

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: P331280-940

Luminaire Tested: **SA2XXDIP-C290D1080U940-4F0-1E-UDD-D1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331280-940  
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-C290D1080U940-4F0-1E-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

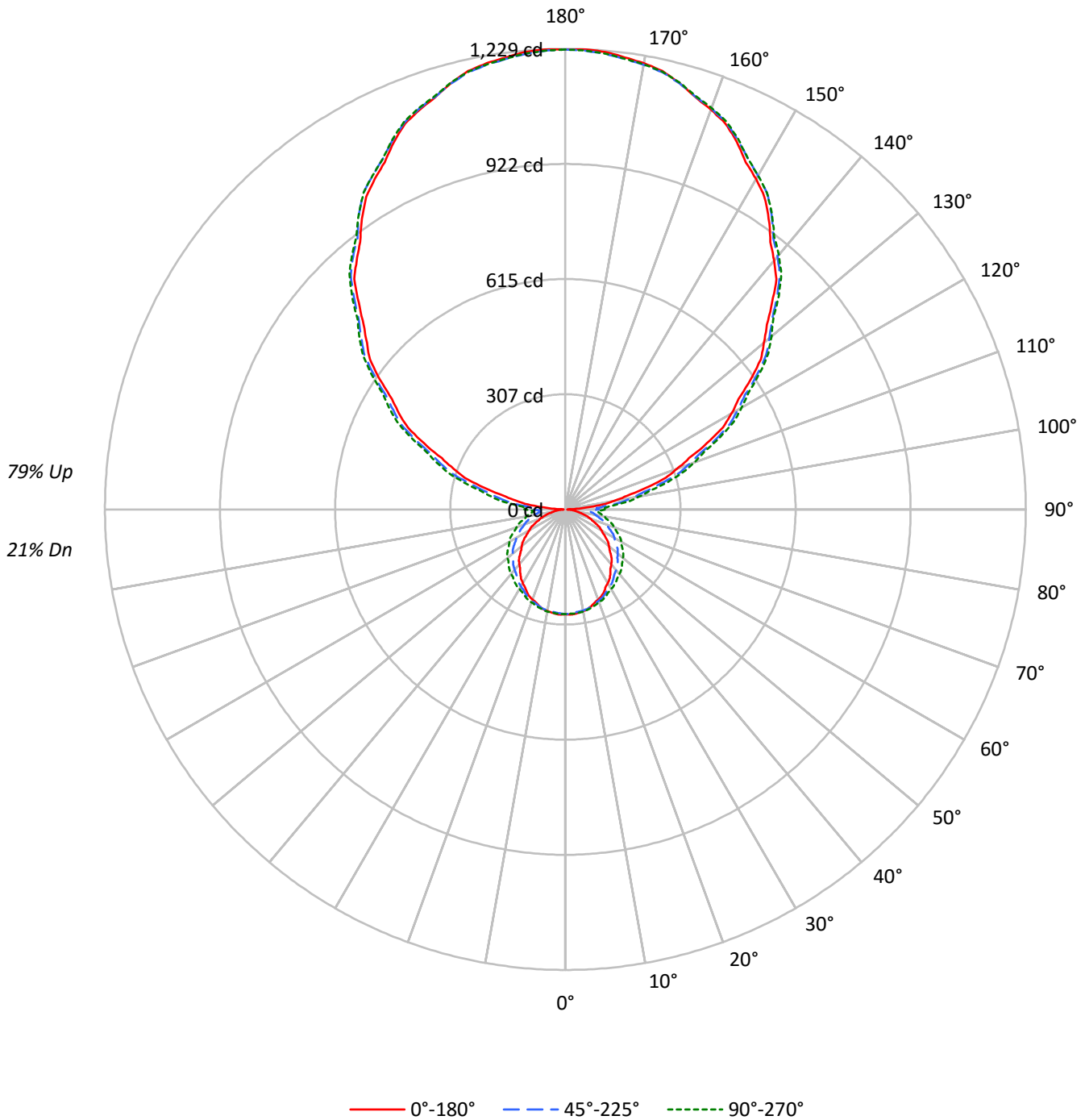
**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4503.3 lumens  
Efficiency: N/A  
Efficacy: 106.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 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	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°	4514	4514	4514
5°	4536	4345	4328
10°	4507	4215	4169
15°	4443	4079	4001
20°	4366	3935	3839
25°	4289	3793	3693
30°	4180	3650	3544
35°	4070	3510	3442
40°	3952	3391	3338
45°	3841	3286	3250
50°	3723	3189	3162
55°	3597	3086	3074
60°	3447	2979	2980
65°	3288	2854	2867
70°	3108	2717	2746
75°	2883	2585	2636
80°	2528	2450	2524
85°	2185	2333	2436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.5	0.6
10°-20°	75.9	1.7
20°-30°	115.1	2.6
30°-40°	140.2	3.1
40°-50°	150.8	3.3
50°-60°	146.5	3.3
60°-70°	127.9	2.8
70°-80°	98.4	2.2
80°-90°	71.0	1.6
90°-100°	123.3	2.7
100°-110°	274.8	6.1
110°-120°	434.9	9.7
120°-130°	555.2	12.3
130°-140°	614.6	13.6
140°-150°	598.5	13.3
150°-160°	501.2	11.1
160°-170°	332.4	7.4
170°-180°	116.2	2.6
0°-30°	217.5	4.8
0°-40°	357.7	7.9
0°-60°	654.9	14.5
0°-90°	952.2	21.1
90°-120°	832.9	18.5
90°-150°	2601.2	57.8
90°-180°	3551.0	78.9
0°-180°	4503.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	280	280	280	280	280	
5°	280	279	277	279	279	27
15°	267	268	268	272	271	75
25°	243	246	250	254	256	112
35°	210	216	224	233	236	131
45°	172	183	197	209	214	133
55°	132	147	167	181	187	118
65°	90	110	134	150	156	89
75°	50	73	98	115	121	53
85°	15	40	66	82	88	16
90°	5	42	90	103	110	6
95°	57	86	113	128	131	64
105°	225	240	263	278	283	238
115°	416	427	443	453	455	411
125°	604	613	623	630	633	539
135°	780	792	798	805	806	603
145°	947	954	960	963	962	591
155°	1082	1086	1089	1093	1091	498
165°	1178	1177	1177	1183	1179	332
175°	1225	1222	1220	1227	1221	116
180°	1227	1227	1227	1227	1227	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	281.2	280.9	280.7	280.4	280.3	279.9	279.4	278.9	278.4	277.9	278.2
