

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: P196790

Luminaire Tested: **NAV-AF-02-D-UNV-T3-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196790
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (p24135)
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-T3-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11784.7 lumens
Efficiency: N/A
Efficacy: 104.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G2

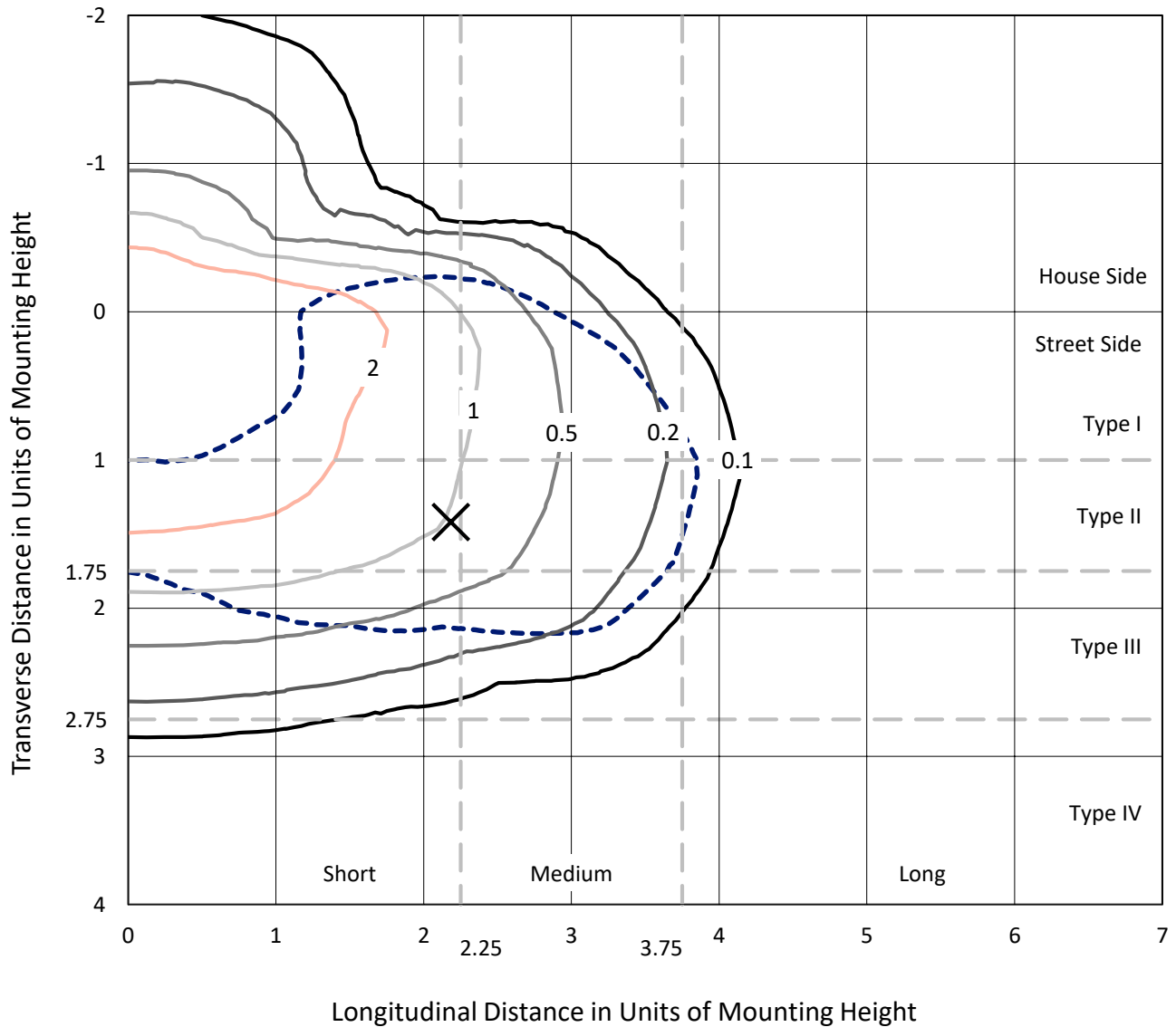
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

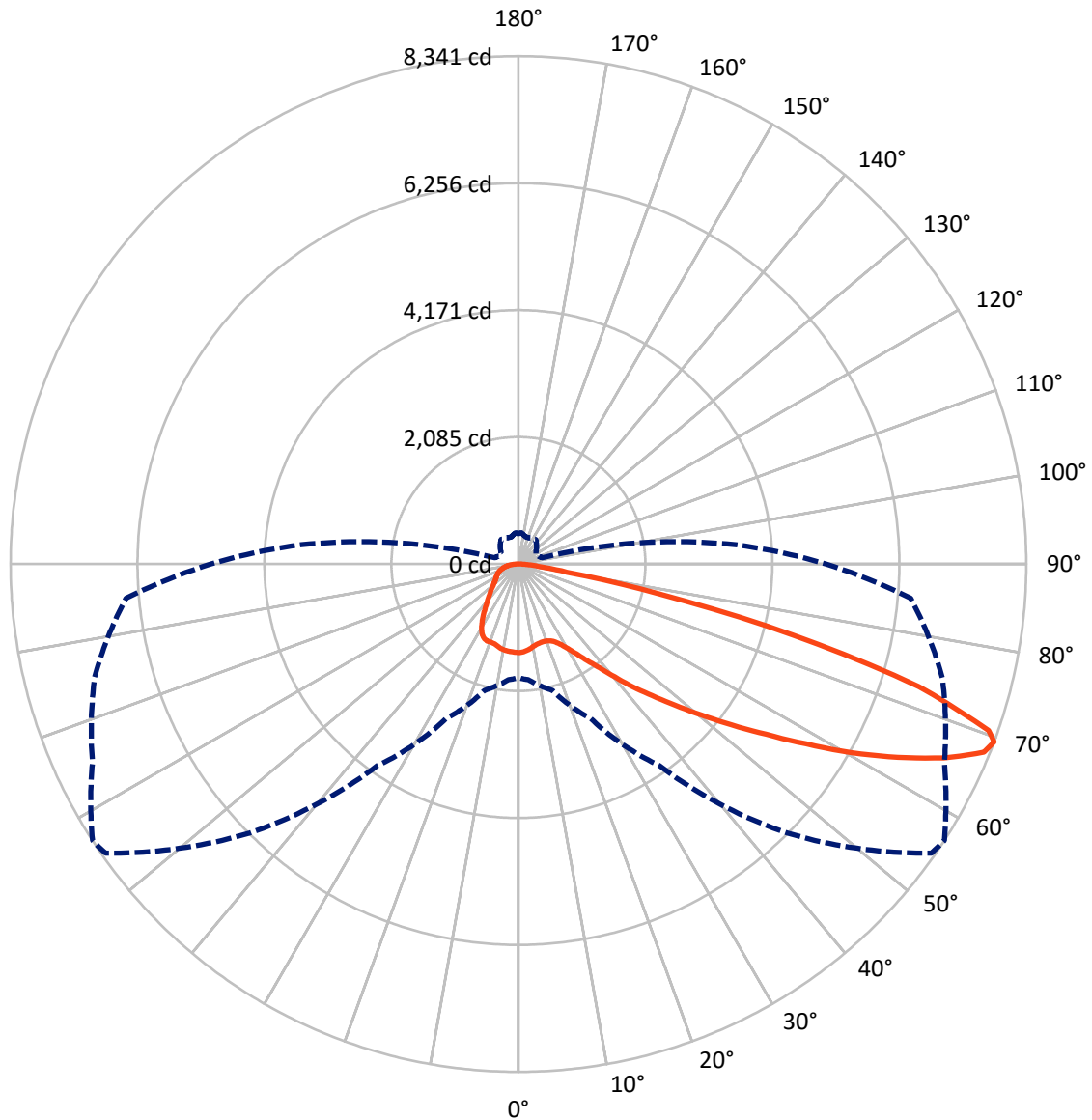
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.7 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 57-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2600.5	0.0	2600.5
	% Fixture	22.1	0.0	22.1
Street Side	Lumens	9184.2	0.0	9184.2
	% Fixture	77.9	0.0	77.9
Total	Lumens	11784.7	0.0	11784.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.3	1.2
10°-20°	387.6	3.3
20°-30°	644.8	5.5
30°-40°	1052.9	8.9
40°-50°	1777.0	15.1
50°-60°	2764.2	23.5
60°-70°	3292.8	27.9
70°-80°	1534.0	13.0
80°-90°	195.1	1.7
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°	11784.7	100.0
0°-180°	11784.7	100.0



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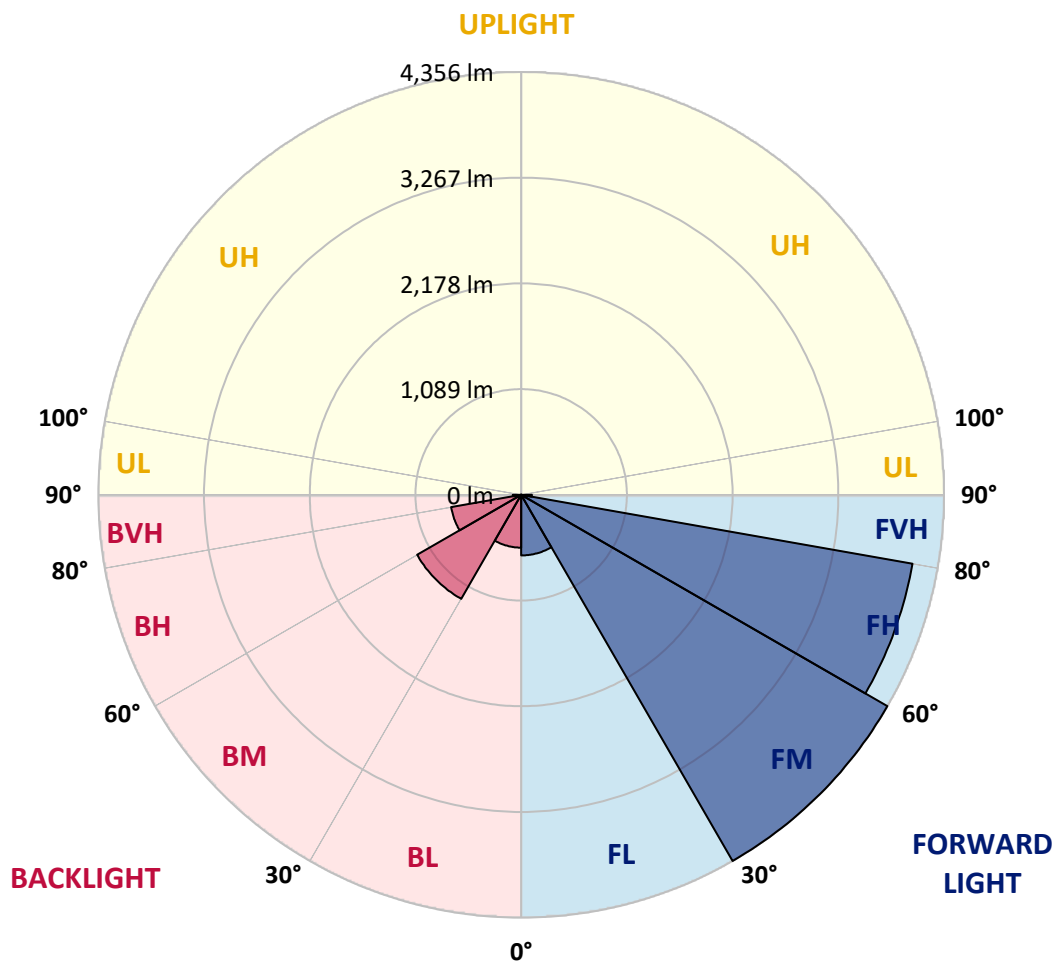
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	624.1	5.3			
FM	(30°-60°)	4356.4	37.0			
FH	(60°-80°)	4094.0	34.7			G2/5000
FVH	(80°-90°)	109.7	0.9			G2/225
BL	(0°-30°)	544.6	4.6	B2/1000		
BM	(30°-60°)	1237.7	10.5	B2/2500		
