

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: P401944

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

Issue Date: 5/20/2020

Test Information

Test Method: LM-79-08
Report Number: P401944
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2004-754-9)
Test Lab: INNOVATION CENTER
Issue Date: 5/20/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: INVUE
Catalog Number: ENT-SA1F-830-U-SLR
Description: ENTRI LED LUMINAIRE
(1) 80 CRI, 3000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT ELIMINATOR RIGHT 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 IV - Short - 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

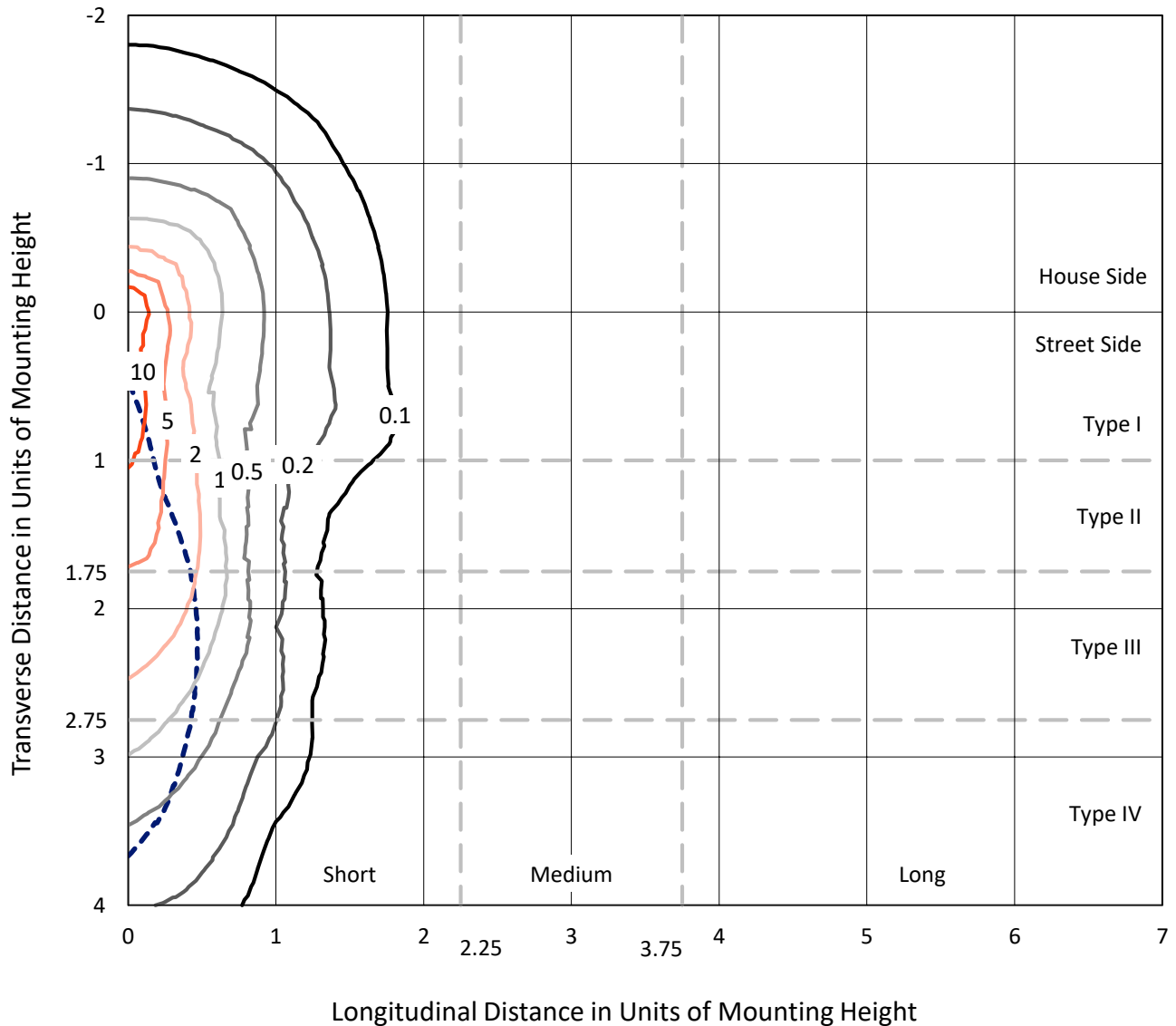


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Iso-Footcandle Lines of Horizontal Illumination

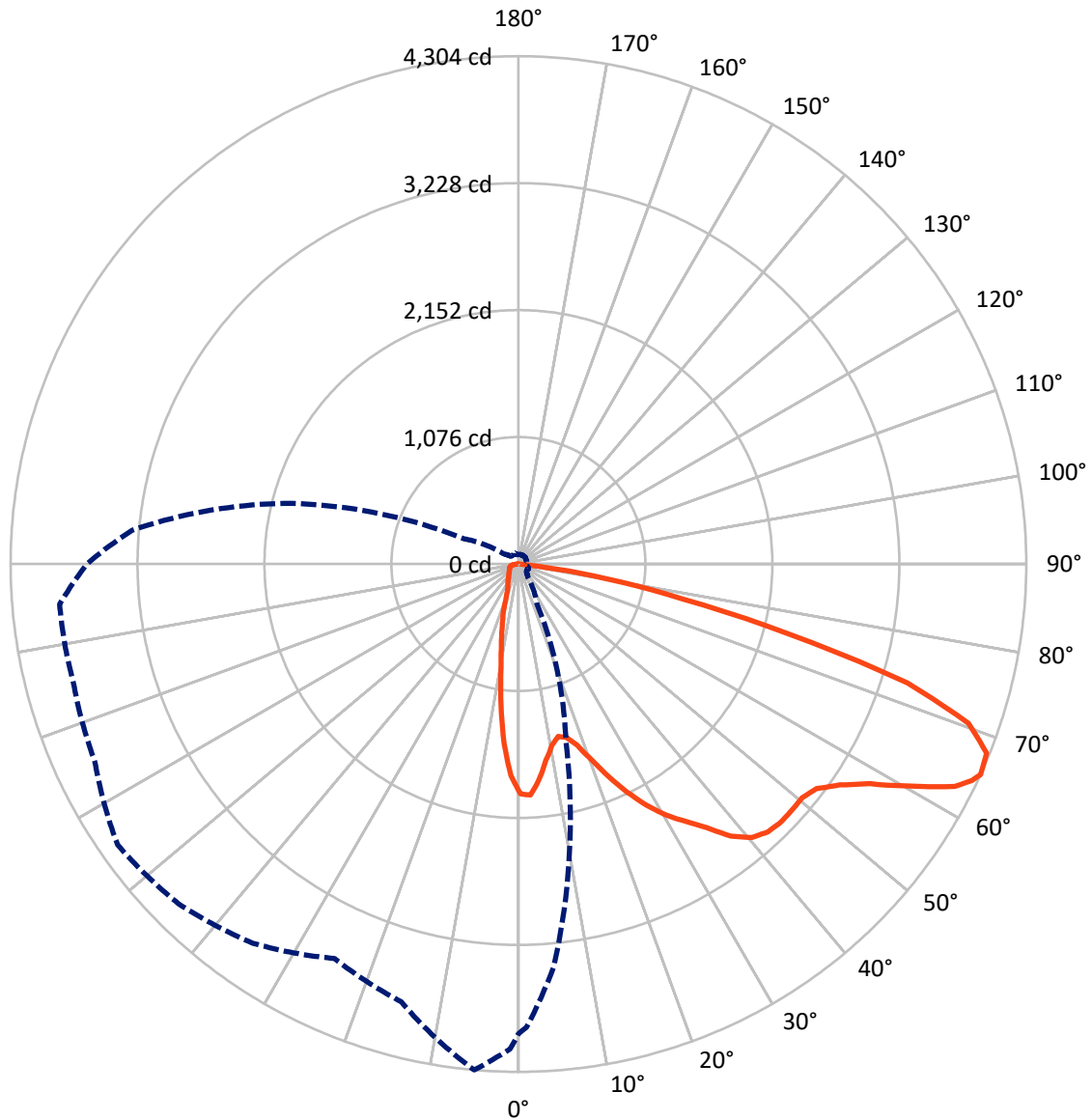
× Max cd
 - - - 1/2 Max cd



Based on 10 foot mounting height. Maximum calculated value = 19.5 fc
 Type IV - Short - Non-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 355-Deg Lateral - - - Horizontal Cone Through 65-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	1122.6	0.0	1122.6
	% Fixture	20.5	0.0	20.5
Street Side	Lumens	4348.4	0.0	4348.4
	% Fixture	79.5	0.0	79.5
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°	148.5	2.7
10°-20°	295.8	5.4
20°-30°	410.2	7.5
30°-40°	573.4	10.5
40°-50°	780.2	14.3
50°-60°	1066.9	19.5
60°-70°	1304.5	23.8
70°-80°	787.6	14.4
80°-90°	103.9	1.9
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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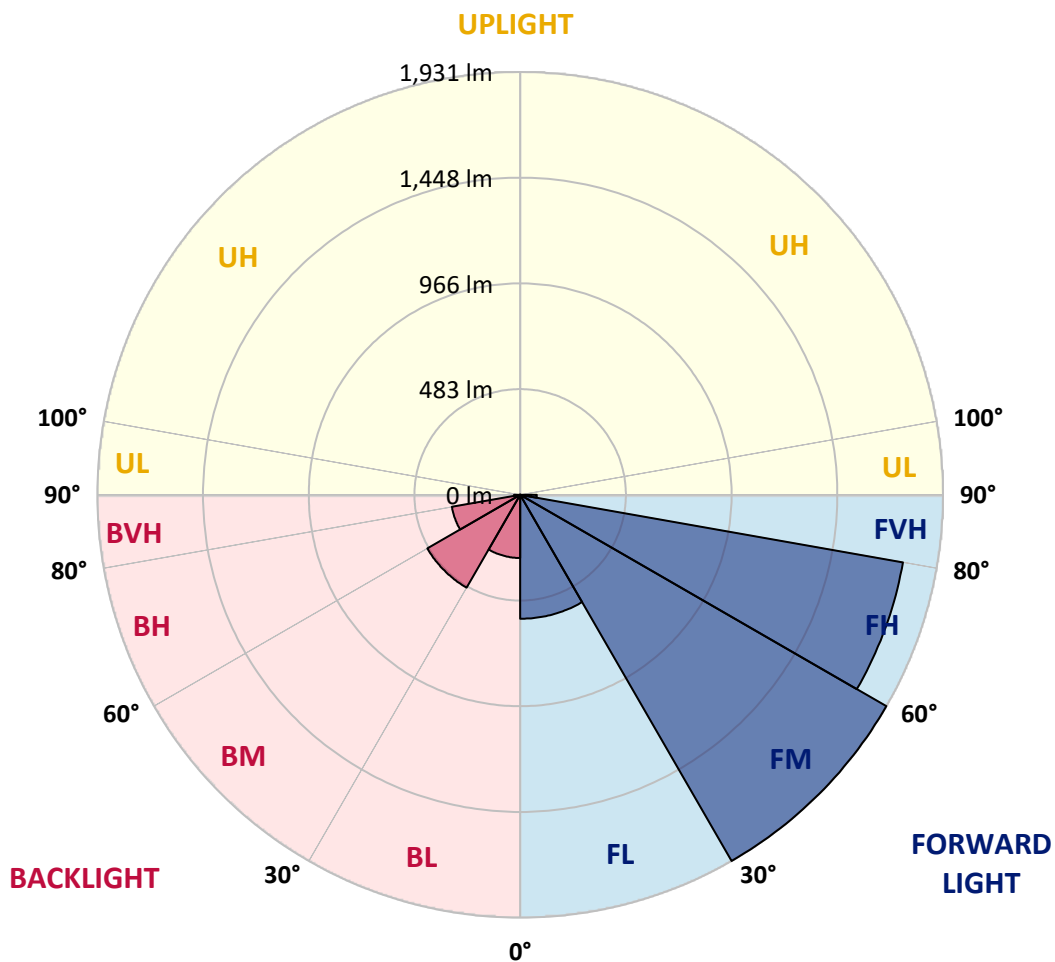
