

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: P196282

Luminaire Tested: **NAV-AF-04-D-UNV-T2R-800**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P196282  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (P24459)  
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-T2R-800  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(4) 70 CRI, 4000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 21130.1 lumens  
Efficiency: N/A  
Efficacy: 123.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G3

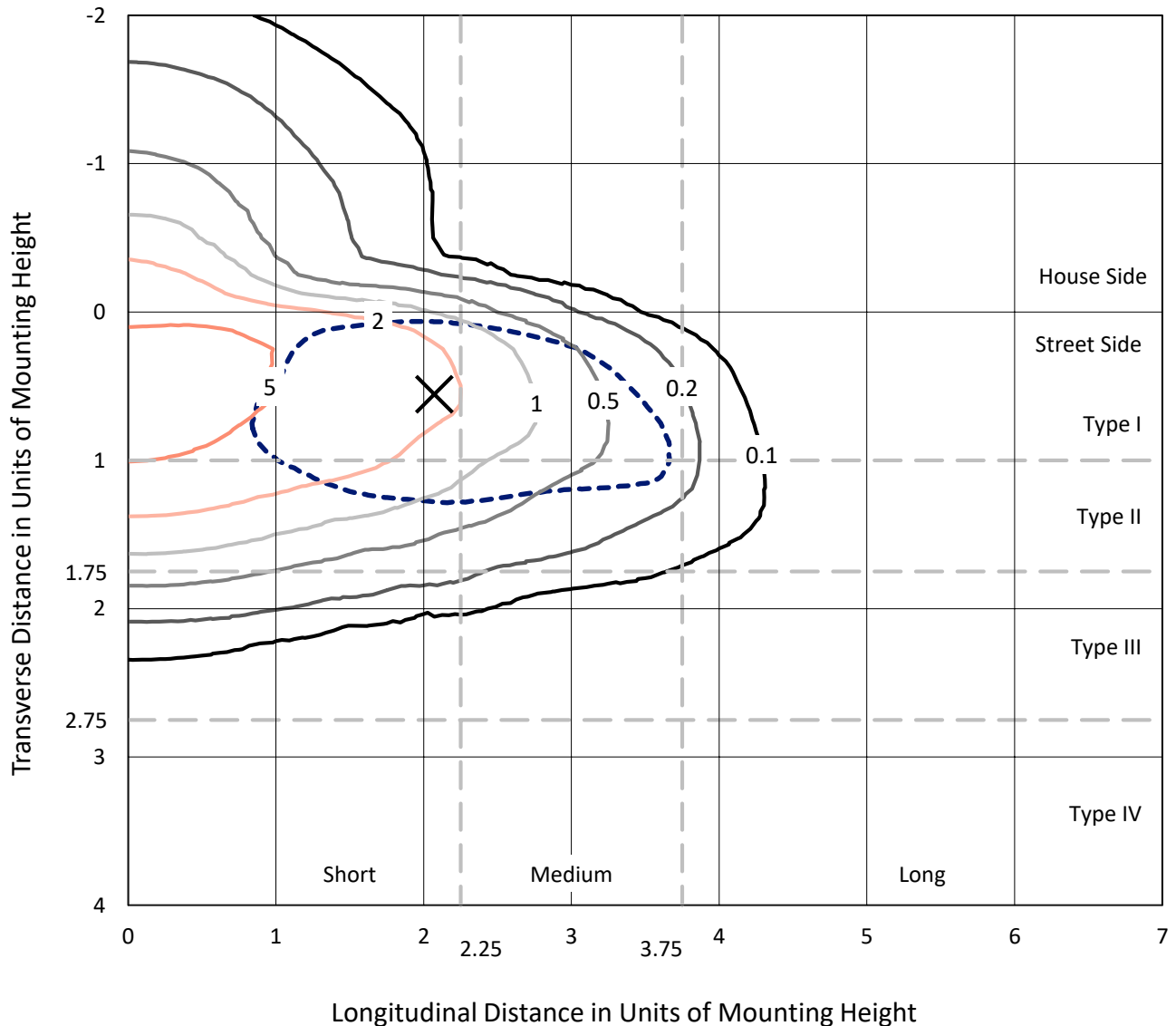
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

