

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: P331247-935

Luminaire Tested: **SA2XXDIP-C290D330U935-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331247-935  
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: SA2XXDIP-C290D330U935-4F0-1E-UDD-F1  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 330 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

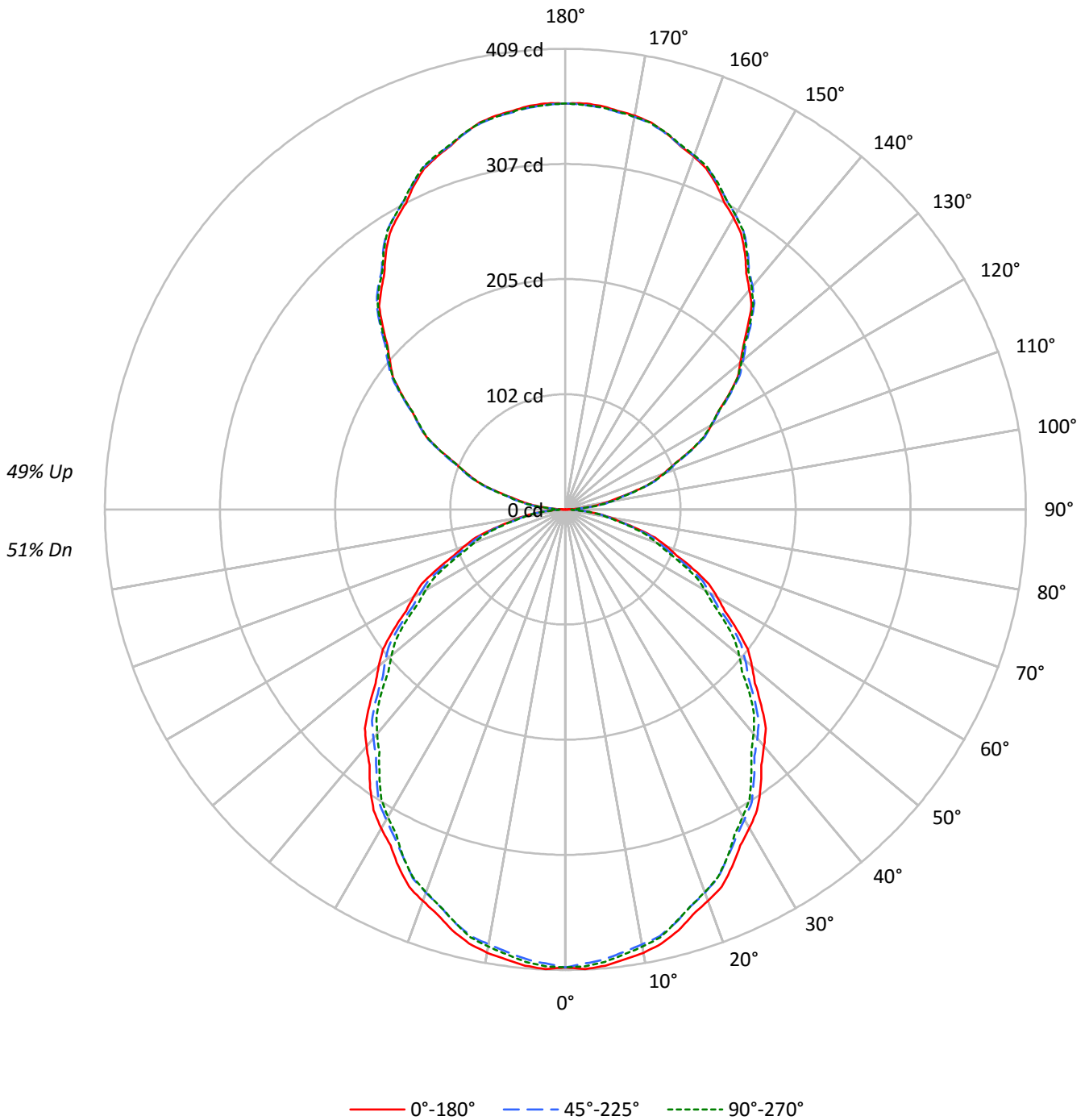
Lumens per Lamp: N/A  
Luminaire Lumens: 2044.2 lumens  
Efficiency: N/A  
Efficacy: 100.7 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: General Diffuse

