

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: P196025

Luminaire Tested: **NAV-AF-05-D-UNV-AFL**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196025
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-05-D-UNV-AFL
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 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: 31517.1 lumens
Efficiency: N/A
Efficacy: 113.0 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

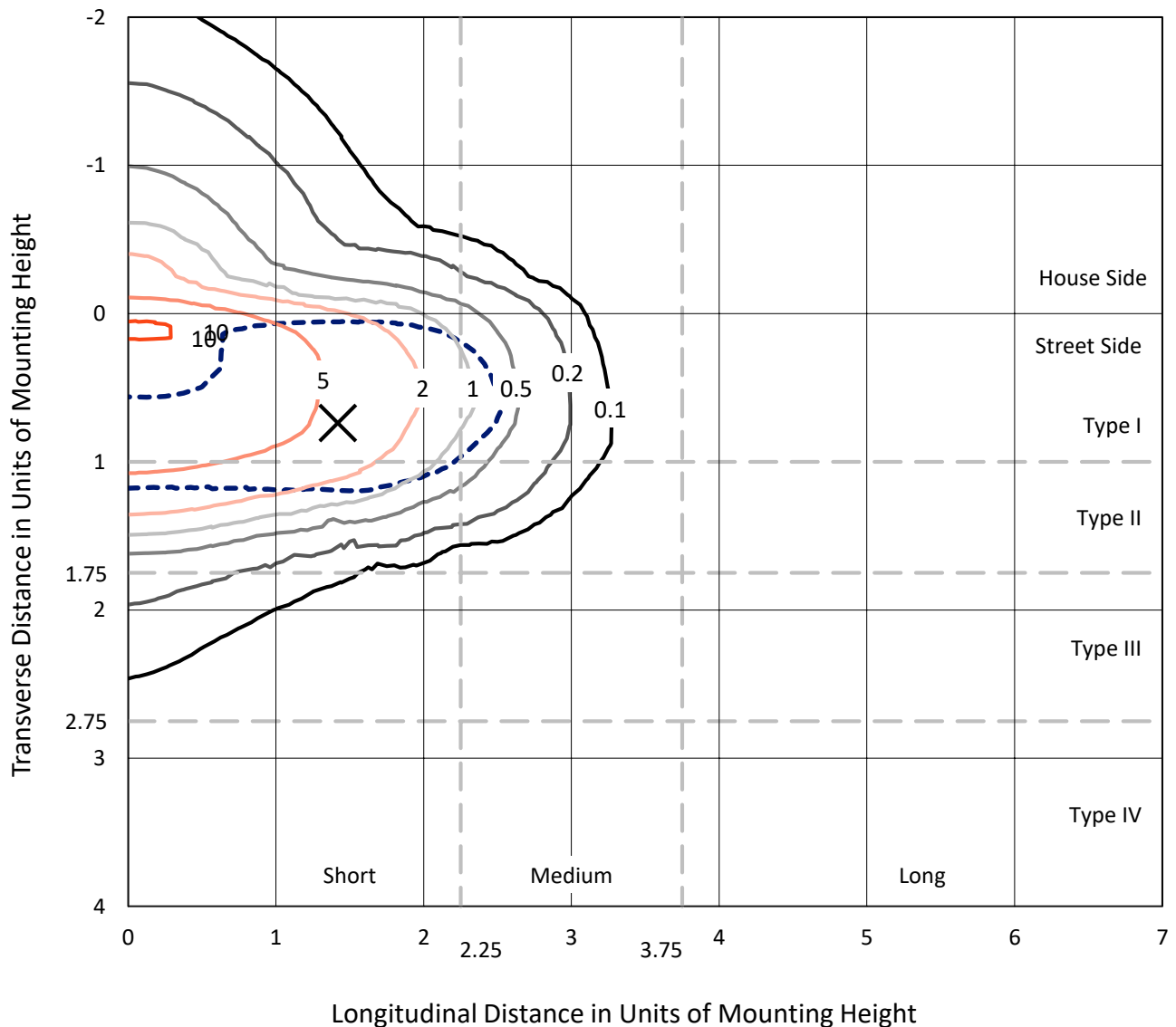
Input Watts (W): 279
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

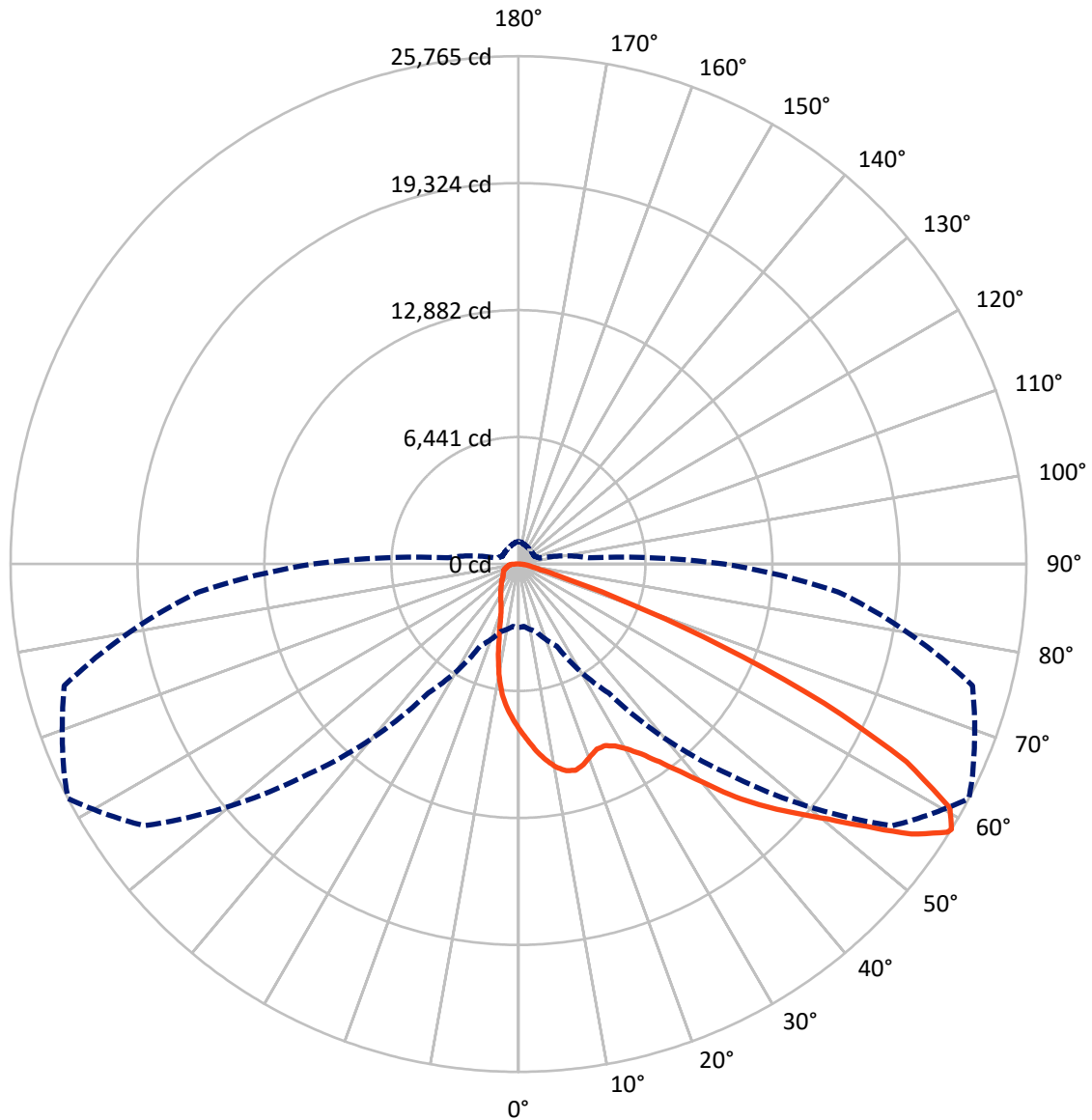
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 10.9 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	4839.1	0.0	4839.1
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	26678.1	0.0	26678.1
	% Fixture	84.6	0.0	84.6
Total	Lumens	31517.1	0.0	31517.1
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	752.1	2.4
10°-20°	1898.2	6.0
20°-30°	3076.3	9.8
30°-40°	4911.6	15.6
40°-50°	7144.1	22.7
50°-60°	7475.6	23.7
60°-70°	4557.4	14.5
70°-80°	1274.5	4.0
80°-90°	427.2	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°	31517.1	100.0
0°-180°	31517.1	100.0



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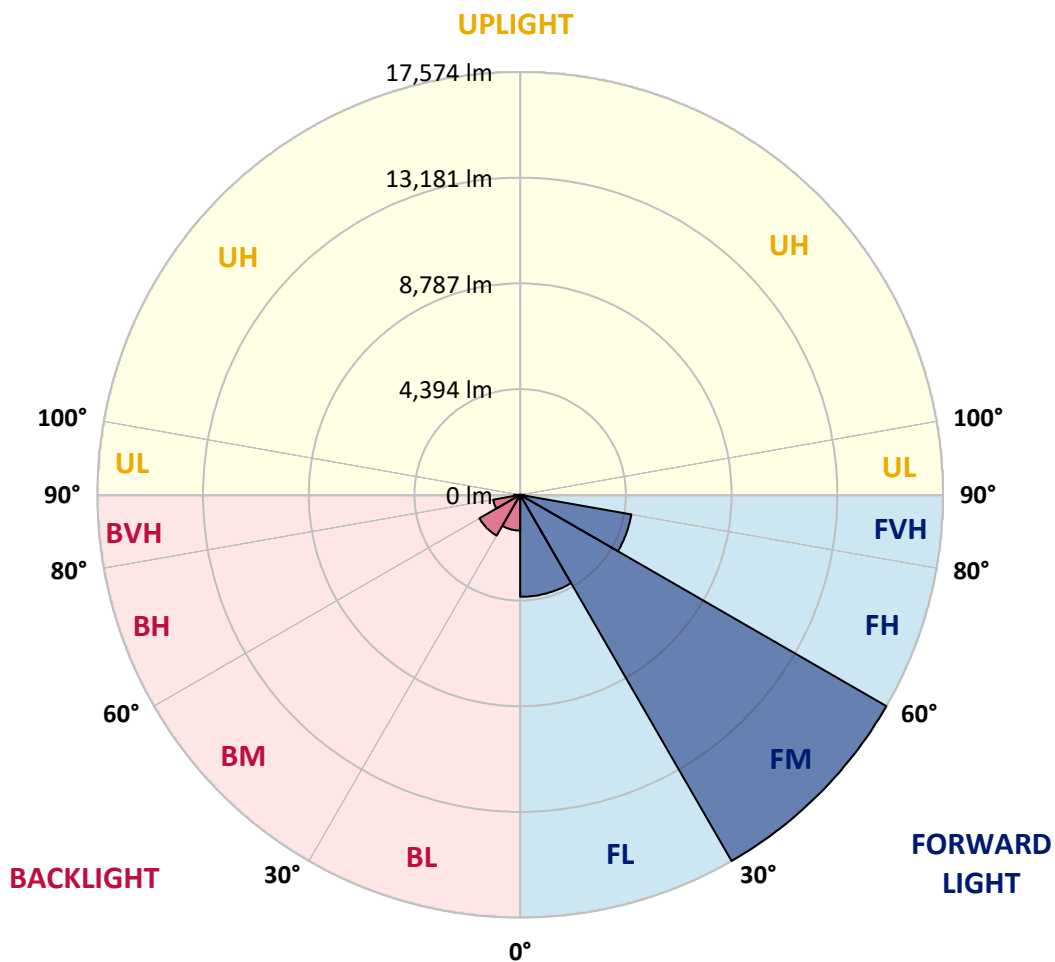
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	4239.2	13.5			
FM	(30°-60°)	17574.3	55.8			
FH	(60°-80°)	4692.7	14.9			G2/5000
FVH	(80°-90°)	171.9	0.5			G2/225
BL	(0°-30°)	1487.5	4.7	B3/2500		
BM	(30°-60°)	1957.0	6.2	B2/2500		
BH	(60°-80°)	1139.2	3.6	B3/2500		G3/2500
