

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: P196112

Luminaire Tested: **NAV-AF-02-D-UNV-SL3-800-HSS**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196112
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24263)
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-SL3-800-HSS
Description: NAVION ROADWAY AND AREA LUMINAIRE
(2) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE III
SPILL LIGHT ELIMINATOR OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8545.7 lumens
Efficiency: N/A
Efficacy: 100.5 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U0 - G2

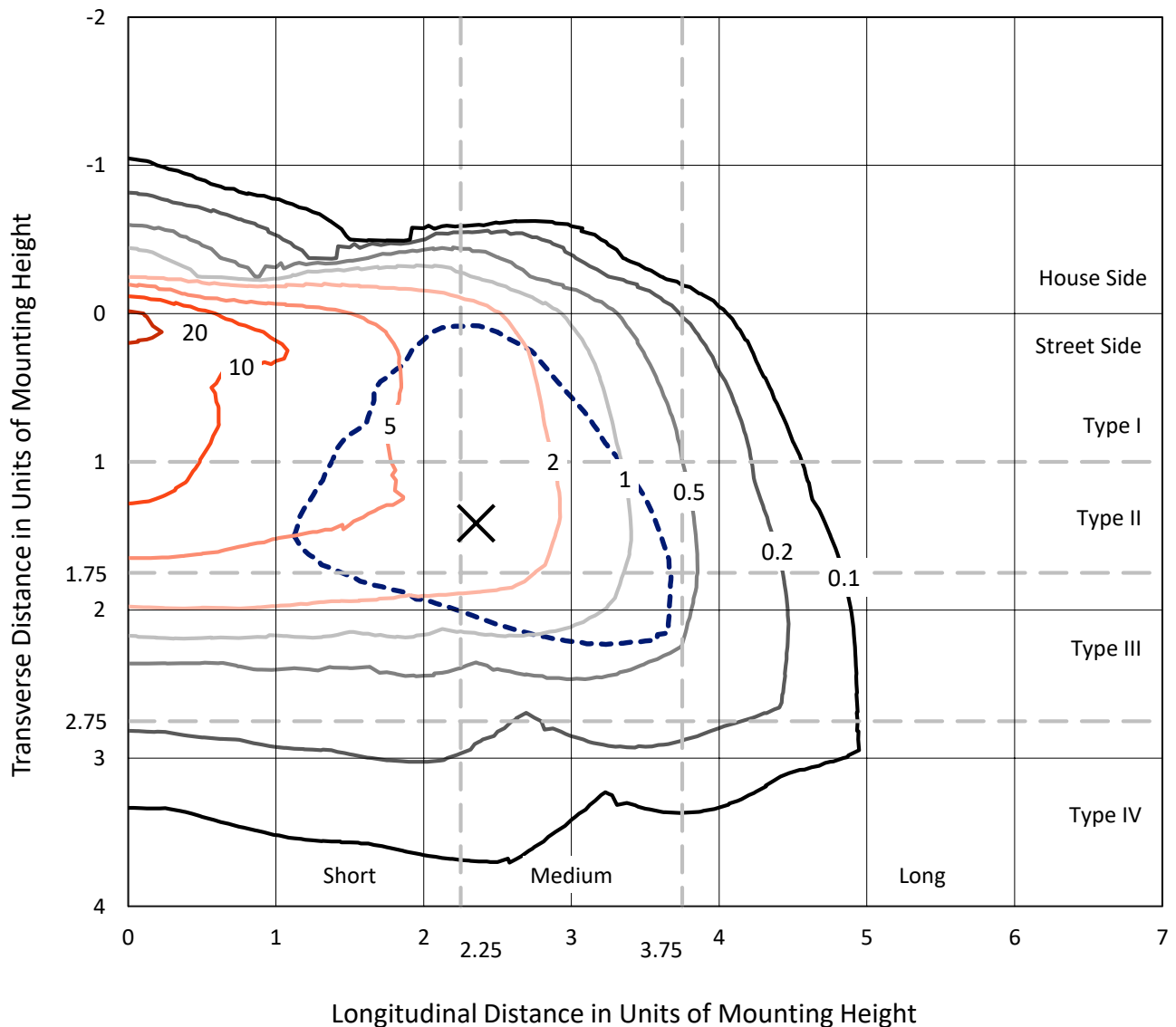
Input Watts (W): 85
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

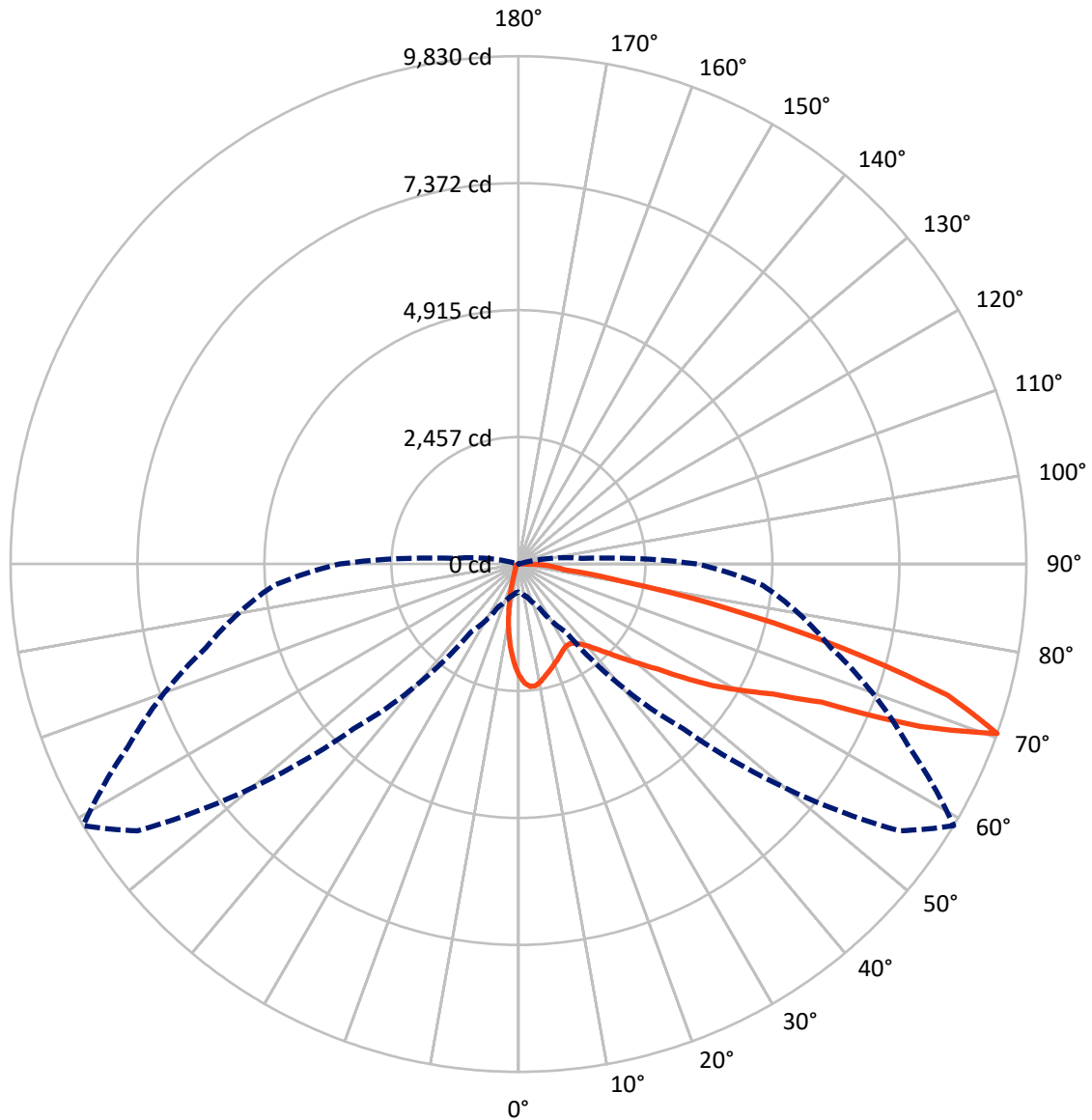
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 23 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 59-Deg Lateral - - - Horizontal Cone Through 70-Deg Vertical

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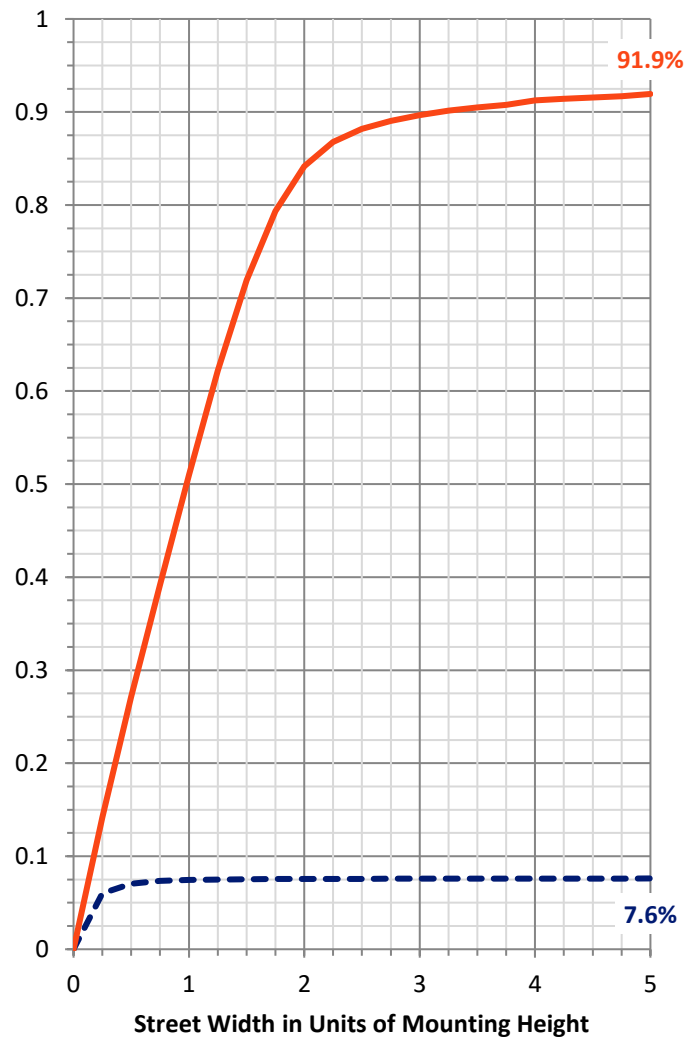
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	656.9	0.0	656.9
	% Fixture	7.7	0.0	7.7
Street Side	Lumens	7888.8	0.0	7888.8
	% Fixture	92.3	0.0	92.3
Total	Lumens	8545.7	0.0	8545.7
