

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: P368348

Luminaire Tested: **MSA-SA4B-730-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368348  
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-SA4B-730-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: 15157 lumens  
Efficiency: N/A  
Efficacy: 88.6 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

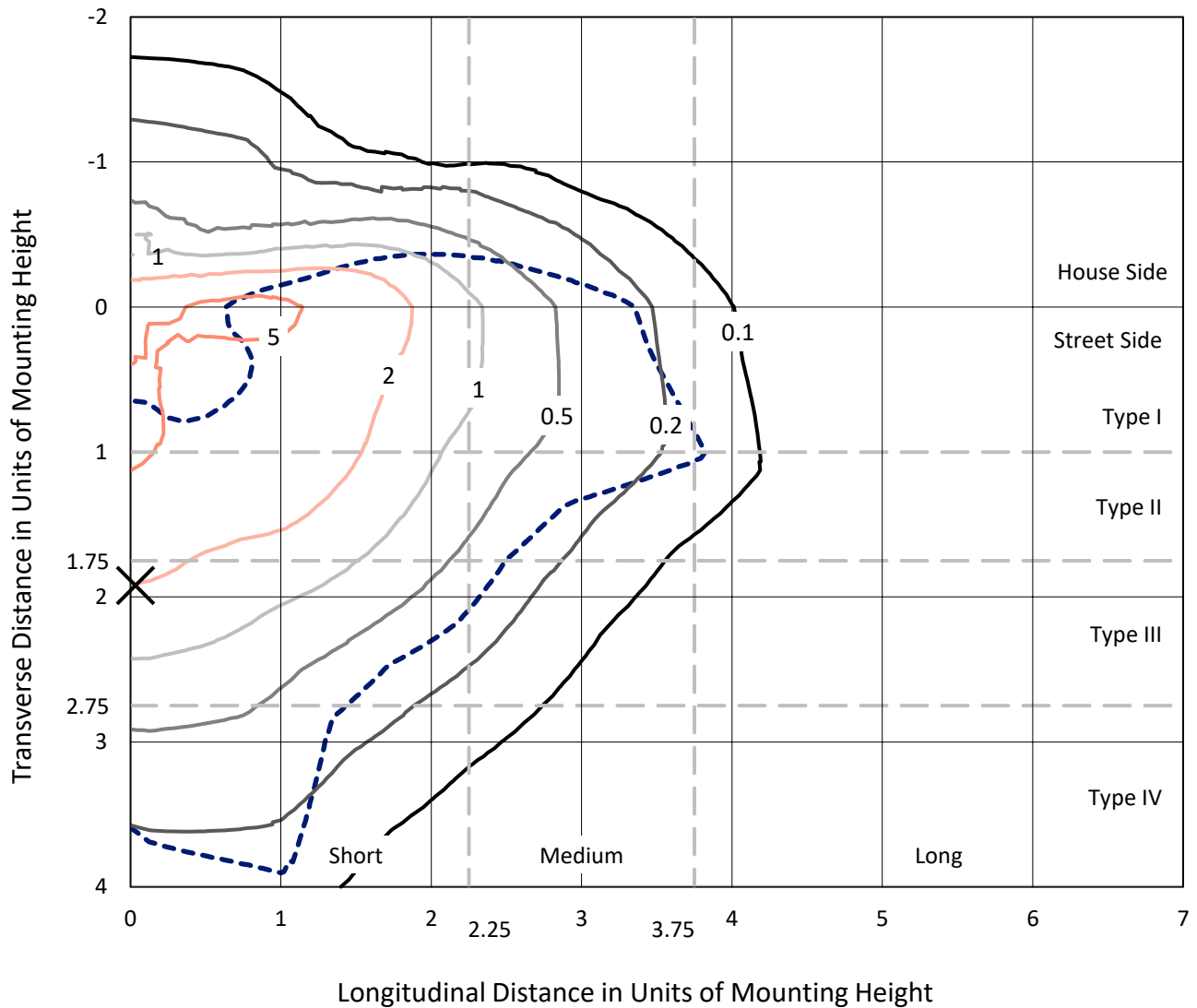
Input Watts (W): 171  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

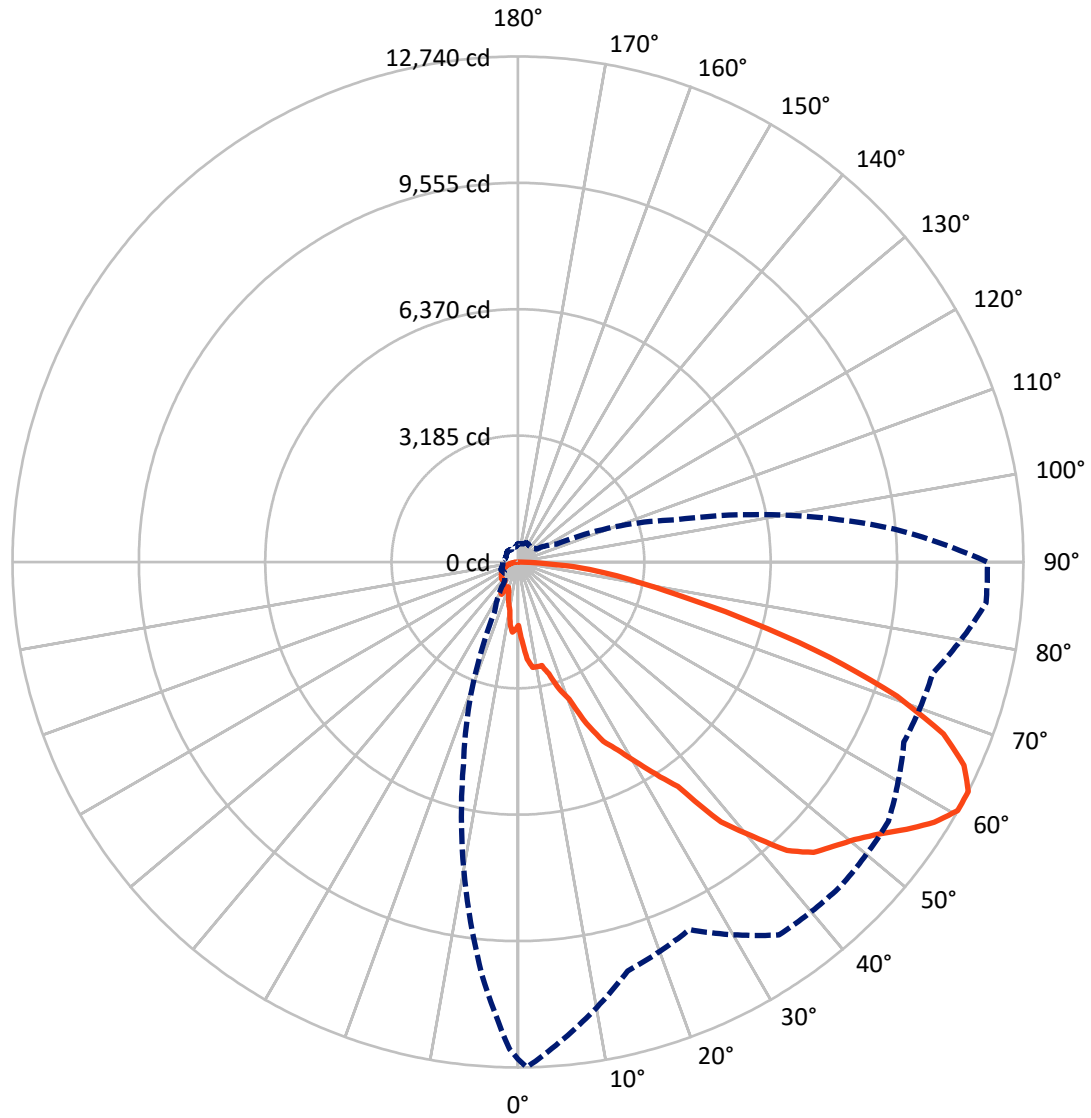
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.5 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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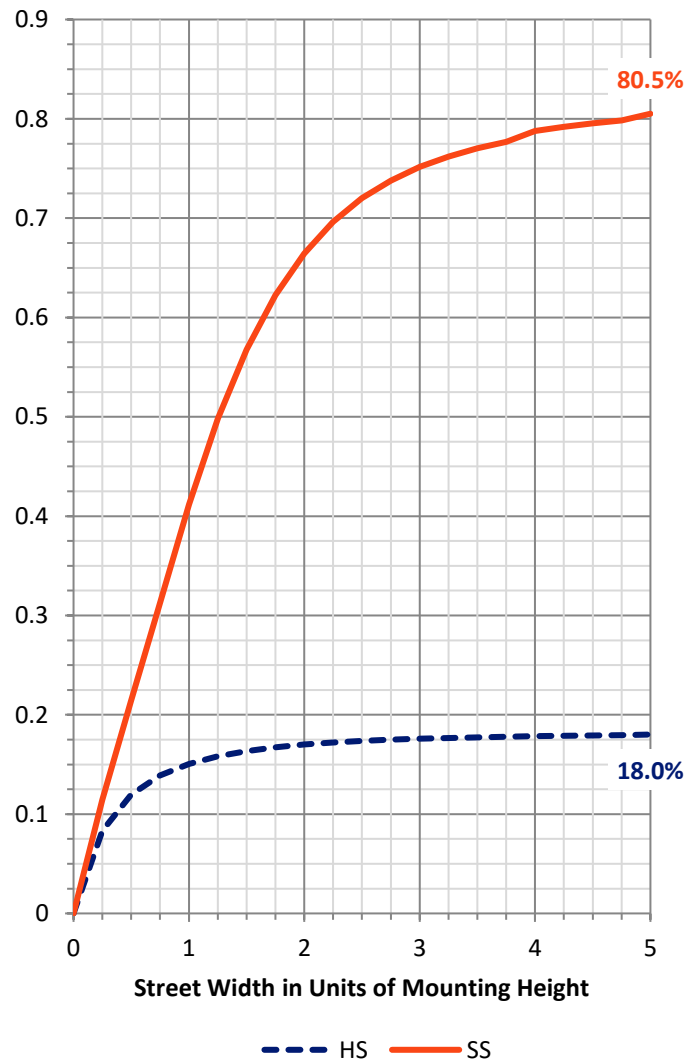
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2760.0	0.0	2760.0
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	12397.0	0.0	12397.0
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	15157.0	0.0	15157.0
	% Fixture	100.0	0.0	100.0

**Coefficient of Utilization**

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	183.2	1.2
10°-20°	532.4	3.5
20°-30°	940.0	6.2
30°-40°	1464.1	9.7
40°-50°	2410.9	15.9
50°-60°	3440.9	22.7
60°-70°	3648.8	24.1
70°-80°	2015.4	13.3
80°-90°	521.3	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°	15157.0	100.0
0°-180°	15157.0	100.0



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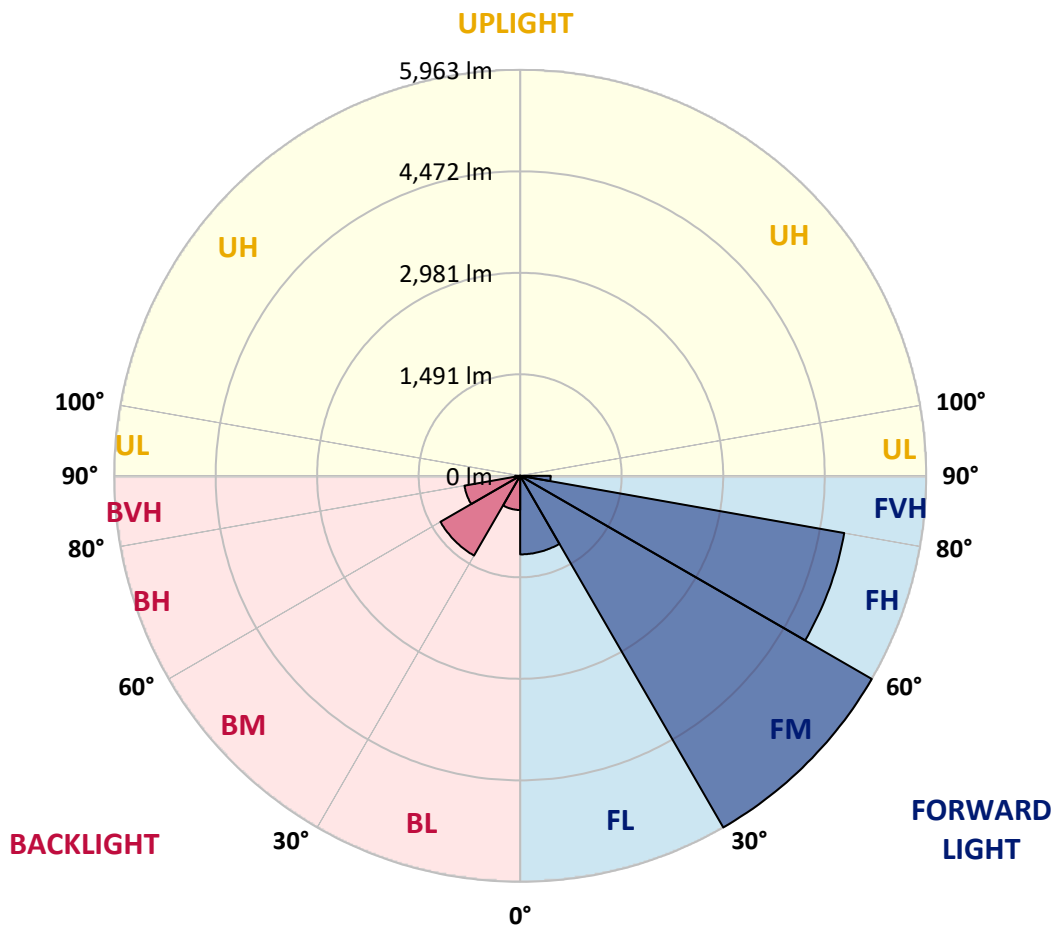
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1153.7	7.6			
FM (30°-60°)	5962.9	39.3			
FH (60°-80°)	4832.7	31.9			G2/5000
FVH (80°-90°)	447.8	3.0			G3/500
