

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: P195902

Luminaire Tested: **NAV-AF-02-D-UNV-T4W-7050**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195902
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-7050
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5000K, 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: 12036 lumens
Efficiency: N/A
Efficacy: 106.5 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

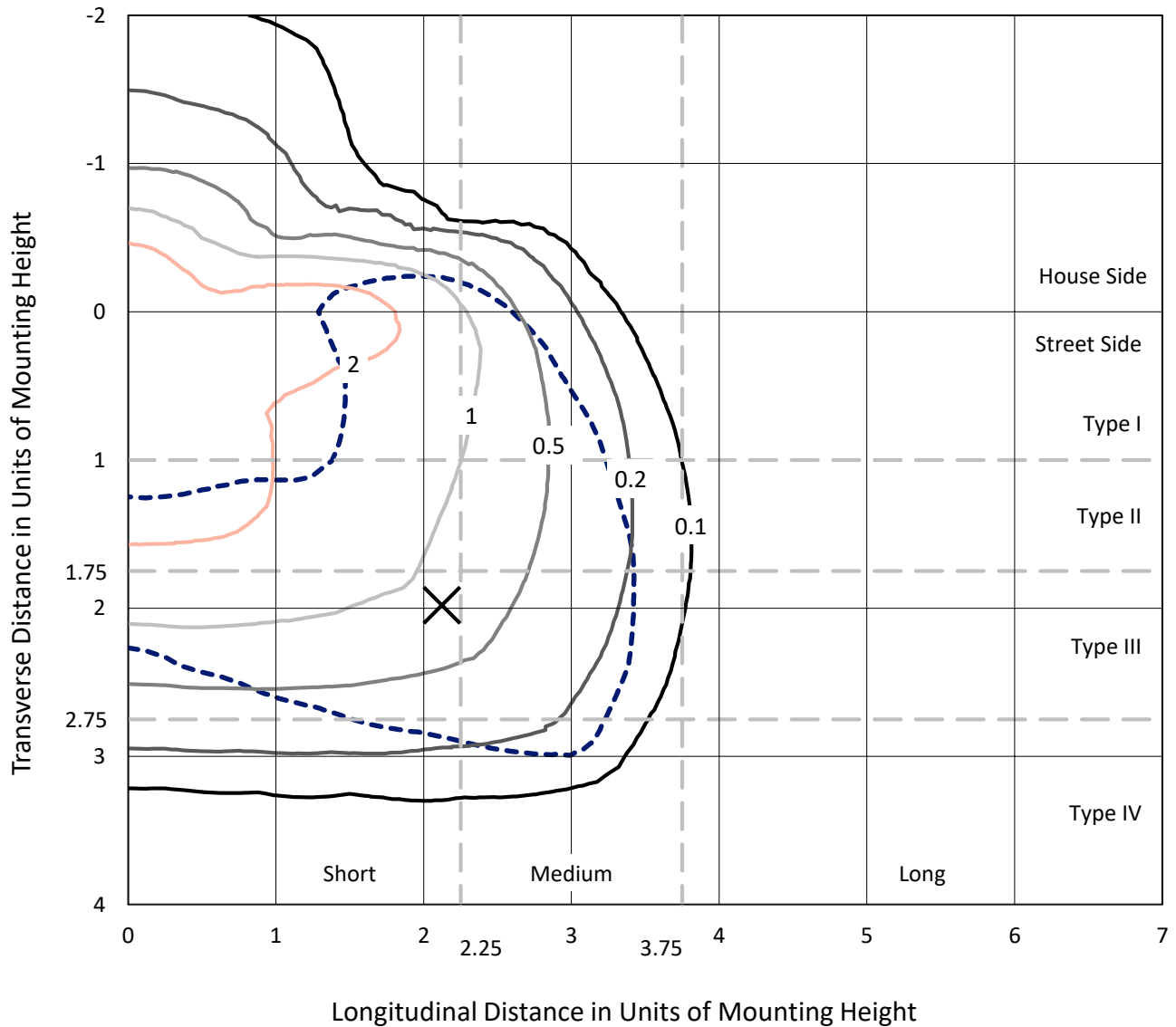
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

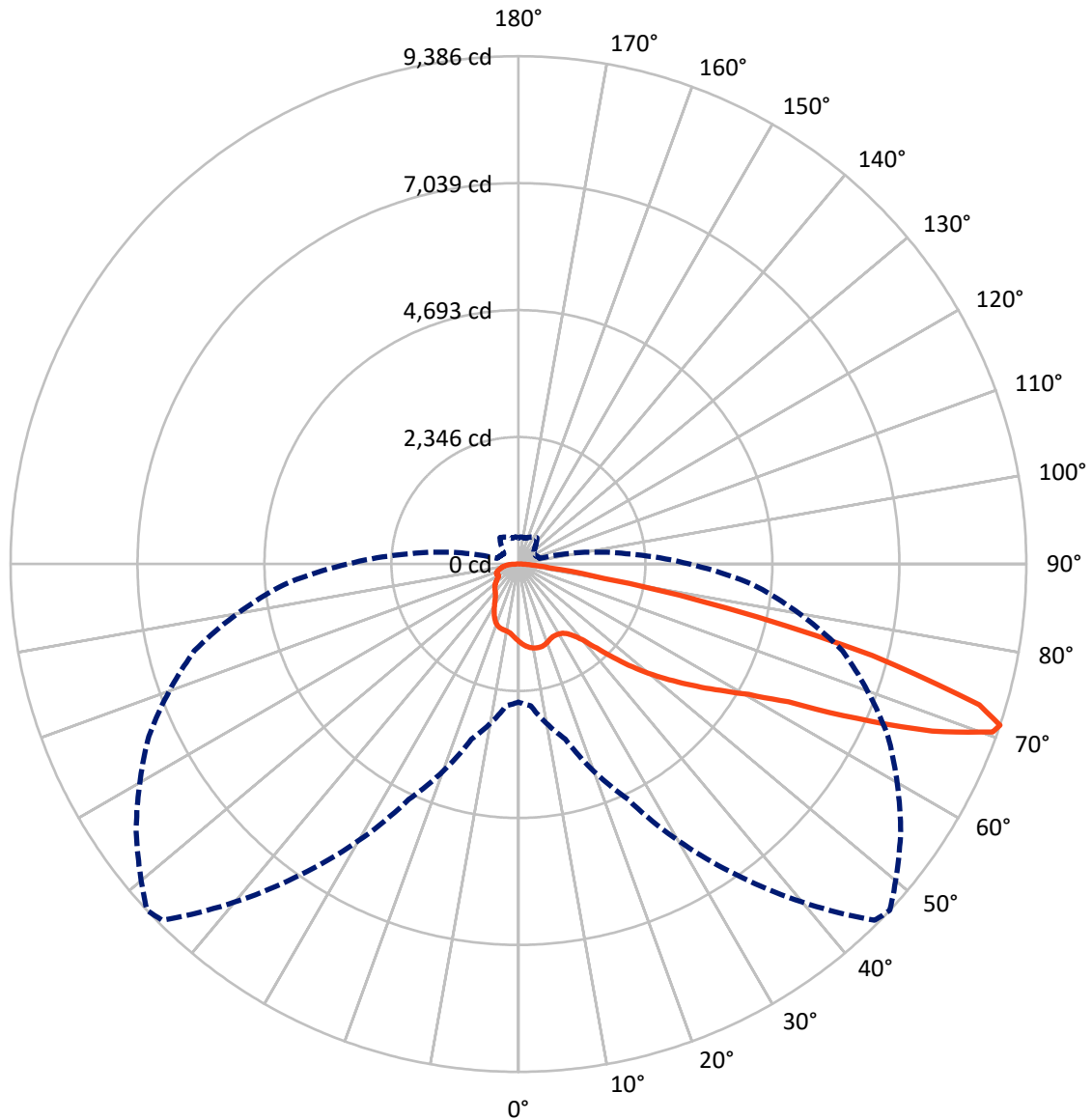
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.1 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	2579.5	0.0	2579.5
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	9456.5	0.0	9456.5
	% Fixture	78.6	0.0	78.6
Total	Lumens	12036.0	0.0	12036.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.7	1.1
10°-20°	399.8	3.3
20°-30°	594.1	4.9
30°-40°	853.0	7.1
40°-50°	1512.4	12.6
50°-60°	2588.0	21.5
60°-70°	3674.1	30.5
70°-80°	2012.3	16.7
80°-90°	265.6	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°	12036.0	100.0
0°-180°	12036.0	100.0



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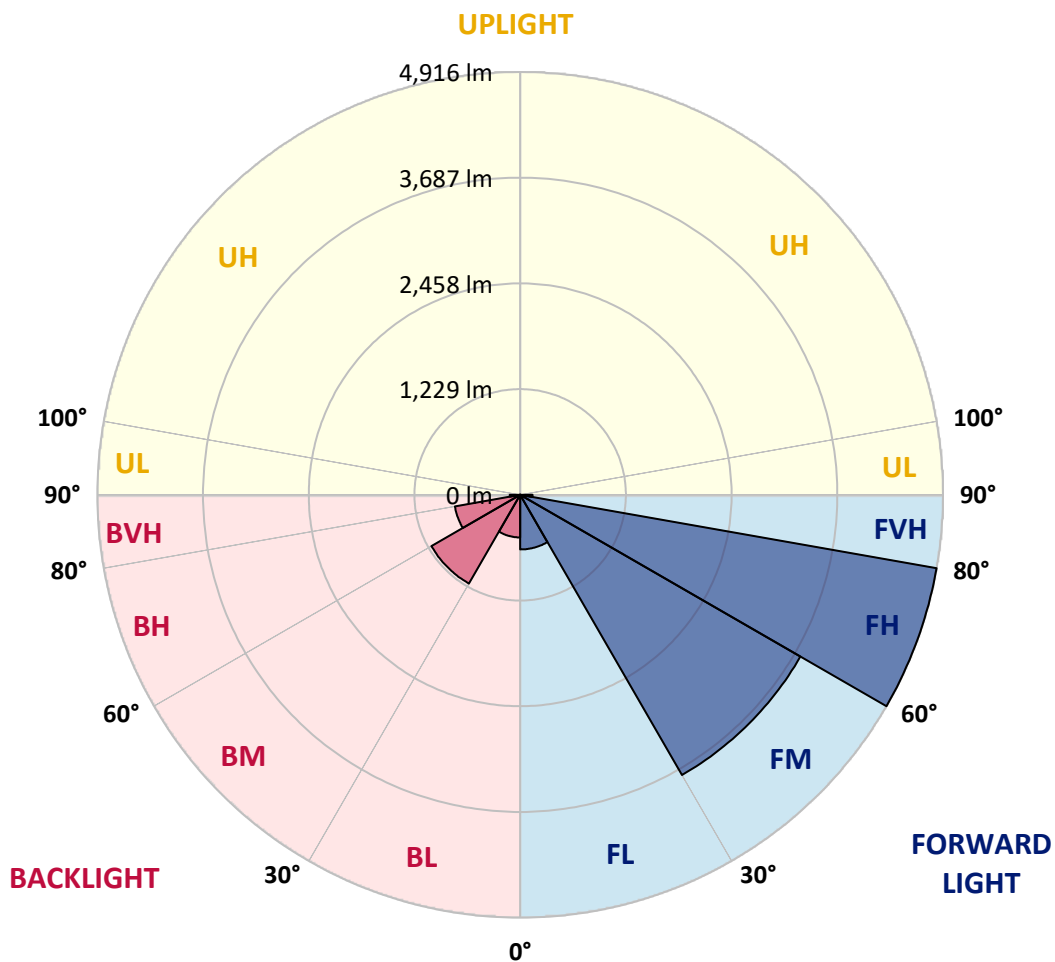
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	635.2	5.3			
FM	(30°-60°)	3761.6	31.3			
FH	(60°-80°)	4915.6	40.8			G2/5000
FVH	(80°-90°)	144.1	1.2			G2/225
BL	(0°-30°)	495.3	4.1	B1/500		
BM	(30°-60°)	1191.9	9.9	B2/2500		
