

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: P366720

Luminaire Tested: **MSA-SA1A-830-U-SLL**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P366720
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-SA1A-830-U-SLL
Description: MESA POST TOP DECORATIVE LUMINAIRE. (1) 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: 2751 lumens
Efficiency: N/A
Efficacy: 80.9 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G1

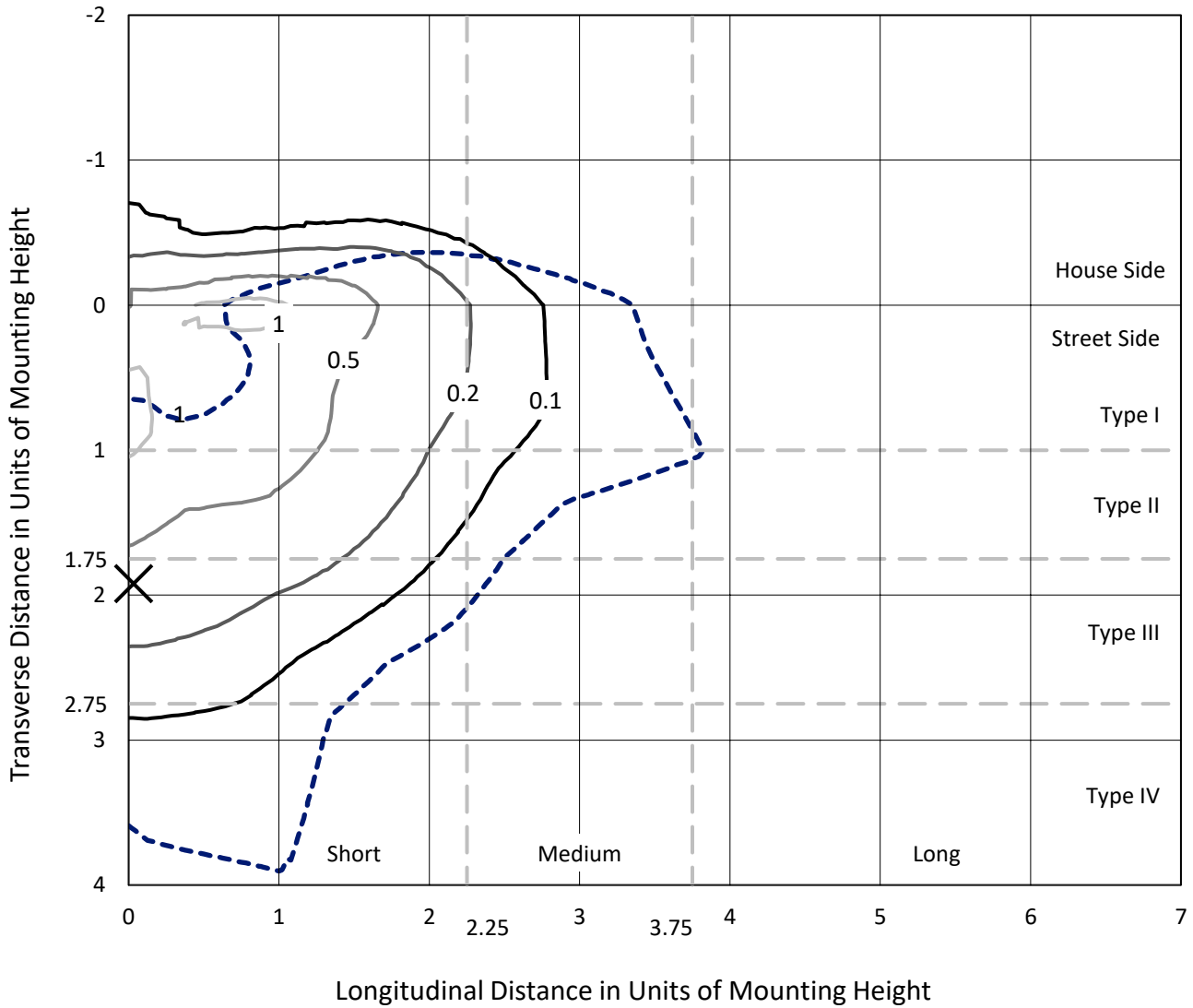
Input Watts (W): 34
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

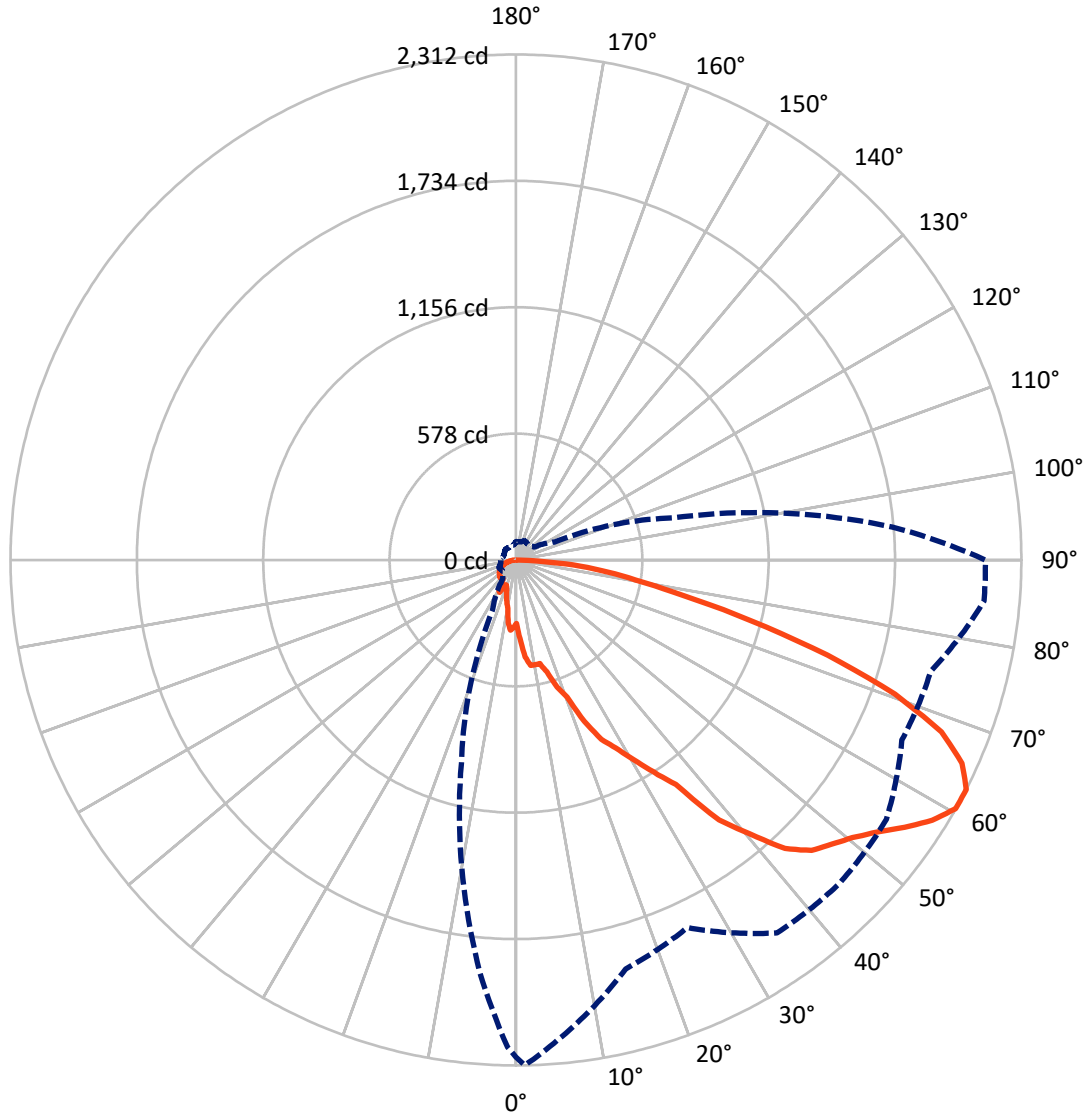
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 1.2 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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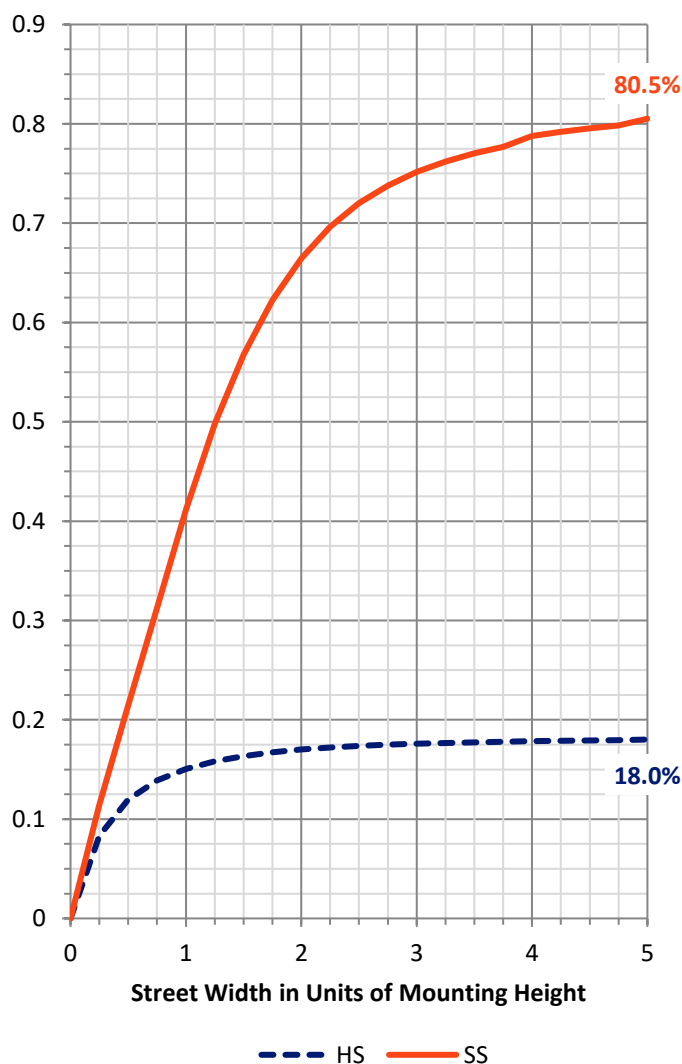
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	500.9	0.0	500.9
	% Fixture	18.2	0.0	18.2
Street Side	Lumens	2250.1	0.0	2250.1
	% Fixture	81.8	0.0	81.8
Total	Lumens	2751.0	0.0	2751.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.3	1.2
10°-20°	96.6	3.5
20°-30°	170.6	6.2
30°-40°	265.7	9.7
40°-50°	437.6	15.9
50°-60°	624.5	22.7
60°-70°	662.3	24.1
70°-80°	365.8	13.3
80°-90°	94.6	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°	2751.0	100.0
0°-180°	2751.0	100.0

Coefficient of Utilization



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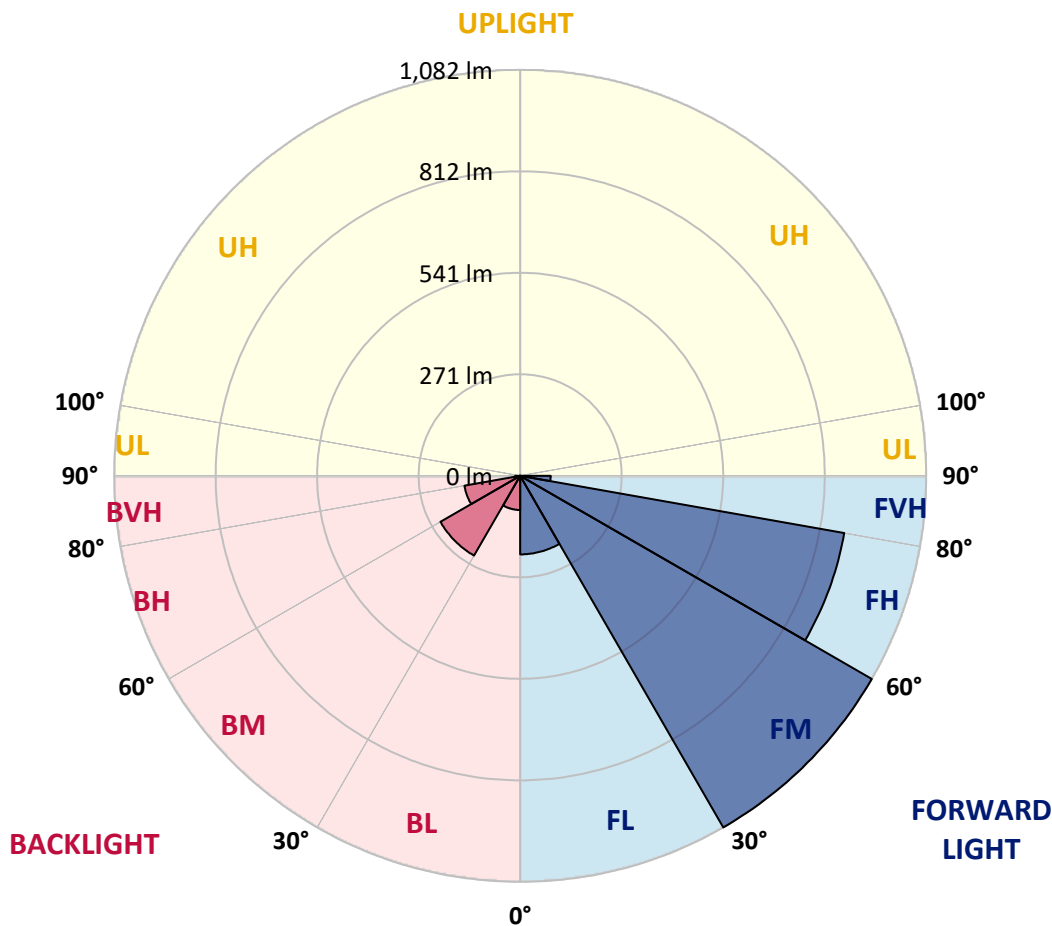
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	209.4	7.6			
