

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: P196757

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-7030-600**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P196757
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-05-D-UNV-T2R-7030-600
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 70 CRI, 3000K, 615mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20079.7 lumens
Efficiency: N/A
Efficacy: 123.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1.5' x H: 0')
IES Classification: Type II - Short - Semi-Cutoff
BUG Rating: B2 - U0 - G3

Input Watts (W): 162
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

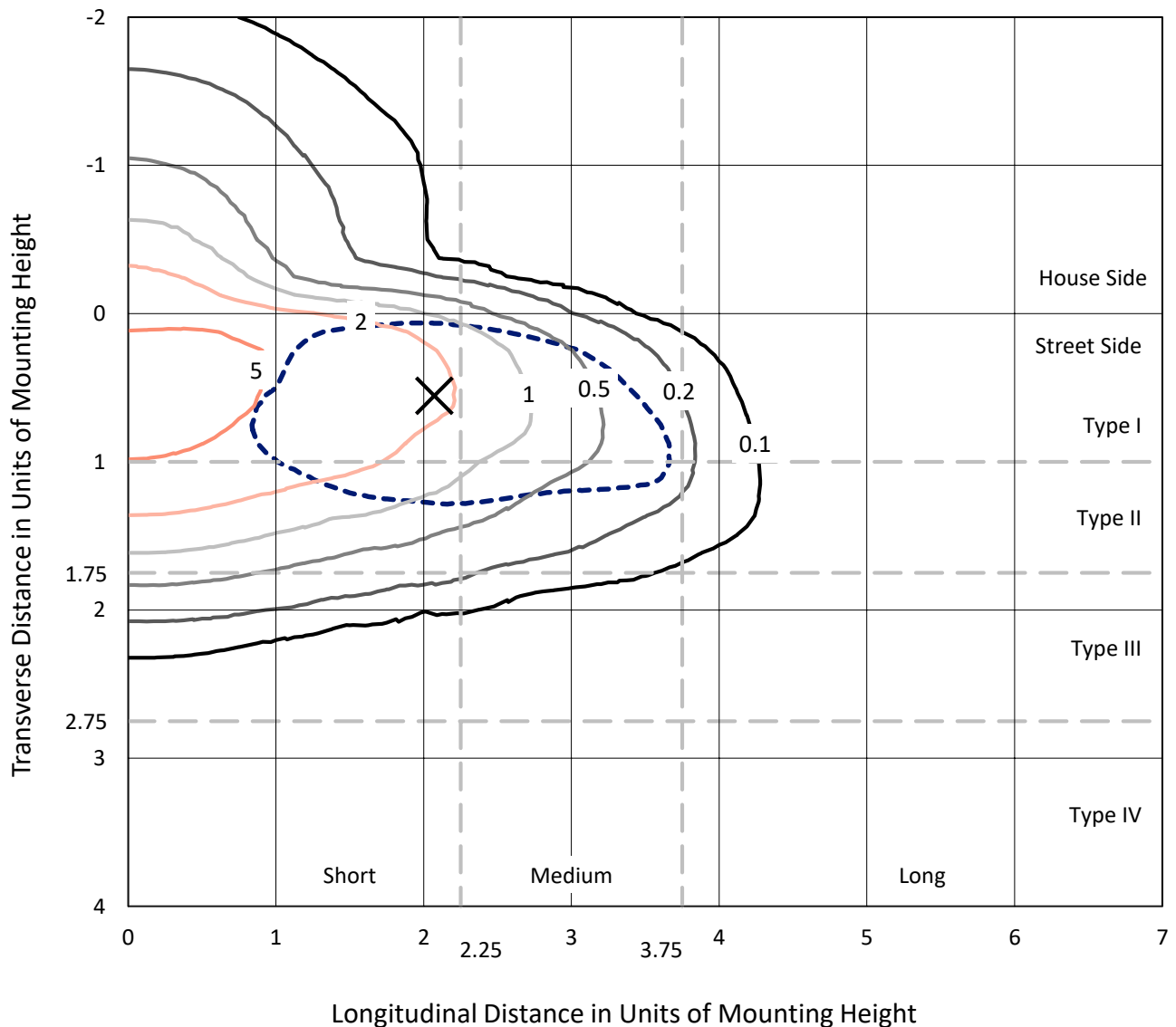


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Iso-Footcandle Lines of Horizontal Illumination

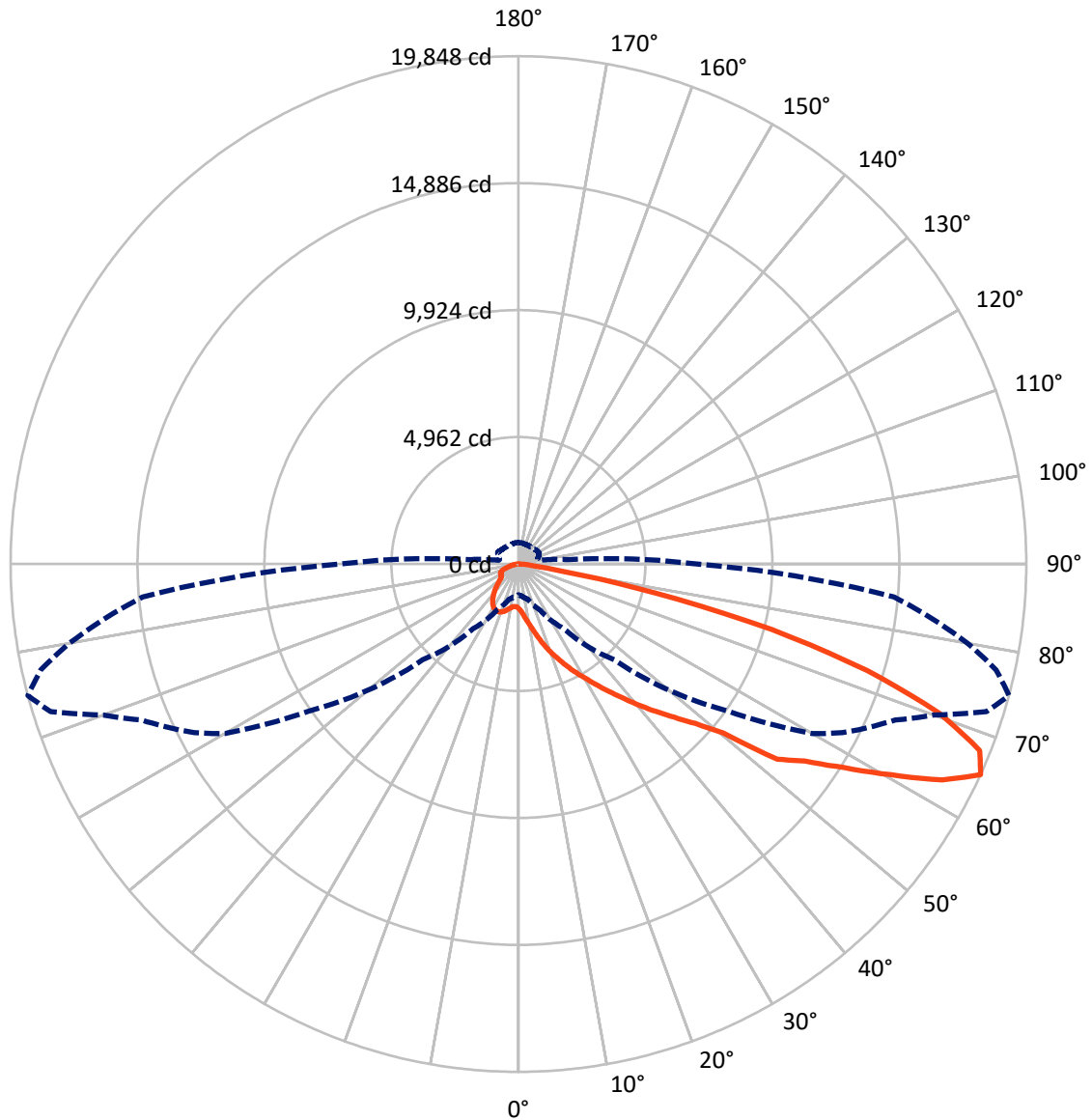
× Max cd
 - - - 1/2 Max cd



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	3017.3	0.0	3017.3
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	17062.4	0.0	17062.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	20079.7	0.0	20079.7
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.4	1.0
10°-20°	784.5	3.9
20°-30°	1583.2	7.9
30°-40°	2688.7	13.4
40°-50°	3750.1	18.7
50°-60°	4596.2	22.9
60°-70°	4324.4	21.5
70°-80°	1896.2	9.4
80°-90°	250.9	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°	20079.7	100.0
0°-180°	20079.7	100.0

Coefficient of Utilization



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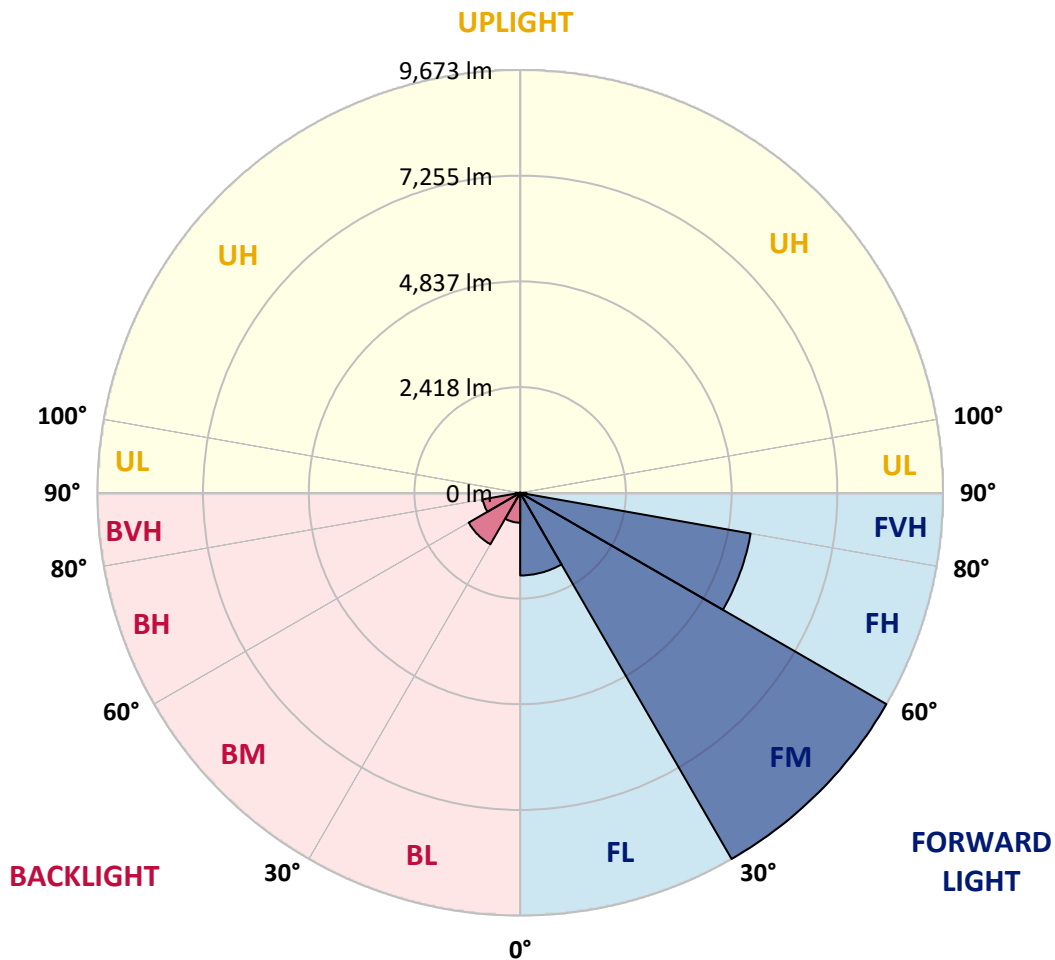
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1890.0	9.4			
FM (30°-60°)	9673.5	48.2			
FH (60°-80°)	5353.4	26.7			G3/7500
FVH (80°-90°)	145.5	0.7			G2/225
BL (0°-30°)	683.0	3.4	B2/1000		
BM (30°-60°)	1361.5	6.8	B2/2500		
