

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: P332516-830

Luminaire Tested: **S124DIP-S350D810U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332516-830
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-S350D810U830-4F0-1E-UDD-F4
Description: DEFINE 4 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 810 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4159.1 lumens
Efficiency: N/A
Efficacy: 133.3 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

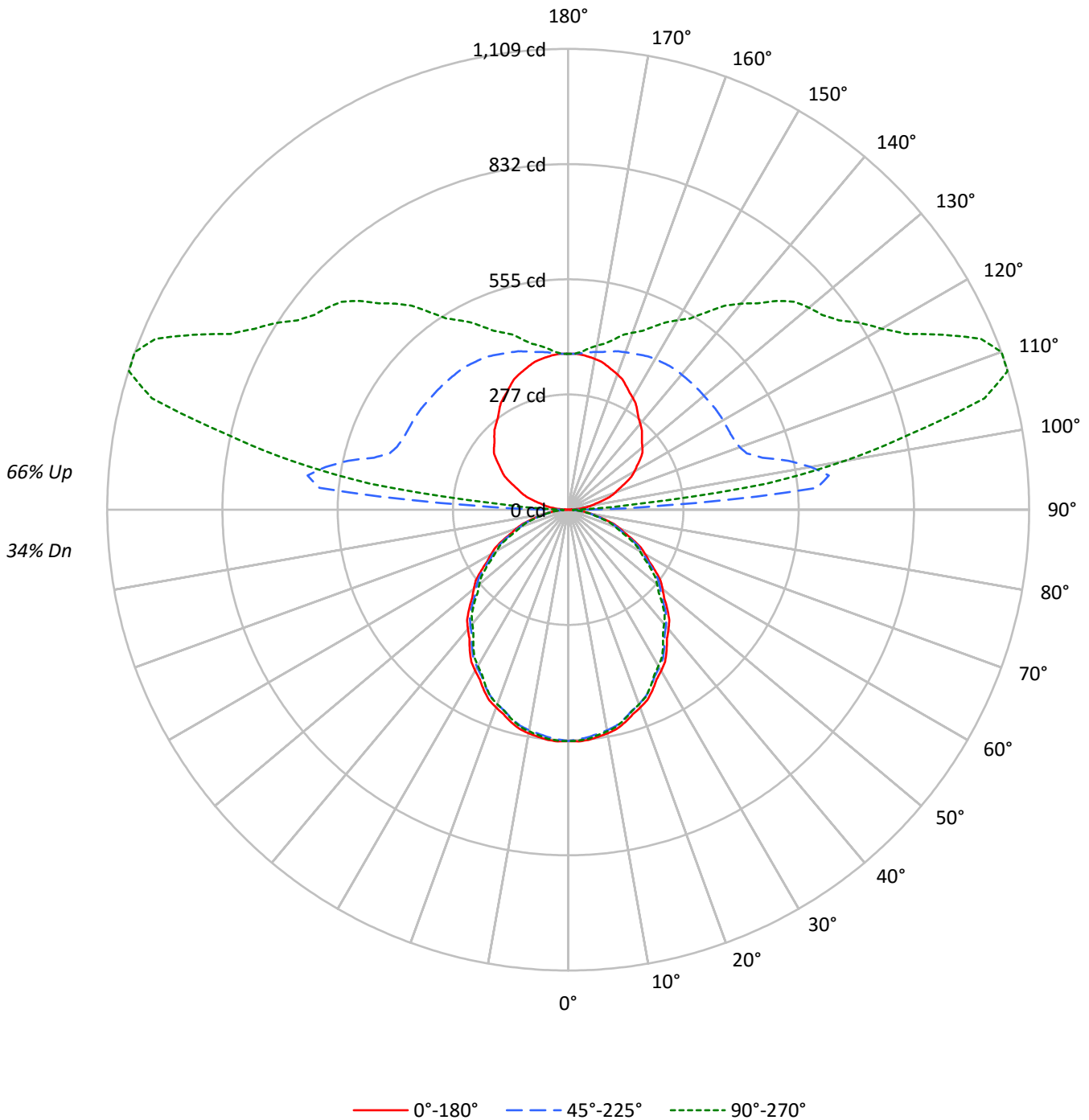
Input Watts (W): 31.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	75	75	75	58	58	58	42	42	42	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	48	37	36	35	29
2	86	79	73	68	77	71	66	62	57	54	51	44	42	40	32	31	30	24
3	78	69	62	56	70	63	56	52	50	46	42	39	36	34	29	27	25	20
4	71	61	53	47	64	55	49	44	45	40	36	35	31	29	26	23	22	18
5	66	54	46	40	59	49	42	37	40	35	31	31	28	25	23	21	19	15
6	60	49	41	35	54	44	37	32	36	31	27	28	25	22	21	18	17	13
7	56	44	36	31	50	40	33	28	32	27	24	26	22	19	19	17	15	12
8	52	40	32	27	46	36	29	25	30	24	21	23	20	17	18	15	13	11
9	48	36	29	24	43	33	26	22	27	22	19	21	18	15	16	14	12	10
10	45	33	26	21	40	30	24	20	25	20	17	20	16	14	15	13	11	9

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4495	4495	4495
5°	4508	4454	4486
10°	4480	4418	4440
15°	4425	4355	4367
20°	4354	4277	4281
25°	4272	4188	4177
30°	4172	4084	4047
35°	4066	3975	3921
40°	3958	3851	3780
45°	3846	3729	3658
50°	3720	3620	3508
55°	3586	3478	3365
60°	3450	3321	3219
65°	3299	3171	3043
70°	3127	2969	2854
75°	2866	2729	2658
80°	2552	2450	2385
85°	2232	2149	2103



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	52.4	1.3
10°-20°	147.7	3.6
20°-30°	217.4	5.2
30°-40°	252.8	6.1
40°-50°	252.8	6.1
50°-60°	221.1	5.3
60°-70°	164.2	3.9
70°-80°	93.3	2.2
80°-90°	29.0	0.7
90°-100°	270.9	6.5
100°-110°	563.9	13.6
110°-120°	505.1	12.1
120°-130°	424.9	10.2
130°-140°	354.3	8.5
140°-150°	270.6	6.5
150°-160°	190.2	4.6
160°-170°	111.9	2.7
170°-180°	36.4	0.9
0°-30°	417.6	10.0
0°-40°	670.4	16.1
0°-60°	1144.3	27.5
0°-90°	1430.8	34.4
90°-120°	1340.0	32.2
90°-150°	2389.7	57.5
90°-180°	2728.0	65.6
0°-180°	4159.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	557	557	557	557	557	
5°	556	554	550	554	554	53
15°	530	528	521	524	522	149
25°	480	476	470	471	469	221
35°	413	409	403	400	398	258
45°	337	333	327	322	320	260
55°	255	253	247	242	239	228
