

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: P196179

Luminaire Tested: **NAV-AF-03-D-UNV-SL4-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196179
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-03-D-UNV-SL4-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 4000K, 615mA 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: 11647.3 lumens
Efficiency: N/A
Efficacy: 121.3 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

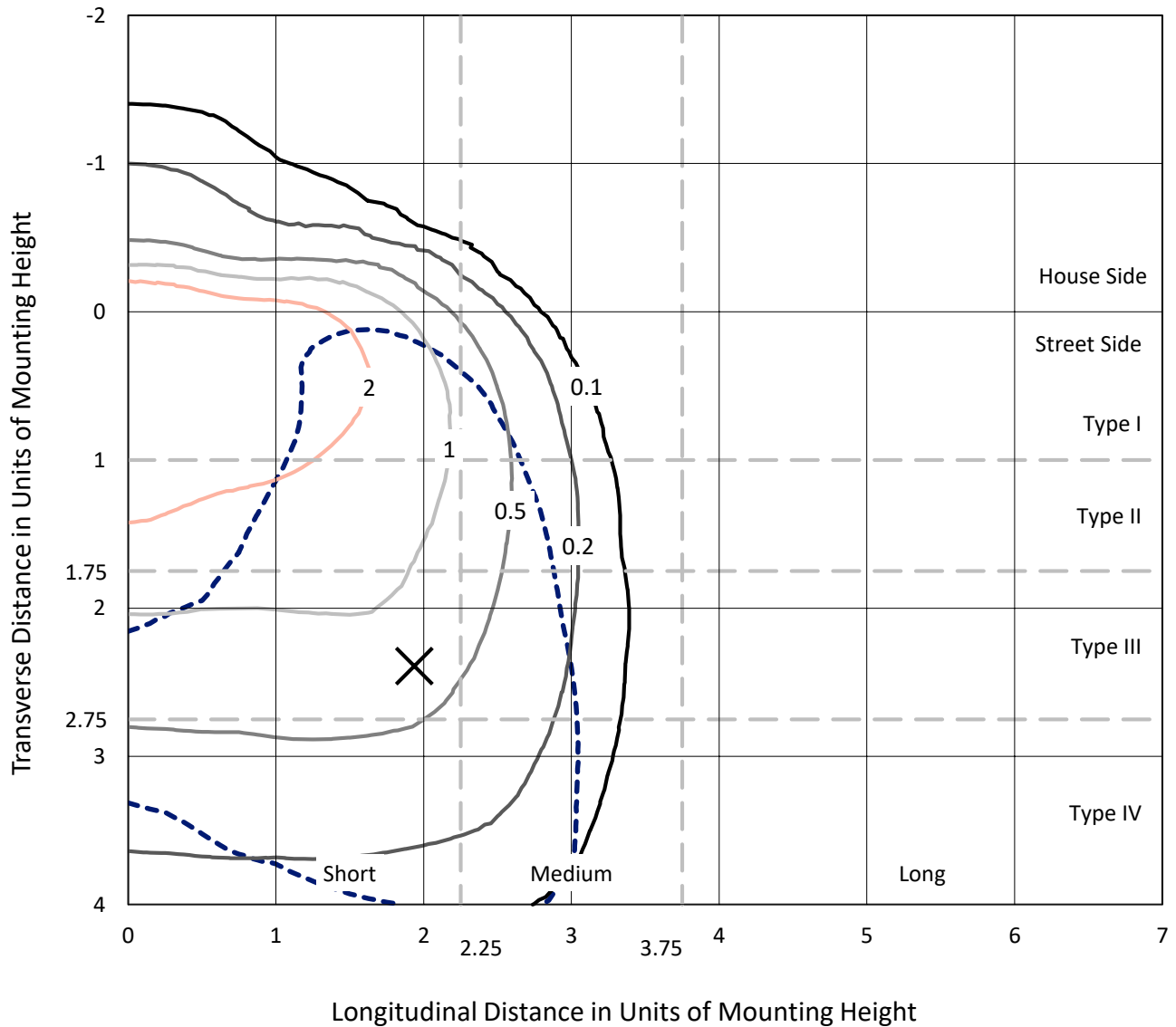
Input Watts (W): 96
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

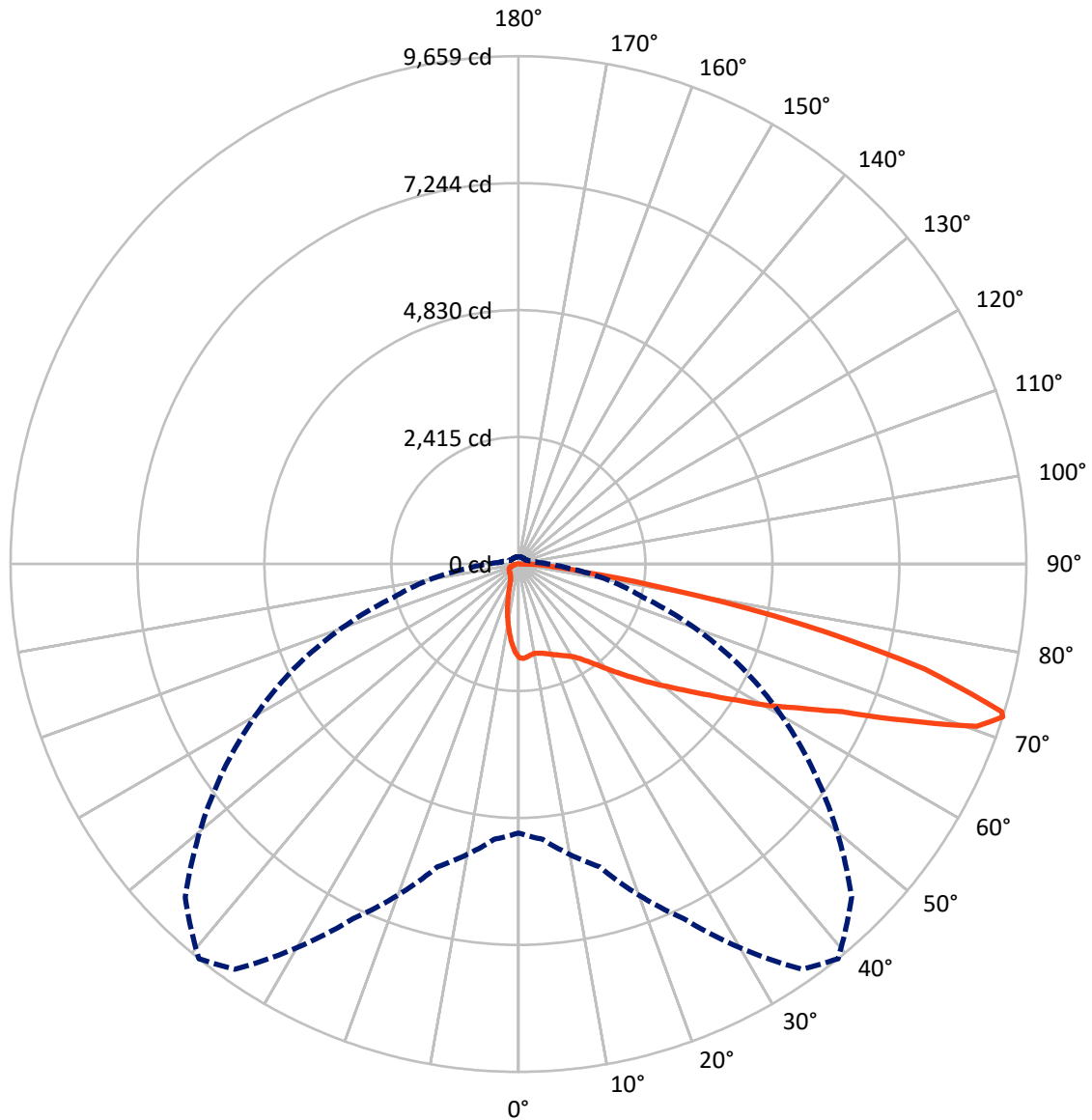
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.4 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	1335.5	0.0	1335.5
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	10311.8	0.0	10311.8
	% Fixture	88.5	0.0	88.5
Total	Lumens	11647.3	0.0	11647.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	152.9	1.3
10°-20°	384.1	3.3
20°-30°	598.6	5.1
30°-40°	921.6	7.9
40°-50°	1502.5	12.9
50°-60°	2334.7	20.0
60°-70°	3124.9	26.8
70°-80°	2247.2	19.3
80°-90°	381.0	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°	11647.3	100.0
0°-180°	11647.3	100.0



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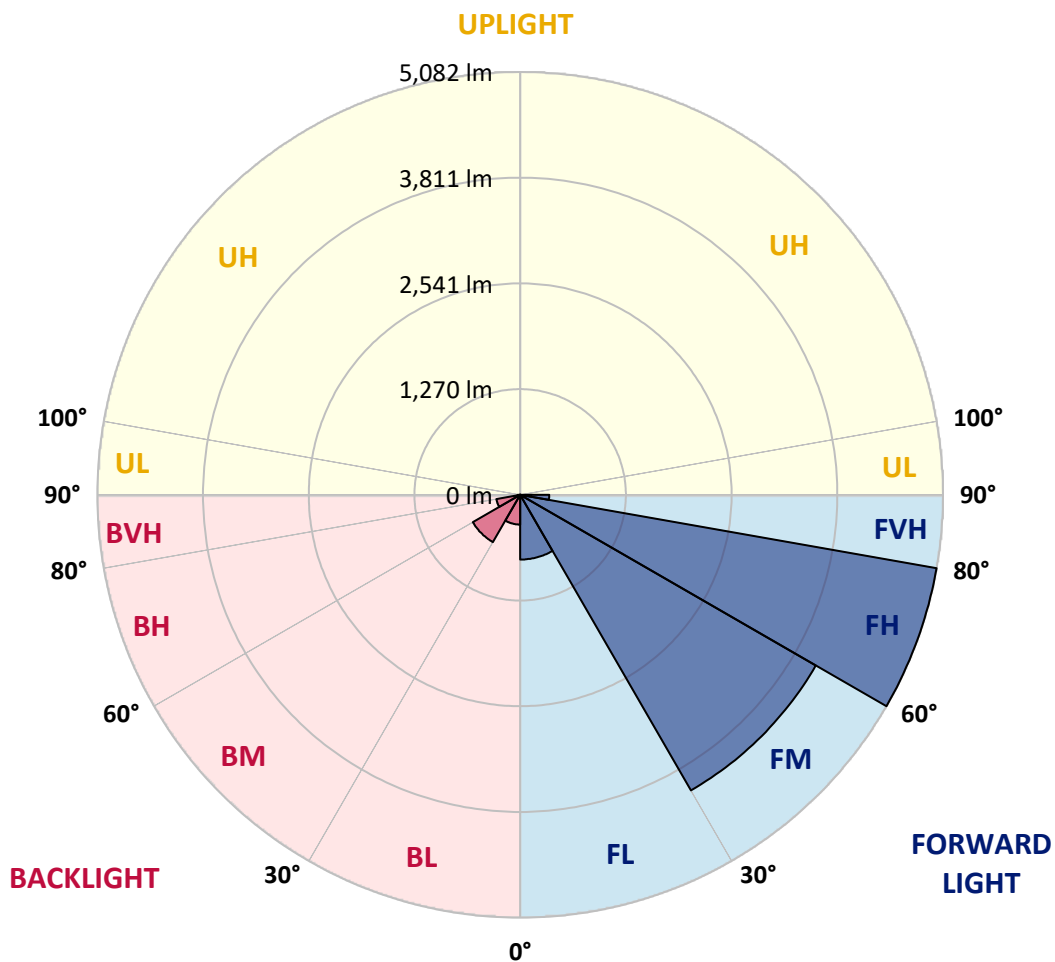
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	778.0	6.7			
FM	(30°-60°)	4102.4	35.2			
FH	(60°-80°)	5081.9	43.6			G3/7500
FVH	(80°-90°)	349.5	3.0			G3/500
BL	(0°-30°)	357.5	3.1	B1/500		