BH	(60°-80°)	770.7	6.4	B2/1000		G2/1000
BVH	(80°-90°)	121.6	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°	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3
2.5°	1518.6	1515.5	1517.1	1511.6	1498.4	1484.3	1484.3	1469.5	1453.9	1438.3	1421.1
5°	1613.0	1608.3	1604.4	1587.3	1561.5	1532.7	1528.0	1498.4	1466.4	1434.4	1403.2
7.5°	1691.8	1687.1	1675.4	1644.2	1606.8	1563.9	1558.4	1519.4	1477.3	1432.8	1389.2
10°	1748.0	1744.8	1722.2	1682.4	1638.8	1588.1	1578.7	1538.9	1489.0	1433.6	1378.2
12.5°	1779.2	1774.5	1747.2	1700.4	1648.9	1597.4	1588.1	1549.8	1492.9	1432.1	1367.3
15°	1766.7	1764.3	1738.6	1691.0	1639.5	1595.1	1587.3	1548.3	1490.6	1426.6	1357.2
17.5°	1713.6	1719.1	1698.8	1652.0	1609.9	1578.7	1570.1	1533.5	1478.9	1413.3	1341.6
20°	1640.3	1646.6	1636.4	1588.8	1564.7	1544.4	1539.7	1510.1	1459.4	1393.8	1322.9
22.5°	1562.3	1567.8	1568.6	1524.1	1516.3	1508.5	1504.6	1483.5	1442.2	1382.1	1310.4
25°	1508.5	1514.7	1516.3	1477.3	1482.0	1484.3	1483.5	1468.7	1439.1	1382.1	1311.9
27.5°	1494.5	1497.6	1496.0	1460.1	1468.7	1482.0	1482.8	1479.6	1451.6	1397.7	1333.8
30°	1542.8	1544.4	1524.9	1471.1	1479.6	1496.8	1497.6	1496.0	1478.1	1438.3	1382.9
32.5°	1751.9	1750.3	1683.2	1544.4	1514.7	1521.0	1523.3	1537.4	1538.9	1505.4	1453.9
35°	2070.1	2069.3	1991.3	1754.2	1614.6	1581.8	1584.9	1606.8	1626.3	1603.7	1574.0
37.5°	2420.3	2422.6	2375.1	2053.7	1829.9	1693.4	1690.2	1706.6	1741.7	1749.5	1753.4
40°	2808.7	2820.4	2818.1	2397.7	2131.7	1883.7	1852.5	1833.8	1901.6	1944.5	1999.9
