

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: P196346

Luminaire Tested: **NAV-AF-02-D-UNV-T4FT-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196346
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24256)
Test Lab: INNOVATION CENTER P2
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: LUMARK
Catalog Number: NAV-AF-02-D-UNV-T4FT-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV FORWARD THROW OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8274.6 lumens
Efficiency: N/A
Efficacy: 125.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G2

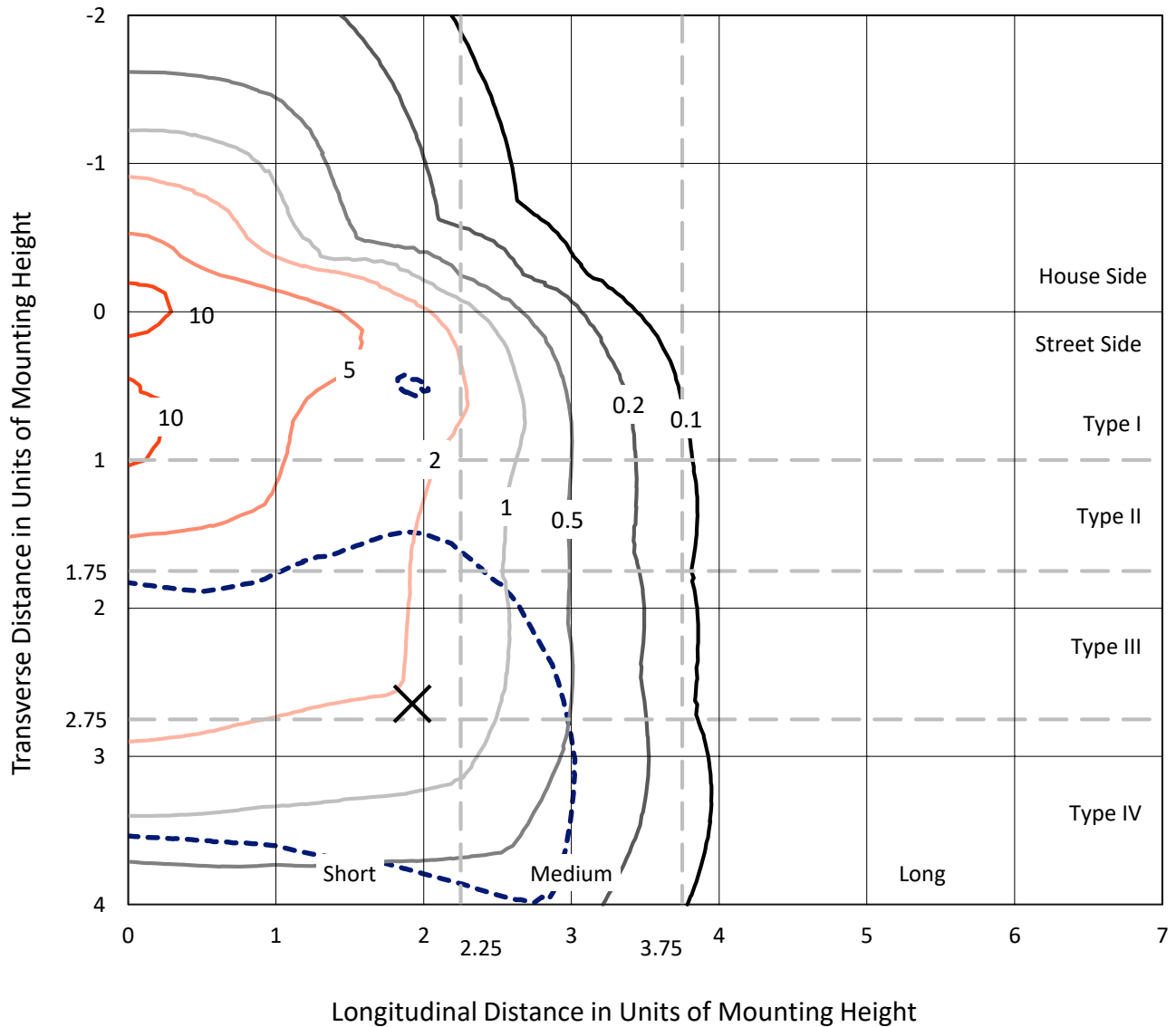
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

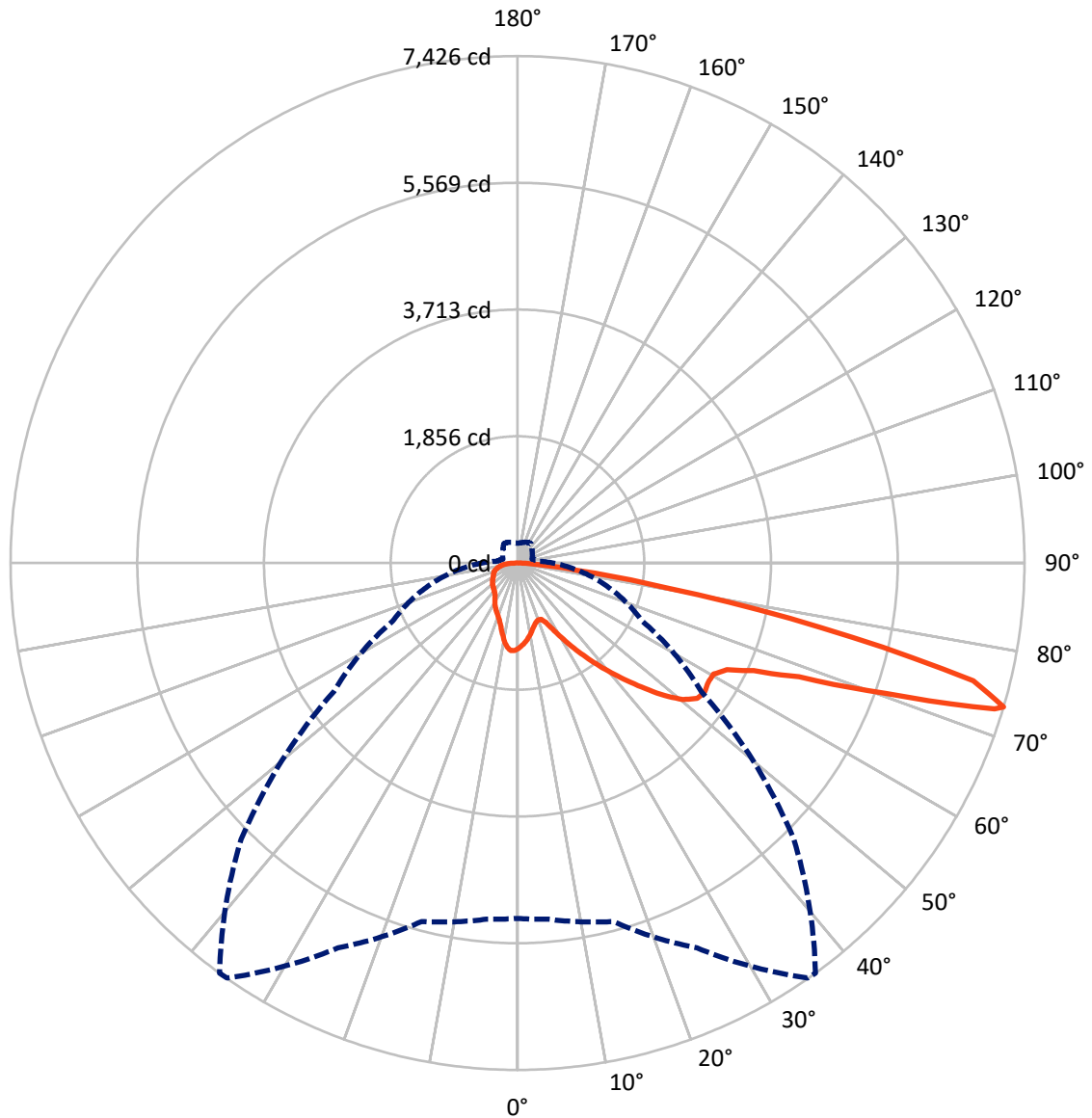
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 36-Deg Lateral - - - Horizontal Cone Through 73-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1595.6	0.0	1595.6
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	6679.0	0.0	6679.0
	% Fixture	80.7	0.0	80.7
Total	Lumens	8274.6	0.0	8274.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.8	1.4
10°-20°	285.9	3.5
20°-30°	458.4	5.5
30°-40°	758.2	9.2
40°-50°	1173.3	14.2
50°-60°	1570.7	19.0
60°-70°	2051.8	24.8
70°-80°	1676.0	20.3
80°-90°	186.6	2.3
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°	8274.6	100.0
0°-180°	8274.6	100.0



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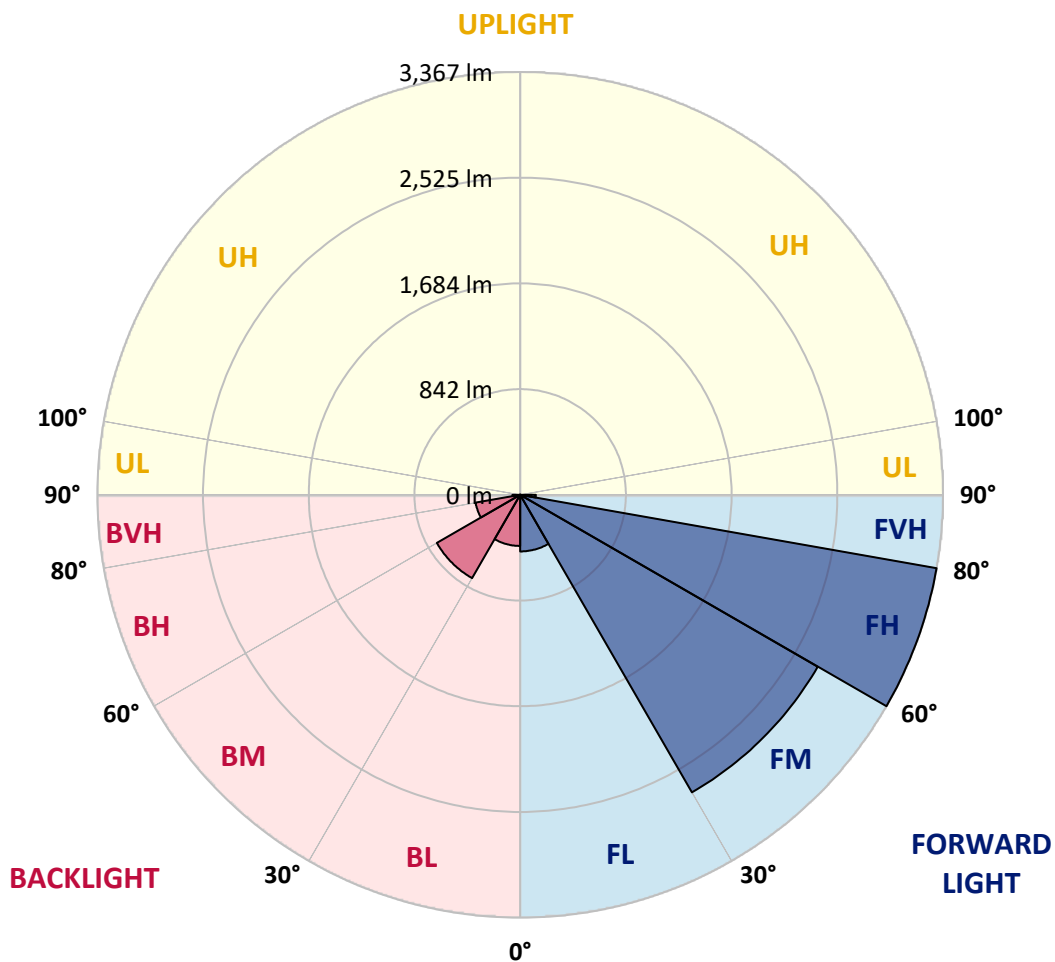
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	450.9	5.4			
FM (30°-60°)	2735.9	33.1			