BL (0°-30°)	502.0	3.3	B2/1000		
BM (30°-60°)	1353.0	8.9	B2/2500		
BH (60°-80°)	831.5	5.5	B2/1000		G2/1000
BVH (80°-90°)	73.5	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-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3
2.5°	1965.3	1982.2	1947.7	1908.7	1747.6	1902.8	1856.5	1942.5	1914.6	1727.7	2069.8
5°	2428.7	2459.6	2425.8	2542.7	2550.1	2580.2	2301.4	2475.0	2414.7	2399.3	2572.1
7.5°	2652.3	2683.9	2770.0	2978.1	3140.7	2993.6	2831.0	2795.0	2747.9	2625.1	2729.5
10°	2666.3	2683.9	2799.4	3240.7	3319.4	3423.9	3318.7	3070.8	2968.6	2701.6	2622.1
12.5°	2624.3	2679.5	2828.8	3366.5	3600.4	3714.4	3740.1	3464.3	3213.5	2909.0	2868.5
15°	2906.0	2925.9	3139.9	3456.2	3617.3	3713.7	3797.5	3627.6	3548.9	3307.6	2983.3
17.5°	3309.9	3365.0	3540.1	3657.0	3765.9	3784.3	3715.1	3648.9	3523.9	3846.0	3501.1
20°	3583.5	3690.1	3904.9	3927.0	3698.2	3738.7	3729.1	3733.5	3662.2	4257.9	4068.2
22.5°	4307.2	4422.7	4452.1	4324.1	3893.1	3708.5	3745.3	3851.9	4132.9	4643.4	4858.1
25°	4962.6	5007.4	5275.9	4946.4	4259.4	3857.1	3796.8	4072.6	4530.8	5292.1	5445.1
27.5°	5304.6	5362.7	5541.4	4824.3	4305.0	3665.8	3524.6	3944.6	4411.7	4986.8	5658.4
30°	5742.2	5834.9	6078.4	4946.4	4442.6	3790.9	3478.3	3879.9	4396.2	5186.9	6110.0
32.5°	6193.1	6373.3	6554.2	5376.7	4423.4	3982.1	3774.7	3807.1	4536.0	5606.2	6577.8
35°	6790.3	6949.2	7105.1	5625.3	4808.8	4141.7	3935.8	4278.5	4894.9	6092.3	7230.2
37.5°	8067.2	8318.8	7907.6	6332.8	5228.1	4861.1	4489.6	4692.6	5274.4	6497.6	8296.0
40°	8880.7	9069.7	8672.5	6814.6	5966.6	5345.8	5284.7	5301.6	5797.4	6844.8	9013.1
42.5°	9689.0	9945.0	9313.2	7475.9	6859.5	6346.8	6032.0	6010.7	6382.9	7468.5	9828.8
