

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: P368480

Luminaire Tested: **MSA-SA4C-730-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368480  
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-SA4C-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: 18772 lumens  
Efficiency: N/A  
Efficacy: 83.4 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B3 - U0 - G4

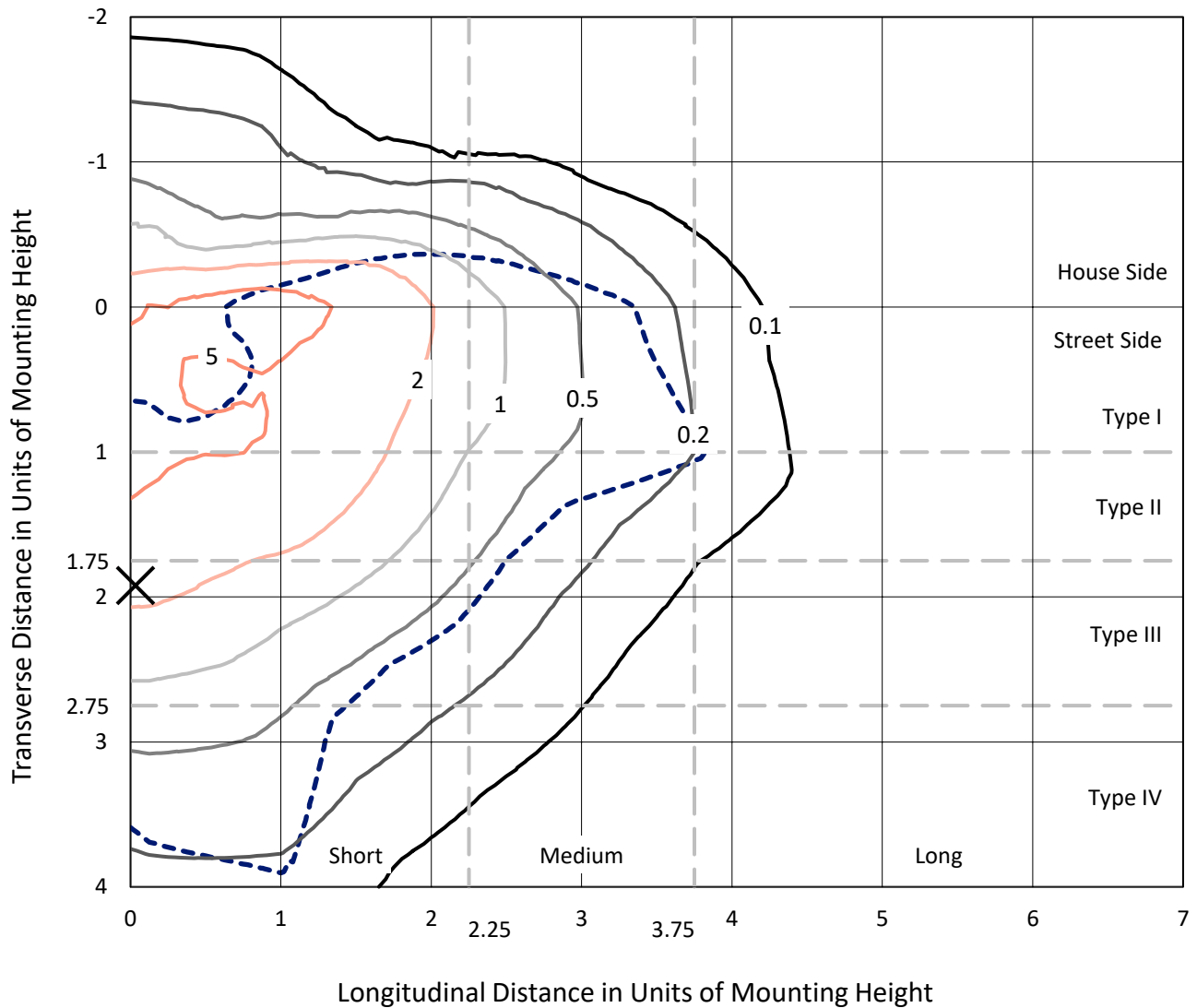
Input Watts (W): 225  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

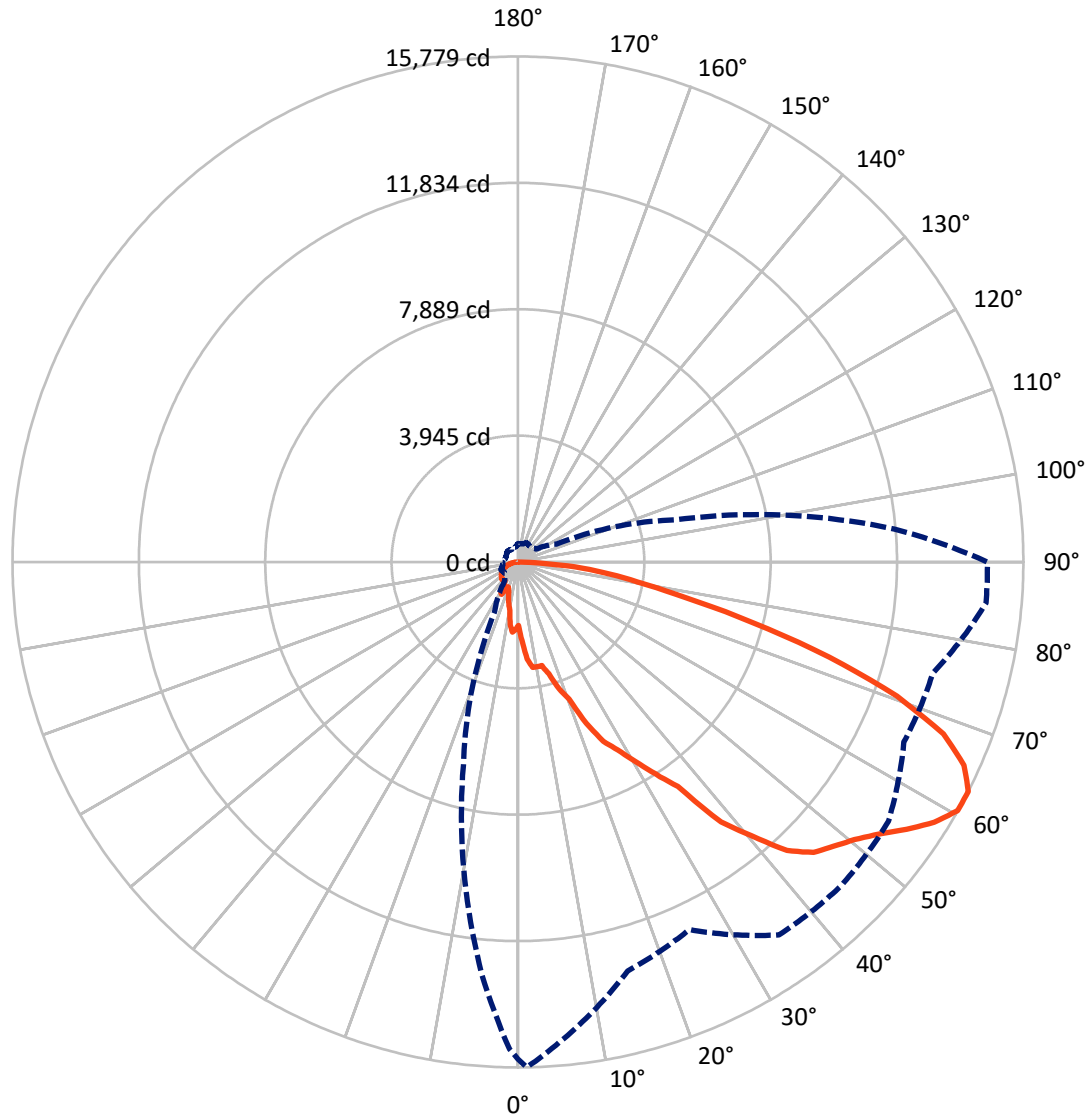
× Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 8 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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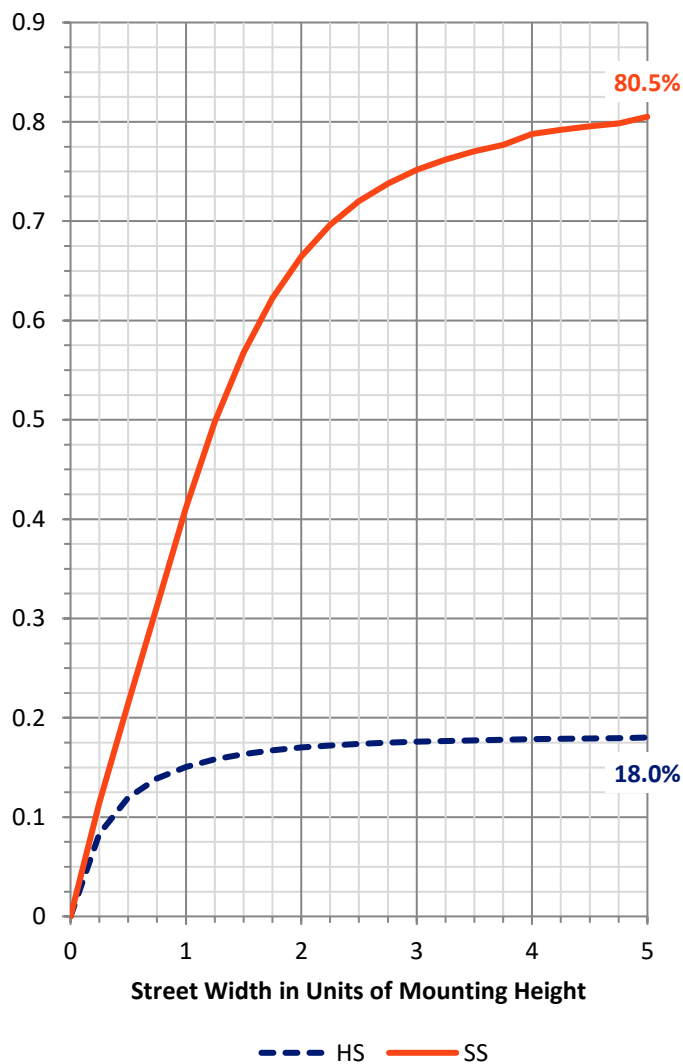
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	3418.3	0.0	3418.3
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	15353.7	0.0	15353.7
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	18772.0	0.0	18772.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	226.9	1.2
10°-20°	659.4	3.5
20°-30°	1164.2	6.2
30°-40°	1813.3	9.7
40°-50°	2985.9	15.9
50°-60°	4261.6	22.7
60°-70°	4519.0	24.1
70°-80°	2496.1	13.3
80°-90°	645.6	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°	18772.0	100.0
0°-180°	18772.0	100.0

**Coefficient of Utilization**



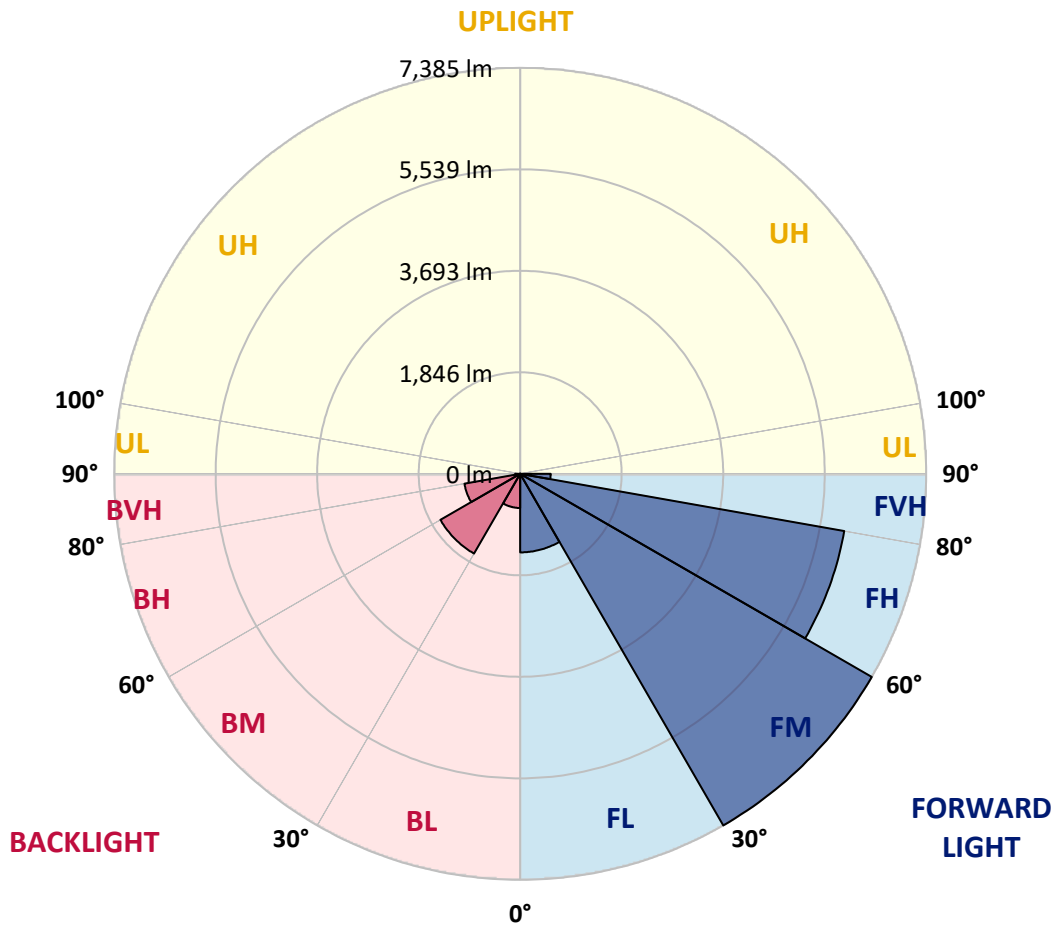
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1428.8	7.6			
FM (30°-60°)	7385.1	39.3			
FH (60°-80°)	5985.3	31.9			G3/7500
FVH (80°-90°)	554.6	3.0			G4/750
BL (0°-30°)	621.7	3.3	B2/1000		
BM (30°-60°)	1675.7	8.9	B2/2500		
BH (60°-80°)	1029.8	5.5	B3/2500		G3/2500
