

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: P196352

Luminaire Tested: **NAV-AF-02-D-UNV-T4FT-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196352
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-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 800mA 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: 10146.6 lumens
Efficiency: N/A
Efficacy: 119.4 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

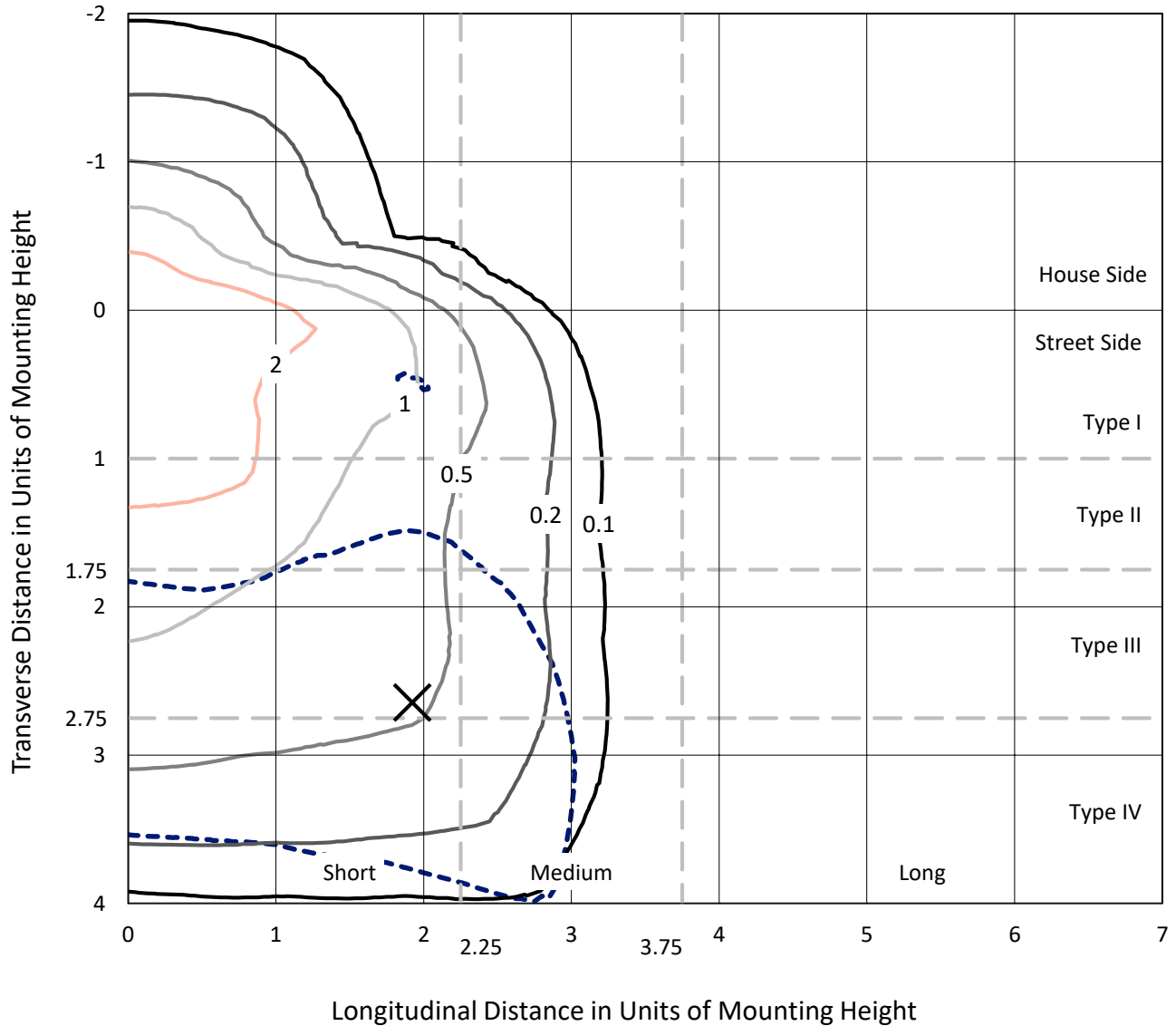
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

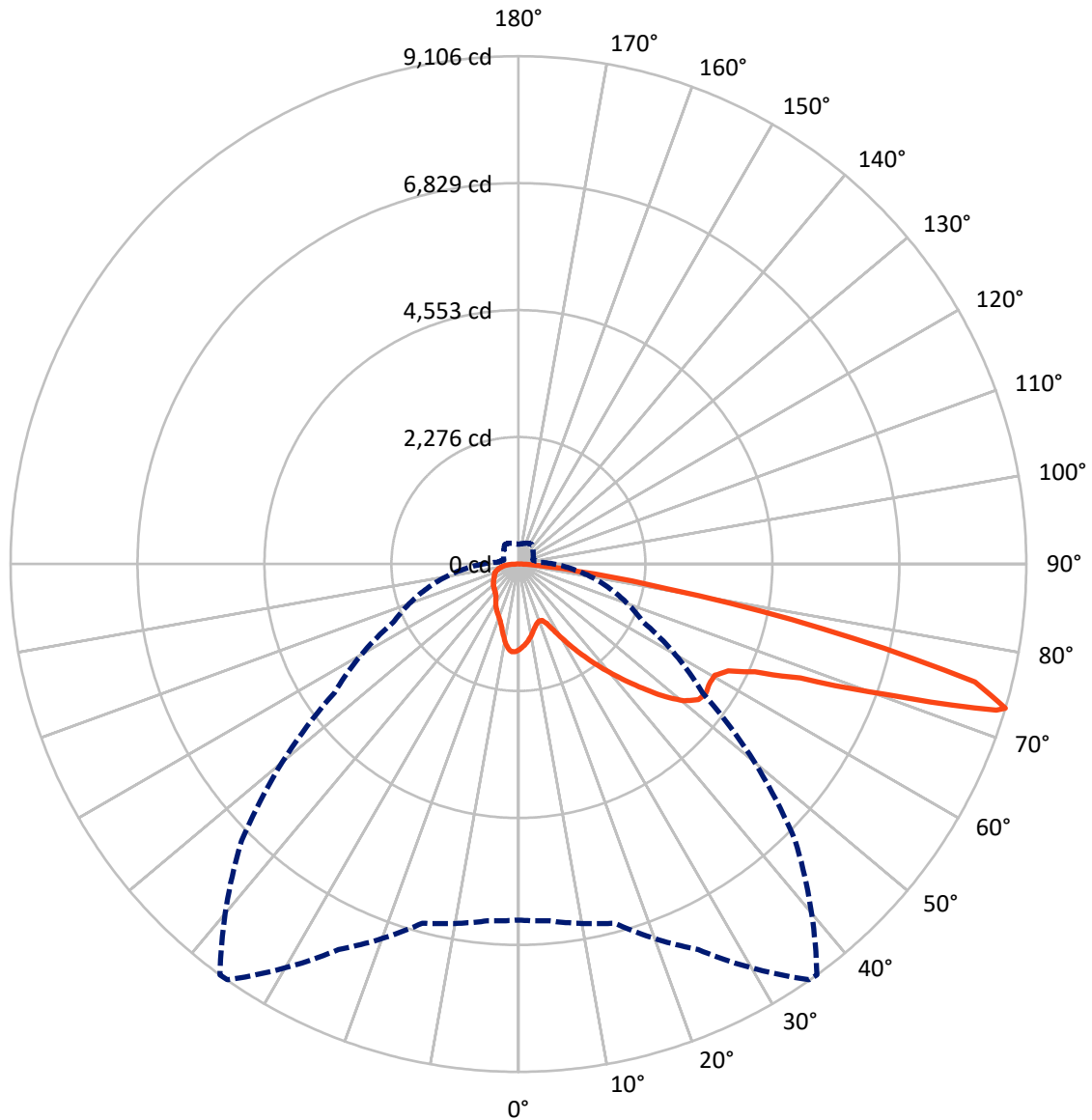
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.8 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	1956.6	0.0	1956.6
	% Fixture	19.3	0.0	19.3
Street Side	Lumens	8190.1	0.0	8190.1
	% Fixture	80.7	0.0	80.7
Total	Lumens	10146.6	0.0	10146.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.6	1.4
10°-20°	350.6	3.5
20°-30°	562.1	5.5
30°-40°	929.8	9.2
40°-50°	1438.7	14.2
50°-60°	1926.0	19.0
60°-70°	2516.0	24.8
70°-80°	2055.1	20.3
80°-90°	228.7	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°	10146.6	100.0
0°-180°	10146.6	100.0



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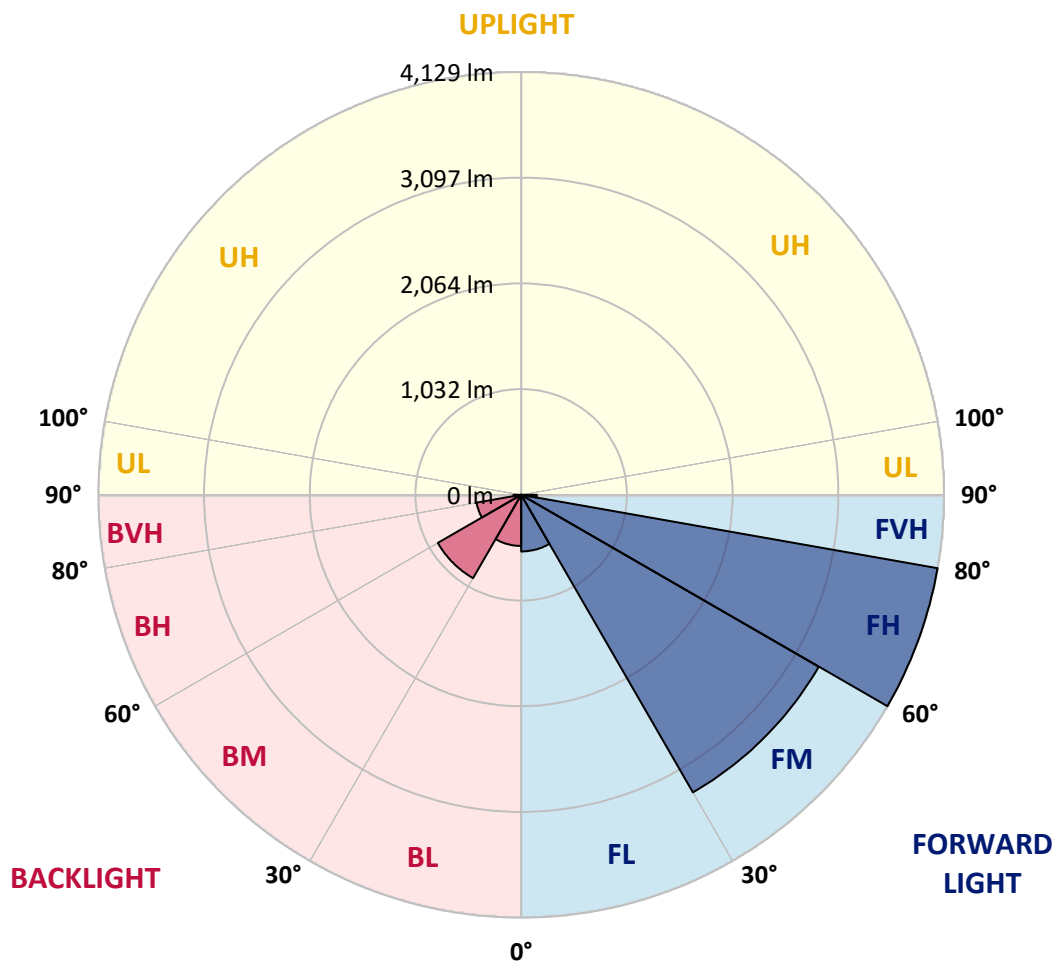
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	552.9	5.4			
FM (30°-60°)	3354.8	33.1			
FH (60°-80°)	4128.9	40.7			G2/5000
FVH (80°-90°)	153.4	1.5			G2/225
BL (0°-30°)	499.4	4.9	B1/500		
BM (30°-60°)	939.6	9.3	B1/1000		
BH (60°-80°)	442.1	4.4	B1/500		G1/500
