

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: P368699

Luminaire Tested: **MSA-SA4D-830-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368699
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-SA4D-830-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (4) 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: 15250 lumens
Efficiency: N/A
Efficacy: 58.9 lumens/watt
Luminous Opening: Rectangular (W 1' x L: 1' x H: 0')
IES Classification: Type IV - Short
BUG Rating: B1 - U0 - G3

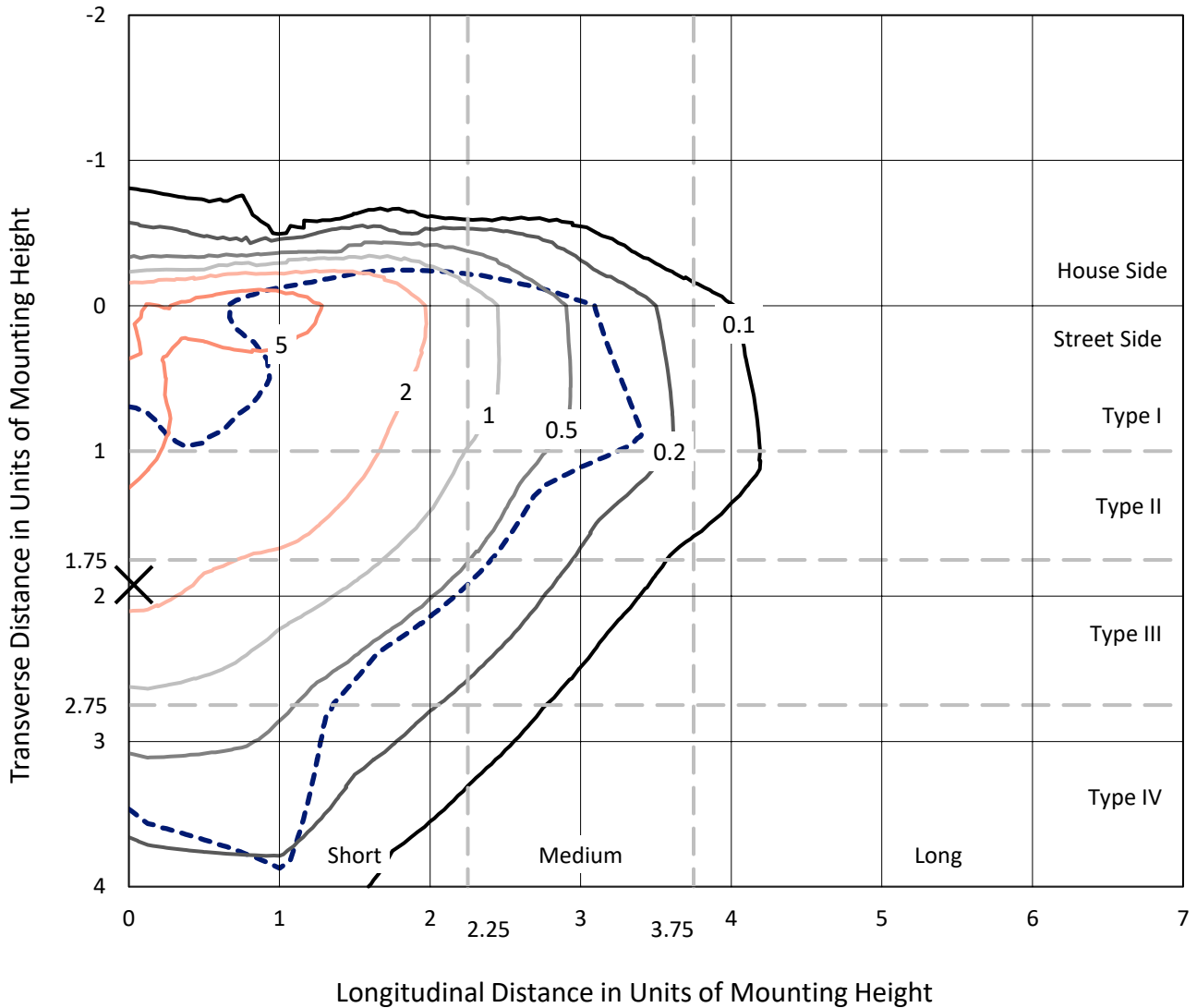
Input Watts (W): 259
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 28.75 FT



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Iso-Footcandle Lines of Horizontal Illumination

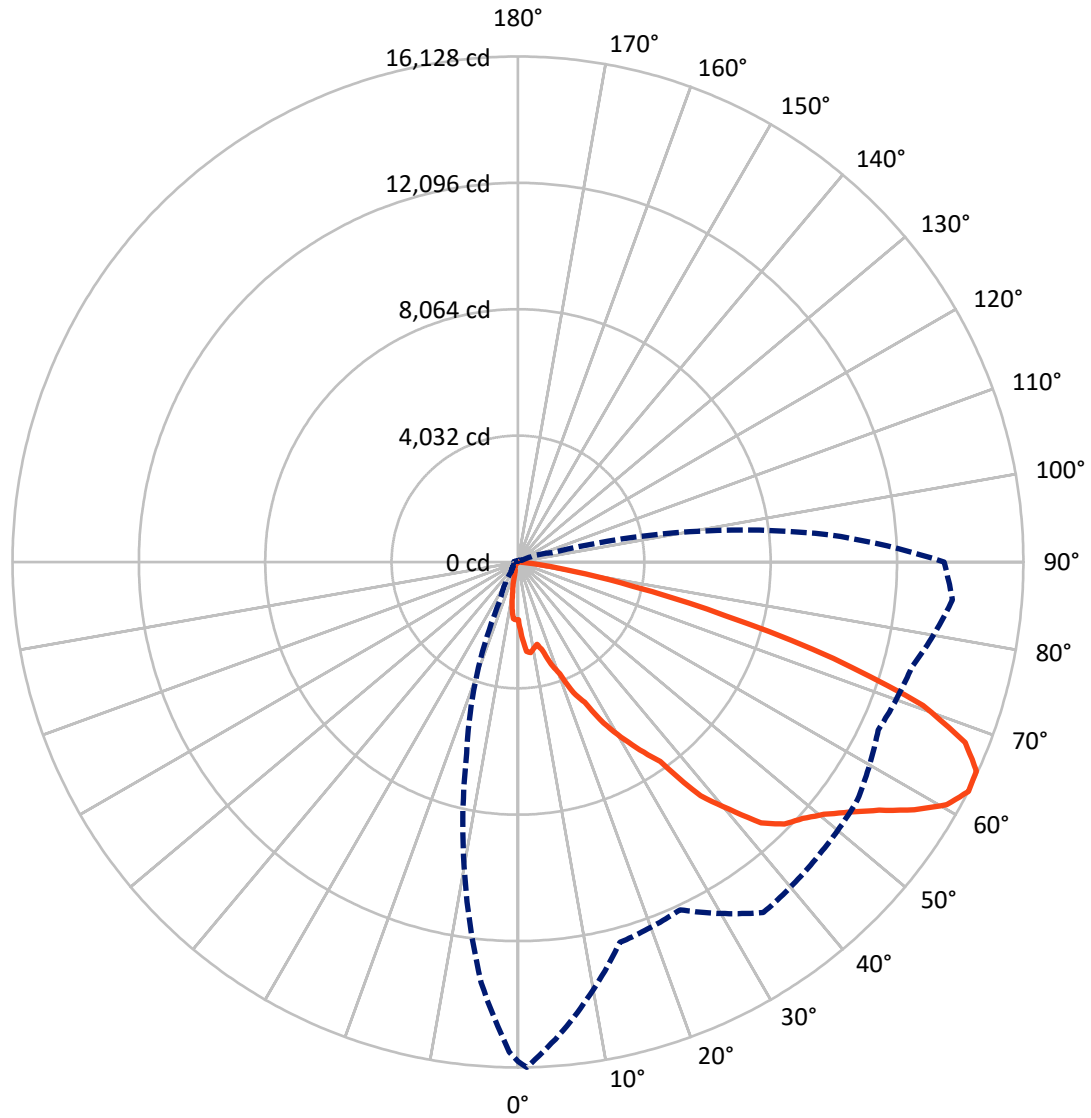
✕ Max cd
 - - - 1/2 Max cd



Based on 25 foot mounting height. Maximum calculated value = 7.8 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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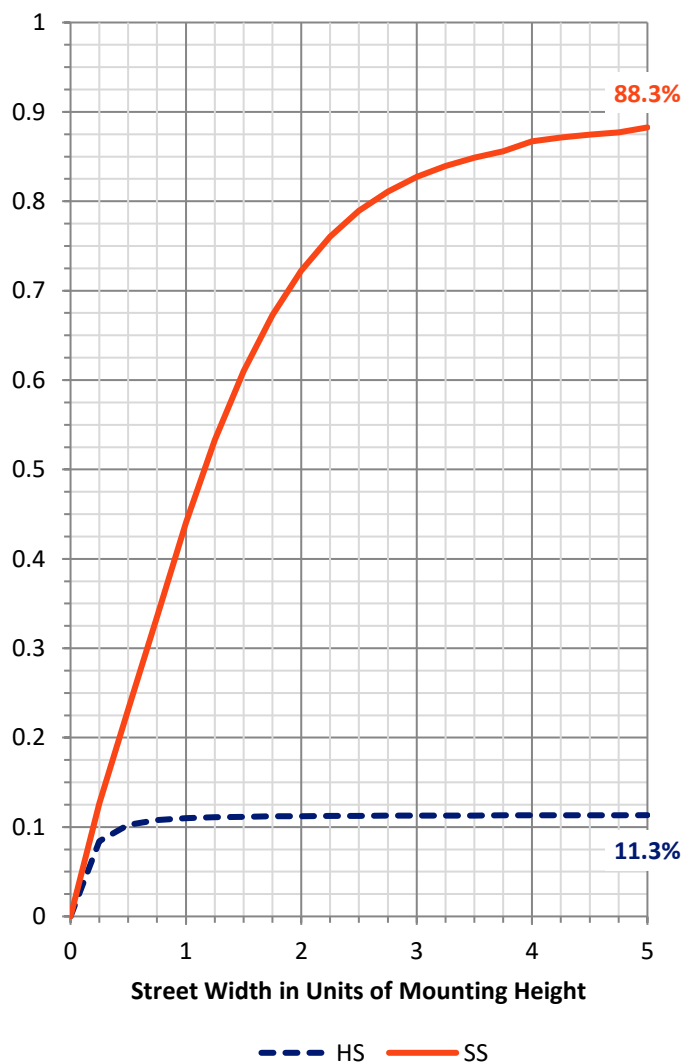
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1743.9	0.0	1743.9
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	13506.1	0.0	13506.1
	% Fixture	88.6	0.0	88.6
Total	Lumens	15250.0	0.0	15250.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	205.3	1.3
10°-20°	536.1	3.5
20°-30°	866.7	5.7
30°-40°	1451.7	9.5
40°-50°	2373.7	15.6
50°-60°	3513.8	23.0
60°-70°	4034.1	26.5
70°-80°	1994.8	13.1
80°-90°	273.8	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°	15250.0	100.0
0°-180°	15250.0	100.0

Coefficient of Utilization

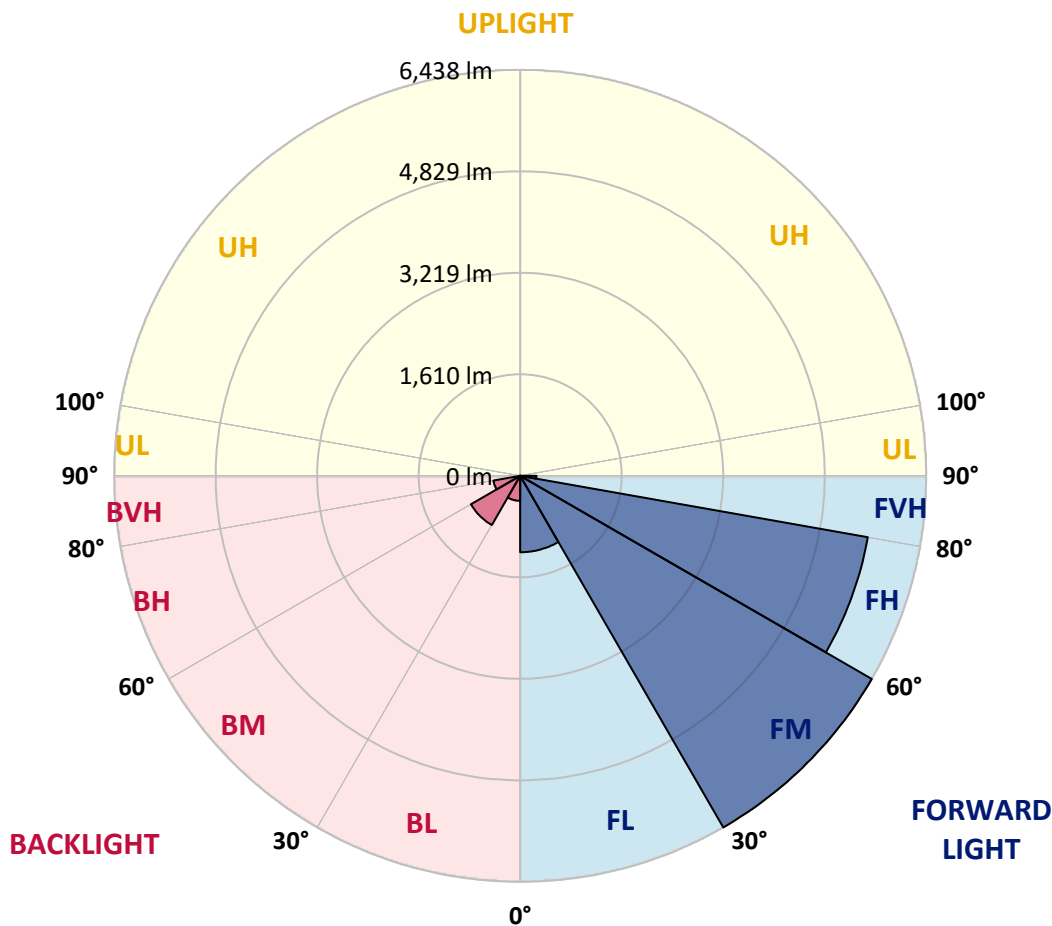