FH (60°-80°)	3367.2	40.7			G2/5000
FVH (80°-90°)	125.1	1.5			G2/225
BL (0°-30°)	407.3	4.9	B1/500		
BM (30°-60°)	766.3	9.3	B1/1000		
BH (60°-80°)	360.6	4.4	B1/500		G1/500
BVH (80°-90°)	61.4	0.7			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	36°	45°	55°	65°	75°	85°
0°	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3
2.5°	1205.5	1208.7	1209.2	1212.9	1212.9	1212.4	1213.9	1220.3	1223.4	1230.7	1237.1
5°	1146.1	1149.8	1151.3	1157.7	1165.6	1166.1	1171.9	1184.0	1195.5	1211.8	1225.5
7.5°	1079.3	1083.5	1087.8	1100.9	1112.5	1113.5	1124.5	1144.0	1159.3	1179.3	1203.9
10°	1014.7	1015.7	1020.0	1036.8	1052.0	1053.5	1069.4	1091.5	1111.9	1139.8	1167.7
12.5°	961.6	964.7	963.7	976.3	989.4	990.5	1011.5	1039.4	1069.4	1100.9	1134.0
15°	943.2	942.6	931.6	931.1	936.9	937.9	958.4	991.0	1024.7	1063.6	1106.1
17.5°	955.8	951.5	922.7	904.8	901.1	902.1	917.4	953.2	988.9	1033.6	1084.6
20°	1025.2	1008.9	941.1	897.9	885.9	885.9	894.8	923.7	963.1	1015.2	1079.3
22.5°	1189.8	1164.5	1020.0	943.2	900.6	896.4	889.6	911.7	955.2	1017.8	1100.9
25°	1396.9	1384.8	1164.5	1063.6	975.8	962.1	916.9	924.7	971.6	1046.3	1159.8
27.5°	1588.7	1567.8	1354.3	1238.7	1114.6	1093.5	997.9	965.8	1010.5	1098.8	1244.9
30°	1700.8	1686.5	1549.4	1439.0	1291.3	1264.4	1127.2	1046.8	1079.8	1185.5	1365.8
32.5°	1822.8	1814.3	1744.9	1644.5	1482.6	1451.6	1294.3	1178.7	1186.1	1300.7	1511.5
35°	1941.0	1952.1	1912.6	1839.1	1688.7	1659.7	1518.9	1351.1	1316.9	1430.0	1667.1
37.5°	2083.0	2085.6	2060.9	2013.1	1905.2	1881.6	1765.4	1535.1	1459.4	1567.8	1817.5
