

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: INVUE

Report Number: P368700

Luminaire Tested: **MSA-SA4D-830-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368700
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-24)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA4D-830-U-SLL
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 17908 lumens
Efficiency: N/A
Efficacy: 69.1 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G4

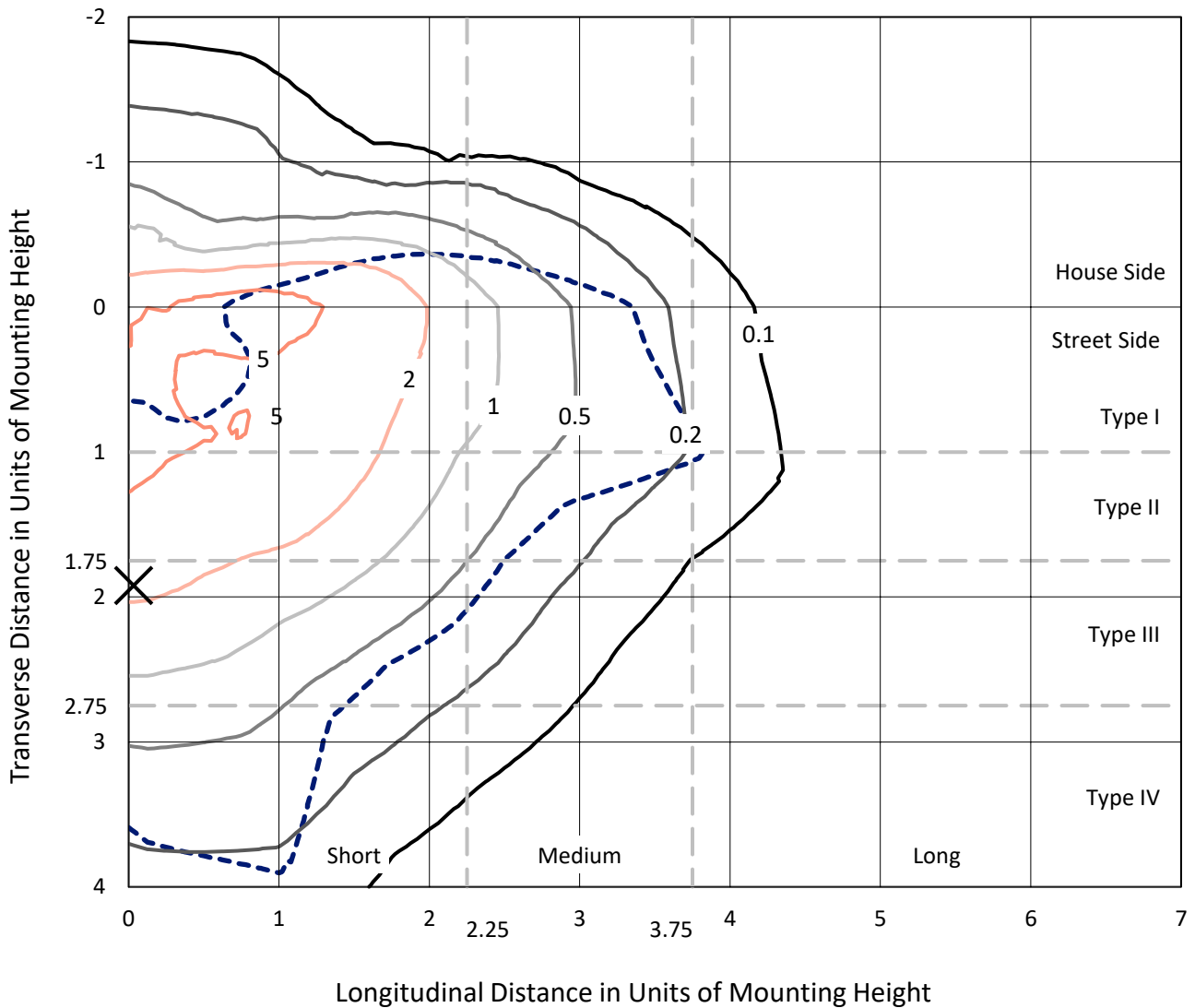
Input Watts (W): 259
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

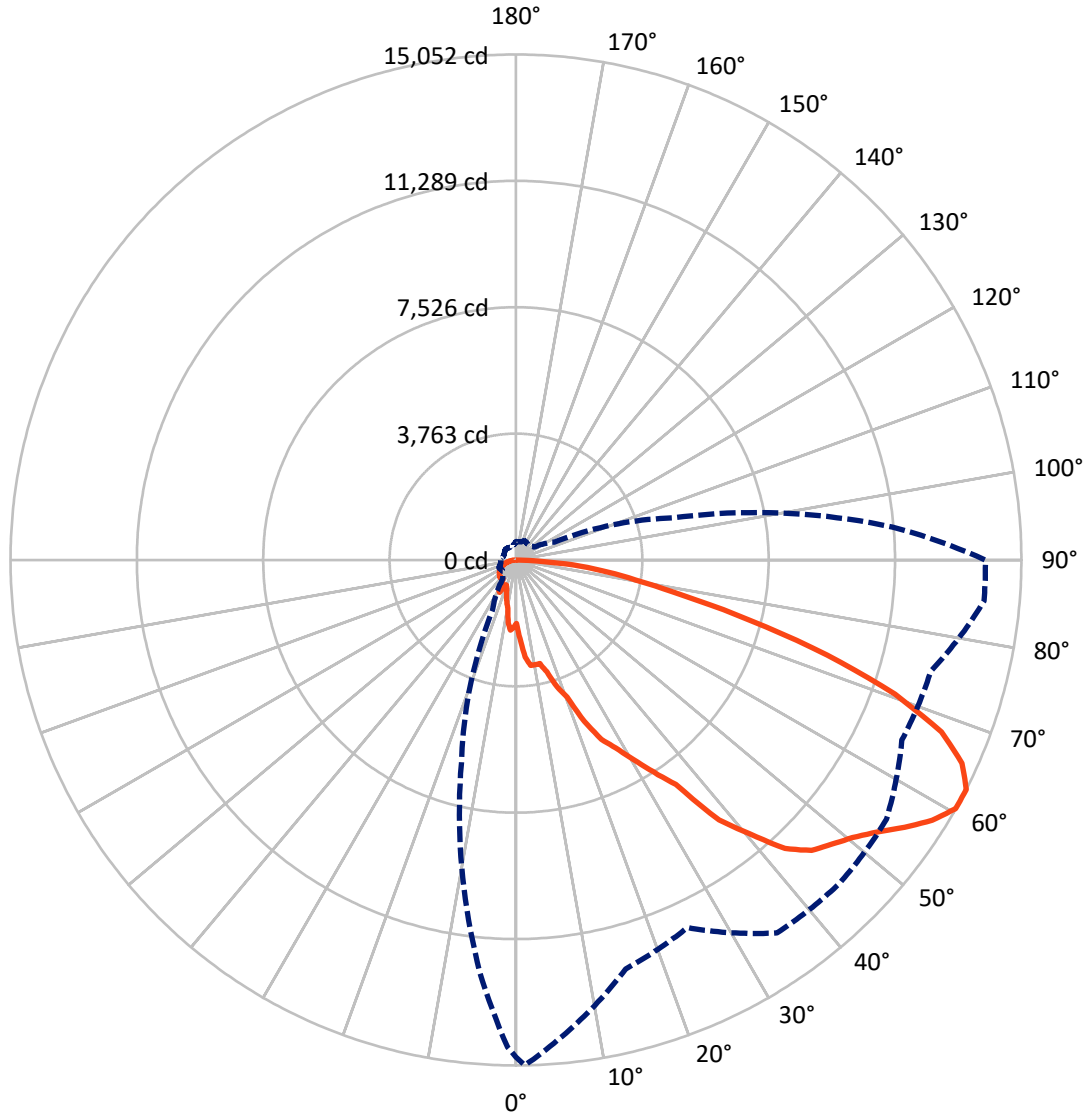
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.6 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



— Vertical Plane Through 1-Deg Lateral - - - Horizontal Cone Through 62.5-Deg Vertical

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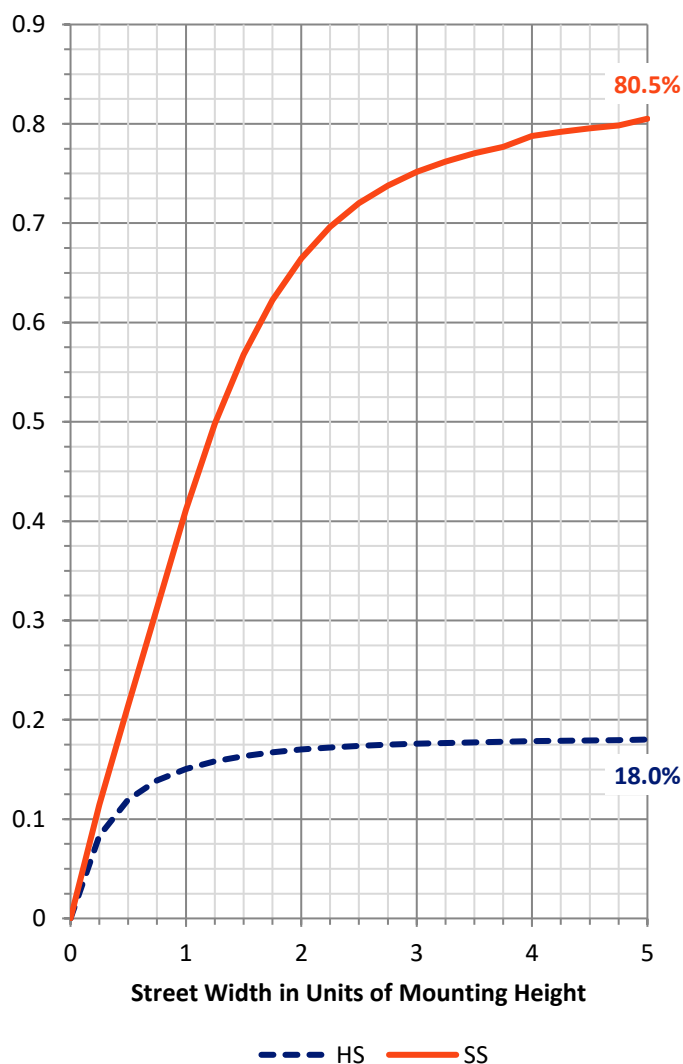
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	3260.9	0.0	3260.9
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	14647.1	0.0	14647.1
	% Fixture	81.8	0.0	81.8
Total	Lumens	17908.0	0.0	17908.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	216.5	1.2
10°-20°	629.1	3.5
20°-30°	1110.6	6.2
30°-40°	1729.9	9.7
40°-50°	2848.4	15.9
50°-60°	4065.4	22.7
60°-70°	4311.0	24.1
70°-80°	2381.2	13.3
80°-90°	615.9	3.4
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°	17908.0	100.0
0°-180°	17908.0	100.0

Coefficient of Utilization

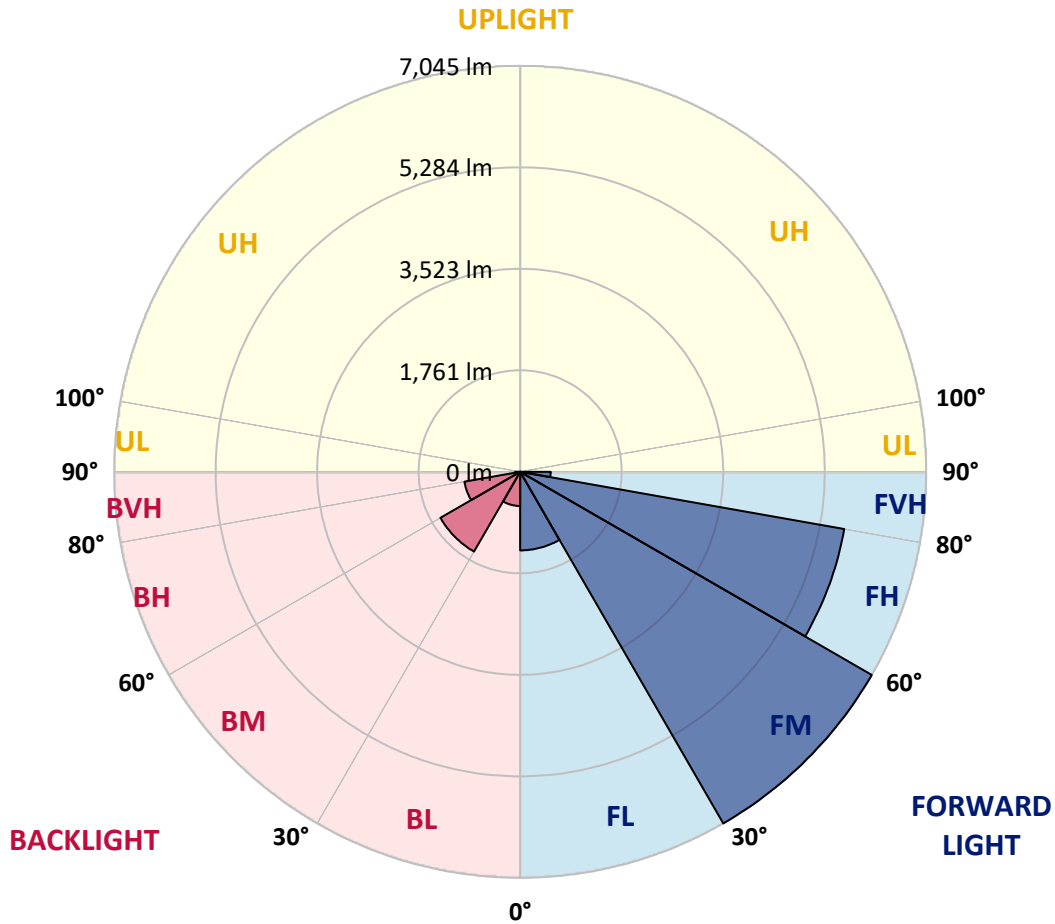


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1363.1	7.6			
FM (30°-60°)	7045.2	39.3			
FH (60°-80°)	5709.8	31.9			G3/7500
