

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: P196334

Luminaire Tested: **NAV-AF-02-D-UNV-T3R**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196334
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24250)
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-T3R
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 12673.3 lumens
Efficiency: N/A
Efficacy: 112.2 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Full Cutoff
BUG Rating: B2 - U0 - G2

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

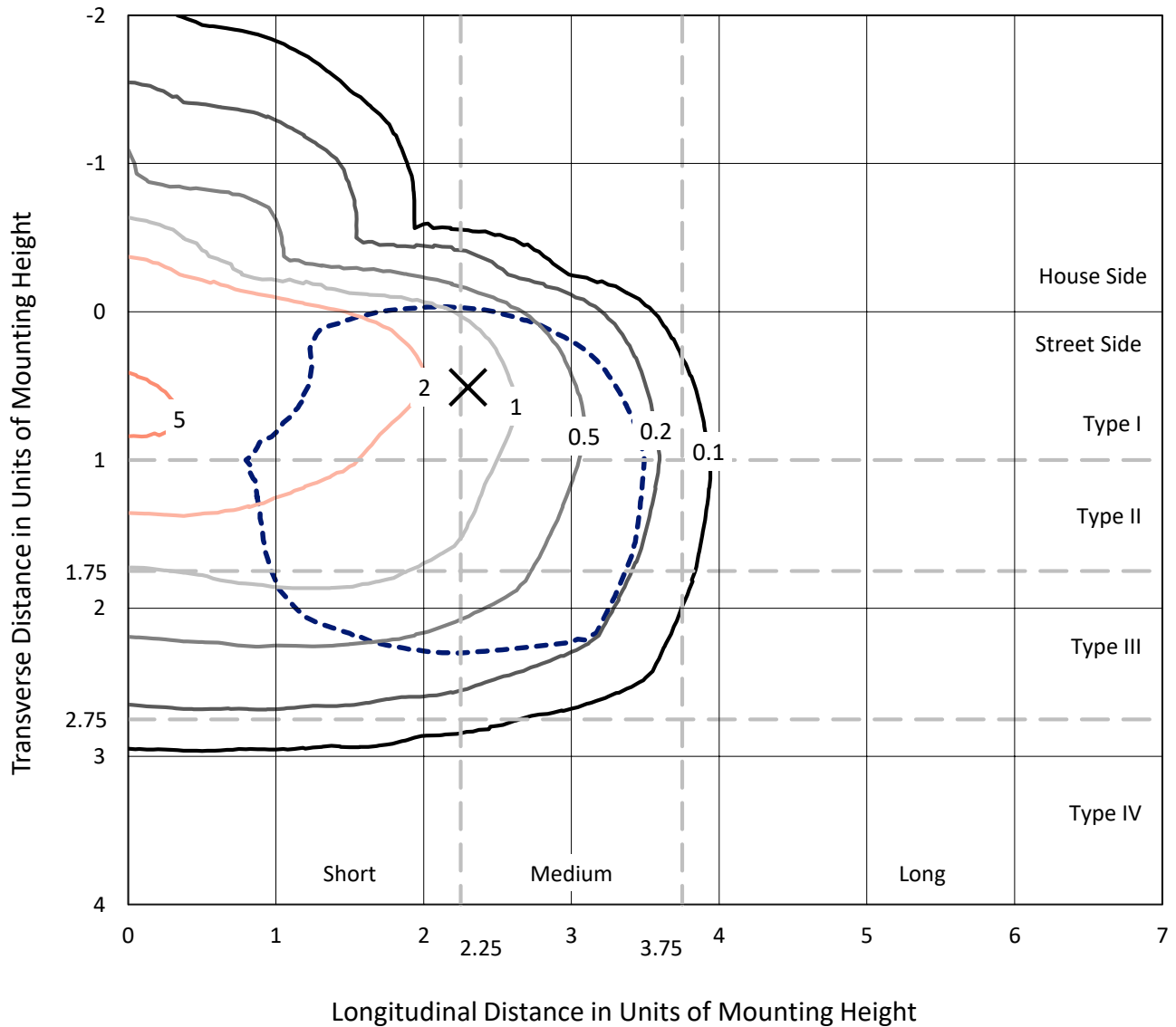


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Iso-Footcandle Lines of Horizontal Illumination

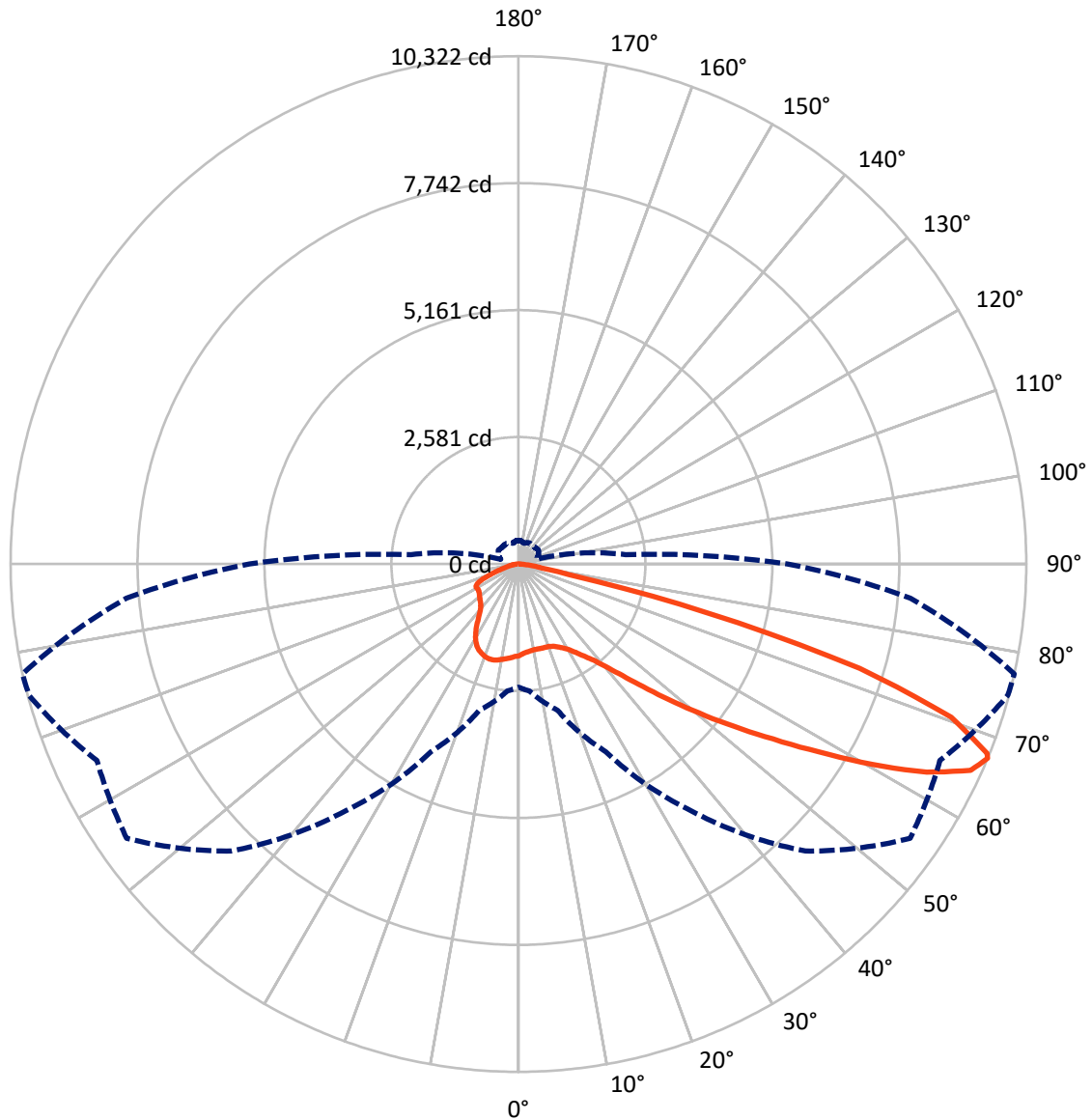
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 5.6 fc
 Type III - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 77.5-Deg Lateral - - - Horizontal Cone Through 67-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2177.9	0.0	2177.9
	% Fixture	17.2	0.0	17.2
Street Side	Lumens	10495.4	0.0	10495.4
	% Fixture	82.8	0.0	82.8
Total	Lumens	12673.3	0.0	12673.3
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	166.1	1.3
10°-20°	460.1	3.6
20°-30°	781.7	6.2
30°-40°	1250.5	9.9
40°-50°	1925.1	15.2
50°-60°	2670.9	21.1
60°-70°	3562.8	28.1
70°-80°	1695.5	13.4
80°-90°	160.5	1.3
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°	12673.3	100.0
0°-180°	12673.3	100.0



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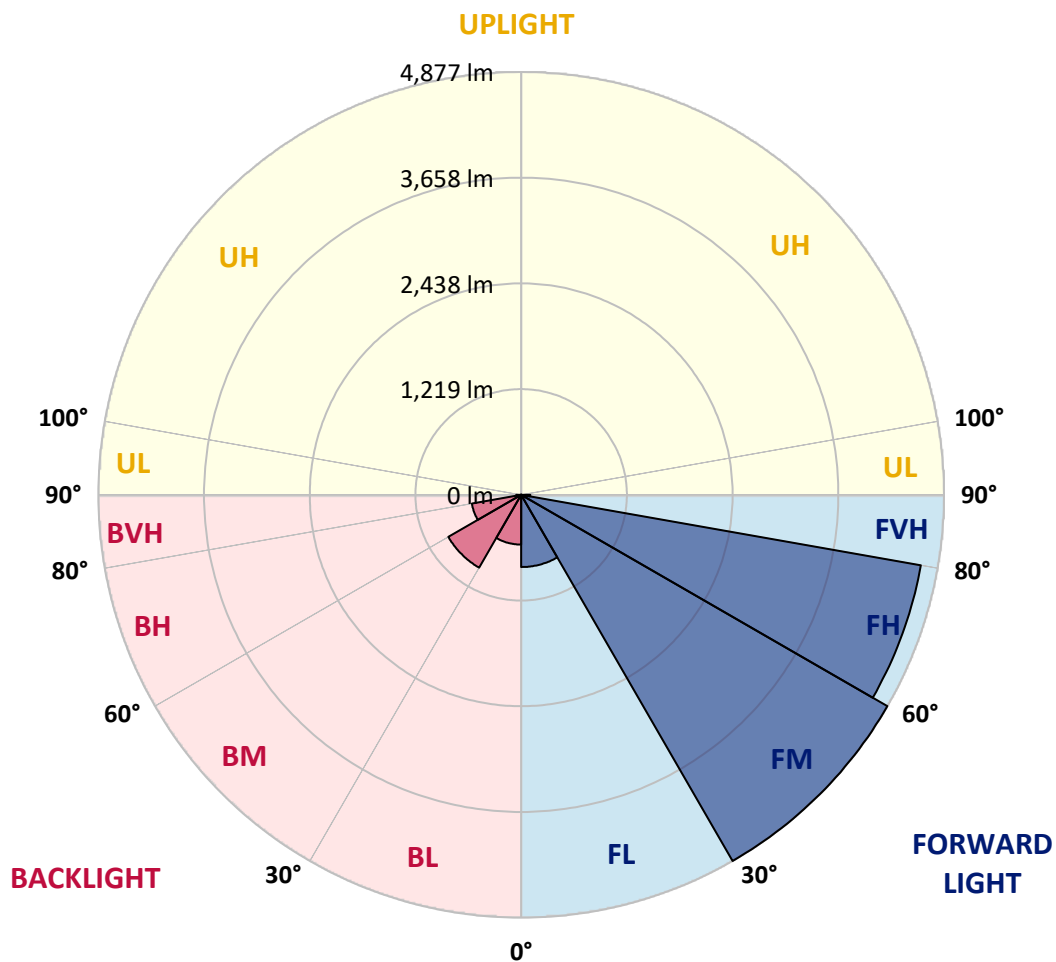
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	833.4	6.6			
