

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: P332506-830

Luminaire Tested: **S124DIP-S350D590U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332506-830  
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: S124DIP-S350D590U830-4F0-1E-UDD-F1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 590 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3359.3 lumens  
Efficiency: N/A  
Efficacy: 131.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3  
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')  
CIE Type: General Diffuse

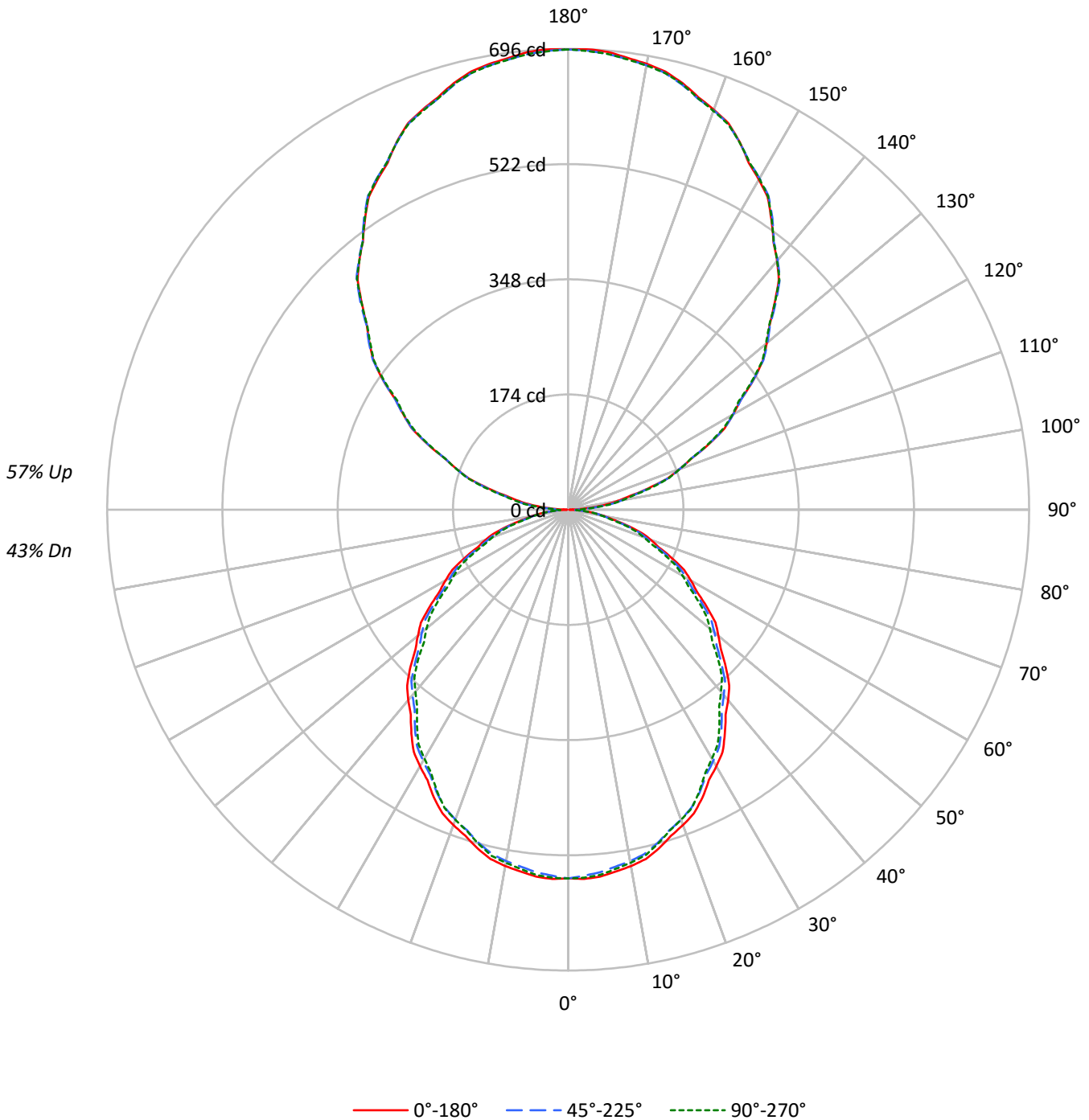
Input Watts (W): 25.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	43
1	96	92	88	84	88	84	81	78	69	67	65	56	54	53	43	42	42	36
2	87	80	74	69	80	73	68	64	61	57	54	49	46	44	38	37	35	30
3	80	70	63	57	73	65	58	53	54	49	45	43	40	37	34	32	30	25
4	73	62	54	48	66	57	50	45	48	42	38	39	35	32	30	28	26	22
5	67	55	47	41	61	51	44	39	42	37	33	35	31	28	27	25	22	19
6	62	50	42	36	56	46	39	33	38	33	29	31	27	24	25	22	20	17
7	57	45	37	31	52	41	34	29	35	29	25	28	24	21	23	20	17	15
8	53	41	33	28	48	37	31	26	32	26	22	26	22	19	21	18	16	13
9	49	37	30	25	45	34	28	23	29	24	20	24	20	17	19	16	14	12
10	46	34	27	22	42	31	25	21	27	22	18	22	18	15	18	15	13	11

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	4495	4495	4495
5°	4508	4454	4486
10°	4480	4418	4440
15°	4425	4355	4367
20°	4354	4277	4281
25°	4272	4188	4177
30°	4172	4084	4047
35°	4066	3975	3921
40°	3958	3851	3780
45°	3846	3729	3658
50°	3720	3620	3508
55°	3586	3478	3365
60°	3450	3321	3219
65°	3299	3171	3043
70°	3127	2969	2854
75°	2866	2729	2658
80°	2552	2450	2385
85°	2232	2149	2103



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	52.4	1.6
10°-20°	147.7	4.4
20°-30°	217.4	6.5
30°-40°	252.8	7.5
40°-50°	252.8	7.5
50°-60°	221.1	6.6
60°-70°	164.2	4.9
70°-80°	93.3	2.8
80°-90°	29.0	0.9
90°-100°	45.8	1.4
100°-110°	135.8	4.0
110°-120°	230.5	6.9
120°-130°	304.0	9.0
130°-140°	341.4	10.2
140°-150°	335.4	10.0
150°-160°	282.1	8.4
160°-170°	187.7	5.6
170°-180°	65.7	2.0
0°-30°	417.6	12.4
0°-40°	670.4	20.0
0°-60°	1144.3	34.1
0°-90°	1430.8	42.6
90°-120°	412.2	12.3
90°-150°	1392.9	41.5
90°-180°	1928.0	57.4
0°-180°	3359.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	556	554	550	554	554	53
15°	530	528	521	524	522	149
25°	480	476	470	471	469	221
35°	413	409	403	400	398	258