FVH (80°-90°)	529.0	3.0			G4/750
BL (0°-30°)	593.1	3.3	B2/1000		
BM (30°-60°)	1598.6	8.9	B2/2500		
BH (60°-80°)	982.4	5.5	B2/1000		G2/1000
BVH (80°-90°)	86.9	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-G4
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4
2.5°	2322.0	2342.0	2301.2	2255.1	2064.8	2248.2	2193.4	2295.1	2262.1	2041.3	2445.4
5°	2869.5	2906.0	2866.0	3004.2	3012.9	3048.5	2719.2	2924.3	2853.0	2834.7	3039.0
7.5°	3133.7	3171.1	3272.7	3518.7	3710.7	3536.9	3344.9	3302.3	3246.7	3101.5	3224.9
10°	3150.2	3171.1	3307.5	3828.9	3921.9	4045.3	3921.0	3628.2	3507.4	3191.9	3098.1
12.5°	3100.7	3165.8	3342.3	3977.5	4253.9	4388.6	4419.0	4093.1	3796.7	3437.0	3389.2
15°	3433.5	3457.0	3709.8	4083.5	4273.8	4387.7	4486.8	4286.0	4193.0	3908.0	3524.7
17.5°	3910.6	3975.8	4182.6	4320.8	4449.4	4471.1	4389.4	4311.2	4163.5	4544.1	4136.5
20°	4233.9	4359.9	4613.6	4639.7	4369.4	4417.2	4405.9	4411.1	4326.9	5030.8	4806.5
22.5°	5089.0	5225.4	5260.2	5109.0	4599.7	4381.6	4425.1	4551.1	4883.0	5486.1	5739.9
25°	5863.3	5916.3	6233.5	5844.2	5032.5	4557.1	4485.9	4811.8	5353.2	6252.6	6433.4
27.5°	6267.4	6336.0	6547.2	5699.9	5086.4	4331.2	4164.3	4660.6	5212.4	5892.0	6685.4
30°	6784.4	6893.9	7181.6	5844.2	5248.9	4478.9	4109.6	4584.1	5194.1	6128.3	7218.9
32.5°	7317.1	7530.1	7743.8	6352.5	5226.3	4704.9	4459.8	4498.0	5359.2	6623.7	7771.6
35°	8022.8	8210.5	8394.7	6646.3	5681.7	4893.5	4650.1	5055.1	5783.3	7198.1	8542.5
37.5°	9531.4	9828.6	9342.8	7482.3	6177.0	5743.4	5304.5	5544.3	6231.7	7676.9	9801.7
40°	10492.5	10715.9	10246.6	8051.5	7049.5	6316.0	6243.9	6263.9	6849.6	8087.1	10649.0