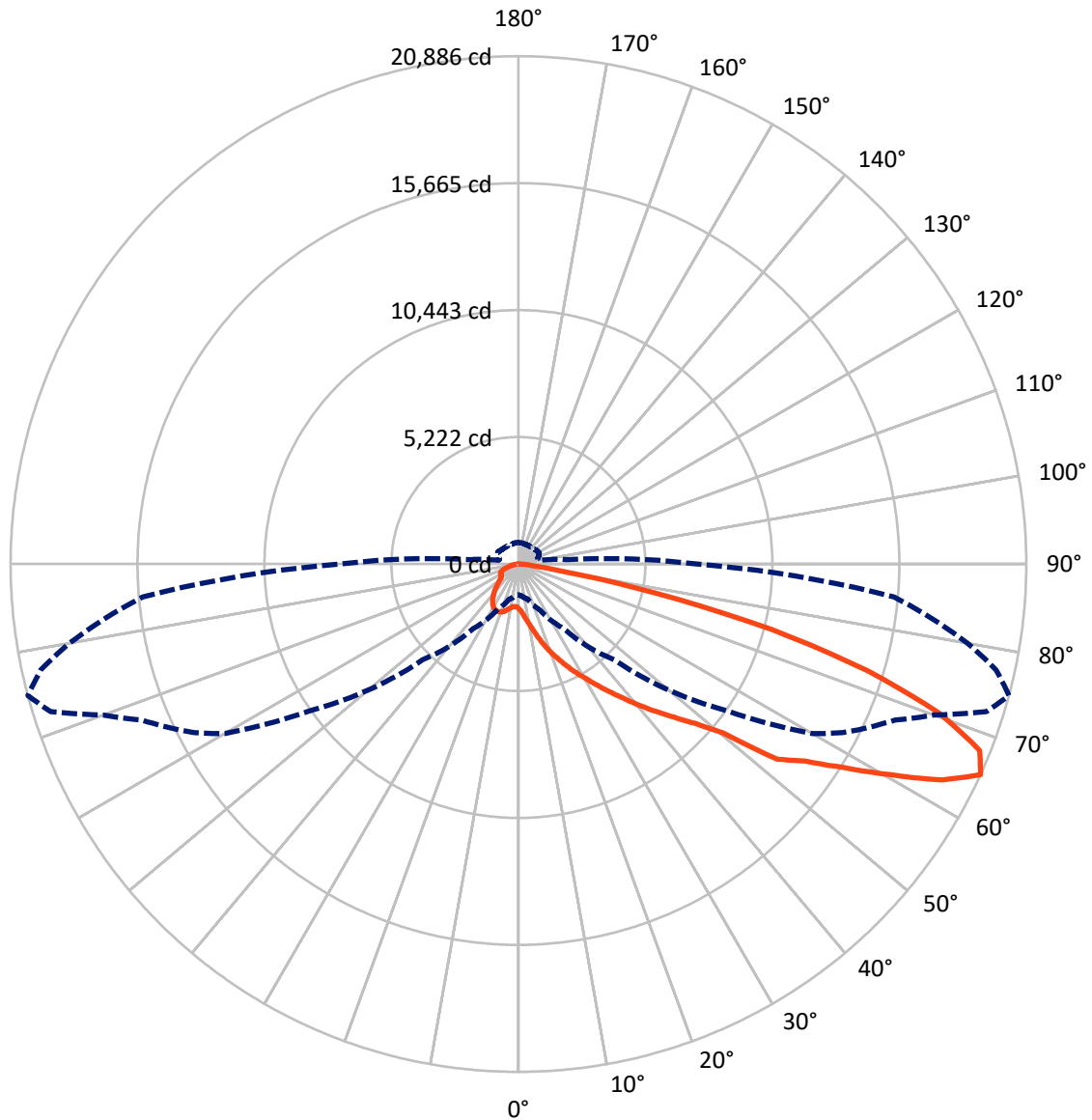
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.4 fc  
 Type II - Short - Semi-Cutoff

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### Luminous Intensity Polar Plot



— Vertical Plane Through 75-Deg Lateral      - - - Horizontal Cone Through 65-Deg Vertical

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**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3175.1	0.0	3175.1
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	17955.0	0.0	17955.0
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	21130.1	0.0	21130.1
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	216.1	1.0
10°-20°	825.5	3.9
20°-30°	1666.0	7.9
30°-40°	2829.4	13.4
40°-50°	3946.3	18.7
50°-60°	4836.7	22.9
60°-70°	4550.6	21.5
70°-80°	1995.4	9.4
80°-90°	264.0	1.2
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°	21130.1	100.0
0°-180°	21130.1	100.0