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	177.7	2.1
10°-20°	372.7	4.4
20°-30°	504.5	5.9
30°-40°	728.1	8.5
40°-50°	1209.2	14.1
50°-60°	1849.6	21.6
60°-70°	2300.4	26.9
70°-80°	1271.7	14.9
80°-90°	131.9	1.5
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°	8545.7	100.0
0°-180°	8545.7	100.0



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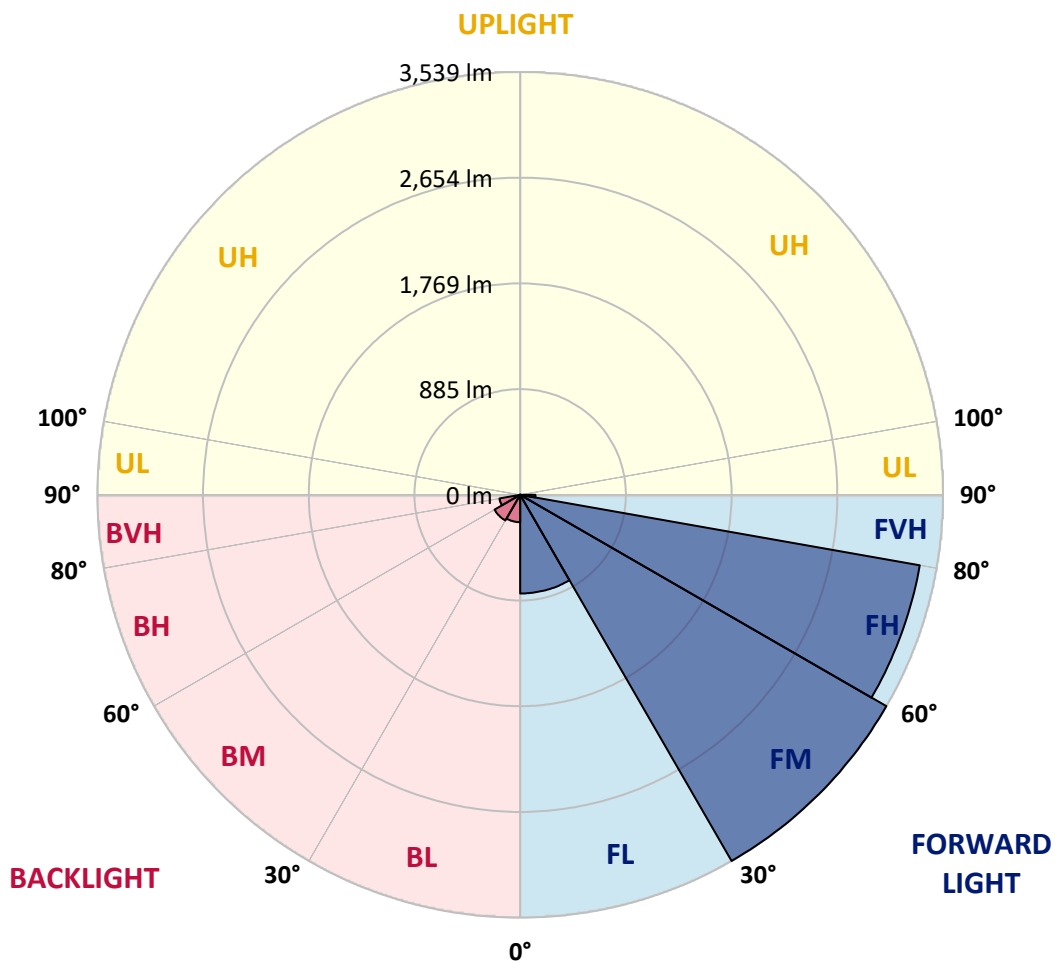
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	826.0	9.7			
FM	(30°-60°)	3538.9	41.4			
FH	(60°-80°)	3395.9	39.7			G2/5000
FVH	(80°-90°)	128.1	1.5			G2/225
BL	(0°-30°)	228.9	2.7	B1/500		
BM	(30°-60°)	248.0	2.9	B1/1000		
BH	(60°-80°)	176.2	2.1	B1/500		G1/500
BVH	(80°-90°)	3.8	0.0			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	59°	65°	75°	85°
0°	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9
2.5°	2442.6	2438.7	2422.7	2419.4	2401.4	2365.3	2323.3	2306.7	2272.5	2218.3	2158.3
5°	2483.2	2485.2	2486.5	2479.3	2476.8	2447.1	2400.8	2380.7	2335.0	2246.0	2136.4
7.5°	2331.1	2336.2	2352.4	2359.4	2390.4	2402.0	2392.4	2379.5	2343.4	2238.2	2084.2
10°	2170.6	2180.2	2197.6	2209.3	2247.3	2278.2	2317.6	2320.8	2313.1	2212.4	2025.5
12.5°	2032.6	2041.6	2060.9	2084.2	2122.8	2162.8	2221.5	2242.1	2267.9	2195.8	1983.6
