

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: P367181

Luminaire Tested: **MSA-SA2A-740-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P367181
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-SA2A-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: 5798 lumens
Efficiency: N/A
Efficacy: 87.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G2

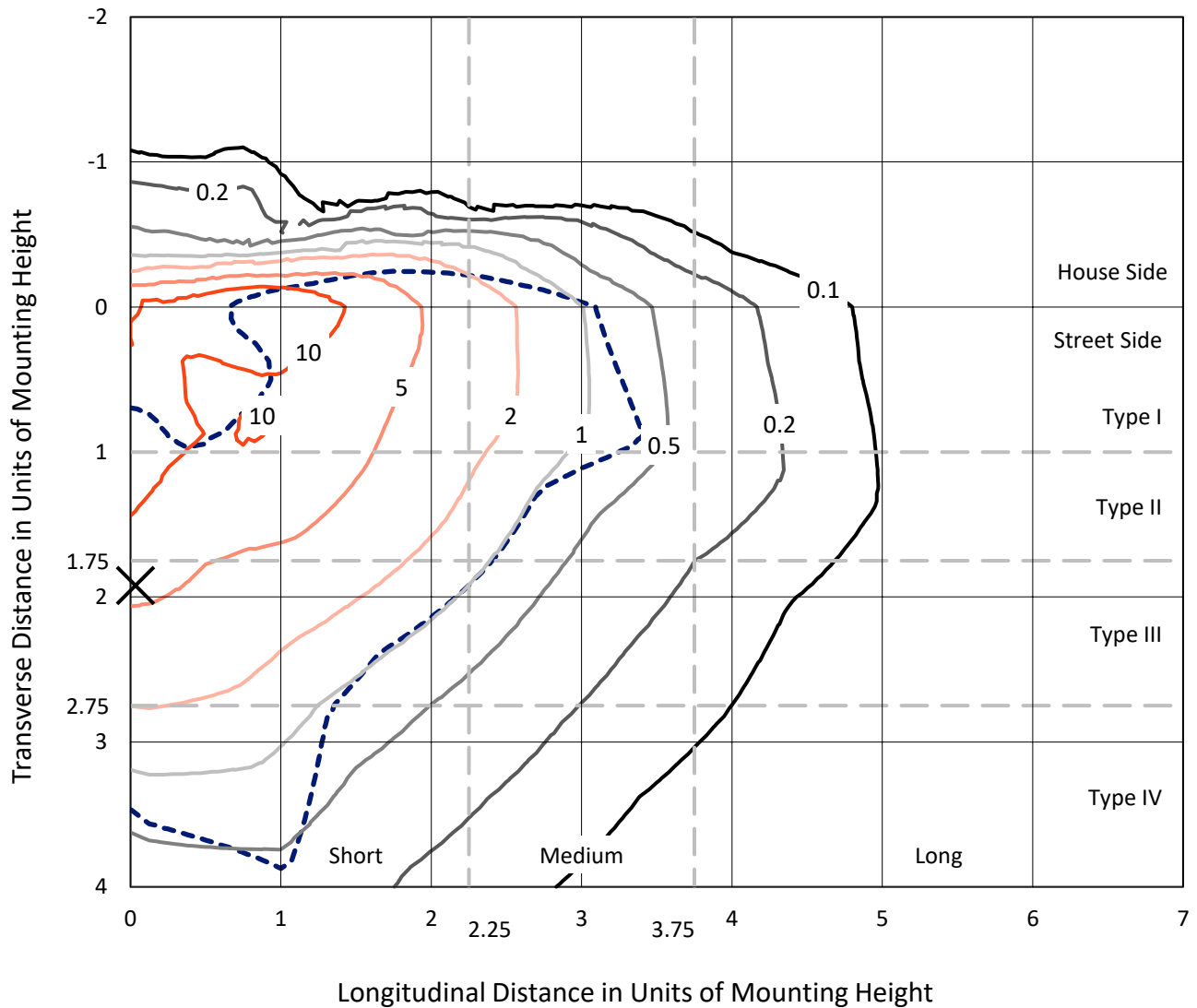
Input Watts (W): 66
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 24 FT



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Iso-Footcandle Lines of Horizontal Illumination

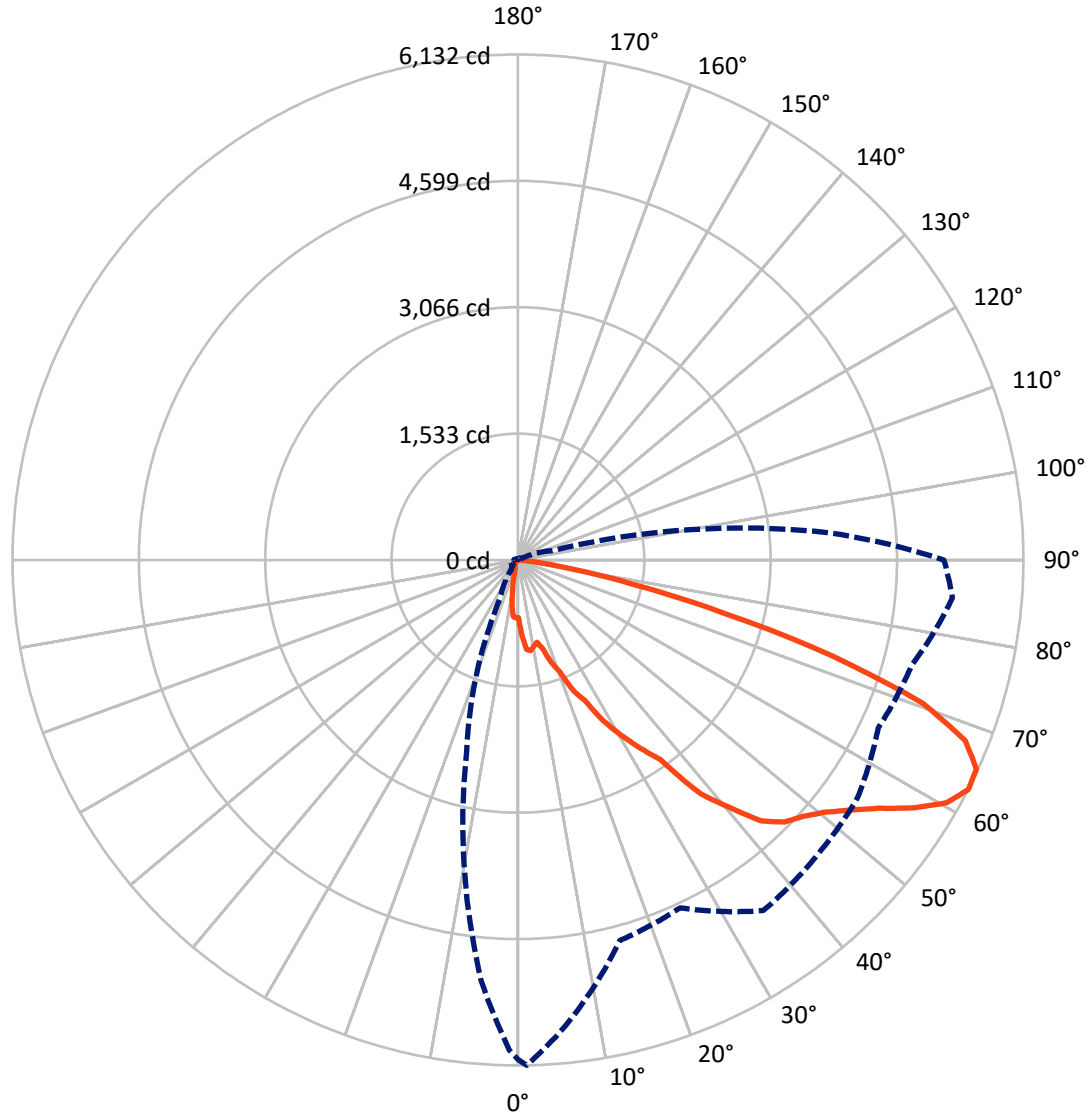
✕ Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 18.6 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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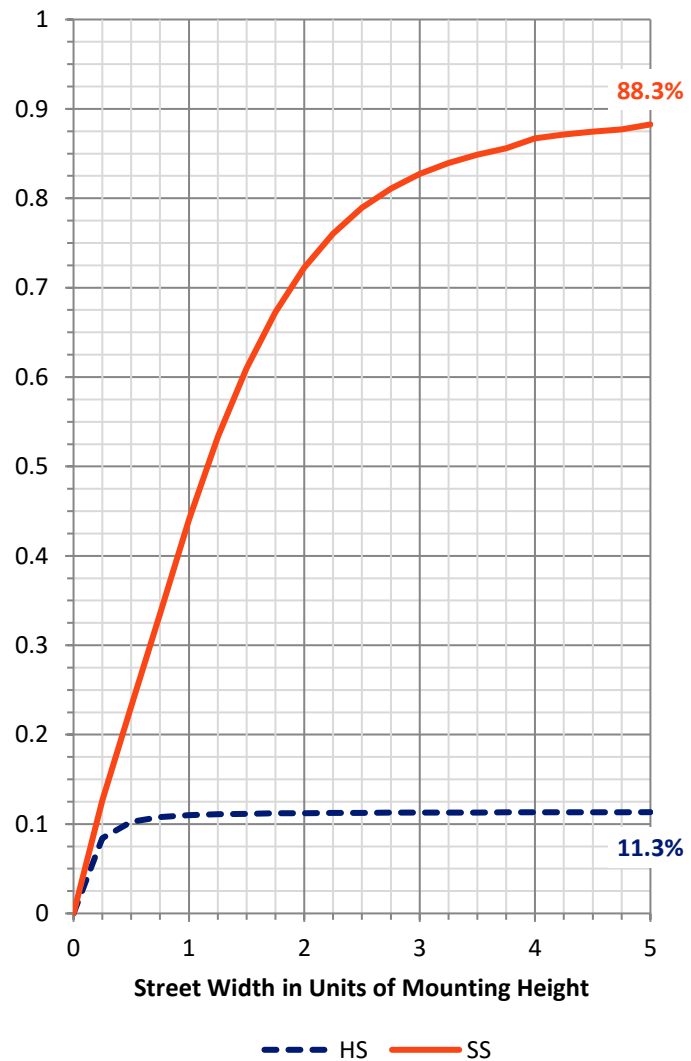
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	663.0	0.0	663.0
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	5135.0	0.0	5135.0
	% Fixture	88.6	0.0	88.6
Total	Lumens	5798.0	0.0	5798.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	78.0	1.3
10°-20°	203.8	3.5
20°-30°	329.5	5.7
30°-40°	551.9	9.5
40°-50°	902.5	15.6
50°-60°	1335.9	23.0
60°-70°	1533.7	26.5
70°-80°	758.4	13.1
80°-90°	104.1	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°	5798.0	100.0
0°-180°	5798.0	100.0

Coefficient of Utilization



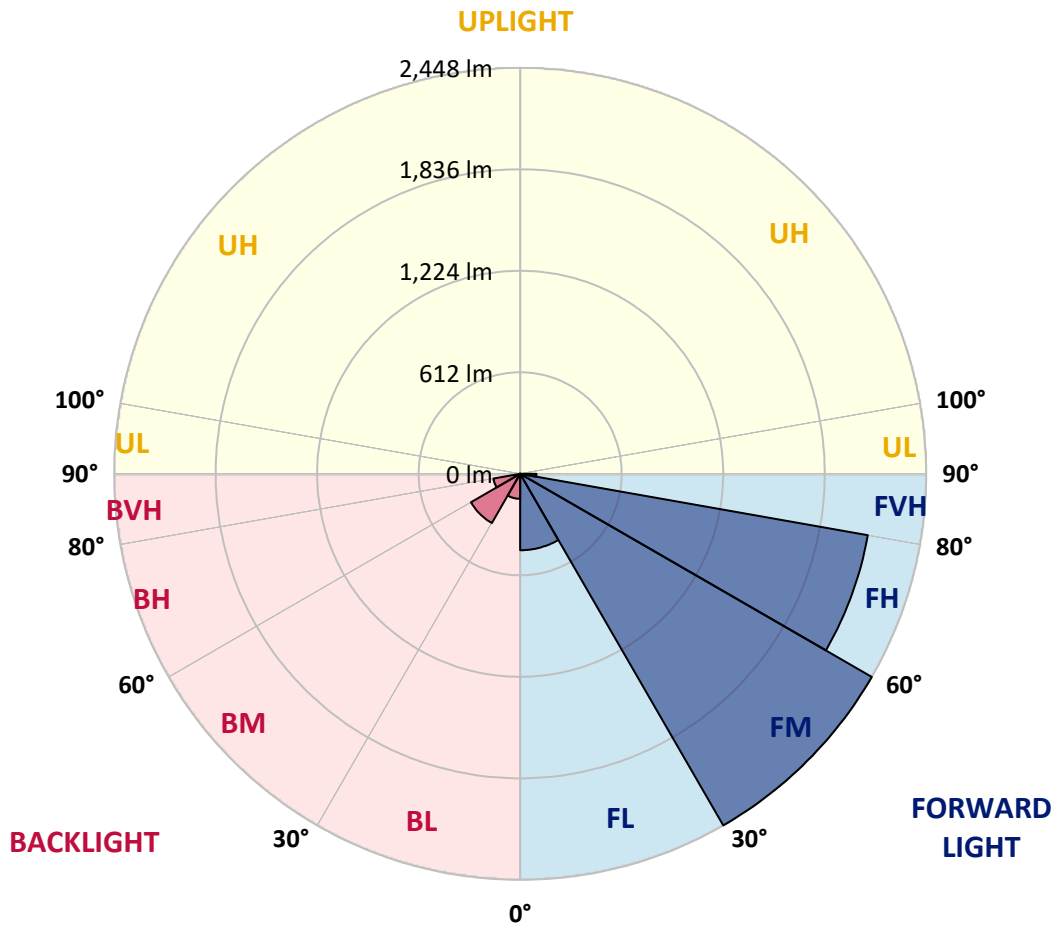
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	460.5	7.9			
