

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: P195807

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7050**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P195807  
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-03-D-UNV-T2R-7050  
Description: NAVION ROADWAY AND AREA LUMINAIRE  
(3) 70 CRI, 5000K, 1050mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II  
ROADWAY OPTICS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 18982 lumens  
Efficiency: N/A  
Efficacy: 114.3 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1.5' x H: 0')  
IES Classification: Type II - Short - Semi-Cutoff  
BUG Rating: B2 - U0 - G3

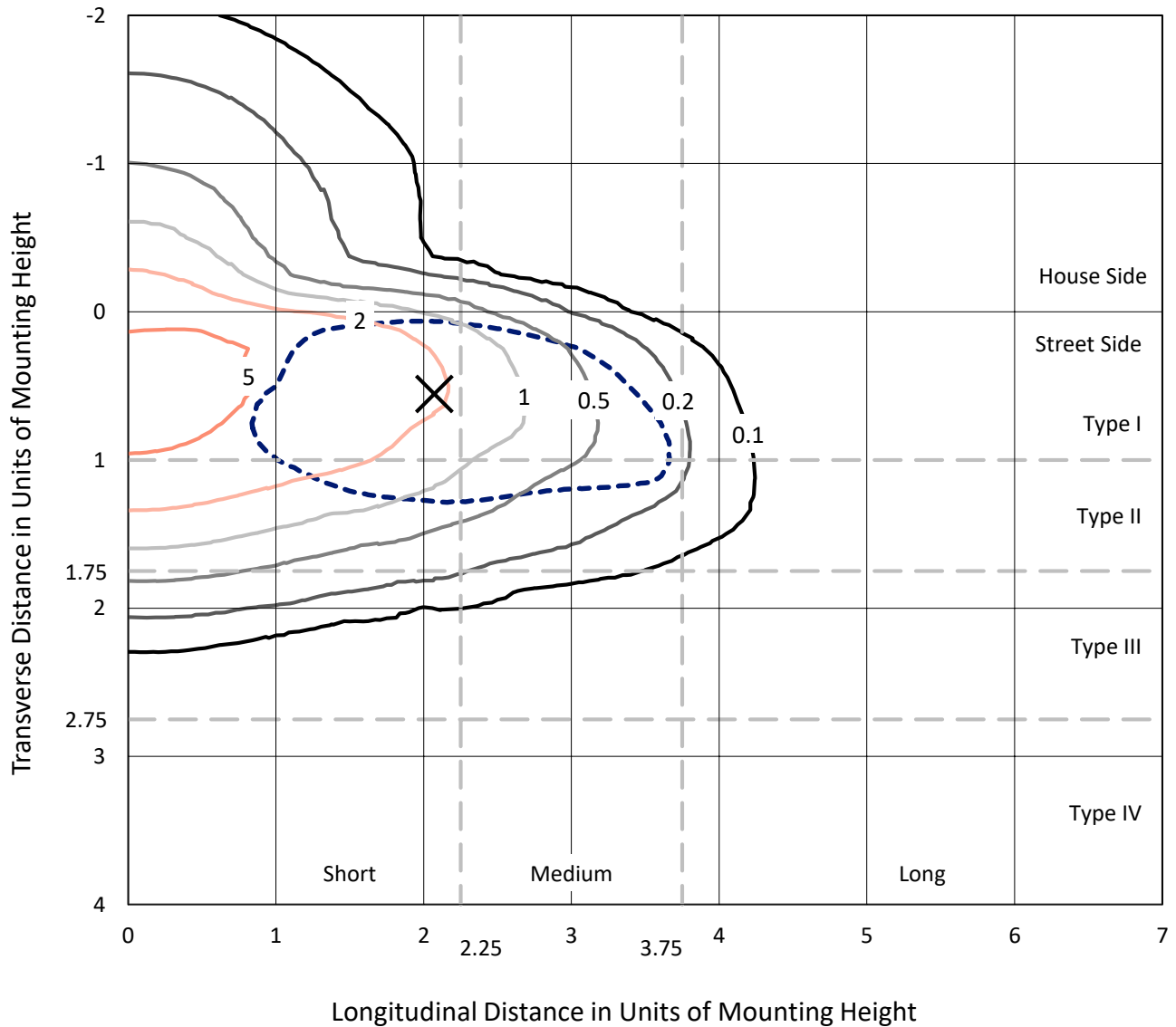
Input Watts (W): 166  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Iso-Footcandle Lines of Horizontal Illumination

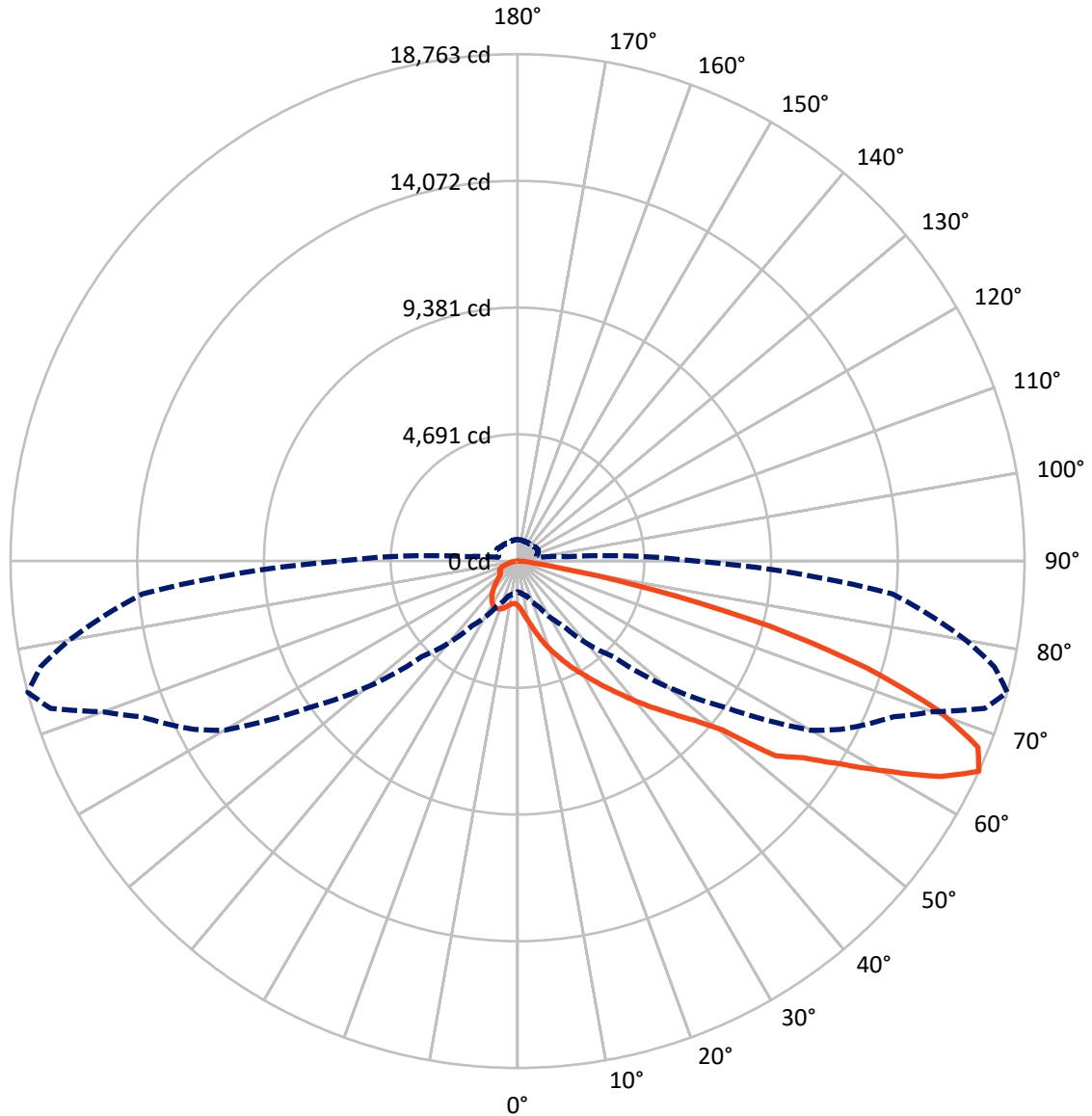
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.6 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	2852.3	0.0	2852.3
	% Fixture	15.0	0.0	15.0
<b>Street Side</b>	Lumens	16129.7	0.0	16129.7
	% Fixture	85.0	0.0	85.0
<b>Total</b>	Lumens	18982.0	0.0	18982.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	194.2	1.0
10°-20°	741.6	3.9
20°-30°	1496.7	7.9
30°-40°	2541.7	13.4
40°-50°	3545.1	18.7
50°-60°	4345.0	22.9
60°-70°	4088.0	21.5
70°-80°	1792.6	9.4
80°-90°	237.2	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°	18982.0	100.0
0°-180°	18982.0	100.0



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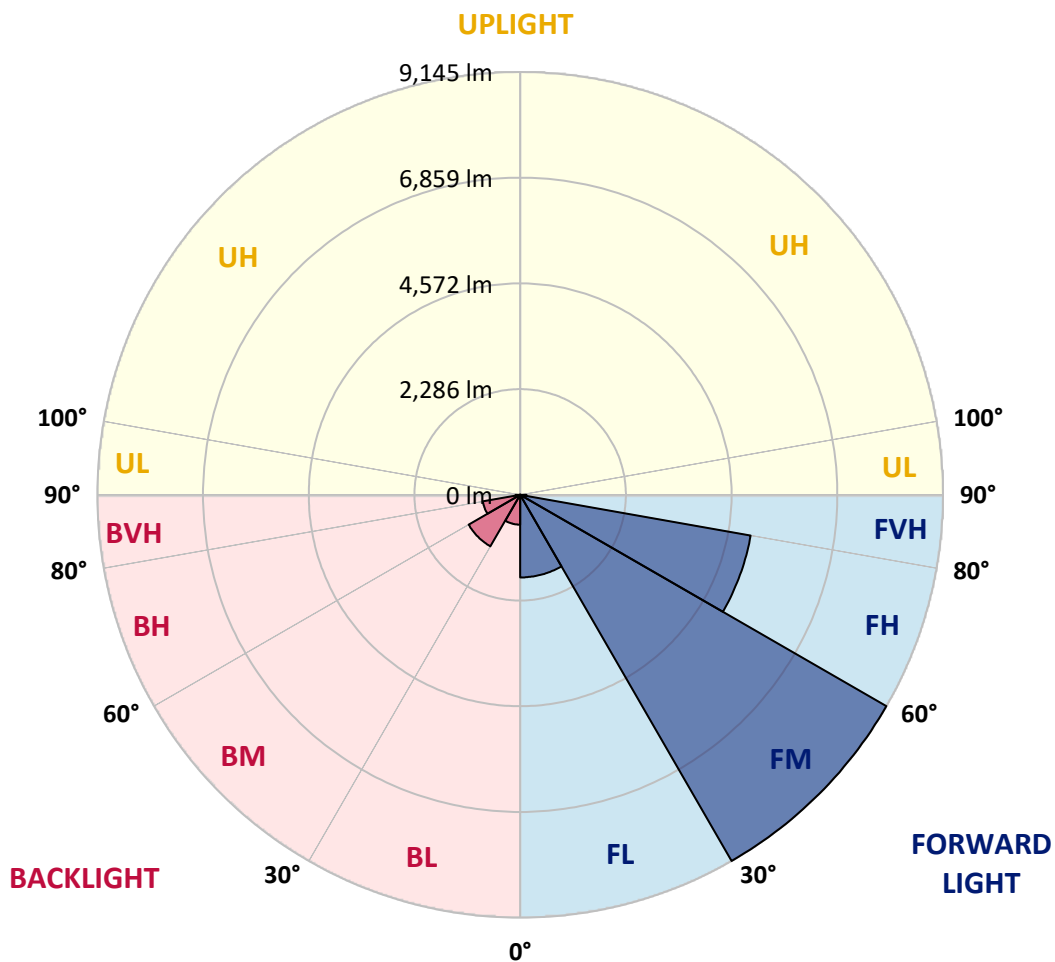
CATALOG NUMBER: NAV-AF-03-D-UNV-T2R-7050

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

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1786.7	9.4			
FM	(30°-60°)	9144.7	48.2			
FH	(60°-80°)	5060.8	26.7			G3/7500
