

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: P195813

Luminaire Tested: **NAV-AF-03-D-UNV-T2R-7050-1200**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P195813
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-7050-1200
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 5000K, 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: 20823 lumens
Efficiency: N/A
Efficacy: 109.0 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

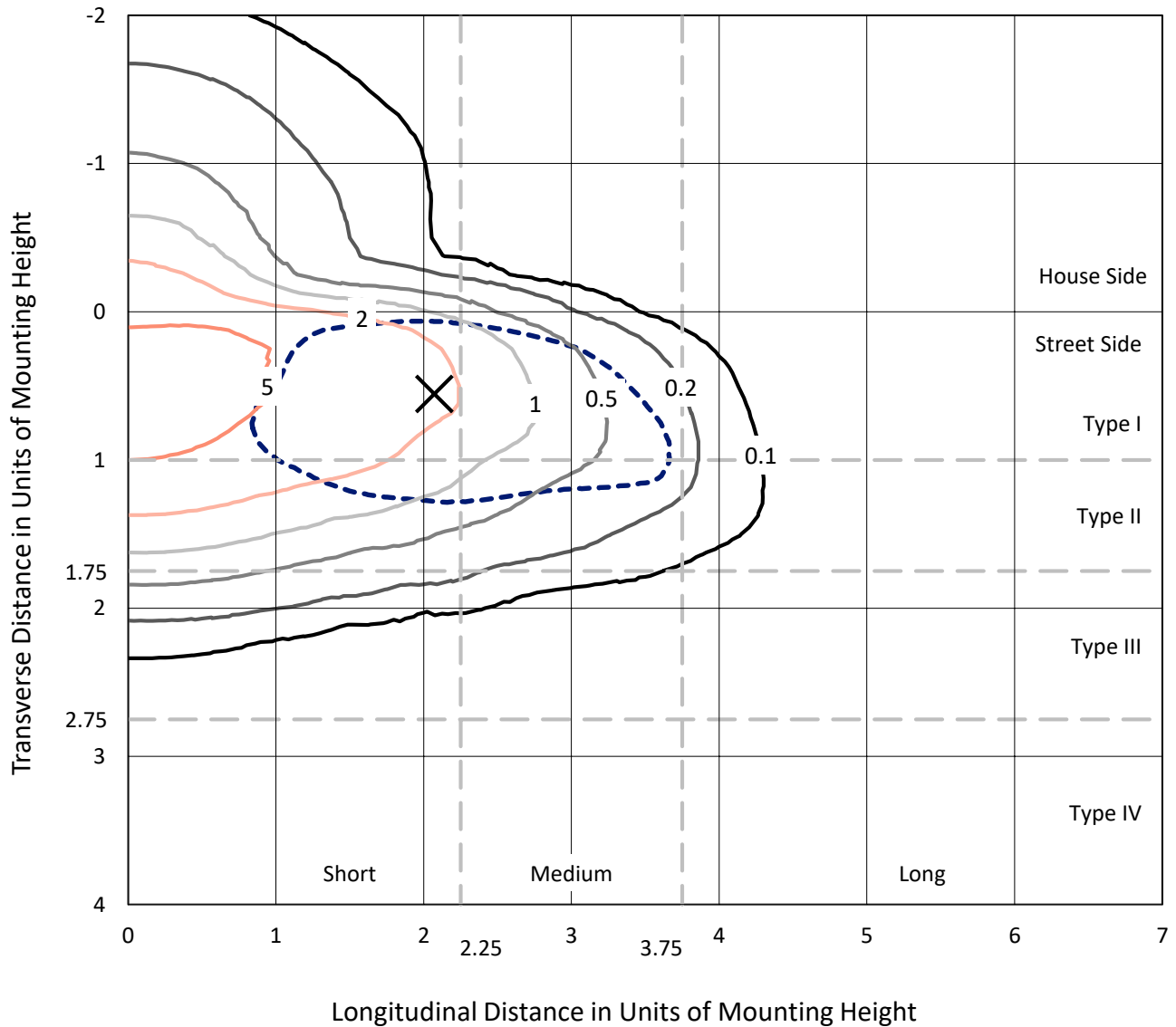
Input Watts (W): 191
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

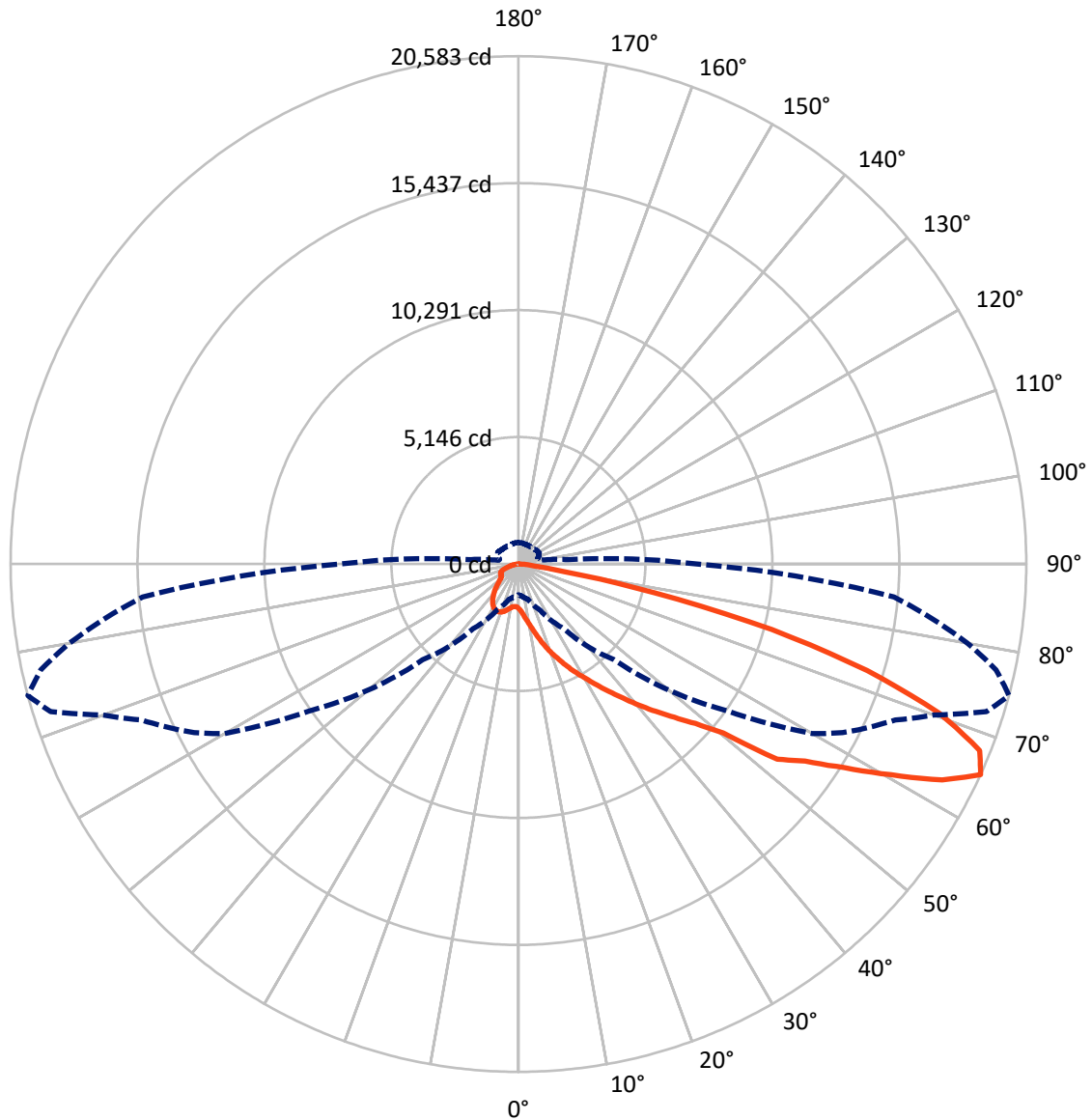
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8.3 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	3129.0	0.0	3129.0
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	17694.0	0.0	17694.0
	% Fixture	85.0	0.0	85.0
Total	Lumens	20823.0	0.0	20823.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	213.0	1.0
10°-20°	813.5	3.9
20°-30°	1641.8	7.9
30°-40°	2788.2	13.4
40°-50°	3888.9	18.7
50°-60°	4766.4	22.9
60°-70°	4484.5	21.5
70°-80°	1966.4	9.4
80°-90°	260.2	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°	20823.0	100.0
0°-180°	20823.0	100.0



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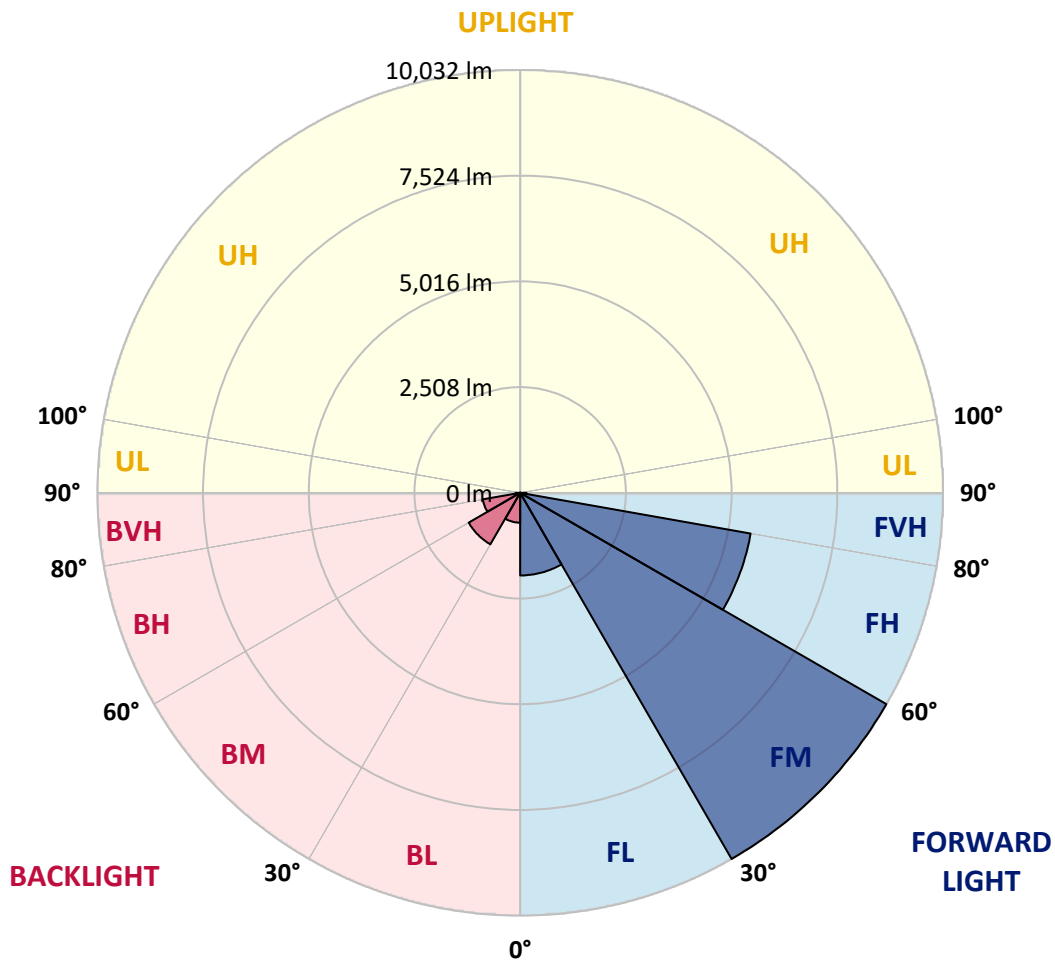
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1960.0	9.4			
FM	(30°-60°)	10031.6	48.2			
FH	(60°-80°)	5551.6	26.7			G3/7500
FVH	(80°-90°)	150.8	0.7			G2/225
BL	(0°-30°)	708.3	3.4	B2/1000		
BM	(30°-60°)	1412.0	6.8	B2/2500		
BH	(60°-80°)	899.3	4.3	B2/1000		G2/1000
BVH	(80°-90°)	109.4	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°	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2
