

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: P332505-940

Luminaire Tested: **S124DIP-S350D590U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332505-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-6,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIP-S350D590U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 590 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3457.3 lumens
Efficiency: N/A
Efficacy: 135.1 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

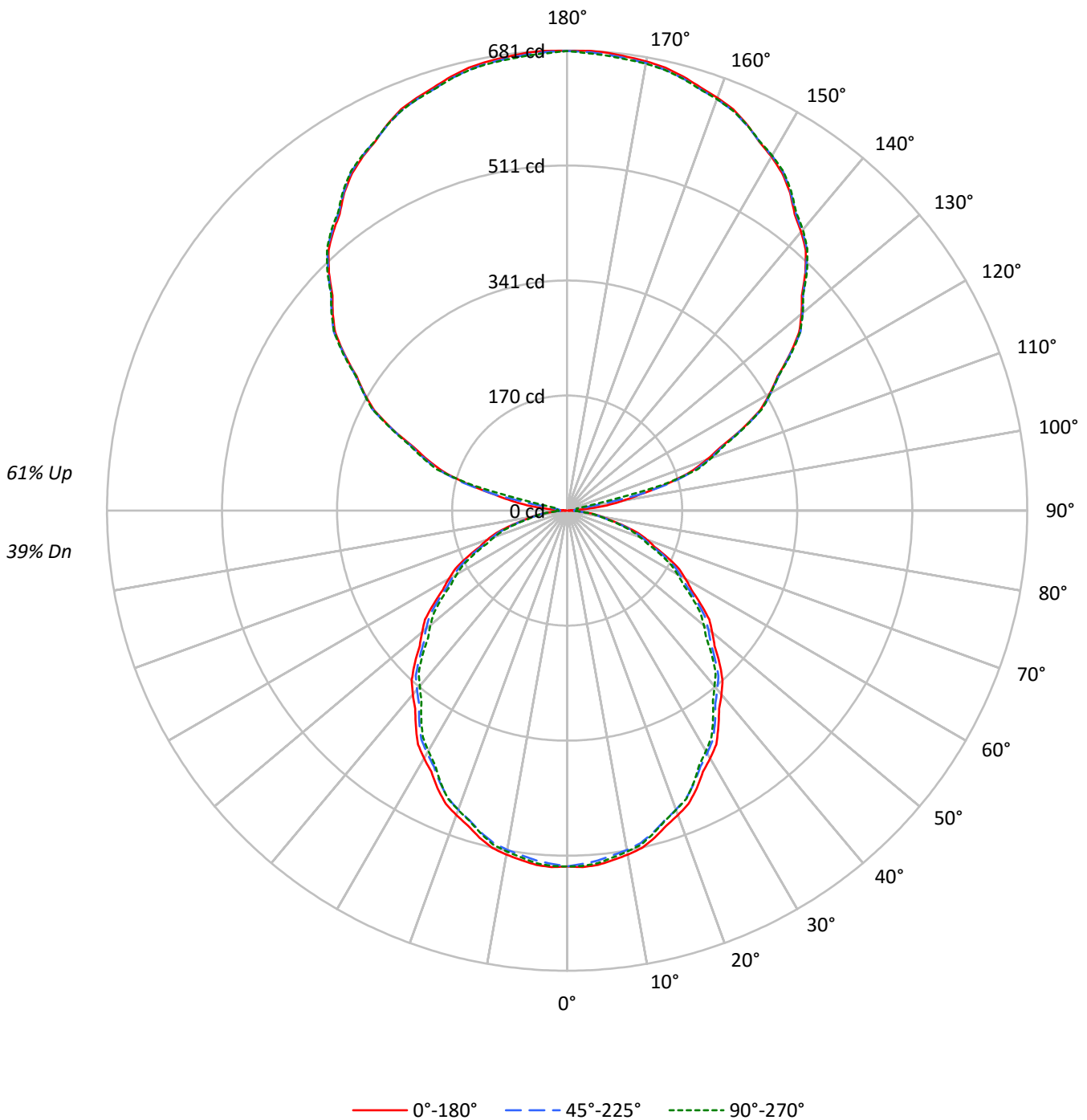
Input Watts (W): 25.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	105	105	105	105	95	95	95	95	77	77	77	61	61	61	46	46	46	39
1	95	91	87	84	86	83	80	77	68	65	63	54	52	51	41	40	39	33
2	87	79	73	68	79	72	67	63	59	56	52	47	45	42	36	34	33	28
3	79	70	63	57	72	64	57	52	52	48	44	42	38	36	32	30	28	23
4	72	62	54	48	65	56	50	44	46	41	37	37	33	31	28	26	24	20
5	66	55	47	41	60	50	43	38	41	36	32	33	29	26	26	23	21	17
6	61	49	41	36	55	45	38	33	37	32	28	30	26	23	23	20	18	15
7	56	44	37	31	51	41	34	29	34	28	25	27	23	20	21	18	16	14
8	52	40	33	27	47	37	30	25	31	26	22	25	21	18	19	17	15	12
9	49	37	29	24	44	34	27	23	28	23	19	23	19	16	18	15	13	11
10	45	34	26	22	41	31	25	20	26	21	17	21	17	15	17	14	12	10

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4252	4252	4252
5°	4265	4214	4245
10°	4238	4180	4200
15°	4187	4120	4131
20°	4119	4046	4050
25°	4041	3963	3951
30°	3947	3864	3828
35°	3847	3761	3710
40°	3744	3643	3577
45°	3639	3528	3460
50°	3520	3425	3318
55°	3392	3291	3184
60°	3265	3142	3047
65°	3121	2999	2879
70°	2960	2809	2700
75°	2711	2583	2514
80°	2413	2315	2255
85°	2112	2029	1991



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	49.6	1.4
10°-20°	139.8	4.0
20°-30°	205.7	6.0
30°-40°	239.2	6.9
40°-50°	239.2	6.9
50°-60°	209.2	6.1
60°-70°	155.4	4.5
70°-80°	88.3	2.6
80°-90°	27.4	0.8
90°-100°	23.3	0.7
100°-110°	148.3	4.3
110°-120°	283.7	8.2
120°-130°	360.1	10.4
130°-140°	385.3	11.1
140°-150°	360.3	10.4
150°-160°	290.6	8.4
160°-170°	187.4	5.4
170°-180°	64.6	1.9
0°-30°	395.1	11.4
0°-40°	634.2	18.3
0°-60°	1082.6	31.3
0°-90°	1353.7	39.2
90°-120°	455.3	13.2
90°-150°	1561.1	45.2
90°-180°	2104.0	60.9
0°-180°	3457.3	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	527	527	527	527	527	
5°	526	524	520	524	524	50
15°	501	499	493	495	494	141
25°	454	451	445	445	444	209
35°	390	387	382	379	376	244
