

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: P332742-927

Luminaire Tested: **S124DIW-S350D1560U927-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332742-927
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-S350D1560U927-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5431.1 lumens
Efficiency: N/A
Efficacy: 101.7 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

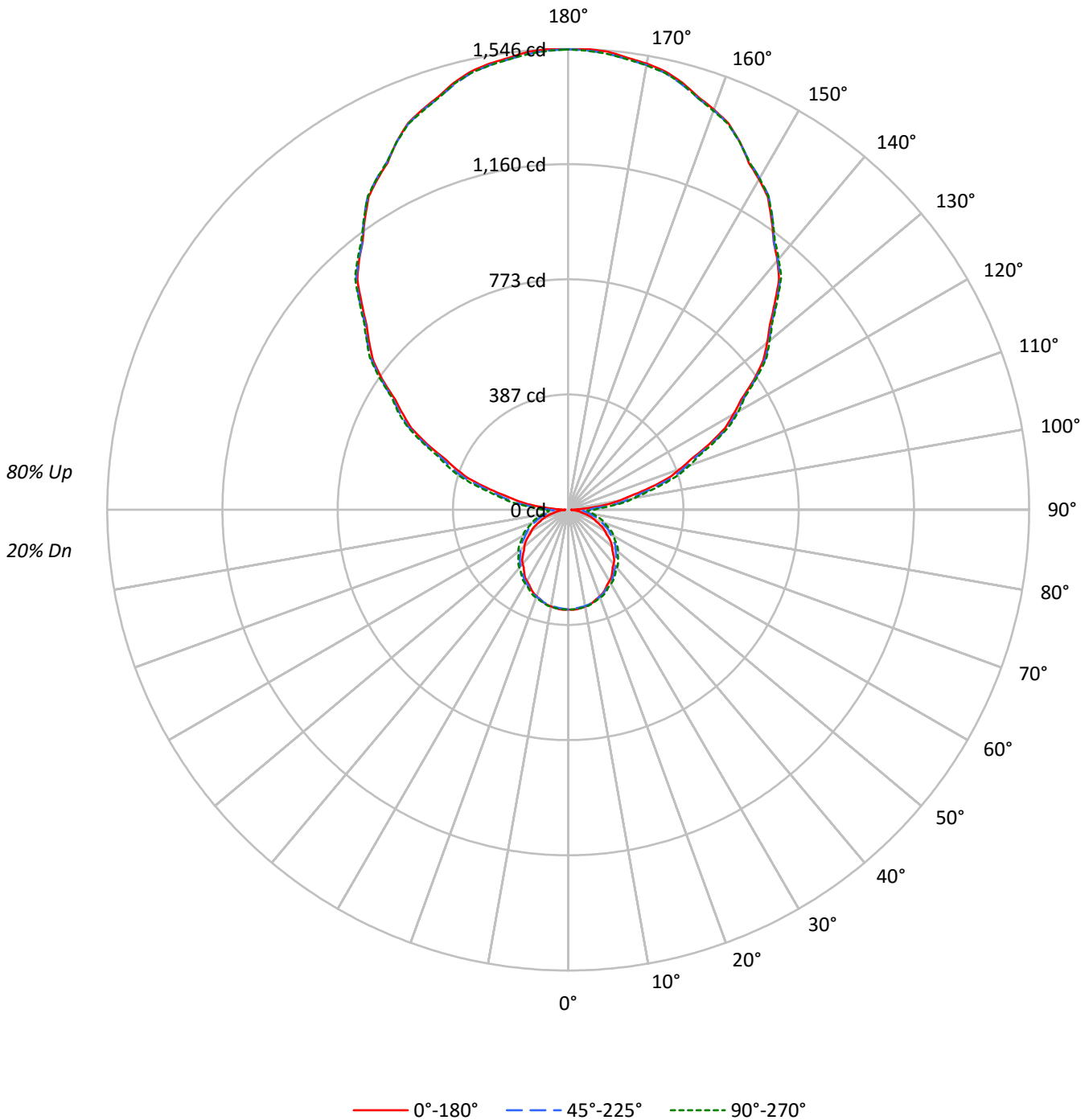
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	88	88	88	88	66	66	66	46	46	46	28	28	28	20
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9
5	62	51	43	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	11	10	7
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	2704	2704	2704
5°	2712	2641	2650
10°	2694	2599	2596
15°	2670	2549	2535
20°	2635	2494	2475
25°	2594	2432	2408
30°	2549	2370	2340
35°	2498	2307	2280
40°	2458	2247	2218
45°	2398	2191	2164
50°	2348	2128	2108
55°	2296	2068	2042
60°	2214	1991	1982
65°	2125	1909	1908
70°	2018	1816	1820
75°	1867	1712	1743
80°	1701	1613	1665
85°	1489	1525	1621



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	31.7	0.6
10°-20°	90.8	1.7
20°-30°	137.4	2.5
30°-40°	166.2	3.1
40°-50°	175.7	3.2
50°-60°	165.4	3.0
60°-70°	137.2	2.5
70°-80°	96.4	1.8
80°-90°	59.1	1.1
90°-100°	134.2	2.5
100°-110°	325.7	6.0
110°-120°	528.3	9.7
120°-130°	684.4	12.6
130°-140°	762.4	14.0
140°-150°	746.1	13.7
150°-160°	626.9	11.5
160°-170°	417.1	7.7
170°-180°	146.1	2.7
0°-30°	259.9	4.8
0°-40°	426.1	7.8
0°-60°	767.2	14.1
0°-90°	1059.9	19.5
90°-120°	988.2	18.2
90°-150°	3181.2	58.6
90°-180°	4371.0	80.5
0°-180°	5431.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	335	335	335	335	335	
5°	335	334	331	334	334	32
15°	321	322	321	324	324	90
25°	294	296	297	301	302	135
35°	257	262	266	270	272	161
45°	214	222	229	235	237	166
55°	168	176	187	194	197	150
65°	116	128	141	150	153	115
75°	64	78	94	104	108	69
85°	20	36	52	63	68	21
90°	10	38	63	81	87	9
95°	76	100	123	137	140	84
105°	282	291	309	322	329	299
115°	523	527	536	543	544	516
125°	760	760	768	772	772	677
135°	979	986	989	992	991	757
145°	1189	1193	1194	1195	1193	744
155°	1362	1362	1360	1365	1360	626
165°	1482	1479	1476	1483	1479	418
175°	1542	1536	1535	1542	1535	146
180°	1544	1544	1544	1544	1544	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	336.0	335.8	335.6	335.4	335.3	334.9	334.4	333.8	333.3	332.7	333.2
