

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: P332245-930

Luminaire Tested: **S123RDIP-S340D365U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332245-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123RDIP-S340D365U930-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED  
HOUSING  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2130.1 lumens  
Efficiency: N/A  
Efficacy: 104.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.06 / 1.22  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

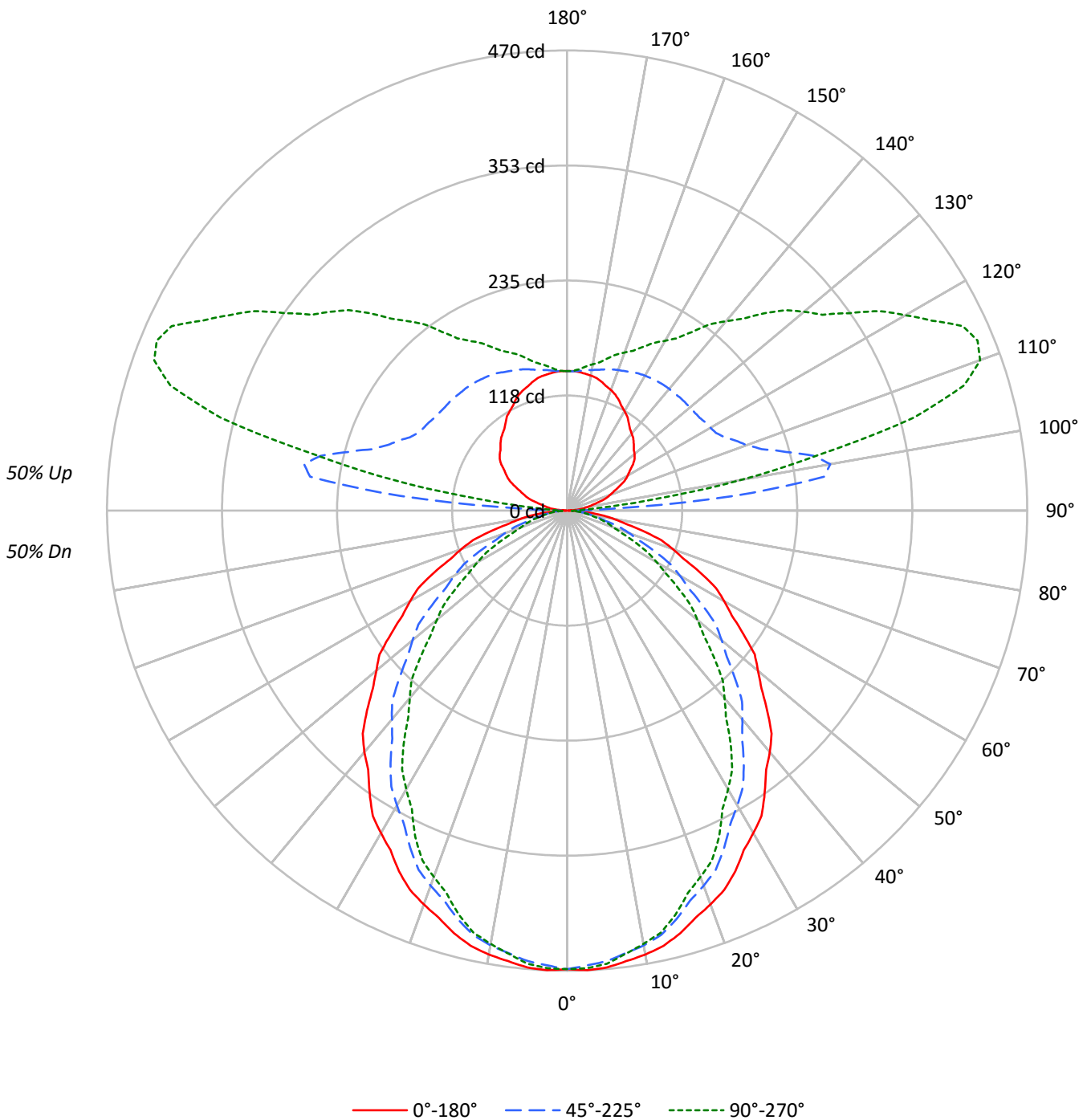
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	94	90	87	90	87	84	81	73	71	69	61	60	58	50	49	48	43
2	90	82	76	71	82	76	71	67	65	61	58	54	51	49	44	42	41	36
3	82	73	65	60	75	67	61	56	57	53	49	48	45	42	40	37	35	31
4	75	64	57	51	69	60	53	48	51	46	42	43	39	36	35	33	30	27
5	69	58	50	44	63	54	46	41	46	40	36	39	35	31	32	29	27	23
6	64	52	44	38	59	48	41	36	41	36	32	35	31	28	29	26	24	21
7	59	47	39	33	54	44	37	32	38	32	28	32	28	25	27	24	21	19
8	55	43	35	30	50	40	33	28	34	29	25	29	25	22	25	21	19	17
9	51	39	31	26	47	36	30	25	32	26	22	27	23	20	23	20	17	15
10	48	36	29	24	44	33	27	23	29	24	20	25	21	18	21	18	16	14

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	5042	5042	5042
5°	5061	4991	5020
10°	5032	4928	4912
15°	4979	4813	4763
20°	4904	4669	4560
25°	4828	4507	4363
30°	4727	4320	4084
35°	4623	4133	3829
40°	4526	3912	3513
45°	4401	3694	3227
50°	4262	3448	2907
55°	4121	3166	2609
60°	3991	2863	2282
65°	3823	2534	1954
70°	3610	2127	1577
75°	3302	1676	1485
80°	2944	1488	1364
85°	2482	1309	1223



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.0	2.1
10°-20°	122.4	5.7
20°-30°	176.2	8.3
30°-40°	198.5	9.3
40°-50°	189.9	8.9
50°-60°	155.5	7.3
60°-70°	104.9	4.9
70°-80°	52.8	2.5
80°-90°	15.1	0.7
90°-100°	79.2	3.7
100°-110°	224.3	10.5
110°-120°	220.6	10.4
120°-130°	176.0	8.3
130°-140°	138.8	6.5
140°-150°	103.6	4.9
150°-160°	72.2	3.4
160°-170°	42.4	2.0
170°-180°	13.8	0.6
0°-30°	342.6	16.1
0°-40°	541.1	25.4
0°-60°	886.5	41.6
0°-90°	1059.3	49.7
90°-120°	524.1	24.6
90°-150°	942.4	44.2
90°-180°	1071.0	50.3
0°-180°	2130.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	468	468	468	468	468	
5°	468	466	462	465	465	44
15°	447	442	432	430	427	126
25°	406	396	380	372	367	187
35°	352	338	314	299	291	220
45°	289	271	243	222	212	223