45°	337	333	327	322	320	260
55°	255	253	247	242	239	228
65°	173	170	166	162	159	171
75°	92	90	88	86	85	98
85°	24	24	23	23	23	27
90°	2	7	12	15	16	3
95°	32	37	41	42	42	36
105°	125	126	128	130	131	133
115°	234	234	233	233	232	231
125°	341	341	341	340	339	304
135°	440	443	444	442	441	340
145°	535	537	538	537	536	335
155°	613	613	612	614	612	282
165°	667	666	664	667	666	188
175°	694	691	691	694	691	66
180°	695	695	695	695	695	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	558.2	558.0	557.7	557.5	557.2	556.7	555.8	555.0	554.1	553.2	554.0
5°	556.3	555.9	555.5	555.2	554.8	554.0	552.9	551.9	550.7	549.6	550.7
7.5°	551.2	550.7	550.4	550.0	549.6	548.7	547.5	546.4	545.2	543.9	544.8
10°	546.5	546.1	545.7	545.4	545.0	544.1	542.8	541.5	540.3	538.9	539.7
12.5°	540.5	540.1	539.7	539.2	538.9	538.0	536.6	535.3	533.9	532.5	533.4
15°	529.5	529.1	528.8	528.4	528.0	527.1	525.6	524.1	522.5	521.1	521.7
17.5°	516.4	515.9	515.5	515.0	514.4	513.5	512.1	510.7	509.3	507.8	508.2
20°	506.8	506.3	505.9	505.3	504.8	503.9	502.4	500.9	499.4	497.9	498.2
22.5°	496.4	495.8	495.1	494.5	493.8	492.8	491.3	489.8	488.3	486.8	487.4
25°	479.6	478.9	478.2	477.5	476.8	475.8	474.4	473.0	471.6	470.2	470.3
27.5°	460.3	459.6	458.9	458.2	457.5	456.5	455.2	453.9	452.6	451.3	451.1
30°	447.5	446.7	445.9	445.1	444.3	443.3	442.0	440.6	439.4	438.1	437.7
32.5°	433.9	433.2	432.4	431.8	431.0	430.0	428.7	427.3	425.9	424.5	424.0
35°	412.6	412.0	411.3	410.6	409.9	408.9	407.5	406.0	404.7	403.3	402.7
37.5°	390.3	389.6	389.0	388.4	387.8	386.7	385.2	383.7	382.2	380.7	379.9
40°	375.6	374.8	374.1	373.2	372.5	371.4	369.9	368.3	366.8	365.4	364.4
42.5°	360.0	359.5	359.0	358.5	358.1	356.9	355.3	353.6	352.0	350.4	349.2
45°	336.9	336.1	335.5	334.8	334.0	332.9	331.3	329.7	328.2	326.6	325.5
47.5°	312.6	312.2	311.7	311.2	310.8	309.8	308.3	306.8	305.4	303.9	302.7
50°	296.2	295.9	295.5	295.0	294.6	293.8	292.4	291.0	289.5	288.2	286.8
52.5°	280.2	279.7	279.2	278.7	278.2	277.3	275.8	274.4	272.9	271.5	270.2
55°	254.8	254.5	254.1	253.8	253.5	252.7	251.3	250.0	248.5	247.1	246.0
57.5°	230.5	230.2	229.8	229.5	229.1	228.3	226.9	225.6	224.1	222.8	221.7
60°	213.7	213.2	212.7	212.2	211.7	210.8	209.5	208.2	207.0	205.7	204.8
62.5°	197.3	196.9	196.4	196.0	195.6	194.7	193.3	192.0	190.6	189.3	188.4
65°	172.7	172.2	171.6	171.2	170.7	169.9	168.9	168.0	166.9	166.0	164.9
