

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: P331643-940

Luminaire Tested: **SA2XXRDIP-C290D1080U940-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331643-940
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: SA2XXRDIP-C290D1080U940-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4357.6 lumens
Efficiency: N/A
Efficacy: 103.3 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Indirect

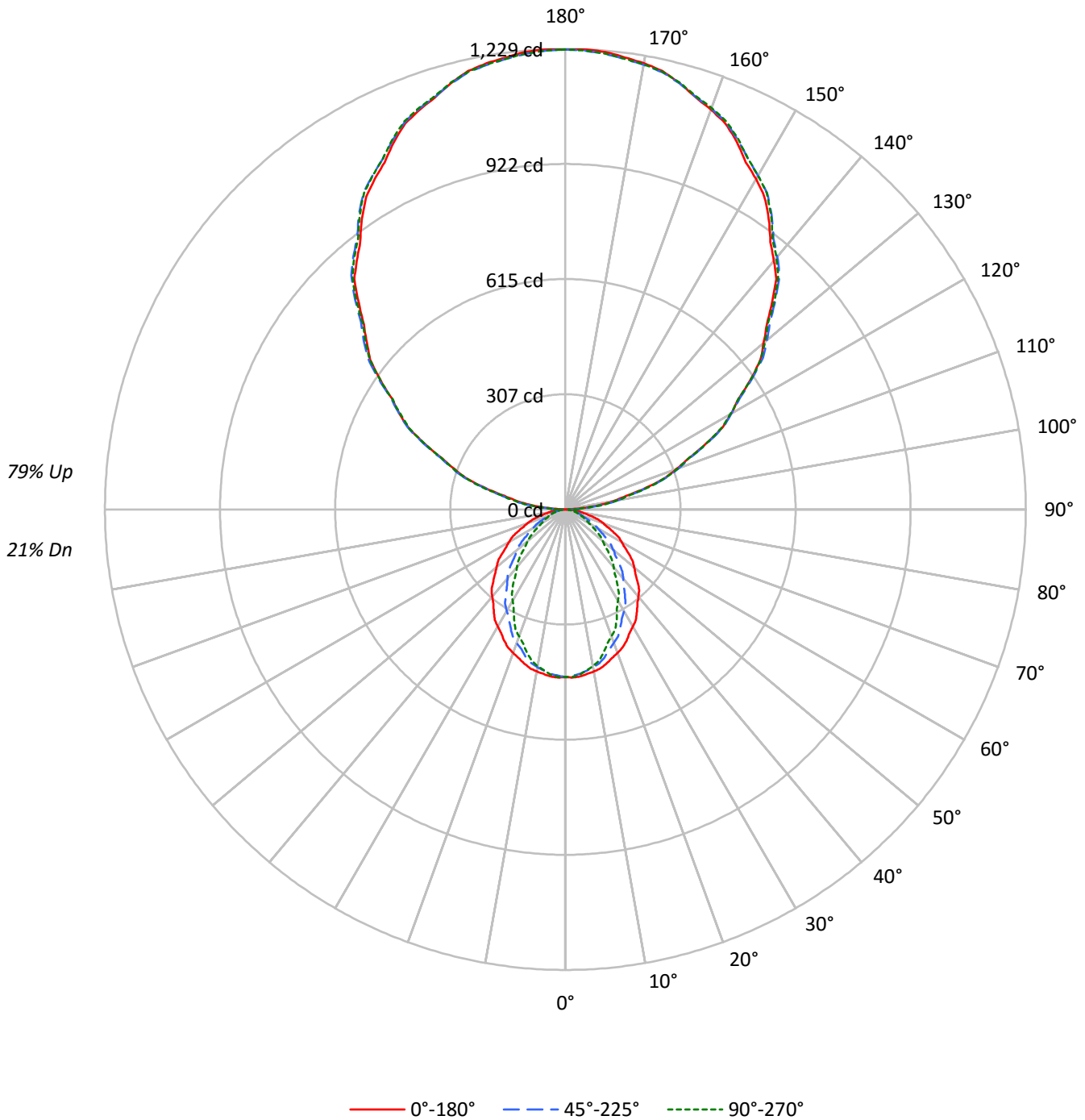
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	92	87	84	80	81	78	75	72	59	57	55	42	41	40	26	26	25	18				
2	83	77	71	66	74	68	63	59	52	49	46	37	35	34	24	23	22	16				
3	76	67	61	55	67	60	54	50	46	42	39	33	31	29	21	20	19	13				
4	70	60	52	47	61	53	47	42	41	37	33	29	27	25	19	17	16	12				
5	64	53	45	40	56	47	41	36	36	32	29	26	24	21	17	15	14	10				
6	59	47	40	34	52	42	36	31	33	28	25	24	21	19	16	14	13	9				
7	54	43	35	30	48	38	32	27	30	25	22	22	19	16	14	12	11	8				
8	50	39	31	26	44	35	28	24	27	22	19	20	17	15	13	11	10	7				
9	47	35	28	23	41	32	25	21	25	20	17	18	15	13	12	10	9	7				
10	43	32	25	21	39	29	23	19	23	18	15	17	14	12	11	9	8	6				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7227	7227	7227
5°	7254	7136	7175
10°	7199	7020	6960
15°	7116	6812	6614
20°	7002	6515	6189
25°	6885	6178	5772
30°	6721	5830	5243
35°	6564	5454	4776
40°	6403	5063	4234
45°	6215	4624	3747
50°	6023	4182	3265
55°	5827	3704	2806
60°	5596	3203	2328
65°	5337	2690	2120
70°	5032	2219	1950
75°	4648	2021	1822
80°	4100	1804	1655
85°	3223	1426	1426



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	41.9	1.0
10°-20°	115.0	2.6
20°-30°	161.6	3.7
30°-40°	176.2	4.0
40°-50°	162.0	3.7
50°-60°	127.2	2.9
60°-70°	82.9	1.9
70°-80°	42.8	1.0
80°-90°	16.0	0.4
90°-100°	77.8	1.8
100°-110°	241.6	5.5
110°-120°	412.9	9.5
120°-130°	543.0	12.5
130°-140°	609.4	14.0
140°-150°	597.6	13.7
150°-160°	501.2	11.5
160°-170°	332.4	7.6
170°-180°	116.2	2.7
0°-30°	318.5	7.3
0°-40°	494.7	11.4
0°-60°	783.8	18.0
0°-90°	925.5	21.2
90°-120°	732.3	16.8
