

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: P368084

Luminaire Tested: **MSA-SA3D-730-U-SLL**

Issue Date: 12/2/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P368084  
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-SA3D-730-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**

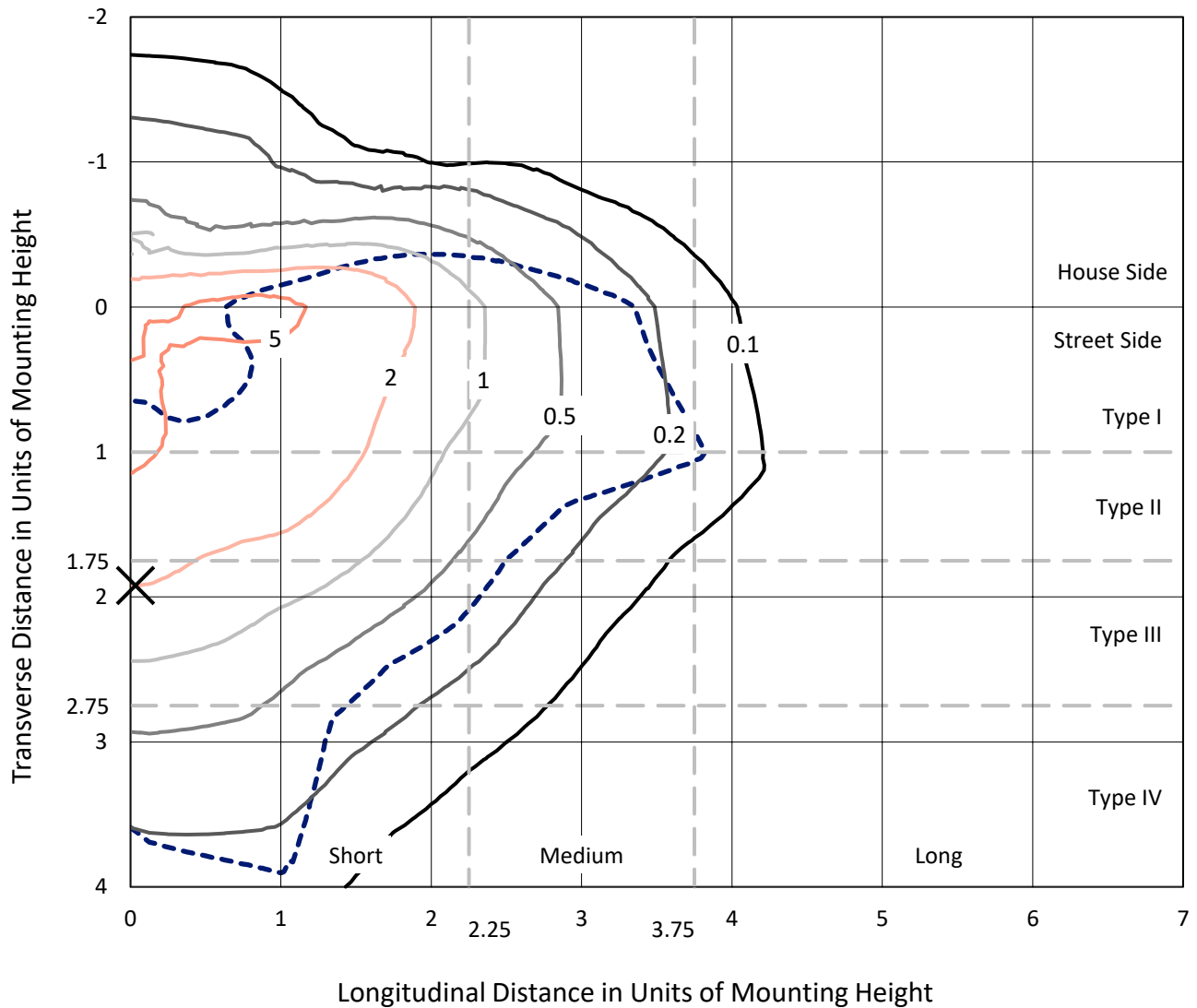
Lumens per Lamp: N/A  
Luminaire Lumens: 15529 lumens  
Efficiency: N/A  
Efficacy: 80.9 lumens/watt  
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')  
IES Classification: Type IV - Short  
BUG Rating: B2 - U0 - G3  
  
Input Watts (W): 192  
Input Voltage (V): NR  
Input Current (Ain): NR  
Voltage 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

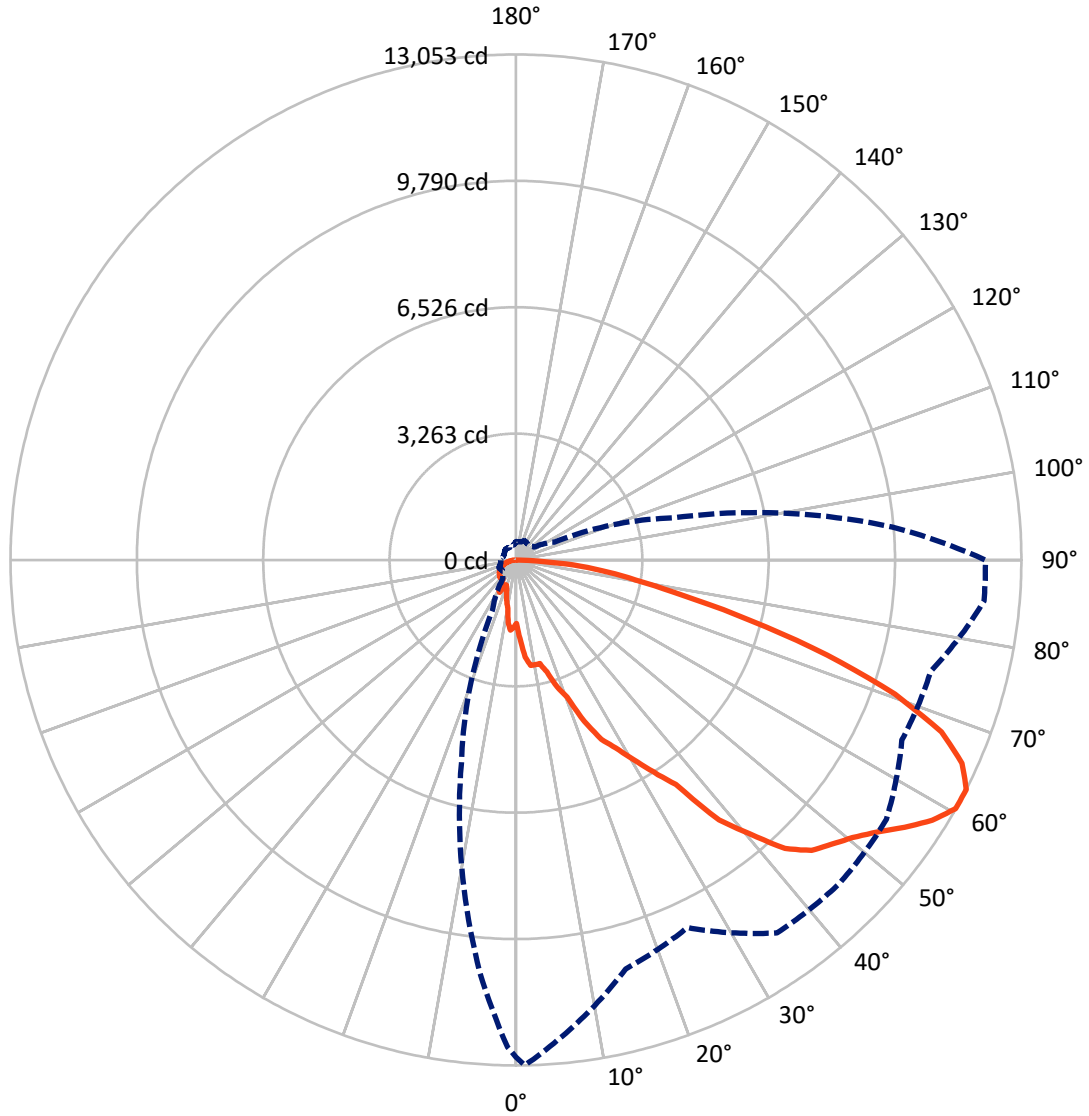
✕ Max cd  
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 6.6 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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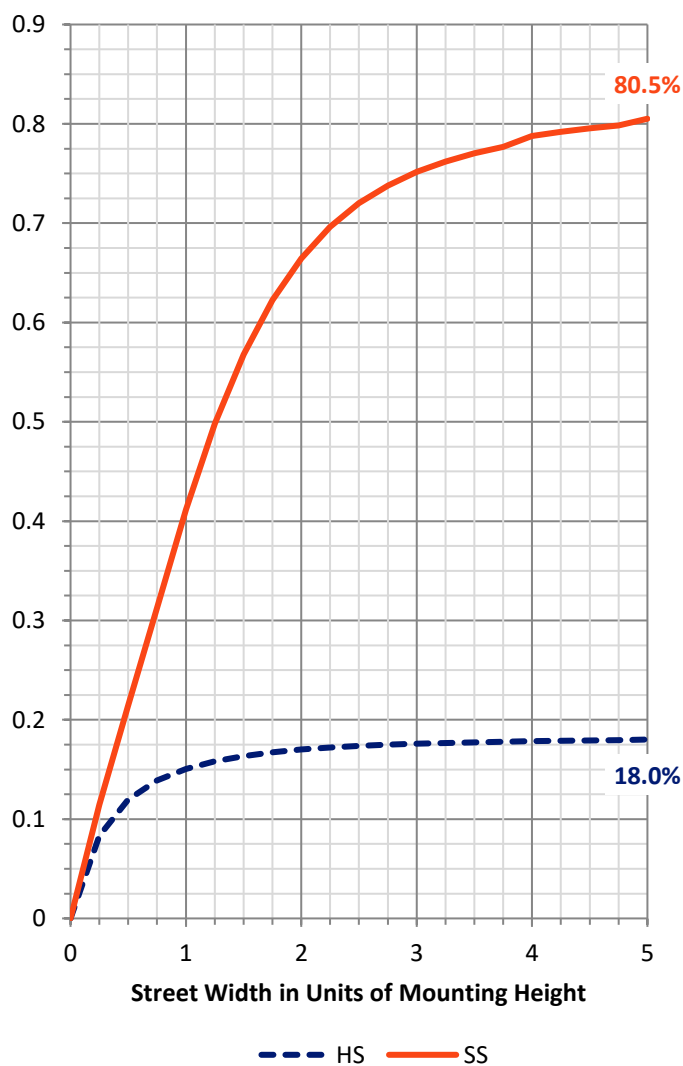
**FLUX DISTRIBUTION:**

		Downward	Upward	Total
<b>House Side</b>	Lumens	2827.7	0.0	2827.7
	% Fixture	18.2	0.0	18.2
<b>Street Side</b>	Lumens	12701.3	0.0	12701.3
	% Fixture	81.8	0.0	81.8
<b>Total</b>	Lumens	15529.0	0.0	15529.0
	% Fixture	100.0	0.0	100.0

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	187.7	1.2
10°-20°	545.5	3.5
20°-30°	963.1	6.2
30°-40°	1500.1	9.7
40°-50°	2470.0	15.9
50°-60°	3525.4	22.7
60°-70°	3738.3	24.1
70°-80°	2064.9	13.3
80°-90°	534.1	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°	15529.0	100.0
0°-180°	15529.0	100.0

**Coefficient of Utilization**



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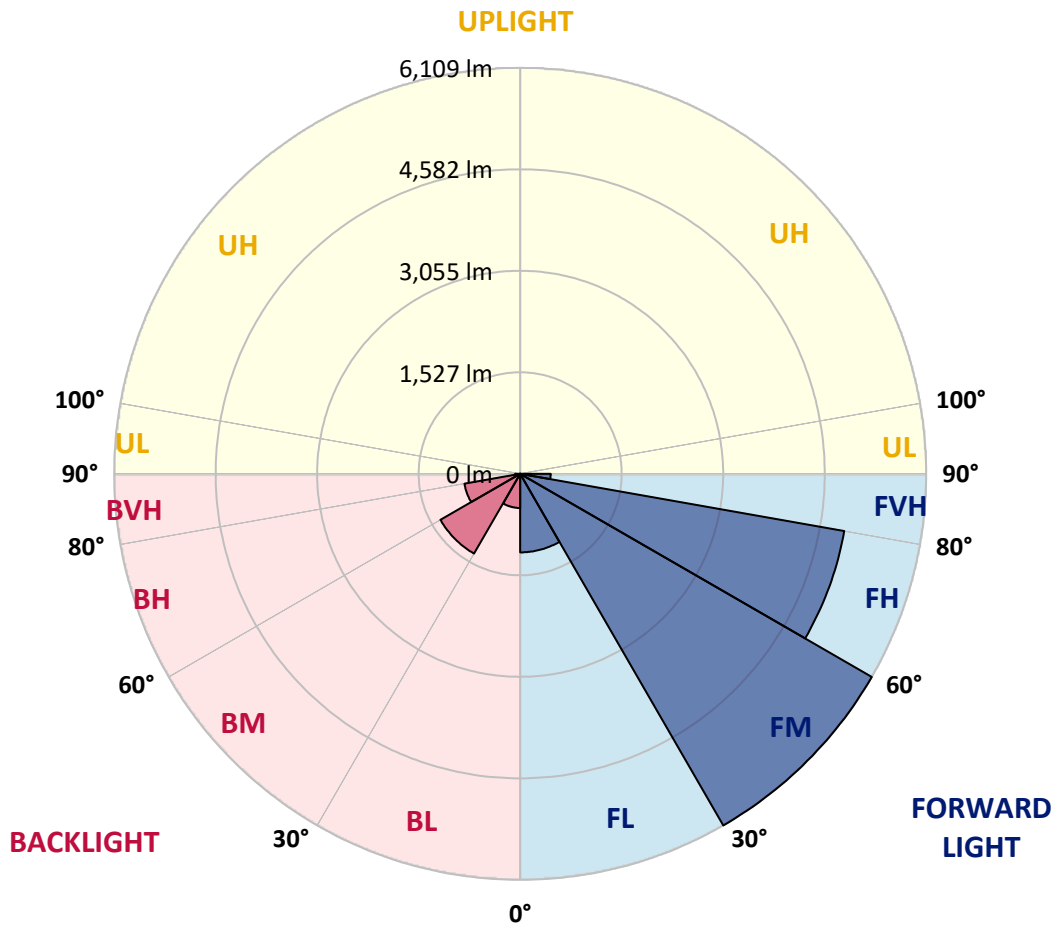
