

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: P194966

Luminaire Tested: **NAV-AF-02-D-UNV-5MQ-7060**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P194966
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-7060
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 5700K, 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: 12972 lumens
Efficiency: N/A
Efficacy: 114.8 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

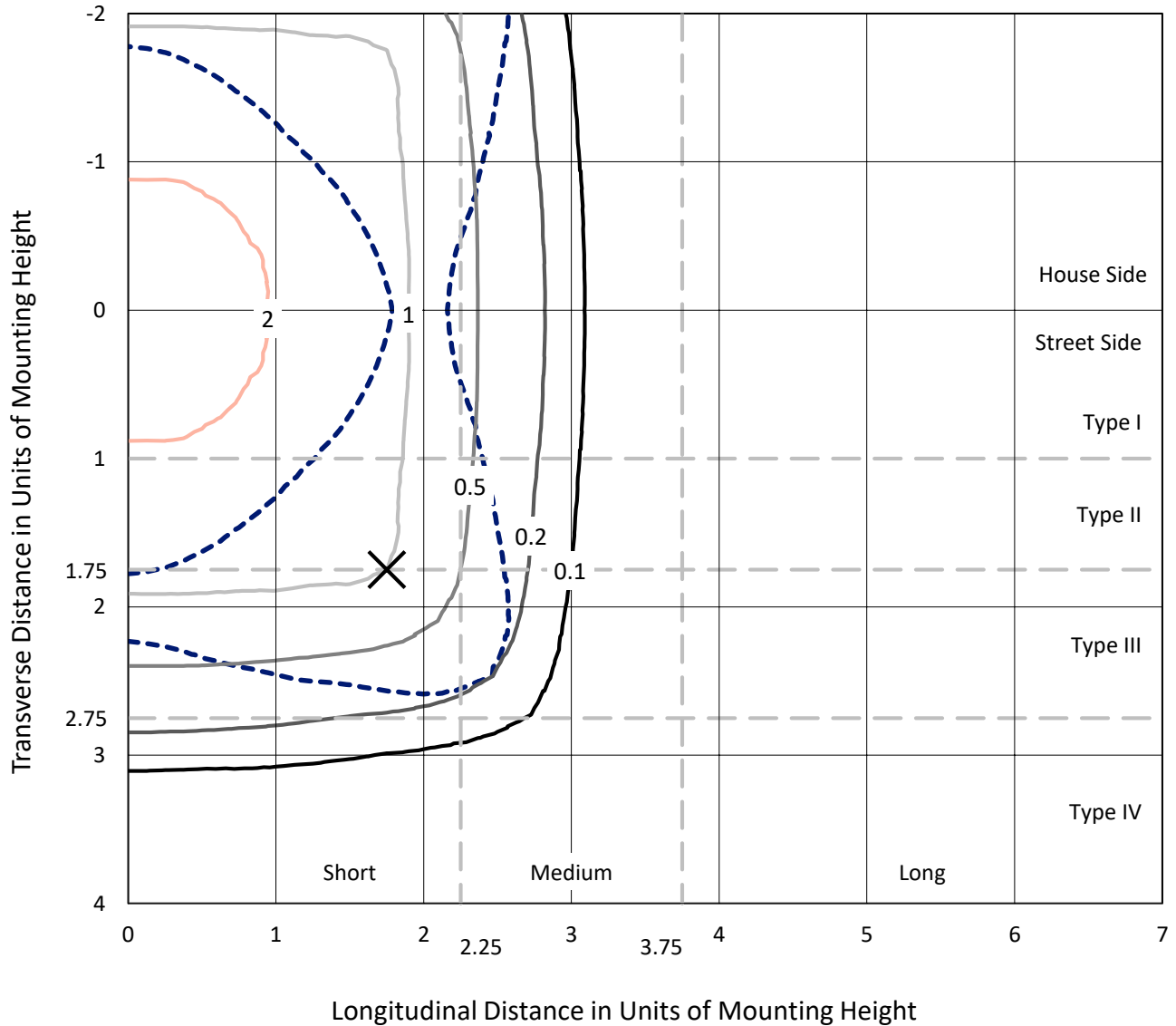
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

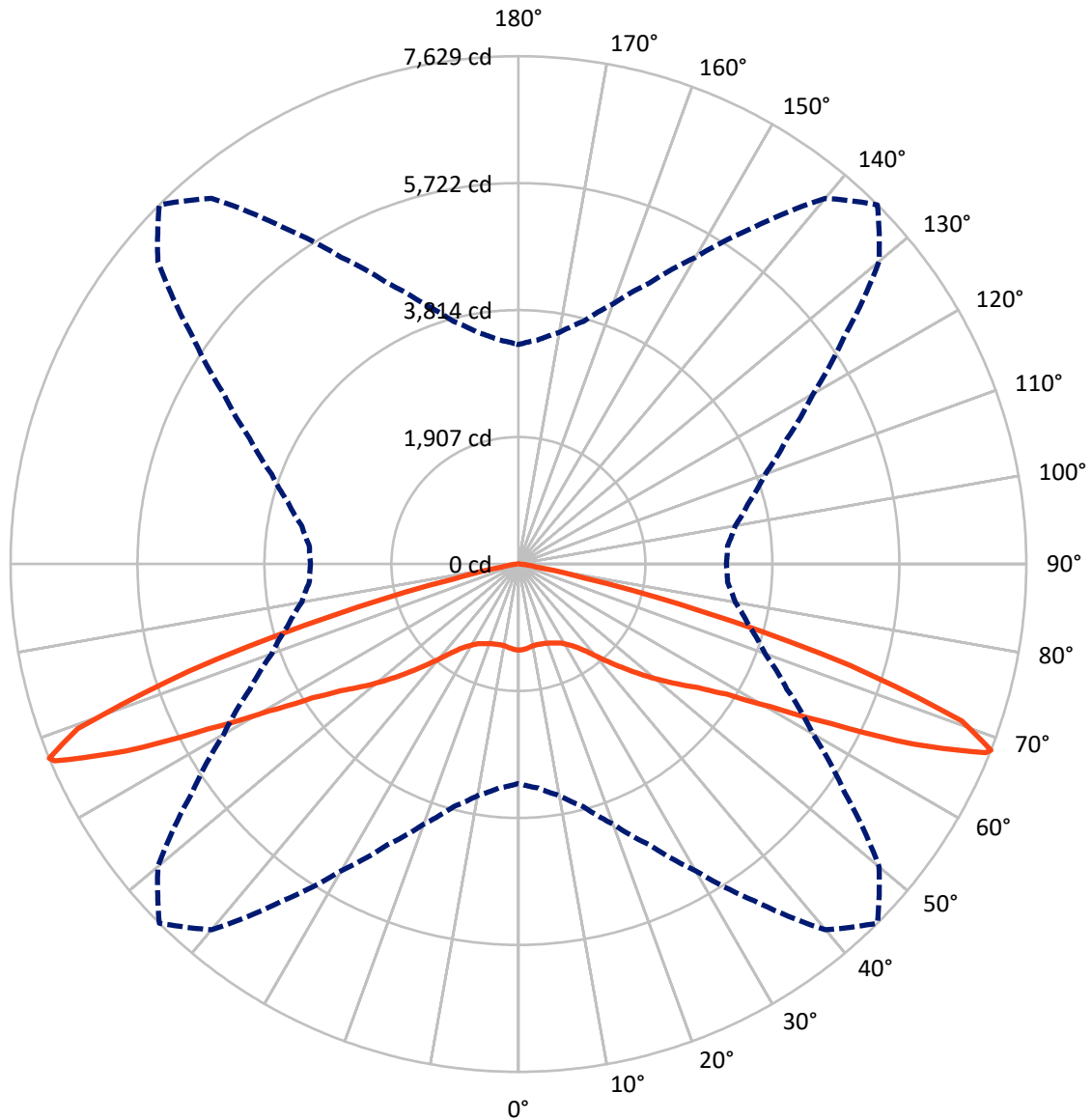
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 3.2 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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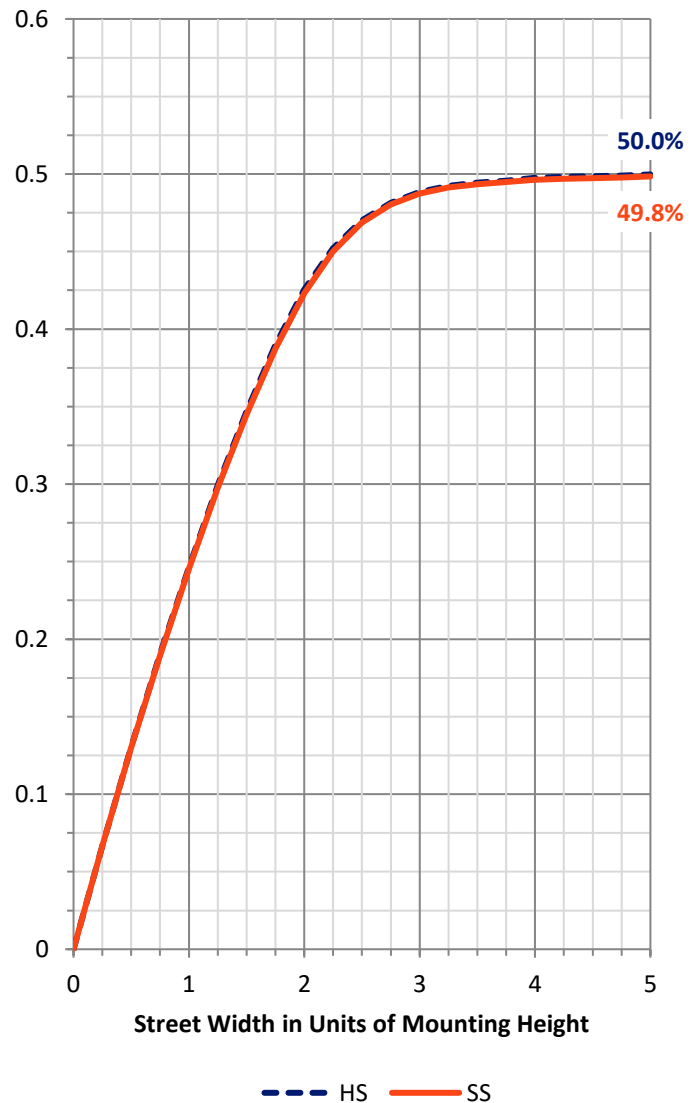
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	6486.0	0.0	6486.0
	% Fixture	50.0	0.0	50.0
Street Side	Lumens	6486.0	0.0	6486.0
	% Fixture	50.0	0.0	50.0
Total	Lumens	12972.0	0.0	12972.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.1	0.9
10°-20°	351.2	2.7
20°-30°	597.0	4.6
30°-40°	977.0	7.5
40°-50°	1746.0	13.5
50°-60°	2948.8	22.7
60°-70°	4572.4	35.2