BH (60°-80°)	867.2	4.3	B2/1000		G2/1000
BVH (80°-90°)	105.5	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°	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7
2.5°	2190.6	2165.2	2167.7	2131.9	2079.5	2022.1	1974.9	1949.3	1927.6	1921.3	1885.4
5°	2865.1	2833.2	2821.7	2740.0	2617.3	2471.7	2327.3	2271.2	2225.2	2197.1	2128.2
7.5°	3417.0	3400.3	3385.1	3309.7	3188.3	3001.8	2769.4	2686.3	2609.6	2525.3	2442.4
10°	3792.5	3786.2	3779.8	3727.4	3626.5	3464.3	3213.9	3123.1	3027.3	2920.1	2811.5
12.5°	4076.1	4076.1	4081.2	4037.7	3976.5	3851.3	3623.9	3539.6	3442.5	3330.1	3206.2
15°	4266.5	4271.5	4298.4	4311.2	4279.2	4198.8	3999.4	3925.3	3833.4	3722.3	3599.6
17.5°	4392.9	4403.1	4442.7	4484.9	4525.7	4497.6	4349.5	4280.4	4197.4	4095.2	3980.4
20°	4686.6	4673.9	4675.2	4662.4	4722.4	4744.1	4662.4	4604.9	4538.5	4445.2	4340.6
22.5°	5303.7	5279.4	5216.8	5057.1	4984.3	4976.6	4928.1	4897.4	4846.3	4787.6	4682.9
25°	6108.3	6080.3	5956.4	5693.3	5476.1	5275.6	5186.1	5167.0	5133.8	5094.2	5018.9
27.5°	6939.9	6909.3	6749.6	6417.6	6134.0	5729.0	5450.5	5425.0	5394.3	5377.7	5342.0
30°	7671.8	7638.7	7481.5	7144.4	6802.1	6319.1	5806.9	5717.5	5665.1	5670.2	5649.8
32.5°	8314.4	8285.0	8108.7	7765.2	7417.7	6948.9	6269.3	6130.1	6012.5	5969.2	5984.4
35°	8853.5	8826.6	8633.7	8287.6	7937.5	7547.9	6864.6	6655.1	6463.4	6343.4	6329.4
37.5°	9170.2	9155.0	9019.6	8725.8	8378.3	8092.2	7531.4	7298.9	7016.6	6841.6	6765.0
40°	9152.3	9168.9	9146.0	9013.2	8743.6	8535.5	8226.2	7996.3	7720.5	7459.9	7304.0
42.5°	8891.7	8914.8	9018.3	9087.2	9014.4	8887.9	8833.1	8661.8	8414.0	8138.1	7922.3
45°	8534.1	8554.6	8688.8	8937.7	9146.0	9181.7	9364.4	9278.9	9069.4	8834.2	8596.7
47.5°	7986.1	8025.7	8181.6	8577.5	9073.2	9418.0	9810.2	9849.8	9728.5	9534.3	9312.0
