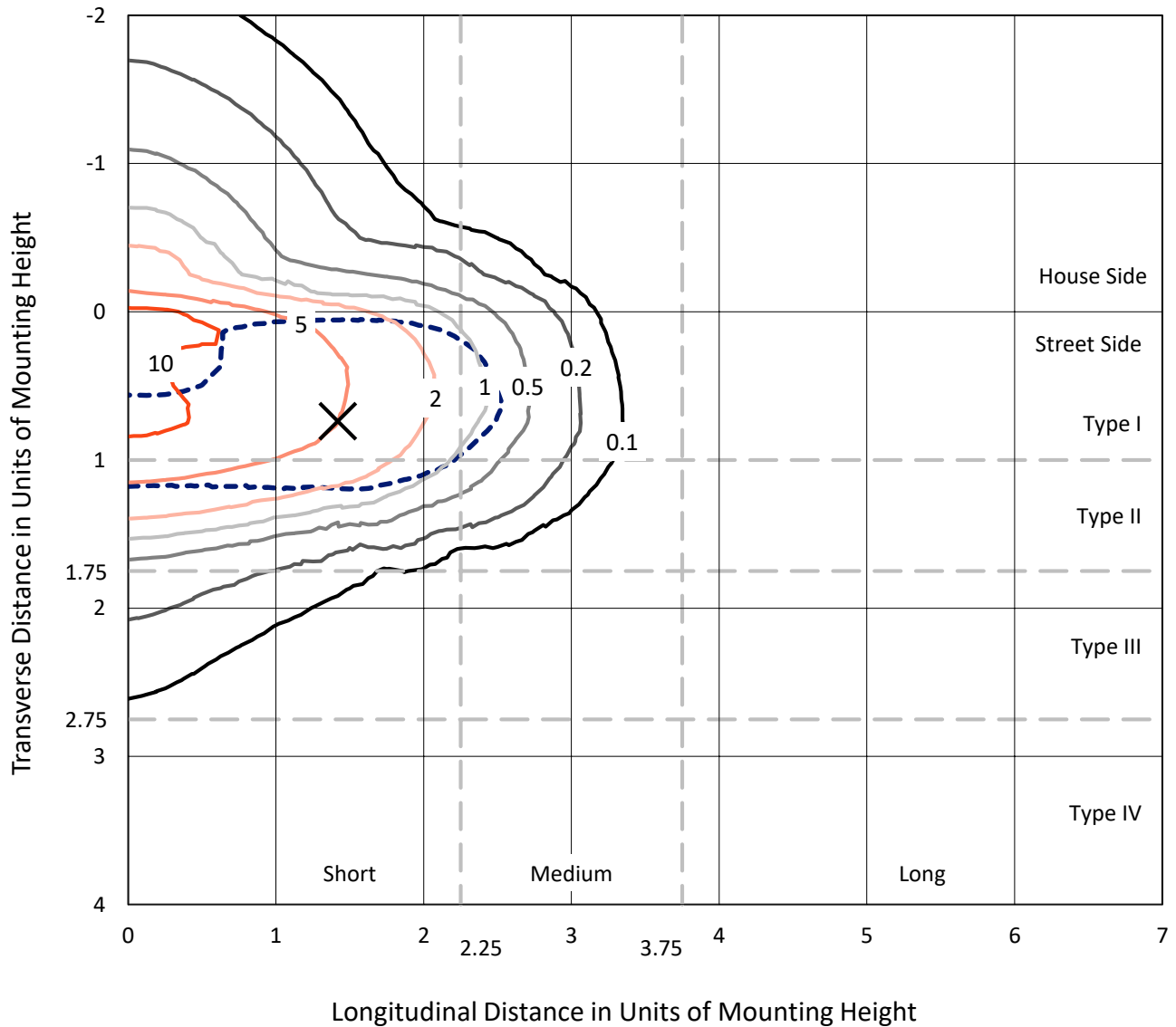
Input Watts (W): 333
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

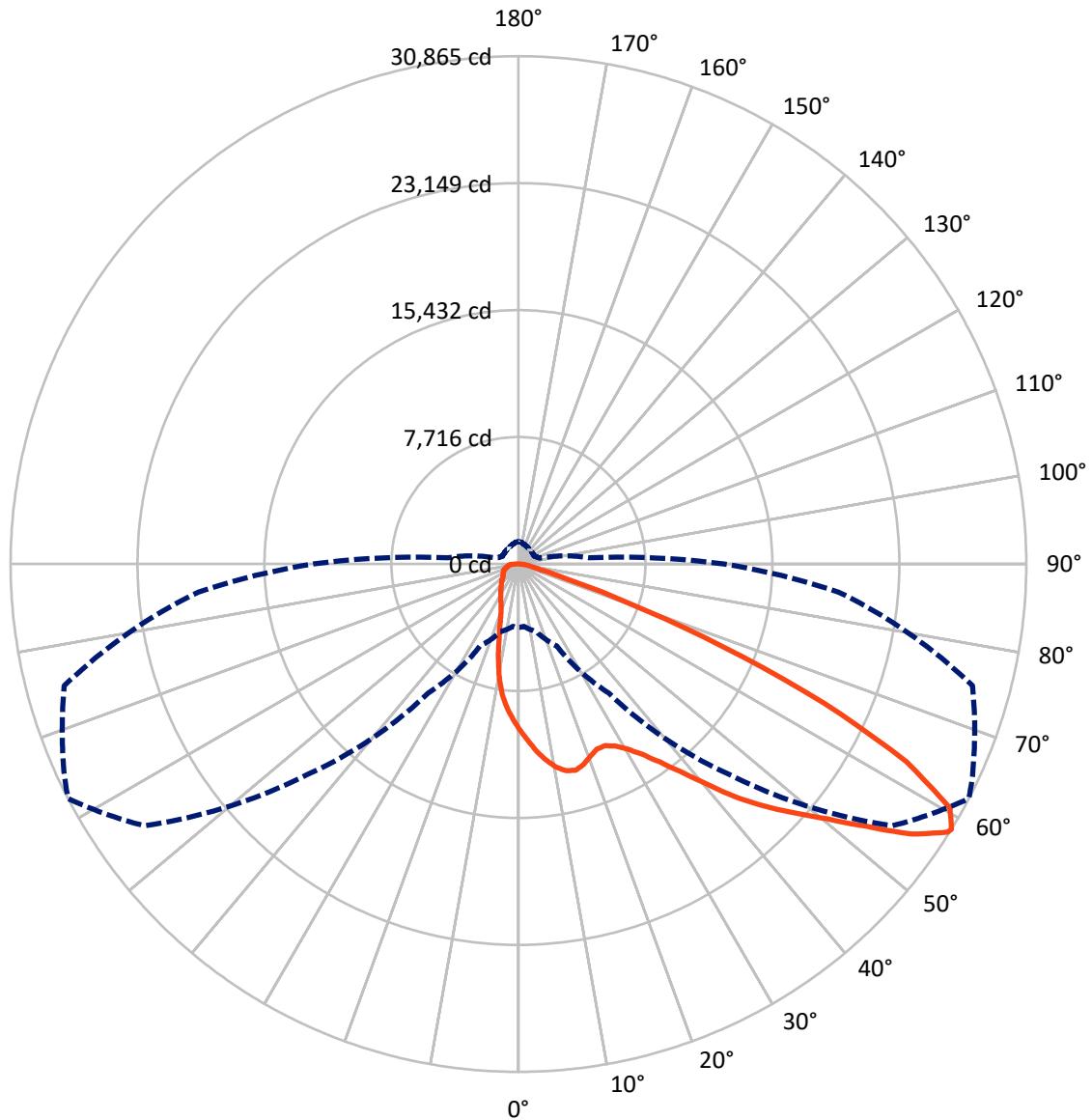
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 13.1 fc
 Type II - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 62.5-Deg Lateral - - - Horizontal Cone Through 58-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	5797.0	0.0	5797.0
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	31959.1	0.0	31959.1
	% Fixture	84.6	0.0	84.6
Total	Lumens	37756.1	0.0	37756.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	901.0	2.4
10°-20°	2274.0	6.0
20°-30°	3685.3	9.8
30°-40°	5883.9	15.6
40°-50°	8558.3	22.7
50°-60°	8955.5	23.7
60°-70°	5459.6	14.5
70°-80°	1526.8	4.0
80°-90°	511.8	1.4
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°	37756.1	100.0
0°-180°	37756.1	100.0



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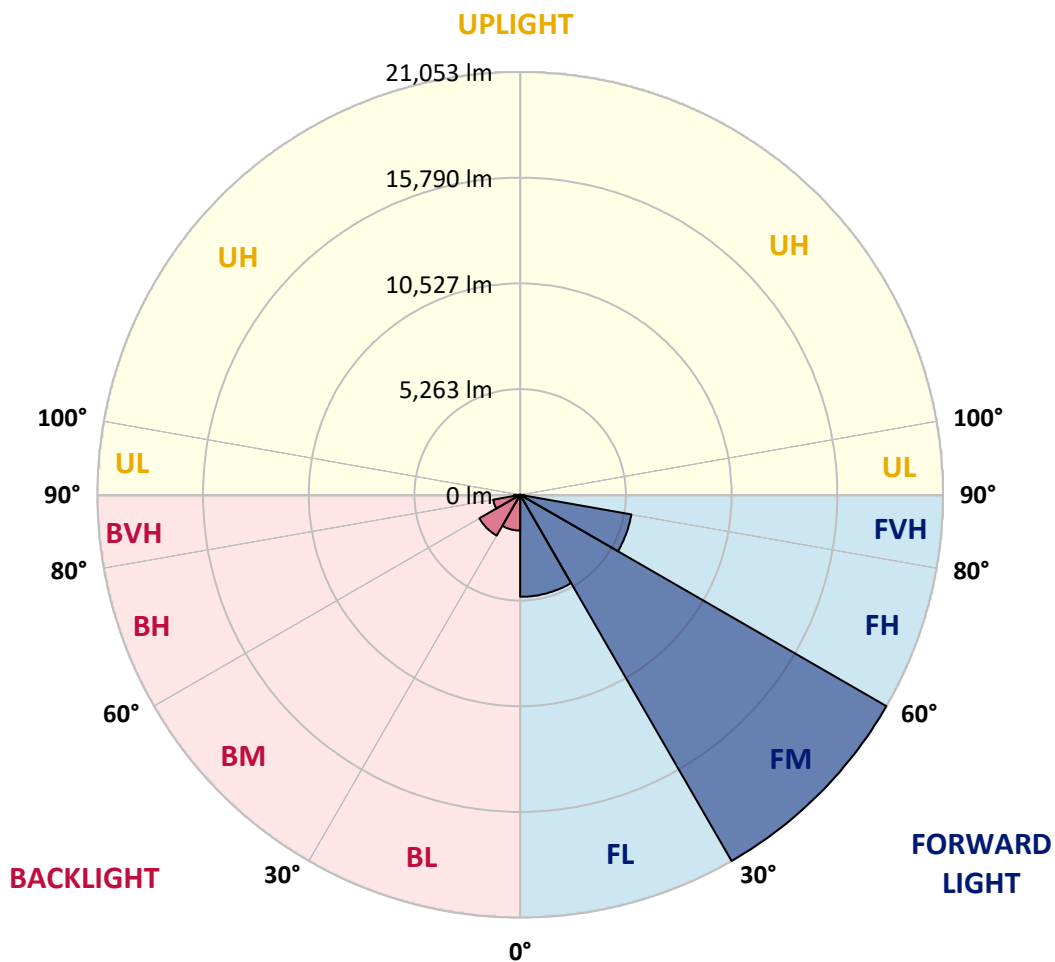
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	5078.3	13.5			
FM (30°-60°)	21053.3	55.8			
FH (60°-80°)	5621.7	14.9			G3/7500
FVH (80°-90°)	205.9	0.5			G2/225
BL (0°-30°)	1782.0	4.7	B3/2500		
BM (30°-60°)	2344.4	6.2	B2/2500		
BH (60°-80°)	1364.7	3.6	B3/2500		G3/2500
BVH (80°-90°)	305.9	0.8			G3/500
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 Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	62.5°	65°	75°	85°
0°	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7
2.5°	11442.2	11435.1	11338.4	11274.7	11199.2	11024.5	10849.9	10720.1	10654.0	10401.6	10156.2
