

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: P270377

Luminaire Tested: **NAV-AF-02-D-UNV-T2-7027**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P270377
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24136)
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-T2-7027
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 2700K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10357.6 lumens
Efficiency: N/A
Efficacy: 91.7 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type II - 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

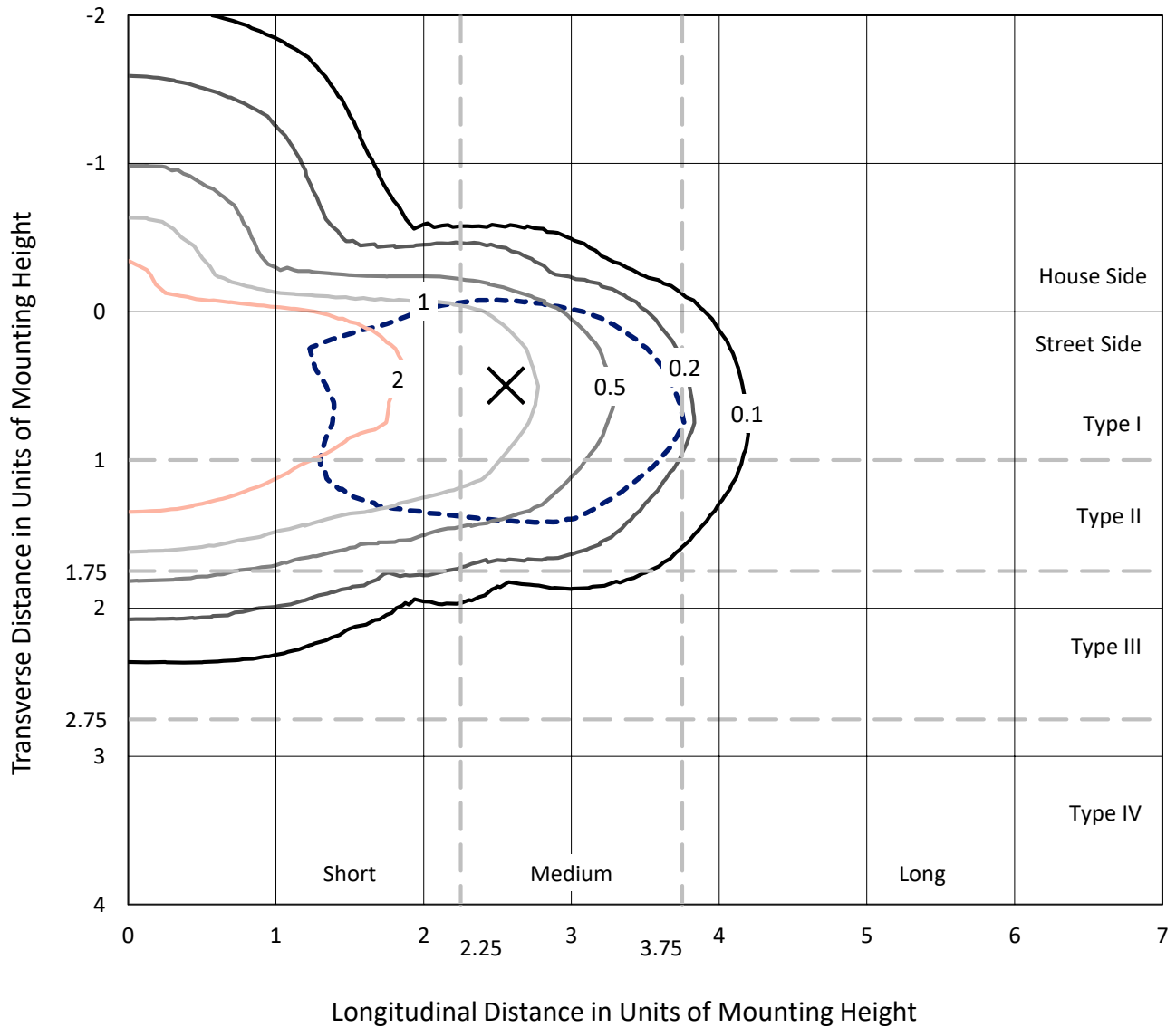


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Iso-Footcandle Lines of Horizontal Illumination

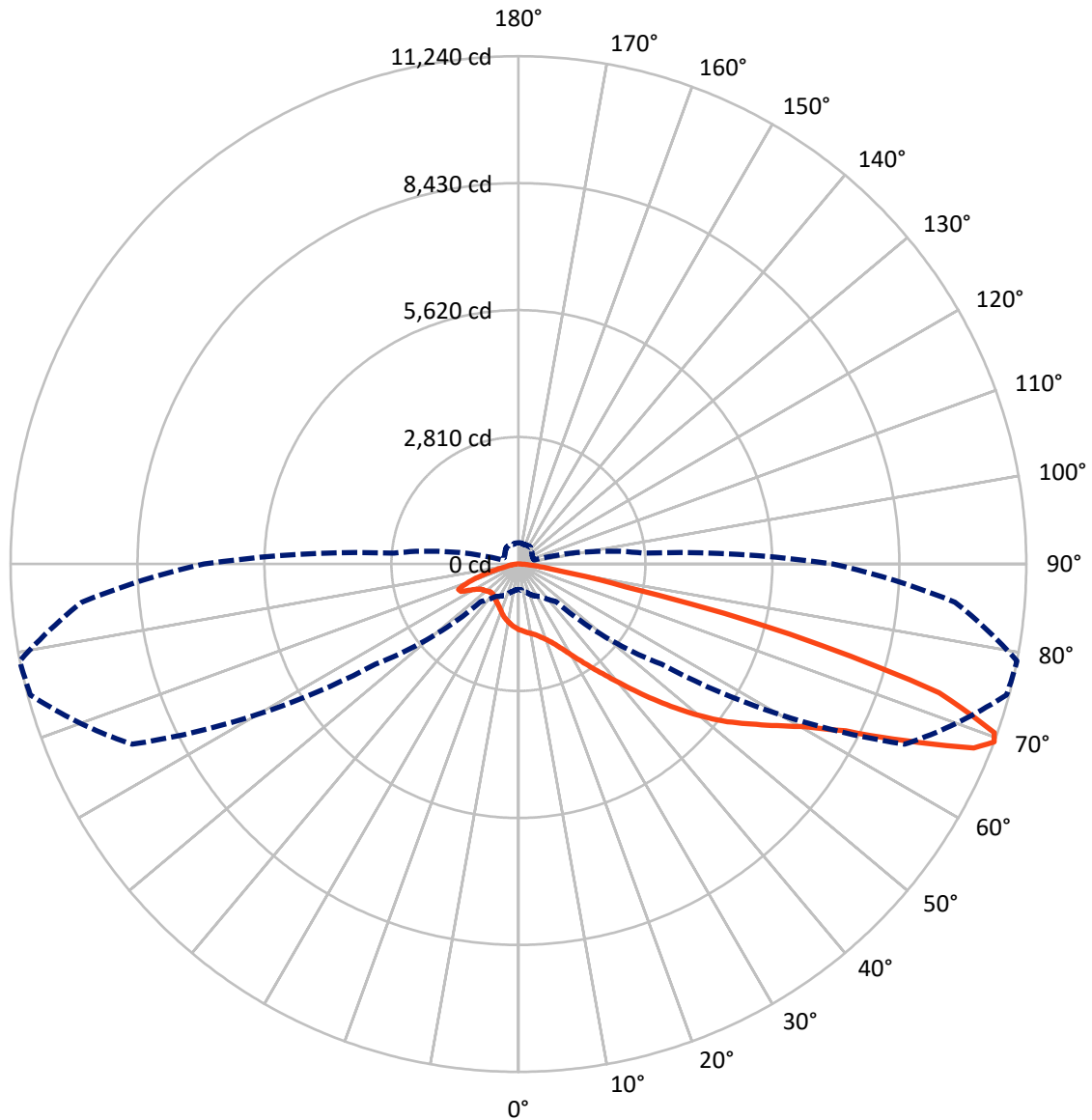
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.4 fc
 Type II - Medium - Full Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 79-Deg Lateral - - - Horizontal Cone Through 69-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1948.4	0.0	1948.4
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	8409.1	0.0	8409.1
	% Fixture	81.2	0.0	81.2
Total	Lumens	10357.6	0.0	10357.6
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	134.7	1.3
10°-20°	386.3	3.7
20°-30°	638.4	6.2
30°-40°	1033.7	10.0
40°-50°	1651.3	15.9
50°-60°	2364.8	22.8
60°-70°	2634.7	25.4
70°-80°	1318.1	12.7
80°-90°	195.6	1.9
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°	10357.6	100.0
0°-180°	10357.6	100.0



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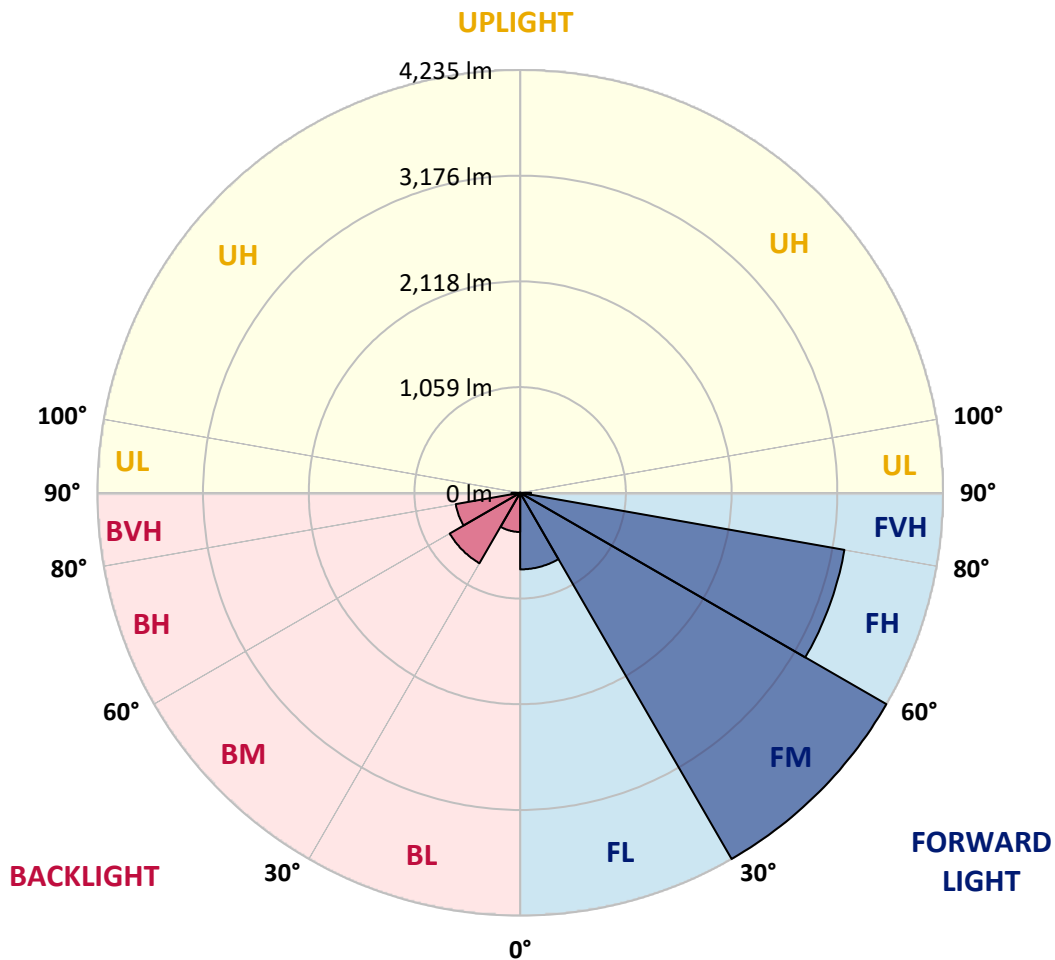
