

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: P196376

Luminaire Tested: **NAV-AF-02-D-UNV-T4W-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196376
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24127)
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-T4W-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 9948.2 lumens
Efficiency: N/A
Efficacy: 117.0 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

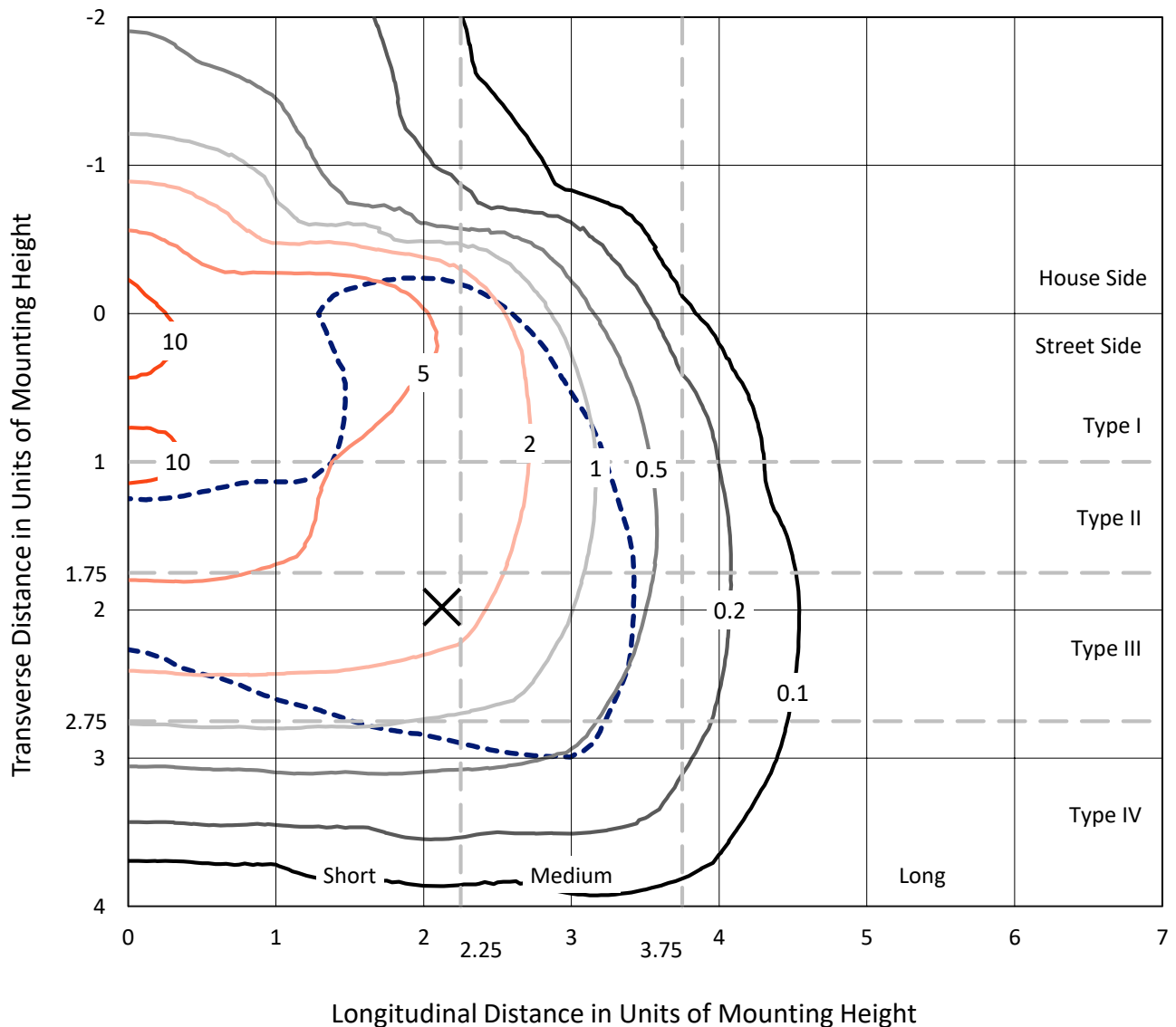
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

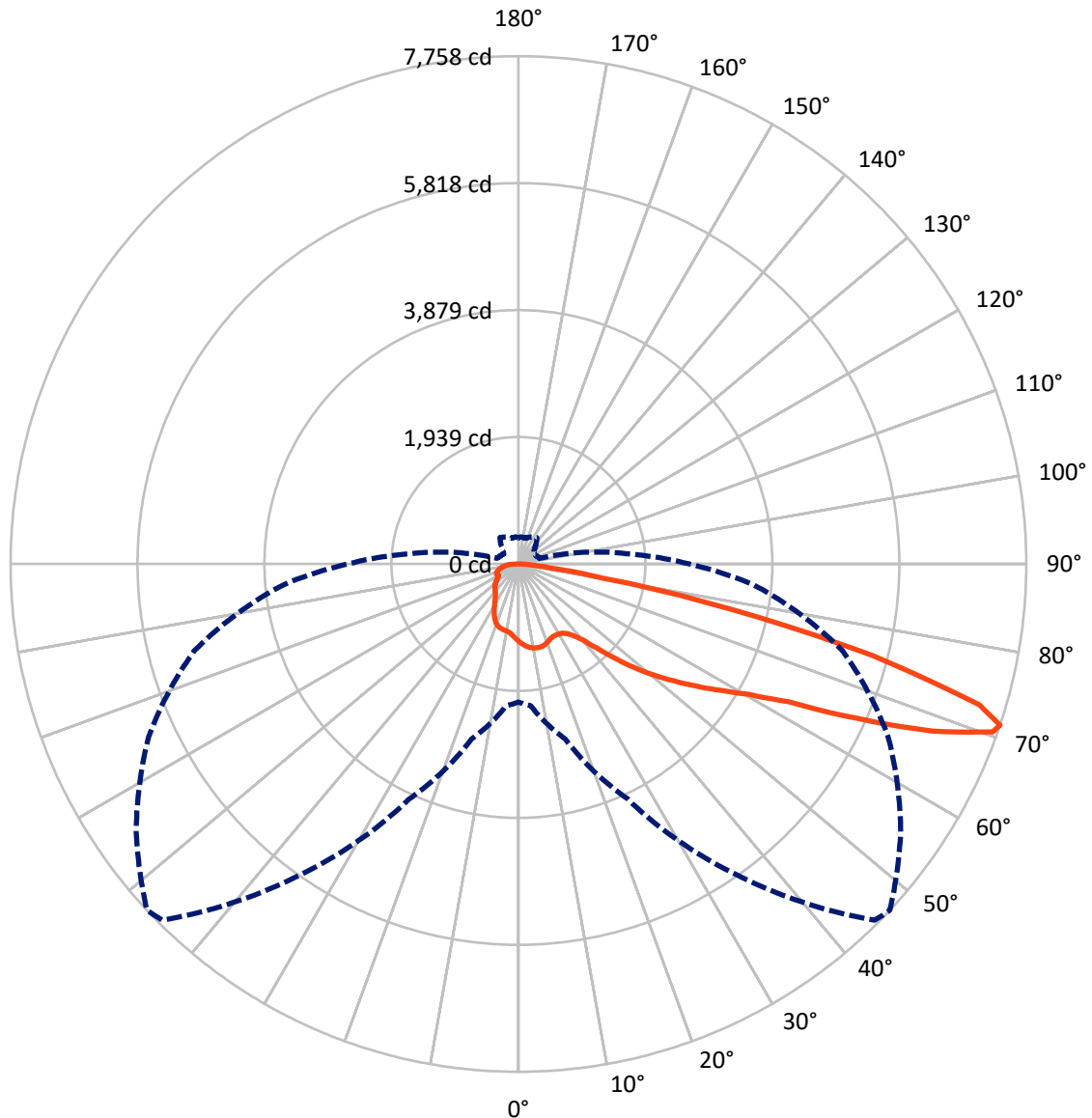
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 13.6 fc
 Type IV - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 47-Deg Lateral - - - Horizontal Cone Through 71-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2132.0	0.0	2132.0
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	7816.2	0.0	7816.2
	% Fixture	78.6	0.0	78.6
Total	Lumens	9948.2	0.0	9948.2
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	113.0	1.1
10°-20°	330.5	3.3
20°-30°	491.0	4.9
30°-40°	705.0	7.1
40°-50°	1250.1	12.6
50°-60°	2139.1	21.5
60°-70°	3036.8	30.5
70°-80°	1663.2	16.7
80°-90°	219.5	2.2
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°	9948.2	100.0
0°-180°	9948.2	100.0



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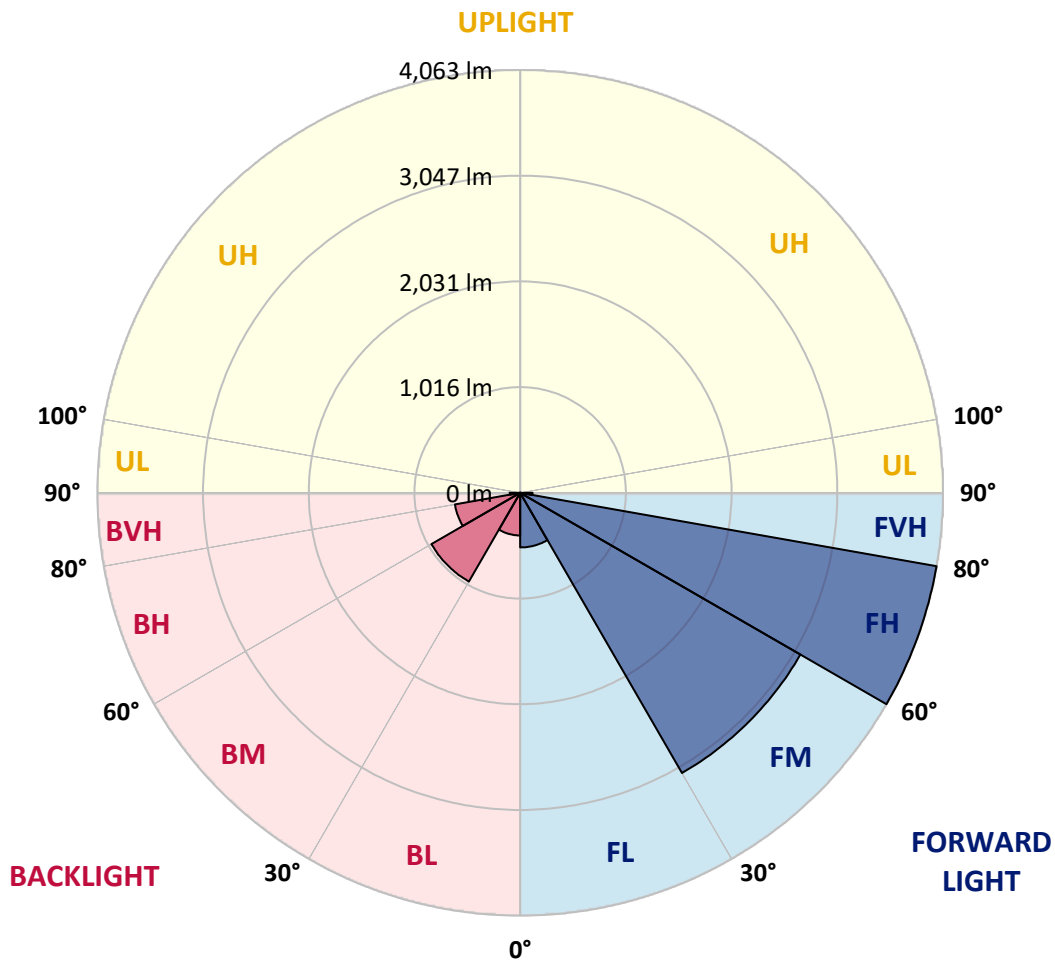
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	525.0	5.3			
FM	(30°-60°)	3109.1	31.3			
FH	(60°-80°)	4062.9	40.8			G2/5000
