

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: P367445

Luminaire Tested: **MSA-SA2C-740-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367445
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G2-1910-543-25)
Test Lab: INNOVATION CENTER
Issue Date: 12/2/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: MSA-SA2C-740-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (2) LIGHTSQUARES WITH 16 LEDS
EACH AND SPILL LIGHT ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8999 lumens
Efficiency: N/A
Efficacy: 79.6 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

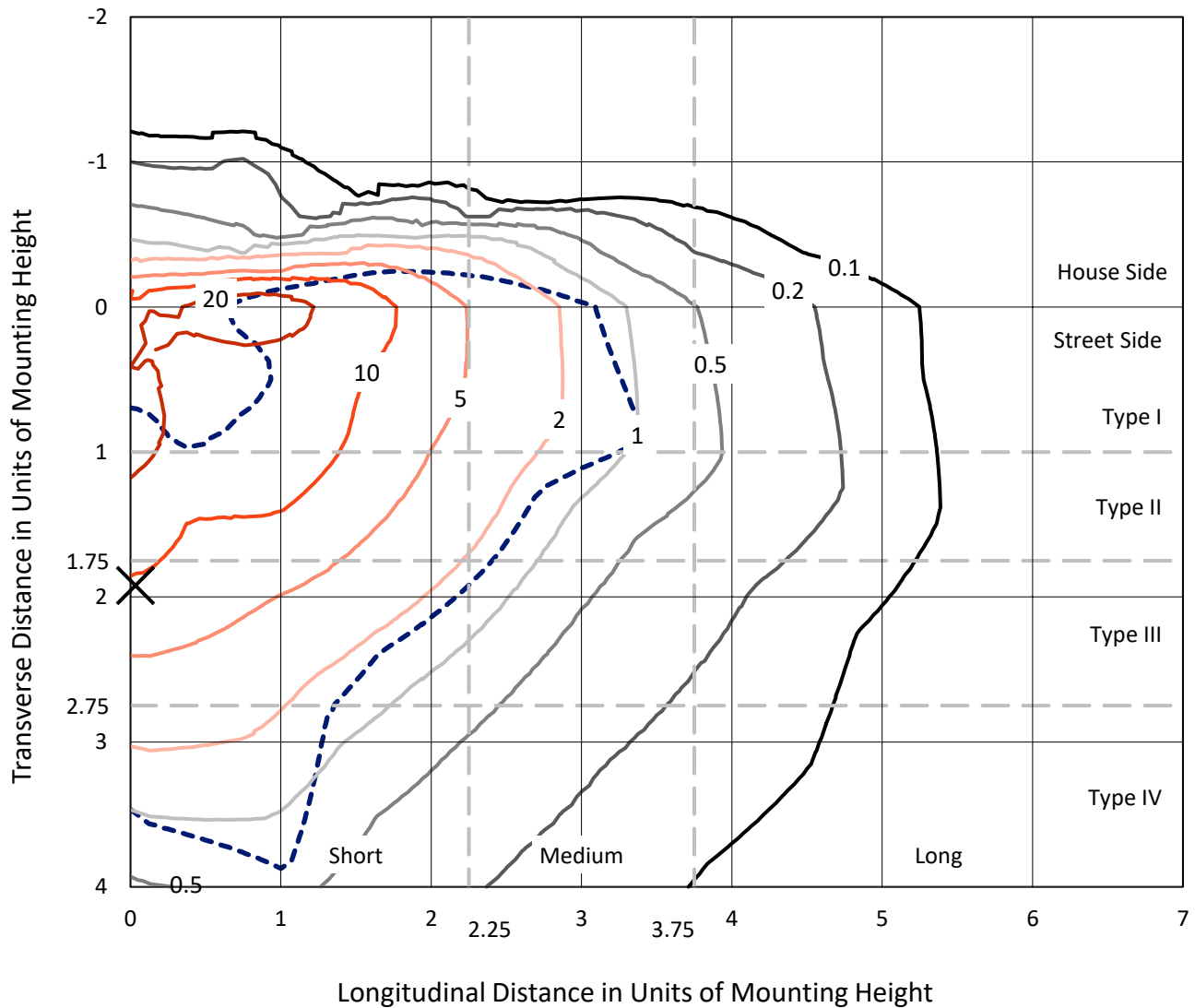
Input Watts (W): 113
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

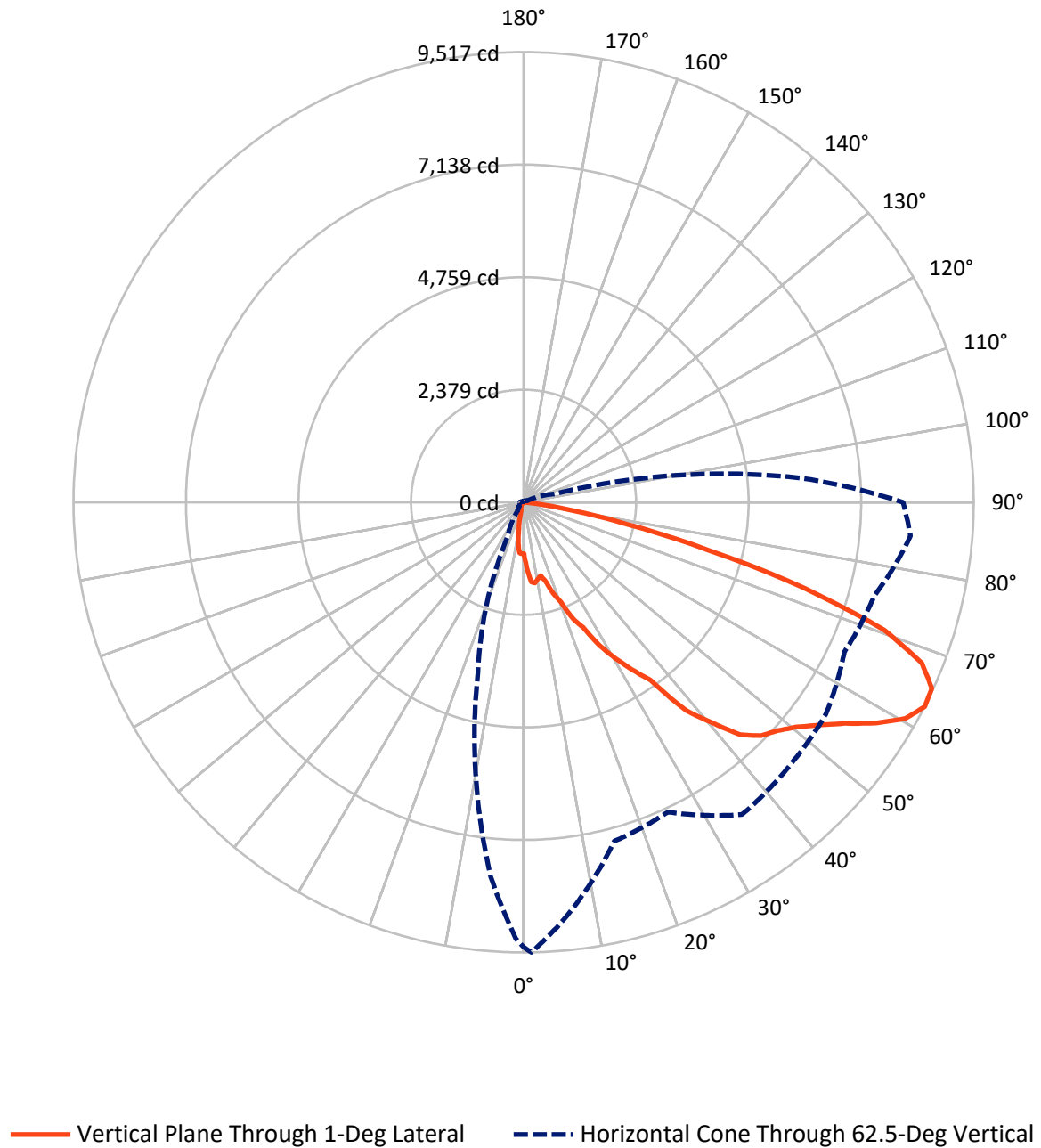
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 28.9 fc
 Type IV - Short - N/A

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Luminous Intensity Polar Plot



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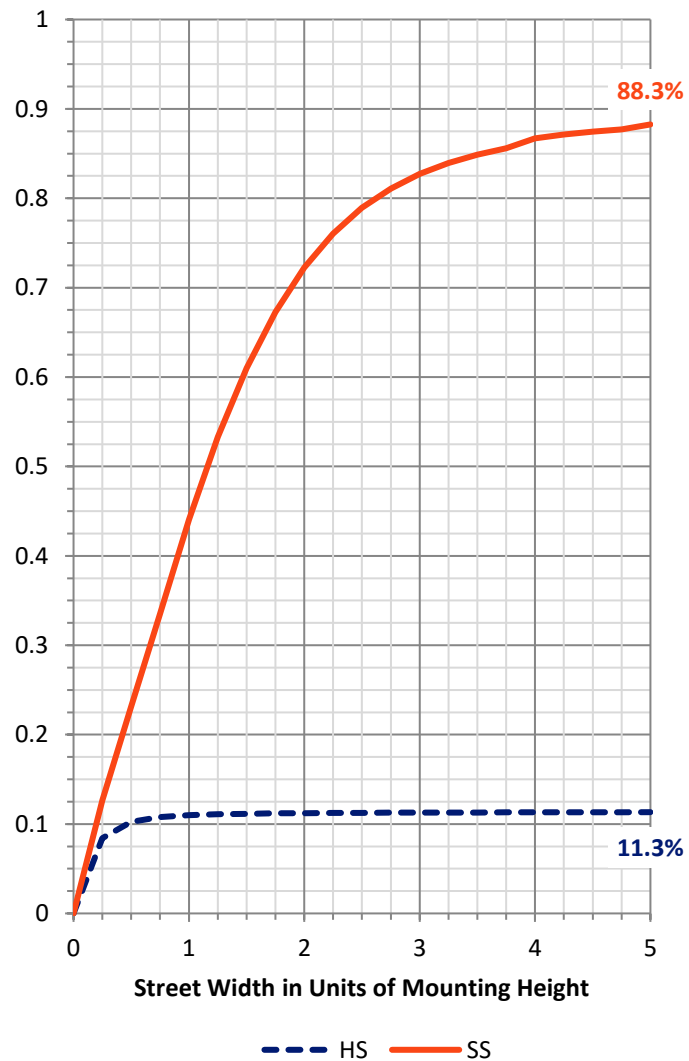
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1029.1	0.0	1029.1
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	7969.9	0.0	7969.9
	% Fixture	88.6	0.0	88.6
Total	Lumens	8999.0	0.0	8999.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	121.1	1.3
10°-20°	316.4	3.5
20°-30°	511.4	5.7
30°-40°	856.6	9.5
40°-50°	1400.7	15.6
50°-60°	2073.5	23.0
60°-70°	2380.5	26.5
70°-80°	1177.2	13.1
80°-90°	161.6	1.8
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°	8999.0	100.0
0°-180°	8999.0	100.0

Coefficient of Utilization



