

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: P196082

Luminaire Tested: **NAV-AF-02-D-UNV-SL2-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196082
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24257)
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-SL2-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II SPILL
LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8048.6 lumens
Efficiency: N/A
Efficacy: 121.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - Medium - Semi-Cutoff
BUG Rating: B1 - U0 - G2

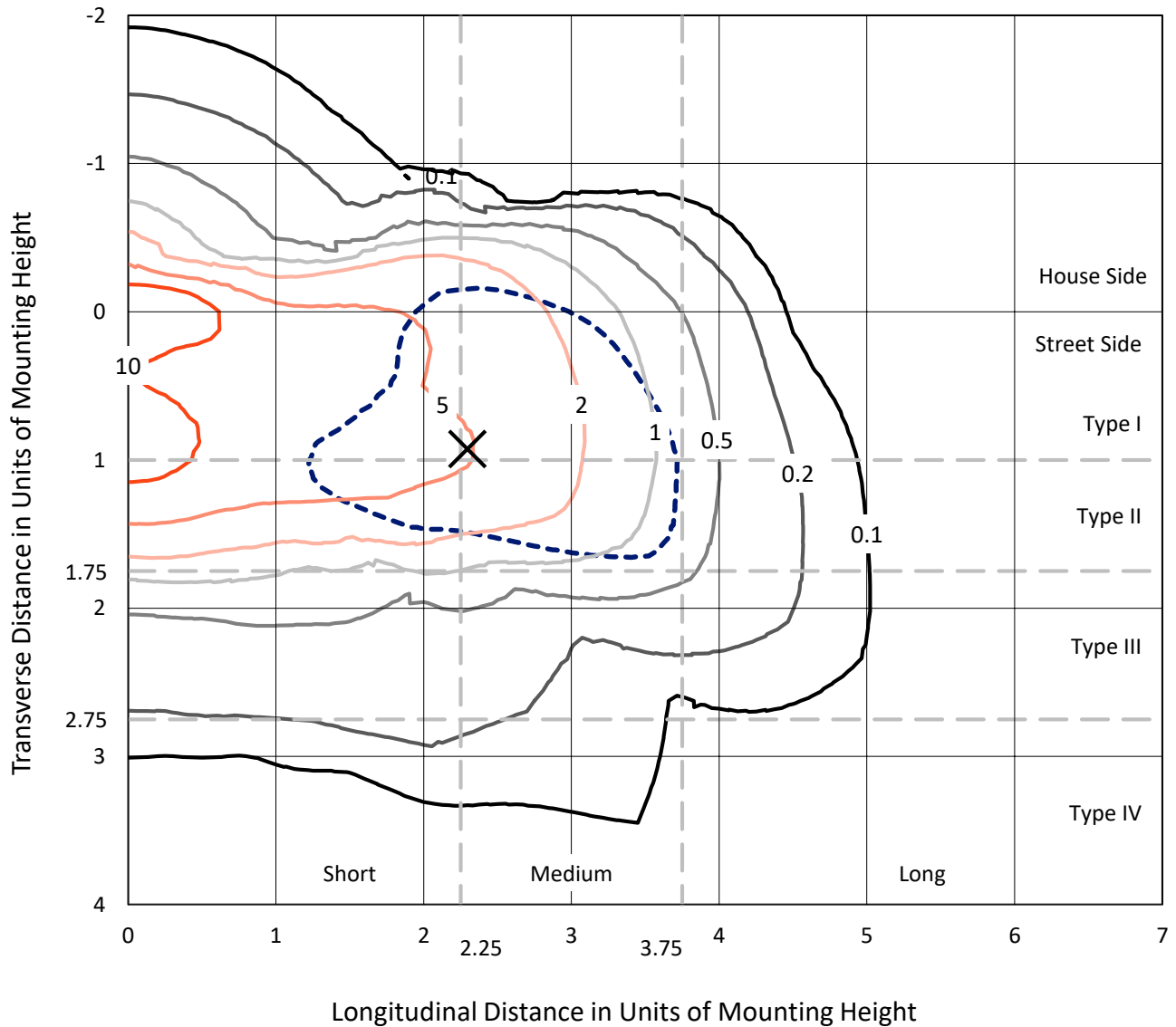
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

