

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: P596640

Luminaire Tested: **MSA-SA2D-827-U-SLL**

Issue Date: 5/27/2021

**Test Information**

Test Method: LM-79-08  
Report Number: P596640  
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-24)  
Test Lab: INNOVATIONS CENTER  
Issue Date: 5/27/2021  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: INVUE  
Catalog Number: MSA-SA2D-827-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS.  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

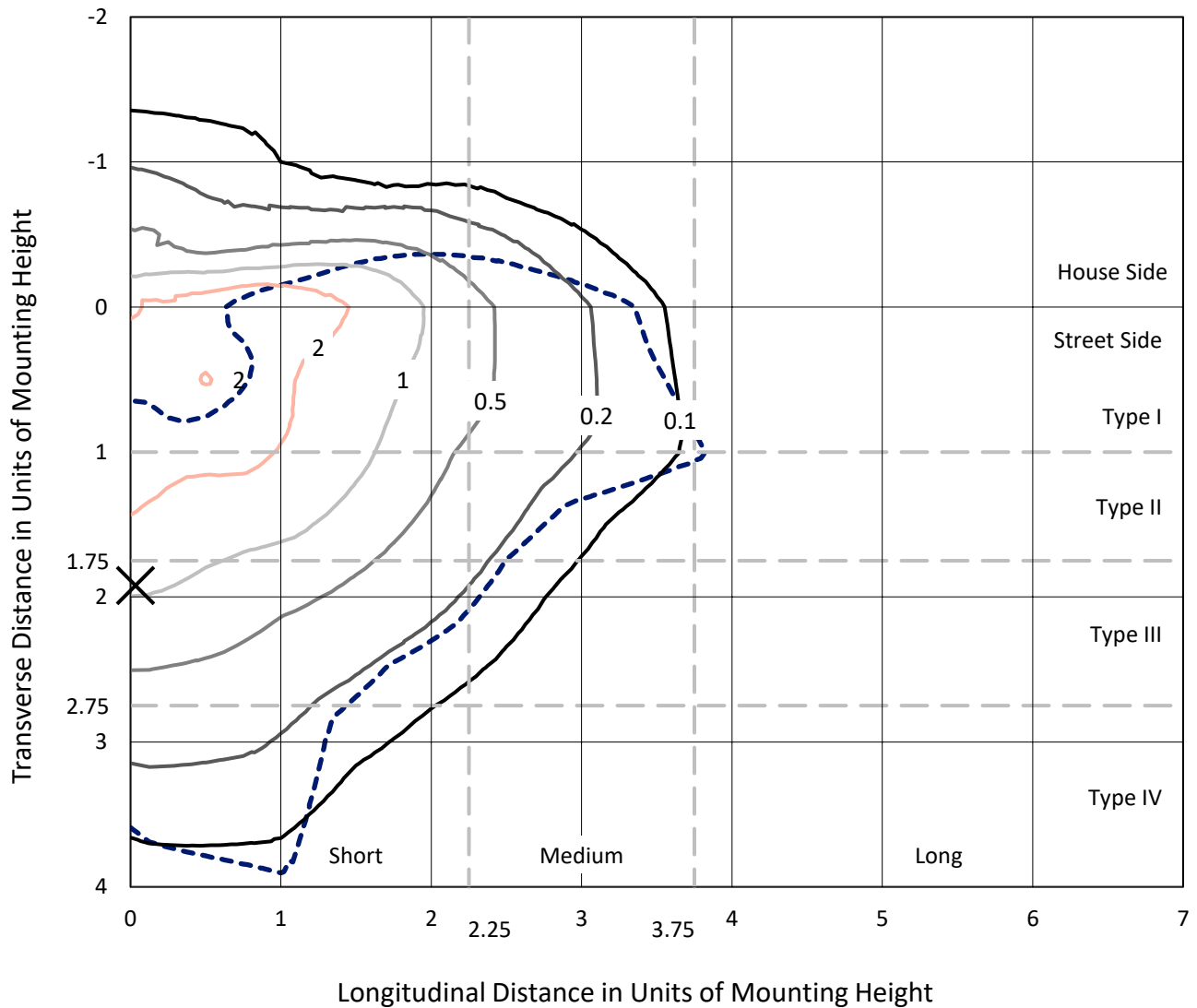
Lumens per Lamp: N/A  
Luminaire Lumens: 8494 lumens  
Efficiency: N/A  
Efficacy: 65.8 lumens/watt  
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B1 - U0 - G3  
  
Input Watts (W): 129  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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

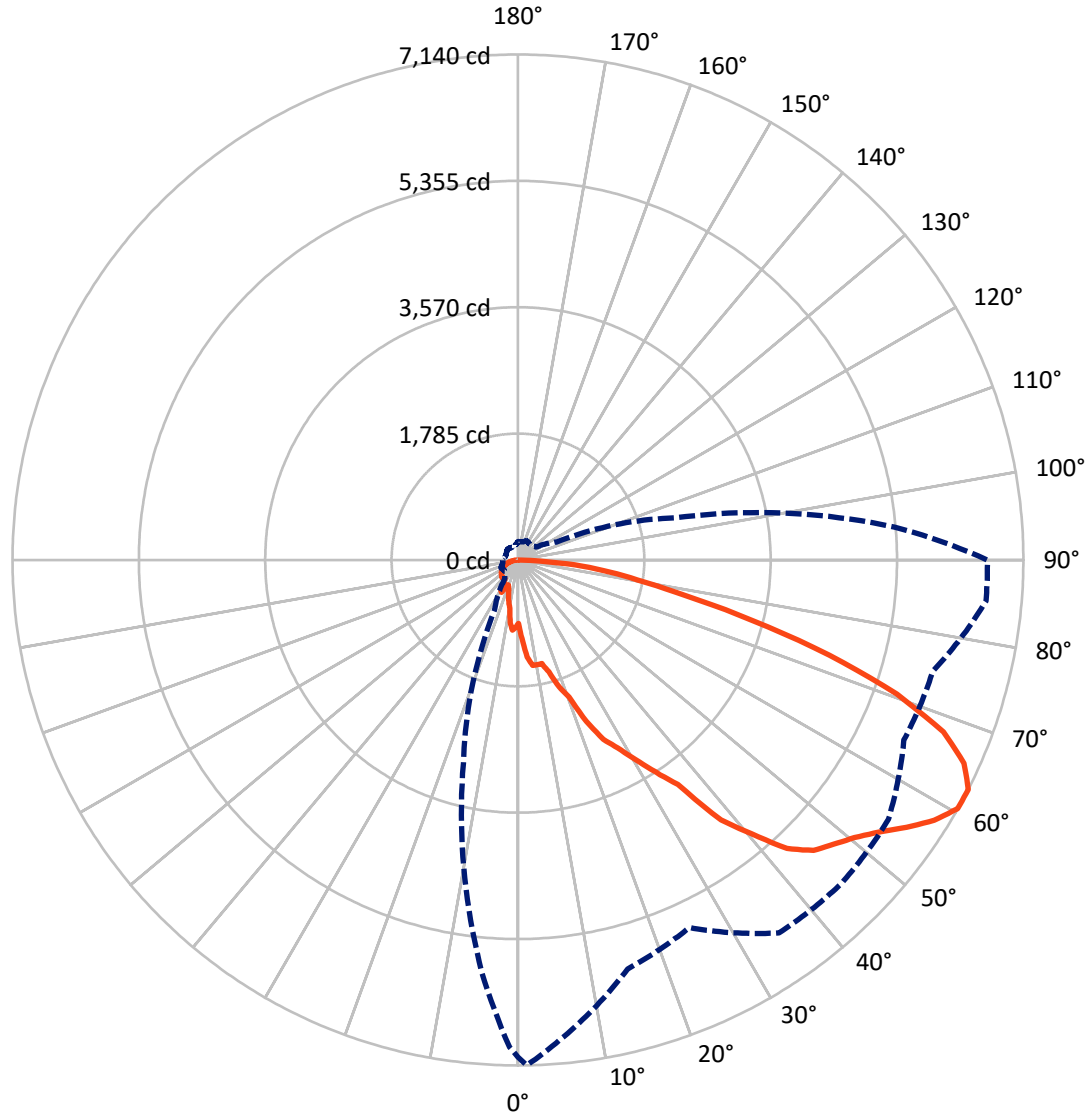
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 3.6 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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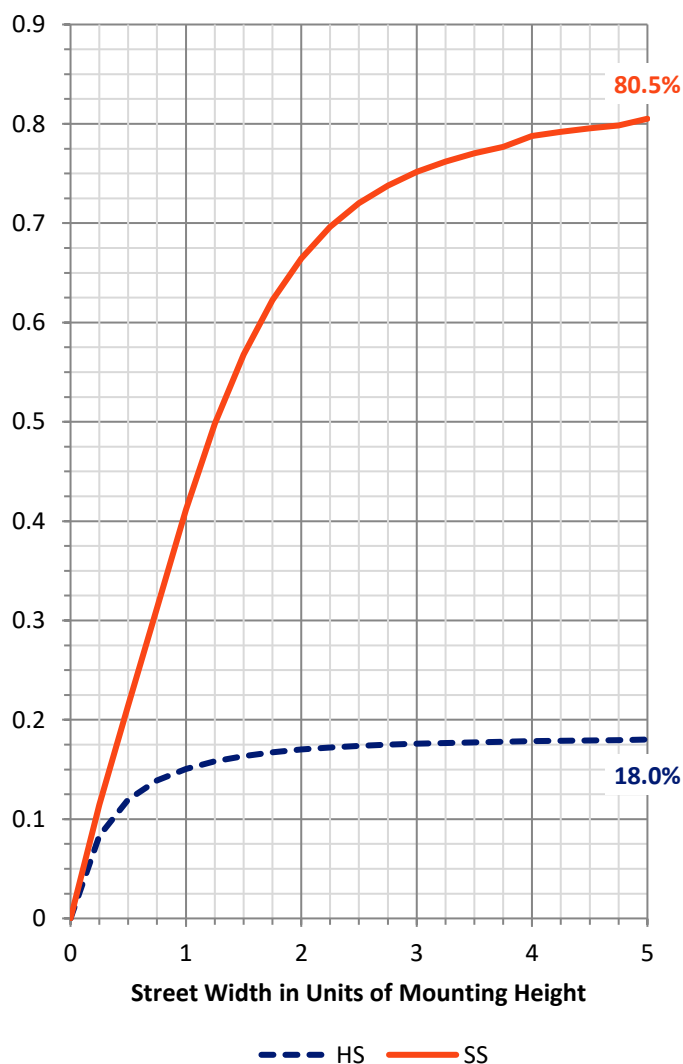
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	1546.7	0.0	1546.7
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	6947.3	0.0	6947.3
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	8494.0	0.0	8494.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	102.7	1.2
10°-20°	298.4	3.5
20°-30°	526.8	6.2
30°-40°	820.5	9.7
40°-50°	1351.1	15.9
50°-60°	1928.3	22.7
60°-70°	2044.8	24.1
70°-80°	1129.4	13.3
80°-90°	292.1	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°	8494.0	100.0