FM (30°-60°)	1082.3	39.3			
FH (60°-80°)	877.1	31.9			G1/1800
FVH (80°-90°)	81.3	3.0			G1/100
BL (0°-30°)	91.1	3.3	B0/110		
BM (30°-60°)	245.6	8.9	B1/1000		
BH (60°-80°)	150.9	5.5	B1/500		G1/500
BVH (80°-90°)	13.3	0.5			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G1

Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1
2.5°	356.7	359.8	353.5	346.4	317.2	345.4	336.9	352.6	347.5	313.6	375.7
5°	440.8	446.4	440.3	461.5	462.8	468.3	417.7	449.2	438.3	435.5	466.8
7.5°	481.4	487.1	502.8	540.5	570.0	543.3	513.8	507.3	498.7	476.5	495.4
10°	483.9	487.1	508.1	588.2	602.5	621.4	602.3	557.4	538.8	490.3	475.9
12.5°	476.3	486.3	513.4	611.0	653.5	674.2	678.8	628.8	583.3	528.0	520.6
15°	527.4	531.1	569.9	627.3	656.5	674.0	689.2	658.4	644.1	600.3	541.5
17.5°	600.7	610.8	642.5	663.7	683.5	686.8	674.3	662.3	639.6	698.1	635.4
20°	650.4	669.8	708.7	712.7	671.2	678.6	676.8	677.6	664.7	772.8	738.4
22.5°	781.8	802.7	808.1	784.8	706.6	673.1	679.8	699.1	750.1	842.8	881.8
25°	900.7	908.9	957.6	897.8	773.1	700.1	689.1	739.2	822.3	960.5	988.3
27.5°	962.8	973.3	1005.8	875.6	781.4	665.4	639.7	715.9	800.7	905.1	1027.0
30°	1042.2	1059.0	1103.2	897.8	806.3	688.0	631.3	704.2	797.9	941.4	1109.0
32.5°	1124.0	1156.8	1189.6	975.9	802.9	722.8	685.1	691.0	823.3	1017.5	1193.9
35°	1232.4	1261.3	1289.6	1021.0	872.8	751.7	714.3	776.6	888.4	1105.8	1312.3
37.5°	1464.2	1509.9	1435.2	1149.4	948.9	882.3	814.9	851.7	957.3	1179.3	1505.7
40°	1611.8	1646.2	1574.1	1236.9	1082.9	970.3	959.2	962.3	1052.2	1242.3	1635.9
