

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: P270397

Luminaire Tested: **NAV-AF-02-D-UNV-T4W-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270397
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-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 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: 10456.7 lumens
Efficiency: N/A
Efficacy: 92.5 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

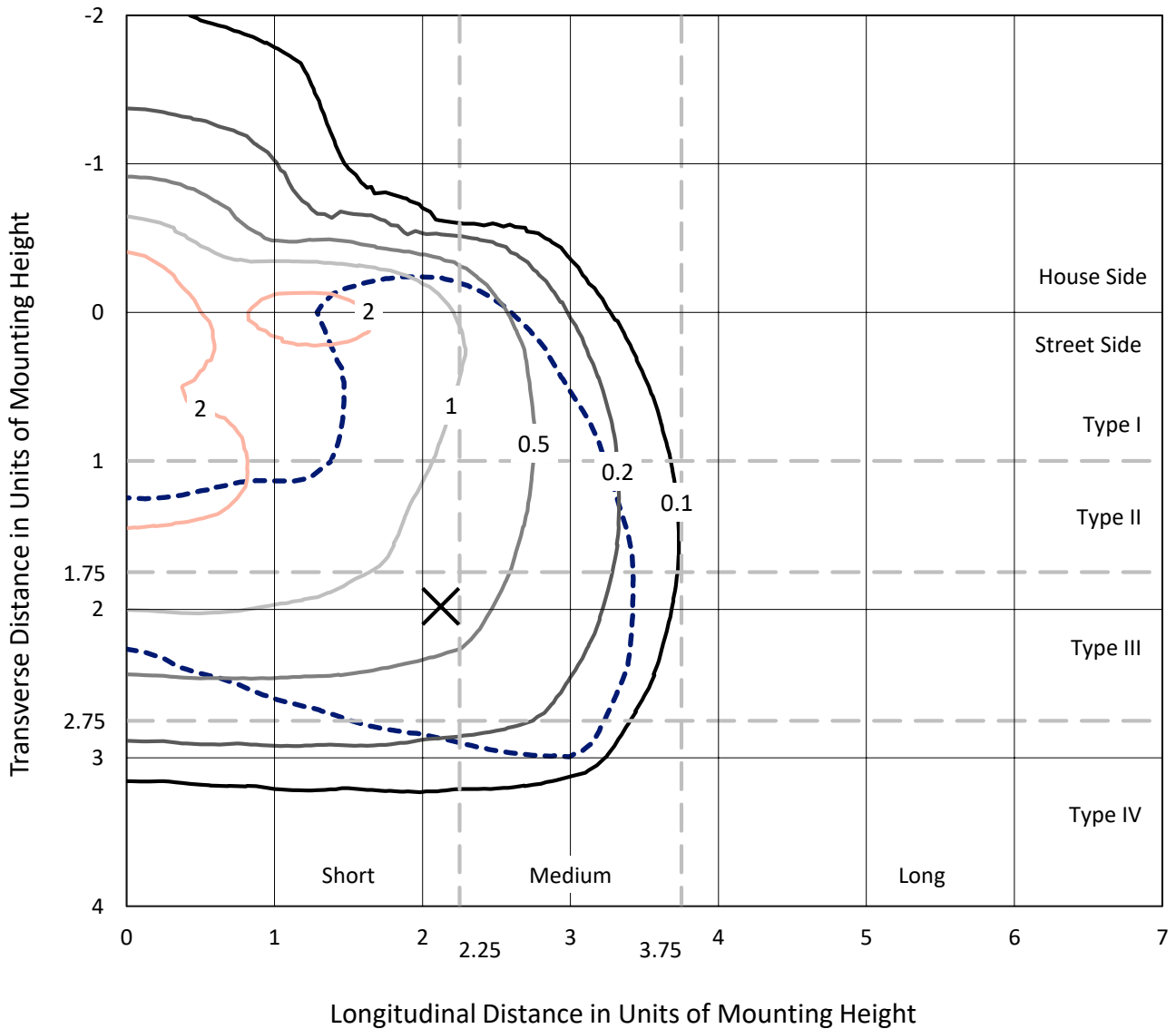
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

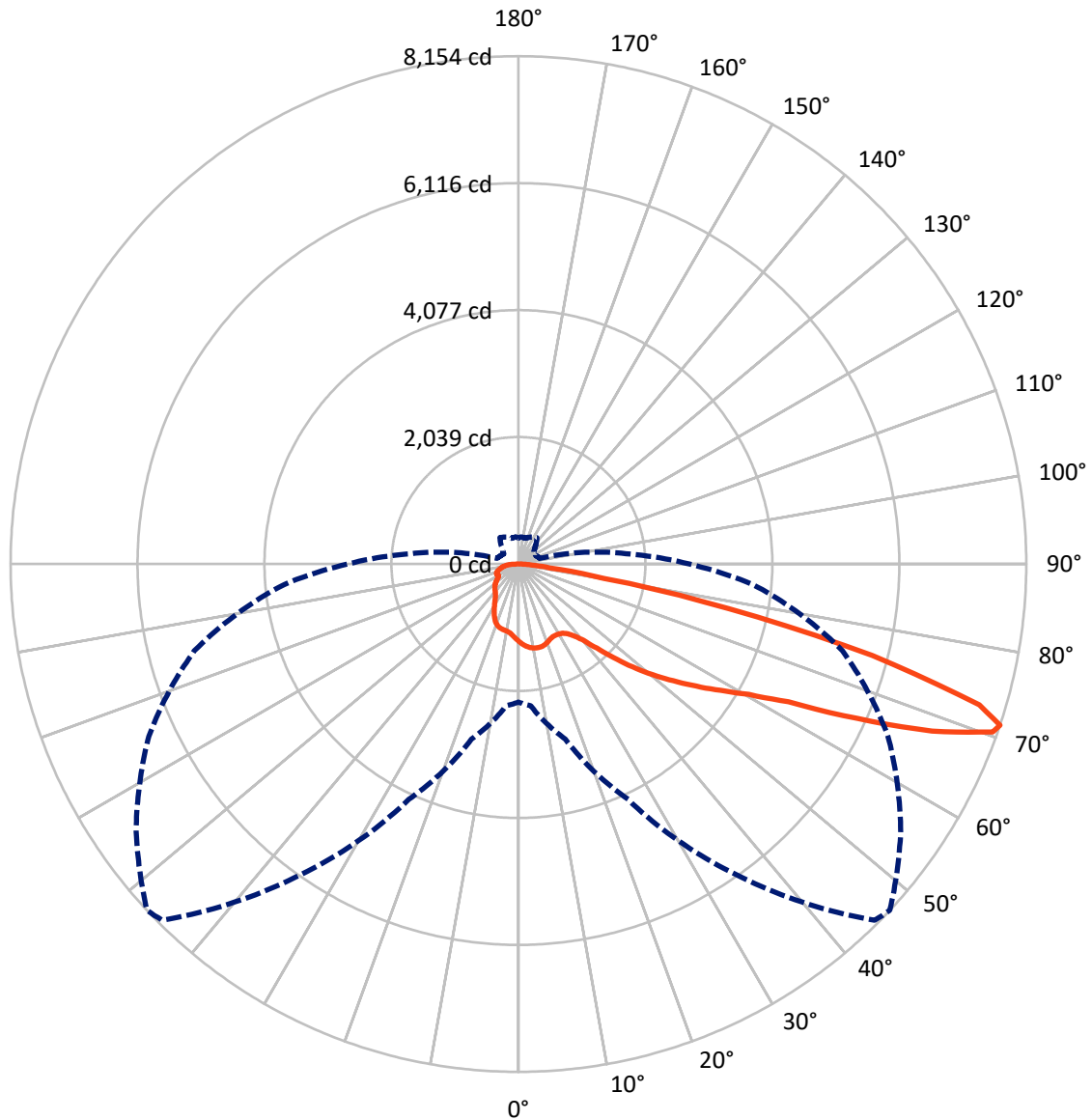
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.6 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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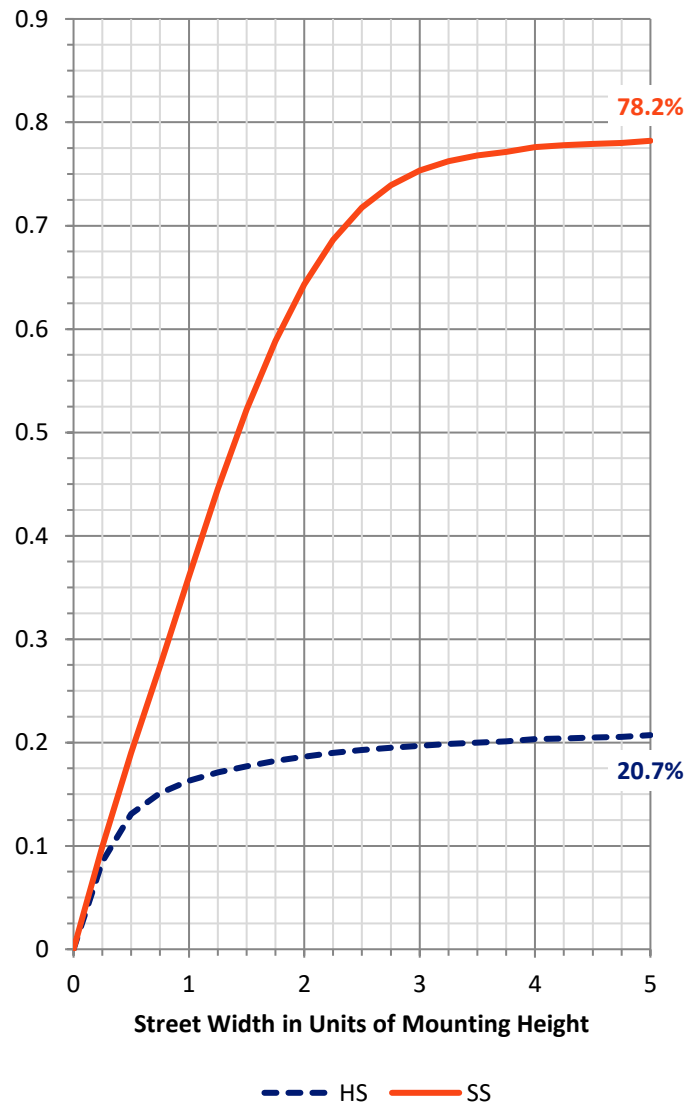
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2241.0	0.0	2241.0
	% Fixture	21.4	0.0	21.4
Street Side	Lumens	8215.7	0.0	8215.7
	% Fixture	78.6	0.0	78.6
Total	Lumens	10456.7	0.0	10456.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.7	1.1
10°-20°	347.3	3.3
20°-30°	516.1	4.9
30°-40°	741.1	7.1
40°-50°	1314.0	12.6
50°-60°	2248.4	21.5
60°-70°	3192.0	30.5
70°-80°	1748.2	16.7
80°-90°	230.8	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°	10456.7	100.0
0°-180°	10456.7	100.0