0°-180°	8494.0	100.0

**Coefficient of Utilization**



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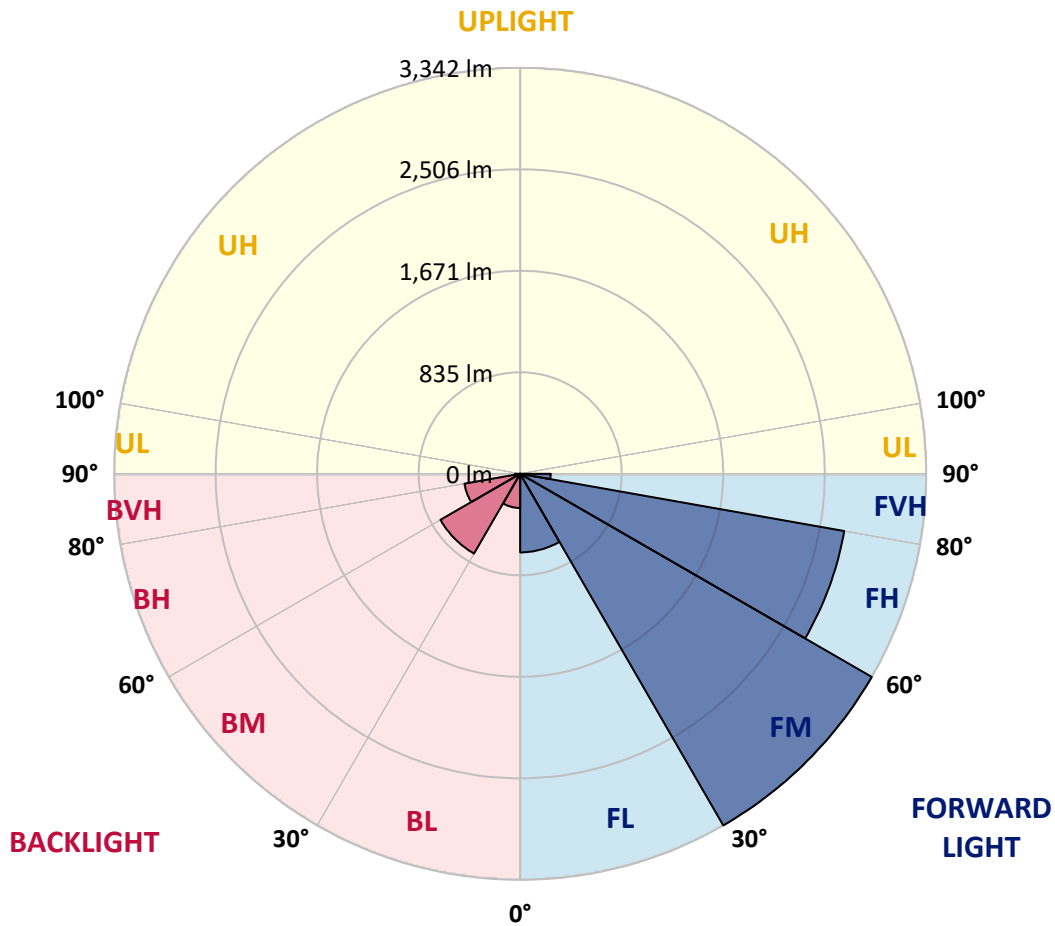
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	646.5	7.6			
FM (30°-60°)	3341.6	39.3			
FH (60°-80°)	2708.2	31.9			G2/5000
FVH (80°-90°)	250.9	3.0			G3/500
BL (0°-30°)	281.3	3.3	B1/500		
BM (30°-60°)	758.2	8.9	B1/1000		
BH (60°-80°)	466.0	5.5	B1/500		G1/500
BVH (80°-90°)	41.2	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

**BUG Rating: B1-U0-G3**

Type IV Short





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**CANDELA DISTRIBUTION (FULL):**

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7
2.5°	1101.4	1110.8	1091.5	1069.6	979.4	1066.3	1040.4	1088.6	1072.9	968.2	1159.9
5°	1361.0	1378.4	1359.4	1424.9	1429.1	1446.0	1289.7	1387.0	1353.2	1344.6	1441.4
7.5°	1486.3	1504.1	1552.3	1668.9	1760.0	1677.6	1586.5	1566.3	1539.9	1471.1	1529.6
10°	1494.2	1504.1	1568.8	1816.1	1860.2	1918.7	1859.8	1720.9	1663.6	1514.0	1469.4
12.5°	1470.7	1501.6	1585.3	1886.6	2017.7	2081.5	2096.0	1941.4	1800.8	1630.2	1607.5
15°	1628.6	1639.7	1759.6	1936.9	2027.1	2081.1	2128.1	2032.9	1988.8	1853.6	1671.8
17.5°	1854.8	1885.8	1983.9	2049.4	2110.4	2120.7	2082.0	2044.9	1974.8	2155.3	1962.0
20°	2008.2	2067.9	2188.3	2200.7	2072.5	2095.1	2089.8	2092.3	2052.3	2386.2	2279.8
22.5°	2413.8	2478.5	2495.0	2423.3	2181.7	2078.3	2098.9	2158.6	2316.1	2602.1	2722.5
25°	2781.0	2806.2	2956.6	2772.0	2387.0	2161.5	2127.7	2282.3	2539.1	2965.7	3051.4
27.5°	2972.7	3005.3	3105.4	2703.5	2412.5	2054.3	1975.2	2210.6	2472.3	2794.6	3171.0
30°	3217.9	3269.9	3406.3	2772.0	2489.6	2124.4	1949.2	2174.3	2463.6	2906.7	3424.0