42.5°	11447.6	11750.0	11003.5	8832.7	8104.5	7498.8	7126.8	7101.6	7541.4	8824.0	11612.7
45°	12160.2	12338.3	11263.4	9491.4	9235.9	8786.7	8507.7	8065.4	8450.4	9334.1	12208.9
47.5°	12499.1	12644.2	11681.4	9874.7	9969.4	9992.9	10496.0	9741.7	9244.6	9679.1	12521.7
50°	12922.3	12991.0	11927.3	10211.9	10666.4	11697.0	11817.8	10539.5	10018.1	10055.4	12706.8
52.5°	13428.1	13456.8	12286.2	10601.2	11371.1	12818.0	12631.2	11891.7	10754.1	10742.8	13055.3
55°	14064.2	14046.8	12736.4	11125.2	11874.3	13484.6	13342.9	12804.1	11556.2	11312.0	13597.6
57.5°	14630.0	14619.5	13333.4	11607.5	12297.5	13827.0	13868.7	13726.2	12102.0	11719.6	14185.0
60°	14907.2	15040.1	14012.9	12135.0	12324.4	13981.7	13997.3	13770.5	12712.0	12242.8	14341.4
62.5°	14799.4	15052.3	14346.7	12609.5	12076.8	13559.3	13624.5	13468.1	12684.2	12792.0	13992.1
65°	14309.3	14601.3	14057.3	12862.4	11924.7	12851.9	12868.4	12473.0	12287.1	13156.1	13173.5
67.5°	13389.9	13663.6	13136.1	12459.1	10883.6	10945.3	11313.8	11345.9	11074.8	12881.5	12023.8
70°	11780.4	11973.4	11643.1	11463.2	9096.9	8735.4	9135.1	9306.3	9429.7	11889.9	10643.8
72.5°	9326.3	9699.1	9751.3	9868.6	7324.1	6721.9	7018.2	6764.5	7568.3	10119.7	8696.3
75°	6900.0	7214.6	7552.7	8207.0	5772.9	5032.5	4996.0	4866.5	5617.3	8138.4	6449.9
77.5°	4876.1	5076.8	5336.7	6555.9	4356.4	3875.8	3898.4	3767.2	4056.6	6150.9	4455.5
80°	3495.2	3600.4	3721.1	4319.0	3213.6	3344.0	3347.5	3223.2	3016.4	4177.4	2973.8
82.5°	2490.6	2572.3	2710.5	2848.6	2395.9	2740.9	2738.3	2730.5	2391.5	2823.4	1860.6
85°	1387.0	1496.5	1736.3	2231.6	1730.2	1959.6	1723.3	1897.9	1755.4	1879.7	942.0
87.5°	97.3	86.9	388.5	1293.1	807.3	590.1	309.4	612.7	785.6	982.0	131.2