BVH	(80°-90°)	255.4	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°	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9
2.5°	9551.4	9545.5	9464.8	9411.6	9348.5	9202.8	9057.0	8948.7	8893.5	8682.7	8477.9
5°	10341.3	10317.7	10272.4	10215.2	10132.5	9949.3	9718.9	9519.9	9441.1	9066.8	8690.6
7.5°	9923.7	9961.1	10101.0	10258.6	10424.1	10435.8	10272.4	10036.0	9949.3	9449.0	8897.4
10°	8767.4	8751.7	8927.0	9234.3	9779.9	10319.6	10589.5	10473.3	10382.6	9811.4	9104.3
12.5°	8416.8	8412.8	8442.4	8521.2	8864.0	9604.6	10508.8	10760.8	10729.3	10195.5	9324.9
15°	8523.2	8527.1	8525.2	8535.0	8629.6	8982.1	10057.7	10857.4	10955.9	10575.7	9549.5
17.5°	8864.0	8850.2	8806.9	8759.5	8773.3	8899.5	9571.1	10691.9	10987.4	10914.5	9738.6
20°	9389.9	9389.9	9273.7	9141.7	9055.1	9082.6	9368.2	10408.3	10841.6	11202.1	9880.4
22.5°	10049.8	10059.6	9888.3	9648.0	9450.9	9376.1	9484.5	10197.5	10664.4	11468.0	10006.4
25°	10869.2	10867.2	10617.1	10272.4	9961.1	9781.9	9779.9	10207.3	10609.2	11779.3	10138.4
27.5°	11883.6	11791.0	11499.5	11009.1	10569.7	10296.0	10171.9	10455.6	10725.4	12161.4	10315.7
30°	13028.1	12933.5	12551.4	11921.1	11326.2	10926.3	10721.4	10884.9	11080.0	12647.9	10583.6
32.5°	14160.7	14182.4	13733.2	13022.2	12257.9	11694.6	11391.2	11491.6	11627.6	13242.8	10946.0
35°	15819.2	15817.3	15230.3	14341.9	13433.8	12653.8	12269.7	12322.9	12447.0	14081.9	11454.2
37.5°	17056.3	17036.5	16658.3	15872.4	14850.1	13914.5	13359.0	13366.9	13473.3	15135.7	12123.9
40°	17182.3	17178.4	17176.4	17064.1	16364.9	15482.4	14787.1	14643.2	14686.6	16254.6	12835.1