40°	2366.4	2324.9	2228.1	2190.2	2126.1	2111.4	1978.9	1703.9	1591.9	1709.1	1959.5
42.5°	2672.9	2608.2	2456.8	2394.7	2368.9	2355.3	2156.6	1816.5	1716.0	1850.6	2098.8
45°	2920.0	2867.4	2719.1	2642.4	2645.6	2623.5	2311.7	1916.8	1850.6	1992.6	2254.4
47.5°	3163.4	3075.6	2909.5	2898.4	2935.3	2902.6	2460.0	2017.3	1991.0	2147.2	2410.0
50°	3179.1	3099.2	3031.9	3120.3	3183.3	3142.9	2594.5	2148.7	2136.6	2334.3	2610.9
52.5°	2987.2	2975.7	3078.3	3227.0	3331.6	3295.3	2704.4	2283.8	2285.4	2568.2	2855.3
55°	2917.4	2902.6	3025.7	3208.6	3350.1	3328.5	2786.4	2436.3	2450.5	2852.2	3117.6
57.5°	3035.1	2998.3	3022.5	3173.9	3306.9	3294.3	2871.6	2605.6	2631.3	3179.1	3360.0
60°	3400.5	3325.3	3197.0	3225.5	3308.5	3301.2	2993.6	2794.3	2837.5	3519.9	3513.5
62.5°	3947.8	3862.7	3601.3	3475.2	3456.8	3442.5	3195.0	3026.2	3047.7	3765.9	3424.1
65°	4548.2	4456.7	4146.0	3939.4	3831.1	3800.6	3519.9	3305.9	3170.7	3765.4	3076.1
67.5°	5222.2	5125.5	4815.7	4618.6	4501.4	4449.3	4047.2	3531.9	3130.8	3446.7	2461.5
70°	5912.5	5820.5	5678.5	5747.4	5798.9	5719.5	4877.8	3607.1	2843.7	2702.3	1652.9
72.5°	5546.0	5538.7	5646.5	6299.4	7292.6	7308.4	5707.5	3394.8	2197.1	1606.1	881.2
73°	5205.9	5236.9	5436.7	6217.9	7420.3	7425.6	5723.7	3284.8	2017.3	1383.7	773.9
75°	2697.0	2907.3	3648.7	5041.8	6871.0	6895.6	5045.5	2486.8	1202.4	768.6	521.5
77.5°	722.4	712.9	1175.6	2456.3	4580.8	4548.2	3188.1	1203.9	576.2	482.1	365.9
80°	247.7	250.8	400.1	898.5	2138.2	2214.4	1383.7	525.2	379.1	335.9	259.2