45°	10292.2	10442.9	9533.1	8033.4	7817.1	7436.9	7200.8	6826.4	7152.2	7900.2	10333.4
47.5°	10579.0	10701.9	9886.9	8357.7	8437.9	8457.8	8883.6	8245.2	7824.5	8192.2	10598.1
50°	10937.2	10995.3	10095.0	8643.1	9027.8	9900.1	10002.4	8920.4	8479.1	8510.7	10754.8
52.5°	11365.3	11389.6	10398.8	8972.6	9624.3	10849.0	10690.8	10064.9	9102.1	9092.5	11049.8
55°	11903.7	11889.0	10779.8	9416.2	10050.2	11413.1	11293.2	10837.2	9781.0	9574.3	11508.7
57.5°	12382.5	12373.7	11285.1	9824.4	10408.4	11702.9	11738.2	11617.6	10242.9	9919.3	12005.9
60°	12617.2	12729.7	11860.3	10270.8	10431.2	11833.8	11847.1	11655.1	10759.2	10362.0	12138.3
62.5°	12525.9	12740.0	12142.7	10672.4	10221.6	11476.4	11531.5	11399.1	10735.7	10826.9	11842.6
65°	12111.1	12358.2	11897.8	10886.5	10092.8	10877.6	10891.6	10557.0	10399.6	11135.1	11149.8
67.5°	11332.9	11564.6	11118.2	10545.2	9211.7	9263.9	9575.8	9603.0	9373.5	10902.7	10176.7
70°	9970.7	10134.0	9854.5	9702.3	7699.4	7393.5	7731.8	7876.7	7981.2	10063.4	9008.7
72.5°	7893.6	8209.2	8253.3	8352.6	6199.0	5689.3	5940.1	5725.3	6405.7	8565.2	7360.4
75°	5840.0	6106.3	6392.4	6946.3	4886.1	4259.4	4228.5	4118.9	4754.4	6888.2	5459.0
77.5°	4127.0	4296.9	4516.8	5548.8	3687.2	3280.4	3299.6	3188.5	3433.4	5206.0	3771.0
80°	2958.3	3047.3	3149.5	3655.5	2720.0	2830.3	2833.2	2728.1	2553.0	3535.7	2517.0
82.5°	2108.0	2177.1	2294.1	2411.0	2027.8	2319.8	2317.6	2311.0	2024.2	2389.7	1574.8
85°	1173.9	1266.6	1469.6	1888.8	1464.4	1658.6	1458.5	1606.4	1485.8	1590.9	797.3
87.5°	82.4	73.6	328.8	1094.5	683.3	499.4	261.8	518.5	664.9	831.1	111.1
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3
