

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: P197140

Luminaire Tested: **NAV-AF-04-D-UNV-SL4-8030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197140
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-04-D-UNV-SL4-8030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(4) 80 CRI, 3000K, 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: 12513 lumens
Efficiency: N/A
Efficacy: 97.0 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short - Non-Cutoff
BUG Rating: B1 - U0 - G3

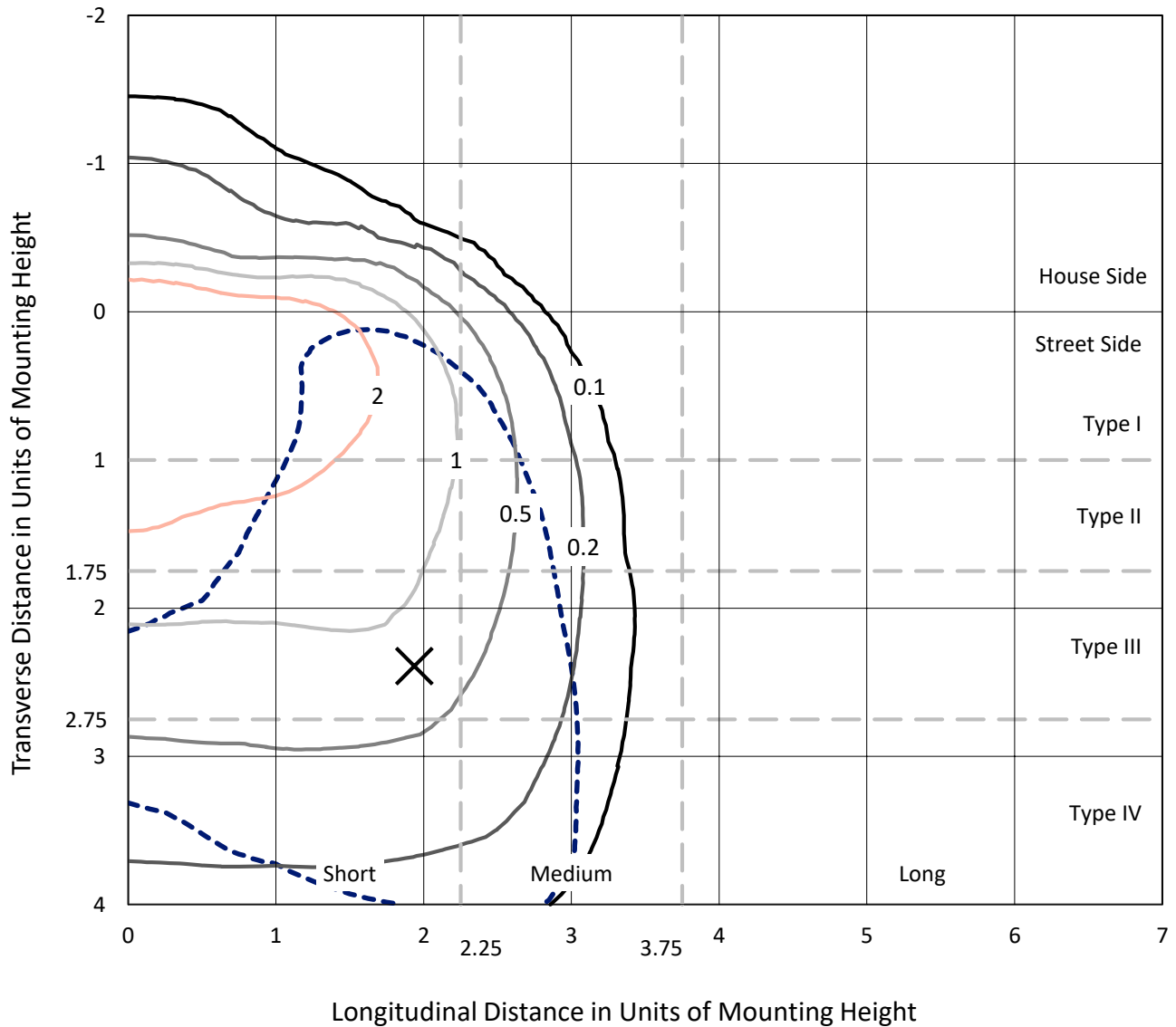
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

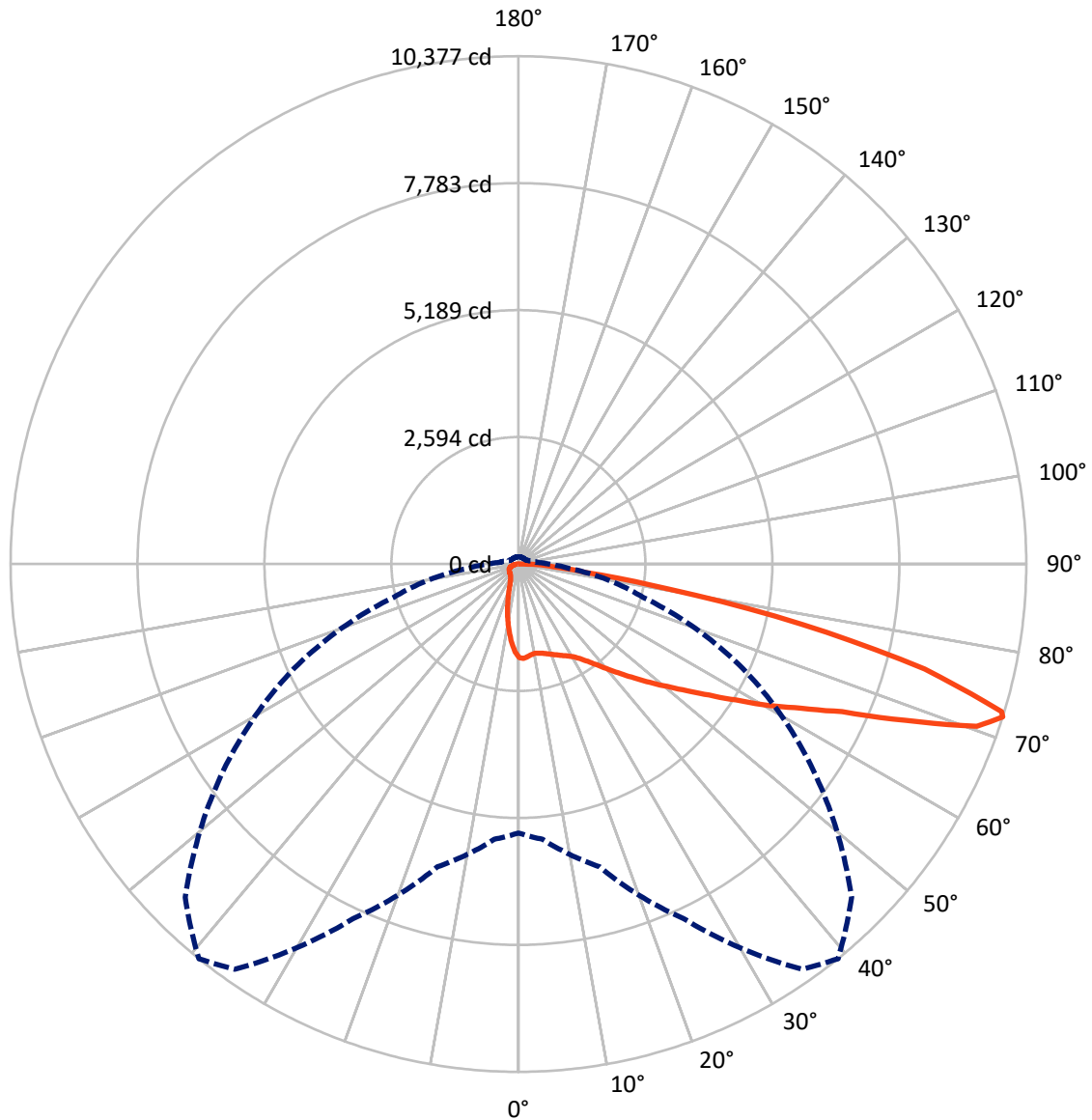
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.8 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	1434.8	0.0	1434.8
	% Fixture	11.5	0.0	11.5
Street Side	Lumens	11078.2	0.0	11078.2
	% Fixture	88.5	0.0	88.5
Total	Lumens	12513.0	0.0	12513.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	164.2	1.3
10°-20°	412.6	3.3
20°-30°	643.1	5.1
30°-40°	990.1	7.9
40°-50°	1614.1	12.9
50°-60°	2508.2	20.0
60°-70°	3357.1	26.8
70°-80°	2414.3	19.3
80°-90°	409.3	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°	12513.0	100.0
0°-180°	12513.0	100.0

Coefficient of Utilization



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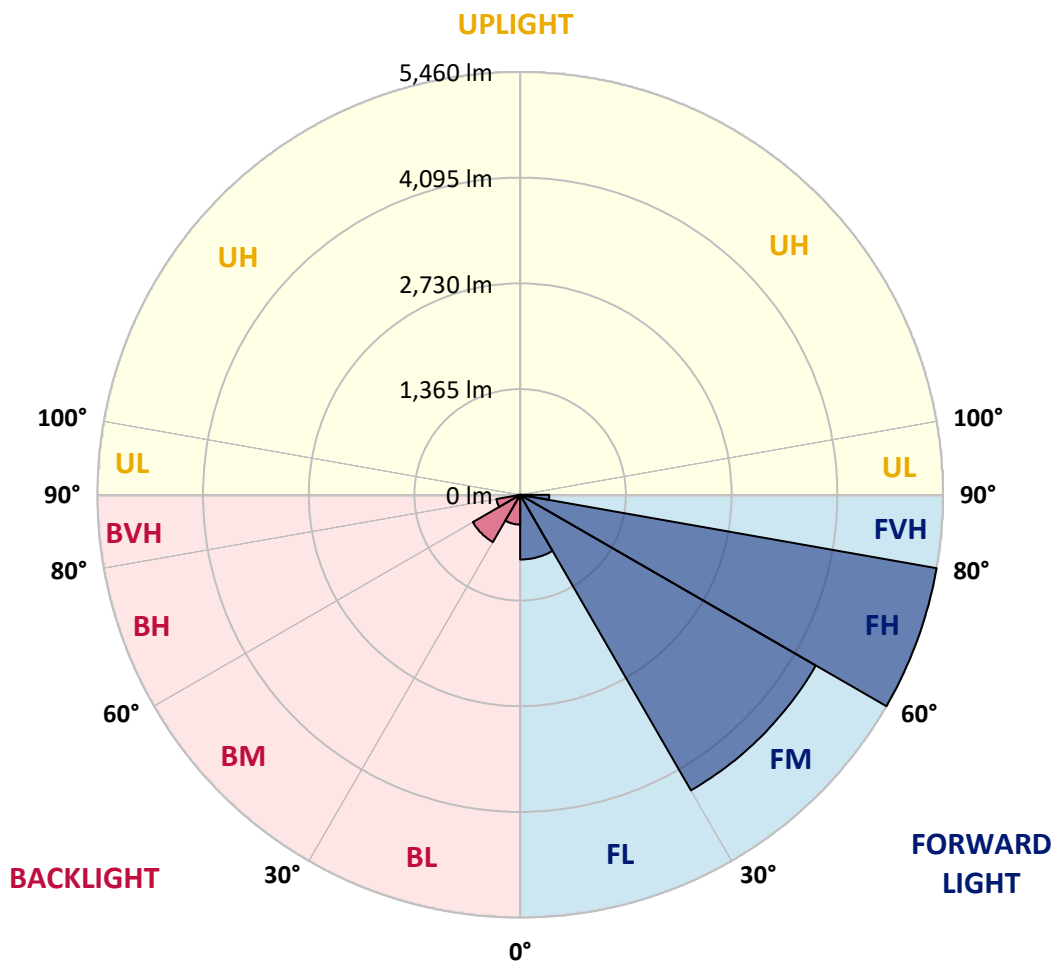
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	835.8	6.7			
FM	(30°-60°)	4407.3	35.2			
FH	(60°-80°)	5459.6	43.6			G3/7500
FVH	(80°-90°)	375.4	3.0			G3/500