BVH (80°-90°)	91.0	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B3-U0-G4**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5
2.5°	2434.1	2455.0	2412.2	2363.9	2164.4	2356.6	2299.2	2405.8	2371.2	2139.8	2563.4
5°	3007.9	3046.2	3004.3	3149.1	3158.3	3195.6	2850.4	3065.3	2990.6	2971.5	3185.6
7.5°	3284.9	3324.0	3430.6	3688.4	3889.7	3707.6	3506.2	3461.6	3403.3	3251.2	3380.5
10°	3302.2	3324.0	3467.1	4013.6	4111.1	4240.5	4110.2	3803.2	3676.6	3345.9	3247.5
12.5°	3250.3	3318.6	3503.5	4169.4	4459.1	4600.3	4632.2	4290.6	3979.9	3602.8	3552.7
15°	3599.2	3623.7	3888.8	4280.5	4480.0	4599.4	4703.2	4492.8	4395.3	4096.5	3694.8
17.5°	4099.3	4167.6	4384.4	4529.2	4664.1	4686.8	4601.2	4519.2	4364.3	4763.3	4336.1
20°	4438.1	4570.2	4836.2	4863.5	4580.2	4630.3	4618.5	4624.0	4535.6	5273.5	5038.4
22.5°	5334.5	5477.5	5514.0	5355.5	4821.6	4593.0	4638.5	4770.6	5118.6	5750.8	6016.8
25°	6146.2	6201.7	6534.2	6126.1	5275.3	4777.0	4702.3	5043.9	5611.4	6554.3	6743.7
27.5°	6569.8	6641.7	6863.1	5974.9	5331.8	4540.2	4365.3	4885.4	5463.9	6176.2	7007.9
30°	7111.8	7226.5	7528.1	6126.1	5502.1	4695.0	4307.9	4805.2	5444.7	6424.0	7567.2
32.5°	7670.2	7893.4	8117.5	6659.0	5478.4	4931.9	4675.0	4715.1	5617.8	6943.2	8146.6
35°	8409.9	8606.6	8799.8	6966.9	5955.8	5129.5	4874.5	5299.0	6062.4	7545.4	8954.6
37.5°	9991.3	10302.8	9793.6	7843.3	6475.0	6020.5	5560.4	5811.8	6532.4	8047.3	10274.6
40°	10998.8	11232.9	10741.0	8439.9	7389.6	6620.8	6545.2	6566.1	7180.1	8477.3	11162.7
42.5°	11999.9	12316.9	11534.4	9258.9	8495.5	7860.6	7470.7	7444.3	7905.2	9249.8	12173.0
45°	12746.9	12933.6	11806.8	9949.4	9681.5	9210.6	8918.2	8454.5	8858.1	9784.5	12797.9