5°	12388.4	12360.1	12305.8	12237.4	12138.3	11918.8	11642.7	11404.5	11310.1	10861.7	10411.0
7.5°	11888.1	11933.0	12100.5	12289.3	12487.6	12501.7	12305.8	12022.6	11918.8	11319.5	10658.7
10°	10503.0	10484.1	10694.1	11062.3	11715.9	12362.5	12685.7	12546.5	12438.0	11753.7	10906.5
12.5°	10083.0	10078.3	10113.7	10208.0	10618.6	11505.8	12588.9	12891.0	12853.3	12213.8	11170.8
15°	10210.4	10215.1	10212.7	10224.6	10337.8	10760.2	12048.6	13006.6	13124.7	12669.2	11439.9
17.5°	10618.6	10602.2	10550.2	10493.5	10510.1	10661.1	11465.7	12808.5	13162.4	13075.1	11666.3
20°	11248.7	11248.7	11109.5	10951.4	10847.6	10880.6	11222.7	12468.6	12987.8	13419.6	11836.3
22.5°	12039.2	12051.0	11845.7	11557.8	11321.8	11232.2	11361.9	12216.2	12775.4	13738.1	11987.2
25°	13020.8	13018.5	12718.8	12305.8	11933.0	11718.2	11715.9	12227.9	12709.3	14111.0	12145.4
27.5°	14236.1	14125.1	13775.9	13188.4	12662.2	12334.1	12185.5	12525.3	12848.6	14568.8	12357.8
30°	15607.1	15493.8	15035.9	14280.9	13568.2	13089.3	12843.9	13039.7	13273.3	15151.6	12678.7
32.5°	16963.9	16989.8	16451.8	15600.0	14684.4	14009.5	13646.2	13766.5	13929.3	15864.2	13112.8
35°	18950.8	18948.3	18245.1	17181.0	16093.2	15158.7	14698.6	14762.3	14910.9	16869.5	13721.7
37.5°	20432.6	20409.0	19955.9	19014.4	17789.7	16668.9	16003.5	16012.9	16140.3	18131.9	14524.0
40°	20583.6	20578.9	20576.6	20442.0	19604.3	18547.2	17714.2	17542.0	17593.9	19472.2	15375.8
42.5°	19429.7	19602.0	20097.5	20857.4	21091.0	20536.5	19748.3	19363.6	19250.4	21010.8	16277.2
45°	17785.0	17872.4	18740.8	20449.1	21839.0	22405.3	21813.1	21001.3	20807.8	22506.8	17011.1