FM	(30°-60°)	4876.8	38.5			
FH	(60°-80°)	4680.9	36.9			G2/5000
FVH	(80°-90°)	104.3	0.8			G2/225
BL	(0°-30°)	574.4	4.5	B2/1000		
BM	(30°-60°)	969.7	7.7	B1/1000		
BH	(60°-80°)	577.5	4.6	B2/1000		G2/1000
BVH	(80°-90°)	56.3	0.4			G1/100
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B2-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	77.5°	85°
0°	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1
2.5°	1672.5	1680.3	1681.1	1703.8	1714.0	1739.8	1768.1	1793.1	1815.0	1822.9	1837.0
5°	1504.9	1504.9	1507.2	1522.0	1551.1	1592.5	1651.3	1715.6	1782.9	1799.4	1840.9
7.5°	1417.1	1418.6	1420.3	1435.1	1457.8	1494.6	1553.5	1641.1	1753.1	1780.5	1853.4
10°	1425.0	1422.6	1414.7	1411.6	1421.0	1444.5	1495.5	1585.5	1728.1	1770.4	1876.2
12.5°	1547.9	1543.2	1517.3	1479.8	1445.3	1436.7	1471.9	1557.3	1716.3	1770.4	1914.6
15°	1758.7	1761.8	1710.9	1632.5	1542.4	1481.3	1476.6	1547.1	1712.4	1775.1	1959.2
17.5°	2032.8	2034.3	1963.9	1850.3	1700.7	1574.5	1508.8	1547.1	1712.4	1779.8	2002.2
20°	2324.2	2313.3	2233.4	2090.8	1896.6	1703.8	1567.5	1556.5	1717.1	1786.9	2043.0
22.5°	2574.2	2563.9	2480.1	2330.5	2108.0	1856.6	1646.6	1587.8	1743.0	1815.8	2100.2
25°	2792.7	2799.0	2717.5	2549.1	2318.7	2028.9	1764.9	1659.9	1797.0	1868.3	2170.7
27.5°	3058.2	3046.4	2952.4	2791.9	2535.7	2207.5	1912.9	1750.8	1861.3	1931.7	2256.8
30°	3365.3	3359.9	3232.9	3067.6	2774.7	2407.3	2059.5	1848.8	1945.0	2018.7	2365.0
32.5°	3738.2	3737.5	3601.1	3398.2	3043.4	2632.9	2232.6	1982.7	2067.3	2141.8	2508.3
35°	4160.4	4159.6	4018.7	3750.8	3352.8	2882.8	2436.3	2145.6	2218.5	2296.8	2679.1
