

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: P196031

Luminaire Tested: **NAV-AF-05-D-UNV-AFL-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196031
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-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 4000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND AUTOMOTIVE FRONTLINE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 34573.7 lumens
Efficiency: N/A
Efficacy: 108.0 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

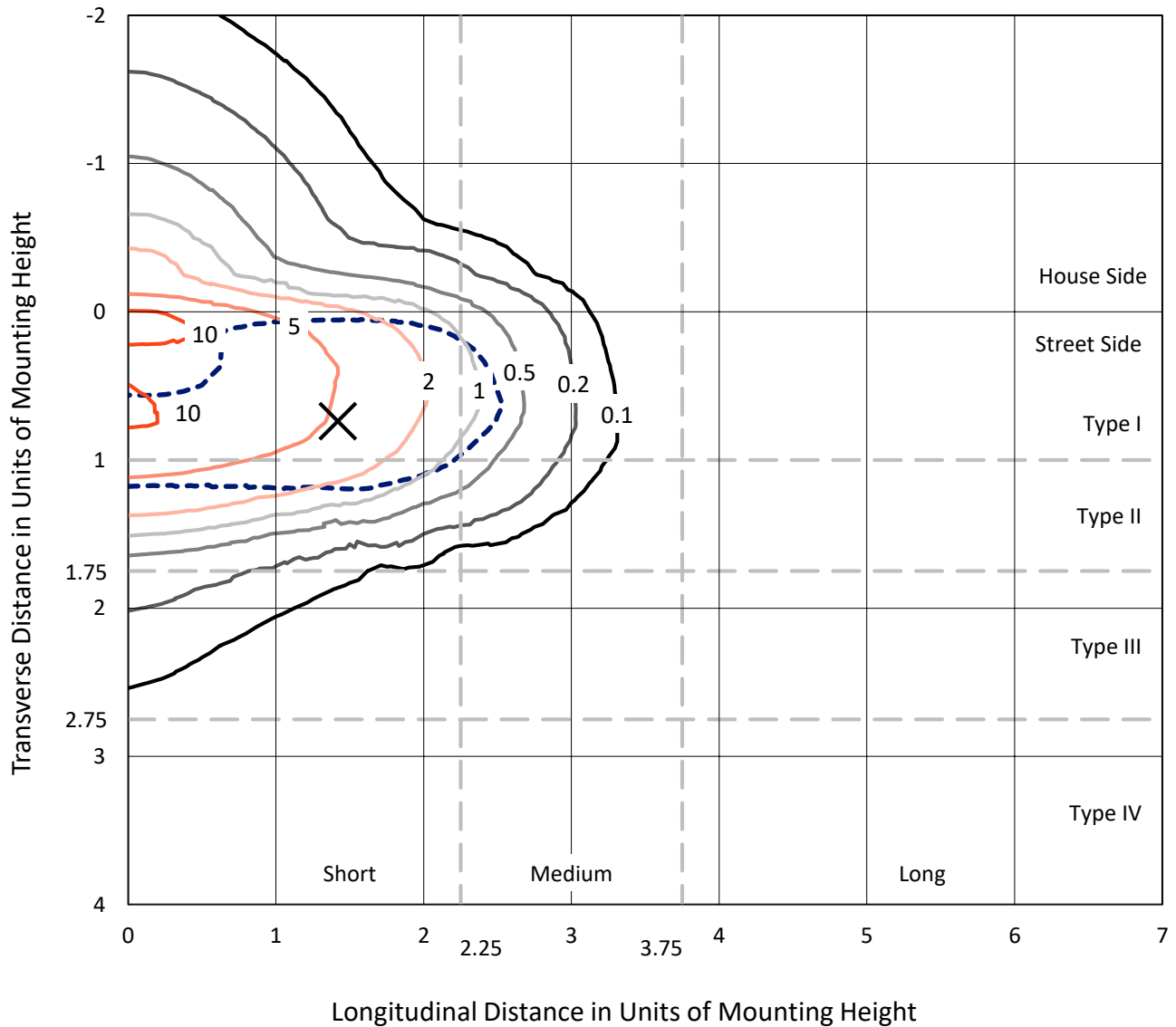
Input Watts (W): 320
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

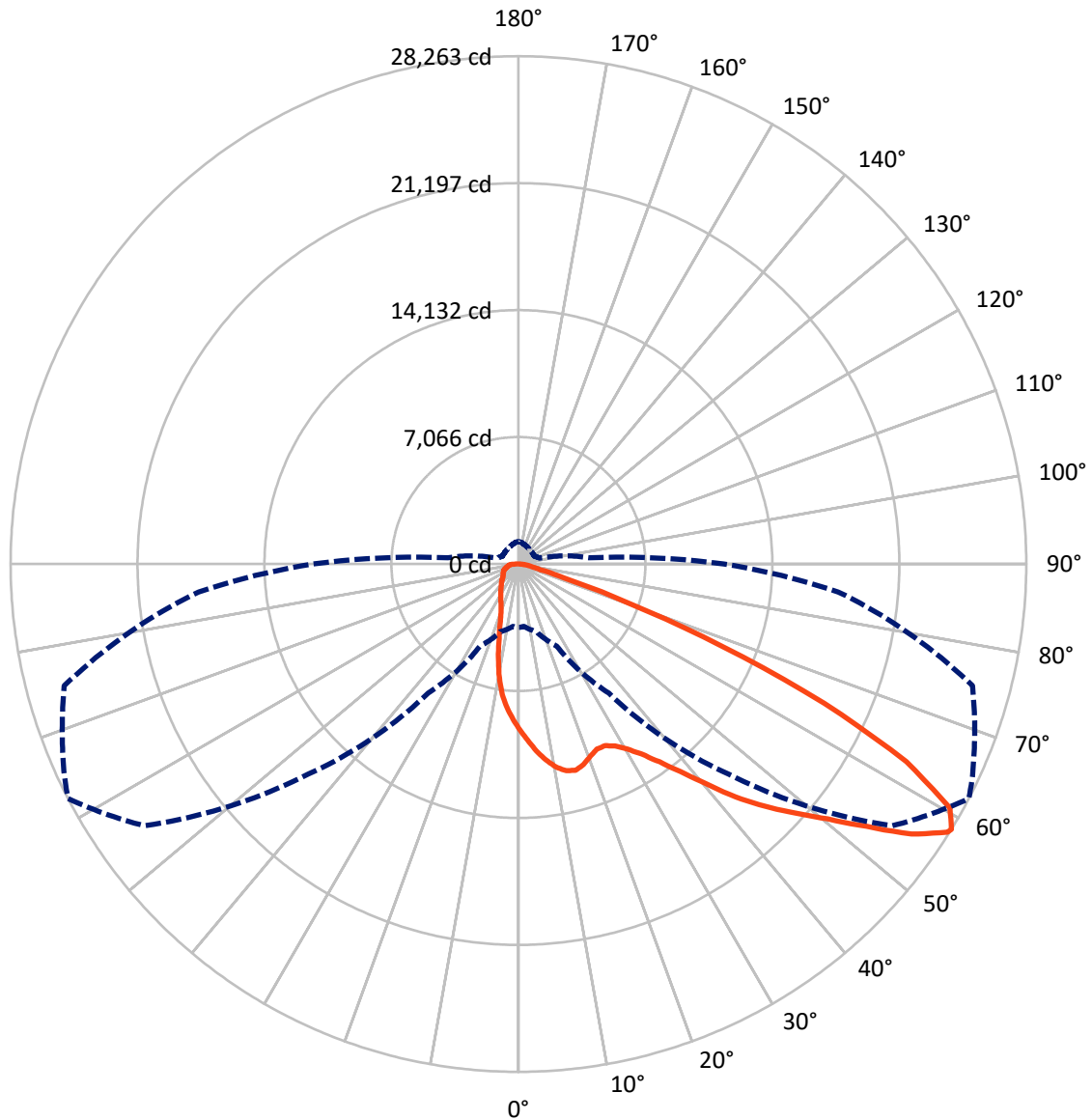
✕ Max cd
 - - - 1/2 Max cd



Based on 30 foot mounting height. Maximum calculated value = 12 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	5308.4	0.0	5308.4
	% Fixture	15.4	0.0	15.4
Street Side	Lumens	29265.3	0.0	29265.3
	% Fixture	84.6	0.0	84.6
Total	Lumens	34573.7	0.0	34573.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	825.1	2.4
10°-20°	2082.3	6.0
20°-30°	3374.7	9.8
30°-40°	5387.9	15.6
40°-50°	7836.9	22.7
50°-60°	8200.6	23.7
60°-70°	4999.4	14.5
70°-80°	1398.1	4.0
80°-90°	468.6	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°	34573.7	100.0
0°-180°	34573.7	100.0



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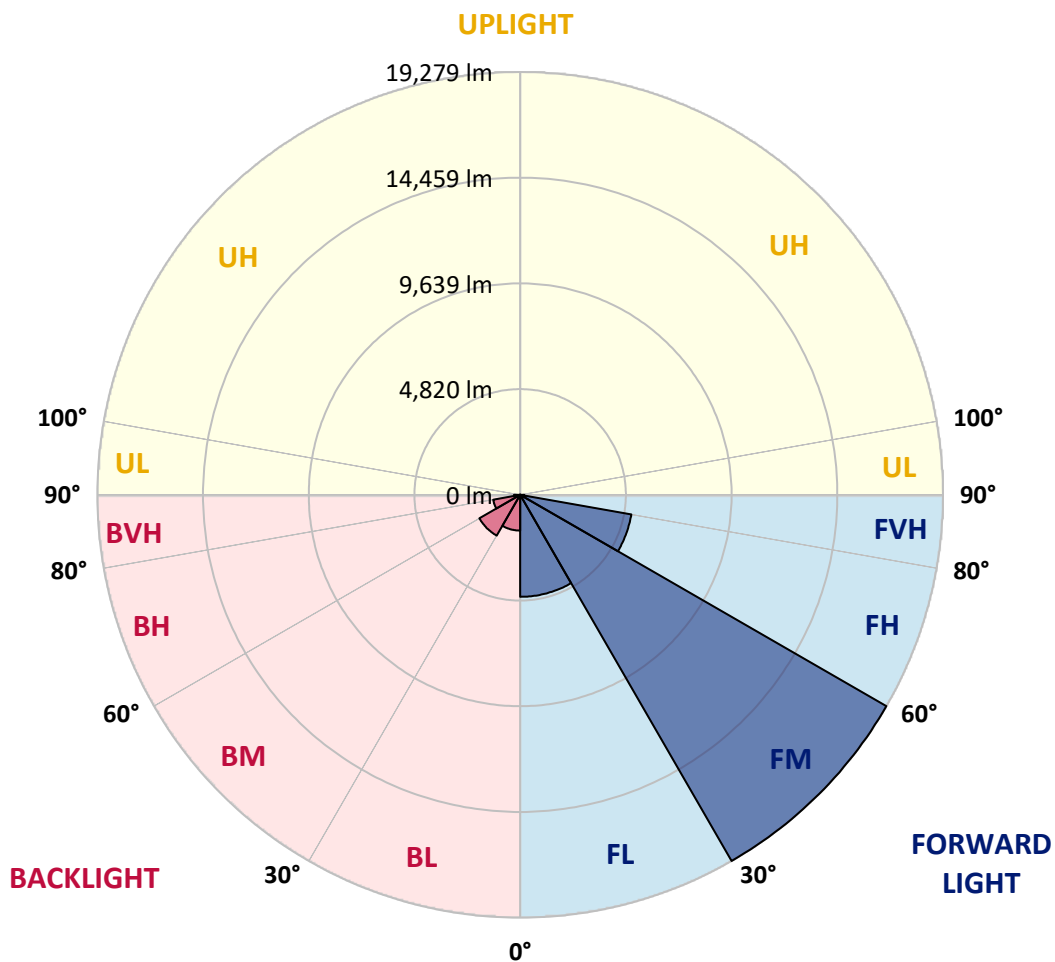
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	4650.3	13.5			
FM	(30°-60°)	19278.7	55.8			
FH	(60°-80°)	5147.8	14.9			G3/7500
FVH	(80°-90°)	188.5	0.5			G2/225
BL	(0°-30°)	1631.8	4.7	B3/2500		
BM	(30°-60°)	2146.8	6.2	B2/2500		