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	766.9	7.4			
FM	(30°-60°)	4235.2	40.9			
FH	(60°-80°)	3297.7	31.8			G2/5000
FVH	(80°-90°)	109.3	1.1			G2/225
BL	(0°-30°)	392.5	3.8	B1/500		
BM	(30°-60°)	814.5	7.9	B1/1000		
BH	(60°-80°)	655.1	6.3	B2/1000		G2/1000
BVH	(80°-90°)	86.3	0.8			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 II Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	65°	75°	79°	85°
0°	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5
2.5°	1595.7	1592.4	1591.7	1581.6	1576.2	1564.6	1537.4	1509.7	1484.0	1470.4	1456.2
5°	1729.2	1722.5	1719.1	1702.2	1687.2	1661.5	1618.8	1574.8	1528.7	1505.0	1476.5
7.5°	1809.9	1810.7	1810.7	1797.1	1782.1	1750.9	1696.8	1636.4	1568.0	1536.8	1492.2
10°	1816.7	1817.5	1827.5	1830.9	1834.2	1818.1	1768.0	1692.0	1604.0	1563.3	1505.0
12.5°	1749.5	1754.4	1771.3	1795.7	1830.2	1847.9	1826.2	1751.7	1649.9	1600.5	1529.4
15°	1659.4	1664.2	1685.8	1723.2	1778.7	1837.8	1868.1	1820.1	1710.4	1652.1	1565.2
17.5°	1615.4	1620.8	1635.8	1665.5	1719.7	1799.0	1890.6	1893.3	1781.5	1714.3	1608.0
20°	1594.4	1598.5	1617.5	1641.9	1683.2	1759.2	1892.5	1970.5	1866.1	1788.3	1660.2
22.5°	1642.6	1643.9	1653.4	1667.0	1694.7	1753.0	1891.2	2050.6	1971.9	1881.1	1727.3
25°	1783.5	1774.7	1768.0	1750.9	1757.8	1799.0	1912.9	2135.9	2107.5	2003.0	1816.7
27.5°	1950.2	1948.9	1931.3	1891.9	1866.9	1893.3	1974.6	2231.4	2273.4	2158.2	1934.0
30°	2135.9	2136.4	2118.3	2070.1	2019.3	2022.1	2072.7	2341.8	2472.0	2345.3	2078.3
32.5°	2330.4	2342.5	2308.6	2260.6	2199.0	2179.2	2213.9	2475.4	2701.7	2566.2	2245.7
