

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: P401941

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

Issue Date: 5/20/2020

Test Information

Test Method: LM-79-08
Report Number: P401941
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G1-2004-754-8)
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-HSS
Description: ENTRI LED LUMINAIRE
(1) 80 CRI, 3000K, 1200mA LIGHTSQUARE WITH 16 LEDS AND SPILL LIGHT ELIMINATOR LEFT OPTICS WITH HOUSE SIDE SHIELD
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4652 lumens
Efficiency: N/A
Efficacy: 70.4 lumens/watt
Luminous Opening: Rectangular (W 0.5' x L: 0.5' x H: 0')
IES Classification: Type III - Short - Semi-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

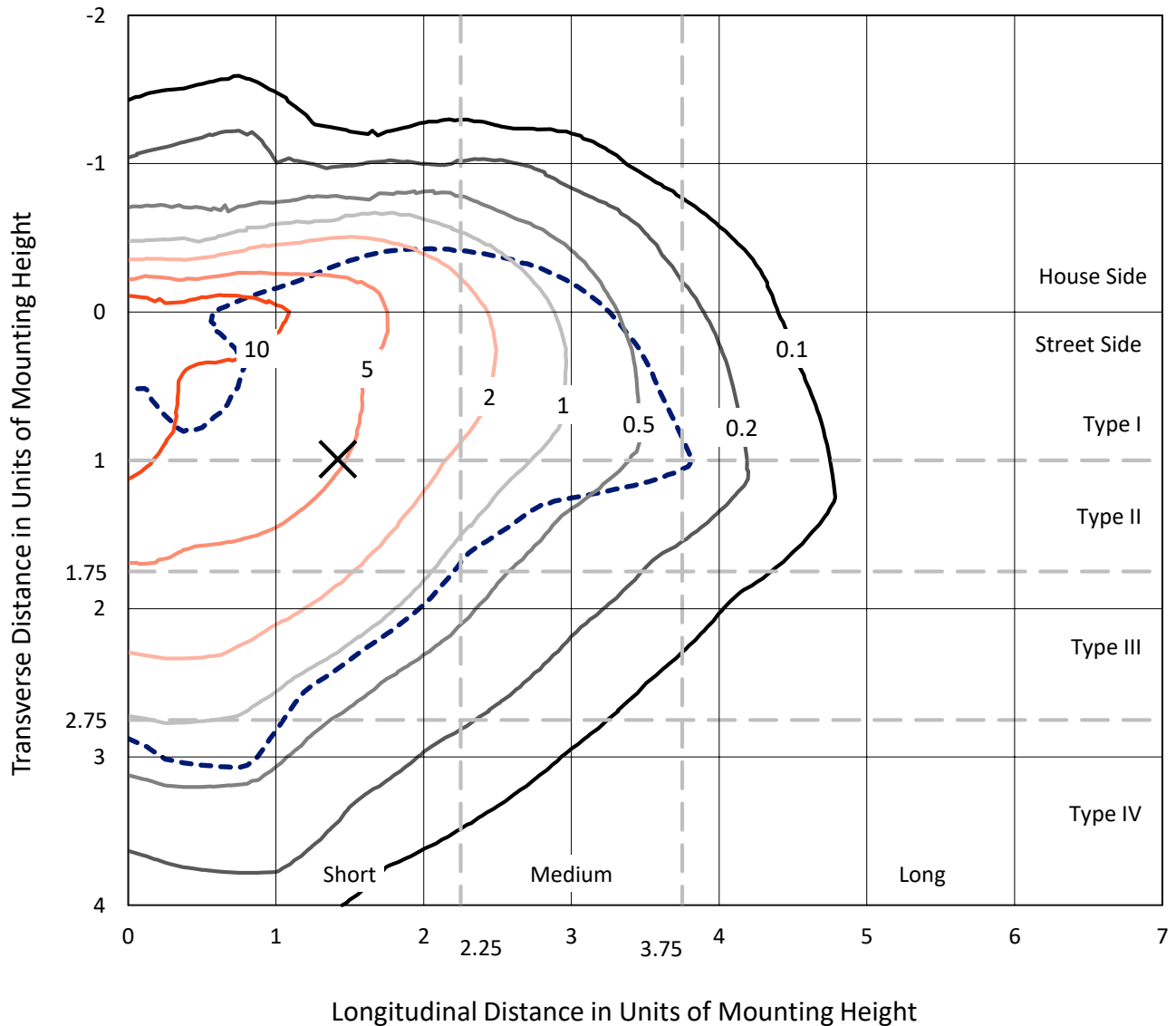


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Iso-Footcandle Lines of Horizontal Illumination

