

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: P401942

Luminaire Tested: **ENT-SA1F-830-U-SLL**

Issue Date: 5/20/2020

Test Information

Test Method: LM-79-08
Report Number: P401942
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2004-754-7)
Test Lab: INNOVATION CENTER
Issue Date: 5/20/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: ENT-SA1F-830-U-SLL
Description: ENTRI LED LUMINAIRE
(1) 80 CRI, 3000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT ELIMINATOR LEFT OPTICS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5471 lumens
Efficiency: N/A
Efficacy: 82.8 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Medium - Non-Cutoff
BUG Rating: B1 - U0 - G1

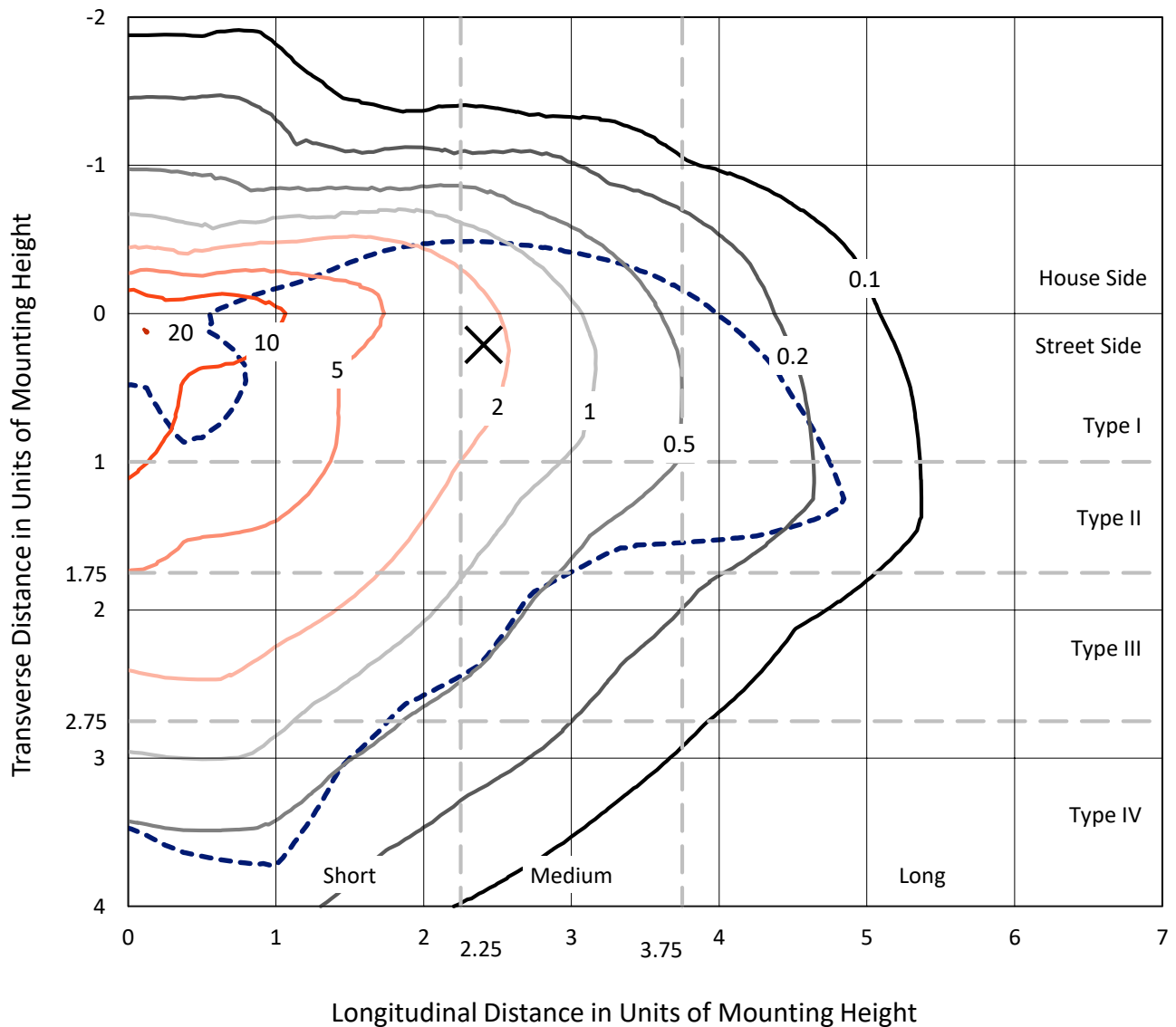
Input Watts (W): 66.1
Input Voltage (V): NR
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Iso-Footcandle Lines of Horizontal Illumination

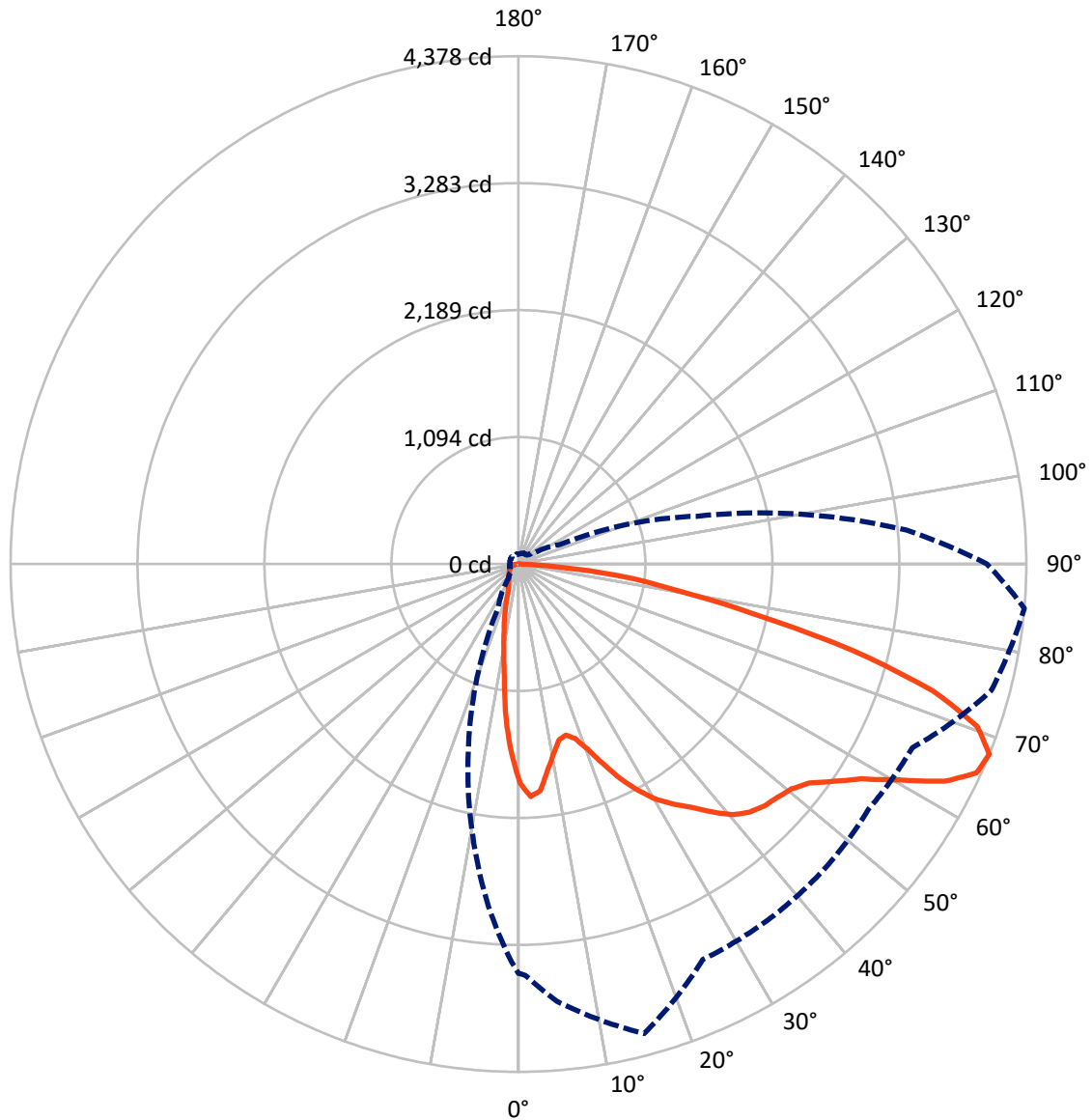
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 20.2 fc
 Type III - Medium - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 85-Deg Lateral - - - Horizontal Cone Through 67.5-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1102.3	0.0	1102.3
	% Fixture	20.1	0.0	20.1
Street Side	Lumens	4368.7	0.0	4368.7
	% Fixture	79.9	0.0	79.9
Total	Lumens	5471.0	0.0	5471.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	143.7	2.6
10°-20°	283.4	5.2
20°-30°	396.0	7.2
30°-40°	558.2	10.2
40°-50°	773.5	14.1
50°-60°	1086.9	19.9
60°-70°	1328.8	24.3
70°-80°	780.9	14.3
80°-90°	119.6	2.2
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°	5471.0	100.0
