

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: P197243

Luminaire Tested: **NAV-AF-05-D-UNV-T2R-8030-800**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P197243
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-8030-800
Description: NAVION ROADWAY AND AREA LUMINAIRE
(5) 80 CRI, 3000K, 800mA LIGHTSQUARES WITH 16 LEDS EACH AND TYPE II
ROADWAY OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 20774 lumens
Efficiency: N/A
Efficacy: 98.9 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): 210
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

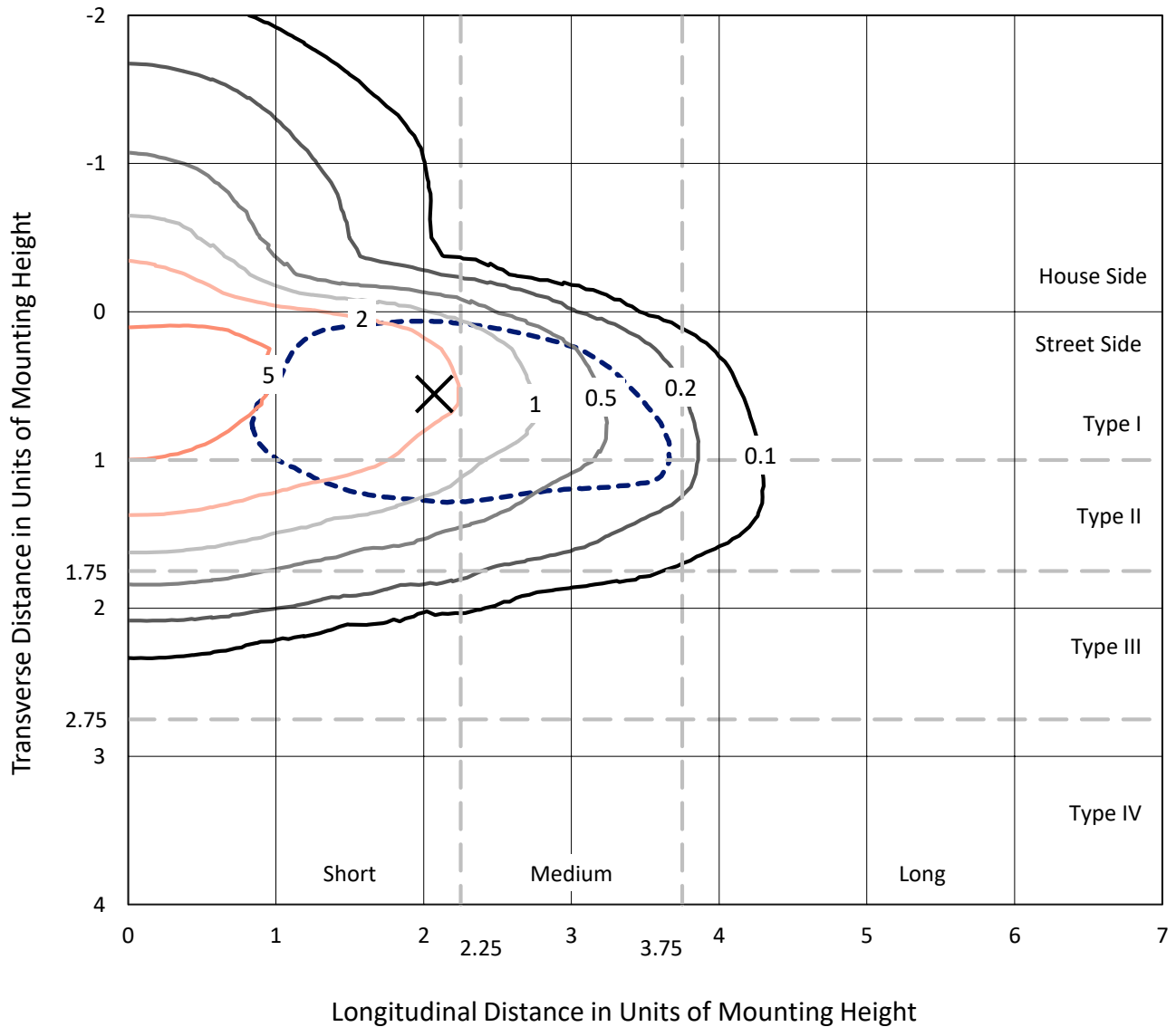


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Iso-Footcandle Lines of Horizontal Illumination

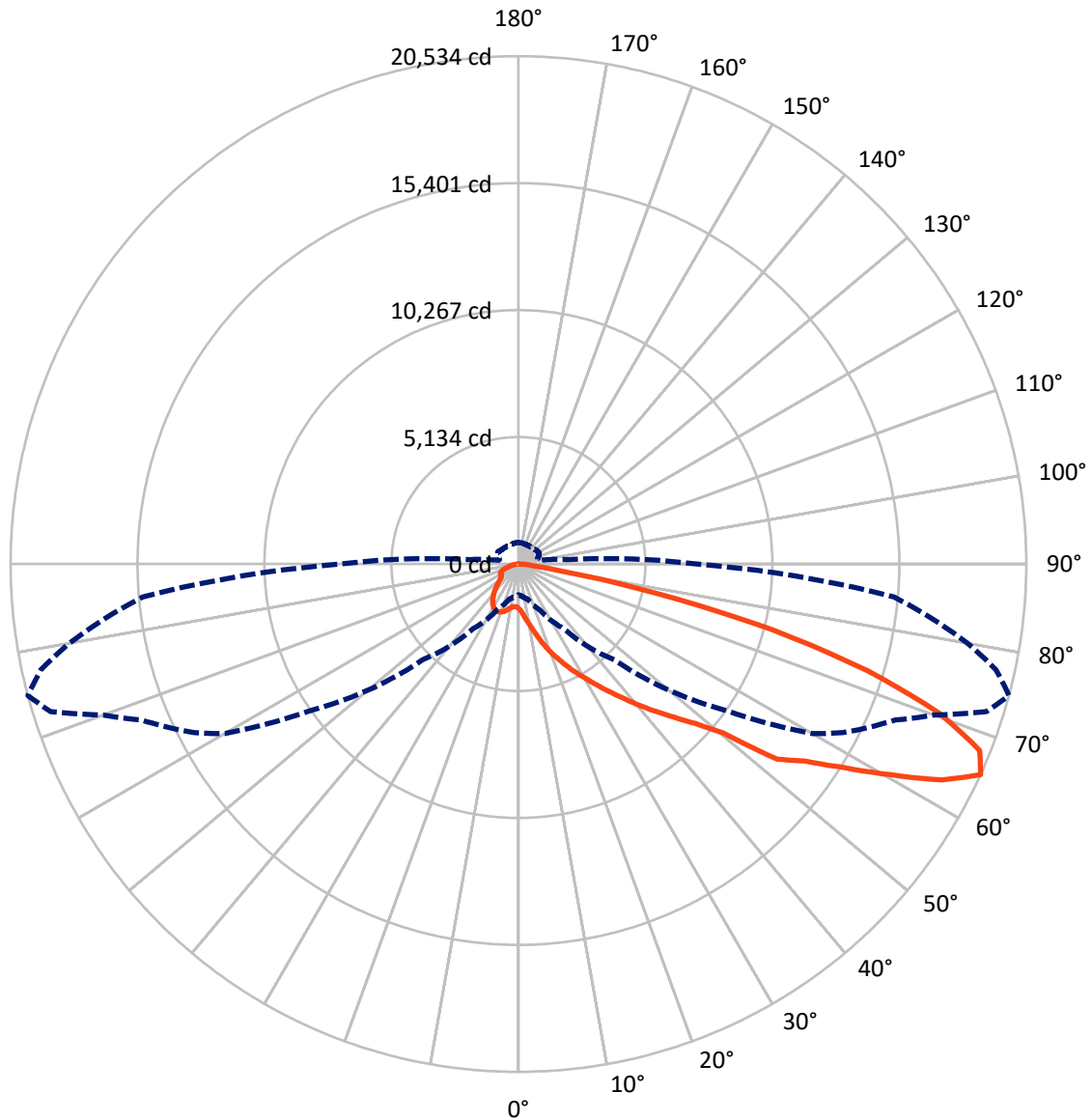
× Max cd
 - - - 1/2 Max cd



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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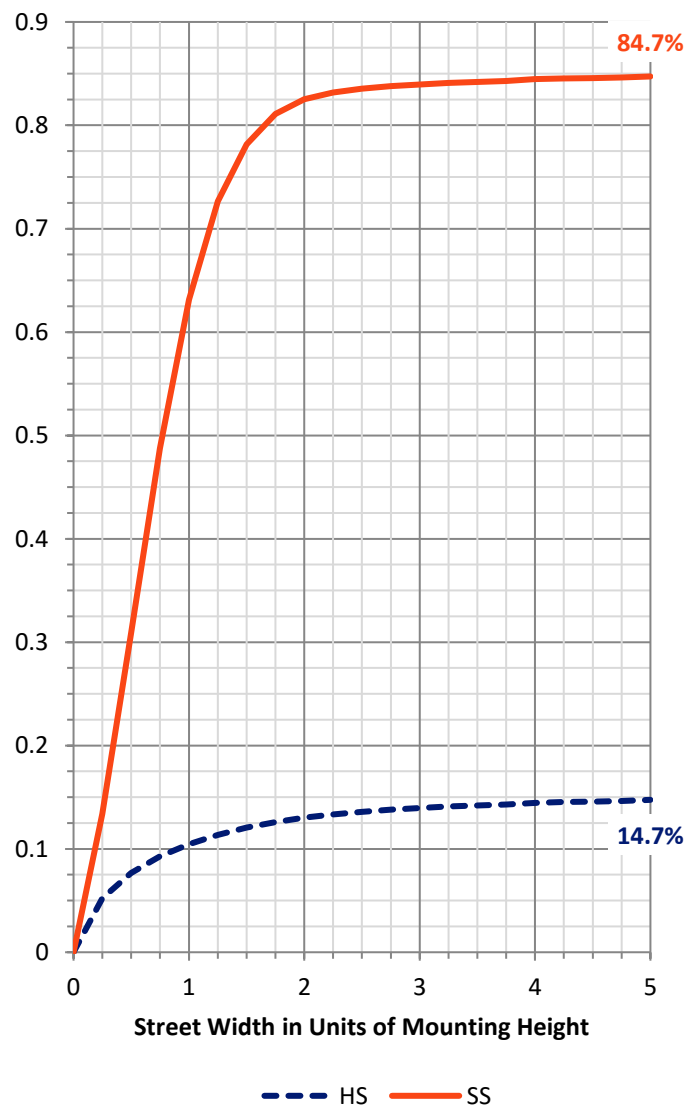
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3121.6	0.0	3121.6
	% Fixture	15.0	0.0	15.0
Street Side	Lumens	17652.4	0.0	17652.4
	% Fixture	85.0	0.0	85.0
Total	Lumens	20774.0	0.0	20774.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	212.5	1.0
10°-20°	811.6	3.9
20°-30°	1637.9	7.9
30°-40°	2781.7	13.4
40°-50°	3879.8	18.7
50°-60°	4755.2	22.9
60°-70°	4473.9	21.5
70°-80°	1961.8	9.4
80°-90°	259.6	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°	20774.0	100.0
0°-180°	20774.0	100.0

Coefficient of Utilization



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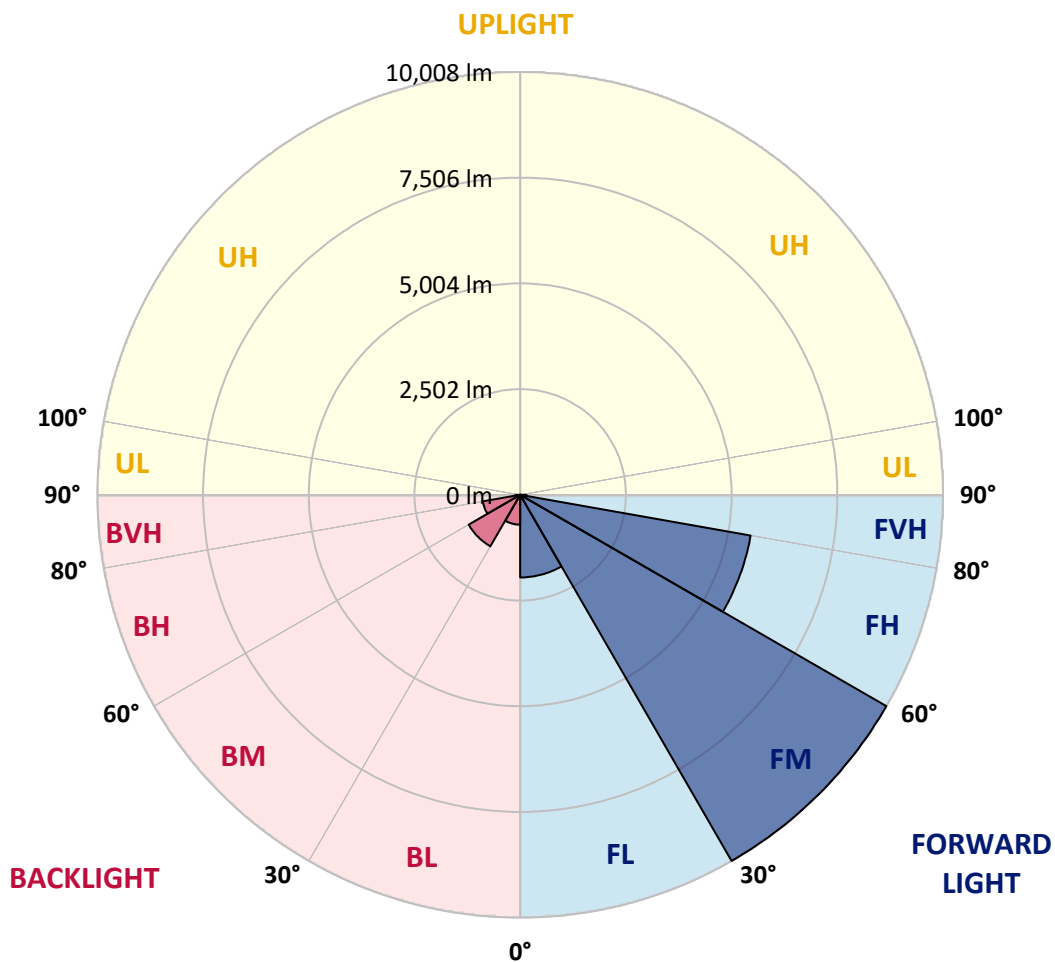