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**LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:**

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1182.0	7.6			
FM (30°-60°)	6109.3	39.3			
FH (60°-80°)	4951.3	31.9			G2/5000
FVH (80°-90°)	458.8	3.0			G3/500
BL (0°-30°)	514.3	3.3	B2/1000		
BM (30°-60°)	1386.2	8.9	B2/2500		
BH (60°-80°)	851.9	5.5	B2/1000		G2/1000
BVH (80°-90°)	75.3	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°	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5
2.5°	2013.6	2030.9	1995.5	1955.5	1790.5	1949.5	1902.0	1990.2	1961.6	1770.1	2120.6
5°	2488.3	2520.0	2485.3	2605.1	2612.6	2643.5	2357.9	2535.8	2474.0	2458.2	2635.3
7.5°	2717.4	2749.8	2838.0	3051.2	3217.8	3067.0	2900.5	2863.6	2815.4	2689.5	2796.5
10°	2731.7	2749.8	2868.1	3320.2	3400.9	3507.9	3400.1	3146.2	3041.4	2767.9	2686.5
12.5°	2688.8	2745.3	2898.2	3449.1	3688.7	3805.6	3831.9	3549.3	3292.4	2980.4	2938.9
15°	2977.4	2997.7	3217.0	3541.0	3706.1	3804.8	3890.7	3716.6	3636.0	3388.8	3056.5
17.5°	3391.1	3447.6	3627.0	3746.8	3858.3	3877.1	3806.3	3738.5	3610.4	3940.4	3587.0
20°	3671.4	3780.7	4000.7	4023.3	3789.0	3830.4	3820.6	3825.1	3752.0	4362.4	4168.0
22.5°	4412.9	4531.2	4561.4	4430.3	3988.7	3799.5	3837.2	3946.5	4234.3	4757.3	4977.4
25°	5084.4	5130.3	5405.4	5067.8	4364.0	3951.7	3890.0	4172.5	4642.0	5422.0	5578.7
27.5°	5434.8	5494.3	5677.4	4942.7	4410.7	3755.8	3611.1	4041.4	4519.9	5109.2	5797.2
30°	5883.2	5978.1	6227.5	5067.8	4551.6	3883.9	3563.7	3975.1	4504.1	5314.2	6259.9
32.5°	6345.1	6529.7	6715.1	5508.6	4532.0	4079.9	3867.3	3900.5	4647.3	5743.7	6739.2
35°	6957.0	7119.8	7279.5	5763.3	4926.9	4243.4	4032.4	4383.5	5015.0	6241.9	7407.6