2.5°	2140.4	2166.1	2065.3	1913.8	1955.0	1910.2	1853.5	1765.3	1583.6	1696.1	1696.9
5°	2570.7	2472.8	2394.1	2319.8	2194.8	2005.8	1980.8	1829.2	1743.9	1788.8	1782.2
7.5°	2705.3	2566.2	2447.8	2182.3	1950.6	1657.1	1568.9	1479.1	1441.6	1550.5	1593.9
10°	2557.4	2412.5	2296.3	1973.4	1816.0	1632.9	1390.1	1265.8	1192.3	1221.0	1237.9
12.5°	2676.6	2528.7	2163.2	1983.0	1723.3	1611.5	1399.0	1216.6	1107.7	1134.2	1102.5
15°	2791.3	2592.0	2226.4	1867.5	1657.1	1495.3	1323.2	1134.9	1006.9	961.3	937.1
17.5°	3210.6	2879.6	2219.1	1802.8	1561.5	1375.4	1168.0	962.1	876.7	829.7	789.2
20°	3721.7	3260.6	2258.8	1735.8	1460.0	1225.4	999.6	808.3	748.8	717.9	706.8
22.5°	4330.0	3749.0	2486.1	1726.3	1364.4	1115.8	906.9	787.7	720.8	687.0	673.0
25°	4813.3	4254.3	2653.8	1791.0	1359.2	1025.3	851.0	875.3	844.4	854.7	773.0
27.5°	5282.5	4391.8	2559.6	1762.3	1222.4	865.0	837.8	888.5	915.0	923.1	920.1
30°	5679.0	4972.9	2580.2	1600.5	1032.7	704.6	641.4	666.4	739.2	854.7	876.7
32.5°	6259.3	5250.9	2756.0	1502.7	923.1	630.3	559.7	550.2	567.1	609.0	645.1
35°	6938.2	5890.8	2805.3	1476.9	847.3	597.2	548.0	525.9	534.7	566.4	573.7
37.5°	8204.0	6357.1	2987.7	1445.3	819.4	577.4	539.1	531.0	550.2	575.9	590.6
40°	8902.0	7195.6	2996.5	1418.1	783.3	569.3	545.0	541.3	553.1	588.4	597.2
42.5°	9832.5	7673.7	3134.8	1386.5	770.8	580.3	556.8	555.3	565.6	586.2	602.4
45°	10399.6	7993.7	3142.2	1368.1	767.9	628.9	572.2	567.1	564.9	577.4	592.1
47.5°	10765.1	8454.8	3231.9	1347.5	785.5	641.4	590.6	568.6	561.2	566.4	577.4
50°	11111.5	8823.3	3401.8	1344.5	803.9	628.9	623.0	567.8	553.1	550.9	559.0
