

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: P331498-940

Luminaire Tested: **S122DIW-S485D435U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331498-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S485D435U940-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 435 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3093.6 lumens  
Efficiency: N/A  
Efficacy: 102.4 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

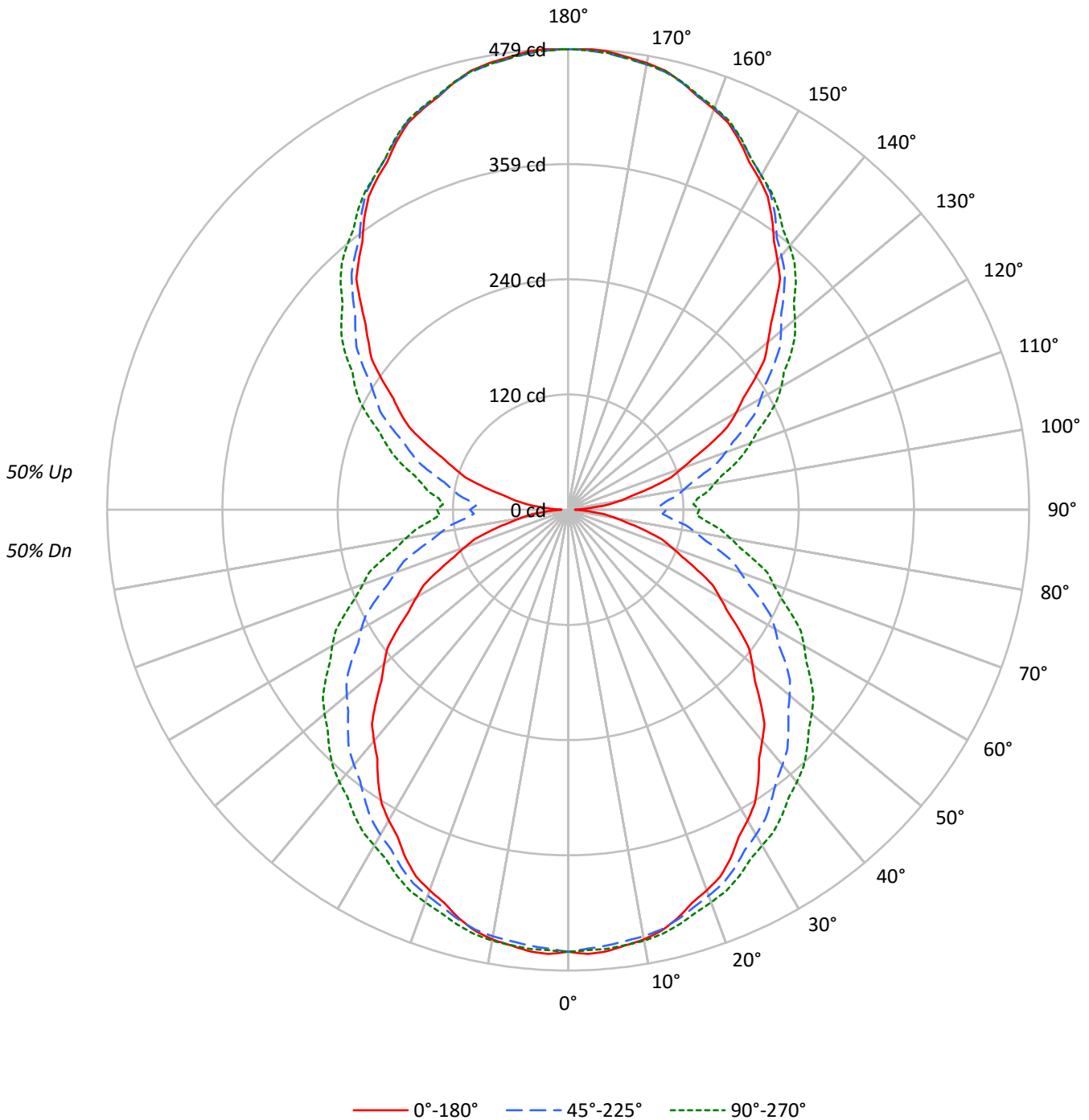
Input Watts (W): 30.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	84	84	84	69	69	69	56	56	56	50				
1	96	91	87	83	89	84	80	77	71	68	65	59	57	55	48	46	45	39				
2	87	79	72	66	80	73	67	62	61	57	53	51	47	45	41	39	36	32				
3	79	69	61	55	72	64	57	51	54	48	44	44	40	37	36	33	30	26				
4	72	61	52	46	66	56	49	43	47	42	37	39	35	31	32	28	26	22				
5	66	54	45	39	60	50	42	36	42	36	32	35	30	27	28	25	22	19				
6	61	48	40	34	56	45	37	31	38	32	27	32	27	23	26	22	19	16				
7	56	43	35	29	51	40	33	27	34	28	24	29	24	20	23	20	17	14				
8	52	39	31	26	48	36	29	24	31	25	21	26	22	18	21	18	15	13				
9	48	36	28	23	44	33	26	21	28	23	19	24	19	16	20	16	14	11				
10	45	33	25	20	42	30	24	19	26	21	17	22	18	15	18	15	12	10				

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

	0°	45°	90°
0°	7419	7419	7419
5°	7455	7143	7115
10°	7408	6931	6854
15°	7306	6708	6577
20°	7177	6468	6312
25°	7050	6237	6072
30°	6870	5999	5829
35°	6689	5771	5659
40°	6498	5576	5488
45°	6317	5402	5343
50°	6123	5242	5199
55°	5916	5073	5052
60°	5666	4897	4897
65°	5405	4692	4714
70°	5117	4470	4516
75°	4741	4251	4334
80°	4149	4028	4148
85°	3591	3837	4006



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.5	1.4
10°-20°	124.9	4.0
20°-30°	189.2	6.1
30°-40°	230.5	7.4
40°-50°	247.9	8.0
50°-60°	240.8	7.8
60°-70°	210.2	6.8
70°-80°	161.8	5.2
80°-90°	110.5	3.6
90°-100°	105.2	3.4
100°-110°	148.9	4.8
110°-120°	197.1	6.4
120°-130°	231.9	7.5
130°-140°	246.1	8.0
140°-150°	234.6	7.6
150°-160°	195.5	6.3
160°-170°	129.7	4.2
170°-180°	45.3	1.5
0°-30°	357.6	11.6
0°-40°	588.1	19.0
0°-60°	1076.8	34.8
0°-90°	1559.4	50.4
90°-120°	451.2	14.6
90°-150°	1163.8	37.6
90°-180°	1534.0	49.6
0°-180°	3093.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	460	460	460	460	460	
5°	461	459	455	459	458	44
15°	440	441	441	446	446	124
25°	400	404	410	418	420	184
35°	344	356	368	382	388	215
45°	282	301	324	344	351	218
