

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: P331281

Luminaire Tested: **SA2XXDIP-C290D1080U835-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331281  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D1080U835-4F0-1E-UDD-D4  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

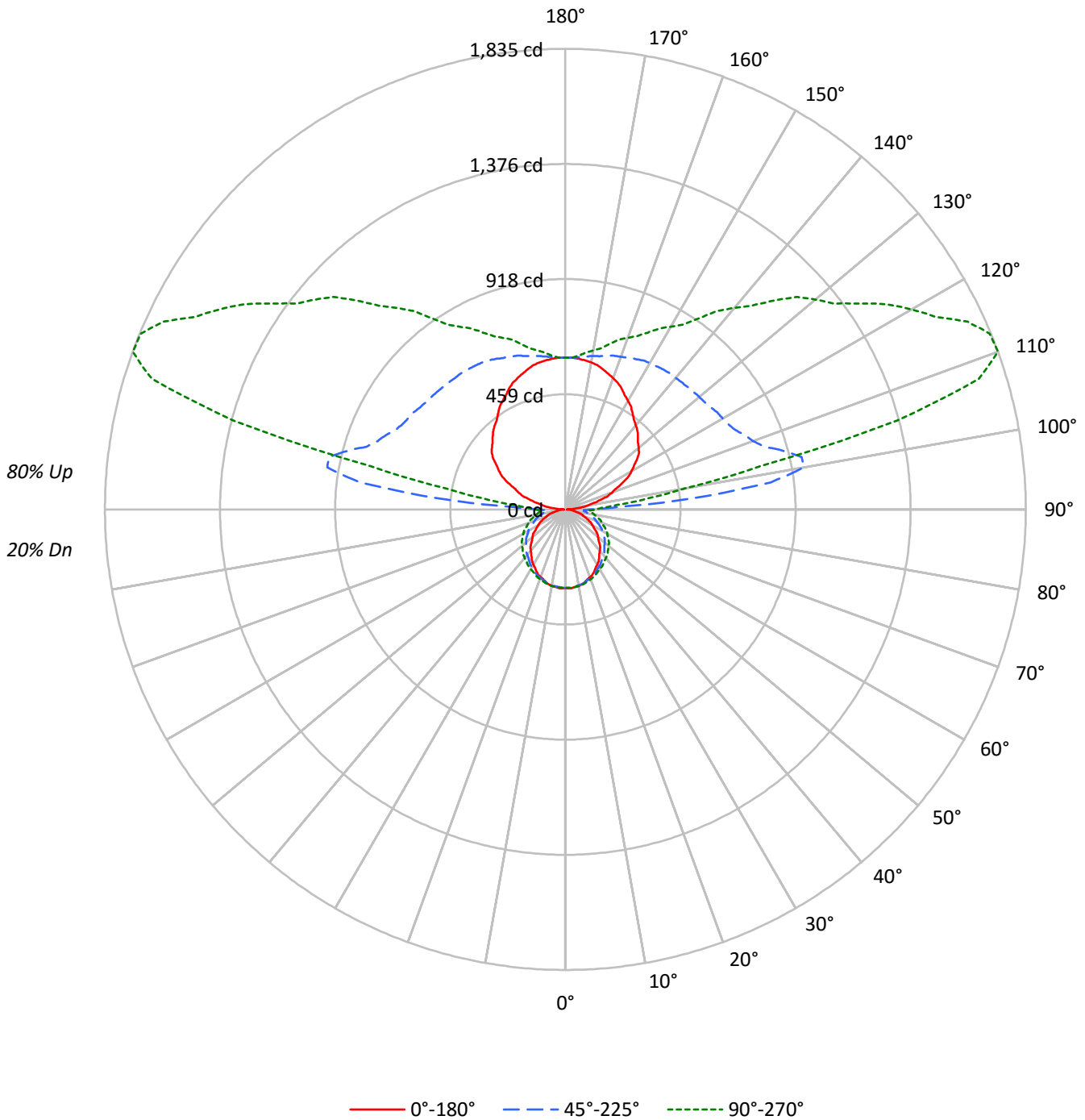
Lumens per Lamp: N/A  
Luminaire Lumens: 5404.8 lumens  
Efficiency: N/A  
Efficacy: 128.1 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

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



TEST NUMBER: P331281  
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### Luminous Intensity Polar Plot