5°	335.3	334.9	334.7	334.5	334.2	333.8	333.2	332.6	332.1	331.4	332.2
7.5°	332.4	332.2	332.1	331.9	331.8	331.4	331.0	330.5	330.0	329.5	330.3
10°	329.9	329.9	329.8	329.7	329.6	329.4	329.0	328.5	328.1	327.7	328.4
12.5°	326.7	326.6	326.6	326.6	326.6	326.5	326.1	325.9	325.6	325.3	326.0
15°	321.3	321.5	321.5	321.6	321.7	321.6	321.3	321.1	320.8	320.6	321.3
17.5°	314.1	314.3	314.6	314.8	315.1	315.2	315.1	315.1	315.1	315.0	315.8
20°	309.0	309.2	309.5	309.7	310.0	310.1	310.2	310.3	310.4	310.5	311.3
22.5°	303.2	303.6	303.9	304.2	304.5	304.8	304.9	305.1	305.2	305.4	306.2
25°	294.0	294.5	295.0	295.5	296.0	296.4	296.6	296.8	297.1	297.4	298.3
27.5°	283.6	284.4	285.1	285.8	286.5	287.1	287.5	287.9	288.3	288.7	289.5
30°	276.7	277.4	278.1	278.7	279.4	280.0	280.6	281.1	281.8	282.3	283.3
32.5°	269.3	270.1	270.8	271.6	272.4	273.1	273.8	274.4	275.1	275.8	276.8
35°	257.2	258.3	259.2	260.2	261.3	262.1	263.0	263.8	264.7	265.5	266.6
37.5°	245.2	246.3	247.5	248.6	249.8	250.8	251.9	252.9	254.0	255.0	256.2
40°	237.3	238.4	239.6	240.6	241.7	242.8	244.0	245.2	246.3	247.5	248.7
42.5°	228.4	229.6	230.8	232.0	233.2	234.5	235.9	237.3	238.6	240.0	241.4
45°	214.4	216.0	217.6	219.2	220.8	222.4	223.9	225.5	227.1	228.7	230.1
47.5°	201.2	202.9	204.5	206.1	207.7	209.5	211.3	213.2	215.0	216.8	218.2
50°	191.6	193.5	195.3	197.1	198.9	200.7	202.6	204.5	206.3	208.1	209.8
52.5°	182.0	183.9	185.7	187.5	189.3	191.3	193.4	195.5	197.6	199.7	201.4
55°	168.0	169.8	171.5	173.3	175.0	177.1	179.6	182.1	184.6	187.1	188.8
57.5°	152.3	154.5	156.6	158.8	161.0	163.3	165.8	168.3	170.7	173.3	175.2
60°	142.1	144.3	146.5	148.6	150.8	153.2	156.0	158.8	161.4	164.2	166.1
62.5°	132.2	134.6	137.0	139.3	141.6	144.3	146.9	149.7	152.5	155.3	157.2
65°	116.2	118.9	121.6	124.2	126.9	129.7	132.5	135.3	138.2	141.0	143.1
67.5°	100.8	103.7	106.5	109.4	112.2	115.1	118.2	121.2	124.2	127.2	129.4
70°	90.4	93.2	96.0	98.9	101.7	104.7	107.9	111.1	114.2	117.4	119.6
72.5°	80.2	83.1	86.0	88.9	91.7	94.9	98.2	101.6	105.0	108.4	110.5
75°	64.5	67.6	70.7	73.8	76.8	80.1	83.7	87.1	90.6	94.1	96.5
77.5°	49.9	53.2	56.4	59.7	62.9	66.4	70.0	73.8	77.4	81.0	83.4
80°	40.9	44.2	47.5	50.9	54.2	57.7	61.4	65.0	68.7	72.4	74.9
82.5°	31.8	35.3	38.8	42.3	45.7	49.3	53.0	56.6	60.3	64.0	66.5
85°	19.9	23.4	26.9	30.3	33.9	37.5	41.3	45.0	48.7	52.5	55.0