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	566.1	10.3			
FM	(30°-60°)	1931.2	35.3			
FH	(60°-80°)	1775.3	32.4			G1/1800
FVH	(80°-90°)	75.9	1.4			G1/100
BL	(0°-30°)	288.5	5.3	B1/500		
BM	(30°-60°)	489.3	8.9	B1/1000		
BH	(60°-80°)	316.8	5.8	B1/500		G1/500
BVH	(80°-90°)	28.0	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°	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9
2.5°	1942.3	1936.8	1923.1	1886.5	1847.1	1800.5	1792.3	1741.9	1747.4	1732.8	1736.4
5°	1774.0	1766.6	1729.1	1655.9	1556.2	1498.6	1453.7	1427.2	1405.3	1394.3	1408.0
7.5°	1610.2	1600.1	1555.3	1426.3	1315.6	1224.1	1150.9	1106.1	1062.2	1027.4	1010.9
10°	1477.5	1473.9	1414.4	1268.9	1129.9	1018.3	970.7	923.1	885.6	836.2	795.9
12.5°	1410.7	1399.8	1329.3	1160.1	1024.7	956.0	911.2	850.8	799.6	739.2	687.1
15°	1413.5	1400.7	1312.9	1135.4	988.1	904.8	836.2	763.9	688.9	627.6	574.5
17.5°	1492.2	1483.0	1376.0	1158.2	957.0	841.7	734.6	641.3	559.0	482.1	434.6
20°	1624.8	1611.1	1462.9	1185.7	917.6	769.4	623.9	495.9	407.1	339.4	301.9
22.5°	1797.7	1772.1	1586.4	1219.5	878.3	687.1	504.1	361.4	282.7	248.8	238.8
25°	1982.5	1962.4	1735.5	1262.5	836.2	597.4	373.3	262.6	235.1	221.4	214.1
27.5°	2152.7	2119.8	1895.6	1310.1	780.4	507.8	283.6	226.0	207.7	201.3	196.7
30°	2274.4	2246.0	2006.3	1365.0	731.9	414.4	242.4	204.9	190.3	180.2	178.4
32.5°	2390.6	2350.3	2086.8	1390.6	691.6	364.1	224.1	190.3	176.6	166.5	162.8
35°	2527.8	2487.6	2179.2	1394.3	661.5	343.1	206.8	179.3	164.7	155.5	151.0
37.5°	2689.7	2634.9	2283.5	1397.0	631.3	334.8	192.1	170.2	155.5	145.5	141.8
40°	2843.4	2801.4	2390.6	1392.4	611.1	323.0	183.0	160.1	146.4	137.2	132.7