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1955.4	9.4			
FM (30°-60°)	10008.0	48.2			
FH (60°-80°)	5538.5	26.7			G3/7500
FVH (80°-90°)	150.5	0.7			G2/225
BL (0°-30°)	706.7	3.4	B2/1000		
BM (30°-60°)	1408.6	6.8	B2/2500		
BH (60°-80°)	897.2	4.3	B2/1000		G2/1000
BVH (80°-90°)	109.1	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°	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9
2.5°	2266.4	2240.0	2242.7	2205.7	2151.5	2092.0	2043.1	2016.7	1994.2	1987.6	1950.6
5°	2964.2	2931.2	2919.3	2834.7	2707.8	2557.2	2407.8	2349.7	2302.1	2273.1	2201.7
7.5°	3535.1	3517.9	3502.1	3424.1	3298.6	3105.6	2865.1	2779.2	2699.9	2612.7	2526.8
10°	3923.7	3917.1	3910.4	3856.3	3751.9	3584.0	3325.0	3231.2	3132.1	3021.0	2908.7
12.5°	4217.0	4217.0	4222.3	4177.4	4114.0	3984.4	3749.2	3662.0	3561.6	3445.3	3317.1
15°	4413.9	4419.2	4447.0	4460.2	4427.2	4343.9	4137.7	4061.1	3965.9	3851.0	3724.1
17.5°	4544.8	4555.4	4596.3	4639.9	4682.2	4653.1	4499.9	4428.5	4342.6	4236.9	4117.9
20°	4848.7	4835.5	4836.8	4823.6	4885.7	4908.2	4823.6	4764.2	4695.4	4599.0	4490.6
22.5°	5487.0	5461.9	5397.2	5232.0	5156.7	5148.7	5098.5	5066.8	5013.9	4953.1	4844.8
25°	6319.6	6290.5	6162.3	5890.1	5665.4	5458.0	5365.5	5345.6	5311.3	5270.3	5192.3
27.5°	7179.9	7148.2	6983.0	6639.4	6346.0	5927.1	5639.0	5612.6	5580.9	5563.7	5526.7
30°	7937.2	7902.8	7740.3	7391.4	7037.2	6537.7	6007.7	5915.2	5861.0	5866.3	5845.2
32.5°	8601.9	8571.5	8389.1	8033.7	7674.2	7189.2	6486.1	6342.1	6220.5	6175.6	6191.4
