

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: P332874-940

Luminaire Tested: **SA4XXRDIP-C350D590U940-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P332874-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA4XXRDIP-C350D590U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3379.2 lumens
Efficiency: N/A
Efficacy: 132.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

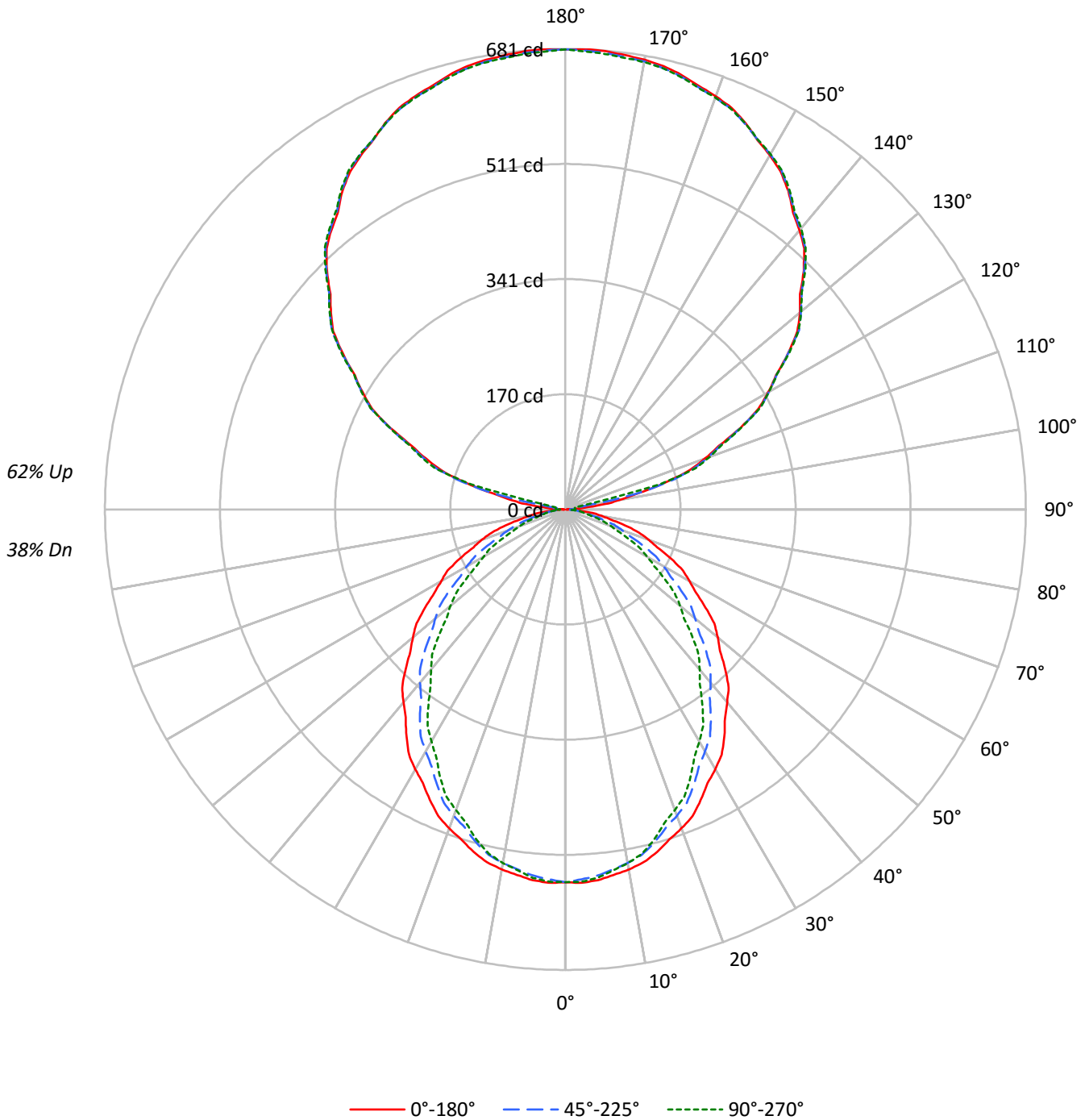
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38				
1	95	91	87	84	86	83	80	77	67	65	63	53	52	50	40	39	38	32				
2	87	80	74	69	79	73	68	63	59	56	53	47	44	42	35	34	32	27				
3	79	70	63	58	72	64	58	53	52	48	44	42	38	36	31	30	28	23				
4	73	62	55	49	66	57	50	45	47	42	38	37	34	31	28	26	24	20				
5	67	55	48	42	60	51	44	39	42	37	33	33	30	27	26	23	21	18				
6	61	50	42	36	56	45	39	34	38	32	29	30	26	24	23	21	19	16				
7	57	45	37	32	51	41	34	29	34	29	25	27	24	21	21	19	17	14				
8	53	41	33	28	48	37	31	26	31	26	22	25	21	19	19	17	15	12				
9	49	37	30	25	44	34	28	23	28	23	20	23	19	17	18	15	13	11				
10	46	34	27	22	41	31	25	21	26	21	18	21	18	15	17	14	12	10				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4451	4451	4451
5°	4460	4406	4433
10°	4432	4353	4353
15°	4381	4262	4229
20°	4312	4141	4064
25°	4222	4000	3899
30°	4135	3852	3691
35°	4039	3698	3482
40°	3923	3523	3256
45°	3817	3350	3027
50°	3695	3149	2783
55°	3564	2940	2519
60°	3421	2713	2249
65°	3289	2428	1983
70°	3099	2110	1683
75°	2857	1753	1369
80°	2492	1334	1255
85°	2112	1213	1130



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	51.8	1.5
10°-20°	144.4	4.3
20°-30°	208.5	6.2
30°-40°	236.4	7.0
40°-50°	228.2	6.8
50°-60°	189.8	5.6
60°-70°	131.1	3.9
70°-80°	66.4	2.0
80°-90°	19.0	0.6
90°-100°	23.3	0.7
100°-110°	148.3	4.4
110°-120°	283.7	8.4
120°-130°	360.1	10.7
130°-140°	385.3	11.4
140°-150°	360.3	10.7
150°-160°	290.6	8.6
160°-170°	187.4	5.5
170°-180°	64.6	1.9
0°-30°	404.7	12.0
0°-40°	641.0	19.0
0°-60°	1059.1	31.3
0°-90°	1275.5	37.7
90°-120°	455.3	13.5
90°-150°	1561.1	46.2
90°-180°	2104.0	62.3
0°-180°	3379.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	551	551	551	551	551	
5°	550	548	544	548	547	52
15°	524	520	510	509	506	148
25°	474	466	449	442	438	218
35°	410	396	375	361	353	256
45°	334	318	293	273	265	258
55°	253	236	209	188	179	226
65°	172	154	127	110	104	170