45°	319	316	309	305	303	246
55°	241	240	234	229	226	216
65°	163	161	157	153	151	162
75°	87	85	83	81	81	92
85°	23	23	22	22	22	25
90°	2	7	11	14	15	3
95°	28	12	11	14	15	36
105°	153	156	159	162	145	160
115°	286	287	287	288	288	281
125°	402	404	403	404	405	359
135°	498	498	500	501	502	384
145°	575	576	576	577	578	359
155°	630	631	629	631	630	290
165°	665	662	662	666	662	188
175°	680	677	678	682	676	65
180°	680	680	680	680	680	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	528.1	527.9	527.6	527.4	527.2	526.6	525.8	525.0	524.2	523.3	524.1
5°	526.3	525.9	525.6	525.2	524.9	524.1	523.1	522.1	521.0	520.0	521.0
7.5°	521.5	521.0	520.7	520.3	520.0	519.2	518.0	516.9	515.8	514.6	515.4
10°	517.0	516.7	516.3	515.9	515.6	514.8	513.5	512.3	511.1	509.9	510.6
12.5°	511.3	511.0	510.6	510.1	509.8	509.0	507.7	506.4	505.1	503.8	504.6
15°	501.0	500.6	500.2	499.9	499.5	498.6	497.2	495.8	494.4	493.0	493.6
17.5°	488.6	488.1	487.7	487.2	486.7	485.8	484.5	483.1	481.8	480.5	480.8
20°	479.5	479.0	478.6	478.0	477.6	476.7	475.3	473.9	472.4	471.0	471.4
22.5°	469.7	469.0	468.4	467.8	467.2	466.2	464.8	463.4	462.0	460.6	461.1
25°	453.7	453.1	452.5	451.7	451.1	450.1	448.8	447.5	446.2	444.9	445.0
27.5°	435.5	434.8	434.2	433.5	432.8	431.9	430.6	429.4	428.2	427.0	426.8
30°	423.4	422.6	421.9	421.1	420.4	419.4	418.1	416.9	415.7	414.5	414.1
32.5°	410.5	409.8	409.1	408.5	407.8	406.8	405.6	404.2	403.0	401.6	401.2
35°	390.4	389.8	389.1	388.4	387.8	386.8	385.5	384.1	382.9	381.6	380.9
37.5°	369.3	368.6	368.0	367.5	366.8	365.9	364.4	363.0	361.6	360.2	359.4
40°	355.3	354.6	353.9	353.1	352.4	351.3	349.9	348.5	347.1	345.7	344.7
42.5°	340.5	340.1	339.7	339.2	338.8	337.7	336.2	334.6	333.1	331.5	330.4
45°	318.7	318.0	317.4	316.7	316.0	315.0	313.4	311.9	310.5	309.0	307.9
47.5°	295.8	295.3	294.9	294.4	294.0	293.1	291.7	290.3	288.9	287.5	286.3
50°	280.3	279.9	279.6	279.1	278.7	277.9	276.6	275.3	273.9	272.7	271.3
52.5°	265.1	264.6	264.1	263.7	263.2	262.3	260.9	259.6	258.2	256.8	255.7
55°	241.0	240.8	240.4	240.1	239.9	239.1	237.7	236.5	235.1	233.8	232.7
57.5°	218.0	217.8	217.4	217.1	216.8	216.0	214.6	213.4	212.0	210.8	209.7
60°	202.2	201.7	201.3	200.7	200.3	199.5	198.2	197.0	195.8	194.6	193.8
62.5°	186.6	186.3	185.8	185.5	185.0	184.2	182.9	181.6	180.3	179.1	178.3
65°	163.4	162.9	162.4	161.9	161.5	160.8	159.8	158.9	157.9	157.0	156.0