35°	2562.8	2564.8	2527.6	2457.0	2395.4	2364.2	2396.0	2642.1	2966.7	2825.7	2449.6
37.5°	2804.0	2805.3	2766.7	2676.6	2598.6	2578.3	2613.6	2844.7	3247.2	3121.2	2689.4
40°	3001.1	3015.4	2984.9	2900.2	2821.5	2809.4	2860.3	3087.2	3605.5	3470.8	2974.7
42.5°	3224.7	3241.1	3204.4	3116.4	3054.1	3049.9	3129.2	3363.8	3962.1	3875.3	3297.9
45°	3476.9	3499.8	3449.1	3350.1	3297.3	3386.7	3391.6	3669.9	4372.7	4327.9	3661.9
47.5°	3752.0	3770.9	3729.7	3623.3	3565.6	3695.1	3648.2	4001.3	4816.5	4813.1	4055.6
50°	3964.1	3985.2	3989.2	3942.4	3882.0	3898.4	3930.3	4349.7	5258.9	5311.9	4462.8
52.5°	3925.5	3945.7	4037.3	4160.0	4256.8	4214.8	4253.5	4719.6	5686.6	5798.4	4849.7
55°	3613.7	3624.7	3796.1	4087.4	4500.1	4700.7	4703.3	5122.1	6093.2	6249.7	5216.9
57.5°	3052.0	3053.3	3276.3	3705.9	4358.4	5015.7	5413.5	5627.6	6517.4	6748.3	5672.3
60°	2159.5	2164.9	2424.5	2986.2	3850.9	4977.8	6177.1	6532.2	7008.7	7308.8	6259.2
62.5°	1282.1	1294.3	1490.1	1940.7	2860.3	4489.9	6628.5	8141.6	7732.3	8130.7	7198.4
65°	834.2	844.2	961.5	1187.9	1690.0	3266.7	6480.1	9700.2	9101.7	9423.7	8548.2
67.5°	642.4	650.6	742.7	879.5	1036.7	1765.9	5181.1	10026.7	10768.7	10869.0	9687.2
69°	564.5	571.2	639.1	770.4	872.8	1168.9	3861.1	9433.8	11185.4	11240.3	9701.4
70°	523.2	528.6	592.3	706.1	801.6	933.1	2955.2	8745.4	11033.1	11173.3	9421.7
72.5°	430.9	435.7	481.1	568.5	655.3	664.7	1309.2	6386.0	9290.2	9738.7	7972.8
75°	359.9	362.6	392.3	456.0	530.5	529.2	668.8	3617.1	5668.9	6203.6	4922.9
77.5°	300.2	302.2	321.9	361.2	418.8	416.8	470.9	1561.3	2503.1	2415.1	1694.7