55°	216	241	275	298	308	193
65°	148	181	220	246	256	147
75°	82	119	162	189	199	87
85°	24	65	108	135	145	26
90°	7	51	102	127	136	6
95°	26	62	102	127	135	28
105°	90	112	146	169	178	96
115°	164	175	203	222	229	162
125°	236	241	260	276	283	211
135°	305	309	317	330	334	236
145°	369	372	374	379	381	231
155°	422	423	425	426	425	194
165°	459	459	459	462	460	129
175°	478	477	476	478	476	45
180°	479	479	479	479	479	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	462.2	461.8	461.5	461.1	460.7	460.1	459.3	458.5	457.7	456.8	457.4
5°	460.8	460.4	459.9	459.5	459.1	458.4	457.5	456.6	455.8	454.9	455.8
7.5°	456.7	456.4	456.1	455.8	455.6	455.0	454.3	453.7	453.0	452.3	453.3
10°	453.5	453.3	452.9	452.6	452.4	452.0	451.6	451.1	450.7	450.2	451.4
12.5°	448.2	448.3	448.4	448.4	448.4	448.3	448.0	447.6	447.3	447.0	448.2
15°	439.5	439.8	440.1	440.4	440.7	440.9	440.9	440.9	440.9	440.9	442.2
17.5°	428.4	429.0	429.6	430.3	430.9	431.4	431.9	432.3	432.8	433.3	434.6
20°	420.9	421.6	422.4	423.1	423.8	424.5	425.1	425.7	426.3	426.9	428.5
22.5°	412.9	413.8	414.6	415.4	416.3	417.1	418.0	418.8	419.6	420.5	422.1
25°	399.6	400.6	401.6	402.7	403.7	404.9	406.3	407.6	408.9	410.2	412.0
27.5°	383.6	385.3	387.0	388.7	390.3	392.0	393.5	395.1	396.6	398.2	400.5
30°	372.9	374.9	376.7	378.7	380.7	382.5	384.5	386.4	388.3	390.2	392.6
32.5°	361.2	363.4	365.5	367.7	369.9	372.1	374.3	376.7	378.9	381.2	383.9
35°	344.3	346.8	349.4	351.9	354.4	357.0	359.8	362.7	365.4	368.3	371.5
37.5°	325.9	328.9	331.7	334.7	337.5	340.8	344.5	348.0	351.7	355.3	359.0
40°	313.7	316.9	320.2	323.4	326.7	330.3	334.3	338.3	342.3	346.3	350.2
42.5°	301.9	305.2	308.4	311.7	315.0	318.9	323.5	328.1	332.7	337.2	341.4
45°	282.4	286.3	290.3	294.4	298.4	302.9	308.1	313.3	318.5	323.7	328.2
47.5°	263.1	267.4	271.8	276.1	280.4	285.7	291.8	297.8	303.9	310.0	314.8
50°	249.8	254.3	259.0	263.5	268.0	273.7	280.4	287.0	293.7	300.3	305.4
52.5°	236.9	241.7	246.6	251.5	256.3	262.2	269.2	276.2	283.2	290.3	295.3
55°	216.4	221.8	227.1	232.4	237.7	244.2	252.0	259.7	267.3	275.0	280.4
57.5°	196.2	202.2	208.2	214.2	220.3	227.1	235.0	242.8	250.7	258.5	264.3
60°	181.8	188.2	194.6	200.9	207.2	214.6	223.1	231.5	240.0	248.4	254.0
62.5°	169.0	175.6	182.3	188.9	195.5	203.0	211.3	219.8	228.3	236.7	242.6
65°	147.8	155.1	162.4	169.6	176.8	184.9	193.6	202.3	211.1	219.8	225.9
67.5°	128.4	136.0	143.6	151.1	158.7	166.9	175.9	184.9	193.8	202.7	208.8
