

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: P196106

Luminaire Tested: **NAV-AF-02-D-UNV-SL3-600-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196106
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24263)
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-SL3-600-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6969.4 lumens
Efficiency: N/A
Efficacy: 105.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U0 - G2

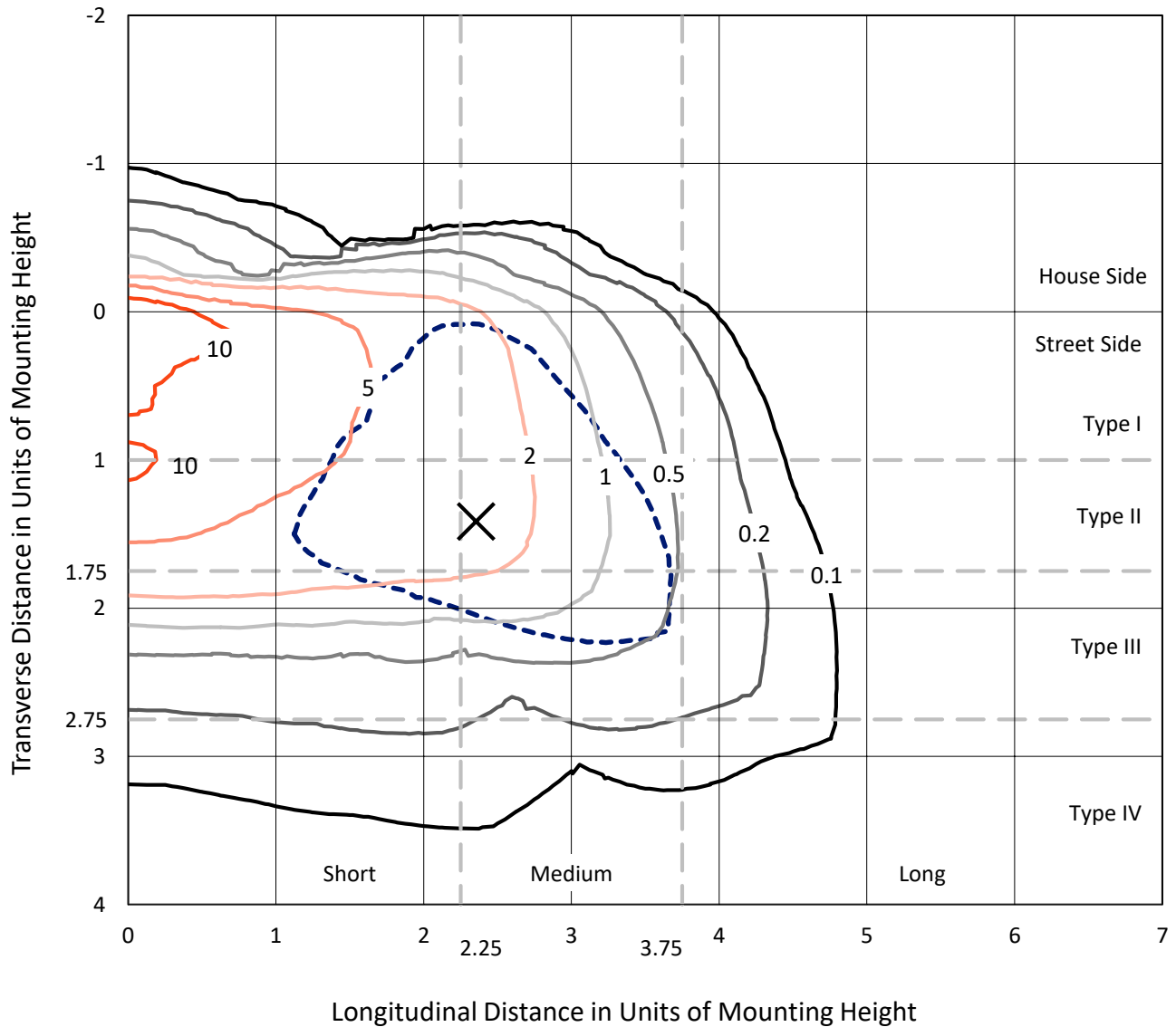
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

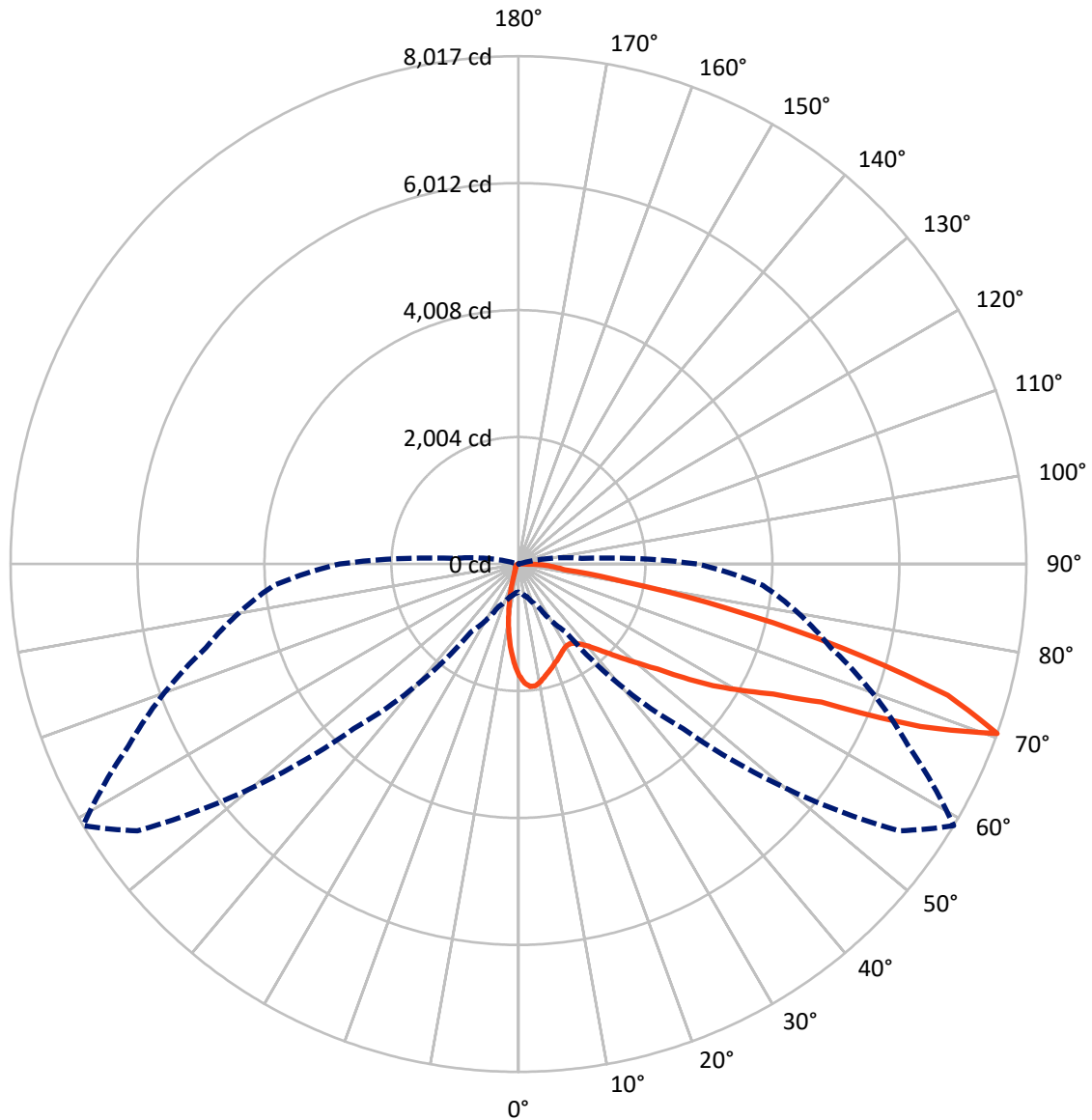
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18.8 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	535.8	0.0	535.8
	% Fixture	7.7	0.0	7.7
Street Side	Lumens	6433.6	0.0	6433.6
	% Fixture	92.3	0.0	92.3
Total	Lumens	6969.4	0.0	6969.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	144.9	2.1
10°-20°	303.9	4.4
20°-30°	411.4	5.9
30°-40°	593.8	8.5
40°-50°	986.1	14.1
50°-60°	1508.4	21.6
60°-70°	1876.1	26.9
70°-80°	1037.1	14.9
80°-90°	107.5	1.5
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°	6969.4	100.0
0°-180°	6969.4	100.0



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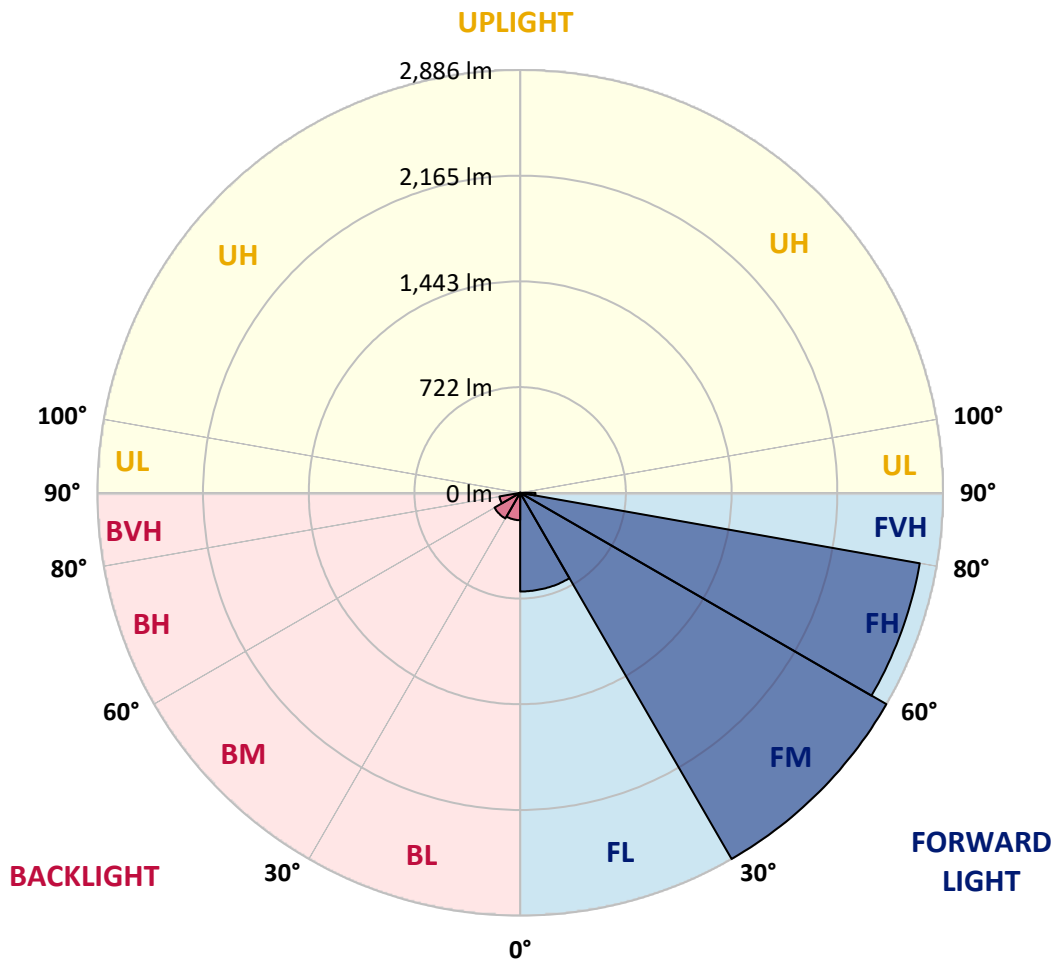
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	673.6	9.7			
FM	(30°-60°)	2886.1	41.4			
FH	(60°-80°)	2769.5	39.7			G2/5000
