

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: P368040

Luminaire Tested: **MSA-SA3C-830-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368040  
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-SA3C-830-U-SLL  
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 12393 lumens  
Efficiency: N/A  
Efficacy: 74.7 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3

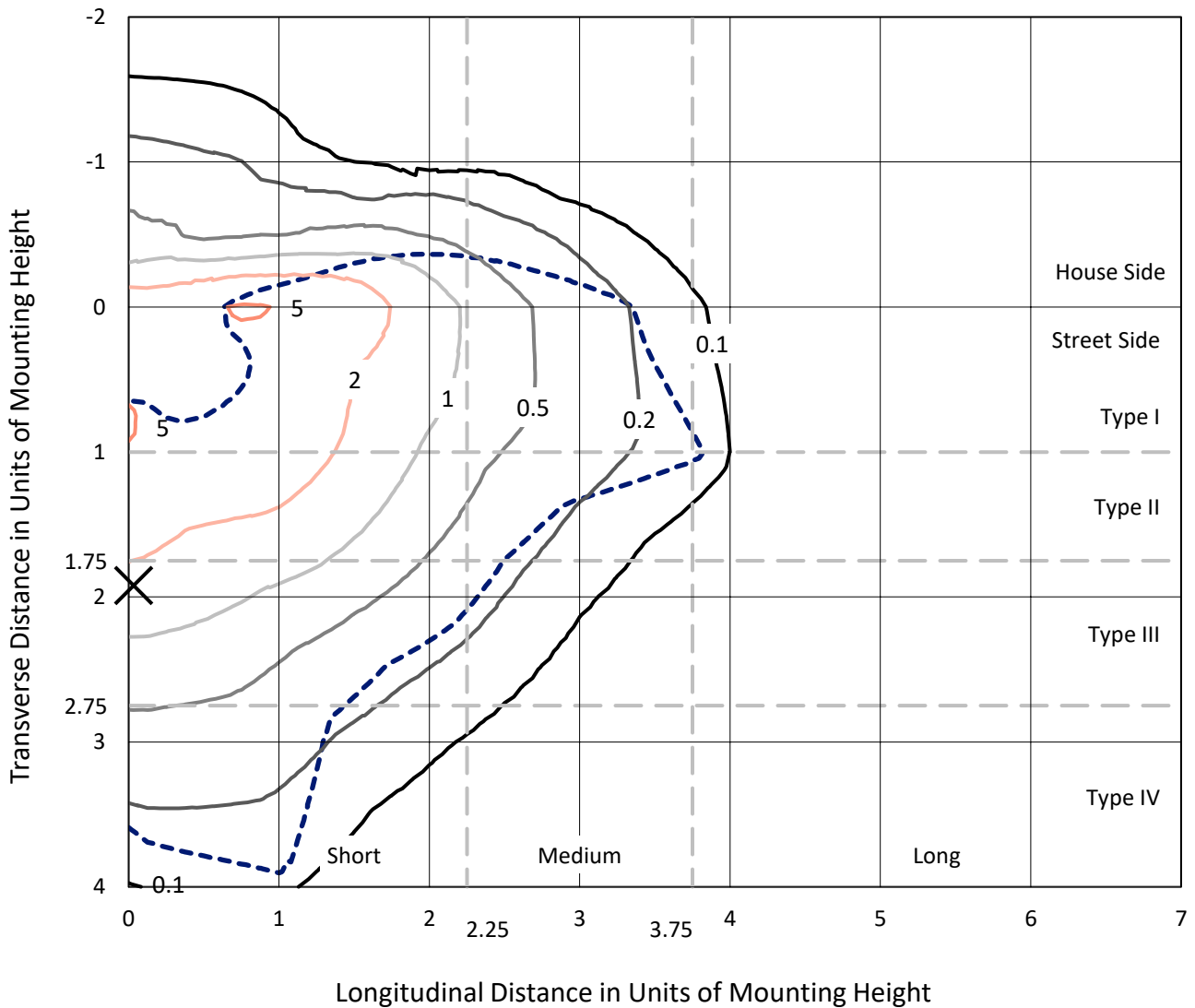
Input Watts (W): 166  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 28.75 FT



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### Iso-Footcandle Lines of Horizontal Illumination

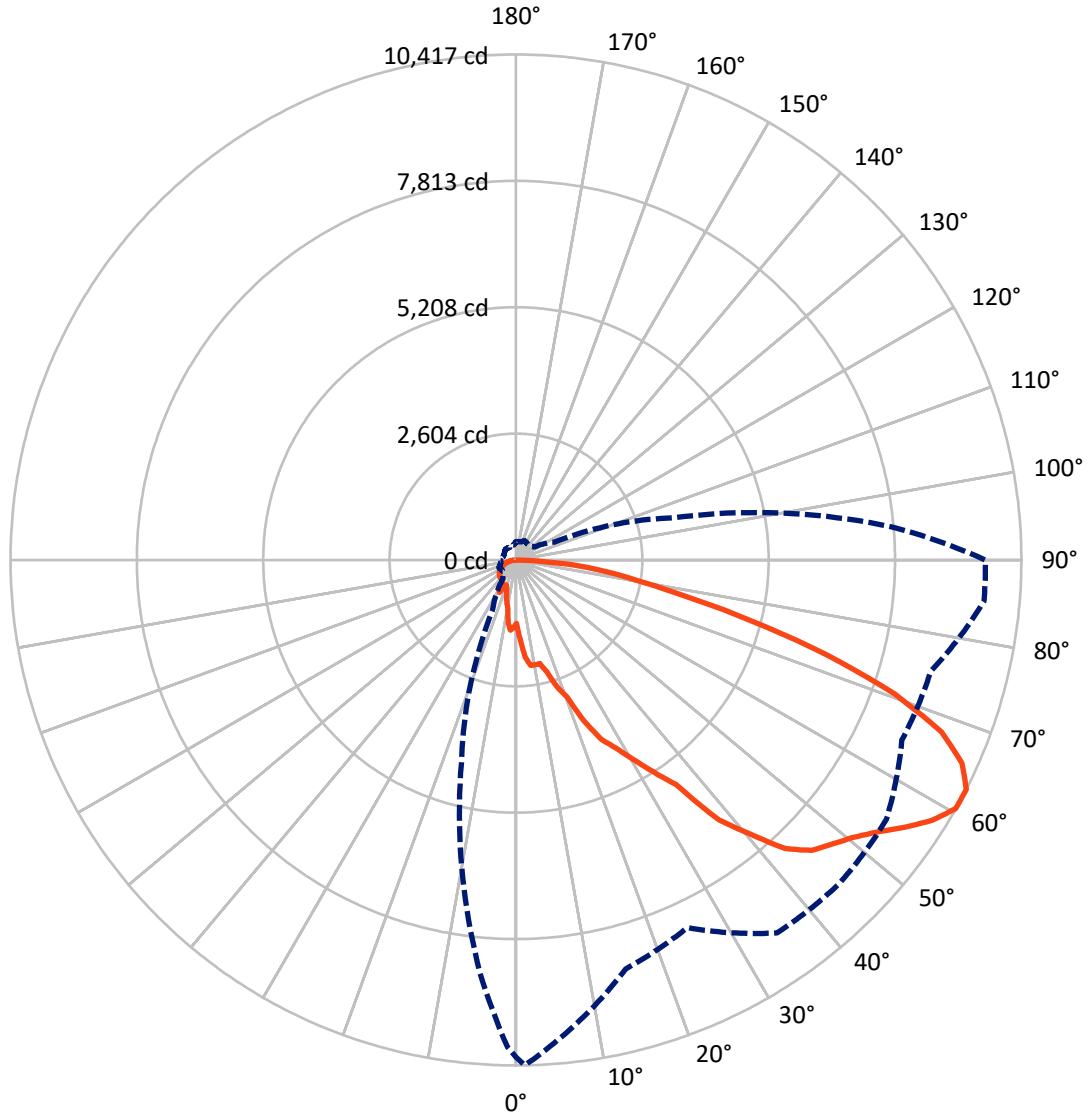
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 5.3 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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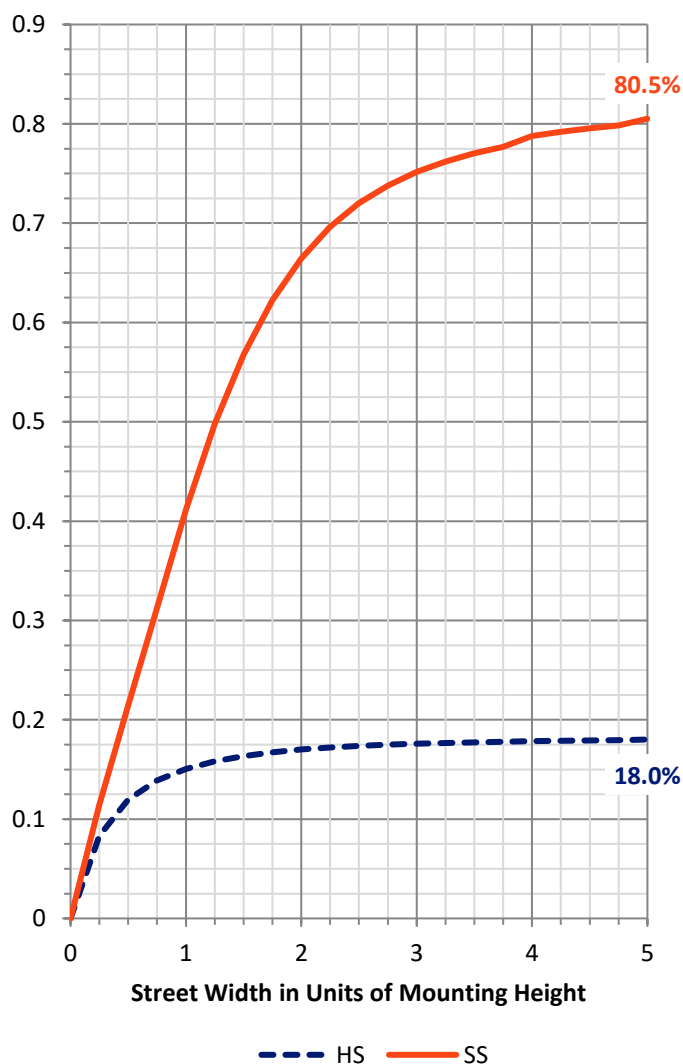
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2256.7	0.0	2256.7
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	10136.3	0.0	10136.3
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	12393.0	0.0	12393.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	149.8	1.2
10°-20°	435.3	3.5
20°-30°	768.6	6.2
30°-40°	1197.1	9.7
40°-50°	1971.2	15.9
50°-60°	2813.4	22.7
60°-70°	2983.4	24.1
70°-80°	1647.9	13.3
80°-90°	426.2	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°	12393.0	100.0
0°-180°	12393.0	100.0

**Coefficient of Utilization**



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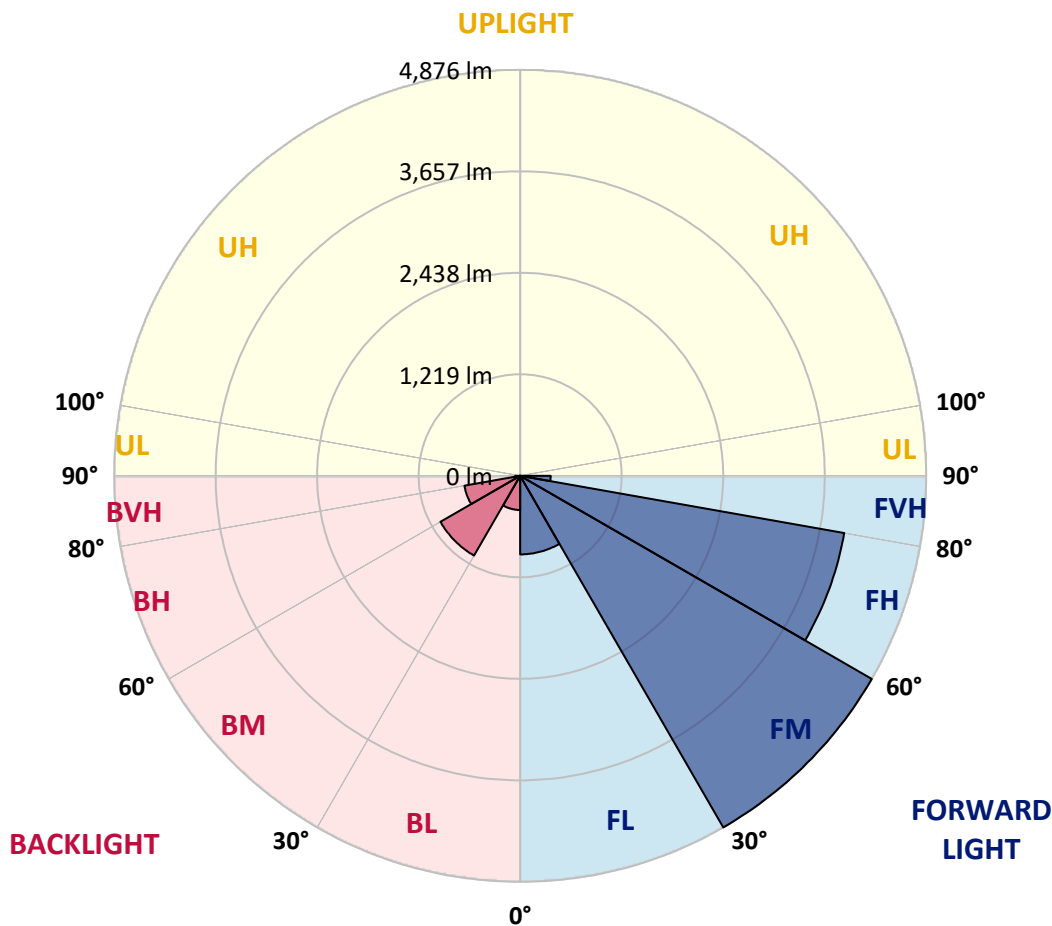
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	943.3	7.6			
