

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: P332718-940

Luminaire Tested: **S124DIW-S350D470U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332718-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S350D470U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 470 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2735.9 lumens
Efficiency: N/A
Efficacy: 119.0 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

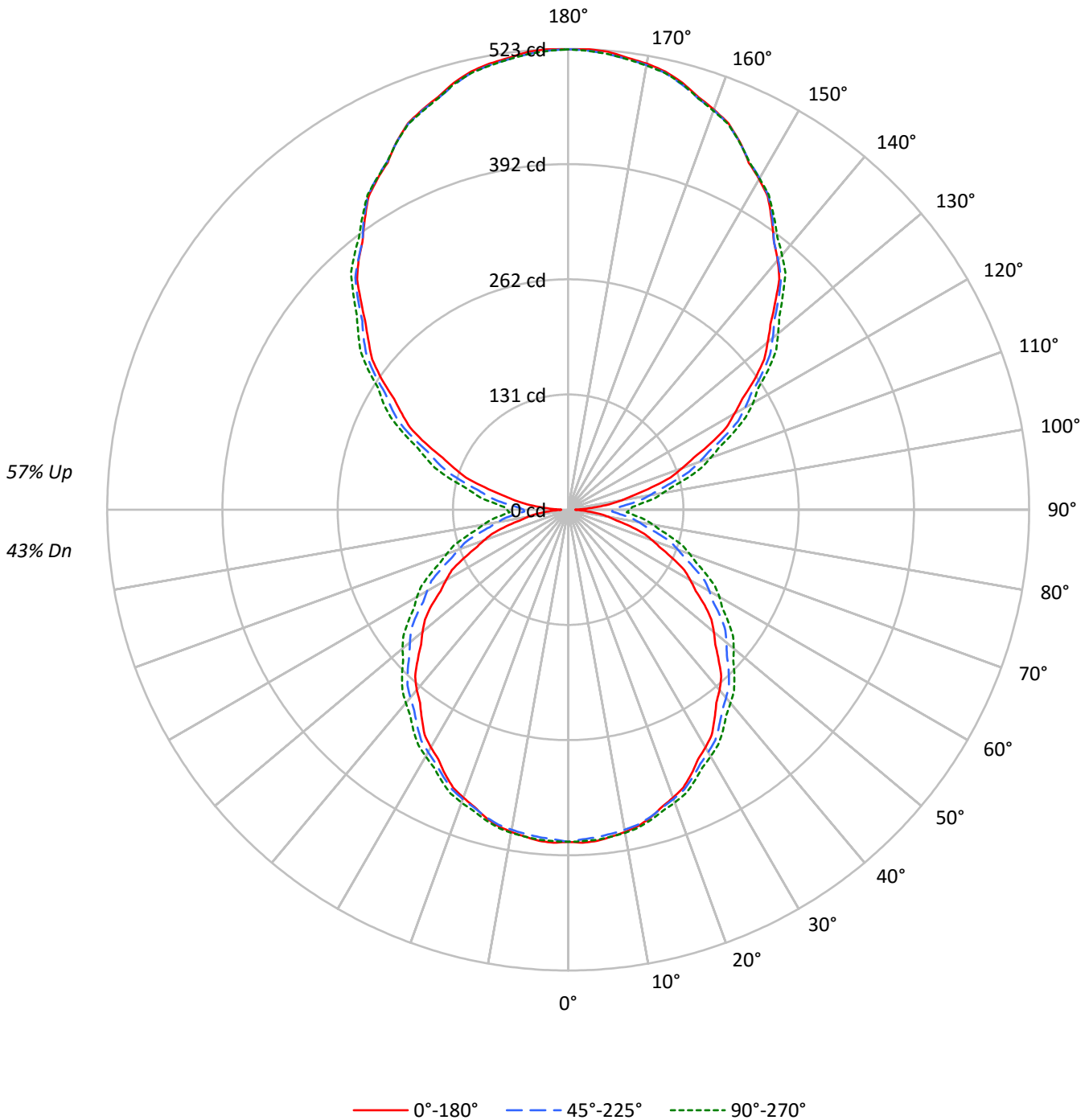
Input Watts (W): 23
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	0
RCR																		
0	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	43
1	95	91	87	83	87	83	79	76	69	66	64	55	53	52	43	42	41	35
2	87	79	72	67	79	72	66	62	59	55	52	48	45	42	37	35	33	28
3	79	69	61	55	71	63	56	51	52	47	43	42	38	35	33	30	28	24
4	72	61	53	46	65	56	49	43	46	41	36	37	33	30	29	26	24	20
5	66	54	46	39	60	49	42	37	41	35	31	33	29	26	26	23	21	17
6	60	48	40	34	55	44	37	32	37	31	27	30	26	22	23	20	18	15
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	21	18	16	13
8	52	39	31	26	47	36	29	24	30	25	21	25	21	18	20	16	14	12
9	48	36	28	23	44	33	26	22	28	22	19	23	19	16	18	15	13	11
10	45	33	25	21	41	30	24	19	25	20	17	21	17	14	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3043	3043	3043
5°	3053	2974	2982
10°	3033	2925	2923
15°	3006	2869	2854
20°	2965	2807	2785
25°	2919	2737	2710
30°	2869	2668	2634
35°	2812	2597	2566
40°	2768	2530	2497
45°	2700	2466	2436
50°	2643	2396	2373
55°	2585	2328	2298
60°	2493	2242	2231
65°	2392	2149	2146
70°	2271	2045	2049
75°	2101	1926	1961
80°	1913	1816	1875
85°	1676	1717	1825



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	35.7	1.3
10°-20°	102.3	3.7
20°-30°	154.6	5.7
30°-40°	187.1	6.8
40°-50°	197.8	7.2
50°-60°	186.2	6.8
60°-70°	154.4	5.6
70°-80°	108.5	4.0
80°-90°	62.9	2.3
90°-100°	70.9	2.6
100°-110°	129.0	4.7
110°-120°	191.4	7.0
120°-130°	238.7	8.7
130°-140°	261.0	9.5
140°-150°	253.0	9.2
150°-160°	212.1	7.8
160°-170°	141.1	5.2
170°-180°	49.4	1.8
0°-30°	292.6	10.7
0°-40°	479.7	17.5
0°-60°	863.6	31.6
0°-90°	1189.4	43.5
90°-120°	391.3	14.3
90°-150°	1143.9	41.8
90°-180°	1547.0	56.5
0°-180°	2735.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	377	377	377	377	377	
5°	377	376	373	376	376	36
15°	362	362	361	364	364	102
25°	331	333	335	339	340	152
35°	290	295	299	304	306	181
45°	241	249	257	264	267	187