42.5°	1758.6	1805.0	1690.3	1356.9	1245.0	1152.0	1094.8	1090.9	1158.5	1355.5	1783.9
45°	1868.0	1895.4	1730.3	1458.1	1418.8	1349.8	1306.9	1239.0	1298.1	1433.9	1875.5
47.5°	1920.1	1942.4	1794.5	1516.9	1531.5	1535.1	1612.4	1496.5	1420.1	1486.9	1923.6
50°	1985.1	1995.7	1832.3	1568.7	1638.5	1796.9	1815.4	1619.1	1539.0	1544.7	1952.0
52.5°	2062.8	2067.2	1887.4	1628.5	1746.8	1969.1	1940.4	1826.8	1652.0	1650.3	2005.5
55°	2160.5	2157.9	1956.5	1709.0	1824.1	2071.5	2049.7	1967.0	1775.3	1737.7	2088.8
57.5°	2247.4	2245.8	2048.3	1783.1	1889.1	2124.1	2130.5	2108.6	1859.1	1800.3	2179.1
60°	2290.0	2310.4	2152.6	1864.2	1893.3	2147.8	2150.2	2115.4	1952.8	1880.7	2203.1
62.5°	2273.5	2312.3	2203.9	1937.0	1855.2	2083.0	2093.0	2068.9	1948.5	1965.1	2149.4
65°	2198.2	2243.0	2159.5	1975.9	1831.9	1974.3	1976.8	1916.1	1887.5	2021.0	2023.7
67.5°	2056.9	2099.0	2017.9	1914.0	1671.9	1681.4	1738.0	1742.9	1701.3	1978.8	1847.1
70°	1809.7	1839.3	1788.6	1761.0	1397.5	1341.9	1403.3	1429.6	1448.6	1826.5	1635.1
72.5°	1432.7	1490.0	1498.0	1516.0	1125.1	1032.6	1078.1	1039.1	1162.6	1554.6	1335.9
75°	1060.0	1108.3	1160.2	1260.8	886.8	773.1	767.5	747.6	862.9	1250.2	990.8
77.5°	749.1	779.9	819.8	1007.1	669.2	595.4	598.9	578.7	623.2	944.9	684.4
80°	536.9	553.1	571.6	663.5	493.7	513.7	514.2	495.1	463.4	641.7	456.8
82.5°	382.6	395.2	416.4	437.6	368.1	421.1	420.7	419.4	367.4	433.7	285.8
85°	213.1	229.9	266.7	342.8	265.8	301.0	264.7	291.6	269.7	288.8	144.7