87.5°	11.8	15.8	19.8	23.8	27.7	31.8	35.9	39.9	44.0	48.1	50.8
90°	9.6	15.8	22.1	28.4	34.6	40.6	46.3	52.0	57.7	63.4	67.4
92.5°	31.3	37.6	44.0	50.3	56.6	62.3	67.4	72.5	77.6	82.6	86.0
95°	76.5	81.7	86.8	92.0	97.1	102.3	107.6	112.9	118.1	123.4	126.4
97.5°	129.6	133.9	138.2	142.4	146.7	151.6	157.2	162.8	168.3	173.9	177.0
100°	171.3	174.6	177.8	181.0	184.3	188.7	194.3	199.9	205.7	211.3	214.0
102.5°	215.3	217.6	220.0	222.3	224.6	228.5	233.8	239.2	244.5	249.9	252.8
105°	281.7	283.6	285.6	287.5	289.4	292.5	296.6	300.7	304.9	309.0	311.9
107.5°	352.1	353.8	355.5	357.1	358.9	361.2	364.2	367.3	370.4	373.5	376.3
110°	399.6	401.2	403.0	404.6	406.4	408.5	411.2	413.8	416.5	419.1	420.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	448.9	450.1	451.2	452.4	453.5	455.3	457.6	459.9	462.2	464.5	466.2
115°	523.1	523.8	524.6	525.3	526.0	527.5	529.7	531.8	533.9	536.0	537.6
117.5°	593.2	593.9	594.5	595.2	595.9	597.2	599.4	601.4	603.6	605.7	606.5
120°	639.8	641.0	642.4	643.6	645.0	646.4	648.1	649.7	651.3	652.9	653.2
122.5°	688.5	689.0	689.4	689.9	690.4	691.6	693.5	695.4	697.3	699.2	700.0
125°	760.0	759.9	759.9	759.8	759.6	760.5	762.3	764.1	766.0	767.8	768.9
127.5°	825.1	825.9	826.6	827.3	828.0	828.9	830.1	831.3	832.4	833.6	834.6
130°	870.7	871.4	872.1	872.8	873.5	874.6	875.9	877.3	878.6	879.9	880.9
132.5°	917.5	918.1	918.5	919.0	919.6	920.2	921.1	921.9	922.8	923.6	924.6
135°	979.1	980.6	982.2	983.8	985.4	986.5	987.1	987.7	988.2	988.8	989.6
137.5°	1046.4	1047.0	1047.7	1048.4	1049.0	1049.7	1050.4	1051.1	1051.9	1052.6	1053.0
140°	1091.3	1091.8	1092.2	1092.7	1093.1	1093.4	1093.4	1093.5	1093.6	1093.7	1094.6
142.5°	1132.1	1132.6	1133.1	1133.6	1134.2	1134.2	1134.0	1133.8	1133.5	1133.2	1134.2
145°	1188.9	1189.9	1190.8	1191.8	1192.8	1193.4	1193.7	1194.0	1194.2	1194.5	1194.7
147.5°	1245.2	1246.4	1247.6	1248.9	1250.1	1250.5	1250.3	1250.1	1249.9	1249.7	1249.5
150°	1279.7	1280.6	1281.6	1282.6	1283.6	1284.0	1284.0	1284.0	1284.0	1284.0	1284.0
152.5°	1311.9	1312.5	1313.1	1313.8	1314.3	1314.8	1314.9	1315.2	1315.4	1315.6	1316.2
155°	1361.7	1361.7	1361.7	1361.7	1361.7	1361.6	1361.3	1361.0	1360.8	1360.5	1361.6
157.5°	1403.7	1403.3	1402.8	1402.3	1401.8	1401.6	1401.5	1401.4	1401.4	1401.4	1402.2
160°	1428.6	1428.3	1428.1	1427.8	1427.5	1427.3	1427.0	1426.7	1426.5	1426.2	1427.0
