

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: P196767

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

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196767
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
Description: NAVION ROADWAY AND AREA LUMINAIRE
(3) 70 CRI, 3000K, 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: 18358.8 lumens
Efficiency: N/A
Efficacy: 110.6 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 - G2

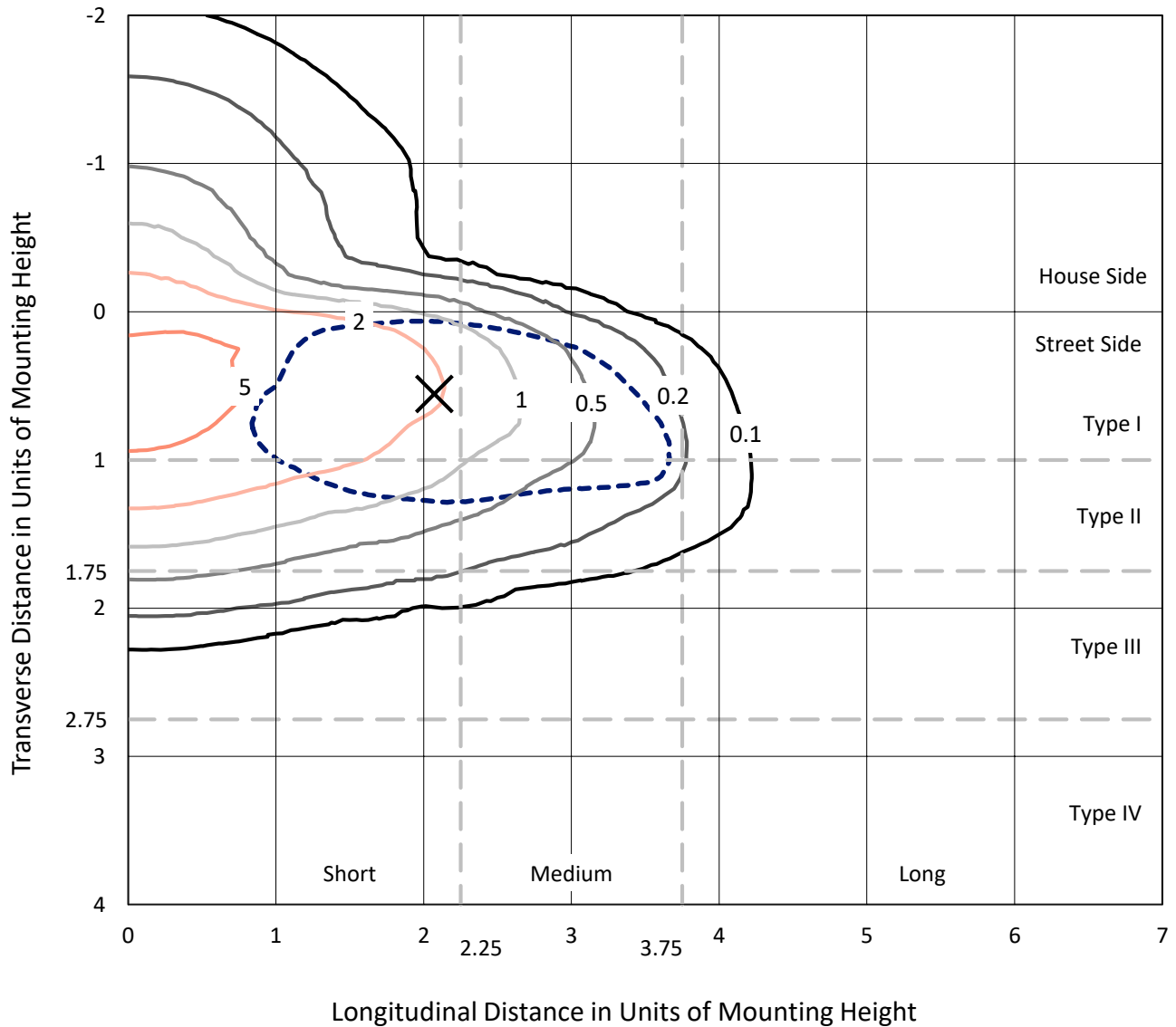
Input Watts (W): 166
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

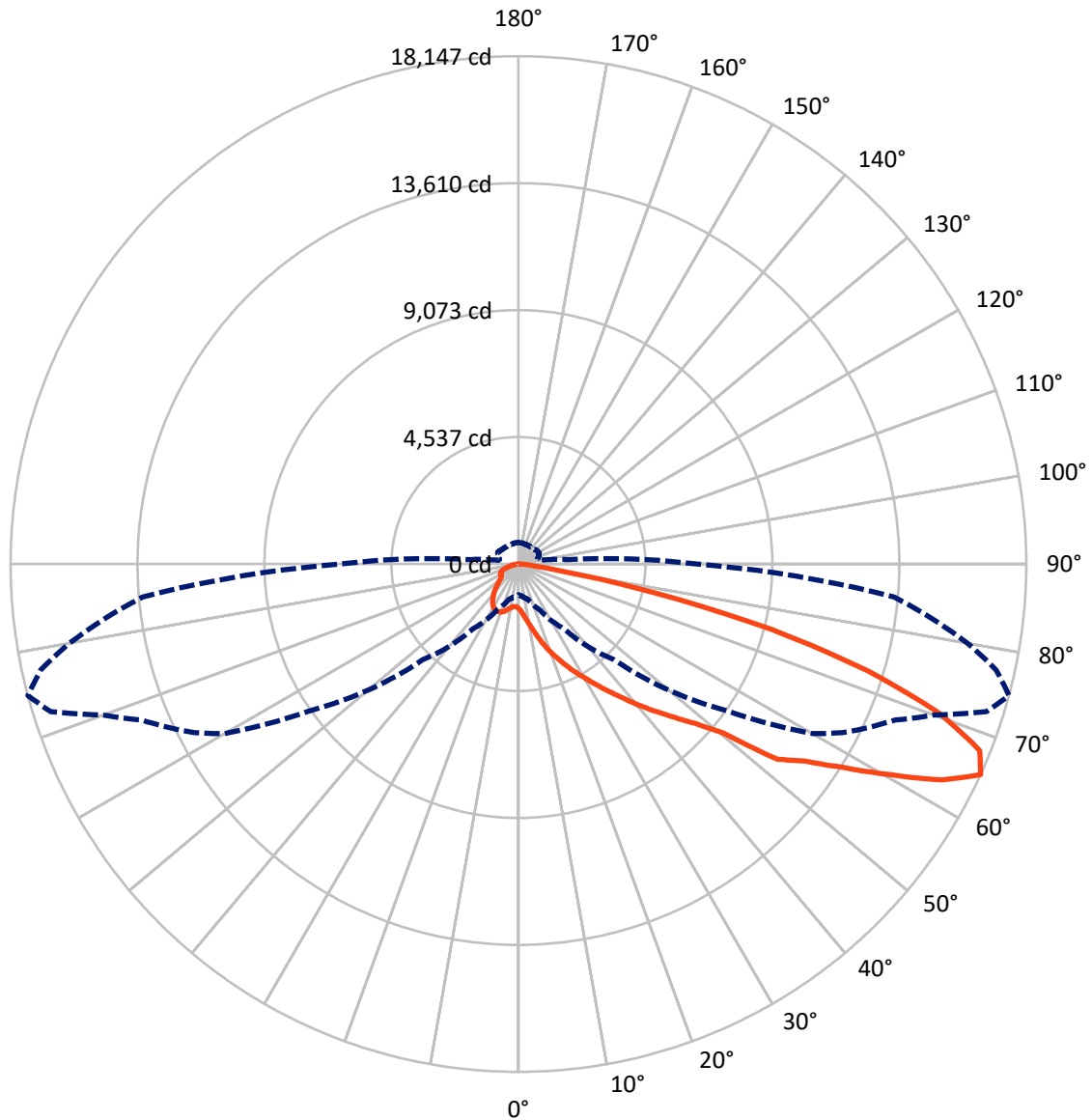
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.3 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	2758.7	0.0	2758.7
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	15600.1	0.0	15600.1
	% Fixture	85.0	0.0	85.0
Total	Lumens	18358.8	0.0	18358.8
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	187.8	1.0
10°-20°	717.3	3.9
20°-30°	1447.5	7.9
30°-40°	2458.3	13.4
40°-50°	3428.7	18.7
50°-60°	4202.3	22.9
60°-70°	3953.8	21.5
70°-80°	1733.7	9.4
80°-90°	229.4	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°	18358.8	100.0
0°-180°	18358.8	100.0

Coefficient of Utilization



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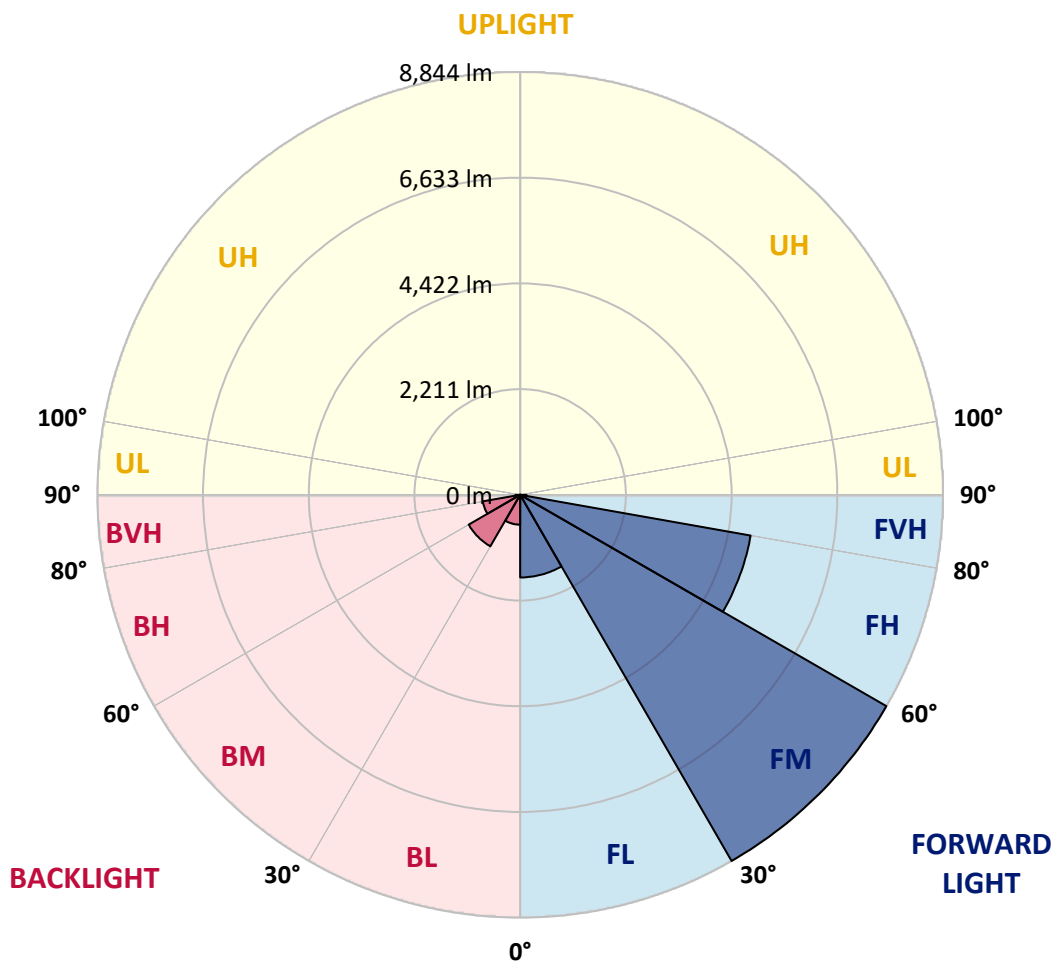
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1728.1	9.4			
FM	(30°-60°)	8844.5	48.2			
FH	(60°-80°)	4894.6	26.7			G2/5000
FVH	(80°-90°)	133.0	0.7			G2/225
BL	(0°-30°)	624.5	3.4	B2/1000		
BM	(30°-60°)	1244.9	6.8	B2/2500		
BH	(60°-80°)	792.9	4.3	B2/1000		G2/1000
BVH	(80°-90°)	96.4	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-G2

Type II Short





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CANDELA DISTRIBUTION (FULL):