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



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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	70	70	70	57	57	57	51				
1	98	94	90	86	90	87	83	80	73	71	69	61	60	58	50	49	48	43				
2	89	82	76	70	82	76	70	66	64	60	57	54	51	48	44	42	40	36				
3	81	72	64	59	75	67	60	55	57	52	48	48	44	41	39	37	34	30				
4	74	64	56	50	68	59	52	47	50	45	41	42	38	35	35	32	30	26				
5	68	57	49	43	63	53	45	40	45	39	35	38	34	30	32	28	26	23				
6	63	51	43	37	58	47	40	35	41	35	31	34	30	27	29	25	23	20				
7	58	46	38	32	54	43	36	31	37	31	27	31	27	24	26	23	20	18				
8	54	42	34	29	50	39	32	27	34	28	24	29	24	21	24	21	18	16				
9	50	38	31	25	46	36	29	24	31	25	22	26	22	19	22	19	16	14				
10	47	35	28	23	43	33	26	22	28	23	19	24	20	17	21	17	15	13				

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

	0°	45°	90°
0°	6567	6567	6567
5°	6592	6498	6536
10°	6555	6432	6465
15°	6472	6349	6342
20°	6357	6223	6216
25°	6242	6070	6070
30°	6096	5929	5876
35°	5960	5757	5673
40°	5788	5590	5482
45°	5617	5421	5286
50°	5433	5247	5061
55°	5239	5044	4856
60°	5028	4799	4624
65°	4795	4558	4348
70°	4504	4263	4060
75°	4099	3924	3830
80°	3636	3533	3347
85°	2964	2816	2538



