

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: P332111-927

Luminaire Tested: **S123DIW-S340D1320U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332111-927
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-S340D1320U927-4F0-1E-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: 4766.4 lumens
Efficiency: N/A
Efficacy: 102.3 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

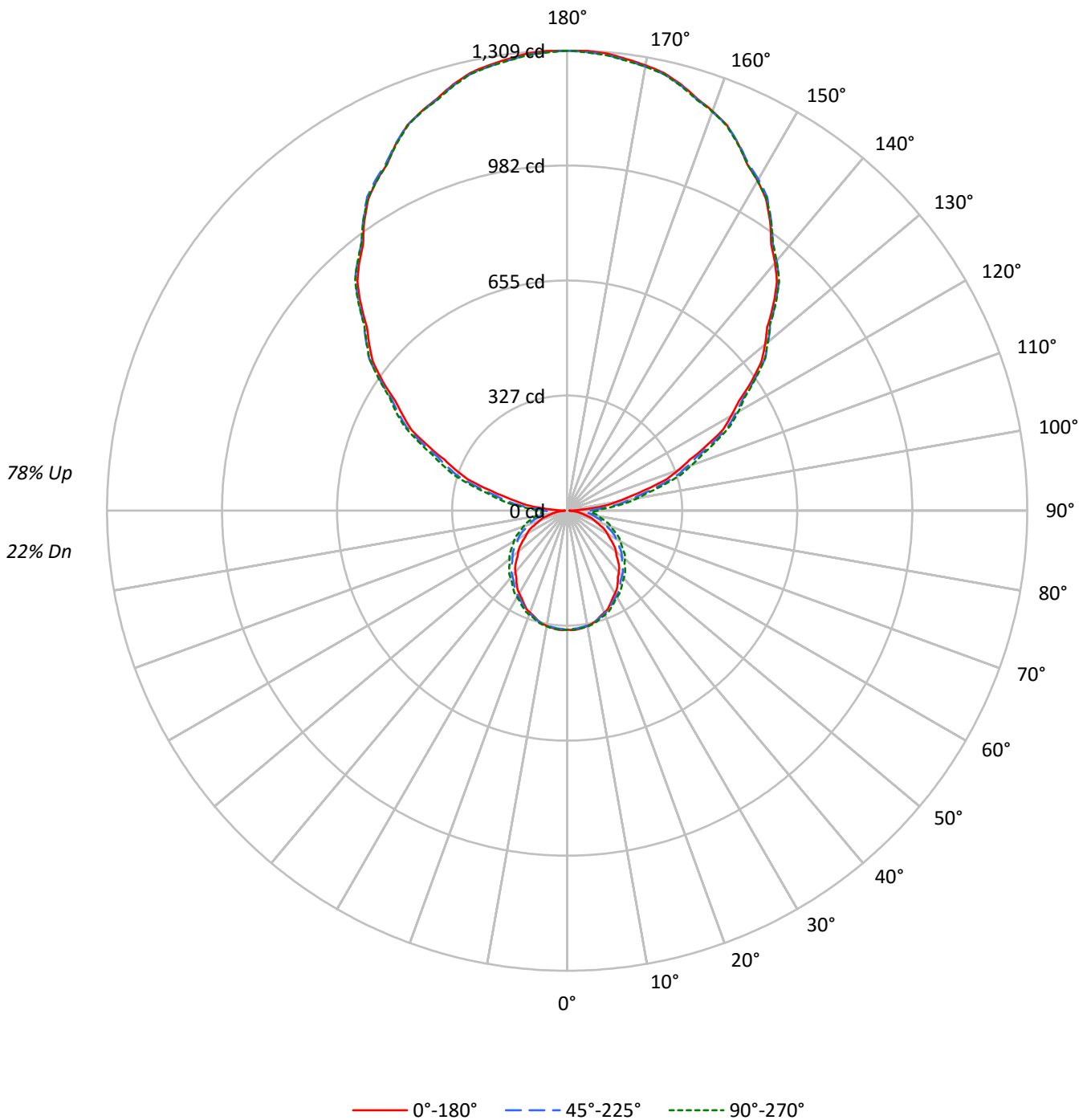
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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°	3647	3647	3647
5°	3658	3556	3557
10°	3626	3473	3456
15°	3579	3380	3345
20°	3513	3274	3224
25°	3430	3152	3096
30°	3345	3043	2966
35°	3251	2926	2863
40°	3161	2820	2752
45°	3061	2718	2664
50°	2962	2618	2566
55°	2852	2516	2478
60°	2745	2411	2388
65°	2636	2300	2280
70°	2471	2174	2170
75°	2265	2031	2059
80°	2023	1890	1932
85°	1805	1794	1856



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	32.1	0.7
10°-20°	91.6	1.9
20°-30°	137.0	2.9
30°-40°	163.6	3.4
40°-50°	171.1	3.6
50°-60°	160.6	3.4
60°-70°	134.1	2.8
70°-80°	96.0	2.0
80°-90°	61.1	1.3
90°-100°	121.1	2.5
100°-110°	281.4	5.9
110°-120°	451.4	9.5
120°-130°	580.6	12.2
130°-140°	645.8	13.5
140°-150°	631.3	13.2
150°-160°	530.7	11.1
160°-170°	353.3	7.4
170°-180°	123.7	2.6
0°-30°	260.6	5.5
0°-40°	424.2	8.9
0°-60°	755.9	15.9
0°-90°	1047.1	22.0
90°-120°	853.9	17.9
90°-150°	2711.7	56.9
90°-180°	3719.0	78.0
0°-180°	4766.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	339	339	339	339	339	
5°	339	338	336	339	339	32
15°	323	324	324	327	327	91
25°	292	295	296	301	301	134
35°	251	257	262	267	269	157
45°	205	214	223	230	233	158
55°	156	169	182	192	195	140
65°	108	123	139	149	154	107
75°	59	76	94	106	111	63
85°	18	37	56	68	72	19
90°	6	34	66	82	89	7
95°	65	87	113	128	132	71
105°	234	246	270	280	286	251
115°	438	446	457	467	469	434
125°	640	644	652	655	654	571
135°	830	836	839	841	841	639
145°	1006	1008	1011	1013	1010	628
155°	1152	1152	1153	1156	1150	530
165°	1254	1252	1251	1257	1250	354
175°	1305	1301	1301	1306	1300	124
180°	1308	1308	1308	1308	1308	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	340.3	340.2	339.9	339.8	339.5	339.2	338.7	338.1	337.6	337.1	337.6
5°	339.2	339.1	338.9	338.7	338.6	338.3	337.7	337.2	336.8	336.3	336.9
