

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: P331870-930

Luminaire Tested: **S123DIP-S340D365U930-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331870-930  
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: S123DIP-S340D365U930-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 365 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 2243.8 lumens  
Efficiency: N/A  
Efficacy: 110.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: General Diffuse

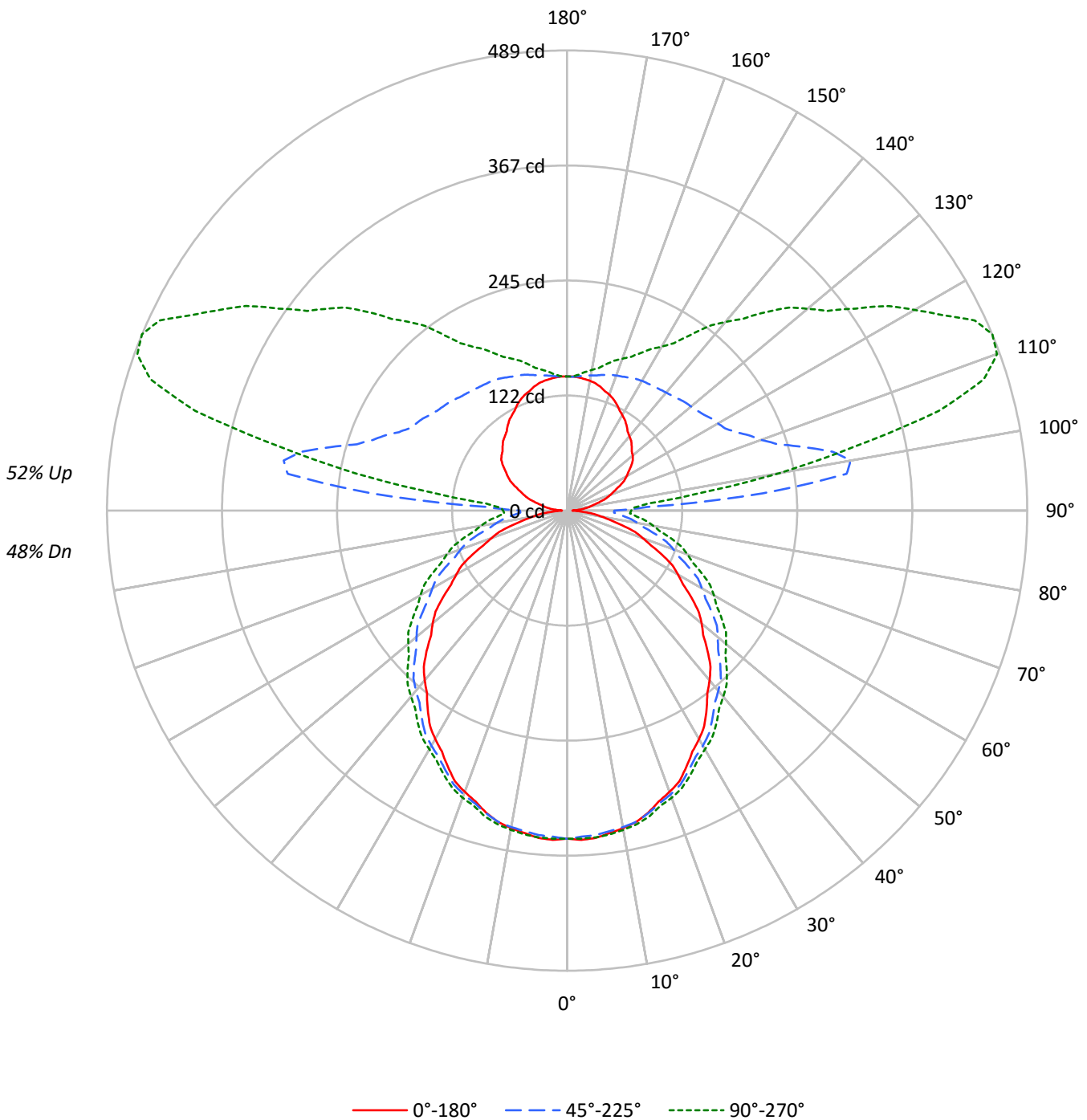
Input Watts (W): 20.3  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	98	98	98	98	82	82	82	68	68	68	54	54	54	48
1	96	92	87	83	88	84	81	77	70	68	65	58	56	54	46	45	44	38
2	87	79	73	67	80	73	67	63	61	57	53	50	47	44	40	38	36	31
3	79	69	62	56	73	64	57	52	54	49	44	44	40	37	35	33	30	26
4	72	61	53	47	66	56	49	44	47	42	37	39	35	32	31	28	26	22
5	66	54	46	40	61	50	43	37	42	37	32	35	31	27	28	25	22	19
6	61	49	40	34	56	45	38	32	38	32	28	32	27	24	25	22	20	17
7	56	44	36	30	52	41	33	28	34	29	24	29	24	21	23	20	17	15
8	52	40	32	26	48	37	30	25	31	26	22	26	22	19	21	18	15	13
9	49	36	29	23	45	34	27	22	29	23	19	24	20	17	20	16	14	12
10	45	33	26	21	42	31	24	20	26	21	17	22	18	15	18	15	13	11

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

	0°	45°	90°
0°	3753	3753	3753
5°	3765	3659	3661
10°	3732	3575	3556
15°	3684	3479	3443
20°	3615	3370	3318
25°	3530	3245	3186
30°	3444	3132	3053
35°	3345	3012	2946
40°	3252	2903	2833
45°	3149	2798	2741
50°	3047	2695	2641
55°	2936	2589	2550
60°	2826	2482	2458
65°	2714	2366	2347
70°	2542	2237	2234
75°	2331	2092	2120
80°	2084	1946	1988
85°	1855	1845	1910



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.1	1.5
10°-20°	94.2	4.2
20°-30°	141.0	6.3
30°-40°	168.3	7.5
40°-50°	176.1	7.8
50°-60°	165.3	7.4
60°-70°	138.0	6.2
70°-80°	98.8	4.4
80°-90°	60.0	2.7
90°-100°	116.2	5.2
100°-110°	251.4	11.2
110°-120°	238.8	10.6
120°-130°	186.3	8.3
130°-140°	143.4	6.4
140°-150°	104.6	4.7
150°-160°	72.2	3.2
160°-170°	42.4	1.9
170°-180°	13.8	0.6
0°-30°	268.3	12.0
0°-40°	436.6	19.5
0°-60°	778.0	34.7