5°	280.4	280.1	279.8	279.6	279.2	278.8	278.3	277.8	277.2	276.7	277.2
7.5°	277.8	277.6	277.4	277.2	277.1	276.8	276.3	276.0	275.5	275.1	275.8
10°	275.9	275.7	275.5	275.4	275.2	274.9	274.6	274.4	274.1	273.8	274.6
12.5°	272.6	272.7	272.7	272.8	272.8	272.7	272.5	272.3	272.1	271.9	272.6
15°	267.3	267.5	267.7	267.9	268.0	268.1	268.1	268.1	268.1	268.1	268.9
17.5°	260.6	260.9	261.3	261.7	262.1	262.4	262.7	263.0	263.2	263.6	264.4
20°	256.0	256.5	256.9	257.3	257.8	258.2	258.6	259.0	259.3	259.7	260.6
22.5°	251.2	251.6	252.2	252.7	253.2	253.8	254.2	254.8	255.3	255.7	256.7
25°	243.1	243.7	244.3	245.0	245.6	246.3	247.1	247.9	248.7	249.5	250.6
27.5°	233.4	234.3	235.4	236.4	237.5	238.4	239.3	240.3	241.3	242.3	243.6
30°	226.9	228.0	229.2	230.3	231.5	232.7	233.9	235.1	236.2	237.4	238.8
32.5°	219.7	221.1	222.3	223.6	225.0	226.3	227.7	229.1	230.5	231.8	233.5
35°	209.5	211.0	212.5	214.0	215.5	217.1	218.9	220.6	222.3	224.0	226.0
37.5°	198.2	200.0	201.8	203.6	205.3	207.3	209.6	211.7	213.9	216.2	218.4
40°	190.8	192.8	194.7	196.7	198.7	200.9	203.3	205.8	208.2	210.6	212.9
42.5°	183.7	185.7	187.6	189.6	191.6	193.9	196.8	199.6	202.3	205.1	207.7
45°	171.7	174.2	176.6	179.1	181.5	184.2	187.4	190.6	193.7	196.9	199.7
47.5°	160.0	162.6	165.3	167.9	170.6	173.8	177.5	181.1	184.9	188.5	191.5
50°	151.9	154.7	157.5	160.2	163.1	166.5	170.6	174.6	178.6	182.7	185.7
52.5°	144.1	147.0	150.0	152.9	155.9	159.4	163.7	168.0	172.3	176.6	179.7
55°	131.6	134.9	138.1	141.3	144.6	148.6	153.3	157.9	162.6	167.3	170.6
57.5°	119.3	123.0	126.6	130.3	133.9	138.1	142.9	147.7	152.5	157.3	160.8
60°	110.6	114.5	118.3	122.2	126.1	130.5	135.7	140.8	146.0	151.1	154.5
62.5°	102.8	106.8	110.8	114.9	118.9	123.4	128.6	133.7	138.8	144.0	147.6
65°	89.9	94.3	98.7	103.2	107.5	112.4	117.7	123.1	128.4	133.7	137.4
67.5°	78.1	82.8	87.3	91.9	96.6	101.6	107.0	112.4	117.9	123.3	127.1
70°	69.6	74.4	79.0	83.7	88.4	93.5	99.1	104.7	110.3	115.8	119.8
72.5°	61.9	66.7	71.5	76.3	81.2	86.4	92.1	97.7	103.4	109.1	112.9
75°	49.8	54.8	59.9	64.9	70.0	75.3	81.1	86.9	92.6	98.4	102.3
77.5°	38.2	43.4	48.7	53.9	59.3	64.8	70.7	76.5	82.4	88.2	92.1
80°	30.4	35.8	41.4	46.8	52.3	58.1	63.8	69.7	75.5	81.4	85.2
82.5°	23.9	29.3	34.8	40.1	45.6	51.3	57.2	63.1	69.0	74.9	78.7
85°	14.6	20.2	25.8	31.3	36.9	42.5	48.3	54.1	59.8	65.6	69.4