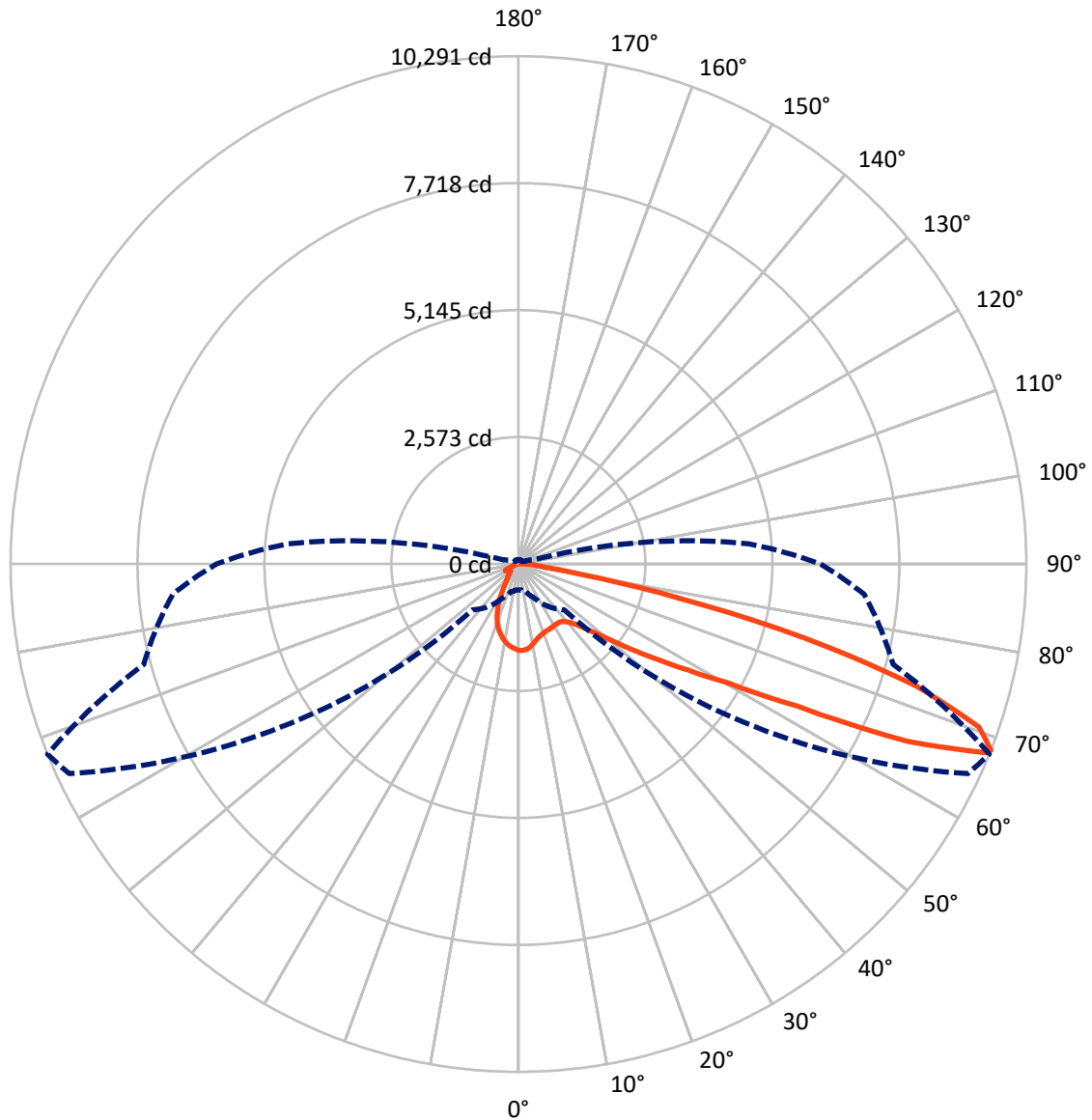
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 17.5 fc
 Type II - Medium - Semi-Cutoff

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Luminous Intensity Polar Plot



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

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1316.8	0.0	1316.8
	% Fixture	16.4	0.0	16.4
Street Side	Lumens	6731.8	0.0	6731.8
	% Fixture	83.6	0.0	83.6
Total	Lumens	8048.6	0.0	8048.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.1	1.9
10°-20°	348.0	4.3
20°-30°	470.7	5.8
30°-40°	663.7	8.2
40°-50°	1091.3	13.6
50°-60°	1691.7	21.0
60°-70°	2193.4	27.3
70°-80°	1258.7	15.6
80°-90°	181.1	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°	8048.6	100.0
0°-180°	8048.6	100.0