67.5°	147.9	147.4	146.9	146.5	146.0	145.3	144.4	143.5	142.5	141.5	140.5
70°	132.5	131.8	131.1	130.4	129.7	128.9	128.2	127.4	126.6	125.8	125.0
72.5°	116.1	115.4	114.7	114.0	113.3	112.6	112.0	111.4	110.7	110.1	109.4
75°	91.9	91.4	91.0	90.4	89.9	89.4	89.0	88.4	87.9	87.5	87.1
77.5°	68.8	68.6	68.3	68.1	68.0	67.6	67.2	66.7	66.3	65.9	65.7
80°	54.9	54.6	54.3	54.0	53.7	53.4	53.3	53.1	52.9	52.7	52.4
82.5°	41.3	41.2	41.0	40.9	40.7	40.6	40.6	40.6	40.5	40.5	40.4
85°	24.1	24.1	24.1	24.1	24.1	24.0	23.8	23.6	23.4	23.2	23.2
87.5°	9.6	9.8	10.0	10.2	10.4	10.5	10.6	10.7	10.8	10.9	11.0
90°	1.6	2.9	4.2	5.6	6.9	8.0	9.0	9.9	10.8	11.8	12.5
92.5°	11.5	13.0	14.5	16.0	17.5	18.6	19.3	20.0	20.6	21.3	21.7
95°	32.2	33.4	34.4	35.4	36.6	37.5	38.4	39.2	40.1	40.8	41.2
97.5°	56.4	57.2	58.1	58.9	59.8	60.7	61.6	62.7	63.6	64.7	65.0
100°	75.2	75.8	76.3	76.7	77.2	77.9	79.0	80.1	81.2	82.3	82.5
102.5°	95.0	95.2	95.4	95.6	95.8	96.4	97.4	98.3	99.3	100.3	100.7
105°	125.3	125.4	125.5	125.6	125.7	126.0	126.5	127.0	127.4	127.9	128.3
107.5°	156.9	157.1	157.2	157.4	157.6	157.7	157.7	157.8	157.9	158.0	158.3
110°	178.5	178.7	179.0	179.2	179.5	179.5	179.4	179.3	179.2	179.0	178.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	200.9	200.9	201.0	201.0	201.0	201.0	200.8	200.5	200.3	200.1	200.0
115°	234.4	234.4	234.4	234.4	234.4	234.2	234.0	233.8	233.6	233.3	233.2
117.5°	266.0	266.1	266.2	266.3	266.4	266.4	266.2	266.0	265.8	265.7	265.2
120°	287.1	287.6	288.0	288.5	289.0	289.1	288.7	288.3	287.9	287.6	287.0
122.5°	309.0	309.2	309.3	309.5	309.7	309.8	309.6	309.4	309.2	309.2	308.7
125°	341.4	341.4	341.4	341.4	341.4	341.3	341.2	341.1	340.9	340.8	340.5
127.5°	370.7	371.1	371.5	371.8	372.1	372.2	372.0	371.8	371.6	371.5	371.3
130°	391.3	391.7	392.1	392.5	392.8	392.9	392.9	392.9	392.9	392.9	392.8
132.5°	412.5	412.7	412.9	413.2	413.5	413.6	413.5	413.4	413.3	413.2	412.9
135°	440.3	441.0	441.7	442.4	443.2	443.5	443.5	443.5	443.5	443.5	443.3
137.5°	470.6	470.9	471.3	471.6	471.9	472.2	472.4	472.6	472.8	473.0	472.7
140°	490.8	491.1	491.3	491.5	491.7	491.9	491.9	491.9	491.9	491.9	491.7
142.5°	509.3	509.5	509.8	510.0	510.3	510.3	510.2	510.1	510.0	509.9	509.9
145°	534.9	535.4	535.8	536.3	536.8	537.1	537.2	537.3	537.4	537.5	537.4
147.5°	560.2	560.8	561.4	561.9	562.6	562.8	562.7	562.6	562.5	562.4	562.3
150°	575.7	576.3	576.7	577.2	577.7	577.9	577.9	577.9	577.9	577.9	577.9