FVH	(80°-90°)	104.4	1.5			G2/225
BL	(0°-30°)	186.7	2.7	B1/500		
BM	(30°-60°)	202.2	2.9	B0/220		
BH	(60°-80°)	143.7	2.1	B1/500		G1/500
BVH	(80°-90°)	3.1	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3
2.5°	1992.1	1988.9	1975.7	1973.2	1958.4	1929.0	1894.8	1881.1	1853.3	1809.1	1760.2
5°	2025.1	2026.8	2027.8	2022.1	2019.9	1995.8	1957.9	1941.6	1904.2	1831.7	1742.3
7.5°	1901.1	1905.3	1918.4	1924.3	1949.4	1959.0	1951.1	1940.5	1911.1	1825.4	1699.7
10°	1770.2	1778.1	1792.3	1801.7	1832.7	1858.0	1890.1	1892.7	1886.4	1804.4	1651.9
12.5°	1657.7	1665.1	1680.8	1699.7	1731.2	1763.9	1811.7	1828.5	1849.6	1790.7	1617.7
15°	1560.9	1563.1	1578.3	1601.9	1643.5	1688.2	1744.9	1769.7	1810.6	1785.5	1591.4
17.5°	1476.3	1476.8	1486.9	1508.3	1558.9	1617.7	1684.0	1716.5	1768.6	1778.1	1568.3
20°	1420.6	1420.1	1420.6	1432.1	1476.8	1546.7	1627.2	1661.4	1728.2	1769.1	1544.7
22.5°	1401.6	1399.0	1386.9	1382.7	1411.1	1472.6	1568.8	1613.5	1691.9	1766.5	1527.3
25°	1424.8	1423.2	1397.5	1373.2	1375.9	1414.2	1509.5	1564.1	1663.4	1775.9	1523.1
27.5°	1499.4	1496.3	1456.9	1409.5	1379.6	1386.4	1465.3	1522.6	1640.8	1799.1	1528.9
30°	1597.2	1597.7	1555.7	1498.4	1427.9	1389.1	1441.6	1495.8	1625.6	1833.8	1541.5
32.5°	1706.1	1705.6	1675.6	1609.3	1519.4	1437.3	1452.1	1497.8	1627.7	1884.8	1565.6
35°	1818.6	1812.8	1802.7	1744.4	1639.3	1522.0	1500.0	1533.6	1649.8	1952.1	1606.6
