

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: P332874-930

Luminaire Tested: **S124RDIP-S350D590U930-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332874-930  
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: S124RDIP-S350D590U930-4F0-1E-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: 3089.6 lumens  
Efficiency: N/A  
Efficacy: 120.7 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

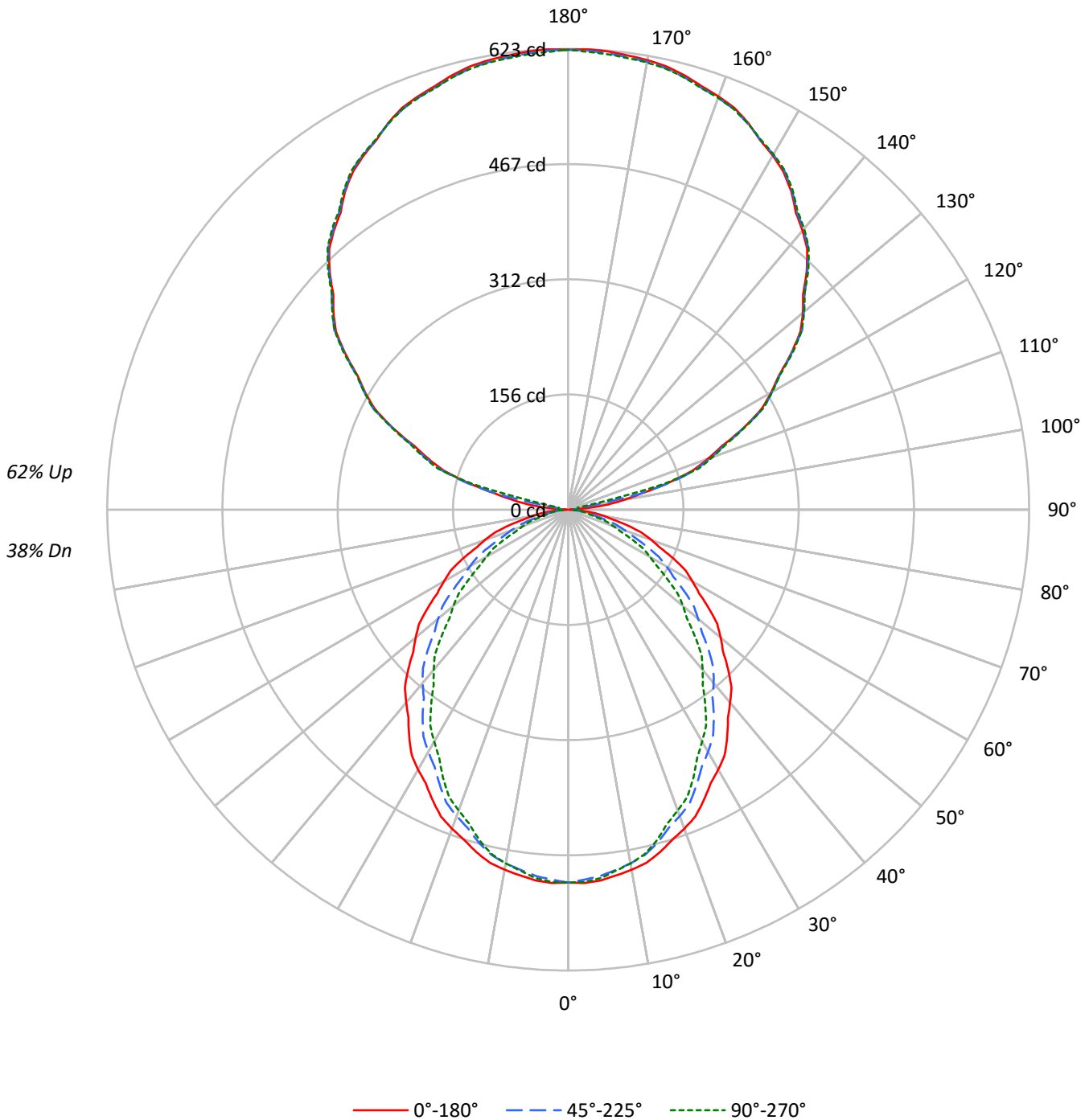
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	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°	4069	4069	4069
5°	4078	4028	4053
10°	4052	3980	3980
15°	4006	3896	3867
20°	3942	3786	3716
25°	3861	3657	3564
30°	3781	3522	3375
35°	3693	3381	3183
40°	3587	3222	2977
45°	3490	3062	2767
50°	3378	2880	2545
55°	3258	2688	2303
60°	3127	2480	2055
65°	3007	2220	1813
70°	2832	1931	1539
75°	2611	1603	1251
80°	2278	1223	1148
85°	1936	1112	1037



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	47.3	1.5
10°-20°	132.0	4.3
20°-30°	190.6	6.2
30°-40°	216.1	7.0
40°-50°	208.7	6.8
50°-60°	173.5	5.6
60°-70°	119.8	3.9
70°-80°	60.7	2.0
80°-90°	17.4	0.6
90°-100°	21.3	0.7
100°-110°	135.6	4.4
110°-120°	259.4	8.4
120°-130°	329.3	10.7
130°-140°	352.3	11.4
140°-150°	329.4	10.7
150°-160°	265.7	8.6
160°-170°	171.4	5.5
170°-180°	59.1	1.9
0°-30°	370.0	12.0
0°-40°	586.1	19.0
0°-60°	968.3	31.3
0°-90°	1166.2	37.7
90°-120°	416.3	13.5
90°-150°	1427.3	46.2
90°-180°	1923.0	62.2
0°-180°	3089.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	504	504	504	504	504	
5°	503	502	497	501	500	48
15°	479	475	466	465	463	135
25°	433	426	411	404	400	200
35°	375	362	343	330	323	234
45°	306	291	268	250	242	236
55°	232	216	191	172	164	207
65°	157	140	116	100	95	155
75°	84	69	51	43	40	88
85°	21	13	12	11	11	23
90°	1	6	10	13	14	2
95°	26	11	10	13	14	33
105°	140	143	145	148	133	146
115°	261	263	262	263	263	257
125°	367	369	368	370	370	328
135°	456	455	457	458	459	351
145°	526	527	527	527	528	328
155°	576	577	575	577	576	266
165°	608	606	606	609	605	172
175°	622	619	620	623	618	59
180°	622	622	622	622	622	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0
2.5°	505.2	504.9	504.7	504.4	504.1	503.6	502.9	502.1	501.3	500.6	501.3