FVH	(80°-90°)	119.1	1.2			G2/225
BL	(0°-30°)	409.4	4.1	B1/500		
BM	(30°-60°)	985.1	9.9	B1/1000		
BH	(60°-80°)	637.0	6.4	B2/1000		G2/1000
BVH	(80°-90°)	100.5	1.0			G2/225
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0
2.5°	1255.3	1252.6	1253.9	1249.4	1238.5	1226.8	1226.8	1214.5	1201.7	1188.8	1174.7
5°	1333.2	1329.3	1326.2	1311.9	1290.7	1266.8	1262.9	1238.5	1212.0	1185.6	1159.8
7.5°	1398.4	1394.5	1384.8	1359.0	1328.1	1292.6	1288.1	1255.9	1221.0	1184.3	1148.2
10°	1444.7	1442.2	1423.4	1390.6	1354.5	1312.5	1304.9	1271.9	1230.7	1185.0	1139.2
12.5°	1470.5	1466.7	1444.1	1405.4	1362.9	1320.3	1312.5	1281.0	1234.0	1183.7	1130.2
15°	1460.3	1458.3	1437.0	1397.7	1355.1	1318.4	1311.9	1279.7	1232.0	1179.2	1121.8
17.5°	1416.4	1420.9	1404.1	1365.4	1330.7	1304.9	1297.7	1267.4	1222.3	1168.2	1108.9
20°	1355.8	1360.9	1352.5	1313.3	1293.2	1276.4	1272.7	1248.1	1206.3	1152.0	1093.4
22.5°	1291.3	1295.9	1296.5	1259.8	1253.3	1246.9	1243.6	1226.2	1192.0	1142.4	1083.1
25°	1246.9	1252.0	1253.3	1221.0	1224.9	1226.8	1226.2	1213.9	1189.5	1142.4	1084.3
27.5°	1235.2	1237.8	1236.5	1206.9	1213.9	1224.9	1225.6	1222.9	1199.8	1155.3	1102.4
30°	1275.2	1276.4	1260.4	1215.9	1222.9	1237.2	1237.8	1236.5	1221.7	1188.8	1143.0
32.5°	1448.0	1446.7	1391.2	1276.4	1252.0	1257.1	1259.0	1270.7	1271.9	1244.2	1201.7
35°	1711.0	1710.4	1645.9	1449.9	1334.5	1307.4	1310.0	1328.1	1344.2	1325.4	1301.0
37.5°	2000.5	2002.4	1963.0	1697.5	1512.4	1399.6	1397.0	1410.5	1439.6	1446.0	1449.2
40°	2321.5	2331.2	2329.3	1981.8	1761.9	1556.9	1531.2	1515.7	1571.8	1607.3	1653.0
