

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: P331280-927

Luminaire Tested: **SA2XXDIP-C290D1080U927-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331280-927  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U927-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

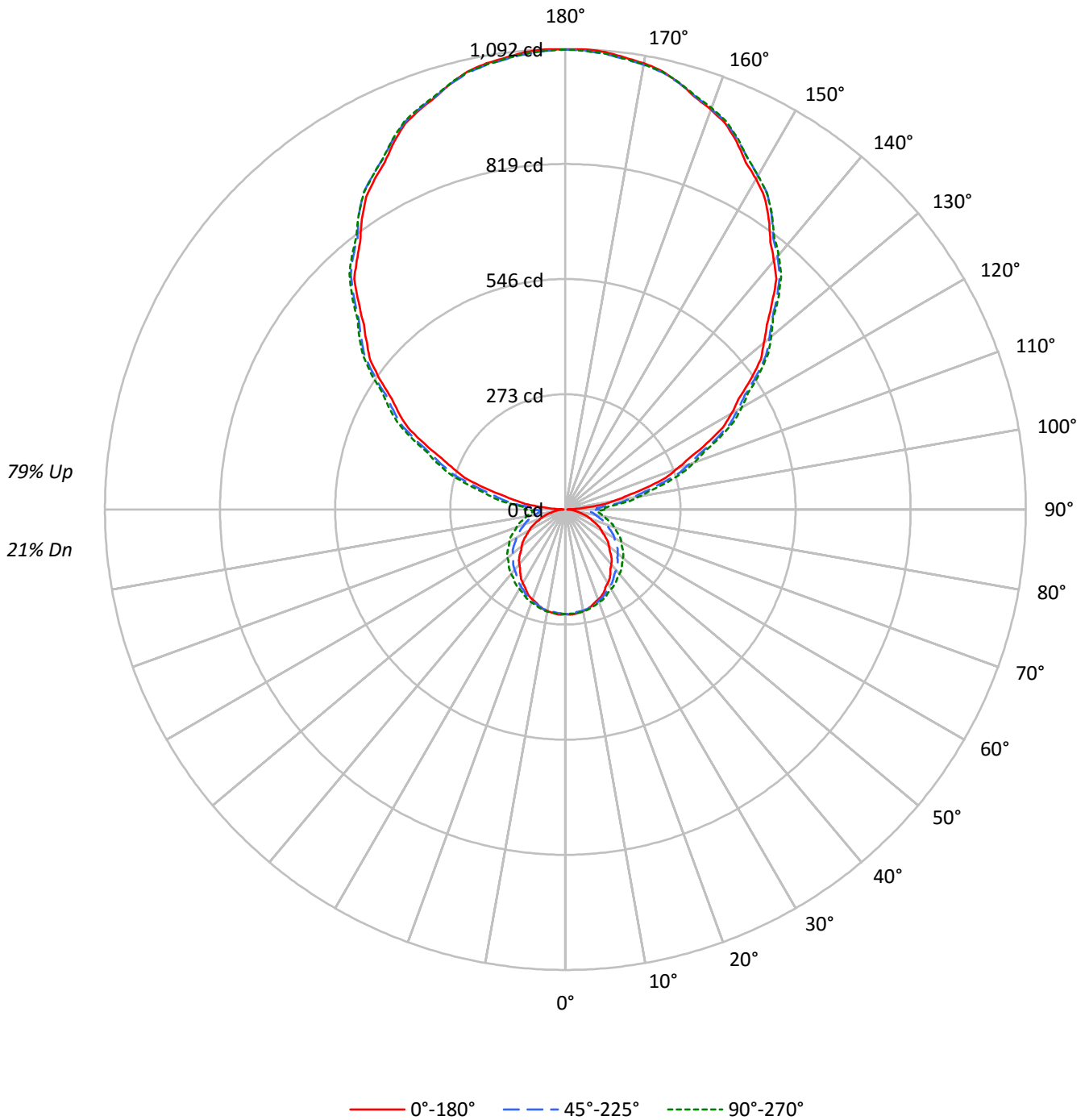
Lumens per Lamp: N/A  
Luminaire Lumens: 4000.7 lumens  
Efficiency: N/A  
Efficacy: 94.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 42.2  
Input Voltage (V): 120  
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	50	30	10	0	
RCR																						
0	100	100	100	100	89	89	89	89	67	67	67	48	48	48	30	30	30	21				
1	91	86	82	79	80	76	73	70	58	56	54	41	39	38	25	24	24	16				
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	22	20	19	13				
3	75	66	58	53	66	58	52	47	44	40	36	31	28	26	19	17	16	11				
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	17	15	14	9				
5	62	51	43	37	55	45	39	34	35	30	26	24	21	19	15	13	12	8				
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	14	12	10	7				
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	21	17	18	15	13	11	9	8	5				
9	45	34	26	21	40	30	24	19	23	18	15	16	13	11	10	9	7	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	6	4				

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

	0°	45°	90°
0°	4009	4009	4009
5°	4030	3859	3845
10°	4004	3746	3703
15°	3948	3624	3554
20°	3878	3495	3410
25°	3809	3371	3279
30°	3712	3242	3150
35°	3615	3118	3059
40°	3511	3013	2965
45°	3413	2919	2886
50°	3309	2833	2810
55°	3196	2741	2731
60°	3061	2646	2648
65°	2922	2534	2548
70°	2764	2415	2440
75°	2564	2299	2342
80°	2245	2177	2240
85°	1945	2073	2163



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	23.5	0.6
10°-20°	67.5	1.7
20°-30°	102.2	2.6
30°-40°	124.5	3.1
40°-50°	134.0	3.3
50°-60°	130.1	3.3
60°-70°	113.6	2.8
70°-80°	87.5	2.2
80°-90°	63.0	1.6
90°-100°	109.5	2.7
100°-110°	244.1	6.1
110°-120°	386.3	9.7
120°-130°	493.3	12.3
130°-140°	546.0	13.6
140°-150°	531.7	13.3
150°-160°	445.3	11.1
160°-170°	295.3	7.4
170°-180°	103.2	2.6
0°-30°	193.2	4.8
0°-40°	317.8	7.9
0°-60°	581.9	14.5
0°-90°	846.0	21.1
90°-120°	740.0	18.5
90°-150°	2310.9	57.8
90°-180°	3155.0	78.9
0°-180°	4000.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	248	248	248	248	248	
5°	249	248	246	248	248	24
15°	238	238	238	241	241	67
25°	216	218	222	226	227	99
35°	186	192	199	207	210	116
45°	153	162	175	186	190	118