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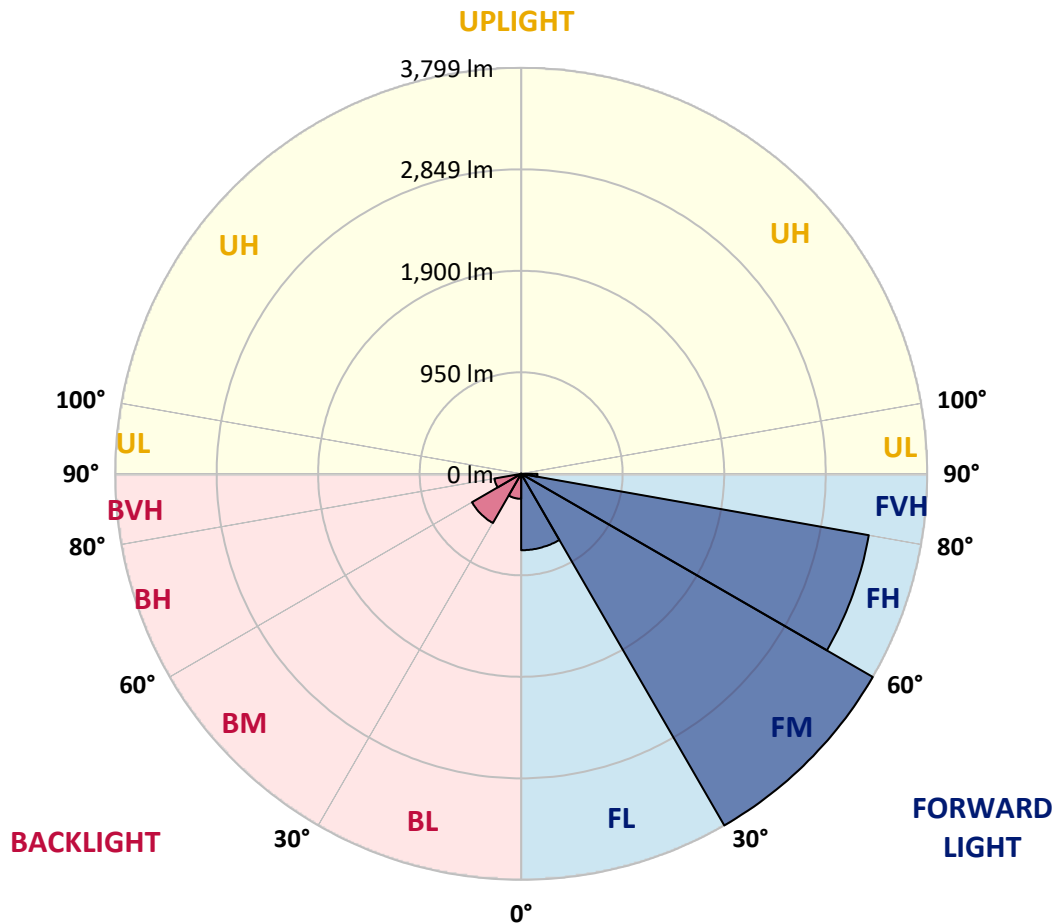
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	714.8	7.9			
FM	(30°-60°)	3799.3	42.2			
FH	(60°-80°)	3303.2	36.7			G2/5000
FVH	(80°-90°)	152.6	1.7			G2/225
BL	(0°-30°)	234.1	2.6	B1/500		
BM	(30°-60°)	531.5	5.9	B1/1000		
BH	(60°-80°)	254.4	2.8	B1/500		G1/500
BVH	(80°-90°)	9.0	0.1			G0/10
UL	(90°-100°)	0.0	0.0		U0/0	
UH	(100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G2

Type IV Short



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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1
2.5°	1397.9	1404.6	1373.3	1369.2	1296.4	1387.1	1389.7	1400.5	1333.8	1204.6	1385.1
5°	1672.8	1691.2	1667.1	1774.3	1805.1	1871.2	1749.7	1858.4	1812.3	1825.1	1851.2
7.5°	1705.6	1724.6	1775.3	1954.8	2120.5	2078.9	2065.6	2106.6	2103.0	2008.2	2055.3
10°	1637.4	1653.3	1737.9	2064.6	2136.9	2323.5	2369.2	2274.8	2236.4	2028.7	1937.9
12.5°	1563.0	1589.7	1697.4	2089.2	2306.1	2494.8	2645.1	2510.7	2383.0	2162.0	2078.9
15°	1705.6	1720.5	1889.7	2140.5	2330.2	2460.4	2583.5	2538.9	2519.4	2360.5	2078.9
17.5°	1985.1	2019.9	2142.5	2266.1	2415.8	2494.3	2465.1	2451.2	2401.5	2651.2	2359.9
20°	2184.0	2249.2	2409.7	2463.0	2344.0	2417.4	2399.4	2387.1	2348.1	2812.7	2683.0
22.5°	2614.8	2674.8	2677.9	2696.9	2419.9	2303.0	2273.3	2276.9	2453.8	2860.9	3085.0
25°	2908.1	2928.6	3090.7	2955.3	2627.1	2337.9	2224.6	2275.3	2530.2	3207.6	3463.0
27.5°	3388.1	3436.8	3537.9	3079.4	2751.2	2315.8	2135.3	2319.9	2731.2	3322.5	3883.0
30°	3779.4	3826.1	3988.6	3249.1	2858.9	2425.1	2173.8	2409.7	2856.3	3558.9	4260.4