FVH	(80°-90°)	137.5	0.7			G2/225
BL	(0°-30°)	645.7	3.4	B2/1000		
BM	(30°-60°)	1287.1	6.8	B2/2500		
BH	(60°-80°)	819.8	4.3	B2/1000		G2/1000
BVH	(80°-90°)	99.7	0.5			G1/100
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°	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7
2.5°	2070.9	2046.8	2049.2	2015.4	1965.9	1911.5	1866.9	1842.7	1822.2	1816.1	1782.3
5°	2708.5	2678.3	2667.5	2590.2	2474.3	2336.6	2200.1	2147.0	2103.5	2077.0	2011.8
7.5°	3230.2	3214.5	3200.0	3128.7	3014.0	2837.7	2618.0	2539.5	2467.0	2387.3	2308.8
10°	3585.2	3579.2	3573.1	3523.6	3428.2	3274.9	3038.2	2952.4	2861.9	2760.4	2657.8
12.5°	3853.3	3853.3	3858.1	3817.0	3759.1	3640.7	3425.8	3346.1	3254.3	3148.1	3030.9
15°	4033.2	4038.0	4063.4	4075.5	4045.3	3969.2	3780.8	3710.8	3623.8	3518.8	3402.9
17.5°	4152.7	4162.4	4199.8	4239.7	4278.3	4251.8	4111.7	4046.5	3968.0	3871.4	3762.7
20°	4430.5	4418.4	4419.6	4407.5	4464.3	4484.8	4407.5	4353.2	4290.4	4202.3	4103.2
22.5°	5013.7	4990.8	4931.6	4780.7	4711.8	4704.6	4658.7	4629.7	4581.4	4525.9	4426.9
25°	5774.5	5747.9	5630.8	5382.0	5176.7	4987.2	4902.6	4884.5	4853.1	4815.7	4744.4
27.5°	6560.6	6531.6	6380.7	6066.7	5798.6	5415.8	5152.6	5128.4	5099.5	5083.8	5049.9
30°	7252.5	7221.1	7072.6	6753.8	6430.2	5973.7	5489.5	5405.0	5355.5	5360.3	5341.0
32.5°	7859.9	7832.1	7665.5	7340.7	7012.2	6569.0	5926.6	5795.0	5683.9	5642.9	5657.3
35°	8369.5	8344.1	8161.8	7834.5	7503.7	7135.4	6489.3	6291.3	6110.2	5996.7	5983.4
37.5°	8669.0	8654.5	8526.5	8248.7	7920.3	7649.8	7119.7	6899.9	6633.0	6467.6	6395.2
40°	8652.0	8667.7	8646.0	8520.4	8265.6	8068.8	7776.6	7559.2	7298.4	7052.1	6904.7
42.5°	8405.7	8427.4	8525.3	8590.5	8521.6	8402.1	8350.2	8188.4	7954.1	7693.3	7489.2
45°	8067.6	8086.9	8213.7	8449.2	8646.0	8679.8	8852.5	8771.6	8573.6	8351.4	8126.8