55°	189	198	211	219	222	168
65°	131	144	159	169	173	130
75°	73	88	106	117	122	77
85°	22	40	59	71	76	24
90°	8	29	51	65	70	6
95°	30	47	67	80	84	31
105°	98	107	124	135	140	104
115°	179	183	195	204	207	176
125°	258	258	268	275	277	230
135°	332	334	337	343	344	257
145°	402	404	404	406	407	252
155°	461	461	460	462	460	212
165°	501	500	499	502	500	141
175°	522	520	519	522	519	49
180°	522	522	522	522	522	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	378.3	378.0	377.8	377.6	377.4	376.9	376.4	375.8	375.1	374.5	375.1
5°	377.4	377.0	376.7	376.5	376.2	375.8	375.1	374.4	373.8	373.1	373.9
7.5°	374.2	374.0	373.8	373.6	373.4	373.1	372.6	372.0	371.5	371.0	371.8
10°	371.4	371.3	371.2	371.1	371.0	370.8	370.3	369.8	369.3	368.9	369.7
12.5°	367.7	367.7	367.7	367.7	367.7	367.5	367.1	366.8	366.5	366.2	366.9
15°	361.7	361.9	361.9	362.0	362.1	362.0	361.7	361.4	361.1	360.9	361.7
17.5°	353.6	353.8	354.1	354.4	354.6	354.8	354.7	354.6	354.6	354.5	355.4
20°	347.8	348.0	348.4	348.7	348.9	349.1	349.2	349.3	349.4	349.5	350.4
22.5°	341.3	341.7	342.1	342.4	342.8	343.0	343.2	343.4	343.6	343.8	344.6
25°	330.9	331.4	332.1	332.6	333.1	333.6	333.9	334.1	334.4	334.7	335.7
27.5°	319.2	320.1	320.9	321.7	322.5	323.2	323.6	324.0	324.5	324.9	325.8
30°	311.5	312.3	313.0	313.7	314.5	315.2	315.8	316.5	317.2	317.8	318.9
32.5°	303.1	304.0	304.9	305.8	306.7	307.5	308.2	308.9	309.7	310.4	311.6
35°	289.5	290.7	291.8	292.9	294.1	295.1	296.0	296.9	297.9	298.8	300.1
37.5°	276.0	277.2	278.6	279.8	281.2	282.3	283.6	284.7	285.9	287.0	288.4
40°	267.2	268.4	269.7	270.8	272.1	273.3	274.6	276.0	277.2	278.6	280.0
42.5°	257.1	258.4	259.8	261.2	262.5	263.9	265.6	267.1	268.6	270.1	271.7
45°	241.4	243.2	245.0	246.7	248.5	250.3	252.1	253.9	255.7	257.4	259.0
47.5°	226.5	228.4	230.2	232.0	233.8	235.8	237.8	240.0	242.0	244.1	245.7
50°	215.7	217.8	219.8	221.9	223.9	226.0	228.1	230.2	232.2	234.3	236.1
52.5°	204.9	207.0	209.0	211.1	213.1	215.3	217.7	220.1	222.4	224.8	226.7
55°	189.1	191.1	193.1	195.0	197.0	199.4	202.2	205.0	207.8	210.6	212.5
57.5°	171.5	173.9	176.3	178.8	181.2	183.8	186.6	189.4	192.2	195.0	197.2
60°	160.0	162.4	164.9	167.3	169.7	172.5	175.6	178.7	181.7	184.9	187.0
62.5°	148.8	151.5	154.2	156.9	159.4	162.4	165.4	168.5	171.7	174.8	176.9
65°	130.8	133.8	136.9	139.8	142.9	146.0	149.1	152.3	155.5	158.7	161.0
67.5°	113.5	116.7	119.9	123.1	126.3	129.6	133.0	136.4	139.8	143.2	145.6