47.5°	13102.2	13254.3	12245.0	10351.1	10450.4	10475.0	11002.4	10211.7	9690.7	10146.1	13125.8
50°	13545.8	13617.8	12502.8	10704.5	11181.0	12261.4	12388.0	11048.0	10501.4	10540.6	13319.9
52.5°	14076.0	14106.0	12879.0	11112.6	11919.7	13436.5	13240.6	12465.4	11273.0	11261.1	13685.2
55°	14742.8	14724.6	13350.8	11661.9	12447.2	14135.2	13986.7	13421.9	12113.8	11857.8	14253.6
57.5°	15335.8	15324.9	13976.7	12167.5	12890.8	14494.1	14537.8	14388.4	12685.9	12285.0	14869.4
60°	15626.4	15765.8	14689.0	12720.5	12919.1	14656.2	14672.6	14434.9	13325.3	12833.4	15033.4
62.5°	15513.4	15778.5	15038.8	13217.8	12659.4	14213.5	14281.8	14117.9	13296.2	13409.1	14667.2
65°	14999.7	15305.7	14735.5	13482.9	12500.0	13472.0	13489.3	13074.8	12879.9	13790.8	13809.1
67.5°	14035.9	14322.8	13769.9	13060.3	11408.7	11473.4	11859.6	11893.3	11609.1	13503.0	12603.9
70°	12348.8	12551.0	12204.9	12016.3	9535.8	9156.8	9575.9	9755.3	9884.7	12463.6	11157.3
72.5°	9776.3	10167.1	10221.7	10344.7	7677.5	7046.2	7356.8	7090.8	7933.4	10608.0	9115.8
75°	7232.9	7562.7	7917.0	8603.0	6051.4	5275.3	5237.0	5101.3	5888.4	8531.0	6761.1
77.5°	5111.3	5321.8	5594.1	6872.2	4566.6	4062.8	4086.5	3949.0	4252.3	6447.7	4670.4
80°	3663.8	3774.1	3900.7	4527.4	3368.7	3505.3	3509.0	3378.7	3161.9	4378.9	3117.3
82.5°	2610.8	2696.4	2841.2	2986.1	2511.5	2873.1	2870.4	2862.2	2506.9	2959.7	1950.3
85°	1453.9	1568.7	1820.1	2339.3	1813.7	2054.2	1806.4	1989.5	1840.1	1970.4	987.5
87.5°	102.0	91.1	407.2	1355.5	846.3	618.5	324.3	642.2	823.5	1029.4	137.6
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°	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5
