

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: P196371

Luminaire Tested: **NAV-AF-03-D-UNV-T4W-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196371
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-03-D-UNV-T4W-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12064.7 lumens
Efficiency: N/A
Efficacy: 125.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

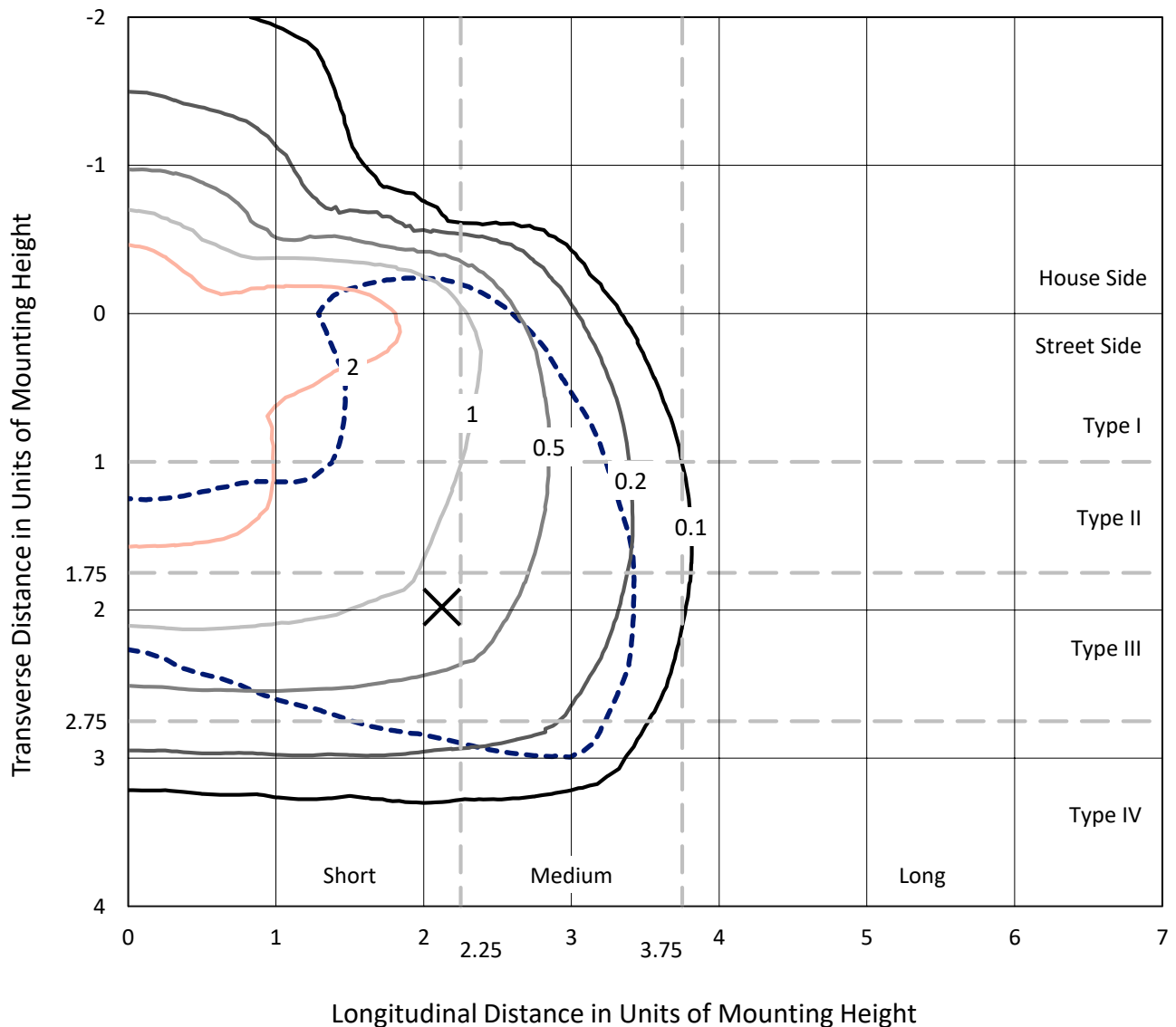
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