65°	173	170	166	162	159	171
75°	92	90	88	86	85	98
85°	24	24	23	23	23	27
90°	1	6	13	15	16	3
95°	24	77	601	297	180	27
105°	86	125	483	1041	1037	92
115°	152	191	431	828	996	151
125°	212	251	429	705	794	188
135°	251	299	425	626	710	194
145°	290	332	423	528	580	182
155°	329	356	411	466	486	152
165°	359	370	394	418	424	101
175°	374	375	378	383	382	36
180°	375	375	375	375	375	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	558.2	558.0	557.7	557.5	557.2	556.7	555.8	555.0	554.1	553.2	554.0
5°	556.3	555.9	555.5	555.2	554.8	554.0	552.9	551.9	550.7	549.6	550.7
7.5°	551.2	550.7	550.4	550.0	549.6	548.7	547.5	546.4	545.2	543.9	544.8
10°	546.5	546.1	545.7	545.4	545.0	544.1	542.8	541.5	540.3	538.9	539.7
12.5°	540.5	540.1	539.7	539.2	538.9	538.0	536.6	535.3	533.9	532.5	533.4
15°	529.5	529.1	528.8	528.4	528.0	527.1	525.6	524.1	522.5	521.1	521.7
17.5°	516.4	515.9	515.5	515.0	514.4	513.5	512.1	510.7	509.3	507.8	508.2
20°	506.8	506.3	505.9	505.3	504.8	503.9	502.4	500.9	499.4	497.9	498.2
22.5°	496.4	495.8	495.1	494.5	493.8	492.8	491.3	489.8	488.3	486.8	487.4
25°	479.6	478.9	478.2	477.5	476.8	475.8	474.4	473.0	471.6	470.2	470.3
27.5°	460.3	459.6	458.9	458.2	457.5	456.5	455.2	453.9	452.6	451.3	451.1
30°	447.5	446.7	445.9	445.1	444.3	443.3	442.0	440.6	439.4	438.1	437.7
32.5°	433.9	433.2	432.4	431.8	431.0	430.0	428.7	427.3	425.9	424.5	424.0
35°	412.6	412.0	411.3	410.6	409.9	408.9	407.5	406.0	404.7	403.3	402.7
37.5°	390.3	389.6	389.0	388.4	387.8	386.7	385.2	383.7	382.2	380.7	379.9
40°	375.6	374.8	374.1	373.2	372.5	371.4	369.9	368.3	366.8	365.4	364.4
42.5°	360.0	359.5	359.0	358.5	358.1	356.9	355.3	353.6	352.0	350.4	349.2
45°	336.9	336.1	335.5	334.8	334.0	332.9	331.3	329.7	328.2	326.6	325.5
47.5°	312.6	312.2	311.7	311.2	310.8	309.8	308.3	306.8	305.4	303.9	302.7
50°	296.2	295.9	295.5	295.0	294.6	293.8	292.4	291.0	289.5	288.2	286.8
52.5°	280.2	279.7	279.2	278.7	278.2	277.3	275.8	274.4	272.9	271.5	270.2
55°	254.8	254.5	254.1	253.8	253.5	252.7	251.3	250.0	248.5	247.1	246.0
57.5°	230.5	230.2	229.8	229.5	229.1	228.3	226.9	225.6	224.1	222.8	221.7
60°	213.7	213.2	212.7	212.2	211.7	210.8	209.5	208.2	207.0	205.7	204.8
62.5°	197.3	196.9	196.4	196.0	195.6	194.7	193.3	192.0	190.6	189.3	188.4
65°	172.7	172.2	171.6	171.2	170.7	169.9	168.9	168.0	166.9	166.0	164.9
67.5°	147.9	147.4	146.9	146.5	146.0	145.3	144.4	143.5	142.5	141.5	140.5