70°-80°	1572.1	12.1
80°-90°	86.4	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°	12972.0	100.0
0°-180°	12972.0	100.0



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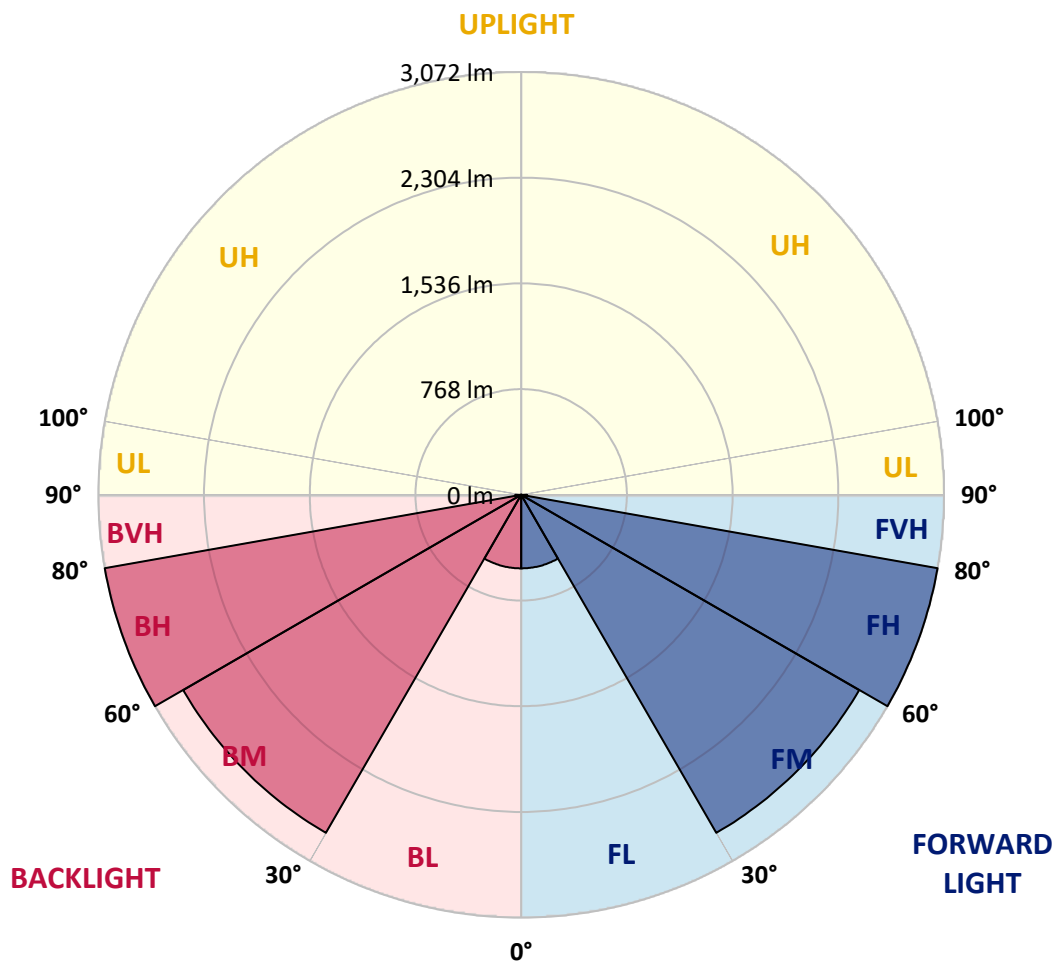
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	534.6	4.1			
FM	(30°-60°)	2835.9	21.9			
FH	(60°-80°)	3072.3	23.7			G2/5000
FVH	(80°-90°)	43.2	0.3			G1/100
BL	(0°-30°)	534.6	4.1	B2/1000		
BM	(30°-60°)	2835.9	21.9	B3/5000		
BH	(60°-80°)	3072.3	23.7	B4/5000		G2/5000
BVH	(80°-90°)	43.2	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°	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0
2.5°	1299.6	1299.6	1301.1	1300.4	1298.0	1295.6	1293.2	1290.8	1289.2	1287.6	1286.1
5°	1286.1	1286.1	1288.4	1286.8	1285.3	1282.9	1281.3	1278.9	1277.3	1275.7	1276.5
7.5°	1268.6	1270.2	1271.8	1271.0	1267.8	1267.0	1264.6	1263.8	1262.2	1259.8	1260.6
10°	1253.5	1254.3	1255.9	1255.1	1254.3	1251.9	1251.1	1250.3	1249.5	1246.3	1245.5
12.5°	1238.4	1240.0	1241.6	1242.4	1241.6	1242.4	1243.2	1244.0	1243.2	1241.6	1241.6
15°	1226.5	1228.1	1230.4	1232.8	1233.6	1238.4	1241.6	1244.7	1247.1	1247.9	1245.5
17.5°	1220.1	1222.5	1225.7	1230.4	1234.4	1240.0	1245.5	1250.3	1254.3	1255.1	1252.7
