

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: P196670

Luminaire Tested: **NAV-AF-02-D-UNV-SL4-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196670
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24284)
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-SL4-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE IV
SPILL LIGHT ELIMINATOR OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11238.4 lumens
Efficiency: N/A
Efficacy: 99.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

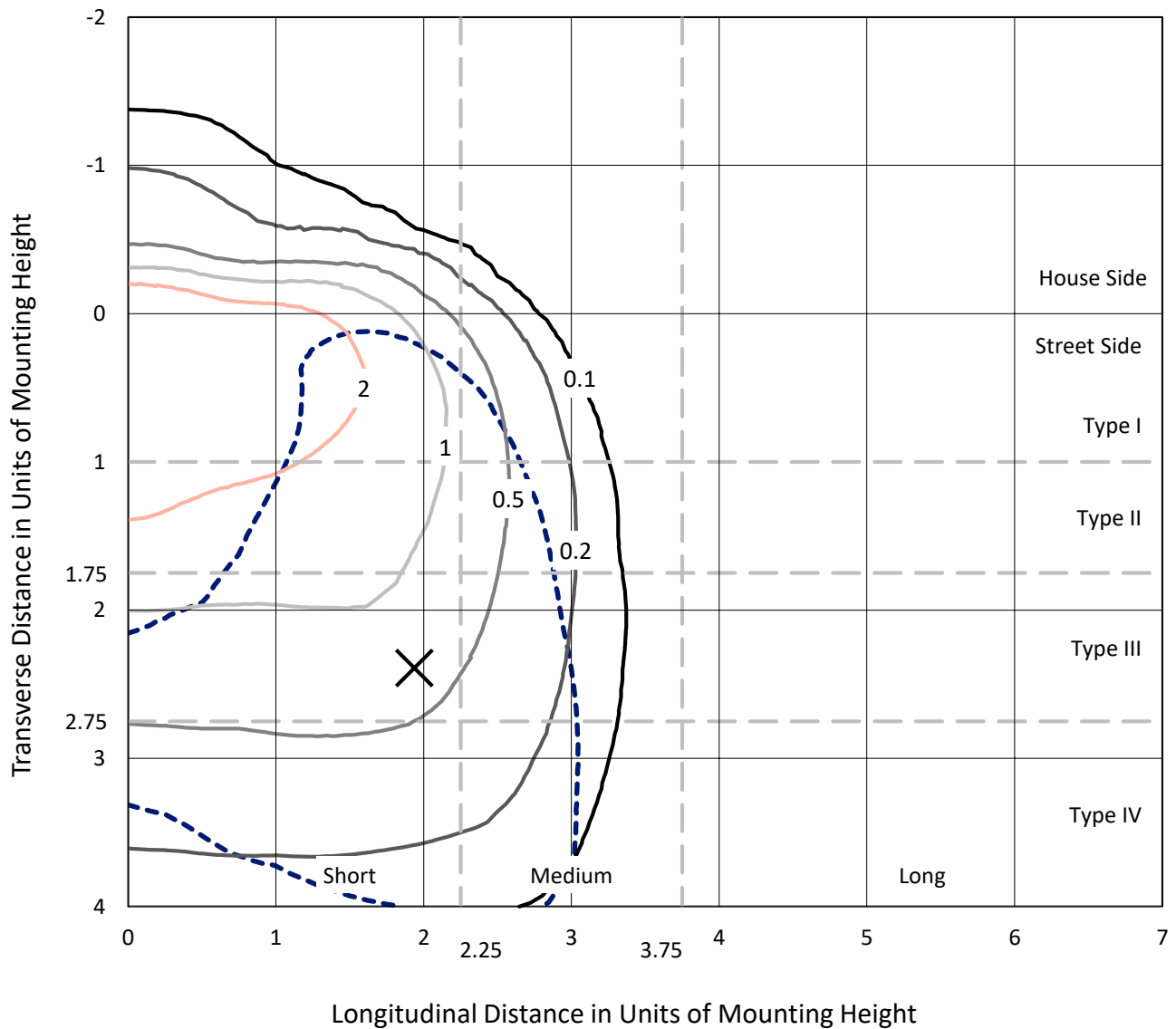
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

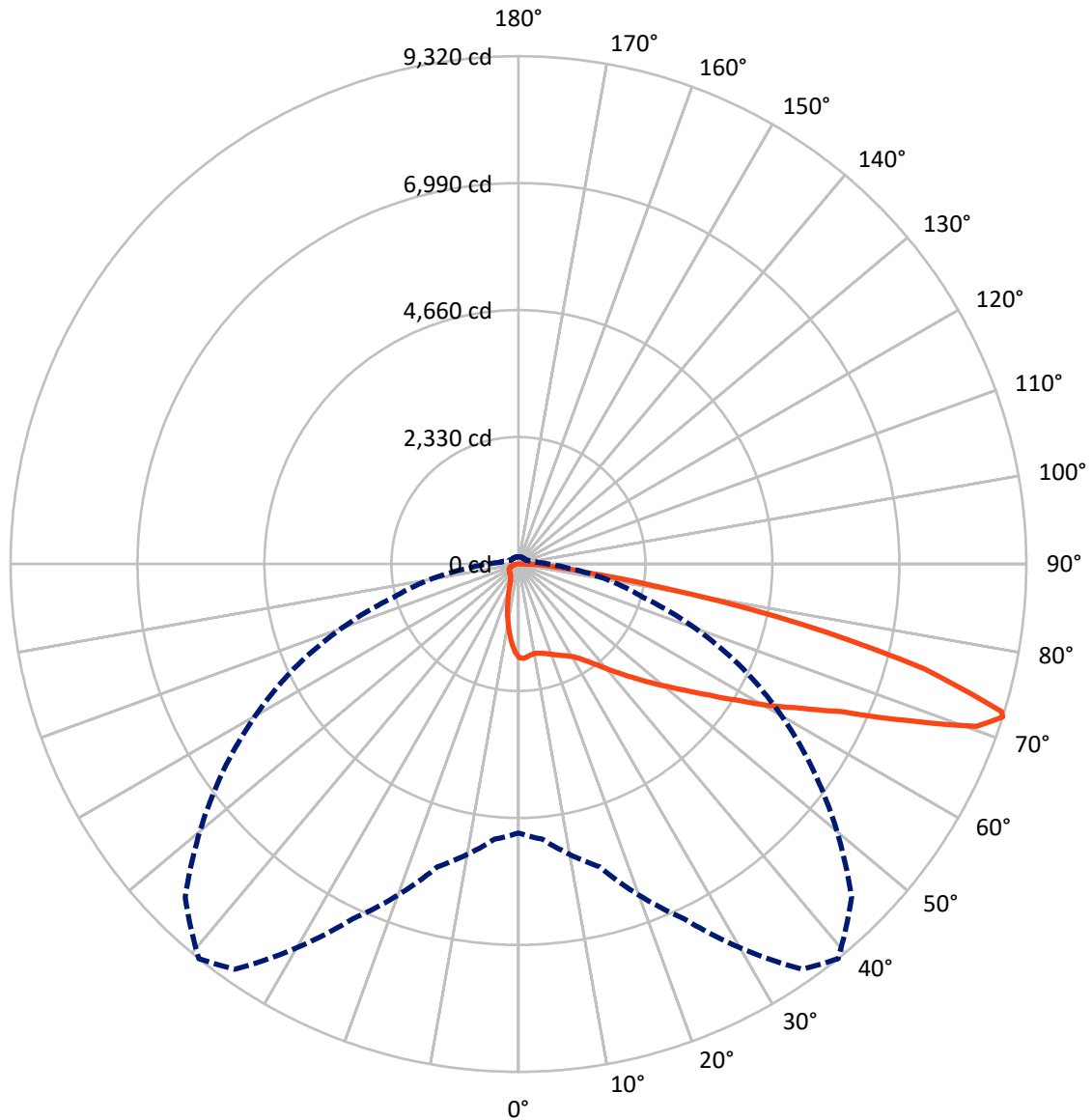
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.3 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 39-Deg Lateral - - - Horizontal Cone Through 72-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1288.6	0.0	1288.6
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	9949.8	0.0	9949.8
	% Fixture	88.5	0.0	88.5
Total	Lumens	11238.4	0.0	11238.4
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	147.5	1.3
10°-20°	370.6	3.3
20°-30°	577.6	5.1
30°-40°	889.3	7.9
40°-50°	1449.7	12.9
50°-60°	2252.7	20.0
60°-70°	3015.1	26.8
70°-80°	2168.3	19.3
80°-90°	367.6	3.3
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°	11238.4	100.0
0°-180°	11238.4	100.0



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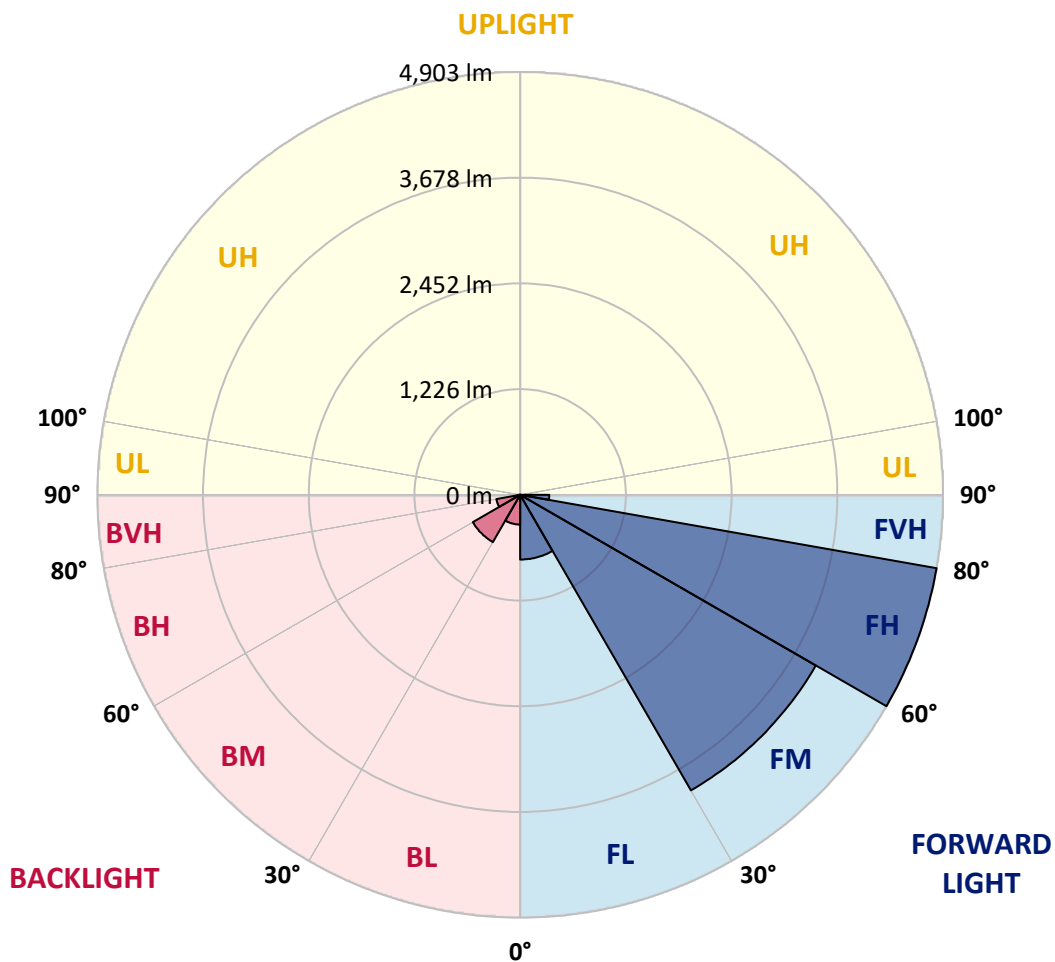
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	750.7	6.7			
FM	(30°-60°)	3958.4	35.2			
