

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: P196382

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196382
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV WIDE OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12312.2 lumens
Efficiency: N/A
Efficacy: 109.0 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 - G3

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

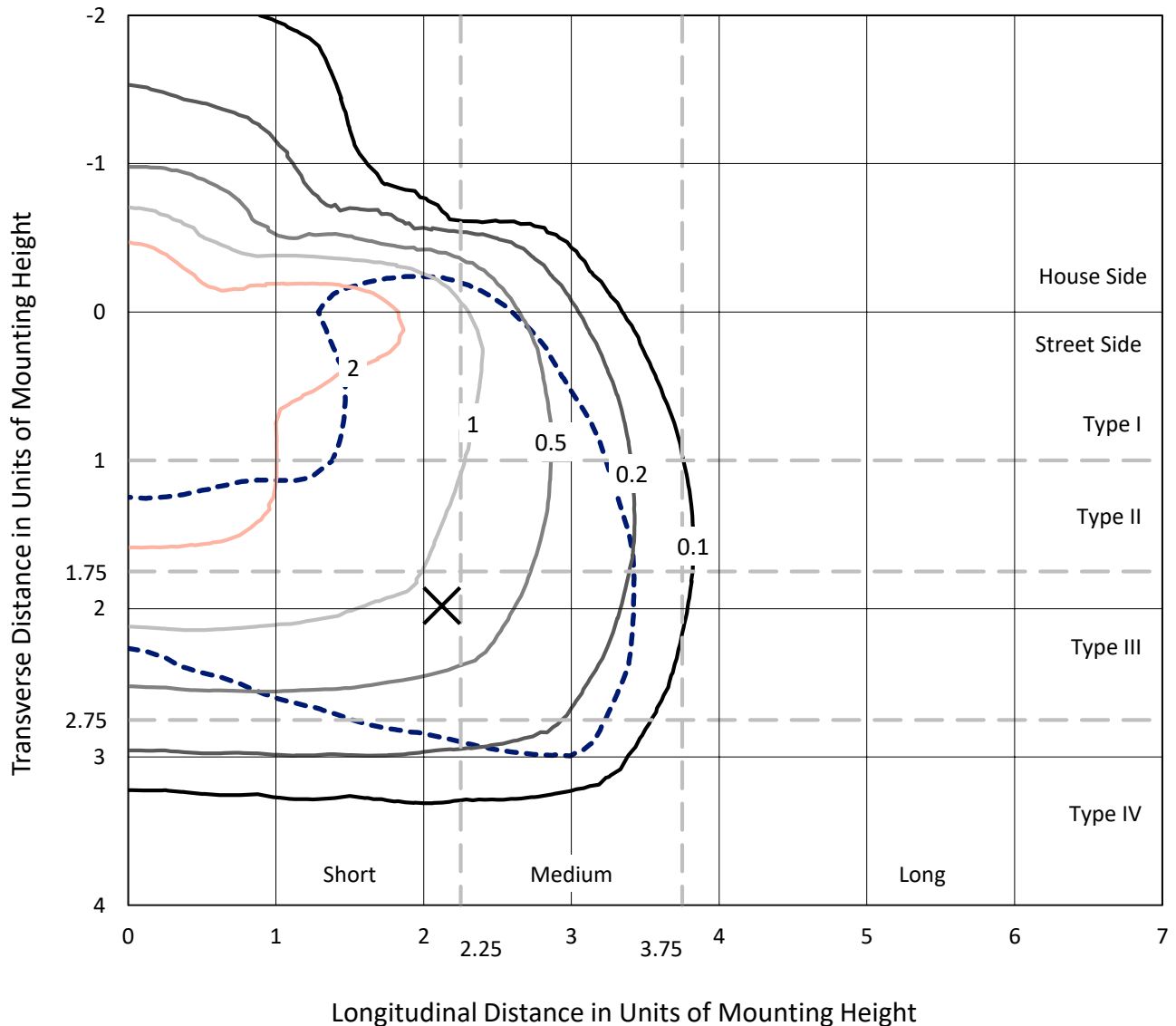


REPORT NUMBER: P196382

CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

Iso-Footcandle Lines of Horizontal Illumination

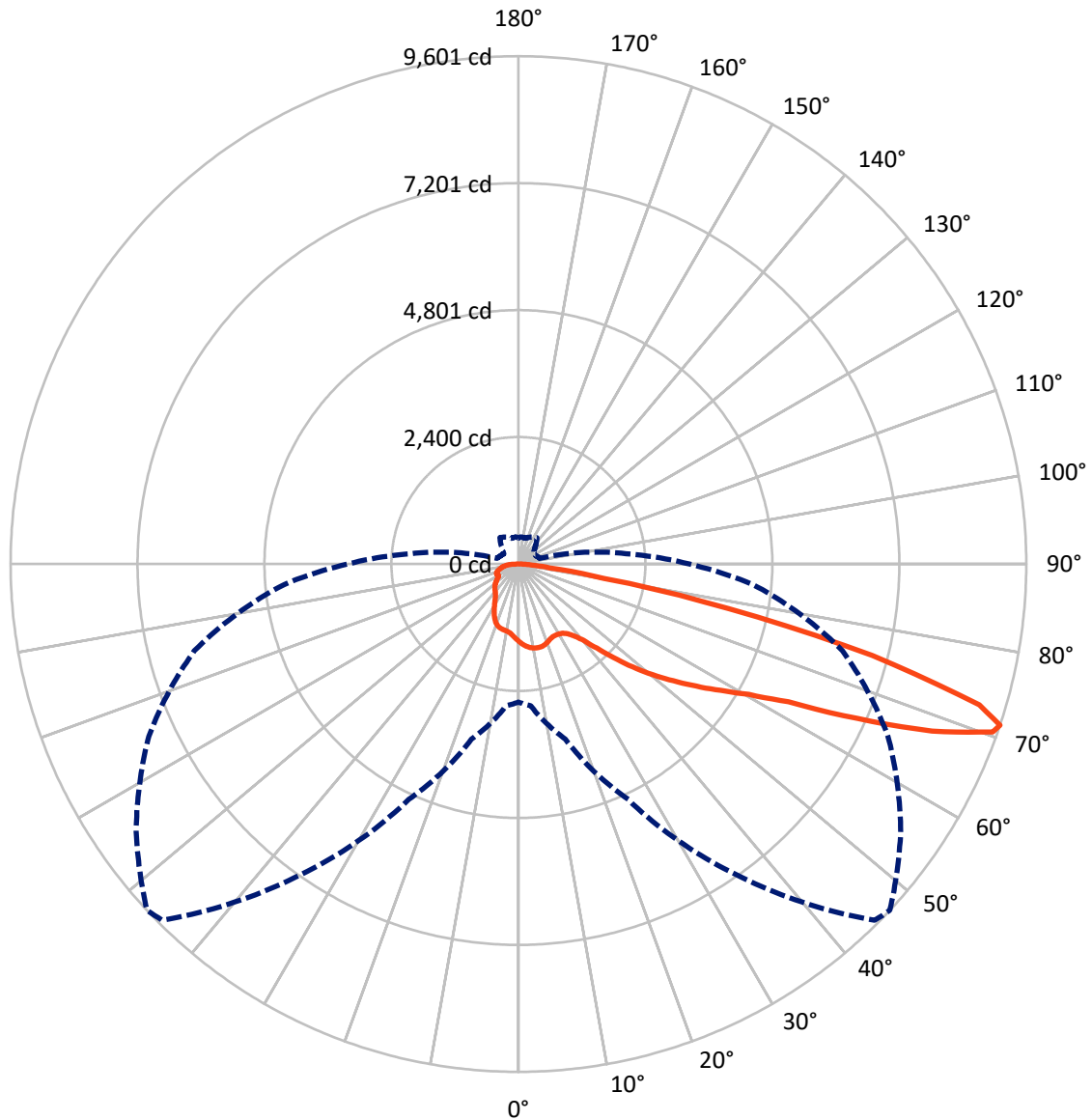
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.2 fc
 Type IV - Short - Semi-Cutoff

REPORT NUMBER: P196382
CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

Luminous Intensity Polar Plot



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

REPORT NUMBER: P196382

CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2638.7	0.0	2638.7
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	9673.5	0.0	9673.5
	% Fixture	78.6	0.0	78.6
Total	Lumens	12312.2	0.0	12312.2
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.8	1.1
10°-20°	409.0	3.3
20°-30°	607.7	4.9
30°-40°	872.6	7.1
40°-50°	1547.2	12.6
50°-60°	2647.4	21.5
60°-70°	3758.4	30.5
70°-80°	2058.4	16.7
80°-90°	271.7	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°	12312.2	100.0
0°-180°	12312.2	100.0