42.5°	2959.6	2914.8	2482.1	1378.7	599.2	302.8	186.6	152.8	140.0	129.9	124.4
45°	3019.1	2978.8	2565.3	1365.9	592.8	285.4	183.0	150.0	135.4	123.5	118.0
47.5°	3063.9	3024.6	2650.4	1360.4	581.9	272.6	168.3	160.1	130.8	117.1	111.6
50°	3136.2	3102.4	2765.7	1391.5	564.5	264.4	154.6	171.1	129.0	111.6	105.2
52.5°	3266.1	3244.2	2956.0	1463.8	546.2	250.7	140.9	163.8	130.8	108.0	100.6
55°	3508.6	3494.8	3217.6	1559.0	528.8	233.3	126.3	148.2	129.9	101.6	96.1
57.5°	3770.2	3766.6	3535.1	1642.2	503.2	204.0	117.1	125.3	123.5	96.1	89.7
60°	3945.9	3934.0	3681.5	1688.9	470.2	168.3	109.8	106.1	126.3	90.6	83.3
62.5°	4006.3	3966.9	3637.6	1671.5	420.8	145.5	101.6	97.0	117.1	85.1	76.8
64°	4002.6	3945.0	3523.2	1605.6	388.8	140.9	97.0	90.6	103.4	81.4	74.1
65°	3981.6	3926.7	3428.1	1554.4	371.4	140.9	94.2	87.8	94.2	79.6	72.3
67.5°	3847.1	3774.8	3103.3	1316.5	326.6	142.7	87.8	80.5	78.7	73.2	67.7
70°	3540.6	3446.4	2657.7	1035.6	302.8	143.6	80.5	73.2	70.4	66.8	62.2
72.5°	2843.4	2717.2	2115.2	740.1	278.1	140.9	73.2	66.8	64.0	60.4	55.8
75°	1906.6	1768.5	1559.0	487.6	227.8	126.3	63.1	57.6	56.7	53.1	49.4
77.5°	1075.0	1017.3	920.4	268.1	157.4	86.9	50.3	46.7	47.6	45.7	42.1
80°	561.7	535.2	492.2	129.9	75.9	42.1	32.0	32.0	36.6	36.6	34.8
82.5°	198.5	199.4	193.0	29.3	15.6	12.8	11.0	15.6	21.0	25.6	25.6
85°	0.9	0.9	0.0	0.0	0.0	0.0	0.0	0.0	1.8	3.7	6.4
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):

	90°	95°	105°	115°	125°	135°	145°	155°	165°	175°	180°
0°	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9
2.5°	1705.3	1710.8	1725.5	1722.7	1737.4	1731.0	1750.2	1760.2	1765.7	1794.1	1807.8