TEST NUMBER: P331281

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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	88	88	88	88	67	67	67	47	47	47	28	28	28	20				
1	90	86	82	79	80	76	73	70	57	55	53	40	39	37	24	23	23	15				
2	82	75	69	64	72	66	61	57	50	46	43	35	33	31	21	20	19	12				
3	75	65	58	53	65	58	52	47	44	39	36	30	28	26	18	17	16	10				
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	15	13	9				
5	62	51	43	37	55	45	38	33	34	30	26	24	21	19	14	13	11	7				
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6				
7	53	41	33	28	46	36	30	25	28	23	19	19	16	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	20	17	18	15	12	11	9	8	5				
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4				
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4				

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

	0°	45°	90°
0°	5062	5062	5062
5°	5086	4872	4853
10°	5054	4728	4675
15°	4983	4575	4487
20°	4896	4412	4306
25°	4810	4254	4140
30°	4687	4093	3976
35°	4563	3936	3860
40°	4433	3803	3743
45°	4308	3685	3644
50°	4176	3577	3546
55°	4035	3461	3447
60°	3865	3340	3342
65°	3686	3200	3215
70°	3487	3048	3081
75°	3236	2900	2956
80°	2836	2748	2829
85°	2454	2617	2731



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	29.7	0.5
10°-20°	85.2	1.6
20°-30°	129.1	2.4
30°-40°	157.2	2.9
40°-50°	169.1	3.1
50°-60°	164.2	3.0
60°-70°	143.4	2.7
70°-80°	110.4	2.0
80°-90°	79.5	1.5
90°-100°	292.6	5.4
100°-110°	856.9	15.9
110°-120°	895.4	16.6
120°-130°	730.5	13.5
130°-140°	581.4	10.8
140°-150°	436.0	8.1
150°-160°	305.7	5.7
160°-170°	180.0	3.3
170°-180°	58.6	1.1
0°-30°	243.9	4.5
0°-40°	401.1	7.4
0°-60°	734.5	13.6
0°-90°	1067.8	19.8
90°-120°	2044.8	37.8
90°-150°	3792.8	70.2
90°-180°	4337.0	80.2
0°-180°	5404.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	314	314	314	314	314	
5°	314	313	310	313	312	30
15°	300	301	301	305	304	84
25°	273	276	280	285	287	125
35°	235	243	251	261	264	147
45°	193	205	221	234	239	149
55°	148	164	188	203	210	132
65°	101	123	150	168	174	100
75°	56	82	110	129	136	59
85°	16	45	74	92	99	18
90°	6	47	100	115	122	5
95°	44	125	508	241	207	46
105°	144	230	900	1593	1369	153
115°	252	323	748	1527	1769	249
125°	349	414	708	1231	1429	310
135°	409	489	689	1026	1176	316
145°	467	537	681	848	930	293
155°	531	573	661	748	777	244
165°	578	596	633	671	682	163
175°	603	604	609	616	614	57
180°	604	604	604	604	604	