2.5°	2271.8	2245.3	2247.9	2210.9	2156.5	2096.9	2047.9	2021.4	1998.9	1992.3	1955.2
5°	2971.2	2938.1	2926.2	2841.4	2714.2	2563.2	2413.5	2355.2	2307.6	2278.4	2206.9
7.5°	3543.5	3526.2	3510.3	3432.2	3306.3	3112.9	2871.9	2785.8	2706.3	2618.9	2532.7
10°	3932.9	3926.3	3919.7	3865.4	3760.7	3592.5	3332.8	3238.8	3139.4	3028.2	2915.6
12.5°	4227.0	4227.0	4232.3	4187.2	4123.7	3993.8	3758.1	3670.6	3570.0	3453.4	3324.9
15°	4424.4	4429.7	4457.5	4470.7	4437.6	4354.2	4147.5	4070.7	3975.3	3860.1	3732.9
17.5°	4555.5	4566.1	4607.2	4650.9	4693.3	4664.1	4510.5	4438.9	4352.8	4246.9	4127.6
20°	4860.2	4846.9	4848.3	4835.0	4897.3	4919.8	4835.0	4775.4	4706.5	4609.8	4501.2
22.5°	5500.0	5474.8	5409.9	5244.3	5168.8	5160.9	5110.5	5078.7	5025.8	4964.8	4856.2
25°	6334.5	6305.4	6176.9	5904.0	5678.8	5470.8	5378.1	5358.2	5323.8	5282.7	5204.6
27.5°	7196.9	7165.1	6999.5	6655.1	6361.0	5941.1	5652.3	5625.8	5594.0	5576.8	5539.7
30°	7955.9	7921.5	7758.5	7408.8	7053.8	6553.1	6021.9	5929.2	5874.9	5880.2	5859.0
32.5°	8622.2	8591.7	8408.9	8052.6	7692.3	7206.1	6501.4	6357.0	6235.2	6190.1	6206.0
35°	9181.2	9153.4	8953.4	8594.4	8231.4	7827.4	7118.7	6901.5	6702.8	6578.3	6563.7
37.5°	9509.7	9493.8	9353.4	9048.7	8688.4	8391.7	7810.2	7569.1	7276.4	7094.9	7015.4
40°	9491.2	9508.4	9484.6	9346.8	9067.3	8851.4	8530.8	8292.4	8006.2	7736.0	7574.4
42.5°	9221.0	9244.8	9352.1	9423.6	9348.1	9217.0	9160.0	8982.5	8725.5	8439.4	8215.5
45°	8850.0	8871.2	9010.3	9268.6	9484.6	9521.6	9711.1	9622.3	9405.1	9161.3	8915.0
47.5°	8281.8	8322.8	8484.4	8895.1	9409.1	9766.7	10173.4	10214.4	10088.6	9887.3	9656.8
50°	7459.2	7513.5	7740.0	8324.2	9122.9	10018.4	10860.9	11017.2	10966.9	10762.9	10529.7
52.5°	6616.7	6671.0	6973.0	7594.3	8661.9	10121.7	11537.8	11937.8	12226.6	12437.2	12478.3