50°	7192.9	7245.2	7463.7	8026.9	8797.2	9660.8	10473.1	10624.0	10575.3	10378.6	10153.8
52.5°	6380.5	6432.8	6724.1	7323.2	8352.8	9760.3	11125.9	11511.7	11790.1	11993.3	12032.8
55°	5534.8	5593.6	5913.0	6602.7	7760.0	9633.9	11592.2	12030.3	12312.5	12524.6	12610.2
57.5°	4580.7	4647.2	4956.2	5653.6	6922.1	9125.6	12110.8	12731.6	13151.9	13478.9	13662.8
60°	3485.9	3569.0	3889.6	4592.1	5821.0	8152.2	12341.9	13260.4	13928.5	14419.0	14710.2
62.5°	2209.9	2294.1	2627.5	3356.9	4567.9	6822.4	11687.9	13028.0	14167.3	14892.9	15426.9
65°	1205.7	1243.0	1428.1	1977.4	3079.7	5293.4	10029.9	11610.0	13251.4	14279.7	15099.8
67.5°	904.3	909.5	928.7	1062.8	1640.1	3574.1	7841.7	9289.0	11111.8	12435.3	13415.0
70°	792.0	792.0	794.6	795.9	890.4	1936.5	5312.6	6644.9	8315.7	9654.3	10871.8
72.5°	710.1	702.5	700.1	684.6	697.4	992.5	2892.0	4088.9	5497.8	7000.0	8135.6
75°	613.2	611.9	611.9	596.5	604.2	698.7	1254.4	1962.1	3054.3	4453.0	5570.6
77.5°	530.1	521.1	522.5	513.5	537.8	535.3	595.3	808.6	1329.8	2338.9	3266.2
80°	436.8	430.5	434.3	429.2	467.5	395.9	401.1	494.3	660.4	1025.7	1445.9
82.5°	323.2	325.7	349.9	347.5	393.5	266.9	293.8	369.2	444.5	510.9	555.7
85°	189.0	192.9	251.7	264.4	288.7	140.5	180.1	219.7	247.8	274.7	286.2
87.5°	20.4	26.9	140.5	144.3	129.0	42.2	72.7	92.0	98.4	104.8	92.0
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°	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7
2.5°	1873.9	1857.3	1839.4	1829.2	1811.3	1796.0	1768.0	1744.9	1719.3	1701.5	1693.8
5°	2093.6	2054.0	2011.9	1981.2	1942.8	1909.7	1845.8	1769.1	1744.9	1693.8	1681.1
7.5°	2379.7	2308.2	2236.6	2177.9	2111.6	2056.6	1949.3	1811.3	1793.4	1711.6	1693.8
10°	2715.6	2611.0	2504.9	2414.2	2317.2	2232.8	2074.5	1880.3	1861.1	1756.4	1738.6