42.5°	16219.1	16362.9	16776.5	17410.8	17605.8	17142.9	16485.1	16164.0	16069.4	17538.8	13587.4
45°	14846.2	14919.0	15643.9	17070.1	18230.2	18703.0	18208.5	17530.9	17369.4	18787.7	14200.1
47.5°	14208.0	14176.5	14596.0	16150.1	18169.1	19944.0	19979.4	18868.4	18594.7	19865.2	14722.1
50°	12839.0	12797.6	13327.5	14796.9	17503.4	20560.5	21797.4	20326.0	19819.9	20889.5	15194.8
52.5°	10110.8	10071.5	10782.5	12675.5	16014.2	20330.0	23329.9	22114.7	21251.9	21876.3	15636.0
55°	6579.0	6583.0	7260.6	9212.6	12959.2	18986.6	24049.0	24180.9	23213.7	22863.2	15992.6
57.5°	3622.4	3588.9	4071.5	5271.1	8915.2	15935.4	23450.1	25670.0	25165.8	23710.2	16250.6
58°	3220.6	3181.2	3553.4	4587.6	7993.3	15074.6	23148.8	25764.7	25415.9	23850.0	16288.0
60°	2294.8	2227.8	2170.7	2586.3	4605.3	10869.2	21139.6	25152.0	25488.9	24129.7	16252.5
62.5°	1934.3	1857.5	1652.7	1636.9	2168.8	5316.4	16717.5	22089.0	23032.6	23485.6	15681.3
65°	1796.4	1719.6	1449.7	1353.3	1471.4	2294.8	10337.3	17056.3	18316.9	21246.0	14243.5
67.5°	1697.9	1607.4	1317.8	1191.7	1215.4	1372.9	4386.7	11154.8	12616.4	16567.7	11426.7
70°	1609.3	1508.9	1213.4	1067.7	1047.9	1044.0	1713.7	5824.6	7233.0	10841.6	7654.5
72.5°	1508.9	1410.3	1120.8	965.2	921.9	847.0	1030.2	2407.1	3299.3	5314.4	3508.2
75°	1363.1	1282.4	1018.3	880.5	805.7	687.4	760.4	1154.3	1422.2	2034.8	1629.0
77.5°	1199.6	1134.6	914.0	809.6	709.1	561.4	581.0	782.0	878.5	1146.4	943.6
80°	848.9	872.6	797.8	713.1	624.4	453.1	447.1	573.2	630.3	770.2	634.2
82.5°	585.0	602.7	650.0	563.3	504.2	352.6	329.0	397.9	427.5	464.8	307.3
85°	417.6	405.8	451.1	403.8	370.3	224.5	210.7	252.2	269.9	283.7	147.7
