

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: P332513-927

Luminaire Tested: **S124DIP-S350D810U927-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332513-927  
REPORT 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: S124DIP-S350D810U927-4F0-1E-UDD-D4  
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 3436.2 lumens  
Efficiency: N/A  
Efficacy: 110.1 lumens/watt  
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39  
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

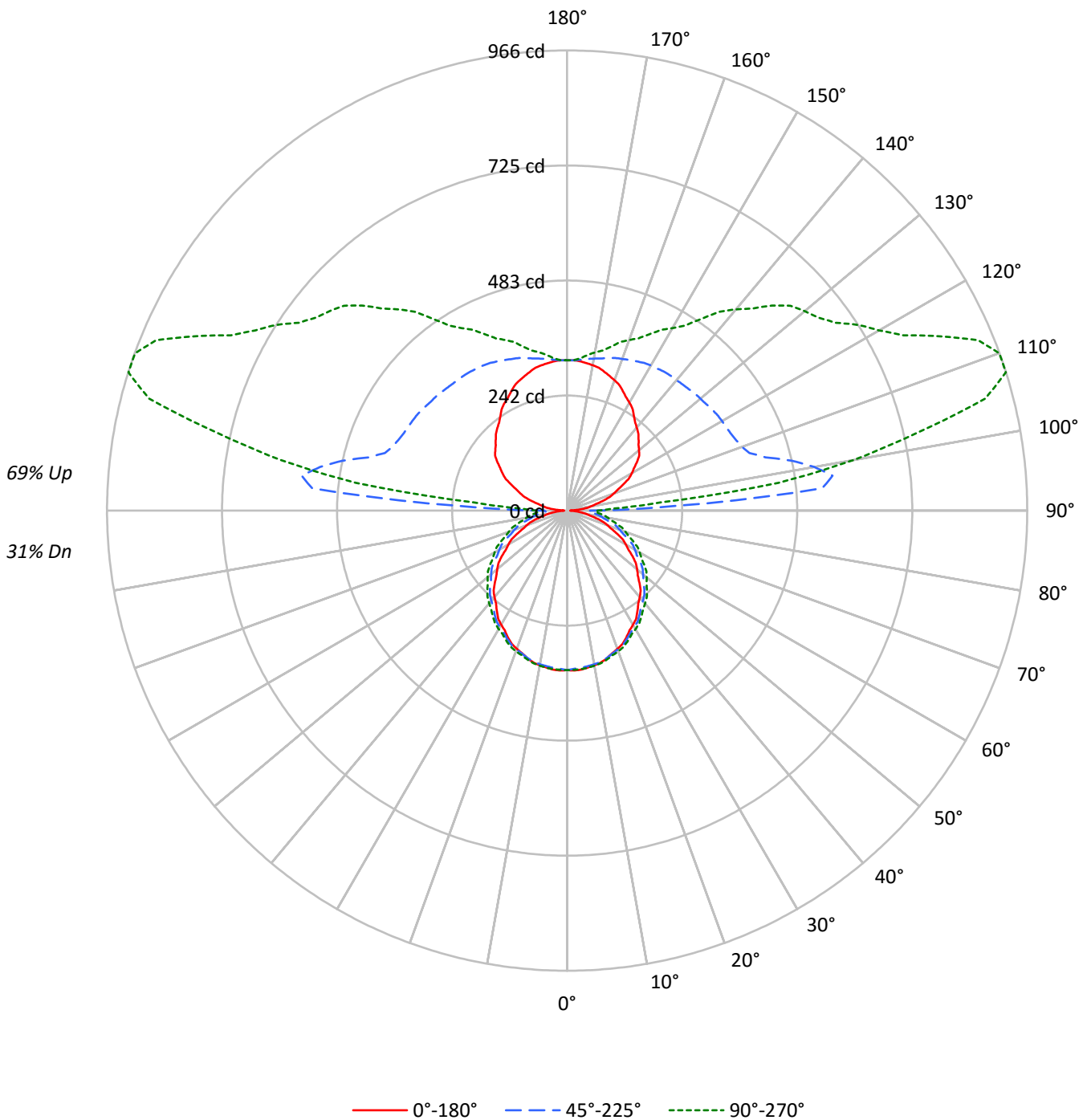
Input Watts (W): 31.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	103	103	103	103	92	92	92	92	73	73	73	55	55	55	38	38	38	31
1	93	88	84	81	83	79	76	73	63	60	58	47	46	44	33	32	31	25
2	84	77	71	65	75	69	64	59	54	51	48	41	39	36	29	27	26	20
3	77	67	60	54	68	60	54	49	48	43	40	36	33	30	25	23	22	17
4	70	59	51	45	62	53	47	41	42	37	33	32	29	26	22	20	18	14
5	64	53	44	39	57	47	40	35	38	32	29	28	25	22	20	18	16	12
6	59	47	39	33	53	42	35	30	34	29	25	26	22	19	18	16	14	11
7	54	42	34	29	48	38	31	26	30	25	22	23	20	17	16	14	12	9
8	50	38	30	25	45	34	28	23	28	23	19	21	18	15	15	13	11	8
9	47	35	27	22	42	31	25	20	25	20	17	19	16	13	14	11	10	7
10	43	32	25	20	39	29	22	18	23	18	15	18	14	12	13	10	9	7

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

	0°	45°	90°
0°	2704	2704	2704
5°	2712	2641	2650
10°	2694	2599	2596
15°	2670	2549	2535
20°	2635	2494	2475
25°	2594	2432	2408
30°	2549	2370	2340
35°	2498	2307	2280
40°	2458	2247	2218
45°	2398	2191	2164
50°	2348	2128	2108
55°	2296	2068	2042
60°	2214	1991	1982
65°	2125	1909	1908
70°	2018	1816	1820
75°	1867	1712	1743
80°	1701	1613	1665
85°	1489	1525	1621



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	31.7	0.9
10°-20°	90.8	2.6
20°-30°	137.4	4.0
30°-40°	166.2	4.8
40°-50°	175.7	5.1
50°-60°	165.4	4.8
60°-70°	137.2	4.0
70°-80°	96.4	2.8
80°-90°	56.2	1.6
90°-100°	260.1	7.6
100°-110°	497.9	14.5
110°-120°	440.6	12.8
120°-130°	366.2	10.7
130°-140°	301.7	8.8
140°-150°	228.3	6.6
150°-160°	159.9	4.7
160°-170°	94.0	2.7
170°-180°	30.6	0.9
0°-30°	259.9	7.6
0°-40°	426.1	12.4
0°-60°	767.2	22.3
0°-90°	1057.0	30.8
90°-120°	1198.6	34.9
90°-150°	2094.7	61.0
90°-180°	2379.0	69.2
0°-180°	3436.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	335	335	335	335	335	
5°	335	334	331	334	334	32
15°	321	322	321	324	324	90
25°	294	296	297	301	302	135
35°	257	262	266	270	272	161