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4
2.5°	2528.8	2559.3	2440.2	2261.2	2309.9	2256.8	2189.9	2085.6	1871.0	2004.0	2004.8
5°	3037.2	2921.6	2828.7	2740.9	2593.2	2369.8	2340.3	2161.3	2060.4	2113.5	2105.6
7.5°	3196.3	3032.0	2892.1	2578.4	2304.6	1957.9	1853.6	1747.6	1703.3	1831.9	1883.2
10°	3021.6	2850.4	2713.1	2331.6	2145.6	1929.2	1642.4	1495.6	1408.7	1442.6	1462.6
12.5°	3162.4	2987.7	2555.8	2342.9	2036.1	1904.0	1652.9	1437.4	1308.7	1340.0	1302.7
15°	3297.9	3062.4	2630.5	2206.4	1957.9	1766.7	1563.4	1340.9	1189.7	1135.8	1107.1
17.5°	3793.3	3402.2	2621.8	2130.0	1844.9	1625.1	1380.0	1136.7	1035.9	980.3	932.5
20°	4397.2	3852.4	2668.8	2050.9	1725.0	1447.8	1181.0	955.1	884.7	848.2	835.1
22.5°	5115.9	4429.4	2937.3	2039.6	1612.0	1318.3	1071.5	930.7	851.6	811.7	795.2
25°	5686.9	5026.4	3135.4	2116.1	1605.9	1211.4	1005.5	1034.1	997.6	1009.8	913.3
27.5°	6241.3	5188.9	3024.2	2082.2	1444.3	1022.0	989.8	1049.8	1081.1	1090.6	1087.1
30°	6709.7	5875.4	3048.5	1891.0	1220.1	832.5	757.8	787.3	873.4	1009.8	1035.9
32.5°	7395.4	6203.9	3256.2	1775.4	1090.6	744.8	661.3	650.0	670.0	719.5	762.1
35°	8197.5	6960.0	3314.4	1745.0	1001.1	705.6	647.4	621.3	631.8	669.1	677.8
37.5°	9693.0	7510.9	3530.0	1707.6	968.1	682.2	637.0	627.4	650.0	680.4	697.8
40°	10517.7	8501.6	3540.4	1675.5	925.5	672.6	643.9	639.6	653.5	695.2	705.6
42.5°	11617.1	9066.5	3703.8	1638.1	910.7	685.7	657.8	656.1	668.3	692.6	711.7
45°	12287.1	9444.5	3712.5	1616.4	907.3	743.0	676.1	670.0	667.4	682.2	699.6
47.5°	12719.0	9989.4	3818.5	1592.0	928.1	757.8	697.8	671.8	663.1	669.1	682.2
50°	13128.3	10424.8	4019.2	1588.6	949.8	743.0	736.1	670.9	653.5	650.9	660.5
