

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: P367622

Luminaire Tested: **MSA-SA2D-760-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367622
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-SA2D-760-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: 11554 lumens
Efficiency: N/A
Efficacy: 89.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B2 - U0 - G3

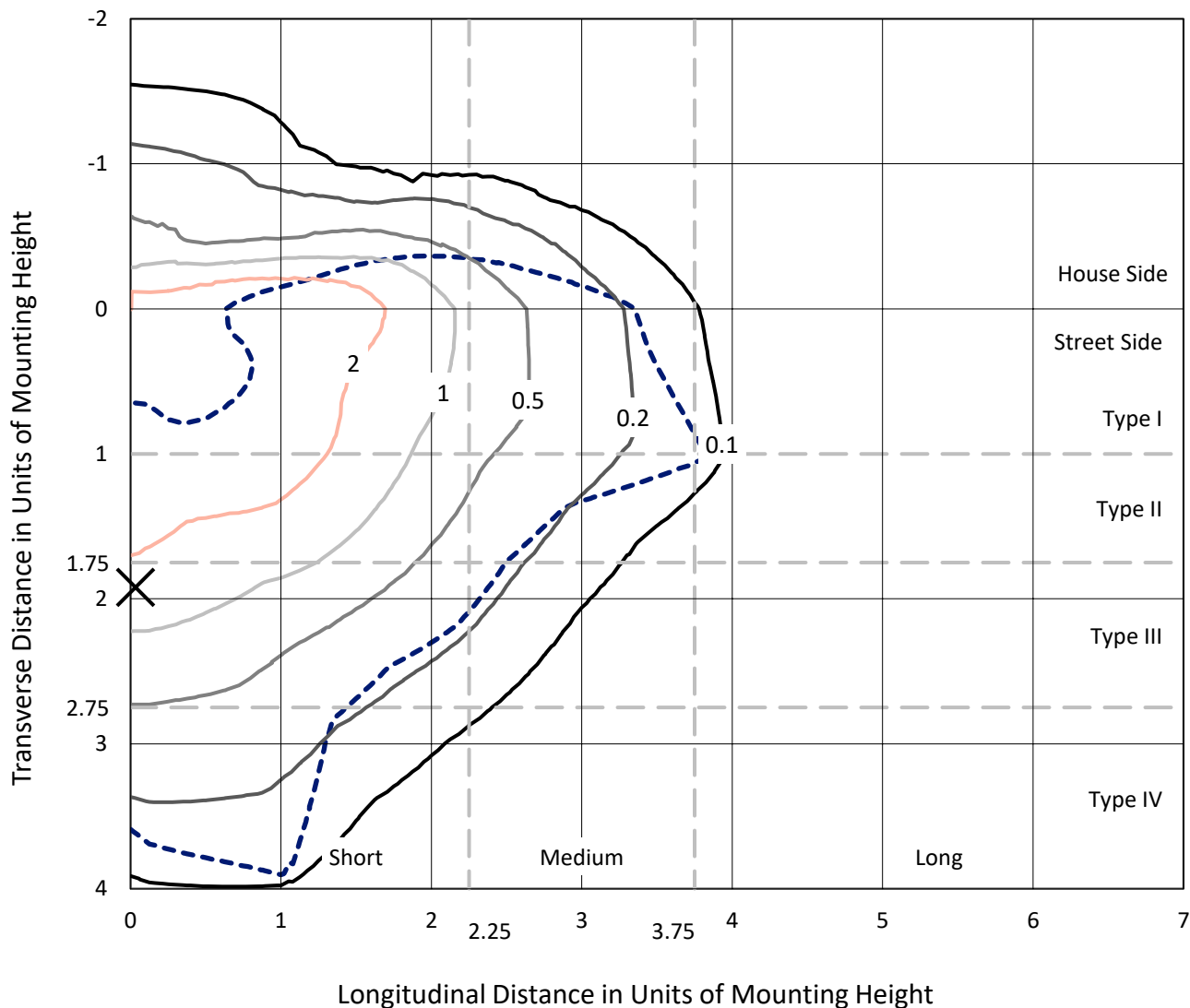
Input Watts (W): 129
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

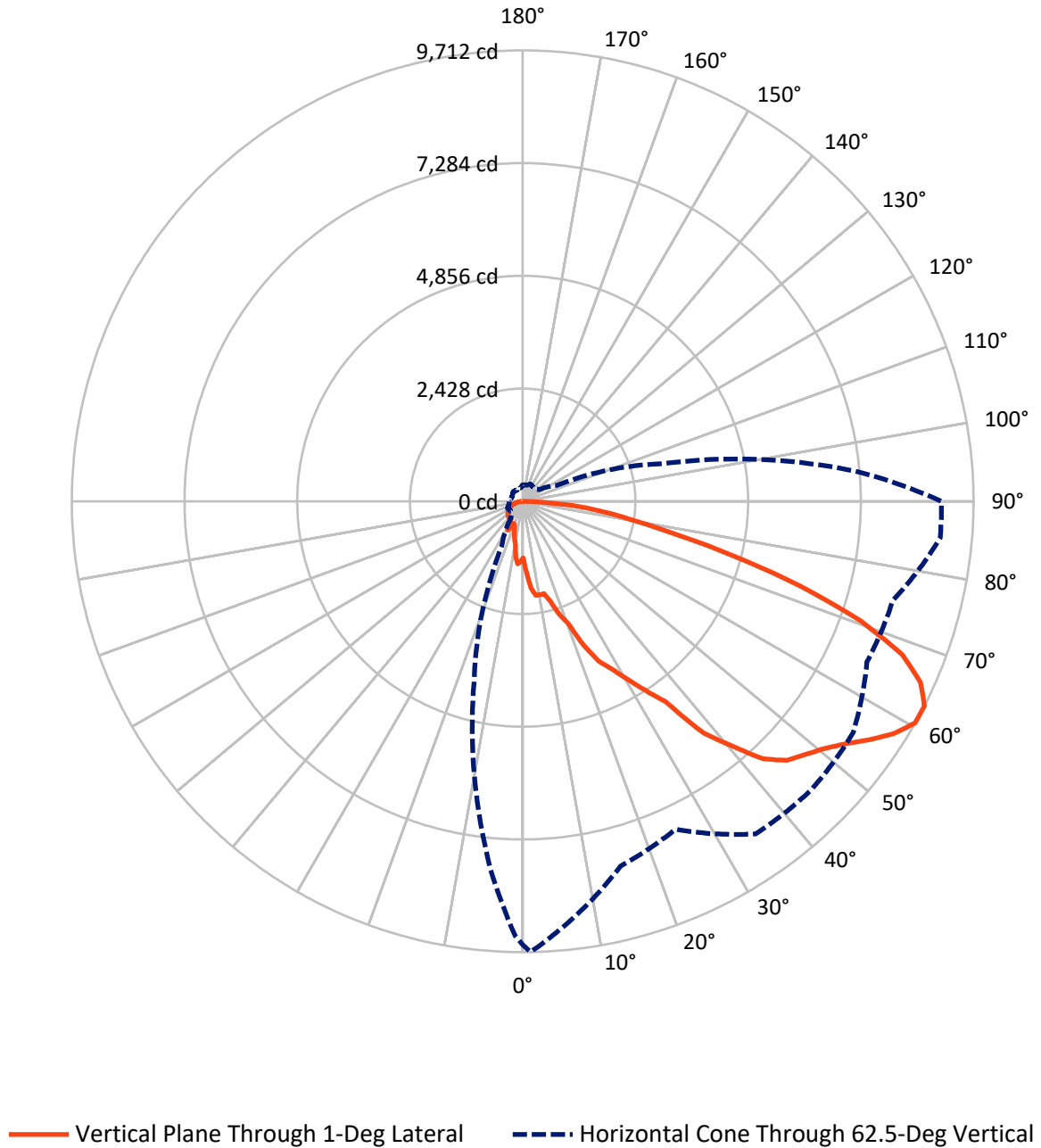
× Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 4.9 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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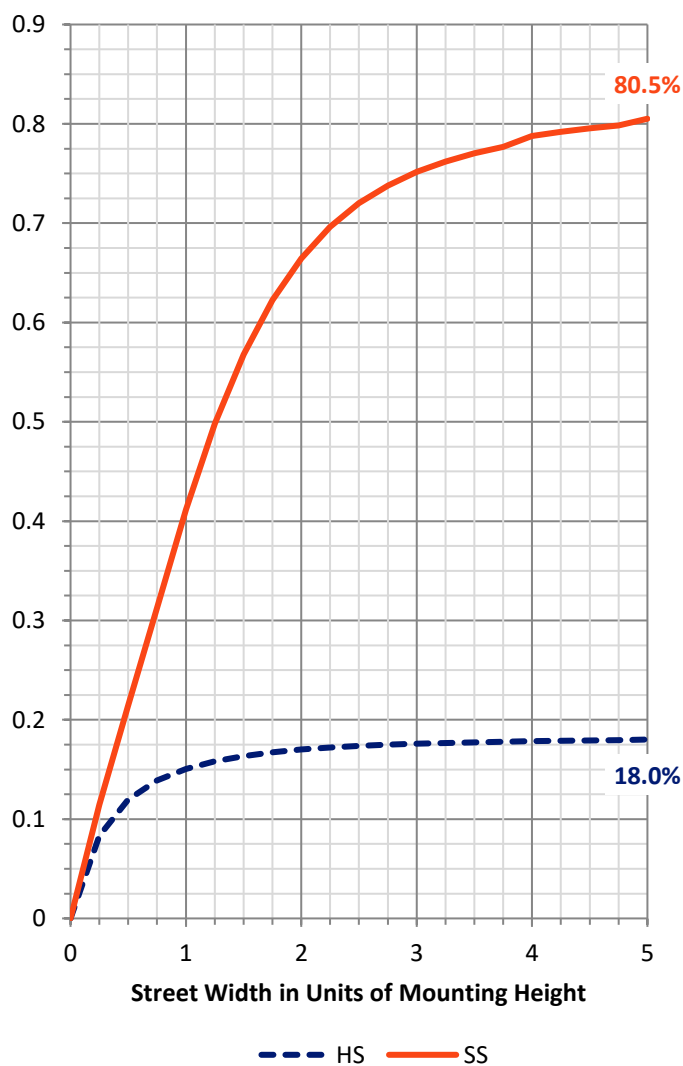
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	2103.9	0.0	2103.9
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	9450.1	0.0	9450.1
	% Fixture	81.8	0.0	81.8
Total	Lumens	11554.0	0.0	11554.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	139.7	1.2
10°-20°	405.9	3.5
20°-30°	716.5	6.2
30°-40°	1116.1	9.7
40°-50°	1837.8	15.9
50°-60°	2623.0	22.7
60°-70°	2781.4	24.1
70°-80°	1536.3	13.3
80°-90°	397.4	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°	11554.0	100.0
0°-180°	11554.0	100.0

Coefficient of Utilization



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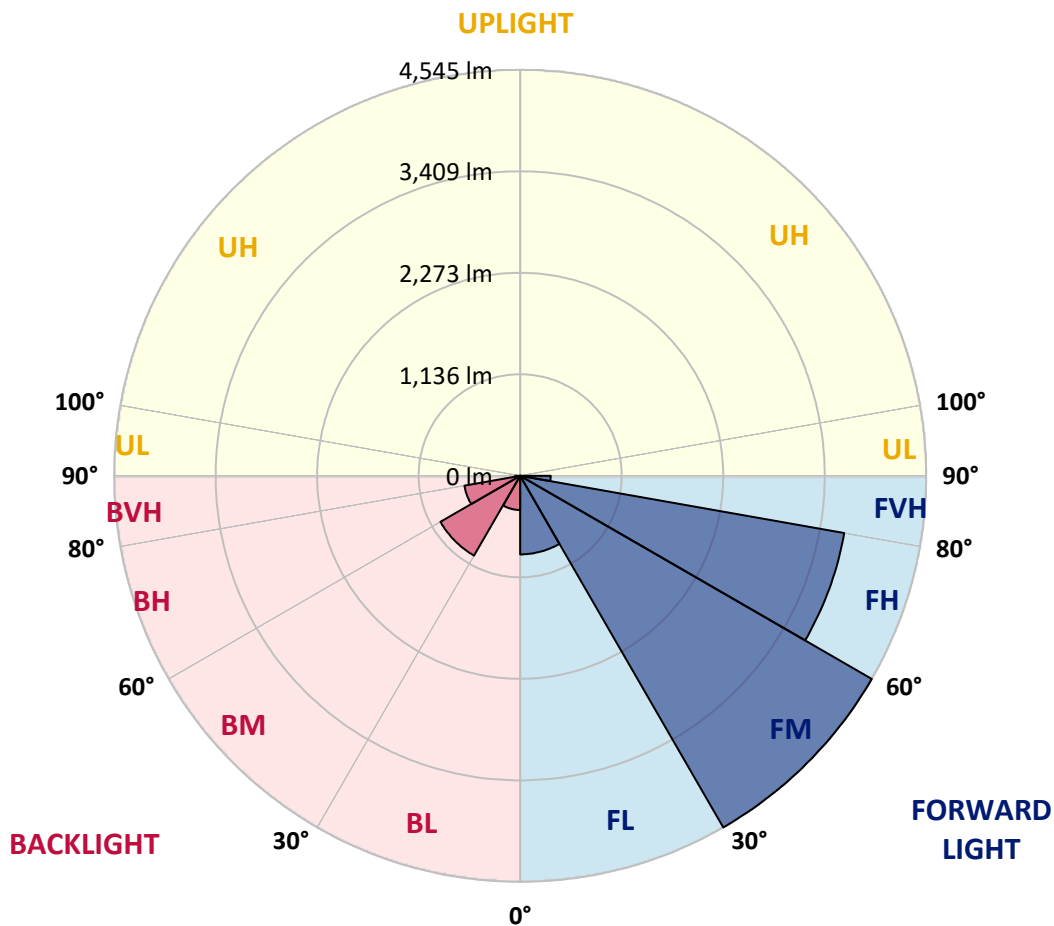
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	879.4	7.6			
FM (30°-60°)	4545.5	39.3			
FH (60°-80°)	3683.9	31.9			G2/5000
FVH (80°-90°)	341.3	3.0			G3/500
BL (0°-30°)	382.6	3.3	B1/500		