BVH (80°-90°)	75.3	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°	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9
2.5°	1478.3	1482.2	1482.8	1487.3	1487.3	1486.7	1488.6	1496.3	1500.2	1509.2	1516.9
5°	1405.4	1409.9	1411.9	1419.5	1429.3	1429.9	1437.0	1451.9	1466.0	1486.0	1502.7
7.5°	1323.5	1328.7	1333.8	1350.0	1364.1	1365.4	1378.9	1402.9	1421.5	1446.0	1476.3
10°	1244.2	1245.5	1250.7	1271.3	1290.0	1292.0	1311.3	1338.3	1363.5	1397.7	1431.8
12.5°	1179.2	1183.0	1181.7	1197.2	1213.3	1214.5	1240.3	1274.5	1311.3	1350.0	1390.6
15°	1156.5	1155.9	1142.3	1141.7	1148.8	1150.1	1175.3	1215.3	1256.5	1304.2	1356.4
17.5°	1172.0	1166.9	1131.4	1109.5	1105.0	1106.3	1124.9	1168.8	1212.6	1267.4	1329.9
20°	1257.1	1237.2	1154.0	1101.1	1086.3	1086.3	1097.2	1132.7	1181.1	1244.9	1323.5
22.5°	1458.9	1427.9	1250.7	1156.5	1104.4	1099.2	1090.8	1117.9	1171.4	1248.1	1350.0
25°	1712.9	1698.1	1427.9	1304.2	1196.5	1179.8	1124.3	1134.0	1191.3	1282.9	1422.2
27.5°	1948.2	1922.4	1660.7	1518.9	1366.8	1341.0	1223.7	1184.3	1239.1	1347.4	1526.7
30°	2085.6	2068.1	1899.9	1764.5	1583.3	1550.5	1382.2	1283.6	1324.2	1453.7	1674.9
32.5°	2235.1	2224.8	2139.7	2016.5	1818.0	1779.9	1587.2	1445.3	1454.4	1595.0	1853.5
35°	2380.2	2393.7	2345.3	2255.1	2070.8	2035.3	1862.5	1656.9	1614.9	1753.5	2044.3
37.5°	2554.2	2557.5	2527.2	2468.5	2336.3	2307.4	2164.9	1882.4	1789.7	1922.4	2228.7
40°	2901.7	2850.8	2732.2	2685.8	2607.1	2589.1	2426.5	2089.4	1952.1	2095.8	2402.7