FH	(60°-80°)	4903.5	43.6			G2/5000
FVH	(80°-90°)	337.2	3.0			G3/500
BL	(0°-30°)	345.0	3.1	B1/500		
BM	(30°-60°)	633.3	5.6	B1/1000		
BH	(60°-80°)	280.0	2.5	B1/500		G1/500
BVH	(80°-90°)	30.4	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-G3

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	39°	45°	55°	65°	75°	85°
0°	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4
2.5°	1753.3	1754.0	1751.8	1745.0	1739.0	1735.9	1730.6	1721.6	1709.5	1701.1	1694.4
5°	1736.6	1739.0	1737.4	1726.1	1715.6	1709.5	1701.1	1688.4	1672.5	1665.7	1650.0
7.5°	1723.9	1725.3	1720.9	1708.0	1687.6	1680.1	1665.0	1648.4	1634.1	1624.2	1605.4
10°	1714.9	1716.4	1712.5	1699.7	1677.1	1668.1	1650.0	1631.8	1613.0	1600.8	1579.8
12.5°	1701.9	1705.0	1705.0	1699.0	1683.9	1677.7	1659.7	1640.1	1622.7	1609.9	1583.5
15°	1699.7	1703.5	1710.2	1709.5	1705.0	1700.5	1686.1	1666.5	1651.5	1636.3	1603.9
17.5°	1718.5	1726.9	1740.5	1745.0	1741.9	1732.2	1715.6	1697.5	1680.9	1666.5	1626.6
20°	1766.0	1770.6	1791.0	1800.0	1785.0	1770.6	1748.7	1725.3	1710.2	1699.0	1647.6
22.5°	1837.7	1843.7	1860.3	1861.1	1829.4	1812.1	1784.2	1755.6	1741.1	1736.6	1676.4
25°	1952.5	1951.0	1955.4	1936.6	1879.3	1858.9	1824.9	1791.8	1781.9	1791.0	1718.5
27.5°	2089.7	2086.0	2071.7	2022.6	1935.8	1909.5	1868.7	1839.3	1839.3	1860.3	1775.9
30°	2248.1	2244.4	2197.6	2115.4	2002.9	1972.7	1929.8	1898.9	1914.8	1955.4	1853.6
32.5°	2415.6	2402.1	2336.4	2226.2	2098.8	2065.6	2024.1	1992.5	2022.6	2092.0	1965.2
35°	2573.3	2565.7	2485.1	2354.5	2222.6	2194.6	2165.9	2126.7	2175.1	2282.9	2122.9