52.5°	13630.6	11140.8	4266.9	1621.6	944.6	721.3	764.7	667.4	636.1	630.0	639.6
55°	14361.4	11908.2	4530.2	1593.8	890.7	679.6	736.9	664.8	617.9	606.6	615.3
57.5°	14835.0	12347.9	4824.8	1570.3	809.1	648.3	711.7	666.5	619.6	594.4	599.6
60°	14677.7	12111.5	4940.4	1426.9	731.7	624.0	651.8	652.6	604.0	580.5	584.9
62.5°	13982.5	11255.5	4832.6	1260.1	674.4	589.2	590.1	626.6	558.8	542.3	549.2
65°	13011.0	10191.0	4396.4	1151.5	647.4	552.7	538.8	550.1	497.9	485.8	499.7
67.5°	11818.7	8878.8	3747.2	1036.7	637.9	503.2	486.7	482.3	449.3	435.4	449.3
70°	10323.1	7434.5	2995.5	955.9	601.4	449.3	436.2	431.9	404.1	393.7	405.8
72.5°	8297.4	5805.1	2311.6	894.2	561.4	399.7	388.5	383.2	359.8	345.0	359.8
75°	5901.5	4436.3	1717.2	799.5	504.9	349.3	336.3	329.4	307.6	293.7	306.8
77.5°	4193.9	3330.1	1199.2	661.3	416.3	295.5	287.6	276.3	257.2	240.7	253.8
80°	3100.7	2379.4	773.4	510.1	318.1	236.4	232.0	224.2	206.0	186.0	195.5
82.5°	2041.3	1715.4	443.2	345.9	231.2	170.3	173.8	168.6	151.2	130.4	135.6
85°	914.2	1015.9	235.5	190.3	150.3	102.5	112.1	108.6	95.6	75.6	77.3
87.5°	87.8	171.2	72.1	69.5	55.6	32.2	40.0	33.9	28.7	18.2	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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4
2.5°	2035.2	1912.7	1790.2	1864.9	1866.7	1886.6	1889.2	1815.4	1874.5	1919.7	1966.6
5°	2067.4	1987.4	1991.8	1919.7	1880.6	1931.0	1920.5	1900.5	1936.2	1985.7	2045.7
7.5°	1834.5	1782.4	1773.7	1704.1	1535.6	1498.2	1529.5	1542.5	1590.3	1666.8	1731.1
10°	1432.1	1535.6	1419.1	1392.2	1347.9	1260.9	1210.5	1204.5	1306.1	1367.8	1421.7
12.5°	1290.5	1264.4	1250.5	1176.7	1176.7	1084.5	1055.0	1081.9	1238.4	1282.7	1352.2