7.5°	335.9	336.0	336.0	336.0	336.0	335.8	335.3	334.9	334.4	333.9	334.7
10°	333.0	333.1	333.3	333.4	333.6	333.5	333.0	332.6	332.2	331.8	332.6
12.5°	329.4	329.6	329.9	330.1	330.3	330.3	330.0	329.7	329.5	329.2	329.9
15°	323.0	323.2	323.4	323.7	323.9	324.1	323.9	323.8	323.8	323.7	324.6
17.5°	314.9	315.4	315.8	316.3	316.8	317.0	317.0	317.0	317.0	317.0	317.7
20°	309.0	309.4	309.9	310.5	310.9	311.2	311.4	311.6	311.7	311.9	312.7
22.5°	302.8	303.2	303.7	304.2	304.8	305.1	305.3	305.5	305.8	306.0	307.0
25°	291.6	292.4	293.3	294.1	294.9	295.4	295.6	295.9	296.1	296.4	297.5
27.5°	280.4	281.3	282.3	283.2	284.2	284.9	285.3	285.9	286.5	286.9	287.9
30°	272.4	273.5	274.6	275.6	276.7	277.5	278.2	278.8	279.5	280.2	281.1
32.5°	263.6	264.7	265.9	267.1	268.3	269.3	270.2	271.1	272.0	272.7	273.9
35°	251.0	252.3	253.7	254.9	256.3	257.5	258.5	259.6	260.6	261.7	262.9
37.5°	237.7	239.2	240.7	242.2	243.6	245.0	246.3	247.6	249.0	250.3	251.7
40°	228.9	230.4	231.8	233.3	234.7	236.3	238.0	239.6	241.2	242.9	244.3
42.5°	219.1	220.9	222.7	224.5	226.3	228.1	229.8	231.5	233.2	234.9	236.5
45°	205.3	207.2	209.1	211.1	213.1	215.1	217.1	219.2	221.3	223.3	224.9
47.5°	190.7	192.9	195.1	197.4	199.6	201.9	204.2	206.6	208.9	211.3	213.0
50°	181.3	183.5	185.8	188.1	190.4	192.8	195.4	198.0	200.5	203.0	204.9
52.5°	171.2	173.6	176.0	178.5	180.9	183.5	186.3	189.2	191.9	194.7	196.7
55°	156.5	159.2	161.9	164.6	167.3	170.2	173.1	176.1	179.0	182.0	184.2
57.5°	142.2	145.0	147.8	150.7	153.4	156.5	159.7	163.0	166.2	169.4	171.7
60°	132.1	135.1	138.1	141.0	143.9	147.1	150.5	153.8	157.2	160.6	162.9
62.5°	122.7	125.7	128.7	131.7	134.8	138.1	141.6	145.2	148.8	152.3	154.6
65°	108.1	111.4	114.5	117.7	121.0	124.4	127.9	131.6	135.1	138.8	141.2
67.5°	93.4	96.8	100.2	103.5	106.9	110.5	114.2	117.9	121.5	125.2	127.9
70°	83.0	86.6	90.1	93.6	97.1	100.9	104.8	108.8	112.7	116.6	119.3
72.5°	73.6	77.2	80.6	84.2	87.7	91.5	95.5	99.7	103.7	107.8	110.5
75°	58.7	62.6	66.4	70.3	74.1	78.1	82.2	86.3	90.4	94.5	97.2
77.5°	45.7	49.6	53.5	57.4	61.2	65.3	69.4	73.5	77.6	81.8	84.7
80°	36.5	40.6	44.6	48.6	52.6	56.8	61.0	65.3	69.6	73.8	76.6
82.5°	28.6	32.6	36.8	40.8	44.9	49.1	53.5	57.8	62.1	66.5	69.2
85°	18.1	22.2	26.3	30.4	34.5	38.7	43.1	47.4	51.7	56.1	58.9
87.5°	10.1	14.6	19.1	23.7	28.2	32.9	37.6	42.4	47.2	52.0	54.9