5°	1397.0	1398.9	1451.0	1462.0	1489.4	1474.8	1508.6	1495.8	1523.3	1526.9	1572.7
7.5°	1026.5	1030.2	1055.8	1116.2	1175.6	1200.3	1210.4	1225.9	1213.1	1208.6	1215.0
10°	780.4	783.1	785.9	828.9	881.0	933.2	933.2	934.1	911.2	888.3	883.8
12.5°	666.9	649.6	622.1	623.0	659.6	684.3	703.5	683.4	679.8	690.7	702.6
15°	548.9	531.5	513.2	491.3	492.2	509.6	519.7	518.7	537.0	545.3	570.0
17.5°	426.3	401.6	402.5	389.7	372.4	383.3	386.1	402.5	426.3	437.3	441.9
20°	286.4	286.4	293.7	309.2	301.0	308.3	309.2	322.0	333.0	326.6	333.0
22.5°	237.0	236.0	238.8	248.8	257.1	263.5	265.3	264.4	253.4	248.8	258.0
25°	215.0	214.1	215.0	220.5	229.6	237.9	234.2	228.7	215.9	215.0	216.8
27.5°	196.7	197.6	199.4	203.1	208.6	218.7	215.0	204.0	197.6	195.8	195.8
30°	181.1	181.1	184.8	188.5	194.9	204.0	197.6	188.5	182.1	180.2	179.3
32.5°	165.6	168.3	171.1	174.7	180.2	189.4	183.9	175.7	169.3	165.6	162.8
35°	150.0	151.9	157.4	162.8	167.4	174.7	171.1	163.8	157.4	149.1	145.5
37.5°	140.9	140.9	143.6	151.9	155.5	161.0	159.2	152.8	142.7	136.3	135.4
40°	132.7	132.7	133.6	138.1	144.6	151.0	147.3	137.2	130.8	128.1	127.2
42.5°	124.4	124.4	125.3	125.3	133.6	144.6	135.4	125.3	122.6	120.8	119.8
45°	117.1	117.1	117.1	116.2	120.8	134.5	124.4	116.2	114.4	114.4	113.4
47.5°	111.6	110.7	109.8	108.0	110.7	121.7	113.4	108.9	108.0	108.9	108.0
50°	104.3	103.4	102.5	101.6	103.4	108.0	106.1	101.6	102.5	102.5	103.4
52.5°	97.9	97.0	96.1	95.1	97.0	100.6	100.6	97.0	97.0	97.9	98.8
55°	94.2	92.4	91.5	91.5	92.4	97.0	96.1	93.3	93.3	95.1	96.1
57.5°	88.7	86.9	86.9	86.0	87.8	93.3	92.4	89.7	89.7	90.6	92.4
60°	83.3	82.3	81.4	83.3	84.2	89.7	88.7	86.9	86.0	88.7	88.7
