

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: P195926

Luminaire Tested: **NAV-AF-02-D-UNV-5MQ**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195926
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24129)
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-5MQ
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE V
MEDIUM OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 13269.7 lumens
Efficiency: N/A
Efficacy: 117.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type V - Short - Full Cutoff
BUG Rating: B4 - 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

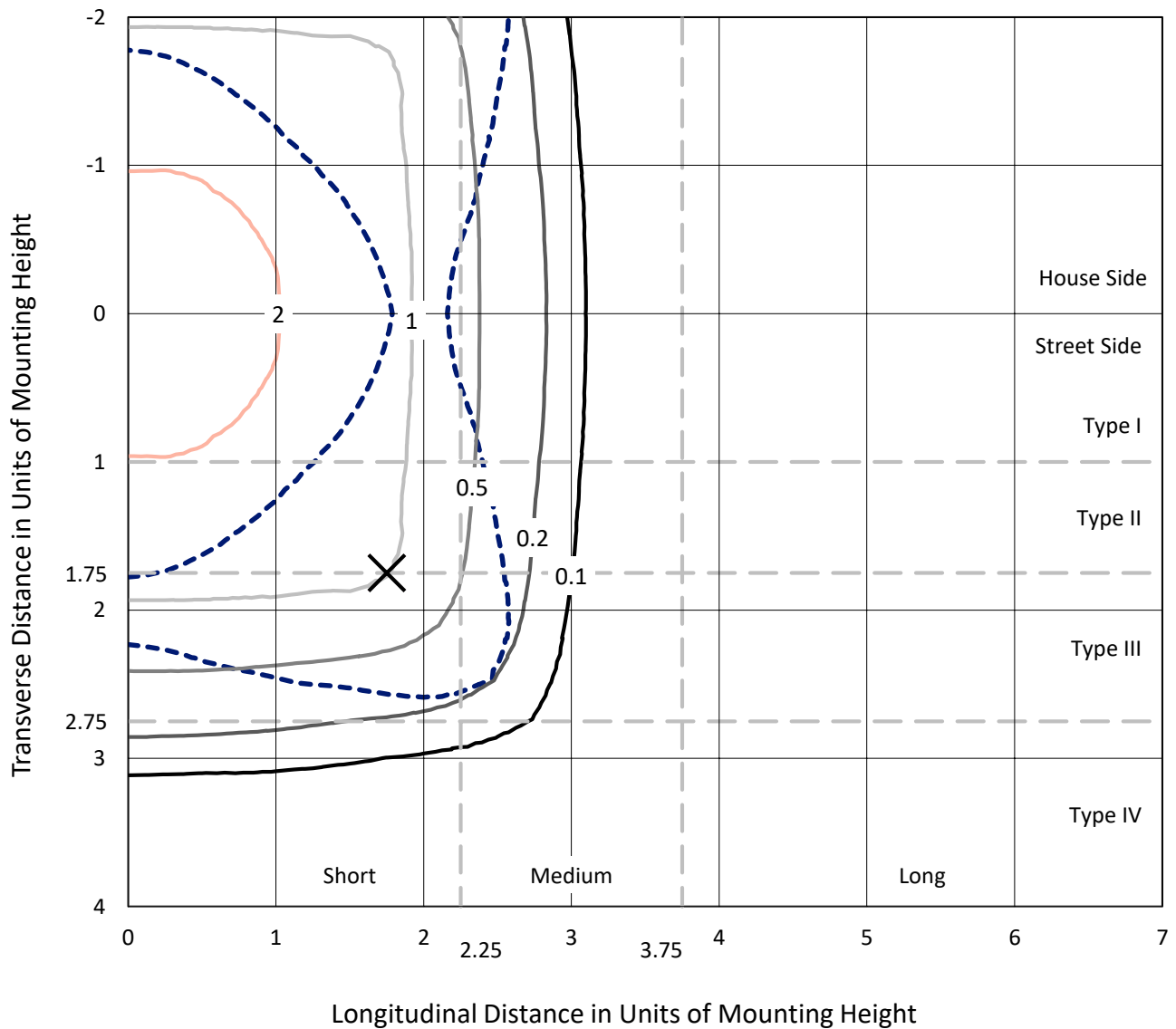


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Iso-Footcandle Lines of Horizontal Illumination