BM	(30°-60°)	656.3	5.6	B1/1000		
BH	(60°-80°)	290.2	2.5	B1/500		G1/500
BVH	(80°-90°)	31.5	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°	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7
2.5°	1817.1	1817.9	1815.5	1808.5	1802.2	1799.1	1793.6	1784.2	1771.8	1763.2	1756.1
5°	1799.9	1802.2	1800.6	1788.9	1778.0	1771.8	1763.2	1749.9	1733.4	1726.3	1710.0
7.5°	1786.6	1788.1	1783.4	1770.1	1749.0	1741.3	1725.6	1708.4	1693.5	1683.4	1663.8
10°	1777.2	1778.7	1774.8	1761.5	1738.1	1728.7	1710.0	1691.1	1671.6	1659.1	1637.2
12.5°	1763.9	1767.0	1767.0	1760.8	1745.2	1738.9	1720.1	1699.7	1681.8	1668.5	1641.1
15°	1761.5	1765.5	1772.5	1771.8	1767.0	1762.3	1747.5	1727.2	1711.5	1695.8	1662.3
17.5°	1781.1	1789.7	1803.8	1808.5	1805.3	1795.2	1778.0	1759.2	1742.0	1727.2	1685.7
20°	1830.4	1835.1	1856.1	1865.6	1849.9	1835.1	1812.4	1788.1	1772.5	1760.8	1707.6
22.5°	1904.6	1910.9	1928.1	1928.9	1896.0	1878.0	1849.1	1819.4	1804.6	1799.9	1737.3
25°	2023.5	2022.0	2026.6	2007.0	1947.6	1926.5	1891.3	1857.0	1846.7	1856.1	1781.1
27.5°	2165.8	2161.9	2147.0	2096.2	2006.3	1978.9	1936.7	1906.2	1906.2	1928.1	1840.5
30°	2330.0	2326.1	2277.6	2192.4	2075.9	2044.6	2000.1	1968.0	1984.4	2026.6	1921.1
32.5°	2503.6	2489.5	2421.4	2307.3	2175.2	2140.7	2097.8	2064.9	2096.2	2168.1	2036.8
35°	2666.9	2659.2	2575.5	2440.2	2303.4	2274.4	2244.8	2204.0	2254.2	2366.0	2200.2
37.5°	2835.8	2829.6	2727.2	2583.3	2459.8	2440.2	2415.2	2387.1	2467.6	2614.6	2421.4
40°	3024.3	3011.8	2882.8	2738.8	2642.0	2632.6	2619.3	2611.5	2741.2	2960.1	2701.4