32.5°	3470.6	3571.6	3673.0	3013.1	2478.9	2231.6	2115.3	2133.5	2542.0	3141.7	3686.2
35°	3805.3	3894.3	3981.7	3152.4	2694.9	2321.0	2205.6	2397.7	2743.1	3414.2	4051.8
37.5°	4520.9	4661.8	4431.4	3548.9	2929.8	2724.1	2516.0	2629.8	2955.8	3641.3	4649.1
40°	4976.8	5082.7	4860.1	3818.9	3343.7	2995.8	2961.6	2971.0	3248.9	3835.8	5050.9
42.5°	5429.7	5573.2	5219.1	4189.5	3844.1	3556.8	3380.4	3368.4	3577.0	4185.4	5508.1
45°	5767.7	5852.2	5342.4	4501.9	4380.7	4167.6	4035.3	3825.5	4008.1	4427.3	5790.8
47.5°	5928.5	5997.3	5540.6	4683.7	4728.6	4739.7	4978.4	4620.6	4384.9	4590.9	5939.2
50°	6129.2	6161.8	5657.3	4843.6	5059.2	5548.0	5605.3	4999.0	4751.7	4769.4	6027.0
52.5°	6369.1	6382.7	5827.5	5028.3	5393.5	6079.8	5991.1	5640.4	5100.8	5095.5	6192.3
55°	6670.8	6662.6	6041.0	5276.8	5632.1	6395.9	6328.7	6073.2	5481.3	5365.4	6449.5
57.5°	6939.2	6934.2	6324.2	5505.6	5832.9	6558.3	6578.1	6510.5	5740.1	5558.8	6728.1
60°	7070.7	7133.7	6646.5	5755.8	5845.6	6631.7	6639.1	6531.5	6029.5	5806.9	6802.3
62.5°	7019.6	7139.5	6804.8	5980.8	5728.2	6431.4	6462.3	6388.1	6016.3	6067.4	6636.6
65°	6787.1	6925.6	6667.5	6100.8	5656.0	6095.8	6103.7	5916.1	5827.9	6240.1	6248.4
67.5°	6351.0	6480.8	6230.6	5909.5	5162.2	5191.5	5366.3	5381.5	5252.9	6109.9	5703.0
70°	5587.6	5679.1	5522.5	5437.2	4314.8	4143.3	4332.9	4414.1	4472.6	5639.6	5048.5
72.5°	4423.6	4600.4	4625.2	4680.8	3473.9	3188.3	3328.8	3208.5	3589.7	4799.9	4124.8
75°	3272.8	3422.0	3582.3	3892.7	2738.2	2387.0	2369.7	2308.3	2664.4	3860.1	3059.3
77.5°	2312.8	2408.0	2531.2	3109.5	2066.3	1838.4	1849.1	1786.8	1924.1	2917.5	2113.3