Coefficient of Utilization



REPORT NUMBER: P196382

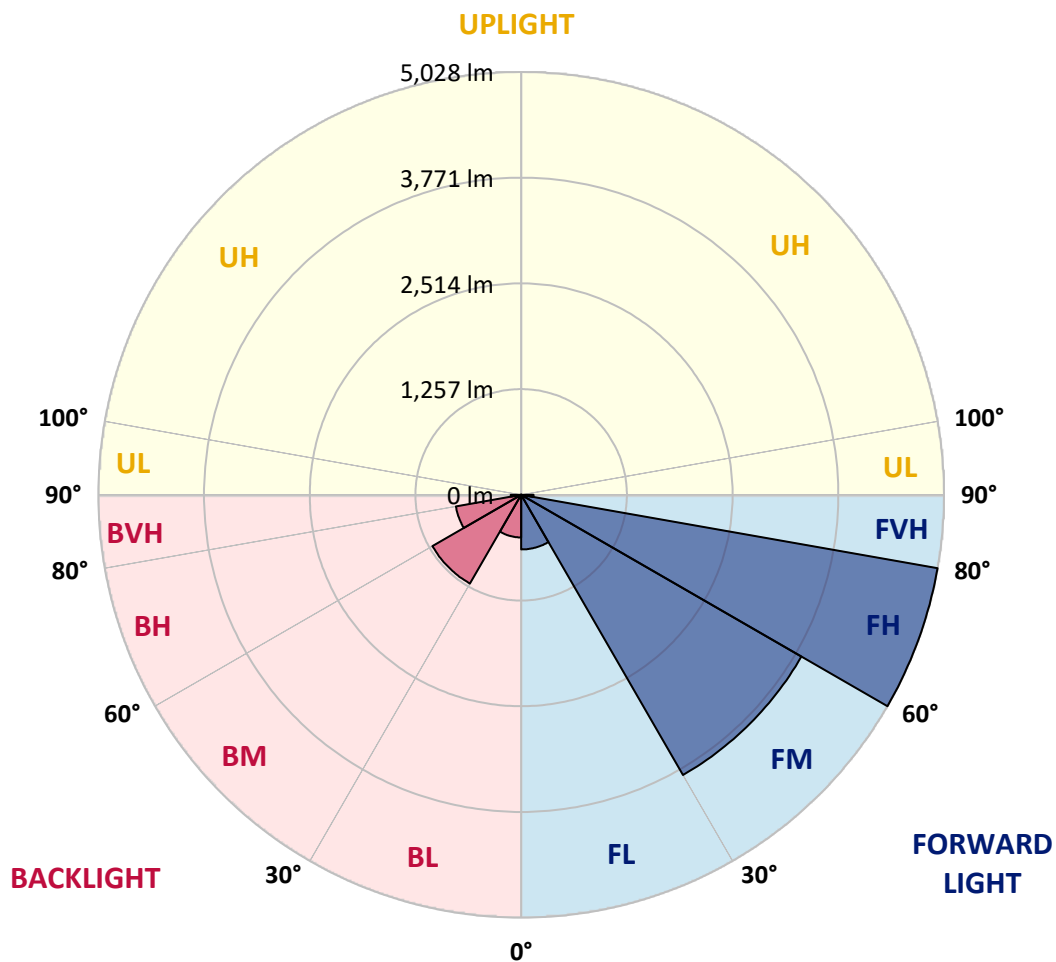
CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	649.8	5.3			
FM (30°-60°)	3847.9	31.3			
FH (60°-80°)	5028.4	40.8			G3/7500
FVH (80°-90°)	147.4	1.2			G2/225
BL (0°-30°)	506.7	4.1	B2/1000		
BM (30°-60°)	1219.2	9.9	B2/2500		
BH (60°-80°)	788.4	6.4	B2/1000		G2/1000
BVH (80°-90°)	124.3	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-G3

