

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: P331243-930

Luminaire Tested: **SA2XXDIP-C290D330U930-4F0-1E-UDD-D**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331243-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C290D330U930-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

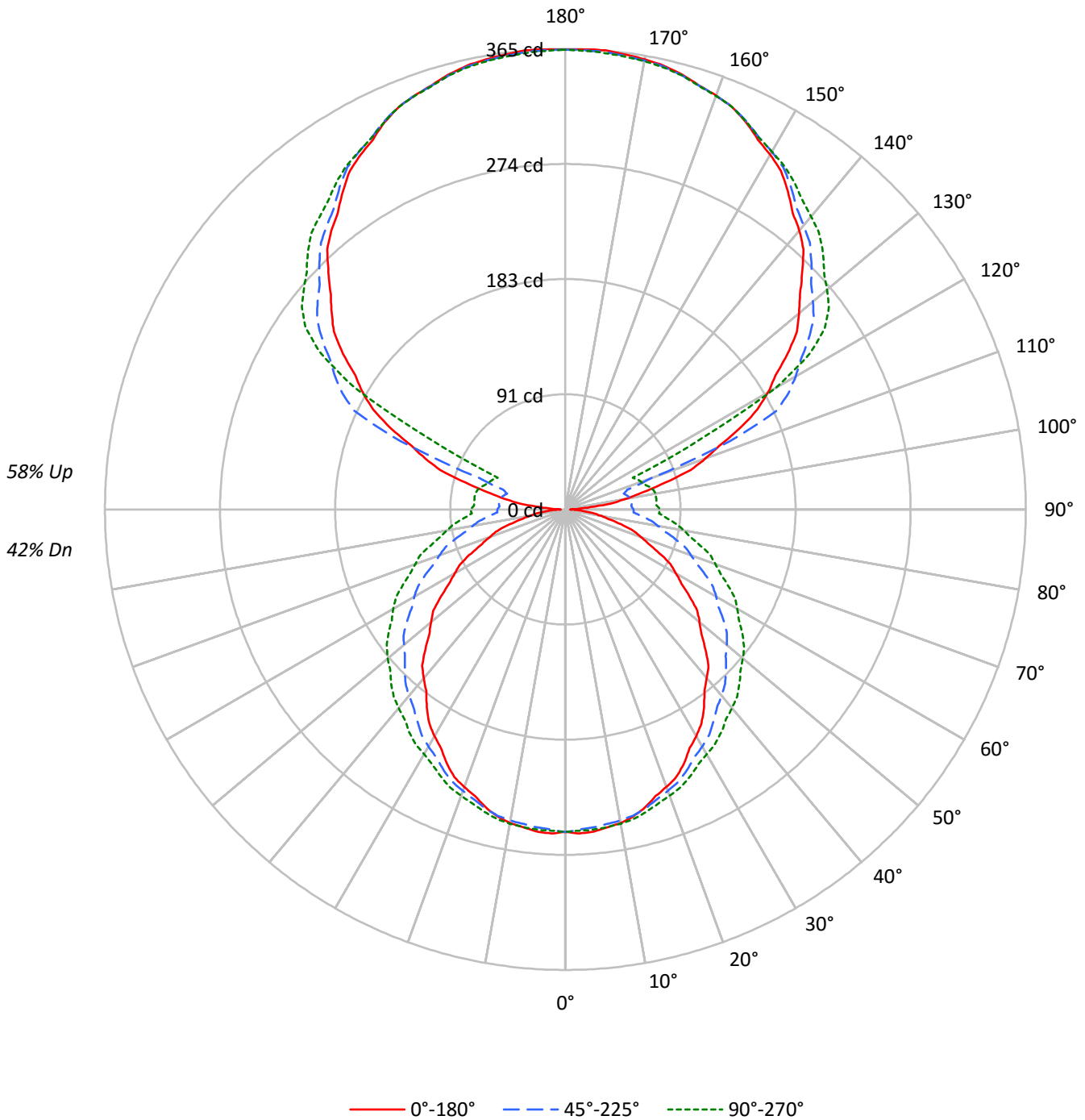
Lumens per Lamp: N/A  
Luminaire Lumens: 2043.5 lumens  
Efficiency: N/A  
Efficacy: 100.7 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

