

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: P332731

Luminaire Tested: **S124DIW-S350D1050U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332731
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1050U835-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5710.0 lumens
Efficiency: N/A
Efficacy: 150.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

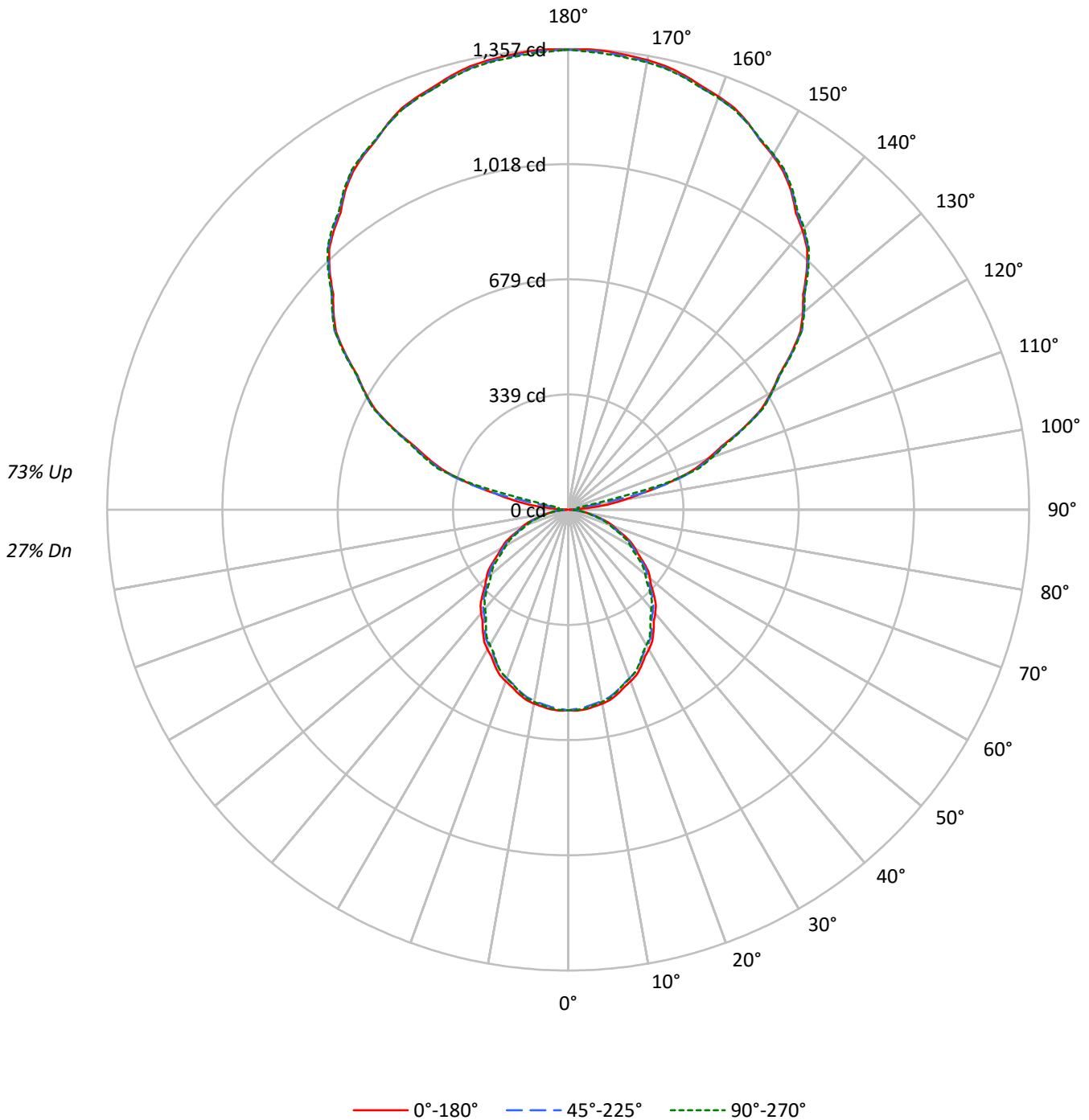
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	91	91	91	91	70	70	70	52	52	52	35	35	35	27
1	93	88	85	81	82	79	76	73	61	59	57	45	44	43	31	30	29	22
2	84	77	71	66	75	69	64	60	54	50	47	40	38	36	27	26	24	19
3	77	68	61	55	68	61	55	50	47	43	40	35	32	30	24	22	21	16
4	70	60	52	46	62	54	47	42	42	37	34	31	28	26	21	19	18	14
5	64	53	45	40	57	48	41	36	37	33	29	28	25	22	19	17	16	12
6	59	47	40	34	52	43	36	31	34	29	25	25	22	19	17	15	14	10
7	54	43	35	30	48	38	32	27	30	26	22	23	20	17	16	14	12	9
8	50	39	31	26	45	35	28	24	28	23	19	21	18	15	14	12	11	8
9	47	35	28	23	42	32	25	21	25	21	17	19	16	13	13	11	10	7
10	44	32	25	20	39	29	23	19	23	19	15	18	14	12	12	10	9	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4769	4769	4769
5°	4783	4725	4760
10°	4753	4687	4710
15°	4695	4621	4633
20°	4619	4538	4542
25°	4532	4444	4431
30°	4426	4333	4294
35°	4315	4217	4161
40°	4200	4086	4011
45°	4080	3956	3881
50°	3947	3841	3721
55°	3804	3690	3571
60°	3660	3523	3416
65°	3500	3364	3228
70°	3319	3151	3028
75°	3041	2895	2820
80°	2706	2599	2529
85°	2371	2279	2232



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	55.6	1.0
10°-20°	156.7	2.7
20°-30°	230.7	4.0
30°-40°	268.2	4.7
40°-50°	268.2	4.7
50°-60°	234.6	4.1
60°-70°	174.2	3.1
70°-80°	99.0	1.7
80°-90°	32.5	0.6
90°-100°	46.3	0.8
100°-110°	295.4	5.2
110°-120°	565.1	9.9
120°-130°	717.4	12.6
130°-140°	767.5	13.4
140°-150°	717.7	12.6
150°-160°	578.8	10.1
160°-170°	373.3	6.5
170°-180°	128.7	2.3
0°-30°	443.1	7.8
0°-40°	711.3	12.5
0°-60°	1214.1	21.3
0°-90°	1519.8	26.6
90°-120°	906.8	15.9
90°-150°	3109.5	54.5
90°-180°	4190.0	73.4