35°	9159.6	9131.9	8932.3	8574.2	8212.1	7809.0	7102.0	6885.2	6687.0	6562.8	6548.2
37.5°	9487.3	9471.5	9331.4	9027.5	8668.0	8372.0	7791.8	7551.3	7259.2	7078.2	6998.9
40°	9468.8	9486.0	9462.2	9324.8	9046.0	8830.5	8510.7	8272.9	7987.4	7717.8	7556.6
42.5°	9199.3	9223.0	9330.1	9401.4	9326.1	9195.3	9138.5	8961.4	8705.0	8419.5	8196.2
45°	8829.2	8850.4	8989.1	9246.8	9462.2	9499.2	9688.2	9599.7	9382.9	9139.8	8894.0
47.5°	8262.3	8303.2	8464.5	8874.2	9386.9	9743.7	10149.4	10190.4	10064.9	9864.0	9634.0
50°	7441.6	7495.8	7721.8	8304.6	9101.5	9994.8	10835.3	10991.3	10941.0	10737.5	10504.9
52.5°	6601.1	6655.3	6956.6	7576.4	8641.6	10097.9	11510.6	11909.7	12197.8	12408.0	12448.9
55°	5726.2	5787.0	6117.4	6831.0	8028.4	9967.1	11993.0	12446.3	12738.3	12957.7	13046.3
57.5°	4739.0	4807.8	5127.6	5849.1	7161.4	9441.1	12529.5	13171.8	13606.6	13944.9	14135.2
60°	3606.5	3692.4	4024.1	4750.9	6022.3	8434.1	12768.7	13718.9	14410.1	14917.6	15218.9
62.5°	2286.3	2373.5	2718.4	3473.0	4725.8	7058.4	12092.1	13478.4	14657.2	15407.9	15960.3
65°	1247.5	1285.9	1477.5	2045.7	3186.2	5476.5	10376.7	12011.5	13709.7	14773.5	15621.9
67.5°	935.7	940.9	960.8	1099.5	1696.9	3697.7	8112.9	9610.3	11496.1	12865.2	13878.8
70°	819.4	819.4	822.0	823.3	921.1	2003.5	5496.3	6874.7	8603.2	9988.2	11247.6
72.5°	734.8	726.8	724.2	708.3	721.6	1026.8	2992.0	4230.3	5687.9	7242.0	8416.9
75°	634.3	633.0	633.0	617.2	625.1	722.9	1297.8	2029.9	3159.8	4606.9	5763.2
77.5°	548.4	539.2	540.5	531.3	556.4	553.7	615.8	836.5	1375.7	2419.7	3379.2
80°	452.0	445.4	449.3	444.0	483.7	409.7	415.0	511.4	683.2	1061.2	1496.0