FM (30°-60°)	2447.9	42.2			
FH (60°-80°)	2128.2	36.7			G2/5000
FVH (80°-90°)	98.3	1.7			G1/100
BL (0°-30°)	150.8	2.6	B1/500		
BM (30°-60°)	342.5	5.9	B1/1000		
BH (60°-80°)	163.9	2.8	B1/500		G1/500
BVH (80°-90°)	5.8	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°	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5
2.5°	900.7	905.0	884.8	882.2	835.2	893.7	895.4	902.3	859.4	776.1	892.4
5°	1077.8	1089.7	1074.1	1143.2	1163.0	1205.6	1127.3	1197.4	1167.6	1175.9	1192.7
7.5°	1098.9	1111.1	1143.8	1259.5	1366.2	1339.4	1330.8	1357.3	1355.0	1293.8	1324.2
10°	1055.0	1065.2	1119.7	1330.2	1376.8	1497.0	1526.4	1465.6	1440.9	1307.1	1248.6
12.5°	1007.1	1024.2	1093.6	1346.0	1485.8	1607.4	1704.2	1617.6	1535.4	1393.0	1339.4
15°	1098.9	1108.5	1217.5	1379.1	1501.3	1585.3	1664.5	1635.8	1623.2	1520.8	1339.4
17.5°	1279.0	1301.4	1380.4	1460.0	1556.5	1607.1	1588.2	1579.3	1547.3	1708.2	1520.5
20°	1407.2	1449.1	1552.5	1586.9	1510.3	1557.5	1545.9	1538.0	1512.9	1812.2	1728.6
22.5°	1684.7	1723.4	1725.3	1737.6	1559.1	1483.8	1464.7	1467.0	1581.0	1843.3	1987.7
25°	1873.7	1886.9	1991.3	1904.1	1692.6	1506.3	1433.3	1466.0	1630.2	2066.6	2231.2
27.5°	2182.9	2214.3	2279.4	1984.0	1772.6	1492.1	1375.8	1494.7	1759.7	2140.7	2501.8
30°	2435.0	2465.1	2569.8	2093.4	1842.0	1562.5	1400.6	1552.5	1840.3	2293.0	2744.9
32.5°	2639.6	2717.2	2836.1	2262.2	1839.3	1643.4	1527.1	1533.4	1939.4	2490.2	2985.5
35°	2900.9	2973.3	3056.8	2378.5	1959.6	1669.5	1564.4	1721.7	2086.8	2696.4	3309.3