TEST NUMBER: P331281

CATALOG NUMBER: SA2XXDIP-C290D1080U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5
2.5°	315.3	315.0	314.8	314.5	314.3	313.9	313.3	312.8	312.2	311.6	312.0
5°	314.4	314.1	313.8	313.5	313.1	312.7	312.1	311.5	310.9	310.3	310.9
7.5°	311.5	311.3	311.1	310.9	310.7	310.4	309.9	309.5	309.0	308.5	309.3
10°	309.4	309.2	309.0	308.8	308.6	308.3	308.0	307.7	307.4	307.1	307.9
12.5°	305.7	305.8	305.8	305.9	305.9	305.8	305.6	305.4	305.1	304.9	305.7
15°	299.8	300.0	300.2	300.4	300.6	300.7	300.7	300.7	300.7	300.7	301.6
17.5°	292.2	292.6	293.0	293.5	293.9	294.3	294.6	294.9	295.2	295.6	296.5
20°	287.1	287.6	288.1	288.6	289.1	289.6	290.0	290.4	290.8	291.2	292.3
22.5°	281.7	282.2	282.8	283.4	284.0	284.6	285.1	285.7	286.3	286.8	287.9
25°	272.6	273.3	274.0	274.7	275.4	276.2	277.1	278.0	278.9	279.8	281.0
27.5°	261.7	262.8	264.0	265.1	266.3	267.4	268.4	269.5	270.6	271.7	273.2
30°	254.4	255.7	257.0	258.3	259.6	261.0	262.3	263.6	264.9	266.2	267.8
32.5°	246.4	247.9	249.3	250.8	252.3	253.8	255.4	256.9	258.5	260.0	261.9
35°	234.9	236.6	238.3	240.0	241.7	243.5	245.5	247.4	249.3	251.2	253.4
37.5°	222.3	224.3	226.3	228.3	230.2	232.5	235.0	237.4	239.9	242.4	244.9
40°	214.0	216.2	218.4	220.6	222.8	225.3	228.0	230.8	233.5	236.2	238.8
42.5°	206.0	208.2	210.4	212.6	214.9	217.5	220.7	223.8	226.9	230.0	232.9
45°	192.6	195.3	198.1	200.8	203.5	206.6	210.2	213.7	217.2	220.8	223.9
47.5°	179.4	182.4	185.4	188.3	191.3	194.9	199.0	203.1	207.3	211.4	214.7
50°	170.4	173.5	176.6	179.7	182.9	186.7	191.3	195.8	200.3	204.9	208.3
52.5°	161.6	164.9	168.2	171.5	174.8	178.8	183.6	188.4	193.2	198.0	201.5
55°	147.6	151.3	154.9	158.5	162.2	166.6	171.9	177.1	182.4	187.6	191.3
57.5°	133.8	137.9	142.0	146.1	150.2	154.9	160.3	165.6	171.0	176.4	180.3
60°	124.0	128.4	132.7	137.0	141.4	146.4	152.2	157.9	163.7	169.4	173.3
62.5°	115.3	119.8	124.3	128.8	133.3	138.4	144.2	149.9	155.7	161.5	165.5
65°	100.8	105.8	110.7	115.7	120.6	126.1	132.0	138.0	144.0	149.9	154.1
67.5°	87.6	92.8	97.9	103.1	108.3	113.9	120.0	126.1	132.2	138.3	142.5
70°	78.1	83.4	88.6	93.9	99.1	104.9	111.1	117.4	123.7	129.9	134.3
72.5°	69.4	74.8	80.2	85.6	91.1	96.9	103.3	109.6	116.0	122.3	126.6
75°	55.9	61.5	67.2	72.8	78.5	84.5	91.0	97.5	103.9	110.4	114.7
77.5°	42.8	48.7	54.6	60.5	66.5	72.7	79.3	85.8	92.4	98.9	103.3
80°	34.1	40.2	46.4	52.5	58.7	65.1	71.6	78.2	84.7	91.3	95.5
82.5°	26.8	32.9	39.0	45.0	51.1	57.5	64.1	70.8	77.4	84.0	88.3
85°	16.4	22.6	28.9	35.1	41.4	47.7	54.2	60.7	67.1	73.6	77.8
87.5°	9.1	15.8	22.8	29.3	35.8	42.7	50.3	58.4	66.3	73.0	76.8
90°	5.7	15.0	25.5	33.7	41.9	51.5	63.8	78.4	91.8	99.5	102.3
92.5°	18.4	30.1	43.9	54.5	67.8	84.6	117.0	160.2	199.4	207.7	188.2
95°	44.3	53.7	70.0	85.2	108.6	141.9	201.4	308.5	449.3	507.6	454.5
97.5°	69.4	79.9	96.4	116.4	142.0	178.6	251.6	398.2	628.0	825.7	867.6
100°	92.6	99.8	114.0	136.4	163.3	200.6	267.8	415.1	671.7	963.1	1134.2
102.5°	113.6	119.6	133.5	155.5	183.0	220.0	282.4	413.9	651.7	965.3	1231.9
105°	144.0	151.6	162.6	183.0	211.5	248.1	307.9	416.6	613.5	899.9	1212.4
107.5°	177.4	183.4	193.7	212.0	239.7	276.1	334.1	429.3	592.8	830.2	1106.5