90°-150°	2482.3	57.0
90°-180°	3432.0	78.8
0°-180°	4357.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	448	448	448	448	448	
5°	448	445	440	444	443	42
15°	426	421	408	400	396	120
25°	386	373	347	331	324	178
35°	333	312	277	252	242	208
45°	272	244	202	175	164	210
55°	207	175	132	108	100	185
65°	140	107	70	57	56	138
75°	74	47	32	30	29	79
85°	17	9	8	8	8	21
90°	1	14	36	34	35	4
95°	54	64	66	66	64	62
105°	223	226	228	230	230	235
115°	414	420	418	417	414	410
125°	603	611	609	606	605	538
135°	780	791	793	792	789	602
145°	947	954	960	961	957	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°	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6
2.5°	449.2	448.9	448.5	448.2	447.8	447.2	446.4	445.7	444.9	444.1	444.8
5°	447.6	447.2	446.7	446.3	445.9	445.0	443.8	442.6	441.5	440.3	441.1
7.5°	443.0	442.5	441.8	441.3	440.8	439.8	438.5	437.0	435.7	434.4	434.5
10°	439.1	438.5	437.8	437.2	436.6	435.3	433.5	431.8	430.0	428.2	427.9
12.5°	434.3	433.5	432.7	431.9	431.1	429.6	427.3	425.0	422.7	420.4	419.9
15°	425.7	424.7	423.7	422.8	421.8	419.7	416.7	413.7	410.5	407.5	405.8
17.5°	415.3	413.8	412.2	410.7	409.2	406.5	402.6	398.7	394.8	390.8	388.8
20°	407.5	405.7	403.9	402.1	400.3	397.2	392.6	388.2	383.7	379.2	376.9
22.5°	399.1	397.1	395.0	393.1	391.0	387.4	382.4	377.3	372.3	367.2	364.3
25°	386.5	383.5	380.7	377.8	375.0	370.5	364.5	358.6	352.7	346.8	343.0
27.5°	371.2	368.1	365.0	361.9	358.6	353.7	347.1	340.4	333.7	327.0	322.7
30°	360.5	357.1	353.7	350.3	346.9	341.5	334.3	327.2	319.9	312.7	308.2
32.5°	350.2	346.2	342.1	338.1	334.1	328.5	321.2	313.8	306.5	299.1	293.9
35°	333.0	328.4	323.8	319.2	314.6	308.4	300.4	292.5	284.6	276.7	271.0
37.5°	315.8	310.8	305.7	300.7	295.6	288.9	280.4	272.0	263.6	255.1	248.9
40°	303.8	298.5	293.0	287.6	282.2	275.2	266.4	257.7	249.0	240.2	233.8
42.5°	291.5	285.8	280.1	274.5	268.8	261.4	252.4	243.3	234.3	225.3	218.7
45°	272.2	266.2	260.1	254.1	248.1	240.3	230.9	221.4	212.0	202.5	196.2
47.5°	253.4	247.0	240.7	234.3	227.8	219.8	210.0	200.3	190.5	180.7	174.4