42.5°	2688.3	2685.8	2687.1	2293.8	2046.9	1804.5	1756.8	1684.6	1749.7	1810.9	1911.5
45°	3003.6	3013.9	3021.7	2625.8	2366.0	2087.5	2039.2	1907.6	1966.3	2057.9	2211.3
47.5°	3320.8	3302.7	3316.9	2995.2	2721.3	2410.5	2348.0	2170.7	2225.4	2354.4	2587.8
50°	3690.2	3681.8	3617.4	3477.4	3150.6	2738.0	2656.1	2445.3	2525.3	2697.4	3052.6
52.5°	4021.6	3976.4	3926.2	3856.5	3572.9	3069.4	2965.5	2730.9	2877.9	3091.3	3629.6
55°	4142.7	4112.5	4173.1	4263.4	4019.7	3407.1	3291.1	3064.2	3275.7	3542.0	4308.5
57.5°	4271.7	4282.1	4418.7	4601.1	4442.6	3767.5	3641.8	3458.8	3712.1	4046.1	5067.3
60°	4336.2	4377.4	4650.1	4992.5	4844.9	4162.8	4042.2	3912.0	4196.2	4603.1	5824.2
62.5°	4347.1	4402.6	4788.7	5129.8	5398.6	4768.2	4628.9	4487.7	4801.0	5218.8	6372.2
65°	4146.0	4231.1	4776.5	5298.7	5903.4	5779.7	5691.3	5445.1	5610.8	5761.0	6465.6
67.5°	3554.9	3647.6	4304.0	5229.1	6308.3	6829.2	6812.4	6448.9	6236.1	5970.5	5772.5
70°	2609.0	2683.8	3314.4	4470.3	6131.7	7653.1	7682.8	7099.4	6410.8	5525.7	4292.3
71°	2110.0	2174.6	2768.9	3968.7	5787.3	7695.7	7757.5	7128.3	6229.0	5124.0	3593.5
72.5°	1313.3	1349.4	1838.7	2995.2	4983.4	7257.3	7361.8	6757.0	5656.5	4331.1	2540.1
75°	495.7	509.9	682.1	1320.9	2974.6	5452.1	5578.5	5106.6	3973.9	2472.4	1063.1
77.5°	266.3	273.3	338.5	549.3	1192.0	3125.4	3288.0	2912.8	1906.4	865.2	434.5
80°	178.6	183.1	234.1	325.6	548.0	1190.1	1325.4	1169.4	713.7	493.9	309.4
82.5°	115.4	117.9	159.3	214.0	353.9	418.4	477.7	499.0	445.5	353.9	187.0