12.5°	3091.3	2963.5	2826.9	2691.4	2576.5	2457.7	2241.8	1987.7	1957.0	1833.1	1808.8
15°	3478.3	3340.3	3181.9	3018.4	2876.7	2719.6	2447.4	2128.2	2071.9	1926.2	1893.0
17.5°	3860.2	3710.8	3544.7	3362.0	3196.0	3008.2	2669.8	2285.2	2188.1	2018.2	1976.1
20°	4229.4	4077.3	3902.4	3723.5	3516.6	3302.1	2897.1	2439.8	2291.6	2094.9	2040.0
22.5°	4565.3	4435.1	4260.0	4054.4	3845.0	3603.5	3128.3	2594.4	2382.3	2153.6	2083.3
25°	4919.2	4800.5	4626.7	4428.6	4184.6	3916.4	3367.2	2741.2	2455.0	2185.6	2098.8
27.5°	5276.7	5174.6	5011.1	4802.9	4541.1	4243.4	3609.8	2876.7	2513.8	2195.8	2091.0
30°	5658.7	5579.6	5428.9	5196.4	4932.0	4602.3	3874.3	3009.4	2550.8	2181.8	2056.6
32.5°	6020.3	6017.7	5883.6	5642.1	5357.3	4994.6	4152.7	3143.6	2570.1	2142.1	1996.5
35°	6395.8	6448.2	6347.3	6117.3	5817.2	5414.8	4460.6	3286.6	2571.3	2071.9	1918.6
37.5°	6822.4	6915.7	6871.0	6652.6	6337.0	5893.8	4822.0	3447.6	2563.7	1974.9	1805.0
40°	7307.8	7435.5	7434.3	7250.3	6913.2	6430.2	5242.4	3627.7	2545.8	1853.5	1670.8
42.5°	7863.5	8015.5	8057.7	7876.3	7535.2	7016.6	5723.9	3825.7	2517.7	1733.4	1529.0
45°	8499.6	8633.7	8713.0	8544.3	8202.0	7655.2	6277.1	4050.6	2483.3	1578.8	1366.9
47.5°	9180.5	9336.3	9455.1	9310.7	8945.4	8383.4	6932.3	4340.6	2470.5	1402.6	1191.8
50°	10024.9	10185.8	10442.6	10377.3	10176.9	9724.6	8318.2	5025.2	2475.6	1235.1	1044.8
52.5°	12119.7	12488.9	12813.3	12668.9	12192.5	11417.1	9444.9	5405.8	2368.2	1098.5	942.7
55°	12751.9	13170.9	13650.0	13590.0	13132.6	12350.8	10335.2	5723.9	2264.7	998.9	876.3
57.5°	13858.2	14352.6	15021.8	15009.2	14448.3	13568.3	11481.0	6104.6	2220.0	941.4	843.1
60°	15029.6	15659.2	16584.1	16728.4	16119.1	15203.3	12835.0	6572.1	2226.4	909.5	824.0
62.5°	15885.4	16808.9	18154.0	18585.8	17867.8	16858.7	14240.1	7039.6	2188.1	872.4	800.9