37.5°	8265.2	8522.9	8101.7	6488.3	5356.4	4980.4	4599.8	4807.8	5403.9	6657.1	8499.6
40°	9098.7	9292.3	8885.4	6981.9	6113.0	5477.0	5414.4	5431.8	5939.7	7012.8	9234.3
42.5°	9926.8	10189.1	9541.8	7659.3	7027.8	6502.6	6180.1	6158.2	6539.5	7651.8	10070.0
45°	10544.8	10699.3	9767.1	8230.5	8009.0	7619.4	7377.5	6993.9	7327.8	8094.1	10587.0
47.5°	10838.7	10964.5	10129.5	8562.9	8645.0	8665.4	9101.7	8447.6	8016.5	8393.3	10858.3
50°	11205.7	11265.2	10342.8	8855.3	9249.4	10143.1	10247.9	9139.4	8687.2	8719.6	11018.8
52.5°	11644.2	11669.1	10654.0	9192.9	9860.5	11115.2	10953.2	10311.9	9325.5	9315.7	11320.9
55°	12195.9	12180.8	11044.4	9647.3	10296.8	11693.2	11570.4	11103.2	10021.0	9809.3	11791.2
57.5°	12686.4	12677.4	11562.1	10065.5	10663.8	11990.1	12026.3	11902.7	10494.3	10162.7	12300.6
60°	12926.8	13042.1	12151.4	10522.9	10687.2	12124.3	12137.8	11941.1	11023.3	10616.4	12436.2
62.5°	12833.4	13052.7	12440.8	10934.4	10472.4	11758.0	11814.5	11678.9	10999.2	11092.6	12133.3
65°	12408.4	12661.6	12189.8	11153.7	10340.5	11144.6	11158.9	10816.1	10654.8	11408.4	11423.4
67.5°	11611.1	11848.5	11391.0	10804.0	9437.8	9491.3	9810.8	9838.7	9603.6	11170.2	10426.5
70°	10215.5	10382.7	10096.4	9940.4	7888.4	7574.9	7921.6	8070.0	8177.0	10310.4	9229.8
72.5°	8087.4	8410.6	8455.9	8557.6	6351.1	5828.9	6085.9	5865.8	6562.9	8775.4	7541.0
75°	5983.4	6256.2	6549.3	7116.8	5006.0	4364.0	4332.3	4220.0	4871.1	7057.2	5593.0
77.5°	4228.3	4402.4	4627.7	5685.0	3777.7	3360.9	3380.5	3266.7	3517.7	5333.8	3863.6
80°	3030.9	3122.1	3226.8	3745.3	2786.7	2899.8	2902.8	2795.0	2615.7	3622.4	2578.7
82.5°	2159.7	2230.6	2350.4	2470.2	2077.6	2376.8	2374.5	2367.7	2073.8	2448.4	1613.4