87.5°	254.1	252.2	260.0	208.8	193.0	114.3	104.4	120.2	128.1	124.1	70.9
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°	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9	8414.9
2.5°	8401.1	8304.5	8093.8	7924.4	7741.2	7601.3	7461.5	7382.7	7296.0	7246.8	7240.9
5°	8493.7	8296.6	7847.6	7430.0	7000.6	6614.5	6236.3	5956.5	5728.1	5598.1	5590.2
7.5°	8596.1	8286.8	7593.5	6870.5	6106.3	5345.9	4674.3	4199.5	3894.3	3752.4	3742.6
10°	8674.8	8245.5	7284.2	6159.5	4948.1	3943.5	3332.9	3053.1	2960.5	2936.9	2933.0
12.5°	8769.5	8215.9	6894.2	5247.4	3782.0	3002.0	2816.8	2799.0	2818.7	2830.6	2832.6
15°	8858.0	8158.7	6368.3	4237.0	2960.5	2682.8	2686.8	2724.2	2763.6	2781.3	2783.2
17.5°	8899.5	8018.9	5676.9	3338.8	2590.2	2539.1	2584.4	2633.6	2669.1	2682.8	2682.8
20°	8899.5	7794.4	4875.2	2704.5	2397.2	2407.1	2462.2	2499.7	2507.6	2495.7	2489.8
22.5°	8862.0	7516.6	4095.2	2359.7	2239.6	2277.1	2320.4	2294.8	2202.2	2131.3	2117.5
25°	8828.5	7187.7	3344.6	2149.0	2101.8	2151.0	2133.3	1957.9	1816.1	1743.2	1731.4
27.5°	8773.3	6789.8	2718.3	1975.7	1967.9	2007.2	1831.9	1662.5	1591.6	1552.2	1544.3
30°	8759.5	6358.5	2275.0	1822.1	1835.8	1780.7	1579.7	1524.6	1508.9	1487.2	1477.3
32.5°	8804.8	5927.1	1997.3	1696.0	1709.8	1528.5	1451.8	1459.6	1457.6	1430.1	1420.2
35°	8928.9	5507.5	1820.0	1581.7	1542.3	1369.0	1378.8	1402.5	1402.5	1369.0	1357.1
37.5°	9145.7	5117.5	1707.8	1485.2	1349.3	1286.3	1311.8	1343.3	1343.3	1319.7	1309.9
40°	9376.1	4737.3	1623.1	1408.4	1227.1	1229.2	1254.8	1278.4	1288.2	1292.2	1284.3