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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone	Lumens	% Fixture	Zone Rating/Lumen Limit		
			B	U	G
FL (0°-30°)	1211.3	7.9			
FM (30°-60°)	6438.4	42.2			
FH (60°-80°)	5597.7	36.7			G3/7500
FVH (80°-90°)	258.7	1.7			G3/500
BL (0°-30°)	396.8	2.6	B1/500		
BM (30°-60°)	900.8	5.9	B1/1000		
BH (60°-80°)	431.2	2.8	B1/500		G1/500
BVH (80°-90°)	15.2	0.1			G1/100
UL (90°-100°)	0.0	0.0		U0/0	
UH (100°-180°)	0.0	0.0		U0/0	

BUG Rating: B1-U0-G3
 Type IV Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1
2.5°	2368.9	2380.2	2327.2	2320.3	2196.9	2350.7	2355.0	2373.3	2260.3	2041.3	2347.2
5°	2834.7	2866.0	2825.2	3006.8	3058.9	3171.1	2965.1	3149.3	3071.1	3092.8	3137.2
7.5°	2890.4	2922.5	3008.5	3312.7	3593.4	3523.0	3500.4	3569.9	3563.8	3403.1	3483.0
10°	2774.8	2801.7	2945.1	3498.7	3621.2	3937.5	4014.9	3855.0	3789.8	3437.8	3284.0
12.5°	2648.8	2694.0	2876.5	3540.4	3908.0	4227.8	4482.4	4254.7	4038.3	3663.8	3523.0
15°	2890.4	2915.6	3202.3	3627.3	3948.8	4169.6	4378.1	4302.5	4269.5	4000.1	3523.0
17.5°	3364.0	3423.1	3630.8	3840.2	4094.0	4226.9	4177.4	4153.9	4069.6	4492.8	3999.2
20°	3701.2	3811.5	4083.5	4173.9	3972.3	4096.6	4066.1	4045.3	3979.2	4766.6	4546.7
22.5°	4431.1	4532.8	4538.0	4570.2	4100.9	3902.8	3852.4	3858.4	4158.3	4848.3	5228.0
25°	4928.2	4963.0	5237.6	5008.2	4452.0	3961.9	3769.8	3855.8	4287.7	5435.7	5868.5
27.5°	5741.6	5824.2	5995.4	5218.5	4662.3	3924.5	3618.6	3931.4	4628.4	5630.4	6580.2
30°	6404.7	6483.8	6759.2	5506.1	4844.8	4109.6	3683.8	4083.5	4840.4	6031.0	7219.8