0°-180°	5710.0	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	591	591	591	591	591	
5°	590	588	583	588	587	56
15°	562	560	553	555	554	158
25°	509	505	499	499	498	234
35°	438	434	428	425	422	274
45°	357	354	346	342	340	275
55°	270	269	262	257	254	242
65°	183	181	176	172	169	181
75°	98	95	93	91	90	104
85°	26	26	25	25	24	28
90°	3	14	22	28	30	4
95°	56	23	22	28	29	72
105°	305	311	316	323	289	319
115°	569	572	571	573	574	560
125°	800	804	802	805	806	714
135°	993	992	996	998	1000	765
145°	1145	1148	1148	1149	1151	715
155°	1255	1256	1253	1257	1254	579
165°	1324	1319	1319	1326	1318	374
175°	1355	1349	1350	1358	1346	129
180°	1355	1355	1355	1355	1355	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	592.2	592.0	591.7	591.5	591.2	590.6	589.7	588.8	587.9	586.9	587.8
5°	590.2	589.8	589.4	589.0	588.6	587.8	586.6	585.5	584.3	583.1	584.3
7.5°	584.8	584.3	583.9	583.5	583.1	582.2	580.9	579.7	578.4	577.1	578.0
10°	579.8	579.4	579.0	578.6	578.2	577.3	575.9	574.5	573.2	571.8	572.6
12.5°	573.4	573.0	572.6	572.1	571.7	570.8	569.3	567.9	566.4	565.0	565.9
15°	561.8	561.4	561.0	560.6	560.2	559.2	557.6	556.0	554.4	552.9	553.5
17.5°	547.9	547.4	546.9	546.4	545.8	544.8	543.3	541.8	540.3	538.8	539.2
20°	537.7	537.2	536.7	536.1	535.6	534.6	533.0	531.4	529.8	528.2	528.6
22.5°	526.7	526.0	525.3	524.6	523.9	522.8	521.2	519.7	518.1	516.5	517.1
25°	508.8	508.1	507.4	506.6	505.9	504.8	503.3	501.8	500.4	498.9	499.0
27.5°	488.4	487.6	486.9	486.1	485.4	484.3	482.9	481.6	480.2	478.8	478.6
30°	474.8	473.9	473.1	472.2	471.4	470.3	468.9	467.5	466.2	464.8	464.4
32.5°	460.4	459.6	458.8	458.1	457.3	456.2	454.8	453.3	451.9	450.4	449.9
35°	437.8	437.1	436.4	435.6	434.9	433.8	432.3	430.8	429.4	427.9	427.2
37.5°	414.1	413.4	412.7	412.1	411.4	410.3	408.7	407.1	405.5	403.9	403.1
40°	398.5	397.7	396.9	396.0	395.2	394.0	392.4	390.8	389.2	387.7	386.6
42.5°	381.9	381.4	380.9	380.4	379.9	378.7	377.0	375.2	373.5	371.8	370.5
45°	357.4	356.6	355.9	355.2	354.4	353.2	351.5	349.8	348.2	346.5	345.3