50°	239.8	233.4	227.0	220.6	214.3	206.1	196.2	186.3	176.4	166.5	160.2
52.5°	226.5	219.8	213.2	206.5	199.8	191.6	181.9	172.3	162.6	152.8	146.9
55°	207.0	200.0	193.0	185.9	178.9	170.6	160.8	151.1	141.3	131.6	126.3
57.5°	187.0	179.8	172.5	165.4	158.2	149.9	140.5	131.3	121.9	112.5	107.5
60°	173.3	166.2	159.0	151.8	144.5	136.3	127.1	117.8	108.5	99.2	94.6
62.5°	160.1	152.9	145.7	138.5	131.3	123.2	114.4	105.6	96.8	87.9	83.6
65°	139.7	132.4	125.2	117.9	110.6	102.9	94.8	86.7	78.6	70.4	67.4
67.5°	120.1	112.9	105.7	98.4	91.2	83.9	76.6	69.4	62.1	54.8	53.3
70°	106.6	99.5	92.5	85.5	78.5	71.9	65.6	59.4	53.2	47.0	46.1
72.5°	93.5	86.9	80.1	73.4	66.6	60.8	55.8	50.8	45.8	40.8	40.0
75°	74.5	68.2	62.0	55.6	49.3	44.7	41.6	38.5	35.5	32.4	31.7
77.5°	55.8	50.3	44.8	39.2	33.7	30.2	28.7	27.3	25.8	24.3	24.0
80°	44.1	39.6	35.0	30.4	25.8	23.0	22.1	21.2	20.3	19.4	19.1
82.5°	33.4	29.9	26.3	22.7	19.2	17.0	16.4	15.8	15.2	14.6	14.4
85°	17.4	15.5	13.6	11.8	9.9	8.7	8.5	8.2	7.9	7.7	7.7
87.5°	5.4	5.4	5.4	5.4	5.3	5.8	6.8	7.8	8.8	9.8	9.7
90°	1.1	3.8	6.6	9.4	12.1	16.0	21.0	26.1	31.2	36.3	35.8
92.5°	18.5	20.4	22.5	24.5	26.6	28.2	29.3	30.6	31.7	32.9	33.0
95°	53.9	56.2	58.5	60.7	63.0	64.5	64.9	65.4	65.8	66.3	66.3
97.5°	98.4	100.4	102.5	104.5	106.5	108.0	108.8	109.7	110.6	111.5	111.5
100°	131.5	133.4	135.3	137.1	138.9	140.2	140.9	141.5	142.2	142.9	142.9
102.5°	166.4	167.8	169.3	170.8	172.3	173.4	174.3	175.1	176.0	176.9	177.1
105°	222.7	223.4	224.1	224.8	225.4	226.0	226.5	226.9	227.4	227.8	228.4
107.5°	279.5	280.4	281.5	282.5	283.5	284.0	284.0	284.0	284.0	284.0	284.2
110°	315.9	317.3	318.7	320.0	321.5	322.2	322.2	322.2	322.2	322.2	322.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	355.7	357.0	358.5	359.8	361.2	361.9	361.6	361.4	361.2	361.1	360.5
115°	414.3	415.7	417.1	418.5	419.8	420.3	419.8	419.4	418.9	418.5	418.2
117.5°	472.7	474.6	476.4	478.2	480.1	480.4	479.1	477.8	476.5	475.2	474.7
120°	511.7	513.5	515.4	517.2	519.1	519.1	517.2	515.4	513.5	511.7	511.7
