

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: P196742

Luminaire Tested: **NAV-AF-02-D-UNV-T2-7030**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196742
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-T2-7030
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 3000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 11530.1 lumens
Efficiency: N/A
Efficacy: 102.0 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

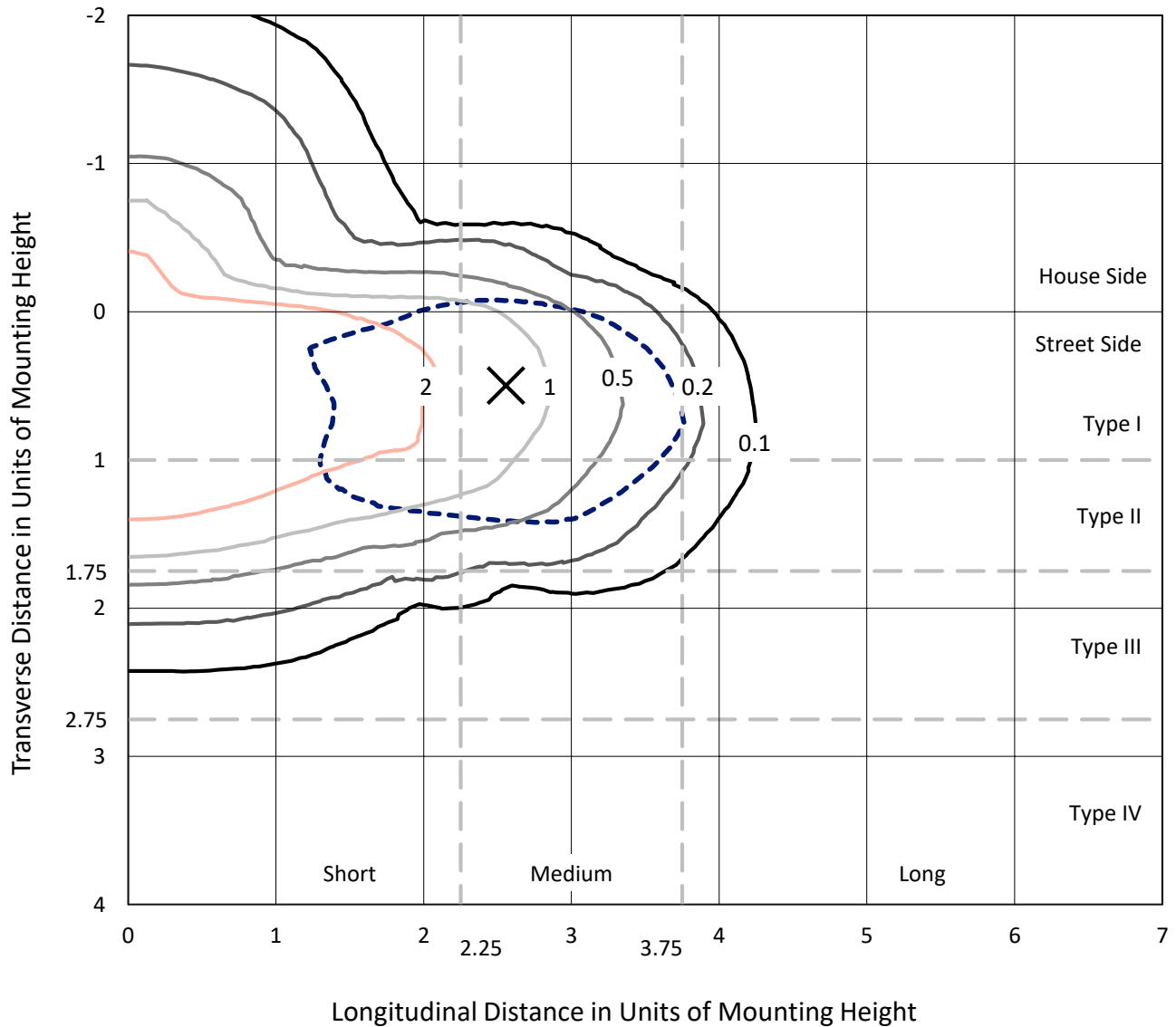
Input Watts (W): 113
Input Voltage (V): NR
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

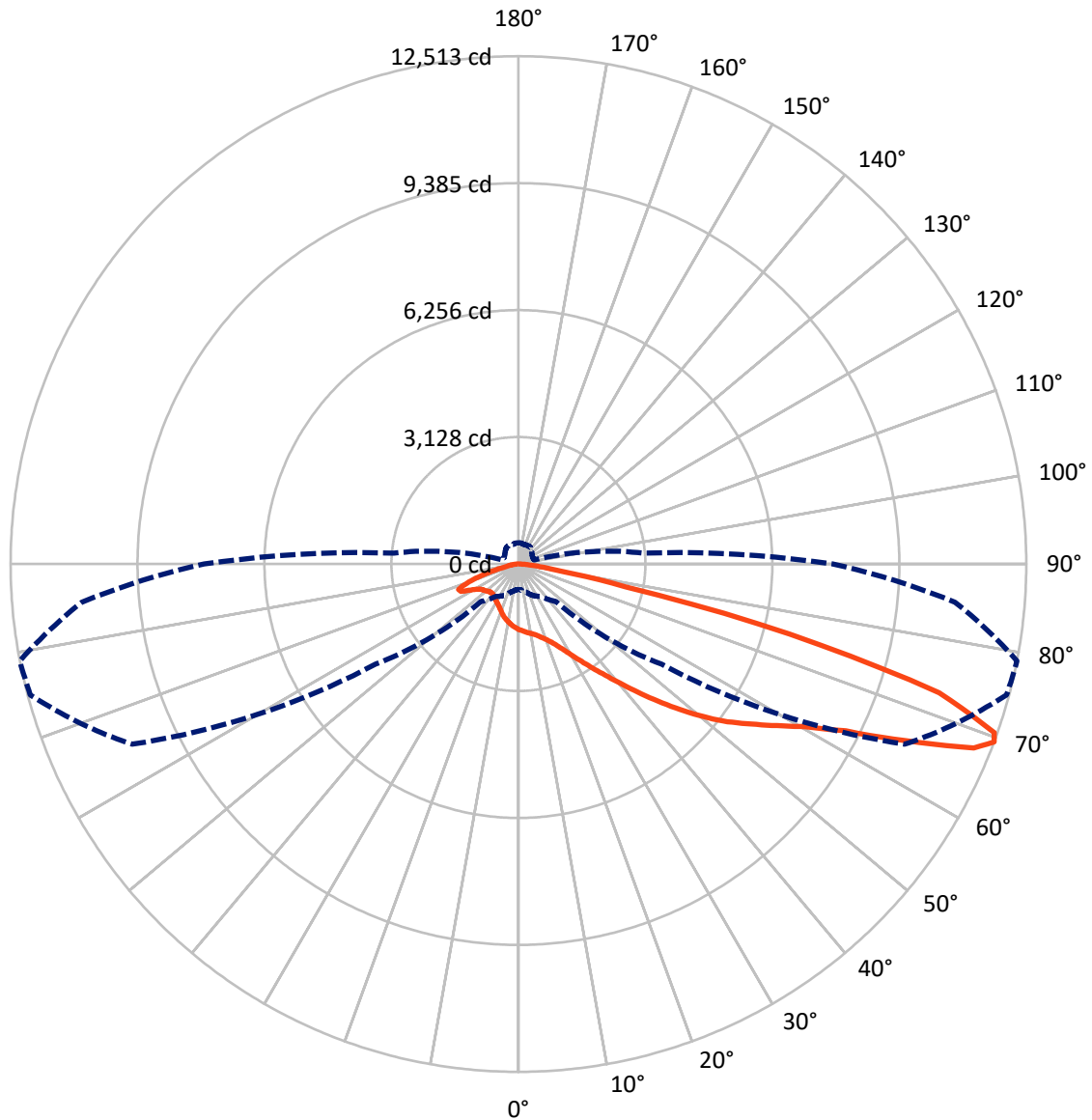
× Max cd
 - - - 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 4.9 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	2169.0	0.0	2169.0
	% Fixture	18.8	0.0	18.8
Street Side	Lumens	9361.1	0.0	9361.1
	% Fixture	81.2	0.0	81.2
Total	Lumens	11530.1	0.0	11530.1
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	150.0	1.3
10°-20°	430.0	3.7
20°-30°	710.6	6.2
30°-40°	1150.7	10.0
40°-50°	1838.2	15.9
50°-60°	2632.5	22.8
60°-70°	2933.0	25.4
70°-80°	1467.3	12.7
80°-90°	217.8	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°	11530.1	100.0
0°-180°	11530.1	100.0

Coefficient of Utilization



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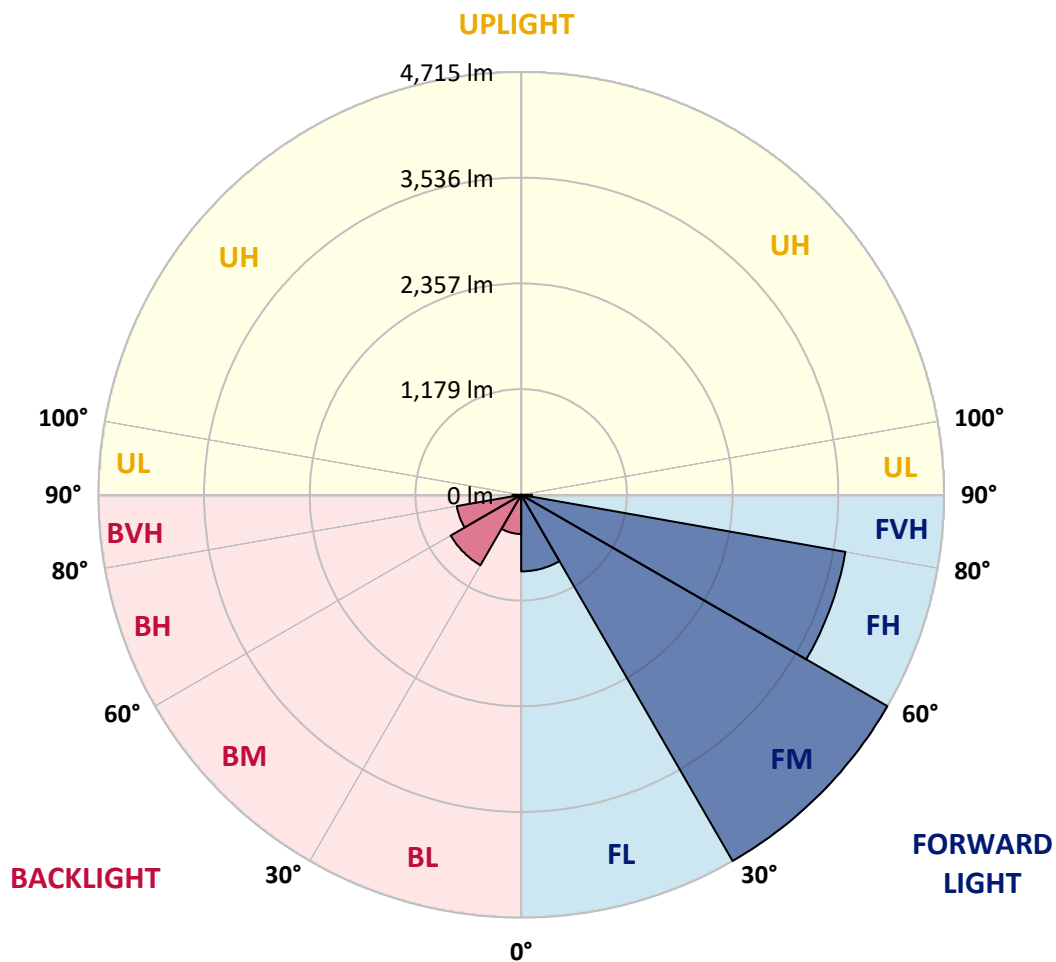
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	853.7	7.4			
FM (30°-60°)	4714.7	40.9			
FH (60°-80°)	3671.0	31.8			G2/5000
FVH (80°-90°)	121.7	1.1			G2/225