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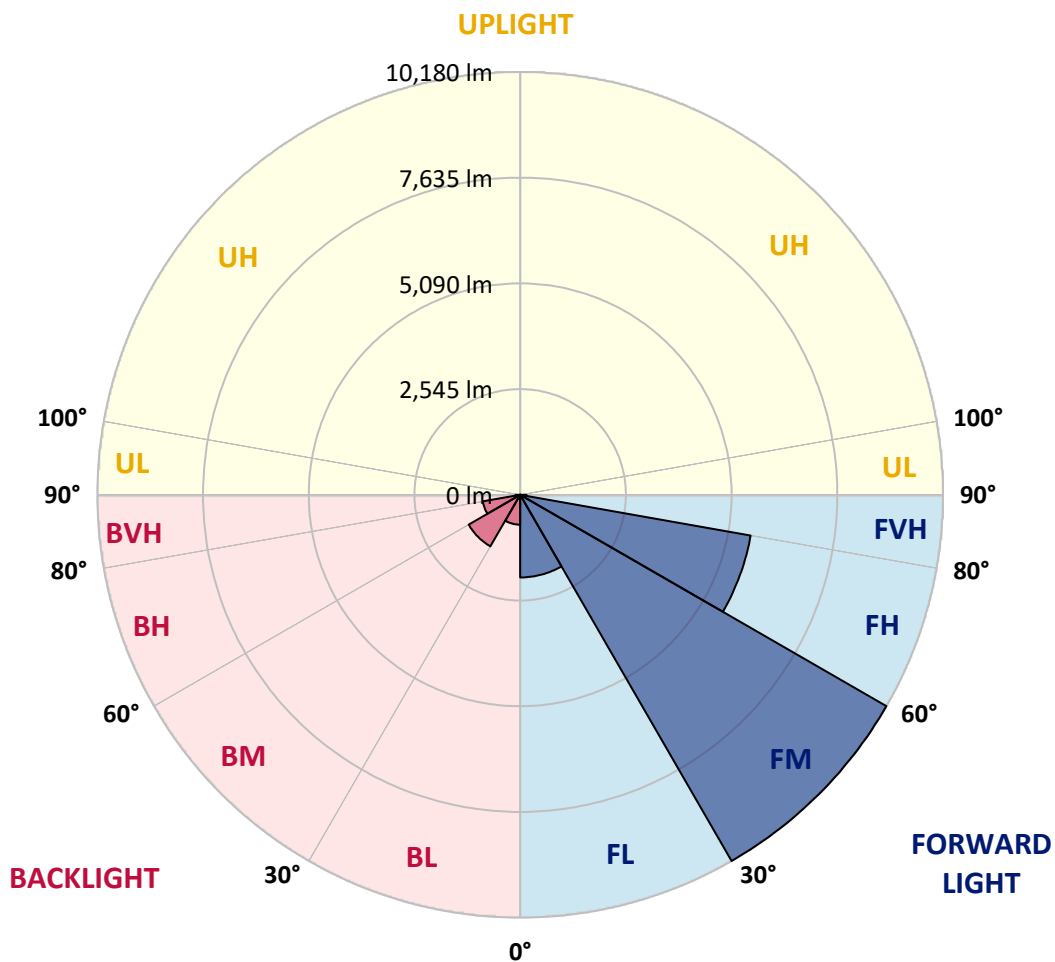
CATALOG NUMBER: NAV-AF-04-D-UNV-T2R-800

**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1988.9	9.4			
FM (30°-60°)	10179.5	48.2			
FH (60°-80°)	5633.5	26.7			G3/7500
FVH (80°-90°)	153.1	0.7			G2/225
BL (0°-30°)	718.8	3.4	B2/1000		
BM (30°-60°)	1432.8	6.8	B2/2500		
BH (60°-80°)	912.6	4.3	B2/1000		G2/1000
BVH (80°-90°)	111.0	0.5			G2/225
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B2-U0-G3**