2.5°	2650.9	2682.7	2557.9	2370.3	2421.3	2365.7	2295.6	2186.3	1961.3	2100.6	2101.6
5°	3183.8	3062.6	2965.1	2873.1	2718.3	2484.2	2453.2	2265.5	2159.9	2215.4	2207.2
7.5°	3350.5	3178.3	3031.6	2702.8	2415.8	2052.4	1943.1	1831.9	1785.5	1920.3	1974.0
10°	3167.4	2987.9	2844.0	2444.1	2249.1	2022.3	1721.7	1567.7	1476.6	1512.2	1533.1
12.5°	3314.9	3131.8	2679.1	2455.9	2134.3	1995.9	1732.6	1506.7	1371.9	1404.7	1365.5
15°	3457.0	3210.2	2757.4	2312.9	2052.4	1852.0	1638.8	1405.6	1247.1	1190.6	1160.5
17.5°	3976.3	3566.4	2748.3	2232.7	1933.9	1703.5	1446.6	1191.5	1085.8	1027.5	977.4
20°	4609.4	4038.2	2797.5	2149.8	1808.2	1517.6	1238.0	1001.1	927.3	889.1	875.4
22.5°	5362.7	4643.1	3079.0	2138.0	1689.8	1381.9	1123.2	975.6	892.7	850.8	833.5
25°	5961.2	5268.9	3286.7	2218.2	1683.4	1269.9	1054.0	1084.0	1045.8	1058.5	957.4
27.5°	6542.4	5439.3	3170.1	2182.6	1514.0	1071.3	1037.6	1100.4	1133.2	1143.2	1139.6
30°	7033.4	6158.9	3195.6	1982.2	1279.0	872.7	794.3	825.3	915.5	1058.5	1085.8
32.5°	7752.2	6503.3	3413.3	1861.1	1143.2	780.7	693.2	681.4	702.3	754.3	798.9
35°	8593.0	7295.8	3474.4	1829.2	1049.4	739.7	678.7	651.3	662.3	701.4	710.5
37.5°	10160.7	7873.3	3700.3	1790.0	1014.8	715.1	667.7	657.7	681.4	713.3	731.5
40°	11025.2	8911.8	3711.2	1756.3	970.2	705.1	675.0	670.5	685.0	728.8	739.7
42.5°	12177.5	9503.9	3882.5	1717.1	954.7	718.7	689.6	687.8	700.5	726.0	746.1
45°	12879.9	9900.2	3891.6	1694.4	951.0	778.9	708.7	702.3	699.6	715.1	733.3
47.5°	13332.6	10471.3	4002.7	1668.9	972.9	794.3	731.5	704.2	695.1	701.4	715.1
50°	13761.7	10927.7	4213.1	1665.2	995.7	778.9	771.6	703.3	685.0	682.3	692.3