REPORT NUMBER: P196371
 CATALOG NUMBER: NAV-AF-03-D-UNV-T4W-600

Iso-Footcandle Lines of Horizontal Illumination

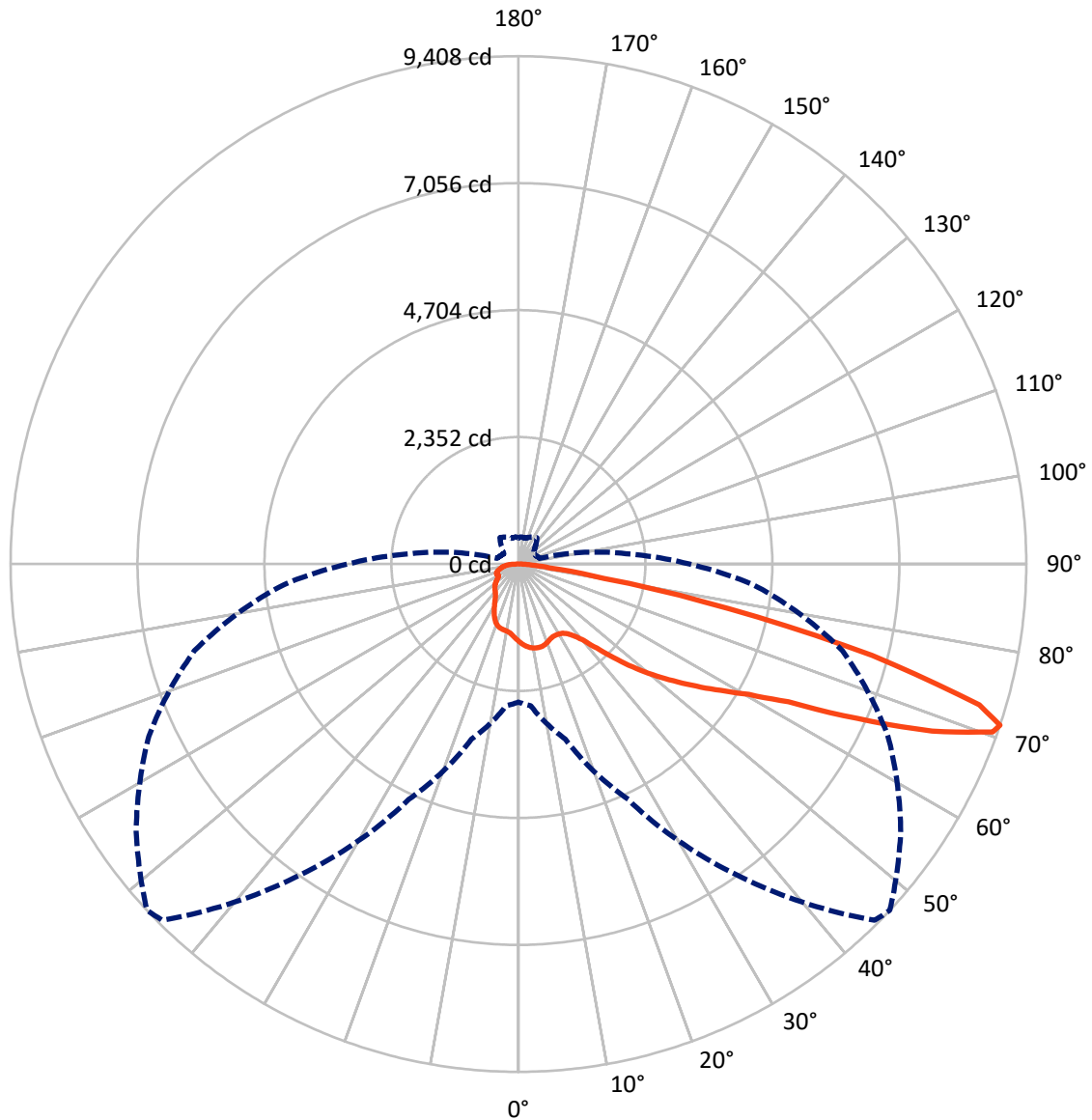
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.1 fc
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P196371
CATALOG NUMBER: NAV-AF-03-D-UNV-T4W-600

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196371

CATALOG NUMBER: NAV-AF-03-D-UNV-T4W-600

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2585.6	0.0	2585.6
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	9479.1	0.0	9479.1
	% Fixture	78.6	0.0	78.6
Total	Lumens	12064.7	0.0	12064.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	137.0	1.1
10°-20°	400.8	3.3
20°-30°	595.5	4.9
30°-40°	855.1	7.1
40°-50°	1516.0	12.6
50°-60°	2594.2	21.5
60°-70°	3682.8	30.5
70°-80°	2017.1	16.7
80°-90°	266.3	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°	12064.7	100.0
0°-180°	12064.7	100.0