80°	1657.8	1707.7	1765.0	2048.6	1524.3	1586.1	1587.7	1528.8	1430.7	1981.4	1410.5
82.5°	1181.3	1220.1	1285.6	1351.2	1136.4	1300.0	1298.8	1295.1	1134.3	1339.2	882.5
85°	657.9	709.8	823.6	1058.5	820.7	929.5	817.4	900.2	832.6	891.6	446.8
87.5°	46.2	41.2	184.2	613.3	382.9	279.9	146.7	290.6	372.6	465.8	62.2
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°	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7
2.5°	1199.5	1213.9	1157.4	1072.5	1095.6	1070.5	1038.7	989.3	887.4	950.5	950.9
5°	1440.6	1385.8	1341.7	1300.0	1230.0	1124.0	1110.0	1025.1	977.3	1002.4	998.7
7.5°	1516.0	1438.1	1371.8	1223.0	1093.1	928.7	879.2	828.9	807.9	868.9	893.2
10°	1433.2	1352.0	1286.8	1105.9	1017.7	915.1	779.0	709.4	668.2	684.2	693.7
12.5°	1500.0	1417.1	1212.2	1111.3	965.8	903.1	784.0	681.8	620.8	635.6	617.9
15°	1564.3	1452.5	1247.7	1046.5	928.7	838.0	741.5	636.0	564.3	538.7	525.1
17.5°	1799.2	1613.7	1243.6	1010.3	875.1	770.8	654.6	539.1	491.3	464.9	442.3
20°	2085.7	1827.2	1265.8	972.8	818.2	686.7	560.2	453.0	419.6	402.3	396.1
22.5°	2426.5	2100.9	1393.2	967.4	764.6	625.3	508.2	441.5	403.9	385.0	377.2
25°	2697.4	2384.1	1487.2	1003.7	761.7	574.6	476.9	490.5	473.2	479.0	433.2
27.5°	2960.3	2461.2	1434.4	987.6	685.1	484.7	469.5	497.9	512.8	517.3	515.6
30°	3182.5	2786.8	1446.0	896.9	578.7	394.9	359.4	373.4	414.2	479.0	491.3
32.5°	3507.7	2942.6	1544.5	842.1	517.3	353.2	313.7	308.3	317.8	341.3	361.5
35°	3888.2	3301.2	1572.1	827.7	474.8	334.7	307.1	294.7	299.7	317.4	321.5
37.5°	4597.5	3562.5	1674.3	809.9	459.2	323.6	302.1	297.6	308.3	322.7	331.0
40°	4988.7	4032.4	1679.3	794.7	439.0	319.0	305.4	303.4	310.0	329.8	334.7