82.5°	334.4	337.0	362.1	359.5	407.0	276.2	304.0	381.9	459.9	528.6	574.9
85°	195.6	199.6	260.3	273.6	298.7	145.4	186.3	227.3	256.4	284.1	296.0
87.5°	21.1	27.8	145.4	149.3	133.5	43.6	75.3	95.2	101.8	108.4	95.2
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°	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9
2.5°	1938.7	1921.5	1903.0	1892.4	1873.9	1858.1	1829.0	1805.2	1778.8	1760.3	1752.4
5°	2166.0	2125.0	2081.4	2049.7	2010.1	1975.7	1909.6	1830.3	1805.2	1752.4	1739.1
7.5°	2462.0	2388.0	2314.0	2253.2	2184.5	2127.7	2016.7	1873.9	1855.4	1770.9	1752.4
10°	2809.6	2701.2	2591.5	2497.7	2397.3	2310.1	2146.2	1945.3	1925.5	1817.1	1798.6
12.5°	3198.1	3066.0	2924.6	2784.5	2665.5	2542.6	2319.3	2056.3	2024.6	1896.4	1871.3
15°	3598.6	3455.8	3292.0	3122.8	2976.1	2813.6	2532.1	2201.7	2143.5	1992.9	1958.5
17.5°	3993.7	3839.1	3667.3	3478.3	3306.5	3112.2	2762.0	2364.2	2263.8	2088.0	2044.4
20°	4375.6	4218.4	4037.3	3852.3	3638.2	3416.2	2997.3	2524.1	2370.8	2167.3	2110.5
22.5°	4723.2	4588.4	4407.3	4194.6	3977.8	3728.1	3236.5	2684.1	2464.7	2228.1	2155.4
25°	5089.3	4966.4	4786.6	4581.8	4329.4	4051.8	3483.6	2836.0	2540.0	2261.2	2171.3
27.5°	5459.3	5353.6	5184.4	4969.0	4698.1	4390.2	3734.7	2976.1	2600.8	2271.7	2163.4
30°	5854.4	5772.5	5616.6	5376.0	5102.5	4761.5	4008.2	3113.6	2639.1	2257.2	2127.7
32.5°	6228.4	6225.8	6087.0	5837.3	5542.5	5167.2	4296.3	3252.3	2658.9	2216.2	2065.6
35°	6617.0	6671.1	6566.7	6328.9	6018.3	5602.0	4614.8	3400.3	2660.3	2143.5	1985.0