87.5°	15.0	13.3	59.7	198.6	124.0	90.6	47.5	94.1	120.7	150.9	20.2
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°	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1
2.5°	388.5	393.2	374.9	347.4	354.8	346.7	336.4	320.4	287.4	307.8	308.0
5°	466.6	448.8	434.5	421.1	398.4	364.0	359.5	332.0	316.5	324.7	323.5
7.5°	491.0	465.8	444.3	396.1	354.0	300.8	284.8	268.5	261.7	281.4	289.3
10°	464.2	437.9	416.8	358.2	329.6	296.4	252.3	229.7	216.4	221.6	224.7
12.5°	485.8	459.0	392.6	359.9	312.8	292.5	253.9	220.8	201.0	205.9	200.1
15°	506.6	470.4	404.1	339.0	300.8	271.4	240.2	206.0	182.8	174.5	170.1
17.5°	582.7	522.6	402.8	327.2	283.4	249.6	212.0	174.6	159.1	150.6	143.2
20°	675.5	591.8	410.0	315.1	265.0	222.4	181.4	146.7	135.9	130.3	128.3
22.5°	785.9	680.4	451.2	313.3	247.6	202.5	164.6	143.0	130.8	124.7	122.2
25°	873.6	772.1	481.7	325.1	246.7	186.1	154.5	158.9	153.3	155.1	140.3
27.5°	958.8	797.1	464.6	319.9	221.9	157.0	152.1	161.3	166.1	167.5	167.0
30°	1030.7	902.6	468.3	290.5	187.4	127.9	116.4	120.9	134.2	155.1	159.1
32.5°	1136.1	953.0	500.2	272.7	167.5	114.4	101.6	99.9	102.9	110.5	117.1
35°	1259.3	1069.2	509.2	268.1	153.8	108.4	99.5	95.5	97.1	102.8	104.1
37.5°	1489.0	1153.8	542.3	262.3	148.7	104.8	97.9	96.4	99.9	104.5	107.2
40°	1615.7	1306.0	543.9	257.4	142.2	103.3	98.9	98.3	100.4	106.8	108.4
42.5°	1784.6	1392.8	569.0	251.6	139.9	105.3	101.1	100.8	102.7	106.4	109.3
45°	1887.5	1450.9	570.3	248.3	139.4	114.1	103.9	102.9	102.5	104.8	107.5