15°	1099.3	1080.2	1015.9	979.4	962.0	924.6	955.9	982.0	1128.0	1131.5	1204.5
17.5°	912.5	901.2	840.3	833.4	816.0	799.5	828.2	890.7	969.8	955.9	989.8
20°	816.0	776.9	721.3	741.3	723.0	710.0	697.8	786.5	842.1	860.3	880.3
22.5°	791.7	720.4	687.4	669.1	670.0	649.2	651.8	725.6	809.9	821.2	809.1
25°	904.6	777.8	670.9	617.9	597.9	590.9	610.9	676.1	777.8	802.1	811.7
27.5°	1058.5	844.7	690.9	600.5	560.5	564.0	592.7	637.9	757.8	801.2	812.5
30°	1015.9	794.3	691.7	587.5	537.9	556.2	566.6	610.1	742.1	807.3	863.8
32.5°	783.9	714.3	696.1	597.9	577.9	549.2	564.0	605.7	696.1	736.9	739.5
35°	663.9	610.9	598.8	574.4	546.6	534.4	551.0	587.5	646.6	671.8	668.3
37.5°	658.7	600.5	552.7	542.3	531.0	527.5	537.1	570.9	630.9	675.2	665.7
40°	667.4	595.3	546.6	528.4	532.7	517.1	526.6	568.3	633.5	675.2	666.5
42.5°	657.0	589.2	538.8	524.9	529.2	507.5	518.8	562.3	626.6	676.1	659.6
45°	636.1	575.3	534.4	511.0	531.0	498.8	512.7	546.6	605.7	659.6	640.5
47.5°	615.3	558.8	516.2	501.4	521.4	490.1	496.2	525.8	584.9	637.9	621.3
50°	592.7	537.9	501.4	497.1	511.0	488.4	478.8	503.2	559.6	612.7	598.8
52.5°	568.3	520.5	491.0	489.3	502.3	477.1	463.2	482.3	532.7	585.7	574.4
55°	544.9	501.4	478.0	482.3	497.1	467.5	450.2	462.3	504.0	556.2	540.5
57.5°	521.4	479.7	460.6	472.7	484.0	455.4	433.6	440.6	474.5	525.8	507.5
60°	500.6	460.6	441.5	456.2	466.7	437.1	411.9	416.3	446.7	492.7	476.2
62.5°	473.6	439.7	414.5	433.6	441.5	412.8	385.8	391.1	415.4	458.8	446.7
65°	435.4	413.7	390.2	403.2	413.7	384.1	358.9	365.0	383.2	424.1	415.4
67.5°	402.4	381.5	365.9	376.3	378.0	355.4	332.8	336.3	351.1	389.3	379.8
