

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: P332513-830

Luminaire Tested: **S124DIP-S350D810U830-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332513-830
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-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: 4088.4 lumens
Efficiency: N/A
Efficacy: 131.0 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

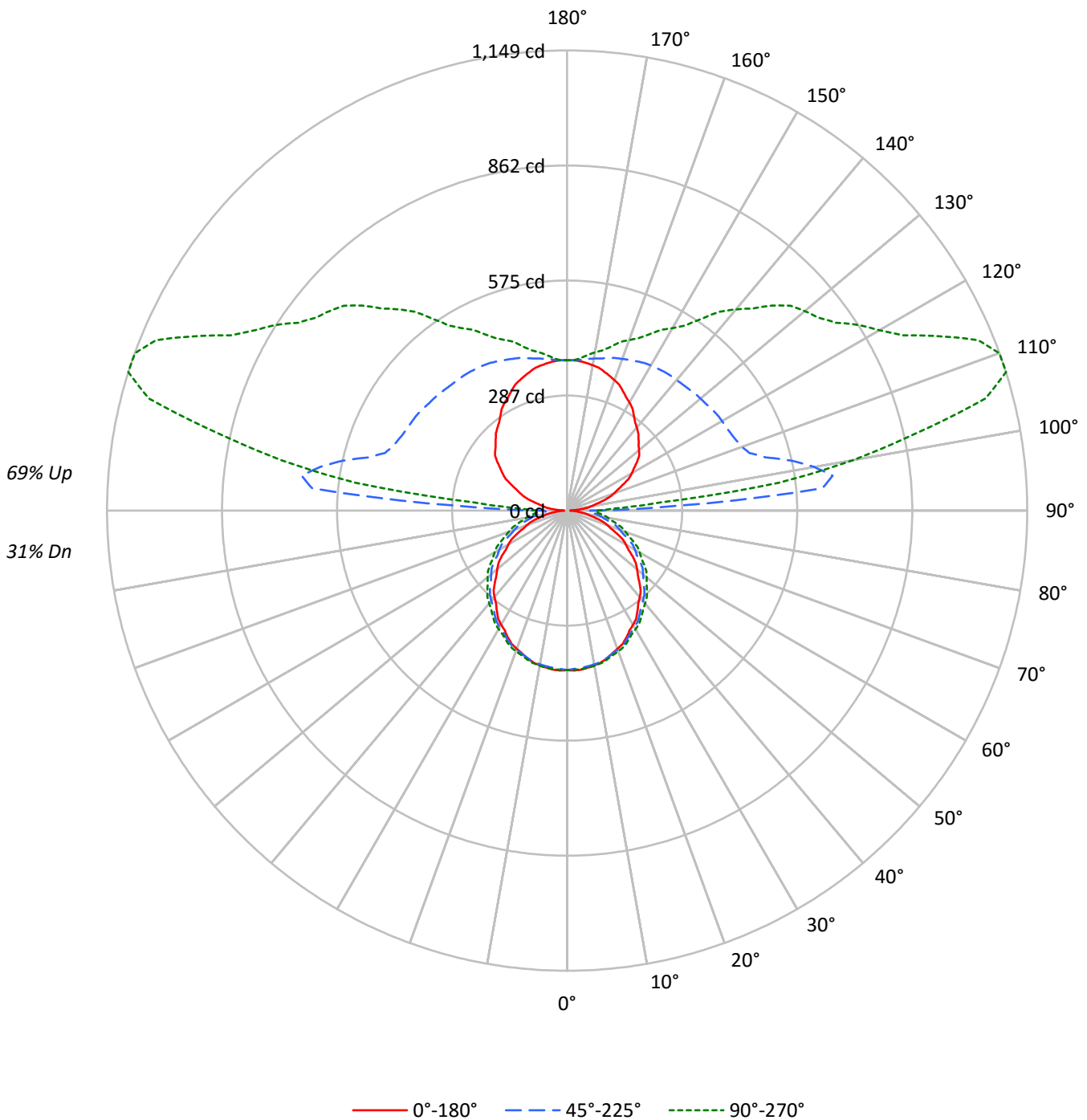
Input Watts (W): 31.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	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°	3216	3216	3216
5°	3227	3143	3152
10°	3207	3092	3090
15°	3177	3032	3016
20°	3134	2967	2944
25°	3086	2893	2865
30°	3032	2819	2784
35°	2972	2744	2713
40°	2925	2674	2639
45°	2853	2607	2575
50°	2794	2532	2508
55°	2732	2460	2429
60°	2635	2369	2357
65°	2529	2272	2269
70°	2400	2161	2166
75°	2220	2037	2074
80°	2021	1919	1981
85°	1773	1815	1928