BH	(60°-80°)	732.8	6.2	B2/1000		G2/1000
BVH	(80°-90°)	85.4	0.7			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type III Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57°	65°	75°	85°
0°	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1
2.5°	1447.8	1447.8	1451.6	1451.6	1451.6	1450.1	1445.5	1447.0	1444.1	1441.7	1438.0
5°	1418.4	1420.0	1424.4	1426.0	1428.2	1429.0	1429.0	1428.2	1429.0	1429.0	1426.7
7.5°	1377.6	1379.2	1384.5	1387.5	1394.2	1400.2	1403.3	1403.3	1407.0	1410.1	1410.9
10°	1352.7	1352.7	1355.8	1355.8	1361.1	1364.1	1373.8	1373.2	1383.7	1393.5	1398.0
12.5°	1349.8	1349.8	1348.3	1342.9	1339.9	1339.2	1349.1	1350.5	1366.3	1383.7	1392.0
15°	1359.5	1359.5	1355.1	1344.4	1333.2	1327.8	1337.7	1340.7	1358.0	1378.5	1391.2
17.5°	1391.2	1390.5	1380.7	1359.5	1339.9	1331.7	1334.6	1337.7	1353.5	1376.8	1392.7
20°	1461.4	1461.4	1440.2	1401.8	1367.8	1348.3	1343.7	1346.0	1357.3	1379.2	1399.5
22.5°	1584.4	1586.7	1549.0	1485.5	1427.5	1386.0	1367.8	1370.1	1375.3	1396.6	1419.2
25°	1765.4	1759.4	1705.9	1616.1	1525.5	1454.6	1417.6	1420.0	1420.0	1439.5	1462.9
27.5°	1957.1	1958.6	1881.7	1785.1	1665.8	1560.2	1501.3	1500.6	1499.9	1518.7	1543.7
30°	2173.6	2174.4	2085.3	1973.7	1837.0	1702.0	1613.8	1613.0	1606.2	1629.6	1662.1
32.5°	2410.5	2409.7	2306.4	2180.4	2028.7	1875.6	1760.9	1760.1	1754.9	1786.6	1825.8
35°	2673.0	2673.0	2570.5	2415.0	2251.3	2080.9	1948.0	1947.2	1950.3	1993.3	2030.2
37.5°	2989.3	2996.0	2872.2	2683.6	2504.8	2323.0	2168.4	2163.8	2141.2	2213.6	2274.7