85°	76.1	78.1	105.1	136.7	219.2	206.3	211.4	276.6	303.6	233.3	95.4
87.5°	43.9	45.1	63.2	70.3	98.6	77.3	83.8	131.6	180.6	152.1	54.8
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°	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0	1183.0
2.5°	1168.2	1163.0	1151.4	1144.4	1141.1	1139.8	1138.5	1141.1	1141.1	1139.8	1137.2
5°	1146.9	1137.2	1117.9	1104.4	1097.2	1095.4	1097.9	1101.1	1103.0	1103.0	1101.1
7.5°	1131.4	1117.3	1091.5	1072.8	1061.8	1058.5	1065.7	1077.3	1085.0	1088.9	1089.5
10°	1118.5	1099.2	1070.8	1051.5	1042.5	1041.2	1050.2	1065.0	1081.2	1088.2	1089.5
12.5°	1106.9	1085.0	1054.0	1036.0	1029.6	1032.8	1045.0	1058.5	1077.3	1087.6	1088.2
15°	1096.0	1073.4	1040.5	1021.8	1020.5	1025.7	1037.3	1048.2	1062.4	1075.3	1075.3
17.5°	1083.1	1058.5	1024.4	1007.0	1007.0	1011.5	1019.3	1025.1	1034.1	1046.4	1045.7
20°	1067.7	1042.5	1007.6	989.6	985.7	983.2	983.2	984.5	992.2	1003.1	1005.0
22.5°	1056.0	1030.2	993.5	971.6	954.1	937.3	930.3	927.7	934.8	945.1	947.7
25°	1056.0	1030.2	989.0	952.2	909.6	877.4	863.9	860.0	867.2	876.8	880.7
27.5°	1073.4	1047.6	999.3	934.8	856.8	805.3	789.1	785.8	792.3	800.0	803.9
30°	1114.0	1088.9	1028.9	914.8	798.1	730.4	712.4	709.1	712.4	715.7	720.2
32.5°	1181.7	1160.4	1077.3	896.7	738.8	662.8	640.8	635.7	637.0	637.6	641.5
35°	1292.0	1282.3	1141.7	875.4	682.7	607.3	584.7	574.4	573.8	577.0	581.5
37.5°	1460.9	1466.7	1224.9	844.5	636.3	567.9	545.4	535.1	529.9	536.3	541.6
40°	1699.4	1712.9	1320.9	802.6	598.3	544.7	520.9	511.3	504.1	502.2	504.8