BL	(0°-30°)	384.1	3.1	B1/500		
BM	(30°-60°)	705.1	5.6	B1/1000		
BH	(60°-80°)	311.7	2.5	B1/500		G1/500
BVH	(80°-90°)	33.8	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°	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0
2.5°	1952.1	1953.0	1950.4	1942.9	1936.2	1932.8	1926.9	1916.8	1903.4	1894.2	1886.6
5°	1933.6	1936.2	1934.5	1921.9	1910.1	1903.4	1894.2	1879.9	1862.2	1854.7	1837.0
7.5°	1919.4	1921.0	1916.0	1901.7	1879.0	1870.6	1853.8	1835.4	1819.4	1808.5	1787.5
10°	1909.3	1911.0	1906.8	1892.5	1867.3	1857.2	1837.0	1816.9	1795.9	1782.4	1758.9
12.5°	1895.0	1898.4	1898.4	1891.6	1874.8	1868.1	1848.0	1826.1	1806.8	1792.5	1763.1
15°	1892.5	1896.7	1904.2	1903.4	1898.4	1893.3	1877.4	1855.5	1838.7	1821.9	1785.8
17.5°	1913.5	1922.7	1937.8	1942.9	1939.5	1928.6	1910.1	1890.0	1871.5	1855.5	1811.0
20°	1966.4	1971.4	1994.1	2004.2	1987.4	1971.4	1947.1	1921.0	1904.2	1891.6	1834.5
22.5°	2046.2	2052.9	2071.4	2072.2	2037.0	2017.6	1986.6	1954.6	1938.7	1933.6	1866.4
25°	2173.9	2172.2	2177.2	2156.2	2092.4	2069.7	2031.9	1995.0	1984.0	1994.1	1913.5
27.5°	2326.8	2322.6	2306.6	2252.0	2155.4	2126.0	2080.6	2047.9	2047.9	2071.4	1977.3
30°	2503.1	2498.9	2446.9	2355.3	2230.2	2196.6	2148.7	2114.2	2131.9	2177.2	2063.8
32.5°	2689.6	2674.5	2601.4	2478.8	2336.8	2299.9	2253.7	2218.4	2252.0	2329.3	2188.2
35°	2865.2	2856.8	2766.9	2621.6	2474.6	2443.5	2411.6	2367.9	2421.7	2541.8	2363.7
37.5°	3046.6	3039.9	2929.9	2775.3	2642.6	2621.6	2594.7	2564.5	2651.0	2808.9	2601.4