× Max cd
 - - - 1/2 Max cd

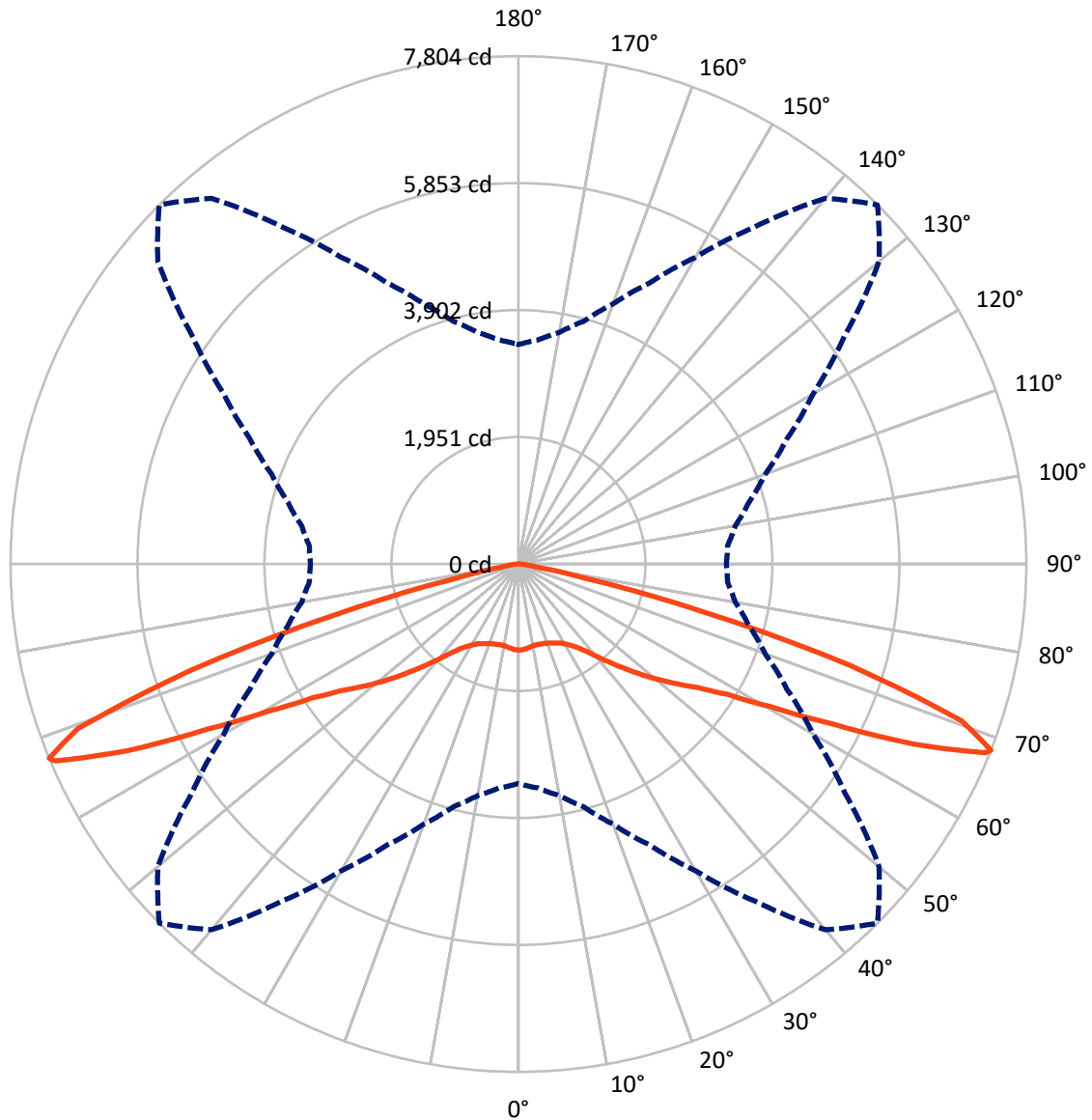


Based on 20 foot mounting height. Maximum calculated value = 3.3 fc
 Type V - Short - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 45-Deg Lateral - - - Horizontal Cone Through 68-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	6634.9	0.0	6634.9
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	6634.9	0.0	6634.9
	% Fixture	50.0	0.0	50.0
Total	Lumens	13269.7	0.0	13269.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.9	0.9
10°-20°	359.2	2.7
20°-30°	610.7	4.6
30°-40°	999.4	7.5
40°-50°	1786.1	13.5
50°-60°	3016.4	22.7
60°-70°	4677.4	35.2
70°-80°	1608.2	12.1
80°-90°	88.4	0.7
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°	13269.7	100.0
0°-180°	13269.7	100.0



