

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: P332512-930

Luminaire Tested: **S124DIP-S350D810U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332512-930  
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-S350D810U930-4F0-1E-UDD-D1  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3463.8 lumens  
Efficiency: N/A  
Efficacy: 111.0 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

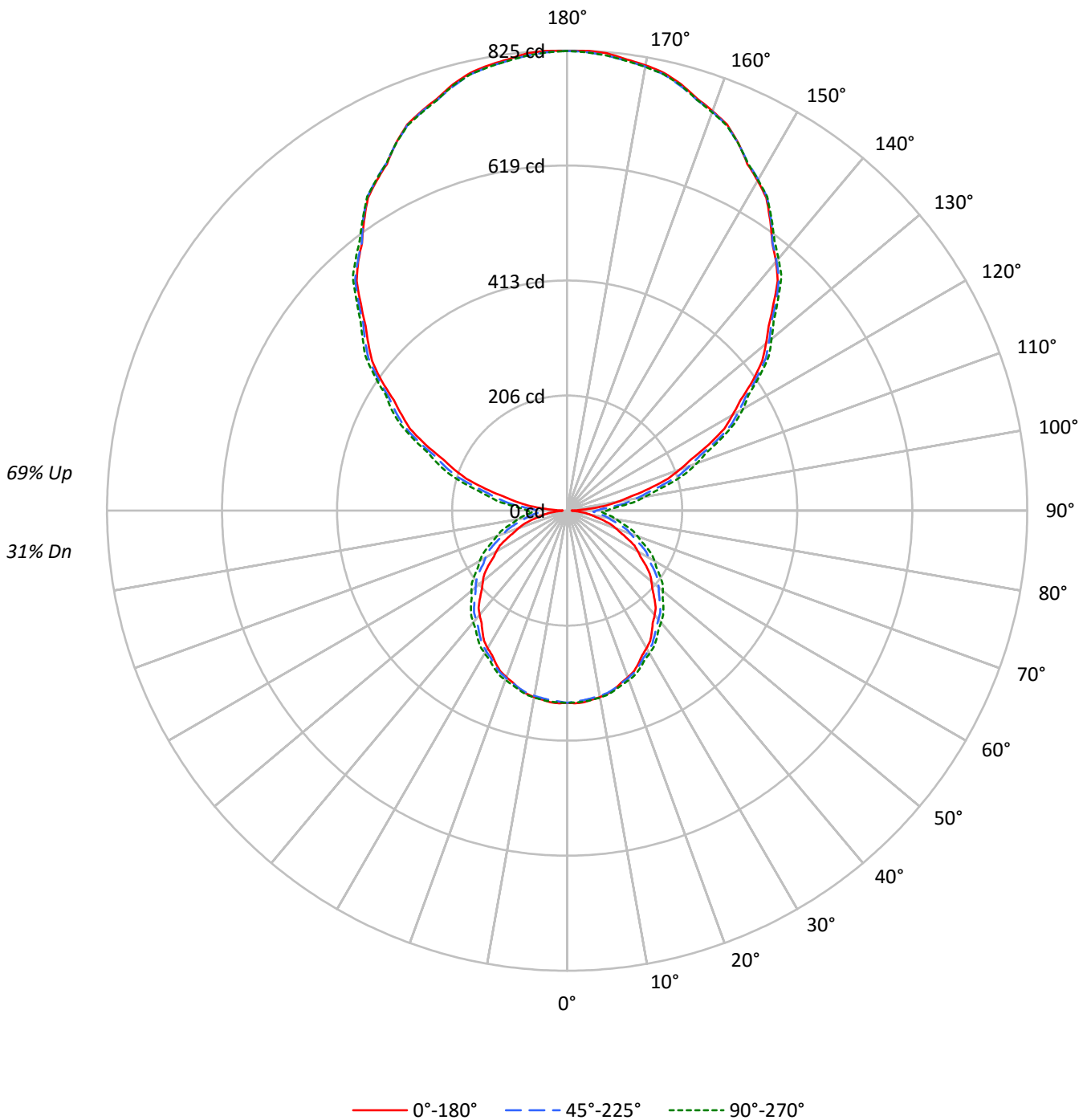
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	39	39	39	31
1	93	88	84	81	83	80	76	73	63	61	58	48	46	45	33	33	32	25
2	84	77	71	65	75	69	64	59	55	51	48	41	39	37	29	27	26	21
3	77	67	60	54	69	61	54	49	48	43	40	36	33	31	25	24	22	17
4	70	59	51	45	63	53	47	41	42	38	34	32	29	26	23	20	19	14
5	64	53	45	39	57	47	40	35	38	33	29	29	25	22	20	18	16	12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11
7	54	42	34	29	49	38	31	26	31	25	22	23	20	17	17	14	12	10
8	50	38	31	25	45	35	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	21	25	20	17	20	16	13	14	12	10	8
10	44	32	25	20	39	29	23	18	23	18	15	18	14	12	13	11	9	7

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

	0°	45°	90°
0°	2782	2782	2782
5°	2791	2719	2726
10°	2774	2675	2673
15°	2749	2623	2608
20°	2711	2566	2547
25°	2669	2503	2478
30°	2623	2439	2408
35°	2571	2374	2347
40°	2530	2313	2282
45°	2468	2256	2228
50°	2417	2190	2169
55°	2363	2129	2101
60°	2280	2049	2039
65°	2187	1965	1962
70°	2076	1868	1874
75°	1922	1763	1793
80°	1750	1660	1713
85°	1534	1571	1669



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	32.6	0.9
10°-20°	93.5	2.7
20°-30°	141.4	4.1
30°-40°	171.1	4.9
40°-50°	180.8	5.2
50°-60°	170.2	4.9
60°-70°	141.2	4.1
70°-80°	99.2	2.9
80°-90°	58.5	1.7
90°-100°	87.7	2.5
100°-110°	185.7	5.4
110°-120°	289.9	8.4
120°-130°	369.7	10.7
130°-140°	408.8	11.8
140°-150°	398.5	11.5
150°-160°	334.5	9.7
160°-170°	222.6	6.4
170°-180°	77.9	2.2
0°-30°	267.5	7.7
0°-40°	438.6	12.7
0°-60°	789.6	22.8
0°-90°	1088.5	31.4
90°-120°	563.2	16.3
90°-150°	1740.2	50.2
90°-180°	2375.0	68.6
0°-180°	3463.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	345	345	345	345	345	
5°	345	344	341	344	344	33
15°	331	331	330	333	333	93
25°	303	305	306	310	311	139
35°	265	269	273	278	280	166
45°	221	228	235	242	244	171
55°	173	181	193	200	203	154
65°	120	132	145	154	158	119
75°	66	81	97	107	111	71
85°	20	37	54	65	70	22