47.5°	1953.9	1534.6	586.6	244.6	142.6	116.4	107.2	103.2	101.9	102.8	104.8
50°	2016.7	1601.4	617.4	244.0	145.9	114.1	113.1	103.1	100.4	100.0	101.5
52.5°	2093.9	1711.4	655.5	249.1	145.1	110.8	117.5	102.5	97.7	96.8	98.3
55°	2206.2	1829.3	695.9	244.8	136.8	104.4	113.2	102.1	94.9	93.2	94.5
57.5°	2278.9	1896.9	741.2	241.2	124.3	99.6	109.3	102.4	95.2	91.3	92.1
60°	2254.8	1860.6	758.9	219.2	112.4	95.9	100.1	100.3	92.8	89.2	89.8
62.5°	2148.0	1729.1	742.4	193.6	103.6	90.5	90.6	96.3	85.8	83.3	84.4
65°	1998.7	1565.5	675.4	176.9	99.5	84.9	82.8	84.5	76.5	74.6	76.8
67.5°	1815.6	1363.9	575.6	159.3	98.0	77.3	74.8	74.1	69.0	66.9	69.0
70°	1585.8	1142.1	460.2	146.8	92.4	69.0	67.0	66.3	62.1	60.5	62.3
72.5°	1274.6	891.8	355.1	137.4	86.2	61.4	59.7	58.9	55.3	53.0	55.3
75°	906.6	681.5	263.8	122.8	77.6	53.7	51.7	50.6	47.3	45.1	47.1
77.5°	644.3	511.6	184.2	101.6	63.9	45.4	44.2	42.5	39.5	37.0	39.0
80°	476.3	365.5	118.8	78.4	48.9	36.3	35.6	34.4	31.6	28.6	30.0
82.5°	313.6	263.5	68.1	53.1	35.5	26.2	26.7	25.9	23.2	20.0	20.8
85°	140.4	156.1	36.2	29.2	23.1	15.8	17.2	16.7	14.7	11.6	11.9
87.5°	13.5	26.3	11.1	10.7	8.5	4.9	6.1	5.2	4.4	2.8	2.1
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°	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1
2.5°	312.7	293.8	275.0	286.5	286.8	289.8	290.2	278.9	288.0	294.9	302.1
5°	317.6	305.3	306.0	294.9	288.9	296.6	295.0	292.0	297.4	305.0	314.3
7.5°	281.8	273.8	272.5	261.8	235.9	230.1	235.0	237.0	244.3	256.0	265.9
10°	220.0	235.9	218.0	213.9	207.1	193.7	186.0	185.0	200.6	210.1	218.4