70°	114.6	122.3	129.9	137.6	145.3	153.7	162.9	172.1	181.3	190.5	196.8
72.5°	101.7	109.7	117.6	125.6	133.5	142.1	151.4	160.7	170.0	179.2	185.6
75°	81.9	90.2	98.4	106.7	115.0	123.9	133.4	142.9	152.4	161.8	168.2
77.5°	62.8	71.4	80.1	88.7	97.5	106.6	116.2	125.8	135.5	145.1	151.4
80°	49.9	58.9	68.0	77.0	86.1	95.4	105.0	114.6	124.2	133.8	140.1
82.5°	39.3	48.2	57.1	66.0	74.9	84.3	94.0	103.7	113.4	123.2	129.4
85°	24.0	33.2	42.4	51.5	60.6	70.0	79.5	88.9	98.4	107.9	114.1
87.5°	13.1	22.2	31.2	40.2	49.3	58.8	68.6	78.5	88.4	98.2	104.2
90°	7.0	16.8	26.4	36.0	45.7	56.3	67.7	79.2	90.6	102.0	107.8
92.5°	13.3	22.1	30.9	39.7	48.4	57.6	67.2	76.8	86.4	95.9	101.8
95°	26.3	34.2	42.0	49.9	57.8	66.2	75.3	84.4	93.4	102.5	108.1
97.5°	43.1	50.0	57.0	63.9	71.0	78.8	87.7	96.6	105.5	114.3	119.8
100°	56.0	62.2	68.4	74.5	80.8	88.1	96.7	105.2	113.8	122.3	127.8
102.5°	69.0	74.5	80.2	85.8	91.3	98.3	106.7	115.1	123.5	131.9	137.3
105°	90.2	94.8	99.3	103.9	108.4	114.7	122.5	130.4	138.3	146.2	151.5
107.5°	112.2	116.0	119.8	123.7	127.5	133.1	140.4	147.8	155.2	162.6	167.6
110°	125.9	129.4	132.9	136.3	139.9	145.3	152.5	159.8	167.0	174.2	179.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	141.4	144.5	147.5	150.4	153.5	158.5	165.2	172.1	178.9	185.7	190.2
115°	164.3	166.4	168.6	170.8	172.9	177.3	183.7	190.2	196.7	203.1	207.5
117.5°	186.4	188.2	189.9	191.7	193.5	197.2	202.9	208.6	214.2	219.8	224.0
120°	201.6	202.9	204.2	205.5	206.8	210.1	215.3	220.4	225.7	230.9	235.1
122.5°	215.4	216.6	217.7	218.7	219.9	222.9	228.0	233.1	238.1	243.2	247.0
125°	236.5	237.3	238.1	238.9	239.7	242.4	246.8	251.3	255.7	260.2	263.9
127.5°	257.5	258.4	259.3	260.2	261.0	263.2	266.7	270.2	273.8	277.2	280.5
130°	270.8	271.8	272.9	273.8	274.9	276.9	279.8	282.7	285.6	288.6	291.9
132.5°	285.7	286.5	287.3	288.1	288.9	290.5	292.9	295.3	297.8	300.2	303.3
135°	304.9	305.9	306.8	307.8	308.8	310.1	311.8	313.4	315.1	316.8	319.8
137.5°	325.8	326.5	327.3	328.1	329.0	329.8	330.6	331.5	332.4	333.3	335.9
140°	338.4	339.0	339.7	340.4	341.1	341.8	342.5	343.2	344.0	344.7	347.1
142.5°	351.3	352.0	352.7	353.3	354.0	354.5	354.8	355.3	355.6	356.0	357.9
145°	369.3	369.9	370.5	371.1	371.8	372.4	372.9	373.4	374.0	374.5	375.5
147.5°	385.8	386.6	387.4	388.1	388.9	389.4	389.8	390.1	390.5	390.8	391.1
150°	397.2	397.7	398.2	398.8	399.3	399.8	400.1	400.5	400.8	401.2	401.4
152.5°	407.2	407.7	408.2	408.8	409.3	409.8	410.2	410.6	411.1	411.5	411.9