Type II Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8
2.5°	2305.3	2278.4	2281.1	2243.4	2188.3	2127.8	2078.1	2051.2	2028.4	2021.7	1984.0
5°	3015.0	2981.4	2969.3	2883.3	2754.3	2601.1	2449.1	2390.0	2341.5	2312.0	2239.4
7.5°	3595.7	3578.3	3562.1	3482.8	3355.1	3158.9	2914.2	2826.8	2746.2	2657.4	2570.1
10°	3990.9	3984.2	3977.4	3922.4	3816.1	3645.5	3382.0	3286.5	3185.8	3072.8	2958.6
12.5°	4289.3	4289.3	4294.7	4249.0	4184.5	4052.7	3813.5	3724.8	3622.6	3504.3	3373.9
15°	4489.6	4494.9	4523.2	4536.7	4503.0	4418.3	4208.6	4130.7	4033.9	3917.0	3788.0
17.5°	4622.7	4633.5	4675.1	4719.5	4762.4	4732.9	4577.0	4504.4	4417.0	4309.5	4188.5
20°	4931.9	4918.4	4919.8	4906.3	4969.5	4992.3	4906.3	4845.8	4776.0	4677.7	4567.6
22.5°	5581.1	5555.5	5489.7	5321.7	5245.1	5237.0	5185.8	5153.6	5099.8	5038.0	4927.9
25°	6427.9	6398.4	6267.9	5991.1	5762.6	5551.6	5457.4	5437.3	5402.3	5360.7	5281.3
27.5°	7303.1	7270.7	7102.8	6753.2	6454.8	6028.7	5735.7	5708.8	5676.6	5659.1	5621.4
30°	8073.2	8038.2	7872.9	7518.1	7157.8	6649.7	6110.7	6016.6	5961.5	5966.9	5945.4
32.5°	8749.4	8718.4	8532.9	8171.3	7805.7	7312.5	6597.3	6450.8	6327.2	6281.4	6297.6
35°	9316.6	9288.4	9085.4	8721.2	8352.8	7942.8	7223.7	7003.2	6801.6	6675.3	6660.4
37.5°	9650.0	9633.8	9491.3	9182.2	8816.6	8515.5	7925.4	7680.7	7383.7	7199.5	7118.8
40°	9631.2	9648.6	9624.4	9484.6	9201.0	8981.9	8656.6	8414.7	8124.3	7850.1	7686.1
42.5°	9356.9	9381.2	9490.0	9562.5	9485.9	9352.9	9295.1	9115.0	8854.3	8563.8	8336.6
45°	8980.6	9002.1	9143.2	9405.3	9624.4	9662.1	9854.3	9764.3	9543.8	9296.5	9046.5
47.5°	8403.8	8445.6	8609.6	9026.2	9547.8	9910.8	10323.4	10365.0	10237.4	10033.1	9799.2
50°	7569.1	7624.3	7854.1	8446.9	9257.5	10166.1	11021.1	11179.6	11128.6	10921.5	10685.0
52.5°	6714.2	6769.4	7075.9	7706.3	8789.7	10270.9	11707.9	12113.9	12406.9	12620.7	12662.3
55°	5824.4	5886.3	6222.3	6948.1	8166.0	10138.0	12198.6	12659.6	12956.7	13179.8	13269.9
57.5°	4820.2	4890.2	5215.5	5949.4	7284.2	9603.0	12744.3	13397.6	13839.8	14183.9	14377.5
60°	3668.3	3755.7	4093.0	4832.4	6125.5	8578.7	12987.6	13954.1	14657.0	15173.2	15479.7
62.5°	2325.5	2414.2	2765.0	3532.6	4806.8	7179.4	12299.3	13709.4	14908.5	15671.9	16233.8
65°	1268.9	1307.9	1502.8	2080.8	3240.8	5570.4	10554.6	12217.4	13944.7	15026.7	15889.7
67.5°	951.7	957.1	977.2	1118.4	1725.9	3761.1	8252.0	9775.0	11693.1	13085.7	14116.7
70°	833.4	833.4	836.1	837.4	936.9	2037.8	5590.5	6992.5	8750.7	10159.4	11440.5
72.5°	747.4	739.3	736.6	720.5	734.0	1044.4	3043.3	4302.7	5785.4	7366.2	8561.2
75°	645.2	643.8	643.8	627.8	635.8	735.3	1320.0	2064.7	3214.0	4685.8	5862.0
77.5°	557.8	548.4	549.7	540.3	565.9	563.2	626.4	850.9	1399.3	2461.2	3437.1
80°	459.7	453.0	457.1	451.6	491.9	416.8	422.1	520.2	695.0	1079.4	1521.6
82.5°	340.1	342.8	368.3	365.6	414.0	280.9	309.1	388.5	467.8	537.7	584.7
85°	199.0	203.0	264.8	278.2	303.8	147.8	189.6	231.2	260.8	289.0	301.1
87.5°	21.5	28.2	147.8	151.9	135.7	44.4	76.6	96.8	103.5	110.3	96.8
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):**