42.5°	3252.6	3249.4	3251.0	2775.2	2476.5	2183.2	2125.5	2038.1	2116.9	2191.0	2312.7
45°	3634.0	3646.5	3655.8	3176.9	2862.6	2525.6	2467.1	2308.0	2379.0	2489.7	2675.4
47.5°	4017.7	3995.9	4013.0	3623.8	3292.3	2916.4	2840.7	2626.2	2692.5	2848.5	3130.9
50°	4464.7	4454.5	4376.5	4207.3	3811.8	3312.6	3213.6	2958.5	3055.2	3263.5	3693.3
52.5°	4865.6	4811.0	4750.1	4665.9	4322.7	3713.5	3588.0	3304.0	3481.9	3740.1	4391.3
55°	5012.2	4975.6	5048.9	5158.1	4863.2	4122.2	3981.8	3707.3	3963.1	4285.3	5212.7
57.5°	5168.2	5180.7	5346.1	5566.8	5374.9	4558.3	4406.2	4184.6	4491.2	4895.2	6130.7
60°	5246.2	5296.1	5626.1	6040.2	5861.6	5036.4	4890.5	4733.0	5077.0	5569.1	7046.4
62.5°	5259.5	5326.6	5793.8	6206.4	6531.6	5768.8	5600.3	5429.5	5808.6	6314.0	7709.4
65°	5016.1	5119.1	5778.9	6410.7	7142.4	6992.6	6885.8	6587.8	6788.3	6970.0	7822.5
67.5°	4300.9	4413.2	5207.2	6326.5	7632.2	8262.4	8242.2	7802.2	7544.8	7223.5	6984.0
70°	3156.6	3247.1	4009.9	5408.5	7418.5	9259.3	9295.1	8589.3	7756.2	6685.3	5193.2
71°	2552.9	2630.9	3350.1	4801.6	7002.0	9310.7	9385.6	8624.4	7536.3	6199.4	4347.7
72.5°	1588.8	1632.5	2224.5	3623.8	6029.3	8780.3	8906.7	8175.1	6843.6	5240.0	3073.2
75°	599.8	617.0	825.2	1598.2	3598.9	6596.4	6749.3	6178.3	4807.9	2991.3	1286.2
77.5°	322.1	330.7	409.5	664.6	1442.2	3781.4	3977.9	3524.0	2306.4	1046.7	525.7
80°	216.1	221.5	283.1	393.9	663.0	1439.9	1603.7	1414.9	863.4	597.5	374.4
82.5°	139.6	142.7	192.7	259.0	428.2	506.2	578.0	603.7	539.0	428.2	226.2
85°	92.0	94.4	127.1	165.4	265.2	249.6	255.8	334.6	367.4	282.4	115.4