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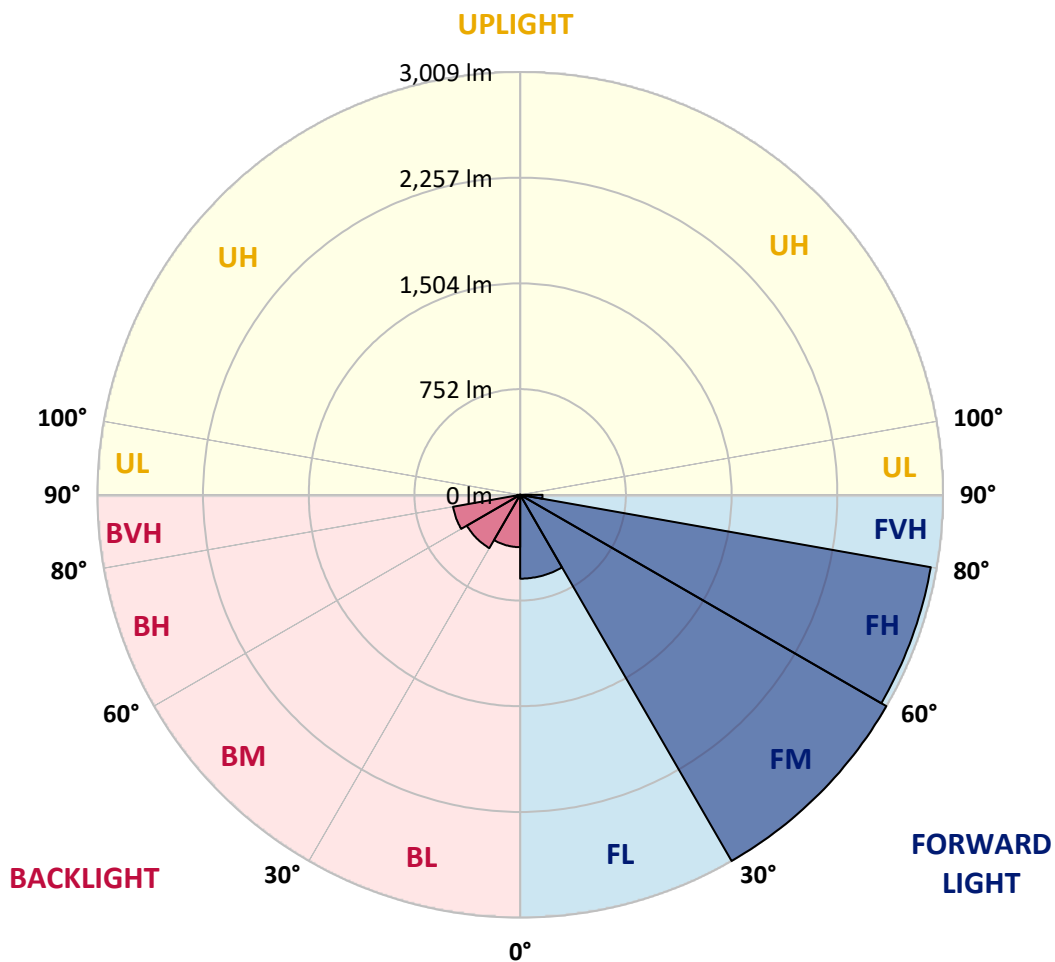
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	596.5	7.4			
FM (30°-60°)	3008.7	37.4			
FH (60°-80°)	2967.1	36.9			G2/5000
FVH (80°-90°)	159.5	2.0			G2/225
BL (0°-30°)	372.3	4.6	B1/500		
BM (30°-60°)	438.0	5.4	B1/1000		
BH (60°-80°)	484.9	6.0	B1/500		G1/500
BVH (80°-90°)	21.6	0.3			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	68°	75°	85°
0°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3
2.5°	1704.5	1718.1	1718.1	1728.2	1737.1	1744.4	1750.8	1750.8	1750.8	1746.6	1742.9
5°	1525.2	1543.6	1546.3	1571.5	1604.6	1645.1	1690.3	1730.2	1738.2	1752.8	1758.7
7.5°	1400.6	1406.4	1416.4	1433.8	1467.4	1517.3	1588.3	1677.7	1699.2	1745.6	1769.7
10°	1312.2	1317.0	1325.4	1342.8	1373.3	1418.5	1488.4	1604.6	1640.4	1722.3	1770.2
12.5°	1247.6	1251.3	1259.2	1275.0	1306.0	1346.5	1418.0	1538.9	1583.0	1699.2	1777.6
15°	1197.2	1203.5	1209.7	1225.0	1256.6	1295.5	1368.0	1491.1	1538.9	1680.8	1791.3
17.5°	1177.2	1180.3	1181.4	1189.3	1217.6	1257.1	1329.6	1457.4	1506.8	1666.1	1801.7
20°	1189.8	1190.3	1179.8	1174.6	1190.8	1227.1	1297.6	1432.1	1482.7	1653.0	1806.0
22.5°	1245.0	1245.0	1217.6	1194.5	1183.5	1206.1	1276.0	1414.8	1469.5	1643.0	1806.0
25°	1350.2	1345.4	1302.8	1257.1	1208.2	1198.7	1262.3	1403.8	1459.5	1637.7	1799.2
27.5°	1488.4	1484.2	1430.1	1362.3	1273.9	1214.5	1257.6	1394.8	1449.5	1629.9	1784.4
30°	1656.7	1653.0	1591.5	1502.6	1372.2	1264.5	1268.7	1388.6	1441.6	1616.7	1759.7
32.5°	1824.3	1822.3	1773.4	1682.4	1507.8	1349.1	1297.6	1387.4	1437.5	1600.9	1729.7
35°	1993.1	1993.1	1963.1	1886.4	1690.3	1476.3	1358.1	1407.0	1445.3	1592.5	1704.0
37.5°	2242.3	2232.4	2176.6	2097.3	1920.1	1641.4	1455.9	1448.0	1475.8	1606.7	1695.5
40°	2628.3	2599.3	2460.0	2326.5	2170.8	1852.8	1598.9	1527.4	1544.1	1655.1	1715.6
42.5°	3032.0	2986.3	2801.8	2588.3	2430.0	2113.5	1786.5	1656.2	1655.6	1748.6	1779.1
45°	3378.5	3354.9	3155.1	2884.3	2726.1	2406.9	2023.6	1847.6	1828.6	1893.8	1901.7
47.5°	3579.9	3564.1	3443.7	3197.6	3077.2	2753.4	2324.3	2113.0	2077.3	2116.2	2104.1