47.5°	7549.6	7587.0	7734.3	8108.7	8577.2	8903.2	9273.9	9311.4	9196.7	9013.1	8803.0
50°	6799.7	6849.2	7055.7	7588.2	8316.4	9132.7	9900.6	10043.1	9997.3	9811.3	9598.8
52.5°	6031.7	6081.2	6356.5	6922.8	7896.1	9226.8	10517.7	10882.4	11145.6	11337.6	11375.1
55°	5232.3	5287.8	5589.7	6241.8	7335.8	9107.3	10958.5	11372.6	11639.5	11840.0	11920.9
57.5°	4330.3	4393.0	4685.3	5344.6	6543.7	8626.7	11448.7	12035.6	12432.9	12742.0	12915.9
60°	3295.4	3373.9	3677.0	4341.1	5502.8	7706.5	11667.3	12535.5	13167.1	13630.8	13906.1
62.5°	2089.1	2168.7	2483.9	3173.4	4318.2	6449.5	11049.0	12315.7	13392.9	14078.7	14583.5
65°	1139.9	1174.9	1350.0	1869.3	2911.4	5004.1	9481.6	10975.4	12527.1	13499.1	14274.4
67.5°	854.9	859.8	877.9	1004.7	1550.5	3378.7	7413.1	8781.3	10504.4	11755.4	12681.6
70°	748.7	748.7	751.1	752.3	841.7	1830.6	5022.2	6281.6	7861.1	9126.6	10277.4
72.5°	671.4	664.1	661.7	647.2	659.3	938.3	2733.9	3865.3	5197.3	6617.3	7690.8
75°	579.6	578.4	578.4	563.9	571.2	660.5	1185.8	1854.8	2887.2	4209.5	5266.1
77.5°	501.1	492.7	493.9	485.4	508.4	506.0	562.7	764.4	1257.1	2211.0	3087.7
80°	413.0	406.9	410.6	405.7	442.0	374.3	379.2	467.3	624.3	969.7	1366.9
82.5°	305.5	307.9	330.9	328.5	371.9	252.4	277.7	349.0	420.2	483.0	525.3
85°	178.7	182.3	237.9	250.0	272.9	132.8	170.3	207.7	234.3	259.6	270.5
87.5°	19.3	25.4	132.8	136.5	122.0	39.8	68.8	86.9	93.0	99.0	86.9
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°	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7
2.5°	1771.5	1755.8	1738.9	1729.2	1712.3	1697.8	1671.2	1649.5	1625.4	1608.4	1601.2
5°	1979.2	1941.7	1901.9	1872.9	1836.7	1805.3	1744.9	1672.4	1649.5	1601.2	1589.1
7.5°	2249.7	2182.0	2114.4	2058.9	1996.1	1944.1	1842.7	1712.3	1695.4	1618.1	1601.2
