

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: NEO-RAY

Report Number: P332111

Luminaire Tested: **S123DIW-S340D1320U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332111
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S340D1320U835-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6016.8 lumens
Efficiency: N/A
Efficacy: 129.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

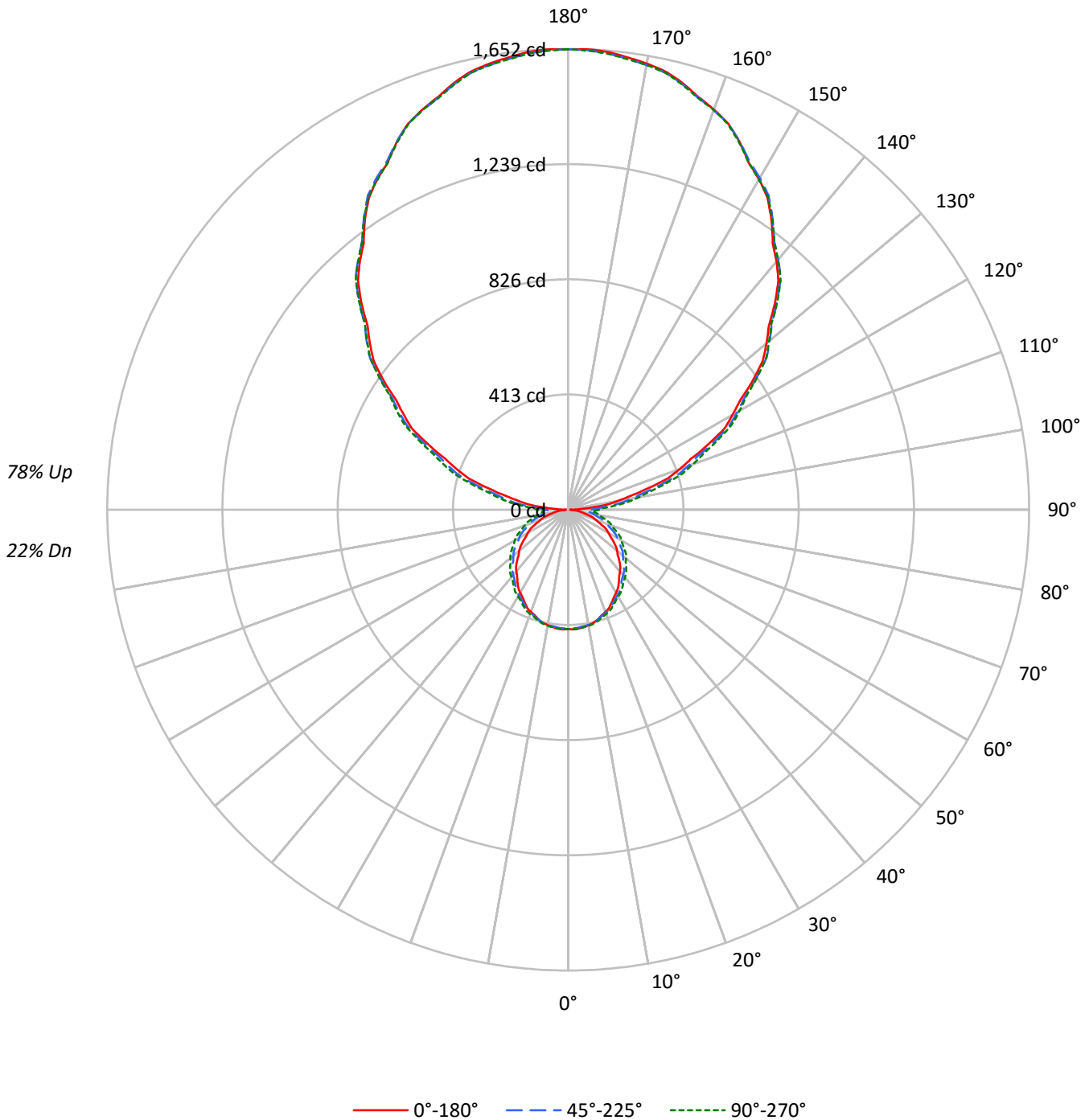
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				20				20				20				20	
RC	80				70				50				30				10	0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
RCR																		
0	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	91	87	83	79	80	77	74	71	58	56	54	42	40	39	26	25	25	17
2	83	75	69	64	73	67	62	58	51	48	45	36	34	32	23	21	20	14
3	75	66	59	53	66	59	53	48	45	41	37	32	29	27	20	18	17	12
4	69	58	51	45	60	52	45	40	40	35	31	28	25	23	18	16	15	10
5	63	52	44	38	55	46	39	34	35	30	27	25	22	20	16	14	13	9
6	58	46	38	33	51	41	34	29	31	27	23	23	19	17	14	12	11	8
7	53	41	34	28	47	37	30	26	28	24	20	20	17	15	13	11	10	7
8	49	37	30	25	43	33	27	22	26	21	18	19	15	13	12	10	9	6
9	46	34	27	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5
10	42	31	24	19	38	28	22	18	21	17	14	16	13	10	10	8	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4604	4604	4604
5°	4618	4488	4490
10°	4577	4385	4363
15°	4518	4267	4223
20°	4434	4133	4070
25°	4330	3980	3908
30°	4224	3841	3744
35°	4103	3694	3614
40°	3990	3560	3474
45°	3864	3432	3362
50°	3739	3305	3239
55°	3601	3175	3128
60°	3466	3044	3015
65°	3328	2903	2878
70°	3120	2744	2740
75°	2859	2565	2600
80°	2556	2387	2438
85°	2274	2264	2344



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.5	0.7
10°-20°	115.6	1.9
20°-30°	172.9	2.9
30°-40°	206.5	3.4
40°-50°	216.0	3.6
50°-60°	202.7	3.4
60°-70°	169.3	2.8
70°-80°	121.1	2.0
80°-90°	77.1	1.3
90°-100°	152.9	2.5
100°-110°	355.2	5.9
110°-120°	569.8	9.5
120°-130°	732.9	12.2
130°-140°	815.2	13.5
140°-150°	796.9	13.2
150°-160°	669.9	11.1
160°-170°	445.9	7.4
170°-180°	156.2	2.6
0°-30°	329.0	5.5