87.5°	8.1	14.1	20.0	25.9	31.8	38.2	44.9	51.7	58.5	65.3	68.8
90°	5.1	13.1	21.0	29.1	37.0	46.5	57.2	68.0	78.9	89.7	92.8
92.5°	22.2	29.1	35.9	42.8	49.7	56.5	63.2	70.0	76.8	83.5	87.1
95°	57.1	63.7	70.2	76.7	83.2	89.4	95.3	101.1	107.0	112.9	116.3
97.5°	101.2	107.0	112.8	118.6	124.4	130.3	136.3	142.4	148.5	154.5	157.9
100°	134.4	139.6	144.7	149.9	155.1	160.5	166.2	172.0	177.7	183.4	186.8
102.5°	168.9	173.3	177.9	182.4	186.9	192.1	197.9	203.6	209.4	215.2	218.6
105°	224.7	228.0	231.3	234.6	237.9	242.2	247.3	252.4	257.6	262.7	266.4
107.5°	281.4	284.5	287.6	290.7	293.8	297.6	302.1	306.6	311.0	315.5	318.7
110°	317.5	320.7	323.9	327.1	330.3	334.0	338.5	342.9	347.3	351.7	354.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	357.3	360.2	363.1	366.0	368.9	372.4	376.4	380.4	384.3	388.3	390.7
115°	416.0	418.3	420.7	423.0	425.4	428.4	432.0	435.6	439.2	442.7	445.2
117.5°	473.9	476.4	478.9	481.4	483.9	486.4	488.8	491.3	493.7	496.2	498.3
120°	512.9	515.1	517.3	519.5	521.7	523.7	525.5	527.2	529.0	530.7	533.2
122.5°	548.5	550.9	553.2	555.6	557.9	560.2	562.2	564.4	566.4	568.6	570.4
125°	603.7	605.7	607.8	609.8	611.9	614.0	616.3	618.4	620.6	622.9	624.6
127.5°	657.7	660.2	662.8	665.3	667.9	669.9	671.4	672.9	674.3	675.8	677.3
130°	691.7	694.6	697.5	700.3	703.3	705.4	706.9	708.3	709.7	711.1	712.9
132.5°	729.8	732.2	734.5	736.8	739.2	741.2	742.7	744.2	745.8	747.3	748.4
135°	780.3	782.9	785.4	787.9	790.5	792.5	793.8	795.1	796.5	797.9	799.5
137.5°	834.0	836.1	838.1	840.2	842.2	843.7	844.7	845.7	846.8	847.7	849.2
140°	866.3	868.3	870.3	872.3	874.2	875.9	877.3	878.6	879.9	881.3	882.7
142.5°	899.5	901.4	903.5	905.4	907.4	908.8	909.6	910.4	911.2	912.0	913.4
145°	946.7	948.3	949.9	951.5	953.1	954.7	956.0	957.4	958.8	960.2	961.0
147.5°	989.2	991.1	993.0	995.0	996.9	998.4	999.3	1000.2	1001.1	1002.0	1002.6
150°	1018.2	1019.6	1020.9	1022.3	1023.7	1024.8	1025.8	1026.7	1027.6	1028.6	1029.2
152.5°	1043.8	1045.3	1046.6	1048.0	1049.4	1050.6	1051.8	1052.8	1054.0	1055.1	1056.0
155°	1082.4	1083.1	1083.8	1084.5	1085.2	1085.8	1086.5	1087.3	1088.0	1088.6	1089.8
157.5°	1115.4	1115.8	1116.2	1116.7	1117.2	1117.6	1118.0	1118.5	1118.8	1119.3	1120.9
160°	1135.2	1135.7	1136.1	1136.6	1137.1	1137.4	1137.6	1137.9	1138.1	1138.4	1139.7
162.5°	1153.4	1153.5	1153.6	1153.7	1153.9	1154.0	1154.2	1154.4	1154.7	1154.9	1156.5