10°	2567.2	2468.2	2368.0	2282.3	2190.5	2110.8	1961.1	1777.5	1759.4	1660.4	1643.5
12.5°	2922.3	2801.5	2672.3	2544.3	2435.6	2323.3	2119.2	1878.9	1850.0	1732.8	1709.9
15°	3288.1	3157.7	3008.0	2853.4	2719.4	2570.9	2313.7	2011.8	1958.6	1821.0	1789.6
17.5°	3649.2	3507.9	3350.9	3178.3	3021.3	2843.8	2523.8	2160.3	2068.5	1907.9	1868.1
20°	3998.2	3854.5	3689.0	3520.0	3324.4	3121.5	2738.7	2306.4	2166.3	1980.4	1928.4
22.5°	4315.8	4192.6	4027.2	3832.7	3634.7	3406.5	2957.3	2452.5	2252.1	2035.9	1969.5
25°	4650.2	4537.9	4373.7	4186.6	3955.9	3702.3	3183.1	2591.4	2320.9	2066.1	1984.0
27.5°	4988.4	4891.8	4737.2	4540.4	4292.8	4011.5	3412.5	2719.4	2376.4	2075.8	1976.7
30°	5349.4	5274.5	5132.1	4912.3	4662.3	4350.8	3662.5	2845.0	2411.5	2062.5	1944.1
32.5°	5691.2	5688.7	5561.9	5333.7	5064.4	4721.5	3925.7	2971.8	2429.6	2025.1	1887.4
35°	6046.2	6095.7	6000.3	5782.9	5499.2	5118.8	4216.7	3107.0	2430.8	1958.6	1813.7
37.5°	6449.5	6537.6	6495.4	6288.9	5990.6	5571.6	4558.5	3259.2	2423.5	1866.9	1706.3
40°	6908.4	7029.1	7027.9	6854.0	6535.2	6078.8	4955.8	3429.4	2406.6	1752.1	1579.5
42.5°	7433.6	7577.3	7617.2	7445.7	7123.3	6633.0	5411.0	3616.6	2380.1	1638.6	1445.4
45°	8035.0	8161.8	8236.7	8077.3	7753.6	7236.8	5933.9	3829.1	2347.5	1492.5	1292.1
47.5°	8678.6	8825.9	8938.2	8801.8	8456.4	7925.1	6553.3	4103.2	2335.4	1325.9	1126.6
50°	9476.8	9629.0	9871.7	9810.1	9620.5	9193.0	7863.5	4750.5	2340.2	1167.7	987.8
52.5°	11457.2	11806.2	12112.9	11976.4	11526.0	10793.0	8928.6	5110.3	2238.8	1038.5	891.2
55°	12054.9	12451.0	12903.8	12847.1	12414.8	11675.7	9770.2	5411.0	2141.0	944.3	828.4
57.5°	13100.6	13568.0	14200.7	14188.6	13658.5	12826.5	10853.4	5770.9	2098.7	890.0	797.0
60°	14208.0	14803.3	15677.5	15814.0	15238.0	14372.2	12133.4	6212.8	2104.7	859.8	778.9