REPORT NUMBER: P196371

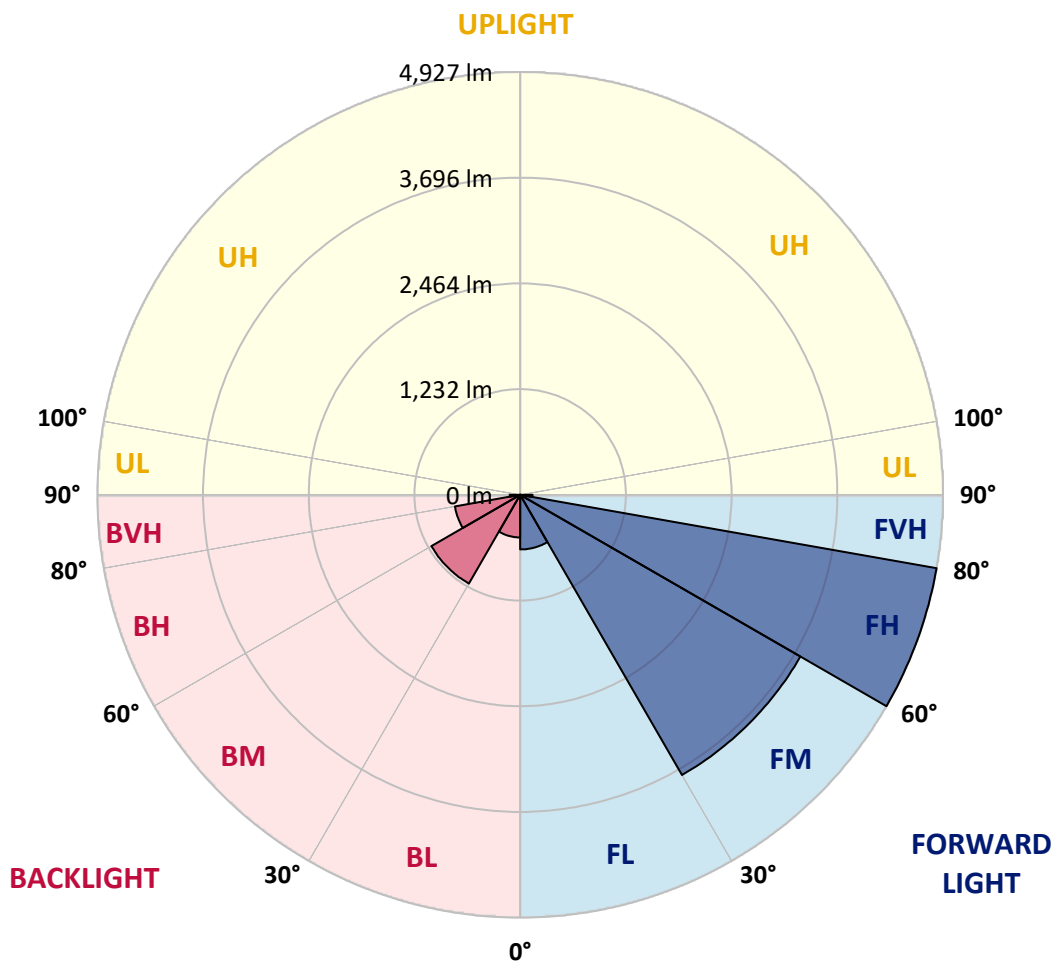
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	636.7	5.3			
FM	(30°-60°)	3770.6	31.3			
FH	(60°-80°)	4927.3	40.8			G2/5000
FVH	(80°-90°)	144.4	1.2			G2/225
BL	(0°-30°)	496.5	4.1	B1/500		
BM	(30°-60°)	1194.7	9.9	B2/2500		
BH	(60°-80°)	772.6	6.4	B2/1000		G2/1000
BVH	(80°-90°)	121.8	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