162.5°	1451.5	1450.9	1450.2	1449.5	1448.7	1448.3	1448.0	1447.8	1447.5	1447.2	1448.7
165°	1482.3	1481.5	1480.7	1480.0	1479.2	1478.5	1478.0	1477.4	1476.9	1476.4	1478.0
167.5°	1506.0	1504.9	1503.8	1502.7	1501.6	1501.0	1501.1	1501.1	1501.2	1501.3	1502.8
170°	1519.4	1518.1	1516.7	1515.4	1514.1	1513.5	1513.8	1514.1	1514.3	1514.6	1516.2
172.5°	1528.9	1527.8	1526.7	1525.6	1524.5	1523.9	1524.0	1524.1	1524.1	1524.2	1526.0
175°	1542.1	1540.7	1539.4	1538.1	1536.8	1536.0	1535.7	1535.4	1535.2	1534.9	1536.8
177.5°	1546.3	1545.3	1544.3	1543.2	1542.1	1541.6	1541.6	1541.6	1541.6	1541.6	1543.1
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	333.7	334.1	334.6	334.8	334.8	334.7	334.6	334.5
5°	332.8	333.4	334.1	334.5	334.4	334.2	334.1	334.1
7.5°	331.1	331.8	332.6	332.9	332.8	332.7	332.6	332.6
10°	329.2	329.9	330.7	331.1	331.0	330.9	330.8	330.7
12.5°	326.7	327.4	328.0	328.4	328.4	328.4	328.4	328.3
15°	322.1	322.8	323.6	323.9	323.8	323.8	323.7	323.6
17.5°	316.5	317.3	318.1	318.4	318.3	318.2	318.2	318.1
20°	312.1	313.0	313.8	314.3	314.3	314.3	314.3	314.3
22.5°	307.0	307.8	308.7	309.2	309.3	309.4	309.6	309.7
25°	299.2	300.1	301.0	301.5	301.6	301.7	301.7	301.8
27.5°	290.3	291.2	292.1	292.6	292.6	292.7	292.8	292.9
30°	284.2	285.1	286.0	286.5	286.7	286.9	287.1	287.2
32.5°	277.8	278.9	280.0	280.6	280.7	280.9	281.1	281.2
35°	267.8	268.9	270.1	270.8	271.1	271.3	271.6	271.9
37.5°	257.4	258.5	259.7	260.5	260.7	260.9	261.3	261.5
40°	250.0	251.2	252.5	253.3	253.6	254.0	254.3	254.6
42.5°	242.7	244.2	245.5	246.4	246.6	246.8	247.2	247.4
45°	231.6	233.0	234.4	235.3	235.8	236.1	236.5	236.9
47.5°	219.8	221.2	222.7	223.6	224.2	224.7	225.1	225.7
50°	211.4	213.1	214.8	215.9	216.3	216.8	217.4	217.9
52.5°	203.0	204.7	206.4	207.5	207.9	208.4	209.0	209.5
55°	190.4	192.1	193.8	194.9	195.4	195.8	196.4	196.9
57.5°	177.2	179.2	181.2	182.4	182.8	183.3	183.8	184.3
60°	168.1	170.0	171.9	173.2	173.9	174.5	175.2	175.9
62.5°	159.1	161.0	162.9	164.2	164.9	165.5	166.2	166.8
65°	145.1	147.3	149.3	150.7	151.4	152.0	152.7	153.4
67.5°	131.5	133.6	135.7	137.1	137.8	138.4	139.0	139.7
70°	121.8	124.1	126.4	127.8	128.3	129.0	129.5	130.1
72.5°	112.7	114.9	117.1	118.5	119.1	119.8	120.5	121.1
75°	98.8	101.1	103.5	105.0	105.8	106.5	107.3	108.0
77.5°	85.8	88.2	90.5	92.1	92.9	93.7	94.5	95.3
80°	77.4	79.9	82.4	84.0	84.6	85.3	86.0	86.6