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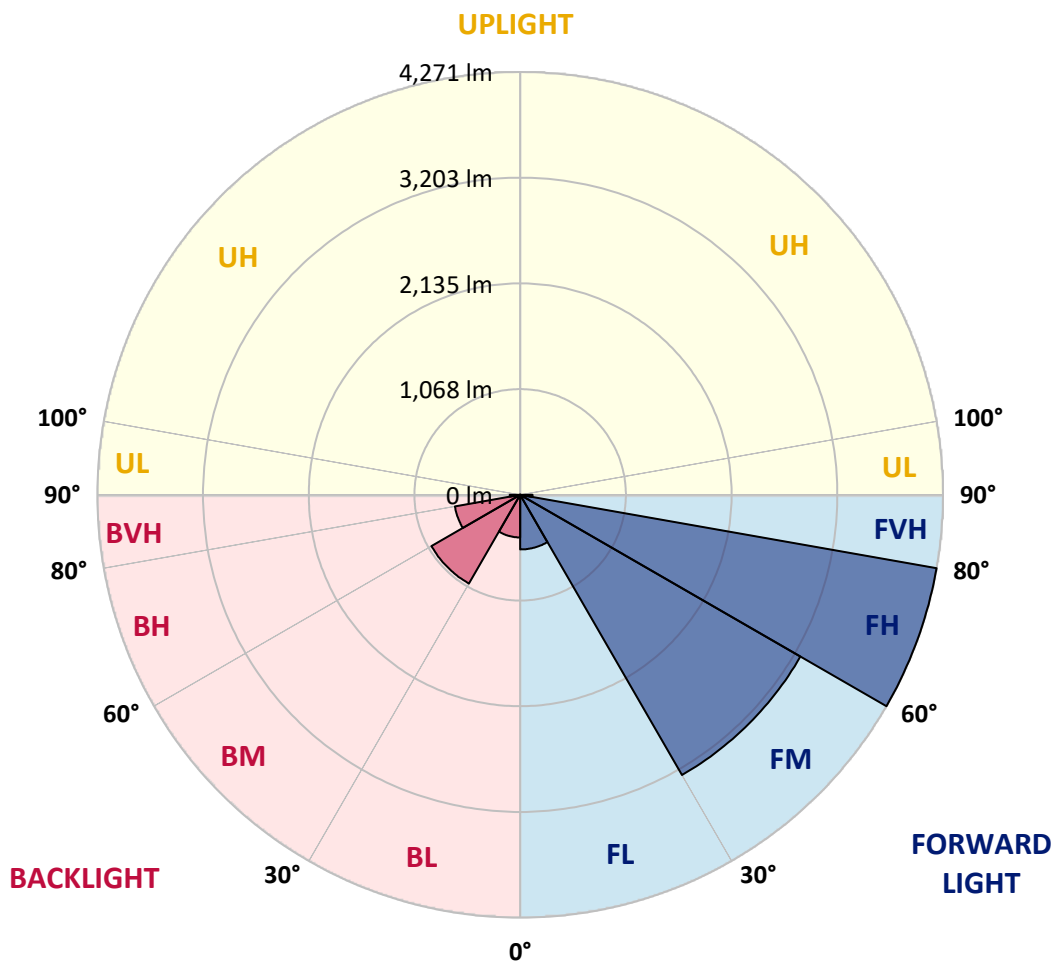
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	551.9	5.3			
FM	(30°-60°)	3268.0	31.3			
FH	(60°-80°)	4270.6	40.8			G2/5000
FVH	(80°-90°)	125.2	1.2			G2/225
BL	(0°-30°)	430.4	4.1	B1/500		
BM	(30°-60°)	1035.5	9.9	B2/2500		
BH	(60°-80°)	669.6	6.4	B2/1000		G2/1000
BVH	(80°-90°)	105.6	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°	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4
2.5°	1319.4	1316.6	1318.1	1313.3	1301.7	1289.5	1289.5	1276.8	1263.1	1249.6	1234.7
5°	1401.4	1397.4	1393.9	1379.0	1356.6	1331.6	1327.5	1301.7	1273.9	1246.2	1219.1
7.5°	1469.7	1465.8	1455.6	1428.5	1396.0	1358.6	1353.9	1320.1	1283.5	1244.8	1207.0
10°	1518.7	1515.9	1496.2	1461.7	1423.8	1379.6	1371.5	1336.9	1293.6	1245.5	1197.4
12.5°	1545.8	1541.6	1518.0	1477.3	1432.5	1387.8	1379.6	1346.5	1297.1	1244.2	1187.9
15°	1534.8	1532.9	1510.5	1469.2	1424.4	1385.7	1379.0	1345.1	1294.9	1239.4	1179.0
17.5°	1488.9	1493.5	1475.9	1435.2	1398.7	1371.5	1364.0	1332.2	1284.8	1228.0	1165.6
20°	1425.2	1430.6	1421.7	1380.3	1359.3	1341.8	1337.7	1312.0	1267.9	1210.9	1149.3
22.5°	1357.2	1362.1	1362.8	1324.1	1317.4	1310.5	1307.2	1288.9	1253.0	1200.8	1138.4