37.5°	2736.3	2730.3	2631.4	2492.6	2373.4	2354.5	2330.4	2303.3	2381.0	2522.8	2336.4
40°	2918.1	2906.1	2781.5	2642.8	2549.2	2540.2	2527.2	2519.7	2644.9	2856.2	2606.5
42.5°	3124.0	3100.7	2939.9	2808.0	2740.8	2748.3	2741.6	2771.7	2963.3	3240.9	2927.9
45°	3359.4	3312.6	3097.6	2983.8	2952.8	2983.0	2997.3	3074.2	3339.8	3685.4	3286.9
47.5°	3579.8	3519.3	3270.4	3174.6	3191.9	3244.0	3284.8	3420.6	3752.5	4124.4	3653.6
50°	3782.7	3714.9	3455.3	3372.3	3456.8	3530.7	3615.2	3806.8	4191.5	4576.4	3990.1
52.5°	3932.8	3883.7	3640.1	3588.1	3760.8	3858.8	3993.9	4236.1	4635.1	5007.2	4290.4
55°	4048.9	4022.6	3820.4	3835.4	4104.8	4245.2	4408.8	4687.2	5104.4	5393.4	4531.8
57.5°	4183.2	4163.7	4026.3	4134.3	4531.8	4708.3	4901.5	5210.8	5551.0	5733.6	4721.2
60°	4325.1	4325.1	4255.6	4494.1	5066.0	5268.2	5460.4	5701.1	5996.1	6039.9	4798.1
62.5°	4432.2	4460.2	4485.0	4877.4	5572.9	5824.2	6035.4	6266.2	6457.1	6190.7	4617.1
65°	4587.6	4647.3	4787.5	5320.2	6200.6	6529.6	6814.7	7008.6	6830.6	6070.8	4026.3
67.5°	4854.7	4943.0	5241.7	5979.5	7161.7	7654.3	7931.2	7596.2	6757.3	5315.7	3084.1
70°	5095.3	5219.9	5730.5	6816.1	8411.0	8922.5	8795.1	7459.6	5885.2	3896.6	1897.4
72°	4935.5	5071.3	5753.3	7180.6	9078.7	9320.2	8647.9	6610.9	4547.7	2377.9	935.5
72.5°	4830.6	4971.7	5680.1	7171.6	9096.8	9269.5	8443.4	6273.7	4128.2	2080.8	756.7
75°	4035.4	4156.1	4884.1	6355.9	8016.5	7699.6	6589.1	4060.3	1897.4	672.2	389.3
77.5°	2635.3	2727.2	3367.7	4403.5	5615.2	5310.3	4010.5	1901.1	711.4	408.2	292.7