	0°	5°	15°	25°	35°	45°	55°	57.5°	60°	62.5°	65°
0°	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7
2.5°	2002.9	1979.6	1982.0	1949.1	1901.3	1848.7	1805.6	1782.2	1762.4	1756.6	1723.8
5°	2619.6	2590.4	2579.9	2505.1	2393.0	2259.9	2128.0	2076.6	2034.5	2008.8	1945.7
7.5°	3124.2	3109.0	3095.0	3026.1	2915.0	2744.6	2532.0	2456.1	2386.0	2308.9	2233.0
10°	3467.5	3461.7	3455.9	3407.9	3315.7	3167.3	2938.4	2855.5	2768.0	2669.9	2570.6
12.5°	3726.8	3726.8	3731.4	3691.8	3635.7	3521.2	3313.3	3236.3	3147.5	3044.7	2931.4
15°	3900.8	3905.5	3929.9	3941.6	3912.5	3839.0	3656.7	3588.9	3504.8	3403.3	3291.1
17.5°	4016.4	4025.7	4061.9	4100.5	4137.8	4112.2	3976.7	3913.6	3837.7	3744.4	3639.2
20°	4285.0	4273.3	4274.6	4262.9	4317.7	4337.6	4262.9	4210.3	4149.5	4064.3	3968.6
22.5°	4849.2	4827.0	4769.7	4623.8	4557.1	4550.1	4505.8	4477.8	4431.0	4377.3	4281.6
25°	5584.9	5559.2	5445.9	5205.3	5006.8	4823.5	4741.7	4724.2	4693.8	4657.6	4588.7
27.5°	6345.2	6317.2	6171.2	5867.6	5608.3	5238.0	4983.5	4960.1	4932.1	4916.8	4884.1
30°	7014.5	6984.1	6840.4	6532.1	6219.0	5777.6	5309.2	5227.5	5179.7	5184.4	5165.7
32.5°	7601.8	7575.1	7413.8	7099.6	6782.0	6353.4	5732.1	5604.8	5497.3	5457.6	5471.6
35°	8094.7	8070.2	7893.9	7577.3	7257.3	6901.2	6276.3	6084.7	5909.7	5799.8	5786.9
37.5°	8384.3	8370.4	8246.6	7977.9	7660.2	7398.6	6885.9	6673.3	6415.2	6255.3	6185.1
40°	8368.0	8383.3	8362.1	8240.7	7994.3	7804.0	7521.3	7311.1	7058.8	6820.5	6678.0
42.5°	8129.8	8150.7	8245.4	8308.4	8241.9	8126.2	8076.0	7919.5	7693.0	7440.7	7243.4
45°	7802.7	7821.5	7944.0	8171.8	8362.1	8394.8	8561.9	8483.7	8292.1	8077.2	7860.0
47.5°	7301.7	7338.0	7480.4	7842.4	8295.6	8610.9	8969.5	9005.7	8894.7	8717.2	8514.0