32.5°	6942.6	7146.8	7459.7	5950.2	4837.8	4322.5	4016.6	4033.1	5101.1	6549.8	7852.5
35°	7630.0	7820.3	8040.2	6256.1	5154.2	4391.2	4114.8	4528.5	5488.7	7092.1	8704.1
37.5°	9179.5	9467.1	9032.6	7026.9	5522.6	5011.6	4502.4	4833.5	5894.6	7645.6	9874.7
40°	10124.9	10367.4	9947.7	7420.6	6160.5	5324.5	5194.1	5363.6	6291.7	7931.5	10756.7
42.5°	11056.5	11376.3	10675.0	8013.2	6766.2	6207.4	5851.1	5987.5	6866.1	8621.5	11749.1
45°	11730.9	11929.0	10832.3	8323.5	7598.7	7213.7	6976.5	6773.1	7667.4	9064.7	12389.6
47.5°	12069.8	12228.0	11142.6	8421.7	8094.0	8278.3	8798.0	8373.0	8376.5	9385.4	12734.6
50°	12539.1	12649.4	11316.4	8539.0	8632.0	9937.2	10199.7	9295.0	9186.4	9706.9	12791.1
52.5°	13198.7	13252.5	11653.5	8848.4	9437.6	11236.4	11331.1	10965.3	9997.2	10304.8	12916.2
55°	14075.5	13980.8	12255.8	9498.4	10277.9	12188.0	12314.9	11995.9	11016.6	10901.8	13303.8
57.5°	15021.0	14912.4	13148.3	10414.3	11189.5	12915.4	12991.0	13016.2	11693.5	11430.2	13962.5
60°	15698.8	15718.8	14271.9	11465.0	11756.1	13611.5	13460.2	13230.8	12376.6	12204.5	14283.2
62.5°	15936.1	16128.1	15147.0	12566.0	12244.5	13654.9	13420.3	13226.5	12682.5	13003.1	13915.6
65°	15742.3	16077.7	15350.4	13533.2	12539.9	13110.0	12865.8	12741.6	12672.9	13329.0	13102.2
67.5°	14972.3	15392.1	14768.1	13541.9	11465.8	11162.6	11451.1	11844.7	11617.1	13058.8	11962.9
70°	13247.3	13707.0	13416.8	12747.6	9551.4	8782.3	9100.4	9695.6	9534.9	11614.4	10286.6
72.5°	9939.0	10529.9	10587.3	11005.3	7582.2	6609.8	6655.8	6639.3	6916.5	9365.4	8027.1
75°	6384.7	6844.4	7465.7	8880.5	5759.9	4825.7	4384.2	4276.4	4793.5	7318.0	5746.8