Input Watts (W): 20.3  
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: P331243-930  
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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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	49	49	49	42				
1	95	90	86	82	86	82	78	75	67	65	62	54	52	50	41	40	39	33				
2	86	78	71	66	78	71	65	61	58	54	50	47	44	41	36	34	32	27				
3	78	68	60	54	71	62	55	50	51	46	42	41	37	34	31	29	27	22				
4	71	60	52	45	64	55	47	42	45	40	35	36	32	29	28	25	22	19				
5	65	53	45	39	59	49	41	36	40	34	30	32	28	25	25	22	19	16				
6	60	47	39	33	54	43	36	31	36	30	26	29	25	21	22	19	17	14				
7	55	43	35	29	50	39	32	27	32	27	23	26	22	19	20	17	15	12				
8	51	39	31	25	46	35	28	24	30	24	20	24	20	17	19	16	13	11				
9	48	35	28	22	43	32	26	21	27	22	18	22	18	15	17	14	12	10				
10	44	32	25	20	40	30	23	19	25	20	16	20	16	13	16	13	11	9				

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

	0°	45°	90°
0°	4127	4127	4127
5°	4146	3973	3957
10°	4121	3855	3812
15°	4063	3730	3659
20°	3992	3597	3511
25°	3922	3468	3376
30°	3821	3336	3241
35°	3720	3209	3148
40°	3615	3101	3051
45°	3512	3004	2971
50°	3404	2917	2891
55°	3289	2822	2810
60°	3151	2723	2724
65°	3006	2608	2622
70°	2844	2485	2512
75°	2639	2365	2410
80°	2312	2240	2305
85°	2005	2134	2226



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	24.2	1.2
10°-20°	69.4	3.4
20°-30°	105.2	5.1
30°-40°	128.2	6.3
40°-50°	137.9	6.7
50°-60°	133.9	6.6
60°-70°	116.9	5.7
70°-80°	90.0	4.4
80°-90°	61.3	3.0
90°-100°	53.8	2.6
100°-110°	74.9	3.7
110°-120°	139.2	6.8
120°-130°	207.8	10.2
130°-140°	213.8	10.5
140°-150°	195.2	9.6
150°-160°	156.3	7.6
160°-170°	100.7	4.9
170°-180°	34.7	1.7
0°-30°	198.9	9.7
0°-40°	327.1	16.0
0°-60°	598.8	29.3
0°-90°	867.1	42.4
90°-120°	267.9	13.1
90°-150°	884.8	43.3
90°-180°	1176.0	57.5
0°-180°	2043.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	256	256	256	256	256	
5°	256	255	253	255	255	24
15°	244	245	245	248	248	69
25°	222	225	228	232	234	102
35°	192	198	205	213	216	120
45°	157	167	180	191	195	121
55°	120	134	153	166	171	108
65°	82	101	122	137	142	82
75°	46	66	90	105	111	48
85°	13	36	60	75	81	14
90°	4	28	54	70	75	3
95°	20	30	53	68	72	23
105°	82	97	48	63	69	88
115°	153	162	185	79	59	151
125°	215	219	235	247	251	192
135°	266	270	276	286	289	205
145°	308	308	312	316	316	192
155°	339	337	340	341	339	156
165°	357	356	356	358	356	101
175°	365	363	364	365	363	35
180°	364	364	364	364	364	