42.5°	5510.1	4300.4	1756.7	777.0	432.0	325.2	312.0	311.2	317.0	328.5	337.6
45°	5827.9	4479.7	1760.9	766.7	430.3	352.4	320.7	317.8	316.6	323.6	331.8
47.5°	6032.8	4738.1	1811.2	755.1	440.2	359.4	331.0	318.6	314.5	317.4	323.6
50°	6226.9	4944.6	1906.4	753.5	450.5	352.4	349.1	318.2	310.0	308.7	313.3
52.5°	6465.2	5284.2	2023.8	769.1	448.0	342.1	362.7	316.6	301.7	298.8	303.4
55°	6811.8	5648.2	2148.7	756.0	422.5	322.3	349.5	315.3	293.1	287.7	291.8
57.5°	7036.5	5856.8	2288.5	744.8	383.7	307.5	337.6	316.1	293.9	281.9	284.4
60°	6961.8	5744.7	2343.3	676.8	347.1	296.0	309.1	309.6	286.5	275.3	277.4
62.5°	6632.1	5338.7	2292.2	597.7	319.9	279.5	279.9	297.2	265.0	257.2	260.5
65°	6171.3	4833.7	2085.3	546.1	307.1	262.2	255.6	260.9	236.2	230.4	237.0
67.5°	5605.8	4211.3	1777.4	491.7	302.5	238.7	230.8	228.8	213.1	206.5	213.1
70°	4896.4	3526.3	1420.8	453.4	285.2	213.1	206.9	204.9	191.7	186.7	192.5
72.5°	3935.6	2753.4	1096.4	424.1	266.3	189.6	184.2	181.8	170.6	163.6	170.6
75°	2799.2	2104.2	814.5	379.2	239.5	165.7	159.5	156.2	145.9	139.3	145.5
77.5°	1989.2	1579.5	568.8	313.7	197.4	140.1	136.4	131.1	122.0	114.2	120.4
80°	1470.7	1128.6	366.8	242.0	150.9	112.1	110.1	106.3	97.7	88.2	92.7
82.5°	968.2	813.7	210.2	164.1	109.6	80.8	82.4	80.0	71.7	61.8	64.3
85°	433.6	481.8	111.7	90.3	71.3	48.6	53.2	51.5	45.3	35.9	36.7
87.5°	41.6	81.2	34.2	33.0	26.4	15.3	19.0	16.1	13.6	8.7	6.6
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°	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7
2.5°	965.3	907.2	849.1	884.6	885.4	894.9	896.1	861.1	889.1	910.5	932.8
5°	980.6	942.7	944.7	910.5	892.0	915.9	910.9	901.5	918.4	941.8	970.3
