

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: P368127

Luminaire Tested: **MSA-SA3D-750-U-SLL-HSS**

Issue Date: 12/2/2019

Test Information

Test Method: LM-79-08
Report Number: P368127
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-SA3D-750-U-SLL-HSS
Description: MESA POST TOP DECORATIVE LUMINAIRE. (3) 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: 14520 lumens
Efficiency: N/A
Efficacy: 75.6 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): 192
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

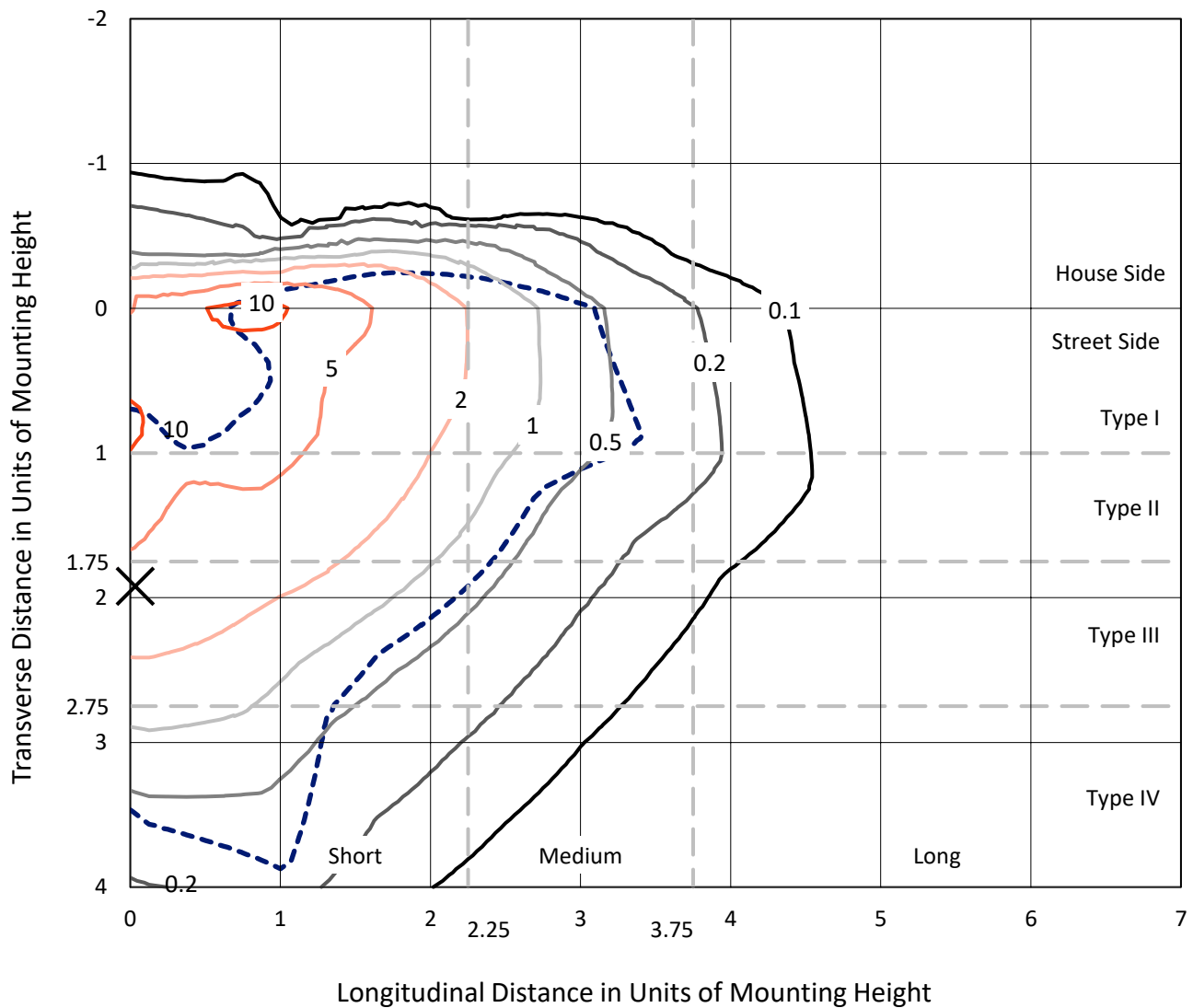


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Iso-Footcandle Lines of Horizontal Illumination

