

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: P332119-930

Luminaire Tested: **S123DIW-S340D1535U930-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332119-930
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-S340D1535U930-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5490.5 lumens
Efficiency: N/A
Efficacy: 102.8 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

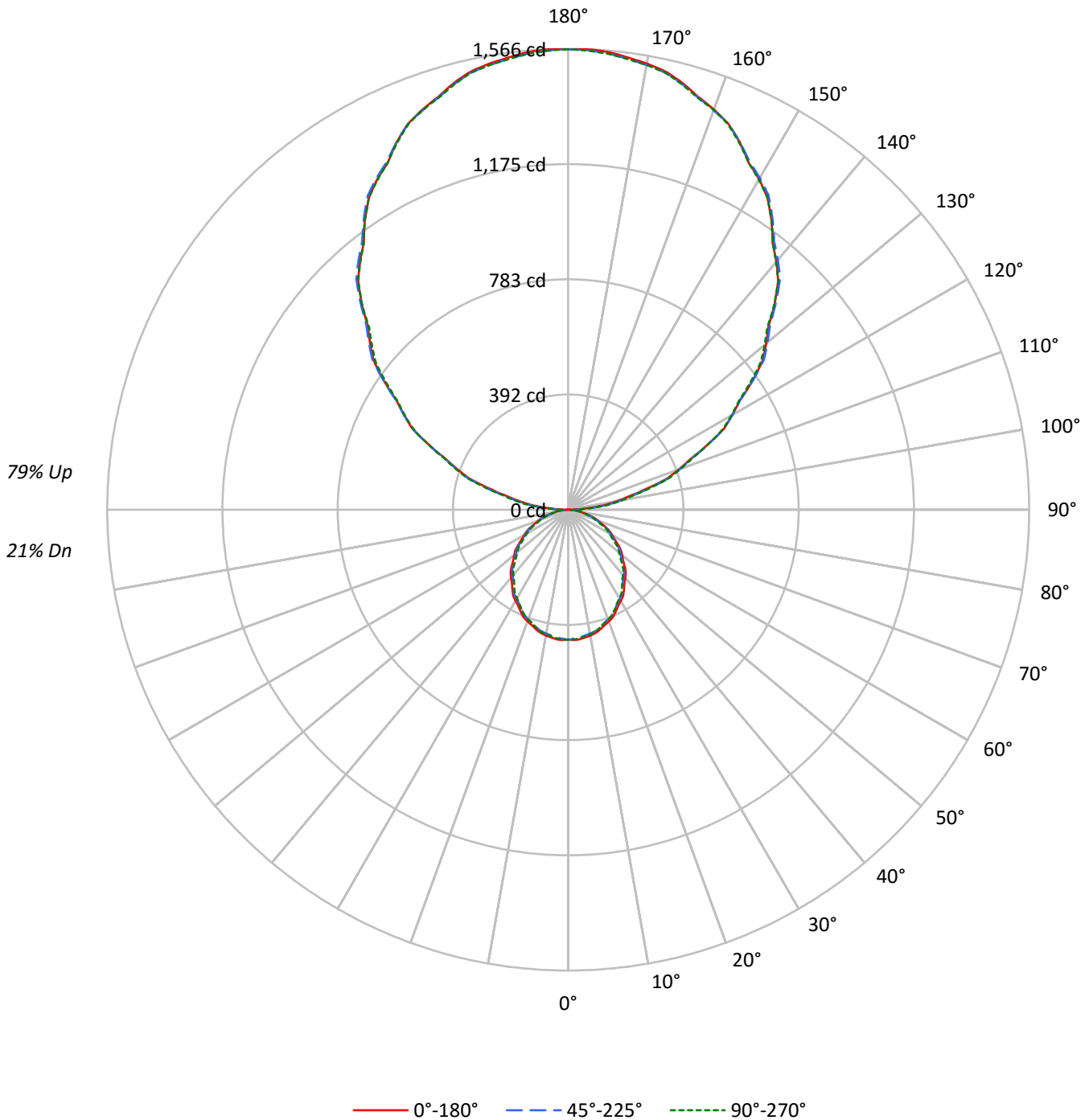
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	67	67	67	48	48	48	30	30	30	21
1	91	87	83	80	81	77	74	71	59	57	55	42	40	39	26	25	25	18
2	83	76	70	65	73	67	63	58	51	48	45	37	35	33	23	22	21	15
3	76	67	60	54	67	59	53	49	45	41	38	32	30	28	20	19	18	12
4	69	59	51	46	61	52	46	41	40	36	32	29	26	24	18	16	15	11
5	63	52	45	39	56	46	40	35	36	31	28	26	23	20	16	14	13	9
6	58	47	39	33	51	42	35	30	32	27	24	23	20	18	15	13	12	8
7	54	42	34	29	47	37	31	26	29	24	21	21	18	15	13	12	10	7
8	50	38	30	25	44	34	27	23	26	22	18	19	16	14	12	10	9	6
9	46	34	27	22	41	31	25	20	24	19	16	17	14	12	11	9	8	6
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4755	4755	4755
5°	4778	4712	4744
10°	4746	4671	4701
15°	4690	4619	4627
20°	4625	4543	4548
25°	4538	4454	4444
30°	4443	4354	4320
35°	4343	4248	4193
40°	4239	4131	4068
45°	4122	4025	3927
50°	4007	3893	3785
55°	3856	3757	3643
60°	3705	3597	3483
65°	3568	3423	3319
70°	3371	3229	3084
75°	3082	2969	2845
80°	2777	2665	2641
85°	2433	2347	2260



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.6	0.8
10°-20°	117.5	2.1
20°-30°	173.6	3.2
30°-40°	202.8	3.7
40°-50°	203.9	3.7
50°-60°	179.1	3.3
60°-70°	133.4	2.4
70°-80°	76.0	1.4
80°-90°	26.5	0.5
90°-100°	102.0	1.9
100°-110°	305.2	5.6
110°-120°	519.0	9.5
120°-130°	682.7	12.4
130°-140°	767.4	14.0
140°-150°	754.3	13.7
150°-160°	635.0	11.6
160°-170°	422.7	7.7
170°-180°	148.0	2.7
0°-30°	332.7	6.1
0°-40°	535.5	9.8
0°-60°	918.4	16.7
0°-90°	1154.3	21.0
90°-120°	926.2	16.9
90°-150°	3130.5	57.0
90°-180°	4336.0	79.0
0°-180°	5490.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	442	442	442	442	442	