50°	6576.5	6624.3	6824.0	7339.1	8043.3	8832.8	9575.6	9713.4	9669.0	9489.1	9283.6
52.5°	5833.7	5881.5	6147.8	6695.6	7636.9	8924.0	10172.4	10525.2	10779.7	10965.4	11001.7
55°	5060.6	5114.2	5406.2	6036.9	7095.0	8808.3	10598.7	10999.2	11257.4	11451.3	11529.5
57.5°	4188.1	4248.9	4531.4	5169.2	6328.9	8343.5	11072.9	11640.5	12024.7	12323.7	12491.8
60°	3187.2	3263.1	3556.3	4198.7	5322.1	7453.5	11284.3	12124.0	12734.8	13183.2	13449.6
62.5°	2020.4	2097.6	2402.4	3069.2	4176.4	6237.7	10686.3	11911.5	12953.2	13616.6	14104.8
65°	1102.5	1136.4	1305.7	1807.9	2815.8	4839.7	9170.3	10615.1	12115.8	13055.9	13805.8
67.5°	826.9	831.6	849.1	971.7	1499.6	3267.8	7169.7	8492.9	10159.6	11369.5	12265.3
70°	724.1	724.1	726.5	727.5	814.0	1770.5	4857.3	6075.5	7603.1	8826.9	9940.0
72.5°	649.3	642.3	640.0	625.9	637.6	907.5	2644.1	3738.5	5026.7	6400.1	7438.4
75°	560.6	559.4	559.4	545.4	552.5	638.8	1146.9	1793.9	2792.4	4071.3	5093.2
77.5°	484.7	476.5	477.7	469.5	491.6	489.4	544.2	739.2	1215.8	2138.4	2986.3
80°	399.5	393.6	397.0	392.5	427.4	362.0	366.7	452.0	603.7	937.8	1322.0
82.5°	295.4	297.8	320.0	317.6	359.7	244.0	268.7	337.5	406.5	467.2	508.0
85°	172.8	176.4	230.1	241.8	264.0	128.5	164.7	200.9	226.6	251.1	261.5
87.5°	18.7	24.5	128.5	131.9	118.0	38.6	66.5	84.1	89.9	95.8	84.1
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°	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7
2.5°	1713.3	1698.1	1681.8	1672.4	1656.1	1642.0	1616.4	1595.4	1572.0	1555.7	1548.6
5°	1914.2	1877.9	1839.5	1811.4	1776.3	1746.0	1687.6	1617.6	1595.4	1548.6	1537.0
7.5°	2175.8	2110.4	2045.0	1991.2	1930.5	1880.4	1782.2	1656.1	1639.8	1565.0	1548.6
10°	2482.9	2387.2	2290.3	2207.4	2118.5	2041.5	1896.6	1719.2	1701.6	1605.9	1589.5