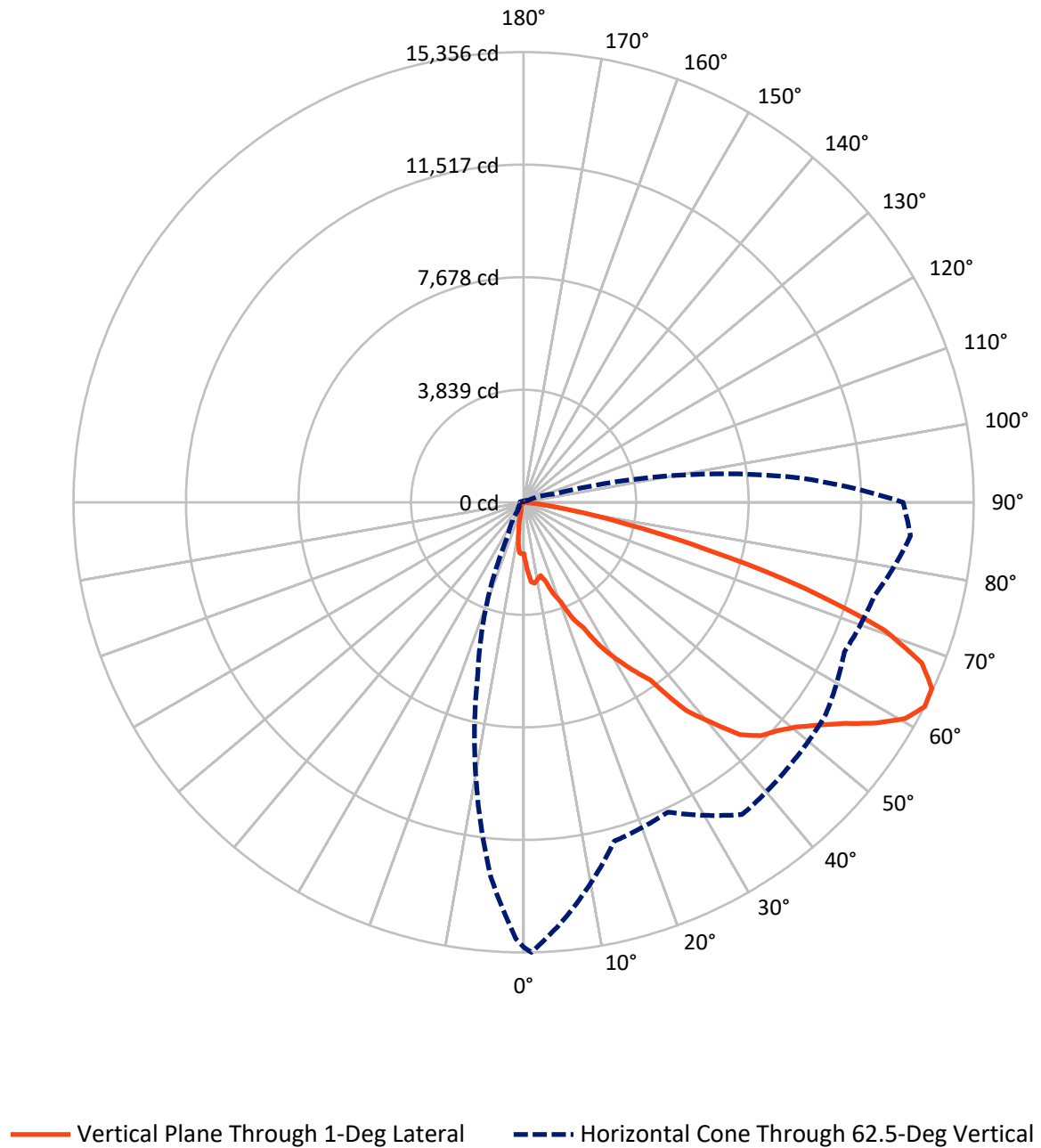
× Max cd
--- 1/2 Max cd



Based on 20 foot mounting height. Maximum calculated value = 11.7 fc
Type IV - Short - N/A

