

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: P331644-940

Luminaire Tested: **SA2XXRDIP-C290D1080U940-4F0-1E-UDD-F4**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331644-940
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: SA2XXRDIP-C290D1080U940-4F0-1E-UDD-F4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4673.8 lumens
Efficiency: N/A
Efficacy: 110.8 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

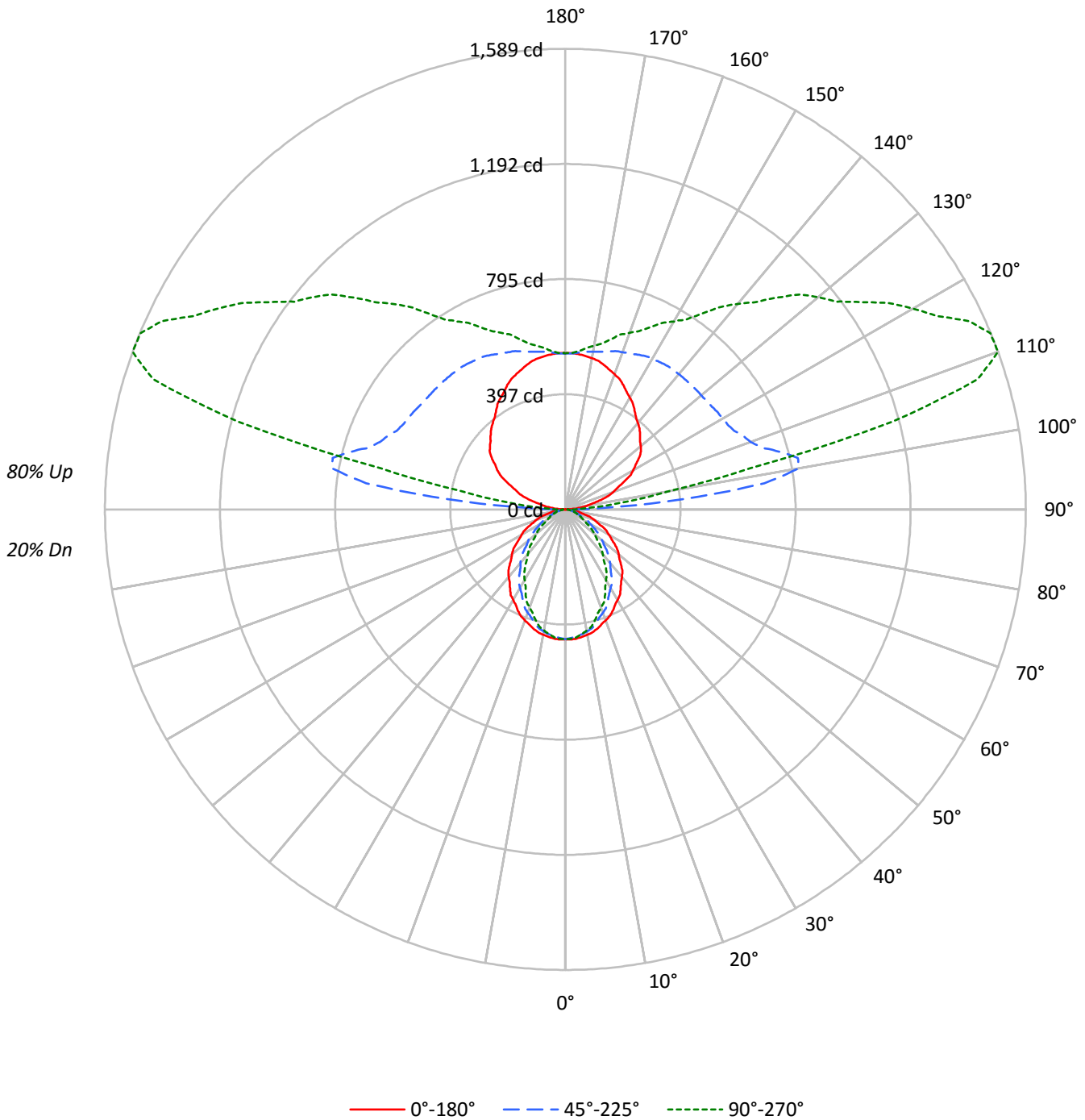
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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	91	87	83	80	80	77	74	71	58	56	55	41	40	39	25	25	24	17																												
2	83	76	70	66	73	68	63	59	51	48	45	36	34	33	22	21	21	15																												
3	76	67	60	55	67	60	54	49	45	42	38	32	30	28	20	19	18	13																												
4	69	59	52	46	61	53	47	42	40	36	33	29	26	24	18	17	15	11																												
5	64	53	45	40	56	47	41	36	36	32	28	26	23	21	16	15	14	10																												
6	58	47	40	34	52	42	36	31	32	28	24	23	20	18	15	13	12	9																												
7	54	42	35	30	48	38	32	27	29	25	21	21	18	16	14	12	11	8																												
8	50	38	31	26	44	34	28	24	27	22	19	19	16	14	12	11	10	7																												
9	46	35	28	23	41	31	25	21	24	20	17	18	15	13	11	10	9	6																												
10	43	32	25	21	38	29	23	19	22	18	15	16	13	11	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	0.9
10°-20°	115.0	2.5
20°-30°	161.6	3.5
30°-40°	176.2	3.8
40°-50°	162.0	3.5
50°-60°	127.2	2.7
60°-70°	82.9	1.8
70°-80°	42.8	0.9
80°-90°	15.9	0.3
90°-100°	215.4	4.6
100°-110°	730.9	15.6
110°-120°	776.4	16.6
120°-130°	639.2	13.7
130°-140°	513.3	11.0
140°-150°	387.9	8.3
150°-160°	272.6	5.8
160°-170°	160.5	3.4
170°-180°	52.2	1.1
0°-30°	318.5	6.8
0°-40°	494.7	10.6
0°-60°	783.8	16.8
0°-90°	925.5	19.8
90°-120°	1722.7	36.9
90°-150°	3263.0	69.8
90°-180°	3748.0	80.2
0°-180°	4673.8	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	35	34	34	3
95°	36	89	406	153	118	38
105°	126	191	768	1372	1167	134
115°	223	281	642	1325	1536	221
125°	311	368	617	1074	1246	276
135°	365	435	610	902	1033	282
145°	416	479	607	754	825	261
155°	473	511	589	667	693	218
165°	516	531	564	599	608	145
175°	538	538	543	550	548	51
180°	539	539	539	539	539	