12.5°	2826.3	2709.5	2584.5	2460.7	2355.6	2247.0	2049.7	1817.2	1789.2	1675.9	1653.7
15°	3180.2	3054.1	2909.2	2759.8	2630.1	2486.4	2237.7	1945.7	1894.3	1761.2	1730.7
17.5°	3529.4	3392.7	3240.9	3073.9	2922.1	2750.4	2441.0	2089.4	2000.6	1845.3	1806.7
20°	3866.9	3727.9	3568.0	3404.4	3215.3	3019.1	2648.8	2230.6	2095.3	1915.4	1865.2
22.5°	4174.0	4054.9	3895.0	3706.9	3515.4	3294.6	2860.2	2372.0	2178.1	1969.1	1904.8
25°	4497.5	4389.0	4230.1	4049.1	3826.0	3580.8	3078.6	2506.3	2244.7	1998.3	1918.8
27.5°	4824.6	4731.2	4581.7	4391.3	4151.9	3879.8	3300.5	2630.1	2298.4	2007.6	1911.8
30°	5173.8	5101.5	4963.5	4751.0	4509.2	4207.9	3542.3	2751.5	2332.2	1994.7	1880.4
32.5°	5504.3	5502.0	5379.4	5158.5	4898.2	4566.5	3796.9	2874.2	2349.8	1958.6	1825.4
35°	5847.7	5895.5	5803.3	5593.1	5318.6	4950.7	4078.3	3004.9	2350.9	1894.3	1754.1
37.5°	6237.7	6323.1	6282.2	6082.5	5793.9	5388.6	4408.8	3152.1	2343.9	1805.6	1650.3
40°	6681.5	6798.3	6797.1	6629.0	6320.6	5879.2	4793.1	3316.8	2327.7	1694.6	1527.7
42.5°	7189.6	7328.6	7367.2	7201.3	6889.5	6415.2	5233.4	3497.8	2302.0	1584.8	1398.0
45°	7771.2	7893.9	7966.2	7812.0	7499.1	6999.2	5739.1	3703.5	2270.4	1443.6	1249.7
47.5°	8393.8	8536.2	8644.8	8512.8	8178.8	7665.0	6338.2	3968.6	2258.7	1282.3	1089.7
50°	9165.6	9312.8	9547.6	9488.1	9304.6	8891.2	7605.3	4594.6	2263.5	1129.4	955.4
52.5°	11081.1	11418.5	11715.3	11583.2	11147.6	10438.7	8635.5	4942.6	2165.3	1004.4	861.9
55°	11659.2	12042.2	12480.1	12425.3	12007.1	11292.4	9449.5	5233.4	2070.7	913.3	801.2
57.5°	12670.6	13122.6	13734.6	13722.9	13210.1	12405.4	10497.1	5581.4	2029.8	860.8	770.9
60°	13741.5	14317.4	15162.9	15294.8	14737.8	13900.4	11735.1	6008.8	2035.6	831.6	753.4
62.5°	14524.1	15368.4	16598.2	16993.0	16336.6	15414.0	13019.8	6436.4	2000.6	797.7	732.2
