

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: P331281-940

Luminaire Tested: **SA2XXDIP-C290D1080U940-4F0-1E-UDD-D4**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331281-940  
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: SA2XXDIP-C290D1080U940-4F0-1E-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**

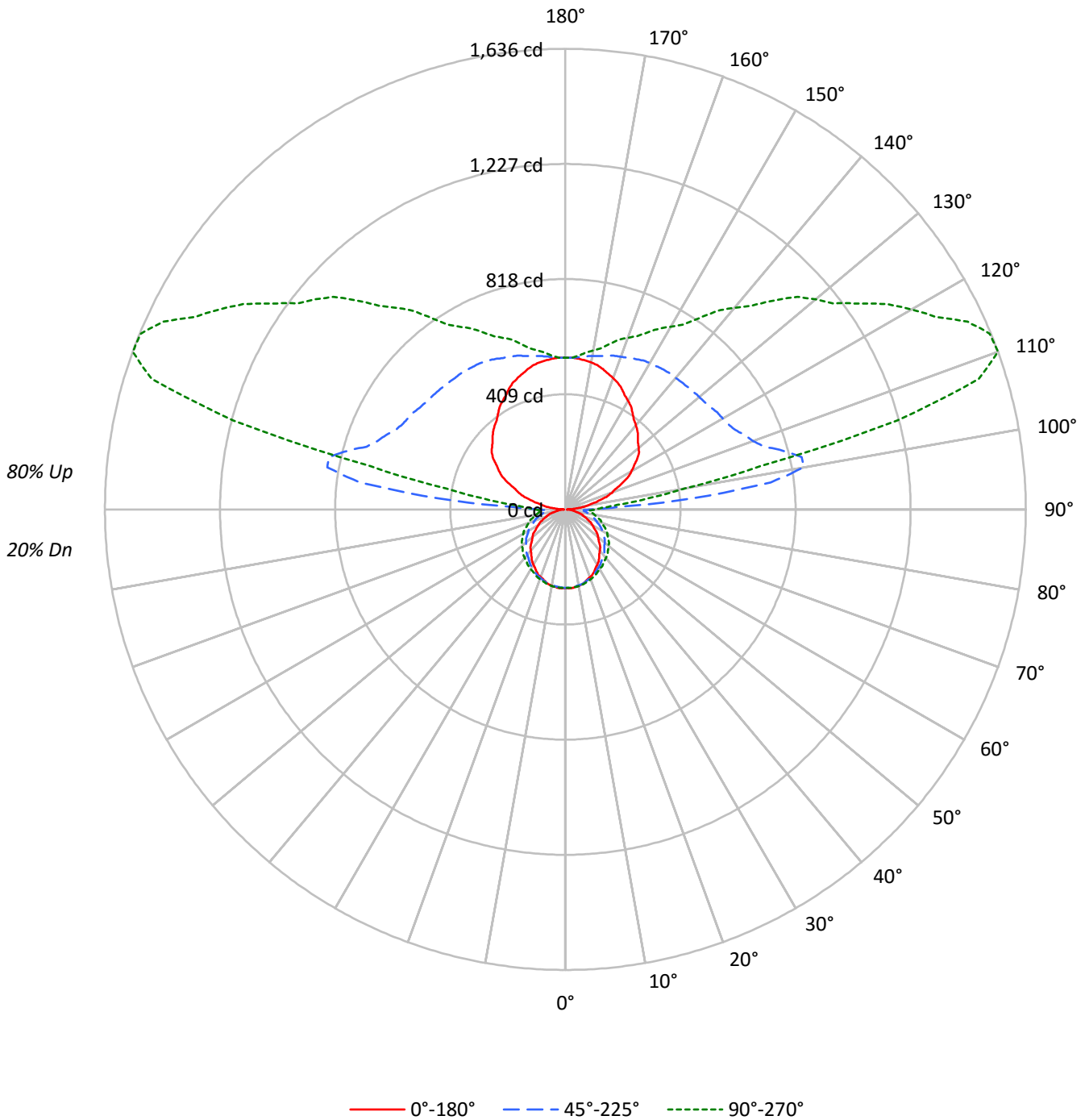
Lumens per Lamp: N/A  
Luminaire Lumens: 4819.5 lumens  
Efficiency: N/A  
Efficacy: 114.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