12.5°	198.2	194.2	192.1	180.8	180.8	166.6	162.1	166.2	190.2	197.0	207.7
15°	168.9	165.9	156.1	150.5	147.8	142.0	146.8	150.9	173.3	173.8	185.0
17.5°	140.2	138.4	129.1	128.0	125.4	122.8	127.2	136.8	149.0	146.8	152.1
20°	125.4	119.3	110.8	113.9	111.1	109.1	107.2	120.8	129.4	132.2	135.2
22.5°	121.6	110.7	105.6	102.8	102.9	99.7	100.1	111.5	124.4	126.2	124.3
25°	139.0	119.5	103.1	94.9	91.8	90.8	93.8	103.9	119.5	123.2	124.7
27.5°	162.6	129.8	106.1	92.2	86.1	86.6	91.0	98.0	116.4	123.1	124.8
30°	156.1	122.0	106.3	90.2	82.6	85.4	87.0	93.7	114.0	124.0	132.7
32.5°	120.4	109.7	106.9	91.8	88.8	84.4	86.6	93.0	106.9	113.2	113.6
35°	102.0	93.8	92.0	88.2	84.0	82.1	84.6	90.2	99.3	103.2	102.7
37.5°	101.2	92.2	84.9	83.3	81.6	81.0	82.5	87.7	96.9	103.7	102.3
40°	102.5	91.4	84.0	81.2	81.8	79.4	80.9	87.3	97.3	103.7	102.4
42.5°	100.9	90.5	82.8	80.6	81.3	78.0	79.7	86.4	96.3	103.9	101.3
45°	97.7	88.4	82.1	78.5	81.6	76.6	78.8	84.0	93.0	101.3	98.4
47.5°	94.5	85.8	79.3	77.0	80.1	75.3	76.2	80.8	89.8	98.0	95.5
50°	91.0	82.6	77.0	76.4	78.5	75.0	73.6	77.3	86.0	94.1	92.0
52.5°	87.3	80.0	75.4	75.2	77.2	73.3	71.2	74.1	81.8	90.0	88.2
55°	83.7	77.0	73.4	74.1	76.4	71.8	69.2	71.0	77.4	85.4	83.0
57.5°	80.1	73.7	70.8	72.6	74.4	70.0	66.6	67.7	72.9	80.8	78.0
60°	76.9	70.8	67.8	70.1	71.7	67.1	63.3	63.9	68.6	75.7	73.2
62.5°	72.8	67.5	63.7	66.6	67.8	63.4	59.3	60.1	63.8	70.5	68.6
65°	66.9	63.5	59.9	61.9	63.5	59.0	55.1	56.1	58.9	65.1	63.8
67.5°	61.8	58.6	56.2	57.8	58.1	54.6	51.1	51.7	53.9	59.8	58.3