82.5°	69.1	71.7	74.2	75.9	76.6	77.3	78.1	78.8
85°	57.5	60.0	62.5	64.2	65.0	65.8	66.6	67.5
87.5°	53.6	56.2	59.0	60.8	61.6	62.5	63.3	64.2
90°	71.5	75.4	79.5	82.1	83.3	84.4	85.6	86.8
92.5°	89.2	92.5	95.9	98.0	98.9	100.0	100.9	102.0
95°	129.5	132.5	135.6	137.5	138.2	138.9	139.7	140.5
97.5°	180.1	183.3	186.4	188.4	189.1	189.8	190.5	191.2
100°	216.8	219.6	222.4	224.0	224.7	225.2	225.8	226.4
102.5°	255.7	258.6	261.6	263.5	264.4	265.2	266.1	267.0
105°	314.8	317.7	320.5	322.7	324.2	325.7	327.1	328.6
107.5°	379.1	381.9	384.7	386.3	386.9	387.5	388.0	388.6
110°	421.9	423.3	424.7	426.1	427.5	429.0	430.5	432.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	467.9	469.7	471.4	472.7	473.6	474.4	475.2	476.0
115°	539.2	540.7	542.3	543.3	543.6	543.9	544.2	544.5
117.5°	607.4	608.2	609.0	609.5	609.7	609.7	609.9	610.1
120°	653.6	653.9	654.3	655.1	656.2	657.4	658.6	659.8
122.5°	700.8	701.5	702.3	702.4	702.1	701.7	701.4	701.0
125°	769.9	771.0	772.0	772.5	772.5	772.5	772.5	772.4
127.5°	835.6	836.5	837.5	838.0	838.2	838.4	838.5	838.6
130°	881.9	882.8	883.8	884.0	883.4	882.9	882.3	881.8
132.5°	925.4	926.3	927.2	927.7	927.8	927.9	928.0	928.0
135°	990.5	991.3	992.0	992.3	992.0	991.7	991.4	991.1
137.5°	1053.6	1054.2	1054.6	1055.2	1055.8	1056.4	1056.9	1057.5
140°	1095.4	1096.1	1096.9	1097.5	1097.6	1097.7	1097.9	1098.0
142.5°	1135.0	1135.9	1136.9	1137.4	1137.7	1138.0	1138.3	1138.6
145°	1194.9	1195.2	1195.4	1195.3	1194.8	1194.4	1193.9	1193.4
147.5°	1249.4	1249.2	1249.1	1249.0	1249.0	1249.0	1249.0	1249.0
150°	1284.0	1284.0	1284.0	1284.0	1283.7	1283.4	1283.2	1282.9
152.5°	1316.8	1317.5	1318.1	1318.1	1317.4	1316.8	1316.1	1315.3
155°	1362.6	1363.7	1364.8	1364.8	1363.7	1362.6	1361.6	1360.5
157.5°	1403.0	1403.7	1404.5	1404.5	1403.6	1402.7	1401.8	1400.9
160°	1427.8	1428.6	1429.4	1429.1	1427.8	1426.5	1425.1	1423.8
162.5°	1450.1	1451.5	1452.9	1453.0	1451.7	1450.4	1449.1	1447.7
165°	1479.6	1481.1	1482.7	1483.0	1481.9	1480.9	1479.8	1478.8
167.5°	1504.4	1506.0	1507.6	1507.6	1505.9	1504.3	1502.6	1500.9
170°	1517.8	1519.4	1521.0	1520.8	1519.0	1517.1	1515.3	1513.4
172.5°	1527.8	1529.5	1531.4	1531.4	1529.5	1527.6	1525.7	1523.9
175°	1538.7	1540.5	1542.4	1542.4	1540.5	1538.7	1536.8	1534.9
177.5°	1544.6	1546.0	1547.5	1547.4	1545.7	1544.0	1542.4	1540.6
180°	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4	1544.4

(END OF REPORT)