37.5°	4453.4	4448.7	4375.1	4115.0	3695.1	3173.4	2690.9	2365.0	2390.0	2477.8	2885.1
40°	4509.8	4538.0	4601.4	4447.9	4068.8	3496.1	2946.2	2600.8	2624.3	2737.1	3144.4
42.5°	4448.7	4485.5	4696.3	4739.3	4442.5	3887.0	3265.9	2927.4	2957.1	3097.4	3449.2
45°	4395.4	4427.5	4691.6	4900.8	4811.4	4313.2	3664.5	3326.1	3382.6	3556.5	3797.0
47.5°	4304.6	4334.3	4599.1	4929.7	5022.2	4723.7	4144.8	3805.6	3902.7	4113.4	4193.3
50°	4299.9	4313.2	4473.0	4832.5	5095.0	5035.5	4676.6	4366.5	4515.3	4758.2	4632.0
52.5°	4180.8	4274.0	4418.9	4677.4	5096.5	5217.2	5200.7	4981.4	5210.9	5479.6	5113.0
55°	3452.3	3559.6	4238.8	4601.4	5087.1	5373.0	5679.3	5635.5	5994.3	6277.0	5651.9
57.5°	3223.5	3268.9	3718.6	4624.1	5165.5	5630.8	6158.0	6338.2	6890.4	7199.1	6298.2
60°	3160.8	3208.7	3614.4	4635.2	5377.8	6100.1	6807.4	7131.7	7944.0	8271.5	7032.3
62.5°	3091.2	3153.0	3622.3	4645.3	5750.6	6794.1	7669.1	7992.6	9025.9	9318.1	7720.0
65°	2887.5	2969.7	3477.3	4581.1	6158.8	7665.2	8808.1	8890.4	9919.7	10105.3	8135.2
67°	2501.3	2591.3	3079.4	4209.7	6121.1	8251.9	9719.2	9452.1	10299.6	10322.4	8000.5
67.5°	2379.1	2472.3	2944.7	4055.5	6013.8	8328.7	9880.6	9529.6	10296.5	10271.4	7875.1
70°	1601.9	1706.9	2085.3	2977.6	4823.9	7751.3	9841.4	9290.6	9621.3	9333.7	6765.9
72.5°	795.1	798.2	1040.3	1631.0	2922.7	5559.5	8209.6	7948.0	7799.2	7256.3	4964.9
75°	383.1	390.2	491.1	720.7	1232.2	2870.2	5598.7	5362.9	4566.2	3953.6	2484.8
77.5°	292.2	299.2	381.5	469.2	513.9	936.1	2773.1	2241.2	1323.1	1056.7	700.3
80°	225.6	239.0	321.9	360.4	340.0	375.2	871.9	686.2	514.6	472.4	347.0