65°	15937.7	17267.6	19175.9	19847.8	19121.0	17824.4	14735.8	6947.6	1958.3	822.6	763.8
67.5°	14660.4	16392.5	18710.9	19448.0	18704.5	17229.2	13867.1	6073.9	1591.6	735.8	700.1
70°	12210.4	14220.9	16627.5	17448.9	16834.4	15341.2	12068.6	4851.4	1189.3	620.8	604.2
72.5°	9435.9	11311.2	13496.7	14256.7	13786.7	12473.6	9519.0	3535.7	849.5	503.2	490.5
75°	6745.7	8342.5	9929.1	10219.0	9755.3	8549.4	6176.1	2208.5	595.3	412.6	394.8
77.5°	4177.0	5215.5	5785.2	5412.2	4820.8	4007.1	2513.8	1090.9	395.9	336.0	318.1
80°	1853.5	2175.4	2031.0	1810.0	1429.3	1175.2	767.6	484.1	255.4	259.3	249.1
82.5°	623.4	659.2	641.3	637.4	574.8	503.2	325.7	209.4	143.0	166.1	162.2
85°	304.1	318.1	319.4	330.8	287.5	223.6	88.2	83.0	61.3	89.4	93.2
87.5°	92.0	93.2	84.3	92.0	74.1	51.2	16.6	23.0	11.5	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°	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7
2.5°	1679.8	1674.6	1665.6	1655.5	1652.9	1640.1	1636.2	1629.9	1626.1	1619.7	1614.7
5°	1664.4	1655.5	1645.2	1633.8	1633.8	1615.8	1608.2	1600.5	1600.5	1589.0	1583.9
7.5°	1679.8	1668.3	1656.7	1646.5	1650.4	1629.9	1622.3	1614.7	1613.3	1601.8	1596.8
10°	1723.1	1711.6	1697.7	1687.4	1683.5	1667.0	1658.0	1646.5	1638.9	1631.2	1623.6
12.5°	1789.5	1774.3	1756.4	1734.7	1725.7	1711.6	1697.7	1682.3	1664.4	1656.7	1645.2
15°	1868.8	1843.2	1818.9	1792.2	1768.0	1753.8	1734.7	1710.5	1686.1	1675.9	1660.6
17.5°	1933.9	1907.1	1872.6	1840.7	1797.4	1785.8	1759.0	1729.6	1689.9	1686.1	1663.2
20°	1988.8	1948.0	1905.8	1867.6	1801.1	1794.7	1761.5	1727.1	1670.8	1670.8	1642.7
22.5°	2019.5	1963.3	1913.4	1862.5	1779.4	1774.3	1735.9	1695.0	1626.1	1628.6	1594.2
25°	2024.7	1957.0	1894.3	1833.1	1737.2	1728.3	1679.8	1635.1	1559.6	1554.5	1518.8
27.5°	2004.2	1925.0	1852.2	1778.0	1674.6	1655.5	1601.8	1548.2	1474.1	1461.4	1423.0