15°	1914.0	1916.6	1935.3	1964.3	2015.2	2070.0	2139.6	2169.9	2220.2	2189.3	1951.4
17.5°	1810.2	1810.8	1823.1	1849.5	1911.4	1983.6	2064.8	2104.8	2168.7	2180.2	1923.0
20°	1741.9	1741.3	1741.9	1756.1	1810.8	1896.6	1995.3	2037.1	2119.0	2169.3	1894.0
22.5°	1718.7	1715.5	1700.7	1695.4	1730.3	1805.7	1923.7	1978.5	2074.5	2166.1	1872.7
25°	1747.0	1745.1	1713.5	1683.9	1687.1	1734.1	1850.8	1917.8	2039.7	2177.7	1867.6
27.5°	1838.5	1834.7	1786.4	1728.4	1691.6	1699.9	1796.7	1867.0	2012.0	2206.0	1874.7
30°	1958.4	1959.2	1907.6	1837.3	1750.9	1703.2	1767.7	1834.0	1993.3	2248.5	1890.1
32.5°	2091.9	2091.3	2054.5	1973.3	1863.1	1762.5	1780.5	1836.6	1995.9	2311.2	1919.8
35°	2229.9	2222.8	2210.6	2139.0	2010.1	1866.3	1839.3	1880.5	2023.0	2393.6	1970.1
37.5°	2389.1	2386.5	2398.8	2323.3	2191.9	2019.1	1942.4	1970.1	2091.3	2515.4	2051.3
40°	2642.5	2628.3	2634.1	2531.6	2396.9	2224.7	2086.8	2093.9	2200.3	2676.7	2179.6
42.5°	3125.3	3067.9	2960.3	2768.2	2622.4	2452.9	2275.7	2263.4	2354.3	2871.9	2348.5
45°	3702.3	3636.6	3365.1	3029.3	2848.1	2697.9	2509.0	2476.2	2543.9	3104.7	2566.4
47.5°	4183.9	4113.0	3753.2	3302.0	3077.6	2950.6	2767.5	2728.8	2770.8	3374.8	2828.2
50°	4348.3	4308.9	3993.1	3528.9	3309.0	3234.3	3091.8	3027.3	3037.7	3666.2	3133.7