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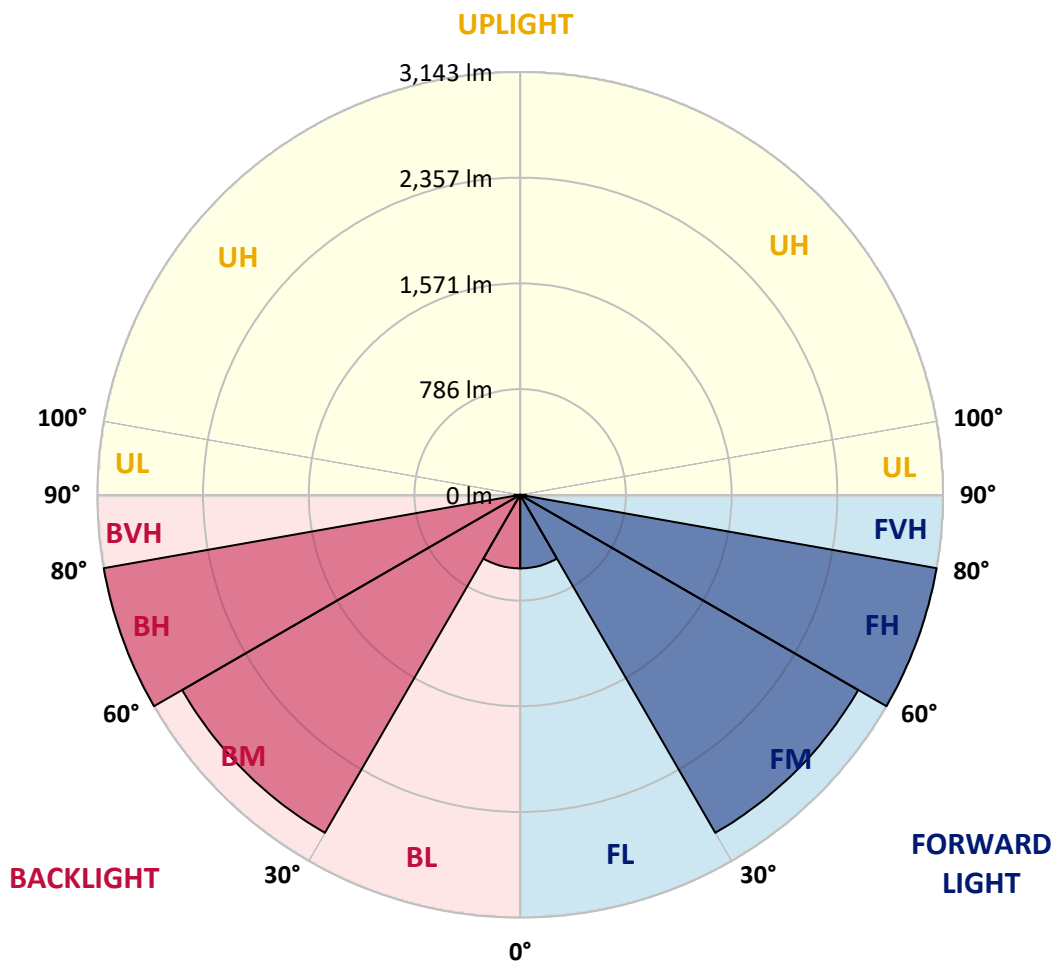
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	546.9	4.1			
FM	(30°-60°)	2901.0	21.9			
FH	(60°-80°)	3142.8	23.7			G2/5000
FVH	(80°-90°)	44.2	0.3			G1/100
BL	(0°-30°)	546.9	4.1	B2/1000		
BM	(30°-60°)	2901.0	21.9	B3/5000		
BH	(60°-80°)	3142.8	23.7	B4/5000		G2/5000
BVH	(80°-90°)	44.2	0.3			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B4-U0-G2

