

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: P196773

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7030-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196773
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-7030-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 1200mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20139.8 lumens
Efficiency: N/A
Efficacy: 105.4 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

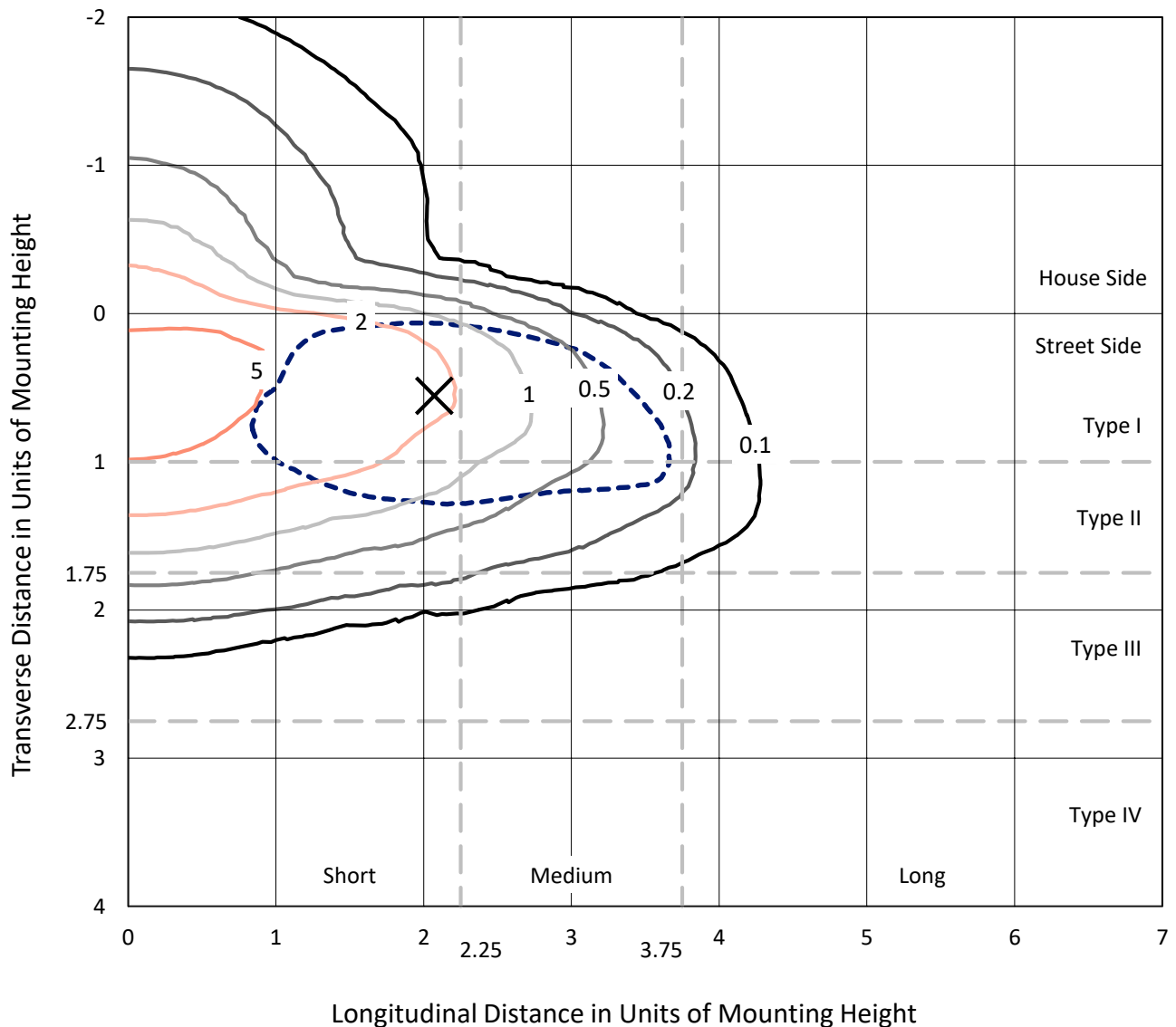
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

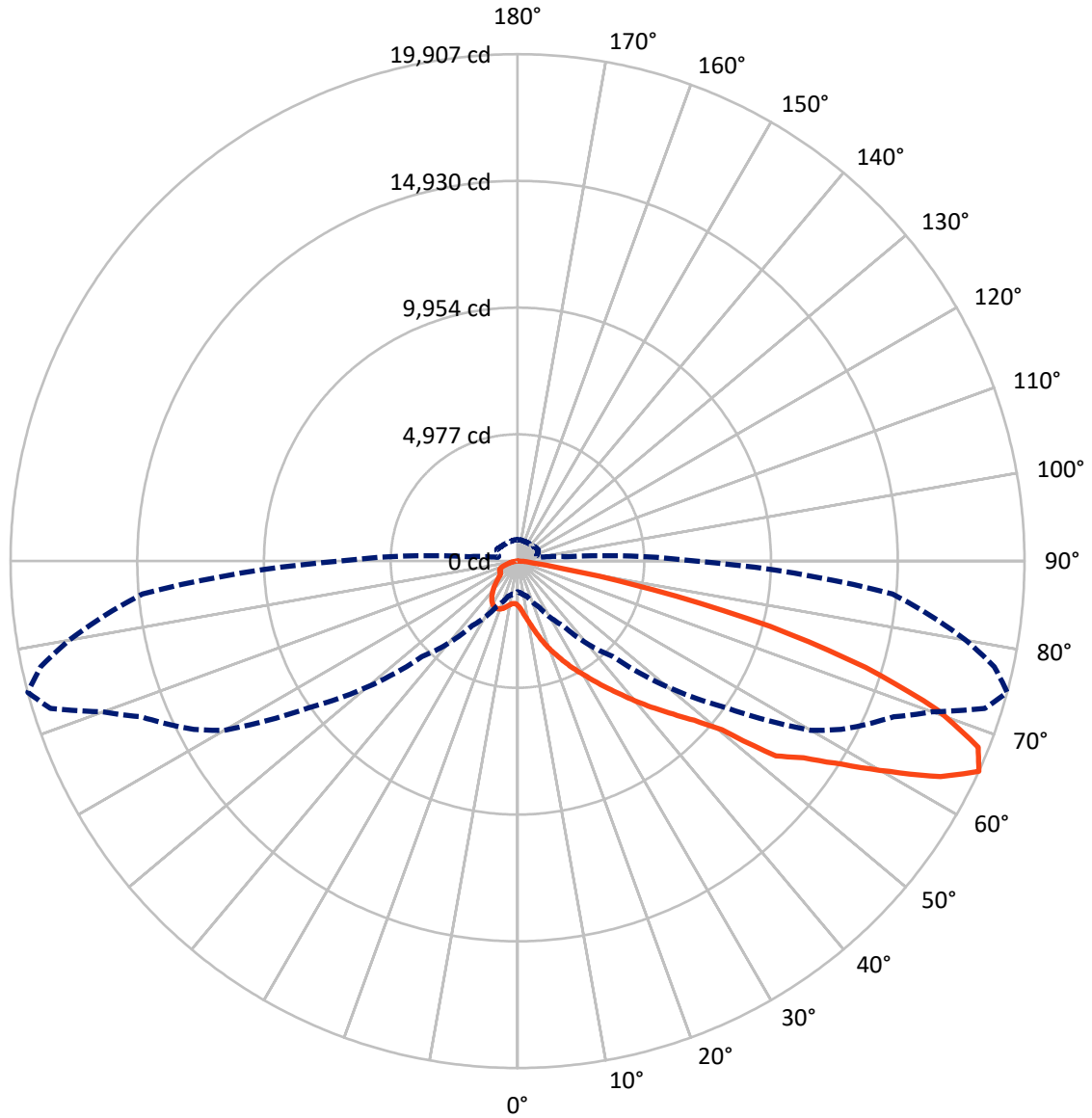
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8 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
House Side	Lumens	3026.3	0.0	3026.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	17113.5	0.0	17113.5
	% Fixture	85.0	0.0	85.0
Total	Lumens	20139.8	0.0	20139.8
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	206.0	1.0
10°-20°	786.9	3.9
20°-30°	1587.9	7.9
30°-40°	2696.8	13.4
40°-50°	3761.3	18.7
50°-60°	4610.0	22.9
60°-70°	4337.4	21.5
70°-80°	1901.9	9.4
80°-90°	251.7	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°	20139.8	100.0
0°-180°	20139.8	100.0



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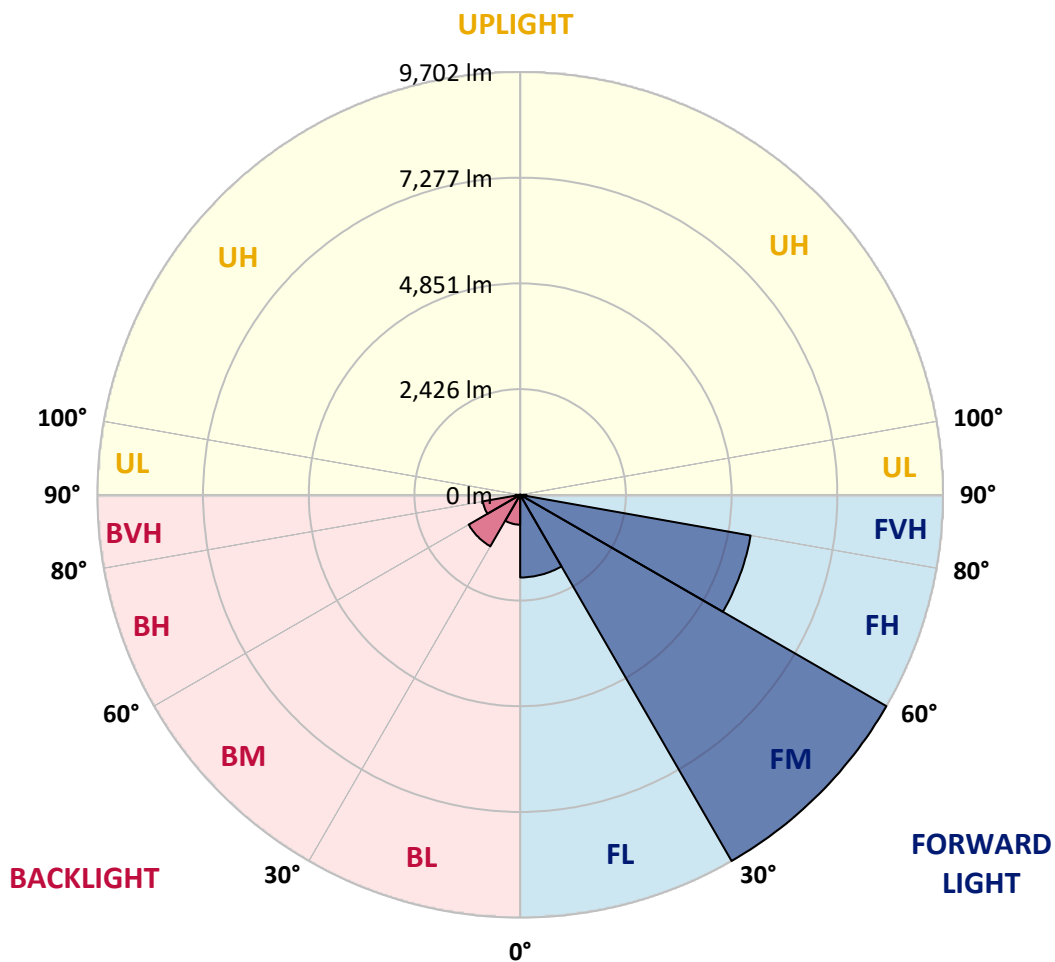
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1895.7	9.4			
FM (30°-60°)	9702.4	48.2			
FH (60°-80°)	5369.4	26.7			G3/7500
FVH (80°-90°)	145.9	0.7			G2/225
BL (0°-30°)	685.1	3.4	B2/1000		
BM (30°-60°)	1365.6	6.8	B2/2500		
BH (60°-80°)	869.8	4.3	B2/1000		G2/1000
BVH (80°-90°)	105.8	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°	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0