165°	1177.7	1177.5	1177.2	1177.0	1176.8	1176.7	1176.7	1176.7	1176.7	1176.7	1178.3
167.5°	1198.0	1197.3	1196.6	1196.0	1195.2	1194.9	1194.8	1194.8	1194.7	1194.7	1196.3
170°	1208.8	1208.1	1207.4	1206.7	1206.0	1205.6	1205.3	1205.1	1204.9	1204.6	1206.2
172.5°	1216.2	1215.6	1214.9	1214.2	1213.4	1213.0	1212.8	1212.5	1212.3	1212.1	1213.7
175°	1225.4	1224.7	1224.0	1223.2	1222.6	1222.0	1221.6	1221.1	1220.7	1220.1	1221.8
177.5°	1229.0	1228.5	1228.0	1227.4	1226.9	1226.4	1226.0	1225.7	1225.3	1224.9	1226.0
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	278.6	278.9	279.3	279.5	279.3	279.1	279.0	278.8
5°	277.8	278.3	278.8	279.0	278.9	278.8	278.7	278.7
7.5°	276.4	277.1	277.8	278.0	277.9	277.9	277.8	277.7
10°	275.3	276.0	276.7	277.1	277.0	276.9	276.8	276.7
12.5°	273.3	274.0	274.7	275.1	275.0	274.9	274.8	274.7
15°	269.7	270.6	271.4	271.8	271.7	271.6	271.5	271.4
17.5°	265.3	266.1	266.9	267.3	267.3	267.3	267.3	267.3
20°	261.6	262.6	263.6	264.1	264.1	264.1	264.1	264.1
22.5°	257.8	258.8	259.8	260.3	260.5	260.6	260.7	260.9
25°	251.7	252.8	253.9	254.5	254.8	255.0	255.3	255.6
27.5°	245.0	246.4	247.7	248.5	248.7	248.9	249.1	249.3
30°	240.2	241.7	243.2	244.0	244.2	244.5	244.8	245.0
32.5°	235.1	236.8	238.5	239.6	240.0	240.6	241.0	241.5
35°	228.0	230.0	231.9	233.3	233.9	234.5	235.1	235.8
37.5°	220.5	222.7	225.0	226.4	227.0	227.7	228.4	229.0
40°	215.3	217.7	220.0	221.6	222.4	223.2	224.0	224.8
42.5°	210.3	212.8	215.3	217.0	217.8	218.6	219.5	220.3
45°	202.4	205.3	208.0	209.9	210.8	211.7	212.6	213.5
47.5°	194.4	197.2	200.2	202.2	203.1	204.1	205.1	206.1
50°	188.8	191.9	194.9	197.0	198.0	198.9	199.9	200.9
52.5°	182.8	185.9	189.0	191.2	192.3	193.3	194.4	195.4
55°	173.8	177.0	180.3	182.4	183.6	184.9	186.0	187.2
57.5°	164.3	167.7	171.2	173.5	174.8	175.9	177.1	178.3
60°	157.9	161.4	164.8	167.1	168.4	169.6	170.9	172.2
62.5°	151.2	154.9	158.5	161.0	162.1	163.3	164.5	165.7
65°	141.1	144.7	148.5	150.9	152.0	153.2	154.4	155.5
67.5°	130.7	134.5	138.2	140.7	141.9	143.1	144.4	145.6
70°	123.6	127.4	131.3	133.8	134.9	136.0	137.1	138.1
72.5°	116.6	120.5	124.2	126.8	128.0	129.4	130.7	132.0
75°	106.2	110.0	114.0	116.5	117.6	118.8	119.9	121.1
77.5°	95.9	99.8	103.6	106.2	107.5	108.7	109.9	111.2
80°	89.0	92.7	96.6	99.1	100.3	101.6	102.8	104.1
82.5°	82.5	86.3	90.1	92.6	93.7	95.0	96.1	97.3