47.5°	331.7	331.2	330.7	330.2	329.7	328.7	327.1	325.5	324.0	322.4	321.1
50°	314.3	313.9	313.5	313.0	312.6	311.7	310.2	308.7	307.2	305.8	304.3
52.5°	297.3	296.7	296.2	295.7	295.2	294.2	292.6	291.1	289.5	288.0	286.7
55°	270.3	270.0	269.6	269.3	269.0	268.1	266.6	265.2	263.7	262.2	261.0
57.5°	244.5	244.2	243.8	243.5	243.1	242.2	240.7	239.3	237.8	236.4	235.2
60°	226.7	226.2	225.7	225.1	224.6	223.7	222.3	220.9	219.6	218.2	217.3
62.5°	209.3	208.9	208.4	208.0	207.5	206.6	205.1	203.7	202.2	200.8	199.9
65°	183.2	182.7	182.1	181.6	181.1	180.3	179.2	178.2	177.1	176.1	175.0
67.5°	156.9	156.4	155.9	155.4	154.9	154.2	153.2	152.2	151.2	150.1	149.1
70°	140.6	139.8	139.1	138.4	137.6	136.8	136.0	135.2	134.3	133.5	132.6
72.5°	123.2	122.4	121.7	121.0	120.2	119.5	118.8	118.2	117.5	116.8	116.1
75°	97.5	97.0	96.5	95.9	95.4	94.9	94.4	93.8	93.3	92.8	92.4
77.5°	73.0	72.8	72.5	72.3	72.1	71.7	71.3	70.8	70.3	69.9	69.7
80°	58.2	57.9	57.6	57.3	57.0	56.7	56.5	56.3	56.1	55.9	55.6
82.5°	43.8	43.7	43.5	43.4	43.2	43.1	43.1	43.1	43.0	43.0	42.9
85°	25.6	25.6	25.6	25.6	25.6	25.5	25.2	25.0	24.8	24.6	24.6
87.5°	10.5	10.9	11.3	11.7	12.1	12.4	12.7	13.0	13.3	13.5	13.8
90°	3.0	5.5	8.0	10.5	12.9	15.1	16.9	18.7	20.5	22.3	23.6
92.5°	12.8	12.9	13.0	13.2	13.3	14.3	16.1	17.9	19.7	21.5	22.8
95°	55.7	48.1	40.4	32.8	25.1	21.4	21.6	21.8	22.1	22.3	23.6
97.5°	118.3	123.1	127.9	132.7	137.4	127.3	102.1	77.0	51.9	26.7	26.9
100°	166.2	170.2	174.3	178.3	182.4	168.9	137.8	106.7	75.7	44.6	40.8
102.5°	219.7	222.6	225.6	228.6	231.5	231.0	227.0	222.9	218.8	214.8	173.5
105°	305.0	306.3	307.7	309.0	310.4	311.6	312.7	313.9	315.0	316.1	318.1
107.5°	384.2	384.9	385.5	386.2	386.9	388.0	389.5	391.1	392.6	394.1	395.1
110°	437.7	438.4	439.0	439.7	440.4	441.4	442.8	444.1	445.5	446.8	447.3



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	489.6	490.8	492.0	493.2	494.4	495.4	496.0	496.6	497.2	497.9	497.8
115°	569.4	570.1	570.8	571.4	572.1	572.3	572.1	571.9	571.7	571.4	571.9
117.5°	641.3	642.2	643.1	644.0	644.9	645.6	646.1	646.6	647.1	647.6	647.5