20°	1219.3	1221.7	1226.5	1232.0	1239.2	1246.3	1255.1	1262.2	1266.2	1268.6	1266.2
22.5°	1224.9	1228.1	1234.4	1241.6	1250.3	1259.8	1271.0	1278.9	1286.8	1290.0	1287.6
25°	1240.8	1244.0	1251.1	1259.8	1269.4	1281.3	1292.4	1302.7	1310.7	1314.6	1311.5
27.5°	1274.1	1274.9	1282.9	1292.4	1303.5	1313.9	1328.2	1332.9	1339.3	1343.2	1339.3
30°	1321.0	1322.6	1329.7	1344.8	1355.2	1368.7	1376.6	1381.4	1388.5	1392.5	1387.7
32.5°	1392.5	1394.1	1400.4	1414.7	1424.3	1434.6	1444.1	1447.3	1454.5	1459.2	1453.7
35°	1493.4	1496.6	1502.1	1511.6	1519.6	1527.5	1534.7	1532.3	1537.1	1543.4	1537.9
37.5°	1631.6	1630.8	1632.4	1639.5	1647.5	1652.2	1663.4	1657.8	1662.6	1668.1	1665.0
40°	1792.8	1792.8	1792.1	1804.8	1807.9	1812.7	1824.6	1817.5	1823.8	1830.2	1824.6
42.5°	1976.3	1979.5	1983.5	1993.8	2002.6	2004.1	2009.7	2006.5	2014.5	2020.0	2014.5
45°	2187.6	2192.4	2197.2	2221.0	2225.0	2228.2	2232.1	2221.8	2230.5	2235.3	2233.7
47.5°	2406.9	2415.6	2425.9	2450.6	2466.5	2473.6	2476.8	2464.9	2465.7	2472.8	2473.6
50°	2654.7	2664.2	2674.6	2702.4	2717.5	2730.2	2734.2	2720.6	2722.2	2727.8	2729.4
52.5°	2883.5	2894.6	2916.9	2954.2	2975.6	2997.9	2999.5	2982.8	2989.9	2993.9	2990.7