0°-180°	5471.0	100.0



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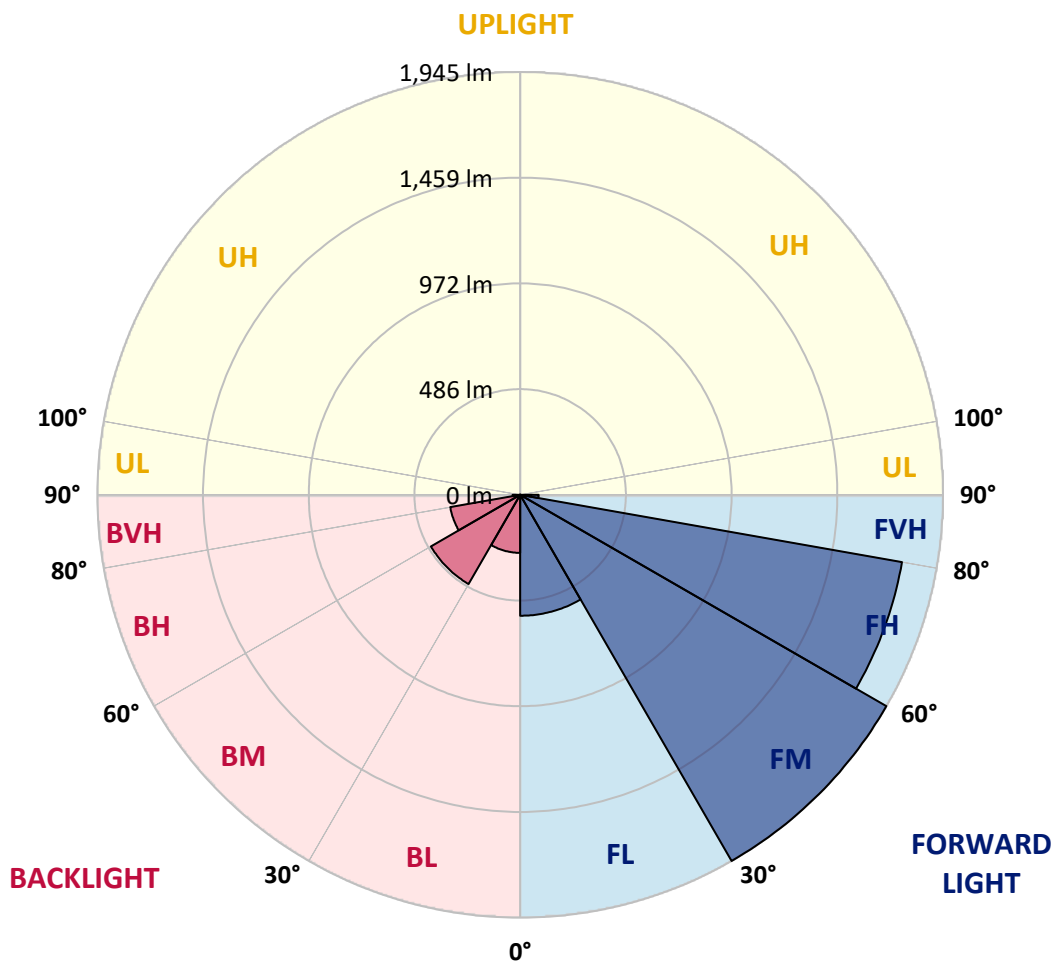
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	556.2	10.2			
FM	(30°-60°)	1944.7	35.5			
FH	(60°-80°)	1783.2	32.6			G1/1800
FVH	(80°-90°)	84.6	1.5			G1/100
BL	(0°-30°)	267.0	4.9	B1/500		
BM	(30°-60°)	473.9	8.7	B1/1000		
BH	(60°-80°)	326.5	6.0	B1/500		G1/500
BVH	(80°-90°)	34.9	0.6			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 III Medium





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1
2.5°	1942.0	1933.2	1963.1	2007.1	2037.0	2058.1	2065.2	2064.3	2058.1	2041.4	2006.2
5°	1855.8	1847.9	1908.6	2006.2	2091.5	2153.1	2170.7	2146.1	2115.3	2050.2	1964.0
7.5°	1692.2	1704.5	1781.9	1919.2	2056.4	2154.0	2177.7	2139.0	2075.7	1942.9	1797.8
10°	1568.2	1574.4	1661.4	1826.8	1972.8	2073.1	2114.4	2080.1	1997.4	1829.4	1661.4
12.5°	1491.7	1497.9	1582.3	1735.3	1891.0	1969.3	1981.6	1980.7	1912.1	1749.4	1555.0
15°	1502.3	1510.2	1594.6	1721.3	1809.2	1843.5	1844.4	1854.1	1833.8	1709.8	1529.5
17.5°	1604.3	1604.3	1685.2	1761.7	1741.5	1716.9	1735.3	1752.9	1788.1	1733.6	1581.4
20°	1765.2	1772.3	1847.0	1833.8	1710.7	1649.1	1627.1	1657.9	1767.0	1804.8	1703.7
22.5°	1939.4	1957.9	2036.1	1939.4	1705.4	1585.8	1561.2	1594.6	1769.6	1917.4	1871.7
25°	2132.0	2154.9	2207.6	2062.5	1721.3	1550.6	1533.9	1565.6	1776.7	2021.2	2052.8
27.5°	2307.9	2309.7	2361.6	2166.3	1762.6	1554.1	1526.0	1567.3	1796.0	2103.0	2212.9
30°	2432.8	2432.8	2455.7	2219.1	1813.6	1576.1	1533.0	1593.7	1823.3	2147.8	2358.0
32.5°	2547.1	2553.3	2541.9	2274.5	1862.0	1607.8	1549.7	1646.5	1866.4	2184.8	2469.7