32.5°	4096.8	4217.3	4401.9	3511.2	2854.8	2550.7	2370.2	2379.9	3010.2	3865.0	4633.7
35°	4502.4	4614.7	4744.5	3691.7	3041.5	2591.2	2428.1	2672.2	3238.9	4185.0	5136.3
37.5°	5416.8	5586.5	5330.1	4146.6	3258.9	2957.4	2656.9	2852.2	3478.4	4511.7	5827.0
40°	5974.7	6117.8	5870.1	4378.9	3635.3	3142.0	3065.0	3165.0	3712.7	4680.4	6347.5
42.5°	6524.4	6713.2	6299.3	4728.6	3992.7	3663.0	3452.7	3533.2	4051.7	5087.6	6933.1
45°	6922.4	7039.3	6392.1	4911.7	4484.0	4256.8	4116.8	3996.8	4524.5	5349.1	7311.1
47.5°	7122.4	7215.7	6575.2	4969.6	4776.3	4885.0	5191.7	4940.9	4942.9	5538.3	7514.7
50°	7399.3	7464.4	6677.8	5038.8	5093.7	5863.9	6018.8	5485.0	5420.9	5728.1	7548.0
52.5°	7788.5	7820.3	6876.7	5221.4	5569.1	6630.6	6686.5	6470.6	5899.3	6080.9	7621.8
55°	8305.9	8250.0	7232.1	5605.0	6065.0	7192.1	7267.0	7078.8	6500.9	6433.2	7850.6
57.5°	8863.9	8799.8	7758.8	6145.5	6602.9	7621.3	7666.0	7680.8	6900.3	6744.9	8239.3
60°	9263.9	9275.7	8421.8	6765.5	6937.3	8032.1	7942.9	7807.5	7303.4	7201.9	8428.5
62.5°	9403.9	9517.2	8938.2	7415.2	7225.4	8057.7	7919.3	7804.9	7483.9	7673.1	8211.6
65°	9289.5	9487.4	9058.2	7985.9	7399.8	7736.2	7592.1	7518.8	7478.3	7865.4	7731.6
67.5°	8835.2	9082.8	8714.6	7991.1	6766.0	6587.0	6757.3	6989.6	6855.2	7705.9	7059.3
70°	7817.2	8088.5	7917.2	7522.4	5636.3	5182.4	5370.1	5721.4	5626.5	6853.7	6070.1
72.5°	5865.0	6213.7	6247.5	6494.2	4474.2	3900.4	3927.6	3917.8	4081.4	5526.5	4736.8
75°	3767.6	4038.9	4405.5	5240.4	3398.9	2847.6	2587.1	2523.5	2828.6	4318.3	3391.2
77.5°	2187.1	2219.4	2388.7	3953.7	2434.3	2051.7	1874.3	1965.1	2071.7	3013.8	2247.6