37.5°	7058.4	7154.8	7108.6	6882.6	6556.2	6097.6	4988.8	3566.8	2652.3	2043.1	1867.3
40°	7560.5	7692.7	7691.4	7501.1	7152.2	6652.6	5423.6	3753.2	2633.8	1917.6	1728.6
42.5°	8135.4	8292.7	8336.3	8148.6	7795.8	7259.2	5921.8	3958.0	2604.8	1793.3	1581.9
45°	8793.5	8932.3	9014.2	8839.8	8485.6	7920.0	6494.1	4190.6	2569.1	1633.4	1414.0
47.5°	9497.9	9659.1	9782.1	9632.7	9254.8	8673.3	7172.0	4490.6	2555.9	1451.1	1233.0
50°	10371.5	10538.0	10803.6	10736.2	10528.7	10060.9	8605.9	5198.9	2561.1	1277.9	1081.0
52.5°	12538.8	12920.7	13256.4	13107.1	12614.1	11811.9	9771.5	5592.8	2450.1	1136.5	975.3
55°	13193.0	13626.4	14122.0	14059.9	13586.8	12778.0	10692.6	5921.8	2343.1	1033.4	906.6
57.5°	14337.4	14848.8	15541.3	15528.1	14948.0	14037.4	11878.0	6315.6	2296.8	974.0	872.2
60°	15549.3	16200.8	17157.6	17306.9	16676.5	15729.0	13278.9	6799.3	2303.4	940.9	852.4
62.5°	16434.7	17390.2	18781.8	19228.4	18485.7	17441.7	14732.5	7283.0	2263.8	902.6	828.6
65°	16488.9	17864.6	19839.0	20534.1	19782.2	18440.8	15245.3	7187.9	2025.9	851.1	790.3
67.5°	15167.3	16959.3	19357.9	20120.5	19351.3	17825.0	14346.7	6283.9	1646.6	761.2	724.2
70°	12632.6	14712.7	17202.5	18052.3	17416.6	15871.7	12485.9	5019.2	1230.4	642.3	625.1
72.5°	9762.2	11702.3	13963.4	14749.7	14263.4	12904.9	9848.1	3658.0	878.8	520.7	507.5
75°	6979.1	8631.0	10272.3	10572.3	10092.6	8845.1	6389.7	2284.9	615.8	426.9	408.4
77.5°	4321.4	5395.9	5985.3	5599.4	4987.5	4145.7	2600.8	1128.6	409.7	347.6	329.1
80°	1917.6	2250.6	2101.3	1872.6	1478.8	1215.8	794.2	500.9	264.3	268.3	257.7
82.5°	644.9	681.9	663.4	659.4	594.7	520.7	337.0	216.7	148.0	171.8	167.8