80°	1324.0	1389.7	1802.3	2315.3	3030.6	2788.3	1851.4	919.6	476.1	295.0	230.1
82.5°	921.2	981.4	1241.0	1182.1	1266.7	1225.9	870.6	767.2	356.0	186.4	120.7
85°	772.6	835.2	1026.8	842.7	689.5	628.5	623.9	725.1	235.4	92.0	101.8
87.5°	673.7	768.7	847.2	615.5	473.0	417.2	459.4	664.7	74.8	50.6	30.9
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4	1716.4
2.5°	1683.1	1680.9	1669.5	1652.2	1639.3	1631.0	1615.2	1614.5	1616.0	1602.4	1607.6
5°	1635.6	1626.6	1597.2	1557.2	1524.7	1493.8	1459.8	1448.4	1438.7	1418.3	1420.6
7.5°	1585.8	1569.9	1518.6	1453.0	1390.5	1333.1	1276.4	1248.7	1227.4	1201.1	1201.1
10°	1556.4	1531.5	1453.0	1357.2	1257.6	1173.9	1089.5	1038.8	1001.9	967.9	965.7
12.5°	1554.9	1517.2	1407.7	1275.7	1139.1	1021.5	906.1	828.4	773.2	733.3	729.6
15°	1566.9	1514.2	1370.0	1199.5	1027.5	874.4	731.8	632.9	562.8	518.3	513.7
17.5°	1577.4	1510.4	1329.2	1119.6	918.9	732.6	574.1	471.6	405.2	368.9	365.2
20°	1587.3	1502.1	1277.2	1035.0	798.9	599.8	448.8	365.9	322.1	301.8	299.5
22.5°	1601.6	1494.5	1222.9	939.9	681.2	488.1	370.4	310.9	287.5	277.6	276.1
25°	1625.0	1495.2	1170.0	842.7	573.4	406.7	320.6	283.6	270.9	264.1	264.1
27.5°	1659.0	1504.3	1118.0	743.8	482.1	350.8	291.1	269.4	261.0	255.7	254.2
30°	1708.9	1520.9	1063.0	650.3	409.6	312.4	273.8	260.2	253.5	249.0	248.2
32.5°	1781.2	1550.3	1004.8	565.1	354.5	285.1	261.0	252.7	247.5	243.6	242.9
35°	1889.1	1602.4	948.3	492.6	315.3	265.6	250.4	243.6	240.7	239.2	238.4
37.5°	2047.5	1686.1	894.8	436.1	289.6	252.7	240.0	236.1	234.6	234.6	234.6