55°	5739.7	5800.7	6131.8	6847.2	8047.3	9990.6	12021.3	12475.6	12768.4	12988.3	13077.0
57.5°	4750.2	4819.1	5139.7	5862.9	7178.3	9463.4	12559.1	13202.9	13638.7	13977.8	14168.6
60°	3615.0	3701.1	4033.6	4762.1	6036.5	8454.0	12798.9	13751.3	14444.1	14952.8	15254.8
62.5°	2291.7	2379.1	2724.8	3481.2	4737.0	7075.0	12120.6	13510.2	14691.8	15444.2	15997.9
65°	1250.5	1288.9	1481.0	2050.6	3193.8	5489.4	10401.2	12039.8	13742.0	14808.4	15658.8
67.5°	937.9	943.2	963.0	1102.1	1700.9	3706.4	8132.1	9632.9	11523.2	12895.6	13911.6
70°	821.3	821.3	823.9	825.3	923.3	2008.2	5509.3	6890.9	8623.5	10011.8	11274.2
72.5°	736.5	728.6	725.9	710.0	723.3	1029.3	2999.0	4240.2	5701.3	7259.1	8436.8
75°	635.8	634.5	634.5	618.6	626.6	724.6	1300.8	2034.7	3167.3	4617.8	5776.8
77.5°	549.7	540.5	541.8	532.5	557.7	555.0	617.3	838.5	1379.0	2425.5	3387.2
80°	453.0	446.4	450.4	445.1	484.8	410.6	415.9	512.6	684.8	1063.7	1499.5
82.5°	335.1	337.8	363.0	360.3	408.0	276.9	304.7	382.8	461.0	529.9	576.2
85°	196.0	200.0	261.0	274.2	299.4	145.7	186.8	227.8	257.0	284.8	296.7
87.5°	21.2	27.8	145.7	149.7	133.8	43.7	75.5	95.4	102.0	108.6	95.4
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):

	67.5°	70°	72.5°	75°	77.5°	80°	85°	90°	95°	100°	102.5°
0°	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2
2.5°	1943.3	1926.1	1907.5	1896.9	1878.4	1862.5	1833.3	1809.5	1783.0	1764.4	1756.5
5°	2171.1	2130.1	2086.3	2054.5	2014.8	1980.4	1914.1	1834.7	1809.5	1756.5	1743.3
7.5°	2467.8	2393.7	2319.5	2258.5	2189.7	2132.7	2021.4	1878.4	1859.8	1775.0	1756.5
10°	2816.2	2707.6	2597.7	2503.6	2402.9	2315.5	2151.2	1949.9	1930.0	1821.4	1802.9
12.5°	3205.7	3073.2	2931.5	2791.1	2671.8	2548.6	2324.8	2061.2	2029.4	1900.9	1875.7
15°	3607.0	3464.0	3299.7	3130.2	2983.1	2820.2	2538.0	2206.9	2148.6	1997.6	1963.1