FM (30°-60°)	4875.5	39.3			
FH (60°-80°)	3951.4	31.9			G2/5000
FVH (80°-90°)	366.1	3.0			G3/500
BL (0°-30°)	410.4	3.3	B1/500		
BM (30°-60°)	1106.3	8.9	B2/2500		
BH (60°-80°)	679.9	5.5	B2/1000		G2/1000
BVH (80°-90°)	60.1	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°	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8
2.5°	1606.9	1620.8	1592.5	1560.6	1428.9	1555.8	1517.9	1588.3	1565.4	1412.7	1692.3
5°	1985.8	2011.1	1983.4	2079.0	2085.0	2109.7	1881.8	2023.7	1974.4	1961.7	2103.1
7.5°	2168.6	2194.5	2264.9	2435.0	2568.0	2447.7	2314.8	2285.3	2246.8	2146.4	2231.8
10°	2180.1	2194.5	2288.9	2649.7	2714.1	2799.5	2713.5	2510.8	2427.2	2208.9	2144.0
12.5°	2145.8	2190.9	2313.0	2752.6	2943.8	3037.0	3058.1	2832.6	2627.5	2378.5	2345.4
15°	2376.1	2392.3	2567.4	2826.0	2957.7	3036.4	3105.0	2966.1	2901.7	2704.5	2439.3
17.5°	2706.3	2751.4	2894.5	2990.1	3079.1	3094.2	3037.6	2983.5	2881.3	3144.7	2862.6
20°	2930.0	3017.2	3192.8	3210.8	3023.8	3056.9	3049.1	3052.7	2994.3	3481.5	3326.3
22.5°	3521.8	3616.2	3640.2	3535.6	3183.2	3032.2	3062.3	3149.5	3379.2	3796.6	3972.2
25°	4057.6	4094.3	4313.8	4044.4	3482.7	3153.7	3104.4	3329.9	3704.6	4327.0	4452.1
27.5°	4337.3	4384.8	4530.9	3944.5	3520.0	2997.3	2881.9	3225.3	3607.2	4077.5	4626.5
30°	4695.1	4770.9	4969.9	4044.4	3632.4	3099.6	2844.0	3172.4	3594.5	4241.0	4995.8
32.5°	5063.7	5211.1	5359.0	4396.2	3616.8	3255.9	3086.4	3112.8	3708.8	4583.8	5378.3
35°	5552.1	5682.0	5809.5	4599.5	3931.9	3386.5	3218.1	3498.3	4002.3	4981.3	5911.7
37.5°	6596.1	6801.8	6465.6	5178.0	4274.7	3974.6	3670.9	3836.9	4312.6	5312.7	6783.1