65°	14571.9	15787.6	17532.5	18146.9	17482.3	16296.9	13472.9	6352.3	1790.4	752.1	698.3
67.5°	13404.0	14987.6	17107.4	17781.3	17101.6	15752.7	12678.8	5553.3	1455.3	672.7	640.0
70°	11164.0	13002.3	15202.6	15953.5	15391.8	14026.4	11034.3	4435.7	1087.3	567.6	552.5
72.5°	8627.3	10341.7	12340.1	13034.9	12605.1	11404.6	8703.1	3232.8	776.7	460.2	448.5
75°	6167.6	7627.6	9078.2	9343.2	8919.3	7816.7	5646.8	2019.3	544.2	377.3	360.9
77.5°	3819.0	4768.5	5289.5	4948.4	4407.6	3663.7	2298.4	997.4	362.0	307.1	290.8
80°	1694.6	1988.9	1857.0	1655.0	1306.8	1074.4	701.9	442.6	233.6	237.1	227.7
82.5°	569.9	602.7	586.2	582.8	525.5	460.2	297.8	191.5	130.8	151.9	148.4
85°	277.9	290.8	291.9	302.5	262.8	204.5	80.7	75.9	56.0	81.7	85.2
87.5°	84.1	85.2	77.0	84.1	67.7	46.8	15.2	21.0	10.5	19.8	19.8
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°	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7
2.5°	1535.7	1531.2	1523.0	1513.6	1511.3	1499.6	1496.1	1490.2	1486.7	1480.9	1476.2
5°	1521.8	1513.6	1504.3	1493.8	1493.8	1477.4	1470.4	1463.4	1463.4	1452.8	1448.2
7.5°	1535.7	1525.3	1514.8	1505.4	1509.0	1490.2	1483.2	1476.2	1475.1	1464.5	1459.9
10°	1575.5	1565.0	1552.1	1542.8	1539.3	1524.0	1516.0	1505.4	1498.4	1491.4	1484.4
12.5°	1636.2	1622.2	1605.9	1586.0	1577.8	1565.0	1552.1	1538.2	1521.8	1514.8	1504.3
15°	1708.6	1685.4	1663.2	1638.6	1616.4	1603.5	1586.0	1563.8	1541.6	1532.3	1518.2
17.5°	1768.3	1743.7	1712.1	1682.9	1643.3	1632.8	1608.2	1581.3	1545.2	1541.6	1520.6
20°	1818.4	1781.0	1742.4	1707.5	1646.7	1640.8	1610.5	1579.1	1527.7	1527.7	1501.9
22.5°	1846.5	1795.0	1749.6	1702.8	1626.9	1622.2	1587.2	1549.9	1486.7	1489.1	1457.5
25°	1851.1	1789.2	1732.0	1675.9	1588.3	1580.2	1535.7	1494.8	1426.1	1421.4	1388.6