BL (0°-30°)	437.0	3.8	B1/500		
BM (30°-60°)	906.7	7.9	B1/1000		
BH (60°-80°)	729.3	6.3	B2/1000		G2/1000
BVH (80°-90°)	96.1	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°	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0
2.5°	1776.4	1772.7	1771.9	1760.6	1754.6	1741.7	1711.5	1680.6	1652.0	1636.9	1621.1
5°	1925.0	1917.5	1913.7	1894.9	1878.2	1849.6	1802.1	1753.1	1701.8	1675.4	1643.7
7.5°	2014.8	2015.7	2015.7	2000.5	1983.9	1949.1	1888.9	1821.7	1745.5	1710.8	1661.1
10°	2022.4	2023.2	2034.4	2038.2	2041.9	2023.9	1968.1	1883.5	1785.6	1740.3	1675.4
12.5°	1947.6	1953.0	1971.8	1999.0	2037.4	2057.1	2032.9	1950.0	1836.7	1781.7	1702.5
15°	1847.3	1852.6	1876.7	1918.3	1980.1	2045.8	2079.6	2026.1	1904.0	1839.1	1742.4
17.5°	1798.3	1804.3	1821.0	1854.1	1914.4	2002.7	2104.6	2107.6	1983.2	1908.4	1790.0
20°	1774.9	1779.5	1800.6	1827.8	1873.8	1958.3	2106.8	2193.6	2077.4	1990.7	1848.1
22.5°	1828.5	1830.0	1840.6	1855.7	1886.6	1951.5	2105.3	2282.7	2195.1	2094.1	1922.8
25°	1985.4	1975.6	1968.1	1949.1	1956.8	2002.7	2129.5	2377.7	2346.1	2229.8	2022.4
27.5°	2171.0	2169.5	2149.9	2106.1	2078.2	2107.6	2198.1	2484.0	2530.8	2402.5	2152.9
30°	2377.7	2378.3	2358.1	2304.5	2247.9	2251.0	2307.4	2606.9	2751.8	2610.8	2313.6
32.5°	2594.2	2607.7	2570.0	2516.5	2447.9	2425.9	2464.5	2755.6	3007.5	2856.7	2499.9
35°	2852.9	2855.2	2813.7	2735.2	2666.6	2631.8	2667.3	2941.2	3302.5	3145.6	2726.9
37.5°	3121.4	3122.9	3079.9	2979.6	2892.8	2870.2	2909.5	3166.7	3614.8	3474.5	2993.9