52.5°	14288.2	11678.3	4472.8	1699.8	990.2	756.1	801.6	699.6	666.8	660.4	670.5
55°	15054.3	12482.7	4748.8	1670.7	933.7	712.4	772.5	696.9	647.7	635.8	645.0
57.5°	15550.8	12943.7	5057.6	1646.1	848.1	679.6	746.1	698.7	649.5	623.1	628.6
60°	15385.9	12695.9	5178.7	1495.8	767.0	654.1	683.2	684.1	633.1	608.5	613.1
62.5°	14657.1	11798.6	5065.8	1320.9	706.9	617.6	618.5	656.8	585.7	568.4	575.7
65°	13638.7	10682.7	4608.5	1207.0	678.7	579.4	564.8	576.6	522.0	509.2	523.8
67.5°	12388.9	9307.1	3928.0	1086.8	668.6	527.4	510.1	505.6	471.0	456.4	471.0
70°	10821.1	7793.2	3140.0	1002.0	630.4	471.0	457.3	452.7	423.6	412.7	425.4
72.5°	8697.7	6085.1	2423.1	937.4	588.5	419.0	407.2	401.7	377.1	361.6	377.1
75°	6186.2	4650.4	1800.0	838.1	529.3	366.2	352.5	345.2	322.5	307.9	321.6
77.5°	4396.2	3490.8	1257.1	693.2	436.3	309.7	301.5	289.7	269.6	252.3	266.0
80°	3250.3	2494.2	810.7	534.7	333.4	247.8	243.2	235.0	215.9	194.9	205.0
82.5°	2139.8	1798.2	464.6	362.6	242.3	178.5	182.2	176.7	158.5	136.6	142.1
85°	958.3	1064.9	246.9	199.5	157.6	107.5	117.5	113.9	100.2	79.3	81.1
87.5°	92.0	179.5	75.6	72.9	58.3	33.7	41.9	35.5	30.1	19.1	14.6
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°	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5
2.5°	2133.4	2005.0	1876.6	1954.9	1956.7	1977.7	1980.4	1903.0	1964.9	2012.3	2061.5
5°	2167.1	2083.3	2087.9	2012.3	1971.3	2024.1	2013.2	1992.2	2029.6	2081.5	2144.4
7.5°	1923.0	1868.4	1859.2	1786.4	1609.6	1570.5	1603.3	1616.9	1667.0	1747.2	1814.6
10°	1501.2	1609.6	1487.6	1459.3	1412.9	1321.8	1268.9	1262.6	1369.2	1433.8	1490.3
12.5°	1352.8	1325.4	1310.9	1233.4	1233.4	1136.9	1105.9	1134.1	1298.1	1344.6	1417.4