62.5°	76.8	76.8	76.8	78.7	79.6	86.0	85.1	84.2	84.2	85.1	84.2
64°	73.2	73.2	74.1	75.0	76.8	82.3	82.3	82.3	82.3	82.3	81.4
65°	71.4	71.4	73.2	74.1	75.0	81.4	80.5	81.4	82.3	81.4	79.6
67.5°	66.8	66.8	69.5	69.5	70.4	77.8	76.8	78.7	80.5	78.7	76.8
70°	61.3	62.2	65.0	64.0	65.9	74.1	71.4	75.0	78.7	75.9	74.1
72.5°	55.8	56.7	60.4	58.6	59.5	69.5	65.9	69.5	75.0	73.2	71.4
75°	50.3	51.2	54.0	53.1	54.9	64.0	60.4	64.0	69.5	69.5	68.6
77.5°	43.0	44.8	46.7	45.7	49.4	57.6	54.0	56.7	61.3	65.0	63.1
80°	34.8	37.5	38.4	39.3	43.0	49.4	46.7	47.6	52.1	54.9	55.8
82.5°	23.8	28.4	30.2	31.1	36.6	38.4	39.3	38.4	41.2	44.8	42.1
85°	7.3	9.1	17.4	22.0	27.4	27.4	32.0	30.2	32.0	28.4	23.8
87.5°	0.0	0.0	0.0	6.4	16.5	16.5	22.9	21.0	22.0	16.5	14.6
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°	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9
2.5°	1810.5	1826.1	1860.9	1901.1	1923.1	1970.7	1999.9	2031.0	2062.1	2068.5	2078.6
5°	1581.8	1600.1	1639.5	1693.4	1747.4	1810.5	1883.7	1961.5	2047.5	2084.1	2119.8
7.5°	1232.3	1236.0	1291.8	1389.7	1437.3	1526.9	1631.2	1751.1	1883.7	1952.4	2025.5
10°	910.3	947.8	989.9	1071.3	1191.2	1294.6	1423.6	1563.5	1701.7	1801.4	1877.3
12.5°	715.4	763.0	832.5	922.2	1012.8	1110.7	1259.8	1409.8	1580.0	1669.7	1763.0
15°	589.2	649.6	740.1	834.4	918.5	1005.5	1138.1	1322.0	1539.7	1631.2	1714.5
17.5°	466.6	533.4	630.4	729.2	829.8	935.9	1089.6	1317.4	1582.7	1688.9	1774.9
20°	357.7	409.9	491.3	591.0	709.0	854.5	1051.2	1352.2	1709.9	1842.6	1899.3
22.5°	265.3	295.5	359.5	463.8	602.9	782.2	1012.8	1401.6	1867.3	2022.8	2065.8
25°	219.6	227.8	257.1	347.7	491.3	700.8	983.5	1465.6	2024.6	2199.4	2230.5