45°	214	222	229	235	237	166
55°	168	176	187	194	197	150
65°	116	128	141	150	153	115
75°	64	78	94	104	108	69
85°	20	36	52	63	68	21
90°	7	26	48	60	64	5
95°	25	82	537	292	197	27
105°	76	116	431	909	909	81
115°	130	166	380	722	865	129
125°	179	213	371	610	688	160
135°	212	252	361	535	609	164
145°	244	279	356	446	491	153
155°	277	299	346	392	408	128
165°	302	311	331	351	356	85
175°	315	315	318	322	321	30
180°	315	315	315	315	315	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	336.0	335.8	335.6	335.4	335.3	334.9	334.4	333.8	333.3	332.7	333.2
5°	335.3	334.9	334.7	334.5	334.2	333.8	333.2	332.6	332.1	331.4	332.2
7.5°	332.4	332.2	332.1	331.9	331.8	331.4	331.0	330.5	330.0	329.5	330.3
10°	329.9	329.9	329.8	329.7	329.6	329.4	329.0	328.5	328.1	327.7	328.4
12.5°	326.7	326.6	326.6	326.6	326.6	326.5	326.1	325.9	325.6	325.3	326.0
15°	321.3	321.5	321.5	321.6	321.7	321.6	321.3	321.1	320.8	320.6	321.3
17.5°	314.1	314.3	314.6	314.8	315.1	315.2	315.1	315.1	315.1	315.0	315.8
20°	309.0	309.2	309.5	309.7	310.0	310.1	310.2	310.3	310.4	310.5	311.3
22.5°	303.2	303.6	303.9	304.2	304.5	304.8	304.9	305.1	305.2	305.4	306.2
25°	294.0	294.5	295.0	295.5	296.0	296.4	296.6	296.8	297.1	297.4	298.3
27.5°	283.6	284.4	285.1	285.8	286.5	287.1	287.5	287.9	288.3	288.7	289.5
30°	276.7	277.4	278.1	278.7	279.4	280.0	280.6	281.1	281.8	282.3	283.3
32.5°	269.3	270.1	270.8	271.6	272.4	273.1	273.8	274.4	275.1	275.8	276.8
35°	257.2	258.3	259.2	260.2	261.3	262.1	263.0	263.8	264.7	265.5	266.6
37.5°	245.2	246.3	247.5	248.6	249.8	250.8	251.9	252.9	254.0	255.0	256.2
40°	237.3	238.4	239.6	240.6	241.7	242.8	244.0	245.2	246.3	247.5	248.7
42.5°	228.4	229.6	230.8	232.0	233.2	234.5	235.9	237.3	238.6	240.0	241.4
45°	214.4	216.0	217.6	219.2	220.8	222.4	223.9	225.5	227.1	228.7	230.1
47.5°	201.2	202.9	204.5	206.1	207.7	209.5	211.3	213.2	215.0	216.8	218.2
50°	191.6	193.5	195.3	197.1	198.9	200.7	202.6	204.5	206.3	208.1	209.8
52.5°	182.0	183.9	185.7	187.5	189.3	191.3	193.4	195.5	197.6	199.7	201.4
55°	168.0	169.8	171.5	173.3	175.0	177.1	179.6	182.1	184.6	187.1	188.8
57.5°	152.3	154.5	156.6	158.8	161.0	163.3	165.8	168.3	170.7	173.3	175.2
60°	142.1	144.3	146.5	148.6	150.8	153.2	156.0	158.8	161.4	164.2	166.1
62.5°	132.2	134.6	137.0	139.3	141.6	144.3	146.9	149.7	152.5	155.3	157.2
65°	116.2	118.9	121.6	124.2	126.9	129.7	132.5	135.3	138.2	141.0	143.1
67.5°	100.8	103.7	106.5	109.4	112.2	115.1	118.2	121.2	124.2	127.2	129.4