85°	1202.7	1297.7	1505.6	1935.2	1500.4	1699.3	1494.3	1645.8	1522.2	1630.0	816.9
87.5°	84.4	75.4	336.8	1121.3	700.1	511.7	268.3	531.3	681.2	851.5	113.8
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°	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5
2.5°	2192.9	2219.3	2116.0	1960.8	2003.0	1957.0	1899.0	1808.6	1622.4	1737.7	1738.5
5°	2633.7	2533.5	2452.9	2376.8	2248.7	2055.0	2029.4	1874.1	1786.7	1832.7	1825.9
7.5°	2771.6	2629.2	2507.9	2235.9	1998.5	1697.8	1607.4	1515.4	1477.0	1588.5	1633.0
10°	2620.2	2471.7	2352.7	2021.8	1860.6	1672.9	1424.3	1296.9	1221.5	1250.9	1268.3
12.5°	2742.3	2590.8	2216.3	2031.6	1765.6	1651.1	1433.3	1246.4	1134.9	1162.0	1129.6
15°	2859.8	2655.6	2281.1	1913.3	1697.8	1532.0	1355.7	1162.8	1031.6	984.9	960.1
17.5°	3289.4	2950.2	2273.5	1847.0	1599.8	1409.2	1196.7	985.7	898.3	850.0	808.6
20°	3813.1	3340.6	2314.2	1778.4	1495.8	1255.5	1024.1	828.2	767.1	735.5	724.2
22.5°	4436.3	3841.0	2547.1	1768.6	1397.9	1143.2	929.2	807.1	738.5	703.8	689.5
25°	4931.4	4358.7	2718.9	1835.0	1392.6	1050.5	871.9	896.8	865.1	875.7	792.0
27.5°	5412.2	4499.6	2622.4	1805.6	1252.4	886.2	858.3	910.3	937.4	945.7	942.7
30°	5818.3	5094.9	2643.5	1639.8	1058.0	721.9	657.1	682.7	757.3	875.7	898.3
32.5°	6412.9	5379.8	2823.6	1539.6	945.7	645.8	573.5	563.7	581.0	624.0	660.9
35°	7108.5	6035.4	2874.1	1513.2	868.1	611.9	561.4	538.8	547.8	580.3	587.8
37.5°	8405.4	6513.1	3061.0	1480.8	839.5	591.6	552.4	544.1	563.7	590.0	605.1
40°	9120.5	7372.2	3070.1	1452.9	802.6	583.3	558.4	554.6	566.7	602.9	611.9
42.5°	10073.8	7862.0	3211.7	1420.5	789.7	594.6	570.5	568.9	579.5	600.6	617.2