Type V Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7
2.5°	1329.4	1329.4	1331.0	1330.2	1327.8	1325.3	1322.9	1320.4	1318.8	1317.2	1315.6
5°	1315.6	1315.6	1318.0	1316.3	1314.8	1312.3	1310.7	1308.3	1306.6	1305.0	1305.8
7.5°	1297.7	1299.4	1301.0	1300.2	1296.9	1296.1	1293.6	1292.8	1291.2	1288.7	1289.5
10°	1282.3	1283.1	1284.7	1283.9	1283.1	1280.6	1279.8	1279.0	1278.2	1274.9	1274.1
12.5°	1266.8	1268.5	1270.1	1270.9	1270.1	1270.9	1271.7	1272.6	1271.7	1270.1	1270.1
15°	1254.6	1256.3	1258.6	1261.1	1261.9	1266.8	1270.1	1273.3	1275.7	1276.5	1274.1
17.5°	1248.1	1250.6	1253.8	1258.6	1262.7	1268.5	1274.1	1279.0	1283.1	1283.9	1281.5
20°	1247.3	1249.7	1254.6	1260.3	1267.6	1274.9	1283.9	1291.2	1295.3	1297.7	1295.3
22.5°	1253.0	1256.3	1262.7	1270.1	1279.0	1288.7	1300.2	1308.3	1316.3	1319.6	1317.2
25°	1269.3	1272.6	1279.8	1288.7	1298.5	1310.7	1322.1	1332.6	1340.8	1344.8	1341.6
27.5°	1303.3	1304.2	1312.3	1322.1	1333.4	1344.1	1358.7	1363.5	1370.0	1374.0	1370.0
30°	1351.3	1353.0	1360.2	1375.7	1386.3	1400.1	1408.2	1413.1	1420.4	1424.5	1419.5
32.5°	1424.5	1426.1	1432.5	1447.2	1457.0	1467.5	1477.2	1480.5	1487.9	1492.7	1487.1
35°	1527.7	1530.9	1536.6	1546.3	1554.5	1562.6	1569.9	1567.5	1572.4	1578.8	1573.2
37.5°	1669.0	1668.2	1669.9	1677.1	1685.3	1690.1	1701.6	1695.8	1700.8	1706.4	1703.2
40°	1833.9	1833.9	1833.2	1846.2	1849.4	1854.3	1866.5	1859.2	1865.7	1872.2	1866.5
42.5°	2021.7	2024.9	2029.0	2039.6	2048.6	2050.1	2055.8	2052.6	2060.7	2066.4	2060.7
45°	2237.8	2242.7	2247.6	2272.0	2276.1	2279.3	2283.3	2272.8	2281.7	2286.6	2285.0
47.5°	2462.1	2471.0	2481.6	2506.8	2523.1	2530.4	2533.6	2521.5	2522.3	2529.6	2530.4
50°	2715.6	2725.3	2736.0	2764.4	2779.9	2792.9	2797.0	2783.0	2784.7	2790.4	2792.0
52.5°	2949.7	2961.0	2983.8	3022.0	3043.9	3066.7	3068.3	3051.3	3058.5	3062.6	3059.3
55°	3169.9	3184.5	3214.5	3265.8	3305.6	3350.3	3370.6	3351.9	3351.9	3348.6	3347.0
57.5°	3426.7	3442.9	3473.7	3533.1	3588.3	3652.5	3707.8	3726.5	3760.7	3772.0	3754.1
60°	3813.5	3830.5	3862.2	3940.2	4010.1	4103.6	4194.5	4268.5	4388.8	4453.7	4395.2
62.5°	4166.9	4192.9	4267.6	4404.2	4555.3	4728.4	4929.1	5072.1	5290.7	5399.6	5252.5
65°	4086.5	4139.3	4285.6	4500.1	4812.1	5187.5	5596.3	5988.8	6440.5	6672.1	6373.1
67.5°	3569.7	3614.4	3772.0	4021.4	4410.7	4928.3	5563.7	6376.4	7308.4	7742.3	7213.2
68°	3372.3	3455.9	3612.8	3860.6	4253.0	4761.7	5440.3	6317.8	7335.2	7804.0	7232.8
70°	2585.6	2615.7	2766.1	2988.7	3412.1	3910.9	4595.9	5596.3	6746.1	7228.7	6641.2
72.5°	1228.7	1246.5	1344.1	1563.4	1832.4	2238.6	2843.2	3786.7	4822.7	5324.9	4738.9
75°	450.2	454.2	477.0	529.0	629.7	782.6	1072.6	1659.3	2456.4	2929.3	2466.2