82.5°	176.3	184.1	273.4	273.4	235.0	251.4	405.8	396.4	319.6	288.3	186.5
85°	124.6	140.2	220.1	203.7	154.4	155.9	242.8	232.6	164.5	132.4	72.8
87.5°	55.6	71.3	156.7	133.2	82.2	63.4	99.5	85.4	65.1	50.1	33.7
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°	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1	1865.1
2.5°	1852.7	1865.1	1884.8	1896.6	1912.2	1918.4	1924.7	1935.7	1944.3	1942.0	1938.1
5°	1869.9	1891.0	1915.3	1923.1	1923.1	1915.3	1910.7	1911.4	1909.0	1907.5	1902.8
7.5°	1894.9	1924.0	1941.2	1933.4	1909.0	1878.5	1849.5	1832.3	1815.8	1805.6	1808.8
10°	1930.2	1962.3	1963.1	1928.7	1870.7	1804.1	1746.9	1710.1	1674.8	1659.1	1663.8
12.5°	1981.1	2013.3	1985.9	1911.4	1809.6	1705.4	1600.4	1524.4	1456.3	1439.8	1435.1
15°	2036.0	2061.0	2000.0	1874.6	1721.8	1550.3	1374.0	1260.4	1184.5	1171.1	1166.5
17.5°	2083.8	2097.9	1992.9	1808.8	1583.2	1313.0	1107.7	1030.9	1015.3	1023.1	1023.1
20°	2126.0	2121.3	1962.3	1706.9	1364.6	1049.8	930.7	929.9	951.0	970.6	972.1
22.5°	2179.3	2142.5	1913.7	1555.8	1103.8	875.7	855.4	875.7	899.3	921.3	923.6
25°	2242.7	2166.0	1848.8	1340.4	887.5	795.1	803.7	820.9	835.9	853.0	853.9
27.5°	2306.2	2184.0	1757.1	1087.3	770.1	743.4	752.8	759.8	763.7	774.8	774.8
30°	2379.9	2198.1	1624.7	871.1	716.0	698.0	692.5	689.4	692.5	707.4	708.2
32.5°	2472.3	2223.2	1443.7	747.4	690.9	665.8	637.6	622.0	633.0	659.6	664.3
35°	2577.2	2252.9	1226.7	698.0	682.3	650.2	598.5	574.2	578.1	602.4	606.3
37.5°	2708.9	2291.3	1012.9	686.2	690.9	648.7	580.4	546.1	528.8	529.6	528.8