40°	2246.7	1796.2	846.4	396.1	275.4	242.9	232.4	229.3	229.3	230.1	230.1
42.5°	2488.8	1934.3	804.9	368.9	267.0	236.1	227.0	225.6	224.8	224.8	225.6
45°	2770.3	2097.3	779.3	347.8	261.0	232.4	223.3	222.6	219.5	218.1	218.1
47.5°	3053.1	2271.6	777.8	335.8	253.5	227.8	219.5	219.5	213.5	210.5	211.2
50°	3317.2	2427.7	794.5	332.7	249.0	221.0	215.8	216.6	208.2	204.5	203.7
52.5°	3529.9	2547.0	814.7	336.5	249.0	215.0	209.0	212.7	203.7	199.2	198.5
55°	3694.4	2629.9	822.2	344.8	252.0	209.8	202.9	209.0	202.2	196.1	196.1
57.5°	3812.0	2656.3	789.8	348.5	256.5	209.0	196.8	208.2	204.5	196.8	196.8
60°	3769.1	2503.1	669.2	334.3	255.7	207.5	192.4	209.8	212.0	203.7	203.7
62.5°	3433.4	2094.3	537.1	301.8	242.9	202.2	187.1	208.2	217.3	214.2	212.7
65°	2795.2	1535.9	416.4	263.4	221.0	190.8	175.8	194.6	205.2	208.2	209.0
67.5°	1969.8	972.4	323.6	224.1	193.9	174.3	162.9	172.0	175.8	177.3	180.3
70°	1077.3	526.6	257.3	188.6	166.0	157.7	149.3	150.1	148.6	147.1	148.6
72°	541.0	344.0	217.3	163.7	147.1	141.8	138.1	135.8	135.8	133.6	134.3
72.5°	465.5	319.9	209.8	157.7	142.6	138.1	135.1	132.8	131.9	130.6	131.2
75°	310.1	253.5	175.1	131.9	121.5	118.4	119.9	117.7	118.4	116.9	117.7
77.5°	250.4	218.1	148.6	111.7	104.2	99.5	102.6	103.4	104.9	103.4	102.6
80°	209.8	185.6	124.4	92.0	86.8	83.0	84.4	89.8	90.5	86.0	85.2
82.5°	135.8	149.3	98.2	71.7	66.4	64.9	68.7	74.0	75.4	69.4	67.8
85°	113.9	119.9	70.9	49.0	43.7	42.3	49.8	55.0	58.9	52.8	51.4
87.5°	31.6	58.9	34.8	23.4	19.6	19.6	24.1	28.6	34.0	34.8	34.8
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)