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Luminous Intensity Polar Plot



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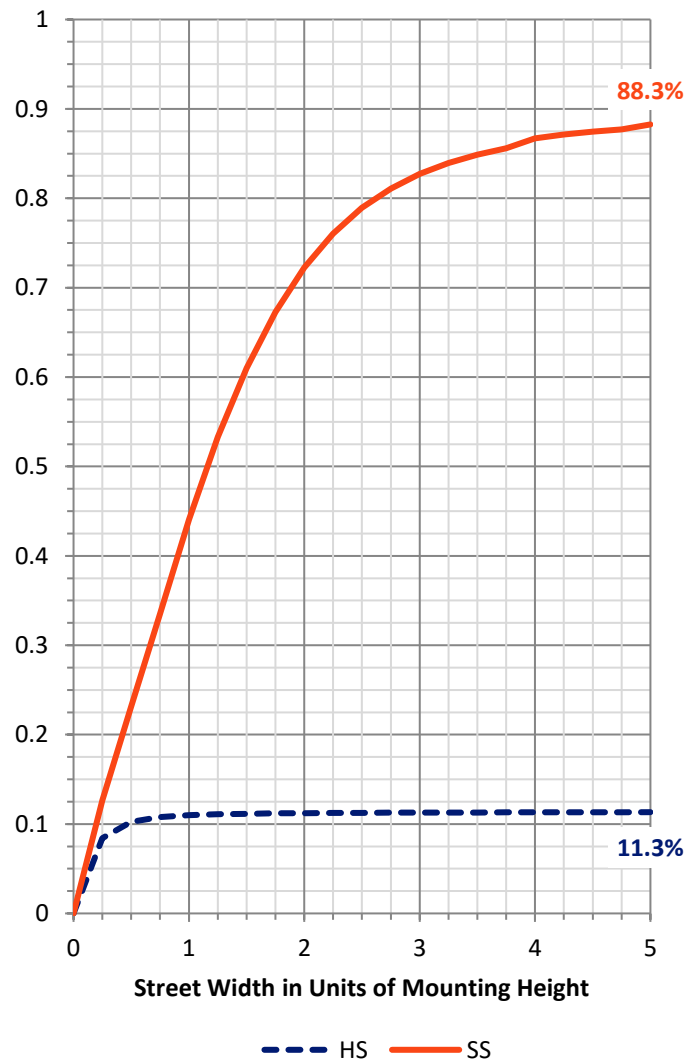
FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1660.4	0.0	1660.4
	% Fixture	11.4	0.0	11.4
Street Side	Lumens	12859.6	0.0	12859.6
	% Fixture	88.6	0.0	88.6
Total	Lumens	14520.0	0.0	14520.0
	% Fixture	100.0	0.0	100.0

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	195.4	1.3
10°-20°	510.5	3.5
20°-30°	825.2	5.7
30°-40°	1382.2	9.5
40°-50°	2260.1	15.6
50°-60°	3345.6	23.0
60°-70°	3841.0	26.5
70°-80°	1899.3	13.1
80°-90°	260.7	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°	14520.0	100.0
0°-180°	14520.0	100.0