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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	5.7	5.5	5.4	5.7	6.8	8.2	9.5	9.6	9.4
90°	1.1	4.1	8.3	10.3	12.4	15.5	20.7	28.0	34.2	35.2	34.2
92.5°	12.7	18.2	25.7	30.2	37.3	47.0	70.4	103.3	132.8	134.6	113.8
95°	36.3	40.4	50.7	60.1	76.7	101.5	149.2	239.2	359.4	406.1	355.3
97.5°	59.0	64.6	75.6	89.7	108.8	137.0	196.8	322.4	522.1	693.2	727.2
100°	79.7	82.8	92.2	108.8	129.5	158.5	213.4	339.7	563.5	818.3	967.5
102.5°	98.8	101.1	110.4	127.0	148.6	177.5	228.3	340.6	547.8	822.5	1057.0
105°	126.4	130.5	137.8	153.3	176.1	205.1	253.8	346.0	516.9	767.6	1043.1
107.5°	156.2	159.5	166.6	180.8	203.5	232.6	279.9	360.3	501.6	708.7	952.2
110°	176.1	180.2	186.5	199.9	221.7	251.7	297.3	371.8	498.3	680.6	895.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	194.3	198.5	205.5	218.1	239.1	269.9	313.9	384.3	499.1	662.4	855.2
115°	222.7	227.9	234.1	246.6	267.2	295.2	339.7	403.0	503.5	642.2	805.9
117.5°	252.2	256.3	262.5	273.5	293.4	322.4	363.6	422.8	510.9	632.5	774.8
120°	270.4	274.5	280.7	290.1	310.8	339.7	380.1	436.1	515.9	626.7	758.2
122.5°	287.8	291.1	297.3	307.5	328.1	358.0	395.9	447.7	521.7	623.4	744.1
125°	310.8	313.9	320.1	332.5	353.2	382.3	419.5	466.2	530.4	617.4	724.1
127.5°	329.0	333.1	341.9	355.5	375.4	405.2	441.5	483.3	539.3	613.9	705.4
130°	339.7	343.9	354.3	368.8	389.5	418.5	454.8	494.1	545.9	612.2	693.0
132.5°	349.7	354.7	365.9	381.2	402.8	431.8	466.4	504.9	552.5	611.4	683.1
135°	364.6	368.8	381.2	396.7	420.5	449.6	482.7	519.0	560.4	610.1	669.1
137.5°	378.7	383.7	396.1	412.7	436.3	463.2	496.0	529.8	567.5	609.9	659.4
140°	389.5	393.6	406.1	422.7	445.4	472.3	503.5	535.6	570.8	609.1	653.6
142.5°	400.3	403.6	415.2	431.8	453.7	479.0	509.3	540.6	573.3	609.1	647.8
145°	416.4	420.5	431.0	446.5	467.2	490.0	517.9	547.0	576.0	607.0	640.2
147.5°	433.8	436.9	446.8	461.2	478.4	498.6	525.0	550.5	576.8	603.3	632.3
150°	445.4	448.5	456.8	470.3	485.8	504.4	528.3	552.1	576.0	600.8	625.6
152.5°	457.0	458.5	466.7	478.6	493.3	510.2	531.6	552.9	574.3	596.6	619.8
155°	473.4	474.4	480.6	492.0	503.5	519.0	536.5	554.2	571.8	589.4	609.1
157.5°	487.1	488.1	493.1	503.0	512.1	525.2	540.1	554.2	567.0	581.9	599.0
160°	496.1	497.2	501.3	509.6	517.9	529.3	541.8	554.2	564.5	577.0	591.5
162.5°	505.3	504.7	508.8	515.4	522.9	531.8	542.6	553.4	562.0	572.8	584.9
165°	515.9	514.9	516.9	523.1	528.3	534.5	543.9	551.1	557.3	564.5	573.9
167.5°	524.6	523.3	525.2	529.1	532.9	536.8	543.6	549.7	552.5	557.3	563.1
170°	530.4	528.3	529.3	532.4	534.5	537.6	542.8	548.0	550.0	553.1	557.3
172.5°	533.7	532.4	531.8	534.9	536.2	538.4	542.0	545.5	546.7	548.2	551.5
175°	537.6	536.5	535.6	537.6	537.6	538.7	540.7	542.8	541.8	542.8	543.9
177.5°	539.5	537.8	537.0	538.7	538.7	538.7	539.5	541.2	539.5	538.7	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7