70°	56.2	53.1	51.3	52.5	52.3	49.4	46.7	46.9	48.7	54.1	52.1
72.5°	50.1	47.1	46.2	46.9	46.3	43.7	41.1	42.1	43.3	47.3	45.7
75°	43.5	40.9	40.3	41.0	40.2	37.6	35.4	36.3	37.4	40.7	38.7
77.5°	36.7	34.3	34.4	34.6	33.5	31.8	29.5	30.4	31.1	33.4	31.4
80°	29.2	27.4	27.9	27.9	26.7	25.5	23.4	23.6	24.0	24.8	23.4
82.5°	21.4	21.4	21.4	21.5	19.0	19.4	17.5	17.4	17.0	16.8	15.9
85°	12.7	13.2	13.5	13.9	10.3	12.0	10.4	10.0	9.2	8.4	8.1
87.5°	2.8	3.6	3.6	3.5	0.0	1.3	0.7	1.1	0.3	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°	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1	290.1
2.5°	293.8	285.8	300.8	314.1	312.0	319.7	301.7	328.4	356.7	356.7
5°	311.9	305.0	308.9	316.7	322.5	349.5	371.9	394.2	440.3	440.8
7.5°	263.0	277.7	281.1	278.9	304.1	338.8	375.8	439.3	478.3	481.4
10°	245.9	252.6	263.1	269.0	279.3	313.5	359.4	434.8	476.2	483.9
12.5°	222.8	247.5	263.5	296.4	304.5	311.3	384.3	449.6	478.2	476.3
15°	197.6	216.3	239.4	275.7	296.4	348.4	399.2	497.1	513.3	527.4
17.5°	157.5	171.3	202.0	243.4	294.6	342.6	435.7	555.9	586.1	600.7
20°	129.6	129.8	160.5	215.3	271.1	318.0	449.6	604.6	642.9	650.4
22.5°	122.6	116.4	132.6	177.2	245.2	332.5	477.7	683.0	762.9	781.8
25°	118.7	111.2	121.3	156.3	226.7	340.2	534.1	790.7	893.4	900.7
27.5°	120.3	123.8	127.0	139.4	203.2	325.9	521.0	838.9	948.9	962.8
30°	131.1	136.7	129.4	133.6	183.8	305.2	544.4	917.1	1018.9	1042.2
32.5°	109.1	106.9	106.3	115.6	164.5	286.5	593.4	1027.3	1094.7	1124.0
