

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: P334801

Luminaire Tested: **S124IP-S590U840-4F0-1E-UDD-4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P334801
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-18)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124IP-S590U840-4F0-1E-UDD-4
Description: DEFINE 4 INDIRECT LED LUMINAIRE, BATWING OPTIC
PENDANT MOUNT, 590 LUMENS PER FOOT
Light Source: 4000K CCT, 80 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

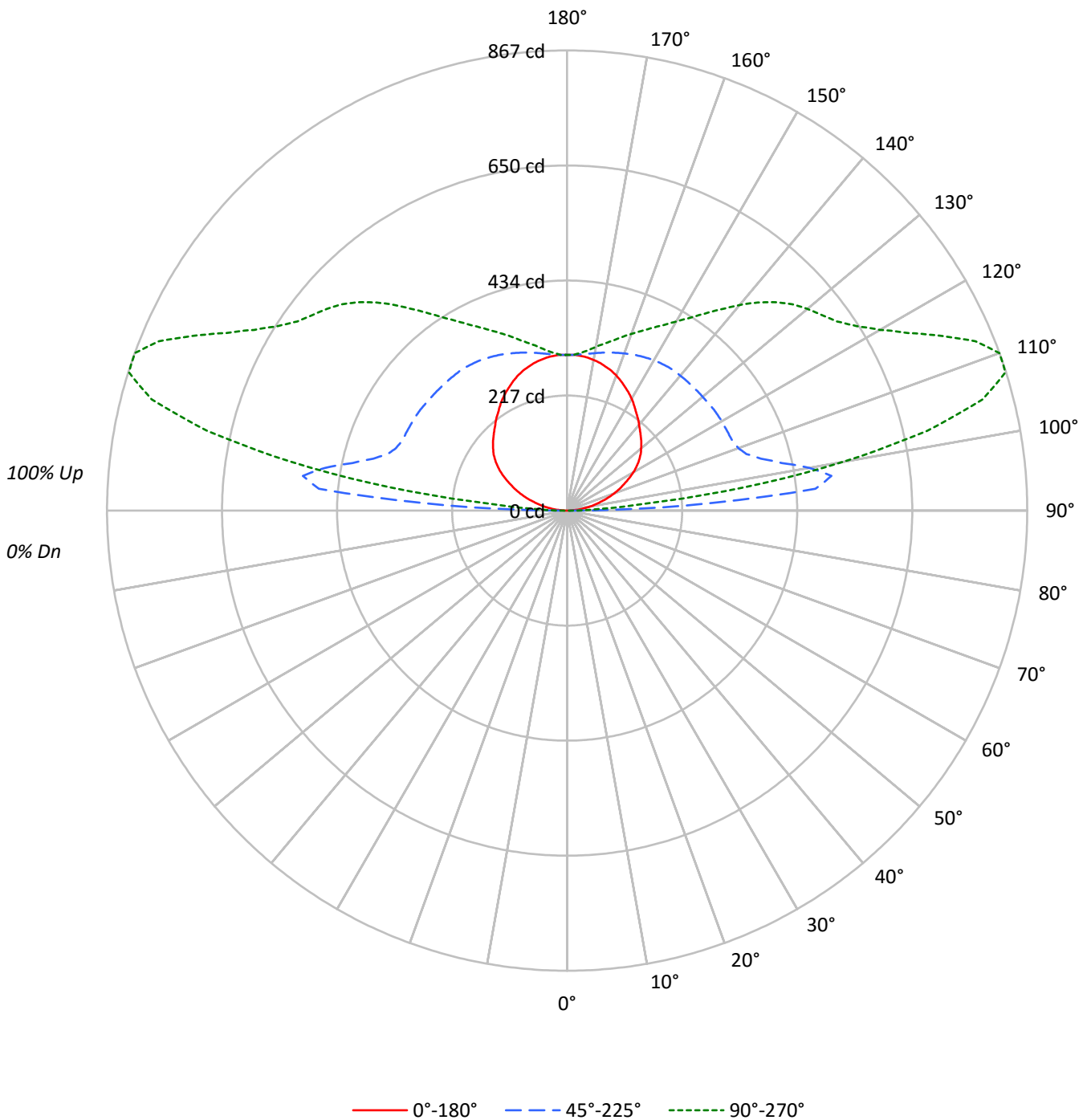
Lumens per Lamp: N/A
Luminaire Lumens: 2136.8 lumens
Efficiency: N/A
Efficacy: 113.7 lumens/watt
Spacing Criteria (0/90/45): - / - / -
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Indirect

Input Watts (W): 18.8
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



TEST NUMBER: P334801
CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	0	0	0
5°	0	0	0
10°	0	0	0
15°	0	0	0
20°	0	0	0
25°	0	0	0
30°	0	0	0
35°	0	0	0
40°	0	0	0
45°	0	0	0
50°	0	0	0
55°	0	0	0
60°	0	0	0
65°	0	0	0
70°	0	0	0
75°	0	0	0
80°	0	0	0
85°	0	0	0