82.5°	126.1	130.4	209.3	382.2	894.3	875.3	445.3	309.1	253.9	204.0	145.1
85°	67.3	69.4	115.2	198.2	328.1	331.7	156.7	165.1	161.4	115.7	71.5
87.5°	33.1	34.2	55.2	87.3	121.4	117.2	54.7	71.5	79.4	65.2	39.4
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°	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3	1253.3
2.5°	1244.9	1244.9	1251.8	1263.3	1271.7	1279.6	1284.9	1293.3	1298.0	1297.5	1297.0
5°	1236.5	1241.8	1255.5	1269.7	1279.1	1285.4	1285.4	1289.1	1289.1	1287.6	1285.4
7.5°	1217.1	1226.0	1246.1	1258.6	1261.3	1254.4	1240.7	1230.2	1217.1	1210.3	1207.6
10°	1186.1	1197.7	1222.8	1228.7	1215.0	1190.8	1157.7	1129.3	1104.1	1092.5	1088.8
12.5°	1155.6	1170.9	1194.5	1185.5	1153.0	1105.6	1054.7	1015.7	987.4	976.3	972.6
15°	1130.4	1148.8	1167.2	1139.3	1082.5	1016.8	960.6	924.2	902.7	894.3	892.2
17.5°	1113.5	1135.1	1141.4	1089.3	1010.5	936.9	886.9	863.3	853.8	850.2	849.0
20°	1114.6	1138.7	1123.5	1041.0	941.1	867.0	833.8	827.0	827.0	827.0	826.4
22.5°	1143.5	1164.5	1116.1	995.7	874.3	808.0	793.9	799.6	803.8	803.8	803.3
25°	1203.4	1215.0	1121.4	952.2	811.7	757.1	757.6	768.6	772.3	772.3	771.3
27.5°	1295.0	1285.4	1130.9	903.8	750.2	710.8	718.2	728.1	730.8	729.2	728.6
30°	1409.5	1371.7	1138.7	847.0	692.4	667.7	674.0	679.8	677.7	674.0	673.5
32.5°	1537.8	1459.4	1134.0	783.4	641.4	623.0	626.7	629.8	626.7	617.8	617.8
35°	1665.1	1538.8	1108.3	713.9	600.9	579.9	579.4	589.3	588.8	578.3	578.9
37.5°	1776.5	1601.4	1058.3	650.4	566.2	548.3	550.4	556.8	560.0	545.7	544.1
40°	1873.7	1644.5	987.9	596.2	538.4	539.4	533.7	523.6	520.0	513.6	512.6