BM (30°-60°)	1031.4	8.9	B2/2500		
BH (60°-80°)	633.9	5.5	B2/1000		G2/1000
BVH (80°-90°)	56.0	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: 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°	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4
2.5°	1498.1	1511.0	1484.7	1455.0	1332.2	1450.5	1415.2	1480.8	1459.5	1317.0	1577.8
5°	1851.4	1874.9	1849.1	1938.3	1943.9	1966.9	1754.4	1886.7	1840.7	1828.9	1960.7
7.5°	2021.8	2045.9	2111.5	2270.2	2394.1	2282.0	2158.1	2130.6	2094.7	2001.1	2080.7
10°	2032.5	2045.9	2133.9	2470.4	2530.3	2610.0	2529.8	2340.8	2262.9	2059.4	1998.8
12.5°	2000.5	2042.6	2156.4	2566.2	2744.5	2831.4	2851.1	2640.8	2449.6	2217.5	2186.7
15°	2215.2	2230.4	2393.5	2634.6	2757.4	2830.9	2894.8	2765.3	2705.3	2521.4	2274.1
17.5°	2523.1	2565.1	2698.6	2787.7	2870.7	2884.7	2832.0	2781.5	2686.2	2931.8	2668.8
20°	2731.6	2812.9	2976.7	2993.5	2819.1	2849.9	2842.6	2846.0	2791.6	3245.8	3101.1
22.5°	3283.3	3371.4	3393.8	3296.2	2967.7	2826.9	2855.0	2936.3	3150.5	3539.6	3703.3
25°	3782.9	3817.1	4021.8	3770.6	3246.9	2940.2	2894.2	3104.5	3453.8	4034.1	4150.7
27.5°	4043.6	4087.9	4224.2	3677.5	3281.7	2794.4	2686.8	3006.9	3363.0	3801.4	4313.3
30°	4377.2	4447.9	4633.5	3770.6	3386.5	2889.7	2651.5	2957.6	3351.2	3953.9	4657.6
32.5°	4720.9	4858.3	4996.2	4098.6	3371.9	3035.5	2877.4	2902.1	3457.7	4273.5	5014.2
35°	5176.2	5297.3	5416.2	4288.1	3665.7	3157.2	3000.2	3261.5	3731.3	4644.1	5511.5
37.5°	6149.5	6341.3	6027.9	4827.5	3985.3	3705.5	3422.4	3577.1	4020.6	4953.0	6323.9
40°	6769.7	6913.7	6611.0	5194.7	4548.2	4075.0	4028.5	4041.4	4419.3	5217.7	6870.6