25°	1310.5	1315.9	1317.4	1283.5	1287.5	1289.5	1288.9	1276.0	1250.3	1200.8	1139.8
27.5°	1298.4	1301.0	1299.7	1268.5	1276.0	1287.5	1288.2	1285.5	1261.1	1214.4	1158.8
30°	1340.5	1341.8	1324.8	1278.1	1285.5	1300.3	1301.0	1299.7	1284.1	1249.6	1201.5
32.5°	1522.0	1520.7	1462.4	1341.8	1315.9	1321.3	1323.5	1335.6	1336.9	1307.8	1263.1
35°	1798.4	1797.8	1730.0	1524.1	1402.8	1374.2	1377.0	1396.0	1412.9	1393.2	1367.5
37.5°	2102.8	2104.8	2063.4	1784.3	1589.7	1471.2	1468.5	1482.7	1513.1	1519.9	1523.3
40°	2440.2	2450.3	2448.3	2083.1	1851.9	1636.5	1609.5	1593.1	1652.2	1689.4	1737.5
42.5°	2825.8	2823.1	2824.5	2411.1	2151.5	1896.7	1846.6	1770.6	1839.1	1903.5	2009.1
45°	3157.2	3168.1	3176.0	2760.0	2487.0	2194.2	2143.4	2005.1	2066.8	2163.1	2324.4
47.5°	3490.5	3471.6	3486.5	3148.3	2860.4	2533.7	2468.0	2281.7	2339.2	2474.8	2720.1
50°	3878.8	3870.0	3802.3	3655.3	3311.6	2878.0	2791.9	2570.3	2654.3	2835.3	3208.7
52.5°	4227.2	4179.8	4126.9	4053.7	3755.5	3226.3	3117.2	2870.5	3025.0	3249.3	3815.1
55°	4354.5	4322.7	4386.5	4481.3	4225.1	3581.4	3459.4	3220.9	3443.2	3722.9	4528.6
57.5°	4490.1	4500.9	4644.5	4836.4	4669.7	3960.2	3827.9	3635.6	3901.9	4252.8	5326.3
60°	4557.8	4601.2	4887.9	5247.7	5092.5	4375.6	4248.9	4111.9	4410.8	4838.5	6121.8