Coefficient of Utilization



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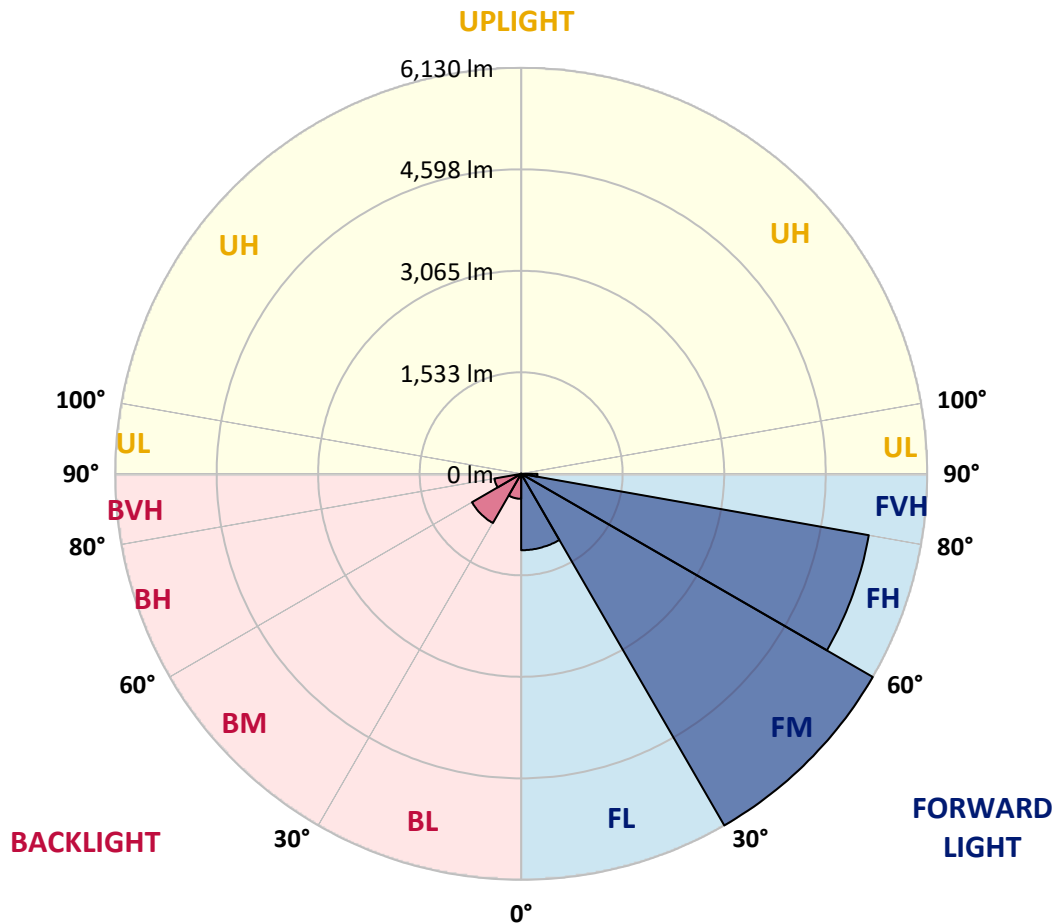
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	1153.3	7.9			
FM	(30°-60°)	6130.2	42.2			
FH	(60°-80°)	5329.7	36.7			G3/7500
FVH	(80°-90°)	246.3	1.7			G3/500
BL	(0°-30°)	377.8	2.6	B1/500		
BM	(30°-60°)	857.6	5.9	B1/1000		
BH	(60°-80°)	410.6	2.8	B1/500		G1/500
BVH	(80°-90°)	14.5	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°	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2
2.5°	2255.5	2266.3	2215.8	2209.2	2091.7	2238.2	2242.3	2259.7	2152.1	1943.6	2234.9
5°	2699.0	2728.8	2689.9	2862.9	2912.5	3019.3	2823.2	2998.6	2924.1	2944.8	2987.0
7.5°	2752.0	2782.6	2864.5	3154.1	3421.4	3354.4	3332.8	3399.0	3393.3	3240.2	3316.3
10°	2642.0	2667.6	2804.1	3331.2	3447.9	3749.0	3822.7	3670.4	3608.4	3273.3	3126.8
12.5°	2522.0	2565.0	2738.8	3370.9	3720.9	4025.4	4267.8	4051.1	3845.0	3488.4	3354.4
15°	2752.0	2776.0	3049.0	3453.7	3759.8	3970.0	4168.5	4096.6	4065.1	3808.6	3354.4
17.5°	3202.9	3259.2	3457.0	3656.4	3898.0	4024.6	3977.4	3955.1	3874.8	4277.8	3807.8
20°	3524.0	3629.1	3888.0	3974.1	3782.1	3900.5	3871.5	3851.6	3788.8	4538.4	4329.1
22.5°	4219.0	4315.8	4320.8	4351.4	3904.6	3715.9	3668.0	3673.7	3959.2	4616.2	4977.8
25°	4692.3	4725.4	4986.9	4768.4	4238.9	3772.2	3589.3	3671.3	4082.5	5175.5	5587.6
27.5°	5466.8	5545.4	5708.4	4968.7	4439.1	3736.6	3445.4	3743.2	4406.8	5360.9	6265.2
30°	6098.1	6173.4	6435.7	5242.5	4612.9	3912.9	3507.4	3888.0	4608.7	5742.3	6874.2
32.5°	6610.3	6804.7	7102.6	5665.3	4606.2	4115.6	3824.3	3840.1	4857.0	6236.3	7476.6
35°	7264.8	7446.0	7655.3	5956.6	4907.4	4181.0	3917.8	4311.7	5226.0	6752.6	8287.4
37.5°	8740.0	9013.9	8600.2	6690.5	5258.3	4771.7	4286.9	4602.1	5612.4	7279.6	9402.0
40°	9640.3	9871.1	9471.5	7065.3	5865.6	5069.6	4945.5	5106.8	5990.5	7551.9	10241.8
42.5°	10527.3	10831.8	10164.0	7629.6	6442.3	5910.3	5571.0	5700.9	6537.4	8208.8	11186.7
45°	11169.3	11358.0	10313.8	7925.0	7235.0	6868.4	6642.5	6448.9	7300.3	8630.8	11796.5
47.5°	11492.0	11642.6	10609.2	8018.5	7706.6	7882.0	8376.8	7972.2	7975.5	8936.1	12125.0
50°	11938.8	12043.9	10774.7	8130.2	8218.8	9461.6	9711.4	8850.1	8746.7	9242.3	12178.8