✕ Max cd
 - - - 1/2 Max cd

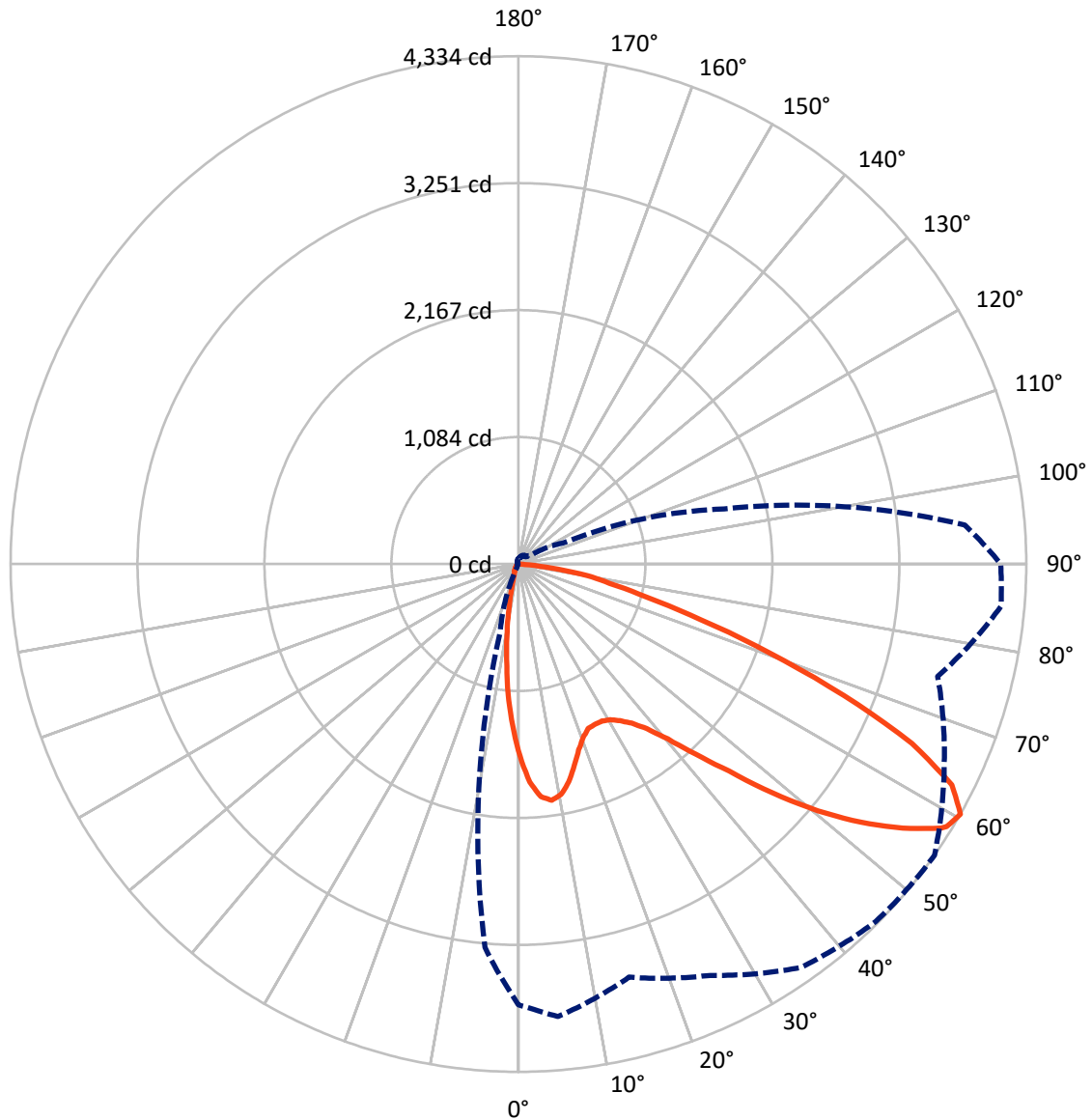


Based on 10 foot mounting height. Maximum calculated value = 19.4 fc
 Type III - Short - Semi-Cutoff

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Luminous Intensity Polar Plot



— Vertical Plane Through 55-Deg Lateral - - - Horizontal Cone Through 60-Deg Vertical

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FLUX DISTRIBUTION:

		Downward	Upward	Total
House Side	Lumens	823.8	0.0	823.8
	% Fixture	17.7	0.0	17.7
Street Side	Lumens	3828.2	0.0	3828.2
	% Fixture	82.3	0.0	82.3
Total	Lumens	4652.0	0.0	4652.0