5°	442	440	436	440	439	42
15°	421	419	414	417	415	119
25°	382	380	375	375	374	176
35°	330	328	323	321	319	207
45°	271	269	264	260	258	209
55°	206	205	200	196	194	184
65°	140	138	134	132	130	138
75°	74	73	71	70	68	79
85°	20	19	19	18	18	22
90°	1	14	30	34	37	6
95°	73	81	91	96	96	82
105°	277	280	290	290	293	296
115°	522	526	524	525	524	517
125°	765	768	766	761	756	682
135°	992	999	998	994	991	764
145°	1204	1206	1210	1208	1204	752
155°	1378	1378	1379	1384	1376	634
165°	1501	1498	1498	1504	1496	423
175°	1561	1557	1556	1563	1555	148
180°	1565	1565	1565	1565	1565	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	443.4	443.0	442.8	442.5	442.2	441.7	441.0	440.3	439.5	438.8	439.4
5°	442.2	441.7	441.3	440.9	440.5	439.9	438.9	438.0	437.0	436.1	436.9
7.5°	437.9	437.4	437.0	436.6	436.2	435.5	434.6	433.6	432.6	431.6	432.4
10°	434.2	433.8	433.3	432.9	432.5	431.8	430.6	429.6	428.4	427.4	428.1
12.5°	429.3	429.0	428.6	428.3	428.0	427.2	426.2	425.2	424.1	423.1	423.7
15°	420.9	420.6	420.2	419.9	419.6	418.8	417.8	416.6	415.6	414.5	415.2
17.5°	411.1	410.7	410.3	409.8	409.4	408.6	407.5	406.4	405.3	404.2	404.6
20°	403.8	403.3	402.8	402.3	401.8	401.0	399.9	398.8	397.7	396.6	397.0
22.5°	395.6	395.1	394.6	394.1	393.6	392.8	391.7	390.6	389.5	388.4	388.7
25°	382.1	381.6	381.2	380.7	380.2	379.4	378.2	377.2	376.0	375.0	375.0
27.5°	367.8	367.3	366.8	366.3	365.8	365.0	363.9	362.6	361.5	360.3	360.4
30°	357.5	357.0	356.6	356.2	355.8	355.0	353.8	352.6	351.5	350.3	350.3
32.5°	347.2	346.6	346.0	345.4	345.0	344.1	343.2	342.3	341.4	340.6	340.1
35°	330.5	330.0	329.5	329.0	328.5	327.7	326.6	325.5	324.4	323.3	322.8
37.5°	313.5	312.8	312.2	311.5	311.0	310.1	308.9	307.8	306.7	305.6	305.0
40°	301.7	301.1	300.6	300.1	299.6	298.7	297.6	296.4	295.2	294.0	293.3
42.5°	289.8	289.2	288.6	288.0	287.5	286.6	285.4	284.2	283.1	281.8	281.2
45°	270.8	270.5	270.2	269.9	269.5	268.8	267.7	266.6	265.5	264.4	263.4
47.5°	252.1	251.6	251.1	250.6	250.1	249.4	248.3	247.3	246.3	245.2	244.3