27.5°	197.6	202.2	215.9	249.8	384.2	634.0	945.1	1539.7	2190.2	2374.1	2371.4
30°	178.4	179.3	187.6	211.3	312.0	574.5	900.2	1622.1	2337.5	2499.5	2491.2
32.5°	161.0	161.0	172.0	190.3	266.2	520.6	846.3	1681.5	2465.6	2601.9	2575.4
35°	145.5	148.2	158.3	176.6	236.0	460.2	795.9	1703.5	2575.4	2725.4	2650.4
37.5°	134.5	138.1	148.2	165.6	210.4	415.4	754.8	1729.1	2710.8	2874.6	2734.6
40°	127.2	129.9	139.1	153.7	190.3	377.8	709.9	1746.5	2845.3	3033.7	2823.3
42.5°	119.8	122.6	131.7	145.5	181.1	333.9	666.9	1756.6	2985.3	3171.9	2897.4
45°	113.4	117.1	126.3	139.1	182.1	294.6	631.3	1752.9	3069.4	3271.6	2955.1
47.5°	108.9	112.5	122.6	139.1	176.6	271.7	601.1	1740.1	3131.6	3336.6	2981.6
50°	104.3	108.0	119.8	153.7	167.4	265.3	578.2	1738.3	3196.6	3349.4	2981.6
52.5°	99.7	106.1	120.8	154.6	153.7	262.6	559.9	1786.8	3286.2	3371.3	3008.1
55°	97.0	102.5	124.4	142.7	134.5	253.4	548.9	1853.5	3437.2	3492.1	3141.7
57.5°	93.3	97.9	122.6	133.6	119.8	232.4	539.8	1917.6	3635.7	3716.2	3407.9
60°	88.7	94.2	118.9	114.4	108.9	197.6	534.3	1970.7	3709.8	3860.8	3694.3
62.5°	84.2	90.6	129.9	99.7	100.6	164.7	524.2	2021.9	3553.4	3826.0	3878.2
64°	81.4	87.8	120.8	93.3	96.1	150.0	514.2	2024.6	3415.2	3743.7	3912.9
65°	79.6	85.1	112.5	89.7	92.4	146.4	505.0	1986.2	3285.3	3655.9	3902.9
67.5°	76.8	80.5	86.9	83.3	86.0	140.0	442.8	1817.0	3009.0	3429.9	3746.4
70°	73.2	75.9	76.8	75.9	80.5	135.4	374.2	1576.3	2707.1	3192.9	3503.1
72.5°	69.5	69.5	69.5	68.6	74.1	129.0	336.7	1273.5	2339.3	2881.9	3200.3
75°	66.8	64.0	63.1	61.3	67.7	125.3	303.7	956.0	1807.8	2400.6	2681.5