35°	2692.3	2691.4	2640.4	2318.5	1906.8	1642.1	1591.1	1713.3	1928.8	2239.3	2576.2
37.5°	2871.7	2862.9	2754.7	2358.0	1961.4	1701.0	1669.4	1804.8	2012.4	2303.5	2710.7
40°	3034.4	3020.3	2859.4	2395.0	2004.5	1815.4	1796.9	1918.3	2117.9	2383.5	2841.8
42.5°	3161.1	3140.0	2948.2	2421.4	2069.6	1994.8	2010.6	2122.3	2224.4	2454.8	2923.6
45°	3267.5	3245.5	3015.1	2434.6	2227.0	2250.7	2281.5	2374.8	2337.8	2474.1	2973.7
47.5°	3344.0	3307.9	3044.1	2473.3	2439.8	2549.8	2644.8	2650.9	2497.9	2473.3	3004.5
50°	3388.9	3349.3	3071.3	2569.1	2687.0	2889.3	2990.4	2942.9	2664.1	2489.1	3048.5
52.5°	3479.5	3438.1	3184.8	2724.8	2940.3	3233.2	3287.7	3211.2	2836.5	2570.9	3136.4
55°	3707.3	3688.8	3404.7	2934.1	3189.2	3511.1	3535.7	3459.2	3016.8	2712.5	3304.4
57.5°	3965.0	3924.5	3702.0	3197.1	3427.6	3728.4	3767.9	3662.4	3205.9	2911.3	3491.8
60°	4037.1	4029.2	3953.5	3504.1	3673.8	3960.6	3963.2	3828.6	3426.7	3147.9	3777.6
62.5°	3931.5	3957.0	4058.2	3788.2	3880.5	4116.2	4094.3	3954.4	3658.0	3524.3	4125.0
65°	3747.7	3783.8	3986.9	4056.4	3928.0	4085.5	4038.8	3950.0	3804.0	3929.8	4340.5
67.5°	3526.9	3546.3	3782.9	4190.1	3761.8	3746.8	3724.8	3684.4	3746.0	4218.3	4377.5
70°	3297.4	3314.1	3532.2	4006.3	3263.1	3091.6	3073.1	3037.9	3278.0	4214.7	4196.3
72.5°	2779.3	2768.8	2970.2	3344.0	2491.7	2258.7	2415.2	2338.7	2651.8	3786.4	3738.0
75°	1726.5	1784.6	2037.0	2344.8	1707.2	1547.1	1763.5	1744.1	2153.1	3260.4	2976.4
77.5°	1051.9	1063.4	1205.8	1461.8	1028.2	1072.2	1133.7	1253.3	1596.4	2643.0	2074.8
80°	550.6	511.9	616.6	802.1	610.4	719.5	831.2	963.1	1013.2	1723.0	1387.0