BH	(60°-80°)	1249.7	3.6	B3/2500		G3/2500
BVH	(80°-90°)	280.1	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°	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9
2.5°	10477.8	10471.2	10382.6	10324.3	10255.2	10095.3	9935.4	9816.5	9756.0	9524.8	9300.1
5°	11344.2	11318.2	11268.6	11205.9	11115.2	10914.2	10661.4	10443.2	10356.8	9946.2	9533.5
7.5°	10886.1	10927.2	11080.6	11253.5	11435.0	11447.9	11268.6	11009.3	10914.2	10365.4	9760.4
10°	9617.8	9600.5	9792.7	10129.9	10728.4	11320.5	11616.4	11489.0	11389.6	10763.0	9987.3
12.5°	9233.2	9228.8	9261.2	9347.6	9723.7	10536.1	11527.8	11804.4	11769.9	11184.3	10229.2
15°	9349.8	9354.1	9351.9	9362.8	9466.5	9853.3	11033.0	11910.3	12018.3	11601.4	10475.5
17.5°	9723.7	9708.5	9661.0	9609.1	9624.2	9762.5	10499.4	11728.8	12052.9	11973.0	10683.0
20°	10300.5	10300.5	10173.0	10028.3	9933.2	9963.4	10276.8	11417.7	11893.0	12288.5	10838.6
22.5°	11024.4	11035.2	10847.3	10583.7	10367.5	10285.5	10404.2	11186.5	11698.6	12580.1	10976.9
25°	11923.3	11921.2	11646.7	11268.6	10927.2	10730.5	10728.4	11197.3	11638.1	12921.6	11121.6
27.5°	13036.1	12934.6	12614.7	12076.8	11594.8	11294.5	11158.3	11469.5	11765.6	13340.8	11316.1
30°	14291.5	14187.8	13768.6	13077.2	12424.7	11986.0	11761.3	11940.6	12154.5	13874.5	11610.0
32.5°	15534.0	15557.8	15065.1	14285.1	13446.7	12828.7	12496.0	12606.1	12755.2	14527.0	12007.6
35°	17353.4	17351.3	16707.3	15732.8	14736.6	13881.0	13459.7	13518.0	13654.1	15447.6	12565.1
37.5°	18710.4	18688.8	18273.9	17411.7	16290.3	15264.0	14654.6	14663.2	14779.9	16603.6	13299.7
40°	18848.7	18844.4	18842.2	18719.1	17952.0	16984.0	16221.1	16063.4	16111.0	17831.0	14079.8