40°	7261.2	7415.8	7091.0	5571.9	4878.5	4370.9	4321.0	4334.8	4740.2	5596.6	7369.5
42.5°	7922.2	8131.4	7614.9	6112.6	5608.6	5189.4	4932.0	4914.6	5218.9	6106.6	8036.4
45°	8415.3	8538.6	7794.7	6568.4	6391.6	6080.7	5887.6	5581.5	5848.0	6459.6	8449.0
47.5°	8649.9	8750.3	8083.9	6833.6	6899.2	6915.4	7263.6	6741.6	6397.6	6698.3	8665.5
50°	8942.7	8990.2	8254.1	7067.0	7381.5	8094.8	8178.4	7293.7	6932.9	6958.7	8793.6
52.5°	9292.7	9312.6	8502.5	7336.4	7869.2	8870.6	8741.3	8229.5	7442.3	7434.4	9034.7
55°	9733.0	9720.9	8814.0	7699.0	8217.4	9331.8	9233.8	8860.9	7997.3	7828.3	9410.0
57.5°	10124.5	10117.3	9227.2	8032.8	8510.3	9568.8	9597.6	9499.0	8375.0	8110.4	9816.6
60°	10316.3	10408.3	9697.5	8397.9	8529.0	9675.8	9686.7	9529.7	8797.2	8472.4	9924.8
62.5°	10241.7	10416.7	9928.4	8726.2	8357.6	9383.6	9428.7	9320.4	8777.9	8852.5	9683.0
65°	9902.6	10104.6	9728.2	8901.2	8252.3	8894.0	8905.4	8631.8	8503.1	9104.5	9116.5
67.5°	9266.3	9455.7	9090.7	8622.2	7531.9	7574.6	7829.5	7851.8	7664.2	8914.5	8320.9
70°	8152.5	8286.0	8057.5	7933.0	6295.4	6045.2	6321.9	6440.3	6525.7	8228.3	7365.9
72.5°	6454.2	6712.2	6748.2	6829.4	5068.5	4651.8	4856.9	4681.3	5237.5	7003.2	6018.2
75°	4775.1	4992.8	5226.7	5679.6	3995.1	3482.7	3457.4	3367.8	3887.4	5632.1	4463.5
77.5°	3374.4	3513.3	3693.2	4536.9	3014.8	2682.2	2697.9	2607.0	2807.3	4256.7	3083.3
80°	2418.8	2491.6	2575.2	2988.9	2224.0	2314.2	2316.6	2230.6	2087.4	2890.9	2058.0
82.5°	1723.6	1780.1	1875.7	1971.4	1658.0	1896.8	1895.0	1889.6	1655.0	1953.9	1287.6
85°	959.8	1035.6	1201.6	1544.4	1197.4	1356.1	1192.6	1313.4	1214.8	1300.8	651.9
87.5°	67.4	60.1	268.8	894.9	558.7	408.3	214.1	424.0	543.7	679.6	90.8