70°	132.5	131.8	131.1	130.4	129.7	128.9	128.2	127.4	126.6	125.8	125.0
72.5°	116.1	115.4	114.7	114.0	113.3	112.6	112.0	111.4	110.7	110.1	109.4
75°	91.9	91.4	91.0	90.4	89.9	89.4	89.0	88.4	87.9	87.5	87.1
77.5°	68.8	68.6	68.3	68.1	68.0	67.6	67.2	66.7	66.3	65.9	65.7
80°	54.9	54.6	54.3	54.0	53.7	53.4	53.3	53.1	52.9	52.7	52.4
82.5°	41.3	41.2	41.0	40.9	40.7	40.6	40.6	40.6	40.5	40.5	40.4
85°	24.1	24.1	24.1	24.1	24.1	24.0	23.8	23.6	23.4	23.2	23.2
87.5°	9.4	9.6	10.0	10.1	10.2	10.1	10.8	10.7	11.0	11.2	11.0
90°	0.8	2.2	4.4	5.2	5.9	5.9	10.3	10.3	11.8	13.3	12.5
92.5°	8.4	12.3	19.1	28.2	38.9	54.2	91.7	148.8	204.6	233.8	194.7
95°	24.3	26.5	33.9	43.5	61.2	92.1	156.3	277.1	453.3	600.7	617.6
97.5°	43.6	43.6	50.0	58.8	74.0	99.9	149.3	249.1	424.2	632.6	775.9
100°	56.0	56.0	61.2	70.0	84.0	107.6	151.1	234.4	384.7	592.6	781.2
102.5°	67.8	69.0	73.5	81.8	95.2	117.6	156.9	230.3	358.2	542.4	737.0
105°	86.2	88.4	92.1	100.9	114.2	135.6	171.0	232.1	335.4	483.4	656.7
107.5°	106.6	108.0	111.7	121.1	133.8	155.0	187.4	243.1	331.2	450.4	591.8
110°	120.2	121.6	125.3	134.1	147.4	167.3	199.7	251.3	332.3	439.2	559.4



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	133.1	134.6	138.8	147.1	160.3	180.3	211.5	260.1	335.9	433.9	541.1
115°	151.8	154.0	159.2	166.5	180.6	200.5	230.0	274.2	342.7	431.1	524.0
117.5°	171.3	173.3	178.0	186.1	199.2	219.8	247.8	288.4	350.0	430.4	516.3
120°	184.3	185.7	190.9	199.0	211.5	232.1	260.1	298.5	355.2	430.4	512.2
122.5°	196.0	197.6	202.6	210.2	223.9	243.9	271.9	307.9	360.5	429.8	507.5
125°	211.5	214.4	218.9	227.0	241.0	261.6	288.1	322.1	368.5	429.0	499.6
127.5°	225.3	227.6	232.9	242.1	256.7	277.6	303.2	334.3	374.8	427.3	489.2
130°	232.9	235.8	241.8	252.8	266.8	288.1	313.2	342.0	379.6	426.7	482.8
132.5°	240.5	242.9	250.6	261.1	276.3	296.4	321.5	349.6	383.7	426.1	476.8
135°	251.3	254.3	261.6	274.2	289.6	308.8	333.1	359.7	389.8	425.3	468.0
137.5°	262.1	264.9	273.0	284.9	301.0	319.2	342.0	366.7	393.5	425.1	460.3
140°	269.8	271.9	280.0	292.6	308.0	325.7	347.9	371.5	396.5	424.5	456.2
142.5°	278.0	280.2	287.8	299.6	314.5	331.7	353.2	374.9	398.9	424.5	452.7
145°	289.6	291.8	299.3	309.5	323.6	339.8	358.9	378.8	400.2	423.0	446.6
147.5°	302.7	303.5	310.0	320.6	332.2	346.9	364.9	382.2	401.0	420.4	441.2
150°	311.0	311.8	317.6	326.5	337.5	351.6	367.8	384.0	401.0	418.6	437.1
152.5°	318.7	318.9	324.7	333.0	342.9	355.7	370.1	385.1	399.7	415.7	432.3