55°	220	200	169	147	139	197
65°	150	129	100	82	77	148
75°	79	61	40	37	36	85
85°	20	12	11	10	10	23
90°	1	4	7	8	8	2
95°	10	32	171	50	33	11
105°	33	49	232	405	366	36
115°	59	74	177	388	446	58
125°	82	97	165	300	352	73
135°	96	115	163	247	285	74
145°	110	126	161	202	223	69
155°	125	135	156	177	185	57
165°	136	140	149	158	161	38
175°	142	142	143	145	145	13
180°	142	142	142	142	142	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	468.4	468.4	468.4	468.4	468.4	468.4	468.4	468.4	468.4	468.4	468.4
2.5°	469.9	469.6	469.4	469.1	468.9	468.3	467.5	466.7	465.9	465.0	465.8
5°	468.4	468.0	467.6	467.2	466.7	466.0	465.0	464.0	462.9	461.9	462.7
7.5°	464.1	463.6	463.2	462.7	462.3	461.4	460.1	458.8	457.4	456.1	456.5
10°	460.4	459.8	459.3	458.7	458.0	457.0	455.5	454.0	452.4	450.9	451.0
12.5°	455.3	454.6	454.0	453.3	452.7	451.3	449.5	447.7	445.8	443.9	443.8
15°	446.8	445.8	444.9	443.9	443.0	441.4	439.0	436.7	434.3	431.9	431.5
17.5°	436.0	435.0	433.9	432.8	431.7	429.7	426.6	423.6	420.7	417.7	416.8
20°	428.1	426.8	425.4	424.1	422.7	420.4	417.3	414.0	410.8	407.6	406.5
22.5°	419.3	417.8	416.2	414.7	413.1	410.7	407.2	403.8	400.4	397.0	395.6
25°	406.5	404.4	402.3	400.1	398.0	395.0	391.2	387.3	383.4	379.5	377.7
27.5°	390.9	388.6	386.2	383.9	381.6	378.3	374.0	369.6	365.3	360.9	358.5
30°	380.3	377.7	375.2	372.7	370.1	366.5	361.7	357.0	352.3	347.6	344.7
32.5°	369.7	366.7	363.9	361.0	358.2	354.2	349.2	344.2	339.2	334.2	331.1
35°	351.8	348.7	345.7	342.7	339.7	335.5	330.3	325.0	319.8	314.5	311.0
37.5°	333.7	330.3	326.9	323.6	320.2	315.7	310.1	304.5	299.0	293.3	289.3
40°	322.1	318.5	314.7	311.0	307.3	302.4	296.4	290.4	284.5	278.4	274.1
42.5°	309.1	305.3	301.7	297.9	294.2	289.3	283.1	276.9	270.7	264.5	259.7
45°	289.1	285.3	281.5	277.7	273.9	268.7	262.3	255.8	249.2	242.7	237.9
47.5°	269.1	265.0	260.7	256.6	252.4	247.1	240.6	234.1	227.6	221.1	215.9
50°	254.5	250.5	246.6	242.6	238.6	233.3	226.4	219.6	212.7	205.9	200.6
52.5°	241.5	237.2	232.8	228.5	224.2	218.7	211.9	205.1	198.4	191.6	186.2
55°	219.6	215.4	211.3	207.2	203.0	197.4	190.2	183.0	175.9	168.7	163.8
57.5°	199.3	194.9	190.4	185.8	181.3	175.5	168.3	161.0	153.8	146.7	142.0
60°	185.4	180.8	176.1	171.5	166.8	161.0	154.0	147.0	140.0	133.0	128.4
62.5°	171.4	166.7	162.1	157.5	152.9	147.0	140.0	133.0	126.0	119.0	114.7
65°	150.1	145.4	140.8	136.2	131.5	125.9	119.3	112.7	106.2	99.5	95.4