37.5°	3490.0	3599.4	3434.2	2671.6	2099.7	1905.4	1711.8	1837.7	2241.1	2906.8	3754.3
40°	3849.5	3941.7	3782.1	2821.3	2342.2	2024.4	1974.8	2039.2	2392.1	3015.5	4089.7
42.5°	4203.7	4325.2	4058.6	3046.6	2572.5	2360.0	2224.6	2276.4	2610.5	3277.9	4467.0
45°	4460.0	4535.4	4118.4	3164.6	2889.0	2742.6	2652.4	2575.1	2915.1	3446.4	4710.5
47.5°	4588.9	4649.0	4236.4	3201.9	3077.3	3147.4	3345.0	3183.4	3184.7	3568.3	4841.7
50°	4767.3	4809.3	4302.4	3246.5	3281.8	3778.1	3877.9	3533.9	3492.6	3690.5	4863.1
52.5°	5018.1	5038.6	4430.6	3364.1	3588.1	4272.1	4308.1	4169.0	3800.9	3917.9	4910.7
55°	5351.5	5315.4	4659.6	3611.3	3907.6	4633.8	4682.1	4560.8	4188.5	4144.8	5058.1
57.5°	5710.9	5669.6	4998.9	3959.5	4254.2	4910.4	4939.1	4948.7	4445.8	4345.7	5308.5
60°	5968.6	5976.2	5426.1	4358.9	4469.6	5175.0	5117.5	5030.3	4705.5	4640.1	5430.4
62.5°	6058.8	6131.9	5758.8	4777.6	4655.3	5191.5	5102.3	5028.7	4821.8	4943.7	5290.7
65°	5985.2	6112.7	5836.2	5145.3	4767.6	4984.4	4891.5	4844.3	4818.2	5067.6	4981.4
67.5°	5692.4	5852.0	5614.8	5148.6	4359.3	4244.0	4353.7	4503.3	4416.8	4964.9	4548.3
70°	5036.6	5211.4	5101.0	4846.6	3631.4	3339.0	3459.9	3686.3	3625.1	4415.8	3910.9
72.5°	3778.8	4003.4	4025.2	4184.2	2882.7	2513.0	2530.5	2524.2	2629.6	3560.7	3051.9
75°	2427.4	2602.2	2838.5	3376.3	2189.9	1834.7	1666.9	1625.9	1822.5	2782.3	2184.9
77.5°	1409.1	1430.0	1539.0	2547.4	1568.4	1321.9	1207.6	1266.1	1334.8	1941.8	1448.1