42.5°	3277.5	3198.3	3012.6	2936.5	2905.0	2888.2	2644.5	2227.4	2104.2	2269.3	2573.5
45°	3580.5	3516.1	3334.3	3240.2	3244.1	3217.0	2834.7	2350.5	2269.3	2443.3	2764.4
47.5°	3879.0	3771.4	3567.6	3554.1	3599.3	3559.3	3016.5	2473.6	2441.4	2632.9	2955.2
50°	3898.4	3800.4	3717.9	3826.1	3903.6	3853.9	3181.5	2634.8	2620.0	2862.4	3201.5
52.5°	3663.1	3648.9	3774.6	3957.1	4085.4	4040.9	3316.2	2800.5	2802.5	3149.3	3501.3
55°	3577.4	3559.3	3710.1	3934.5	4107.9	4081.5	3416.9	2987.4	3004.8	3497.4	3823.0
57.5°	3721.7	3676.6	3706.3	3891.9	4055.1	4039.5	3521.3	3195.1	3226.6	3898.4	4120.1
60°	4169.9	4077.6	3920.4	3955.1	4057.0	4047.9	3670.9	3426.5	3479.4	4316.1	4308.4
62.5°	4840.9	4736.5	4416.1	4261.3	4238.8	4221.4	3917.7	3710.8	3737.2	4617.9	4198.8
65°	5577.1	5465.0	5084.0	4830.6	4697.8	4660.4	4316.1	4053.7	3888.0	4617.2	3772.0
67.5°	6403.7	6285.0	5905.3	5663.6	5519.7	5455.9	4962.7	4331.0	3839.0	4226.5	3018.4
70°	7250.1	7137.2	6963.2	7047.6	7110.8	7013.5	5981.4	4423.1	3487.0	3313.6	2026.9
72.5°	6800.8	6791.7	6923.8	7724.6	8942.4	8961.8	6998.6	4162.7	2694.1	1969.5	1080.4
73°	6383.6	6421.7	6666.7	7624.7	9099.0	9105.5	7018.7	4028.0	2473.6	1696.8	949.0
75°	3307.2	3565.1	4474.1	6182.5	8425.3	8455.6	6187.0	3049.3	1474.4	942.5	639.5
77.5°	885.8	874.2	1441.5	3012.0	5617.1	5577.1	3909.3	1476.3	706.6	591.2	448.7
80°	303.6	307.5	490.6	1101.7	2621.9	2715.4	1696.8	644.0	464.8	411.9	317.8
82.5°	154.8	159.9	256.6	468.7	1096.6	1073.4	546.1	379.1	311.4	250.1	177.9
85°	82.6	85.1	141.2	243.1	402.3	406.8	192.1	202.4	197.9	141.8	87.7