40°	3340.9	3356.8	3322.8	3228.5	3140.9	3127.4	3184.1	3436.7	4013.7	3863.7	3311.5
42.5°	3589.8	3608.0	3567.2	3469.2	3399.8	3395.2	3483.5	3744.6	4410.6	4314.0	3671.3
45°	3870.5	3896.0	3839.6	3729.4	3670.6	3770.1	3775.5	4085.4	4867.7	4817.9	4076.5
47.5°	4176.8	4197.8	4151.9	4033.5	3969.3	4113.4	4061.2	4454.3	5361.8	5358.0	4514.7
50°	4412.9	4436.3	4440.8	4388.7	4321.5	4339.7	4375.2	4842.1	5854.3	5913.2	4968.0
52.5°	4369.9	4392.4	4494.3	4630.9	4738.7	4691.9	4735.0	5253.9	6330.4	6454.8	5398.7
55°	4022.8	4035.0	4225.8	4550.1	5009.5	5232.8	5235.8	5702.0	6783.0	6957.2	5807.5
57.5°	3397.5	3399.0	3647.2	4125.4	4851.8	5583.5	6026.3	6264.7	7255.2	7512.3	6314.5
60°	2404.0	2410.0	2699.0	3324.3	4286.9	5541.3	6876.4	7271.7	7802.1	8136.2	6967.8
62.5°	1427.2	1440.8	1658.8	2160.4	3184.1	4998.2	7378.9	9063.3	8607.7	9051.2	8013.3
65°	928.6	939.8	1070.4	1322.4	1881.3	3636.5	7213.7	10798.3	10132.1	10490.5	9515.9
67.5°	715.1	724.2	826.8	979.1	1154.1	1965.8	5767.6	11161.8	11987.8	12099.5	10783.9
69°	628.4	635.9	711.4	857.6	971.6	1301.2	4298.2	10501.8	12451.7	12512.8	10799.7
70°	582.4	588.4	659.3	786.0	892.3	1038.7	3289.7	9735.4	12282.1	12438.2	10488.3
72.5°	479.7	485.0	535.6	632.9	729.5	740.0	1457.4	7108.9	10341.9	10841.2	8875.4
75°	400.6	403.6	436.7	507.6	590.6	589.1	744.5	4026.6	6310.7	6905.9	5480.2
77.5°	334.2	336.4	358.3	402.1	466.2	464.0	524.2	1738.0	2786.5	2688.5	1886.6
80°	294.9	296.4	307.8	319.0	359.8	357.6	388.5	798.0	1133.8	1047.8	713.6
82.5°	224.1	227.0	284.4	289.6	279.0	269.4	270.9	464.7	580.8	528.9	383.2