70°	90.4	93.2	96.0	98.9	101.7	104.7	107.9	111.1	114.2	117.4	119.6
72.5°	80.2	83.1	86.0	88.9	91.7	94.9	98.2	101.6	105.0	108.4	110.5
75°	64.5	67.6	70.7	73.8	76.8	80.1	83.7	87.1	90.6	94.1	96.5
77.5°	49.9	53.2	56.4	59.7	62.9	66.4	70.0	73.8	77.4	81.0	83.4
80°	40.9	44.2	47.5	50.9	54.2	57.7	61.4	65.0	68.7	72.4	74.9
82.5°	31.8	35.3	38.8	42.3	45.7	49.3	53.0	56.6	60.3	64.0	66.5
85°	19.9	23.4	26.9	30.3	33.9	37.5	41.3	45.0	48.7	52.5	55.0
87.5°	11.2	14.9	18.6	22.2	25.7	29.2	33.6	37.2	41.1	45.1	47.4
90°	6.7	11.2	16.4	20.4	24.3	27.7	35.0	38.7	43.4	48.2	50.1
92.5°	12.8	19.0	27.8	38.3	50.4	66.5	101.6	153.3	203.7	231.8	201.3
95°	25.3	29.9	38.9	49.7	67.3	96.4	153.7	258.7	410.1	537.4	554.0
97.5°	41.1	43.5	51.2	60.9	76.0	100.8	145.7	232.9	383.4	562.0	684.6
100°	51.2	53.4	59.9	69.5	83.4	105.9	145.8	219.0	348.6	526.5	687.4
102.5°	61.1	64.0	69.7	78.6	91.7	113.1	149.4	214.1	324.9	482.9	648.6
105°	75.8	79.4	84.1	93.2	106.1	126.4	159.2	213.7	303.5	431.1	578.8
107.5°	92.8	95.5	100.0	109.2	121.3	141.1	171.3	221.0	298.0	401.2	522.0
110°	103.9	106.4	110.7	119.2	131.6	150.4	180.5	226.8	297.8	390.5	493.5



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	114.5	116.8	121.4	129.4	141.6	160.3	189.3	233.0	299.4	384.6	476.5
115°	129.8	132.5	137.5	144.5	157.0	175.5	202.9	242.7	303.0	380.0	459.9
117.5°	146.2	148.3	152.6	159.9	171.3	190.1	216.2	252.9	307.0	377.1	451.1
120°	156.7	158.2	162.8	169.8	180.6	199.3	225.3	259.9	310.0	375.7	446.1
122.5°	166.7	167.9	172.3	178.7	190.3	208.3	234.1	266.6	313.1	373.6	440.6
125°	179.3	181.6	185.3	192.0	203.7	222.0	246.4	277.0	318.1	371.0	432.1
127.5°	190.8	192.7	197.0	204.7	216.9	235.1	258.3	286.1	321.7	367.4	420.9
130°	196.9	199.2	204.1	213.3	225.1	243.6	266.0	291.5	324.4	365.4	414.0
132.5°	203.3	205.2	211.6	220.3	233.0	250.4	272.5	297.3	326.9	363.7	407.7
135°	212.0	214.4	220.6	231.2	244.2	260.5	281.6	304.5	330.5	360.8	398.1
137.5°	221.0	223.3	230.0	240.0	253.4	268.9	288.2	309.3	332.2	358.9	389.8
140°	227.4	229.3	236.0	246.4	259.4	274.2	292.9	312.8	333.9	357.5	385.2
142.5°	234.1	235.9	242.2	252.2	264.7	279.1	297.1	315.4	335.4	357.0	381.5
145°	243.8	245.6	251.7	260.3	272.0	285.6	301.7	318.4	336.4	355.5	375.9
147.5°	254.8	255.4	260.7	269.6	279.2	291.5	306.7	321.2	337.0	353.3	370.8
150°	261.7	262.3	267.2	274.5	283.8	295.5	309.1	322.7	337.0	351.8	367.3
152.5°	267.9	268.0	273.0	279.9	288.2	299.0	311.1	323.7	336.0	349.4	363.4