	% Fixture	100.0	0.0	100.0

Coefficient of Utilization

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	123.6	2.7
10°-20°	235.1	5.1
20°-30°	335.4	7.2
30°-40°	492.0	10.6
40°-50°	725.4	15.6
50°-60°	1074.6	23.1
60°-70°	1145.2	24.6
70°-80°	475.0	10.2
80°-90°	45.7	1.0
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°	4652.0	100.0
0°-180°	4652.0	100.0



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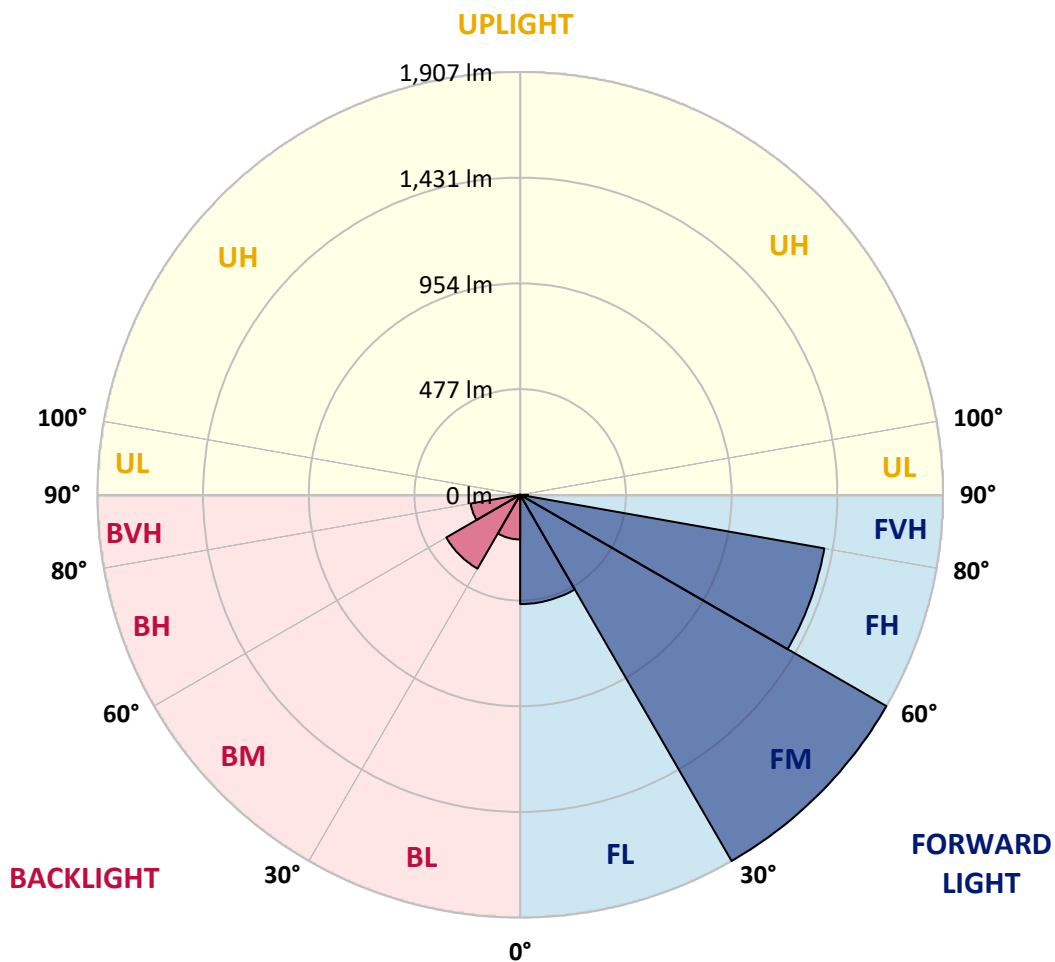
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LUMINAIRE CLASSIFICATION SYSTEM LUMEN TABLE AND BUG RATING:

Zone		Lumens	% Fixture	Zone Rating/Lumen Limit		
				B	U	G
FL	(0°-30°)	492.7	10.6			
FM	(30°-60°)	1907.4	41.0			
FH	(60°-80°)	1393.1	29.9			G1/1800
FVH	(80°-90°)	35.0	0.8			G1/100
BL	(0°-30°)	201.4	4.3	B1/500		
BM	(30°-60°)	384.6	8.3	B1/1000		
BH	(60°-80°)	227.1	4.9	B1/500		G1/500
BVH	(80°-90°)	10.7	0.2			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 Short





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CANDELA DISTRIBUTION (FULL):

	0°	1°	5°	15°	25°	35°	45°	55°	65°	75°	85°
0°	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9
2.5°	1715.9	1713.2	1737.9	1788.9	1820.5	1839.9	1843.4	1863.6	1843.4	1832.8	1795.0
5°	1665.7	1664.9	1712.4	1824.0	1915.5	1984.1	2017.5	1994.7	1959.5	1890.0	1805.6
7.5°	1526.8	1526.8	1616.5	1766.0	1919.0	2037.8	2078.2	2036.0	1952.5	1812.6	1661.3
10°	1413.3	1423.9	1510.1	1688.6	1858.3	1988.5	2033.4	2000.8	1891.8	1710.6	1532.9
12.5°	1345.6	1351.8	1447.6	1627.0	1785.4	1890.9	1918.2	1908.5	1829.3	1632.3	1444.1
15°	1351.8	1360.6	1470.5	1617.4	1720.3	1762.5	1772.2	1784.5	1751.9	1600.7	1415.1
17.5°	1448.5	1454.7	1565.5	1660.5	1656.1	1642.9	1646.4	1666.6	1705.3	1627.0	1474.0
20°	1603.3	1619.1	1730.8	1732.6	1622.6	1561.1	1545.3	1578.7	1683.3	1696.5	1599.8
22.5°	1802.1	1808.2	1921.7	1854.0	1626.2	1504.8	1486.3	1524.1	1690.4	1809.1	1773.9
25°	2032.5	2054.5	2116.0	2011.4	1677.2	1496.9	1484.6	1516.2	1715.9	1928.7	1953.3
27.5°	2188.2	2205.7	2264.7	2118.7	1722.9	1501.3	1478.4	1517.1	1746.7	2041.3	2145.1
30°	2327.1	2339.4	2361.4	2175.0	1774.8	1523.3	1486.3	1541.7	1763.4	2065.0	2269.1
32.5°	2458.2	2473.1	2459.9	2242.7	1832.0	1564.6	1501.3	1593.6	1799.4	2112.5	2377.2
35°	2627.0	2627.9	2583.0	2310.4	1897.0	1613.9	1545.3	1667.5	1869.8	2186.4	2493.3
37.5°	2827.5	2829.3	2715.8	2379.9	1970.9	1696.5	1649.0	1781.8	1971.8	2271.7	2659.6
40°	3002.6	3009.6	2859.2	2459.9	2061.5	1857.5	1853.1	1963.0	2102.8	2385.2	2838.1
42.5°	3154.7	3174.9	2991.1	2526.8	2189.9	2104.6	2115.2	2215.4	2262.0	2480.1	2948.9
45°	3308.6	3307.7	3099.3	2593.6	2404.5	2423.0	2523.2	2518.8	2442.3	2531.2	3036.0
47.5°	3404.5	3400.1	3165.3	2702.7	2693.9	2870.6	2977.1	2919.0	2642.0	2585.7	3145.0
