

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: P333022

Luminaire Tested: **S124RDIW-S350D770U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P333022
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: S124RDIW-S350D770U835-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4093.6 lumens
Efficiency: N/A
Efficacy: 134.7 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.09 / 1.24
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

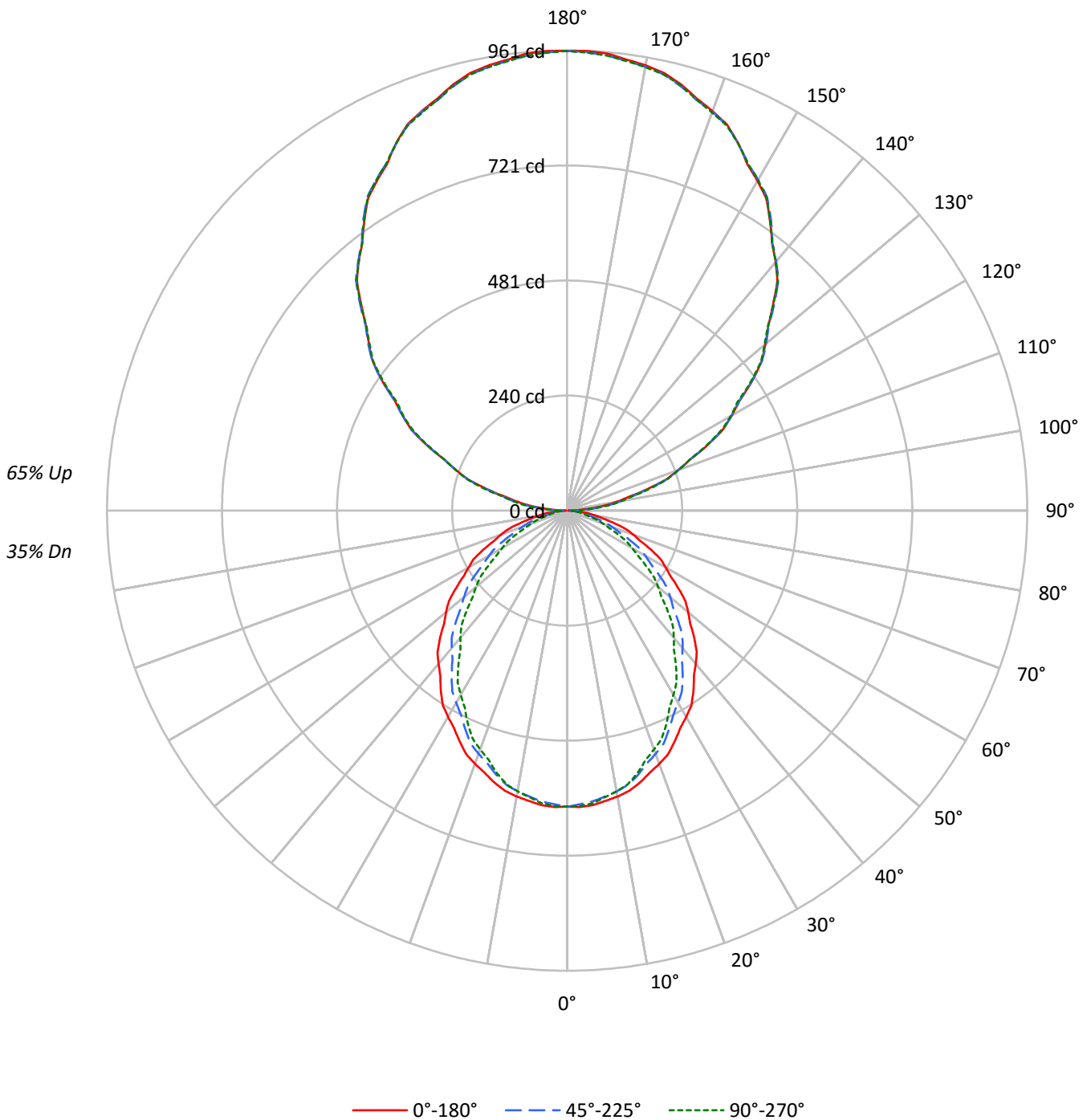
Input Watts (W): 30.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	42	42	42	35
1	95	90	87	83	85	82	79	76	66	64	62	51	50	49	38	37	36	30
2	86	79	73	68	78	72	67	63	58	54	51	45	43	41	33	32	31	25
3	79	70	63	57	71	63	57	52	51	47	43	40	37	35	30	28	26	22
4	72	62	54	48	65	56	50	44	46	41	37	36	32	30	27	24	23	19
5	66	55	47	41	60	50	43	38	41	36	32	32	29	26	24	22	20	16
6	61	49	41	36	55	45	38	33	37	32	28	29	25	23	22	19	18	14
7	56	44	37	31	51	41	34	29	33	28	24	26	23	20	20	17	16	13
8	52	40	33	28	47	37	30	26	30	25	22	24	20	18	18	16	14	12
9	48	37	29	25	44	34	27	23	28	23	19	22	19	16	17	14	13	10
10	45	34	27	22	41	31	25	20	25	21	17	20	17	14	16	13	12	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4991	4991	4991
5°	5002	4941	4971
10°	4970	4882	4882
15°	4914	4779	4743
20°	4835	4643	4558
25°	4735	4486	4372
30°	4638	4320	4139
35°	4529	4147	3905
40°	4400	3951	3652
45°	4280	3756	3394
50°	4143	3532	3121
55°	3997	3298	2825
60°	3836	3042	2522
65°	3689	2722	2223
70°	3474	2367	1888
75°	3203	1965	1535
80°	2794	1497	1409
85°	2371	1362	1269



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	58.1	1.4
10°-20°	161.9	4.0
20°-30°	233.8	5.7
30°-40°	265.1	6.5
40°-50°	255.9	6.3
50°-60°	212.8	5.2
60°-70°	147.0	3.6
70°-80°	74.5	1.8
80°-90°	22.0	0.5
90°-100°	63.3	1.5
100°-110°	187.5	4.6
110°-120°	318.2	7.8
120°-130°	419.6	10.3
130°-140°	471.3	11.5
140°-150°	463.1	11.3
150°-160°	389.5	9.5
160°-170°	259.1	6.3
170°-180°	90.7	2.2
0°-30°	453.8	11.1
0°-40°	718.9	17.6
0°-60°	1187.7	29.0
0°-90°	1431.1	35.0
90°-120°	569.0	13.9
90°-150°	1923.1	47.0
90°-180°	2662.0	65.0
0°-180°	4093.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	618	618	618	618	618	
5°	617	615	610	614	613	59
15°	588	583	572	571	568	166
25°	532	522	504	496	491	245
35°	460	444	421	405	396	287
45°	375	357	329	307	297	289
55°	284	264	234	211	201	254
65°	193	172	142	123	116	191