0°-90°	1074.8	47.9
90°-120°	606.4	27.0
90°-150°	1040.7	46.4
90°-180°	1169.0	52.1
0°-180°	2243.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	349	349	349	349	349	
5°	349	348	346	349	349	33
15°	332	333	333	337	337	94
25°	300	304	305	310	310	138
35°	258	264	269	275	276	162
45°	211	220	230	237	240	163
55°	161	174	187	197	201	144
65°	111	126	143	154	158	110
75°	60	78	97	109	114	64
85°	19	38	58	70	74	20
90°	6	27	50	63	68	4
95°	14	51	208	99	87	14
105°	36	62	260	444	409	39
115°	61	81	197	417	478	60
125°	83	99	178	320	374	74
135°	97	115	168	258	298	75
145°	110	126	161	205	227	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°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	350.3	350.1	349.8	349.7	349.4	349.1	348.5	348.0	347.5	346.9	347.5
5°	349.1	348.9	348.8	348.6	348.5	348.1	347.6	347.1	346.6	346.1	346.7
7.5°	345.7	345.8	345.8	345.8	345.8	345.6	345.1	344.6	344.1	343.6	344.5
10°	342.7	342.8	343.0	343.2	343.3	343.2	342.8	342.3	341.9	341.5	342.3
12.5°	339.0	339.2	339.5	339.7	340.0	339.9	339.7	339.3	339.1	338.8	339.6
15°	332.4	332.6	332.9	333.1	333.4	333.5	333.4	333.3	333.2	333.1	334.0
17.5°	324.1	324.6	325.1	325.5	326.0	326.3	326.3	326.2	326.2	326.2	326.9
20°	318.0	318.5	318.9	319.5	320.0	320.3	320.5	320.7	320.8	321.0	321.8
22.5°	311.6	312.1	312.6	313.1	313.6	314.0	314.2	314.5	314.7	315.0	315.9
25°	300.1	300.9	301.8	302.6	303.5	304.0	304.3	304.5	304.8	305.1	306.1
27.5°	288.5	289.5	290.5	291.5	292.4	293.2	293.7	294.2	294.8	295.3	296.3
30°	280.4	281.4	282.6	283.6	284.8	285.6	286.3	287.0	287.6	288.4	289.3
32.5°	271.3	272.5	273.7	274.9	276.1	277.2	278.1	279.0	279.9	280.7	281.8
35°	258.3	259.7	261.1	262.4	263.7	265.0	266.0	267.2	268.2	269.4	270.6
37.5°	244.7	246.1	247.7	249.2	250.7	252.2	253.5	254.9	256.2	257.6	259.0
40°	235.5	237.1	238.6	240.1	241.6	243.2	244.9	246.6	248.3	250.0	251.4
42.5°	225.5	227.4	229.2	231.1	232.9	234.7	236.5	238.2	240.0	241.7	243.4
45°	211.2	213.3	215.2	217.3	219.3	221.4	223.5	225.6	227.7	229.8	231.5
47.5°	196.2	198.5	200.8	203.2	205.5	207.8	210.2	212.6	215.0	217.4	219.2