27.5°	1832.4	1760.0	1693.4	1625.7	1531.2	1513.6	1464.5	1415.5	1347.7	1336.1	1301.1
30°	1789.2	1704.0	1629.3	1550.9	1451.7	1423.6	1372.3	1322.0	1253.2	1238.0	1205.2
32.5°	1720.3	1623.4	1540.4	1462.2	1352.4	1317.3	1266.0	1215.8	1149.2	1137.5	1107.2
35°	1629.3	1520.6	1433.1	1350.1	1240.3	1204.1	1155.1	1110.6	1050.0	1045.3	1024.2
37.5°	1514.8	1401.5	1308.1	1228.6	1124.8	1106.0	1055.8	1023.1	972.9	977.6	967.1
40°	1385.1	1269.5	1180.8	1110.6	1020.7	1004.4	974.0	949.5	906.3	919.1	920.3
42.5°	1254.3	1138.7	1058.0	995.1	918.0	907.5	886.4	872.4	839.7	865.5	875.9
45°	1106.0	998.5	929.7	881.7	824.6	824.6	814.0	812.9	790.7	826.9	837.4
47.5°	962.3	878.2	830.4	801.2	761.4	780.1	776.7	786.0	769.6	807.0	816.3
50°	853.8	795.3	766.1	752.1	724.1	753.4	760.3	773.1	759.2	791.8	798.8
52.5°	784.8	746.2	730.0	726.5	706.6	742.8	754.4	766.1	749.8	780.1	779.0
55°	746.2	720.6	714.8	721.7	706.6	741.7	753.4	761.4	747.5	768.5	767.3
57.5°	732.2	718.3	721.7	732.2	721.7	750.9	756.8	766.1	752.1	761.4	766.1
60°	731.1	731.1	745.1	759.2	752.1	773.1	776.7	775.5	762.6	763.8	766.1
62.5°	724.1	741.7	765.0	787.2	784.8	810.4	812.9	797.7	787.2	775.5	772.0
65°	701.9	731.1	765.0	795.3	800.0	839.7	844.3	829.2	822.1	802.4	787.2
67.5°	652.9	690.2	730.0	767.3	775.5	829.2	839.7	845.5	849.1	836.3	816.3
70°	569.9	608.5	649.3	692.6	704.2	763.8	786.0	812.9	833.8	852.6	845.5
72.5°	463.7	498.7	533.7	573.4	591.0	652.9	682.1	728.8	761.4	809.4	829.2
75°	367.8	389.0	409.9	434.5	448.5	509.2	545.4	601.5	645.8	712.4	756.8
77.5°	289.6	300.1	310.7	321.2	327.0	360.9	390.0	446.1	497.5	581.6	647.1
80°	223.1	228.9	230.1	233.6	231.2	247.6	258.1	291.9	336.4	419.2	496.4
82.5°	143.6	148.4	150.7	156.5	144.8	165.8	172.8	176.4	199.7	260.5	315.3
85°	80.7	81.7	82.9	85.2	69.0	89.9	91.1	85.2	82.9	107.4	121.5