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.3	1.9
10°-20°	107.6	5.3
20°-30°	158.2	7.7
30°-40°	183.8	9.0
40°-50°	183.6	9.0
50°-60°	160.1	7.8
60°-70°	118.4	5.8
70°-80°	67.0	3.3
80°-90°	19.5	1.0
90°-100°	22.8	1.1
100°-110°	70.9	3.5
110°-120°	121.3	5.9
120°-130°	159.5	7.8
130°-140°	179.0	8.8
140°-150°	175.5	8.6
150°-160°	147.2	7.2
160°-170°	97.6	4.8
170°-180°	34.1	1.7
0°-30°	304.1	14.9
0°-40°	487.8	23.9
0°-60°	831.5	40.7
0°-90°	1036.3	50.7
90°-120°	215.0	10.5
90°-150°	729.0	35.7
90°-180°	1008.0	49.3
0°-180°	2044.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	407	407	407	407	407	
5°	407	405	401	404	403	39
15°	387	385	380	381	379	109
25°	350	347	341	341	341	161
35°	302	298	292	290	288	189
45°	246	243	237	233	232	190
55°	186	184	179	175	172	166
65°	126	123	119	116	114	124
75°	66	65	63	61	61	70
85°	16	16	15	14	14	18
90°	0	4	11	10	10	2
95°	16	19	20	19	19	18
105°	65	66	67	68	68	69
115°	122	123	123	123	122	120
125°	177	180	179	178	178	158
135°	229	232	233	233	232	177
145°	278	280	282	282	281	174
155°	318	319	320	321	320	146
165°	346	346	346	347	346	98
175°	360	359	358	360	359	34
180°	360	360	360	360	360	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	408.6	408.3	407.9	407.6	407.3	406.7	406.0	405.2	404.4	403.6	404.3
5°	406.7	406.4	406.0	405.7	405.4	404.8	403.8	402.9	401.8	400.9	401.6
7.5°	403.2	402.6	402.1	401.6	401.1	400.3	399.3	398.3	397.4	396.4	397.1
10°	399.8	399.2	398.6	398.0	397.3	396.5	395.5	394.4	393.4	392.3	393.0
12.5°	395.0	394.5	394.0	393.4	392.9	392.1	391.1	390.0	389.0	388.0	388.4
15°	387.2	386.7	386.2	385.6	385.1	384.4	383.1	382.0	380.9	379.8	380.1
17.5°	377.2	376.7	376.2	375.7	375.1	374.3	373.2	372.0	370.8	369.7	370.1
20°	370.0	369.5	368.9	368.4	367.9	367.0	365.8	364.6	363.4	362.2	362.5
22.5°	362.8	362.1	361.4	360.6	359.9	359.0	357.8	356.6	355.5	354.4	354.4
25°	350.4	349.7	349.0	348.4	347.7	346.6	345.1	343.6	342.2	340.7	340.9
27.5°	336.4	335.8	335.1	334.5	333.9	332.9	331.8	330.6	329.5	328.3	328.0
30°	327.0	326.3	325.6	324.9	324.2	323.2	321.9	320.6	319.3	318.0	317.7
32.5°	316.9	316.4	315.9	315.3	314.8	313.7	312.4	311.1	309.7	308.3	307.8
35°	302.4	301.4	300.6	299.7	298.9	297.7	296.4	295.0	293.6	292.1	291.6
37.5°	285.9	285.1	284.3	283.5	282.8	281.7	280.3	279.0	277.5	276.1	275.5
40°	274.6	273.9	273.2	272.5	271.8	270.8	269.3	267.9	266.6	265.2	264.4
42.5°	263.6	262.9	262.3	261.6	260.9	259.8	258.4	257.0	255.6	254.3	253.4
45°	246.0	245.4	244.8	244.2	243.6	242.6	241.3	240.0	238.8	237.4	236.4
47.5°	228.5	227.9	227.4	226.8	226.2	225.2	223.9	222.6	221.2	219.8	218.8
50°	216.3	215.9	215.4	215.0	214.6	213.7	212.5	211.3	210.1	208.9	207.7
52.5°	204.4	203.8	203.3	202.7	202.1	201.2	200.1	199.0	197.8	196.7	195.6
55°	186.1	185.6	185.1	184.6	184.1	183.3	182.3	181.2	180.2	179.2	178.1
57.5°	167.9	167.5	167.0	166.6	166.2	165.4	164.3	163.2	162.0	160.8	159.8
60°	155.7	155.3	155.0	154.6	154.3	153.5	152.3	151.1	149.8	148.6	147.7
62.5°	143.8	143.2	142.7	142.2	141.5	140.8	139.8	139.0	138.0	137.1	136.1
65°	125.5	125.0	124.5	124.0	123.5	122.8	121.9	121.1	120.2	119.3	118.5
67.5°	107.0	106.6	106.2	105.7	105.4	104.8	103.9	103.1	102.4	101.6	101.0
70°	95.4	95.1	94.7	94.4	94.0	93.5	92.7	92.0	91.1	90.3	89.7
72.5°	83.5	83.2	82.8	82.5	82.1	81.7	81.2	80.8	80.2	79.7	79.1
75°	65.7	65.5	65.3	65.2	65.0	64.7	64.3	63.8	63.4	62.9	62.4
77.5°	49.8	49.4	49.2	48.9	48.6	48.3	48.1	48.0	47.8	47.6	47.4
80°	39.1	39.0	38.9	38.8	38.7	38.7	38.5	38.3	38.1	38.0	37.7
82.5°	29.1	29.1	29.1	29.0	29.0	28.9	28.8	28.8	28.7	28.6	28.2
85°	16.0	15.9	15.8	15.8	15.7	15.6	15.5	15.4	15.3	15.2	15.0
87.5°	5.7	5.7	5.8	5.8	5.8	5.9	6.0	6.2	6.4	6.5	6.3
90°	0.3	1.1	1.9	2.8	3.5	4.7	6.2	7.7	9.1	10.7	10.5
92.5°	5.4	6.0	6.6	7.2	7.8	8.3	8.6	9.0	9.3	9.6	9.7
95°	15.8	16.5	17.1	17.8	18.5	18.9	19.0	19.2	19.4	19.5	19.5
97.5°	28.9	29.5	30.0	30.7	31.3	31.7	31.9	32.2	32.5	32.7	32.7
100°	38.7	39.2	39.7	40.3	40.8	41.2	41.3	41.6	41.8	42.0	42.0
102.5°	48.8	49.2	49.7	50.1	50.5	51.0	51.1	51.4	51.7	51.9	52.0
105°	65.4	65.6	65.8	66.0	66.2	66.4	66.6	66.6	66.8	66.9	67.1
107.5°	82.1	82.4	82.7	83.0	83.3	83.4	83.4	83.4	83.4	83.4	83.4
110°	92.8	93.2	93.6	94.0	94.4	94.6	94.6	94.6	94.6	94.6	94.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	104.4	104.9	105.3	105.6	106.1	106.2	106.2	106.2	106.1	106.1	105.9