70°	101.7	104.9	108.1	111.3	114.5	117.9	121.5	125.0	128.6	132.2	134.6
72.5°	90.2	93.5	96.8	100.0	103.3	106.8	110.6	114.4	118.2	122.0	124.4
75°	72.6	76.1	79.5	83.0	86.5	90.2	94.2	98.1	102.0	105.9	108.6
77.5°	56.2	59.8	63.5	67.1	70.8	74.7	78.8	83.0	87.1	91.2	93.9
80°	46.0	49.8	53.5	57.2	61.0	64.9	69.1	73.2	77.3	81.5	84.3
82.5°	35.8	39.8	43.7	47.6	51.5	55.5	59.7	63.8	67.9	72.1	74.9
85°	22.4	26.3	30.2	34.2	38.2	42.2	46.5	50.6	54.8	59.1	61.9
87.5°	12.8	16.8	20.8	24.8	28.8	33.0	37.2	41.5	45.7	49.9	52.8
90°	7.9	12.7	17.5	22.2	26.9	31.7	36.4	41.2	45.9	50.6	53.9
92.5°	15.1	19.5	24.1	28.6	33.1	37.6	42.2	46.7	51.2	55.7	58.8
95°	29.7	33.6	37.5	41.5	45.4	49.5	54.0	58.5	63.0	67.4	70.3
97.5°	47.3	50.6	53.9	57.2	60.5	64.5	69.0	73.6	78.1	82.7	85.4
100°	61.2	64.0	66.8	69.6	72.4	76.1	80.5	85.0	89.4	93.9	96.6
102.5°	76.1	78.4	80.6	82.9	85.2	88.5	92.8	97.1	101.5	105.8	108.5
105°	97.9	99.9	101.9	103.9	105.8	108.7	112.5	116.4	120.2	124.0	126.6
107.5°	121.7	123.3	125.0	126.6	128.3	130.8	134.1	137.4	140.8	144.1	146.7
110°	137.5	139.0	140.5	142.0	143.5	145.9	149.0	152.2	155.4	158.6	160.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	154.0	155.2	156.4	157.6	158.8	160.9	163.8	166.8	169.8	172.7	174.8
115°	178.7	179.6	180.4	181.2	182.1	184.0	186.7	189.6	192.3	195.2	197.2
117.5°	202.4	203.0	203.6	204.1	204.7	206.3	209.0	211.7	214.4	217.0	218.6
120°	217.8	218.6	219.2	219.8	220.4	222.0	224.4	226.9	229.3	231.8	233.2
122.5°	234.3	234.6	234.8	235.0	235.1	236.5	239.0	241.4	243.8	246.3	247.8
125°	258.2	258.2	258.1	258.0	257.9	259.0	261.3	263.5	265.7	268.0	269.6
127.5°	280.3	280.4	280.6	280.8	281.0	281.9	283.6	285.2	286.9	288.5	290.0
130°	295.4	295.6	295.8	296.0	296.1	296.9	298.5	300.0	301.5	303.0	304.5
132.5°	311.3	311.4	311.5	311.6	311.7	312.3	313.4	314.6	315.7	316.8	318.3
135°	331.8	332.3	332.9	333.4	333.9	334.6	335.2	335.8	336.5	337.2	338.5
137.5°	354.5	354.7	354.9	355.1	355.2	355.5	356.0	356.4	356.9	357.4	358.5
140°	369.8	369.9	370.0	370.1	370.1	370.1	370.3	370.4	370.5	370.6	371.7
142.5°	383.3	383.5	383.6	383.8	384.0	384.0	383.9	383.7	383.6	383.4	384.5
145°	402.4	402.7	403.0	403.2	403.5	403.7	403.8	403.9	403.9	404.0	404.6
147.5°	421.5	421.9	422.2	422.6	422.8	423.0	422.9	422.8	422.8	422.8	422.8
150°	433.2	433.5	433.7	434.0	434.3	434.4	434.4	434.4	434.4	434.4	434.4
152.5°	443.8	444.1	444.3	444.4	444.6	444.8	444.8	444.9	445.0	445.1	445.2