62.5°	15017.0	15890.1	17161.6	17569.8	16891.1	15937.2	13461.7	6654.8	2068.5	824.8	757.1
65°	15066.5	16323.6	18127.6	18762.8	18075.7	16850.1	13930.2	6567.8	1851.2	777.7	722.1
67.5°	13859.0	15496.4	17688.1	18384.8	17682.1	16287.3	13109.1	5741.9	1504.6	695.5	661.7
70°	11542.9	13443.6	15718.6	16495.0	15914.2	14502.6	11408.9	4586.3	1124.2	586.9	571.2
72.5°	8920.1	10692.8	12758.9	13477.4	13033.0	11791.7	8998.6	3342.5	803.0	475.8	463.7
75°	6377.0	7886.5	9386.2	9660.3	9222.0	8082.1	5838.5	2087.8	562.7	390.0	373.1
77.5°	3948.7	4930.4	5469.0	5116.4	4557.3	3788.1	2376.4	1031.2	374.3	317.6	300.7
80°	1752.1	2056.4	1920.0	1711.1	1351.2	1110.9	725.7	457.7	241.5	245.1	235.5
82.5°	589.3	623.1	606.2	602.6	543.4	475.8	307.9	198.0	135.2	157.0	153.4
85°	287.4	300.7	301.9	312.8	271.7	211.3	83.3	78.5	58.0	84.5	88.2
87.5°	86.9	88.2	79.7	86.9	70.0	48.3	15.7	21.7	10.9	20.5	20.5
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°	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7
2.5°	1587.9	1583.1	1574.6	1565.0	1562.6	1550.5	1546.9	1540.8	1537.2	1531.2	1526.3
5°	1573.4	1565.0	1555.3	1544.4	1544.4	1527.5	1520.3	1513.1	1513.1	1502.2	1497.4
7.5°	1587.9	1577.1	1566.2	1556.5	1560.1	1540.8	1533.6	1526.3	1525.1	1514.3	1509.4
10°	1629.0	1618.1	1604.8	1595.2	1591.5	1575.8	1567.4	1556.5	1549.3	1542.0	1534.8
12.5°	1691.8	1677.3	1660.4	1639.8	1631.4	1618.1	1604.8	1590.3	1573.4	1566.2	1555.3
15°	1766.6	1742.5	1719.5	1694.2	1671.2	1658.0	1639.8	1616.9	1594.0	1584.3	1569.8
17.5°	1828.2	1802.9	1770.3	1740.1	1699.0	1688.1	1662.8	1635.0	1597.6	1594.0	1572.2
20°	1880.1	1841.5	1801.7	1765.4	1702.6	1696.6	1665.2	1632.6	1579.5	1579.5	1552.9
22.5°	1909.1	1856.0	1808.9	1760.6	1682.1	1677.3	1641.1	1602.4	1537.2	1539.6	1507.0
25°	1914.0	1850.0	1790.8	1732.8	1642.3	1633.8	1587.9	1545.7	1474.4	1469.6	1435.8