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):**

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8
2.5°	1750.1	1771.1	1688.7	1564.8	1598.5	1561.8	1515.5	1443.3	1294.8	1386.8	1387.4
5°	2101.9	2021.9	1957.5	1896.8	1794.6	1640.0	1619.6	1495.7	1425.9	1462.6	1457.2
7.5°	2211.9	2098.3	2001.4	1784.3	1594.9	1354.9	1282.8	1209.4	1178.7	1267.7	1303.2
10°	2091.0	1972.6	1877.6	1613.5	1484.8	1335.1	1136.6	1035.0	974.9	998.3	1012.1
12.5°	2188.5	2067.6	1768.7	1621.4	1409.1	1317.7	1143.9	994.7	905.7	927.3	901.5
15°	2282.3	2119.3	1820.4	1526.9	1354.9	1222.6	1081.9	928.0	823.3	786.0	766.2
17.5°	2625.1	2354.5	1814.4	1474.0	1276.8	1124.6	955.0	786.6	716.9	678.4	645.3
20°	3043.1	2666.0	1846.9	1419.3	1193.8	1001.9	817.3	660.9	612.2	587.0	577.9
22.5°	3540.4	3065.3	2032.7	1411.5	1115.6	912.3	741.5	644.1	589.4	561.7	550.3
25°	3935.5	3478.5	2169.8	1464.4	1111.4	838.3	695.8	715.7	690.4	698.8	632.1
27.5°	4319.2	3590.9	2092.9	1440.9	999.5	707.2	685.0	726.5	748.1	754.7	752.3
30°	4643.4	4066.0	2109.7	1308.6	844.4	576.1	524.4	544.9	604.4	698.8	716.9
32.5°	5117.9	4293.4	2253.4	1228.6	754.7	515.4	457.7	449.8	463.7	498.0	527.4
35°	5673.0	4816.6	2293.7	1207.6	692.8	488.3	448.0	430.0	437.2	463.1	469.1
37.5°	6707.9	5197.8	2442.9	1181.7	670.0	472.1	440.8	434.2	449.8	470.9	482.9
40°	7278.7	5883.4	2450.1	1159.5	640.5	465.5	445.6	442.6	452.2	481.1	488.3
42.5°	8039.4	6274.3	2563.1	1133.6	630.3	474.5	455.3	454.1	462.5	479.3	492.5
45°	8503.1	6536.0	2569.2	1118.6	627.9	514.2	467.9	463.7	461.9	472.1	484.1
47.5°	8802.0	6913.0	2642.5	1101.8	642.3	524.4	482.9	464.9	458.9	463.1	472.1