55°	117	130	149	161	166	105
65°	80	98	119	133	138	79
75°	44	65	88	102	108	47
85°	13	35	58	73	78	14
90°	4	37	80	92	98	5
95°	51	77	100	113	116	57
105°	200	213	233	247	252	211
115°	370	379	393	403	404	365
125°	536	545	553	560	563	479
135°	693	703	709	715	716	535
145°	841	847	853	856	854	525
155°	962	964	967	971	969	442
165°	1046	1045	1045	1051	1047	295
175°	1089	1086	1084	1090	1085	103
180°	1090	1090	1090	1090	1090	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	249.8	249.5	249.4	249.1	249.0	248.7	248.2	247.8	247.3	246.8	247.2
5°	249.1	248.8	248.6	248.3	248.0	247.7	247.2	246.8	246.3	245.8	246.3
7.5°	246.8	246.6	246.4	246.3	246.1	245.9	245.5	245.2	244.8	244.4	245.0
10°	245.1	244.9	244.8	244.6	244.5	244.2	244.0	243.8	243.5	243.3	243.9
12.5°	242.2	242.2	242.2	242.3	242.3	242.2	242.1	241.9	241.7	241.5	242.2
15°	237.5	237.7	237.8	238.0	238.1	238.2	238.2	238.2	238.2	238.2	238.9
17.5°	231.5	231.8	232.1	232.5	232.8	233.1	233.4	233.6	233.9	234.2	234.9
20°	227.4	227.8	228.2	228.6	229.0	229.4	229.7	230.0	230.4	230.7	231.6
22.5°	223.2	223.6	224.0	224.5	225.0	225.5	225.9	226.3	226.8	227.2	228.1
25°	215.9	216.5	217.1	217.6	218.2	218.8	219.5	220.2	220.9	221.7	222.6
27.5°	207.3	208.2	209.1	210.0	211.0	211.8	212.6	213.5	214.4	215.2	216.4
30°	201.5	202.6	203.6	204.6	205.7	206.8	207.8	208.8	209.8	210.9	212.1
32.5°	195.2	196.4	197.5	198.7	199.9	201.1	202.3	203.5	204.8	206.0	207.5
35°	186.1	187.4	188.8	190.1	191.5	192.9	194.5	196.0	197.5	199.0	200.7
37.5°	176.1	177.7	179.3	180.9	182.4	184.2	186.2	188.1	190.0	192.0	194.0
40°	169.5	171.3	173.0	174.8	176.5	178.5	180.6	182.8	185.0	187.1	189.2
42.5°	163.2	164.9	166.7	168.4	170.2	172.3	174.8	177.3	179.7	182.2	184.5
45°	152.6	154.7	156.9	159.1	161.2	163.7	166.5	169.3	172.1	174.9	177.4
47.5°	142.1	144.5	146.9	149.2	151.5	154.4	157.6	160.9	164.2	167.5	170.1
50°	135.0	137.4	139.9	142.4	144.9	147.9	151.5	155.1	158.7	162.3	165.0
52.5°	128.0	130.6	133.2	135.9	138.5	141.6	145.4	149.2	153.0	156.9	159.6
55°	116.9	119.9	122.7	125.6	128.5	132.0	136.2	140.3	144.5	148.6	151.5
57.5°	106.0	109.2	112.5	115.7	119.0	122.7	127.0	131.2	135.5	139.7	142.8
60°	98.2	101.7	105.1	108.5	112.0	116.0	120.6	125.1	129.7	134.2	137.3
62.5°	91.3	94.9	98.5	102.0	105.6	109.6	114.2	118.7	123.3	127.9	131.1
65°	79.9	83.8	87.7	91.7	95.5	99.9	104.6	109.3	114.1	118.7	122.1
67.5°	69.4	73.5	77.6	81.7	85.8	90.2	95.1	99.9	104.7	109.6	112.9