42.5°	7385.8	7581.0	7099.3	5698.8	5228.9	4838.1	4598.1	4581.9	4865.6	5693.1	7492.4
45°	7845.6	7960.5	7267.0	6123.7	5958.9	5669.0	5489.1	5203.7	5452.1	6022.3	7877.0
47.5°	8064.3	8157.9	7536.7	6371.0	6432.1	6447.3	6771.9	6285.2	5964.5	6244.9	8078.8
50°	8337.3	8381.6	7695.3	6588.6	6881.8	7546.8	7624.7	6799.9	6463.5	6487.6	8198.3
52.5°	8663.6	8682.1	7926.9	6839.7	7336.5	8270.0	8149.5	7672.3	6938.4	6931.1	8423.1
55°	9074.0	9062.8	8217.3	7177.8	7661.1	8700.1	8608.7	8261.1	7455.9	7298.4	8773.0
57.5°	9439.0	9432.3	8602.5	7489.0	7934.2	8921.0	8947.9	8855.9	7808.0	7561.3	9152.0
60°	9617.9	9703.7	9041.0	7829.3	7951.6	9020.8	9030.9	8884.5	8201.6	7898.9	9252.9
62.5°	9548.4	9711.5	9256.3	8135.5	7791.8	8748.3	8790.3	8689.4	8183.7	8253.2	9027.5
65°	9232.2	9420.5	9069.6	8298.6	7693.7	8291.9	8302.5	8047.4	7927.5	8488.1	8499.3
67.5°	8639.0	8815.6	8475.2	8038.5	7022.0	7061.8	7299.5	7320.2	7145.3	8311.0	7757.6
70°	7600.6	7725.0	7512.0	7395.9	5869.2	5636.0	5893.9	6004.3	6083.9	7671.2	6867.2
72.5°	6017.2	6257.7	6291.4	6367.1	4725.4	4336.9	4528.1	4364.3	4883.0	6529.1	5610.7
75°	4451.8	4654.8	4872.9	5295.1	3724.6	3246.9	3223.3	3139.8	3624.2	5250.8	4161.4
77.5°	3146.0	3275.5	3443.1	4229.8	2810.7	2500.6	2515.2	2430.5	2617.3	3968.5	2874.6
80°	2255.1	2322.9	2400.8	2786.6	2073.4	2157.5	2159.7	2079.6	1946.1	2695.2	1918.6
82.5°	1606.9	1659.6	1748.8	1837.9	1545.8	1768.4	1766.7	1761.7	1543.0	1821.6	1200.4
85°	894.8	965.5	1120.2	1439.8	1116.3	1264.3	1111.8	1224.5	1132.6	1212.8	607.8
87.5°	62.8	56.1	250.6	834.3	520.9	380.7	199.6	395.3	506.9	633.6	84.7