80°	674.0	684.6	729.5	1310.7	1089.7	1144.2	1056.0	1121.7	916.5	1116.1	821.7
82.5°	213.8	216.1	223.7	643.9	676.7	757.9	485.7	651.2	566.6	674.7	547.1
85°	35.7	60.8	75.0	186.0	381.9	255.7	105.4	232.3	316.2	425.6	248.5
87.5°	0.0	0.0	0.0	3.3	31.1	14.5	2.3	13.2	48.6	94.8	11.2
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°	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5
2.5°	926.1	948.9	863.0	786.0	805.5	790.0	766.5	726.5	634.0	702.1	697.5
5°	1191.7	1149.5	1033.2	979.0	912.9	812.1	799.9	722.6	688.6	694.2	689.2
7.5°	1284.3	1208.6	1105.8	942.6	787.7	642.3	597.7	547.1	536.9	558.7	572.9
10°	1211.6	1131.3	1041.4	838.6	719.3	614.2	504.2	433.5	395.2	390.5	394.5
12.5°	1244.9	1158.4	973.4	818.1	693.5	598.4	475.4	368.7	285.5	291.7	275.2
15°	1268.1	1168.6	957.2	775.1	640.3	513.1	365.1	258.4	190.3	170.5	158.6
17.5°	1403.9	1261.8	936.7	725.6	566.0	399.5	229.3	149.7	127.5	120.6	115.0
20°	1578.3	1376.4	936.3	673.4	456.3	249.8	143.1	108.4	103.1	107.0	102.8
22.5°	1781.2	1529.1	986.2	608.3	327.4	157.6	111.3	96.1	90.9	94.2	94.5
25°	1985.4	1758.0	1026.9	546.5	228.0	120.9	99.1	88.5	82.6	85.6	83.9
27.5°	2354.1	1947.7	1017.6	467.5	167.8	106.4	92.2	82.9	74.0	78.6	78.3
30°	2595.3	2282.4	1053.6	356.8	133.2	93.2	85.9	75.7	66.1	71.4	71.0
32.5°	2883.7	2426.1	1092.6	273.9	110.7	88.2	77.3	67.4	61.8	65.1	64.4
35°	3207.8	2710.3	1020.9	228.0	96.1	79.6	68.4	60.8	55.8	57.5	57.5
37.5°	3780.4	2947.8	978.0	185.7	89.5	72.0	64.1	54.8	51.9	51.9	53.5
40°	4105.5	3310.6	849.8	147.0	91.5	66.4	59.8	50.2	46.3	45.9	47.6