70°	61.9	66.1	70.2	74.4	78.5	83.1	88.0	93.0	98.0	102.9	106.4
72.5°	55.0	59.3	63.5	67.8	72.2	76.8	81.8	86.8	91.9	96.9	100.3
75°	44.3	48.7	53.2	57.7	62.2	66.9	72.1	77.2	82.3	87.5	90.9
77.5°	33.9	38.6	43.3	47.9	52.7	57.6	62.8	68.0	73.2	78.3	81.8
80°	27.0	31.8	36.8	41.6	46.5	51.6	56.7	61.9	67.1	72.3	75.7
82.5°	21.2	26.1	30.9	35.6	40.5	45.6	50.8	56.1	61.3	66.5	69.9
85°	13.0	17.9	22.9	27.8	32.8	37.8	42.9	48.1	53.2	58.3	61.6
87.5°	7.2	12.5	17.7	23.0	28.3	33.9	39.9	45.9	52.0	58.0	61.2
90°	4.5	11.6	18.7	25.8	32.9	41.3	50.9	60.4	70.1	79.7	82.5
92.5°	19.7	25.8	31.9	38.0	44.1	50.2	56.2	62.2	68.2	74.1	77.4
95°	50.7	56.6	62.3	68.1	73.9	79.5	84.7	89.8	95.1	100.3	103.3
97.5°	89.9	95.1	100.2	105.4	110.5	115.7	121.1	126.5	131.9	137.3	140.3
100°	119.4	124.0	128.6	133.2	137.8	142.6	147.7	152.8	157.9	163.0	166.0
102.5°	150.0	154.0	158.0	162.1	166.0	170.6	175.8	180.9	186.0	191.2	194.2
105°	199.6	202.6	205.5	208.4	211.4	215.2	219.7	224.3	228.9	233.4	236.6
107.5°	250.0	252.8	255.5	258.3	261.0	264.4	268.4	272.4	276.3	280.3	283.1
110°	282.1	284.9	287.7	290.6	293.4	296.8	300.7	304.6	308.6	312.4	315.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	317.4	320.0	322.6	325.1	327.7	330.8	334.4	337.9	341.4	345.0	347.1
115°	369.6	371.6	373.8	375.8	378.0	380.6	383.8	387.0	390.1	393.3	395.5
117.5°	421.0	423.3	425.5	427.7	429.9	432.1	434.3	436.5	438.6	440.8	442.7
120°	455.7	457.6	459.5	461.5	463.5	465.2	466.8	468.3	469.9	471.5	473.7
122.5°	487.3	489.4	491.5	493.6	495.7	497.6	499.5	501.4	503.2	505.1	506.8
125°	536.3	538.1	540.0	541.8	543.6	545.5	547.5	549.4	551.4	553.3	554.8
127.5°	584.3	586.5	588.8	591.0	593.3	595.1	596.4	597.8	599.0	600.4	601.7
130°	614.5	617.0	619.6	622.2	624.8	626.7	628.0	629.2	630.5	631.8	633.3
132.5°	648.3	650.5	652.5	654.6	656.7	658.5	659.8	661.2	662.6	663.9	664.9
135°	693.2	695.5	697.8	700.0	702.3	704.0	705.2	706.4	707.6	708.8	710.3
137.5°	740.9	742.8	744.6	746.4	748.2	749.6	750.4	751.3	752.3	753.1	754.4
140°	769.6	771.4	773.2	774.9	776.7	778.2	779.3	780.5	781.7	782.9	784.2
142.5°	799.1	800.8	802.6	804.4	806.1	807.4	808.1	808.8	809.5	810.2	811.4
145°	841.1	842.5	843.9	845.3	846.8	848.1	849.3	850.6	851.8	853.0	853.7
147.5°	878.8	880.5	882.2	883.9	885.7	886.9	887.7	888.6	889.4	890.2	890.7
150°	904.5	905.8	907.0	908.2	909.4	910.5	911.3	912.1	912.9	913.8	914.3
152.5°	927.3	928.6	929.8	931.1	932.2	933.3	934.4	935.3	936.4	937.3	938.1
155°	961.6	962.2	962.8	963.5	964.1	964.6	965.3	965.9	966.5	967.1	968.1