52.5°	12566.9	12618.2	11095.7	8424.8	8985.8	10698.5	10788.7	10440.4	9518.6	9811.6	12297.9
55°	13401.7	13311.5	11669.1	9043.7	9785.9	11604.6	11725.4	11421.7	10489.2	10380.0	12667.0
57.5°	14302.0	14198.5	12518.9	9915.8	10653.9	12297.1	12369.1	12393.1	11133.8	10883.1	13294.2
60°	14947.3	14966.4	13588.7	10916.2	11193.3	12959.9	12815.9	12597.5	11784.1	11620.3	13599.5
62.5°	15173.2	15356.1	14421.9	11964.5	11658.4	13001.3	12777.9	12593.3	12075.4	12380.7	13249.5
65°	14988.7	15308.1	14615.6	12885.4	11939.7	12482.5	12250.0	12131.6	12066.3	12691.0	12475.0
67.5°	14255.6	14655.3	14061.2	12893.7	10917.0	10628.2	10902.9	11277.7	11061.0	12433.6	11390.3
70°	12613.2	13050.9	12774.5	12137.4	9094.2	8361.9	8664.7	9231.5	9078.5	11058.5	9794.2
72.5°	9463.2	10025.9	10080.5	10478.5	7219.2	6293.4	6337.2	6321.5	6585.4	8917.1	7642.9
75°	6079.1	6516.8	7108.4	8455.4	5484.1	4594.7	4174.3	4071.7	4564.1	6967.7	5471.7
77.5°	3528.9	3581.1	3854.1	6379.4	3927.8	3310.5	3024.2	3170.7	3342.8	4862.7	3626.6
80°	1687.9	1714.4	1826.9	3282.4	2728.8	2865.4	2644.4	2809.1	2295.3	2795.0	2057.8
82.5°	535.3	541.1	560.2	1612.6	1694.6	1898.1	1216.3	1630.8	1419.0	1689.6	1370.2
85°	89.4	152.2	187.8	465.8	956.5	640.4	263.9	581.7	791.8	1065.7	622.2
87.5°	0.0	0.0	0.0	8.3	77.8	36.4	5.8	33.1	121.6	237.5	28.1
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2
2.5°	2319.3	2376.4	2161.2	1968.4	2017.3	1978.4	1919.6	1819.5	1587.8	1758.3	1746.7
5°	2984.5	2878.6	2587.3	2451.6	2286.2	2033.8	2003.2	1809.6	1724.3	1738.4	1726.0
7.5°	3216.2	3026.7	2769.4	2360.6	1972.6	1608.5	1496.8	1370.2	1344.6	1399.2	1434.7
10°	3034.2	2833.1	2608.0	2100.0	1801.3	1538.2	1262.6	1085.6	989.6	978.0	987.9
12.5°	3117.7	2900.9	2437.6	2048.7	1736.8	1498.5	1190.7	923.4	714.9	730.6	689.2
15°	3175.6	2926.6	2397.0	1941.1	1603.5	1285.0	914.3	647.0	476.6	426.9	397.2
17.5°	3515.7	3159.9	2345.7	1817.0	1417.4	1000.4	574.2	374.8	319.4	302.0	287.9
20°	3952.6	3447.0	2344.9	1686.3	1142.7	625.5	358.3	271.4	258.2	268.1	257.3
22.5°	4460.6	3829.3	2469.8	1523.3	820.0	394.7	278.8	240.8	227.5	235.8	236.6
25°	4972.0	4402.7	2571.6	1368.6	570.9	302.8	248.2	221.7	206.9	214.3	210.2
27.5°	5895.4	4877.6	2548.5	1170.8	420.3	266.4	230.9	207.7	185.3	196.9	196.1
