

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: P332736-940

Luminaire Tested: **S124DIW-S350D1340U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332736-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D1340U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5437.9 lumens
Efficiency: N/A
Efficacy: 116.7 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

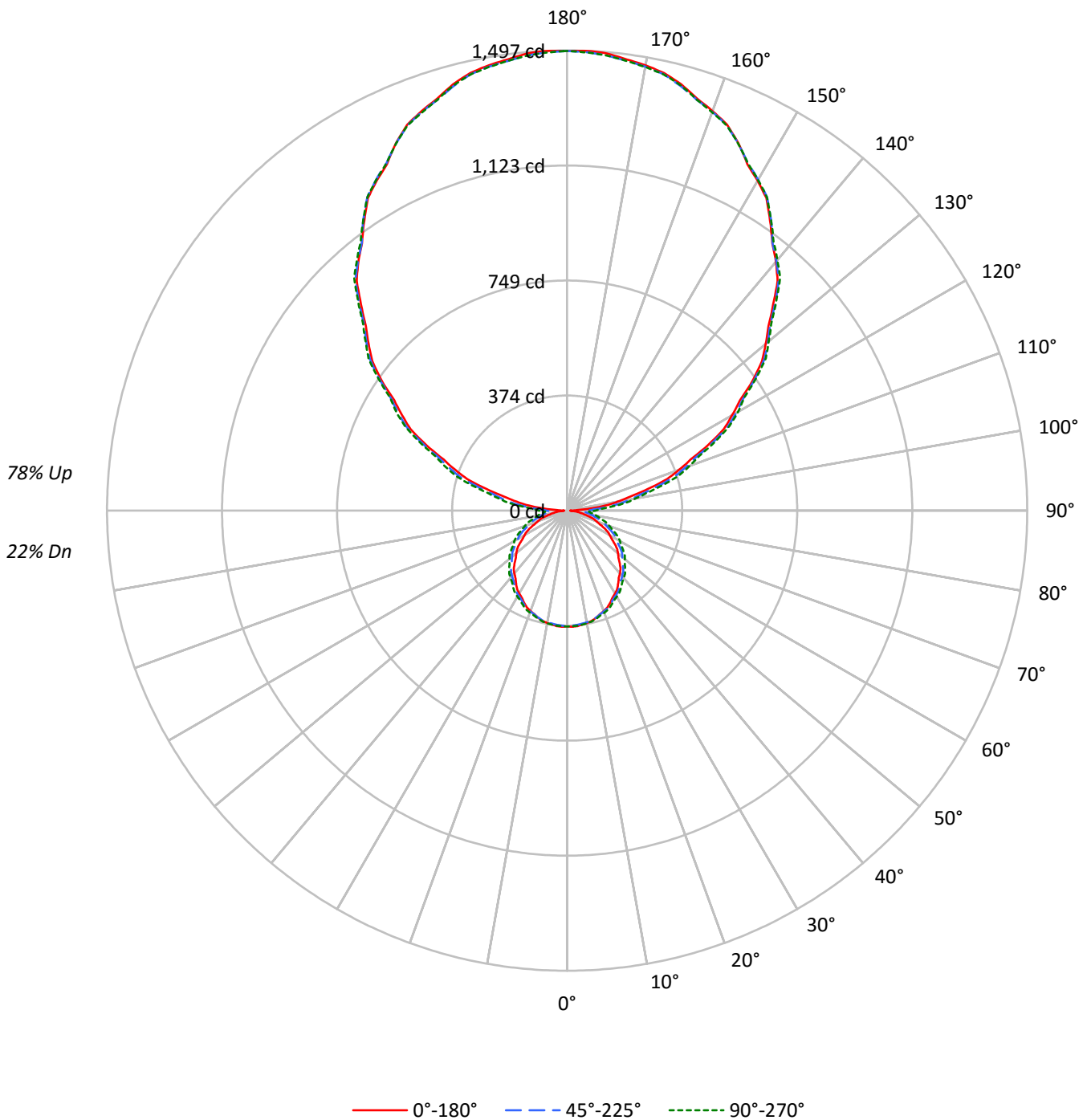
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	18
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	39	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	17	21	17	14	16	13	10	10	8	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.7	0.7
10°-20°	102.3	1.9
20°-30°	154.6	2.8
30°-40°	187.1	3.4
40°-50°	197.8	3.6
50°-60°	186.2	3.4
60°-70°	154.4	2.8
70°-80°	108.5	2.0
80°-90°	65.8	1.2
90°-100°	135.0	2.5
100°-110°	319.1	5.9
110°-120°	514.0	9.5
120°-130°	664.1	12.2
130°-140°	738.7	13.6
140°-150°	722.5	13.3
150°-160°	606.9	11.2
160°-170°	403.8	7.4
170°-180°	141.4	2.6
0°-30°	292.6	5.4
0°-40°	479.7	8.8
0°-60°	863.6	15.9
0°-90°	1192.3	21.9
90°-120°	968.1	17.8
90°-150°	3093.4	56.9
90°-180°	4246.0	78.1
0°-180°	5437.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	10	40	67	86	92	9
95°	75	99	125	139	143	82
105°	273	283	303	317	324	290
115°	507	511	522	530	532	500
125°	736	736	745	750	751	656
135°	948	955	958	962	961	733
145°	1151	1155	1156	1158	1156	720
155°	1318	1318	1317	1321	1317	606
165°	1435	1432	1429	1436	1432	404
175°	1493	1487	1486	1493	1486	142
180°	1495	1495	1495	1495	1495	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	13.2	17.6	21.9	26.4	30.8	35.2	39.8	44.2	48.8	53.3	56.4
90°	10.3	16.8	23.4	30.0	36.6	42.9	49.0	55.0	61.2	67.2	71.5
92.5°	31.1	37.8	44.4	51.0	57.6	63.7	69.1	74.6	80.1	85.5	89.1
95°	74.9	80.3	85.7	91.1	96.5	102.0	107.7	113.3	119.0	124.6	127.9
97.5°	126.2	130.7	135.2	139.7	144.2	149.5	155.3	161.3	167.2	173.1	176.5
100°	166.6	170.0	173.4	176.9	180.4	185.1	191.1	197.1	203.0	209.0	212.0
102.5°	209.1	211.7	214.2	216.8	219.3	223.5	229.1	234.8	240.5	246.2	249.3
105°	273.2	275.4	277.5	279.6	281.8	285.1	289.6	294.1	298.6	303.1	306.2
107.5°	341.4	343.2	345.1	347.0	348.7	351.4	354.9	358.3	361.8	365.2	368.2