50°	3524.2	3539.4	3504.7	3379.0	3454.7	3240.2	2707.6	2476.9	2409.0	2447.9	2418.5
52.5°	3230.8	3271.8	3302.8	3326.9	3671.9	3891.6	3189.3	2931.1	2874.8	2868.0	2839.6
55°	2702.4	2767.6	2865.4	3043.1	3613.6	4414.7	4030.4	3480.5	3398.4	3355.4	3366.4
57.5°	1839.1	1938.0	2148.8	2486.8	3310.2	4637.8	5274.4	4190.3	4051.5	3898.0	3933.8
60°	1013.1	1095.7	1346.5	1687.2	2617.7	4604.6	6376.9	5343.8	4906.9	4500.0	4573.6
62.5°	655.6	673.5	860.1	1152.5	1606.7	4065.2	6989.4	7271.7	6345.9	5293.9	5397.4
65°	526.8	539.4	631.0	929.6	1119.3	2615.1	7016.7	9271.7	8661.3	6372.7	6375.8
67.5°	514.7	520.5	573.6	781.8	1050.0	1423.7	6065.2	10060.4	10201.8	7646.0	7030.4
68°	522.1	528.9	582.6	757.6	1049.4	1312.2	5605.7	10048.2	10290.7	7859.0	7030.4
70°	460.5	469.0	594.1	783.9	1004.7	1128.3	3838.5	9514.7	9904.7	8348.5	6670.8
72.5°	240.8	233.9	293.9	618.8	1130.9	1175.6	2027.9	7948.9	8404.3	7731.8	5763.3
75°	187.7	170.8	164.6	244.5	994.7	1219.3	1177.7	5649.8	5993.7	5573.5	3852.2
77.5°	176.7	156.1	144.0	144.5	437.9	1268.7	952.7	3324.9	3324.9	2658.8	1229.2
80°	142.0	123.1	115.2	131.4	211.3	1169.3	994.2	1515.2	1292.3	687.1	338.6
82.5°	93.6	83.6	84.1	106.7	160.4	780.7	1151.4	748.2	562.0	304.4	199.3
85°	59.4	51.0	56.8	74.7	119.9	348.0	1139.9	520.0	372.3	170.8	99.3
87.5°	30.0	23.1	28.4	38.9	73.0	99.9	938.5	464.2	276.0	71.0	54.1
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°	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3	1751.3
2.5°	1742.9	1731.3	1725.5	1716.1	1704.5	1693.0	1685.0	1681.3	1679.3	1680.3	1679.8
5°	1755.5	1740.2	1715.6	1680.3	1644.1	1605.6	1576.3	1553.7	1539.4	1535.2	1534.1
7.5°	1765.0	1742.9	1696.7	1632.5	1570.4	1503.1	1445.8	1400.1	1369.1	1354.9	1354.4
10°	1763.4	1735.0	1661.9	1567.3	1476.3	1377.5	1287.6	1210.9	1155.1	1128.3	1127.2
12.5°	1765.0	1726.0	1619.3	1491.1	1360.6	1219.3	1085.7	966.4	883.3	843.8	842.3
15°	1771.2	1716.6	1575.7	1405.8	1225.5	1025.7	834.9	685.1	609.4	583.6	583.6
17.5°	1770.7	1700.9	1525.2	1307.0	1065.2	797.6	569.9	477.4	470.0	493.7	497.4
20°	1760.2	1675.6	1460.1	1189.8	877.0	552.1	386.5	373.3	432.2	497.4	504.7