37.5°	1948.4	1946.3	1956.3	1894.8	1787.5	1646.6	1584.0	1606.6	1705.6	2051.4	1672.9
40°	2155.1	2143.5	2148.2	2064.6	1954.8	1814.3	1701.9	1707.6	1794.4	2182.9	1777.6
42.5°	2548.8	2502.0	2414.3	2257.6	2138.8	2000.5	1855.8	1845.9	1920.0	2342.3	1915.3
45°	3019.3	2965.7	2744.4	2470.5	2322.7	2200.3	2046.2	2019.4	2074.5	2532.0	2093.0
47.5°	3412.1	3354.3	3060.9	2692.9	2509.9	2406.4	2257.0	2225.5	2259.7	2752.2	2306.4
50°	3546.2	3514.0	3256.5	2878.0	2698.6	2637.7	2521.5	2468.9	2477.3	2989.9	2555.6
52.5°	3484.7	3473.6	3301.2	3004.6	2873.2	2893.2	2811.2	2755.9	2746.5	3249.6	2831.1
55°	3354.8	3349.6	3265.4	3075.1	3027.2	3127.2	3217.6	3169.7	3080.3	3525.7	3058.8
57.5°	3169.2	3189.2	3249.6	3210.7	3216.5	3374.2	3595.1	3619.8	3486.2	3745.4	3227.5
60°	2673.4	2727.1	3004.1	3356.4	3626.1	3785.3	3999.3	4045.7	3830.0	3895.8	3422.6
62.5°	1976.2	2053.1	2447.9	3095.0	3851.6	4567.2	4537.2	4516.6	4158.1	4097.1	3777.5
65°	1160.8	1250.8	1584.6	2418.5	3511.5	5069.7	5541.3	5257.5	4658.1	4515.6	4342.6
67.5°	578.3	578.9	729.8	1276.5	2595.1	4719.1	7007.1	6843.1	5721.2	5132.3	4565.5
70°	444.8	456.8	539.9	741.8	1312.2	3675.5	7343.0	8016.6	6789.5	5105.0	3873.7
72.5°	377.0	384.8	480.6	645.6	981.0	2017.8	6356.8	7086.0	6478.8	4313.3	2855.4
75°	271.3	277.6	425.3	585.6	903.3	1001.1	4360.5	5255.4	4861.1	3034.1	1571.5
77.5°	67.3	66.8	148.2	475.3	808.0	833.8	2502.0	3370.0	2789.1	1242.4	403.8