30°	6499.4	5715.8	2638.6	893.6	333.5	233.3	215.1	189.5	165.5	178.7	177.9
32.5°	7221.7	6075.7	2736.3	685.9	277.2	220.9	193.6	168.8	154.7	163.0	161.3
35°	8033.4	6787.3	2556.7	570.9	240.8	199.4	171.3	152.2	139.8	144.0	144.0
37.5°	9467.3	7382.2	2449.2	465.0	224.2	180.4	160.5	137.4	129.9	129.9	134.0
40°	10281.5	8290.8	2128.1	368.2	229.2	166.3	149.8	125.8	115.8	115.0	119.1
42.5°	11340.6	8814.5	1927.1	297.9	207.7	162.2	137.4	114.2	102.6	101.8	105.9
45°	11968.6	9107.4	1644.1	234.2	186.2	188.7	127.4	105.1	87.7	84.4	91.8
47.5°	12365.0	9495.5	1483.6	186.2	162.2	187.8	124.1	91.0	73.6	69.5	76.1
50°	12566.0	9687.4	1452.1	159.7	140.7	168.0	142.3	76.1	62.9	57.1	62.9
52.5°	12775.4	9999.4	1463.7	147.3	124.1	134.9	134.9	65.4	55.4	48.8	53.0
55°	13198.2	10460.2	1438.1	139.8	114.2	102.6	86.9	57.9	50.5	43.0	47.2
57.5°	13717.8	10791.2	1438.1	133.2	105.9	87.7	69.5	53.8	46.3	37.2	40.5
60°	13619.3	10442.9	1366.9	126.6	99.3	81.9	62.9	49.6	43.0	33.9	36.4
62.5°	12943.3	9495.5	1107.1	116.7	93.5	77.8	57.1	47.2	40.5	29.8	32.3
65°	12149.0	8489.3	769.5	105.9	86.9	70.3	51.3	44.7	37.2	26.5	28.1
67.5°	11192.5	7290.4	426.9	95.2	80.3	61.2	47.2	43.9	35.6	24.0	25.7
70°	9532.7	5504.0	229.2	86.9	75.3	56.3	44.7	43.9	35.6	23.2	24.0
72.5°	7156.4	3466.1	134.0	79.4	68.7	52.1	42.2	44.7	34.8	22.3	22.3
75°	4869.4	2104.1	96.0	67.8	61.2	43.9	40.5	43.0	35.6	22.3	20.7
77.5°	3310.5	1478.6	78.6	61.2	55.4	38.9	41.4	43.0	35.6	18.2	14.1
80°	2066.9	762.9	59.6	48.8	48.0	33.9	41.4	37.2	23.2	4.1	0.0
82.5°	1445.5	283.8	34.8	37.2	37.2	24.0	32.3	26.5	13.2	0.0	0.0
85°	606.5	48.8	19.0	26.5	23.2	14.1	25.7	19.9	8.3	0.0	0.0
87.5°	10.8	0.0	7.4	15.7	16.5	8.3	13.2	8.3	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°	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2
2.5°	1801.3	1722.7	1557.2	1636.6	1628.4	1664.8	1668.1	1583.7	1765.7	1878.2	1894.8
5°	1727.7	1674.7	1665.6	1620.1	1608.5	1675.5	1639.1	1636.6	1724.3	1852.6	1853.4
7.5°	1435.6	1395.0	1414.1	1361.1	1224.6	1232.9	1245.3	1297.4	1372.7	1457.1	1487.7
10°	985.5	1090.5	1013.6	1007.0	992.9	949.1	914.3	941.6	1039.2	1117.0	1146.0
12.5°	703.3	719.9	767.0	749.6	773.6	736.4	722.3	807.6	902.7	982.1	1039.2
15°	411.2	439.4	467.5	527.1	551.1	543.6	586.6	657.8	734.7	771.2	841.5