40°	3318.9	3337.8	3209.5	2989.3	2796.1	2608.1	2437.7	2434.7	2415.0	2491.9	2590.9
42.5°	3675.7	3718.7	3576.2	3351.3	3140.8	2937.9	2766.7	2758.4	2682.9	2802.8	2957.5
45°	4143.5	4171.4	3964.7	3761.0	3562.6	3331.0	3127.2	3082.7	3007.3	3161.2	3361.9
47.5°	4461.9	4448.3	4319.3	4182.8	4055.2	3833.5	3520.4	3463.7	3371.7	3575.4	3796.4
50°	4659.6	4669.4	4597.0	4590.2	4583.3	4428.8	3963.9	3896.0	3789.6	4031.1	4289.1
52.5°	4790.2	4745.5	4758.3	4912.3	5098.7	5024.8	4465.7	4390.2	4280.8	4522.2	4813.5
55°	4735.8	4677.0	4795.4	5098.7	5537.0	5553.6	5016.4	4938.7	4845.2	5044.4	5444.2
57.5°	4511.0	4540.4	4727.4	5149.2	5836.5	6027.4	5649.5	5570.2	5386.2	5588.3	6043.2
60°	4194.8	4254.4	4540.4	5069.2	6046.3	6396.4	6344.2	6291.4	5974.7	6118.0	6672.5
62.5°	3855.3	3914.1	4265.7	4932.7	5952.0	6723.0	7026.4	6993.9	6624.2	6628.0	7071.6
65°	3353.6	3377.7	3736.8	4559.9	5690.1	7018.0	7709.2	7680.5	7245.1	7063.3	7183.2
67.5°	2532.7	2562.9	2857.9	3599.5	4893.5	6858.1	8254.5	8250.0	7618.5	7224.8	6917.6
69°	1870.3	1907.3	2147.9	2794.6	4046.2	6248.4	8280.2	8341.4	7719.7	7208.2	6468.8
70°	1368.6	1410.9	1633.4	2218.1	3370.2	5575.5	8060.7	8191.9	7681.2	7103.3	6118.7
72.5°	581.7	596.0	705.4	1001.2	1709.6	3361.9	6602.3	6878.4	6937.3	6364.7	4780.3
75°	364.4	369.0	411.9	513.7	760.6	1390.5	4275.6	4652.0	5179.4	4938.0	3200.4
77.5°	274.7	278.4	303.3	353.9	472.3	519.1	1983.5	2365.3	2966.5	2904.6	1592.7
80°	210.6	212.7	229.3	257.3	332.7	325.1	643.5	808.7	1238.1	1092.5	563.6
82.5°	165.2	166.0	180.3	185.6	232.4	218.8	322.9	359.9	500.2	415.7	275.4