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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°	9.1	8.6	8.9	9.1	9.1	9.1	9.1	9.1
90°	33.2	31.1	33.2	34.2	34.2	34.2	34.2	34.2
92.5°	90.3	77.5	68.8	62.3	61.5	58.2	59.0	57.4
95°	271.4	208.2	164.7	141.9	128.4	120.2	117.1	118.1
97.5°	633.3	518.2	406.1	331.3	281.8	256.3	241.1	232.5
100°	945.7	817.3	675.4	550.0	464.0	419.5	389.5	370.9
102.5°	1150.5	1121.4	1017.6	884.8	791.4	715.4	677.9	652.6
105°	1258.6	1375.6	1389.1	1355.0	1290.7	1226.5	1182.0	1167.4
107.5°	1180.7	1357.0	1464.7	1514.8	1523.0	1519.4	1510.5	1491.2
110°	1113.6	1299.0	1431.6	1516.5	1561.0	1580.7	1590.1	1589.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1052.2	1230.2	1371.9	1469.3	1531.2	1564.1	1581.8	1587.3
115°	976.9	1136.4	1272.0	1378.8	1452.3	1499.9	1526.9	1536.2
117.5°	920.1	1060.2	1183.2	1283.3	1358.3	1408.5	1437.0	1444.8
120°	891.9	1020.3	1130.2	1224.4	1296.9	1345.6	1375.6	1386.0
122.5°	869.5	987.2	1091.2	1176.3	1241.4	1289.2	1316.0	1324.6
125°	837.0	943.7	1034.8	1112.5	1172.6	1212.0	1237.9	1246.2
127.5°	804.9	901.4	987.4	1059.1	1111.5	1148.3	1170.7	1177.4
130°	784.2	873.3	955.1	1023.4	1074.2	1109.5	1130.2	1138.4
132.5°	764.3	846.8	921.9	986.1	1036.1	1071.3	1090.4	1097.8
135°	736.5	804.9	873.3	931.2	975.8	1010.0	1028.6	1032.8
137.5°	714.3	771.5	825.8	876.4	916.9	946.4	962.8	968.9
140°	700.3	750.0	797.6	843.2	876.4	903.3	918.8	925.1
142.5°	688.7	730.9	772.0	810.0	841.5	866.0	879.9	881.1
145°	672.3	706.5	738.6	768.7	793.4	811.1	821.4	824.6
147.5°	659.7	686.6	711.7	733.6	754.1	768.2	775.3	777.1
150°	650.5	673.3	695.1	713.7	729.2	741.7	747.9	748.9
152.5°	641.4	662.5	681.0	697.1	709.4	720.1	724.7	724.9
155°	628.7	645.3	660.8	672.3	683.7	690.9	695.1	693.0
157.5°	614.0	627.9	641.0	649.9	658.0	664.0	665.8	665.8
160°	604.9	616.4	627.8	635.0	642.2	647.4	648.5	648.5
162.5°	595.8	605.6	615.3	620.9	628.1	631.7	632.7	631.9
165°	582.2	589.4	596.6	600.8	604.9	609.1	609.1	608.1
167.5°	569.1	574.7	579.7	583.4	585.2	587.5	587.4	586.1
170°	562.5	565.6	569.7	571.8	572.8	576.0	574.9	572.8
172.5°	555.0	557.3	560.6	561.9	562.9	564.4	563.3	562.0
175°	547.0	548.0	549.0	550.0	550.0	551.1	550.0	548.0
177.5°	541.2	541.2	542.0	542.0	542.0	542.0	541.2	539.5
180°	538.7	538.7	538.7	538.7	538.7	538.7	538.7	538.7

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