REPORT NUMBER: P196371
 CATALOG NUMBER: NAV-AF-03-D-UNV-T4W-600

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7
2.5°	1522.3	1519.1	1520.7	1515.2	1501.9	1487.9	1487.9	1473.0	1457.4	1441.7	1424.6
5°	1616.9	1612.2	1608.3	1591.1	1565.2	1536.4	1531.7	1501.9	1469.9	1437.9	1406.6
7.5°	1695.8	1691.1	1679.4	1648.2	1610.6	1567.6	1562.1	1523.1	1480.8	1436.2	1392.4
10°	1752.1	1749.0	1726.3	1686.4	1642.7	1591.8	1582.5	1542.6	1492.6	1437.0	1381.5
12.5°	1783.4	1778.7	1751.3	1704.4	1652.8	1601.2	1591.8	1553.6	1496.5	1435.5	1370.5
15°	1770.9	1768.6	1742.7	1695.0	1643.5	1598.9	1591.1	1552.0	1494.1	1430.0	1360.4
17.5°	1717.7	1723.2	1702.9	1656.0	1613.7	1582.5	1573.9	1537.1	1482.4	1416.7	1344.8
20°	1644.2	1650.5	1640.3	1592.6	1568.4	1548.0	1543.3	1513.7	1462.8	1397.1	1326.1
22.5°	1566.0	1571.6	1572.3	1527.8	1519.9	1512.1	1508.1	1487.1	1445.6	1385.5	1313.5
25°	1512.1	1518.4	1519.9	1480.8	1485.5	1487.9	1487.1	1472.2	1442.5	1385.5	1315.1
27.5°	1498.0	1501.2	1499.5	1463.6	1472.2	1485.5	1486.2	1483.2	1455.0	1401.0	1337.0
30°	1546.5	1548.0	1528.5	1474.6	1483.2	1500.4	1501.2	1499.5	1481.6	1441.7	1386.2
32.5°	1756.0	1754.5	1687.3	1548.0	1518.4	1524.6	1527.0	1541.0	1542.6	1509.0	1457.4
35°	2075.1	2074.2	1996.1	1758.4	1618.4	1585.6	1588.7	1610.6	1630.2	1607.5	1577.8
37.5°	2426.0	2428.4	2380.7	2058.6	1834.3	1697.4	1694.3	1710.7	1745.9	1753.6	1757.6
40°	2815.5	2827.1	2824.8	2403.4	2136.8	1888.2	1856.9	1838.1	1906.2	1949.1	2004.7
42.5°	3260.3	3257.2	3258.7	2781.8	2482.4	2188.4	2130.5	2042.9	2121.9	2196.2	2318.2
45°	3642.6	3655.1	3664.5	3184.4	2869.4	2531.6	2473.0	2313.5	2384.6	2495.7	2681.8
47.5°	4027.3	4005.4	4022.7	3632.5	3300.1	2923.3	2847.5	2632.5	2699.0	2855.4	3138.3
50°	4475.3	4465.2	4386.9	4217.3	3820.9	3320.5	3221.2	2965.5	3062.5	3271.3	3702.1
52.5°	4877.1	4822.4	4761.4	4677.0	4333.0	3722.4	3596.5	3311.9	3490.2	3749.0	4401.9
55°	5024.1	4987.4	5060.9	5170.4	4874.9	4132.1	3991.3	3716.2	3972.5	4295.5	5225.1
57.5°	5180.5	5193.0	5358.8	5580.1	5387.7	4569.1	4416.7	4194.6	4501.9	4906.9	6145.4
60°	5258.7	5308.7	5639.4	6054.6	5875.6	5048.4	4902.2	4744.2	5089.1	5582.4	7063.3
62.5°	5272.0	5339.3	5807.6	6221.2	6547.2	5782.5	5613.6	5442.4	5822.4	6329.1	7727.8
65°	5028.1	5131.2	5792.8	6426.0	7159.4	7009.3	6902.2	6603.5	6804.5	6986.7	7841.1
67.5°	4311.1	4423.8	5219.6	6341.6	7650.3	8282.1	8261.8	7820.9	7562.8	7240.8	7000.7
70°	3164.2	3254.8	4019.5	5421.3	7436.1	9281.3	9317.3	8609.8	7774.7	6701.2	5205.6
71°	2559.0	2637.2	3358.0	4813.1	7018.7	9332.9	9408.0	8644.9	7554.2	6214.1	4358.0
72.5°	1592.6	1636.4	2229.8	3632.5	6043.7	8801.3	8927.9	8194.6	6859.9	5252.4	3080.5
75°	601.3	618.5	827.2	1602.0	3607.4	6612.0	6765.4	6193.0	4819.3	2998.4	1289.2
77.5°	322.9	331.5	410.5	666.1	1445.6	3790.4	3987.5	3532.4	2312.0	1049.2	526.9
80°	216.6	222.1	283.8	394.9	664.6	1443.3	1607.5	1418.3	865.5	598.9	375.3
82.5°	139.9	143.1	193.1	259.6	429.2	507.4	579.4	605.2	540.2	429.2	226.7
85°	92.3	94.6	127.5	165.7	265.9	250.2	256.5	335.4	368.3	283.1	115.7
87.5°	53.2	54.7	76.6	85.2	119.6	93.8	101.7	159.5	218.9	184.5	66.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



