

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: P332725-940

Luminaire Tested: **S124DIW-S350D770U940-4F0-1E-UDD-F**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332725-940
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: S124DIW-S350D770U940-4F0-1E-UDD-F
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4091.8 lumens
Efficiency: N/A
Efficacy: 134.6 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

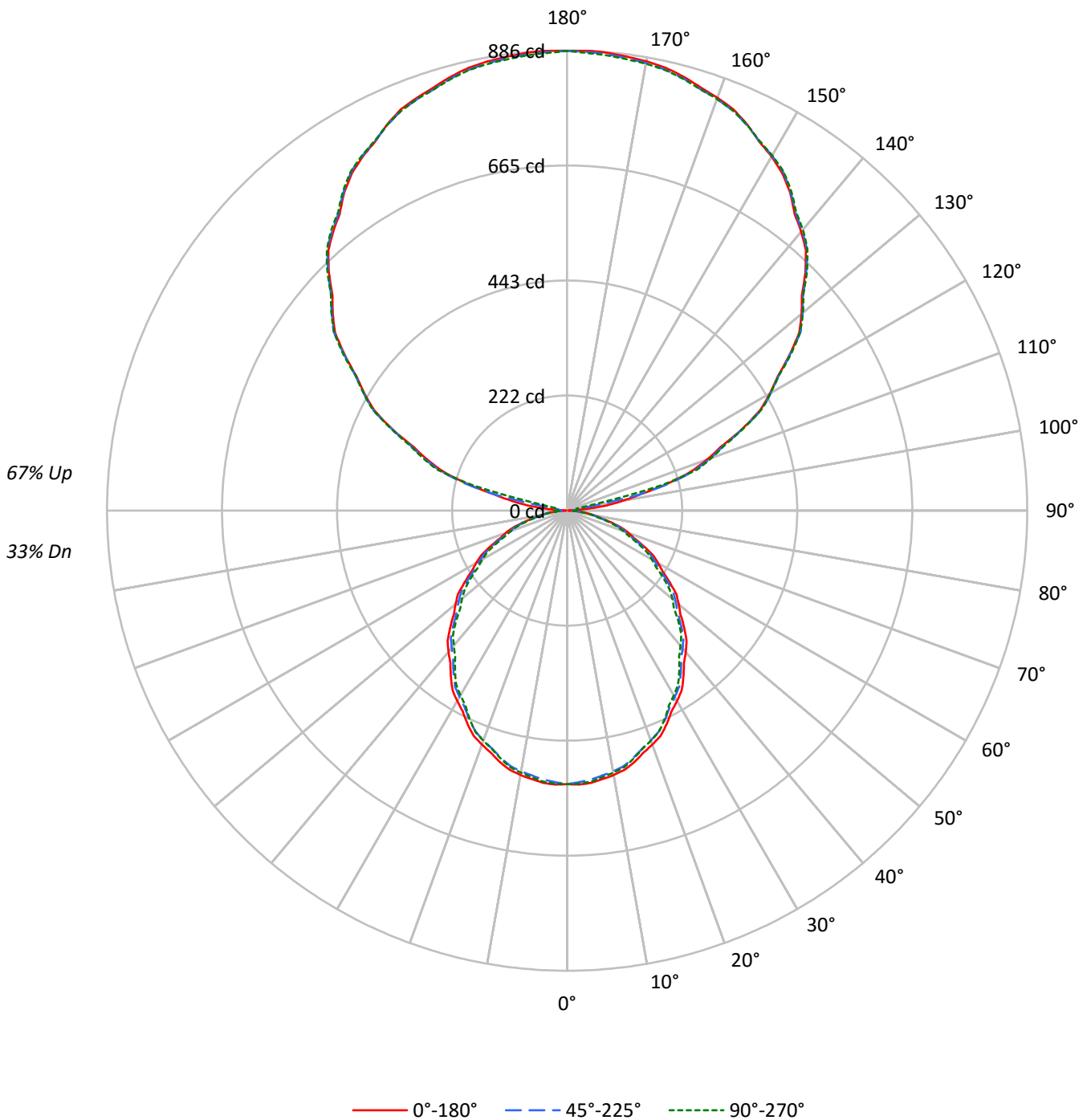
Input Watts (W): 30.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	33
1	94	90	86	82	85	81	78	75	65	62	60	50	48	47	36	35	34	28
2	86	78	72	67	77	71	66	61	57	53	50	44	41	39	31	30	29	23
3	78	69	62	56	70	62	56	51	50	46	42	38	36	33	28	26	24	20
4	71	61	53	47	64	55	48	43	44	39	36	34	31	28	25	23	21	17
5	65	54	46	40	59	49	42	37	40	34	31	31	27	24	22	20	18	15
6	60	48	40	35	54	44	37	32	36	30	27	28	24	21	20	18	16	13
7	55	44	36	30	50	40	33	28	32	27	23	25	21	19	19	16	14	11
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13	10
9	48	36	29	24	43	33	26	22	27	22	18	21	17	15	16	13	12	9
10	45	33	26	21	40	30	24	20	25	20	16	19	16	13	15	12	10	8