75°	103	85	63	53	49	108
85°	26	16	15	14	14	29
90°	2	10	16	21	22	4
95°	44	51	56	58	59	50
105°	173	174	177	179	181	183
115°	324	324	322	321	321	319
125°	471	471	470	469	468	420
135°	608	612	612	611	609	470
145°	738	741	742	741	739	462
155°	846	846	845	848	845	389
165°	921	919	917	921	919	260
175°	958	955	954	958	954	91
180°	960	960	960	960	960	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2
2.5°	619.7	619.3	619.0	618.7	618.3	617.7	616.8	615.9	614.9	614.0	614.9
5°	617.2	616.8	616.4	616.0	615.5	614.7	613.4	612.2	610.9	609.7	610.7
7.5°	611.6	611.2	610.8	610.3	609.9	608.8	607.2	605.5	603.9	602.3	602.9
10°	606.3	605.8	605.3	604.8	604.2	603.0	601.1	599.2	597.3	595.5	595.9
12.5°	599.5	598.9	598.3	597.7	597.1	595.7	593.4	591.2	589.0	586.7	587.0
15°	587.9	586.9	586.0	585.0	584.1	582.3	579.7	577.0	574.4	571.8	571.6
17.5°	573.8	572.4	571.0	569.7	568.3	566.0	562.9	559.7	556.6	553.4	552.8
20°	562.8	561.4	560.1	558.7	557.3	554.9	551.3	547.7	544.1	540.5	539.7
22.5°	550.7	549.1	547.6	546.1	544.5	541.8	538.0	534.2	530.4	526.5	525.3
25°	531.6	529.7	527.8	525.9	524.0	520.9	516.6	512.3	507.9	503.6	501.8
27.5°	511.5	509.1	506.7	504.4	502.0	498.5	493.9	489.3	484.7	480.1	477.8
30°	497.5	494.8	492.2	489.6	487.0	483.2	478.2	473.3	468.3	463.4	460.8
32.5°	482.7	479.7	476.8	473.8	470.8	466.8	461.7	456.6	451.5	446.4	443.3
35°	459.6	456.2	452.9	449.5	446.1	441.8	436.6	431.3	426.1	420.8	417.2
37.5°	434.9	431.4	428.0	424.5	421.0	416.4	410.5	404.7	398.9	393.1	389.1
40°	417.5	414.0	410.5	407.1	403.6	398.9	392.9	386.9	380.9	374.9	370.5
42.5°	400.8	397.2	393.5	389.9	386.3	381.3	375.1	368.8	362.6	356.3	351.8
45°	374.9	371.0	367.1	363.2	359.3	354.2	347.9	341.6	335.3	329.0	323.8
47.5°	348.1	344.1	340.1	336.0	332.0	326.7	320.2	313.6	307.0	300.5	295.1
50°	329.9	325.8	321.7	317.6	313.5	308.1	301.4	294.6	287.9	281.2	275.9
52.5°	311.4	307.3	303.3	299.3	295.3	289.8	282.9	276.0	269.1	262.2	256.9
55°	284.0	279.8	275.6	271.4	267.2	261.6	254.8	248.0	241.1	234.3	228.8
57.5°	256.9	252.5	248.2	243.8	239.4	233.9	227.1	220.4	213.7	206.9	201.4
60°	237.6	233.4	229.2	225.0	220.8	215.3	208.6	201.8	195.1	188.4	182.9
62.5°	220.2	215.8	211.4	207.1	202.7	197.1	190.2	183.3	176.4	169.5	164.4
65°	193.1	188.6	184.1	179.6	175.0	169.4	162.7	155.9	149.2	142.5	138.0
67.5°	165.0	160.7	156.3	152.0	147.7	142.4	136.1	129.9	123.6	117.4	113.5