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°	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4
2.5°	1631.6	1651.2	1574.4	1458.9	1490.3	1456.1	1412.9	1345.6	1207.1	1292.9	1293.5
5°	1959.6	1885.0	1825.0	1768.4	1673.1	1529.0	1509.9	1394.4	1329.4	1363.6	1358.5
7.5°	2062.2	1956.2	1865.9	1663.5	1486.9	1263.2	1195.9	1127.5	1098.9	1181.9	1215.0
10°	1949.5	1839.0	1750.4	1504.3	1384.3	1244.7	1059.7	964.9	908.9	930.7	943.6
12.5°	2040.3	1927.6	1649.0	1511.6	1313.7	1228.4	1066.4	927.4	844.4	864.6	840.5
15°	2127.8	1975.8	1697.2	1423.6	1263.2	1139.9	1008.7	865.1	767.6	732.8	714.3
17.5°	2447.4	2195.1	1691.6	1374.2	1190.3	1048.5	890.4	733.4	668.3	632.4	601.6
20°	2837.0	2485.5	1721.8	1323.2	1112.9	934.1	762.0	616.2	570.8	547.2	538.8
22.5°	3300.7	2857.8	1895.1	1315.9	1040.1	850.6	691.3	600.5	549.5	523.7	513.0
25°	3669.1	3243.0	2022.9	1365.3	1036.1	781.6	648.7	667.2	643.7	651.5	589.3
27.5°	4026.8	3347.8	1951.2	1343.4	931.9	659.4	638.6	677.3	697.5	703.7	701.4
30°	4329.0	3790.8	1966.9	1220.0	787.2	537.1	488.9	508.0	563.5	651.5	668.3
32.5°	4771.4	4002.7	2100.9	1145.5	703.7	480.5	426.7	419.4	432.3	464.2	491.7
35°	5288.9	4490.5	2138.4	1125.8	645.9	455.3	417.7	400.9	407.6	431.7	437.3
37.5°	6253.8	4846.0	2277.5	1101.7	624.6	440.1	411.0	404.8	419.4	439.0	450.2
40°	6785.9	5485.1	2284.2	1081.0	597.1	434.0	415.5	412.7	421.6	448.5	455.3
42.5°	7495.2	5849.6	2389.6	1056.9	587.6	442.4	424.4	423.3	431.2	446.9	459.2
45°	7927.5	6093.5	2395.2	1042.9	585.3	479.4	436.2	432.3	430.6	440.1	451.3
47.5°	8206.1	6445.0	2463.6	1027.2	598.8	488.9	450.2	433.4	427.8	431.7	440.1
50°	8470.2	6725.9	2593.1	1024.9	612.8	479.4	474.9	432.8	421.6	419.9	426.1