90°	5.9	12.1	18.5	24.7	31.1	37.8	44.9	52.0	59.3	66.4	70.1
92.5°	29.4	34.5	39.7	44.9	50.1	55.6	61.4	67.2	73.0	78.8	82.2
95°	64.6	69.5	74.3	79.1	83.9	89.2	95.1	100.8	106.7	112.6	116.1
97.5°	111.3	115.3	119.5	123.5	127.6	132.2	137.4	142.5	147.7	152.9	156.4
100°	143.1	147.0	151.1	155.0	159.1	163.5	168.4	173.3	178.2	183.2	186.2
102.5°	179.7	182.9	186.1	189.3	192.5	196.7	201.9	207.1	212.3	217.5	220.5
105°	234.1	236.5	239.0	241.4	243.8	247.8	253.4	259.0	264.6	270.1	272.4
107.5°	297.0	298.9	300.9	302.9	304.8	307.8	312.0	316.2	320.4	324.5	327.4
110°	336.1	338.1	340.0	341.9	343.9	346.7	350.5	354.2	357.9	361.6	364.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	377.2	378.7	380.2	381.7	383.2	385.6	388.8	392.1	395.3	398.5	401.6
115°	438.5	440.2	441.9	443.5	445.2	447.3	449.8	452.3	454.8	457.2	459.5
117.5°	500.5	501.5	502.6	503.7	504.8	506.4	508.6	510.7	512.9	515.1	517.0
120°	538.8	540.6	542.4	544.2	546.0	547.6	549.2	550.7	552.3	553.9	555.6
122.5°	579.1	580.4	581.5	582.7	584.0	585.6	587.6	589.5	591.5	593.5	594.8
125°	640.2	640.9	641.5	642.2	642.9	644.2	646.1	648.1	650.0	651.9	652.7
127.5°	696.9	698.3	699.7	701.0	702.4	703.9	705.3	706.8	708.2	709.7	710.0
130°	734.7	736.4	738.2	739.9	741.6	743.1	744.0	745.0	745.9	746.9	747.5
132.5°	772.2	774.0	775.9	777.7	779.4	780.8	781.6	782.4	783.2	784.0	784.4
135°	829.9	831.2	832.4	833.8	835.0	836.0	836.7	837.3	838.0	838.7	839.2
137.5°	883.2	884.3	885.4	886.5	887.6	888.6	889.7	890.8	891.9	893.0	893.3
140°	920.0	921.1	922.2	923.4	924.5	925.3	925.7	926.2	926.7	927.2	928.2
142.5°	953.6	954.7	955.8	956.9	957.9	958.7	959.2	959.6	960.0	960.5	961.4
145°	1006.2	1006.6	1007.0	1007.3	1007.7	1008.3	1008.9	1009.6	1010.3	1011.0	1011.5
147.5°	1051.9	1052.7	1053.5	1054.4	1055.2	1055.9	1056.5	1057.2	1057.8	1058.4	1058.7
150°	1083.9	1084.4	1084.9	1085.3	1085.8	1086.2	1086.7	1087.1	1087.6	1088.1	1088.1
152.5°	1110.2	1110.9	1111.5	1112.1	1112.8	1113.3	1113.6	1113.8	1114.1	1114.4	1114.8
155°	1151.8	1151.8	1151.8	1151.8	1151.8	1151.9	1152.1	1152.3	1152.5	1152.8	1153.7
157.5°	1187.1	1186.8	1186.5	1186.3	1186.0	1186.0	1186.1	1186.3	1186.5	1186.7	1187.6
160°	1209.3	1208.9	1208.4	1207.9	1207.4	1207.2	1207.2	1207.2	1207.2	1207.2	1208.4
162.5°	1229.0	1228.4	1227.7	1227.1	1226.5	1226.2	1226.5	1226.6	1226.8	1226.9	1228.1