80°	1046.1	1062.5	1132.3	2034.3	1691.2	1775.9	1638.9	1741.0	1422.5	1732.3	1275.4
82.5°	331.8	335.4	347.2	999.5	1050.2	1176.4	753.8	1010.7	879.5	1047.2	849.2
85°	55.4	94.4	116.4	288.7	592.8	396.9	163.6	360.5	490.8	660.5	385.6
87.5°	0.0	0.0	0.0	5.1	48.2	22.6	3.6	20.5	75.4	147.2	17.4
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°	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1
2.5°	1437.4	1472.8	1339.5	1220.0	1250.2	1226.1	1189.7	1127.7	984.1	1089.7	1082.5
5°	1849.7	1784.1	1603.5	1519.4	1416.9	1260.5	1241.5	1121.5	1068.7	1077.4	1069.7
7.5°	1993.3	1875.8	1716.4	1463.0	1222.5	996.9	927.7	849.2	833.3	867.2	889.2
10°	1880.5	1755.9	1616.4	1301.5	1116.4	953.3	782.5	672.8	613.3	606.1	612.3
12.5°	1932.3	1797.9	1510.7	1269.7	1076.4	928.7	737.9	572.3	443.1	452.8	427.2
15°	1968.2	1813.8	1485.6	1203.0	993.8	796.4	566.7	401.0	295.4	264.6	246.1
17.5°	2178.9	1958.4	1453.8	1126.1	878.4	620.0	355.9	232.3	197.9	187.2	178.5
20°	2449.7	2136.4	1453.3	1045.1	708.2	387.7	222.0	168.2	160.0	166.1	159.5
22.5°	2764.5	2373.3	1530.7	944.1	508.2	244.6	172.8	149.2	141.0	146.1	146.7
25°	3081.5	2728.6	1593.8	848.2	353.8	187.7	153.8	137.4	128.2	132.8	130.3
27.5°	3653.7	3023.0	1579.4	725.6	260.5	165.1	143.1	128.7	114.9	122.0	121.5
30°	4028.1	3542.5	1635.3	553.8	206.7	144.6	133.3	117.4	102.6	110.8	110.3
32.5°	4475.8	3765.5	1695.9	425.1	171.8	136.9	120.0	104.6	95.9	101.0	100.0
35°	4978.8	4206.6	1584.6	353.8	149.2	123.6	106.2	94.4	86.7	89.2	89.2
37.5°	5867.5	4575.3	1517.9	288.2	139.0	111.8	99.5	85.1	80.5	80.5	83.1