5°	503.2	502.9	502.6	502.2	501.8	501.2	500.1	499.1	498.1	497.1	497.9
7.5°	498.6	498.3	498.0	497.6	497.3	496.4	495.0	493.7	492.4	491.1	491.5
10°	494.3	493.9	493.5	493.1	492.6	491.6	490.1	488.5	487.0	485.5	485.8
12.5°	488.8	488.3	487.8	487.3	486.8	485.7	483.8	482.0	480.2	478.3	478.6
15°	479.3	478.5	477.8	477.0	476.2	474.7	472.6	470.4	468.3	466.2	466.0
17.5°	467.8	466.7	465.5	464.5	463.3	461.5	458.9	456.3	453.8	451.2	450.7
20°	458.9	457.7	456.6	455.5	454.4	452.4	449.5	446.5	443.6	440.7	440.0
22.5°	449.0	447.7	446.5	445.2	443.9	441.7	438.6	435.5	432.4	429.3	428.3
25°	433.4	431.9	430.3	428.8	427.2	424.7	421.2	417.7	414.1	410.6	409.1
27.5°	417.0	415.1	413.1	411.2	409.3	406.4	402.7	398.9	395.2	391.4	389.6
30°	405.6	403.4	401.3	399.2	397.1	394.0	389.9	385.9	381.8	377.8	375.7
32.5°	393.5	391.1	388.7	386.3	383.8	380.6	376.4	372.3	368.1	363.9	361.4
35°	374.7	371.9	369.2	366.5	363.7	360.2	356.0	351.6	347.4	343.1	340.1
37.5°	354.6	351.7	348.9	346.1	343.2	339.5	334.7	330.0	325.2	320.5	317.2
40°	340.4	337.5	334.7	331.9	329.1	325.2	320.3	315.4	310.5	305.7	302.1
42.5°	326.8	323.8	320.8	317.9	315.0	310.9	305.8	300.7	295.6	290.5	286.8
45°	305.7	302.5	299.3	296.1	292.9	288.8	283.6	278.5	273.4	268.2	264.0
47.5°	283.8	280.5	277.3	273.9	270.7	266.4	261.1	255.7	250.3	245.0	240.6
50°	269.0	265.6	262.3	258.9	255.6	251.2	245.7	240.2	234.7	229.3	224.9
52.5°	253.9	250.5	247.3	244.0	240.8	236.3	230.6	225.0	219.4	213.8	209.5
55°	231.5	228.1	224.7	221.3	217.8	213.3	207.7	202.2	196.6	191.0	186.5
57.5°	209.5	205.9	202.4	198.8	195.2	190.7	185.2	179.7	174.2	168.7	164.2
60°	193.7	190.3	186.9	183.4	180.0	175.5	170.1	164.5	159.1	153.6	149.1
62.5°	179.5	175.9	172.4	168.8	165.3	160.7	155.1	149.4	143.8	138.2	134.0
65°	157.4	153.8	150.1	146.4	142.7	138.1	132.6	127.1	121.6	116.2	112.5
67.5°	134.5	131.0	127.4	123.9	120.4	116.1	111.0	105.9	100.8	95.7	92.5
70°	120.0	116.4	112.8	109.3	105.6	101.3	96.4	91.6	86.7	81.8	79.0
72.5°	104.6	101.3	98.1	94.8	91.6	87.6	83.0	78.4	73.8	69.1	66.8
75°	83.7	80.6	77.4	74.2	71.0	67.4	63.4	59.4	55.4	51.4	49.3
77.5°	62.6	59.9	57.2	54.5	51.9	48.8	45.6	42.3	39.1	35.8	34.7
80°	49.0	46.6	44.0	41.6	39.1	36.5	34.0	31.4	28.8	26.3	26.0
82.5°	37.3	35.0	32.7	30.4	28.1	26.3	24.8	23.3	21.9	20.4	20.2