42.5°	4528.4	3519.7	769.5	118.9	82.9	64.8	54.8	45.6	41.0	40.6	42.3
45°	4779.2	3636.7	656.5	93.5	74.3	75.3	50.9	42.0	35.0	33.7	36.7
47.5°	4937.5	3791.7	592.4	74.3	64.8	75.0	49.6	36.3	29.4	27.8	30.4
50°	5017.8	3868.3	579.8	63.8	56.2	67.1	56.8	30.4	25.1	22.8	25.1
52.5°	5101.3	3992.9	584.5	58.8	49.6	53.9	53.9	26.1	22.1	19.5	21.1
55°	5270.2	4176.9	574.2	55.8	45.6	41.0	34.7	23.1	20.2	17.2	18.8
57.5°	5477.7	4309.1	574.2	53.2	42.3	35.0	27.8	21.5	18.5	14.9	16.2
60°	5438.4	4170.0	545.8	50.6	39.6	32.7	25.1	19.8	17.2	13.5	14.5
62.5°	5168.4	3791.7	442.1	46.6	37.3	31.1	22.8	18.8	16.2	11.9	12.9
65°	4851.2	3389.9	307.3	42.3	34.7	28.1	20.5	17.8	14.9	10.6	11.2
67.5°	4469.3	2911.1	170.5	38.0	32.0	24.4	18.8	17.5	14.2	9.6	10.2
70°	3806.5	2197.8	91.5	34.7	30.1	22.5	17.8	17.5	14.2	9.3	9.6
72.5°	2857.6	1384.0	53.5	31.7	27.4	20.8	16.9	17.8	13.9	8.9	8.9
75°	1944.4	840.2	38.3	27.1	24.4	17.5	16.2	17.2	14.2	8.9	8.3
77.5°	1321.9	590.4	31.4	24.4	22.1	15.5	16.5	17.2	14.2	7.3	5.6
80°	825.3	304.6	23.8	19.5	19.2	13.5	16.5	14.9	9.3	1.7	0.0
82.5°	577.2	113.3	13.9	14.9	14.9	9.6	12.9	10.6	5.3	0.0	0.0
85°	242.2	19.5	7.6	10.6	9.3	5.6	10.2	7.9	3.3	0.0	0.0
87.5°	4.3	0.0	3.0	6.3	6.6	3.3	5.3	3.3	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°	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5
2.5°	719.3	687.9	621.8	653.5	650.2	664.8	666.1	632.4	705.1	750.0	756.6
5°	689.9	668.7	665.1	646.9	642.3	669.1	654.5	653.5	688.6	739.8	740.1