22.5°	1743.9	1643.0	1384.9	1053.6	657.8	359.6	298.1	318.0	398.0	478.9	490.5
25°	1721.3	1603.6	1298.6	895.4	437.4	258.7	248.7	273.4	329.7	383.8	392.2
27.5°	1688.2	1553.7	1204.5	723.9	279.2	213.0	216.7	233.9	258.2	281.3	286.0
30°	1646.6	1495.2	1102.0	534.2	211.9	190.4	196.6	207.1	217.7	232.4	235.6
32.5°	1604.6	1435.8	995.2	366.9	185.1	178.2	184.5	190.4	199.3	209.3	211.3
35°	1566.8	1380.7	885.4	256.0	173.5	170.3	173.5	177.2	186.1	196.1	197.1
37.5°	1539.4	1335.5	770.8	202.4	166.6	163.5	165.1	166.6	177.2	191.9	193.4
40°	1535.8	1305.5	654.6	181.9	161.4	157.2	156.1	157.2	170.8	187.7	189.2
42.5°	1571.5	1307.0	541.0	173.5	157.2	152.4	148.2	150.4	162.4	175.6	176.7
45°	1656.2	1343.9	442.7	169.8	153.5	149.9	143.5	144.5	150.4	157.2	158.3
47.5°	1805.4	1424.3	367.5	167.8	150.4	147.2	139.3	136.2	136.7	140.3	140.3
50°	2044.2	1558.9	321.7	165.6	147.7	142.0	133.0	126.7	125.1	127.3	127.8
52.5°	2400.0	1789.7	299.7	161.4	143.0	135.1	125.1	118.9	116.2	118.3	118.3
55°	2881.1	2158.2	289.2	155.6	137.2	126.7	117.7	112.5	110.4	112.0	112.0
57.5°	3429.5	2637.2	307.1	147.7	129.8	117.7	111.5	107.8	106.2	107.8	108.3
60°	4081.0	3263.9	430.0	137.8	121.9	109.9	106.2	104.1	103.0	104.6	104.6
62.5°	4946.9	4097.7	665.6	129.8	113.5	102.5	101.5	100.5	99.3	101.0	101.0
65°	5881.7	4856.5	685.1	125.1	106.2	96.3	96.8	96.8	95.6	97.3	97.3
67.5°	6179.2	4790.7	382.8	119.4	97.3	89.9	92.0	92.0	91.5	93.1	92.6
68°	6116.1	4686.6	333.4	117.7	95.6	88.3	90.4	90.9	90.4	92.0	91.5
70°	5646.1	4114.6	219.2	108.8	88.9	83.1	86.2	86.7	86.2	88.3	87.8
72.5°	4660.9	3086.2	161.9	95.1	80.4	76.2	79.4	79.9	80.4	82.6	82.0
75°	2960.0	1704.5	127.8	81.0	72.0	68.3	71.5	73.0	74.2	77.3	75.7
77.5°	810.7	517.3	103.6	68.8	62.0	60.5	62.6	64.7	65.7	69.4	66.8
80°	283.9	228.7	86.2	58.3	51.6	51.0	53.1	55.2	56.3	59.4	56.3
82.5°	172.5	149.4	68.8	45.7	40.5	40.0	42.6	44.7	45.7	45.7	43.7
85°	89.9	78.9	50.4	32.1	27.8	26.3	31.0	33.7	34.2	33.7	32.1
87.5°	50.4	44.7	26.8	15.2	12.6	13.1	16.3	19.9	21.6	21.1	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

(END OF REPORT)