77.5°	3706.4	3761.1	4047.9	6700.1	4125.2	3476.9	3176.3	3330.1	3510.8	5107.2	3808.9
80°	1772.8	1800.6	1918.8	3447.4	2866.0	3009.4	2777.4	2950.3	2410.7	2935.5	2161.3
82.5°	562.3	568.3	588.3	1693.7	1779.8	1993.5	1277.5	1712.8	1490.4	1774.5	1439.1
85°	93.9	159.9	197.3	489.3	1004.6	672.6	277.2	610.9	831.7	1119.3	653.5
87.5°	0.0	0.0	0.0	8.7	81.7	38.2	6.1	34.8	127.7	249.4	29.5
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°	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1
2.5°	2435.9	2495.8	2269.9	2067.4	2118.7	2077.8	2016.1	1911.0	1667.6	1846.7	1834.5
5°	3134.6	3023.3	2717.4	2574.9	2401.1	2136.0	2103.9	1900.5	1811.0	1825.8	1812.8
7.5°	3377.9	3178.9	2908.6	2479.3	2071.7	1689.4	1572.1	1439.1	1412.2	1469.5	1506.9
10°	3186.7	2975.5	2739.1	2205.6	1891.9	1615.5	1326.1	1140.2	1039.3	1027.2	1037.6
12.5°	3274.5	3046.8	2560.1	2151.7	1824.1	1573.8	1250.5	969.8	750.8	767.3	723.9
15°	3335.3	3073.7	2517.5	2038.7	1684.2	1349.6	960.3	679.6	500.6	448.4	417.1
17.5°	3692.5	3318.8	2463.7	1908.4	1488.6	1050.6	603.1	393.7	335.4	317.2	302.4
20°	4151.3	3620.3	2462.8	1771.1	1200.1	657.0	376.3	285.0	271.1	281.6	270.3
22.5°	4684.9	4021.8	2594.0	1599.9	861.2	414.5	292.9	252.9	239.0	247.7	248.5
25°	5221.9	4624.1	2700.9	1437.4	599.6	318.1	260.7	232.9	217.3	225.1	220.7
27.5°	6191.8	5122.9	2676.6	1229.7	441.5	279.8	242.5	218.1	194.7	206.8	206.0
30°	6826.1	6003.2	2771.3	938.5	350.2	245.1	225.9	199.0	173.8	187.7	186.8
32.5°	7584.8	6381.2	2873.8	720.4	291.1	232.0	203.4	177.3	162.5	171.2	169.5
35°	8437.3	7128.6	2685.3	599.6	252.9	209.4	179.9	159.9	146.9	151.2	151.2