155°	460.7	460.7	460.7	460.7	460.7	460.6	460.5	460.4	460.3	460.2	460.6
157.5°	474.8	474.7	474.6	474.4	474.2	474.1	474.1	474.1	474.0	474.0	474.3
160°	483.3	483.2	483.1	483.0	483.0	482.9	482.8	482.7	482.6	482.5	482.8
162.5°	491.1	490.8	490.5	490.4	490.1	489.9	489.8	489.7	489.6	489.5	490.1
165°	501.4	501.1	500.9	500.6	500.3	500.2	500.0	499.8	499.6	499.4	500.0
167.5°	509.4	509.1	508.7	508.4	507.9	507.7	507.7	507.8	507.8	507.8	508.4
170°	514.0	513.5	513.1	512.6	512.2	512.0	512.1	512.2	512.3	512.4	512.9
172.5°	517.2	516.8	516.5	516.1	515.7	515.5	515.5	515.6	515.6	515.6	516.2
175°	521.7	521.2	520.8	520.3	519.9	519.6	519.5	519.4	519.3	519.2	519.9
177.5°	523.1	522.7	522.4	522.0	521.7	521.5	521.5	521.5	521.5	521.5	522.0
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	376.9	376.9	376.9	376.9	376.9	376.9	376.9	376.9
2.5°	375.6	376.1	376.7	376.8	376.8	376.7	376.7	376.6
5°	374.6	375.3	376.1	376.5	376.4	376.2	376.1	376.0
7.5°	372.6	373.4	374.3	374.7	374.6	374.5	374.4	374.3
10°	370.6	371.4	372.3	372.6	372.6	372.5	372.4	372.3
12.5°	367.7	368.5	369.3	369.6	369.6	369.6	369.6	369.5
15°	362.6	363.4	364.3	364.6	364.5	364.4	364.4	364.3
17.5°	356.2	357.1	358.0	358.4	358.3	358.2	358.2	358.1
20°	351.3	352.3	353.2	353.7	353.7	353.7	353.7	353.7
22.5°	345.6	346.5	347.5	348.0	348.2	348.3	348.5	348.7
25°	336.8	337.8	338.9	339.4	339.5	339.6	339.7	339.7
27.5°	326.8	327.8	328.8	329.3	329.4	329.5	329.6	329.8
30°	319.9	320.9	321.9	322.5	322.7	323.0	323.2	323.3
32.5°	312.7	314.0	315.1	315.8	316.0	316.2	316.4	316.6
35°	301.5	302.7	304.1	304.9	305.1	305.4	305.8	306.0
37.5°	289.7	291.0	292.3	293.2	293.5	293.7	294.1	294.4
40°	281.4	282.8	284.2	285.1	285.4	285.9	286.2	286.6
42.5°	273.2	274.8	276.3	277.3	277.6	277.9	278.2	278.5
45°	260.6	262.3	263.9	264.8	265.4	265.8	266.3	266.7
47.5°	247.4	249.0	250.7	251.7	252.4	252.9	253.4	254.0
50°	238.0	239.9	241.7	243.0	243.5	244.1	244.7	245.2
52.5°	228.5	230.4	232.3	233.5	234.1	234.6	235.2	235.8
55°	214.4	216.2	218.1	219.4	219.9	220.4	221.1	221.6
57.5°	199.5	201.7	203.9	205.3	205.8	206.3	206.9	207.4
60°	189.2	191.4	193.5	194.9	195.7	196.4	197.2	198.0
62.5°	179.1	181.2	183.3	184.9	185.6	186.3	187.1	187.8
65°	163.4	165.8	168.1	169.6	170.4	171.1	171.9	172.6
67.5°	148.0	150.4	152.8	154.4	155.1	155.8	156.5	157.3
70°	137.1	139.7	142.2	143.8	144.5	145.2	145.8	146.4