75°	92	76	56	47	44	97
85°	23	15	13	12	12	26
90°	2	7	11	14	15	2
95°	28	12	11	14	15	36
105°	153	156	159	162	145	160
115°	286	287	287	288	288	281
125°	402	404	403	404	405	359
135°	498	498	500	501	502	384
145°	575	576	576	577	578	359
155°	630	631	629	631	630	290
165°	665	662	662	666	662	188
175°	680	677	678	682	676	65
180°	680	680	680	680	680	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	552.6	552.2	552.0	551.7	551.3	550.8	550.0	549.2	548.3	547.5	548.3
5°	550.4	550.0	549.7	549.3	548.8	548.1	547.0	545.9	544.7	543.7	544.6
7.5°	545.4	545.0	544.7	544.2	543.9	542.9	541.4	539.9	538.5	537.1	537.6
10°	540.6	540.2	539.8	539.3	538.8	537.7	536.0	534.3	532.6	531.0	531.4
12.5°	534.6	534.0	533.5	533.0	532.4	531.2	529.1	527.2	525.2	523.2	523.4
15°	524.2	523.3	522.5	521.7	520.8	519.2	516.9	514.5	512.2	509.9	509.7
17.5°	511.7	510.4	509.2	508.0	506.8	504.7	501.9	499.1	496.3	493.5	492.9
20°	501.9	500.6	499.4	498.2	497.0	494.8	491.6	488.4	485.2	482.0	481.3
22.5°	491.1	489.6	488.3	487.0	485.5	483.1	479.7	476.4	473.0	469.5	468.4
25°	474.0	472.3	470.6	469.0	467.3	464.5	460.7	456.8	452.9	449.1	447.5
27.5°	456.1	454.0	451.8	449.8	447.6	444.5	440.4	436.3	432.2	428.1	426.1
30°	443.6	441.2	438.9	436.6	434.3	430.9	426.4	422.0	417.6	413.2	410.9
32.5°	430.4	427.8	425.2	422.5	419.8	416.3	411.7	407.2	402.6	398.1	395.3
35°	409.8	406.8	403.9	400.8	397.8	394.0	389.3	384.6	380.0	375.2	372.0
37.5°	387.8	384.7	381.7	378.5	375.4	371.3	366.0	360.9	355.7	350.5	347.0
40°	372.3	369.2	366.0	363.0	359.9	355.7	350.4	345.0	339.7	334.3	330.4
42.5°	357.4	354.2	350.9	347.7	344.5	340.0	334.5	328.9	323.3	317.7	313.7
45°	334.3	330.8	327.3	323.9	320.4	315.8	310.2	304.6	299.0	293.4	288.7
47.5°	310.4	306.8	303.3	299.6	296.0	291.3	285.5	279.6	273.8	268.0	263.1
50°	294.2	290.5	286.9	283.2	279.6	274.7	268.8	262.7	256.7	250.7	246.0
52.5°	277.7	274.0	270.5	266.9	263.3	258.4	252.3	246.1	240.0	233.8	229.1
55°	253.2	249.5	245.8	242.0	238.3	233.3	227.2	221.1	215.0	208.9	204.0
57.5°	229.1	225.2	221.3	217.4	213.5	208.6	202.5	196.5	190.6	184.5	179.6
60°	211.9	208.1	204.4	200.6	196.9	192.0	186.0	179.9	174.0	168.0	163.1
62.5°	196.4	192.4	188.5	184.7	180.7	175.8	169.6	163.5	157.3	151.1	146.6
65°	172.2	168.2	164.2	160.2	156.0	151.1	145.1	139.0	133.0	127.1	123.1
67.5°	147.1	143.3	139.4	135.5	131.7	127.0	121.4	115.8	110.2	104.7	101.2