85°	314.5	329.1	330.4	342.3	297.3	231.3	91.2	85.9	63.4	92.5	96.5
87.5°	95.2	96.5	87.2	95.2	76.6	52.9	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°	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9
2.5°	1737.8	1732.5	1723.3	1712.7	1710.1	1696.9	1692.9	1686.3	1682.3	1675.7	1670.4
5°	1722.0	1712.7	1702.1	1690.3	1690.3	1671.8	1663.8	1655.9	1655.9	1644.0	1638.7
7.5°	1737.8	1725.9	1714.0	1703.5	1707.4	1686.3	1678.4	1670.4	1669.1	1657.2	1651.9
10°	1782.8	1770.9	1756.3	1745.8	1741.8	1724.6	1715.4	1703.5	1695.5	1687.6	1679.7
12.5°	1851.5	1835.6	1817.1	1794.7	1785.4	1770.9	1756.3	1740.5	1722.0	1714.0	1702.1
15°	1933.4	1907.0	1881.9	1854.1	1829.0	1814.5	1794.7	1769.5	1744.4	1733.9	1718.0
17.5°	2000.8	1973.1	1937.4	1904.3	1859.4	1847.5	1819.8	1789.4	1748.4	1744.4	1720.6
20°	2057.6	2015.4	1971.7	1932.1	1863.4	1856.8	1822.4	1786.7	1728.6	1728.6	1699.5
22.5°	2089.4	2031.2	1979.7	1926.8	1840.9	1835.6	1796.0	1753.7	1682.3	1685.0	1649.3
25°	2094.6	2024.6	1959.8	1896.4	1797.3	1788.0	1737.8	1691.6	1613.6	1608.3	1571.3
27.5°	2073.5	1991.6	1916.2	1839.6	1732.5	1712.7	1657.2	1601.7	1525.1	1511.8	1472.2
30°	2024.6	1928.1	1843.6	1755.0	1642.7	1611.0	1552.8	1496.0	1418.0	1400.8	1363.8
32.5°	1946.6	1836.9	1743.1	1654.6	1530.3	1490.7	1432.6	1375.7	1300.4	1287.2	1252.8
35°	1843.6	1720.6	1621.5	1527.7	1403.5	1362.5	1307.0	1256.8	1188.1	1182.8	1159.0
37.5°	1714.0	1585.9	1480.1	1390.3	1272.6	1251.5	1194.7	1157.7	1100.8	1106.1	1094.2
40°	1567.3	1436.5	1336.1	1256.8	1155.0	1136.5	1102.2	1074.4	1025.5	1040.1	1041.4