45°	10654.8	8189.8	3219.3	1401.6	786.7	644.3	586.3	581.0	578.7	591.6	606.6
47.5°	11029.3	8662.3	3311.2	1380.5	804.8	657.1	605.1	582.5	575.0	580.3	591.6
50°	11384.3	9039.9	3485.3	1377.5	823.7	644.3	638.3	581.8	566.7	564.4	572.7
52.5°	11819.8	9660.8	3700.1	1406.2	819.1	625.5	663.1	578.7	551.6	546.3	554.6
55°	12453.6	10326.2	3928.4	1382.1	772.4	589.3	639.0	576.5	535.8	526.0	533.5
57.5°	12864.3	10707.5	4183.8	1361.7	701.6	562.2	617.2	578.0	537.3	515.4	520.0
60°	12727.9	10502.6	4284.1	1237.4	634.5	541.1	565.2	565.9	523.7	503.4	507.2
62.5°	12125.0	9760.3	4190.6	1092.7	584.8	510.9	511.7	543.3	484.5	470.2	476.3
65°	11282.5	8837.2	3812.3	998.5	561.4	479.3	467.2	477.0	431.8	421.2	433.3
67.5°	10248.6	7699.3	3249.4	899.0	553.1	436.3	422.0	418.2	389.6	377.5	389.6
70°	8951.7	6446.8	2597.6	828.9	521.5	389.6	378.3	374.5	350.4	341.4	351.9
72.5°	7195.1	5033.9	2004.5	775.4	486.8	346.6	336.8	332.3	312.0	299.2	312.0
75°	5117.5	3847.0	1489.1	693.3	437.8	302.9	291.6	285.6	266.8	254.7	266.0
77.5°	3636.8	2887.7	1039.9	573.5	361.0	256.2	249.4	239.6	223.1	208.7	220.0
80°	2688.8	2063.3	670.7	442.3	275.8	205.0	201.2	194.4	178.6	161.3	169.6
82.5°	1770.1	1487.6	384.3	299.9	200.5	147.7	150.7	146.2	131.1	113.0	117.6
85°	792.8	880.9	204.2	165.0	130.4	88.9	97.2	94.2	82.9	65.6	67.1
87.5°	76.1	148.5	62.5	60.3	48.2	27.9	34.7	29.4	24.9	15.8	12.1
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):**

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5
2.5°	1764.9	1658.6	1552.4	1617.2	1618.7	1636.0	1638.3	1574.2	1625.5	1664.6	1705.3
5°	1792.8	1723.4	1727.2	1664.6	1630.7	1674.4	1665.4	1648.1	1679.0	1721.9	1773.9
7.5°	1590.8	1545.6	1538.0	1477.8	1331.6	1299.2	1326.3	1337.6	1379.0	1445.4	1501.1