52.5°	4272.9	4259.3	4047.8	3684.3	3523.0	3547.6	3447.0	3379.3	3367.8	3984.7	3471.5
55°	4113.6	4107.1	4004.0	3770.6	3712.0	3834.4	3945.3	3886.7	3777.0	4323.1	3750.6
57.5°	3886.0	3910.5	3984.7	3936.9	3944.1	4137.4	4408.2	4438.5	4274.7	4592.5	3957.6
60°	3278.1	3343.8	3683.6	4115.5	4446.3	4641.5	4903.9	4960.7	4696.4	4777.0	4196.8
62.5°	2423.3	2517.4	3001.5	3795.1	4722.8	5600.1	5563.4	5538.3	5098.6	5023.8	4631.9
65°	1423.4	1533.6	1943.0	2965.4	4305.7	6216.5	6794.7	6446.6	5711.7	5537.0	5324.9
67.5°	709.1	709.7	894.8	1565.2	3182.1	5786.5	8592.1	8391.0	7015.2	6293.2	5598.2
70°	545.3	560.2	662.1	909.6	1609.1	4506.8	9004.0	9829.8	8325.2	6259.6	4749.9
72.5°	462.3	471.9	589.2	791.7	1203.0	2474.2	7794.6	8688.7	7944.1	5288.8	3501.2
75°	332.7	340.3	521.5	718.1	1107.5	1227.4	5346.9	6444.1	5960.5	3720.4	1926.9
77.5°	82.6	81.8	181.8	582.8	990.8	1022.4	3067.9	4132.3	3419.9	1523.4	495.1
80°	36.7	35.5	41.2	122.4	921.9	965.1	1349.3	2086.8	1311.9	246.9	151.5
82.5°	25.8	24.4	25.8	45.1	308.1	895.4	815.5	904.5	480.3	84.5	64.4
85°	8.4	7.8	14.2	38.1	86.3	516.4	795.5	675.6	357.1	36.1	43.2
87.5°	1.3	1.3	5.1	20.7	25.2	172.2	466.8	468.0	160.5	21.3	19.3