110°	387.4	389.1	390.9	392.8	394.6	397.1	400.1	403.1	406.1	409.1	410.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	435.1	436.3	437.7	438.9	440.1	442.1	444.8	447.5	450.1	452.8	454.8
115°	506.8	507.6	508.5	509.3	510.1	511.8	514.2	516.7	519.2	521.7	523.5
117.5°	574.6	575.3	576.0	576.8	577.5	579.1	581.5	584.0	586.4	588.8	589.9
120°	619.6	621.0	622.2	623.6	624.9	626.5	628.5	630.4	632.4	634.3	634.9
122.5°	666.8	667.3	667.8	668.2	668.7	670.0	672.3	674.5	676.6	678.9	679.9
125°	736.0	735.9	735.8	735.8	735.7	736.6	738.8	740.8	742.9	745.0	746.3
127.5°	799.1	799.8	800.4	801.1	801.8	802.8	804.2	805.6	807.0	808.4	809.6
130°	843.2	843.8	844.5	845.2	845.9	846.9	848.5	850.0	851.5	852.9	854.2
132.5°	888.5	888.9	889.4	889.9	890.4	891.1	892.1	893.1	894.1	895.1	896.2
135°	948.0	949.5	951.1	952.6	954.1	955.2	955.9	956.5	957.3	957.9	958.9
137.5°	1013.2	1013.8	1014.4	1015.0	1015.7	1016.4	1017.1	1017.8	1018.6	1019.3	1020.0
140°	1056.7	1057.1	1057.5	1057.9	1058.4	1058.6	1058.7	1058.8	1058.9	1059.0	1060.0
142.5°	1096.1	1096.6	1097.1	1097.6	1098.1	1098.2	1098.0	1097.7	1097.4	1097.2	1098.2
145°	1151.1	1152.0	1153.0	1153.9	1154.9	1155.4	1155.7	1155.9	1156.2	1156.5	1156.7
147.5°	1205.7	1206.8	1207.9	1209.1	1210.2	1210.7	1210.5	1210.3	1210.1	1209.9	1209.8
150°	1238.9	1239.9	1240.8	1241.8	1242.7	1243.1	1243.1	1243.1	1243.1	1243.1	1243.1
152.5°	1270.1	1270.7	1271.3	1271.8	1272.5	1272.9	1273.1	1273.3	1273.5	1273.7	1274.3
155°	1318.3	1318.3	1318.3	1318.3	1318.3	1318.2	1317.9	1317.7	1317.4	1317.2	1318.2
157.5°	1359.1	1358.6	1358.2	1357.6	1357.2	1356.9	1356.9	1356.8	1356.8	1356.7	1357.5
160°	1383.1	1382.9	1382.6	1382.3	1382.1	1381.8	1381.5	1381.3	1381.1	1380.8	1381.5
162.5°	1405.3	1404.6	1404.0	1403.3	1402.7	1402.2	1401.9	1401.7	1401.4	1401.1	1402.6
165°	1435.1	1434.4	1433.6	1432.8	1432.1	1431.5	1430.9	1430.4	1429.9	1429.3	1430.9
167.5°	1458.0	1457.0	1455.9	1454.8	1453.8	1453.2	1453.3	1453.3	1453.4	1453.4	1455.0
170°	1471.0	1469.7	1468.5	1467.1	1465.9	1465.3	1465.6	1465.9	1466.2	1466.3	1467.9
172.5°	1480.2	1479.2	1478.1	1477.0	1476.0	1475.4	1475.5	1475.5	1475.6	1475.6	1477.4
175°	1493.0	1491.7	1490.4	1489.2	1487.8	1487.0	1486.8	1486.6	1486.3	1486.0	1487.8
177.5°	1497.1	1496.1	1495.0	1494.1	1493.0	1492.5	1492.5	1492.5	1492.5	1492.5	1494.0
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	59.4	62.3	65.4	67.4	68.3	69.2	70.2	71.1