85°	146.4	148.6	163.1	135.8	148.6	131.9	177.3	192.4	265.6	250.5	104.2
87.5°	74.8	78.4	136.6	116.2	74.8	62.6	77.7	83.7	107.8	116.9	50.6
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°	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1	1456.1
2.5°	1438.7	1439.5	1441.7	1445.5	1451.6	1459.1	1468.2	1477.3	1482.5	1486.3	1484.9
5°	1426.7	1427.5	1432.0	1438.7	1446.3	1457.6	1472.7	1484.1	1492.4	1497.6	1496.9
7.5°	1411.6	1413.9	1422.9	1430.4	1441.0	1450.1	1462.1	1472.7	1481.0	1486.3	1485.5
10°	1400.2	1402.6	1413.9	1423.6	1432.7	1434.2	1432.0	1429.0	1428.2	1432.0	1430.4
12.5°	1395.0	1399.5	1410.1	1416.9	1413.2	1398.7	1382.1	1375.3	1373.2	1380.7	1381.5
15°	1396.6	1400.2	1409.3	1404.8	1384.5	1360.3	1351.2	1356.6	1361.1	1365.6	1366.3
17.5°	1400.2	1402.6	1404.8	1388.2	1359.5	1343.7	1340.7	1335.3	1321.8	1314.3	1313.6
20°	1407.0	1410.1	1406.2	1380.0	1354.3	1333.2	1296.9	1264.4	1233.5	1216.9	1210.1
22.5°	1430.4	1432.7	1421.5	1395.8	1356.6	1287.8	1214.6	1158.8	1111.2	1085.7	1075.8
25°	1476.5	1480.3	1464.4	1432.0	1329.3	1209.4	1106.0	1030.7	971.0	940.0	931.8
27.5°	1557.2	1561.0	1543.7	1459.1	1266.0	1104.5	979.3	904.5	853.4	826.9	823.2
30°	1677.9	1683.2	1667.4	1458.4	1169.4	971.0	855.6	811.8	782.4	764.3	763.5
32.5°	1845.4	1865.0	1800.1	1432.7	1050.2	836.0	762.0	746.9	732.6	720.6	720.6
35°	2058.2	2104.3	1931.3	1379.2	919.0	743.9	709.9	695.7	677.5	664.8	663.2
37.5°	2312.5	2384.1	2025.0	1284.2	805.8	699.4	678.3	654.9	626.2	601.3	595.3
40°	2661.8	2678.4	2071.0	1129.4	721.2	675.2	648.9	619.4	583.2	555.2	552.3