17.5°	4003.1	3848.1	3675.9	3486.5	3314.3	3119.6	2768.5	2369.8	2269.1	2093.0	2049.2
20°	4385.9	4228.3	4046.8	3861.4	3646.8	3424.2	3004.3	2530.1	2376.4	2172.4	2115.5
22.5°	4734.3	4599.2	4417.7	4204.5	3987.2	3736.9	3244.1	2690.4	2470.5	2233.4	2160.5
25°	5101.3	4978.1	4797.9	4592.6	4339.6	4061.4	3491.8	2842.7	2546.0	2266.5	2176.4
27.5°	5472.2	5366.2	5196.6	4980.7	4709.2	4400.5	3743.5	2983.1	2606.9	2277.1	2168.5
30°	5868.2	5786.1	5629.8	5388.7	5114.5	4772.7	4017.7	3120.9	2645.3	2262.5	2132.7
32.5°	6243.1	6240.5	6101.4	5851.0	5555.6	5179.4	4306.5	3260.0	2665.2	2221.5	2070.4
35°	6632.6	6686.9	6582.2	6343.8	6032.5	5615.2	4625.7	3408.3	2666.5	2148.6	1989.6
37.5°	7075.0	7171.7	7125.3	6898.8	6571.6	6112.0	5000.6	3575.3	2658.6	2047.9	1871.7
40°	7578.4	7710.8	7709.5	7518.8	7169.1	6668.3	5436.4	3762.0	2640.0	1922.1	1732.7
42.5°	8154.6	8312.2	8355.9	8167.8	7814.2	7276.4	5935.8	3967.4	2610.9	1797.6	1585.6
45°	8814.3	8953.4	9035.5	8860.6	8505.6	7938.7	6509.4	4200.5	2575.1	1637.3	1417.4
47.5°	9520.3	9681.9	9805.1	9655.4	9276.6	8693.7	7188.9	4501.2	2561.9	1454.5	1235.9
50°	10395.9	10562.8	10829.1	10761.5	10553.6	10084.6	8626.2	5211.2	2567.2	1280.9	1083.6
52.5°	12568.4	12951.2	13287.7	13138.0	12643.9	11839.8	9794.5	5606.0	2455.9	1139.2	977.6
55°	13224.1	13658.6	14155.3	14093.0	13618.8	12808.1	10717.8	5935.8	2348.6	1035.9	908.7
57.5°	14371.2	14883.9	15578.0	15564.7	14983.2	14070.5	11906.0	6330.5	2302.3	976.3	874.3
60°	15585.9	16239.0	17198.0	17347.7	16715.9	15766.1	13310.2	6815.4	2308.9	943.2	854.4
62.5°	16473.5	17431.2	18826.1	19273.8	18529.3	17482.8	14767.3	7300.2	2269.1	904.7	830.6
65°	16527.8	17906.7	19885.8	20582.6	19828.8	18484.3	15281.3	7204.8	2030.7	853.1	792.1