122.5°	547.3	549.6	551.7	553.9	556.2	556.6	555.4	554.0	552.8	551.4	550.9
125°	602.8	604.9	607.0	609.0	611.1	611.8	611.1	610.5	609.8	609.0	608.3
127.5°	656.9	659.5	662.2	664.8	667.4	668.3	667.4	666.6	665.8	664.9	664.1
130°	690.9	693.8	696.9	699.8	702.8	704.1	703.6	703.2	702.8	702.3	701.8
132.5°	729.0	731.5	733.9	736.3	738.8	740.0	740.1	740.2	740.3	740.4	739.4
135°	780.0	782.5	785.1	787.6	790.1	791.6	792.0	792.5	793.0	793.4	793.2
137.5°	833.6	835.7	837.8	839.8	841.9	843.2	843.8	844.5	845.0	845.6	845.4
140°	865.9	868.0	870.0	872.2	874.2	875.8	877.0	878.2	879.3	880.4	880.4
142.5°	899.1	901.2	903.2	905.3	907.3	908.7	909.5	910.3	911.2	912.0	912.1
145°	946.7	948.3	949.9	951.5	953.1	954.7	956.0	957.4	958.8	960.2	960.4
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°	447.6	447.6	447.6	447.6	447.6	447.6	447.6	447.6
2.5°	445.5	446.2	446.9	447.2	447.1	446.9	446.7	446.7
5°	441.9	442.7	443.5	443.8	443.5	443.3	443.0	442.7
7.5°	434.8	435.1	435.2	435.2	434.7	434.2	433.7	433.3
10°	427.7	427.4	427.1	426.7	426.1	425.6	425.1	424.5
12.5°	419.5	418.9	418.5	417.8	416.9	416.0	415.1	414.2
15°	404.1	402.3	400.6	399.4	398.5	397.5	396.6	395.7
17.5°	386.7	384.7	382.7	380.9	379.3	377.8	376.2	374.7
20°	374.7	372.4	370.1	368.0	366.0	364.1	362.1	360.2
22.5°	361.4	358.5	355.6	353.4	351.9	350.4	348.9	347.5
25°	339.4	335.6	332.0	329.5	328.1	326.7	325.4	324.0
27.5°	318.3	314.1	309.8	306.6	304.4	302.3	300.1	298.0
30°	303.5	299.0	294.4	290.9	288.4	286.0	283.6	281.2
32.5°	288.6	283.4	278.1	274.4	272.2	269.8	267.5	265.3
35°	265.4	259.7	254.0	250.1	248.2	246.2	244.2	242.3
37.5°	242.6	236.4	230.2	225.9	223.6	221.3	219.1	216.8
40°	227.5	221.1	214.6	210.3	207.9	205.6	203.2	200.9
42.5°	212.0	205.5	198.9	194.5	192.2	189.9	187.6	185.4
45°	189.8	183.3	177.0	172.7	170.6	168.4	166.2	164.1
47.5°	168.0	161.7	155.3	151.1	149.2	147.2	145.3	143.3
50°	154.1	147.8	141.6	137.6	135.7	133.8	131.9	130.0
52.5°	140.9	134.9	128.9	125.0	123.3	121.5	119.8	118.1
55°	120.8	115.5	110.0	106.5	104.8	103.1	101.4	99.7