17.5°	289.6	292.1	297.9	362.4	404.6	421.2	446.8	500.6	532.0	548.6	577.5
20°	253.2	245.7	235.8	272.2	311.9	332.6	325.2	367.4	393.0	409.6	430.3
22.5°	229.2	216.8	211.0	223.4	254.0	272.2	275.5	300.4	339.2	350.8	357.4
25°	206.9	198.6	194.4	201.1	217.6	235.0	238.3	270.6	305.3	310.3	323.5
27.5°	192.0	176.2	177.9	182.9	190.3	211.8	218.4	236.6	287.1	292.9	297.0
30°	176.2	159.7	164.7	169.6	166.3	192.8	202.7	223.4	272.2	281.3	286.3
32.5°	160.5	148.1	147.3	152.2	158.0	172.1	193.6	217.6	262.3	274.7	287.1
35°	143.1	133.2	134.9	135.7	143.1	161.3	177.1	189.5	220.1	226.7	230.9
37.5°	130.7	122.5	120.8	129.1	136.5	150.6	156.4	162.2	202.7	217.6	218.4
40°	115.8	110.9	110.9	116.7	133.2	131.6	139.0	157.2	196.1	211.8	213.5
42.5°	105.1	98.5	100.1	105.9	117.5	109.2	124.1	150.6	193.6	209.3	208.5
45°	88.5	86.9	90.2	95.2	100.1	92.7	115.8	144.0	185.3	206.0	200.2
47.5°	73.6	73.6	77.8	82.7	80.3	82.7	105.1	134.9	180.4	199.4	195.3
50°	60.4	61.2	65.4	73.6	66.2	72.8	94.3	125.8	172.1	192.8	189.5
52.5°	51.3	52.1	54.6	60.4	57.1	66.2	86.9	116.7	163.8	181.2	179.6
55°	44.7	46.3	46.3	49.6	51.3	62.1	78.6	107.6	151.4	170.4	167.1
57.5°	39.7	41.4	40.5	43.0	44.7	54.6	70.3	97.6	139.0	154.7	149.8
60°	35.6	37.2	36.4	39.7	38.9	47.2	61.2	86.9	125.8	138.2	134.0
62.5°	31.4	33.1	33.1	34.8	35.6	39.7	53.0	77.0	112.5	122.5	119.1
65°	28.1	29.8	30.6	29.8	31.4	33.9	44.7	69.5	97.6	107.6	102.6
67.5°	25.7	27.3	29.0	25.7	27.3	28.1	38.1	62.1	86.1	94.3	90.2
70°	24.8	25.7	25.7	22.3	21.5	22.3	33.1	53.0	75.3	83.6	77.8
72.5°	23.2	24.0	23.2	18.2	15.7	17.4	28.1	44.7	63.7	70.3	65.4
75°	21.5	22.3	21.5	14.9	9.9	12.4	23.2	38.9	54.6	57.9	55.4
77.5°	18.2	19.9	19.9	10.8	3.3	7.4	17.4	31.4	45.5	45.5	46.3
80°	1.7	5.0	8.3	5.8	0.0	0.8	5.8	16.5	29.0	28.1	30.6
82.5°	0.0	0.0	0.8	0.0	0.0	0.0	0.0	0.0	9.9	7.4	8.3
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°	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2	1749.2
2.5°	1855.9	1830.3	1862.5	1961.0	1921.3	1928.7	1902.2	2065.2	2249.8	2255.5
5°	1855.1	1831.9	1879.9	1875.8	1989.1	2112.4	2231.6	2424.3	2697.4	2699.0
7.5°	1473.6	1611.0	1646.6	1635.8	1781.4	1951.1	2134.7	2503.8	2728.0	2752.0
10°	1328.8	1388.4	1461.2	1487.7	1548.1	1709.5	1917.1	2335.0	2586.5	2642.0