70°	147.2	142.8	138.4	134.0	129.5	124.3	118.3	112.3	106.3	100.3	96.9
72.5°	128.3	124.3	120.3	116.3	112.3	107.5	101.8	96.1	90.5	84.8	81.9
75°	102.7	98.8	94.9	91.0	87.1	82.7	77.8	72.8	67.9	63.0	60.5
77.5°	76.8	73.5	70.2	66.9	63.6	59.9	55.9	51.9	47.9	43.9	42.5
80°	60.1	57.1	54.0	51.0	47.9	44.8	41.7	38.5	35.3	32.2	31.9
82.5°	45.7	42.9	40.1	37.3	34.5	32.2	30.4	28.6	26.8	25.0	24.8
85°	25.6	23.5	21.4	19.2	17.1	15.9	15.6	15.3	15.0	14.7	14.5
87.5°	9.2	8.8	8.5	8.2	7.9	7.8	8.0	8.2	8.4	8.6	8.7
90°	2.2	4.0	5.9	7.7	9.5	11.1	12.4	13.7	15.0	16.3	17.3
92.5°	15.9	18.0	20.0	22.1	24.2	25.7	26.6	27.5	28.5	29.4	30.0
95°	44.5	46.0	47.5	49.0	50.5	51.8	52.9	54.1	55.3	56.4	56.9
97.5°	77.8	79.0	80.2	81.3	82.5	83.8	85.2	86.5	87.9	89.2	89.8
100°	103.9	104.6	105.2	105.9	106.5	107.6	109.1	110.6	112.1	113.6	113.9
102.5°	131.2	131.5	131.7	132.0	132.3	133.1	134.4	135.8	137.1	138.5	139.0
105°	172.9	173.1	173.3	173.4	173.6	174.0	174.7	175.3	176.0	176.6	177.1
107.5°	216.7	216.9	217.1	217.3	217.5	217.7	217.8	217.9	218.0	218.1	218.5
110°	246.4	246.7	247.1	247.4	247.7	247.8	247.6	247.5	247.3	247.1	246.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	277.3	277.3	277.4	277.5	277.5	277.4	277.1	276.8	276.5	276.2	276.2
115°	323.6	323.6	323.6	323.6	323.6	323.4	323.1	322.8	322.4	322.1	321.9
117.5°	367.2	367.4	367.5	367.6	367.8	367.7	367.5	367.3	367.0	366.8	366.2
120°	396.3	397.0	397.6	398.3	399.0	399.0	398.6	398.1	397.6	397.1	396.2
122.5°	426.6	426.9	427.1	427.4	427.7	427.7	427.5	427.2	427.0	426.8	426.2
125°	471.3	471.3	471.3	471.3	471.3	471.2	471.0	470.9	470.7	470.5	470.2
127.5°	511.8	512.3	512.8	513.3	513.8	513.9	513.6	513.4	513.1	512.9	512.5
130°	540.3	540.8	541.3	541.8	542.3	542.5	542.5	542.5	542.5	542.5	542.2
132.5°	569.4	569.8	570.1	570.5	570.9	571.0	570.8	570.7	570.6	570.4	570.1
135°	607.9	608.8	609.8	610.8	611.8	612.3	612.3	612.3	612.3	612.3	612.0
137.5°	649.7	650.2	650.6	651.1	651.6	651.9	652.2	652.4	652.7	653.0	652.5
140°	677.6	677.9	678.3	678.6	678.9	679.1	679.1	679.1	679.1	679.1	678.9
142.5°	703.1	703.5	703.8	704.1	704.5	704.6	704.4	704.3	704.2	704.0	704.0
145°	738.5	739.1	739.8	740.5	741.1	741.5	741.7	741.9	742.0	742.2	742.0
147.5°	773.5	774.3	775.1	775.9	776.7	777.0	776.9	776.7	776.6	776.5	776.3
150°	794.9	795.5	796.2	796.9	797.5	797.9	797.9	797.9	797.9	797.9	797.9
152.5°	815.1	815.5	815.9	816.3	816.7	816.9	817.0	817.2	817.3	817.4	817.8