50°	3441.4	3439.7	3217.2	2841.6	2988.5	3276.1	3428.2	3312.1	2886.5	2677.1	3275.2
52.5°	3546.1	3537.3	3336.8	2999.9	3255.0	3666.6	3792.3	3663.0	3130.1	2841.6	3426.5
55°	3709.7	3712.3	3542.6	3185.5	3468.7	3941.8	4095.8	3980.5	3379.0	3067.6	3634.0
57.5°	3819.6	3827.5	3770.3	3392.2	3697.3	4134.5	4284.0	4251.4	3710.5	3337.6	3877.6
58°	3830.2	3836.3	3806.4	3431.7	3731.6	4156.4	4309.5	4286.6	3783.5	3423.8	3935.7
60°	3762.4	3780.9	3876.8	3649.9	3873.2	4203.1	4313.9	4334.1	4009.6	3703.5	4134.5
62.5°	3578.6	3584.8	3758.9	3894.4	3970.0	4087.8	4098.4	4151.2	4102.8	4031.6	4312.1
65°	3353.5	3353.5	3541.7	3905.8	3719.3	3700.0	3638.4	3691.2	3831.0	4237.4	4299.8
67.5°	2962.1	2964.7	3204.8	3479.2	3083.5	3016.6	2977.1	2996.4	3294.5	4065.9	4060.6
70°	2394.0	2392.2	2639.3	2817.0	2288.4	2231.3	2278.7	2272.6	2676.3	3612.9	3545.2
72.5°	1693.0	1708.0	1962.1	2175.8	1554.0	1339.5	1548.8	1629.7	2013.1	3045.7	2743.1
75°	953.4	973.6	1181.1	1511.8	980.6	905.9	1013.2	1128.4	1455.5	2424.7	1842.5
77.5°	478.4	486.4	605.1	727.3	594.5	690.4	684.2	794.2	998.2	1635.8	1053.6
80°	276.2	292.0	332.4	375.5	332.4	438.0	508.3	598.0	614.8	846.1	587.5
82.5°	110.8	124.0	155.7	176.8	138.1	130.2	88.8	279.7	370.3	409.0	225.1
85°	0.0	0.0	0.9	1.8	2.6	2.6	4.4	49.3	90.6	20.2	36.9
87.5°	0.0	0.0	0.9	0.9	1.8	2.6	3.5	6.2	7.9	9.7	33.4
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°	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9
2.5°	1781.0	1771.3	1738.7	1689.5	1658.7	1611.2	1591.9	1547.0	1524.1	1486.3	1486.3
5°	1763.4	1723.8	1642.0	1535.6	1459.9	1380.8	1355.3	1302.5	1264.7	1219.8	1201.4
7.5°	1603.3	1547.9	1420.4	1296.4	1175.9	1095.8	1016.7	963.0	912.0	875.1	880.4
10°	1456.4	1377.3	1237.4	1080.0	955.1	871.6	800.3	737.9	685.1	633.2	625.3
12.5°	1360.6	1270.0	1102.9	934.0	840.8	779.2	713.3	644.7	579.6	522.4	499.5
15°	1320.1	1221.6	1035.2	876.0	790.7	711.5	635.0	550.6	475.8	407.2	388.7
17.5°	1364.1	1246.2	1029.0	837.3	718.5	619.2	512.7	420.4	332.4	283.2	268.2
20°	1483.7	1330.7	1049.2	798.6	638.5	510.1	379.9	275.3	226.0	196.1	186.5
22.5°	1656.9	1470.5	1083.5	760.8	557.6	379.9	262.1	198.8	169.7	153.9	149.5
25°	1845.2	1650.8	1146.8	729.1	476.7	282.3	194.4	162.7	145.1	133.7	129.3