42.5°	9584.9	4343.3	1532.5	1325.6	1172.0	1185.8	1197.7	1215.4	1256.7	1284.3	1280.3
45°	9707.0	3947.5	1434.0	1223.2	1134.6	1140.5	1136.6	1168.1	1217.3	1258.6	1258.6
47.5°	9819.3	3622.4	1353.3	1120.8	1097.1	1097.1	1085.4	1116.9	1162.2	1211.4	1215.4
50°	9925.7	3411.6	1296.1	1042.0	1049.9	1044.0	1040.0	1069.6	1130.7	1189.7	1199.6
52.5°	10034.0	3340.8	1244.9	984.9	1000.7	992.8	996.7	1038.1	1107.0	1168.1	1177.9
55°	10185.7	3386.1	1191.7	945.5	953.4	951.4	967.2	1014.5	1075.5	1136.6	1140.5
57.5°	10372.8	3551.5	1146.4	916.0	908.1	919.8	945.5	990.8	1049.9	1122.8	1128.7
58°	10410.3	3590.9	1138.5	908.1	898.3	916.0	941.5	984.9	1046.0	1122.8	1128.7
60°	10467.3	3730.7	1118.8	892.3	864.7	896.2	927.7	971.1	1038.1	1132.6	1144.5
62.5°	10191.6	3758.3	1113.0	874.6	829.3	868.7	906.1	955.3	1030.2	1166.1	1191.7
65°	9236.2	3474.7	1071.5	845.1	799.7	847.0	886.4	943.6	1053.8	1266.5	1278.4
67.5°	7414.2	2885.7	971.1	799.7	766.2	821.4	870.6	943.6	1063.7	1282.4	1290.2
70°	5097.8	2168.8	845.1	750.4	726.8	789.9	864.7	965.2	1030.2	1213.4	1189.7
72.5°	2663.2	1508.9	740.6	693.4	679.5	762.3	921.9	943.6	990.8	1132.6	1109.0
75°	1341.4	1026.2	652.0	628.4	626.4	752.5	1032.2	908.1	949.4	1065.6	1116.9
77.5°	791.9	803.6	581.0	567.3	577.1	734.7	1034.1	872.6	902.1	980.9	1036.1
80°	541.7	663.8	525.9	522.0	529.9	675.7	953.4	829.3	847.0	927.7	986.8
82.5°	305.4	366.4	460.9	486.5	482.6	553.5	823.4	754.4	776.1	1097.1	1160.2
85°	147.7	220.7	386.1	455.0	411.6	368.4	669.7	669.7	675.7	785.9	795.8
87.5°	55.1	98.5	260.0	360.5	287.6	220.7	455.0	474.8	527.9	543.7	555.5
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)