

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: P197270

Luminaire Tested: **NAV-AF-02-D-UNV-T3-8030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197270
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
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-T3-8030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 80 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9943 lumens
Efficiency: N/A
Efficacy: 88.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

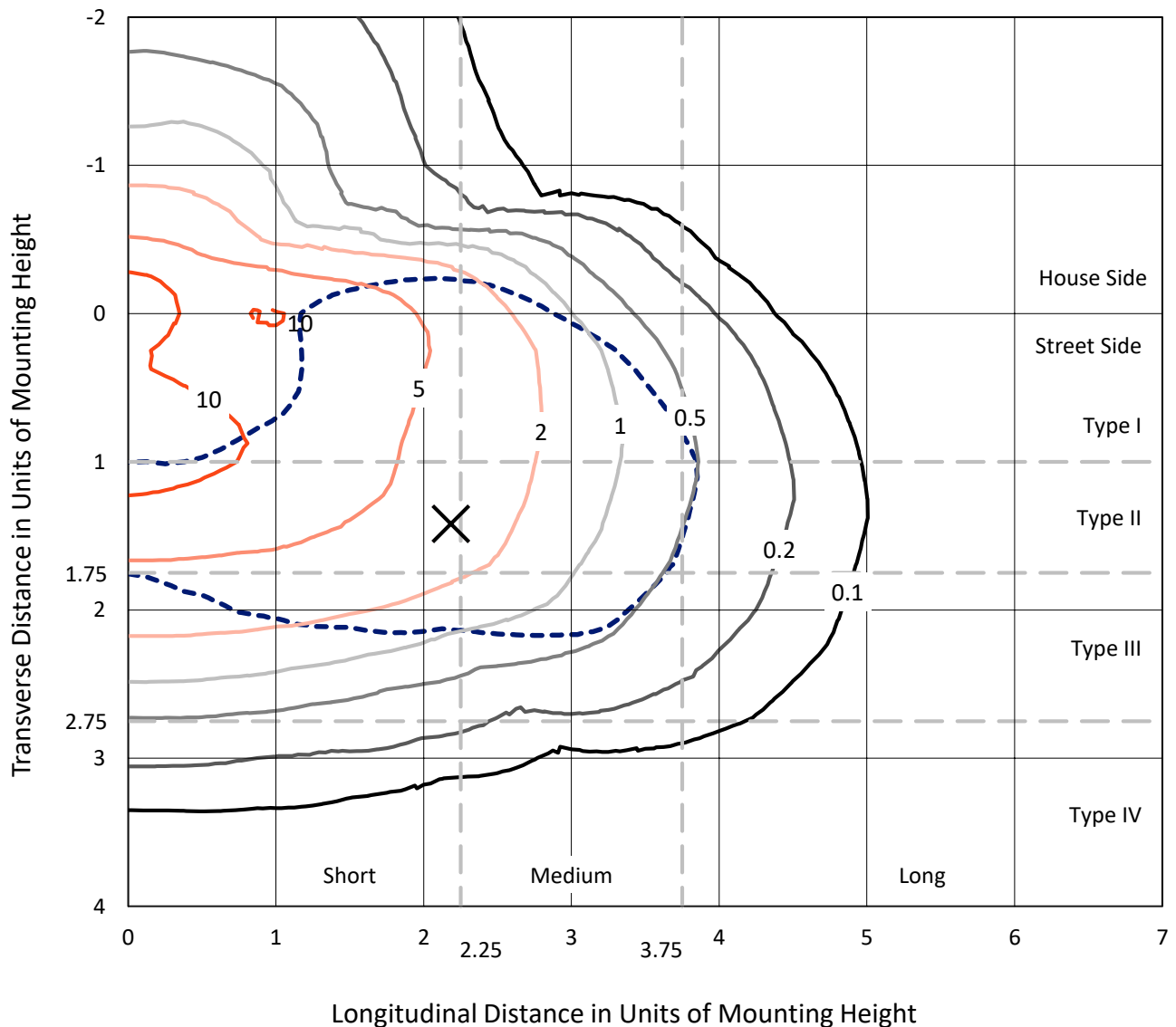
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

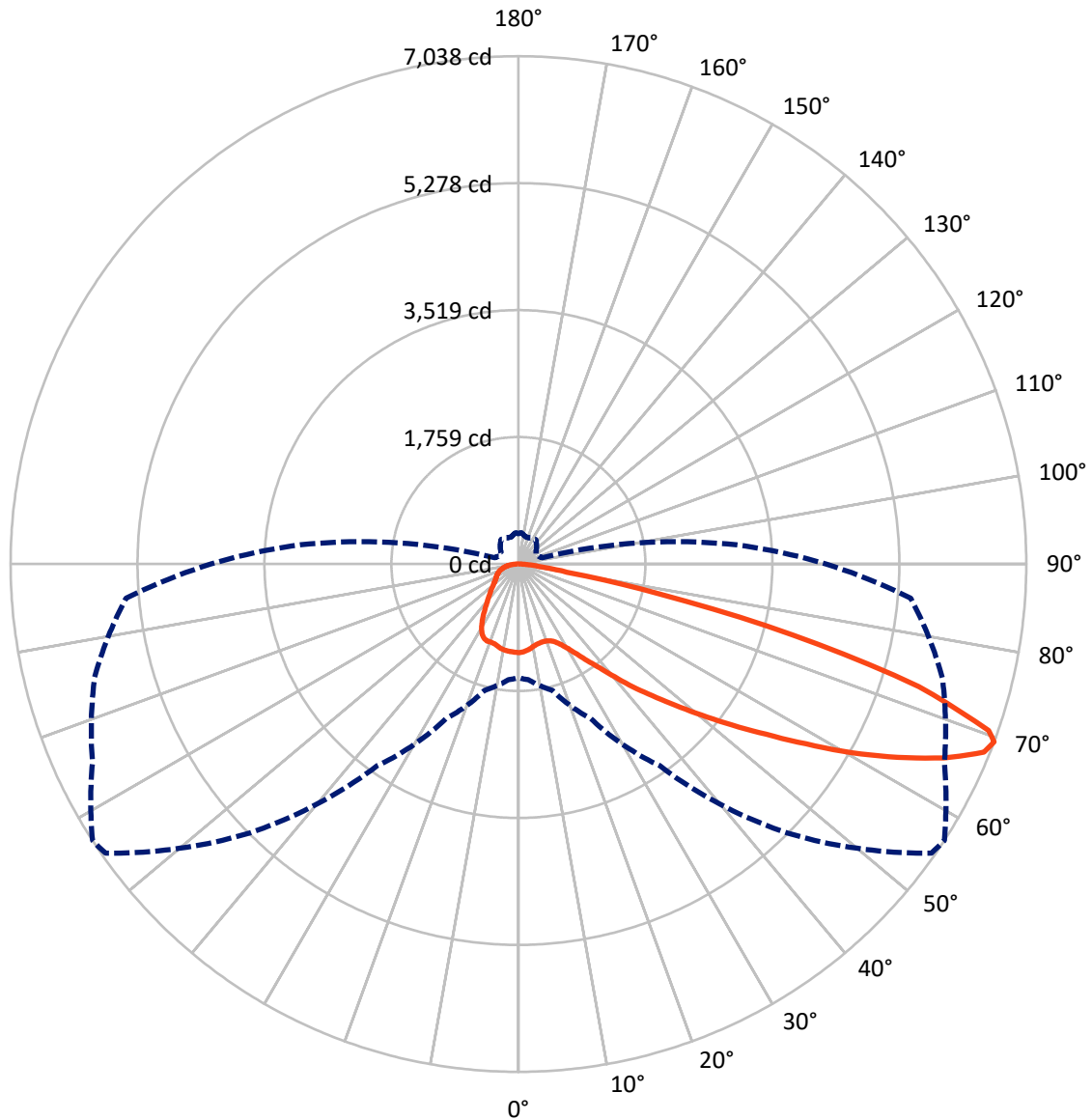
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 12.6 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2194.1	0.0	2194.1
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	7748.9	0.0	7748.9
	% Fixture	77.9	0.0	77.9
Total	Lumens	9943.0	0.0	9943.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	115.0	1.2
10°-20°	327.0	3.3
20°-30°	544.0	5.5
30°-40°	888.3	8.9
40°-50°	1499.3	15.1
50°-60°	2332.2	23.5
60°-70°	2778.2	27.9
70°-80°	1294.3	13.0
80°-90°	164.6	1.7
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°	9943.0	100.0
0°-180°	9943.0	100.0



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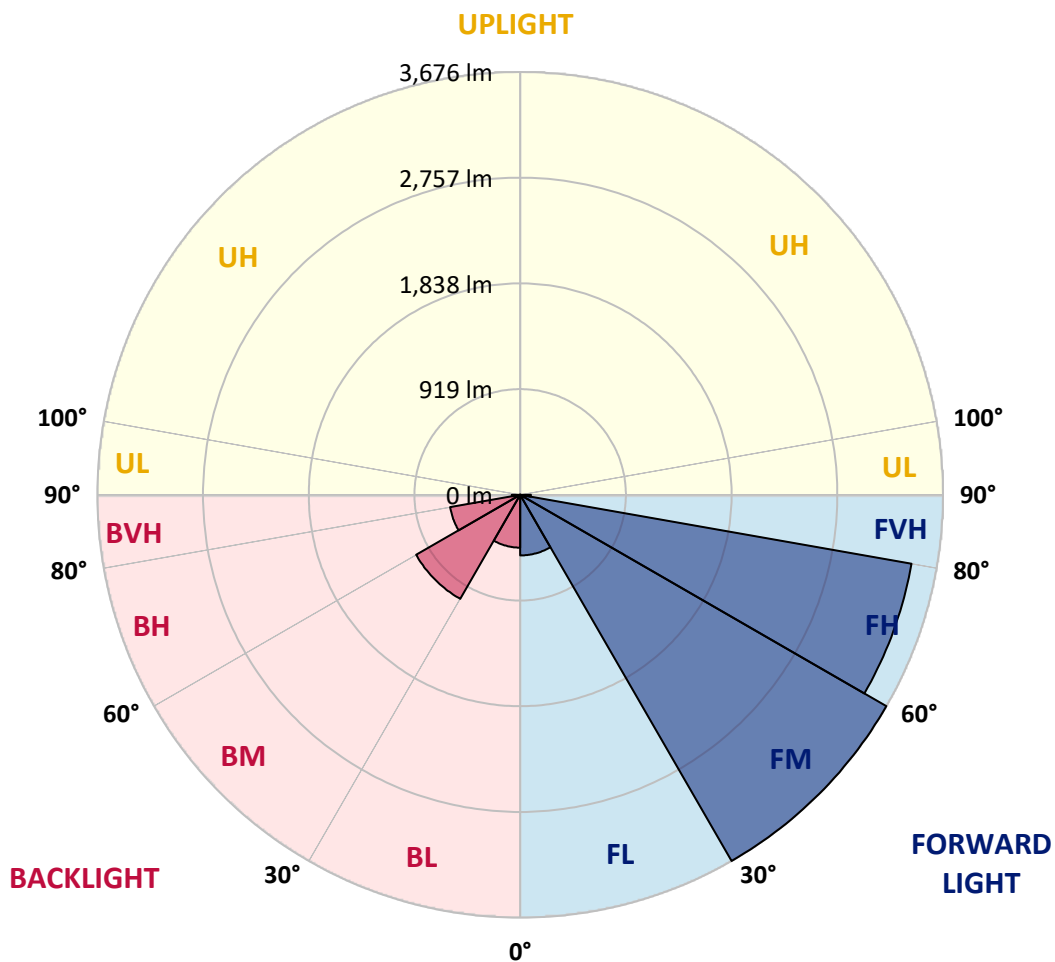
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	526.6	5.3			
FM	(30°-60°)	3675.6	37.0			
FH	(60°-80°)	3454.2	34.7			G2/5000
FVH	(80°-90°)	92.5	0.9			G1/100
BL	(0°-30°)	459.5	4.6	B1/500		