12.5°	1151.8	1342.1	1438.9	1626.7	1661.5	1684.6	2012.3	2375.5	2528.6	2522.0
15°	954.0	1119.5	1272.6	1501.8	1596.1	1839.4	2097.5	2573.3	2664.3	2752.0
17.5°	675.2	800.1	1035.1	1275.9	1563.8	1828.6	2332.5	2926.6	3098.7	3202.9
20°	451.8	512.2	724.8	1043.4	1408.3	1671.4	2428.5	3246.0	3433.8	3524.0
22.5°	366.5	395.5	505.6	764.5	1203.1	1663.9	2467.4	3594.3	4099.0	4219.0
25°	322.7	342.6	401.3	566.0	998.7	1630.8	2682.5	3986.5	4595.5	4692.3
27.5°	282.2	311.9	355.8	466.7	856.4	1607.7	2791.7	4645.1	5371.6	5466.8
30°	269.7	306.1	348.3	425.3	757.1	1518.3	2965.5	5239.2	5928.5	6098.1
32.5°	291.3	303.7	324.3	389.7	680.1	1424.0	3270.8	5949.2	6389.3	6610.3
35°	230.9	253.2	289.6	357.4	647.9	1419.0	3443.7	6405.9	7128.2	7264.8
37.5°	225.9	246.6	293.7	348.3	686.8	1457.1	3700.2	7341.7	8460.4	8740.0
40°	219.3	245.7	290.4	344.2	686.8	1494.3	3864.1	8090.5	9356.5	9640.3
42.5°	216.8	250.7	289.6	361.6	665.2	1515.0	4111.5	8837.7	10303.0	10527.3
45°	215.1	255.7	292.1	382.3	660.3	1582.9	4251.3	9200.9	10912.0	11169.3
47.5°	211.0	255.7	326.0	369.9	633.0	1576.2	4432.5	9739.6	11275.3	11492.0
50°	207.7	257.3	369.0	346.7	637.1	1535.7	4678.2	10245.1	11784.1	11938.8
52.5°	200.2	263.1	362.4	314.4	624.7	1531.6	5044.8	10964.1	12453.5	12566.9
55°	183.7	255.7	327.7	274.7	580.8	1484.4	5530.5	11899.1	13381.9	13401.7
57.5°	168.8	237.5	273.9	252.4	486.5	1490.2	5949.2	12759.6	14209.3	14302.0
60°	153.9	246.6	212.6	235.0	403.0	1384.3	6151.9	13089.0	14811.7	14947.3
62.5°	139.8	227.5	181.2	216.0	359.1	1285.8	6011.2	12824.2	14888.6	15173.2
65°	124.1	158.0	153.1	193.6	363.2	1147.6	5541.2	12048.9	14596.5	14988.7
67.5°	106.7	124.1	134.9	167.1	388.9	1029.3	4735.3	10804.5	13811.3	14255.6
70°	93.5	111.7	117.5	146.5	404.6	951.5	3736.6	9077.6	12202.8	12613.2
72.5°	77.8	103.4	105.1	128.3	389.7	874.6	2662.6	6516.8	9266.3	9463.2
75°	67.0	86.1	95.2	107.6	327.7	652.8	1467.0	4033.7	5859.0	6079.1
77.5°	60.4	65.4	72.0	74.5	139.0	340.1	504.7	2487.2	3280.7	3528.9
80°	46.3	51.3	49.6	51.3	76.1	117.5	192.0	1165.8	1549.8	1687.9
82.5°	14.9	24.8	27.3	23.2	49.6	57.9	55.4	403.0	503.9	535.3
85°	3.3	9.1	4.1	0.0	16.5	29.8	4.1	61.2	120.8	89.4
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

(END OF REPORT)