52.5°	8794.3	7187.9	2752.9	1046.2	609.5	465.4	493.4	430.6	410.4	406.5	412.7
55°	9265.8	7683.0	2922.8	1028.3	574.7	438.5	475.5	428.9	398.6	391.4	397.0
57.5°	9571.4	7966.7	3112.9	1013.1	522.0	418.3	459.2	430.0	399.8	383.5	386.9
60°	9469.9	7814.2	3187.5	920.6	472.1	402.6	420.5	421.1	389.7	374.5	377.3
62.5°	9021.3	7261.9	3117.9	813.0	435.1	380.1	380.7	404.3	360.5	349.9	354.3
65°	8394.5	6575.1	2836.5	742.9	417.7	356.6	347.6	354.9	321.3	313.4	322.4
67.5°	7625.2	5728.5	2417.7	668.9	411.5	324.6	314.0	311.2	289.9	280.9	289.9
70°	6660.3	4796.6	1932.7	616.7	388.0	289.9	281.5	278.7	260.7	254.0	261.8
72.5°	5353.4	3745.3	1491.4	576.9	362.2	257.9	250.6	247.3	232.1	222.6	232.1
75°	3807.6	2862.3	1107.9	515.8	325.8	225.4	217.0	212.5	198.5	189.5	197.9
77.5°	2705.8	2148.5	773.7	426.7	268.6	190.6	185.6	178.3	166.0	155.3	163.7
80°	2000.5	1535.1	499.0	329.1	205.2	152.5	149.7	144.7	132.9	120.0	126.2
82.5°	1317.0	1106.8	285.9	223.2	149.1	109.9	112.1	108.8	97.6	84.1	87.5
85°	589.8	655.4	151.9	122.8	97.0	66.2	72.3	70.1	61.7	48.8	49.9
87.5°	56.6	110.5	46.5	44.9	35.9	20.7	25.8	21.9	18.5	11.8	9.0
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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4
2.5°	1313.1	1234.1	1155.0	1203.2	1204.3	1217.2	1218.9	1171.3	1209.4	1238.5	1268.8
5°	1333.9	1282.3	1285.1	1238.5	1213.3	1245.8	1239.1	1226.2	1249.2	1281.2	1319.8
7.5°	1183.6	1150.0	1144.3	1099.5	990.7	966.6	986.8	995.2	1026.0	1075.4	1116.9
10°	924.0	990.7	915.6	898.2	869.6	813.5	781.0	777.1	842.7	882.5	917.3
12.5°	832.6	815.8	806.8	759.2	759.2	699.7	680.7	698.0	799.0	827.6	872.4