40°	2877.3	2329.7	843.7	689.4	709.7	652.5	571.8	517.8	481.8	483.3	486.5
42.5°	3053.5	2354.8	736.3	698.8	732.4	658.1	568.8	490.4	459.1	485.7	509.9
45°	3259.5	2347.8	680.8	707.4	749.7	660.4	557.0	487.2	461.4	541.3	586.8
47.5°	3496.1	2317.2	649.4	711.3	754.4	659.6	548.3	497.5	481.0	619.6	671.4
50°	3753.1	2269.4	624.3	705.0	752.1	656.4	557.7	509.9	488.9	636.9	676.8
52.5°	4034.3	2225.5	598.5	690.9	740.3	647.0	569.5	504.5	466.9	586.8	617.2
55°	4367.3	2215.3	569.5	666.7	720.7	636.9	563.2	487.2	442.6	520.2	539.0
57.5°	4747.9	2278.8	531.9	636.9	694.1	616.5	548.3	477.8	433.9	473.1	483.3
60°	5231.3	2419.0	491.9	605.6	661.1	585.9	535.0	480.2	436.3	466.1	468.4
62.5°	5608.8	2545.1	455.9	567.1	617.2	549.1	520.9	482.5	443.3	475.5	471.6
65°	5745.9	2483.2	411.2	509.9	555.4	508.4	501.3	484.2	443.3	481.0	472.4
67°	5464.7	2187.9	369.0	452.8	496.6	472.4	482.5	477.8	435.6	480.2	465.3
67.5°	5330.8	2083.8	358.0	443.3	481.0	461.4	477.8	474.8	433.2	478.6	461.4
70°	4396.2	1494.6	302.4	372.0	402.6	406.5	448.9	454.4	414.4	449.7	418.3
72.5°	3128.0	935.3	260.9	288.3	325.1	347.8	409.7	427.0	389.3	390.9	365.1
75°	1547.9	502.2	232.6	222.5	253.0	289.8	357.2	389.3	352.5	325.9	317.2
77.5°	522.5	284.4	196.6	179.4	196.6	232.6	296.1	340.0	311.0	275.8	270.3
80°	270.3	206.8	153.5	144.1	155.1	180.1	231.9	282.7	265.6	267.1	220.1
82.5°	168.4	126.1	110.5	109.7	117.5	137.9	170.7	229.6	227.9	195.1	141.8
85°	78.4	72.8	70.5	72.8	75.2	78.4	111.2	163.7	173.1	105.0	93.2
87.5°	32.9	32.1	28.2	30.6	33.7	32.9	44.6	69.8	97.2	65.8	60.4
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)