47.5°	17020.5	16982.7	17485.4	19347.2	21765.8	23891.9	23934.4	22603.5	22275.6	23797.5	17636.4
50°	15380.5	15331.0	15965.7	17726.0	20968.2	24630.5	26112.5	24349.7	23743.3	25024.5	18202.7
52.5°	12112.4	12065.1	12917.0	15184.7	19184.3	24354.4	27948.2	26492.3	25458.8	26206.8	18731.3
55°	7881.4	7886.1	8697.8	11036.3	15524.4	22745.1	28809.6	28967.6	27809.0	27389.0	19158.4
57.5°	4339.5	4299.4	4877.5	6314.6	10680.0	19090.0	28092.2	30751.5	30147.5	28403.7	19467.5
58°	3858.1	3810.9	4256.9	5495.7	9575.6	18058.8	27731.2	30864.9	30447.2	28571.2	19512.4
60°	2749.1	2668.8	2600.3	3098.3	5517.0	13020.8	25324.3	30131.0	30534.5	28906.3	19469.8
62.5°	2317.2	2225.2	1979.8	1960.9	2598.0	6368.8	20026.7	26461.7	27592.0	28134.6	18785.6
65°	2152.1	2060.0	1736.8	1621.1	1762.6	2749.1	12383.7	20432.6	21942.8	25451.7	17063.0
67.5°	2034.0	1925.5	1578.6	1427.6	1456.0	1644.7	5255.0	13363.0	15113.9	19847.4	13688.6
70°	1927.9	1807.6	1453.6	1279.0	1255.4	1250.7	2053.0	6977.6	8664.8	12987.8	9169.8
72.5°	1807.6	1689.5	1342.6	1156.2	1104.4	1014.7	1234.1	2883.6	3952.5	6366.4	4202.6
75°	1632.9	1536.2	1220.0	1054.8	965.2	823.6	910.8	1382.8	1703.7	2437.6	1951.5
77.5°	1437.0	1359.2	1094.9	969.9	849.5	672.5	696.1	936.8	1052.4	1373.3	1130.3
80°	1017.0	1045.4	955.6	854.2	748.0	542.8	535.6	686.7	755.1	922.6	759.8
82.5°	700.8	722.1	778.7	674.8	604.1	422.4	394.0	476.7	512.1	556.9	368.2
85°	500.2	486.1	540.3	483.8	443.7	269.0	252.5	302.1	323.3	339.8	177.0
87.5°	304.4	302.1	311.5	250.1	231.3	136.9	125.1	143.9	153.3	148.6	84.9