7.5°	870.1	845.4	841.3	808.3	728.3	710.6	725.5	731.6	754.3	790.6	821.1
10°	679.3	728.3	673.1	660.3	639.3	598.1	574.2	571.3	619.5	648.8	674.3
12.5°	612.1	599.7	593.1	558.1	558.1	514.4	500.4	513.2	587.4	608.4	641.4
15°	521.4	512.3	481.8	464.5	456.3	438.6	453.4	465.8	535.0	536.7	571.3
17.5°	432.8	427.4	398.6	395.3	387.0	379.2	392.8	422.5	460.0	453.4	469.5
20°	387.0	368.5	342.1	351.6	342.9	336.8	331.0	373.0	399.4	408.1	417.5
22.5°	375.5	341.7	326.0	317.4	317.8	307.9	309.1	344.2	384.2	389.5	383.7
25°	429.1	368.9	318.2	293.1	283.6	280.3	289.8	320.7	368.9	380.4	385.0
27.5°	502.0	400.6	327.7	284.8	265.9	267.5	281.1	302.5	359.4	380.0	385.4
30°	481.8	376.7	328.1	278.6	255.1	263.8	268.7	289.4	352.0	382.9	409.7
32.5°	371.8	338.8	330.2	283.6	274.1	260.5	267.5	287.3	330.2	349.5	350.8
35°	314.9	289.8	284.0	272.5	259.3	253.5	261.3	278.6	306.7	318.6	317.0
37.5°	312.4	284.8	262.2	257.2	251.8	250.2	254.7	270.8	299.2	320.3	315.7
40°	316.6	282.3	259.3	250.6	252.7	245.3	249.8	269.6	300.5	320.3	316.1
42.5°	311.6	279.5	255.6	249.0	251.0	240.7	246.1	266.7	297.2	320.7	312.9
45°	301.7	272.9	253.5	242.4	251.8	236.6	243.2	259.3	287.3	312.9	303.8
47.5°	291.8	265.0	244.8	237.8	247.3	232.5	235.4	249.4	277.4	302.5	294.7
50°	281.1	255.1	237.8	235.8	242.4	231.6	227.1	238.7	265.4	290.6	284.0
52.5°	269.6	246.9	232.9	232.1	238.2	226.3	219.7	228.8	252.7	277.8	272.5
55°	258.4	237.8	226.7	228.8	235.8	221.8	213.5	219.3	239.1	263.8	256.4
57.5°	247.3	227.5	218.5	224.2	229.6	216.0	205.7	209.0	225.1	249.4	240.7
60°	237.4	218.5	209.4	216.4	221.3	207.3	195.4	197.4	211.9	233.7	225.9
62.5°	224.6	208.6	196.6	205.7	209.4	195.8	183.0	185.5	197.0	217.6	211.9