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8
2.5°	1971.9	1954.4	1935.6	1924.9	1906.1	1889.9	1860.3	1836.2	1809.3	1790.5	1782.4
5°	2203.1	2161.5	2117.1	2084.9	2044.5	2009.6	1942.4	1861.7	1836.2	1782.4	1769.0
7.5°	2504.2	2429.0	2353.7	2291.8	2222.0	2164.2	2051.2	1906.1	1887.2	1801.2	1782.4
10°	2857.7	2747.5	2635.9	2540.5	2438.4	2349.6	2183.0	1978.7	1958.4	1848.3	1829.4
12.5°	3253.0	3118.6	2974.7	2832.2	2711.2	2586.2	2359.0	2091.5	2059.3	1928.9	1903.4
15°	3660.2	3515.1	3348.4	3176.4	3027.1	2861.8	2575.5	2239.4	2180.3	2027.1	1992.1
17.5°	4062.1	3904.9	3730.1	3537.9	3363.2	3165.6	2809.3	2404.8	2302.6	2123.9	2079.5
20°	4450.7	4290.7	4106.5	3918.3	3700.5	3474.8	3048.6	2567.4	2411.5	2204.5	2146.7
22.5°	4804.2	4667.0	4482.9	4266.4	4046.0	3792.0	3292.0	2730.1	2506.9	2266.3	2192.4
25°	5176.4	5051.4	4868.6	4660.4	4403.6	4121.3	3543.3	2884.6	2583.6	2299.9	2208.6
27.5°	5552.9	5445.4	5273.3	5054.2	4778.6	4465.4	3798.7	3027.1	2645.4	2310.6	2200.5
30°	5954.8	5871.4	5712.8	5468.2	5189.9	4843.2	4077.0	3167.0	2684.3	2295.9	2164.2
32.5°	6335.1	6332.5	6191.3	5937.3	5637.6	5255.8	4369.9	3308.0	2704.5	2254.2	2100.9
35°	6730.4	6785.5	6679.3	6437.3	6121.4	5698.0	4693.9	3458.6	2705.9	2180.3	2019.0
37.5°	7179.4	7277.5	7230.4	7000.6	6668.5	6202.2	5074.3	3628.0	2697.8	2078.1	1899.3
40°	7690.1	7824.6	7823.2	7629.7	7274.8	6766.7	5516.6	3817.6	2679.0	1950.5	1758.2
42.5°	8274.9	8434.8	8479.1	8288.3	7929.4	7383.7	6023.3	4025.8	2649.4	1824.0	1609.0
45°	8944.3	9085.4	9168.7	8991.3	8631.0	8055.7	6605.4	4262.4	2613.1	1661.4	1438.3
47.5°	9660.7	9824.7	9949.7	9797.8	9413.4	8821.9	7295.0	4567.6	2599.6	1475.9	1254.1
50°	10549.2	10718.6	10988.7	10920.2	10709.2	10233.4	8753.4	5288.0	2605.0	1299.9	1099.6
52.5°	12753.7	13142.2	13483.6	13331.7	12830.4	12014.4	9939.0	5688.6	2492.1	1156.0	992.1
55°	13419.1	13860.0	14364.1	14300.9	13819.7	12997.0	10875.9	6023.3	2383.3	1051.2	922.1
57.5°	14583.2	15103.4	15807.8	15794.3	15204.2	14278.0	12081.6	6423.9	2336.2	990.6	887.2
60°	15815.7	16478.5	17451.6	17603.6	16962.4	15998.5	13506.4	6915.9	2343.0	957.1	867.1
62.5°	16716.3	17688.3	19103.7	19558.0	18802.6	17740.6	14985.1	7407.8	2302.6	918.1	842.8
65°	16771.5	18170.8	20179.0	20886.1	20121.2	18756.8	15506.6	7311.0	2060.6	865.6	803.8
67.5°	15427.3	17250.0	19689.8	20465.4	19683.0	18130.5	14592.6	6391.6	1674.9	774.3	736.6
70°	12849.2	14965.0	17497.4	18361.7	17715.2	16143.8	12699.9	5105.2	1251.5	653.3	635.8
72.5°	9929.6	11902.9	14202.8	15002.5	14507.9	13126.1	10016.9	3720.7	893.9	529.6	516.2
75°	7098.7	8779.0	10448.4	10753.6	10265.6	8996.6	6499.2	2324.1	626.4	434.1	415.3
77.5°	4395.5	5488.3	6087.9	5695.4	5073.0	4216.7	2645.4	1148.0	416.8	353.5	334.7
80°	1950.5	2289.2	2137.3	1904.7	1504.1	1236.6	807.8	509.4	268.8	272.8	262.1
82.5°	655.9	693.6	674.7	670.7	604.9	529.6	342.8	220.4	150.6	174.7	170.7
85°	319.9	334.7	336.0	348.1	302.5	235.3	92.8	87.4	64.5	94.1	98.1
87.5°	96.8	98.1	88.7	96.8	77.9	53.8	17.5	24.2	12.1	22.8	22.8
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):**