BM	(30°-60°)	1044.2	10.5	B2/2500		
BH	(60°-80°)	618.3	6.2	B2/1000		G2/1000
BVH	(80°-90°)	72.1	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6
2.5°	1221.6	1221.6	1224.7	1224.7	1224.7	1223.5	1219.6	1220.9	1218.4	1216.5	1213.3
5°	1196.7	1198.0	1201.8	1203.1	1205.0	1205.6	1205.6	1205.0	1205.6	1205.6	1203.7
7.5°	1162.4	1163.6	1168.1	1170.6	1176.4	1181.4	1184.0	1184.0	1187.2	1189.7	1190.4
10°	1141.3	1141.3	1143.9	1143.9	1148.3	1150.9	1159.2	1158.5	1167.4	1175.7	1179.5
12.5°	1138.8	1138.8	1137.5	1133.1	1130.5	1129.9	1138.2	1139.4	1152.8	1167.4	1174.4
15°	1147.1	1147.1	1143.3	1134.3	1124.8	1120.3	1128.6	1131.2	1145.8	1163.0	1173.8
17.5°	1173.8	1173.2	1164.9	1147.1	1130.5	1123.5	1126.1	1128.6	1142.0	1161.7	1175.1
20°	1233.0	1233.0	1215.2	1182.7	1154.1	1137.5	1133.7	1135.6	1145.2	1163.6	1180.8
22.5°	1336.8	1338.7	1306.9	1253.4	1204.4	1169.4	1154.1	1156.0	1160.4	1178.3	1197.4
25°	1489.5	1484.5	1439.3	1363.5	1287.1	1227.3	1196.1	1198.0	1198.0	1214.6	1234.3
27.5°	1651.2	1652.5	1587.6	1506.1	1405.5	1316.4	1266.7	1266.1	1265.5	1281.4	1302.4
30°	1833.9	1834.6	1759.4	1665.2	1550.0	1436.1	1361.6	1361.0	1355.2	1375.0	1402.3
32.5°	2033.8	2033.2	1946.0	1839.6	1711.7	1582.5	1485.7	1485.1	1480.6	1507.4	1540.5
35°	2255.3	2255.3	2168.7	2037.6	1899.5	1755.6	1643.6	1643.0	1645.5	1681.8	1713.0
37.5°	2522.0	2527.8	2423.4	2264.2	2113.4	1960.0	1829.5	1825.6	1806.5	1867.7	1919.2
40°	2800.2	2816.1	2707.9	2522.0	2359.1	2200.6	2056.7	2054.2	2037.6	2102.5	2185.9