15°	1152.3	1132.3	1064.9	1026.6	1008.4	969.2	1002.0	1029.4	1182.4	1186.1	1262.6
17.5°	956.5	944.7	880.9	873.6	855.4	838.1	868.1	933.7	1016.6	1002.0	1037.6
20°	855.4	814.4	756.1	777.0	757.9	744.2	731.5	824.4	882.7	901.8	922.8
22.5°	829.9	755.2	720.6	701.4	702.3	680.5	683.2	760.6	849.0	860.8	848.1
25°	948.3	815.3	703.3	647.7	626.7	619.4	640.4	708.7	815.3	840.8	850.8
27.5°	1109.5	885.4	724.2	629.5	587.6	591.2	621.3	668.6	794.3	839.9	851.7
30°	1064.9	832.6	725.1	615.8	563.9	583.0	593.9	639.5	777.9	846.3	905.5
32.5°	821.7	748.8	729.7	626.7	605.8	575.7	591.2	634.9	729.7	772.5	775.2
35°	696.0	640.4	627.6	602.1	573.0	560.2	577.5	615.8	677.7	704.2	700.5
37.5°	690.5	629.5	579.4	568.4	556.6	552.9	563.0	598.5	661.3	707.8	697.8
40°	699.6	624.0	573.0	553.9	558.4	542.0	552.0	595.8	664.1	707.8	698.7
42.5°	688.7	617.6	564.8	550.2	554.8	532.0	543.8	589.4	656.8	708.7	691.4
45°	666.8	603.0	560.2	535.6	556.6	522.9	537.5	573.0	634.9	691.4	671.4
47.5°	645.0	585.7	541.1	525.6	546.6	513.8	520.2	551.1	613.1	668.6	651.3
50°	621.3	563.9	525.6	521.1	535.6	512.0	501.9	527.4	586.7	642.2	627.6
52.5°	595.8	545.7	514.7	512.9	526.5	500.1	485.5	505.6	558.4	614.0	602.1
55°	571.2	525.6	501.0	505.6	521.1	490.1	471.9	484.6	528.3	583.0	566.6
57.5°	546.6	502.8	482.8	495.6	507.4	477.3	454.6	461.9	497.4	551.1	532.0
60°	524.7	482.8	462.8	478.2	489.2	458.2	431.8	436.3	468.2	516.5	499.2
62.5°	496.5	460.9	434.5	454.6	462.8	432.7	404.5	409.9	435.4	481.0	468.2
65°	456.4	433.6	409.0	422.7	433.6	402.6	376.2	382.6	401.7	444.5	435.4
67.5°	421.8	399.9	383.5	394.4	396.3	372.6	348.9	352.5	368.0	408.1	398.1
70°	383.5	362.6	349.8	358.0	357.1	337.1	318.8	319.7	332.5	368.9	355.3