42.5°	17792.1	17949.8	18403.6	19099.3	19313.2	18805.4	18083.7	17731.5	17627.8	19239.8	14905.2
45°	16286.0	16365.9	17161.1	18725.5	19998.3	20516.8	19974.4	19231.2	19054.0	20609.7	15577.2
47.5°	15585.9	15551.3	16011.5	17716.4	19931.3	21878.2	21917.0	20698.3	20397.9	21791.7	16149.8
50°	14084.1	14038.8	14620.0	16232.0	19200.9	22554.4	23911.5	22297.4	21742.0	22915.3	16668.5
52.5°	11091.4	11048.2	11828.3	13904.8	17567.3	22301.7	25592.6	24259.4	23312.9	23997.9	17152.4
55°	7217.1	7221.4	7964.7	10106.0	14215.9	20828.0	26381.3	26526.0	25465.0	25080.4	17543.6
57.5°	3973.8	3937.0	4466.4	5782.3	9779.8	17480.9	25724.3	28159.6	27606.4	26009.5	17826.7
58°	3532.9	3489.7	3898.1	5032.5	8768.5	16536.6	25393.7	28263.3	27880.8	26163.0	17867.7
60°	2517.4	2443.8	2381.2	2837.2	5051.9	11923.3	23189.8	27591.3	27960.8	26469.9	17828.8
62.5°	2121.9	2037.6	1812.9	1795.6	2379.1	5832.0	18338.7	24231.2	25266.3	25763.2	17202.1
65°	1970.6	1886.4	1590.4	1484.5	1614.1	2517.4	11339.9	18710.4	20093.3	23306.4	15624.8
67.5°	1862.6	1763.3	1445.5	1307.3	1333.2	1506.1	4812.1	12236.6	13839.9	18174.5	12534.8
70°	1765.4	1655.1	1331.1	1171.2	1149.6	1145.2	1879.9	6389.5	7934.5	11893.0	8396.9
72.5°	1655.1	1547.1	1229.5	1058.8	1011.3	929.1	1130.1	2640.5	3619.3	5829.8	3848.3
75°	1495.2	1406.7	1117.2	965.9	883.7	754.1	834.1	1266.2	1560.1	2232.1	1787.0
77.5°	1315.9	1244.6	1002.6	888.1	777.9	615.8	637.4	857.8	963.7	1257.6	1035.0
80°	931.3	957.3	875.1	782.3	685.0	496.9	490.5	628.8	691.4	844.9	695.8
82.5°	641.8	661.2	713.1	618.0	553.2	386.8	360.9	436.5	468.9	509.9	337.1