0°-40°	535.5	8.9
0°-60°	954.2	15.9
0°-90°	1321.8	22.0
90°-120°	1077.9	17.9
90°-150°	3423.0	56.9
90°-180°	4695.0	78.0
0°-180°	6016.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	428	428	428	428	428	
5°	428	427	424	428	428	41
15°	408	409	409	413	413	115
25°	368	373	374	380	380	170
35°	317	324	330	337	339	198
45°	259	270	282	290	294	200
55°	198	213	230	242	246	177
65°	136	155	175	189	194	135
75°	74	96	119	134	140	79
85°	23	46	71	86	91	24
90°	7	43	84	104	112	9
95°	82	109	142	161	166	90
105°	296	310	341	354	361	316
115°	554	563	577	589	592	548
125°	808	812	823	827	826	721
135°	1048	1055	1059	1062	1062	807
145°	1270	1272	1276	1278	1275	793
155°	1454	1454	1455	1460	1451	669
165°	1584	1580	1580	1587	1578	446
175°	1647	1642	1642	1649	1641	156
180°	1651	1651	1651	1651	1651	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	429.6	429.4	429.1	428.9	428.6	428.2	427.5	426.8	426.2	425.5	426.2
5°	428.2	428.0	427.8	427.6	427.4	427.0	426.3	425.7	425.1	424.5	425.3
7.5°	424.0	424.1	424.1	424.1	424.2	423.9	423.3	422.7	422.1	421.5	422.5
10°	420.3	420.5	420.7	420.9	421.1	421.0	420.4	419.9	419.4	418.9	419.9
12.5°	415.8	416.1	416.4	416.7	417.0	416.9	416.6	416.2	415.9	415.5	416.5
15°	407.7	408.0	408.3	408.6	408.9	409.1	408.9	408.8	408.7	408.6	409.7
17.5°	397.5	398.1	398.7	399.3	399.9	400.2	400.2	400.1	400.1	400.1	401.0
20°	390.0	390.6	391.2	391.9	392.5	392.9	393.1	393.3	393.5	393.7	394.7
22.5°	382.2	382.8	383.4	384.0	384.7	385.1	385.4	385.7	386.0	386.3	387.5
25°	368.1	369.1	370.2	371.2	372.2	372.9	373.2	373.5	373.8	374.2	375.5
27.5°	353.9	355.1	356.3	357.5	358.7	359.6	360.2	360.9	361.6	362.2	363.4
30°	343.9	345.2	346.6	347.9	349.3	350.3	351.2	352.0	352.8	353.7	354.9
32.5°	332.7	334.2	335.7	337.2	338.7	340.0	341.1	342.2	343.3	344.3	345.7
35°	316.8	318.5	320.2	321.8	323.5	325.0	326.3	327.7	329.0	330.4	331.9
37.5°	300.1	301.9	303.8	305.7	307.5	309.3	310.9	312.6	314.3	315.9	317.7
40°	288.9	290.8	292.6	294.5	296.3	298.3	300.4	302.5	304.5	306.6	308.4
42.5°	276.6	278.9	281.1	283.4	285.7	287.9	290.1	292.2	294.4	296.5	298.5