50°	186.5	188.9	191.3	193.6	196.0	198.4	201.1	203.7	206.4	209.0	210.9
52.5°	176.2	178.7	181.2	183.7	186.2	188.9	191.8	194.7	197.5	200.4	202.4
55°	161.1	163.9	166.6	169.4	172.2	175.1	178.1	181.2	184.3	187.3	189.6
57.5°	146.3	149.2	152.1	155.1	157.9	161.1	164.4	167.7	171.0	174.4	176.7
60°	136.0	139.0	142.1	145.1	148.1	151.4	154.9	158.3	161.8	165.3	167.6
62.5°	126.3	129.4	132.5	135.6	138.7	142.1	145.8	149.4	153.1	156.8	159.1
65°	111.3	114.6	117.9	121.2	124.5	128.0	131.7	135.4	139.1	142.8	145.4
67.5°	96.1	99.6	103.1	106.6	110.1	113.7	117.5	121.3	125.1	128.9	131.6
70°	85.4	89.1	92.7	96.4	100.0	103.9	107.9	111.9	116.0	120.0	122.8
72.5°	75.7	79.4	83.0	86.7	90.3	94.2	98.3	102.6	106.7	111.0	113.7
75°	60.4	64.4	68.3	72.3	76.3	80.4	84.6	88.8	93.0	97.3	100.0
77.5°	47.0	51.0	55.0	59.0	63.0	67.2	71.4	75.7	79.9	84.2	87.2
80°	37.6	41.7	45.9	50.1	54.1	58.5	62.8	67.2	71.6	76.0	78.8
82.5°	29.4	33.6	37.8	42.0	46.2	50.5	55.0	59.4	63.9	68.4	71.3
85°	18.6	22.8	27.1	31.3	35.5	39.9	44.4	48.8	53.2	57.7	60.6
87.5°	10.2	14.5	18.8	23.2	27.6	32.0	36.4	40.8	45.3	49.8	52.7
90°	5.5	10.2	14.9	20.0	24.6	29.4	34.7	39.8	44.9	50.1	52.7
92.5°	8.2	13.7	19.8	25.8	32.0	40.2	52.0	68.6	85.0	84.8	76.7
95°	13.9	18.1	24.6	32.8	43.5	58.5	87.2	134.2	185.6	208.5	178.8
97.5°	20.5	23.7	29.1	36.4	46.7	62.4	89.7	142.0	224.8	299.6	320.7
100°	24.7	27.7	32.4	39.2	48.8	63.3	87.4	133.9	213.5	305.9	365.1
102.5°	29.3	32.2	36.4	42.6	51.4	64.7	86.7	126.7	198.0	289.1	365.5
105°	36.4	39.4	43.1	48.6	56.1	67.8	87.1	120.3	178.4	260.2	345.2
107.5°	43.7	46.3	49.7	54.8	61.7	72.6	89.7	117.7	165.1	234.3	311.7
110°	48.9	51.4	54.3	58.9	65.4	75.9	92.3	117.6	159.6	219.6	290.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	54.1	56.2	58.9	63.3	69.4	79.5	94.7	118.3	155.6	209.0	272.0
115°	61.0	63.1	65.9	69.8	75.7	85.4	99.5	120.1	152.5	197.3	249.2
117.5°	68.2	70.1	72.2	75.5	81.6	90.5	104.2	122.8	150.6	189.1	234.2
120°	73.0	74.3	76.1	79.4	85.3	94.2	107.3	125.1	150.0	185.1	226.2
122.5°	77.4	78.4	80.1	83.4	88.9	98.0	110.8	127.3	150.3	182.0	219.3
125°	83.2	83.8	85.5	88.7	94.2	103.2	115.8	130.9	150.6	177.6	210.1