85°	20.9	19.2	17.4	15.7	13.9	13.0	12.7	12.5	12.2	12.0	11.8
87.5°	7.4	7.1	6.8	6.4	6.1	6.0	6.1	6.2	6.3	6.4	6.4
90°	1.4	2.5	3.7	4.8	6.0	6.9	7.7	8.6	9.4	10.2	10.8
92.5°	5.9	6.0	6.0	6.0	6.1	6.5	7.4	8.2	9.0	9.9	10.5
95°	25.6	22.1	18.6	15.0	11.5	9.8	9.9	10.0	10.1	10.2	10.8
97.5°	54.3	56.5	58.7	60.9	63.1	58.4	46.9	35.4	23.8	12.3	12.3
100°	76.2	78.1	80.0	81.9	83.7	77.5	63.3	49.0	34.7	20.5	18.7
102.5°	100.9	102.2	103.5	104.9	106.3	106.1	104.2	102.3	100.4	98.6	79.7
105°	140.0	140.6	141.2	141.9	142.4	143.0	143.6	144.1	144.6	145.1	146.0
107.5°	176.3	176.7	177.0	177.2	177.6	178.1	178.8	179.5	180.2	180.9	181.4
110°	200.9	201.2	201.5	201.9	202.1	202.6	203.3	203.8	204.5	205.1	205.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	224.7	225.3	225.8	226.4	227.0	227.4	227.6	228.0	228.3	228.5	228.5
115°	261.4	261.7	262.0	262.3	262.6	262.7	262.6	262.5	262.4	262.3	262.5
117.5°	294.4	294.8	295.2	295.6	296.0	296.4	296.6	296.9	297.0	297.3	297.3
120°	316.7	317.2	317.6	318.0	318.4	318.5	318.5	318.3	318.2	318.1	318.3
122.5°	337.5	337.8	338.0	338.3	338.5	338.8	338.9	339.0	339.2	339.3	339.4
125°	367.4	367.8	368.3	368.7	369.1	369.2	368.9	368.8	368.5	368.4	368.7
127.5°	395.7	395.7	395.9	396.0	396.1	396.4	396.9	397.3	397.8	398.3	398.2
130°	413.9	414.0	414.1	414.3	414.3	414.5	414.8	415.2	415.5	415.8	415.9
132.5°	430.6	430.8	431.0	431.2	431.4	431.7	432.1	432.4	432.8	433.3	433.3
135°	455.8	455.7	455.6	455.4	455.3	455.5	455.9	456.3	456.7	457.1	457.4
137.5°	478.0	478.0	478.1	478.1	478.2	478.4	478.8	479.3	479.8	480.2	480.5
140°	492.5	492.7	492.9	493.1	493.3	493.5	493.7	494.0	494.2	494.4	494.6
142.5°	505.6	505.9	506.3	506.6	507.0	507.3	507.4	507.5	507.6	507.8	508.0
145°	525.5	525.9	526.1	526.4	526.8	526.9	526.9	526.9	526.9	526.9	527.0
147.5°	541.4	542.0	542.6	543.2	543.7	544.0	543.9	543.8	543.6	543.6	543.6
150°	552.9	553.3	553.8	554.2	554.6	554.8	554.6	554.6	554.5	554.3	554.3
152.5°	562.6	563.0	563.3	563.6	563.9	564.0	563.9	563.7	563.5	563.3	563.5
155°	576.3	576.3	576.4	576.5	576.7	576.5	576.3	575.9	575.6	575.3	575.7
157.5°	587.7	587.6	587.5	587.5	587.4	587.2	586.9	586.5	586.1	585.8	586.4
160°	594.4	594.0	593.7	593.5	593.1	592.9	592.8	592.7	592.6	592.5	593.1