50°	239.3	238.9	238.5	238.1	237.7	236.8	235.8	234.7	233.6	232.5	231.5
52.5°	225.9	225.7	225.3	225.1	224.8	224.0	222.9	221.8	220.6	219.4	218.7
55°	205.5	205.5	205.4	205.3	205.2	204.6	203.5	202.4	201.3	200.2	199.3
57.5°	186.1	185.8	185.5	185.2	184.9	184.3	183.4	182.5	181.7	180.8	180.0
60°	172.1	172.0	171.9	171.9	171.8	171.2	170.2	169.2	168.2	167.1	166.4
62.5°	159.6	159.4	159.2	159.0	158.7	158.2	157.1	156.1	155.1	154.1	153.4
65°	140.1	139.7	139.3	138.9	138.5	137.9	137.1	136.2	135.3	134.4	133.8
67.5°	119.6	119.2	118.9	118.5	118.1	117.6	117.0	116.3	115.7	115.0	114.5
70°	107.1	106.6	106.2	105.6	105.1	104.6	104.1	103.5	103.1	102.6	102.0
72.5°	94.1	93.7	93.4	92.9	92.5	92.1	91.6	91.0	90.4	89.8	89.3
75°	74.1	73.7	73.4	73.1	72.7	72.4	72.2	71.9	71.7	71.4	71.0
77.5°	56.3	56.2	56.0	55.8	55.6	55.4	55.1	54.8	54.5	54.1	53.9
80°	44.8	44.6	44.4	44.1	43.8	43.6	43.5	43.3	43.1	43.0	42.8
82.5°	33.6	33.5	33.5	33.4	33.3	33.3	33.3	33.3	33.3	33.2	33.0
85°	19.7	19.6	19.4	19.2	19.1	19.0	19.0	19.0	19.0	19.0	18.8
87.5°	8.2	8.5	8.8	9.2	9.5	10.0	10.7	11.3	12.0	12.6	12.7
90°	1.2	4.0	6.7	9.5	12.1	15.3	18.8	22.4	25.9	29.5	30.6
92.5°	29.8	31.6	33.4	35.3	37.2	39.1	41.2	43.1	45.2	47.2	48.1
95°	72.6	74.4	76.4	78.3	80.2	82.3	84.4	86.6	88.8	91.0	92.0
97.5°	128.8	130.3	131.7	133.1	134.5	136.0	137.6	139.2	140.8	142.4	143.7
100°	167.2	168.8	170.5	172.1	173.7	175.3	176.6	178.0	179.4	180.8	181.6
102.5°	211.5	212.5	213.4	214.4	215.4	216.8	218.6	220.4	222.2	224.0	224.9
105°	276.6	277.2	277.7	278.3	278.8	280.3	282.7	285.2	287.7	290.2	290.2
107.5°	352.4	352.7	353.0	353.4	353.7	354.3	355.3	356.3	357.3	358.2	359.1
110°	399.6	400.1	400.6	401.2	401.8	402.3	402.8	403.4	403.9	404.5	405.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	448.7	449.1	449.4	449.7	450.0	450.3	450.4	450.5	450.6	450.7	452.0
115°	522.5	523.3	524.2	525.0	525.8	525.9	525.4	524.8	524.3	523.7	524.0
117.5°	596.8	597.3	597.9	598.4	598.9	598.8	598.2	597.5	596.7	596.1	596.0
120°	643.0	644.7	646.3	647.9	649.5	649.7	648.3	646.9	645.6	644.2	643.9