15°	709.3	696.9	655.4	631.9	620.7	596.6	616.7	633.6	727.8	730.0	777.1
17.5°	588.7	581.4	542.2	537.7	526.5	515.8	534.3	574.7	625.7	616.7	638.6
20°	526.5	501.2	465.4	478.3	466.5	458.1	450.2	507.4	543.3	555.1	568.0
22.5°	510.8	464.8	443.5	431.7	432.3	418.8	420.5	468.2	522.6	529.8	522.0
25°	583.7	501.8	432.8	398.6	385.7	381.3	394.2	436.2	501.8	517.5	523.7
27.5°	682.9	545.0	445.7	387.4	361.6	363.9	382.4	411.5	488.9	516.9	524.2
30°	655.4	512.5	446.3	379.0	347.1	358.8	365.6	393.6	478.8	520.9	557.3
32.5°	505.7	460.9	449.1	385.7	372.9	354.3	363.9	390.8	449.1	475.5	477.1
35°	428.4	394.2	386.3	370.6	352.7	344.8	355.5	379.0	417.1	433.4	431.2
37.5°	425.0	387.4	356.6	349.9	342.6	340.3	346.5	368.4	407.1	435.6	429.5
40°	430.6	384.1	352.7	340.9	343.7	333.6	339.8	366.7	408.7	435.6	430.0
42.5°	423.9	380.1	347.6	338.7	341.5	327.4	334.7	362.8	404.3	436.2	425.6
45°	410.4	371.2	344.8	329.7	342.6	321.8	330.8	352.7	390.8	425.6	413.2
47.5°	397.0	360.5	333.0	323.5	336.4	316.2	320.1	339.2	377.3	411.5	400.9
50°	382.4	347.1	323.5	320.7	329.7	315.1	308.9	324.6	361.1	395.3	386.3
52.5°	366.7	335.8	316.8	315.7	324.1	307.8	298.8	311.2	343.7	377.9	370.6
55°	351.5	323.5	308.4	311.2	320.7	301.6	290.4	298.3	325.2	358.8	348.7
57.5°	336.4	309.5	297.2	305.0	312.3	293.8	279.8	284.3	306.1	339.2	327.4
60°	323.0	297.2	284.8	294.4	301.1	282.0	265.8	268.6	288.2	317.9	307.3
62.5°	305.6	283.7	267.4	279.8	284.8	266.3	248.9	252.3	268.0	296.0	288.2
65°	280.9	266.9	251.7	260.2	266.9	247.8	231.6	235.5	247.3	273.6	268.0
67.5°	259.6	246.1	236.0	242.8	243.9	229.3	214.7	217.0	226.5	251.2	245.0