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	1.2
10°-20°	139.8	3.4
20°-30°	205.7	5.0
30°-40°	239.2	5.8
40°-50°	239.2	5.8
50°-60°	209.2	5.1
60°-70°	155.4	3.8
70°-80°	88.3	2.2
80°-90°	28.0	0.7
90°-100°	30.3	0.7
100°-110°	193.0	4.7
110°-120°	369.2	9.0
120°-130°	468.7	11.5
130°-140°	501.4	12.3
140°-150°	468.9	11.5
150°-160°	378.1	9.2
160°-170°	243.9	6.0
170°-180°	84.1	2.1
0°-30°	395.1	9.7
0°-40°	634.2	15.5
0°-60°	1082.6	26.5
0°-90°	1354.3	33.1
90°-120°	592.4	14.5
90°-150°	2031.4	49.6
90°-180°	2737.0	66.9
0°-180°	4091.8	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	9	14	18	20	3
95°	36	15	14	18	19	47
105°	199	203	206	211	189	208
115°	372	374	373	375	375	366
125°	523	525	524	526	527	467
135°	649	648	651	652	653	500
145°	748	750	750	751	752	467
155°	820	821	819	821	820	378
165°	865	862	862	866	861	244
175°	885	881	882	887	880	84
180°	885	885	885	885	885	



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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°	9.2	9.5	9.6	9.9	10.2	10.3	10.5	10.7	10.9	11.1	11.2
90°	2.0	3.6	5.3	6.9	8.5	9.9	11.1	12.2	13.4	14.5	15.4
92.5°	8.4	8.5	8.6	8.6	8.6	9.4	10.5	11.7	12.8	14.0	14.9
95°	36.4	31.4	26.4	21.4	16.4	14.0	14.1	14.3	14.4	14.5	15.4
97.5°	77.3	80.4	83.6	86.7	89.8	83.1	66.7	50.3	33.9	17.5	17.6
100°	108.5	111.2	113.9	116.5	119.1	110.3	90.1	69.7	49.4	29.2	26.7
102.5°	143.5	145.4	147.4	149.4	151.2	150.9	148.3	145.6	142.9	140.4	113.3
105°	199.2	200.1	201.0	201.9	202.8	203.6	204.3	205.0	205.8	206.5	207.9
107.5°	251.0	251.5	251.9	252.4	252.8	253.5	254.5	255.5	256.5	257.4	258.2
110°	286.0	286.4	286.9	287.3	287.7	288.4	289.3	290.2	291.1	291.9	292.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	319.9	320.7	321.5	322.2	323.0	323.6	324.0	324.4	324.9	325.3	325.2
115°	372.0	372.5	372.9	373.3	373.7	373.9	373.7	373.6	373.4	373.3	373.6
117.5°	419.0	419.5	420.2	420.7	421.3	421.8	422.1	422.4	422.8	423.1	423.0
120°	450.8	451.4	451.9	452.5	453.1	453.3	453.2	453.1	452.9	452.7	453.1
122.5°	480.5	480.7	481.1	481.4	481.8	482.1	482.3	482.5	482.7	483.0	483.1
125°	522.9	523.5	524.1	524.7	525.2	525.4	525.1	524.9	524.5	524.2	524.7
127.5°	563.1	563.3	563.5	563.6	563.7	564.2	564.8	565.5	566.1	566.9	566.8
130°	589.1	589.2	589.4	589.5	589.7	590.0	590.4	590.8	591.3	591.7	591.9
132.5°	613.0	613.2	613.5	613.7	613.9	614.4	614.9	615.5	616.1	616.6	616.8
135°	648.6	648.5	648.4	648.2	648.1	648.3	648.9	649.4	650.1	650.7	650.9
137.5°	680.3	680.4	680.5	680.5	680.6	680.9	681.5	682.2	682.9	683.5	683.8
140°	701.0	701.2	701.5	701.9	702.1	702.4	702.8	703.0	703.3	703.6	704.0
142.5°	719.5	720.1	720.6	721.0	721.6	721.9	722.1	722.3	722.5	722.6	723.0
145°	748.0	748.4	748.9	749.3	749.8	749.9	749.9	749.9	749.9	749.9	750.1
147.5°	770.6	771.4	772.2	773.0	773.9	774.2	774.1	773.9	773.7	773.6	773.7
150°	787.0	787.6	788.2	788.8	789.3	789.6	789.4	789.3	789.2	789.0	789.0
152.5°	800.8	801.2	801.7	802.2	802.6	802.7	802.5	802.3	802.0	801.7	801.9
155°	820.1	820.3	820.4	820.6	820.7	820.6	820.1	819.7	819.2	818.8	819.4
157.5°	836.4	836.3	836.2	836.2	836.1	835.7	835.3	834.7	834.2	833.7	834.5
160°	845.9	845.4	845.1	844.6	844.2	843.8	843.7	843.6	843.4	843.3	844.2
162.5°	854.3	853.8	853.3	852.7	852.1	851.8	851.7	851.5	851.3	851.2	852.1
165°	865.1	864.3	863.6	862.9	862.2	861.8	861.8	861.8	861.8	861.8	863.0
167.5°	873.6	872.8	872.1	871.3	870.5	870.1	870.0	870.0	869.9	869.8	871.0
170°	878.3	877.4	876.6	875.7	874.9	874.4	874.6	874.8	874.9	875.0	876.2
172.5°	881.5	880.7	879.8	878.9	878.0	877.6	877.8	877.9	878.1	878.2	879.4
175°	884.9	884.0	883.2	882.3	881.5	881.1	881.2	881.4	881.5	881.6	883.0
177.5°	886.5	885.7	884.9	884.0	883.2	883.0	883.2	883.4	883.7	883.9	884.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9