42.5°	3101.3	3137.6	3017.3	2827.6	2650.0	2478.8	2334.3	2327.3	2263.6	2364.8	2495.3
45°	3496.0	3519.5	3345.1	3173.2	3005.8	2810.4	2638.5	2601.0	2537.3	2667.2	2836.5
47.5°	3764.6	3753.1	3644.3	3529.1	3421.5	3234.3	2970.2	2922.4	2844.8	3016.6	3203.2
50°	3931.4	3939.6	3878.5	3872.8	3867.1	3736.6	3344.5	3287.2	3197.4	3401.1	3618.8
52.5°	4041.5	4003.9	4014.8	4144.6	4301.9	4239.5	3767.8	3704.1	3611.8	3815.5	4061.2
55°	3995.7	3946.0	4046.0	4301.9	4671.7	4685.7	4232.5	4166.9	4088.0	4256.0	4593.4
57.5°	3806.0	3830.8	3988.7	4344.5	4924.4	5085.5	4766.5	4699.7	4544.4	4715.0	5098.8
60°	3539.3	3589.5	3830.8	4277.0	5101.4	5396.7	5352.8	5308.2	5040.9	5161.8	5629.7
62.5°	3252.8	3302.5	3599.1	4161.8	5021.8	5672.4	5928.3	5900.9	5589.0	5592.2	5966.4
65°	2829.5	2849.9	3152.9	3847.3	4800.9	5921.3	6504.3	6480.1	6112.9	5959.4	6060.7
67.5°	2136.9	2162.4	2411.3	3037.0	4128.7	5786.3	6964.6	6960.7	6428.0	6095.7	5836.6
69°	1578.0	1609.2	1812.3	2357.8	3413.9	5272.0	6986.2	7037.8	6513.2	6081.7	5457.8
70°	1154.7	1190.4	1378.1	1871.5	2843.5	4704.2	6801.0	6911.7	6480.8	5993.2	5162.5
72.5°	490.8	502.9	595.2	844.7	1442.4	2836.5	5570.5	5803.5	5853.1	5370.0	4033.2
75°	307.5	311.3	347.6	433.5	641.6	1173.2	3607.4	3925.0	4370.0	4166.3	2700.3
77.5°	231.7	234.9	255.9	298.5	398.5	438.0	1673.5	1995.6	2502.9	2450.7	1343.8
80°	177.6	179.5	193.5	217.1	280.7	274.4	543.0	682.4	1044.6	921.7	475.5
82.5°	139.4	140.0	152.1	156.6	196.1	184.6	272.4	303.6	422.0	350.7	232.3
85°	123.5	125.4	137.5	114.6	125.4	111.4	149.6	162.3	224.1	211.3	87.8