127.5°	88.1	88.8	90.8	94.0	100.0	108.7	120.5	134.0	151.5	174.2	201.8
130°	91.1	91.8	94.3	97.7	103.6	112.3	123.4	136.1	152.1	172.0	197.0
132.5°	93.0	94.1	96.9	101.0	107.0	115.3	126.0	138.0	152.4	170.2	192.3
135°	97.0	98.1	101.2	105.4	111.4	119.5	129.4	140.1	152.6	167.6	186.1
137.5°	100.7	101.8	104.9	109.4	115.4	122.8	131.9	141.8	152.5	165.2	180.8
140°	103.0	104.4	107.3	111.9	117.6	125.0	133.5	142.5	152.5	163.7	177.4
142.5°	105.7	106.9	109.9	114.0	119.7	126.4	134.6	143.1	152.2	162.1	174.1
145°	110.1	111.0	113.4	117.6	122.5	129.1	136.6	144.3	152.4	161.0	171.0
147.5°	114.3	114.8	117.3	121.1	125.8	131.4	138.3	145.3	152.4	160.0	168.0
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°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	348.0	348.5	349.1	349.3	349.3	349.2	349.1	349.0
5°	347.4	348.1	348.8	349.1	349.0	348.9	348.8	348.7
7.5°	345.4	346.2	347.0	347.4	347.3	347.2	347.1	347.0
10°	343.2	344.1	344.9	345.2	345.0	344.9	344.7	344.5
12.5°	340.3	341.1	341.9	342.2	342.0	341.9	341.7	341.5
15°	334.8	335.7	336.6	336.9	336.8	336.7	336.6	336.6
17.5°	327.7	328.5	329.2	329.5	329.4	329.3	329.2	329.1
20°	322.5	323.3	324.1	324.5	324.6	324.7	324.7	324.8
22.5°	316.8	317.8	318.8	319.3	319.2	319.1	319.1	319.0
25°	307.2	308.3	309.4	310.0	310.0	310.0	310.0	310.0
27.5°	297.2	298.2	299.1	299.6	299.7	299.8	299.8	299.9
30°	290.3	291.4	292.4	292.9	292.9	292.9	292.9	292.9
32.5°	282.9	284.0	285.0	285.7	285.9	286.1	286.3	286.5
35°	271.9	273.1	274.4	275.2	275.6	275.9	276.2	276.5
37.5°	260.4	261.9	263.3	264.2	264.4	264.7	265.0	265.2
40°	252.8	254.3	255.7	256.6	256.9	257.3	257.6	258.0
42.5°	244.9	246.5	248.0	249.1	249.6	250.0	250.5	250.9
45°	233.0	234.6	236.3	237.4	238.1	238.7	239.5	240.1
47.5°	221.0	222.9	224.7	225.8	226.3	226.9	227.4	228.0
50°	212.8	214.7	216.7	218.0	218.6	219.2	219.7	220.4
52.5°	204.5	206.4	208.5	209.9	210.6	211.3	212.0	212.7
55°	191.8	194.1	196.4	197.9	198.5	199.3	199.9	200.6
57.5°	179.0	181.2	183.5	185.1	185.9	186.7	187.5	188.3
60°	170.0	172.4	174.7	176.3	177.2	178.2	179.1	180.1
62.5°	161.4	163.8	166.2	167.8	168.7	169.5	170.4	171.3