70°	365.9	345.9	333.7	341.5	340.7	321.5	304.2	305.0	317.2	352.0	338.9
72.5°	325.9	306.8	300.7	305.0	301.5	284.2	267.7	273.7	281.6	307.6	297.2
75°	283.3	265.9	262.4	266.8	261.6	245.1	230.3	236.4	243.3	265.1	252.0
77.5°	239.0	223.3	224.2	225.1	218.1	206.8	192.1	198.1	202.5	217.3	204.2
80°	190.3	178.1	181.6	181.6	173.8	166.0	152.1	153.8	156.4	161.6	152.1
82.5°	139.0	139.0	139.0	139.9	123.4	126.0	113.8	113.0	110.4	109.5	103.4
85°	82.6	86.0	87.8	90.4	66.9	78.2	67.8	65.2	60.0	54.7	53.0
87.5°	18.2	23.5	23.5	22.6	0.0	8.7	4.3	7.0	1.7	0.0	0.0
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):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4	1888.4
2.5°	1912.7	1860.6	1957.9	2044.8	2030.9	2081.3	1964.0	2137.8	2322.0	2322.0
5°	2030.0	1985.7	2010.9	2061.3	2099.6	2275.1	2421.1	2566.2	2866.0	2869.5
7.5°	1712.0	1807.6	1830.2	1815.4	1979.6	2205.6	2446.3	2859.9	3113.7	3133.7
10°	1600.7	1644.2	1712.8	1751.1	1818.0	2040.5	2339.4	2830.4	3099.8	3150.2
12.5°	1450.4	1611.2	1715.4	1929.2	1982.2	2026.6	2501.9	2926.9	3112.8	3100.7
15°	1286.1	1407.8	1558.2	1794.5	1929.2	2268.1	2598.4	3236.2	3341.4	3433.5
17.5°	1025.4	1115.0	1314.8	1584.2	1917.9	2229.9	2836.5	3618.6	3815.0	3910.6
20°	843.8	844.7	1044.6	1401.7	1765.0	2070.0	2926.9	3935.8	4185.2	4233.9
22.5°	797.8	757.8	862.9	1153.2	1596.4	2164.7	3109.4	4445.9	4966.4	5089.0
25°	772.6	723.9	789.9	1017.6	1475.6	2214.3	3476.9	5147.2	5815.5	5863.3
27.5°	783.0	805.6	826.4	907.3	1322.6	2121.3	3391.8	5460.9	6177.0	6267.4
30°	853.4	889.9	842.1	869.9	1196.6	1986.6	3543.9	5970.2	6632.4	6784.4
32.5°	710.0	696.1	691.7	752.6	1070.6	1864.9	3862.8	6687.1	7126.0	7317.1
35°	640.5	618.7	627.4	697.0	1008.9	1847.5	4041.8	7280.7	7905.5	8022.8