77.5°	243.0	243.8	252.7	265.8	283.6	303.9	347.8	466.5	752.5	1023.9	794.7
80°	152.7	151.9	160.9	171.4	183.6	193.4	197.4	211.2	238.0	278.8	255.9
82.5°	78.1	85.3	105.7	117.0	134.9	138.1	134.1	133.3	141.4	152.7	157.6
85°	43.1	38.2	56.1	74.8	81.2	83.7	84.5	79.6	78.1	76.4	80.4
87.5°	21.9	20.4	24.3	37.3	39.8	32.5	33.3	28.4	19.5	19.5	20.4
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):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7	1323.7
2.5°	1314.0	1314.8	1313.2	1313.2	1313.2	1314.0	1313.2	1312.3
5°	1303.3	1305.0	1305.0	1305.8	1306.6	1306.6	1306.6	1306.6
7.5°	1287.9	1288.7	1290.4	1290.4	1290.4	1290.4	1290.4	1290.4
10°	1273.3	1271.7	1270.9	1269.3	1269.3	1266.8	1267.6	1268.5
12.5°	1266.0	1262.7	1261.1	1258.6	1257.1	1254.6	1254.6	1255.5
15°	1269.3	1264.4	1259.5	1257.9	1256.3	1254.6	1253.0	1253.8
17.5°	1275.7	1270.1	1264.4	1261.1	1257.9	1255.5	1254.6	1255.5
20°	1289.5	1281.5	1272.6	1266.8	1260.3	1258.6	1256.3	1258.6
22.5°	1308.3	1298.5	1287.1	1276.5	1269.3	1266.0	1262.7	1265.2
25°	1331.0	1320.4	1309.1	1296.9	1288.7	1286.4	1282.3	1282.3
27.5°	1362.7	1353.8	1344.1	1332.6	1324.5	1322.1	1315.6	1315.6
30°	1413.1	1404.1	1395.2	1385.5	1377.3	1374.8	1366.8	1366.8
32.5°	1479.7	1470.0	1464.3	1456.2	1449.6	1445.5	1435.8	1435.0
35°	1569.1	1560.2	1559.4	1553.7	1547.1	1547.9	1538.2	1536.6
37.5°	1697.5	1690.1	1692.6	1687.8	1682.0	1686.9	1681.2	1681.2
40°	1861.7	1859.2	1861.7	1858.4	1859.2	1860.0	1855.1	1856.8
42.5°	2059.9	2053.4	2068.0	2066.4	2063.9	2070.5	2059.1	2050.9
45°	2288.2	2285.8	2300.4	2302.9	2298.0	2302.0	2281.7	2280.9
47.5°	2536.1	2536.1	2549.1	2547.5	2542.5	2543.4	2519.0	2503.6
50°	2794.5	2792.9	2805.9	2802.6	2796.1	2795.3	2770.0	2754.6
52.5°	3063.4	3063.4	3082.2	3073.1	3057.7	3050.4	3019.5	2999.2
55°	3360.8	3356.8	3362.4	3333.2	3303.1	3281.2	3243.0	3227.6
57.5°	3737.0	3689.9	3649.3	3611.9	3569.7	3543.7	3499.0	3482.7
60°	4270.9	4145.0	4090.6	4015.8	3945.9	3910.9	3851.6	3819.9
62.5°	5010.4	4801.5	4653.6	4488.7	4329.4	4217.3	4127.1	4087.3
65°	5865.2	5410.2	5033.9	4680.5	4380.6	4142.5	4010.1	3968.6
67.5°	6190.3	5354.9	4705.7	4198.6	3834.5	3551.0	3392.5	3359.2
68°	6121.1	5228.1	4553.7	4034.4	3668.8	3382.8	3225.2	3195.1
70°	5399.6	4410.7	3698.9	3182.1	2840.7	2568.5	2457.2	2409.3
72.5°	3681.0	2832.7	2172.8	1738.1	1483.0	1310.7	1208.3	1173.3
75°	1694.2	1144.9	764.7	571.2	485.1	443.7	411.9	403.9
77.5°	494.1	359.2	308.8	286.0	268.9	254.3	243.8	243.0
80°	234.9	220.2	213.7	199.1	183.6	169.8	160.1	161.7
82.5°	157.6	153.5	153.5	138.9	114.6	98.3	81.2	73.1
85°	83.7	87.0	91.9	87.0	75.6	56.1	36.5	39.8
87.5°	28.4	32.5	34.2	33.3	30.1	22.7	17.1	17.1
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)