62.5°	4569.4	4627.6	5033.6	5392.0	5674.7	5011.9	4865.5	4717.1	5046.4	5485.5	6697.9
65°	4357.9	4447.4	5020.6	5569.5	6205.2	6075.1	5982.3	5723.5	5897.6	6055.5	6796.0
67.5°	3736.5	3834.1	4524.0	5496.4	6630.7	7178.3	7160.7	6778.5	6554.8	6275.6	6067.6
70°	2742.4	2821.0	3483.7	4698.8	6445.1	8044.3	8075.6	7462.2	6738.5	5808.1	4511.7
71°	2217.9	2285.6	2910.5	4171.5	6083.2	8089.1	8154.0	7492.8	6547.3	5385.9	3777.3
72.5°	1380.3	1418.3	1932.7	3148.3	5238.1	7628.2	7738.0	7102.4	5945.6	4552.4	2669.9
75°	521.0	536.0	716.9	1388.5	3126.6	5730.8	5863.6	5367.6	4176.9	2598.7	1117.4
77.5°	279.8	287.3	355.8	577.3	1253.0	3285.2	3456.0	3061.7	2003.8	909.4	456.7
80°	187.7	192.4	246.0	342.3	576.1	1250.9	1393.2	1229.2	750.2	519.1	325.2
82.5°	121.4	124.0	167.4	224.9	372.0	439.8	502.2	524.5	468.2	372.0	196.5
85°	79.9	81.9	110.4	143.6	230.3	216.9	222.3	290.7	319.2	245.2	100.3
87.5°	46.1	47.4	66.5	73.9	103.7	81.3	88.2	138.2	189.7	159.9	57.6
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°	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4	1243.4
2.5°	1228.0	1222.5	1210.2	1202.8	1199.4	1198.1	1196.7	1199.4	1199.4	1198.1	1195.4
5°	1205.5	1195.4	1175.1	1160.8	1153.3	1151.3	1154.1	1157.5	1159.4	1159.4	1157.5
7.5°	1189.3	1174.4	1147.2	1127.6	1116.1	1112.7	1120.1	1132.4	1140.5	1144.5	1145.2