87.5°	53.0	54.6	76.4	85.0	119.3	93.6	101.4	159.1	218.4	184.1	66.3
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°	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3	1431.3
2.5°	1413.3	1407.1	1393.1	1384.5	1380.6	1379.0	1377.5	1380.6	1380.6	1379.0	1375.9
5°	1387.6	1375.9	1352.5	1336.1	1327.5	1325.2	1328.3	1332.2	1334.6	1334.6	1332.2
7.5°	1368.9	1351.7	1320.5	1297.9	1284.6	1280.7	1289.3	1303.4	1312.7	1317.4	1318.2
10°	1353.3	1329.9	1295.6	1272.2	1261.2	1259.7	1270.6	1288.5	1308.0	1316.6	1318.2
12.5°	1339.2	1312.7	1275.3	1253.4	1245.6	1249.5	1264.4	1280.7	1303.4	1315.8	1316.6
15°	1326.0	1298.7	1258.9	1236.3	1234.7	1241.0	1255.0	1268.3	1285.4	1301.0	1301.0
17.5°	1310.4	1280.7	1239.4	1218.3	1218.3	1223.8	1233.2	1240.2	1251.1	1265.9	1265.1
20°	1291.7	1261.2	1219.1	1197.3	1192.6	1189.5	1189.5	1191.0	1200.4	1213.7	1216.0
22.5°	1277.6	1246.4	1202.0	1175.4	1154.4	1134.1	1125.5	1122.4	1131.0	1143.5	1146.6
25°	1277.6	1246.4	1196.5	1152.0	1100.6	1061.6	1045.2	1040.5	1049.1	1060.8	1065.5
27.5°	1298.7	1267.5	1209.0	1131.0	1036.6	974.2	954.7	950.8	958.6	968.0	972.6
30°	1347.8	1317.4	1244.9	1106.8	965.6	883.7	861.9	858.0	861.9	865.8	871.2
32.5°	1429.7	1404.0	1303.4	1085.0	893.9	801.8	775.3	769.1	770.6	771.4	776.1
35°	1563.1	1551.4	1381.4	1059.2	826.0	734.8	707.5	695.0	694.2	698.1	703.6
37.5°	1767.5	1774.5	1482.0	1021.8	769.9	687.2	659.9	647.4	641.2	649.0	655.2
40°	2056.1	2072.4	1598.2	971.1	723.8	659.1	630.2	618.5	610.0	607.6	610.7