67.5°	139.9	139.5	139.0	138.6	138.1	137.5	136.6	135.7	134.8	133.8	133.0
70°	125.4	124.7	124.0	123.4	122.7	122.0	121.3	120.6	119.8	119.0	118.2
72.5°	109.9	109.1	108.5	107.9	107.2	106.6	105.9	105.4	104.8	104.2	103.5
75°	86.9	86.5	86.1	85.5	85.1	84.6	84.2	83.6	83.2	82.8	82.4
77.5°	65.1	64.9	64.6	64.5	64.3	63.9	63.6	63.1	62.7	62.3	62.2
80°	51.9	51.6	51.4	51.1	50.8	50.6	50.4	50.2	50.0	49.8	49.6
82.5°	39.1	39.0	38.8	38.7	38.5	38.4	38.4	38.4	38.3	38.3	38.3
85°	22.8	22.8	22.8	22.8	22.8	22.7	22.5	22.3	22.1	21.9	21.9
87.5°	9.1	9.3	9.5	9.6	9.8	9.9	10.0	10.2	10.3	10.3	10.4
90°	1.5	2.8	4.0	5.3	6.5	7.6	8.5	9.4	10.3	11.1	11.9
92.5°	6.4	6.5	6.5	6.6	6.7	7.1	8.1	9.0	9.9	10.8	11.5
95°	28.0	24.2	20.3	16.4	12.6	10.7	10.9	11.0	11.1	11.1	11.9
97.5°	59.4	61.8	64.2	66.6	69.0	63.8	51.3	38.7	26.0	13.5	13.5
100°	83.4	85.4	87.5	89.5	91.6	84.8	69.2	53.6	38.0	22.4	20.4
102.5°	110.3	111.7	113.2	114.8	116.3	116.0	114.0	111.9	109.9	107.8	87.1
105°	153.1	153.8	154.4	155.2	155.8	156.4	157.0	157.6	158.1	158.7	159.7
107.5°	192.9	193.2	193.6	193.9	194.2	194.7	195.6	196.4	197.1	197.9	198.4
110°	219.7	220.1	220.4	220.8	221.1	221.6	222.3	222.9	223.6	224.4	224.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	245.8	246.4	247.0	247.6	248.3	248.7	249.0	249.3	249.7	249.9	249.9
115°	285.9	286.2	286.5	286.9	287.2	287.3	287.2	287.1	287.0	286.9	287.1
117.5°	322.0	322.4	322.9	323.3	323.8	324.1	324.4	324.7	324.9	325.1	325.1
120°	346.4	346.9	347.3	347.8	348.2	348.4	348.3	348.1	348.0	347.9	348.1
122.5°	369.2	369.4	369.7	370.0	370.2	370.5	370.7	370.8	371.0	371.1	371.2
125°	401.8	402.3	402.8	403.2	403.7	403.8	403.5	403.3	403.1	402.9	403.2
127.5°	432.7	432.8	433.0	433.1	433.2	433.5	434.1	434.5	435.1	435.6	435.5
130°	452.7	452.8	452.9	453.1	453.2	453.3	453.7	454.1	454.4	454.8	454.9
132.5°	471.0	471.2	471.4	471.6	471.8	472.2	472.6	473.0	473.4	473.9	473.9
135°	498.5	498.4	498.3	498.1	498.0	498.2	498.6	499.1	499.5	500.0	500.2
137.5°	522.8	522.8	522.9	522.9	523.0	523.3	523.7	524.2	524.8	525.2	525.5
140°	538.7	538.9	539.1	539.3	539.6	539.8	540.0	540.3	540.5	540.7	541.0
142.5°	552.9	553.3	553.8	554.1	554.6	554.8	554.9	555.1	555.2	555.4	555.6
145°	574.8	575.2	575.4	575.8	576.1	576.3	576.3	576.3	576.3	576.3	576.4
147.5°	592.2	592.8	593.4	594.1	594.7	594.9	594.9	594.8	594.6	594.5	594.6
150°	604.8	605.2	605.7	606.2	606.6	606.8	606.6	606.5	606.5	606.3	606.3