65°	206.5	196.2	185.1	191.3	196.2	182.2	170.2	173.1	181.8	201.1	197.0
67.5°	190.8	181.0	173.5	178.5	179.3	168.6	157.9	159.5	166.5	184.7	180.1
70°	173.5	164.1	158.3	162.0	161.6	152.5	144.3	144.7	150.4	166.9	160.8
72.5°	154.6	145.5	142.6	144.7	143.0	134.8	127.0	129.8	133.5	145.9	141.0
75°	134.4	126.1	124.5	126.5	124.1	116.2	109.2	112.1	115.4	125.7	119.5
77.5°	113.4	105.9	106.3	106.8	103.5	98.1	91.1	94.0	96.0	103.0	96.9
80°	90.3	84.5	86.1	86.1	82.4	78.7	72.1	73.0	74.2	76.7	72.1
82.5°	66.0	66.0	66.0	66.4	58.5	59.8	54.0	53.6	52.3	51.9	49.1
85°	39.2	40.8	41.6	42.9	31.7	37.1	32.2	30.9	28.4	26.0	25.1
87.5°	8.7	11.1	11.1	10.7	0.0	4.1	2.1	3.3	0.8	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°	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7	895.7
2.5°	907.2	882.5	928.7	969.9	963.3	987.2	931.5	1014.0	1101.4	1101.4
5°	962.9	941.8	953.8	977.7	995.8	1079.1	1148.4	1217.2	1359.4	1361.0
7.5°	812.0	857.4	868.1	861.1	939.0	1046.1	1160.3	1356.5	1476.9	1486.3
10°	759.2	779.9	812.4	830.6	862.3	967.8	1109.6	1342.5	1470.3	1494.2
12.5°	687.9	764.2	813.7	915.1	940.2	961.2	1186.7	1388.2	1476.5	1470.7
15°	610.0	667.7	739.1	851.2	915.1	1075.8	1232.4	1535.0	1584.9	1628.6
17.5°	486.4	528.8	623.6	751.4	909.7	1057.7	1345.4	1716.3	1809.5	1854.8
20°	400.2	400.6	495.4	664.9	837.2	981.8	1388.2	1866.8	1985.1	2008.2
22.5°	378.4	359.4	409.3	547.0	757.2	1026.8	1474.8	2108.8	2355.7	2413.8
25°	366.4	343.4	374.7	482.7	699.9	1050.3	1649.2	2441.4	2758.4	2781.0
27.5°	371.4	382.1	392.0	430.3	627.3	1006.2	1608.8	2590.2	2929.8	2972.7
30°	404.8	422.1	399.4	412.6	567.6	942.3	1680.9	2831.7	3145.8	3217.9