82.5°	159.2	158.3	208.5	336.0	289.4	353.6	419.5	605.1	664.1	1024.7	949.9
85°	0.9	0.9	0.9	1.8	2.6	4.4	18.5	155.7	205.8	475.0	390.5
87.5°	0.0	0.0	0.9	1.8	1.8	3.5	5.3	7.0	8.8	10.6	38.7
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°	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1
2.5°	1994.8	1981.6	1953.5	1915.6	1889.2	1843.5	1833.8	1804.8	1775.8	1752.0	1752.9
5°	1922.7	1877.8	1809.2	1730.1	1654.4	1586.7	1573.5	1533.9	1522.5	1511.0	1479.4
7.5°	1733.6	1680.8	1584.9	1467.9	1373.0	1308.8	1240.1	1198.8	1161.9	1119.7	1130.2
10°	1588.4	1512.8	1380.9	1243.7	1124.9	1038.7	963.1	924.4	870.7	832.0	826.8
12.5°	1476.7	1394.9	1236.6	1075.7	964.0	913.8	865.5	804.8	745.0	694.0	667.6
15°	1439.8	1347.5	1163.6	1003.6	915.6	854.9	787.2	717.7	644.7	590.2	569.1
17.5°	1482.9	1373.8	1162.7	972.8	862.8	774.0	689.6	611.3	525.1	470.6	453.8
20°	1601.6	1465.3	1187.4	943.7	798.6	678.1	559.4	475.0	387.0	348.3	330.7
22.5°	1767.0	1589.3	1225.2	908.6	727.4	561.1	427.5	321.0	277.9	258.6	254.2
25°	1936.7	1746.8	1278.8	878.7	649.1	446.8	307.0	256.8	236.6	227.8	227.8
27.5°	2123.2	1904.2	1336.9	842.6	568.2	332.5	249.8	226.0	215.5	210.2	209.3
30°	2274.5	2032.6	1402.9	800.4	495.2	272.7	221.6	205.8	196.1	193.5	193.5
32.5°	2383.5	2128.5	1472.3	758.2	428.3	246.3	205.8	191.7	181.2	179.4	179.4
35°	2511.1	2220.0	1504.0	734.4	387.9	229.6	194.4	180.3	170.6	166.2	166.2
37.5°	2664.1	2329.0	1521.6	711.5	370.3	213.7	186.5	170.6	161.0	155.7	155.7
40°	2858.5	2453.0	1540.1	688.7	359.7	200.5	177.7	161.8	153.9	147.8	147.8
42.5°	2997.5	2567.4	1554.1	669.3	341.3	194.4	170.6	155.7	146.0	140.7	139.8