70°	236.0	223.2	215.3	220.3	219.8	207.5	196.2	196.8	204.6	227.1	218.7
72.5°	210.3	197.9	194.0	196.8	194.6	183.3	172.7	176.6	181.7	198.5	191.8
75°	182.8	171.6	169.3	172.1	168.8	158.1	148.6	152.5	157.0	171.0	162.6
77.5°	154.2	144.1	144.7	145.2	140.7	133.4	123.9	127.8	130.6	140.2	131.8
80°	122.8	114.9	117.2	117.2	112.1	107.1	98.1	99.2	100.9	104.3	98.1
82.5°	89.7	89.7	89.7	90.3	79.6	81.3	73.4	72.9	71.2	70.6	66.7
85°	53.3	55.5	56.6	58.3	43.2	50.5	43.7	42.1	38.7	35.3	34.2
87.5°	11.8	15.1	15.1	14.6	0.0	5.6	2.8	4.5	1.1	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°	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4	1218.4
2.5°	1234.1	1200.4	1263.2	1319.3	1310.3	1342.8	1267.1	1379.3	1498.1	1498.1
5°	1309.7	1281.2	1297.4	1329.9	1354.6	1467.9	1562.1	1655.7	1849.1	1851.4
7.5°	1104.5	1166.2	1180.8	1171.3	1277.2	1423.0	1578.3	1845.2	2008.9	2021.8
10°	1032.8	1060.8	1105.1	1129.8	1172.9	1316.5	1509.4	1826.1	1999.9	2032.5
12.5°	935.8	1039.5	1106.8	1244.7	1278.9	1307.5	1614.2	1888.4	2008.4	2000.5
15°	829.8	908.3	1005.3	1157.8	1244.7	1463.4	1676.4	2088.0	2155.8	2215.2
17.5°	661.6	719.4	848.3	1022.1	1237.4	1438.7	1830.1	2334.7	2461.4	2523.1
20°	544.4	545.0	673.9	904.4	1138.7	1335.5	1888.4	2539.3	2700.2	2731.6
22.5°	514.7	488.9	556.8	744.0	1030.0	1396.7	2006.1	2868.4	3204.3	3283.3
25°	498.4	467.0	509.7	656.6	952.0	1428.6	2243.3	3320.9	3752.1	3782.9
27.5°	505.2	519.8	533.2	585.3	853.4	1368.6	2188.3	3523.3	3985.3	4043.6
30°	550.6	574.1	543.3	561.2	772.1	1281.7	2286.5	3851.9	4279.1	4377.2
32.5°	458.1	449.1	446.3	485.5	690.8	1203.2	2492.2	4314.4	4597.6	4720.9