77.5°	61.3	58.6	55.8	54.0	60.4	111.6	253.4	675.2	1333.0	1746.5	2069.5
80°	53.1	51.2	47.6	44.8	50.3	87.8	192.1	417.2	975.3	1179.3	1357.7
82.5°	43.0	42.1	38.4	34.8	36.6	63.1	130.8	212.3	650.5	640.4	758.4
85°	26.5	32.9	28.4	22.9	24.7	36.6	53.1	67.7	199.4	119.8	185.7
87.5°	15.6	21.0	17.4	11.9	9.1	16.5	14.6	13.7	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):

	285°	295°	305°	315°	325°	335°	345°	355°	359°	360°
0°	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9	1946.9
2.5°	2102.4	2114.3	2120.7	2096.9	2071.3	2048.4	2004.5	1960.6	1937.7	1942.3
5°	2188.4	2208.5	2214.0	2179.2	2107.0	2032.9	1925.8	1833.4	1777.6	1774.0
7.5°	2155.5	2221.3	2232.3	2194.8	2091.4	1953.3	1807.8	1678.8	1623.0	1610.2
10°	2038.4	2139.0	2171.9	2159.1	2058.5	1900.2	1723.6	1559.9	1504.1	1477.5
12.5°	1918.5	2023.7	2043.8	2056.7	1995.4	1861.8	1667.8	1499.5	1432.7	1410.7
15°	1839.8	1912.1	1917.6	1929.5	1916.7	1843.5	1693.4	1524.2	1443.7	1413.5
17.5°	1828.8	1803.2	1785.8	1810.5	1826.1	1844.4	1760.2	1616.6	1530.6	1492.2
20°	1830.7	1751.1	1701.7	1699.8	1766.6	1868.2	1895.6	1772.1	1660.5	1624.8
22.5°	1897.5	1723.6	1641.3	1631.2	1712.7	1908.4	2033.8	1956.9	1845.3	1797.7
25°	1997.2	1707.2	1598.3	1601.0	1682.5	1935.0	2151.8	2141.7	2043.8	1982.5
27.5°	2093.2	1734.6	1592.8	1600.1	1692.5	1952.4	2249.7	2315.6	2205.8	2152.7
30°	2170.1	1795.9	1609.3	1615.7	1723.6	1976.1	2298.2	2470.2	2337.5	2274.4
32.5°	2236.9	1853.5	1634.0	1638.6	1773.0	2010.0	2343.9	2600.1	2465.6	2390.6
35°	2297.3	1903.0	1671.5	1687.0	1836.2	2058.5	2390.6	2741.0	2622.0	2527.8
37.5°	2350.3	1963.3	1745.6	1771.2	1928.6	2128.9	2451.0	2926.7	2796.8	2689.7