155°	846.1	846.1	846.1	846.1	846.1	846.0	845.8	845.7	845.5	845.4	846.0
157.5°	872.2	871.9	871.6	871.3	871.0	870.9	870.8	870.8	870.8	870.7	871.2
160°	887.7	887.5	887.3	887.2	887.0	886.8	886.7	886.5	886.3	886.2	886.7
162.5°	901.9	901.5	901.0	900.6	900.2	899.9	899.7	899.6	899.4	899.2	900.1
165°	921.1	920.6	920.1	919.6	919.1	918.7	918.3	918.0	917.7	917.3	918.3
167.5°	935.7	935.1	934.4	933.7	933.0	932.6	932.7	932.7	932.7	932.8	933.8
170°	944.1	943.2	942.4	941.6	940.8	940.4	940.6	940.8	940.9	941.1	942.1
172.5°	950.0	949.3	948.6	947.9	947.2	946.9	946.9	947.0	947.0	947.0	948.2
175°	958.2	957.3	956.5	955.7	954.9	954.4	954.2	954.0	953.9	953.7	954.9
177.5°	960.8	960.2	959.5	958.9	958.2	957.9	957.9	957.9	957.9	957.9	958.8
180°	959.6	959.6	959.6	959.6	959.6	959.6	959.6	959.6	959.6	959.6	959.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	618.2	618.2	618.2	618.2	618.2	618.2	618.2	618.2
2.5°	615.9	616.8	617.7	618.1	618.0	618.0	617.9	617.8
5°	611.8	612.8	613.9	614.3	614.1	613.9	613.6	613.4
7.5°	603.6	604.3	605.0	605.1	604.8	604.5	604.1	603.8
10°	596.3	596.7	597.1	597.1	596.7	596.3	595.9	595.5
12.5°	587.2	587.5	587.8	587.6	587.0	586.4	585.8	585.2
15°	571.4	571.2	570.9	570.5	569.7	569.0	568.3	567.5
17.5°	552.2	551.7	551.1	550.2	549.1	548.0	546.9	545.8
20°	538.9	538.0	537.2	536.1	534.7	533.3	532.0	530.6
22.5°	524.0	522.7	521.5	520.3	519.2	518.1	517.0	515.8
25°	500.0	498.3	496.5	495.1	494.0	492.9	491.9	490.8
27.5°	475.6	473.4	471.2	469.4	467.8	466.3	464.8	463.3
30°	458.1	455.5	452.9	450.7	449.0	447.4	445.7	444.0
32.5°	440.3	437.2	434.2	431.8	430.2	428.6	427.0	425.4
35°	413.6	410.1	406.5	403.8	401.9	400.0	398.1	396.2
37.5°	385.1	381.1	377.1	374.1	372.2	370.3	368.4	366.5
40°	366.0	361.6	357.2	354.1	352.2	350.3	348.4	346.5
42.5°	347.3	342.8	338.3	335.1	333.1	331.1	329.1	327.2
45°	318.7	313.5	308.3	304.8	302.9	301.0	299.1	297.3
47.5°	289.8	284.4	279.1	275.4	273.3	271.2	269.1	267.1
50°	270.6	265.4	260.1	256.5	254.5	252.5	250.5	248.5
52.5°	251.5	246.2	240.9	237.1	235.1	233.0	230.9	228.8
55°	223.4	217.9	212.4	208.7	206.7	204.7	202.7	200.7
57.5°	195.8	190.3	184.7	181.2	179.7	178.2	176.6	175.1
60°	177.4	172.0	166.5	162.9	161.2	159.6	157.9	156.2
62.5°	159.4	154.3	149.3	146.1	144.7	143.4	142.0	140.7
65°	133.4	128.9	124.4	121.5	120.2	119.0	117.7	116.4
67.5°	109.6	105.7	101.8	99.2	97.8	96.4	95.0	93.6
70°	93.4	89.9	86.5	84.2	83.1	82.1	81.0	80.0