42.5°	3237.7	3213.5	3047.0	2910.1	2840.5	2848.3	2841.3	2872.5	3071.2	3359.0	3034.5
45°	3481.7	3433.2	3210.3	3092.3	3060.3	3091.6	3106.4	3186.1	3461.4	3819.4	3406.6
47.5°	3709.9	3647.4	3389.4	3290.1	3308.1	3362.0	3404.3	3545.0	3889.1	4274.5	3786.6
50°	3920.3	3850.0	3580.9	3494.9	3582.6	3659.2	3746.8	3945.3	4344.1	4742.8	4135.3
52.5°	4075.8	4025.1	3772.5	3718.5	3897.6	3999.2	4139.3	4390.2	4803.8	5189.2	4446.5
55°	4196.2	4168.9	3959.4	3975.0	4254.1	4399.6	4569.2	4857.8	5290.1	5589.6	4696.7
57.5°	4335.5	4315.1	4172.8	4284.6	4696.7	4879.7	5079.8	5400.4	5753.0	5942.2	4893.0
60°	4482.5	4482.5	4410.6	4657.6	5250.3	5459.8	5659.2	5908.6	6214.3	6259.6	4972.7
62.5°	4593.5	4622.4	4648.2	5054.8	5775.7	6036.0	6254.9	6494.2	6692.0	6416.0	4785.1
65°	4754.6	4816.4	4961.7	5513.7	6426.2	6767.1	7062.7	7263.6	7079.0	6291.7	4172.8
67.5°	5031.4	5122.8	5432.5	6197.1	7422.3	7932.9	8219.8	7872.6	7003.2	5509.1	3196.3
70°	5280.8	5409.8	5939.0	7064.2	8717.1	9247.2	9115.0	7731.2	6099.3	4038.4	1966.4
72°	5115.0	5255.7	5962.6	7441.9	9409.0	9659.2	8962.6	6851.5	4713.1	2464.5	969.6
72.5°	5006.3	5152.5	5886.7	7432.5	9427.8	9606.8	8750.7	6502.1	4278.4	2156.4	784.2
75°	4182.2	4307.3	5061.9	6587.3	8308.2	7979.7	6828.8	4208.0	1966.4	696.6	403.5
77.5°	2731.1	2826.4	3490.3	4563.8	5819.5	5503.6	4156.5	1970.3	737.3	423.0	303.4
80°	1372.2	1440.2	1867.9	2399.5	3140.8	2889.8	1918.7	953.1	493.4	305.8	238.4
82.5°	954.6	1017.2	1286.2	1225.2	1312.8	1270.5	902.2	795.1	369.1	193.1	125.1