85°	73.2	77.0	80.8	83.3	84.5	85.8	87.0	88.3
87.5°	72.4	76.0	79.5	81.9	83.2	84.4	85.6	86.8
90°	96.0	99.2	102.3	104.5	105.8	107.1	108.4	109.8
92.5°	90.8	94.3	98.0	100.3	101.5	102.6	103.7	104.9
95°	119.8	123.1	126.5	128.6	129.2	129.8	130.5	131.1
97.5°	161.2	164.5	167.9	170.0	171.0	172.1	173.1	174.2
100°	190.1	193.4	196.8	198.9	199.6	200.4	201.1	201.9
102.5°	222.0	225.5	228.9	231.0	231.8	232.6	233.3	234.1
105°	269.9	273.6	277.1	279.5	280.4	281.4	282.4	283.4
107.5°	321.9	325.1	328.3	329.9	329.8	329.8	329.8	329.7
110°	357.5	360.3	363.2	364.8	365.2	365.4	365.7	366.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	393.1	395.4	397.7	399.1	399.6	400.1	400.6	401.0
115°	447.7	450.1	452.6	454.1	454.3	454.6	455.0	455.2
117.5°	500.4	502.6	504.6	505.9	506.0	506.3	506.5	506.8
120°	535.7	538.3	540.8	542.2	542.5	542.8	543.1	543.4
122.5°	572.4	574.3	576.1	577.3	577.6	577.9	578.3	578.6
125°	626.3	628.0	629.8	631.0	631.5	632.1	632.7	633.3
127.5°	678.7	680.0	681.4	682.2	682.2	682.3	682.3	682.4
130°	714.6	716.3	718.0	718.7	718.5	718.4	718.1	717.9
132.5°	749.5	750.6	751.6	752.2	752.2	752.2	752.2	752.2
135°	801.2	802.9	804.5	805.4	805.4	805.4	805.5	805.5
137.5°	850.7	852.1	853.6	854.2	853.9	853.5	853.3	853.0
140°	884.1	885.6	887.0	887.5	887.2	886.8	886.4	886.0
142.5°	914.7	916.1	917.4	917.8	917.4	916.9	916.5	916.1
145°	961.7	962.5	963.2	963.4	963.0	962.5	962.0	961.5
147.5°	1003.2	1003.8	1004.3	1004.3	1003.6	1003.0	1002.3	1001.7
150°	1029.9	1030.6	1031.4	1031.4	1030.6	1029.9	1029.2	1028.6
152.5°	1056.9	1057.7	1058.5	1058.5	1057.7	1056.9	1056.0	1055.1
155°	1090.9	1092.1	1093.2	1093.4	1092.8	1092.1	1091.4	1090.7
157.5°	1122.4	1124.0	1125.5	1125.8	1124.6	1123.6	1122.5	1121.3
160°	1141.1	1142.5	1143.9	1144.1	1143.2	1142.3	1141.3	1140.4
162.5°	1158.1	1159.6	1161.2	1161.4	1160.3	1159.2	1158.1	1157.0
165°	1179.9	1181.5	1183.1	1183.3	1182.2	1181.1	1179.9	1178.8
167.5°	1197.9	1199.5	1201.1	1201.3	1200.2	1198.9	1197.7	1196.6
170°	1207.8	1209.4	1211.0	1211.2	1209.8	1208.4	1207.0	1205.7
172.5°	1215.3	1216.9	1218.5	1218.6	1217.3	1215.8	1214.5	1213.1
175°	1223.4	1225.0	1226.6	1226.7	1225.4	1224.0	1222.6	1221.2
177.5°	1227.2	1228.2	1229.3	1229.3	1228.2	1227.2	1226.0	1224.9
180°	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4	1227.4

(END OF REPORT)