TEST NUMBER: P331243-930

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	257.1	256.8	256.7	256.4	256.2	255.9	255.4	255.0	254.5	254.0	254.4
5°	256.3	256.1	255.8	255.6	255.3	254.9	254.5	254.0	253.5	253.0	253.5
7.5°	254.0	253.8	253.6	253.5	253.3	253.1	252.7	252.3	251.9	251.5	252.2
10°	252.3	252.1	251.9	251.8	251.6	251.4	251.1	250.9	250.6	250.4	251.0
12.5°	249.2	249.3	249.3	249.4	249.4	249.3	249.2	249.0	248.7	248.6	249.2
15°	244.4	244.6	244.8	244.9	245.1	245.2	245.2	245.2	245.2	245.2	245.9
17.5°	238.2	238.6	238.9	239.3	239.6	239.9	240.2	240.4	240.7	241.0	241.7
20°	234.1	234.5	234.9	235.3	235.7	236.1	236.4	236.8	237.1	237.4	238.3
22.5°	229.7	230.1	230.6	231.1	231.5	232.0	232.4	232.9	233.4	233.8	234.7
25°	222.3	222.8	223.4	224.0	224.5	225.2	225.9	226.7	227.4	228.1	229.1
27.5°	213.4	214.3	215.2	216.1	217.1	218.0	218.8	219.7	220.6	221.5	222.7
30°	207.4	208.5	209.5	210.6	211.7	212.8	213.9	214.9	216.0	217.0	218.3
32.5°	200.9	202.1	203.3	204.5	205.7	206.9	208.2	209.5	210.8	212.0	213.5
35°	191.5	192.9	194.3	195.7	197.1	198.5	200.2	201.7	203.3	204.8	206.6
37.5°	181.2	182.9	184.5	186.1	187.7	189.6	191.6	193.6	195.6	197.6	199.7
40°	174.5	176.3	178.1	179.9	181.6	183.7	185.9	188.2	190.4	192.6	194.7
42.5°	168.0	169.7	171.5	173.3	175.2	177.3	179.9	182.5	185.0	187.5	189.9
45°	157.0	159.2	161.5	163.7	165.9	168.4	171.4	174.2	177.1	180.0	182.5
47.5°	146.3	148.7	151.2	153.5	156.0	158.9	162.2	165.6	169.0	172.4	175.0
50°	138.9	141.5	144.0	146.5	149.1	152.2	156.0	159.6	163.3	167.1	169.8
52.5°	131.8	134.4	137.1	139.8	142.5	145.8	149.7	153.6	157.5	161.4	164.3
55°	120.3	123.4	126.3	129.2	132.2	135.8	140.1	144.4	148.7	153.0	156.0
57.5°	109.1	112.4	115.8	119.1	122.5	126.3	130.7	135.0	139.4	143.8	147.0
60°	101.1	104.7	108.2	111.7	115.3	119.4	124.1	128.7	133.5	138.1	141.3
62.5°	94.0	97.7	101.3	105.0	108.7	112.8	117.6	122.2	126.9	131.7	134.9
65°	82.2	86.3	90.3	94.3	98.3	102.8	107.6	112.5	117.4	122.2	125.6
67.5°	71.4	75.7	79.8	84.1	88.3	92.9	97.8	102.8	107.8	112.8	116.2
70°	63.7	68.0	72.2	76.6	80.8	85.5	90.6	95.7	100.9	105.9	109.5
72.5°	56.6	61.0	65.4	69.8	74.3	79.0	84.2	89.4	94.6	99.7	103.2
75°	45.6	50.1	54.8	59.4	64.0	68.9	74.2	79.5	84.7	90.0	93.5
77.5°	34.9	39.7	44.5	49.3	54.2	59.3	64.7	70.0	75.3	80.6	84.2
80°	27.8	32.8	37.8	42.8	47.9	53.1	58.4	63.8	69.1	74.4	77.9
82.5°	21.9	26.8	31.8	36.7	41.7	46.9	52.3	57.7	63.1	68.5	72.0
85°	13.4	18.4	23.6	28.6	33.8	38.9	44.2	49.5	54.7	60.0	63.4
87.5°	7.3	12.3	17.4	22.4	27.5	32.6	38.0	43.4	48.8	54.1	57.5
90°	4.0	9.4	14.8	20.2	25.6	31.2	36.9	42.7	48.4	54.1	57.7
92.5°	8.7	13.1	17.5	21.9	26.3	31.1	36.4	41.7	47.0	52.3	55.7
95°	20.1	22.0	24.0	25.9	27.8	31.5	36.9	42.2	47.5	52.9	56.3
97.5°	36.6	34.6	32.6	30.6	28.5	30.4	36.1	41.8	47.5	53.2	56.4
100°	49.2	44.3	39.3	34.3	29.4	29.7	35.2	40.8	46.5	52.1	55.6
102.5°	62.9	63.9	65.1	66.1	67.2	65.8	62.0	58.1	54.3	50.4	54.0
105°	82.0	86.1	90.3	94.4	98.6	94.8	83.1	71.3	59.7	47.9	51.4
107.5°	104.2	107.5	110.9	114.2	117.5	111.6	96.5	81.4	66.4	51.4	53.4
110°	118.3	121.2	124.0	126.9	129.8	124.7	111.9	99.0	86.1	73.1	70.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	131.8	134.2	136.7	139.2	141.6	142.7	142.4	142.0	141.7	141.3	122.6
115°	153.0	155.0	156.9	158.7	160.7	164.2	169.3	174.6	179.7	184.9	160.2
117.5°	171.7	173.4	175.1	176.8	178.6	181.6	186.1	190.5	194.9	199.3	195.2
120°	185.6	186.9	188.1	189.2	190.5	193.2	197.6	201.9	206.3	210.7	213.6
122.5°	197.5	198.5	199.6	200.6	201.7	204.3	208.6	212.8	217.0	221.3	224.0
125°	215.1	215.8	216.5	217.4	218.1	220.4	224.1	227.9	231.6	235.4	238.0
127.5°	231.4	232.1	232.8	233.7	234.4	236.3	239.2	242.1	245.1	248.1	250.7
130°	241.7	242.6	243.4	244.3	245.1	246.7	249.1	251.4	253.8	256.2	258.9