27.5°	2057.1	1829.3	1224.2	705.3	401.9	226.0	167.1	143.4	129.3	121.4	117.9
30°	2189.9	1957.7	1283.2	663.1	350.9	205.8	159.2	135.4	120.5	114.3	111.7
32.5°	2312.2	2058.9	1339.5	614.8	312.2	182.1	154.8	142.5	124.9	112.6	107.3
35°	2446.7	2162.7	1366.7	585.7	286.7	158.3	127.5	110.8	101.1	99.4	96.7
37.5°	2647.2	2285.8	1384.3	569.9	270.9	144.2	118.7	100.3	88.8	78.3	73.9
40°	2837.2	2413.3	1393.1	555.0	263.0	135.4	113.5	95.0	82.7	73.0	68.6
42.5°	2985.8	2529.4	1398.4	544.4	248.9	130.2	109.1	91.5	78.3	68.6	64.2
45°	3107.2	2664.0	1394.0	540.9	237.5	133.7	107.3	88.8	74.8	65.1	60.7
47.5°	3225.9	2810.0	1410.7	536.5	226.0	128.4	108.2	87.9	72.1	62.4	58.0
50°	3381.6	2986.7	1471.4	524.2	218.1	120.5	117.0	88.8	71.2	60.7	57.2
52.5°	3583.0	3231.2	1581.3	511.0	208.4	113.5	122.2	88.8	69.5	58.9	54.5
55°	3827.5	3505.6	1702.7	491.6	191.7	104.7	117.0	88.8	67.7	58.0	52.8
57.5°	4027.2	3750.1	1798.5	468.8	160.9	94.1	107.3	85.3	63.3	54.5	50.1
58°	4044.7	3778.3	1811.7	462.6	157.4	92.3	104.7	84.4	61.6	53.6	49.3
60°	4116.0	3824.0	1817.0	429.2	131.0	87.9	90.6	81.8	58.0	50.1	46.6
62.5°	4091.4	3672.7	1705.3	370.3	117.0	80.0	75.6	83.6	53.6	45.7	42.2
65°	3969.1	3375.5	1494.2	331.6	117.9	71.2	65.1	73.0	49.3	41.3	37.8
67.5°	3678.0	2924.3	1213.7	310.5	123.1	63.3	56.3	54.5	44.0	36.9	34.3
70°	3137.1	2396.6	919.9	292.0	130.2	56.3	51.9	48.4	40.5	34.3	30.8
72.5°	2310.4	1774.8	669.3	273.5	126.6	50.1	48.4	44.0	36.9	30.8	29.0
75°	1441.5	1030.8	458.2	223.4	113.5	44.0	44.9	41.3	33.4	29.0	26.4
77.5°	841.7	723.8	226.0	166.2	78.3	38.7	39.6	37.8	34.3	27.3	25.5
80°	503.9	450.3	96.7	71.2	43.1	34.3	33.4	35.2	32.5	25.5	23.7
82.5°	218.1	195.2	46.6	39.6	35.2	29.9	29.0	29.9	28.1	21.1	20.2
85°	12.3	32.5	22.0	29.0	26.4	22.0	22.0	22.9	20.2	16.7	16.7
87.5°	11.4	24.6	14.1	17.6	19.3	16.7	17.6	17.6	16.7	15.0	14.1
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°	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9
2.5°	1466.1	1456.4	1427.4	1416.8	1371.1	1382.5	1386.1	1381.7	1383.4	1386.9	1400.1
5°	1214.6	1198.7	1160.9	1136.3	1123.1	1114.3	1073.0	1073.8	1080.0	1056.3	1087.0
7.5°	862.8	880.4	883.9	861.0	846.9	817.0	779.2	758.1	722.1	742.3	746.7