157.5°	990.9	991.3	991.7	992.0	992.5	992.8	993.2	993.6	994.0	994.3	995.8
160°	1008.5	1008.9	1009.3	1009.7	1010.2	1010.4	1010.7	1010.9	1011.1	1011.3	1012.5
162.5°	1024.7	1024.8	1024.8	1024.9	1025.1	1025.2	1025.4	1025.6	1025.8	1026.0	1027.4
165°	1046.2	1046.1	1045.8	1045.6	1045.4	1045.4	1045.4	1045.4	1045.4	1045.4	1046.8
167.5°	1064.3	1063.7	1063.0	1062.5	1061.8	1061.5	1061.4	1061.4	1061.4	1061.4	1062.8
170°	1073.9	1073.2	1072.6	1072.0	1071.4	1071.0	1070.8	1070.6	1070.4	1070.2	1071.6
172.5°	1080.5	1079.9	1079.3	1078.6	1078.0	1077.6	1077.4	1077.2	1077.0	1076.8	1078.2
175°	1088.6	1088.0	1087.3	1086.7	1086.2	1085.6	1085.2	1084.8	1084.4	1083.9	1085.4
177.5°	1091.9	1091.4	1090.9	1090.4	1090.0	1089.5	1089.2	1088.9	1088.5	1088.2	1089.2
180°	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	248.3	248.3	248.3	248.3	248.3	248.3	248.3	248.3
2.5°	247.5	247.8	248.1	248.3	248.1	248.0	247.9	247.7
5°	246.8	247.2	247.7	247.9	247.8	247.7	247.6	247.6
7.5°	245.6	246.1	246.8	247.0	246.9	246.8	246.8	246.7
10°	244.5	245.2	245.8	246.1	246.1	246.0	245.9	245.8
12.5°	242.8	243.4	244.1	244.4	244.3	244.2	244.2	244.1
15°	239.6	240.4	241.1	241.5	241.4	241.3	241.2	241.1
17.5°	235.7	236.4	237.1	237.5	237.5	237.5	237.5	237.5
20°	232.4	233.3	234.2	234.6	234.6	234.6	234.6	234.6
22.5°	229.0	229.9	230.8	231.2	231.4	231.5	231.6	231.8
25°	223.6	224.6	225.5	226.1	226.3	226.6	226.8	227.0
27.5°	217.6	218.9	220.1	220.8	220.9	221.1	221.3	221.5
30°	213.4	214.8	216.0	216.7	217.0	217.2	217.5	217.7
32.5°	208.9	210.4	211.9	212.9	213.3	213.7	214.1	214.5
35°	202.6	204.3	206.0	207.2	207.8	208.3	208.9	209.5
37.5°	195.9	197.9	199.9	201.1	201.7	202.3	202.9	203.4
40°	191.3	193.4	195.4	196.9	197.6	198.3	199.0	199.7
42.5°	186.8	189.0	191.3	192.8	193.5	194.2	195.0	195.7
45°	179.8	182.4	184.8	186.5	187.3	188.1	188.9	189.6
47.5°	172.7	175.2	177.8	179.6	180.5	181.3	182.2	183.1
50°	167.7	170.5	173.2	175.0	175.9	176.7	177.6	178.5
52.5°	162.4	165.2	167.9	169.8	170.8	171.7	172.7	173.6
55°	154.4	157.2	160.2	162.1	163.1	164.2	165.2	166.3
57.5°	145.9	149.0	152.1	154.2	155.3	156.3	157.3	158.4
60°	140.3	143.4	146.4	148.5	149.6	150.7	151.9	153.0
62.5°	134.4	137.6	140.9	143.0	144.0	145.0	146.2	147.2
65°	125.3	128.6	131.9	134.0	135.1	136.1	137.1	138.2
67.5°	116.1	119.5	122.8	125.0	126.0	127.1	128.3	129.4
70°	109.8	113.2	116.7	118.9	119.9	120.8	121.8	122.7
72.5°	103.6	107.0	110.4	112.6	113.8	114.9	116.1	117.2