2.5°	2197.2	2171.6	2174.2	2138.3	2085.8	2028.2	1980.8	1955.0	1933.4	1926.9	1891.1
5°	2873.7	2841.8	2830.2	2748.2	2625.2	2479.1	2334.4	2277.9	2231.8	2203.6	2134.5
7.5°	3427.3	3410.5	3395.1	3319.7	3197.9	3010.8	2777.6	2694.4	2617.6	2532.9	2449.6
10°	3803.9	3797.5	3791.1	3738.6	3637.3	3474.6	3223.4	3132.6	3036.5	2928.8	2819.9
12.5°	4088.3	4088.3	4093.4	4049.8	3988.4	3862.8	3634.7	3550.2	3452.8	3340.0	3215.8
15°	4279.1	4284.3	4311.3	4324.1	4292.0	4211.3	4011.5	3937.1	3844.9	3733.4	3610.4
17.5°	4406.0	4416.3	4456.0	4498.3	4539.2	4511.1	4362.5	4293.3	4210.0	4107.5	3992.3
20°	4700.7	4687.9	4689.2	4676.4	4736.6	4758.3	4676.4	4618.7	4552.1	4458.6	4353.6
22.5°	5319.5	5295.1	5232.4	5072.3	4999.2	4991.5	4942.9	4912.1	4860.8	4802.0	4696.8
25°	6126.7	6098.6	5974.2	5710.3	5492.5	5291.3	5201.7	5182.3	5149.2	5109.4	5033.8
27.5°	6960.7	6930.0	6769.8	6436.7	6152.3	5746.2	5466.9	5441.2	5410.5	5393.8	5358.0
30°	7694.8	7661.6	7503.9	7165.8	6822.3	6338.0	5824.3	5734.6	5682.1	5687.3	5666.7
32.5°	8339.3	8309.8	8133.0	7788.3	7439.9	6969.6	6288.1	6148.4	6030.6	5987.0	6002.3
35°	8879.9	8853.1	8659.6	8312.5	7961.4	7570.6	6885.2	6674.9	6482.9	6362.3	6348.3
37.5°	9197.7	9182.3	9046.5	8751.8	8403.3	8116.4	7553.9	7320.7	7037.6	6862.0	6785.2
40°	9179.8	9196.5	9173.3	9040.1	8769.8	8560.9	8250.9	8020.2	7743.5	7482.2	7325.9
42.5°	8918.4	8941.4	9045.2	9114.4	9041.4	8914.6	8859.5	8687.8	8439.1	8162.5	7946.0
45°	8559.7	8580.1	8714.7	8964.5	9173.3	9209.3	9392.5	9306.6	9096.5	8860.7	8622.4
47.5°	8010.1	8049.7	8206.0	8603.2	9100.3	9446.2	9839.6	9879.3	9757.6	9562.8	9339.9
50°	7214.4	7267.0	7486.0	8051.0	8823.6	9689.6	10504.5	10655.7	10607.0	10409.6	10184.2
52.5°	6399.6	6452.1	6744.2	7345.1	8377.8	9789.6	11159.2	11546.1	11825.4	12029.1	12068.9