	105°	107.5°	110°	112.5°	115°	117.5°	120°	122.5°	125°	127.5°	130°
0°	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8
2.5°	1767.7	1762.2	1752.8	1742.1	1739.4	1725.9	1721.9	1715.2	1711.2	1704.4	1699.0
5°	1751.5	1742.1	1731.3	1719.3	1719.3	1700.5	1692.4	1684.3	1684.3	1672.2	1666.8
7.5°	1767.7	1755.5	1743.4	1732.7	1736.7	1715.2	1707.1	1699.0	1697.7	1685.6	1680.2
10°	1813.3	1801.2	1786.5	1775.6	1771.6	1754.2	1744.7	1732.7	1724.6	1716.5	1708.4
12.5°	1883.3	1867.1	1848.3	1825.5	1816.0	1801.2	1786.5	1770.3	1751.5	1743.4	1731.3
15°	1966.5	1939.7	1914.1	1885.9	1860.3	1845.6	1825.5	1799.9	1774.3	1763.6	1747.4
17.5°	2035.1	2006.9	1970.6	1937.0	1891.2	1879.2	1850.9	1820.0	1778.4	1774.3	1750.2
20°	2093.0	2049.9	2005.5	1965.2	1895.3	1888.6	1853.7	1817.4	1758.2	1758.2	1728.6
22.5°	2125.2	2066.1	2013.6	1959.9	1872.5	1867.1	1826.8	1783.7	1711.2	1713.9	1677.5
25°	2130.5	2059.3	1993.4	1928.9	1828.1	1818.7	1767.7	1720.6	1641.2	1635.9	1598.3
27.5°	2109.0	2025.7	1949.1	1871.1	1762.2	1742.1	1685.6	1629.2	1551.2	1537.8	1497.4
30°	2059.3	1961.2	1875.2	1785.0	1670.8	1638.6	1579.4	1521.6	1442.4	1424.9	1387.2
32.5°	1980.0	1868.4	1773.0	1683.0	1556.6	1516.2	1457.1	1399.3	1322.7	1309.3	1274.3
35°	1875.2	1750.2	1649.3	1553.9	1427.5	1385.9	1329.4	1278.3	1208.4	1203.1	1178.8
37.5°	1743.4	1613.0	1505.5	1414.1	1294.4	1273.0	1215.2	1177.5	1119.7	1125.0	1113.0
40°	1594.2	1461.2	1359.0	1278.3	1174.9	1156.0	1121.1	1092.8	1043.1	1057.8	1059.3
42.5°	1443.7	1310.6	1217.8	1145.3	1056.5	1044.4	1020.3	1004.1	966.5	996.0	1008.1
45°	1273.0	1149.3	1070.0	1014.9	949.0	949.0	936.9	935.6	910.0	951.7	963.8
47.5°	1107.7	1010.9	955.7	922.1	876.5	897.9	893.9	904.6	885.8	928.8	939.6
50°	982.6	915.4	881.8	865.6	833.4	867.1	875.0	889.9	873.7	911.3	919.4
52.5°	903.3	859.0	840.1	836.1	813.2	854.9	868.4	881.8	863.0	897.9	896.6
55°	859.0	829.4	822.7	830.7	813.2	853.6	867.1	876.5	860.3	884.4	883.1
57.5°	842.8	826.6	830.7	842.8	830.7	864.3	871.0	881.8	865.6	876.5	881.8
60°	841.5	841.5	857.6	873.7	865.6	889.9	893.9	892.5	877.8	879.1	881.8
62.5°	833.4	853.6	880.5	906.0	903.3	932.8	935.6	918.1	906.0	892.5	888.5
65°	807.8	841.5	880.5	915.4	920.8	966.5	971.8	954.4	946.3	923.4	906.0
67.5°	751.4	794.4	840.1	883.1	892.5	954.4	966.5	973.2	977.2	962.4	939.6
70°	655.9	700.3	747.4	797.1	810.6	879.1	904.6	935.6	959.7	981.2	973.2
72.5°	533.7	574.0	614.3	660.0	680.2	751.4	785.0	838.8	876.5	931.5	954.4
75°	423.4	447.6	471.8	500.0	516.2	586.0	627.8	692.2	743.4	820.0	871.0
77.5°	333.4	345.5	357.5	369.7	376.3	415.3	449.0	513.5	572.6	669.4	744.7
80°	256.8	263.5	264.8	268.8	266.2	285.0	297.1	336.0	387.1	482.5	571.3
82.5°	165.3	170.7	173.4	180.1	166.6	190.9	199.0	203.0	229.9	299.7	362.9
85°	92.8	94.1	95.4	98.1	79.3	103.5	104.9	98.1	95.4	123.7	139.8
87.5°	22.8	21.5	22.8	22.8	9.4	21.5	21.5	14.8	10.7	20.2	16.2
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):**