80°	264.9	266.3	276.5	286.6	323.2	321.2	349.0	716.8	1018.5	941.2	641.0
82.5°	201.3	203.9	255.5	260.1	250.6	242.0	243.4	417.4	521.7	475.1	344.2
85°	113.8	114.5	164.0	191.8	218.2	164.0	157.9	215.5	257.5	225.7	150.5
87.5°	50.8	52.9	78.6	90.8	117.9	96.2	90.1	91.4	111.1	92.2	59.6
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°	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5	1453.5
2.5°	1442.7	1431.1	1404.1	1376.3	1348.4	1330.8	1312.6	1295.6	1288.9	1288.2	1275.2
5°	1448.7	1421.7	1359.9	1292.2	1227.9	1177.7	1135.6	1108.6	1082.2	1077.3	1065.8
7.5°	1450.9	1406.7	1306.5	1198.0	1099.7	1030.6	988.7	970.3	957.5	954.1	950.0
10°	1450.1	1387.8	1246.8	1098.4	986.6	934.4	918.8	922.9	928.4	931.1	931.1
12.5°	1461.0	1379.0	1187.2	1004.9	913.4	888.3	900.6	921.7	937.8	944.6	945.9
15°	1480.5	1373.6	1121.4	923.5	862.0	868.0	897.9	928.4	951.3	961.5	964.2
17.5°	1505.0	1366.1	1045.5	856.5	832.1	853.1	891.7	930.4	958.1	971.1	973.0
20°	1532.1	1355.3	966.9	806.4	805.7	832.1	870.7	914.1	943.8	958.1	957.5
22.5°	1568.7	1345.1	893.8	769.8	776.6	801.0	832.8	872.2	899.9	912.8	910.1
25°	1617.5	1335.6	828.1	737.2	743.3	759.5	782.0	811.8	831.4	838.2	833.4
27.5°	1683.2	1328.1	776.6	707.4	706.7	714.2	727.7	744.1	753.5	751.5	744.1
30°	1763.8	1320.7	738.5	681.0	671.6	670.9	677.0	686.5	692.6	680.3	674.3
32.5°	1853.9	1307.8	704.7	658.0	641.0	634.9	637.6	650.6	675.5	663.4	658.6
35°	1960.3	1292.9	670.9	632.9	620.0	608.5	610.6	638.3	714.2	705.3	700.7
37.5°	2088.4	1279.4	639.7	605.7	605.1	590.8	589.6	622.7	724.4	705.3	701.3