165°	1254.5	1253.8	1253.2	1252.4	1251.8	1251.4	1251.4	1251.4	1251.4	1251.4	1252.8
167.5°	1274.9	1273.9	1273.0	1272.1	1271.2	1270.8	1271.0	1271.2	1271.4	1271.5	1273.0
170°	1286.3	1285.5	1284.5	1283.7	1282.7	1282.2	1282.2	1282.2	1282.2	1282.2	1283.8
172.5°	1295.4	1294.5	1293.6	1292.7	1291.7	1291.3	1291.3	1291.3	1291.3	1291.3	1292.7
175°	1304.9	1303.9	1303.1	1302.1	1301.2	1300.8	1300.8	1300.8	1300.8	1300.8	1302.1
177.5°	1308.8	1308.1	1307.3	1306.5	1305.8	1305.4	1305.4	1305.4	1305.4	1305.4	1306.5
180°	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	338.8	338.8	338.8	338.8	338.8	338.8	338.8	338.8
2.5°	338.1	338.7	339.2	339.4	339.4	339.3	339.2	339.1
5°	337.5	338.3	338.9	339.2	339.1	339.0	338.9	338.8
7.5°	335.6	336.4	337.2	337.5	337.5	337.3	337.2	337.2
10°	333.5	334.3	335.1	335.4	335.3	335.1	334.9	334.8
12.5°	330.7	331.4	332.2	332.5	332.3	332.2	332.0	331.8
15°	325.3	326.1	327.0	327.3	327.3	327.2	327.1	327.0
17.5°	318.4	319.2	319.9	320.2	320.0	320.0	319.9	319.7
20°	313.4	314.1	314.9	315.3	315.4	315.4	315.5	315.6
22.5°	307.8	308.8	309.7	310.2	310.1	310.1	310.1	310.0
25°	298.5	299.6	300.6	301.2	301.2	301.2	301.2	301.2
27.5°	288.8	289.7	290.7	291.1	291.2	291.3	291.3	291.4
30°	282.1	283.1	284.1	284.6	284.6	284.6	284.6	284.6
32.5°	274.9	275.9	276.9	277.6	277.8	278.0	278.2	278.4
35°	264.2	265.4	266.6	267.4	267.8	268.1	268.4	268.7
37.5°	253.0	254.4	255.9	256.7	256.9	257.2	257.5	257.7
40°	245.7	247.1	248.4	249.3	249.6	250.0	250.3	250.6
42.5°	238.0	239.5	241.0	242.0	242.5	242.9	243.4	243.8
45°	226.4	228.0	229.6	230.7	231.3	232.0	232.7	233.3
47.5°	214.8	216.6	218.3	219.4	219.9	220.5	220.9	221.5
50°	206.8	208.7	210.6	211.8	212.4	212.9	213.5	214.1
52.5°	198.7	200.6	202.6	203.9	204.6	205.3	206.0	206.7
55°	186.4	188.6	190.8	192.3	192.9	193.6	194.2	194.9
57.5°	173.9	176.1	178.3	179.8	180.6	181.4	182.2	182.9
60°	165.2	167.5	169.8	171.3	172.2	173.2	174.0	175.0
62.5°	156.9	159.1	161.4	163.0	163.9	164.7	165.6	166.4
65°	143.7	146.2	148.6	150.3	151.1	151.9	152.7	153.5
67.5°	130.6	133.2	135.9	137.7	138.3	139.0	139.7	140.4
70°	121.9	124.5	127.1	128.9	129.7	130.5	131.3	132.1
72.5°	113.1	115.8	118.5	120.3	121.1	121.9	122.8	123.6
75°	99.9	102.6	105.4	107.2	108.1	109.2	110.1	111.1
77.5°	87.5	90.4	93.2	95.0	95.8	96.6	97.3	98.1
80°	79.4	82.2	85.0	86.7	87.6	88.4	89.3	90.1