152.5°	590.4	590.7	591.0	591.3	591.5	591.7	591.8	591.9	592.0	592.1	592.4
155°	612.8	612.8	612.8	612.8	612.8	612.7	612.7	612.6	612.5	612.3	612.7
157.5°	631.8	631.5	631.3	631.1	630.9	630.7	630.7	630.7	630.7	630.7	631.0
160°	642.9	642.8	642.7	642.6	642.4	642.3	642.2	642.2	642.0	641.9	642.2
162.5°	653.3	653.0	652.6	652.3	652.1	651.8	651.7	651.6	651.5	651.3	652.0
165°	667.1	666.8	666.4	666.1	665.7	665.4	665.2	665.0	664.7	664.5	665.2
167.5°	677.8	677.3	676.7	676.3	675.8	675.5	675.5	675.6	675.6	675.6	676.4
170°	683.8	683.2	682.6	682.0	681.4	681.2	681.3	681.4	681.6	681.6	682.4
172.5°	688.1	687.6	687.1	686.6	686.1	685.9	685.9	685.9	685.9	686.0	686.7
175°	694.0	693.4	692.9	692.2	691.6	691.3	691.2	691.1	690.9	690.8	691.6
177.5°	696.0	695.5	695.0	694.6	694.0	693.8	693.8	693.8	693.8	693.8	694.5
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	554.8	555.6	556.4	556.8	556.7	556.6	556.5	556.4
5°	551.9	552.9	554.0	554.4	554.2	554.0	553.8	553.6
7.5°	545.6	546.6	547.4	547.8	547.7	547.5	547.4	547.3
10°	540.5	541.3	542.2	542.4	542.2	542.0	541.8	541.6
12.5°	534.2	535.1	536.0	536.3	536.0	535.7	535.5	535.2
15°	522.3	522.8	523.5	523.6	523.3	523.0	522.7	522.5
17.5°	508.6	509.0	509.3	509.4	509.3	509.1	508.9	508.7
20°	498.5	498.8	499.1	499.2	498.9	498.7	498.5	498.3
22.5°	487.9	488.4	489.0	489.1	488.7	488.3	488.0	487.7
25°	470.4	470.5	470.6	470.5	470.0	469.7	469.3	468.9
27.5°	450.8	450.6	450.3	450.0	449.5	449.0	448.5	448.0
30°	437.3	437.0	436.5	436.1	435.5	435.1	434.6	434.1
32.5°	423.6	423.1	422.6	422.2	421.7	421.1	420.7	420.2
35°	401.9	401.2	400.5	399.9	399.4	399.0	398.4	397.9
37.5°	379.2	378.4	377.7	377.0	376.4	375.7	375.0	374.4
40°	363.4	362.4	361.5	360.7	360.1	359.7	359.2	358.7
42.5°	348.1	346.9	345.8	345.1	344.7	344.4	344.0	343.7
45°	324.4	323.3	322.3	321.5	321.2	320.9	320.7	320.4
47.5°	301.4	300.2	299.0	298.0	297.3	296.5	295.8	295.0
50°	285.4	284.1	282.7	281.6	281.1	280.5	279.8	279.3
52.5°	269.0	267.8	266.6	265.5	264.8	264.0	263.3	262.5
55°	244.8	243.6	242.4	241.5	240.9	240.3	239.7	239.1
57.5°	220.6	219.4	218.3	217.4	216.9	216.3	215.7	215.1
60°	203.9	203.0	202.1	201.4	201.0	200.4	199.9	199.4
62.5°	187.7	186.8	186.0	185.3	184.8	184.4	183.9	183.3
65°	164.0	163.0	162.0	161.3	160.8	160.2	159.8	159.3
67.5°	139.6	138.6	137.7	137.1	137.0	136.9	136.8	136.6
70°	124.2	123.5	122.6	122.1	121.8	121.5	121.2	120.9