75°	94.3	97.8	101.2	103.5	104.5	105.5	106.5	107.6
77.5°	85.2	88.6	92.1	94.3	95.5	96.6	97.7	98.8
80°	79.1	82.4	85.8	88.0	89.1	90.2	91.3	92.4
82.5°	73.3	76.7	80.0	82.2	83.3	84.4	85.4	86.4
85°	65.0	68.4	71.8	74.0	75.1	76.2	77.3	78.4
87.5°	64.3	67.5	70.7	72.8	73.9	74.9	76.0	77.1
90°	85.3	88.1	90.9	92.8	94.0	95.1	96.3	97.5
92.5°	80.6	83.8	87.1	89.1	90.2	91.2	92.1	93.2
95°	106.4	109.4	112.4	114.2	114.8	115.3	115.9	116.5
97.5°	143.2	146.2	149.2	151.1	151.9	152.9	153.8	154.7
100°	168.9	171.8	174.8	176.7	177.3	178.0	178.6	179.4
102.5°	197.3	200.3	203.4	205.3	205.9	206.6	207.2	207.9
105°	239.8	243.0	246.2	248.3	249.1	250.0	250.9	251.8
107.5°	286.0	288.8	291.7	293.1	293.0	292.9	292.9	292.9
110°	317.6	320.1	322.7	324.1	324.4	324.6	324.9	325.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	349.2	351.3	353.3	354.6	355.0	355.5	355.8	356.2
115°	397.8	399.9	402.1	403.4	403.6	403.9	404.2	404.4
117.5°	444.6	446.5	448.3	449.4	449.6	449.8	450.0	450.2
120°	475.9	478.2	480.5	481.7	482.0	482.2	482.5	482.8
122.5°	508.5	510.2	511.8	512.9	513.1	513.4	513.7	514.0
125°	556.4	557.9	559.5	560.5	561.0	561.6	562.1	562.6
127.5°	602.9	604.1	605.4	606.0	606.1	606.2	606.2	606.3
130°	634.9	636.4	637.9	638.5	638.3	638.2	637.9	637.8
132.5°	665.8	666.8	667.7	668.2	668.2	668.2	668.2	668.2
135°	711.8	713.3	714.7	715.5	715.5	715.5	715.6	715.6
137.5°	755.7	757.0	758.4	758.8	758.6	758.3	758.0	757.8
140°	785.4	786.7	788.0	788.5	788.1	787.8	787.4	787.1
142.5°	812.6	813.8	815.0	815.4	815.0	814.6	814.2	813.8
145°	854.4	855.1	855.7	855.9	855.5	855.1	854.6	854.2
147.5°	891.2	891.8	892.2	892.2	891.6	891.0	890.4	889.9
150°	915.0	915.6	916.2	916.2	915.6	915.0	914.3	913.8
152.5°	938.9	939.6	940.4	940.4	939.6	938.9	938.1	937.3
155°	969.2	970.2	971.2	971.4	970.8	970.2	969.6	968.9
157.5°	997.1	998.5	999.9	1000.1	999.1	998.1	997.2	996.2
160°	1013.8	1014.9	1016.2	1016.4	1015.6	1014.8	1013.9	1013.1
162.5°	1028.8	1030.2	1031.6	1031.7	1030.8	1029.8	1028.8	1027.9
165°	1048.2	1049.6	1051.1	1051.2	1050.3	1049.2	1048.2	1047.2
167.5°	1064.2	1065.6	1067.1	1067.2	1066.2	1065.1	1064.1	1063.0
170°	1073.0	1074.4	1075.9	1076.0	1074.8	1073.6	1072.3	1071.1
172.5°	1079.7	1081.1	1082.5	1082.6	1081.4	1080.1	1079.0	1077.7
175°	1086.9	1088.3	1089.7	1089.8	1088.6	1087.3	1086.2	1084.9
177.5°	1090.2	1091.2	1092.1	1092.1	1091.2	1090.2	1089.2	1088.2
180°	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4	1090.4

(END OF REPORT)