37.5°	9943.3	7753.4	2572.3	488.4	235.5	189.4	168.6	144.3	136.4	136.4	140.8
40°	10798.4	8707.6	2235.1	386.7	240.7	174.7	157.3	132.1	121.7	120.8	125.1
42.5°	11910.8	9257.7	2023.9	312.8	218.1	170.3	144.3	119.9	107.8	106.9	111.2
45°	12570.4	9565.3	1726.7	245.9	195.5	198.1	133.8	110.4	92.1	88.6	96.5
47.5°	12986.6	9972.9	1558.2	195.5	170.3	197.3	130.4	95.6	77.3	73.0	79.9
50°	13197.8	10174.5	1525.1	167.7	147.7	176.4	149.5	79.9	66.0	60.0	66.0
52.5°	13417.7	10502.1	1537.3	154.7	130.4	141.7	141.7	68.7	58.2	51.3	55.6
55°	13861.7	10986.1	1510.4	146.9	119.9	107.8	91.2	60.8	53.0	45.2	49.5
57.5°	14407.5	11333.8	1510.4	139.9	111.2	92.1	73.0	56.5	48.7	39.1	42.6
60°	14304.1	10967.9	1435.6	133.0	104.3	86.0	66.0	52.1	45.2	35.6	38.2
62.5°	13594.1	9972.9	1162.7	122.5	98.2	81.7	60.0	49.5	42.6	31.3	33.9
65°	12759.8	8916.1	808.2	111.2	91.2	73.9	53.9	46.9	39.1	27.8	29.5
67.5°	11755.2	7656.9	448.4	99.9	84.3	64.3	49.5	46.1	37.4	25.2	26.9
70°	10012.0	5780.7	240.7	91.2	79.1	59.1	46.9	46.1	37.4	24.3	25.2
72.5°	7516.1	3640.3	140.8	83.4	72.1	54.7	44.3	46.9	36.5	23.5	23.5
75°	5114.2	2209.9	100.8	71.3	64.3	46.1	42.6	45.2	37.4	23.5	21.7
77.5°	3476.9	1552.9	82.6	64.3	58.2	40.8	43.5	45.2	37.4	19.1	14.8
80°	2170.8	801.2	62.6	51.3	50.4	35.6	43.5	39.1	24.3	4.3	0.0
82.5°	1518.2	298.1	36.5	39.1	39.1	25.2	33.9	27.8	13.9	0.0	0.0
85°	637.0	51.3	20.0	27.8	24.3	14.8	26.9	20.9	8.7	0.0	0.0
87.5°	11.3	0.0	7.8	16.5	17.4	8.7	13.9	8.7	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°	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1
2.5°	1891.9	1809.3	1635.5	1718.9	1710.2	1748.5	1751.9	1663.3	1854.5	1972.7	1990.1