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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°	11.3	11.5	11.7	11.9	11.9	11.9	12.0	12.0
90°	16.3	17.2	18.1	18.6	19.0	19.3	19.5	19.9
92.5°	15.8	16.7	17.6	18.0	18.1	18.2	18.2	18.3
95°	16.3	17.2	18.1	18.6	18.7	18.9	19.1	19.2
97.5°	17.7	17.7	17.8	17.9	18.1	18.3	18.4	18.5
100°	24.2	21.6	19.1	17.9	18.1	18.3	18.4	18.5
102.5°	86.4	59.4	32.5	18.9	19.0	19.0	19.0	19.1
105°	209.2	210.4	211.8	209.8	204.6	199.2	193.9	188.7
107.5°	258.8	259.4	260.1	260.6	261.3	261.8	262.3	262.9
110°	292.5	292.7	293.1	293.5	293.9	294.4	294.8	295.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	325.1	325.1	325.0	325.3	325.8	326.4	327.0	327.5
115°	373.9	374.2	374.5	374.6	374.6	374.6	374.6	374.6
117.5°	422.9	422.9	422.8	422.8	422.8	422.7	422.6	422.6
120°	453.3	453.6	453.9	453.9	453.6	453.3	453.1	452.7
122.5°	483.3	483.5	483.7	483.6	483.3	483.0	482.7	482.4
125°	525.1	525.6	526.0	526.3	526.5	526.6	526.7	526.9
127.5°	566.7	566.6	566.5	566.4	566.3	566.1	566.1	566.0
130°	592.0	592.2	592.4	592.4	592.4	592.4	592.4	592.4
132.5°	616.9	617.1	617.2	617.2	617.2	617.0	616.9	616.8
135°	651.2	651.6	651.8	652.1	652.4	652.7	653.0	653.3
137.5°	684.1	684.5	684.7	684.9	684.8	684.7	684.7	684.6
140°	704.5	704.9	705.3	705.7	705.8	706.0	706.1	706.2
142.5°	723.4	723.6	724.0	724.2	724.2	724.2	724.2	724.2
145°	750.2	750.4	750.6	750.7	751.0	751.4	751.6	751.9
147.5°	773.8	774.0	774.1	774.3	774.4	774.5	774.7	774.8
150°	789.0	789.0	789.0	789.1	789.3	789.3	789.5	789.6
152.5°	802.2	802.4	802.6	802.7	802.6	802.5	802.5	802.4
155°	819.9	820.6	821.1	821.2	820.7	820.3	819.8	819.5
157.5°	835.3	836.1	836.8	836.8	836.1	835.3	834.5	833.7
160°	845.1	845.9	846.8	846.8	845.9	845.1	844.2	843.3
162.5°	853.0	853.8	854.7	854.7	853.7	852.7	851.7	850.7
165°	864.2	865.3	866.5	866.5	865.1	863.8	862.5	861.1
167.5°	872.4	873.6	874.9	874.9	873.3	871.9	870.4	869.0
170°	877.4	878.6	879.8	879.6	878.2	876.6	875.2	873.7
172.5°	880.6	881.7	882.9	882.7	881.1	879.6	878.0	876.4
175°	884.3	885.6	887.0	886.7	884.9	883.2	881.5	879.7
177.5°	885.8	886.7	887.7	887.4	886.0	884.6	883.2	881.8
180°	884.9	884.9	884.9	884.9	884.9	884.9	884.9	884.9

(END OF REPORT)