57.5°	102.6	97.6	92.7	89.5	88.1	86.7	85.2	83.7
60°	90.1	85.5	80.9	77.8	76.4	75.0	73.6	72.1
62.5°	79.2	74.8	70.4	67.8	66.9	66.1	65.2	64.3
65°	64.4	61.3	58.2	56.5	56.3	56.0	55.7	55.5
67.5°	52.0	50.6	49.1	48.3	48.0	47.7	47.4	47.2
70°	45.2	44.3	43.4	42.8	42.4	42.0	41.6	41.3
72.5°	39.3	38.5	37.8	37.4	37.1	36.9	36.6	36.5
75°	31.1	30.5	29.9	29.5	29.4	29.3	29.2	29.2
77.5°	23.5	23.2	22.8	22.6	22.5	22.3	22.2	22.0
80°	18.7	18.4	18.0	17.8	17.8	17.8	17.8	17.8
82.5°	14.2	13.9	13.7	13.6	13.6	13.6	13.6	13.6
85°	7.7	7.7	7.7	7.7	7.7	7.7	7.7	7.7
87.5°	9.5	9.4	9.2	9.1	9.2	9.2	9.3	9.3
90°	35.3	34.9	34.4	34.3	34.5	34.8	35.0	35.2
92.5°	33.1	33.2	33.3	33.3	33.4	33.4	33.5	33.5
95°	66.3	66.3	66.3	66.1	65.6	65.2	64.6	64.2
97.5°	111.5	111.5	111.5	111.5	111.4	111.4	111.3	111.3
100°	142.9	142.9	142.9	142.9	142.6	142.4	142.1	141.9
102.5°	177.3	177.5	177.6	177.6	177.4	177.2	176.9	176.7
105°	228.8	229.3	229.7	230.0	230.0	230.0	230.0	230.0
107.5°	284.4	284.5	284.7	284.3	283.3	282.2	281.2	280.1
110°	322.2	322.2	322.2	321.8	321.1	320.4	319.7	319.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	360.0	359.4	358.9	358.4	357.8	357.3	356.9	356.3
115°	418.0	417.8	417.5	417.1	416.4	415.7	415.0	414.3
117.5°	474.1	473.6	473.1	472.4	471.7	471.0	470.3	469.7
120°	511.7	511.7	511.7	511.3	510.7	510.0	509.3	508.5
122.5°	550.4	549.8	549.2	548.8	548.2	547.7	547.2	546.7
125°	607.7	607.0	606.3	605.8	605.6	605.4	605.1	604.9
127.5°	663.3	662.5	661.6	660.8	660.1	659.4	658.7	657.9
130°	701.3	700.9	700.4	699.7	698.8	697.9	697.0	696.1
132.5°	738.3	737.4	736.4	735.5	734.8	734.0	733.3	732.5
135°	793.0	792.7	792.5	792.0	791.3	790.7	790.0	789.3
137.5°	845.3	845.1	844.9	844.4	843.4	842.5	841.6	840.6
140°	880.4	880.4	880.4	879.9	879.0	878.2	877.2	876.3
142.5°	912.3	912.5	912.7	912.3	911.3	910.4	909.5	908.6
145°	960.6	960.9	961.1	960.7	959.8	958.9	958.0	957.1
147.5°	1003.1	1003.5	1004.1	1003.9	1003.0	1002.1	1001.2	1000.4
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

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