72.5°	78.9	75.9	73.0	71.0	70.0	69.1	68.1	67.1
75°	58.1	55.7	53.3	51.8	51.1	50.5	49.9	49.2
77.5°	41.1	39.7	38.3	37.5	37.3	37.1	36.9	36.7
80°	31.6	31.2	30.9	30.7	30.6	30.5	30.4	30.3
82.5°	24.5	24.3	24.1	23.9	23.8	23.7	23.6	23.5
85°	14.3	14.0	13.8	13.7	13.7	13.7	13.7	13.7
87.5°	8.8	8.9	9.0	9.2	9.3	9.5	9.6	9.8
90°	18.3	19.3	20.3	20.9	21.3	21.6	21.9	22.3
92.5°	30.6	31.2	31.8	32.2	32.4	32.6	32.8	33.0
95°	57.4	57.9	58.4	58.6	58.6	58.6	58.6	58.6
97.5°	90.4	91.0	91.6	91.9	91.9	91.9	91.9	91.9
100°	114.2	114.5	114.9	115.0	115.0	115.0	115.0	115.0
102.5°	139.4	139.9	140.3	140.6	140.8	140.9	141.0	141.2
105°	177.6	178.1	178.6	179.1	179.6	180.1	180.6	181.1
107.5°	219.0	219.4	219.9	220.1	220.1	220.1	220.0	220.0
110°	246.5	246.2	245.8	245.9	246.4	246.9	247.4	247.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	276.1	276.0	276.0	276.0	276.1	276.2	276.3	276.4
115°	321.8	321.6	321.4	321.3	321.1	321.0	320.8	320.6
117.5°	365.7	365.1	364.5	364.1	363.8	363.4	363.1	362.8
120°	395.4	394.6	393.8	393.5	393.9	394.2	394.5	394.8
122.5°	425.6	425.1	424.5	423.9	423.3	422.7	422.2	421.6
125°	469.9	469.6	469.2	468.9	468.6	468.2	467.9	467.6
127.5°	512.2	511.9	511.5	511.2	511.0	510.7	510.4	510.2
130°	541.9	541.5	541.2	540.7	540.1	539.4	538.7	538.1
132.5°	569.8	569.5	569.1	568.8	568.6	568.3	568.0	567.8
135°	611.6	611.3	611.0	610.6	610.1	609.6	609.1	608.6
137.5°	652.1	651.7	651.3	651.1	651.2	651.3	651.4	651.5
140°	678.8	678.6	678.4	678.3	678.1	677.9	677.8	677.6
142.5°	704.0	703.9	703.9	703.9	703.8	703.8	703.8	703.7
145°	741.9	741.7	741.5	741.2	740.7	740.2	739.7	739.2
147.5°	776.2	776.1	775.9	775.8	775.6	775.5	775.3	775.1
150°	797.9	797.9	797.9	797.8	797.6	797.4	797.3	797.1
152.5°	818.2	818.6	819.0	819.0	818.6	818.2	817.7	817.3
155°	846.7	847.3	848.0	848.0	847.3	846.7	846.0	845.4
157.5°	871.7	872.2	872.7	872.7	872.1	871.6	871.0	870.4
160°	887.2	887.7	888.2	888.0	887.2	886.3	885.5	884.7
162.5°	901.0	901.9	902.8	902.8	902.0	901.2	900.4	899.5
165°	919.3	920.3	921.3	921.5	920.8	920.1	919.5	918.8
167.5°	934.8	935.7	936.7	936.7	935.7	934.7	933.7	932.6
170°	943.1	944.1	945.1	945.0	943.8	942.7	941.5	940.4
172.5°	949.3	950.4	951.5	951.5	950.3	949.2	948.0	946.9
175°	956.0	957.2	958.3	958.3	957.2	956.0	954.9	953.7
177.5°	959.7	960.6	961.6	961.5	960.4	959.4	958.3	957.3
180°	959.6	959.6	959.6	959.6	959.6	959.6	959.6	959.6

(END OF REPORT)