TEST NUMBER: P334801

CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	0.0	0.0
10°-20°	0.0	0.0
20°-30°	0.0	0.0
30°-40°	0.0	0.0
40°-50°	0.0	0.0
50°-60°	0.0	0.0
60°-70°	0.0	0.0
70°-80°	0.0	0.0
80°-90°	1.2	0.1
90°-100°	212.5	9.9
100°-110°	443.7	20.8
110°-120°	394.4	18.5
120°-130°	332.0	15.5
130°-140°	277.0	13.0
140°-150°	211.5	9.9
150°-160°	148.7	7.0
160°-170°	87.4	4.1
170°-180°	28.4	1.3
0°-30°	0.0	0.0
0°-40°	0.0	0.0
0°-60°	0.0	0.0
0°-90°	1.2	0.1
90°-120°	1050.6	49.2
90°-150°	1871.1	87.6
90°-180°	2136.0	100.0
0°-180°	2136.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	0	0	0	0	0	
5°	0	0	0	0	0	0
15°	0	0	0	0	0	0
25°	0	0	0	0	0	0
35°	0	0	0	0	0	0
45°	0	0	0	0	0	0
55°	0	0	0	0	0	0
65°	0	0	0	0	0	0
75°	0	0	0	0	0	0
85°	0	0	0	0	0	0
90°	1	5	10	12	12	1
95°	19	60	470	232	141	21
105°	67	98	378	814	810	72
115°	119	149	337	648	778	118
125°	165	196	335	551	621	147
135°	196	234	332	489	555	152
145°	226	259	331	412	453	142
155°	258	278	322	364	380	119
165°	280	289	308	326	331	79
175°	293	293	296	300	298	28
180°	293	293	293	293	293	



TEST NUMBER: P334801

CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	0.6	1.7	3.5	4.0	4.6	4.6	8.1	8.1	9.2	10.4	9.8
92.5°	8.1	11.5	17.9	26.5	36.9	51.8	87.6	143.4	197.6	225.8	187.8
95°	19.0	20.7	26.5	34.0	47.8	72.0	122.1	216.6	354.3	469.5	482.8
97.5°	31.7	31.7	36.9	43.8	55.9	76.6	116.4	197.6	339.3	502.3	605.5
100°	43.8	43.8	47.8	54.7	65.7	84.1	118.1	183.2	300.7	463.2	610.6
102.5°	55.3	56.5	59.9	66.2	76.6	93.9	123.9	179.2	274.8	414.2	567.4
105°	67.4	69.1	72.0	78.9	89.3	106.0	133.6	181.5	262.1	377.9	513.3
107.5°	80.7	81.8	84.7	92.2	102.0	118.7	144.0	188.4	258.7	354.3	468.9
110°	93.9	95.1	97.9	104.8	115.2	130.8	156.1	196.4	259.8	343.3	437.2



TEST NUMBER: P334801

CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	106.6	107.7	111.2	117.5	127.9	143.4	167.6	205.1	263.3	338.2	419.4
115°	118.7	120.4	124.4	130.2	141.1	156.7	179.7	214.3	267.9	337.0	409.6
117.5°	131.3	133.1	136.5	142.9	153.2	169.4	191.3	223.5	272.5	336.4	404.4
120°	144.0	145.2	149.2	155.5	165.3	181.5	203.4	233.3	277.7	336.4	400.4
122.5°	155.5	156.7	160.7	166.5	177.4	193.0	214.9	242.5	282.9	335.9	395.8
125°	165.3	167.6	171.1	177.4	188.4	204.5	225.2	251.7	288.0	335.3	390.6
127.5°	174.6	176.3	180.3	187.2	198.7	214.9	235.0	259.8	292.1	334.1	383.7
130°	182.0	184.3	189.0	197.6	208.5	225.2	244.8	267.3	296.7	333.5	377.3
132.5°	189.5	191.3	197.6	205.7	217.8	233.3	252.9	274.8	300.7	333.0	371.6
135°	196.4	198.7	204.5	214.3	226.4	241.4	260.4	281.1	304.7	332.4	365.8
137.5°	203.4	205.7	212.0	221.2	233.9	248.3	266.1	285.7	307.0	332.4	360.6
140°	210.8	212.6	218.9	228.7	240.8	254.6	271.9	290.3	309.9	331.8	356.6
142.5°	218.9	220.6	226.4	235.6	247.1	260.4	277.1	293.8	312.2	331.8	353.1
145°	226.4	228.1	233.9	242.0	252.9	265.6	280.5	296.1	312.8	330.7	349.1
147.5°	235.0	235.6	240.8	249.4	258.7	270.2	284.6	298.4	313.4	328.9	345.6
150°	243.1	243.7	248.3	255.2	263.8	274.8	287.5	300.1	313.4	327.2	341.6
152.5°	250.6	250.6	255.2	261.5	269.0	278.8	289.8	301.3	312.2	324.3	337.0
155°	257.5	258.1	261.5	267.3	273.6	282.3	292.1	301.9	311.1	321.5	332.4
157.5°	264.4	264.4	267.9	272.5	278.2	285.2	293.8	301.9	309.9	318.6	327.8
160°	270.8	270.8	273.1	277.1	281.7	288.0	295.0	301.9	308.2	315.1	322.6
162.5°	276.5	275.9	277.7	281.1	285.2	289.8	296.1	301.9	306.5	311.7	318.0
165°	280.5	280.5	281.7	284.6	287.5	290.9	296.1	300.7	304.2	308.2	312.8
167.5°	285.2	284.6	285.2	287.5	289.2	292.1	296.1	299.6	301.9	304.7	308.2
170°	288.0	287.5	288.0	289.8	290.9	292.6	295.5	298.4	299.6	301.3	303.6
172.5°	290.9	290.3	290.3	291.5	292.1	293.2	295.0	297.3	297.3	297.8	299.6
175°	292.6	292.1	292.1	292.6	293.2	293.2	294.4	296.1	295.5	295.5	296.7
177.5°	293.8	293.2	292.6	293.2	293.2	293.2	293.8	295.0	293.8	293.8	294.4
180°	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2