67.5°	15203.1	16999.3	19403.6	20167.9	19397.0	17867.0	14380.5	6298.8	1650.5	763.0	725.9
70°	12662.4	14747.4	17243.1	18094.8	17457.7	15909.2	12515.4	5031.1	1233.3	643.8	626.6
72.5°	9785.3	11729.9	13996.3	14784.5	14297.0	12935.3	9871.4	3666.7	880.9	521.9	508.7
75°	6995.5	8651.3	10296.6	10597.3	10116.4	8865.9	6404.7	2290.3	617.3	427.9	409.3
77.5°	4331.6	5408.6	5999.4	5612.6	4999.3	4155.5	2606.9	1131.3	410.6	348.4	329.8
80°	1922.1	2255.9	2106.2	1877.0	1482.3	1218.7	796.1	502.0	264.9	268.9	258.3
82.5°	646.4	683.5	665.0	661.0	596.1	521.9	337.8	217.2	148.4	172.2	168.2
85°	315.3	329.8	331.2	343.1	298.0	231.8	91.4	86.1	63.6	92.7	96.7
87.5°	95.4	96.7	87.4	95.4	76.8	53.0	17.2	23.8	11.9	22.5	22.5
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°	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2
2.5°	1741.9	1736.6	1727.4	1716.8	1714.1	1700.9	1696.9	1690.3	1686.3	1679.7	1674.4
5°	1726.0	1716.8	1706.2	1694.2	1694.2	1675.7	1667.7	1659.8	1659.8	1647.9	1642.6
7.5°	1741.9	1730.0	1718.1	1707.5	1711.5	1690.3	1682.3	1674.4	1673.0	1661.1	1655.8
10°	1787.0	1775.0	1760.5	1749.9	1745.9	1728.7	1719.4	1707.5	1699.5	1691.6	1683.6
12.5°	1855.8	1840.0	1821.4	1798.9	1789.6	1775.0	1760.5	1744.6	1726.0	1718.1	1706.2
15°	1938.0	1911.5	1886.3	1858.5	1833.3	1818.8	1798.9	1773.7	1748.5	1738.0	1722.1
17.5°	2005.5	1977.7	1942.0	1908.8	1863.8	1851.9	1824.1	1793.6	1752.5	1748.5	1724.7
20°	2062.5	2020.1	1976.4	1936.7	1867.8	1861.1	1826.7	1790.9	1732.7	1732.7	1703.5
22.5°	2094.3	2036.0	1984.3	1931.4	1845.2	1840.0	1800.2	1757.8	1686.3	1688.9	1653.2
25°	2099.6	2029.4	1964.5	1900.9	1801.5	1792.3	1741.9	1695.6	1617.4	1612.1	1575.0
27.5°	2078.4	1996.3	1920.8	1843.9	1736.6	1716.8	1661.1	1605.5	1528.7	1515.4	1475.7