155°	329.4	330.2	334.6	342.0	350.1	361.1	373.6	386.2	397.9	411.2	425.3
157.5°	339.9	339.9	344.0	349.8	356.8	365.5	376.2	386.2	396.1	406.7	418.0
160°	346.4	346.4	349.3	354.5	360.4	368.5	377.3	386.2	394.3	403.1	412.7
162.5°	352.3	351.7	354.0	358.6	363.9	370.2	378.5	386.2	392.6	399.6	408.0
165°	358.9	358.9	360.4	364.1	367.8	372.2	378.8	384.7	389.2	394.3	400.2
167.5°	365.5	364.9	365.5	368.3	370.4	373.8	378.7	383.0	385.6	389.0	393.1
170°	368.5	367.8	368.5	370.7	372.2	374.4	378.1	381.7	383.2	385.4	388.4
172.5°	371.5	370.7	370.9	372.5	373.3	374.9	377.5	380.6	380.9	381.9	384.3
175°	374.4	373.6	373.6	374.4	375.1	375.1	376.6	378.8	378.1	378.1	379.6
177.5°	375.7	375.1	374.6	375.1	375.1	375.1	375.7	376.9	375.7	375.7	376.3
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	556.8	556.8	556.8	556.8	556.8	556.8	556.8	556.8
2.5°	554.8	555.6	556.4	556.8	556.7	556.6	556.5	556.4
5°	551.9	552.9	554.0	554.4	554.2	554.0	553.8	553.6
7.5°	545.6	546.6	547.4	547.8	547.7	547.5	547.4	547.3
10°	540.5	541.3	542.2	542.4	542.2	542.0	541.8	541.6
12.5°	534.2	535.1	536.0	536.3	536.0	535.7	535.5	535.2
15°	522.3	522.8	523.5	523.6	523.3	523.0	522.7	522.5
17.5°	508.6	509.0	509.3	509.4	509.3	509.1	508.9	508.7
20°	498.5	498.8	499.1	499.2	498.9	498.7	498.5	498.3
22.5°	487.9	488.4	489.0	489.1	488.7	488.3	488.0	487.7
25°	470.4	470.5	470.6	470.5	470.0	469.7	469.3	468.9
27.5°	450.8	450.6	450.3	450.0	449.5	449.0	448.5	448.0
30°	437.3	437.0	436.5	436.1	435.5	435.1	434.6	434.1
32.5°	423.6	423.1	422.6	422.2	421.7	421.1	420.7	420.2
35°	401.9	401.2	400.5	399.9	399.4	399.0	398.4	397.9
37.5°	379.2	378.4	377.7	377.0	376.4	375.7	375.0	374.4
40°	363.4	362.4	361.5	360.7	360.1	359.7	359.2	358.7
42.5°	348.1	346.9	345.8	345.1	344.7	344.4	344.0	343.7
45°	324.4	323.3	322.3	321.5	321.2	320.9	320.7	320.4
47.5°	301.4	300.2	299.0	298.0	297.3	296.5	295.8	295.0
50°	285.4	284.1	282.7	281.6	281.1	280.5	279.8	279.3
52.5°	269.0	267.8	266.6	265.5	264.8	264.0	263.3	262.5
55°	244.8	243.6	242.4	241.5	240.9	240.3	239.7	239.1
57.5°	220.6	219.4	218.3	217.4	216.9	216.3	215.7	215.1
60°	203.9	203.0	202.1	201.4	201.0	200.4	199.9	199.4
62.5°	187.7	186.8	186.0	185.3	184.8	184.4	183.9	183.3
65°	164.0	163.0	162.0	161.3	160.8	160.2	159.8	159.3
67.5°	139.6	138.6	137.7	137.1	137.0	136.9	136.8	136.6
70°	124.2	123.5	122.6	122.1	121.8	121.5	121.2	120.9
72.5°	108.9	108.2	107.5	107.1	106.8	106.5	106.2	105.9