85°	458.1	445.1	494.8	442.9	406.2	246.3	231.2	276.6	296.0	311.2	162.0
87.5°	278.8	276.6	285.2	229.0	211.8	125.3	114.6	131.9	140.5	136.2	77.7
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°	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9	9230.9
2.5°	9215.9	9110.0	8878.7	8692.9	8491.9	8338.6	8185.1	8098.7	8003.6	7949.6	7943.1
5°	9317.3	9101.3	8608.6	8150.6	7679.5	7256.0	6841.1	6534.3	6283.6	6141.0	6132.4
7.5°	9429.8	9090.5	8329.9	7536.9	6698.5	5864.4	5127.5	4606.9	4271.9	4116.4	4105.5
10°	9516.2	9045.1	7990.7	6756.8	5428.0	4326.0	3656.1	3349.2	3247.7	3221.8	3217.4
12.5°	9619.9	9012.7	7562.8	5756.3	4148.8	3293.1	3089.9	3070.5	3092.1	3105.1	3107.2
15°	9717.1	8950.0	6985.8	4647.9	3247.7	2943.0	2947.3	2988.3	3031.6	3051.1	3053.2
17.5°	9762.5	8796.7	6227.4	3662.6	2841.5	2785.3	2835.0	2889.0	2927.9	2943.0	2943.0
20°	9762.5	8550.3	5348.0	2966.8	2629.7	2640.5	2701.0	2742.0	2750.7	2737.7	2731.3
22.5°	9721.4	8245.6	4492.3	2588.7	2456.8	2497.8	2545.4	2517.4	2415.8	2338.0	2322.8
25°	9684.7	7884.8	3669.0	2357.4	2305.5	2359.6	2340.1	2147.8	1992.3	1912.3	1899.3
27.5°	9624.2	7448.3	2981.9	2167.3	2158.6	2201.9	2009.6	1823.7	1746.0	1702.7	1694.1
30°	9609.1	6975.1	2495.7	1998.7	2013.9	1953.3	1733.0	1672.4	1655.1	1631.4	1620.6
32.5°	9658.8	6501.9	2191.1	1860.4	1875.6	1676.8	1592.5	1601.1	1599.0	1568.7	1558.0
35°	9795.0	6041.6	1996.6	1735.1	1691.9	1501.8	1512.5	1538.5	1538.5	1501.8	1488.8
37.5°	10032.6	5613.7	1873.4	1629.3	1480.1	1411.0	1439.1	1473.7	1473.7	1447.8	1436.9
40°	10285.5	5196.7	1780.5	1545.0	1346.2	1348.4	1376.4	1402.4	1413.2	1417.5	1408.8