	135°	145°	155°	165°	175°	180°
0°	1830.8	1830.8	1830.8	1830.8	1830.8	1830.8
2.5°	1686.9	1684.3	1685.6	1678.9	1676.2	1677.5
5°	1660.0	1654.7	1654.7	1650.6	1645.3	1645.3
7.5°	1672.2	1661.4	1657.4	1649.3	1641.2	1642.7
10°	1691.0	1672.2	1658.7	1646.6	1637.2	1637.2
12.5°	1703.1	1669.5	1649.3	1633.2	1622.4	1622.4
15°	1705.8	1654.7	1625.2	1607.7	1596.9	1596.9
17.5°	1689.6	1625.2	1587.5	1564.6	1552.5	1555.2
20°	1649.3	1570.0	1525.6	1501.5	1489.4	1490.7
22.5°	1586.2	1494.7	1443.7	1415.5	1403.4	1403.4
25°	1500.2	1400.6	1345.5	1322.7	1311.9	1311.9
27.5°	1402.0	1299.9	1251.5	1234.0	1227.2	1227.2
30°	1291.8	1207.1	1172.1	1160.0	1149.3	1149.3
32.5°	1199.0	1138.5	1126.5	1110.3	1082.1	1080.7
35°	1125.0	1118.4	1109.0	1060.6	1020.3	1014.9
37.5°	1084.7	1125.0	1065.9	982.6	950.3	949.0
40°	1063.3	1100.9	998.7	958.4	954.4	954.4
42.5°	1012.2	1039.0	994.7	971.8	971.8	973.2
45°	958.4	981.2	1004.1	984.0	990.6	992.1
47.5°	920.8	966.5	1004.1	986.6	1000.0	1008.1
50°	885.8	953.1	984.0	984.0	998.7	1000.0
52.5°	877.8	934.3	965.2	979.9	981.2	974.6
55°	879.1	919.4	950.3	969.1	961.1	961.1
57.5°	877.8	911.3	938.3	945.0	949.0	949.0
60°	879.1	900.6	922.1	919.4	932.8	932.8
62.5°	883.1	885.8	896.6	893.9	914.0	914.0
65°	892.5	867.1	860.3	863.0	887.2	885.8
67.5°	910.0	841.5	820.0	821.3	856.2	850.9
70°	935.6	806.5	774.3	766.2	825.3	815.9
72.5°	943.7	766.2	715.1	707.1	741.9	715.1
75°	906.0	734.0	651.9	625.0	610.3	602.2
77.5°	807.8	713.8	586.0	529.6	506.8	501.3
80°	669.4	672.1	500.0	432.8	502.7	501.3
82.5°	505.4	580.7	400.6	375.0	364.3	303.8
85°	244.7	436.9	307.8	258.1	154.6	146.5
87.5°	21.5	182.8	177.5	115.6	52.4	49.7
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)