162.5°	600.3	599.9	599.5	599.2	598.8	598.5	598.3	598.3	598.2	598.1	598.7
165°	607.8	607.3	606.8	606.3	605.8	605.5	605.5	605.5	605.5	605.5	606.3
167.5°	613.8	613.3	612.7	612.2	611.6	611.3	611.3	611.2	611.1	611.1	612.0
170°	617.2	616.5	615.9	615.3	614.7	614.4	614.5	614.6	614.7	614.8	615.6
172.5°	619.4	618.7	618.2	617.5	616.9	616.6	616.8	616.9	616.9	617.0	617.9
175°	621.8	621.2	620.5	620.0	619.3	619.1	619.1	619.3	619.4	619.5	620.4
177.5°	622.9	622.3	621.7	621.2	620.6	620.4	620.5	620.7	620.9	621.0	621.7
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	504.0	504.0	504.0	504.0	504.0	504.0	504.0	504.0
2.5°	502.1	502.9	503.6	503.9	503.9	503.9	503.8	503.7
5°	498.8	499.6	500.5	500.8	500.7	500.5	500.3	500.1
7.5°	492.1	492.7	493.3	493.3	493.1	492.8	492.5	492.3
10°	486.2	486.5	486.8	486.8	486.5	486.2	485.8	485.5
12.5°	478.7	479.0	479.2	479.1	478.6	478.1	477.6	477.1
15°	465.9	465.7	465.5	465.1	464.5	463.9	463.3	462.7
17.5°	450.2	449.8	449.3	448.6	447.7	446.8	445.9	445.0
20°	439.4	438.6	438.0	437.1	435.9	434.8	433.7	432.6
22.5°	427.2	426.2	425.2	424.2	423.3	422.4	421.5	420.5
25°	407.6	406.3	404.8	403.7	402.8	401.9	401.0	400.1
27.5°	387.8	386.0	384.2	382.7	381.4	380.2	379.0	377.7
30°	373.5	371.4	369.2	367.5	366.1	364.8	363.4	362.0
32.5°	359.0	356.4	354.0	352.0	350.7	349.4	348.1	346.8
35°	337.2	334.4	331.4	329.2	327.7	326.1	324.6	323.0
37.5°	314.0	310.7	307.4	305.0	303.5	301.9	300.4	298.8
40°	298.4	294.8	291.2	288.7	287.1	285.6	284.1	282.5
42.5°	283.2	279.5	275.8	273.2	271.6	269.9	268.3	266.8
45°	259.8	255.6	251.4	248.5	247.0	245.4	243.9	242.4
47.5°	236.3	231.9	227.6	224.5	222.8	221.1	219.4	217.8
50°	220.6	216.4	212.1	209.1	207.5	205.9	204.2	202.6
52.5°	205.0	200.7	196.4	193.3	191.7	190.0	188.3	186.5
55°	182.1	177.7	173.2	170.2	168.5	166.9	165.3	163.6
57.5°	159.6	155.2	150.6	147.7	146.5	145.3	144.0	142.8
60°	144.6	140.2	135.7	132.8	131.4	130.1	128.7	127.3
62.5°	130.0	125.8	121.7	119.1	118.0	116.9	115.8	114.7
65°	108.8	105.1	101.4	99.1	98.0	97.0	96.0	94.9
67.5°	89.4	86.2	83.0	80.9	79.7	78.6	77.5	76.3
70°	76.1	73.3	70.5	68.6	67.8	66.9	66.0	65.2
72.5°	64.3	61.9	59.5	57.9	57.1	56.3	55.5	54.7
75°	47.4	45.4	43.5	42.2	41.7	41.2	40.7	40.1
77.5°	33.5	32.4	31.2	30.6	30.4	30.2	30.1	29.9