5°	1814.5	1758.9	1749.3	1701.5	1689.4	1759.8	1721.5	1718.9	1811.0	1945.7	1946.6
7.5°	1507.7	1465.2	1485.2	1429.5	1286.1	1294.8	1307.9	1362.6	1441.7	1530.3	1562.5
10°	1035.0	1145.4	1064.5	1057.6	1042.8	996.8	960.3	988.9	1091.5	1173.2	1203.6
12.5°	738.7	756.0	805.6	787.3	812.5	773.4	758.7	848.2	948.1	1031.5	1091.5
15°	431.9	461.4	491.0	553.6	578.8	570.9	616.1	690.9	771.7	809.9	883.8
17.5°	304.2	306.8	312.8	380.6	425.0	442.3	469.3	525.8	558.8	576.2	606.6
20°	265.9	258.1	247.7	285.9	327.6	349.3	341.5	385.8	412.8	430.2	451.9
22.5°	240.7	227.7	221.6	234.6	266.8	285.9	289.4	315.5	356.3	368.5	375.4
25°	217.3	208.6	204.2	211.2	228.6	246.8	250.3	284.2	320.7	325.9	339.8
27.5°	201.6	185.1	186.8	192.1	199.9	222.5	229.4	248.5	301.5	307.6	312.0
30°	185.1	167.7	172.9	178.1	174.7	202.5	212.9	234.6	285.9	295.5	300.7
32.5°	168.6	155.6	154.7	159.9	166.0	180.8	203.4	228.6	275.5	288.5	301.5
35°	150.3	139.9	141.7	142.5	150.3	169.5	186.0	199.0	231.2	238.1	242.5
37.5°	137.3	128.6	126.9	135.6	143.4	158.2	164.2	170.3	212.9	228.6	229.4
40°	121.7	116.4	116.4	122.5	139.9	138.2	146.0	165.1	206.0	222.5	224.2
42.5°	110.4	103.4	105.2	111.2	123.4	114.7	130.4	158.2	203.4	219.9	219.0
45°	93.0	91.2	94.7	99.9	105.2	97.3	121.7	151.2	194.7	216.4	210.3
47.5°	77.3	77.3	81.7	86.9	84.3	86.9	110.4	141.7	189.4	209.4	205.1
50°	63.4	64.3	68.7	77.3	69.5	76.5	99.1	132.1	180.8	202.5	199.0
52.5°	53.9	54.7	57.4	63.4	60.0	69.5	91.2	122.5	172.1	190.3	188.6
55°	46.9	48.7	48.7	52.1	53.9	65.2	82.6	113.0	159.0	179.0	175.5
57.5°	41.7	43.5	42.6	45.2	46.9	57.4	73.9	102.5	146.0	162.5	157.3
60°	37.4	39.1	38.2	41.7	40.8	49.5	64.3	91.2	132.1	145.1	140.8