120°	690.0	690.9	691.8	692.7	693.6	693.9	693.7	693.5	693.2	693.0	693.5
122.5°	735.4	735.9	736.4	737.0	737.5	738.0	738.3	738.6	738.9	739.2	739.5
125°	800.4	801.3	802.2	803.1	804.0	804.2	803.8	803.3	802.9	802.4	803.1
127.5°	862.0	862.2	862.5	862.7	862.9	863.5	864.6	865.6	866.6	867.7	867.6
130°	901.7	902.0	902.2	902.4	902.6	903.1	903.8	904.4	905.1	905.8	906.0
132.5°	938.2	938.6	939.0	939.4	939.8	940.5	941.3	942.2	943.0	943.9	944.1
135°	992.9	992.7	992.5	992.2	992.0	992.4	993.3	994.2	995.1	996.0	996.4
137.5°	1041.3	1041.4	1041.5	1041.6	1041.7	1042.2	1043.2	1044.2	1045.2	1046.2	1046.7
140°	1073.0	1073.4	1073.9	1074.3	1074.8	1075.2	1075.7	1076.1	1076.6	1077.0	1077.7
142.5°	1101.3	1102.1	1102.9	1103.8	1104.6	1105.1	1105.4	1105.6	1105.9	1106.2	1106.7
145°	1144.9	1145.6	1146.2	1146.9	1147.6	1147.9	1147.9	1147.9	1147.9	1147.9	1148.2
147.5°	1179.5	1180.8	1182.1	1183.3	1184.6	1185.1	1184.9	1184.7	1184.4	1184.2	1184.4
150°	1204.7	1205.6	1206.5	1207.4	1208.3	1208.6	1208.4	1208.2	1207.9	1207.7	1207.7
152.5°	1225.7	1226.5	1227.2	1227.9	1228.6	1228.8	1228.4	1228.0	1227.6	1227.2	1227.5
155°	1255.3	1255.6	1255.8	1256.0	1256.2	1256.0	1255.3	1254.7	1254.0	1253.3	1254.2
157.5°	1280.3	1280.1	1280.0	1279.8	1279.7	1279.3	1278.5	1277.7	1277.0	1276.2	1277.4
160°	1294.8	1294.2	1293.5	1292.8	1292.1	1291.7	1291.5	1291.2	1291.0	1290.8	1292.1
162.5°	1307.8	1307.0	1306.1	1305.2	1304.4	1303.8	1303.6	1303.4	1303.2	1302.9	1304.3
165°	1324.2	1323.1	1322.0	1320.8	1319.7	1319.2	1319.2	1319.2	1319.2	1319.2	1321.0
167.5°	1337.2	1336.0	1334.9	1333.7	1332.5	1331.9	1331.7	1331.6	1331.5	1331.3	1333.3
170°	1344.5	1343.1	1341.8	1340.4	1339.1	1338.5	1338.7	1339.0	1339.2	1339.4	1341.2
172.5°	1349.3	1348.0	1346.6	1345.3	1343.9	1343.4	1343.6	1343.8	1344.1	1344.3	1346.1
175°	1354.6	1353.3	1351.9	1350.6	1349.2	1348.7	1348.9	1349.1	1349.3	1349.6	1351.6
177.5°	1357.0	1355.8	1354.5	1353.3	1352.0	1351.6	1351.9	1352.3	1352.6	1353.0	1354.4
180°	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	590.7	590.7	590.7	590.7	590.7	590.7	590.7	590.7