72.5°	108.9	108.2	107.5	107.1	106.8	106.5	106.2	105.9
75°	86.6	86.2	85.9	85.6	85.5	85.4	85.3	85.2
77.5°	65.6	65.5	65.4	65.2	64.9	64.7	64.4	64.2
80°	52.2	52.0	51.8	51.7	51.6	51.5	51.4	51.3
82.5°	40.2	40.2	40.1	40.0	39.9	39.7	39.6	39.5
85°	23.2	23.2	23.2	23.2	23.1	23.0	22.8	22.7
87.5°	11.2	11.4	11.5	11.6	11.7	11.7	11.8	11.8
90°	13.3	13.9	14.7	15.2	15.5	15.6	15.9	16.1
92.5°	22.1	22.6	23.0	23.3	23.5	23.6	23.8	23.8
95°	41.6	41.9	42.3	42.5	42.5	42.5	42.5	42.5
97.5°	65.5	65.9	66.4	66.5	66.5	66.5	66.5	66.5
100°	82.8	82.9	83.2	83.3	83.3	83.3	83.3	83.3
102.5°	100.9	101.3	101.6	101.9	102.0	102.1	102.2	102.3
105°	128.7	129.0	129.4	129.7	130.1	130.4	130.8	131.2
107.5°	158.6	158.9	159.3	159.5	159.4	159.4	159.4	159.4
110°	178.5	178.3	178.0	178.1	178.5	178.8	179.2	179.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	200.0	199.9	199.9	199.9	200.0	200.0	200.1	200.2
115°	233.1	233.0	232.8	232.7	232.6	232.4	232.3	232.2
117.5°	264.9	264.5	264.0	263.7	263.4	263.3	263.0	262.8
120°	286.4	285.8	285.2	285.0	285.3	285.5	285.8	286.0
122.5°	308.3	307.9	307.5	307.1	306.6	306.2	305.8	305.4
125°	340.4	340.1	339.9	339.6	339.4	339.1	338.9	338.7
127.5°	371.0	370.8	370.5	370.3	370.1	369.9	369.8	369.6
130°	392.5	392.3	392.0	391.6	391.2	390.7	390.2	389.7
132.5°	412.7	412.5	412.3	412.0	411.8	411.6	411.4	411.2
135°	443.0	442.8	442.5	442.2	441.9	441.5	441.2	440.8
137.5°	472.3	472.0	471.7	471.6	471.6	471.7	471.8	471.9
140°	491.6	491.5	491.4	491.3	491.2	491.1	491.0	490.8
142.5°	509.9	509.9	509.8	509.8	509.8	509.8	509.7	509.7
145°	537.3	537.2	537.1	536.9	536.5	536.1	535.7	535.5
147.5°	562.2	562.1	562.0	561.9	561.8	561.7	561.6	561.5
150°	577.9	577.9	577.9	577.9	577.7	577.6	577.5	577.4
152.5°	592.7	593.0	593.2	593.2	593.0	592.6	592.3	592.0
155°	613.2	613.7	614.3	614.3	613.7	613.2	612.7	612.3
157.5°	631.4	631.8	632.2	632.1	631.7	631.3	630.8	630.5
160°	642.6	642.9	643.3	643.2	642.6	642.0	641.4	640.8
162.5°	652.6	653.3	653.9	653.9	653.4	652.7	652.1	651.6
165°	665.9	666.6	667.3	667.4	666.9	666.5	666.0	665.5
167.5°	677.0	677.8	678.5	678.4	677.8	677.0	676.3	675.5
170°	683.1	683.8	684.5	684.5	683.6	682.8	681.9	681.1
172.5°	687.6	688.4	689.2	689.2	688.3	687.5	686.6	685.9
175°	692.5	693.3	694.1	694.1	693.3	692.5	691.6	690.8
177.5°	695.1	695.8	696.4	696.4	695.7	694.9	694.1	693.3
180°	695.1	695.1	695.1	695.1	695.1	695.1	695.1	695.1

(END OF REPORT)