55°	5551.5	5610.4	5930.7	6622.5	7783.3	9662.8	11626.9	12066.3	12349.5	12562.1	12648.0
57.5°	4594.4	4661.0	4971.1	5670.5	6942.8	9152.8	12147.0	12769.6	13191.2	13519.2	13703.7
60°	3496.4	3579.7	3901.2	4606.0	5838.4	8176.6	12378.8	13300.1	13970.1	14462.1	14754.3
62.5°	2216.5	2301.0	2635.5	3367.0	4581.6	6842.9	11723.0	13066.9	14209.7	14937.5	15473.0
65°	1209.5	1246.6	1432.4	1983.3	3089.0	5309.2	10059.9	11644.8	13291.1	14322.5	15145.0
67.5°	907.1	912.2	931.4	1066.0	1645.0	3584.8	7865.2	9316.9	11145.1	12472.4	13455.1
70°	794.4	794.4	796.9	798.1	892.9	1942.3	5328.5	6664.9	8340.6	9683.3	10904.3
72.5°	712.4	704.6	702.1	686.7	699.5	995.5	2900.7	4101.1	5514.4	7021.0	8159.9
75°	615.0	613.7	613.7	598.3	606.0	700.8	1258.1	1967.9	3063.3	4466.2	5587.3
77.5°	531.6	522.7	524.0	515.0	539.4	536.8	597.0	811.0	1333.7	2345.9	3276.0
80°	438.1	431.8	435.6	430.5	468.9	397.1	402.3	495.8	662.3	1028.7	1450.3
82.5°	324.2	326.6	351.0	348.5	394.7	267.8	294.7	370.3	445.9	512.4	557.3
85°	189.6	193.5	252.4	265.2	289.5	141.0	180.6	220.3	248.6	275.5	287.1
87.5°	20.5	26.9	141.0	144.8	129.4	42.3	72.9	92.3	98.7	105.1	92.3
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0
2.5°	1879.5	1862.9	1845.0	1834.7	1816.8	1801.3	1773.2	1750.2	1724.4	1706.5	1698.9
5°	2099.9	2060.2	2017.9	1987.1	1948.7	1915.5	1851.3	1774.5	1750.2	1698.9	1686.1
7.5°	2386.9	2315.1	2243.4	2184.4	2117.8	2062.7	1955.0	1816.8	1798.9	1716.8	1698.9
10°	2723.9	2618.7	2512.4	2421.4	2324.1	2239.5	2080.7	1886.0	1866.7	1761.7	1743.7
12.5°	3100.4	2972.4	2835.3	2699.5	2584.2	2465.0	2248.4	1993.6	1962.9	1838.5	1814.1
15°	3488.6	3350.3	3191.5	3027.5	2885.2	2727.6	2454.7	2134.5	2078.1	1932.0	1898.7
17.5°	3871.8	3721.9	3555.3	3372.1	3205.5	3017.2	2677.7	2292.0	2194.7	2024.2	1982.0