7.5°	573.2	557.1	564.7	543.5	489.0	492.3	497.2	518.1	548.1	581.8	594.1
10°	393.5	435.5	404.7	402.1	396.5	379.0	365.1	376.0	415.0	446.0	457.6
12.5°	280.8	287.4	306.3	299.3	308.9	294.1	288.4	322.5	360.5	392.2	415.0
15°	164.2	175.4	186.7	210.5	220.0	217.1	234.3	262.7	293.4	307.9	336.0
17.5°	115.6	116.6	118.9	144.7	161.6	168.2	178.4	199.9	212.4	219.1	230.6
20°	101.1	98.1	94.2	108.7	124.6	132.8	129.8	146.7	156.9	163.5	171.8
22.5°	91.5	86.6	84.3	89.2	101.4	108.7	110.0	119.9	135.5	140.1	142.7
25°	82.6	79.3	77.6	80.3	86.9	93.8	95.2	108.0	121.9	123.9	129.2
27.5°	76.7	70.4	71.0	73.0	76.0	84.6	87.2	94.5	114.6	117.0	118.6
30°	70.4	63.8	65.7	67.7	66.4	77.0	80.9	89.2	108.7	112.3	114.3
32.5°	64.1	59.1	58.8	60.8	63.1	68.7	77.3	86.9	104.7	109.7	114.6
35°	57.2	53.2	53.9	54.2	57.2	64.4	70.7	75.7	87.9	90.5	92.2
37.5°	52.2	48.9	48.2	51.5	54.5	60.1	62.4	64.8	80.9	86.9	87.2
40°	46.3	44.3	44.3	46.6	53.2	52.5	55.5	62.8	78.3	84.6	85.2
42.5°	42.0	39.3	40.0	42.3	46.9	43.6	49.6	60.1	77.3	83.6	83.3
45°	35.4	34.7	36.0	38.0	40.0	37.0	46.3	57.5	74.0	82.3	80.0
47.5°	29.4	29.4	31.1	33.0	32.0	33.0	42.0	53.9	72.0	79.6	78.0
50°	24.1	24.4	26.1	29.4	26.4	29.1	37.7	50.2	68.7	77.0	75.7
52.5°	20.5	20.8	21.8	24.1	22.8	26.4	34.7	46.6	65.4	72.4	71.7
55°	17.8	18.5	18.5	19.8	20.5	24.8	31.4	43.0	60.5	68.1	66.7
57.5°	15.9	16.5	16.2	17.2	17.8	21.8	28.1	39.0	55.5	61.8	59.8
60°	14.2	14.9	14.5	15.9	15.5	18.8	24.4	34.7	50.2	55.2	53.5
62.5°	12.6	13.2	13.2	13.9	14.2	15.9	21.1	30.7	44.9	48.9	47.6