2.5°	588.6	589.5	590.3	590.7	590.6	590.5	590.4	590.3
5°	585.5	586.6	587.8	588.2	588.0	587.8	587.6	587.4
7.5°	578.9	579.9	580.8	581.2	581.1	580.9	580.8	580.7
10°	573.5	574.3	575.2	575.5	575.3	575.0	574.8	574.6
12.5°	566.8	567.7	568.7	569.0	568.7	568.4	568.1	567.8
15°	554.1	554.7	555.4	555.5	555.2	554.9	554.6	554.3
17.5°	539.6	540.0	540.4	540.5	540.3	540.1	539.9	539.7
20°	528.9	529.2	529.5	529.6	529.3	529.1	528.9	528.7
22.5°	517.6	518.2	518.8	518.9	518.5	518.1	517.7	517.4
25°	499.1	499.2	499.3	499.2	498.7	498.3	497.9	497.5
27.5°	478.3	478.1	477.8	477.4	476.9	476.4	475.8	475.3
30°	464.0	463.6	463.1	462.7	462.1	461.6	461.1	460.6
32.5°	449.4	448.9	448.4	447.9	447.4	446.8	446.3	445.8
35°	426.4	425.7	424.9	424.3	423.8	423.3	422.7	422.2
37.5°	402.3	401.5	400.7	400.0	399.3	398.6	397.9	397.2
40°	385.6	384.5	383.5	382.7	382.1	381.6	381.1	380.6
42.5°	369.3	368.1	366.9	366.1	365.7	365.4	365.0	364.7
45°	344.2	343.0	341.9	341.1	340.8	340.5	340.2	339.9
47.5°	319.8	318.5	317.2	316.2	315.4	314.6	313.8	313.0
50°	302.8	301.4	299.9	298.8	298.2	297.6	296.9	296.3
52.5°	285.4	284.1	282.8	281.7	280.9	280.1	279.3	278.5
55°	259.7	258.4	257.2	256.2	255.6	255.0	254.3	253.7
57.5°	234.0	232.8	231.6	230.7	230.1	229.5	228.9	228.2
60°	216.3	215.4	214.4	213.7	213.2	212.6	212.1	211.6
62.5°	199.1	198.2	197.3	196.6	196.1	195.6	195.1	194.5
65°	174.0	172.9	171.9	171.1	170.6	170.0	169.5	169.0
67.5°	148.1	147.1	146.1	145.5	145.4	145.2	145.1	144.9
70°	131.8	131.0	130.1	129.5	129.2	128.9	128.6	128.3
72.5°	115.5	114.8	114.1	113.6	113.3	113.0	112.7	112.4
75°	91.9	91.5	91.1	90.8	90.7	90.6	90.5	90.4
77.5°	69.6	69.5	69.4	69.2	68.9	68.6	68.3	68.1
80°	55.4	55.2	55.0	54.9	54.7	54.6	54.5	54.4
82.5°	42.7	42.6	42.5	42.4	42.3	42.1	42.0	41.9
85°	24.6	24.6	24.6	24.6	24.5	24.4	24.2	24.1
87.5°	14.1	14.4	14.6	14.8	14.9	15.0	15.1	15.2
90°	25.0	26.3	27.7	28.6	29.0	29.5	29.9	30.4
92.5°	24.2	25.5	26.9	27.6	27.7	27.8	27.9	28.0
95°	25.0	26.3	27.7	28.5	28.7	28.9	29.2	29.4
97.5°	27.0	27.2	27.3	27.5	27.7	27.9	28.1	28.4