40°	6372.1	5138.3	1318.9	228.2	142.0	103.1	92.8	77.9	71.8	71.3	73.8
42.5°	7028.5	5462.9	1194.3	184.6	128.7	100.5	85.1	70.8	63.6	63.1	65.6
45°	7417.8	5644.5	1018.9	145.1	115.4	116.9	79.0	65.1	54.4	52.3	56.9
47.5°	7663.4	5885.0	919.5	115.4	100.5	116.4	76.9	56.4	45.6	43.1	47.2
50°	7788.0	6003.9	900.0	99.0	87.2	104.1	88.2	47.2	39.0	35.4	39.0
52.5°	7917.7	6197.3	907.2	91.3	76.9	83.6	83.6	40.5	34.4	30.3	32.8
55°	8179.8	6482.9	891.3	86.7	70.8	63.6	53.8	35.9	31.3	26.7	29.2
57.5°	8501.8	6688.0	891.3	82.6	65.6	54.4	43.1	33.3	28.7	23.1	25.1
60°	8440.8	6472.1	847.2	78.5	61.5	50.8	39.0	30.8	26.7	21.0	22.6
62.5°	8021.8	5885.0	686.1	72.3	57.9	48.2	35.4	29.2	25.1	18.5	20.0
65°	7529.5	5261.4	476.9	65.6	53.8	43.6	31.8	27.7	23.1	16.4	17.4
67.5°	6936.7	4518.3	264.6	59.0	49.7	37.9	29.2	27.2	22.1	14.9	15.9
70°	5908.0	3411.2	142.0	53.8	46.7	34.9	27.7	27.2	22.1	14.4	14.9
72.5°	4435.3	2148.1	83.1	49.2	42.6	32.3	26.2	27.7	21.5	13.8	13.8
75°	3017.9	1304.1	59.5	42.1	37.9	27.2	25.1	26.7	22.1	13.8	12.8
77.5°	2051.7	916.4	48.7	37.9	34.4	24.1	25.6	26.7	22.1	11.3	8.7
80°	1281.0	472.8	36.9	30.3	29.7	21.0	25.6	23.1	14.4	2.6	0.0
82.5°	895.9	175.9	21.5	23.1	23.1	14.9	20.0	16.4	8.2	0.0	0.0
85°	375.9	30.3	11.8	16.4	14.4	8.7	15.9	12.3	5.1	0.0	0.0
87.5°	6.7	0.0	4.6	9.7	10.3	5.1	8.2	5.1	0.0	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):

	185°	195°	205°	215°	225°	235°	245°	255°	265°	270°	275°
0°	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1
2.5°	1116.4	1067.7	965.1	1014.3	1009.2	1031.8	1033.8	981.5	1094.3	1164.1	1174.3