75°	86.6	86.2	85.9	85.6	85.5	85.4	85.3	85.2
77.5°	65.6	65.5	65.4	65.2	64.9	64.7	64.4	64.2
80°	52.2	52.0	51.8	51.7	51.6	51.5	51.4	51.3
82.5°	40.2	40.2	40.1	40.0	39.9	39.7	39.6	39.5
85°	23.2	23.2	23.2	23.2	23.1	23.0	22.8	22.7
87.5°	11.2	11.4	11.5	11.5	11.7	11.8	11.7	11.7
90°	13.3	14.0	14.7	14.7	15.5	16.2	15.5	15.5
92.5°	144.8	109.0	86.7	71.9	63.2	59.3	56.7	56.7
95°	546.1	431.9	333.1	261.6	225.6	202.6	189.5	179.8
97.5°	806.8	764.4	692.3	615.4	562.5	518.1	496.0	480.7
100°	888.8	903.5	867.4	812.9	748.8	703.8	681.7	675.8
102.5°	884.7	957.8	968.3	945.6	906.3	873.6	850.4	845.6
105°	825.5	952.9	1025.9	1056.1	1057.6	1051.7	1041.4	1037.0
107.5°	741.3	877.0	979.8	1045.5	1081.9	1098.7	1106.1	1108.0
110°	690.6	818.0	924.9	1006.0	1058.3	1089.3	1102.6	1109.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	653.5	766.2	867.1	948.2	1007.6	1045.1	1063.7	1074.4
115°	616.1	706.8	793.0	863.7	922.0	966.2	989.8	995.7
117.5°	597.9	672.9	740.6	800.7	850.4	887.5	911.3	916.0
120°	589.6	658.2	717.1	769.4	811.4	843.9	863.0	871.1
122.5°	582.5	648.7	702.4	748.2	783.7	811.4	827.6	835.8
125°	570.4	633.9	684.7	725.2	754.7	776.1	790.0	794.5
127.5°	555.7	616.2	666.9	705.5	735.1	754.1	765.9	770.3
130°	543.9	602.1	652.2	691.3	721.5	740.0	751.8	756.2
132.5°	531.5	586.2	635.2	674.2	703.8	724.6	735.8	740.3
135°	514.4	562.3	607.3	644.1	673.6	694.3	706.1	710.5
137.5°	499.0	539.5	577.4	610.7	638.2	658.6	668.3	673.6
140°	490.1	524.7	557.9	588.9	614.6	630.8	641.2	647.1
142.5°	481.8	512.4	540.8	567.6	590.5	605.5	614.6	618.8
145°	470.2	495.3	517.4	538.0	556.5	568.9	576.4	580.0
147.5°	460.6	480.5	498.2	514.4	528.0	538.8	544.3	545.6
150°	454.7	471.6	486.4	499.6	511.5	521.0	525.5	526.2
152.5°	448.3	462.8	476.4	487.3	497.3	505.1	507.7	508.5
155°	438.5	450.3	461.4	470.2	477.6	483.4	485.7	485.7
157.5°	428.0	437.9	447.2	454.3	459.9	464.3	465.6	465.6
160°	421.6	429.7	437.8	443.7	448.1	452.5	453.3	453.3
162.5°	415.1	422.0	428.4	433.7	436.9	441.3	442.1	441.5
165°	406.0	410.5	415.7	419.3	422.3	425.3	424.5	423.8
167.5°	397.4	400.8	404.9	407.1	408.6	410.5	410.4	409.7
170°	392.1	394.3	397.3	399.4	401.0	401.6	401.0	401.0
172.5°	387.4	389.0	390.8	392.4	393.2	394.0	393.2	392.1
175°	381.1	381.7	383.2	383.2	383.2	384.7	383.2	381.7
177.5°	376.9	377.5	377.5	378.1	377.5	378.1	376.9	375.7
180°	375.1	375.1	375.1	375.1	375.1	375.1	375.1	375.1

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