85°	800.7	865.5	1064.2	873.4	714.6	651.3	646.6	751.4	244.0	95.3	105.6
87.5°	698.2	796.8	878.0	638.0	490.2	432.4	476.2	688.9	77.4	52.4	32.0
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°	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7	1778.7
2.5°	1744.3	1742.0	1730.3	1712.3	1699.0	1690.4	1674.0	1673.2	1674.8	1660.7	1666.2
5°	1695.1	1685.7	1655.2	1613.8	1580.2	1548.1	1512.9	1501.2	1491.1	1469.9	1472.2
7.5°	1643.5	1627.1	1573.9	1505.9	1441.0	1381.6	1322.9	1294.0	1272.1	1244.7	1244.7
10°	1613.0	1587.2	1505.9	1406.6	1303.3	1216.6	1129.0	1076.7	1038.3	1003.1	1000.8
12.5°	1611.5	1572.4	1458.9	1322.2	1180.6	1058.7	939.1	858.5	801.4	760.0	756.1
15°	1623.9	1569.2	1419.9	1243.2	1064.9	906.2	758.4	656.0	583.3	537.2	532.4
17.5°	1634.9	1565.3	1377.6	1160.3	952.4	759.2	595.1	488.7	419.8	382.4	378.4
20°	1645.0	1556.7	1323.7	1072.8	828.0	621.5	465.2	379.2	333.9	312.7	310.4
22.5°	1659.9	1548.8	1267.4	974.3	706.0	505.8	383.9	322.1	297.9	287.8	286.1
25°	1684.2	1549.7	1212.7	873.4	594.2	421.5	332.3	294.0	280.7	273.6	273.6
27.5°	1719.4	1559.1	1158.7	770.9	499.6	363.6	301.8	279.2	270.6	265.0	263.5
30°	1770.9	1576.3	1101.6	674.0	424.5	323.7	283.9	269.8	262.7	258.0	257.3
32.5°	1846.0	1606.7	1041.5	585.6	367.4	295.5	270.6	261.9	256.5	252.6	251.7
35°	1957.8	1660.7	982.9	510.6	326.8	275.2	259.6	252.6	249.4	247.9	247.0
37.5°	2122.0	1747.5	927.3	451.9	300.2	261.9	248.7	244.7	243.2	243.2	243.2
40°	2328.4	1861.7	877.3	410.5	285.4	251.7	240.8	237.7	237.7	238.4	238.4