55°	3098.8	3113.1	3142.4	3192.5	3231.4	3275.1	3295.0	3276.7	3276.7	3273.5	3271.9
57.5°	3349.8	3365.7	3395.8	3453.8	3507.8	3570.6	3624.6	3642.9	3676.3	3687.4	3669.9
60°	3727.9	3744.6	3775.5	3851.8	3920.1	4011.5	4100.4	4172.7	4290.3	4353.8	4296.6
62.5°	4073.4	4098.8	4171.9	4305.4	4453.1	4622.3	4818.5	4958.3	5172.0	5278.5	5134.7
65°	3994.8	4046.4	4189.4	4399.1	4704.1	5071.1	5470.7	5854.4	6296.0	6522.4	6230.1
67.5°	3489.6	3533.3	3687.4	3931.2	4311.7	4817.7	5438.9	6233.3	7144.4	7568.6	7051.4
68°	3296.6	3378.4	3531.7	3774.0	4157.6	4654.9	5318.2	6176.1	7170.6	7628.9	7070.5
70°	2527.6	2557.0	2704.0	2921.6	3335.5	3823.2	4492.8	5470.7	6594.7	7066.5	6492.2
72.5°	1201.1	1218.5	1313.9	1528.3	1791.3	2188.4	2779.4	3701.7	4714.5	5205.4	4632.6
75°	440.1	444.0	466.3	517.1	615.6	765.0	1048.5	1622.1	2401.3	2863.6	2410.9
77.5°	237.5	238.3	247.0	259.8	277.2	297.1	340.0	456.0	735.6	1000.9	776.9
80°	149.3	148.5	157.3	167.6	179.5	189.1	193.0	206.5	232.7	272.5	250.2
82.5°	76.3	83.4	103.3	114.4	131.9	135.0	131.1	130.3	138.2	149.3	154.1
85°	42.1	37.3	54.8	73.1	79.4	81.8	82.6	77.8	76.3	74.7	78.6
87.5°	21.4	19.9	23.8	36.5	38.9	31.8	32.6	27.8	19.1	19.1	19.9