40°	3249.1	3235.6	3097.0	2942.5	2838.3	2828.2	2813.9	2805.5	2945.0	3180.2	2902.1
42.5°	3478.4	3452.3	3273.4	3126.4	3051.7	3060.1	3052.5	3086.1	3299.5	3608.6	3260.0
45°	3740.4	3688.4	3449.0	3322.1	3287.7	3321.3	3337.2	3422.9	3718.6	4103.3	3659.8
47.5°	3985.7	3918.5	3641.3	3534.6	3554.0	3611.9	3657.3	3808.5	4178.1	4592.2	4068.0
50°	4211.7	4136.1	3847.1	3754.7	3848.8	3931.1	4025.2	4238.6	4666.9	5095.3	4442.7
52.5°	4378.8	4324.2	4052.9	3995.0	4187.3	4296.5	4446.9	4716.5	5160.9	5575.0	4777.0
55°	4508.2	4478.8	4253.7	4270.5	4570.3	4726.6	4908.9	5218.8	5683.3	6005.0	5045.8
57.5°	4657.7	4635.9	4483.0	4603.1	5045.8	5242.3	5457.4	5801.8	6180.6	6383.9	5256.6
60°	4815.6	4815.6	4738.3	5003.8	5640.5	5865.6	6079.8	6347.7	6676.2	6724.9	5342.3
62.5°	4934.9	4966.0	4993.7	5430.5	6204.9	6484.7	6719.9	6976.9	7189.4	6892.9	5140.7
65°	5107.9	5174.3	5330.5	5923.6	6903.8	7270.0	7587.6	7803.4	7605.2	6759.3	4483.0
67.5°	5405.3	5503.6	5836.2	6657.7	7974.0	8522.5	8830.7	8457.8	7523.7	5918.5	3433.8
70°	5673.2	5811.8	6380.5	7589.2	9365.0	9934.5	9792.5	8305.7	6552.7	4338.5	2112.6
72°	5495.2	5646.4	6405.7	7995.0	10108.3	10377.1	9628.7	7360.8	5063.4	2647.6	1041.6
72.5°	5378.4	5535.5	6324.2	7984.9	10128.5	10320.9	9401.1	6985.3	4596.4	2316.7	842.5
75°	4493.1	4627.5	5438.0	7076.9	8925.7	8572.9	7336.4	4520.8	2112.6	748.4	433.4
77.5°	2934.1	3036.5	3749.7	4903.0	6252.0	5912.6	4465.3	2116.8	792.1	454.4	325.9
80°	1474.2	1547.2	2006.7	2577.9	3374.2	3104.6	2061.3	1023.9	530.0	328.4	256.2
82.5°	1025.6	1092.8	1381.8	1316.3	1410.3	1365.0	969.3	854.3	396.5	207.5	134.4