45°	3070.5	2673.8	1560.3	657.9	320.2	199.7	165.4	150.4	139.0	133.7	132.8
47.5°	3119.7	2761.7	1568.2	649.1	303.4	190.0	164.5	145.1	133.7	126.7	126.7
50°	3198.0	2877.8	1588.4	632.4	293.8	177.7	177.7	142.5	127.5	121.4	120.5
52.5°	3337.8	3044.1	1643.0	613.9	283.2	165.4	182.9	143.4	123.1	116.1	114.3
55°	3548.9	3308.8	1733.6	587.5	268.3	150.4	170.6	144.2	118.7	112.6	109.9
57.5°	3823.4	3629.0	1839.1	566.4	242.8	138.1	155.7	139.8	113.5	108.2	106.4
60°	4008.1	3842.7	1906.0	539.2	206.7	130.2	133.7	135.4	108.2	102.0	101.1
62.5°	4107.4	3846.2	1906.8	501.3	173.3	123.1	119.6	138.1	103.8	95.9	95.0
65°	4114.5	3658.9	1811.0	453.0	161.8	115.2	109.9	122.3	99.4	91.5	90.6
67.5°	4038.0	3353.7	1592.0	397.6	166.2	109.1	102.0	102.9	94.1	87.1	86.2
70°	3763.5	2958.8	1277.1	353.6	167.1	101.1	95.9	93.2	88.8	82.7	80.9
72.5°	3247.3	2472.4	967.5	339.5	169.8	95.0	88.8	86.2	82.7	77.4	75.6
75°	2450.4	1928.8	726.5	316.6	171.5	88.0	80.9	79.2	75.6	70.4	69.5
77.5°	1693.1	1430.1	504.9	267.4	153.0	80.0	73.0	71.2	68.6	63.3	62.4
80°	1143.4	980.7	309.6	200.5	116.1	70.4	63.3	63.3	60.7	55.4	55.4
82.5°	796.0	732.7	178.5	131.1	84.4	58.0	55.4	55.4	52.8	47.5	46.6
85°	332.5	443.3	80.0	71.2	58.9	45.7	45.7	46.6	44.0	39.6	38.7
87.5°	11.4	47.5	31.7	33.4	35.2	31.7	35.2	35.2	34.3	30.8	29.9
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°	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1
2.5°	1727.4	1716.0	1680.8	1676.4	1650.0	1648.3	1659.7	1640.3	1642.1	1665.8	1662.3
5°	1486.4	1460.0	1459.2	1430.1	1397.6	1389.7	1361.5	1351.0	1346.6	1336.9	1372.1