62.5°	33.0	34.8	34.8	36.5	37.4	41.7	55.6	80.8	118.2	128.6	125.1
65°	29.5	31.3	32.2	31.3	33.0	35.6	46.9	73.0	102.5	113.0	107.8
67.5°	26.9	28.7	30.4	26.9	28.7	29.5	40.0	65.2	90.4	99.1	94.7
70°	26.1	26.9	26.9	23.5	22.6	23.5	34.8	55.6	79.1	87.8	81.7
72.5°	24.3	25.2	24.3	19.1	16.5	18.2	29.5	46.9	66.9	73.9	68.7
75°	22.6	23.5	22.6	15.6	10.4	13.0	24.3	40.8	57.4	60.8	58.2
77.5°	19.1	20.9	20.9	11.3	3.5	7.8	18.2	33.0	47.8	47.8	48.7
80°	1.7	5.2	8.7	6.1	0.0	0.9	6.1	17.4	30.4	29.5	32.2
82.5°	0.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	10.4	7.8	8.7
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°	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1	1837.1
2.5°	1949.2	1922.3	1956.2	2059.6	2017.9	2025.7	1997.9	2169.1	2362.9	2368.9
5°	1948.3	1924.0	1974.4	1970.1	2089.1	2218.6	2343.7	2546.2	2833.0	2834.7
7.5°	1547.7	1692.0	1729.3	1718.1	1871.0	2049.1	2242.1	2629.7	2865.2	2890.4
10°	1395.6	1458.2	1534.7	1562.5	1625.9	1795.4	2013.5	2452.4	2716.6	2774.8
12.5°	1209.7	1409.5	1511.2	1708.5	1745.0	1769.3	2113.5	2495.0	2655.7	2648.8
15°	1002.0	1175.8	1336.6	1577.3	1676.3	1931.8	2203.0	2702.7	2798.2	2890.4
17.5°	709.1	840.3	1087.1	1340.0	1642.4	1920.5	2449.8	3073.7	3254.5	3364.0
20°	474.5	537.9	761.3	1095.8	1479.1	1755.4	2550.6	3409.2	3606.4	3701.2
22.5°	385.0	415.4	531.0	803.0	1263.6	1747.6	2591.4	3775.0	4305.1	4431.1
25°	338.9	359.8	421.5	594.4	1048.9	1712.8	2817.4	4186.9	4826.5	4928.2
27.5°	296.3	327.6	373.7	490.1	899.4	1688.5	2932.1	4878.7	5641.7	5741.6
30°	283.3	321.5	365.9	446.7	795.2	1594.7	3114.6	5502.6	6226.5	6404.7