67.5°	128.7	124.0	119.3	114.6	109.9	104.4	98.1	91.8	85.4	79.2	76.1
70°	114.7	110.1	105.6	101.0	96.5	91.2	85.4	79.4	73.5	67.6	64.7
72.5°	100.8	96.3	91.8	87.2	82.8	77.9	72.5	67.1	61.7	56.3	54.0
75°	79.4	75.3	71.3	67.3	63.2	58.9	54.2	49.6	44.9	40.3	39.5
77.5°	59.9	56.3	52.6	48.9	45.3	42.0	39.0	36.0	33.0	30.0	29.6
80°	47.5	44.0	40.6	37.1	33.7	31.1	29.3	27.5	25.7	24.0	23.6
82.5°	35.6	32.6	29.7	26.7	23.6	21.8	21.0	20.1	19.3	18.4	18.2
85°	20.1	18.3	16.4	14.6	12.7	11.7	11.4	11.2	10.9	10.6	10.4
87.5°	7.4	6.8	6.1	5.5	5.0	4.7	4.9	5.1	5.2	5.4	5.3
90°	0.6	1.1	1.7	2.6	3.2	3.8	4.6	5.5	6.4	7.2	6.9
92.5°	3.6	5.3	7.7	9.9	12.4	16.6	24.2	36.6	48.8	44.3	33.4
95°	9.8	10.7	13.9	18.8	26.3	37.4	62.0	104.8	152.1	170.9	138.6
97.5°	16.7	17.0	19.5	23.7	31.1	43.3	66.7	115.0	193.9	264.8	283.2
100°	21.4	21.6	23.6	27.6	34.6	45.8	66.0	108.6	184.4	272.9	329.6
102.5°	26.2	26.7	28.5	32.3	38.5	48.8	66.9	103.1	170.6	257.9	331.9
105°	33.4	34.3	36.0	39.5	44.9	53.9	69.5	99.1	153.6	231.6	314.3
107.5°	41.2	42.0	43.7	47.0	52.2	60.5	74.2	98.8	142.8	208.5	283.6
110°	46.6	47.5	49.0	52.2	57.1	65.1	78.1	100.0	138.6	195.3	264.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	51.8	52.6	54.1	57.2	62.1	70.0	82.0	102.3	136.2	186.5	247.4
115°	59.0	60.3	62.0	64.8	69.7	77.5	88.5	106.0	135.4	177.2	227.1
117.5°	66.4	67.7	69.1	71.8	77.3	84.5	95.3	111.0	135.9	171.6	214.7
120°	71.4	72.3	73.8	76.6	82.1	89.3	99.7	114.6	136.9	169.1	208.3
122.5°	75.8	76.7	78.1	81.3	86.5	94.2	104.3	118.1	138.4	167.5	203.0
125°	82.1	82.7	84.4	87.6	93.0	100.9	111.0	123.6	140.9	165.3	196.2
127.5°	86.9	87.7	89.9	93.1	99.1	107.0	116.7	128.1	143.7	164.4	190.2
130°	89.9	90.7	93.4	96.8	102.9	110.6	120.2	131.1	145.5	163.6	186.9
132.5°	92.2	93.3	96.1	100.3	106.3	113.9	123.1	133.9	146.9	163.4	184.0
135°	96.2	97.3	100.5	104.8	111.0	118.7	127.6	137.5	149.0	163.1	180.1
137.5°	100.0	101.3	104.4	108.9	115.0	122.1	130.8	140.1	150.3	162.4	176.7
140°	102.6	104.0	106.9	111.5	117.2	124.5	132.8	141.5	151.2	162.2	174.6
142.5°	105.3	106.6	109.7	113.8	119.6	126.3	134.4	142.8	152.0	161.8	172.8
145°	109.7	110.6	113.2	117.6	122.5	129.1	136.6	144.3	152.4	161.0	170.2
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	167.9
150°	117.2	117.6	119.8	123.6	127.6	132.8	139.4	145.5	152.4	159.1	166.2
152.5°	120.3	120.3	122.6	125.9	129.5	134.4	140.1	145.9	151.7	157.9	164.4