5°	1070.7	1037.9	1032.3	1004.1	996.9	1038.4	1015.9	1014.3	1068.7	1148.2	1148.7
7.5°	889.7	864.6	876.4	843.6	759.0	764.1	771.8	804.1	850.7	903.1	922.0
10°	610.8	675.9	628.2	624.1	615.4	588.2	566.7	583.6	644.1	692.3	710.2
12.5°	435.9	446.1	475.4	464.6	479.5	456.4	447.7	500.5	559.5	608.7	644.1
15°	254.9	272.3	289.7	326.7	341.5	336.9	363.6	407.7	455.4	477.9	521.5
17.5°	179.5	181.0	184.6	224.6	250.8	261.0	276.9	310.2	329.7	340.0	357.9
20°	156.9	152.3	146.1	168.7	193.3	206.1	201.5	227.7	243.6	253.8	266.7
22.5°	142.0	134.4	130.8	138.5	157.4	168.7	170.8	186.1	210.3	217.4	221.5
25°	128.2	123.1	120.5	124.6	134.9	145.6	147.7	167.7	189.2	192.3	200.5
27.5°	119.0	109.2	110.3	113.3	117.9	131.3	135.4	146.7	177.9	181.5	184.1
30°	109.2	99.0	102.0	105.1	103.1	119.5	125.6	138.5	168.7	174.4	177.4
32.5°	99.5	91.8	91.3	94.4	97.9	106.7	120.0	134.9	162.6	170.3	177.9
35°	88.7	82.6	83.6	84.1	88.7	100.0	109.7	117.4	136.4	140.5	143.1
37.5°	81.0	75.9	74.9	80.0	84.6	93.3	96.9	100.5	125.6	134.9	135.4
40°	71.8	68.7	68.7	72.3	82.6	81.5	86.2	97.4	121.5	131.3	132.3
42.5°	65.1	61.0	62.0	65.6	72.8	67.7	76.9	93.3	120.0	129.7	129.2
45°	54.9	53.8	55.9	59.0	62.0	57.4	71.8	89.2	114.9	127.7	124.1
47.5°	45.6	45.6	48.2	51.3	49.7	51.3	65.1	83.6	111.8	123.6	121.0
50°	37.4	37.9	40.5	45.6	41.0	45.1	58.5	77.9	106.7	119.5	117.4
52.5°	31.8	32.3	33.8	37.4	35.4	41.0	53.8	72.3	101.5	112.3	111.3
55°	27.7	28.7	28.7	30.8	31.8	38.5	48.7	66.7	93.8	105.6	103.6
57.5°	24.6	25.6	25.1	26.7	27.7	33.8	43.6	60.5	86.2	95.9	92.8
60°	22.1	23.1	22.6	24.6	24.1	29.2	37.9	53.8	77.9	85.6	83.1
62.5°	19.5	20.5	20.5	21.5	22.1	24.6	32.8	47.7	69.7	75.9	73.8