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°	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0	1294.0
2.5°	1284.5	1285.3	1283.7	1283.7	1283.7	1284.5	1283.7	1282.9
5°	1274.1	1275.7	1275.7	1276.5	1277.3	1277.3	1277.3	1277.3
7.5°	1259.0	1259.8	1261.4	1261.4	1261.4	1261.4	1261.4	1261.4
10°	1244.7	1243.2	1242.4	1240.8	1240.8	1238.4	1239.2	1240.0
12.5°	1237.6	1234.4	1232.8	1230.4	1228.9	1226.5	1226.5	1227.3
15°	1240.8	1236.0	1231.2	1229.7	1228.1	1226.5	1224.9	1225.7
17.5°	1247.1	1241.6	1236.0	1232.8	1229.7	1227.3	1226.5	1227.3
20°	1260.6	1252.7	1244.0	1238.4	1232.0	1230.4	1228.1	1230.4
22.5°	1278.9	1269.4	1258.2	1247.9	1240.8	1237.6	1234.4	1236.8
25°	1301.1	1290.8	1279.7	1267.8	1259.8	1257.5	1253.5	1253.5
27.5°	1332.1	1323.4	1313.9	1302.7	1294.8	1292.4	1286.1	1286.1
30°	1381.4	1372.6	1363.9	1354.4	1346.4	1344.0	1336.1	1336.1
32.5°	1446.5	1437.0	1431.4	1423.5	1417.1	1413.1	1403.6	1402.8
35°	1533.9	1525.2	1524.4	1518.8	1512.4	1513.2	1503.7	1502.1
37.5°	1659.4	1652.2	1654.6	1649.9	1644.3	1649.1	1643.5	1643.5
40°	1819.9	1817.5	1819.9	1816.7	1817.5	1818.3	1813.5	1815.1
42.5°	2013.7	2007.3	2021.6	2020.0	2017.6	2024.0	2012.9	2004.9