50°	9085.3	7214.3	2781.4	1099.3	657.3	514.2	509.4	464.3	452.2	450.4	457.1
52.5°	9432.9	7709.9	2952.8	1122.2	653.7	499.2	529.2	461.9	440.2	436.0	442.6
55°	9938.6	8240.9	3135.1	1103.0	616.4	470.3	510.0	460.1	427.6	419.8	425.8
57.5°	10266.4	8545.2	3338.9	1086.7	559.9	448.6	492.5	461.3	428.8	411.4	415.0
60°	10157.5	8381.6	3418.9	987.5	506.4	431.8	451.0	451.6	418.0	401.7	404.7
62.5°	9676.4	7789.3	3344.4	872.0	466.7	407.7	408.3	433.6	386.7	375.3	380.1
65°	9004.1	7052.5	3042.5	796.8	448.0	382.5	372.9	380.7	344.6	336.2	345.8
67.5°	8179.0	6144.4	2593.2	717.5	441.4	348.2	336.8	333.8	310.9	301.3	310.9
70°	7144.0	5144.9	2073.0	661.5	416.2	310.9	301.9	298.9	279.6	272.4	280.9
72.5°	5742.1	4017.3	1599.7	618.8	388.5	276.6	268.8	265.2	249.0	238.8	249.0
75°	4084.1	3070.1	1188.4	553.3	349.4	241.8	232.7	227.9	212.9	203.3	212.3
77.5°	2902.3	2304.5	829.9	457.7	288.1	204.5	199.1	191.2	178.0	166.6	175.6
80°	2145.8	1646.6	535.2	353.0	220.1	163.6	160.6	155.2	142.5	128.7	135.3
82.5°	1412.7	1187.2	306.7	239.4	160.0	117.9	120.3	116.7	104.6	90.2	93.8
85°	632.7	703.0	163.0	131.7	104.0	71.0	77.6	75.2	66.2	52.3	53.5
87.5°	60.7	118.5	49.9	48.1	38.5	22.3	27.7	23.5	19.8	12.6	9.6
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°	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8
2.5°	1408.5	1323.7	1238.9	1290.6	1291.8	1305.6	1307.4	1256.3	1297.2	1328.5	1361.0
5°	1430.7	1375.4	1378.4	1328.5	1301.4	1336.3	1329.1	1315.2	1339.9	1374.2	1415.7
7.5°	1269.5	1233.5	1227.4	1179.3	1062.7	1036.8	1058.5	1067.5	1100.6	1153.5	1198.0
10°	991.1	1062.7	982.1	963.4	932.8	872.6	837.7	833.5	903.9	946.6	983.9