90°	8	30	52	67	72	7
95°	43	62	82	94	98	47
105°	152	161	177	188	194	161
115°	280	284	295	302	305	276
125°	406	406	415	421	422	362
135°	523	527	529	534	535	404
145°	635	637	637	639	639	397
155°	727	727	726	728	726	334
165°	791	789	788	791	789	223
175°	823	820	819	823	819	78
180°	824	824	824	824	824	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	345.8	345.6	345.4	345.2	345.0	344.6	344.1	343.6	343.0	342.4	342.9
5°	345.0	344.7	344.5	344.2	344.0	343.6	342.9	342.3	341.8	341.1	341.9
7.5°	342.1	341.9	341.8	341.6	341.4	341.1	340.6	340.1	339.7	339.2	339.9
10°	339.6	339.5	339.4	339.3	339.2	339.0	338.6	338.1	337.7	337.3	338.0
12.5°	336.2	336.1	336.1	336.1	336.1	336.0	335.7	335.4	335.1	334.8	335.5
15°	330.7	330.8	330.9	331.0	331.1	331.0	330.7	330.4	330.2	330.0	330.7
17.5°	323.3	323.5	323.8	324.0	324.2	324.4	324.3	324.2	324.2	324.2	325.0
20°	318.0	318.2	318.5	318.8	319.0	319.2	319.3	319.4	319.4	319.5	320.4
22.5°	312.1	312.4	312.7	313.1	313.4	313.6	313.8	314.0	314.1	314.3	315.1
25°	302.6	303.0	303.6	304.1	304.6	305.0	305.2	305.5	305.7	306.1	307.0
27.5°	291.9	292.7	293.4	294.2	294.9	295.5	295.9	296.3	296.7	297.1	297.9
30°	284.8	285.5	286.2	286.8	287.6	288.2	288.8	289.3	290.0	290.6	291.6
32.5°	277.1	277.9	278.8	279.6	280.4	281.1	281.8	282.4	283.2	283.8	284.9
35°	264.7	265.8	266.8	267.8	268.9	269.8	270.7	271.5	272.4	273.2	274.4
37.5°	252.3	253.5	254.7	255.8	257.1	258.1	259.3	260.3	261.4	262.4	263.7
40°	244.3	245.4	246.5	247.6	248.7	249.9	251.1	252.3	253.5	254.7	256.0
42.5°	235.1	236.3	237.5	238.8	240.0	241.3	242.8	244.2	245.6	247.0	248.4
45°	220.7	222.3	224.0	225.6	227.2	228.9	230.5	232.1	233.7	235.4	236.8
47.5°	207.1	208.8	210.4	212.1	213.8	215.6	217.4	219.4	221.3	223.1	224.6
50°	197.2	199.1	201.0	202.8	204.7	206.6	208.6	210.4	212.3	214.2	215.9
52.5°	187.4	189.2	191.1	193.0	194.9	196.9	199.0	201.2	203.3	205.5	207.2
55°	172.9	174.7	176.5	178.3	180.1	182.3	184.8	187.4	190.0	192.6	194.3
57.5°	156.8	159.0	161.2	163.5	165.7	168.0	170.6	173.2	175.7	178.3	180.3
60°	146.3	148.5	150.7	153.0	155.2	157.7	160.5	163.4	166.2	169.0	171.0
62.5°	136.1	138.5	141.0	143.4	145.8	148.5	151.2	154.1	156.9	159.8	161.8
65°	119.6	122.4	125.1	127.8	130.6	133.5	136.3	139.3	142.2	145.1	147.2
67.5°	103.8	106.7	109.7	112.6	115.4	118.5	121.6	124.7	127.8	130.9	133.1
70°	93.0	95.9	98.8	101.7	104.7	107.8	111.0	114.3	117.6	120.8	123.1