20°	4242.0	4089.6	3914.1	3734.7	3527.1	3311.8	2905.8	2447.1	2298.5	2101.2	2046.1
22.5°	4578.9	4448.3	4272.8	4066.5	3856.5	3614.3	3137.6	2602.1	2389.4	2160.0	2089.6
25°	4933.9	4814.7	4640.5	4441.9	4197.2	3928.1	3377.2	2749.4	2462.4	2192.2	2105.0
27.5°	5292.6	5190.2	5026.2	4817.2	4554.7	4256.0	3620.7	2885.2	2521.3	2202.3	2097.3
30°	5675.7	5596.3	5445.1	5211.8	4946.7	4616.1	3886.0	3018.5	2558.6	2188.3	2062.7
32.5°	6038.3	6035.7	5901.2	5659.1	5373.4	5009.4	4165.2	3153.0	2577.8	2148.6	2002.5
35°	6414.9	6467.5	6366.2	6135.7	5834.6	5430.9	4473.9	3296.5	2579.1	2078.1	1924.4
37.5°	6842.9	6936.5	6891.5	6672.5	6356.0	5911.5	4836.5	3457.9	2571.3	1980.8	1810.3
40°	7329.7	7457.8	7456.5	7272.1	6933.8	6449.6	5258.0	3638.6	2553.4	1859.0	1675.8
42.5°	7887.0	8039.6	8081.8	7899.9	7557.8	7037.6	5741.0	3837.1	2525.2	1738.6	1533.6
45°	8525.1	8659.6	8739.0	8569.9	8226.5	7678.2	6295.7	4062.7	2490.7	1583.6	1370.8
47.5°	9208.0	9364.3	9483.3	9338.6	8972.2	8408.5	6953.0	4353.6	2477.8	1406.7	1195.4
50°	10054.8	10216.3	10473.8	10408.5	10207.3	9753.7	8343.1	5040.2	2482.9	1238.9	1048.1
52.5°	12155.9	12526.2	12851.6	12706.9	12229.0	11451.4	9473.1	5422.0	2375.3	1101.9	945.5
55°	12790.2	13210.4	13690.8	13630.6	13172.0	12388.0	10366.2	5741.0	2271.6	1001.9	878.9
57.5°	13899.6	14395.5	15066.9	15054.1	14491.6	13608.9	11515.4	6122.8	2226.7	944.2	845.5
60°	15074.5	15706.1	16633.7	16778.5	16167.4	15248.8	12873.5	6591.7	2233.2	912.2	826.3
62.5°	15933.0	16859.2	18208.4	18641.4	17921.4	16909.2	14282.8	7060.7	2194.7	875.0	803.3
65°	15985.5	17319.2	19233.4	19907.1	19178.2	17877.8	14779.8	6968.4	1964.1	825.1	766.1
67.5°	14704.2	16441.6	18766.9	19506.2	18760.6	17280.8	13908.6	6092.1	1596.4	737.9	702.1