115°	121.7	122.1	122.5	122.9	123.3	123.5	123.3	123.1	123.0	122.9	122.9
117.5°	138.8	139.4	139.9	140.4	141.0	141.1	140.7	140.3	139.9	139.6	139.4
120°	150.2	150.8	151.4	151.9	152.4	152.4	151.9	151.4	150.8	150.2	150.2
122.5°	160.7	161.4	162.0	162.6	163.3	163.5	163.1	162.7	162.3	162.0	161.8
125°	177.0	177.6	178.2	178.8	179.4	179.7	179.4	179.3	179.1	178.8	178.7
127.5°	193.0	193.7	194.5	195.2	196.0	196.2	196.0	195.8	195.5	195.3	195.0
130°	202.9	203.8	204.7	205.5	206.4	206.8	206.6	206.6	206.4	206.2	206.1
132.5°	214.1	214.8	215.5	216.2	217.0	217.3	217.3	217.4	217.4	217.4	217.1
135°	229.0	229.8	230.6	231.3	232.0	232.5	232.6	232.7	232.9	233.0	232.9
137.5°	244.8	245.4	246.0	246.7	247.3	247.6	247.8	248.0	248.1	248.3	248.3
140°	254.3	254.9	255.5	256.1	256.8	257.2	257.5	257.9	258.2	258.6	258.6
142.5°	264.1	264.7	265.3	265.9	266.5	266.9	267.1	267.3	267.6	267.8	267.9
145°	278.0	278.5	279.0	279.5	279.9	280.3	280.8	281.2	281.5	282.0	282.1
147.5°	290.5	291.1	291.6	292.2	292.7	293.2	293.4	293.8	294.0	294.3	294.5
150°	299.0	299.5	299.8	300.2	300.7	301.0	301.3	301.5	301.8	302.0	302.3
152.5°	306.6	306.9	307.4	307.8	308.2	308.6	308.8	309.2	309.5	309.9	310.1
155°	317.9	318.1	318.3	318.5	318.7	318.9	319.1	319.3	319.5	319.7	320.0
157.5°	327.5	327.7	327.8	328.0	328.1	328.2	328.4	328.5	328.6	328.7	329.2
160°	333.4	333.6	333.6	333.8	333.9	334.1	334.1	334.2	334.2	334.3	334.7
162.5°	338.7	338.8	338.8	338.8	338.9	338.9	339.0	339.1	339.1	339.1	339.7
165°	345.9	345.8	345.7	345.7	345.6	345.5	345.5	345.5	345.5	345.5	346.0
167.5°	351.8	351.6	351.5	351.2	351.0	350.9	350.9	350.9	350.9	350.9	351.3
170°	355.0	354.8	354.6	354.4	354.2	354.0	354.0	353.9	353.9	353.8	354.2
172.5°	357.1	357.0	356.8	356.5	356.4	356.2	356.2	356.1	356.0	355.9	356.5
175°	359.9	359.6	359.5	359.2	359.0	358.9	358.8	358.6	358.4	358.3	358.8
177.5°	360.9	360.8	360.6	360.5	360.3	360.2	360.1	360.0	359.8	359.7	360.1
180°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	406.7	406.7	406.7	406.7	406.7	406.7	406.7	406.7
2.5°	405.0	405.7	406.4	406.7	406.6	406.4	406.3	406.1
5°	402.3	403.0	403.7	404.0	403.8	403.6	403.5	403.3
7.5°	397.8	398.5	399.2	399.4	399.2	399.0	398.8	398.6
10°	393.7	394.4	395.1	395.3	395.0	394.8	394.5	394.3
12.5°	388.9	389.3	389.9	390.0	389.9	389.6	389.4	389.3
15°	380.5	380.8	381.2	381.2	380.7	380.3	379.9	379.4
17.5°	370.5	370.9	371.3	371.3	370.8	370.5	370.1	369.6
20°	362.7	363.0	363.3	363.2	362.8	362.5	362.1	361.8
22.5°	354.5	354.6	354.6	354.5	354.3	354.0	353.9	353.7
25°	341.0	341.2	341.4	341.4	341.2	341.0	340.9	340.7
27.5°	327.8	327.5	327.3	326.9	326.5	326.1	325.7	325.3
30°	317.5	317.2	316.9	316.7	316.3	316.0	315.6	315.2
32.5°	307.4	306.9	306.4	306.0	305.7	305.3	305.0	304.6
35°	291.1	290.6	290.1	289.6	289.2	288.8	288.3	287.8
37.5°	274.8	274.2	273.5	273.0	272.6	272.2	271.8	271.4
40°	263.6	262.9	262.1	261.5	261.1	260.8	260.5	260.1
42.5°	252.5	251.7	250.8	250.1	249.7	249.2	248.7	248.2
45°	235.5	234.5	233.6	232.9	232.6	232.2	231.9	231.5
47.5°	217.8	216.8	215.8	215.0	214.6	214.0	213.5	213.0
50°	206.5	205.2	204.0	203.2	202.8	202.3	201.9	201.5
52.5°	194.7	193.6	192.6	191.8	191.2	190.7	190.1	189.5
55°	177.0	176.0	175.0	174.3	173.8	173.3	172.9	172.5
57.5°	158.8	157.7	156.7	156.0	155.8	155.4	155.1	154.7
60°	146.7	145.8	144.8	144.2	144.0	143.7	143.4	143.2
62.5°	135.3	134.4	133.5	132.9	132.6	132.2	131.9	131.6
65°	117.7	116.9	116.1	115.5	115.1	114.7	114.3	113.8
67.5°	100.4	99.8	99.2	98.7	98.3	98.0	97.6	97.3
70°	89.1	88.5	87.9	87.5	87.1	86.7	86.4	86.0
72.5°	78.5	77.9	77.3	76.8	76.5	76.3	76.0	75.7
75°	61.9	61.4	60.9	60.7	60.9	61.0	61.2	61.4
77.5°	47.1	46.8	46.6	46.3	46.1	45.9	45.6	45.4
80°	37.5	37.2	36.9	36.7	36.5	36.3	36.2	36.0
82.5°	27.9	27.6	27.2	27.0	27.0	26.9	26.9	26.9
85°	14.7	14.5	14.2	14.0	13.9	13.9	13.8	13.7
87.5°	6.0	5.8	5.6	5.4	5.3	5.3	5.3	5.2
90°	10.4	10.2	10.1	10.1	10.2	10.2	10.2	10.3
92.5°	9.7	9.7	9.8	9.8	9.8	9.8	9.8	9.8
95°	19.5	19.5	19.5	19.4	19.3	19.1	19.0	18.9
97.5°	32.7	32.7	32.7	32.7	32.7	32.7	32.7	32.6
100°	42.0	42.0	42.0	41.9	41.8	41.8	41.8	41.7
102.5°	52.1	52.1	52.2	52.2	52.1	52.0	52.0	51.9
105°	67.2	67.3	67.5	67.5	67.5	67.5	67.5	67.5
107.5°	83.5	83.6	83.6	83.5	83.2	82.9	82.6	82.2
110°	94.6	94.6	94.6	94.5	94.3	94.1	93.9	93.7