80°	30.0	28.9	33.7	99.9	751.8	787.1	1100.4	1701.9	1069.9	201.3	123.6
82.5°	21.1	19.9	21.1	36.8	251.3	730.3	665.0	737.6	391.7	68.8	52.6
85°	6.9	6.3	11.6	31.0	70.5	421.1	648.8	551.0	291.2	29.5	35.2
87.5°	1.0	1.0	4.2	16.8	20.5	140.3	380.6	381.7	130.9	17.4	15.8
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°	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3	1762.3
2.5°	1735.5	1704.4	1660.9	1617.2	1577.8	1537.3	1504.7	1489.4	1482.6	1473.2	1452.6
5°	1695.5	1639.3	1543.6	1449.5	1361.6	1277.6	1205.5	1164.5	1120.3	1118.3	1096.7
7.5°	1631.4	1551.5	1400.6	1254.4	1120.3	992.1	881.7	810.2	761.3	730.8	709.7
10°	1559.9	1457.4	1257.6	1052.0	869.6	698.2	556.3	463.7	407.4	379.1	362.7
12.5°	1503.1	1374.3	1116.7	858.1	629.3	432.7	300.7	233.4	203.5	191.9	186.7
15°	1454.2	1298.0	984.7	684.6	420.0	248.7	174.0	151.9	147.2	147.2	146.7
17.5°	1404.8	1224.5	856.4	514.1	264.4	163.0	137.2	134.1	134.6	136.2	136.2
20°	1358.0	1154.5	732.8	366.4	173.5	130.4	124.6	123.6	125.1	127.3	126.7
22.5°	1320.1	1093.0	617.2	251.9	133.5	118.3	114.6	113.0	114.1	115.7	115.2
25°	1293.3	1040.4	511.1	175.6	116.2	107.8	103.5	101.5	100.5	101.5	101.0
27.5°	1277.1	996.3	411.1	132.0	104.1	97.3	92.0	87.8	85.2	85.2	84.1
30°	1266.5	954.7	322.3	109.4	94.1	86.7	79.4	73.7	69.4	68.3	67.8
32.5°	1266.0	919.0	240.8	96.8	84.6	76.2	67.3	59.9	55.2	54.1	53.6