87.5°	63.0	66.2	115.2	98.0	63.0	52.8	65.6	70.7	91.0	98.7	42.6
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°	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6	1228.6
2.5°	1213.9	1214.6	1216.5	1219.6	1224.7	1231.1	1238.7	1246.4	1250.8	1254.0	1252.7
5°	1203.7	1204.4	1208.2	1213.9	1220.3	1229.8	1242.6	1252.1	1259.1	1263.6	1262.9
7.5°	1191.0	1192.9	1200.5	1206.9	1215.8	1223.5	1233.6	1242.6	1249.6	1254.0	1253.4
10°	1181.4	1183.4	1192.9	1201.2	1208.8	1210.1	1208.2	1205.6	1205.0	1208.2	1206.9
12.5°	1177.0	1180.8	1189.7	1195.5	1192.3	1180.2	1166.2	1160.4	1158.5	1164.9	1165.5
15°	1178.3	1181.4	1189.1	1185.3	1168.1	1147.7	1140.1	1144.5	1148.3	1152.2	1152.8
17.5°	1181.4	1183.4	1185.3	1171.3	1147.1	1133.7	1131.2	1126.7	1115.2	1108.9	1108.2
20°	1187.2	1189.7	1186.5	1164.3	1142.6	1124.8	1094.2	1066.9	1040.8	1026.8	1021.0
22.5°	1206.9	1208.8	1199.3	1177.6	1144.5	1086.6	1024.9	977.8	937.6	916.0	907.7
25°	1245.7	1248.9	1235.6	1208.2	1121.6	1020.4	933.2	869.5	819.2	793.1	786.1
27.5°	1313.9	1317.0	1302.4	1231.1	1068.1	931.9	826.3	763.2	719.9	697.7	694.5
30°	1415.7	1420.2	1406.8	1230.5	986.7	819.2	721.9	684.9	660.1	644.8	644.2
32.5°	1557.0	1573.6	1518.8	1208.8	886.1	705.3	642.9	630.2	618.1	607.9	607.9
35°	1736.5	1775.4	1629.6	1163.6	775.3	627.6	599.0	586.9	571.6	560.8	559.5
37.5°	1951.0	2011.5	1708.5	1083.4	679.8	590.1	572.3	552.5	528.3	507.3	502.2
40°	2245.8	2259.8	1747.3	952.9	608.5	569.7	547.4	522.6	492.1	468.5	466.0