30°	2029.4	1932.7	1847.9	1759.1	1646.6	1614.8	1556.5	1499.5	1421.4	1404.1	1367.0
32.5°	1951.2	1841.3	1747.2	1658.5	1534.0	1494.2	1435.9	1379.0	1303.5	1290.2	1255.8
35°	1847.9	1724.7	1625.4	1531.3	1406.8	1365.7	1310.1	1259.8	1190.9	1185.6	1161.7
37.5°	1718.1	1589.6	1483.6	1393.5	1275.6	1254.5	1197.5	1160.4	1103.4	1108.7	1096.8
40°	1571.0	1439.9	1339.2	1259.8	1157.8	1139.2	1104.8	1076.9	1027.9	1042.5	1043.8
42.5°	1422.7	1291.5	1200.1	1128.6	1041.2	1029.3	1005.4	989.5	952.4	981.6	993.5
45°	1254.5	1132.6	1054.4	1000.1	935.2	935.2	923.3	922.0	896.8	937.9	949.8
47.5°	1091.5	996.1	941.8	908.7	863.7	884.9	880.9	891.5	873.0	915.3	925.9
50°	968.3	902.1	869.0	853.1	821.3	854.4	862.4	876.9	861.0	898.1	906.1
52.5°	890.2	846.5	827.9	823.9	801.4	842.5	855.7	869.0	850.4	884.9	883.5
55°	846.5	817.3	810.7	818.6	801.4	841.2	854.4	863.7	847.8	871.6	870.3
57.5°	830.6	814.7	818.6	830.6	818.6	851.8	858.4	869.0	853.1	863.7	869.0
60°	829.2	829.2	845.1	861.0	853.1	876.9	880.9	879.6	865.0	866.3	869.0
62.5°	821.3	841.2	867.7	892.8	890.2	919.3	922.0	904.7	892.8	879.6	875.6
65°	796.1	829.2	867.7	902.1	907.4	952.4	957.7	940.5	932.6	910.0	892.8
67.5°	740.5	782.9	827.9	870.3	879.6	940.5	952.4	959.1	963.0	948.5	925.9
70°	646.4	690.1	736.5	785.5	798.8	866.3	891.5	922.0	945.8	967.0	959.1
72.5°	525.9	565.6	605.4	650.4	670.3	740.5	773.6	826.6	863.7	918.0	940.5
75°	417.3	441.1	465.0	492.8	508.7	577.6	618.6	682.2	732.5	808.0	858.4
77.5°	328.5	340.4	352.4	364.3	370.9	409.3	442.4	506.0	564.3	659.7	733.9
80°	253.0	259.6	261.0	264.9	262.3	280.8	292.7	331.2	381.5	475.6	563.0
82.5°	162.9	168.2	170.9	177.5	164.3	188.1	196.0	200.0	226.5	295.4	357.7
85°	91.4	92.7	94.1	96.7	78.2	102.0	103.3	96.7	94.1	121.9	137.8
87.5°	22.5	21.2	22.5	22.5	9.3	21.2	21.2	14.6	10.6	19.9	15.9