37.5°	637.9	612.7	624.0	676.1	1030.7	1878.8	4328.6	8233.1	9280.3	9531.4
40°	631.8	617.9	624.0	663.1	1008.1	1896.2	4493.7	9033.5	10237.9	10492.5
42.5°	630.9	624.0	630.0	673.5	984.6	1904.0	4722.3	9756.5	11246.9	11447.6
45°	628.3	635.3	635.3	682.2	974.2	1956.2	4857.0	10111.0	11912.5	12160.2
47.5°	616.1	637.0	670.9	679.6	931.6	1931.8	5047.3	10649.0	12266.2	12499.1
50°	600.5	634.4	716.1	662.2	924.6	1872.7	5269.7	11075.7	12719.8	12922.3
52.5°	579.6	630.0	705.6	628.3	912.5	1862.3	5581.7	11630.1	13249.1	13428.1
55°	550.1	614.4	673.5	594.4	882.9	1829.3	6058.8	12317.5	13941.7	14064.2
57.5°	523.2	590.9	626.6	575.3	812.5	1836.2	6390.8	12878.0	14523.1	14630.0
60°	498.8	588.3	559.6	555.3	740.4	1743.3	6498.5	12871.9	14739.4	14907.2
62.5°	472.7	555.3	512.7	528.4	677.0	1647.7	6270.0	12320.1	14505.7	14799.4
65°	438.9	476.2	473.6	509.2	678.7	1492.1	5746.0	11346.8	13922.6	14309.3
67.5°	398.9	421.5	436.2	478.0	700.4	1371.3	4903.0	10176.2	12930.1	13389.9
70°	358.0	380.6	397.1	437.1	720.4	1315.7	3902.8	8532.0	11313.8	11780.4
72.5°	316.3	339.8	352.8	387.6	693.5	1196.6	2888.6	6638.4	9081.3	9326.3
75°	272.9	295.5	305.9	338.0	602.2	989.8	1994.4	5028.2	6651.5	6900.0
77.5°	228.6	252.9	256.4	282.4	459.7	756.9	1278.3	3856.7	4710.1	4876.1
80°	182.5	206.8	206.8	220.7	323.3	520.5	765.6	2909.5	3430.0	3495.2
82.5°	131.2	157.3	155.6	156.4	223.3	322.4	443.2	2180.4	2478.4	2490.6
85°	77.3	95.6	94.7	86.9	132.1	173.8	239.8	1353.9	1383.5	1387.0
87.5°	14.8	22.6	20.0	8.7	36.5	51.3	69.5	251.1	99.9	97.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

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