87.5°	40.6	41.9	67.7	107.0	148.9	143.7	67.0	87.7	97.4	79.9	48.4
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°	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9	1536.9
2.5°	1526.7	1526.7	1534.9	1549.2	1559.5	1569.2	1575.7	1585.9	1591.7	1591.1	1590.4
5°	1516.3	1522.8	1539.5	1556.9	1568.5	1576.3	1576.3	1580.8	1580.8	1578.8	1576.3
7.5°	1492.5	1503.4	1527.9	1543.3	1546.6	1538.2	1521.4	1508.5	1492.5	1484.1	1480.8
10°	1454.4	1468.5	1499.5	1506.6	1489.8	1460.2	1419.5	1384.8	1353.9	1339.7	1335.2
12.5°	1417.0	1435.7	1464.8	1453.7	1413.8	1355.7	1293.2	1245.5	1210.7	1197.2	1192.7
15°	1386.1	1408.6	1431.2	1397.0	1327.4	1246.8	1177.8	1133.3	1106.9	1096.6	1094.0
17.5°	1365.4	1391.8	1399.6	1335.8	1239.1	1148.8	1087.6	1058.5	1047.0	1042.5	1041.2
20°	1366.8	1396.4	1377.7	1276.4	1154.0	1063.1	1022.4	1014.1	1014.1	1014.1	1013.4
22.5°	1402.2	1427.9	1368.7	1221.0	1072.2	990.8	973.4	980.6	985.7	985.7	985.1
25°	1475.7	1489.8	1375.2	1167.5	995.4	928.3	928.9	942.5	947.0	947.0	945.7
27.5°	1587.8	1576.3	1386.7	1108.2	919.9	871.7	880.7	892.9	896.1	894.2	893.5
30°	1728.4	1681.9	1396.4	1038.6	849.0	818.8	826.4	833.6	831.0	826.4	825.8
32.5°	1885.7	1789.7	1390.6	960.6	786.5	763.9	768.4	772.3	768.4	757.5	757.5
35°	2041.7	1886.9	1359.0	875.4	736.8	711.1	710.4	722.7	722.0	709.1	709.8
37.5°	2178.4	1963.7	1297.7	797.5	694.3	672.4	674.9	682.7	686.6	669.2	667.3
40°	2297.6	2016.5	1211.4	731.1	660.1	661.4	654.4	642.1	637.6	629.8	628.6