42.5°	1419.3	1288.5	1197.3	1126.0	1038.7	1026.8	1003.1	987.2	950.2	979.3	991.2
45°	1251.5	1129.9	1051.9	997.8	933.0	933.0	921.1	919.8	894.7	935.7	947.5
47.5°	1089.0	993.8	939.6	906.6	861.6	882.8	878.8	889.4	870.9	913.2	923.8
50°	966.0	900.0	866.9	851.1	819.4	852.4	860.3	874.9	859.0	896.0	903.9
52.5°	888.1	844.5	826.0	822.0	799.5	840.5	853.7	866.9	848.4	882.8	881.5
55°	844.5	815.4	808.8	816.7	799.5	839.2	852.4	861.6	845.8	869.6	868.3
57.5°	828.6	812.7	816.7	828.6	816.7	849.8	856.4	866.9	851.1	861.6	866.9
60°	827.3	827.3	843.1	859.0	851.1	874.9	878.8	877.5	863.0	864.3	866.9
62.5°	819.4	839.2	865.6	890.7	888.1	917.2	919.8	902.6	890.7	877.5	873.5
65°	794.2	827.3	865.6	900.0	905.3	950.2	955.5	938.3	930.4	907.9	890.7
67.5°	738.7	781.0	826.0	868.3	877.5	938.3	950.2	956.8	960.8	946.2	923.8
70°	644.9	688.5	734.8	783.7	796.9	864.3	889.4	919.8	943.6	964.7	956.8
72.5°	524.7	564.3	603.9	648.9	668.7	738.7	771.8	824.6	861.6	915.8	938.3
75°	416.3	440.1	463.9	491.6	507.5	576.2	617.2	680.6	730.8	806.1	856.4
77.5°	327.7	339.6	351.5	363.4	370.0	408.4	441.4	504.8	563.0	658.1	732.1
80°	252.4	259.0	260.3	264.3	261.7	280.2	292.1	330.4	380.6	474.4	561.7
82.5°	162.5	167.8	170.5	177.1	163.9	187.7	195.6	199.6	226.0	294.7	356.8
85°	91.2	92.5	93.8	96.5	78.0	101.8	103.1	96.5	93.8	121.6	137.4
87.5°	22.5	21.1	22.5	22.5	9.3	21.1	21.1	14.5	10.6	19.8	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°	1799.9	1799.9	1799.9	1799.9	1799.9	1799.9
2.5°	1658.5	1655.9	1657.2	1650.6	1648.0	1649.3