72.5°	82.5	85.5	88.5	91.5	94.4	97.7	101.1	104.6	108.0	111.5	113.7
75°	66.4	69.5	72.7	75.9	79.1	82.4	86.1	89.7	93.3	96.9	99.3
77.5°	51.4	54.7	58.0	61.4	64.7	68.3	72.1	75.9	79.7	83.4	85.9
80°	42.1	45.5	48.9	52.3	55.8	59.4	63.2	66.9	70.7	74.5	77.0
82.5°	32.8	36.4	39.9	43.5	47.0	50.7	54.5	58.3	62.0	65.9	68.5
85°	20.5	24.1	27.6	31.2	34.9	38.6	42.5	46.3	50.1	54.1	56.6
87.5°	11.8	15.7	19.4	23.2	27.1	31.0	34.9	38.9	42.9	46.9	49.6
90°	8.1	13.0	18.1	23.1	28.0	32.9	37.7	42.6	47.4	52.3	55.6
92.5°	19.5	24.4	29.3	34.2	39.0	43.7	48.2	52.7	57.2	61.6	64.5
95°	43.3	47.4	51.4	55.6	59.7	64.0	68.5	73.0	77.5	82.0	84.8
97.5°	71.3	74.8	78.3	81.7	85.2	89.2	93.8	98.5	103.1	107.8	110.6
100°	93.5	96.3	99.1	101.8	104.7	108.4	113.0	117.6	122.2	126.9	129.5
102.5°	116.9	119.1	121.3	123.5	125.6	129.0	133.4	137.9	142.3	146.8	149.4
105°	152.0	153.8	155.7	157.5	159.4	162.2	165.9	169.7	173.4	177.2	179.8
107.5°	189.5	191.1	192.7	194.2	195.8	198.1	201.2	204.3	207.4	210.5	213.0
110°	214.7	216.2	217.7	219.2	220.6	222.8	225.7	228.5	231.4	234.2	235.9



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	240.9	242.1	243.1	244.3	245.4	247.3	249.9	252.5	255.1	257.7	259.5
115°	280.2	281.0	281.8	282.5	283.3	284.9	287.4	289.8	292.3	294.7	296.5
117.5°	317.6	318.2	318.8	319.4	319.9	321.4	323.8	326.1	328.5	330.8	332.2
120°	342.3	343.2	344.0	344.8	345.6	347.1	349.1	351.1	353.2	355.3	356.3
122.5°	368.3	368.6	368.8	369.2	369.4	370.6	372.8	375.0	377.1	379.2	380.5
125°	406.3	406.2	406.1	406.0	405.9	406.9	408.9	410.9	412.9	414.9	416.3
127.5°	441.0	441.3	441.7	442.1	442.4	443.3	444.7	446.1	447.5	448.9	450.2
130°	465.2	465.5	465.9	466.2	466.5	467.4	468.8	470.1	471.5	472.9	474.2
132.5°	490.2	490.4	490.6	490.8	491.1	491.7	492.7	493.7	494.6	495.6	496.8
135°	522.8	523.7	524.5	525.4	526.2	526.9	527.5	528.2	528.7	529.3	530.4
137.5°	558.7	559.1	559.4	559.7	559.9	560.4	560.9	561.4	562.0	562.5	563.4
140°	582.7	582.9	583.1	583.3	583.5	583.7	583.8	583.8	583.9	584.0	585.0
142.5°	604.3	604.6	604.9	605.1	605.4	605.4	605.3	605.1	605.0	604.8	605.8
145°	634.6	635.0	635.5	636.0	636.5	636.8	637.0	637.1	637.2	637.4	637.7
147.5°	664.7	665.3	665.9	666.4	667.1	667.3	667.2	667.1	666.9	666.8	666.8
150°	683.1	683.5	684.0	684.4	684.9	685.2	685.2	685.2	685.2	685.2	685.2
152.5°	700.1	700.3	700.7	701.0	701.3	701.6	701.6	701.8	701.9	702.1	702.4