10°	1241.9	1331.6	1230.6	1207.2	1168.8	1093.4	1049.7	1044.5	1132.6	1186.1	1232.8
12.5°	1119.1	1096.5	1084.4	1020.3	1020.3	940.5	914.8	938.2	1073.8	1112.3	1172.6
15°	953.3	936.7	880.9	849.3	834.2	801.8	828.9	851.5	978.1	981.2	1044.5
17.5°	791.3	781.5	728.7	722.7	707.6	693.3	718.2	772.4	841.0	828.9	858.3
20°	707.6	673.7	625.5	642.8	627.0	615.7	605.1	682.0	730.2	746.0	763.4
22.5°	686.5	624.7	596.1	580.3	581.0	562.9	565.2	629.2	702.3	712.1	701.6
25°	784.5	674.4	581.8	535.8	518.5	512.4	529.8	586.3	674.4	695.5	703.8
27.5°	917.9	732.5	599.1	520.7	486.1	489.1	513.9	553.1	657.1	694.8	704.6
30°	880.9	688.8	599.8	509.4	466.5	482.3	491.3	529.0	643.6	700.1	749.1
32.5°	679.7	619.4	603.6	518.5	501.1	476.3	489.1	525.2	603.6	639.0	641.3
35°	575.7	529.8	519.2	498.1	474.0	463.4	477.8	509.4	560.7	582.5	579.5
37.5°	571.2	520.7	479.3	470.2	460.4	457.4	465.7	495.1	547.1	585.5	577.2
40°	578.7	516.2	474.0	458.2	461.9	448.4	456.7	492.8	549.4	585.5	578.0
42.5°	569.7	510.9	467.2	455.2	458.9	440.1	449.9	487.6	543.3	586.3	572.0
45°	551.6	498.9	463.4	443.1	460.4	432.6	444.6	474.0	525.2	572.0	555.4
47.5°	533.5	484.5	447.6	434.8	452.1	425.0	430.3	455.9	507.2	553.1	538.8
50°	513.9	466.5	434.8	431.0	443.1	423.5	415.2	436.3	485.3	531.3	519.2
52.5°	492.8	451.4	425.8	424.3	435.6	413.7	401.7	418.2	461.9	507.9	498.1
55°	472.5	434.8	414.5	418.2	431.0	405.4	390.4	400.9	437.1	482.3	468.7
57.5°	452.1	416.0	399.4	409.9	419.7	394.9	376.0	382.1	411.5	455.9	440.1
60°	434.1	399.4	382.8	395.6	404.7	379.0	357.2	361.0	387.3	427.3	413.0
62.5°	410.7	381.3	359.5	376.0	382.8	357.9	334.6	339.1	360.2	397.9	387.3
65°	377.5	358.7	338.4	349.7	358.7	333.1	311.2	316.5	332.3	367.7	360.2