70°	12247.0	14263.6	16677.4	17501.1	16884.8	15387.2	12104.8	4866.0	1192.8	622.7	606.0
72.5°	9464.1	11344.9	13537.1	14299.5	13828.0	12510.8	9547.5	3546.3	852.0	504.8	492.0
75°	6766.0	8367.5	9958.8	10249.5	9784.5	8575.0	6194.6	2215.2	597.0	413.9	395.8
77.5°	4189.5	5231.2	5802.5	5428.4	4835.3	4019.1	2521.3	1094.1	397.1	336.9	319.0
80°	1859.0	2181.9	2037.1	1815.5	1433.7	1178.7	769.9	485.5	256.2	260.0	249.8
82.5°	625.2	661.1	643.2	639.2	576.6	504.8	326.6	210.1	143.4	166.5	162.7
85°	305.0	319.0	320.3	331.8	288.2	224.2	88.4	83.2	61.5	89.7	93.5
87.5°	92.3	93.5	84.5	92.3	74.3	51.3	16.6	23.1	11.6	21.8	21.8
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°	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0
2.5°	1684.8	1679.7	1670.7	1660.4	1657.9	1645.0	1641.2	1634.8	1630.9	1624.5	1619.4
5°	1669.4	1660.4	1650.2	1638.7	1638.7	1620.8	1613.0	1605.3	1605.3	1593.8	1588.6
7.5°	1684.8	1673.2	1661.8	1651.5	1655.3	1634.8	1627.1	1619.4	1618.1	1606.6	1601.5
10°	1728.4	1716.8	1702.7	1692.4	1688.6	1672.0	1663.0	1651.5	1643.8	1636.0	1628.4
12.5°	1794.9	1779.7	1761.7	1739.9	1730.8	1716.8	1702.7	1687.3	1669.4	1661.8	1650.2
15°	1874.4	1848.7	1824.4	1797.6	1773.2	1759.1	1739.9	1715.5	1691.3	1681.0	1665.5
17.5°	1939.7	1912.8	1878.2	1846.2	1802.7	1791.1	1764.2	1734.7	1695.0	1691.3	1668.1
20°	1994.8	1953.8	1911.5	1873.1	1806.5	1800.0	1766.7	1732.2	1675.8	1675.8	1647.6
22.5°	2025.5	1969.2	1919.2	1868.0	1784.7	1779.7	1741.1	1700.2	1630.9	1633.5	1598.9
25°	2030.7	1962.9	1900.0	1838.5	1742.4	1733.5	1684.8	1640.0	1564.4	1559.2	1523.3
27.5°	2010.2	1930.7	1857.7	1783.4	1679.7	1660.4	1606.6	1552.8	1478.5	1465.7	1427.3
30°	1962.9	1869.3	1787.3	1701.3	1592.6	1561.8	1505.4	1450.3	1374.7	1358.1	1322.1