42.5°	2009.5	2005.6	1418.9	749.1	557.0	529.3	504.1	493.9	482.2	467.4	464.2
45°	2376.9	2321.5	1500.9	683.3	509.9	514.4	488.7	474.4	456.4	434.5	432.0
47.5°	2810.9	2658.0	1551.1	613.1	466.2	495.1	471.3	449.4	422.9	408.8	406.8
50°	3333.7	3052.0	1586.6	541.6	426.8	470.7	446.7	417.8	392.0	388.1	387.5
52.5°	3952.6	3516.8	1630.4	477.1	395.9	439.1	422.3	392.6	371.9	373.9	373.9
55°	4610.8	3997.7	1631.7	426.2	368.8	402.3	404.3	380.3	364.3	370.7	372.7
57.5°	5211.0	4418.0	1503.4	390.1	343.0	373.3	398.4	384.8	372.7	395.2	397.1
60°	5734.6	4741.7	1227.5	360.4	321.7	362.3	411.3	412.6	410.0	471.3	475.8
62.5°	5926.0	4745.0	871.7	335.2	310.1	368.8	438.4	440.3	440.3	497.1	505.4
65°	5657.8	4349.7	580.2	320.4	302.4	383.0	460.3	451.9	432.0	471.3	462.3
67.5°	4712.7	3385.9	424.2	310.8	291.4	383.6	479.7	458.4	424.2	457.8	442.2
70°	3239.0	2154.5	355.3	301.7	278.5	366.8	490.0	456.4	412.6	426.8	406.1
71°	2607.1	1719.4	337.2	298.5	273.3	357.1	491.2	453.9	406.8	415.8	397.1
72.5°	1717.4	1059.3	315.3	291.4	265.7	340.4	488.0	448.1	399.1	399.7	387.5
75°	677.6	439.1	283.7	275.3	243.7	313.3	473.8	435.8	384.2	371.3	366.2
77.5°	342.4	286.9	249.5	252.7	217.9	285.6	453.9	415.8	363.6	346.2	342.4
80°	250.1	217.9	213.4	219.2	188.9	258.5	428.7	388.7	337.2	355.3	347.5
82.5°	152.1	132.8	166.9	181.2	157.9	230.8	399.1	357.1	303.6	279.8	270.8
85°	72.2	78.1	120.6	133.5	116.7	184.3	364.9	322.3	264.9	228.8	232.7
87.5°	35.5	43.2	68.9	79.9	76.7	135.3	275.3	250.1	208.9	172.2	168.3
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)