132.5°	252.3	252.9	253.6	254.4	255.1	256.4	258.4	260.4	262.4	264.3	266.8
135°	265.5	266.5	267.4	268.4	269.3	270.4	271.8	273.1	274.5	275.8	278.2
137.5°	279.4	280.1	280.7	281.4	282.0	282.7	283.7	284.7	285.7	286.7	288.7
140°	288.5	288.9	289.3	289.7	290.0	290.7	291.5	292.3	293.1	293.9	295.7
142.5°	296.1	296.4	296.8	297.1	297.4	298.0	298.8	299.5	300.3	301.1	302.6
145°	307.6	307.6	307.5	307.4	307.4	307.9	308.8	309.9	310.9	311.9	312.7
147.5°	318.0	317.8	317.6	317.3	317.2	317.5	318.5	319.5	320.5	321.5	321.8
150°	324.7	324.3	323.9	323.5	323.1	323.4	324.3	325.3	326.2	327.2	327.5
152.5°	330.4	330.0	329.5	329.1	328.6	328.8	329.7	330.6	331.5	332.4	332.7
155°	338.8	338.2	337.7	337.1	336.6	336.7	337.5	338.1	338.8	339.5	339.9
157.5°	345.2	344.8	344.3	343.9	343.4	343.5	344.0	344.5	345.0	345.4	345.8
160°	349.0	348.7	348.3	348.0	347.6	347.6	348.0	348.3	348.7	349.0	349.4
162.5°	352.4	352.0	351.7	351.3	351.0	351.0	351.2	351.6	351.9	352.2	352.6
165°	356.9	356.6	356.2	355.9	355.6	355.5	355.6	355.8	356.0	356.1	356.5
167.5°	360.3	360.0	359.6	359.2	358.9	358.8	359.0	359.1	359.3	359.5	359.9
170°	362.2	361.8	361.5	361.2	360.8	360.7	360.8	360.9	361.0	361.2	361.6
172.5°	363.5	363.1	362.7	362.4	362.1	361.9	362.1	362.2	362.3	362.4	362.8
175°	365.1	364.7	364.3	363.9	363.5	363.3	363.5	363.5	363.7	363.8	364.2
177.5°	365.3	365.0	364.7	364.4	364.0	363.9	363.9	364.0	364.0	364.1	364.4
180°	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	255.6	255.6	255.6	255.6	255.6	255.6	255.6	255.6
2.5°	254.7	255.0	255.4	255.5	255.4	255.2	255.1	254.9
5°	254.0	254.5	254.9	255.1	255.0	254.9	254.9	254.8
7.5°	252.7	253.3	254.0	254.2	254.1	254.0	254.0	253.9
10°	251.7	252.3	253.0	253.3	253.2	253.2	253.1	253.0
12.5°	249.9	250.5	251.2	251.5	251.4	251.4	251.3	251.2
15°	246.6	247.4	248.2	248.5	248.4	248.3	248.3	248.2
17.5°	242.6	243.3	244.0	244.4	244.4	244.4	244.4	244.4
20°	239.2	240.1	241.0	241.5	241.5	241.5	241.5	241.5
22.5°	235.7	236.6	237.5	238.0	238.1	238.2	238.4	238.6
25°	230.2	231.1	232.1	232.7	232.9	233.2	233.4	233.7
27.5°	224.0	225.3	226.5	227.2	227.4	227.6	227.7	228.0
30°	219.6	221.0	222.3	223.1	223.3	223.6	223.8	224.0
32.5°	215.0	216.5	218.1	219.1	219.5	220.0	220.4	220.8
35°	208.5	210.3	212.1	213.3	213.9	214.4	215.0	215.6
37.5°	201.6	203.7	205.7	207.0	207.6	208.2	208.8	209.4
40°	196.9	199.0	201.1	202.6	203.3	204.1	204.8	205.5
42.5°	192.2	194.5	196.9	198.4	199.2	199.9	200.6	201.4
45°	185.1	187.7	190.2	191.9	192.7	193.6	194.4	195.2
47.5°	177.7	180.3	183.0	184.8	185.7	186.6	187.5	188.4
50°	172.6	175.5	178.2	180.1	181.0	181.9	182.8	183.7
52.5°	167.1	170.0	172.8	174.8	175.8	176.8	177.7	178.6
55°	158.9	161.8	164.9	166.8	167.9	169.0	170.1	171.1
57.5°	150.2	153.4	156.5	158.7	159.8	160.9	161.9	163.1
60°	144.4	147.6	150.7	152.8	153.9	155.1	156.3	157.4
62.5°	138.3	141.6	145.0	147.2	148.2	149.3	150.4	151.5
65°	129.0	132.3	135.7	137.9	139.0	140.1	141.1	142.2
67.5°	119.5	122.9	126.4	128.7	129.7	130.9	132.0	133.1
70°	113.0	116.5	120.1	122.4	123.4	124.3	125.3	126.3
72.5°	106.6	110.1	113.6	115.9	117.1	118.3	119.5	120.7
75°	97.1	100.6	104.2	106.5	107.5	108.6	109.7	110.7
77.5°	87.7	91.2	94.7	97.1	98.2	99.4	100.5	101.7
80°	81.4	84.8	88.3	90.6	91.7	92.9	94.0	95.1
82.5°	75.4	78.9	82.3	84.6	85.7	86.8	87.9	88.9
85°	66.9	70.4	73.9	76.1	77.3	78.4	79.6	80.7
87.5°	60.9	64.3	67.8	70.0	71.1	72.2	73.2	74.3
90°	61.3	64.9	68.5	70.8	72.0	73.1	74.2	75.3
92.5°	59.1	62.5	65.9	68.1	69.1	70.2	71.3	72.3
95°	59.7	63.1	66.5	68.7	69.6	70.6	71.5	72.5
97.5°	59.8	63.0	66.3	68.5	69.5	70.5	71.6	72.6
100°	59.1	62.6	66.1	68.4	69.4	70.4	71.4	72.5
102.5°	57.6	61.1	64.7	67.1	68.2	69.2	70.3	71.3
105°	55.0	58.5	62.0	64.3	65.5	66.6	67.8	68.9
107.5°	55.5	57.6	59.8	61.4	62.5	63.7	64.8	66.0
110°	66.7	63.5	60.3	59.2	60.3	61.5	62.6	63.8