12.5°	893.1	875.0	865.4	814.3	814.3	750.5	730.1	748.7	857.0	887.7	935.8
15°	760.8	747.5	703.0	677.8	665.7	639.9	661.5	679.6	780.6	783.0	833.5
17.5°	631.5	623.6	581.5	576.7	564.7	553.3	573.1	616.4	671.2	661.5	685.0
20°	564.7	537.6	499.2	513.0	500.4	491.3	482.9	544.3	582.8	595.4	609.2
22.5°	547.9	498.6	475.7	463.1	463.7	449.2	451.0	502.2	560.5	568.3	559.9
25°	626.1	538.2	464.3	427.6	413.8	408.9	422.8	467.9	538.2	555.1	561.7
27.5°	732.5	584.6	478.1	415.6	387.9	390.3	410.2	441.4	524.4	554.5	562.3
30°	703.0	549.7	478.7	406.5	372.3	384.9	392.1	422.2	513.6	558.7	597.8
32.5°	542.5	494.3	481.7	413.8	399.9	380.1	390.3	419.2	481.7	510.0	511.8
35°	459.5	422.8	414.4	397.5	378.3	369.9	381.3	406.5	447.4	464.9	462.5
37.5°	455.9	415.6	382.5	375.3	367.5	365.0	371.7	395.1	436.6	467.3	460.7
40°	461.9	412.0	378.3	365.6	368.7	357.8	364.4	393.3	438.4	467.3	461.3
42.5°	454.7	407.7	372.9	363.2	366.2	351.2	359.0	389.1	433.6	467.9	456.5
45°	440.2	398.1	369.9	353.6	367.5	345.2	354.8	378.3	419.2	456.5	443.2
47.5°	425.8	386.7	357.2	347.0	360.8	339.2	343.4	363.8	404.7	441.4	430.0
50°	410.2	372.3	347.0	344.0	353.6	338.0	331.4	348.2	387.3	424.0	414.4
52.5°	393.3	360.2	339.8	338.6	347.6	330.2	320.5	333.8	368.7	405.3	397.5
55°	377.1	347.0	330.8	333.8	344.0	323.6	311.5	319.9	348.8	384.9	374.1
57.5°	360.8	332.0	318.7	327.2	335.0	315.1	300.1	304.9	328.4	363.8	351.2
60°	346.4	318.7	305.5	315.7	322.9	302.5	285.1	288.1	309.1	341.0	329.6
62.5°	327.8	304.3	286.9	300.1	305.5	285.7	267.0	270.6	287.5	317.5	309.1
65°	301.3	286.3	270.0	279.0	286.3	265.8	248.4	252.6	265.2	293.5	287.5