65°	11.2	11.9	12.2	11.9	12.6	13.5	17.8	27.8	39.0	43.0	41.0
67.5°	10.2	10.9	11.6	10.2	10.9	11.2	15.2	24.8	34.4	37.7	36.0
70°	9.9	10.2	10.2	8.9	8.6	8.9	13.2	21.1	30.1	33.4	31.1
72.5°	9.3	9.6	9.3	7.3	6.3	6.9	11.2	17.8	25.4	28.1	26.1
75°	8.6	8.9	8.6	5.9	4.0	5.0	9.3	15.5	21.8	23.1	22.1
77.5°	7.3	7.9	7.9	4.3	1.3	3.0	6.9	12.6	18.2	18.2	18.5
80°	0.7	2.0	3.3	2.3	0.0	0.3	2.3	6.6	11.6	11.2	12.2
82.5°	0.0	0.0	0.3	0.0	0.0	0.0	0.0	0.0	4.0	3.0	3.3
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°	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5	698.5
2.5°	741.1	730.8	743.7	783.0	767.2	770.2	759.6	824.7	898.4	900.7
5°	740.8	731.5	750.7	749.0	794.3	843.5	891.1	968.1	1077.1	1077.8
7.5°	588.4	643.3	657.5	653.2	711.3	779.1	852.4	999.8	1089.3	1098.9
10°	530.6	554.4	583.5	594.1	618.2	682.6	765.5	932.4	1032.8	1055.0
12.5°	459.9	535.9	574.6	649.6	663.4	672.7	803.5	948.6	1009.7	1007.1
15°	380.9	447.0	508.2	599.7	637.3	734.5	837.6	1027.5	1063.9	1098.9
17.5°	269.6	319.5	413.3	509.5	624.5	730.2	931.4	1168.6	1237.3	1279.0
20°	180.4	204.5	289.4	416.6	562.3	667.4	969.7	1296.2	1371.2	1407.2
22.5°	146.4	157.9	201.9	305.3	480.4	664.4	985.2	1435.3	1636.8	1684.7
25°	128.9	136.8	160.2	226.0	398.8	651.2	1071.2	1591.9	1835.0	1873.7
27.5°	112.7	124.6	142.1	186.3	342.0	642.0	1114.8	1854.9	2144.9	2182.9
30°	107.7	122.2	139.1	169.8	302.3	606.3	1184.1	2092.1	2367.3	2435.0
32.5°	116.3	121.3	129.5	155.6	271.6	568.6	1306.1	2375.6	2551.3	2639.6