27.5°	1894.6	1819.8	1750.9	1680.9	1583.1	1565.0	1514.3	1463.5	1393.5	1381.4	1345.2
30°	1850.0	1761.8	1684.5	1603.6	1501.0	1472.0	1418.9	1366.9	1295.7	1280.0	1246.2
32.5°	1778.7	1678.5	1592.7	1511.8	1398.3	1362.1	1309.0	1257.1	1188.2	1176.1	1144.8
35°	1684.5	1572.2	1481.7	1395.9	1282.4	1245.0	1194.3	1148.4	1085.6	1080.8	1059.0
37.5°	1566.2	1449.1	1352.4	1270.3	1162.9	1143.5	1091.6	1057.8	1005.9	1010.7	999.8
40°	1432.1	1312.6	1220.8	1148.4	1055.4	1038.5	1007.1	981.7	937.1	950.3	951.5
42.5°	1296.9	1177.4	1094.0	1028.8	949.1	938.3	916.5	902.0	868.2	894.8	905.7
45°	1143.5	1032.4	961.2	911.7	852.5	852.5	841.7	840.5	817.5	854.9	865.8
47.5°	995.0	908.1	858.6	828.4	787.3	806.6	803.0	812.7	795.8	834.4	844.1
50°	882.7	822.3	792.1	777.7	748.7	778.9	786.1	799.4	784.9	818.7	826.0
52.5°	811.5	771.6	754.7	751.1	730.6	768.0	780.1	792.1	775.2	806.6	805.4
55°	771.6	745.1	739.0	746.3	730.6	766.8	778.9	787.3	772.8	794.6	793.4
57.5°	757.1	742.6	746.3	757.1	746.3	776.5	782.5	792.1	777.7	787.3	792.1
60°	755.9	755.9	770.4	784.9	777.7	799.4	803.0	801.8	788.5	789.7	792.1
62.5°	748.7	766.8	790.9	813.9	811.5	838.0	840.5	824.8	813.9	801.8	798.2
65°	725.7	755.9	790.9	822.3	827.2	868.2	873.1	857.4	850.1	829.6	813.9
67.5°	675.0	713.7	754.7	793.4	801.8	857.4	868.2	874.3	877.9	864.6	844.1
70°	589.3	629.1	671.4	716.1	728.1	789.7	812.7	840.5	862.2	881.5	874.3
72.5°	479.4	515.6	551.8	592.9	611.0	675.0	705.2	753.5	787.3	836.8	857.4
75°	380.4	402.1	423.8	449.2	463.7	526.5	563.9	621.9	667.8	736.6	782.5
77.5°	299.5	310.3	321.2	332.1	338.1	373.1	403.3	461.3	514.4	601.4	669.0
80°	230.6	236.7	237.9	241.5	239.1	256.0	266.9	301.9	347.8	433.5	513.2
82.5°	148.5	153.4	155.8	161.8	149.7	171.5	178.7	182.3	206.5	269.3	326.0
85°	83.3	84.5	85.7	88.2	71.2	93.0	94.2	88.2	85.7	111.1	125.6