82.5°	72.0	74.8	77.6	79.4	80.2	81.0	81.8	82.7
85°	61.7	64.5	67.3	69.1	69.9	70.7	71.5	72.3
87.5°	57.9	60.8	63.8	65.8	66.7	67.6	68.5	69.4
90°	73.8	77.5	81.2	83.7	84.9	86.2	87.5	88.8
92.5°	85.7	89.2	92.6	94.6	95.1	95.5	96.0	96.5
95°	119.5	122.9	126.4	128.6	129.4	130.2	131.0	131.8
97.5°	159.9	163.3	166.8	169.0	169.7	170.4	171.1	171.9
100°	189.3	192.3	195.4	197.6	198.8	200.1	201.4	202.7
102.5°	223.6	226.6	229.5	231.4	232.1	232.8	233.6	234.3
105°	274.7	277.0	279.3	281.1	282.3	283.5	284.7	285.9
107.5°	330.3	333.3	336.2	337.9	338.3	338.8	339.2	339.7
110°	367.7	370.8	373.8	375.5	375.7	375.9	376.0	376.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	404.8	408.0	411.1	413.0	413.7	414.3	414.9	415.6
115°	461.7	463.8	466.0	467.4	467.8	468.2	468.7	469.1
117.5°	518.9	520.8	522.7	523.6	523.6	523.6	523.6	523.6
120°	557.2	558.9	560.5	561.4	561.5	561.7	561.7	561.9
122.5°	596.0	597.1	598.4	599.0	598.9	598.9	598.8	598.7
125°	653.6	654.3	655.1	655.4	655.1	654.7	654.3	654.0
127.5°	710.3	710.7	711.1	711.0	710.5	710.0	709.6	709.0
130°	748.1	748.8	749.4	749.2	748.1	747.0	745.9	744.8
132.5°	784.8	785.2	785.6	785.4	784.8	784.1	783.5	782.8
135°	839.9	840.4	841.0	841.2	841.1	841.1	841.1	841.1
137.5°	893.7	894.1	894.4	894.3	893.9	893.4	892.9	892.5
140°	929.2	930.2	931.2	931.1	929.9	928.8	927.6	926.4
142.5°	962.3	963.1	964.0	964.1	963.2	962.4	961.6	960.8
145°	1011.9	1012.3	1012.7	1012.6	1012.0	1011.5	1010.9	1010.3
147.5°	1058.8	1059.1	1059.2	1058.8	1057.7	1056.7	1055.6	1054.6
150°	1088.1	1088.1	1088.1	1087.4	1086.2	1085.1	1083.9	1082.6
152.5°	1115.1	1115.5	1115.8	1115.4	1114.3	1113.1	1112.0	1110.8
155°	1154.6	1155.6	1156.4	1156.1	1154.5	1152.9	1151.3	1149.7
157.5°	1188.6	1189.5	1190.6	1190.3	1189.1	1187.8	1186.5	1185.3
160°	1209.5	1210.7	1211.8	1212.0	1211.0	1210.1	1209.2	1208.2
162.5°	1229.2	1230.4	1231.5	1231.4	1229.9	1228.4	1227.0	1225.5
165°	1254.2	1255.5	1256.9	1256.8	1255.2	1253.6	1252.0	1250.4
167.5°	1274.4	1275.8	1277.2	1277.2	1275.8	1274.4	1273.0	1271.5
170°	1285.5	1287.1	1288.6	1288.6	1287.1	1285.5	1283.8	1282.2
172.5°	1294.1	1295.5	1297.0	1296.9	1295.3	1293.6	1292.0	1290.5
175°	1303.5	1304.9	1306.2	1306.1	1304.5	1302.9	1301.3	1299.7
177.5°	1307.7	1308.8	1309.9	1309.8	1308.4	1307.2	1305.9	1304.6
180°	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0

(END OF REPORT)