5°	1632.1	1626.8	1626.8	1622.9	1617.6	1617.6
7.5°	1644.0	1633.4	1629.5	1621.5	1613.6	1614.9
10°	1662.5	1644.0	1630.8	1618.9	1609.6	1609.6
12.5°	1674.4	1641.4	1621.5	1605.7	1595.1	1595.1
15°	1677.0	1626.8	1597.7	1580.6	1570.0	1570.0
17.5°	1661.2	1597.7	1560.7	1538.3	1526.4	1529.0
20°	1621.5	1543.6	1500.0	1476.2	1464.3	1465.6
22.5°	1559.4	1469.6	1419.3	1391.6	1379.7	1379.7
25°	1474.8	1377.0	1322.9	1300.4	1289.8	1289.8
27.5°	1378.4	1277.9	1230.4	1213.2	1206.6	1206.6
30°	1270.0	1186.7	1152.4	1140.5	1129.9	1129.9
32.5°	1178.8	1119.3	1107.5	1091.6	1063.8	1062.5
35°	1106.1	1099.5	1090.3	1042.7	1003.1	997.8
37.5°	1066.5	1106.1	1048.0	966.0	934.3	933.0
40°	1045.3	1082.3	981.9	942.3	938.3	938.3
42.5°	995.1	1021.6	977.9	955.5	955.5	956.8
45°	942.3	964.7	987.2	967.4	974.0	975.3
47.5°	905.3	950.2	987.2	970.0	983.2	991.2
50°	870.9	937.0	967.4	967.4	981.9	983.2
52.5°	863.0	918.5	948.9	963.4	964.7	958.1
55°	864.3	903.9	934.3	952.8	944.9	944.9
57.5°	863.0	896.0	922.4	929.0	933.0	933.0
60°	864.3	885.4	906.6	903.9	917.2	917.2
62.5°	868.3	870.9	881.5	878.8	898.6	898.6
65°	877.5	852.4	845.8	848.4	872.2	870.9
67.5°	894.7	827.3	806.1	807.5	841.8	836.5
70°	919.8	792.9	761.2	753.3	811.4	802.2
72.5°	927.7	753.3	703.1	695.1	729.5	703.1
75°	890.7	721.6	640.9	614.5	600.0	592.1
77.5°	794.2	701.7	576.2	520.7	498.2	492.9
80°	658.1	660.8	491.6	425.5	494.3	492.9
82.5°	496.9	570.9	393.8	368.7	358.1	298.7
85°	240.5	429.5	302.6	253.7	152.0	144.0
87.5°	21.1	179.7	174.4	113.7	51.5	48.9
90°	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)