52.5°	11536.7	9429.4	3611.4	1372.5	799.5	610.5	647.3	564.9	538.4	533.3	541.3
55°	12155.2	10078.9	3834.3	1348.9	753.9	575.2	623.7	562.7	523.0	513.4	520.7
57.5°	12556.1	10451.0	4083.6	1329.1	684.8	548.7	602.4	564.1	524.4	503.1	507.5
60°	12423.0	10251.0	4181.4	1207.7	619.3	528.1	551.6	552.4	511.2	491.3	495.0
62.5°	11834.6	9526.5	4090.2	1066.5	570.8	498.7	499.4	530.3	472.9	459.0	464.9
65°	11012.2	8625.5	3721.0	974.6	548.0	467.8	456.0	465.6	421.5	411.2	422.9
67.5°	10003.1	7514.8	3171.6	877.5	539.9	425.9	411.9	408.2	380.3	368.5	380.3
70°	8737.3	6292.4	2535.3	809.1	509.0	380.3	369.2	365.6	342.0	333.2	343.5
72.5°	7022.8	4913.3	1956.5	756.9	475.1	338.3	328.8	324.4	304.5	292.0	304.5
75°	4994.9	3754.8	1453.4	676.7	427.3	295.7	284.6	278.8	260.4	248.6	259.6
77.5°	3549.6	2818.5	1015.0	559.7	352.3	250.1	243.5	233.9	217.7	203.7	214.8
80°	2624.3	2013.9	654.6	431.8	269.2	200.1	196.4	189.8	174.3	157.4	165.5
82.5°	1727.7	1451.9	375.1	292.7	195.6	144.2	147.1	142.7	128.0	110.3	114.7
85°	773.8	859.8	199.3	161.1	127.2	86.8	94.9	91.9	80.9	64.0	65.5
87.5°	74.3	144.9	61.0	58.8	47.1	27.2	33.8	28.7	24.3	15.4	11.8
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):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3
2.5°	1722.6	1618.9	1515.2	1578.4	1579.9	1596.8	1599.0	1536.5	1586.5	1624.8	1664.5
5°	1749.8	1682.1	1685.8	1624.8	1591.7	1634.3	1625.5	1608.6	1638.7	1680.7	1731.4
7.5°	1552.7	1508.6	1501.2	1442.4	1299.7	1268.0	1294.5	1305.6	1346.0	1410.7	1465.2
10°	1212.1	1299.7	1201.1	1178.3	1140.8	1067.2	1024.6	1019.4	1105.5	1157.7	1203.3
12.5°	1092.3	1070.2	1058.4	995.9	995.9	917.9	892.9	915.7	1048.1	1085.6	1144.5