110°	199.3	206.0	215.0	232.1	258.5	295.7	351.7	440.3	587.0	796.4	1040.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	219.7	226.1	235.7	251.6	276.7	314.5	368.5	452.2	585.6	773.4	992.9
115°	251.6	258.5	266.6	281.6	306.0	340.2	394.7	470.1	587.3	747.5	934.1
117.5°	284.1	289.5	297.2	310.2	333.3	368.2	418.7	489.3	592.3	732.8	895.5
120°	304.6	309.6	317.0	327.8	351.5	386.2	435.6	502.3	595.8	724.2	874.5
122.5°	324.1	328.0	335.1	346.6	370.0	405.5	451.8	513.7	600.4	718.3	856.5
125°	349.4	352.9	359.9	373.8	397.0	431.2	476.2	531.7	607.0	707.8	830.2
127.5°	369.9	374.4	384.1	399.3	421.5	456.2	499.5	549.0	614.3	700.6	805.8
130°	381.9	386.5	398.0	414.2	437.3	470.8	513.6	559.9	620.1	696.5	789.6
132.5°	393.1	398.6	411.0	428.1	452.2	485.5	525.9	570.7	625.8	693.4	776.2
135°	409.4	414.0	427.9	445.4	472.1	505.1	543.3	585.0	632.5	689.2	757.6
137.5°	425.2	430.7	444.6	463.2	489.7	520.1	557.2	595.6	638.3	686.4	743.7
140°	437.2	441.8	455.6	474.1	499.6	529.8	564.9	601.1	640.8	684.0	735.5
142.5°	449.3	452.9	465.9	484.3	508.9	537.2	571.1	606.3	643.0	683.2	728.0
145°	467.0	471.6	483.3	500.7	523.9	549.5	580.8	613.4	645.9	680.7	718.5
147.5°	486.5	490.0	501.1	517.2	536.5	559.2	588.7	617.3	646.8	676.6	709.2
150°	499.5	503.0	512.3	527.4	544.8	565.7	592.5	619.2	645.9	673.8	701.6
152.5°	512.5	514.2	523.4	536.7	553.2	572.2	596.2	620.1	644.0	669.1	695.1
155°	530.9	532.0	539.0	551.8	564.6	582.0	601.7	621.5	641.2	661.0	683.1
157.5°	546.2	547.4	553.0	564.1	574.3	589.0	605.7	621.5	635.9	652.6	671.7
160°	556.4	557.6	562.2	571.5	580.8	593.6	607.6	621.5	633.1	647.1	663.3
162.5°	566.7	566.0	570.6	578.0	586.4	596.4	608.5	620.6	630.3	642.4	655.9
165°	578.5	577.4	579.7	586.6	592.5	599.4	609.9	618.0	625.0	633.1	643.6
167.5°	588.3	586.9	589.0	593.4	597.6	602.0	609.6	616.4	619.6	625.0	631.5
170°	594.8	592.5	593.6	597.1	599.4	602.9	608.7	614.5	616.8	620.3	625.0
172.5°	598.5	597.1	596.4	599.9	601.3	603.8	607.8	611.7	613.1	614.8	618.5
175°	602.9	601.7	600.6	602.9	602.9	604.1	606.4	608.7	607.6	608.7	609.9
177.5°	605.0	603.1	602.2	604.1	604.1	604.1	605.0	606.9	605.0	604.1	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	313.5	313.5	313.5	313.5	313.5	313.5	313.5	313.5
2.5°	312.4	312.8	313.2	313.4	313.2	313.0	312.9	312.7
5°	311.5	312.1	312.7	312.9	312.8	312.7	312.6	312.5
7.5°	310.0	310.7	311.5	311.8	311.7	311.6	311.5	311.4
10°	308.7	309.5	310.3	310.7	310.6	310.5	310.4	310.3
12.5°	306.5	307.3	308.1	308.5	308.4	308.3	308.2	308.1
15°	302.5	303.5	304.4	304.8	304.7	304.6	304.5	304.4
17.5°	297.5	298.4	299.3	299.8	299.8	299.8	299.8	299.8
20°	293.4	294.5	295.6	296.2	296.2	296.2	296.2	296.2
22.5°	289.1	290.2	291.3	291.9	292.1	292.2	292.4	292.6
25°	282.3	283.5	284.7	285.4	285.7	286.0	286.3	286.6
27.5°	274.7	276.3	277.8	278.7	278.9	279.1	279.3	279.6
30°	269.4	271.1	272.7	273.6	273.9	274.2	274.5	274.8
32.5°	263.7	265.6	267.5	268.7	269.2	269.8	270.3	270.8
35°	255.7	257.9	260.1	261.6	262.3	263.0	263.7	264.4
37.5°	247.3	249.8	252.3	253.9	254.6	255.4	256.1	256.8
40°	241.5	244.1	246.7	248.5	249.4	250.3	251.2	252.1
42.5°	235.8	238.6	241.5	243.4	244.3	245.2	246.1	247.0
45°	227.0	230.2	233.3	235.4	236.4	237.4	238.4	239.4