10°	617.4	608.6	625.3	617.4	595.4	584.0	543.5	540.0	536.5	533.8	559.4
12.5°	470.5	444.1	424.8	429.2	412.5	384.3	377.3	378.2	381.7	381.7	388.7
15°	372.9	332.4	301.7	283.2	285.8	257.7	249.8	223.4	219.9	212.0	213.7
17.5°	261.2	244.5	226.0	204.9	196.1	170.6	139.8	125.8	115.2	117.0	122.2
20°	180.3	173.3	168.0	157.4	148.6	118.7	99.4	93.2	92.3	94.1	95.9
22.5°	145.1	138.1	132.8	129.3	117.9	95.9	85.3	80.9	80.9	80.9	81.8
25°	124.9	117.9	110.8	110.8	100.3	83.6	75.6	72.1	71.2	70.4	72.1
27.5°	116.1	106.4	99.4	95.0	87.1	73.9	66.8	63.3	62.4	62.4	63.3
30°	107.3	97.6	90.6	84.4	75.6	66.0	58.9	56.3	54.5	54.5	55.4
32.5°	102.0	92.3	83.6	75.6	66.0	58.0	51.9	48.4	46.6	47.5	48.4
35°	90.6	82.7	74.8	66.8	58.0	51.0	44.9	41.3	40.5	40.5	41.3
37.5°	71.2	65.1	63.3	58.9	51.0	44.0	37.8	34.3	33.4	33.4	34.3
40°	64.2	56.3	52.8	51.0	46.6	37.8	30.8	27.3	27.3	26.4	28.1
42.5°	58.9	51.0	44.9	43.1	40.5	32.5	24.6	22.0	21.1	21.1	22.0
45°	55.4	46.6	38.7	34.3	34.3	26.4	20.2	16.7	15.8	15.8	16.7
47.5°	53.6	44.0	34.3	28.1	27.3	22.0	15.8	12.3	11.4	11.4	11.4
50°	51.9	40.5	30.8	23.7	21.1	18.5	12.3	9.7	8.8	8.8	8.8
52.5°	49.3	38.7	28.1	21.1	16.7	14.1	9.7	7.0	6.2	5.3	6.2
55°	47.5	36.1	27.3	19.3	14.1	10.6	7.0	5.3	4.4	4.4	4.4
57.5°	44.9	33.4	24.6	18.5	13.2	7.9	5.3	3.5	2.6	2.6	3.5
58°	44.0	33.4	23.7	17.6	12.3	7.9	5.3	3.5	2.6	2.6	3.5
60°	41.3	30.8	22.9	15.8	11.4	7.0	4.4	2.6	1.8	1.8	2.6
62.5°	38.7	28.1	20.2	14.1	9.7	6.2	3.5	1.8	0.9	0.9	0.9
65°	34.3	25.5	17.6	13.2	7.9	4.4	2.6	0.9	0.0	0.0	0.0
67.5°	30.8	23.7	15.8	11.4	7.0	3.5	1.8	0.0	0.0	0.0	0.0
70°	28.1	22.0	14.1	9.7	6.2	2.6	0.9	0.0	0.0	0.0	0.0
72.5°	26.4	20.2	13.2	8.8	4.4	2.6	0.9	0.0	0.0	0.0	0.0
75°	25.5	19.3	13.2	7.9	4.4	2.6	1.8	0.9	0.0	0.0	0.9
77.5°	24.6	19.3	13.2	7.9	5.3	2.6	2.6	1.8	1.8	0.9	2.6
80°	22.9	17.6	11.4	7.0	4.4	3.5	2.6	1.8	0.0	0.0	0.0
82.5°	19.3	14.1	9.7	7.0	4.4	2.6	0.9	0.0	0.0	0.0	0.0
85°	15.8	11.4	7.9	4.4	2.6	0.9	0.0	0.0	0.0	0.0	0.0
87.5°	14.1	8.8	6.2	3.5	1.8	0.9	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°	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9	1642.9
2.5°	1411.6	1452.0	1468.7	1525.0	1549.7	1600.7	1644.6	1682.5	1700.9	1715.9
5°	1095.0	1133.7	1175.0	1258.5	1330.7	1408.1	1504.8	1605.1	1634.1	1665.7