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°	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9	2160.9
2.5°	2128.0	2090.0	2036.5	1983.0	1934.6	1885.0	1845.0	1826.4	1818.0	1806.3	1781.2
5°	2079.0	2010.1	1892.8	1777.4	1669.7	1566.5	1478.2	1427.9	1373.8	1371.2	1344.8
7.5°	2000.4	1902.4	1717.3	1538.2	1373.8	1216.5	1081.1	993.4	933.4	896.1	870.3
10°	1912.7	1787.0	1542.0	1289.9	1066.2	856.1	682.1	568.6	499.6	464.8	444.8
12.5°	1843.1	1685.1	1369.2	1052.1	771.6	530.6	368.8	286.2	249.5	235.3	228.8
15°	1783.1	1591.7	1207.5	839.3	515.1	304.9	213.4	186.3	180.6	180.6	179.8
17.5°	1722.5	1501.4	1050.2	630.4	324.3	199.9	168.3	164.4	165.0	166.9	166.9
20°	1665.2	1415.7	898.7	449.3	212.8	159.9	152.8	151.5	153.4	156.0	155.4
22.5°	1618.7	1340.3	756.9	308.8	163.8	145.1	140.6	138.6	139.9	141.8	141.2
25°	1585.9	1275.8	626.7	215.3	142.5	132.2	126.9	124.4	123.2	124.4	123.8
27.5°	1565.9	1221.6	504.1	161.8	127.7	119.3	112.8	107.6	104.4	104.4	103.1
30°	1552.9	1170.7	395.2	134.1	115.4	106.4	97.4	90.2	85.1	83.8	83.2
32.5°	1552.3	1126.9	295.2	118.7	103.8	93.5	82.6	73.4	67.7	66.4	65.8
35°	1568.5	1091.4	217.3	107.0	93.5	81.2	68.9	59.3	54.1	54.1	53.5
37.5°	1610.3	1070.8	164.4	98.0	85.1	70.9	58.0	49.0	44.5	45.7	45.7
40°	1688.4	1066.9	134.1	90.9	78.1	61.9	47.1	40.0	38.1	40.0	40.0