10°	1175.7	1155.4	1125.5	1105.3	1095.8	1094.3	1103.8	1119.5	1136.4	1143.8	1145.2
12.5°	1163.6	1140.5	1108.0	1088.9	1082.2	1085.6	1098.4	1112.7	1132.4	1143.3	1143.8
15°	1151.9	1128.4	1093.7	1074.1	1072.8	1078.1	1090.4	1101.9	1116.8	1130.2	1130.2
17.5°	1138.4	1112.7	1076.8	1058.6	1058.6	1063.2	1071.4	1077.4	1086.9	1099.9	1099.2
20°	1122.3	1095.8	1059.1	1040.1	1036.1	1033.4	1033.4	1034.8	1042.9	1054.4	1056.4
22.5°	1109.9	1082.8	1044.3	1021.3	1002.9	985.4	977.8	975.1	982.6	993.4	996.1
25°	1109.9	1082.8	1039.5	1000.9	956.2	922.3	908.0	904.0	911.4	921.7	925.7
27.5°	1128.4	1101.1	1050.4	982.6	900.6	846.4	829.5	826.0	832.8	841.0	845.0
30°	1171.0	1144.5	1081.5	961.5	838.9	767.8	748.7	745.5	748.7	752.2	756.9
32.5°	1242.1	1219.8	1132.4	942.6	776.6	696.6	673.5	668.2	669.4	670.1	674.3
35°	1358.0	1347.8	1200.1	920.3	717.7	638.3	614.6	603.8	603.1	606.4	611.2
37.5°	1535.6	1541.6	1287.5	887.7	668.9	597.1	573.3	562.5	556.9	563.7	569.3
40°	1786.3	1800.6	1388.5	843.7	628.9	572.6	547.5	537.4	529.9	527.8	530.5
42.5°	2112.3	2108.1	1491.5	787.5	585.4	556.3	529.9	519.1	506.9	491.4	487.9
45°	2498.5	2440.2	1577.6	718.4	536.0	540.8	513.7	498.7	479.8	456.7	454.1
47.5°	2954.5	2793.9	1630.5	644.4	489.9	520.5	495.3	472.2	444.5	429.6	427.7