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°	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7	10080.7
2.5°	10064.1	9948.5	9696.0	9493.1	9273.7	9106.1	8938.5	8844.1	8740.3	8681.4	8674.2
5°	10175.0	9939.1	9401.0	8900.8	8386.4	7923.9	7470.8	7135.7	6862.0	6706.3	6696.8
7.5°	10297.7	9927.2	9096.6	8230.7	7315.0	6404.2	5599.5	5030.9	4665.2	4495.3	4483.4
10°	10392.2	9877.7	8726.2	7378.7	5927.6	4724.1	3992.6	3657.6	3546.7	3518.3	3513.6
12.5°	10505.4	9842.3	8258.9	6286.2	4530.6	3596.2	3374.4	3353.1	3376.8	3390.9	3393.2
15°	10611.6	9773.9	7628.9	5075.7	3546.7	3213.9	3218.6	3263.4	3310.7	3331.9	3334.2
17.5°	10661.1	9606.3	6800.7	3999.7	3103.0	3041.6	3096.0	3154.9	3197.4	3213.9	3213.9
20°	10661.1	9337.3	5840.2	3239.9	2871.7	2883.6	2949.6	2994.5	3003.9	2989.8	2982.6
22.5°	10616.3	9004.6	4905.8	2826.9	2683.0	2727.8	2779.8	2749.1	2638.2	2553.2	2536.7
25°	10576.2	8610.6	4006.8	2574.5	2517.8	2576.8	2555.5	2345.5	2175.6	2088.4	2074.1
27.5°	10510.1	8133.9	3256.4	2366.8	2357.3	2404.5	2194.5	1991.6	1906.7	1859.4	1850.0
30°	10493.5	7617.1	2725.4	2182.7	2199.2	2133.2	1892.5	1826.4	1807.6	1781.6	1769.8
32.5°	10547.9	7100.3	2392.8	2031.7	2048.3	1831.1	1739.1	1748.5	1746.2	1713.1	1701.4
35°	10696.5	6597.7	2180.3	1894.8	1847.7	1640.0	1651.8	1680.1	1680.1	1640.0	1625.9
37.5°	10956.1	6130.5	2045.9	1779.2	1616.4	1540.9	1571.6	1609.3	1609.3	1581.0	1569.2
40°	11232.2	5675.0	1944.4	1687.2	1470.1	1472.4	1503.1	1531.5	1543.2	1547.9	1538.5
42.5°	11482.3	5203.1	1835.9	1588.0	1404.0	1420.6	1434.7	1456.0	1505.5	1538.5	1533.8