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	103.9	85.1	66.4	57.6	58.6	59.8	60.8	62.0
115°	135.6	110.9	86.3	72.2	69.0	65.6	62.4	59.0
117.5°	191.1	186.9	182.9	174.2	161.3	148.2	135.2	122.2
120°	216.6	219.6	222.7	220.7	213.7	206.7	199.7	192.7
122.5°	226.7	229.3	232.0	232.8	232.1	231.4	230.6	229.8
125°	240.6	243.2	245.9	247.6	248.6	249.5	250.4	251.3
127.5°	253.3	256.0	258.6	260.3	261.1	261.9	262.6	263.3
130°	261.5	264.1	266.7	268.3	268.9	269.5	270.1	270.7
132.5°	269.3	271.7	274.2	275.7	276.3	276.9	277.5	278.1
135°	280.5	282.8	285.1	286.6	287.1	287.6	288.1	288.7
137.5°	290.8	292.9	295.0	296.2	296.5	296.9	297.3	297.7
140°	297.6	299.4	301.3	302.3	302.5	302.6	302.9	303.0
142.5°	304.2	305.7	307.2	308.0	308.2	308.3	308.4	308.6
145°	313.6	314.5	315.4	316.0	316.1	316.3	316.3	316.4
147.5°	322.2	322.5	322.9	323.1	323.0	323.0	322.9	322.9
150°	327.8	328.2	328.6	328.6	328.3	328.0	327.7	327.4
152.5°	333.1	333.5	333.8	333.8	333.4	333.0	332.6	332.2
155°	340.2	340.6	341.0	340.9	340.4	340.0	339.5	339.0
157.5°	346.3	346.7	347.0	347.0	346.5	346.1	345.6	345.2
160°	349.8	350.1	350.4	350.4	350.0	349.6	349.2	348.8
162.5°	352.9	353.4	353.8	353.8	353.2	352.7	352.2	351.7
165°	356.9	357.3	357.8	357.8	357.3	356.9	356.5	356.1
167.5°	360.3	360.7	361.1	361.0	360.5	360.0	359.5	358.9
170°	362.0	362.4	362.8	362.7	362.2	361.7	361.2	360.6
172.5°	363.2	363.6	364.0	364.0	363.5	363.0	362.4	361.9
175°	364.6	365.0	365.4	365.3	364.8	364.2	363.5	363.0
177.5°	364.8	365.1	365.4	365.3	364.9	364.5	364.1	363.7
180°	364.3	364.3	364.3	364.3	364.3	364.3	364.3	364.3

(END OF REPORT)