7.5°	1162.7	1150.4	1161.0	1157.5	1127.6	1110.9	1051.0	1005.3	982.4	992.1	994.8
10°	826.8	845.2	873.4	900.6	879.5	824.1	798.6	761.7	757.3	754.6	772.2
12.5°	655.3	634.1	647.3	657.0	636.8	613.0	602.5	586.7	595.4	615.7	627.1
15°	544.4	507.5	490.8	479.3	484.6	470.6	475.8	470.6	476.7	482.9	504.0
17.5°	430.1	416.9	385.2	370.3	371.2	365.0	366.8	365.9	362.4	376.4	393.2
20°	323.7	320.2	313.1	302.6	304.3	299.9	297.3	282.3	276.2	280.6	294.6
22.5°	252.4	256.8	261.2	260.3	264.7	253.3	242.8	229.6	227.8	228.7	232.2
25°	226.0	227.8	231.3	235.7	238.4	227.8	212.8	204.9	204.1	205.8	205.8
27.5°	210.2	208.5	212.8	218.1	221.6	208.5	196.1	189.1	187.3	185.6	184.7
30°	193.5	193.5	197.0	202.3	204.9	193.5	182.9	175.9	171.5	168.9	168.0
32.5°	181.2	182.1	183.8	187.3	191.7	180.3	171.5	165.4	157.4	154.8	153.0
35°	167.1	170.6	173.3	174.1	177.7	169.8	161.0	151.3	144.2	141.6	141.6
37.5°	155.7	158.3	162.7	161.8	164.5	159.2	149.5	139.0	135.4	134.6	133.7
40°	146.9	146.9	150.4	153.9	157.4	147.8	136.3	131.1	128.4	126.7	127.5
42.5°	139.0	138.1	138.1	144.2	150.4	136.3	126.7	123.1	122.3	120.5	121.4
45°	131.9	131.1	128.4	131.1	139.8	124.9	118.7	116.1	115.2	115.2	115.2
47.5°	125.8	124.0	120.5	121.4	127.5	116.1	110.8	109.9	109.1	109.1	109.9
50°	118.7	117.0	114.3	113.5	115.2	109.9	105.5	103.8	103.8	103.8	105.5
52.5°	112.6	111.7	108.2	107.3	108.2	104.7	100.3	99.4	99.4	99.4	102.0
55°	108.2	106.4	104.7	102.9	104.7	100.3	96.7	95.0	95.0	96.7	98.5
57.5°	103.8	102.0	101.1	99.4	101.1	96.7	93.2	91.5	92.4	93.2	93.2
60°	99.4	97.6	96.7	95.0	97.6	93.2	89.7	88.8	88.8	88.0	88.0
62.5°	95.0	94.1	92.4	90.6	94.1	88.8	86.2	84.4	83.6	83.6	83.6