15°	930.4	914.3	859.8	828.9	814.2	782.6	809.1	831.1	954.7	957.7	1019.4
17.5°	772.3	762.7	711.3	705.4	690.7	676.7	701.0	753.9	820.8	809.1	837.8
20°	690.7	657.6	610.5	627.4	612.0	600.9	590.6	665.6	712.7	728.2	745.1
22.5°	670.1	609.7	581.8	566.4	567.1	549.4	551.6	614.2	685.5	695.1	684.8
25°	765.7	658.3	567.8	523.0	506.0	500.2	517.1	572.2	658.3	678.9	687.0
27.5°	895.9	714.9	584.7	508.2	474.4	477.4	501.6	539.9	641.4	678.2	687.7
30°	859.8	672.3	585.5	497.2	455.3	470.7	479.6	516.3	628.1	683.3	731.1
32.5°	663.4	604.6	589.2	506.0	489.1	464.9	477.4	512.7	589.2	623.7	625.9
35°	561.9	517.1	506.8	486.2	462.6	452.3	466.3	497.2	547.2	568.6	565.6
37.5°	557.5	508.2	467.8	459.0	449.4	446.5	454.6	483.2	534.0	571.5	563.4
40°	564.9	503.8	462.6	447.2	450.9	437.6	445.7	481.0	536.2	571.5	564.1
42.5°	556.1	498.7	456.0	444.3	447.9	429.5	439.1	475.9	530.3	572.2	558.3
45°	538.4	486.9	452.3	432.5	449.4	422.2	434.0	462.6	512.7	558.3	542.1
47.5°	520.7	472.9	436.9	424.4	441.3	414.8	420.0	445.0	495.0	539.9	525.9
50°	501.6	455.3	424.4	420.7	432.5	413.4	405.3	425.9	473.7	518.5	506.8
52.5°	481.0	440.6	415.6	414.1	425.1	403.8	392.0	408.2	450.9	495.7	486.2
55°	461.2	424.4	404.5	408.2	420.7	395.7	381.0	391.3	426.6	470.7	457.5
57.5°	441.3	406.0	389.8	400.1	409.7	385.4	367.0	372.9	401.6	445.0	429.5
60°	423.7	389.8	373.6	386.1	395.0	370.0	348.6	352.3	378.1	417.0	403.1
62.5°	400.9	372.2	350.8	367.0	373.6	349.4	326.6	331.0	351.6	388.4	378.1
65°	368.5	350.1	330.2	341.3	350.1	325.1	303.8	308.9	324.4	358.9	351.6
67.5°	340.5	322.9	309.7	318.5	320.0	300.8	281.7	284.6	297.2	329.5	321.4
70°	309.7	292.7	282.4	289.1	288.3	272.1	257.4	258.2	268.5	297.9	286.9