87.5°	20.5	19.3	20.5	20.5	8.5	19.3	19.3	13.3	9.7	18.1	14.5
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°	1644.7	1644.7	1644.7	1644.7	1644.7	1644.7
2.5°	1515.5	1513.1	1514.3	1508.2	1505.8	1507.0
5°	1491.3	1486.5	1486.5	1482.9	1478.0	1478.0
7.5°	1502.2	1492.5	1488.9	1481.7	1474.4	1475.6
10°	1519.1	1502.2	1490.1	1479.2	1470.8	1470.8
12.5°	1530.0	1499.8	1481.7	1467.2	1457.5	1457.5
15°	1532.4	1486.5	1459.9	1444.2	1434.6	1434.6
17.5°	1517.9	1459.9	1426.1	1405.6	1394.7	1397.1
20°	1481.7	1410.4	1370.6	1348.8	1338.0	1339.2
22.5°	1424.9	1342.8	1296.9	1271.5	1260.7	1260.7
25°	1347.6	1258.3	1208.8	1188.2	1178.6	1178.6
27.5°	1259.5	1167.7	1124.2	1108.5	1102.5	1102.5
30°	1160.4	1084.4	1053.0	1042.1	1032.4	1032.4
32.5°	1077.1	1022.8	1011.9	997.4	972.1	970.9
35°	1010.7	1004.7	996.2	952.8	916.5	911.7
37.5°	974.5	1010.7	957.6	882.7	853.7	852.5
40°	955.2	989.0	897.2	861.0	857.4	857.4
42.5°	909.3	933.4	893.6	873.1	873.1	874.3
45°	861.0	881.5	902.0	883.9	890.0	891.2
47.5°	827.2	868.2	902.0	886.3	898.4	905.7
50°	795.8	856.1	883.9	883.9	897.2	898.4
52.5°	788.5	839.2	867.0	880.3	881.5	875.5
55°	789.7	826.0	853.7	870.6	863.4	863.4
57.5°	788.5	818.7	842.9	848.9	852.5	852.5
60°	789.7	809.1	828.4	826.0	838.0	838.0
62.5°	793.4	795.8	805.4	803.0	821.1	821.1
65°	801.8	778.9	772.8	775.2	797.0	795.8
67.5°	817.5	755.9	736.6	737.8	769.2	764.4
70°	840.5	724.5	695.5	688.3	741.4	733.0
72.5°	847.7	688.3	642.4	635.2	666.6	642.4
75°	813.9	659.3	585.7	561.5	548.2	541.0
77.5°	725.7	641.2	526.5	475.8	455.2	450.4
80°	601.4	603.8	449.2	388.8	451.6	450.4
82.5°	454.0	521.7	359.8	336.9	327.2	272.9
85°	219.8	392.5	276.5	231.8	138.9	131.6
87.5°	19.3	164.2	159.4	103.8	47.1	44.7
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)