47.5°	218.0	221.2	224.5	226.7	227.8	228.9	230.0	231.1
50°	211.7	215.2	218.6	220.9	222.0	223.1	224.2	225.3
52.5°	205.0	208.5	212.0	214.4	215.6	216.8	218.0	219.1
55°	194.9	198.5	202.2	204.6	205.9	207.3	208.6	209.9
57.5°	184.2	188.1	192.0	194.6	196.0	197.3	198.6	200.0
60°	177.1	181.0	184.8	187.4	188.8	190.2	191.7	193.1
62.5°	169.6	173.7	177.8	180.5	181.8	183.1	184.5	185.8
65°	158.2	162.3	166.5	169.2	170.5	171.8	173.1	174.4
67.5°	146.6	150.8	155.0	157.8	159.1	160.5	161.9	163.3
70°	138.6	142.9	147.3	150.1	151.3	152.5	153.7	154.9
72.5°	130.8	135.1	139.3	142.2	143.6	145.1	146.6	148.0
75°	119.1	123.4	127.8	130.6	131.9	133.2	134.5	135.8
77.5°	107.6	111.9	116.2	119.1	120.5	121.9	123.3	124.7
80°	99.8	104.0	108.3	111.1	112.5	113.9	115.3	116.7
82.5°	92.5	96.8	101.0	103.8	105.1	106.5	107.8	109.1
85°	82.1	86.3	90.6	93.4	94.8	96.2	97.6	99.0
87.5°	80.7	84.4	89.0	91.9	93.2	94.5	95.8	97.1
90°	105.2	106.9	113.3	117.1	118.3	119.5	120.7	121.9
92.5°	165.9	155.5	149.7	145.0	145.3	142.8	145.0	144.3
95°	364.3	297.2	252.3	229.3	215.4	207.3	205.0	207.4
97.5°	766.1	640.6	518.7	437.2	382.9	355.5	339.7	331.2
100°	1113.5	973.2	817.8	679.6	584.3	535.5	502.9	483.1
102.5°	1340.3	1311.5	1198.7	1052.2	948.5	864.4	823.4	796.2
105°	1457.6	1592.4	1611.0	1575.0	1504.1	1433.2	1384.3	1369.2
107.5°	1366.2	1567.3	1691.5	1750.0	1760.2	1757.3	1748.4	1727.9
110°	1288.4	1499.6	1651.5	1748.9	1800.0	1823.2	1834.8	1834.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1217.1	1419.9	1582.1	1693.4	1764.0	1802.1	1822.9	1830.3
115°	1128.8	1310.7	1465.9	1587.6	1671.2	1725.8	1757.1	1768.6
117.5°	1061.3	1221.4	1362.3	1476.6	1561.7	1619.2	1652.1	1661.9
120°	1027.2	1174.1	1300.0	1407.7	1490.1	1545.9	1580.7	1593.4
122.5°	999.8	1134.5	1253.9	1351.2	1425.1	1479.7	1510.6	1521.3
125°	959.5	1081.9	1186.9	1275.8	1344.1	1389.1	1419.1	1429.3
127.5°	919.8	1030.6	1129.5	1211.6	1271.2	1313.5	1339.5	1347.8
130°	894.2	996.6	1090.7	1169.0	1226.8	1267.1	1291.1	1301.2
132.5°	869.6	964.4	1051.1	1124.7	1181.5	1221.8	1244.0	1253.1
135°	835.2	914.0	992.8	1059.3	1110.0	1149.2	1170.9	1176.4
137.5°	807.2	873.1	935.9	993.8	1040.1	1073.7	1092.8	1100.4
140°	789.4	846.8	901.9	954.1	991.9	1022.7	1040.7	1048.3
142.5°	775.0	823.7	871.0	914.7	950.5	978.5	994.6	996.5
145°	755.1	794.1	830.7	864.9	893.3	913.6	925.7	929.7
147.5°	739.9	770.2	798.4	823.2	846.4	862.5	870.6	872.9
150°	729.5	755.1	779.5	800.4	817.8	831.8	838.7	839.9
152.5°	719.3	743.0	763.7	781.8	795.5	807.6	812.7	812.9
155°	705.1	723.7	741.1	753.9	766.7	774.8	779.5	777.2
157.5°	688.6	704.2	718.8	728.8	737.9	744.6	746.7	746.7
160°	678.4	691.2	704.0	712.1	720.2	726.0	727.2	727.2
162.5°	668.2	679.1	690.0	696.3	704.4	708.4	709.5	708.6
165°	652.9	661.0	669.1	673.8	678.4	683.1	683.1	681.9
167.5°	638.2	644.5	650.1	654.3	656.3	658.9	658.7	657.3
170°	630.8	634.3	638.9	641.2	642.4	645.9	644.7	642.4
172.5°	622.4	625.0	628.7	630.1	631.3	632.9	631.7	630.3
175°	613.4	614.5	615.7	616.8	616.8	618.0	616.8	614.5
177.5°	606.9	606.9	607.8	607.8	607.8	607.8	606.9	605.0
180°	604.1	604.1	604.1	604.1	604.1	604.1	604.1	604.1

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