80°	25.8	25.4	25.2	25.0	24.9	24.9	24.8	24.7
82.5°	20.0	19.8	19.6	19.5	19.4	19.3	19.2	19.2
85°	11.7	11.4	11.3	11.2	11.2	11.2	11.2	11.2
87.5°	6.4	6.5	6.6	6.7	6.8	6.9	7.0	7.1
90°	11.5	12.1	12.7	13.1	13.4	13.5	13.8	13.9
92.5°	11.1	11.7	12.3	12.6	12.7	12.7	12.8	12.8
95°	11.5	12.1	12.7	13.0	13.2	13.3	13.4	13.5
97.5°	12.4	12.5	12.6	12.6	12.7	12.8	12.9	13.0
100°	17.0	15.2	13.5	12.6	12.7	12.8	12.9	13.0
102.5°	60.7	41.7	22.7	13.3	13.4	13.4	13.4	13.4
105°	147.0	147.9	148.8	147.4	143.7	140.0	136.2	132.6
107.5°	181.8	182.3	182.7	183.1	183.5	183.9	184.3	184.7
110°	205.5	205.7	205.9	206.2	206.5	206.8	207.1	207.4





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	228.4	228.4	228.4	228.5	228.9	229.3	229.8	230.1
115°	262.7	262.9	263.1	263.3	263.3	263.3	263.3	263.3
117.5°	297.2	297.2	297.1	297.1	297.0	297.0	296.9	296.9
120°	318.5	318.7	318.9	318.9	318.7	318.5	318.3	318.1
122.5°	339.6	339.7	339.8	339.7	339.6	339.3	339.2	338.9
125°	368.9	369.2	369.6	369.8	369.9	370.0	370.1	370.2
127.5°	398.2	398.1	398.0	397.9	397.9	397.8	397.7	397.6
130°	416.0	416.0	416.2	416.2	416.2	416.2	416.2	416.2
132.5°	433.5	433.6	433.7	433.7	433.6	433.5	433.4	433.3
135°	457.5	457.8	458.0	458.2	458.4	458.6	458.9	459.0
137.5°	480.7	480.9	481.1	481.2	481.2	481.1	481.0	480.9
140°	495.0	495.3	495.6	495.8	495.9	496.0	496.1	496.2
142.5°	508.2	508.4	508.7	508.8	508.8	508.8	508.8	508.9
145°	527.1	527.3	527.3	527.5	527.7	527.9	528.2	528.3
147.5°	543.7	543.8	543.9	544.0	544.1	544.2	544.3	544.4
150°	554.3	554.3	554.3	554.4	554.5	554.6	554.7	554.8
152.5°	563.6	563.8	563.9	564.0	563.9	563.9	563.8	563.8
155°	576.1	576.5	576.9	577.0	576.7	576.3	576.1	575.8
157.5°	586.9	587.4	587.9	587.9	587.4	586.9	586.4	585.8
160°	593.7	594.4	595.0	595.0	594.4	593.7	593.1	592.5
162.5°	599.3	599.9	600.5	600.5	599.8	599.1	598.4	597.7
165°	607.2	608.0	608.9	608.8	607.8	606.9	606.0	605.0
167.5°	612.9	613.8	614.7	614.7	613.7	612.6	611.6	610.6
170°	616.4	617.3	618.2	618.0	617.0	616.0	614.9	613.9
172.5°	618.7	619.5	620.4	620.2	619.1	618.0	616.9	615.7
175°	621.3	622.2	623.2	623.1	621.8	620.5	619.3	618.1
177.5°	622.4	623.1	623.7	623.5	622.6	621.6	620.5	619.5
180°	621.8	621.8	621.8	621.8	621.8	621.8	621.8	621.8

(END OF REPORT)