155°	124.7	124.7	126.5	129.4	132.6	136.6	141.5	146.1	151.0	155.9	161.6
157.5°	128.3	128.6	130.0	132.5	135.2	138.3	142.2	146.3	150.0	154.1	158.5
160°	131.1	131.1	132.2	134.5	136.6	139.4	142.9	146.3	149.5	152.7	156.5
162.5°	133.1	133.1	134.1	135.9	137.7	140.1	143.2	146.1	148.6	151.3	154.3
165°	136.2	136.0	136.6	138.0	139.2	141.2	143.5	145.5	147.2	149.3	151.6
167.5°	138.6	138.3	138.6	139.7	140.5	141.8	143.4	145.0	145.9	147.2	148.9
170°	140.0	139.4	139.7	140.6	141.2	141.8	143.2	144.3	145.0	145.8	147.2
172.5°	141.0	140.6	140.6	141.3	141.6	141.9	143.2	144.1	144.2	144.6	145.6
175°	142.0	141.8	141.5	142.0	142.0	142.4	142.9	143.5	143.2	143.2	143.7
177.5°	142.6	142.4	142.1	142.4	142.4	142.4	142.6	143.0	142.6	142.4	142.6
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	468.4	468.4	468.4	468.4	468.4	468.4	468.4	468.4
2.5°	466.5	467.2	468.1	468.3	468.2	468.1	467.9	467.8
5°	463.5	464.2	465.0	465.3	465.1	465.0	464.8	464.6
7.5°	457.0	457.4	457.8	457.9	457.5	457.3	457.0	456.7
10°	451.1	451.2	451.3	451.1	450.7	450.3	449.8	449.4
12.5°	443.8	443.8	443.8	443.4	443.0	442.5	442.0	441.5
15°	431.0	430.6	430.2	429.7	429.2	428.5	428.0	427.4
17.5°	415.9	415.0	414.1	413.2	412.3	411.4	410.6	409.7
20°	405.4	404.3	403.2	402.2	401.1	400.1	399.2	398.1
22.5°	394.3	392.9	391.5	390.4	389.4	388.5	387.5	386.6
25°	375.9	374.2	372.4	371.0	370.1	369.2	368.3	367.4
27.5°	356.0	353.6	351.1	349.2	347.7	346.3	345.0	343.5
30°	341.9	339.0	336.1	334.0	332.6	331.3	330.0	328.6
32.5°	327.9	324.8	321.6	319.4	318.0	316.6	315.1	313.7
35°	307.3	303.6	300.0	297.4	296.0	294.4	292.9	291.4
37.5°	285.1	281.0	276.9	273.9	272.0	270.1	268.2	266.4
40°	269.7	265.3	260.9	257.7	255.8	253.9	251.9	250.0
42.5°	254.9	250.1	245.3	242.1	240.3	238.6	236.8	235.1
45°	233.1	228.3	223.5	220.0	218.1	216.1	214.0	212.0
47.5°	210.6	205.4	200.2	196.7	194.9	193.1	191.2	189.4
50°	195.4	190.2	185.0	181.4	179.4	177.5	175.5	173.6
52.5°	180.8	175.3	169.9	166.3	164.5	162.8	161.1	159.3
55°	158.9	154.0	149.1	145.8	144.1	142.4	140.7	139.0
57.5°	137.4	132.7	128.2	125.1	123.7	122.2	120.8	119.4
60°	123.8	119.3	114.7	111.7	110.3	108.8	107.5	106.0
62.5°	110.4	106.2	101.8	98.9	97.4	96.0	94.4	92.9
65°	91.2	87.2	83.0	80.5	79.5	78.6	77.7	76.7
67.5°	73.0	69.9	66.8	64.7	63.8	62.8	61.8	60.8
70°	61.7	58.8	55.8	53.9	52.9	52.0	51.0	50.1
72.5°	51.5	49.2	46.7	45.3	44.9	44.5	44.2	43.8