67.5°	348.9	330.8	317.3	326.3	327.8	308.2	288.6	291.6	304.4	337.6	329.3
70°	317.3	299.9	289.4	296.2	295.4	278.8	263.8	264.5	275.1	305.2	293.9
72.5°	282.6	266.0	260.7	264.5	261.5	246.4	232.1	237.4	244.2	266.8	257.7
75°	245.7	230.6	227.6	231.3	226.8	212.5	199.7	205.0	211.0	229.8	218.5
77.5°	207.2	193.7	194.4	195.2	189.1	179.4	166.5	171.8	175.6	188.4	177.1
80°	165.0	154.5	157.5	157.5	150.7	143.9	131.9	133.4	135.6	140.2	131.9
82.5°	120.6	120.6	120.6	121.3	107.0	109.3	98.7	98.0	95.7	95.0	89.7
85°	71.6	74.6	76.1	78.4	58.0	67.8	58.8	56.5	52.0	47.5	46.0
87.5°	15.8	20.3	20.3	19.6	0.0	7.5	3.8	6.0	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°	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5	1637.5
2.5°	1658.6	1613.4	1697.8	1773.2	1761.1	1804.8	1703.1	1853.8	2013.6	2013.6
5°	1760.4	1721.9	1743.8	1787.5	1820.6	1972.9	2099.5	2225.3	2485.3	2488.3
7.5°	1484.5	1567.4	1587.0	1574.2	1716.6	1912.6	2121.3	2480.0	2700.1	2717.4
10°	1388.1	1425.8	1485.3	1518.5	1576.5	1769.4	2028.6	2454.4	2688.0	2731.7
12.5°	1257.7	1397.1	1487.6	1672.9	1718.9	1757.3	2169.5	2538.0	2699.3	2688.8
15°	1115.3	1220.8	1351.2	1556.1	1672.9	1966.8	2253.2	2806.3	2897.5	2977.4
17.5°	889.2	966.8	1140.2	1373.8	1663.1	1933.7	2459.7	3137.9	3308.2	3391.1
20°	731.7	732.5	905.8	1215.5	1530.5	1795.0	2538.0	3412.9	3629.2	3671.4
22.5°	691.8	657.1	748.3	1000.0	1384.3	1877.2	2696.3	3855.3	4306.7	4412.9
25°	669.9	627.7	685.0	882.4	1279.6	1920.1	3015.1	4463.4	5042.9	5084.4
27.5°	679.0	698.6	716.6	786.7	1146.9	1839.5	2941.2	4735.5	5356.4	5434.8
30°	740.0	771.7	730.2	754.3	1037.7	1722.7	3073.1	5177.1	5751.3	5883.2