85°	860.1	929.9	1143.2	938.3	767.7	699.7	694.7	807.2	262.1	102.5	113.4
87.5°	750.1	855.9	943.3	685.4	526.7	464.5	511.5	740.0	83.2	56.3	34.4
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°	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0	1911.0
2.5°	1874.0	1871.5	1858.9	1839.6	1825.3	1816.0	1798.4	1797.6	1799.2	1784.1	1790.0
5°	1821.1	1811.0	1778.2	1733.7	1697.6	1663.2	1625.4	1612.8	1601.8	1579.2	1581.7
7.5°	1765.6	1748.0	1690.9	1617.8	1548.1	1484.2	1421.3	1390.2	1366.7	1337.3	1337.3
10°	1732.9	1705.2	1617.8	1511.1	1400.3	1307.0	1212.9	1156.7	1115.5	1077.7	1075.2
12.5°	1731.2	1689.2	1567.4	1420.4	1268.4	1137.3	1008.8	922.3	861.0	816.5	812.3
15°	1744.6	1685.8	1525.4	1335.6	1144.1	973.5	814.8	704.7	626.6	577.1	572.0
17.5°	1756.4	1681.6	1480.0	1246.5	1023.1	815.6	639.2	525.0	451.1	410.8	406.6
20°	1767.3	1672.4	1422.1	1152.5	889.5	667.8	499.8	407.4	358.7	336.0	333.5
22.5°	1783.3	1664.0	1361.6	1046.6	758.5	543.5	412.4	346.1	320.0	309.1	307.4
25°	1809.3	1664.8	1302.8	938.3	638.4	452.8	357.0	315.8	301.6	294.0	294.0
27.5°	1847.1	1674.9	1244.9	828.2	536.7	390.6	324.2	299.9	290.6	284.8	283.1
30°	1902.6	1693.4	1183.5	724.1	456.1	347.8	304.9	289.8	282.2	277.2	276.4
32.5°	1983.2	1726.2	1118.9	629.1	394.8	317.5	290.6	281.4	275.5	271.3	270.5
35°	2103.3	1784.1	1055.9	548.5	351.1	295.7	278.9	271.3	268.0	266.3	265.4
37.5°	2279.7	1877.4	996.2	485.5	322.6	281.4	267.1	262.9	261.2	261.2	261.2
40°	2501.5	2000.0	942.5	441.0	306.6	270.5	258.7	255.4	255.4	256.2	256.2