72.5°	275.8	259.6	254.5	258.2	255.2	240.5	226.5	231.7	238.3	260.4	251.5
75°	239.8	225.1	222.1	225.8	221.4	207.4	194.9	200.1	205.9	224.3	213.3
77.5°	202.3	189.0	189.8	190.5	184.6	175.1	162.6	167.7	171.4	183.9	172.8
80°	161.1	150.8	153.7	153.7	147.1	140.5	128.7	130.2	132.4	136.8	128.7
82.5°	117.7	117.7	117.7	118.4	104.4	106.7	96.4	95.6	93.4	92.7	87.5
85°	69.9	72.8	74.3	76.5	56.6	66.2	57.4	55.2	50.8	46.3	44.9
87.5°	15.4	19.9	19.9	19.1	0.0	7.4	3.7	5.9	1.5	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°	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3	1598.3
2.5°	1618.9	1574.8	1657.1	1730.7	1718.9	1761.6	1662.3	1809.4	1965.3	1965.3
5°	1718.2	1680.7	1702.0	1744.7	1777.0	1925.6	2049.2	2172.0	2425.8	2428.7
7.5°	1449.0	1529.9	1549.0	1536.5	1675.5	1866.8	2070.5	2420.6	2635.4	2652.3
10°	1354.8	1391.6	1449.7	1482.1	1538.7	1727.0	1980.0	2395.6	2623.6	2666.3
12.5°	1227.6	1363.7	1451.9	1632.9	1677.7	1715.2	2117.6	2477.2	2634.6	2624.3
15°	1088.6	1191.5	1318.8	1518.9	1632.9	1919.7	2199.2	2739.1	2828.1	2906.0
17.5°	867.9	943.7	1112.8	1340.9	1623.3	1887.4	2400.7	3062.7	3228.9	3309.9
20°	714.2	714.9	884.1	1186.4	1493.8	1752.0	2477.2	3331.2	3542.3	3583.5
22.5°	675.2	641.4	730.4	976.0	1351.2	1832.2	2631.7	3762.9	4203.5	4307.2
25°	653.9	612.7	668.6	861.3	1248.9	1874.1	2942.8	4356.5	4922.1	4962.6
27.5°	662.7	681.8	699.5	767.9	1119.5	1795.4	2870.7	4622.0	5228.1	5304.6
30°	722.3	753.2	712.7	736.3	1012.8	1681.4	2999.5	5053.0	5613.5	5742.2
32.5°	600.9	589.2	585.5	637.0	906.2	1578.4	3269.4	5659.8	6031.3	6193.1
35°	542.1	523.7	531.0	589.9	853.9	1563.7	3420.9	6162.2	6691.0	6790.3