87.5°	19.8	18.7	19.8	19.8	8.2	18.7	18.7	12.9	9.4	17.5	13.9
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°	1590.7	1590.7	1590.7	1590.7	1590.7	1590.7
2.5°	1465.7	1463.4	1464.5	1458.7	1456.4	1457.5
5°	1442.3	1437.7	1437.7	1434.1	1429.5	1429.5
7.5°	1452.8	1443.6	1440.0	1433.1	1426.1	1427.2
10°	1469.2	1452.8	1441.2	1430.6	1422.5	1422.5
12.5°	1479.7	1450.5	1433.1	1419.0	1409.7	1409.7
15°	1482.1	1437.7	1411.9	1396.8	1387.5	1387.5
17.5°	1468.0	1411.9	1379.3	1359.4	1349.0	1351.2
20°	1433.1	1364.1	1325.6	1304.5	1294.0	1295.2
22.5°	1378.1	1298.6	1254.3	1229.8	1219.4	1219.4
25°	1303.4	1216.9	1169.1	1149.2	1139.9	1139.9
27.5°	1218.1	1129.4	1087.3	1072.2	1066.3	1066.3
30°	1122.3	1048.8	1018.4	1007.9	998.5	998.5
32.5°	1041.8	989.3	978.8	964.6	940.1	939.0
35°	977.6	971.7	963.5	921.5	886.4	881.7
37.5°	942.5	977.6	926.2	853.8	825.7	824.6
40°	923.8	956.6	867.7	832.7	829.2	829.2
42.5°	879.4	902.8	864.2	844.3	844.3	845.5
45°	832.7	852.6	872.4	855.0	860.8	861.9
47.5°	800.0	839.7	872.4	857.2	868.9	875.9
50°	769.6	828.0	855.0	855.0	867.7	868.9
52.5°	762.6	811.7	838.6	851.3	852.6	846.8
55°	763.8	798.8	825.7	842.1	835.1	835.1
57.5°	762.6	791.8	815.2	821.1	824.6	824.6
60°	763.8	782.6	801.2	798.8	810.4	810.4
62.5°	767.3	769.6	779.0	776.7	794.2	794.2
65°	775.5	753.4	747.5	749.8	770.9	769.6
67.5°	790.7	731.1	712.4	713.6	743.9	739.2
70°	812.9	700.8	672.7	665.7	717.1	708.9
72.5°	819.9	665.7	621.3	614.4	644.6	621.3
75°	787.2	637.6	566.4	543.1	530.2	523.3
77.5°	701.9	620.1	509.2	460.2	440.4	435.6
80°	581.6	584.0	434.5	376.1	436.8	435.6
82.5°	439.1	504.6	348.0	325.8	316.6	264.0
85°	212.5	379.5	267.4	224.2	134.3	127.3
87.5°	18.7	158.9	154.2	100.4	45.6	43.2
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)