REPORT NUMBER: P196371

CATALOG NUMBER: NAV-AF-03-D-UNV-T4W-600

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7	1434.7
2.5°	1416.7	1410.4	1396.4	1387.7	1383.8	1382.3	1380.8	1383.8	1383.8	1382.3	1379.1
5°	1390.9	1379.1	1355.7	1339.3	1330.8	1328.4	1331.5	1335.4	1337.7	1337.7	1335.4
7.5°	1372.2	1354.9	1323.7	1301.0	1287.7	1283.8	1292.4	1306.5	1315.8	1320.5	1321.3
10°	1356.5	1333.0	1298.6	1275.2	1264.3	1262.7	1273.7	1291.6	1311.1	1319.8	1321.3
12.5°	1342.4	1315.8	1278.3	1256.4	1248.6	1252.5	1267.3	1283.8	1306.5	1319.0	1319.8
15°	1329.1	1301.8	1261.9	1239.2	1237.7	1243.9	1258.0	1271.3	1288.5	1304.2	1304.2
17.5°	1313.5	1283.8	1242.4	1221.2	1221.2	1226.7	1236.1	1243.1	1254.0	1269.0	1268.2
20°	1294.7	1264.3	1222.0	1200.1	1195.4	1192.4	1192.4	1193.9	1203.3	1216.6	1218.9
22.5°	1280.6	1249.4	1204.8	1178.2	1157.2	1136.8	1128.2	1125.0	1133.6	1146.2	1149.3
25°	1280.6	1249.4	1199.3	1154.8	1103.2	1064.1	1047.7	1043.0	1051.6	1063.4	1068.0
27.5°	1301.8	1270.5	1211.9	1133.6	1039.1	976.5	957.0	953.1	960.9	970.3	975.0
30°	1351.0	1320.5	1247.8	1109.5	967.9	885.9	864.0	860.0	864.0	867.9	873.3
32.5°	1433.2	1407.4	1306.5	1087.6	896.0	803.7	777.1	770.9	772.4	773.2	778.0
35°	1566.9	1555.1	1384.7	1061.7	828.0	736.5	709.1	696.6	695.8	699.8	705.2
37.5°	1771.6	1778.7	1485.5	1024.2	771.7	688.9	661.4	649.0	642.7	650.5	656.7
40°	2060.9	2077.4	1602.0	973.4	725.6	660.6	631.8	620.0	611.4	609.1	612.2
42.5°	2437.0	2432.4	1720.8	908.5	675.6	641.9	611.4	598.9	584.8	566.8	562.9
45°	2882.7	2815.5	1820.1	828.8	618.5	623.9	592.6	575.4	553.5	526.9	523.9
47.5°	3408.9	3223.5	1881.1	743.6	565.3	600.5	571.5	544.9	512.9	495.7	493.4
50°	4042.9	3701.2	1924.2	656.7	517.6	570.7	541.9	506.7	475.4	470.7	469.8
52.5°	4793.5	4265.0	1977.3	578.6	480.1	532.4	512.1	476.2	451.1	453.5	453.5
55°	5591.8	4848.3	1978.9	516.8	447.2	487.8	490.2	461.2	441.7	449.6	451.9
57.5°	6319.7	5358.0	1823.3	473.0	415.9	452.7	483.1	466.8	451.9	479.3	481.6
60°	6954.5	5750.5	1488.6	437.0	390.2	439.4	498.8	500.4	497.3	571.5	577.0
62.5°	7186.7	5754.4	1057.0	406.5	376.0	447.2	531.6	534.0	534.0	602.8	613.0
65°	6861.5	5275.2	703.7	388.6	366.7	464.4	558.2	548.1	523.9	571.5	560.6
67.5°	5715.3	4106.2	514.4	376.9	353.4	465.2	581.6	555.9	514.4	555.2	536.3
70°	3928.0	2612.9	430.8	365.9	337.8	444.9	594.2	553.5	500.4	517.6	492.6
71°	3161.8	2085.2	408.9	362.0	331.5	433.1	595.8	550.4	493.4	504.3	481.6
72.5°	2082.8	1284.6	382.3	353.4	322.1	412.9	591.9	543.4	484.0	484.8	469.8
75°	821.7	532.4	344.0	333.9	295.5	380.0	574.7	528.6	466.0	450.3	444.1
77.5°	415.1	347.9	302.6	306.5	264.2	346.4	550.4	504.3	441.0	419.8	415.1
80°	303.4	264.2	258.8	265.9	229.0	313.5	520.0	471.5	408.9	430.8	421.5
82.5°	184.5	161.0	202.5	219.7	191.6	279.9	484.0	433.1	368.3	339.3	328.4
85°	87.6	94.6	146.2	161.8	141.5	223.6	442.5	391.0	321.3	277.5	282.2
87.5°	43.0	52.4	83.7	97.0	93.1	164.2	333.9	303.4	253.3	208.8	204.1
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)