42.5°	10514.5	4764.6	1681.1	1454.2	1285.6	1300.8	1313.8	1333.2	1378.6	1408.8	1404.5
45°	10648.4	4330.3	1573.1	1341.9	1244.6	1251.1	1246.8	1281.3	1335.4	1380.8	1380.8
47.5°	10771.6	3973.8	1484.5	1229.5	1203.6	1203.6	1190.6	1225.2	1274.9	1328.9	1333.2
50°	10888.3	3742.5	1421.8	1143.0	1151.7	1145.2	1140.9	1173.3	1240.3	1305.1	1315.9
52.5°	11007.2	3664.7	1365.6	1080.4	1097.7	1089.0	1093.3	1138.7	1214.3	1281.3	1292.2
55°	11173.5	3714.4	1307.3	1037.2	1045.9	1043.7	1061.0	1112.8	1179.8	1246.8	1251.1
57.5°	11378.8	3895.9	1257.6	1004.7	996.1	1009.1	1037.2	1086.9	1151.7	1231.6	1238.2
58°	11419.8	3939.2	1248.9	996.1	985.3	1004.7	1032.9	1080.4	1147.3	1231.6	1238.2
60°	11482.5	4092.5	1227.3	978.9	948.6	983.2	1017.7	1065.3	1138.7	1242.5	1255.5
62.5°	11180.0	4122.8	1220.9	959.4	909.7	952.9	994.0	1048.0	1130.1	1279.2	1307.3
65°	10132.0	3811.6	1175.5	927.0	877.3	929.1	972.3	1035.0	1156.0	1389.4	1402.4
67.5°	8133.3	3165.6	1065.3	877.3	840.6	901.0	955.0	1035.0	1166.9	1406.7	1415.4
70°	5592.2	2379.1	927.0	823.3	797.3	866.4	948.6	1058.8	1130.1	1331.1	1305.1
72.5°	2921.4	1655.1	812.4	760.6	745.5	836.3	1011.3	1035.0	1086.9	1242.5	1216.5
75°	1471.5	1125.8	715.2	689.3	687.1	825.4	1132.3	996.1	1041.5	1169.0	1225.2
77.5°	868.7	881.6	637.4	622.3	633.1	806.0	1134.5	957.3	989.6	1076.0	1136.6
80°	594.2	728.2	576.9	572.6	581.2	741.1	1045.9	909.7	929.1	1017.7	1082.6
82.5°	334.9	401.9	505.6	533.7	529.4	607.2	903.3	827.6	851.4	1203.6	1272.8
85°	162.0	242.0	423.5	499.1	451.6	404.1	734.7	734.7	741.1	862.1	873.0
87.5°	60.5	108.0	285.2	395.5	315.5	242.0	499.1	520.8	579.1	596.4	609.4
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)