35°	92.2	101.1	115.6	142.7	258.7	566.6	1375.1	2557.9	2846.4	2900.9
37.5°	90.2	98.5	117.3	139.1	274.2	581.8	1477.5	2931.6	3378.3	3490.0
40°	87.6	98.1	116.0	137.4	274.2	596.7	1543.0	3230.6	3736.1	3849.5
42.5°	86.6	100.1	115.6	144.4	265.6	605.0	1641.7	3529.0	4114.1	4203.7
45°	85.9	102.1	116.6	152.6	263.7	632.1	1697.6	3674.0	4357.3	4460.0
47.5°	84.3	102.1	130.2	147.7	252.8	629.4	1769.9	3889.1	4502.3	4588.9
50°	82.9	102.8	147.4	138.4	254.4	613.2	1868.1	4091.0	4705.5	4767.3
52.5°	80.0	105.1	144.7	125.6	249.5	611.6	2014.4	4378.1	4972.8	5018.1
55°	73.3	102.1	130.8	109.7	231.9	592.7	2208.4	4751.5	5343.5	5351.5
57.5°	67.4	94.8	109.4	100.8	194.3	595.0	2375.6	5095.1	5673.9	5710.9
60°	61.5	98.5	84.9	93.8	160.9	552.8	2456.5	5226.6	5914.5	5968.6
62.5°	55.8	90.9	72.4	86.2	143.4	513.4	2400.3	5120.8	5945.2	6058.8
65°	49.6	63.1	61.1	77.3	145.0	458.3	2212.7	4811.3	5828.6	5985.2
67.5°	42.6	49.6	53.9	66.7	155.3	411.0	1890.9	4314.3	5515.0	5692.4
70°	37.3	44.6	46.9	58.5	161.6	380.0	1492.1	3624.8	4872.7	5036.6
72.5°	31.1	41.3	42.0	51.2	155.6	349.2	1063.2	2602.2	3700.1	3778.8
75°	26.8	34.4	38.0	43.0	130.8	260.7	585.8	1610.7	2339.6	2427.4
77.5°	24.1	26.1	28.7	29.7	55.5	135.8	201.5	993.2	1310.0	1409.1
80°	18.5	20.5	19.8	20.5	30.4	46.9	76.7	465.5	618.8	674.0
82.5°	5.9	9.9	10.9	9.3	19.8	23.1	22.1	160.9	201.2	213.8
85°	1.3	3.6	1.7	0.0	6.6	11.9	1.7	24.4	48.2	35.7
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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