45°	259.1	261.6	264.0	266.5	269.0	271.5	274.1	276.7	279.3	281.9	283.9
47.5°	240.7	243.5	246.3	249.2	252.0	254.9	257.8	260.8	263.7	266.7	268.9
50°	228.8	231.7	234.6	237.5	240.4	243.4	246.6	249.9	253.1	256.3	258.7
52.5°	216.1	219.2	222.2	225.3	228.4	231.7	235.2	238.8	242.3	245.8	248.3
55°	197.6	201.0	204.4	207.8	211.2	214.8	218.5	222.3	226.0	229.7	232.5
57.5°	179.5	183.0	186.6	190.2	193.7	197.6	201.6	205.7	209.8	213.9	216.7
60°	166.8	170.5	174.3	178.0	181.7	185.7	190.0	194.2	198.4	202.7	205.6
62.5°	154.9	158.7	162.5	166.3	170.1	174.3	178.8	183.3	187.8	192.3	195.1
65°	136.5	140.6	144.6	148.6	152.7	157.0	161.5	166.1	170.6	175.2	178.3
67.5°	117.9	122.2	126.5	130.7	135.0	139.5	144.1	148.8	153.4	158.1	161.4
70°	104.8	109.3	113.7	118.2	122.6	127.4	132.3	137.3	142.3	147.2	150.6
72.5°	92.9	97.4	101.8	106.3	110.7	115.5	120.6	125.8	130.9	136.1	139.5
75°	74.1	79.0	83.8	88.7	93.6	98.6	103.8	108.9	114.1	119.3	122.7
77.5°	57.7	62.6	67.5	72.4	77.3	82.4	87.6	92.8	98.0	103.3	106.9
80°	46.1	51.2	56.3	61.4	66.4	71.7	77.0	82.4	87.8	93.2	96.7
82.5°	36.1	41.2	46.4	51.5	56.7	62.0	67.5	72.9	78.4	83.9	87.4
85°	22.8	28.0	33.2	38.4	43.5	48.9	54.4	59.8	65.3	70.8	74.3
87.5°	12.7	18.4	24.1	29.9	35.6	41.5	47.5	53.5	59.6	65.6	69.3
90°	7.4	15.3	23.3	31.2	39.2	47.7	56.7	65.7	74.8	83.8	88.5
92.5°	37.1	43.6	50.1	56.7	63.2	70.2	77.5	84.8	92.1	99.5	103.8
95°	81.6	87.7	93.8	99.8	105.9	112.6	120.0	127.3	134.7	142.1	146.5
97.5°	140.5	145.6	150.8	155.9	161.1	166.9	173.4	179.9	186.4	193.0	197.4
100°	180.6	185.6	190.7	195.7	200.8	206.4	212.6	218.8	225.0	231.2	235.1
102.5°	226.9	230.9	234.9	239.0	243.0	248.3	254.9	261.4	268.0	274.6	278.4
105°	295.5	298.6	301.7	304.7	307.8	312.8	319.9	326.9	334.0	341.0	343.9
107.5°	374.9	377.3	379.8	382.3	384.7	388.6	393.8	399.1	404.4	409.6	413.3
110°	424.3	426.8	429.2	431.6	434.1	437.7	442.4	447.1	451.8	456.5	460.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	476.2	478.1	479.9	481.8	483.7	486.7	490.8	494.9	499.0	503.1	507.0
115°	553.5	555.7	557.8	559.9	562.0	564.6	567.8	570.9	574.1	577.2	580.0