85°	126.7	127.5	182.6	213.5	242.9	182.6	175.8	239.9	286.7	251.2	167.5
87.5°	56.6	58.9	87.5	101.1	131.2	107.1	100.3	101.8	123.7	102.6	66.4
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°	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0	1618.0
2.5°	1606.0	1593.1	1563.0	1532.1	1501.1	1481.5	1461.2	1442.3	1434.8	1434.0	1419.6
5°	1612.7	1582.6	1513.9	1438.5	1366.9	1311.0	1264.2	1234.1	1204.7	1199.3	1186.5
7.5°	1615.1	1566.0	1454.4	1333.6	1224.2	1147.3	1100.6	1080.2	1065.9	1062.1	1057.5
10°	1614.3	1544.9	1387.9	1222.7	1098.3	1040.2	1022.8	1027.4	1033.5	1036.5	1036.5
12.5°	1626.4	1535.1	1321.6	1118.7	1016.8	988.9	1002.5	1026.0	1044.0	1051.5	1053.0
15°	1648.1	1529.1	1248.4	1028.1	959.6	966.3	999.5	1033.5	1059.0	1070.4	1073.4
17.5°	1675.4	1520.8	1163.9	953.5	926.3	949.7	992.7	1035.7	1066.6	1081.0	1083.2
20°	1705.5	1508.7	1076.4	897.7	896.9	926.3	969.3	1017.6	1050.7	1066.6	1065.9
22.5°	1746.3	1497.4	995.0	856.9	864.5	891.7	927.1	970.9	1001.8	1016.1	1013.1
25°	1800.6	1486.8	921.8	820.7	827.5	845.5	870.5	903.7	925.5	933.1	927.8
27.5°	1873.8	1478.5	864.5	787.5	786.7	795.1	810.1	828.3	838.8	836.6	828.3
30°	1963.5	1470.2	822.1	758.1	747.6	746.8	753.6	764.2	771.0	757.3	750.6
32.5°	2063.8	1455.9	784.5	732.5	713.6	706.8	709.8	724.2	752.0	738.5	733.2
35°	2182.2	1439.3	746.8	704.5	690.2	677.4	679.7	710.6	795.1	785.2	780.0
37.5°	2324.8	1424.2	712.1	674.3	673.6	657.7	656.3	693.2	806.4	785.2	780.7
40°	2496.1	1421.1	681.1	641.2	653.3	647.3	641.9	664.6	743.7	700.8	692.4