155°	276.9	277.5	281.2	287.4	294.2	303.5	314.0	324.6	334.5	345.6	357.4
157.5°	285.7	285.7	289.1	294.0	299.9	307.2	316.2	324.6	332.9	341.8	351.3
160°	291.1	291.1	293.6	297.9	302.9	309.7	317.1	324.6	331.4	338.8	346.9
162.5°	296.1	295.6	297.5	301.4	305.9	311.2	318.1	324.6	329.9	335.9	342.9
165°	301.7	301.7	302.9	306.0	309.1	312.8	318.4	323.4	327.1	331.4	336.4
167.5°	307.2	306.7	307.2	309.6	311.3	314.2	318.3	321.9	324.1	326.9	330.4
170°	309.7	309.1	309.7	311.6	312.8	314.7	317.7	320.8	322.1	323.9	326.5
172.5°	312.2	311.6	311.7	313.1	313.8	315.1	317.3	319.9	320.1	321.0	323.0
175°	314.7	314.0	314.0	314.7	315.3	315.3	316.6	318.4	317.7	317.7	319.0
177.5°	315.8	315.3	314.8	315.3	315.3	315.3	315.8	316.8	315.8	315.8	316.2
180°	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	334.9	334.9	334.9	334.9	334.9	334.9	334.9	334.9
2.5°	333.7	334.1	334.6	334.8	334.8	334.7	334.6	334.5
5°	332.8	333.4	334.1	334.5	334.4	334.2	334.1	334.1
7.5°	331.1	331.8	332.6	332.9	332.8	332.7	332.6	332.6
10°	329.2	329.9	330.7	331.1	331.0	330.9	330.8	330.7
12.5°	326.7	327.4	328.0	328.4	328.4	328.4	328.4	328.3
15°	322.1	322.8	323.6	323.9	323.8	323.8	323.7	323.6
17.5°	316.5	317.3	318.1	318.4	318.3	318.2	318.2	318.1
20°	312.1	313.0	313.8	314.3	314.3	314.3	314.3	314.3
22.5°	307.0	307.8	308.7	309.2	309.3	309.4	309.6	309.7
25°	299.2	300.1	301.0	301.5	301.6	301.7	301.7	301.8
27.5°	290.3	291.2	292.1	292.6	292.6	292.7	292.8	292.9
30°	284.2	285.1	286.0	286.5	286.7	286.9	287.1	287.2
32.5°	277.8	278.9	280.0	280.6	280.7	280.9	281.1	281.2
35°	267.8	268.9	270.1	270.8	271.1	271.3	271.6	271.9
37.5°	257.4	258.5	259.7	260.5	260.7	260.9	261.3	261.5
40°	250.0	251.2	252.5	253.3	253.6	254.0	254.3	254.6
42.5°	242.7	244.2	245.5	246.4	246.6	246.8	247.2	247.4
45°	231.6	233.0	234.4	235.3	235.8	236.1	236.5	236.9
47.5°	219.8	221.2	222.7	223.6	224.2	224.7	225.1	225.7
50°	211.4	213.1	214.8	215.9	216.3	216.8	217.4	217.9
52.5°	203.0	204.7	206.4	207.5	207.9	208.4	209.0	209.5
55°	190.4	192.1	193.8	194.9	195.4	195.8	196.4	196.9
57.5°	177.2	179.2	181.2	182.4	182.8	183.3	183.8	184.3
60°	168.1	170.0	171.9	173.2	173.9	174.5	175.2	175.9
62.5°	159.1	161.0	162.9	164.2	164.9	165.5	166.2	166.8
65°	145.1	147.3	149.3	150.7	151.4	152.0	152.7	153.4
67.5°	131.5	133.6	135.7	137.1	137.8	138.4	139.0	139.7
70°	121.8	124.1	126.4	127.8	128.3	129.0	129.5	130.1
72.5°	112.7	114.9	117.1	118.5	119.1	119.8	120.5	121.1