32.5°	1887.2	1780.8	1689.9	1604.0	1483.6	1445.2	1388.8	1333.7	1260.8	1247.8	1214.5
35°	1787.3	1668.1	1572.0	1481.0	1360.6	1321.0	1267.1	1218.5	1151.8	1146.6	1123.6
37.5°	1661.8	1537.4	1434.9	1347.8	1233.7	1213.4	1158.1	1122.3	1067.3	1072.4	1060.8
40°	1519.5	1392.6	1295.3	1218.5	1119.8	1101.9	1068.5	1041.6	994.3	1008.4	1009.5
42.5°	1376.0	1249.2	1160.8	1091.6	1007.1	995.5	972.4	957.0	921.2	949.4	960.9
45°	1213.4	1095.5	1019.8	967.3	904.5	904.5	892.9	891.7	867.4	907.1	918.7
47.5°	1055.7	963.4	910.9	878.9	835.3	855.8	852.0	862.3	844.3	885.3	895.6
50°	936.6	872.6	840.4	825.1	794.4	826.3	834.0	848.2	832.8	868.6	876.4
52.5°	861.0	818.7	800.8	796.9	775.0	814.8	827.6	840.4	822.5	855.8	854.5
55°	818.7	790.5	784.1	791.8	775.0	813.6	826.3	835.3	820.0	843.1	841.8
57.5°	803.3	788.0	791.8	803.3	791.8	823.9	830.3	840.4	825.1	835.3	840.4
60°	802.1	802.1	817.4	832.8	825.1	848.2	852.0	850.7	836.6	837.9	840.4
62.5°	794.4	813.6	839.2	863.4	861.0	889.2	891.7	875.0	863.4	850.7	846.9
65°	769.9	802.1	839.2	872.6	877.6	921.2	926.3	909.7	901.9	880.2	863.4
67.5°	716.2	757.1	800.8	841.8	850.7	909.7	921.2	927.6	931.4	917.3	895.6
70°	625.2	667.5	712.4	759.8	772.6	837.9	862.3	891.7	914.7	935.3	927.6
72.5°	508.6	547.1	585.5	629.2	648.2	716.2	748.2	799.4	835.3	887.8	909.7
75°	403.6	426.6	449.7	476.6	492.0	558.7	598.3	659.8	708.5	781.5	830.3
77.5°	317.7	329.3	340.8	352.4	358.7	395.8	428.0	489.4	545.8	638.1	709.7
80°	244.7	251.1	252.4	256.2	253.7	271.6	283.1	320.3	369.0	460.0	544.5
82.5°	157.6	162.7	165.3	171.6	158.9	181.9	189.6	193.5	219.1	285.7	346.0
85°	88.4	89.7	91.0	93.5	75.6	98.7	100.0	93.5	91.0	117.9	133.3
87.5°	21.8	20.5	21.8	21.8	9.0	20.5	20.5	14.1	10.3	19.2	15.4