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	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°	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	0.5
10°-20°	75.9	1.6
20°-30°	115.1	2.4
30°-40°	140.2	2.9
40°-50°	150.8	3.1
50°-60°	146.5	3.0
60°-70°	127.9	2.7
70°-80°	98.4	2.0
80°-90°	70.9	1.5
90°-100°	260.9	5.4
100°-110°	764.1	15.9
110°-120°	798.4	16.6
120°-130°	651.4	13.5
130°-140°	518.4	10.8
140°-150°	388.8	8.1
150°-160°	272.6	5.7
160°-170°	160.5	3.3
170°-180°	52.2	1.1
0°-30°	217.5	4.5
0°-40°	357.7	7.4
0°-60°	654.9	13.6
0°-90°	952.2	19.8
90°-120°	1823.4	37.8
90°-150°	3382.1	70.2
90°-180°	3867.0	80.2
0°-180°	4819.5	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	89	103	109	5
95°	40	112	453	215	185	41
105°	128	205	802	1420	1221	137
115°	224	288	667	1361	1577	222
125°	312	369	631	1098	1274	277
135°	365	436	615	915	1049	282
145°	416	479	607	756	829	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°	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	20.3	26.1	31.9	38.1	44.9	52.1	59.1	65.1	68.5
90°	5.1	13.4	22.7	30.1	37.4	45.9	56.9	69.9	81.9	88.7	91.2
92.5°	16.4	26.8	39.1	48.6	60.5	75.4	104.3	142.9	177.8	185.2	167.8
95°	39.5	47.9	62.4	76.0	96.8	126.5	179.6	275.1	400.6	452.6	405.3
97.5°	61.9	71.2	86.0	103.8	126.6	159.3	224.4	355.1	560.0	736.3	773.6
100°	82.6	89.0	101.7	121.6	145.6	178.9	238.8	370.1	599.0	858.8	1011.4
102.5°	101.3	106.6	119.0	138.7	163.2	196.2	251.8	369.1	581.1	860.8	1098.5
105°	128.4	135.2	145.0	163.2	188.6	221.2	274.6	371.5	547.1	802.5	1081.1
107.5°	158.2	163.5	172.7	189.0	213.7	246.2	297.9	382.8	528.6	740.3	986.7
110°	177.7	183.7	191.7	207.0	230.5	263.7	313.6	392.6	523.4	710.2	927.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	195.9	201.6	210.2	224.4	246.7	280.4	328.6	403.2	522.2	689.6	885.4
115°	224.4	230.5	237.7	251.1	272.9	303.4	352.0	419.2	523.7	666.6	832.9
117.5°	253.3	258.2	265.0	276.6	297.2	328.3	373.4	436.3	528.2	653.4	798.5
120°	271.6	276.1	282.7	292.3	313.4	344.4	388.4	447.9	531.3	645.8	779.8
122.5°	289.0	292.5	298.8	309.1	329.9	361.6	402.9	458.1	535.4	640.5	763.8
125°	311.6	314.7	320.9	333.3	354.0	384.5	424.6	474.1	541.3	631.2	740.3
127.5°	329.8	333.9	342.5	356.1	375.9	406.8	445.4	489.5	547.8	624.7	718.5
130°	340.5	344.6	354.9	369.3	389.9	419.8	458.0	499.3	552.9	621.1	704.1
132.5°	350.5	355.4	366.5	381.7	403.2	432.9	469.0	508.9	558.0	618.3	692.1
135°	365.1	369.2	381.6	397.2	421.0	450.4	484.5	521.7	564.0	614.6	675.6
137.5°	379.2	384.1	396.5	413.0	436.7	463.8	496.9	531.1	569.2	612.1	663.2
140°	389.9	394.0	406.3	422.8	445.5	472.4	503.7	536.0	571.4	609.9	655.9
142.5°	400.6	403.9	415.4	431.9	453.8	479.0	509.3	540.6	573.4	609.2	649.2
145°	416.4	420.5	431.0	446.5	467.2	490.0	517.9	547.0	576.0	607.0	640.7
147.5°	433.8	436.9	446.8	461.2	478.4	498.6	525.0	550.5	576.8	603.3	632.4
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°	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°	72.0	75.3	79.4	81.9	83.1	84.3	85.4	86.6
90°	93.8	95.3	101.0	104.4	105.5	106.6	107.6	108.7
92.5°	147.9	138.7	133.5	129.3	129.6	127.3	129.3	128.7
95°	324.9	265.0	225.0	204.5	192.1	184.9	182.8	184.9
97.5°	683.1	571.2	462.5	389.9	341.4	317.0	302.9	295.3
100°	992.9	867.8	729.2	606.0	521.0	477.5	448.4	430.8
102.5°	1195.2	1169.5	1068.9	938.3	845.8	770.8	734.2	710.0
105°	1299.8	1420.0	1436.5	1404.4	1341.2	1278.0	1234.4	1220.9
107.5°	1218.3	1397.6	1508.3	1560.5	1569.6	1567.0	1559.1	1540.8
110°	1148.9	1337.2	1472.7	1559.5	1605.1	1625.8	1636.1	1636.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1085.3	1266.1	1410.8	1510.0	1573.0	1607.0	1625.5	1632.1
115°	1006.6	1168.8	1307.2	1415.7	1490.2	1538.9	1566.8	1577.1
117.5°	946.4	1089.1	1214.8	1316.7	1392.6	1443.9	1473.2	1481.9
120°	916.0	1047.0	1159.2	1255.3	1328.7	1378.5	1409.5	1420.9
122.5°	891.5	1011.6	1118.1	1204.9	1270.8	1319.5	1347.0	1356.6
125°	855.6	964.7	1058.4	1137.6	1198.5	1238.7	1265.4	1274.5
127.5°	820.2	919.0	1007.2	1080.4	1133.5	1171.3	1194.4	1201.8
130°	797.4	888.7	972.6	1042.4	1094.0	1129.9	1151.3	1160.3
132.5°	775.4	860.0	937.3	1002.9	1053.6	1089.5	1109.3	1117.4
135°	744.8	815.0	885.3	944.6	989.8	1024.8	1044.1	1049.0
137.5°	719.8	778.6	834.6	886.2	927.5	957.4	974.5	981.2
140°	703.9	755.1	804.2	850.8	884.5	912.0	928.0	934.8
142.5°	691.1	734.5	776.7	815.6	847.6	872.5	886.9	888.6
145°	673.3	708.1	740.7	771.2	796.6	814.7	825.5	829.0
147.5°	659.8	686.8	711.9	734.1	754.7	769.1	776.3	778.4
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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