TEST NUMBER: P334801

CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
7.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
10°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
12.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
15°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
17.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
20°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
22.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
25°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
27.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
30°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
32.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
35°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
37.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
40°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
42.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
45°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
47.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
50°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
52.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
55°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
57.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
60°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
62.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
65°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
67.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
70°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
72.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
75°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
77.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
80°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
82.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
85°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
87.5°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
90°	10.4	10.9	11.5	11.5	12.1	12.7	12.1	12.1
92.5°	138.8	103.7	81.8	67.4	58.8	54.7	52.4	52.4
95°	426.9	337.6	260.4	204.5	176.3	158.4	148.1	140.6
97.5°	614.7	570.3	506.9	442.4	403.3	368.7	351.4	337.6
100°	694.7	706.3	678.0	635.4	585.3	550.2	532.9	528.3
102.5°	690.7	759.3	776.6	765.0	739.1	716.1	697.6	694.2
105°	645.2	744.9	801.9	825.5	826.7	822.1	814.0	810.5
107.5°	589.3	697.1	776.6	824.9	850.3	860.7	865.3	865.8
110°	539.8	639.4	723.0	786.3	827.2	851.4	861.8	867.0



TEST NUMBER: P334801

CATALOG NUMBER: S124IP-S590U840-4F0-1E-UDD-4

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	503.5	588.8	666.5	729.9	777.7	808.2	823.8	833.0
115°	481.6	552.5	619.9	675.2	720.7	755.2	773.7	778.3
117.5°	468.9	528.8	583.6	632.0	672.3	702.2	721.8	724.7
120°	460.9	514.4	560.5	601.4	634.3	659.6	674.6	680.9
122.5°	453.9	505.2	546.1	580.7	607.2	627.9	640.0	646.4
125°	445.9	495.4	535.2	566.9	589.9	606.6	617.6	621.0
127.5°	436.7	484.5	524.2	554.2	577.2	592.2	601.4	604.9
130°	425.1	470.7	509.8	540.4	564.0	578.4	587.6	591.1
132.5°	413.0	455.1	493.1	523.7	546.7	563.4	572.0	575.5
135°	402.1	439.5	474.7	503.5	526.5	542.7	551.9	555.3
137.5°	391.7	424.6	455.1	481.6	503.5	520.2	527.7	531.7
140°	383.1	410.2	436.1	460.3	480.4	493.1	501.2	505.8
142.5°	375.0	398.1	419.4	439.5	456.8	468.4	475.3	478.1
145°	367.5	387.1	404.4	420.5	434.9	444.7	450.5	453.4
147.5°	361.2	377.3	391.7	405.0	415.9	424.6	429.2	430.3
150°	355.4	368.7	380.2	390.6	399.8	407.3	410.7	411.3
152.5°	349.1	360.0	370.4	378.5	386.0	391.7	393.5	394.0
155°	342.8	352.0	360.6	367.5	373.3	377.9	379.6	379.6
157.5°	335.9	343.9	351.4	357.2	361.8	365.2	366.4	366.4
160°	329.5	335.9	342.2	346.8	350.3	353.7	354.3	354.3
162.5°	323.2	328.4	333.0	337.0	339.3	342.8	343.3	342.8
165°	317.4	320.9	324.9	327.8	330.1	332.4	331.8	331.2
167.5°	311.7	314.5	318.0	319.7	320.9	322.6	322.6	322.0
170°	306.5	308.2	310.5	312.2	313.4	314.0	313.4	313.4
172.5°	301.9	303.0	304.2	305.3	305.9	306.5	305.9	304.7
175°	297.8	298.4	299.6	299.6	299.6	300.7	299.6	298.4
177.5°	295.0	295.5	295.5	296.1	295.5	296.1	295.0	293.8
180°	293.2	293.2	293.2	293.2	293.2	293.2	293.2	293.2

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