30°	1957.0	1863.6	1781.9	1696.4	1587.7	1557.2	1500.9	1445.9	1370.6	1354.0	1318.2
32.5°	1881.6	1775.6	1684.9	1599.2	1479.2	1440.9	1384.7	1329.8	1256.9	1244.1	1210.9
35°	1781.9	1663.2	1567.4	1476.6	1356.6	1317.0	1263.4	1214.8	1148.4	1143.3	1120.2
37.5°	1656.7	1532.8	1430.6	1343.8	1230.1	1209.7	1154.8	1119.0	1064.0	1069.2	1057.6
40°	1515.0	1388.4	1291.5	1214.8	1116.4	1098.5	1065.3	1038.5	991.2	1005.3	1006.6
42.5°	1371.9	1245.4	1157.3	1088.3	1004.0	992.5	969.5	954.2	918.5	946.5	957.9
45°	1209.7	1092.1	1016.7	964.4	901.8	901.8	890.4	889.1	864.8	904.3	915.9
47.5°	1052.6	960.6	908.2	876.3	832.9	853.4	849.5	859.7	841.8	882.7	892.8
50°	933.7	869.9	837.9	822.6	792.0	824.0	831.6	845.6	830.3	866.1	873.7
52.5°	858.3	816.2	798.3	794.6	772.8	812.5	825.2	837.9	820.1	853.4	852.0
55°	816.2	788.1	781.7	789.4	772.8	811.1	824.0	832.9	817.5	840.5	839.2
57.5°	800.9	785.6	789.4	800.9	789.4	821.3	827.7	837.9	822.6	832.9	837.9
60°	799.7	799.7	815.0	830.3	822.6	845.6	849.5	848.2	834.0	835.4	837.9
62.5°	792.0	811.1	836.7	861.0	858.3	886.5	889.1	872.4	861.0	848.2	844.3
65°	767.6	799.7	836.7	869.9	874.9	918.5	923.6	907.0	899.3	877.6	861.0
67.5°	714.0	754.9	798.3	839.2	848.2	907.0	918.5	924.8	928.7	914.6	892.8
70°	623.4	665.5	710.1	757.5	770.3	835.4	859.7	889.1	912.1	932.5	924.8
72.5°	507.1	545.4	583.8	627.1	646.4	714.0	746.0	797.0	832.9	885.2	907.0
75°	402.4	425.3	448.4	475.2	490.5	556.9	596.5	657.8	706.4	779.2	827.7
77.5°	316.8	328.4	339.8	351.3	357.8	394.8	426.6	488.0	544.1	636.1	707.7
80°	243.9	250.3	251.7	255.4	252.9	270.9	282.3	319.4	367.8	458.6	542.9
82.5°	157.2	162.2	164.8	171.2	158.4	181.4	189.0	192.9	218.4	284.8	344.9
85°	88.2	89.4	90.6	93.2	75.4	98.4	99.7	93.2	90.6	117.6	132.9