155°	422.1	422.4	422.7	423.0	423.3	423.6	423.8	424.1	424.4	424.6	425.1
157.5°	435.1	435.2	435.4	435.6	435.8	435.9	436.0	436.2	436.4	436.6	437.2
160°	442.8	443.0	443.2	443.4	443.5	443.6	443.7	443.8	443.9	444.0	444.5
162.5°	449.9	450.0	450.0	450.0	450.0	450.1	450.2	450.3	450.4	450.5	451.0
165°	459.3	459.2	459.1	459.1	459.0	459.0	459.0	459.0	459.0	459.0	459.6
167.5°	467.3	467.0	466.7	466.5	466.2	466.0	466.0	466.0	466.0	466.0	466.6
170°	471.4	471.2	470.9	470.6	470.4	470.2	470.1	470.0	469.9	469.8	470.5
172.5°	474.4	474.1	473.9	473.6	473.3	473.1	473.1	473.0	472.9	472.8	473.4
175°	478.0	477.7	477.4	477.2	476.9	476.6	476.4	476.3	476.1	475.9	476.5
177.5°	479.4	479.2	478.9	478.8	478.5	478.3	478.2	478.0	477.9	477.8	478.2
180°	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	458.1	458.6	459.2	459.4	459.1	459.0	458.7	458.4
5°	456.6	457.5	458.4	458.8	458.6	458.5	458.3	458.2
7.5°	454.4	455.5	456.6	457.0	456.9	456.7	456.6	456.5
10°	452.5	453.7	455.0	455.5	455.3	455.1	455.0	454.9
12.5°	449.3	450.6	451.7	452.3	452.1	451.9	451.8	451.7
15°	443.5	444.9	446.2	446.7	446.7	446.5	446.3	446.2
17.5°	436.0	437.5	438.8	439.5	439.5	439.5	439.5	439.5
20°	430.2	431.8	433.4	434.2	434.2	434.2	434.2	434.2
22.5°	423.7	425.3	427.0	427.9	428.2	428.4	428.6	428.9
25°	413.8	415.5	417.3	418.5	418.9	419.4	419.8	420.3
27.5°	402.8	405.0	407.2	408.5	408.8	409.2	409.5	409.8
30°	395.0	397.3	399.8	401.1	401.5	402.0	402.4	402.9
32.5°	386.6	389.3	392.1	393.9	394.7	395.5	396.3	397.1
35°	374.8	378.1	381.3	383.4	384.5	385.5	386.6	387.6
37.5°	362.6	366.2	369.8	372.1	373.3	374.3	375.4	376.6
40°	354.0	357.8	361.7	364.3	365.6	366.9	368.3	369.6
42.5°	345.6	349.8	354.0	356.9	358.1	359.4	360.8	362.1
45°	332.9	337.4	342.0	345.0	346.5	348.0	349.5	351.0
47.5°	319.5	324.3	329.1	332.3	333.9	335.6	337.2	338.9
50°	310.4	315.4	320.5	323.8	325.5	327.1	328.7	330.3
52.5°	300.5	305.7	310.9	314.2	316.0	317.8	319.5	321.3
55°	285.7	291.1	296.3	300.0	301.9	303.8	305.8	307.6
57.5°	270.0	275.7	281.5	285.3	287.3	289.3	291.2	293.2
60°	259.7	265.3	270.9	274.7	276.8	278.9	281.0	283.0
62.5°	248.6	254.6	260.6	264.6	266.5	268.5	270.5	272.4
65°	231.9	238.0	244.1	248.1	249.9	251.9	253.8	255.7
67.5°	215.0	221.1	227.2	231.3	233.3	235.3	237.4	239.3
70°	203.2	209.6	215.9	220.0	221.8	223.6	225.3	227.1
72.5°	191.8	198.0	204.3	208.5	210.5	212.7	214.8	217.0
75°	174.6	180.9	187.3	191.5	193.3	195.3	197.2	199.1