50°	3504.1	3207.9	1667.7	569.3	448.7	494.6	469.6	439.1	412.1	407.9	407.2
52.5°	4154.7	3696.5	1713.7	501.4	416.1	461.5	443.9	412.7	391.0	393.0	393.0
55°	4846.5	4202.1	1715.1	448.0	387.6	422.8	424.9	399.8	382.9	389.7	391.8
57.5°	5477.3	4643.9	1580.3	409.9	360.5	392.4	418.8	404.5	391.8	415.3	417.4
60°	6027.6	4984.1	1290.2	378.8	338.1	380.8	432.4	433.7	430.9	495.3	500.0
62.5°	6228.8	4987.5	916.2	352.3	325.9	387.6	460.8	462.8	462.8	522.5	531.3
65°	5947.0	4572.1	609.9	336.8	317.8	402.5	483.8	475.1	454.1	495.3	485.9
67.5°	4953.6	3558.9	445.9	326.7	306.3	403.2	504.2	481.9	445.9	481.1	464.9
70°	3404.4	2264.6	373.3	317.1	292.8	385.6	515.0	479.8	433.7	448.7	427.0
71°	2740.4	1807.3	354.4	313.8	287.3	375.4	516.3	477.1	427.7	437.0	417.4
72.5°	1805.2	1113.4	331.4	306.3	279.3	357.7	513.0	470.9	419.5	420.1	407.2
75°	712.1	461.5	298.1	289.3	256.1	329.3	498.1	458.0	403.9	390.4	385.0
77.5°	359.9	301.6	262.2	265.5	229.1	300.3	477.1	437.0	382.1	364.0	359.9
80°	262.9	229.1	224.2	230.3	198.5	271.7	450.6	408.5	354.4	373.3	365.3
82.5°	159.9	139.5	175.4	190.4	166.0	242.6	419.5	375.4	319.2	294.0	284.7
85°	75.8	81.9	126.8	140.2	122.7	193.9	383.5	338.8	278.6	240.6	244.6
87.5°	37.3	45.5	72.6	84.0	80.7	142.3	289.3	262.9	219.5	180.9	176.8
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)