70°	131.3	127.3	123.4	119.5	115.5	110.8	105.5	100.1	94.8	89.4	86.4
72.5°	114.4	110.8	107.3	103.7	100.1	95.9	90.8	85.7	80.7	75.6	73.0
75°	91.6	88.1	84.6	81.1	77.7	73.7	69.4	64.9	60.5	56.2	53.9
77.5°	68.5	65.5	62.6	59.7	56.7	53.4	49.8	46.3	42.7	39.1	37.9
80°	53.6	50.9	48.2	45.5	42.7	39.9	37.2	34.3	31.5	28.7	28.4
82.5°	40.8	38.3	35.8	33.3	30.8	28.7	27.1	25.5	23.9	22.3	22.1
85°	22.8	21.0	19.1	17.1	15.2	14.2	13.9	13.6	13.4	13.1	12.9
87.5°	8.1	7.8	7.4	7.0	6.7	6.5	6.7	6.8	6.9	7.0	7.0
90°	1.5	2.8	4.0	5.3	6.5	7.6	8.5	9.4	10.3	11.1	11.9
92.5°	6.4	6.5	6.5	6.6	6.7	7.1	8.1	9.0	9.9	10.8	11.5
95°	28.0	24.2	20.3	16.4	12.6	10.7	10.9	11.0	11.1	11.1	11.9
97.5°	59.4	61.8	64.2	66.6	69.0	63.8	51.3	38.7	26.0	13.5	13.5
100°	83.4	85.4	87.5	89.5	91.6	84.8	69.2	53.6	38.0	22.4	20.4
102.5°	110.3	111.7	113.2	114.8	116.3	116.0	114.0	111.9	109.9	107.8	87.1
105°	153.1	153.8	154.4	155.2	155.8	156.4	157.0	157.6	158.1	158.7	159.7
107.5°	192.9	193.2	193.6	193.9	194.2	194.7	195.6	196.4	197.1	197.9	198.4
110°	219.7	220.1	220.4	220.8	221.1	221.6	222.3	222.9	223.6	224.4	224.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	245.8	246.4	247.0	247.6	248.3	248.7	249.0	249.3	249.7	249.9	249.9
115°	285.9	286.2	286.5	286.9	287.2	287.3	287.2	287.1	287.0	286.9	287.1
117.5°	322.0	322.4	322.9	323.3	323.8	324.1	324.4	324.7	324.9	325.1	325.1
120°	346.4	346.9	347.3	347.8	348.2	348.4	348.3	348.1	348.0	347.9	348.1
122.5°	369.2	369.4	369.7	370.0	370.2	370.5	370.7	370.8	371.0	371.1	371.2
125°	401.8	402.3	402.8	403.2	403.7	403.8	403.5	403.3	403.1	402.9	403.2
127.5°	432.7	432.8	433.0	433.1	433.2	433.5	434.1	434.5	435.1	435.6	435.5
130°	452.7	452.8	452.9	453.1	453.2	453.3	453.7	454.1	454.4	454.8	454.9
132.5°	471.0	471.2	471.4	471.6	471.8	472.2	472.6	473.0	473.4	473.9	473.9
135°	498.5	498.4	498.3	498.1	498.0	498.2	498.6	499.1	499.5	500.0	500.2
137.5°	522.8	522.8	522.9	522.9	523.0	523.3	523.7	524.2	524.8	525.2	525.5
140°	538.7	538.9	539.1	539.3	539.6	539.8	540.0	540.3	540.5	540.7	541.0
142.5°	552.9	553.3	553.8	554.1	554.6	554.8	554.9	555.1	555.2	555.4	555.6
145°	574.8	575.2	575.4	575.8	576.1	576.3	576.3	576.3	576.3	576.3	576.4
147.5°	592.2	592.8	593.4	594.1	594.7	594.9	594.9	594.8	594.6	594.5	594.6
150°	604.8	605.2	605.7	606.2	606.6	606.8	606.6	606.5	606.5	606.3	606.3
152.5°	615.4	615.7	616.1	616.4	616.8	616.9	616.7	616.5	616.3	616.1	616.3