65°	17.4	18.5	19.0	18.5	19.5	21.0	27.7	43.1	60.5	66.7	63.6
67.5°	15.9	16.9	17.9	15.9	16.9	17.4	23.6	38.5	53.3	58.5	55.9
70°	15.4	15.9	15.9	13.8	13.3	13.8	20.5	32.8	46.7	51.8	48.2
72.5°	14.4	14.9	14.4	11.3	9.7	10.8	17.4	27.7	39.5	43.6	40.5
75°	13.3	13.8	13.3	9.2	6.2	7.7	14.4	24.1	33.8	35.9	34.4
77.5°	11.3	12.3	12.3	6.7	2.1	4.6	10.8	19.5	28.2	28.2	28.7
80°	1.0	3.1	5.1	3.6	0.0	0.5	3.6	10.3	17.9	17.4	19.0
82.5°	0.0	0.0	0.5	0.0	0.0	0.0	0.0	0.0	6.2	4.6	5.1
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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°	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1	1084.1
2.5°	1150.2	1134.3	1154.3	1215.4	1190.7	1195.4	1178.9	1280.0	1394.3	1397.9
5°	1149.7	1135.4	1165.1	1162.5	1232.8	1309.2	1383.0	1502.5	1671.8	1672.8
7.5°	913.3	998.4	1020.5	1013.8	1104.1	1209.2	1323.0	1551.8	1690.7	1705.6
10°	823.6	860.5	905.6	922.0	959.5	1059.5	1188.2	1447.1	1603.0	1637.4
12.5°	713.8	831.8	891.8	1008.2	1029.7	1044.1	1247.1	1472.3	1567.1	1563.0
15°	591.3	693.8	788.7	930.7	989.2	1140.0	1300.0	1594.8	1651.2	1705.6
17.5°	418.5	495.9	641.5	790.7	969.2	1133.3	1445.6	1813.8	1920.5	1985.1
20°	280.0	317.4	449.2	646.6	872.8	1035.9	1505.1	2011.7	2128.1	2184.0
22.5°	227.2	245.1	313.3	473.8	745.6	1031.3	1529.2	2227.6	2540.4	2614.8
25°	200.0	212.3	248.7	350.8	619.0	1010.7	1662.5	2470.7	2848.1	2908.1
27.5°	174.9	193.3	220.5	289.2	530.8	996.4	1730.2	2878.9	3329.1	3388.1
30°	167.2	189.7	215.9	263.6	469.2	941.0	1837.9	3247.1	3674.3	3779.4
32.5°	180.5	188.2	201.0	241.5	421.5	882.5	2027.1	3687.1	3959.9	4096.8