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):

	135°	145°	155°	165°	175°	180°
0°	1745.0	1745.0	1745.0	1745.0	1745.0	1745.0
2.5°	1607.9	1605.3	1606.6	1600.2	1597.7	1598.9
5°	1582.3	1577.1	1577.1	1573.4	1568.2	1568.2
7.5°	1593.8	1583.6	1579.7	1572.0	1564.4	1565.5
10°	1611.8	1593.8	1581.0	1569.5	1560.4	1560.4
12.5°	1623.3	1591.3	1572.0	1556.6	1546.4	1546.4
15°	1625.9	1577.1	1549.0	1532.4	1522.1	1522.1
17.5°	1610.5	1549.0	1513.1	1491.3	1479.8	1482.3
20°	1572.0	1496.5	1454.1	1431.1	1419.6	1420.8
22.5°	1511.8	1424.7	1376.0	1349.2	1337.6	1337.6
25°	1429.7	1335.0	1282.4	1260.8	1250.5	1250.5
27.5°	1336.2	1238.9	1192.8	1176.1	1169.7	1169.7
30°	1231.3	1150.5	1117.1	1105.7	1095.5	1095.5
32.5°	1142.9	1085.2	1073.7	1058.2	1031.4	1030.1
35°	1072.4	1066.0	1057.0	1010.8	972.4	967.3
37.5°	1033.9	1072.4	1016.0	936.6	905.8	904.5
40°	1013.4	1049.3	951.9	913.5	909.7	909.7
42.5°	964.8	990.3	948.1	926.3	926.3	927.6
45°	913.5	935.3	957.0	937.9	944.2	945.5
47.5°	877.6	921.2	957.0	940.4	953.2	960.9
50°	844.3	908.4	937.9	937.9	951.9	953.2
52.5°	836.6	890.5	919.9	933.9	935.3	928.8
55°	837.9	876.4	905.8	923.8	916.0	916.0
57.5°	836.6	868.6	894.3	900.8	904.5	904.5
60°	837.9	858.4	878.9	876.4	889.2	889.2
62.5°	841.8	844.3	854.5	852.0	871.3	871.3
65°	850.7	826.3	820.0	822.5	845.5	844.3
67.5°	867.4	802.1	781.5	782.9	816.1	811.0
70°	891.7	768.7	737.9	730.3	786.6	777.7
72.5°	899.4	730.3	681.6	673.9	707.2	681.6
75°	863.4	699.5	621.3	595.8	581.7	573.9
77.5°	769.9	680.3	558.7	504.8	483.0	477.9
80°	638.1	640.6	476.6	412.6	479.2	477.9
82.5°	481.8	553.5	381.8	357.5	347.2	289.5
85°	233.2	416.4	293.4	246.0	147.4	139.7
87.5°	20.5	174.3	169.2	110.2	49.9	47.4
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)