155°	630.3	630.4	630.4	630.5	630.7	630.5	630.3	629.9	629.5	629.2	629.6
157.5°	642.7	642.7	642.6	642.6	642.5	642.2	641.9	641.5	641.1	640.7	641.3
160°	650.1	649.7	649.3	649.1	648.7	648.5	648.4	648.3	648.1	648.0	648.7
162.5°	656.6	656.1	655.7	655.3	654.9	654.6	654.4	654.3	654.2	654.2	654.8
165°	664.8	664.2	663.7	663.1	662.5	662.3	662.3	662.3	662.3	662.3	663.2
167.5°	671.3	670.7	670.1	669.6	669.0	668.6	668.6	668.5	668.4	668.3	669.4
170°	675.0	674.3	673.6	673.0	672.3	672.0	672.1	672.2	672.3	672.4	673.3
172.5°	677.4	676.7	676.1	675.4	674.8	674.4	674.6	674.7	674.8	674.8	675.8
175°	680.1	679.4	678.7	678.1	677.3	677.1	677.2	677.3	677.4	677.5	678.5
177.5°	681.3	680.6	680.0	679.4	678.8	678.5	678.7	678.9	679.0	679.2	680.0
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	551.3	551.3	551.3	551.3	551.3	551.3	551.3	551.3
2.5°	549.2	550.0	550.8	551.2	551.1	551.1	551.0	550.9
5°	545.5	546.4	547.4	547.8	547.6	547.4	547.2	547.0
7.5°	538.2	538.9	539.5	539.6	539.3	539.0	538.7	538.4
10°	531.7	532.1	532.4	532.4	532.1	531.7	531.4	531.0
12.5°	523.6	523.9	524.1	524.0	523.4	522.9	522.4	521.8
15°	509.5	509.3	509.1	508.7	508.0	507.4	506.8	506.0
17.5°	492.4	492.0	491.4	490.6	489.6	488.7	487.7	486.7
20°	480.5	479.7	479.0	478.0	476.8	475.5	474.4	473.1
22.5°	467.3	466.1	465.0	464.0	463.0	462.0	461.0	459.9
25°	445.9	444.3	442.7	441.5	440.5	439.5	438.6	437.7
27.5°	424.1	422.1	420.2	418.6	417.1	415.8	414.5	413.1
30°	408.5	406.2	403.9	401.9	400.4	399.0	397.4	395.9
32.5°	392.6	389.9	387.2	385.0	383.6	382.2	380.8	379.3
35°	368.8	365.7	362.5	360.1	358.4	356.7	355.0	353.3
37.5°	343.4	339.8	336.3	333.6	331.9	330.2	328.5	326.8
40°	326.4	322.4	318.5	315.8	314.1	312.4	310.7	309.0
42.5°	309.7	305.7	301.7	298.8	297.0	295.2	293.5	291.8
45°	284.2	279.6	274.9	271.8	270.1	268.4	266.7	265.1
47.5°	258.4	253.6	248.9	245.6	243.7	241.8	240.0	238.2
50°	241.3	236.7	231.9	228.7	226.9	225.2	223.4	221.6
52.5°	224.3	219.5	214.8	211.4	209.6	207.8	205.9	204.0
55°	199.2	194.3	189.4	186.1	184.3	182.5	180.7	179.0
57.5°	174.6	169.7	164.7	161.6	160.2	158.9	157.5	156.1
60°	158.2	153.4	148.5	145.3	143.7	142.3	140.8	139.3
62.5°	142.1	137.6	133.1	130.3	129.0	127.9	126.6	125.5
65°	119.0	114.9	110.9	108.3	107.2	106.1	105.0	103.8
67.5°	97.7	94.3	90.8	88.5	87.2	86.0	84.7	83.5
70°	83.3	80.2	77.1	75.1	74.1	73.2	72.2	71.3