42.5°	2579.4	2004.7	834.2	382.4	276.8	244.7	235.4	233.7	233.0	233.0	233.7
45°	2871.0	2173.6	807.7	360.5	270.6	240.8	231.4	230.7	227.5	226.0	226.0
47.5°	3164.2	2354.2	806.1	347.9	262.7	236.1	227.5	227.5	221.3	218.1	218.9
50°	3437.9	2516.0	823.3	344.8	258.0	229.0	223.6	224.4	215.8	211.9	211.1
52.5°	3658.4	2639.6	844.4	348.7	258.0	222.8	216.6	220.4	211.1	206.4	205.6
55°	3828.8	2725.6	852.2	357.3	261.2	217.4	210.3	216.6	209.5	203.3	203.3
57.5°	3950.8	2753.0	818.7	361.2	265.9	216.6	204.1	215.8	211.9	204.1	204.1
60°	3906.2	2594.2	693.6	346.4	265.0	215.0	199.4	217.4	219.7	211.1	211.1
62.5°	3558.3	2170.5	556.7	312.7	251.7	209.5	194.0	215.8	225.2	222.1	220.4
65°	2896.8	1591.9	431.6	272.9	229.0	197.8	182.2	201.7	212.7	215.8	216.6
67.5°	2041.5	1007.8	335.4	232.2	200.9	180.7	168.9	178.3	182.2	183.7	186.9
70°	1116.6	545.7	266.6	195.5	172.1	163.4	154.8	155.6	154.1	152.4	154.1
72°	560.6	356.5	225.2	169.7	152.4	147.0	143.1	140.8	140.8	138.4	139.2
72.5°	482.4	331.5	217.4	163.4	147.8	143.1	139.9	137.6	136.9	135.2	136.1
75°	321.3	262.7	181.4	136.9	125.9	122.8	124.3	121.9	122.8	121.2	121.9
77.5°	259.6	226.0	154.1	115.7	107.9	103.2	106.3	107.1	108.6	107.1	106.3
80°	217.4	192.3	129.0	95.3	89.9	86.0	87.6	93.1	93.8	89.1	88.4
82.5°	140.8	154.8	101.7	74.3	68.8	67.2	71.2	76.6	78.2	71.9	70.4
85°	118.0	124.3	73.4	50.8	45.3	43.8	51.6	57.1	61.0	54.7	53.2
87.5°	32.8	61.0	36.0	24.2	20.4	20.4	25.1	29.7	35.2	36.0	36.0
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)