72.5°	341.6	321.6	315.2	319.7	316.1	297.9	280.6	286.9	295.1	322.5	311.5
75°	297.0	278.7	275.1	279.7	274.2	256.9	241.4	247.8	255.1	277.8	264.2
77.5°	250.5	234.1	235.0	235.9	228.6	216.8	201.3	207.7	212.3	227.7	214.1
80°	199.5	186.7	190.4	190.4	182.2	174.0	159.4	161.2	164.0	169.4	159.4
82.5°	145.8	145.8	145.8	146.7	129.4	132.1	119.3	118.4	115.7	114.8	108.4
85°	86.5	90.2	92.0	94.7	70.1	82.0	71.1	68.3	62.9	57.4	55.6
87.5°	19.1	24.6	24.6	23.7	0.0	9.1	4.6	7.3	1.8	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°	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5	1979.5
2.5°	2005.0	1950.3	2052.4	2143.5	2128.9	2181.7	2058.7	2240.9	2434.1	2434.1
5°	2128.0	2081.5	2107.9	2160.8	2200.8	2384.9	2537.9	2690.0	3004.3	3007.9
7.5°	1794.6	1894.8	1918.5	1903.0	2075.1	2312.0	2564.3	2997.9	3263.9	3284.9
10°	1678.0	1723.5	1795.5	1835.6	1905.7	2138.9	2452.3	2967.0	3249.3	3302.2
12.5°	1520.4	1688.9	1798.2	2022.3	2077.9	2124.3	2622.6	3068.1	3263.0	3250.3
15°	1348.2	1475.7	1633.3	1881.1	2022.3	2377.6	2723.7	3392.4	3502.6	3599.2
17.5°	1074.9	1168.7	1378.3	1660.7	2010.5	2337.5	2973.3	3793.2	3999.1	4099.3
20°	884.5	885.4	1095.0	1469.4	1850.1	2169.9	3068.1	4125.7	4387.1	4438.1
22.5°	836.2	794.3	904.6	1208.8	1673.4	2269.2	3259.4	4660.4	5206.1	5334.5
25°	809.8	758.8	828.1	1066.7	1546.8	2321.1	3644.7	5395.5	6096.1	6146.2
27.5°	820.8	844.4	866.3	951.0	1386.5	2223.6	3555.4	5724.4	6475.0	6569.8
30°	894.6	932.8	882.7	911.9	1254.4	2082.4	3714.8	6258.2	6952.3	7111.8
32.5°	744.2	729.7	725.1	788.9	1122.3	1954.9	4049.2	7009.7	7469.8	7670.2
35°	671.4	648.6	657.7	730.6	1057.6	1936.7	4236.8	7631.9	8286.9	8409.9