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	105.7	105.6	105.4	105.2	105.1	105.0	104.8	104.6
115°	122.8	122.7	122.6	122.5	122.3	122.1	121.9	121.7
117.5°	139.2	139.1	138.9	138.7	138.5	138.4	138.1	137.9
120°	150.2	150.2	150.2	150.2	150.0	149.7	149.6	149.4
122.5°	161.6	161.4	161.3	161.2	161.0	160.8	160.7	160.6
125°	178.5	178.2	178.1	177.9	177.9	177.8	177.7	177.6
127.5°	194.8	194.6	194.3	194.1	193.9	193.6	193.5	193.2
130°	206.0	205.9	205.7	205.5	205.3	204.9	204.7	204.4
132.5°	216.8	216.5	216.3	216.0	215.8	215.6	215.3	215.2
135°	232.9	232.8	232.7	232.6	232.4	232.2	232.0	231.8
137.5°	248.2	248.1	248.1	248.0	247.7	247.5	247.2	246.8
140°	258.6	258.6	258.6	258.4	258.1	257.9	257.6	257.4
142.5°	267.9	267.9	268.0	267.9	267.7	267.3	267.1	266.8
145°	282.1	282.1	282.2	282.1	281.9	281.6	281.4	281.0
147.5°	294.5	294.7	294.9	294.8	294.5	294.3	294.0	293.8
150°	302.5	302.6	302.9	302.9	302.6	302.5	302.3	302.0
152.5°	310.4	310.6	310.9	310.9	310.6	310.4	310.1	309.9
155°	320.4	320.7	321.1	321.2	320.9	320.7	320.6	320.3
157.5°	329.6	330.1	330.5	330.6	330.3	329.9	329.7	329.3
160°	335.1	335.5	336.0	336.0	335.7	335.4	335.2	334.9
162.5°	340.1	340.5	341.0	341.0	340.8	340.4	340.1	339.8
165°	346.5	347.0	347.4	347.5	347.2	346.8	346.5	346.2
167.5°	351.8	352.2	352.8	352.8	352.5	352.1	351.7	351.4
170°	354.7	355.2	355.7	355.7	355.3	354.9	354.5	354.0
172.5°	356.9	357.4	357.8	357.9	357.5	357.1	356.7	356.3
175°	359.3	359.7	360.2	360.2	359.9	359.5	359.0	358.6
177.5°	360.4	360.7	361.0	361.0	360.7	360.4	360.1	359.7
180°	360.5	360.5	360.5	360.5	360.5	360.5	360.5	360.5

(END OF REPORT)