32.5°	615.7	603.6	599.8	652.6	928.4	1617.2	3349.6	5798.8	6179.3	6345.1
35°	555.4	536.5	544.1	604.4	874.9	1602.1	3504.9	6313.4	6855.3	6957.0
37.5°	553.1	531.3	541.1	586.3	893.7	1629.2	3753.6	7139.4	8047.4	8265.2
40°	547.8	535.8	541.1	575.0	874.1	1644.3	3896.7	7833.4	8877.9	9098.7
42.5°	547.1	541.1	546.3	584.0	853.8	1651.1	4094.9	8460.4	9752.8	9926.8
45°	544.8	550.9	550.9	591.6	844.8	1696.3	4211.7	8767.8	10330.0	10544.8
47.5°	534.3	552.4	581.8	589.3	807.8	1675.2	4376.8	9234.3	10636.7	10838.7
50°	520.7	550.1	620.9	574.2	801.8	1624.0	4569.7	9604.3	11030.1	11205.7
52.5°	502.6	546.3	611.9	544.8	791.3	1614.9	4840.2	10085.1	11489.0	11644.2
55°	477.0	532.8	584.0	515.4	765.6	1586.3	5253.9	10681.2	12089.6	12195.9
57.5°	453.7	512.4	543.3	498.9	704.6	1592.3	5541.8	11167.2	12593.7	12686.4
60°	432.6	510.2	485.3	481.5	642.0	1511.7	5635.2	11161.9	12781.4	12926.8
62.5°	409.9	481.5	444.6	458.2	587.0	1428.8	5437.0	10683.4	12578.7	12833.4
65°	380.6	413.0	410.7	441.6	588.5	1293.9	4982.6	9839.4	12073.0	12408.4
67.5°	345.9	365.5	378.3	414.5	607.4	1189.1	4251.7	8824.4	11212.4	11611.1
70°	310.5	330.1	344.4	379.0	624.7	1140.9	3384.3	7398.6	9810.8	10215.5
72.5°	274.3	294.6	306.0	336.1	601.4	1037.7	2504.9	5756.6	7874.9	8087.4
75°	236.6	256.2	265.3	293.1	522.2	858.3	1729.5	4360.2	5767.9	5983.4
77.5°	198.2	219.3	222.3	244.9	398.6	656.4	1108.5	3344.4	4084.4	4228.3
80°	158.3	179.4	179.4	191.4	280.3	451.4	663.9	2523.0	2974.4	3030.9
82.5°	113.8	136.4	134.9	135.6	193.7	279.6	384.3	1890.7	2149.2	2159.7
85°	67.1	82.9	82.1	75.4	114.5	150.7	208.0	1174.1	1199.7	1202.7
87.5°	12.8	19.6	17.3	7.5	31.7	44.5	60.3	217.8	86.7	84.4
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)