122.5°	691.2	692.4	693.6	694.8	696.0	696.3	695.5	694.8	694.1	693.4	692.7
125°	764.7	765.5	766.4	767.2	768.0	768.1	767.6	767.0	766.5	766.0	764.8
127.5°	832.6	834.3	836.1	837.8	839.6	840.2	839.5	838.9	838.4	837.7	836.2
130°	877.8	880.0	882.2	884.4	886.6	887.2	886.4	885.6	884.8	883.9	882.9
132.5°	923.1	925.2	927.4	929.6	931.8	932.6	932.0	931.4	930.7	930.2	928.9
135°	992.1	993.8	995.4	997.0	998.7	999.4	999.1	998.8	998.6	998.3	997.2
137.5°	1056.1	1057.4	1058.8	1060.2	1061.5	1062.6	1063.3	1064.0	1064.7	1065.4	1064.3
140°	1100.3	1101.7	1103.1	1104.4	1105.8	1106.6	1106.9	1107.2	1107.4	1107.7	1107.4
142.5°	1140.7	1142.0	1143.4	1144.8	1146.1	1147.0	1147.5	1148.0	1148.5	1149.0	1148.8
145°	1203.6	1204.2	1204.7	1205.3	1205.8	1206.5	1207.3	1208.1	1208.9	1209.7	1209.5
147.5°	1258.7	1259.6	1260.6	1261.7	1262.7	1263.5	1264.3	1265.0	1265.8	1266.6	1266.6
150°	1297.1	1297.6	1298.1	1298.7	1299.3	1299.8	1300.3	1300.9	1301.4	1302.0	1302.0
152.5°	1328.5	1329.3	1330.1	1330.8	1331.5	1332.1	1332.4	1332.8	1333.1	1333.4	1333.9
155°	1378.2	1378.2	1378.2	1378.2	1378.2	1378.3	1378.6	1378.8	1379.2	1379.4	1380.5
157.5°	1420.5	1420.2	1419.8	1419.5	1419.2	1419.1	1419.4	1419.5	1419.8	1420.0	1421.1
160°	1447.1	1446.5	1445.9	1445.4	1444.9	1444.5	1444.5	1444.5	1444.5	1444.5	1445.9
162.5°	1470.6	1469.9	1469.1	1468.4	1467.6	1467.3	1467.5	1467.8	1467.9	1468.2	1469.6
165°	1501.1	1500.3	1499.5	1498.7	1497.9	1497.5	1497.5	1497.5	1497.5	1497.5	1499.1
167.5°	1525.5	1524.4	1523.3	1522.2	1521.1	1520.7	1520.9	1521.1	1521.3	1521.5	1523.2
170°	1539.2	1538.1	1537.1	1535.9	1534.9	1534.3	1534.3	1534.3	1534.3	1534.3	1536.3
172.5°	1550.0	1549.0	1547.8	1546.8	1545.7	1545.2	1545.2	1545.2	1545.2	1545.2	1546.9
175°	1561.4	1560.3	1559.2	1558.1	1557.0	1556.5	1556.5	1556.5	1556.5	1556.5	1558.1
177.5°	1566.0	1565.2	1564.3	1563.4	1562.5	1562.1	1562.1	1562.1	1562.1	1562.1	1563.4
180°	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	441.8	441.8	441.8	441.8	441.8	441.8	441.8	441.8