152.5°	615.4	615.7	616.1	616.4	616.8	616.9	616.7	616.5	616.3	616.1	616.3
155°	630.3	630.4	630.4	630.5	630.7	630.5	630.3	629.9	629.5	629.2	629.6
157.5°	642.7	642.7	642.6	642.6	642.5	642.2	641.9	641.5	641.1	640.7	641.3
160°	650.1	649.7	649.3	649.1	648.7	648.5	648.4	648.3	648.1	648.0	648.7
162.5°	656.6	656.1	655.7	655.3	654.9	654.6	654.4	654.3	654.2	654.2	654.8
165°	664.8	664.2	663.7	663.1	662.5	662.3	662.3	662.3	662.3	662.3	663.2
167.5°	671.3	670.7	670.1	669.6	669.0	668.6	668.6	668.5	668.4	668.3	669.4
170°	675.0	674.3	673.6	673.0	672.3	672.0	672.1	672.2	672.3	672.4	673.3
172.5°	677.4	676.7	676.1	675.4	674.8	674.4	674.6	674.7	674.8	674.8	675.8
175°	680.1	679.4	678.7	678.1	677.3	677.1	677.2	677.3	677.4	677.5	678.5
177.5°	681.3	680.6	680.0	679.4	678.8	678.5	678.7	678.9	679.0	679.2	680.0
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	526.7	526.7	526.7	526.7	526.7	526.7	526.7	526.7
2.5°	524.9	525.7	526.4	526.7	526.6	526.6	526.5	526.4
5°	522.1	523.1	524.1	524.5	524.3	524.1	524.0	523.8
7.5°	516.2	517.1	517.9	518.3	518.2	518.0	517.9	517.8
10°	511.4	512.1	512.9	513.2	513.0	512.7	512.6	512.4
12.5°	505.4	506.2	507.1	507.4	507.1	506.8	506.6	506.3
15°	494.1	494.6	495.3	495.3	495.1	494.8	494.5	494.3
17.5°	481.2	481.5	481.9	482.0	481.8	481.6	481.4	481.3
20°	471.6	471.9	472.2	472.3	472.0	471.8	471.6	471.4
22.5°	461.5	462.1	462.6	462.7	462.4	462.0	461.6	461.4
25°	445.1	445.1	445.2	445.1	444.7	444.3	444.0	443.6
27.5°	426.5	426.3	426.1	425.7	425.3	424.8	424.3	423.8
30°	413.8	413.4	413.0	412.6	412.1	411.6	411.2	410.7
32.5°	400.7	400.3	399.8	399.4	399.0	398.4	398.0	397.5
35°	380.2	379.6	378.9	378.4	377.9	377.5	376.9	376.5
37.5°	358.7	358.0	357.3	356.7	356.1	355.4	354.8	354.2
40°	343.8	342.9	342.0	341.3	340.7	340.3	339.8	339.4
42.5°	329.3	328.2	327.2	326.5	326.1	325.8	325.5	325.2
45°	306.9	305.9	304.9	304.2	303.9	303.6	303.4	303.1
47.5°	285.2	284.0	282.9	282.0	281.2	280.5	279.8	279.1
50°	270.0	268.8	267.4	266.4	265.9	265.4	264.7	264.2
52.5°	254.5	253.3	252.2	251.2	250.5	249.8	249.1	248.3
55°	231.6	230.4	229.3	228.5	227.9	227.4	226.8	226.2
57.5°	208.7	207.6	206.5	205.7	205.2	204.6	204.1	203.5
60°	192.9	192.1	191.2	190.6	190.1	189.6	189.1	188.7
62.5°	177.5	176.7	175.9	175.3	174.9	174.4	174.0	173.4
65°	155.2	154.2	153.3	152.6	152.1	151.6	151.1	150.7
67.5°	132.1	131.2	130.3	129.7	129.7	129.5	129.4	129.2
70°	117.5	116.8	116.0	115.5	115.2	114.9	114.7	114.4