45°	11628.6	4728.8	1717.8	1465.4	1359.2	1366.3	1361.5	1399.3	1458.3	1507.8	1507.8
47.5°	11763.1	4339.5	1621.1	1342.6	1314.4	1314.4	1300.2	1337.9	1392.2	1451.3	1456.0
50°	11890.5	4087.0	1552.6	1248.3	1257.7	1250.7	1246.0	1281.3	1354.5	1425.3	1437.0
52.5°	12020.3	4002.1	1491.4	1179.9	1198.7	1189.3	1194.0	1243.6	1326.2	1399.3	1411.1
55°	12202.0	4056.3	1427.6	1132.6	1142.1	1139.8	1158.6	1215.3	1288.4	1361.5	1366.3
57.5°	12426.2	4254.6	1373.3	1097.2	1087.8	1102.0	1132.6	1186.9	1257.7	1345.1	1352.1
58°	12471.0	4301.7	1363.9	1087.8	1076.0	1097.2	1127.9	1179.9	1253.0	1345.1	1352.1
60°	12539.4	4469.3	1340.3	1069.0	1035.9	1073.7	1111.4	1163.3	1243.6	1356.8	1371.0
62.5°	12209.1	4502.3	1333.2	1047.7	993.4	1040.6	1085.5	1144.5	1234.1	1396.9	1427.6
65°	11064.6	4162.5	1283.7	1012.3	958.0	1014.7	1061.8	1130.3	1262.4	1517.2	1531.5
67.5°	8881.9	3457.0	1163.3	958.0	917.9	984.0	1043.0	1130.3	1274.2	1536.2	1545.6
70°	6106.9	2598.0	1012.3	899.1	870.7	946.2	1035.9	1156.2	1234.1	1453.6	1425.3
72.5°	3190.3	1807.6	887.2	830.6	814.1	913.2	1104.4	1130.3	1186.9	1356.8	1328.5
75°	1607.0	1229.4	781.0	752.8	750.3	901.4	1236.4	1087.8	1137.4	1276.6	1337.9
77.5°	948.6	962.8	696.1	679.5	691.4	880.1	1238.8	1045.4	1080.7	1175.2	1241.2
80°	649.0	795.2	630.0	625.3	634.7	809.4	1142.1	993.4	1014.7	1111.4	1182.2
82.5°	365.7	438.9	552.2	582.9	578.2	663.1	986.3	903.8	929.8	1314.4	1389.9
85°	177.0	264.3	462.5	545.1	493.2	441.3	802.3	802.3	809.4	941.5	953.3
87.5°	66.1	117.9	311.5	431.8	344.5	264.3	545.1	568.7	632.4	651.3	665.4
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)