100°	36.9	33.1	29.3	27.5	27.7	27.9	28.1	28.4
102.5°	132.2	90.9	49.6	29.0	29.0	29.1	29.1	29.2
105°	320.2	322.2	324.2	321.2	313.1	305.0	296.9	288.8
107.5°	396.1	397.1	398.1	399.0	399.9	400.7	401.6	402.4
110°	447.7	448.2	448.6	449.2	449.9	450.5	451.2	451.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	497.7	497.6	497.5	497.9	498.8	499.6	500.5	501.3
115°	572.3	572.8	573.2	573.5	573.5	573.5	573.5	573.5
117.5°	647.4	647.4	647.3	647.2	647.1	647.0	646.9	646.8
120°	693.9	694.4	694.8	694.8	694.4	693.9	693.5	693.0
122.5°	739.8	740.0	740.3	740.2	739.8	739.3	738.9	738.4
125°	803.8	804.5	805.1	805.6	805.8	806.0	806.3	806.5
127.5°	867.4	867.3	867.1	867.0	866.8	866.6	866.4	866.3
130°	906.2	906.5	906.7	906.8	906.8	906.8	906.8	906.8
132.5°	944.3	944.6	944.8	944.8	944.6	944.4	944.3	944.1
135°	996.9	997.3	997.8	998.2	998.7	999.1	999.6	1000.0
137.5°	1047.2	1047.7	1048.2	1048.4	1048.2	1048.1	1048.0	1047.8
140°	1078.4	1079.0	1079.7	1080.2	1080.4	1080.6	1080.8	1081.1
142.5°	1107.2	1107.7	1108.2	1108.4	1108.5	1108.5	1108.6	1108.6
145°	1148.4	1148.6	1148.8	1149.2	1149.6	1150.1	1150.5	1151.0
147.5°	1184.6	1184.7	1184.9	1185.1	1185.4	1185.6	1185.8	1186.0
150°	1207.7	1207.7	1207.7	1207.8	1208.0	1208.3	1208.5	1208.7
152.5°	1227.9	1228.2	1228.6	1228.7	1228.6	1228.4	1228.3	1228.2
155°	1255.1	1256.0	1256.9	1257.0	1256.3	1255.7	1255.0	1254.3
157.5°	1278.5	1279.7	1280.9	1280.9	1279.7	1278.5	1277.4	1276.2
160°	1293.5	1294.8	1296.2	1296.2	1294.8	1293.5	1292.1	1290.8
162.5°	1305.6	1307.0	1308.3	1308.3	1306.7	1305.2	1303.7	1302.1
165°	1322.8	1324.6	1326.4	1326.2	1324.2	1322.2	1320.2	1318.1
167.5°	1335.3	1337.3	1339.2	1339.1	1336.9	1334.6	1332.4	1330.1
170°	1343.0	1344.8	1346.6	1346.4	1344.1	1341.9	1339.6	1337.4
172.5°	1347.9	1349.7	1351.5	1351.2	1348.7	1346.3	1343.9	1341.4
175°	1353.6	1355.6	1357.7	1357.3	1354.6	1351.9	1349.2	1346.5
177.5°	1355.9	1357.3	1358.8	1358.4	1356.2	1354.1	1351.9	1349.8
180°	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6	1354.6

(END OF REPORT)