42.5°	2771.1	2153.7	896.3	410.8	297.4	262.9	252.8	251.2	250.3	250.3	251.2
45°	3084.4	2335.2	867.7	387.2	290.6	258.7	248.6	247.8	244.4	242.8	242.8
47.5°	3399.4	2529.2	866.0	373.8	282.2	253.7	244.4	244.4	237.7	234.4	235.2
50°	3693.4	2703.1	884.5	370.4	277.2	246.1	240.2	241.1	231.8	227.6	226.8
52.5°	3930.3	2835.8	907.2	374.6	277.2	239.4	232.7	236.9	226.8	221.8	220.9
55°	4113.4	2928.2	915.6	383.9	280.6	233.5	226.0	232.7	225.1	218.4	218.4
57.5°	4244.4	2957.6	879.5	388.1	285.6	232.7	219.2	231.8	227.6	219.2	219.2
60°	4196.6	2787.1	745.1	372.1	284.8	231.0	214.2	233.5	236.0	226.8	226.8
62.5°	3822.8	2331.8	598.1	336.0	270.5	225.1	208.3	231.8	241.9	238.6	236.9
65°	3112.1	1710.2	463.7	293.2	246.1	212.5	195.7	216.7	228.5	231.8	232.7
67.5°	2193.2	1082.7	360.4	249.5	215.9	194.0	181.4	191.5	195.7	197.4	200.8
70°	1199.5	586.3	286.4	210.0	184.8	175.6	166.3	167.2	165.5	163.8	165.5
72°	602.3	383.0	241.9	182.3	163.8	157.9	153.7	151.2	151.2	148.7	149.5
72.5°	518.3	356.2	233.5	175.6	158.8	153.7	150.4	147.8	147.0	145.3	146.2
75°	345.2	282.2	194.9	147.0	135.2	131.9	133.6	131.0	131.9	130.2	131.0
77.5°	278.9	242.8	165.5	124.3	115.9	110.9	114.2	115.1	116.8	115.1	114.2
80°	233.5	206.6	138.6	102.5	96.6	92.4	94.1	100.0	100.8	95.8	94.9
82.5°	151.2	166.3	109.2	79.8	73.9	72.2	76.4	82.3	84.0	77.3	75.6
85°	126.8	133.6	79.0	54.6	48.7	47.0	55.4	61.3	65.5	58.8	57.1
87.5°	35.3	65.5	38.6	26.0	21.8	21.8	26.9	31.9	37.8	38.6	38.6
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)