117.5°	631.8	633.1	634.5	635.8	637.2	639.2	642.0	644.7	647.5	650.2	652.6
120°	680.2	682.4	684.7	686.9	689.2	691.3	693.3	695.2	697.2	699.2	701.3
122.5°	731.0	732.6	734.1	735.6	737.2	739.2	741.7	744.2	746.7	749.2	750.8
125°	808.1	809.0	809.8	810.7	811.6	813.2	815.6	818.1	820.5	822.9	823.9
127.5°	879.7	881.5	883.2	884.9	886.7	888.5	890.3	892.2	894.0	895.9	896.3
130°	927.4	929.6	931.8	934.0	936.2	938.0	939.2	940.4	941.6	942.8	943.6
132.5°	974.8	977.1	979.4	981.7	983.9	985.6	986.6	987.6	988.7	989.7	990.2
135°	1047.6	1049.2	1050.8	1052.5	1054.1	1055.3	1056.2	1057.0	1057.9	1058.7	1059.4
137.5°	1114.9	1116.3	1117.7	1119.0	1120.4	1121.7	1123.1	1124.5	1125.9	1127.3	1127.7
140°	1161.3	1162.7	1164.1	1165.6	1167.0	1168.0	1168.6	1169.2	1169.8	1170.4	1171.7
142.5°	1203.8	1205.2	1206.5	1207.9	1209.2	1210.2	1210.8	1211.4	1211.9	1212.5	1213.6
145°	1270.2	1270.7	1271.2	1271.6	1272.1	1272.8	1273.6	1274.5	1275.4	1276.2	1276.8
147.5°	1327.8	1328.9	1329.9	1331.0	1332.0	1332.9	1333.7	1334.5	1335.3	1336.1	1336.4
150°	1368.3	1368.9	1369.5	1370.0	1370.6	1371.2	1371.8	1372.3	1372.9	1373.5	1373.5
152.5°	1401.5	1402.3	1403.1	1403.9	1404.7	1405.3	1405.7	1406.0	1406.4	1406.7	1407.2
155°	1453.9	1453.9	1453.9	1453.9	1453.9	1454.1	1454.3	1454.6	1454.9	1455.2	1456.4
157.5°	1498.5	1498.2	1497.8	1497.5	1497.1	1497.1	1497.3	1497.5	1497.8	1498.0	1499.2
160°	1526.5	1526.0	1525.4	1524.8	1524.2	1523.9	1523.9	1523.9	1523.9	1523.9	1525.4
162.5°	1551.4	1550.6	1549.8	1549.0	1548.2	1547.9	1548.2	1548.4	1548.6	1548.8	1550.3
165°	1583.6	1582.7	1581.9	1581.0	1580.2	1579.7	1579.7	1579.7	1579.7	1579.7	1581.4
167.5°	1609.3	1608.1	1607.0	1605.8	1604.7	1604.2	1604.4	1604.7	1604.9	1605.1	1606.9
170°	1623.8	1622.7	1621.5	1620.4	1619.2	1618.6	1618.6	1618.6	1618.6	1618.6	1620.6
172.5°	1635.2	1634.1	1632.9	1631.8	1630.6	1630.0	1630.0	1630.0	1630.0	1630.0	1631.8
175°	1647.2	1646.0	1644.9	1643.7	1642.5	1642.0	1642.0	1642.0	1642.0	1642.0	1643.7
177.5°	1652.1	1651.2	1650.2	1649.3	1648.4	1647.9	1647.9	1647.9	1647.9	1647.9	1649.3
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	427.7	427.7	427.7	427.7	427.7	427.7	427.7	427.7