35°	98.4	95.1	96.4	107.1	155.0	283.8	620.9	1118.4	1214.4	1232.4
37.5°	98.0	94.1	95.9	103.9	158.3	288.6	665.0	1264.8	1425.6	1464.2
40°	97.1	94.9	95.9	101.9	154.9	291.3	690.3	1387.7	1572.7	1611.8
42.5°	96.9	95.9	96.8	103.5	151.3	292.5	725.4	1498.8	1727.7	1758.6
45°	96.5	97.6	97.6	104.8	149.7	300.5	746.1	1553.2	1830.0	1868.0
47.5°	94.6	97.9	103.1	104.4	143.1	296.8	775.4	1635.9	1884.3	1920.1
50°	92.2	97.5	110.0	101.7	142.0	287.7	809.5	1701.4	1954.0	1985.1
52.5°	89.0	96.8	108.4	96.5	140.2	286.1	857.5	1786.6	2035.3	2062.8
55°	84.5	94.4	103.5	91.3	135.6	281.0	930.7	1892.2	2141.7	2160.5
57.5°	80.4	90.8	96.3	88.4	124.8	282.1	981.7	1978.3	2231.0	2247.4
60°	76.6	90.4	86.0	85.3	113.7	267.8	998.3	1977.4	2264.3	2290.0
62.5°	72.6	85.3	78.8	81.2	104.0	253.1	963.2	1892.6	2228.3	2273.5
65°	67.4	73.2	72.8	78.2	104.3	229.2	882.7	1743.1	2138.8	2198.2
67.5°	61.3	64.7	67.0	73.4	107.6	210.7	753.2	1563.3	1986.3	2056.9
70°	55.0	58.5	61.0	67.1	110.7	202.1	599.5	1310.7	1738.0	1809.7
72.5°	48.6	52.2	54.2	59.5	106.5	183.8	443.7	1019.8	1395.0	1432.7
75°	41.9	45.4	47.0	51.9	92.5	152.1	306.4	772.4	1021.8	1060.0
77.5°	35.1	38.8	39.4	43.4	70.6	116.3	196.4	592.5	723.6	749.1
80°	28.0	31.8	31.8	33.9	49.7	80.0	117.6	446.9	526.9	536.9
82.5°	20.2	24.2	23.9	24.0	34.3	49.5	68.1	334.9	380.7	382.6
85°	11.9	14.7	14.6	13.3	20.3	26.7	36.8	208.0	212.5	213.1
87.5°	2.3	3.5	3.1	1.3	5.6	7.9	10.7	38.6	15.4	15.0
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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