65°	89.7	88.8	88.0	87.1	88.8	84.4	81.8	80.9	79.2	78.3	79.2
67.5°	85.3	85.3	83.6	81.8	84.4	79.2	77.4	76.5	73.9	73.0	73.9
70°	80.0	80.0	78.3	77.4	80.9	73.9	72.1	71.2	69.5	68.6	68.6
72.5°	74.8	74.8	73.0	72.1	76.5	68.6	66.8	66.0	63.3	62.4	62.4
75°	69.5	68.6	67.7	66.8	72.1	63.3	60.7	58.9	56.3	55.4	54.5
77.5°	63.3	62.4	60.7	61.6	65.1	56.3	52.8	51.9	49.3	48.4	47.5
80°	55.4	54.5	53.7	55.4	55.4	49.3	44.9	43.1	40.5	38.7	37.8
82.5°	47.5	46.6	46.6	48.4	45.7	43.1	37.8	34.3	29.9	27.3	26.4
85°	38.7	40.5	38.7	40.5	34.3	34.3	26.4	20.2	14.1	11.4	10.6
87.5°	29.9	30.8	29.9	30.8	23.7	22.9	12.3	7.0	0.9	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°	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1	1890.1
2.5°	1688.7	1690.5	1728.3	1766.1	1789.0	1846.2	1874.3	1906.0	1922.7	1942.0
5°	1355.4	1388.8	1419.6	1495.2	1533.9	1624.5	1690.5	1796.0	1829.4	1855.8
7.5°	1023.8	1073.9	1111.7	1205.8	1278.8	1391.4	1506.6	1632.4	1668.5	1692.2
10°	813.6	859.3	930.6	1004.4	1086.2	1222.6	1347.5	1477.6	1541.0	1568.2
12.5°	683.4	756.4	840.0	908.6	973.6	1073.9	1232.2	1396.7	1462.7	1491.7
15°	563.8	645.6	730.9	815.3	896.2	1009.7	1175.9	1389.7	1473.2	1502.3
17.5°	447.7	514.5	600.7	702.8	820.6	964.9	1186.5	1464.4	1566.5	1604.3
20°	318.4	383.5	471.4	597.2	737.1	918.2	1211.1	1577.0	1722.1	1765.2
22.5°	240.1	276.2	357.1	481.1	662.3	881.3	1249.8	1730.9	1900.7	1939.4
25°	211.1	223.4	264.7	384.4	587.5	847.9	1300.8	1884.0	2089.8	2132.0
27.5°	187.3	194.4	215.5	308.7	532.1	813.6	1361.5	2049.3	2252.5	2307.9
30°	168.9	177.7	195.3	258.6	478.5	764.3	1416.9	2198.0	2390.6	2432.8