42.5°	2431.2	2426.5	1716.8	906.3	673.9	640.4	610.0	597.5	583.4	565.5	561.6
45°	2875.8	2808.7	1815.8	826.8	617.0	622.4	591.2	574.1	552.2	525.7	522.6
47.5°	3400.8	3215.9	1876.7	741.8	563.9	599.0	570.2	543.7	511.7	494.5	492.2
50°	4033.3	3692.5	1919.6	655.2	516.4	569.4	540.5	505.4	474.2	469.6	468.8
52.5°	4782.1	4254.8	1972.6	577.2	478.9	531.2	510.9	475.0	450.1	452.4	452.4
55°	5578.5	4836.7	1974.2	515.6	446.2	486.7	489.1	460.2	440.7	448.5	450.8
57.5°	6304.7	5345.3	1818.9	471.9	415.0	451.6	482.0	465.7	450.8	478.1	480.5
60°	6938.0	5736.8	1485.1	436.0	389.2	438.4	497.6	499.2	496.1	570.2	575.6
62.5°	7169.7	5740.7	1054.5	405.6	375.2	446.2	530.4	532.7	532.7	601.4	611.5
65°	6845.2	5262.6	702.0	387.7	365.8	463.3	556.9	546.8	522.6	570.2	559.3
67.5°	5701.7	4096.5	513.2	376.0	352.6	464.1	580.3	554.6	513.2	553.8	535.1
70°	3918.7	2606.7	429.8	365.0	337.0	443.8	592.8	552.2	499.2	516.4	491.4
71°	3154.3	2080.2	407.9	361.1	330.7	432.1	594.4	549.1	492.2	503.1	480.5
72.5°	2077.9	1281.5	381.4	352.6	321.4	411.8	590.5	542.1	482.8	483.6	468.8
75°	819.8	531.2	343.2	333.1	294.8	379.1	573.3	527.3	464.9	449.3	443.0
77.5°	414.2	347.1	301.9	305.8	263.6	345.5	549.1	503.1	439.9	418.9	414.2
80°	302.6	263.6	258.2	265.2	228.5	312.8	518.7	470.3	407.9	429.8	420.4
82.5°	184.1	160.7	202.0	219.2	191.1	279.2	482.8	432.1	367.4	338.5	327.6
85°	87.4	94.4	145.9	161.5	141.2	223.1	441.5	390.0	320.6	276.9	281.6
87.5°	42.9	52.3	83.5	96.7	92.8	163.8	333.1	302.6	252.7	208.3	203.6
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)