75°	98.8	101.1	103.5	105.0	105.8	106.5	107.3	108.0
77.5°	85.8	88.2	90.5	92.1	92.9	93.7	94.5	95.3
80°	77.4	79.9	82.4	84.0	84.6	85.3	86.0	86.6
82.5°	69.1	71.7	74.2	75.9	76.6	77.3	78.1	78.8
85°	57.5	60.0	62.5	64.2	65.0	65.8	66.6	67.5
87.5°	49.9	52.4	55.0	56.6	57.4	58.2	58.9	59.6
90°	53.1	56.2	59.2	60.7	62.0	63.3	63.4	64.0
92.5°	161.7	134.0	117.6	106.7	100.1	97.4	95.9	96.6
95°	496.1	402.3	321.6	263.0	233.4	215.0	204.5	197.3
97.5°	712.8	679.3	620.9	557.7	514.0	477.4	459.5	447.3
100°	780.1	794.6	766.6	722.2	668.8	631.6	613.6	609.3
102.5°	774.9	838.5	849.5	831.9	799.5	772.7	753.8	750.5
105°	722.7	831.9	895.3	922.1	924.0	919.7	911.7	908.6
107.5°	649.7	765.8	854.2	910.9	942.0	956.7	963.5	965.7
110°	605.6	714.7	806.4	875.8	920.5	947.2	959.0	965.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	572.7	669.4	756.1	825.5	876.1	908.2	924.5	934.2
115°	539.2	617.2	691.5	752.1	801.6	839.4	859.8	865.4
117.5°	521.3	586.1	644.8	696.5	738.9	770.7	791.5	796.0
120°	512.8	572.0	623.2	668.4	704.3	732.3	749.1	756.5
122.5°	505.3	562.6	609.3	649.0	679.5	703.4	717.6	725.0
125°	493.1	548.0	592.3	627.4	652.7	671.1	683.4	687.6
127.5°	478.3	530.7	574.8	608.2	633.7	650.2	660.7	665.0
130°	466.9	517.3	560.9	594.8	620.7	636.7	647.1	651.3
132.5°	455.1	502.6	545.1	578.9	604.3	622.3	632.2	636.4
135°	438.4	480.0	519.1	551.0	576.3	594.1	604.5	608.7
137.5°	423.4	458.8	491.8	520.6	544.2	561.7	570.3	575.1
140°	414.9	445.0	474.0	500.7	522.8	536.9	546.0	551.4
142.5°	407.0	433.6	458.5	481.6	501.2	514.2	522.3	526.1
145°	396.2	417.7	436.8	454.6	470.4	481.3	487.8	491.2
147.5°	387.3	404.1	419.0	432.8	444.5	453.8	458.8	460.1
150°	382.1	396.4	408.8	419.9	429.9	437.9	441.6	442.3
152.5°	376.8	389.0	400.4	409.6	418.0	424.5	426.7	427.4
155°	368.5	378.5	387.8	395.2	401.4	406.3	408.2	408.2
157.5°	359.7	368.0	375.9	381.8	386.5	390.2	391.3	391.3
160°	354.3	361.2	368.0	372.9	376.6	380.3	381.0	381.0
162.5°	348.9	354.7	360.0	364.5	367.2	370.9	371.5	371.1
165°	341.3	345.0	349.4	352.4	354.9	357.4	356.8	356.2
167.5°	334.0	336.8	340.3	342.1	343.4	345.0	344.9	344.4
170°	329.5	331.4	333.9	335.7	337.0	337.5	337.0	337.0
172.5°	325.6	326.9	328.4	329.8	330.5	331.1	330.5	329.5
175°	320.3	320.8	322.1	322.1	322.1	323.4	322.1	320.8
177.5°	316.8	317.3	317.3	317.7	317.3	317.7	316.8	315.8
180°	315.3	315.3	315.3	315.3	315.3	315.3	315.3	315.3

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