42.5°	1965.2	1674.5	913.2	551.0	524.2	536.2	516.8	493.2	483.1	489.0	492.7
45°	2055.1	1708.1	841.2	513.6	506.3	526.8	500.0	473.7	462.2	464.7	468.4
47.5°	2165.0	1755.0	754.4	473.7	478.9	509.4	489.5	461.0	443.8	433.2	430.0
50°	2309.6	1822.8	641.9	430.6	450.0	490.5	480.5	442.6	423.7	402.7	397.4
52.5°	2490.5	1886.9	528.4	395.9	426.4	474.2	465.9	426.9	403.8	378.5	374.3
55°	2670.7	1895.8	430.6	365.9	399.6	452.1	448.0	414.3	381.7	361.2	357.0
57.5°	2797.0	1811.1	364.9	340.6	373.8	424.8	431.7	399.1	363.2	347.5	344.8
60°	2799.1	1608.8	324.9	323.9	354.4	401.1	414.8	381.2	351.7	341.3	339.1
62.5°	2576.7	1296.5	299.1	311.3	340.1	381.7	402.2	371.1	349.1	344.8	342.8
65°	2159.8	957.9	278.7	299.6	327.0	365.4	391.7	368.1	348.0	346.5	344.8
67.5°	1594.6	656.6	261.3	285.0	312.3	348.5	381.7	363.2	341.8	348.0	346.0
70°	1003.1	438.4	245.0	268.1	292.9	329.1	368.6	354.9	333.9	330.2	323.4
72.5°	566.2	317.0	225.6	246.5	267.6	303.3	350.7	340.6	316.0	301.3	294.4
73°	511.6	300.2	220.9	241.3	261.8	298.1	346.5	336.4	310.7	294.4	288.1
75°	374.3	245.5	199.3	219.7	237.6	273.9	326.5	315.5	287.6	268.1	263.9
77.5°	271.3	189.2	171.3	189.8	205.6	240.3	296.6	283.9	256.6	246.0	241.8
80°	195.6	143.5	142.0	159.8	173.5	208.7	264.4	251.3	225.0	256.0	249.2
82.5°	116.7	92.0	104.1	124.1	138.3	175.0	229.8	214.5	189.2	191.4	163.0
85°	55.8	52.1	64.7	81.5	91.5	119.9	191.4	179.3	151.4	124.1	121.4
87.5°	24.8	23.6	31.0	36.3	48.9	72.0	130.9	116.2	109.9	65.7	51.6
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)