67.5°	278.4	264.0	253.2	260.4	261.6	246.0	230.3	232.7	243.0	269.4	262.8
70°	253.2	239.4	230.9	236.3	235.7	222.5	210.5	211.1	219.5	243.6	234.5
72.5°	225.5	212.3	208.1	211.1	208.7	196.7	185.2	189.4	194.9	212.9	205.7
75°	196.1	184.0	181.6	184.6	181.0	169.6	159.4	163.6	168.4	183.4	174.4
77.5°	165.4	154.6	155.2	155.8	150.9	143.1	132.9	137.1	140.1	150.3	141.3
80°	131.7	123.3	125.7	125.7	120.3	114.9	105.2	106.4	108.3	111.9	105.2
82.5°	96.2	96.2	96.2	96.8	85.4	87.2	78.8	78.2	76.4	75.8	71.6
85°	57.1	59.5	60.7	62.5	46.3	54.1	46.9	45.1	41.5	37.9	36.7
87.5°	12.6	16.2	16.2	15.6	0.0	6.0	3.0	4.8	1.2	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°	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8	1306.8
2.5°	1323.7	1287.6	1354.9	1415.1	1405.5	1440.3	1359.2	1479.4	1606.9	1606.9
5°	1404.9	1374.2	1391.6	1426.5	1453.0	1574.4	1675.5	1775.9	1983.4	1985.8
7.5°	1184.7	1250.9	1266.5	1256.3	1370.0	1526.3	1692.9	1979.2	2154.8	2168.6
10°	1107.8	1137.8	1185.3	1211.8	1258.1	1412.1	1619.0	1958.7	2145.2	2180.1
12.5°	1003.7	1115.0	1187.2	1335.1	1371.8	1402.5	1731.4	2025.5	2154.2	2145.8
15°	890.1	974.3	1078.3	1241.9	1335.1	1569.6	1798.2	2239.6	2312.4	2376.1
17.5°	709.6	771.6	909.9	1096.3	1327.3	1543.2	1963.0	2504.2	2640.1	2706.3
20°	584.0	584.6	722.9	970.0	1221.4	1432.5	2025.5	2723.7	2896.3	2930.0
22.5°	552.1	524.4	597.2	798.0	1104.8	1498.1	2151.8	3076.7	3437.0	3521.8
25°	534.6	501.0	546.7	704.2	1021.2	1532.4	2406.2	3562.1	4024.5	4057.6
27.5°	541.9	557.5	571.9	627.9	915.3	1468.0	2347.2	3779.2	4274.7	4337.3
30°	590.6	615.8	582.8	602.0	828.1	1374.8	2452.5	4131.6	4589.8	4695.1
32.5°	491.3	481.7	478.7	520.8	740.9	1290.6	2673.2	4627.7	4931.4	5063.7