42.5°	1807.7	1087.5	119.3	85.7	71.6	52.9	39.3	34.2	33.6	35.5	35.5
45°	1963.0	1128.1	110.9	81.2	64.4	43.9	32.8	29.7	29.1	31.6	31.6
47.5°	2151.3	1182.9	103.1	76.1	57.4	36.1	27.7	25.2	25.2	27.7	28.3
50°	2374.3	1257.1	95.4	70.9	51.6	30.3	23.2	21.3	21.9	24.4	25.2
52.5°	2630.8	1347.9	88.3	66.4	45.1	24.4	19.3	18.0	18.7	21.3	21.9
55°	2852.0	1427.3	79.9	61.9	36.7	19.9	16.2	15.4	16.2	19.3	19.3
57.5°	3044.7	1503.3	72.2	54.8	29.1	16.2	12.9	12.9	14.2	17.4	18.0
60°	3300.7	1623.2	65.8	46.4	21.9	12.3	10.3	10.9	12.9	15.4	16.2
62.5°	3753.8	1827.0	57.4	38.7	16.2	9.7	8.4	9.0	11.6	14.8	15.4
65°	4321.1	2019.7	47.7	32.2	12.3	7.1	6.4	8.4	11.6	14.8	15.4
67.5°	4263.1	1756.7	37.4	25.8	9.0	5.8	5.1	7.8	10.9	14.8	15.4
70°	3457.4	1231.3	27.7	17.4	7.1	5.1	5.1	7.8	10.9	14.2	14.8
72.5°	2398.1	685.3	21.3	11.6	6.4	5.1	4.5	7.1	10.3	14.2	14.8
75°	1141.1	210.1	16.8	8.4	5.8	4.5	3.9	7.1	10.3	14.2	14.8
77.5°	219.2	53.5	13.5	7.1	5.1	4.5	3.9	6.4	10.3	13.5	14.2
80°	74.2	23.8	10.9	6.4	5.1	4.5	3.9	6.4	9.7	12.9	13.5
82.5°	40.6	13.5	9.7	5.8	5.1	3.9	3.3	5.8	9.0	12.9	13.5
85°	31.6	9.7	7.8	5.8	5.1	3.9	3.3	5.8	9.0	12.3	12.9
87.5°	16.2	7.1	6.4	5.8	5.1	3.9	3.3	5.1	8.4	11.6	12.9
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)