75°	38.6	37.7	36.9	36.4	36.2	36.0	35.9	35.7
77.5°	29.1	28.6	28.2	27.9	27.7	27.6	27.4	27.2
80°	23.4	23.2	22.9	22.7	22.5	22.3	22.2	22.0
82.5°	17.9	17.7	17.4	17.3	17.3	17.2	17.2	17.2
85°	10.3	10.1	9.9	9.9	9.9	9.9	9.9	9.9
87.5°	5.2	5.2	5.2	5.3	5.1	5.1	5.1	5.0
90°	7.2	7.5	7.7	8.3	8.1	8.3	8.6	8.3
92.5°	24.3	19.2	17.0	15.5	15.0	14.1	14.4	13.9
95°	103.7	70.3	55.0	44.7	39.2	36.6	34.6	33.4
97.5°	258.5	207.1	169.9	135.5	114.2	101.3	93.4	91.0
100°	339.7	316.3	282.7	241.7	212.6	191.6	180.3	180.7
102.5°	366.6	365.9	346.3	320.3	297.7	281.0	271.7	265.0
105°	374.5	403.3	408.8	401.4	388.1	377.2	367.9	366.5
107.5°	351.8	398.6	423.9	434.1	434.4	430.6	427.5	424.9
110°	330.2	383.2	419.5	439.7	447.8	450.0	449.5	448.9





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	308.8	362.9	403.6	429.5	444.3	451.4	453.6	453.7
115°	280.3	330.4	372.8	404.2	425.8	438.5	444.3	445.7
117.5°	259.8	303.0	341.0	372.9	395.5	410.0	418.2	420.2
120°	248.9	287.8	322.4	351.5	374.2	390.4	397.3	399.0
122.5°	240.4	275.6	307.6	334.7	354.9	369.4	377.0	379.2
125°	229.0	260.5	288.1	311.2	329.6	342.3	349.5	351.5
127.5°	219.2	247.1	272.1	293.1	309.5	320.3	326.9	328.6
130°	212.9	238.9	262.2	281.8	297.0	307.4	313.5	315.8
132.5°	207.2	231.0	252.7	271.4	285.8	296.1	301.5	303.1
135°	199.3	219.8	238.6	254.9	269.1	277.8	282.9	284.9
137.5°	192.2	209.0	225.2	239.5	251.3	260.1	264.4	265.8
140°	188.2	202.8	216.6	229.0	240.0	248.1	252.7	252.4
142.5°	184.3	196.8	208.8	219.6	228.9	236.1	240.2	239.9
145°	179.5	189.0	198.2	206.6	213.8	219.8	222.2	222.7
147.5°	175.6	183.2	190.6	196.6	202.0	206.1	208.3	208.6
150°	172.8	179.5	185.6	191.0	195.3	198.5	200.2	200.2
152.5°	170.3	176.0	181.4	186.0	189.3	192.2	193.3	193.3
155°	166.6	171.1	175.5	178.9	181.5	183.8	184.4	184.7
157.5°	162.5	166.3	169.7	172.4	174.6	176.3	176.8	176.8
160°	160.2	163.4	166.2	168.3	170.2	172.0	172.0	171.7
162.5°	157.4	160.1	162.8	164.6	165.9	167.4	167.4	167.1
165°	153.8	155.6	157.6	159.1	160.2	161.3	161.0	161.0
167.5°	150.7	152.1	153.2	154.3	154.7	155.6	155.3	155.3
170°	148.6	149.5	150.7	151.2	151.6	152.1	151.8	151.8
172.5°	146.8	147.5	148.4	148.7	148.8	149.4	148.9	148.6
175°	144.3	144.6	145.2	145.2	145.2	145.5	145.2	145.0
177.5°	142.8	143.0	143.2	143.2	143.0	143.2	142.8	142.8
180°	142.4	142.4	142.4	142.4	142.4	142.4	142.4	142.4

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