35°	143.1	156.9	179.5	221.5	401.5	879.5	2134.3	3970.2	4417.8	4502.4
37.5°	140.0	152.8	182.0	215.9	425.6	903.1	2293.3	4550.1	5243.5	5416.8
40°	135.9	152.3	180.0	213.3	425.6	926.1	2394.8	5014.2	5798.8	5974.7
42.5°	134.4	155.4	179.5	224.1	412.3	938.9	2548.1	5477.3	6385.5	6524.4
45°	133.3	158.5	181.0	236.9	409.2	981.0	2634.8	5702.4	6762.9	6922.4
47.5°	130.8	158.5	202.0	229.2	392.3	976.9	2747.1	6036.3	6988.0	7122.4
50°	128.7	159.5	228.7	214.9	394.9	951.8	2899.4	6349.6	7303.4	7399.3
52.5°	124.1	163.1	224.6	194.9	387.2	949.2	3126.6	6795.2	7718.3	7788.5
55°	113.8	158.5	203.1	170.3	360.0	920.0	3427.6	7374.7	8293.6	8305.9
57.5°	104.6	147.2	169.7	156.4	301.5	923.6	3687.1	7908.0	8806.4	8863.9
60°	95.4	152.8	131.8	145.6	249.7	857.9	3812.7	8112.1	9179.8	9263.9
62.5°	86.7	141.0	112.3	133.8	222.6	796.9	3725.5	7948.0	9227.4	9403.9
65°	76.9	97.9	94.9	120.0	225.1	711.3	3434.3	7467.5	9046.4	9289.5
67.5°	66.2	76.9	83.6	103.6	241.0	637.9	2934.8	6696.2	8559.8	8835.2
70°	57.9	69.2	72.8	90.8	250.8	589.7	2315.8	5626.0	7562.9	7817.2
72.5°	48.2	64.1	65.1	79.5	241.5	542.0	1650.2	4038.9	5742.9	5865.0
75°	41.5	53.3	59.0	66.7	203.1	404.6	909.2	2499.9	3631.2	3767.6
77.5°	37.4	40.5	44.6	46.2	86.2	210.8	312.8	1541.5	2033.3	2187.1
80°	28.7	31.8	30.8	31.8	47.2	72.8	119.0	722.5	960.5	1046.1
82.5°	9.2	15.4	16.9	14.4	30.8	35.9	34.4	249.7	312.3	331.8
85°	2.1	5.6	2.6	0.0	10.3	18.5	2.6	37.9	74.9	55.4
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	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

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