42.5°	2541.8	2495.9	1739.7	812.9	567.8	551.3	522.0	494.6	467.2	447.5	447.5
45°	2878.5	2702.2	1681.8	672.2	530.9	530.3	498.4	472.3	451.3	436.7	433.5
47.5°	3200.6	2887.4	1581.8	568.4	492.7	509.2	483.1	462.1	443.0	429.0	426.5
50°	3591.5	3101.9	1475.5	495.9	455.8	490.8	476.8	466.0	447.5	423.3	420.8
52.5°	3979.8	3352.7	1393.4	441.1	423.3	476.1	480.6	481.9	464.7	417.6	414.4
55°	4396.7	3620.7	1306.9	398.5	396.6	469.1	489.5	488.2	480.0	418.9	413.8
57.5°	4793.3	3890.0	1177.6	368.6	375.6	462.1	491.4	471.1	456.4	425.2	416.9
60°	5121.7	4112.8	987.9	347.6	357.7	448.1	478.7	448.1	423.3	423.9	416.3
62.5°	5281.5	4175.2	755.6	323.4	343.1	425.2	460.2	430.9	408.0	426.5	422.0
65°	5159.9	3997.6	538.5	301.1	325.3	398.5	449.4	416.3	400.4	439.2	434.1
67.5°	4723.3	3513.8	390.8	281.4	308.1	371.1	429.0	402.9	392.8	448.8	437.3
69°	4259.2	3033.8	338.6	269.9	296.0	356.5	415.7	395.9	387.0	435.4	418.9
70°	3873.4	2664.0	312.5	262.9	285.8	348.2	405.5	391.5	381.3	419.5	399.8
72.5°	2777.3	1721.9	262.9	241.9	259.1	329.7	383.2	374.9	359.7	378.8	366.0
75°	1678.0	898.8	223.4	220.2	231.1	304.3	357.1	346.9	331.6	333.6	327.2
77.5°	770.9	415.0	187.1	194.8	201.8	272.4	325.3	313.8	299.8	294.7	295.4
80°	338.0	242.5	156.6	166.1	170.0	245.1	290.9	278.2	262.9	290.3	269.3
82.5°	182.7	140.7	122.2	128.6	139.4	213.2	252.7	236.2	221.5	257.8	208.2
85°	73.8	71.9	82.8	89.1	96.8	153.4	211.3	194.1	176.3	157.9	154.0
87.5°	31.8	34.4	40.7	43.3	51.6	95.5	142.0	124.1	124.8	106.9	105.0
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)