32.5°	154.8	164.5	180.3	234.0	432.7	727.4	1448.6	2308.8	2508.4	2547.1
35°	145.1	153.9	169.8	212.0	392.3	701.9	1458.3	2418.7	2652.7	2692.3
37.5°	136.3	145.1	159.2	190.0	364.1	668.4	1473.2	2549.8	2819.8	2871.7
40°	130.2	137.2	150.4	175.0	325.4	632.4	1490.8	2702.8	2982.5	3034.4
42.5°	124.0	131.9	143.4	175.9	286.7	601.6	1502.3	2820.7	3111.8	3161.1
45°	118.7	127.5	140.7	172.4	257.7	573.5	1497.0	2919.2	3229.7	3267.5
47.5°	113.5	124.0	147.8	165.4	248.9	548.0	1501.4	3014.2	3314.1	3344.0
50°	109.9	123.1	158.3	154.8	250.7	536.5	1543.6	3127.6	3377.4	3388.9
52.5°	107.3	125.8	149.5	139.8	250.7	531.2	1624.5	3310.6	3487.4	3479.5
55°	102.9	124.9	139.8	126.7	240.1	533.9	1701.0	3552.5	3751.2	3707.3
57.5°	99.4	119.6	125.8	117.0	215.5	534.8	1814.5	3756.5	3958.8	3965.0
60°	95.0	128.4	109.1	109.1	184.7	530.4	1914.8	3753.0	3996.6	4037.1
62.5°	90.6	125.8	97.6	101.1	163.6	513.7	1975.4	3534.0	3856.8	3931.5
65°	85.3	99.4	89.7	94.1	154.8	472.3	1889.2	3262.2	3667.7	3747.7
67.5°	79.2	81.8	81.8	87.1	151.3	409.9	1672.0	2962.3	3430.2	3526.9
70°	72.1	73.0	74.8	82.7	140.7	352.7	1361.5	2643.0	3175.1	3297.4
72.5°	65.1	66.0	66.0	74.8	131.9	304.3	964.0	2094.2	2650.9	2779.3
75°	57.2	58.0	57.2	65.1	115.2	227.8	572.6	1324.6	1581.4	1726.5
77.5°	48.4	48.4	46.6	51.0	79.2	144.2	313.1	804.8	962.2	1051.9
80°	39.6	36.1	29.9	30.8	43.1	82.7	139.8	461.8	527.7	550.6
82.5°	26.4	20.2	12.3	11.4	14.1	22.9	32.5	182.9	168.0	159.2
85°	5.3	1.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9
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

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