35°	443.2	428.2	434.2	482.3	698.2	1278.6	2797.1	5038.5	5470.9	5552.1
37.5°	441.4	424.0	431.8	467.9	713.3	1300.2	2995.5	5697.6	6422.3	6596.1
40°	437.2	427.6	431.8	458.9	697.6	1312.2	3109.8	6251.5	7085.0	7261.2
42.5°	436.6	431.8	436.0	466.1	681.4	1317.7	3268.0	6751.9	7783.2	7922.2
45°	434.8	439.6	439.6	472.1	674.2	1353.7	3361.2	6997.2	8243.9	8415.3
47.5°	426.4	440.8	464.3	470.3	644.7	1336.9	3492.9	7369.5	8488.7	8649.9
50°	415.6	439.0	495.5	458.3	639.9	1296.0	3646.9	7664.8	8802.6	8942.7
52.5°	401.1	436.0	488.3	434.8	631.5	1288.8	3862.8	8048.5	9168.9	9292.7
55°	380.7	425.2	466.1	411.4	611.0	1265.9	4192.9	8524.2	9648.2	9733.0
57.5°	362.0	408.9	433.6	398.1	562.3	1270.7	4422.7	8912.1	10050.5	10124.5
60°	345.2	407.1	387.3	384.3	512.4	1206.4	4497.2	8907.8	10200.2	10316.3
62.5°	327.2	384.3	354.8	365.6	468.5	1140.2	4339.1	8526.0	10038.5	10241.7
65°	303.7	329.6	327.8	352.4	469.7	1032.6	3976.4	7852.4	9634.9	9902.6
67.5°	276.0	291.7	301.9	330.8	484.7	949.0	3393.1	7042.3	8948.1	9266.3
70°	247.8	263.4	274.8	302.5	498.6	910.5	2700.9	5904.5	7829.5	8152.5
72.5°	218.9	235.1	244.2	268.2	479.9	828.1	1999.0	4594.0	6284.6	6454.2
75°	188.8	204.5	211.7	233.9	416.8	685.0	1380.2	3479.7	4603.1	4775.1
77.5°	158.2	175.0	177.4	195.5	318.1	523.8	884.7	2669.0	3259.6	3374.4
80°	126.3	143.1	143.1	152.8	223.7	360.2	529.8	2013.5	2373.7	2418.8
82.5°	90.8	108.9	107.6	108.3	154.6	223.1	306.7	1508.9	1715.2	1723.6
85°	53.5	66.2	65.6	60.1	91.4	120.3	166.0	937.0	957.4	959.8
87.5°	10.2	15.6	13.8	6.0	25.3	35.5	48.1	173.8	69.2	67.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)