72.5°	103.0	102.4	101.7	101.3	101.0	100.8	100.5	100.2
75°	81.9	81.6	81.2	81.0	80.9	80.8	80.7	80.6
77.5°	62.1	62.0	61.9	61.7	61.4	61.2	60.9	60.7
80°	49.4	49.2	49.0	49.0	48.8	48.7	48.6	48.5
82.5°	38.1	38.0	37.9	37.8	37.7	37.5	37.5	37.4
85°	21.9	21.9	21.9	21.9	21.8	21.8	21.6	21.5
87.5°	10.6	10.8	10.9	11.0	11.1	11.1	11.1	11.1
90°	12.6	13.2	13.9	14.4	14.6	14.8	15.1	15.2
92.5°	12.1	12.8	13.5	13.8	13.9	13.9	14.0	14.0
95°	12.6	13.2	13.9	14.3	14.4	14.5	14.6	14.7
97.5°	13.6	13.6	13.7	13.8	13.9	14.0	14.1	14.3
100°	18.5	16.6	14.7	13.8	13.9	14.0	14.1	14.3
102.5°	66.3	45.7	24.9	14.5	14.6	14.6	14.6	14.6
105°	160.8	161.8	162.7	161.2	157.2	153.1	149.0	145.0
107.5°	198.9	199.4	199.8	200.3	200.7	201.2	201.6	202.1
110°	224.8	225.0	225.2	225.5	225.9	226.1	226.5	226.9



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	249.9	249.9	249.8	249.9	250.4	250.8	251.3	251.6
115°	287.3	287.6	287.8	287.9	287.9	287.9	287.9	287.9
117.5°	325.0	325.0	324.9	324.9	324.9	324.9	324.8	324.8
120°	348.4	348.6	348.8	348.8	348.6	348.4	348.1	347.9
122.5°	371.4	371.5	371.7	371.6	371.4	371.1	371.0	370.7
125°	403.5	403.9	404.2	404.5	404.6	404.7	404.7	404.9
127.5°	435.5	435.4	435.3	435.2	435.2	435.1	435.0	434.9
130°	455.0	455.0	455.2	455.2	455.2	455.2	455.2	455.2
132.5°	474.1	474.2	474.3	474.3	474.2	474.1	474.0	473.9
135°	500.4	500.7	500.9	501.1	501.3	501.6	501.9	502.0
137.5°	525.8	526.0	526.2	526.3	526.3	526.2	526.1	526.0
140°	541.4	541.7	542.1	542.2	542.4	542.5	542.6	542.7
142.5°	555.8	556.1	556.3	556.5	556.5	556.5	556.5	556.6
145°	576.5	576.7	576.8	576.9	577.1	577.4	577.7	577.8
147.5°	594.7	594.8	594.9	594.9	595.1	595.2	595.3	595.4
150°	606.3	606.3	606.3	606.4	606.5	606.6	606.7	606.8
152.5°	616.4	616.6	616.8	616.9	616.8	616.7	616.6	616.6
155°	630.1	630.5	631.0	631.1	630.7	630.4	630.1	629.7
157.5°	641.9	642.5	643.0	643.0	642.5	641.9	641.3	640.7
160°	649.3	650.1	650.8	650.8	650.1	649.3	648.7	648.0
162.5°	655.5	656.1	656.8	656.8	656.0	655.2	654.5	653.7
165°	664.1	664.9	665.9	665.8	664.8	663.8	662.8	661.7
167.5°	670.4	671.4	672.3	672.3	671.2	670.0	668.9	667.8
170°	674.2	675.1	676.1	675.9	674.8	673.7	672.5	671.5
172.5°	676.7	677.6	678.5	678.3	677.2	675.9	674.7	673.4
175°	679.6	680.6	681.6	681.4	680.1	678.7	677.3	676.0
177.5°	680.7	681.4	682.2	682.0	680.9	679.8	678.7	677.6
180°	680.1	680.1	680.1	680.1	680.1	680.1	680.1	680.1

(END OF REPORT)