40°	2380.5	2017.3	1855.4	1893.8	2048.4	2220.4	2527.8	3047.5	2964.2	2843.4
42.5°	2403.4	2091.4	2031.9	2101.5	2234.1	2306.4	2564.4	3101.4	3063.0	2959.6
45°	2415.3	2237.8	2297.3	2362.2	2443.6	2400.6	2544.3	3119.7	3107.8	3019.1
47.5°	2469.3	2458.3	2604.7	2694.3	2689.7	2542.5	2505.9	3117.9	3137.1	3063.9
50°	2579.0	2715.4	2920.3	3008.1	2974.3	2675.1	2498.5	3115.2	3195.7	3136.2
52.5°	2709.9	2972.4	3261.5	3298.1	3226.8	2809.6	2553.4	3162.7	3305.5	3266.1
55°	2881.9	3214.0	3529.6	3541.5	3440.9	2940.4	2670.5	3302.7	3510.4	3508.6
57.5°	3121.6	3430.8	3754.7	3740.0	3598.2	3121.6	2859.0	3512.2	3738.2	3770.2
60°	3382.3	3659.5	3936.7	3928.5	3777.5	3330.2	3117.9	3822.4	3937.6	3945.9
62.5°	3632.1	3871.8	4112.4	4073.0	3902.9	3546.1	3476.5	4151.7	4067.6	4006.3
64°	3794.9	3943.1	4157.2	4095.0	3933.1	3649.5	3683.3	4258.8	4104.2	4002.6
65°	3902.9	3960.5	4147.2	4072.1	3923.0	3687.9	3839.8	4303.6	4110.6	3981.6
67.5°	4096.8	3860.8	3874.5	3815.1	3681.5	3652.2	4095.9	4278.9	4040.1	3847.1
70°	4042.9	3459.2	3270.7	3233.2	3073.1	3237.8	4063.9	4046.5	3775.7	3540.6
72.5°	3581.8	2777.6	2506.8	2472.9	2250.6	2453.7	3506.7	3446.4	3038.3	2843.4
75°	2951.4	2105.1	1790.4	1818.8	1649.5	1837.1	2789.5	2361.3	2022.8	1906.6
77.5°	2290.9	1487.6	1236.9	1203.1	1169.2	1189.3	1917.6	1418.1	1182.0	1075.0
80°	1460.1	935.0	927.7	848.1	820.6	691.6	985.3	754.8	593.8	561.7
82.5°	775.8	538.9	612.1	490.4	394.3	283.6	333.9	224.1	189.4	198.5
85°	212.3	111.6	31.1	0.0	0.0	0.0	0.0	0.9	0.9	0.9
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	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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