37.5°	539.9	518.5	528.1	572.2	872.3	1590.2	3663.6	6968.3	7854.6	8067.2
40°	534.7	523.0	528.1	561.2	853.2	1604.9	3803.4	7645.8	8665.2	8880.7
42.5°	534.0	528.1	533.3	570.0	833.3	1611.5	3996.8	8257.7	9519.1	9689.0
45°	531.8	537.7	537.7	577.4	824.5	1655.7	4110.8	8557.8	10082.5	10292.2
47.5°	521.5	539.1	567.8	575.2	788.5	1635.1	4271.9	9013.1	10381.9	10579.0
50°	508.2	536.9	606.1	560.5	782.6	1585.1	4460.2	9374.2	10765.8	10937.2
52.5°	490.6	533.3	597.2	531.8	772.3	1576.2	4724.3	9843.5	11213.8	11365.3
55°	465.6	520.0	570.0	503.1	747.3	1548.3	5128.1	10425.3	11800.0	11903.7
57.5°	442.8	500.2	530.3	486.9	687.7	1554.2	5409.0	10899.7	12292.1	12382.5
60°	422.2	497.9	473.7	470.0	626.7	1475.5	5500.2	10894.6	12475.2	12617.2
62.5°	400.1	470.0	434.0	447.2	573.0	1394.6	5306.8	10427.5	12277.3	12525.9
65°	371.4	403.1	400.9	431.0	574.4	1262.9	4863.3	9603.7	11783.8	12111.1
67.5°	337.6	356.7	369.2	404.5	592.8	1160.7	4149.8	8613.0	10943.8	11332.9
70°	303.0	322.2	336.1	370.0	609.7	1113.6	3303.2	7221.4	9575.8	9970.7
72.5°	267.7	287.6	298.6	328.0	586.9	1012.8	2444.9	5618.7	7686.2	7893.6
75°	231.0	250.1	258.9	286.1	509.7	837.8	1688.0	4255.7	5629.7	5840.0
77.5°	193.4	214.0	217.0	239.0	389.1	640.6	1082.0	3264.2	3986.5	4127.0
80°	154.5	175.1	175.1	186.8	273.6	440.6	648.0	2462.5	2903.1	2958.3
82.5°	111.1	133.1	131.7	132.4	189.0	272.9	375.1	1845.4	2097.7	2108.0
85°	65.5	80.9	80.2	73.6	111.8	147.1	203.0	1145.9	1171.0	1173.9
87.5°	12.5	19.1	16.9	7.4	30.9	43.4	58.8	212.6	84.6	82.4
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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