2.5°	426.8	427.5	428.2	428.4	428.4	428.3	428.2	428.1
5°	426.1	427.0	427.8	428.2	428.1	427.9	427.8	427.7
7.5°	423.6	424.6	425.6	426.1	426.0	425.8	425.7	425.6
10°	421.0	422.0	423.0	423.4	423.2	423.0	422.8	422.6
12.5°	417.4	418.4	419.3	419.7	419.5	419.3	419.1	418.9
15°	410.7	411.7	412.8	413.2	413.1	413.0	412.9	412.8
17.5°	401.9	402.9	403.8	404.2	404.0	403.9	403.8	403.6
20°	395.6	396.5	397.5	398.0	398.1	398.2	398.3	398.4
22.5°	388.6	389.8	391.0	391.6	391.5	391.4	391.4	391.3
25°	376.8	378.2	379.5	380.2	380.2	380.2	380.2	380.2
27.5°	364.5	365.7	366.9	367.5	367.6	367.7	367.7	367.8
30°	356.1	357.4	358.6	359.2	359.2	359.2	359.2	359.2
32.5°	347.0	348.3	349.6	350.4	350.7	350.9	351.2	351.4
35°	333.5	335.0	336.6	337.6	338.0	338.4	338.8	339.2
37.5°	319.4	321.2	323.0	324.0	324.3	324.7	325.0	325.3
40°	310.1	311.9	313.6	314.7	315.1	315.6	316.0	316.4
42.5°	300.4	302.3	304.2	305.5	306.1	306.6	307.2	307.8
45°	285.8	287.8	289.8	291.2	292.0	292.8	293.7	294.5
47.5°	271.1	273.4	275.6	277.0	277.6	278.3	278.9	279.6
50°	261.0	263.4	265.8	267.4	268.1	268.8	269.5	270.3
52.5°	250.8	253.2	255.7	257.4	258.3	259.2	260.0	260.9
55°	235.3	238.1	240.9	242.7	243.5	244.4	245.2	246.0
57.5°	219.5	222.3	225.1	227.0	228.0	229.0	230.0	230.9
60°	208.5	211.4	214.3	216.3	217.4	218.6	219.7	220.9
62.5°	198.0	200.9	203.8	205.8	206.9	207.9	209.0	210.1
65°	181.4	184.5	187.6	189.7	190.7	191.8	192.8	193.8
67.5°	164.8	168.2	171.6	173.8	174.6	175.5	176.4	177.2
70°	153.9	157.2	160.5	162.7	163.7	164.7	165.8	166.8
72.5°	142.8	146.2	149.6	151.9	152.9	153.9	155.0	156.0
75°	126.1	129.5	133.0	135.3	136.5	137.8	139.0	140.3
77.5°	110.5	114.1	117.7	119.9	120.9	121.9	122.8	123.8
80°	100.2	103.8	107.3	109.5	110.6	111.6	112.7	113.7
82.5°	90.9	94.4	98.0	100.2	101.3	102.3	103.3	104.4
85°	77.9	81.4	84.9	87.2	88.2	89.3	90.3	91.3
87.5°	73.1	76.8	80.6	83.0	84.2	85.3	86.5	87.6
90°	93.1	97.8	102.5	105.6	107.2	108.8	110.5	112.1
92.5°	108.2	112.6	116.9	119.4	120.0	120.6	121.2	121.8
95°	150.8	155.2	159.6	162.3	163.3	164.3	165.4	166.4