45°	2236.9	2234.5	2248.8	2251.2	2246.4	2250.4	2230.5	2229.7
47.5°	2479.2	2479.2	2491.9	2490.3	2485.5	2486.3	2462.5	2447.4
50°	2731.8	2730.2	2742.9	2739.7	2733.4	2732.6	2707.9	2692.8
52.5°	2994.7	2994.7	3013.0	3004.2	2989.1	2982.0	2951.8	2931.9
55°	3285.4	3281.5	3287.0	3258.4	3229.0	3207.6	3170.2	3155.2
57.5°	3653.2	3607.1	3567.4	3530.9	3489.6	3464.2	3420.5	3404.6
60°	4175.1	4052.0	3998.8	3925.7	3857.4	3823.2	3765.2	3734.2
62.5°	4898.0	4693.8	4549.2	4388.0	4232.3	4122.7	4034.5	3995.6
65°	5733.6	5288.8	4921.0	4575.5	4282.3	4049.6	3920.1	3879.6
67.5°	6051.4	5234.8	4600.1	4104.4	3748.5	3471.3	3316.4	3283.8
68°	5983.8	5110.8	4451.5	3943.9	3586.5	3306.9	3152.8	3123.4
70°	5278.5	4311.7	3615.9	3110.7	2777.0	2510.9	2402.1	2355.2
72.5°	3598.4	2769.1	2124.1	1699.1	1449.7	1281.3	1181.2	1147.0
75°	1656.2	1119.2	747.5	558.4	474.2	433.7	402.7	394.8
77.5°	483.0	351.1	301.9	279.6	262.9	248.6	238.3	237.5
80°	229.6	215.3	208.9	194.6	179.5	166.0	156.5	158.1
82.5°	154.1	150.1	150.1	135.8	112.0	96.1	79.4	71.5
85°	81.8	85.0	89.8	85.0	73.9	54.8	35.7	38.9
87.5°	27.8	31.8	33.4	32.6	29.4	22.2	16.7	16.7
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)