7.5°	764.3	821.4	890.9	965.7	1068.6	1185.5	1324.5	1448.5	1511.0	1526.8
10°	593.7	661.4	735.2	809.1	894.4	1019.3	1159.2	1319.2	1386.1	1413.3
12.5°	445.9	536.5	624.4	711.5	785.4	893.6	1045.7	1236.6	1310.4	1345.6
15°	268.2	370.3	478.4	595.4	698.3	825.0	996.5	1219.0	1312.2	1351.8
17.5°	133.7	182.9	282.3	458.2	610.4	767.8	995.6	1282.3	1397.5	1448.5
20°	99.4	112.6	150.4	285.8	507.5	720.3	1006.1	1390.5	1560.2	1603.3
22.5°	85.3	95.0	108.2	167.1	379.9	676.3	1043.1	1533.8	1744.9	1802.1
25°	74.8	82.7	93.2	115.2	260.3	624.4	1112.5	1736.1	1954.2	2032.5
27.5°	66.0	73.0	81.8	96.7	174.1	526.8	1152.1	1905.8	2123.1	2188.2
30°	58.0	63.3	72.1	82.7	128.4	407.2	1189.1	2055.4	2276.1	2327.1
32.5°	51.0	55.4	62.4	70.4	97.6	308.7	1190.8	2183.8	2409.8	2458.2
35°	43.1	48.4	53.6	60.7	77.4	241.0	1154.8	2311.3	2568.1	2627.0
37.5°	36.1	40.5	46.6	52.8	70.4	186.5	1080.0	2460.8	2760.7	2827.5
40°	30.8	35.2	40.5	47.5	62.4	135.4	960.4	2596.2	2941.0	3002.6
42.5°	24.6	29.0	35.2	46.6	51.9	97.6	839.9	2726.4	3097.5	3154.7
45°	19.3	24.6	32.5	44.9	43.1	68.6	736.1	2841.6	3232.1	3308.6
47.5°	14.1	20.2	32.5	40.5	35.2	49.3	683.4	2952.4	3352.6	3404.5
50°	10.6	16.7	35.2	34.3	29.9	42.2	691.3	3075.6	3408.0	3441.4
52.5°	7.9	14.1	27.3	24.6	25.5	36.9	722.1	3238.3	3522.3	3546.1
55°	7.0	10.6	16.7	18.5	22.9	35.2	714.1	3392.2	3668.3	3709.7
57.5°	6.2	8.8	13.2	15.0	20.2	33.4	669.3	3459.9	3762.4	3819.6
58°	5.3	8.8	12.3	15.0	20.2	32.5	657.9	3441.4	3758.0	3830.2
60°	4.4	7.9	11.4	13.2	17.6	29.0	602.4	3284.9	3661.3	3762.4
62.5°	3.5	5.3	8.8	9.7	14.1	23.7	496.0	3031.6	3453.7	3578.6
65°	1.8	3.5	5.3	7.0	9.7	17.6	352.7	2731.7	3231.2	3353.5
67.5°	0.0	1.8	3.5	4.4	6.2	13.2	203.2	2318.3	2865.4	2962.1
70°	0.0	0.9	1.8	2.6	3.5	8.8	107.3	1701.8	2219.8	2394.0
72.5°	0.9	0.9	0.9	0.0	1.8	7.0	47.5	1009.6	1513.6	1693.0
75°	0.9	0.9	0.0	0.0	0.0	3.5	20.2	532.1	868.1	953.4
77.5°	3.5	1.8	0.0	0.0	0.0	0.9	9.7	286.7	450.3	478.4
80°	0.9	0.0	0.0	0.0	0.0	0.0	3.5	95.9	270.0	276.2
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.8	116.1	110.8
85°	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
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

(END OF REPORT)