97.5°	201.8	206.2	210.6	213.3	214.2	215.1	216.0	217.0
100°	238.9	242.8	246.7	249.4	251.0	252.6	254.2	255.9
102.5°	282.2	286.0	289.7	292.1	293.0	293.9	294.9	295.8
105°	346.8	349.7	352.6	354.8	356.3	357.9	359.4	360.9
107.5°	417.0	420.7	424.4	426.5	427.1	427.7	428.2	428.8
110°	464.2	468.1	471.9	474.0	474.2	474.5	474.7	475.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	511.0	515.0	519.0	521.4	522.2	523.0	523.8	524.6
115°	582.8	585.5	588.3	590.0	590.5	591.0	591.6	592.1
117.5°	655.0	657.4	659.8	661.0	661.0	661.0	661.0	661.0
120°	703.4	705.5	707.6	708.7	708.8	709.0	709.1	709.3
122.5°	752.3	753.8	755.4	756.1	756.0	756.0	755.9	755.8
125°	825.0	826.0	827.0	827.3	826.9	826.5	826.0	825.6
127.5°	896.7	897.2	897.6	897.5	896.9	896.3	895.7	895.0
130°	944.4	945.2	946.0	945.7	944.3	943.0	941.6	940.2
132.5°	990.7	991.2	991.7	991.5	990.7	989.8	989.0	988.1
135°	1060.2	1060.9	1061.6	1061.9	1061.8	1061.8	1061.7	1061.7
137.5°	1128.2	1128.6	1129.0	1128.9	1128.4	1127.8	1127.2	1126.6
140°	1173.0	1174.2	1175.5	1175.4	1173.9	1172.4	1170.9	1169.4
142.5°	1214.7	1215.8	1216.9	1217.0	1215.9	1214.9	1213.8	1212.8
145°	1277.3	1277.8	1278.4	1278.3	1277.5	1276.8	1276.1	1275.3
147.5°	1336.6	1336.9	1337.1	1336.6	1335.2	1333.9	1332.5	1331.2
150°	1373.5	1373.5	1373.5	1372.7	1371.2	1369.7	1368.2	1366.6
152.5°	1407.6	1408.1	1408.5	1408.0	1406.6	1405.1	1403.7	1402.2
155°	1457.5	1458.7	1459.8	1459.4	1457.4	1455.4	1453.3	1451.3
157.5°	1500.4	1501.6	1502.9	1502.6	1501.0	1499.4	1497.8	1496.2
160°	1526.8	1528.3	1529.7	1529.9	1528.7	1527.6	1526.4	1525.2
162.5°	1551.7	1553.2	1554.6	1554.4	1552.6	1550.7	1548.9	1547.0
165°	1583.2	1584.9	1586.6	1586.5	1584.5	1582.5	1580.4	1578.4
167.5°	1608.7	1610.5	1612.3	1612.3	1610.5	1608.7	1606.9	1605.1
170°	1622.7	1624.7	1626.7	1626.7	1624.7	1622.7	1620.6	1618.6
172.5°	1633.6	1635.4	1637.2	1637.1	1635.1	1633.0	1631.0	1629.0
175°	1645.4	1647.2	1648.9	1648.7	1646.7	1644.7	1642.7	1640.7
177.5°	1650.7	1652.1	1653.5	1653.4	1651.7	1650.1	1648.5	1646.9
180°	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1	1651.1

(END OF REPORT)