Type IV Short





REPORT NUMBER: P196382

CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	47°	55°	65°	75°	85°
0°	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1
2.5°	1553.5	1550.3	1551.9	1546.3	1532.8	1518.4	1518.4	1503.2	1487.3	1471.3	1453.7
5°	1650.0	1645.2	1641.2	1623.7	1597.3	1567.9	1563.1	1532.8	1500.1	1467.3	1435.4
7.5°	1730.6	1725.8	1713.9	1681.9	1643.7	1599.8	1594.2	1554.3	1511.2	1465.7	1421.1
10°	1788.1	1784.8	1761.7	1721.0	1676.4	1624.5	1614.9	1574.2	1523.2	1466.5	1409.8
12.5°	1820.0	1815.2	1787.3	1739.4	1686.7	1634.1	1624.5	1585.4	1527.2	1465.0	1398.7
15°	1807.2	1804.8	1778.5	1729.8	1677.1	1631.7	1623.7	1583.8	1524.8	1459.3	1388.3
17.5°	1752.9	1758.6	1737.8	1689.9	1646.8	1614.9	1606.1	1568.7	1512.8	1445.7	1372.4
20°	1677.9	1684.4	1674.0	1625.3	1600.6	1579.8	1575.0	1544.8	1492.9	1425.8	1353.3
22.5°	1598.2	1603.8	1604.6	1559.1	1551.1	1543.1	1539.1	1517.5	1475.3	1413.8	1340.5
25°	1543.1	1549.5	1551.1	1511.2	1516.0	1518.4	1517.5	1502.4	1472.1	1413.8	1342.0
27.5°	1528.8	1532.0	1530.3	1493.6	1502.4	1516.0	1516.8	1513.6	1484.9	1429.8	1364.4
30°	1578.2	1579.8	1559.9	1504.9	1513.6	1531.2	1532.0	1530.3	1512.0	1471.3	1414.6
32.5°	1792.1	1790.5	1721.8	1579.8	1549.5	1555.9	1558.3	1572.7	1574.2	1540.0	1487.3
35°	2117.6	2116.8	2037.0	1794.5	1651.7	1618.1	1621.3	1643.7	1663.6	1640.5	1610.1
37.5°	2475.8	2478.2	2429.6	2100.8	1871.9	1732.3	1729.0	1745.8	1781.7	1789.7	1793.6
40°	2873.2	2885.1	2882.8	2452.7	2180.6	1926.9	1895.0	1875.9	1945.2	1989.1	2045.8
42.5°	3327.2	3324.0	3325.6	2838.9	2533.3	2233.3	2174.3	2084.9	2165.5	2241.3	2365.8
45°	3717.4	3730.2	3739.7	3249.8	2928.3	2583.6	2523.7	2361.0	2433.6	2546.8	2736.8
47.5°	4109.9	4087.6	4105.1	3707.0	3367.9	2983.3	2905.9	2686.5	2754.3	2913.9	3202.8
50°	4567.2	4556.7	4476.9	4303.9	3899.3	3388.6	3287.4	3026.4	3125.3	3338.4	3778.1
52.5°	4977.3	4921.4	4859.1	4773.0	4421.9	3798.7	3670.3	3379.8	3561.8	3825.9	4492.1
55°	5127.2	5089.8	5164.8	5276.5	4974.8	4216.8	4073.2	3792.4	4054.1	4383.7	5332.3
57.5°	5286.8	5299.6	5468.8	5694.6	5498.3	4662.9	4507.3	4280.6	4594.3	5007.5	6271.4
60°	5366.6	5417.6	5755.2	6178.8	5996.1	5152.0	5002.7	4841.6	5193.5	5696.9	7208.1
62.5°	5380.2	5448.8	5926.8	6348.8	6681.5	5901.2	5728.8	5554.1	5941.9	6458.9	7886.3
65°	5131.2	5236.6	5911.5	6557.8	7306.3	7153.1	7043.8	6739.0	6944.1	7130.0	8002.0
67.5°	4399.6	4514.5	5326.7	6471.7	7807.4	8452.0	8431.4	7981.3	7718.0	7389.3	7144.3
70°	3229.0	3321.6	4101.9	5532.6	7588.8	9471.8	9508.4	8786.4	7934.2	6838.7	5312.4
71°	2611.5	2691.3	3427.0	4911.8	7162.7	9524.4	9601.0	8822.3	7709.3	6341.7	4447.5
72.5°	1625.3	1670.0	2275.6	3707.0	6167.7	8981.8	9111.1	8362.7	7000.7	5360.3	3143.7
75°	613.6	631.2	844.1	1634.9	3681.5	6747.8	6904.2	6320.1	4918.2	3060.0	1315.7
77.5°	329.5	338.3	418.9	679.9	1475.3	3868.2	4069.2	3604.9	2359.3	1070.7	537.8
80°	221.1	226.6	289.6	402.9	678.2	1472.9	1640.5	1447.4	883.2	611.2	383.0
82.5°	142.8	146.0	197.1	264.9	438.0	517.8	591.3	617.6	551.4	438.0	231.4
85°	94.1	96.6	130.0	169.2	271.3	255.3	261.7	342.3	375.8	288.9	118.0
87.5°	54.2	55.9	78.2	87.0	122.0	95.7	103.7	162.8	223.4	188.3	67.8
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: P196382