35°	1279.1	890.1	177.2	87.3	76.2	66.3	56.3	48.4	44.2	44.2	43.7
37.5°	1313.3	873.3	134.1	79.9	69.4	57.8	47.4	40.0	36.3	37.3	37.3
40°	1376.9	870.1	109.4	74.2	63.6	50.4	38.4	32.6	31.0	32.6	32.6
42.5°	1474.2	886.9	97.3	70.0	58.3	43.1	32.1	27.8	27.3	28.9	28.9
45°	1600.9	920.0	90.4	66.3	52.6	35.7	26.8	24.1	23.6	25.8	25.8
47.5°	1754.5	964.7	84.1	62.0	46.7	29.5	22.6	20.5	20.5	22.6	23.1
50°	1936.3	1025.2	77.8	57.8	42.0	24.8	18.9	17.4	17.9	19.9	20.5
52.5°	2145.5	1099.4	72.0	54.1	36.8	19.9	15.8	14.7	15.2	17.4	17.9
55°	2325.9	1164.0	65.2	50.4	30.0	16.3	13.1	12.6	13.1	15.8	15.8
57.5°	2483.1	1226.0	58.9	44.7	23.6	13.1	10.5	10.5	11.6	14.2	14.7
60°	2691.8	1323.8	53.6	37.8	17.9	10.0	8.4	8.9	10.5	12.6	13.1
62.5°	3061.4	1489.9	46.7	31.5	13.1	7.9	6.9	7.4	9.5	12.1	12.6
65°	3524.1	1647.2	38.9	26.3	10.0	5.8	5.2	6.9	9.5	12.1	12.6
67.5°	3476.8	1432.6	30.5	21.1	7.4	4.7	4.2	6.3	8.9	12.1	12.6
70°	2819.6	1004.1	22.6	14.2	5.8	4.2	4.2	6.3	8.9	11.6	12.1
72.5°	1955.8	558.8	17.4	9.5	5.2	4.2	3.7	5.8	8.4	11.6	12.1
75°	930.6	171.3	13.7	6.9	4.7	3.7	3.2	5.8	8.4	11.6	12.1
77.5°	178.7	43.7	11.0	5.8	4.2	3.7	3.2	5.2	8.4	11.0	11.6
80°	60.5	19.4	8.9	5.2	4.2	3.7	3.2	5.2	7.9	10.5	11.0
82.5°	33.1	11.0	7.9	4.7	4.2	3.2	2.7	4.7	7.4	10.5	11.0
85°	25.8	7.9	6.3	4.7	4.2	3.2	2.7	4.7	7.4	10.0	10.5
87.5°	13.1	5.8	5.2	4.7	4.2	3.2	2.7	4.2	6.9	9.5	10.5
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)