2.5°	440.1	440.8	441.5	441.8	441.7	441.6	441.6	441.5
5°	437.8	438.6	439.5	439.9	439.7	439.5	439.3	439.1
7.5°	433.2	433.9	434.6	435.0	434.9	434.8	434.7	434.6
10°	428.9	429.7	430.4	430.7	430.6	430.4	430.2	430.1
12.5°	424.2	424.8	425.3	425.6	425.5	425.3	425.3	425.2
15°	415.8	416.5	417.2	417.3	416.7	416.2	415.7	415.2
17.5°	405.1	405.6	406.1	406.3	406.0	405.9	405.7	405.5
20°	397.3	397.6	397.9	398.0	397.7	397.5	397.2	397.0
22.5°	388.9	389.2	389.5	389.5	389.1	388.8	388.5	388.2
25°	375.1	375.2	375.3	375.2	375.0	374.7	374.5	374.2
27.5°	360.4	360.5	360.5	360.4	360.1	359.8	359.5	359.1
30°	350.3	350.3	350.3	349.9	349.4	348.8	348.2	347.6
32.5°	339.6	339.1	338.7	338.3	337.9	337.6	337.3	337.0
35°	322.3	321.8	321.2	320.8	320.4	319.9	319.5	319.1
37.5°	304.4	303.8	303.1	302.7	302.5	302.1	301.9	301.7
40°	292.7	292.0	291.3	290.8	290.5	290.2	289.8	289.5
42.5°	280.5	279.8	279.2	278.7	278.3	278.0	277.7	277.3
45°	262.4	261.4	260.3	259.7	259.2	258.8	258.4	258.0
47.5°	243.3	242.3	241.2	240.6	240.2	239.9	239.5	239.1
50°	230.6	229.7	228.8	228.0	227.6	227.1	226.6	226.0
52.5°	217.8	217.0	216.2	215.6	215.1	214.6	214.1	213.6
55°	198.4	197.4	196.5	195.8	195.4	194.9	194.5	194.1
57.5°	179.2	178.3	177.5	176.8	176.3	175.9	175.4	174.9
60°	165.7	164.9	164.1	163.5	163.1	162.7	162.2	161.8
62.5°	152.5	151.8	151.1	150.5	150.3	149.9	149.7	149.4
65°	133.1	132.5	131.8	131.3	131.1	130.8	130.5	130.3
67.5°	113.8	113.2	112.7	112.2	111.9	111.5	111.1	110.8
70°	101.4	100.8	100.2	99.7	99.3	98.9	98.4	98.0
72.5°	88.8	88.2	87.7	87.3	87.2	86.9	86.7	86.4
75°	70.6	70.1	69.7	69.4	69.1	68.9	68.6	68.4
77.5°	53.6	53.3	53.0	52.9	52.9	52.9	52.9	52.9
80°	42.7	42.6	42.6	42.6	42.6	42.6	42.6	42.6
82.5°	32.9	32.8	32.6	32.4	32.4	32.4	32.3	32.2
85°	18.7	18.5	18.3	18.3	18.3	18.3	18.3	18.3
87.5°	12.9	13.0	13.2	13.3	13.5	13.5	13.6	13.8
90°	31.7	32.8	33.9	34.7	35.2	35.8	36.4	36.9
92.5°	48.9	49.8	50.7	51.0	50.6	50.3	50.0	49.7
95°	93.2	94.2	95.3	95.9	95.9	95.9	95.9	95.9
97.5°	144.9	146.1	147.4	148.0	147.9	147.7	147.7	147.6