72.5°	70.4	67.7	65.1	63.3	62.4	61.6	60.7	59.8
75°	51.8	49.7	47.5	46.2	45.6	45.0	44.5	43.9
77.5°	36.6	35.4	34.2	33.4	33.3	33.1	32.9	32.7
80°	28.2	27.8	27.6	27.4	27.3	27.2	27.1	27.0
82.5°	21.8	21.7	21.5	21.3	21.2	21.1	21.0	21.0
85°	12.8	12.5	12.3	12.2	12.2	12.2	12.2	12.2
87.5°	7.0	7.1	7.2	7.3	7.4	7.6	7.7	7.8
90°	12.6	13.2	13.9	14.4	14.6	14.8	15.1	15.2
92.5°	12.1	12.8	13.5	13.8	13.9	13.9	14.0	14.0
95°	12.6	13.2	13.9	14.3	14.4	14.5	14.6	14.7
97.5°	13.6	13.6	13.7	13.8	13.9	14.0	14.1	14.3
100°	18.5	16.6	14.7	13.8	13.9	14.0	14.1	14.3
102.5°	66.3	45.7	24.9	14.5	14.6	14.6	14.6	14.6
105°	160.8	161.8	162.7	161.2	157.2	153.1	149.0	145.0
107.5°	198.9	199.4	199.8	200.3	200.7	201.2	201.6	202.1
110°	224.8	225.0	225.2	225.5	225.9	226.1	226.5	226.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	249.9	249.9	249.8	249.9	250.4	250.8	251.3	251.6
115°	287.3	287.6	287.8	287.9	287.9	287.9	287.9	287.9
117.5°	325.0	325.0	324.9	324.9	324.9	324.9	324.8	324.8
120°	348.4	348.6	348.8	348.8	348.6	348.4	348.1	347.9
122.5°	371.4	371.5	371.7	371.6	371.4	371.1	371.0	370.7
125°	403.5	403.9	404.2	404.5	404.6	404.7	404.7	404.9
127.5°	435.5	435.4	435.3	435.2	435.2	435.1	435.0	434.9
130°	455.0	455.0	455.2	455.2	455.2	455.2	455.2	455.2
132.5°	474.1	474.2	474.3	474.3	474.2	474.1	474.0	473.9
135°	500.4	500.7	500.9	501.1	501.3	501.6	501.9	502.0
137.5°	525.8	526.0	526.2	526.3	526.3	526.2	526.1	526.0
140°	541.4	541.7	542.1	542.2	542.4	542.5	542.6	542.7
142.5°	555.8	556.1	556.3	556.5	556.5	556.5	556.5	556.6
145°	576.5	576.7	576.8	576.9	577.1	577.4	577.7	577.8
147.5°	594.7	594.8	594.9	594.9	595.1	595.2	595.3	595.4
150°	606.3	606.3	606.3	606.4	606.5	606.6	606.7	606.8
152.5°	616.4	616.6	616.8	616.9	616.8	616.7	616.6	616.6
155°	630.1	630.5	631.0	631.1	630.7	630.4	630.1	629.7
157.5°	641.9	642.5	643.0	643.0	642.5	641.9	641.3	640.7
160°	649.3	650.1	650.8	650.8	650.1	649.3	648.7	648.0
162.5°	655.5	656.1	656.8	656.8	656.0	655.2	654.5	653.7
165°	664.1	664.9	665.9	665.8	664.8	663.8	662.8	661.7
167.5°	670.4	671.4	672.3	672.3	671.2	670.0	668.9	667.8
170°	674.2	675.1	676.1	675.9	674.8	673.7	672.5	671.5
172.5°	676.7	677.6	678.5	678.3	677.2	675.9	674.7	673.4
175°	679.6	680.6	681.6	681.4	680.1	678.7	677.3	676.0
177.5°	680.7	681.4	682.2	682.0	680.9	679.8	678.7	677.6
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1

(END OF REPORT)