32.5°	336.8	330.2	328.1	357.0	507.8	884.6	1832.2	3171.8	3379.9	3470.6
35°	303.8	293.5	297.6	330.6	478.5	876.3	1917.1	3453.3	3749.7	3805.3
37.5°	302.5	290.6	296.0	320.7	488.9	891.1	2053.1	3905.1	4401.8	4520.9
40°	299.7	293.1	296.0	314.5	478.1	899.4	2131.4	4284.7	4856.0	4976.8
42.5°	299.2	296.0	298.8	319.4	467.0	903.1	2239.8	4627.6	5334.5	5429.7
45°	298.0	301.3	301.3	323.6	462.1	927.8	2303.7	4795.8	5650.3	5767.7
47.5°	292.2	302.1	318.2	322.3	441.9	916.3	2394.0	5050.9	5818.0	5928.5
50°	284.8	300.9	339.6	314.1	438.6	888.3	2499.5	5253.3	6033.2	6129.2
52.5°	274.9	298.8	334.7	298.0	432.8	883.3	2647.5	5516.3	6284.2	6369.1
55°	260.9	291.4	319.4	281.9	418.8	867.7	2873.8	5842.3	6612.7	6670.8
57.5°	248.1	280.3	297.2	272.9	385.4	871.0	3031.2	6108.2	6888.5	6939.2
60°	236.6	279.1	265.4	263.4	351.2	826.8	3082.3	6105.3	6991.1	7070.7
62.5°	224.2	263.4	243.2	250.6	321.1	781.5	2973.9	5843.6	6880.2	7019.6
65°	208.2	225.9	224.6	241.5	321.9	707.7	2725.4	5381.9	6603.7	6787.1
67.5°	189.2	199.9	206.9	226.7	332.2	650.4	2325.6	4826.7	6132.9	6351.0
70°	169.8	180.5	188.4	207.3	341.7	624.1	1851.1	4046.9	5366.3	5587.6
72.5°	150.0	161.2	167.3	183.8	328.9	567.6	1370.1	3148.7	4307.4	4423.6
75°	129.4	140.1	145.1	160.3	285.6	469.5	946.0	2384.9	3154.9	3272.8
77.5°	108.4	119.9	121.6	134.0	218.0	359.0	606.3	1829.3	2234.1	2312.8
80°	86.6	98.1	98.1	104.7	153.3	246.9	363.1	1380.0	1626.9	1657.8
82.5°	62.2	74.6	73.8	74.2	105.9	152.9	210.2	1034.2	1175.6	1181.3
85°	36.7	45.3	44.9	41.2	62.7	82.4	113.8	642.2	656.2	657.9
87.5°	7.0	10.7	9.5	4.1	17.3	24.3	33.0	119.1	47.4	46.2
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)