90°	75.8	80.0	84.3	87.0	88.3	89.5	90.9	92.1
92.5°	92.7	96.3	99.9	102.2	103.2	104.2	105.3	106.4
95°	131.3	134.6	137.9	139.9	140.7	141.6	142.4	143.3
97.5°	179.9	183.2	186.6	188.8	189.6	190.4	191.2	192.0
100°	215.1	218.1	221.2	223.0	223.7	224.4	225.0	225.7
102.5°	252.5	255.7	258.9	260.9	261.9	262.8	263.8	264.7
105°	309.3	312.5	315.6	317.9	319.4	320.9	322.4	324.0
107.5°	371.2	374.3	377.3	379.1	379.7	380.3	380.9	381.6
110°	412.4	414.1	415.7	417.3	418.8	420.4	421.9	423.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	456.7	458.7	460.7	462.2	463.1	464.0	464.8	465.7
115°	525.3	527.2	529.0	530.0	530.5	530.8	531.3	531.6
117.5°	590.9	592.1	593.2	593.8	594.1	594.2	594.5	594.8
120°	635.5	636.1	636.7	637.6	638.9	640.2	641.4	642.7
122.5°	680.9	681.9	682.9	683.2	683.1	682.8	682.5	682.2
125°	747.5	748.8	750.1	750.7	750.8	750.8	750.9	750.9
127.5°	810.7	811.9	813.1	813.8	814.0	814.2	814.5	814.7
130°	855.3	856.5	857.6	858.0	857.6	857.1	856.6	856.1
132.5°	897.3	898.4	899.5	900.1	900.3	900.4	900.5	900.7
135°	959.8	960.8	961.8	962.2	962.0	961.8	961.6	961.4
137.5°	1020.7	1021.4	1022.1	1022.8	1023.4	1024.0	1024.7	1025.3
140°	1061.0	1061.8	1062.8	1063.5	1063.6	1063.8	1064.1	1064.3
142.5°	1099.2	1100.2	1101.3	1101.9	1102.2	1102.6	1103.0	1103.3
145°	1157.1	1157.4	1157.7	1157.6	1157.3	1156.8	1156.5	1156.0
147.5°	1209.6	1209.5	1209.3	1209.3	1209.3	1209.4	1209.4	1209.5
150°	1243.1	1243.1	1243.1	1243.0	1242.8	1242.5	1242.2	1242.1
152.5°	1275.0	1275.6	1276.2	1276.1	1275.5	1274.8	1274.2	1273.5
155°	1319.3	1320.3	1321.3	1321.3	1320.3	1319.3	1318.2	1317.2
157.5°	1358.3	1359.1	1359.9	1359.8	1358.9	1358.0	1357.2	1356.3
160°	1382.3	1383.1	1383.8	1383.6	1382.3	1381.1	1379.7	1378.5
162.5°	1403.9	1405.3	1406.7	1406.8	1405.4	1404.2	1402.9	1401.6
165°	1432.4	1434.0	1435.6	1435.8	1434.8	1433.7	1432.7	1431.6
167.5°	1456.5	1458.0	1459.6	1459.6	1457.9	1456.3	1454.8	1453.2
170°	1469.5	1471.0	1472.6	1472.4	1470.6	1468.8	1467.0	1465.3
172.5°	1479.1	1480.9	1482.6	1482.6	1480.8	1479.0	1477.2	1475.4
175°	1489.6	1491.4	1493.3	1493.3	1491.4	1489.6	1487.8	1486.0
177.5°	1495.4	1496.8	1498.3	1498.2	1496.6	1494.9	1493.3	1491.6
180°	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3	1495.3

(END OF REPORT)