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):

	135°	145°	155°	165°	175°	180°
0°	1804.2	1804.2	1804.2	1804.2	1804.2	1804.2
2.5°	1662.4	1659.8	1661.1	1654.5	1651.8	1653.2
5°	1636.0	1630.7	1630.7	1626.7	1621.4	1621.4
7.5°	1647.9	1637.3	1633.3	1625.4	1617.4	1618.7
10°	1666.4	1647.9	1634.6	1622.7	1613.4	1613.4
12.5°	1678.3	1645.2	1625.4	1609.5	1598.9	1598.9
15°	1681.0	1630.7	1601.5	1584.3	1573.7	1573.7
17.5°	1665.1	1601.5	1564.4	1541.9	1530.0	1532.6
20°	1625.4	1547.2	1503.5	1479.6	1467.7	1469.0
22.5°	1563.1	1473.0	1422.7	1394.9	1382.9	1382.9
25°	1478.3	1380.3	1326.0	1303.5	1292.9	1292.9
27.5°	1381.6	1280.9	1233.3	1216.0	1209.4	1209.4
30°	1273.0	1189.5	1155.1	1143.2	1132.6	1132.6
32.5°	1181.6	1122.0	1110.1	1094.2	1066.4	1065.0
35°	1108.7	1102.1	1092.8	1045.2	1005.4	1000.1
37.5°	1069.0	1108.7	1050.5	968.3	936.5	935.2
40°	1047.8	1084.9	984.2	944.5	940.5	940.5
42.5°	997.5	1024.0	980.2	957.7	957.7	959.1
45°	944.5	967.0	989.5	969.7	976.3	977.6
47.5°	907.4	952.4	989.5	972.3	985.5	993.5
50°	873.0	939.2	969.7	969.7	984.2	985.5
52.5°	865.0	920.6	951.1	965.7	967.0	960.4
55°	866.3	906.1	936.5	955.1	947.1	947.1
57.5°	865.0	898.1	924.6	931.2	935.2	935.2
60°	866.3	887.5	908.7	906.1	919.3	919.3
62.5°	870.3	873.0	883.5	880.9	900.8	900.8
65°	879.6	854.4	847.8	850.4	874.3	873.0
67.5°	896.8	829.2	808.0	809.4	843.8	838.5
70°	922.0	794.8	763.0	755.1	813.3	804.1
72.5°	929.9	755.1	704.7	696.8	731.2	704.7
75°	892.8	723.3	642.5	616.0	601.4	593.4
77.5°	796.1	703.4	577.6	521.9	499.4	494.1
80°	659.7	662.3	492.8	426.5	495.4	494.1
82.5°	498.1	572.3	394.7	369.6	359.0	299.4
85°	241.1	430.5	303.3	254.3	152.3	144.4
87.5°	21.2	180.2	174.9	113.9	51.7	49.0
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)