65°	147.9	150.4	153.0	154.7	155.5	156.4	157.2	158.0
67.5°	134.4	137.1	139.9	141.7	142.4	143.1	143.8	144.5
70°	125.5	128.2	130.9	132.6	133.5	134.3	135.2	136.0
72.5°	116.4	119.2	122.0	123.8	124.7	125.5	126.4	127.2
75°	102.8	105.6	108.4	110.3	111.3	112.3	113.3	114.4
77.5°	90.1	93.0	96.0	97.8	98.6	99.4	100.1	100.9
80°	81.7	84.6	87.5	89.3	90.2	91.0	91.9	92.7
82.5°	74.1	77.0	79.9	81.7	82.6	83.4	84.2	85.1
85°	63.5	66.4	69.2	71.1	71.9	72.8	73.6	74.4
87.5°	55.6	58.5	61.5	63.4	64.2	65.1	66.0	66.8
90°	55.8	59.0	62.2	64.7	65.1	66.3	67.4	68.0
92.5°	70.4	68.2	68.7	69.0	69.2	69.1	70.2	70.5
95°	146.6	115.8	103.1	94.5	89.8	88.1	86.9	86.6
97.5°	298.5	249.5	214.8	182.1	161.7	149.5	142.6	141.0
100°	377.6	356.8	325.5	286.3	258.0	237.7	227.4	228.5
102.5°	402.7	404.3	387.0	362.6	340.9	325.1	316.5	310.7
105°	407.7	439.0	446.8	440.8	428.4	418.2	409.7	409.0
107.5°	382.2	431.2	458.8	470.5	471.5	468.6	466.2	464.2
110°	358.9	414.1	452.6	474.2	482.9	485.9	486.0	486.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	335.5	391.8	434.6	461.9	477.4	485.3	488.3	489.1
115°	304.5	356.7	401.0	433.8	456.1	469.4	475.9	478.0
117.5°	281.3	326.5	366.6	399.7	423.0	438.1	447.1	449.7
120°	268.8	309.6	346.1	376.5	399.8	416.5	424.0	426.4
122.5°	258.6	295.6	329.5	357.8	378.6	393.8	401.9	404.7
125°	244.8	277.9	307.4	331.6	350.7	363.9	371.7	374.3
127.5°	232.4	262.0	288.6	310.8	327.8	339.2	346.3	348.6
130°	224.5	252.0	277.0	297.6	313.4	324.2	330.8	333.6
132.5°	217.0	242.5	265.7	285.4	300.4	311.3	317.2	319.4
135°	207.0	228.9	249.2	266.6	281.1	290.2	295.8	298.2
137.5°	197.7	215.8	233.3	248.3	260.7	269.9	274.7	276.4
140°	192.2	208.1	223.2	236.4	247.9	256.3	261.4	261.5
142.5°	186.8	200.6	213.7	225.2	235.0	242.6	247.1	247.2
145°	180.8	191.0	200.9	209.8	217.4	223.7	226.3	227.3
147.5°	176.0	183.8	191.4	197.6	203.4	207.8	210.3	210.8
150°	172.8	179.5	185.6	191.1	195.6	198.9	200.8	201.0
152.5°	170.3	176.0	181.4	186.0	189.4	192.3	193.5	193.5
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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