155°	726.6	726.6	726.6	726.6	726.6	726.5	726.4	726.3	726.1	726.0	726.5
157.5°	749.1	748.8	748.5	748.3	748.0	747.9	747.9	747.9	747.8	747.8	748.2
160°	762.3	762.1	762.1	761.9	761.7	761.6	761.5	761.3	761.2	761.1	761.5
162.5°	774.5	774.2	773.8	773.5	773.1	772.8	772.7	772.6	772.4	772.3	773.1
165°	791.0	790.6	790.2	789.7	789.3	789.0	788.6	788.4	788.1	787.8	788.6
167.5°	803.6	803.0	802.4	801.8	801.3	801.0	801.0	801.0	801.0	801.0	801.9
170°	810.7	810.1	809.3	808.6	808.0	807.6	807.8	808.0	808.0	808.2	809.0
172.5°	815.9	815.3	814.6	814.1	813.5	813.2	813.3	813.3	813.3	813.3	814.2
175°	822.9	822.1	821.4	820.8	820.0	819.6	819.5	819.3	819.2	819.0	820.0
177.5°	825.2	824.6	824.0	823.5	822.9	822.6	822.6	822.6	822.6	822.6	823.4
180°	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	344.6	344.6	344.6	344.6	344.6	344.6	344.6	344.6
2.5°	343.4	343.9	344.4	344.5	344.5	344.5	344.4	344.3
5°	342.5	343.2	343.9	344.2	344.1	344.0	343.9	343.8
7.5°	340.7	341.4	342.3	342.6	342.5	342.4	342.3	342.3
10°	338.8	339.6	340.4	340.7	340.6	340.6	340.5	340.4
12.5°	336.2	337.0	337.6	337.9	337.9	337.9	337.9	337.9
15°	331.5	332.2	333.0	333.4	333.3	333.2	333.1	333.0
17.5°	325.7	326.5	327.3	327.7	327.6	327.5	327.5	327.4
20°	321.2	322.1	322.9	323.4	323.4	323.4	323.4	323.4
22.5°	316.0	316.8	317.7	318.2	318.4	318.5	318.6	318.8
25°	307.9	308.8	309.8	310.3	310.4	310.5	310.5	310.6
27.5°	298.8	299.7	300.6	301.1	301.2	301.3	301.3	301.5
30°	292.4	293.4	294.3	294.9	295.1	295.3	295.5	295.6
32.5°	285.9	287.1	288.1	288.8	288.9	289.1	289.3	289.4
35°	275.7	276.8	278.0	278.8	279.0	279.2	279.6	279.8
37.5°	264.9	266.0	267.3	268.1	268.3	268.6	268.9	269.1
40°	257.3	258.5	259.8	260.7	261.0	261.4	261.7	262.0
42.5°	249.8	251.3	252.7	253.6	253.8	254.0	254.4	254.6
45°	238.3	239.8	241.2	242.1	242.6	243.0	243.4	243.9
47.5°	226.2	227.6	229.2	230.2	230.7	231.2	231.7	232.3
50°	217.6	219.3	221.0	222.2	222.7	223.1	223.7	224.2
52.5°	209.0	210.7	212.4	213.5	214.0	214.5	215.1	215.6
55°	196.0	197.7	199.4	200.6	201.1	201.5	202.1	202.6
57.5°	182.4	184.4	186.5	187.7	188.2	188.7	189.1	189.6
60°	173.0	175.0	176.9	178.2	179.0	179.6	180.3	181.0
62.5°	163.7	165.7	167.6	169.0	169.7	170.3	171.0	171.7
65°	149.4	151.6	153.7	155.1	155.8	156.5	157.2	157.8
67.5°	135.3	137.5	139.7	141.1	141.8	142.4	143.1	143.8
70°	125.4	127.8	130.0	131.5	132.1	132.7	133.3	133.9
72.5°	116.0	118.3	120.5	122.0	122.6	123.3	124.0	124.7