77.5°	157.7	164.1	170.4	174.6	176.6	178.7	180.8	182.9
80°	146.3	152.5	158.7	162.8	165.0	167.0	169.1	171.1
82.5°	135.6	141.9	148.0	152.1	154.1	156.0	158.0	160.0
85°	120.3	126.5	132.8	136.9	138.9	141.1	143.1	145.2
87.5°	110.2	116.2	122.2	126.2	128.0	130.0	131.9	133.8
90°	113.5	119.3	125.0	128.9	130.6	132.5	134.4	136.3
92.5°	107.6	113.5	119.3	123.1	124.9	126.7	128.5	130.3
95°	113.7	119.3	124.9	128.6	130.1	131.7	133.3	134.9
97.5°	125.3	130.7	136.3	139.8	141.6	143.3	145.0	146.8
100°	133.3	138.8	144.3	147.8	149.3	150.9	152.4	153.9
102.5°	142.8	148.1	153.6	157.0	158.6	160.2	161.7	163.2
105°	156.9	162.2	167.6	171.1	172.7	174.3	175.9	177.6
107.5°	172.6	177.7	182.8	185.9	187.1	188.3	189.6	190.7
110°	183.7	188.5	193.2	196.3	197.6	198.9	200.4	201.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	194.7	199.3	203.8	206.8	208.2	209.6	211.1	212.5
115°	211.9	216.2	220.6	223.5	224.8	226.1	227.5	228.9
117.5°	228.2	232.4	236.5	239.2	240.5	241.7	242.9	244.2
120°	239.2	243.3	247.4	250.2	251.6	252.9	254.3	255.7
122.5°	250.8	254.6	258.4	260.9	262.2	263.3	264.5	265.7
125°	267.6	271.3	275.1	277.6	278.8	280.1	281.3	282.6
127.5°	283.9	287.2	290.6	292.7	293.8	294.8	295.9	296.9
130°	295.3	298.6	302.0	304.2	305.0	305.8	306.7	307.5
132.5°	306.3	309.3	312.4	314.3	315.2	316.1	317.0	317.9
135°	322.8	325.8	328.9	330.8	331.7	332.7	333.6	334.5
137.5°	338.6	341.3	343.9	345.5	346.2	346.9	347.5	348.1
140°	349.5	351.9	354.2	355.6	356.1	356.7	357.2	357.8
142.5°	359.9	361.9	363.8	365.0	365.4	365.8	366.2	366.7
145°	376.5	377.5	378.4	379.1	379.5	379.9	380.2	380.6
147.5°	391.5	391.8	392.1	392.3	392.3	392.3	392.3	392.4
150°	401.7	402.0	402.3	402.3	402.0	401.7	401.4	401.2
152.5°	412.1	412.5	412.9	412.9	412.5	412.1	411.9	411.5
155°	425.5	426.0	426.4	426.5	426.2	426.0	425.7	425.4
157.5°	437.7	438.4	439.0	439.1	438.6	438.2	437.8	437.4
160°	445.1	445.6	446.1	446.2	445.9	445.5	445.1	444.8
162.5°	451.7	452.3	452.9	453.0	452.5	452.1	451.7	451.3
165°	460.2	460.8	461.5	461.5	461.1	460.7	460.2	459.8
167.5°	467.3	467.9	468.5	468.6	468.1	467.6	467.2	466.7
170°	471.1	471.7	472.3	472.4	471.9	471.4	470.8	470.3
172.5°	474.0	474.7	475.3	475.3	474.7	474.2	473.7	473.1
175°	477.2	477.8	478.4	478.5	478.0	477.4	476.9	476.4
177.5°	478.7	479.0	479.5	479.5	479.0	478.7	478.2	477.8
180°	478.8	478.8	478.8	478.8	478.8	478.8	478.8	478.8

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