42.5°	2409.9	2053.3	1119.8	675.7	642.7	657.6	633.7	604.7	592.5	599.6	604.1
45°	2520.0	2094.6	1031.4	629.8	620.8	646.0	613.1	580.8	566.7	569.9	574.4
47.5°	2654.8	2152.0	925.2	580.8	587.3	624.7	600.2	565.4	544.1	531.2	527.3
50°	2832.0	2235.1	787.2	527.9	551.9	601.5	589.2	542.8	519.7	493.8	487.3
52.5°	3053.8	2313.8	647.9	485.5	522.8	581.5	571.2	523.4	495.1	464.2	459.0
55°	3275.0	2324.8	527.9	448.7	490.0	554.4	549.2	508.0	468.0	442.9	437.7
57.5°	3429.7	2220.9	447.4	417.8	458.4	520.9	529.3	489.3	445.5	426.2	422.9
60°	3432.3	1972.8	398.4	397.1	434.5	491.9	508.6	467.4	431.3	418.4	415.8
62.5°	3159.6	1589.8	366.8	381.7	417.2	468.0	493.2	455.1	428.1	422.9	420.3
65°	2648.3	1174.7	341.7	367.4	401.0	448.1	480.3	451.3	426.8	424.8	422.9
67.5°	1955.4	805.2	320.4	349.4	382.9	427.4	468.0	445.5	419.0	426.8	424.2
70°	1230.1	537.7	300.4	328.8	359.1	403.6	451.9	435.2	409.4	404.9	396.5
72.5°	694.3	388.7	276.6	302.4	328.2	371.9	430.0	417.8	387.5	369.4	361.0
73°	627.3	368.2	270.8	295.9	321.0	365.5	424.8	412.6	381.0	361.0	353.3
75°	459.0	301.1	244.4	269.4	291.4	335.8	400.4	386.8	352.6	328.8	323.7
77.5°	332.7	232.1	210.2	232.7	252.1	294.6	363.6	348.1	314.6	301.7	296.6
80°	239.8	175.9	174.1	196.0	212.8	255.9	324.3	308.1	275.9	313.9	305.6
82.5°	143.1	112.8	127.7	152.1	169.5	214.7	281.7	263.0	232.1	234.7	199.9
85°	68.3	63.8	79.3	99.9	112.2	147.0	234.7	219.8	185.7	152.1	148.9
87.5°	30.3	29.1	38.1	44.5	59.9	88.3	160.5	142.5	134.7	80.6	63.2
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)