40°	2242.3	1276.6	611.8	576.0	586.9	581.5	576.6	597.0	668.1	629.5	622.0
42.5°	2427.8	1288.9	591.5	547.4	565.8	578.7	569.9	574.6	603.8	569.2	563.1
45°	2644.8	1322.0	576.6	522.5	543.5	576.6	566.6	562.3	567.2	548.1	544.2
47.5°	2897.6	1381.0	566.6	501.4	522.5	571.2	565.2	556.9	555.0	544.2	541.4
50°	3167.9	1460.3	559.7	482.5	503.5	561.7	564.5	552.9	549.6	544.8	543.5
52.5°	3436.1	1546.3	551.6	466.2	487.9	550.2	565.2	548.9	544.2	541.4	540.2
55°	3703.3	1635.8	536.6	451.9	476.5	536.6	564.5	543.5	538.1	538.1	538.1
57.5°	4049.5	1771.9	517.1	440.4	461.5	519.1	555.6	537.4	529.9	530.5	531.3
60°	4549.6	2000.3	495.3	427.6	441.7	498.6	542.0	526.4	517.8	520.4	521.0
62.5°	5385.1	2399.5	465.5	409.3	421.5	477.0	524.5	511.7	503.5	508.3	508.9
65°	6499.1	2882.7	426.2	386.2	400.5	452.7	502.2	494.0	485.2	496.8	496.0
67.5°	7178.7	3024.2	385.0	361.8	380.2	427.0	474.3	470.9	464.9	485.2	483.7
69°	6955.8	2768.0	361.2	346.2	365.9	409.3	456.7	455.4	450.6	470.3	468.9
70°	6609.5	2528.9	346.2	336.1	358.5	398.5	445.2	445.2	440.4	457.3	454.1
72.5°	5309.2	1875.7	311.7	310.4	332.7	368.7	413.9	417.4	414.7	420.8	417.4
75°	3117.1	1130.2	277.8	281.9	301.6	336.8	379.4	382.1	379.4	378.7	379.4
77.5°	1080.8	506.9	245.2	251.3	268.4	304.3	341.5	346.9	342.9	338.1	339.5
80°	422.8	294.7	210.1	218.8	233.1	267.6	303.5	307.0	300.8	300.2	294.7
82.5°	254.1	179.7	163.3	177.5	195.1	232.4	262.2	260.9	256.1	284.0	248.7
85°	110.4	99.6	119.3	133.5	142.3	174.1	221.6	215.5	203.9	179.7	175.4
87.5°	44.7	51.6	65.8	79.3	85.3	112.5	151.9	146.3	148.4	122.0	121.4
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)