87.5°	21.8	20.4	21.8	21.8	9.0	20.4	20.4	14.1	10.3	19.1	15.3
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):

	135°	145°	155°	165°	175°	180°
0°	1739.7	1739.7	1739.7	1739.7	1739.7	1739.7
2.5°	1603.1	1600.5	1601.8	1595.4	1592.9	1594.2
5°	1577.6	1572.5	1572.5	1568.6	1563.5	1563.5
7.5°	1589.0	1578.8	1575.0	1567.4	1559.6	1561.0
10°	1606.9	1589.0	1576.3	1564.8	1555.9	1555.9
12.5°	1618.4	1586.5	1567.4	1552.0	1541.7	1541.7
15°	1621.0	1572.5	1544.4	1527.8	1517.5	1517.5
17.5°	1605.7	1544.4	1508.6	1486.9	1475.3	1478.0
20°	1567.4	1491.9	1449.9	1426.8	1415.4	1416.6
22.5°	1507.3	1420.5	1371.9	1345.1	1333.6	1333.6
25°	1425.5	1331.0	1278.7	1256.9	1246.7	1246.7
27.5°	1332.3	1235.1	1189.3	1172.7	1166.3	1166.3
30°	1227.5	1147.1	1113.9	1102.4	1092.1	1092.1
32.5°	1139.5	1081.8	1070.4	1055.1	1028.2	1027.0
35°	1069.2	1062.8	1053.8	1007.8	969.5	964.4
37.5°	1030.9	1069.2	1013.0	933.7	903.1	901.8
40°	1010.4	1046.1	949.1	910.7	907.0	907.0
42.5°	961.8	987.3	945.2	923.6	923.6	924.8
45°	910.7	932.5	954.2	935.0	941.4	942.7
47.5°	874.9	918.5	954.2	937.6	950.3	957.9
50°	841.8	905.6	935.0	935.0	949.1	950.3
52.5°	834.0	887.7	917.1	931.2	932.5	926.1
55°	835.4	873.7	903.1	920.9	913.3	913.3
57.5°	834.0	866.1	891.5	898.0	901.8	901.8
60°	835.4	855.8	876.3	873.7	886.5	886.5
62.5°	839.2	841.8	852.0	849.5	868.6	868.6
65°	848.2	824.0	817.5	820.1	843.1	841.8
67.5°	864.8	799.7	779.2	780.4	813.7	808.6
70°	889.1	766.5	735.8	728.1	784.3	775.4
72.5°	896.7	728.1	679.6	672.0	705.2	679.6
75°	861.0	697.4	619.5	594.0	579.9	572.3
77.5°	767.6	678.3	556.9	503.2	481.7	476.5
80°	636.1	638.7	475.2	411.4	477.8	476.5
82.5°	480.3	551.9	380.7	356.4	346.2	288.7
85°	232.5	415.1	292.5	245.3	146.9	139.2
87.5°	20.4	173.7	168.6	109.8	49.8	47.3
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)