37.5°	668.6	642.2	654.1	708.7	1080.4	1969.5	4537.4	8630.3	9728.0	9991.3
40°	662.3	647.7	654.1	695.1	1056.7	1987.7	4710.5	9469.3	10731.9	10998.8
42.5°	661.3	654.1	660.4	706.0	1032.1	1995.9	4950.1	10227.2	11789.5	11999.9
45°	658.6	665.9	665.9	715.1	1021.2	2050.5	5091.3	10598.9	12487.3	12746.9
47.5°	645.9	667.7	703.3	712.4	976.5	2025.0	5290.8	11162.7	12858.0	13102.2
50°	629.5	665.0	750.6	694.1	969.2	1963.1	5524.0	11610.0	13333.5	13545.8
52.5°	607.6	660.4	739.7	658.6	956.5	1952.2	5851.0	12191.2	13888.3	14076.0
55°	576.6	644.0	706.0	623.1	925.5	1917.5	6351.1	12911.8	14614.3	14742.8
57.5°	548.4	619.4	656.8	603.0	851.7	1924.8	6699.1	13499.3	15223.8	15335.8
60°	522.9	616.7	586.7	582.1	776.1	1827.4	6812.1	13493.0	15450.6	15626.4
62.5°	495.6	582.1	537.5	553.9	709.6	1727.2	6572.5	12914.5	15205.5	15513.4
65°	460.0	499.2	496.5	533.8	711.4	1564.1	6023.2	11894.2	14594.3	14999.7
67.5°	418.1	441.8	457.3	501.0	734.2	1437.5	5139.6	10667.2	13554.0	14035.9
70°	375.3	399.0	416.3	458.2	755.2	1379.2	4091.1	8943.7	11859.6	12348.8
72.5°	331.6	356.2	369.8	406.3	726.9	1254.4	3028.0	6958.7	9519.4	9776.3
75°	286.0	309.7	320.7	354.4	631.3	1037.6	2090.6	5270.7	6972.4	7232.9
77.5°	239.6	265.1	268.7	296.1	481.9	793.4	1340.0	4042.8	4937.3	5111.3
80°	191.3	216.8	216.8	231.4	338.9	545.7	802.5	3049.9	3595.5	3663.8
82.5°	137.6	164.9	163.1	164.0	234.1	338.0	464.6	2285.6	2598.0	2610.8
85°	81.1	100.2	99.3	91.1	138.5	182.2	251.4	1419.3	1450.2	1453.9
87.5°	15.5	23.7	21.0	9.1	38.3	53.7	72.9	263.3	104.8	102.0
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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