75°	101.7	104.0	106.5	108.0	108.8	109.6	110.4	111.1
77.5°	88.3	90.7	93.2	94.8	95.6	96.4	97.3	98.1
80°	79.7	82.2	84.8	86.4	87.1	87.8	88.5	89.1
82.5°	71.1	73.8	76.4	78.1	78.8	79.6	80.4	81.1
85°	59.2	61.7	64.3	66.0	66.9	67.8	68.6	69.5
87.5°	52.2	54.9	57.5	59.3	60.1	60.8	61.6	62.5
90°	58.9	62.2	65.6	67.8	68.7	69.6	70.6	71.6
92.5°	67.4	70.4	73.3	75.2	76.1	76.9	77.8	78.6
95°	87.5	90.3	92.9	94.7	95.5	96.3	97.0	97.8
97.5°	113.3	116.1	118.8	120.6	121.3	122.1	122.8	123.5
100°	132.1	134.6	137.2	138.8	139.4	140.1	140.6	141.2
102.5°	152.0	154.7	157.3	159.0	159.8	160.6	161.3	162.2
105°	182.3	184.9	187.4	189.3	190.4	191.5	192.7	193.7
107.5°	215.5	218.0	220.5	222.1	222.7	223.2	223.8	224.5
110°	237.7	239.3	241.0	242.4	243.5	244.6	245.7	246.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	261.4	263.3	265.1	266.4	267.2	267.9	268.7	269.5
115°	298.2	300.0	301.7	302.9	303.3	303.8	304.2	304.7
117.5°	333.5	334.8	336.1	336.9	337.3	337.7	338.1	338.5
120°	357.3	358.3	359.3	360.3	361.3	362.2	363.2	364.2
122.5°	381.7	382.9	384.2	384.8	385.0	385.1	385.1	385.2
125°	417.6	419.0	420.3	421.1	421.3	421.5	421.8	422.0
127.5°	451.4	452.7	454.0	454.8	455.1	455.5	455.8	456.2
130°	475.4	476.6	477.9	478.5	478.5	478.4	478.3	478.3
132.5°	498.0	499.2	500.3	501.1	501.4	501.7	502.0	502.3
135°	531.5	532.6	533.7	534.3	534.3	534.4	534.5	534.6
137.5°	564.3	565.2	566.0	566.7	567.2	567.8	568.3	568.8
140°	586.0	586.9	587.9	588.5	588.8	589.1	589.4	589.6
142.5°	606.7	607.6	608.5	609.2	609.5	609.8	610.3	610.6
145°	638.1	638.5	638.9	639.0	639.0	638.9	638.8	638.7
147.5°	666.8	666.7	666.7	666.7	666.8	667.0	667.1	667.2
150°	685.2	685.2	685.2	685.1	685.0	684.9	684.7	684.5
152.5°	702.7	703.0	703.4	703.4	703.0	702.6	702.3	701.9
155°	727.1	727.7	728.2	728.2	727.7	727.1	726.5	726.0
157.5°	748.6	749.1	749.5	749.4	749.0	748.5	748.0	747.5
160°	761.9	762.3	762.7	762.6	761.9	761.2	760.5	759.8
162.5°	773.8	774.5	775.3	775.3	774.6	774.0	773.2	772.5
165°	789.5	790.4	791.2	791.3	790.8	790.2	789.6	789.1
167.5°	802.7	803.6	804.5	804.5	803.6	802.7	801.8	801.0
170°	809.9	810.7	811.6	811.5	810.6	809.6	808.5	807.6
172.5°	815.2	816.2	817.2	817.2	816.2	815.1	814.2	813.2
175°	821.0	822.0	823.0	823.0	822.0	821.0	820.0	819.0
177.5°	824.2	825.0	825.8	825.7	824.8	823.9	823.0	822.1
180°	824.1	824.1	824.1	824.1	824.1	824.1	824.1	824.1

(END OF REPORT)