35°	413.2	399.2	404.8	449.7	650.9	1192.0	2607.7	4697.4	5100.5	5176.2
37.5°	411.5	395.3	402.6	436.2	665.0	1212.2	2792.7	5311.9	5987.5	6149.5
40°	407.6	398.6	402.6	427.8	650.4	1223.4	2899.3	5828.3	6605.4	6769.7
42.5°	407.1	402.6	406.5	434.5	635.3	1228.4	3046.7	6294.8	7256.3	7385.8
45°	405.4	409.9	409.9	440.1	628.5	1262.1	3133.6	6523.5	7685.8	7845.6
47.5°	397.5	411.0	432.8	438.5	601.0	1246.4	3256.4	6870.6	7914.0	8064.3
50°	387.4	409.3	462.0	427.2	596.6	1208.3	3400.0	7145.9	8206.7	8337.3
52.5°	374.0	406.5	455.3	405.4	588.7	1201.5	3601.2	7503.6	8548.1	8663.6
55°	354.9	396.4	434.5	383.5	569.7	1180.2	3909.1	7947.1	8995.0	9074.0
57.5°	337.5	381.3	404.3	371.2	524.2	1184.7	4123.2	8308.7	9370.1	9439.0
60°	321.8	379.6	361.1	358.3	477.7	1124.7	4192.8	8304.8	9509.7	9617.9
62.5°	305.0	358.3	330.8	340.9	436.8	1063.0	4045.3	7948.8	9358.9	9548.4
65°	283.1	307.3	305.6	328.6	437.9	962.7	3707.2	7320.8	8982.7	9232.2
67.5°	257.4	271.9	281.5	308.4	451.9	884.8	3163.4	6565.6	8342.4	8639.0
70°	231.0	245.6	256.2	282.0	464.8	848.9	2518.0	5504.8	7299.5	7600.6
72.5°	204.1	219.2	227.6	250.1	447.4	772.1	1863.7	4283.0	5859.1	6017.2
75°	176.1	190.6	197.4	218.1	388.6	638.6	1286.8	3244.1	4291.4	4451.8
77.5°	147.5	163.2	165.4	182.2	296.6	488.4	824.8	2488.3	3038.9	3146.0
80°	117.7	133.4	133.4	142.4	208.6	335.8	494.0	1877.2	2213.0	2255.1
82.5°	84.7	101.5	100.4	100.9	144.1	208.0	285.9	1406.7	1599.1	1606.9
85°	49.9	61.7	61.1	56.1	85.2	112.1	154.7	873.5	892.6	894.8
87.5°	9.5	14.6	12.9	5.6	23.5	33.1	44.9	162.0	64.5	62.8
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)