72.5°	126.9	129.4	131.8	133.4	134.1	134.8	135.6	136.3
75°	111.2	113.8	116.5	118.2	119.0	119.8	120.7	121.5
77.5°	96.6	99.2	101.9	103.7	104.6	105.5	106.4	107.3
80°	87.1	89.9	92.7	94.5	95.2	96.0	96.8	97.5
82.5°	77.8	80.7	83.6	85.4	86.2	87.0	87.9	88.7
85°	64.7	67.5	70.4	72.2	73.1	74.1	75.0	76.0
87.5°	55.6	58.5	61.3	63.1	64.0	64.8	65.7	66.6
90°	57.2	60.5	63.7	65.8	66.7	67.7	68.6	69.6
92.5°	61.7	64.6	67.6	69.6	70.4	71.2	72.1	72.9
95°	73.0	75.8	78.6	80.4	81.3	82.1	83.0	83.8
97.5°	88.2	91.0	93.8	95.6	96.4	97.2	98.0	98.8
100°	99.3	102.0	104.8	106.5	107.1	107.7	108.4	109.1
102.5°	111.2	113.9	116.6	118.4	119.2	120.0	120.8	121.6
105°	129.3	131.9	134.5	136.3	137.3	138.3	139.4	140.4
107.5°	149.3	151.8	154.4	156.0	156.6	157.3	157.9	158.6
110°	162.6	164.5	166.5	168.0	169.1	170.0	171.1	172.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	176.8	178.9	180.9	182.4	183.2	184.0	184.8	185.6
115°	199.1	201.1	203.1	204.4	204.9	205.5	206.1	206.6
117.5°	220.3	221.9	223.6	224.7	225.2	225.9	226.4	226.9
120°	234.6	236.0	237.5	238.7	239.6	240.6	241.5	242.4
122.5°	249.4	251.0	252.5	253.5	253.9	254.2	254.6	254.9
125°	271.2	272.8	274.4	275.4	275.8	276.2	276.5	277.0
127.5°	291.5	293.0	294.5	295.5	296.0	296.5	297.0	297.5
130°	305.9	307.5	309.0	309.9	310.0	310.3	310.5	310.7
132.5°	319.7	321.1	322.5	323.5	323.9	324.3	324.8	325.1
135°	339.8	341.1	342.4	343.2	343.6	343.8	344.1	344.4
137.5°	359.6	360.8	361.9	362.7	363.3	363.8	364.3	364.8
140°	372.8	374.0	375.1	375.9	376.2	376.6	377.0	377.4
142.5°	385.6	386.6	387.7	388.4	388.8	389.1	389.5	389.9
145°	405.0	405.5	406.0	406.3	406.4	406.4	406.5	406.7
147.5°	422.8	422.8	422.8	422.8	423.0	423.3	423.5	423.7
150°	434.4	434.4	434.4	434.4	434.3	434.2	434.1	434.0
152.5°	445.5	445.7	445.9	445.9	445.7	445.4	445.2	445.0
155°	460.9	461.3	461.6	461.6	461.3	460.9	460.6	460.2
157.5°	474.6	474.8	475.1	475.1	474.8	474.5	474.2	473.9
160°	483.0	483.3	483.6	483.5	483.0	482.6	482.1	481.6
162.5°	490.5	491.1	491.5	491.5	491.1	490.6	490.2	489.7
165°	500.5	501.1	501.6	501.7	501.3	501.0	500.6	500.2
167.5°	508.9	509.4	510.0	510.0	509.4	508.9	508.3	507.7
170°	513.4	514.0	514.5	514.4	513.8	513.2	512.6	511.9
172.5°	516.8	517.5	518.0	518.0	517.4	516.7	516.1	515.5
175°	520.5	521.1	521.7	521.7	521.1	520.5	519.9	519.2
177.5°	522.5	523.0	523.5	523.4	522.9	522.4	521.7	521.2
180°	522.5	522.5	522.5	522.5	522.5	522.5	522.5	522.5

(END OF REPORT)