42.5°	3012.6	2958.3	2061.9	963.4	672.9	653.4	618.6	586.1	553.7	530.4	530.4
45°	3411.7	3202.7	1993.3	796.7	629.3	628.5	590.8	559.9	535.0	517.6	513.7
47.5°	3793.5	3422.2	1874.9	673.7	584.0	603.5	572.6	547.7	525.1	508.5	505.6
50°	4256.6	3676.5	1748.8	587.7	540.2	581.7	565.1	552.3	530.4	501.7	498.7
52.5°	4716.9	3973.8	1651.6	522.8	501.7	564.4	569.6	571.1	550.7	495.0	491.1
55°	5211.1	4291.3	1549.0	472.3	470.1	556.0	580.1	578.6	568.9	496.5	490.3
57.5°	5681.2	4610.5	1395.8	436.8	445.1	547.7	582.5	558.4	541.0	504.0	494.2
60°	6070.5	4874.6	1170.9	411.9	424.0	531.1	567.4	531.1	501.7	502.5	493.5
62.5°	6259.8	4948.6	895.6	383.3	406.7	504.0	545.5	510.8	483.6	505.6	500.2
65°	6115.7	4738.0	638.3	356.8	385.5	472.3	532.6	493.5	474.5	520.6	514.5
67.5°	5598.1	4164.6	463.3	333.5	365.2	439.9	508.5	477.6	465.6	531.9	518.3
69°	5048.1	3595.7	401.4	319.9	350.8	422.5	492.6	469.3	458.7	516.0	496.5
70°	4591.0	3157.5	370.4	311.6	338.7	412.7	480.6	464.1	451.9	497.2	473.8
72.5°	3291.8	2040.9	311.6	286.7	307.0	390.8	454.2	444.3	426.2	448.9	433.9
75°	1988.7	1065.3	264.9	261.0	273.9	360.7	423.3	411.2	393.2	395.3	387.8
77.5°	913.6	491.8	221.8	230.9	239.2	322.9	385.5	371.9	355.3	349.3	350.0
80°	400.7	287.5	185.6	196.8	201.5	290.5	344.8	329.8	311.6	344.0	319.1
82.5°	216.6	166.7	144.9	152.4	165.2	252.7	299.5	279.9	262.6	305.6	246.7
85°	87.5	85.2	98.2	105.7	114.7	181.8	250.5	230.1	209.0	187.2	182.6
87.5°	37.7	40.8	48.3	51.4	61.0	113.2	168.3	147.2	147.8	126.7	124.4
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)