32.5°	305.9	318.9	340.7	409.3	714.3	1495.6	3435.2	6248.2	6710.6	6942.6
35°	242.5	265.9	304.2	375.4	680.4	1490.4	3616.9	6727.9	7486.6	7630.0
37.5°	237.2	259.0	308.5	365.9	721.3	1530.3	3886.3	7710.8	8885.7	9179.5
40°	230.3	258.1	305.0	361.5	721.3	1569.4	4058.3	8497.3	9826.9	10124.9
42.5°	227.7	263.3	304.2	379.8	698.7	1591.2	4318.2	9282.0	10821.0	11056.5
45°	225.9	268.5	306.8	401.5	693.5	1662.4	4465.0	9663.5	11460.6	11730.9
47.5°	221.6	268.5	342.4	388.5	664.8	1655.5	4655.3	10229.2	11842.1	12069.8
50°	218.1	270.3	387.6	364.1	669.1	1612.9	4913.4	10760.2	12376.6	12539.1
52.5°	210.3	276.3	380.6	330.2	656.1	1608.6	5298.4	11515.4	13079.6	13198.7
55°	192.9	268.5	344.1	288.5	610.1	1559.0	5808.5	12497.4	14054.7	14075.5
57.5°	177.3	249.4	287.6	265.1	511.0	1565.1	6248.2	13401.1	14923.7	15021.0
60°	161.6	259.0	223.3	246.8	423.2	1453.9	6461.2	13747.0	15556.3	15698.8
62.5°	146.9	239.0	190.3	226.8	377.2	1350.5	6313.4	13468.9	15637.1	15936.1
65°	130.4	166.0	160.8	203.4	381.5	1205.3	5819.8	12654.7	15330.4	15742.3
67.5°	112.1	130.4	141.7	175.5	408.4	1081.1	4973.4	11347.7	14505.7	14972.3
70°	98.2	117.3	123.4	153.8	425.0	999.4	3924.5	9534.0	12816.3	13247.3
72.5°	81.7	108.6	110.4	134.7	409.3	918.6	2796.5	6844.4	9732.1	9939.0
75°	70.4	90.4	99.9	113.0	344.1	685.7	1540.8	4236.5	6153.5	6384.7
77.5°	63.4	68.7	75.6	78.2	146.0	357.2	530.1	2612.3	3445.7	3706.4
80°	48.7	53.9	52.1	53.9	79.9	123.4	201.6	1224.4	1627.7	1772.8
82.5°	15.6	26.1	28.7	24.3	52.1	60.8	58.2	423.2	529.2	562.3
85°	3.5	9.6	4.3	0.0	17.4	31.3	4.3	64.3	126.9	93.9
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

(END OF REPORT)