100°	182.4	183.2	184.0	184.7	185.2	185.8	186.3	186.9
102.5°	225.7	226.5	227.3	227.6	227.6	227.4	227.3	227.2
105°	290.2	290.2	290.2	290.4	291.0	291.6	292.0	292.6
107.5°	360.0	360.9	361.7	362.0	361.7	361.3	361.0	360.7
110°	406.7	407.7	408.9	409.1	408.5	408.1	407.5	406.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	453.3	454.6	455.9	456.6	456.5	456.3	456.2	456.1
115°	524.3	524.6	524.8	524.8	524.6	524.3	524.0	523.7
117.5°	595.9	595.9	595.8	595.4	594.6	593.9	593.1	592.3
120°	643.7	643.4	643.1	642.7	642.2	641.6	641.1	640.5
122.5°	691.9	691.3	690.6	689.8	689.1	688.3	687.5	686.7
125°	763.8	762.6	761.6	760.4	759.4	758.3	757.2	756.1
127.5°	834.7	833.2	831.6	830.2	829.0	827.7	826.5	825.2
130°	881.7	880.7	879.6	878.1	876.2	874.2	872.4	870.4
132.5°	927.6	926.3	925.0	923.6	922.1	920.6	919.1	917.6
135°	996.1	995.0	993.9	993.1	992.5	992.0	991.5	990.9
137.5°	1063.2	1062.0	1060.9	1059.7	1058.7	1057.7	1056.6	1055.6
140°	1107.2	1106.9	1106.6	1105.5	1103.6	1101.7	1099.8	1097.9
142.5°	1148.5	1148.2	1147.9	1147.0	1145.6	1144.1	1142.6	1141.2
145°	1209.2	1208.9	1208.7	1207.9	1206.9	1205.8	1204.7	1203.6
147.5°	1266.6	1266.6	1266.6	1265.8	1264.1	1262.5	1260.8	1259.1
150°	1302.0	1302.0	1302.0	1301.1	1299.5	1297.9	1296.2	1294.6
152.5°	1334.3	1334.7	1335.2	1334.7	1333.3	1331.9	1330.4	1329.0
155°	1381.6	1382.7	1383.8	1383.4	1381.4	1379.6	1377.6	1375.7
157.5°	1422.3	1423.4	1424.6	1424.4	1422.9	1421.3	1419.8	1418.3
160°	1447.3	1448.7	1450.0	1450.2	1449.1	1448.0	1446.9	1445.8
162.5°	1470.9	1472.3	1473.7	1473.5	1471.7	1470.0	1468.2	1466.5
165°	1500.7	1502.4	1504.0	1503.9	1501.9	1500.1	1498.1	1496.2
167.5°	1524.9	1526.6	1528.3	1528.3	1526.6	1524.9	1523.2	1521.5
170°	1538.1	1540.1	1542.0	1542.0	1540.1	1538.1	1536.3	1534.3
172.5°	1548.5	1550.2	1551.9	1551.8	1549.9	1548.0	1546.1	1544.2
175°	1559.7	1561.4	1563.0	1562.8	1561.0	1559.0	1557.1	1555.3
177.5°	1564.7	1566.0	1567.3	1567.2	1565.7	1564.2	1562.7	1561.1
180°	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0

(END OF REPORT)