42.5°	2702.7	1434.8	658.5	609.4	629.9	644.2	634.4	639.7	672.2	633.6	626.8
45°	2944.2	1471.7	641.9	581.6	605.0	641.9	630.7	626.0	631.4	610.2	605.8
47.5°	3225.6	1537.3	630.7	558.2	581.6	635.9	629.2	620.0	617.8	605.8	602.7
50°	3526.5	1625.6	623.1	537.1	560.5	625.3	628.4	615.5	611.8	606.5	605.0
52.5°	3825.1	1721.4	614.0	519.0	543.1	612.5	629.2	611.0	605.8	602.7	601.3
55°	4122.5	1821.0	597.4	503.1	530.4	597.4	628.4	605.0	599.0	599.0	599.0
57.5°	4507.9	1972.5	575.6	490.3	513.7	577.9	618.5	598.2	589.9	590.6	591.4
60°	5064.6	2226.8	551.4	476.0	491.7	555.1	603.4	586.0	576.4	579.3	580.0
62.5°	5994.7	2671.1	518.2	455.6	469.2	531.0	583.9	569.6	560.5	565.8	566.5
65°	7234.8	3209.0	474.5	429.9	445.8	503.9	559.0	549.9	540.1	553.0	552.2
67.5°	7991.4	3366.6	428.6	402.8	423.2	475.3	528.0	524.2	517.5	540.1	538.5
69°	7743.2	3081.4	402.1	385.4	407.3	455.6	508.4	507.0	501.6	523.5	522.0
70°	7357.7	2815.2	385.4	374.1	399.1	443.6	495.6	495.6	490.3	509.1	505.5
72.5°	5910.2	2088.0	347.0	345.5	370.4	410.4	460.8	464.7	461.6	468.4	464.7
75°	3470.0	1258.2	309.3	313.8	335.7	374.9	422.4	425.4	422.4	421.6	422.4
77.5°	1203.2	564.3	273.0	279.8	298.8	338.7	380.2	386.2	381.7	376.4	377.9
80°	470.7	328.1	233.9	243.6	259.5	297.9	337.9	341.8	334.9	334.2	328.1
82.5°	282.9	200.0	181.8	197.6	217.2	258.7	291.9	290.4	285.1	316.1	276.9
85°	122.9	110.9	132.8	148.6	158.4	193.8	246.7	239.9	227.0	200.0	195.3
87.5°	49.8	57.4	73.2	88.3	95.0	125.2	169.1	162.9	165.2	135.8	135.1
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)