CATALOG NUMBER: NAV-AF-02-D-UNV-T4W

CANDELA DISTRIBUTION (continued):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1	1464.1
2.5°	1445.7	1439.4	1425.1	1416.3	1412.3	1410.6	1409.1	1412.3	1412.3	1410.6	1407.5
5°	1419.4	1407.5	1383.5	1366.8	1358.0	1355.6	1358.8	1362.8	1365.2	1365.2	1362.8
7.5°	1400.3	1382.7	1350.8	1327.7	1314.1	1310.1	1318.9	1333.3	1342.8	1347.6	1348.5
10°	1384.4	1360.4	1325.3	1301.4	1290.1	1288.6	1299.8	1318.1	1338.0	1346.8	1348.5
12.5°	1369.9	1342.8	1304.6	1282.2	1274.2	1278.2	1293.4	1310.1	1333.3	1346.0	1346.8
15°	1356.4	1328.5	1287.8	1264.7	1263.0	1269.5	1283.8	1297.4	1314.9	1330.9	1330.9
17.5°	1340.5	1310.1	1267.8	1246.3	1246.3	1251.9	1261.5	1268.7	1279.8	1295.0	1294.1
20°	1321.3	1290.1	1247.1	1224.8	1220.0	1216.8	1216.8	1218.3	1228.0	1241.6	1243.9
22.5°	1306.9	1275.0	1229.6	1202.4	1180.9	1160.1	1151.3	1148.2	1157.0	1169.7	1172.9
25°	1306.9	1275.0	1224.0	1178.4	1125.9	1086.0	1069.2	1064.4	1073.2	1085.1	1090.0
27.5°	1328.5	1296.6	1236.7	1157.0	1060.4	996.6	976.6	972.6	980.6	990.2	994.9
30°	1378.7	1347.6	1273.5	1132.2	987.8	904.0	881.7	877.7	881.7	885.7	891.2
32.5°	1462.5	1436.2	1333.3	1109.9	914.4	820.2	793.1	786.8	788.3	789.1	793.9
35°	1599.0	1587.0	1413.1	1083.5	845.0	751.7	723.7	711.0	710.1	714.1	719.7
37.5°	1808.1	1815.2	1516.0	1045.3	787.6	703.0	675.0	662.3	655.9	663.9	670.2
40°	2103.3	2120.0	1634.9	993.4	740.4	674.2	644.7	632.7	624.0	621.5	624.7
42.5°	2487.0	2482.2	1756.2	927.1	689.4	655.1	624.0	611.2	596.8	578.5	574.5
45°	2941.8	2873.2	1857.5	845.8	631.2	636.7	604.8	587.3	564.9	537.8	534.6
47.5°	3478.9	3289.7	1919.8	758.8	576.8	612.7	583.3	556.2	523.4	505.8	503.5
50°	4125.9	3777.2	1963.7	670.2	528.3	582.5	552.9	517.0	485.1	480.4	479.6
52.5°	4891.9	4352.5	2017.9	590.4	489.9	543.4	522.6	485.9	460.4	462.8	462.8
55°	5706.5	4947.7	2019.5	527.4	456.4	497.9	500.3	470.8	450.8	458.8	461.1
57.5°	6449.4	5468.0	1860.6	482.7	424.5	462.0	493.1	476.4	461.1	489.1	491.5
60°	7097.2	5868.5	1519.2	446.0	398.1	448.5	509.0	510.7	507.5	583.3	588.8
62.5°	7334.3	5872.5	1078.7	414.9	383.8	456.4	542.6	544.9	544.9	615.2	625.5
65°	7002.3	5383.4	718.1	396.6	374.2	473.9	569.7	559.3	534.6	583.3	572.1
67.5°	5832.6	4190.5	525.0	384.6	360.7	474.8	593.6	567.3	525.0	566.5	547.4
70°	4008.6	2666.5	439.7	373.4	344.7	454.0	606.4	564.9	510.7	528.3	502.7
71°	3226.7	2127.9	417.3	369.4	338.3	442.0	608.0	561.7	503.5	514.6	491.5
72.5°	2125.6	1310.9	390.2	360.7	328.8	421.3	604.1	554.5	493.9	494.7	479.6
75°	838.6	543.4	351.1	340.7	301.6	387.8	586.5	539.4	475.6	459.6	453.2
77.5°	423.7	355.1	308.8	312.8	269.6	353.4	561.7	514.6	450.0	428.5	423.7
80°	309.5	269.6	264.1	271.3	233.7	320.0	530.6	481.1	417.3	439.7	430.0
82.5°	188.3	164.4	206.6	224.2	195.5	285.6	493.9	442.0	375.8	346.3	335.1
85°	89.4	96.6	149.2	165.2	144.4	228.2	451.6	399.0	328.0	283.3	288.1
87.5°	43.9	53.5	85.4	98.9	94.9	167.6	340.7	309.5	258.5	213.1	208.3
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)