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	37.7	0.9
10°-20°	108.1	2.6
20°-30°	163.4	4.0
30°-40°	197.8	4.8
40°-50°	209.1	5.1
50°-60°	196.8	4.8
60°-70°	163.2	4.0
70°-80°	114.7	2.8
80°-90°	66.9	1.6
90°-100°	309.4	7.6
100°-110°	592.4	14.5
110°-120°	524.2	12.8
120°-130°	435.7	10.7
130°-140°	358.9	8.8
140°-150°	271.6	6.6
150°-160°	190.2	4.7
160°-170°	111.9	2.7
170°-180°	36.4	0.9
0°-30°	309.3	7.6
0°-40°	507.0	12.4
0°-60°	912.9	22.3
0°-90°	1257.7	30.8
90°-120°	1426.1	34.9
90°-150°	2492.2	61.0
90°-180°	2831.0	69.2
0°-180°	4088.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	398	398	398	398	398	
5°	399	397	394	398	398	38
15°	382	383	381	385	385	108
25°	350	352	354	358	359	161
35°	306	311	316	322	324	192
45°	255	264	272	279	282	197
55°	200	210	223	231	234	178
65°	138	153	168	178	182	137
75°	77	93	112	124	128	82
85°	24	42	62	75	80	25
90°	8	31	57	71	76	6
95°	30	97	639	348	235	32
105°	90	138	513	1081	1081	96
115°	154	198	452	859	1030	153
125°	213	253	441	726	818	190
135°	252	300	429	637	724	195
145°	290	332	423	530	584	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°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	399.8	399.5	399.4	399.1	398.9	398.4	397.8	397.2	396.5	395.9	396.4
5°	398.9	398.5	398.2	397.9	397.7	397.2	396.4	395.8	395.1	394.4	395.2
7.5°	395.5	395.3	395.1	394.9	394.7	394.4	393.8	393.2	392.7	392.1	392.9
10°	392.6	392.5	392.4	392.3	392.2	391.9	391.4	390.9	390.4	389.9	390.8
12.5°	388.7	388.6	388.6	388.6	388.6	388.4	388.0	387.8	387.4	387.1	387.9
15°	382.3	382.5	382.6	382.7	382.8	382.7	382.3	382.0	381.7	381.4	382.3
17.5°	373.7	374.0	374.3	374.6	374.8	375.0	374.9	374.8	374.8	374.8	375.7
20°	367.6	367.9	368.3	368.5	368.8	369.0	369.1	369.2	369.3	369.4	370.4
22.5°	360.8	361.2	361.6	361.9	362.3	362.6	362.8	363.0	363.2	363.4	364.3
25°	349.8	350.3	351.0	351.6	352.1	352.6	352.9	353.2	353.5	353.8	354.9
27.5°	337.4	338.4	339.2	340.1	340.9	341.6	342.0	342.5	343.0	343.5	344.4
30°	329.2	330.1	330.8	331.6	332.4	333.2	333.8	334.5	335.3	335.9	337.1
32.5°	320.4	321.3	322.3	323.2	324.1	325.0	325.7	326.5	327.3	328.1	329.3
35°	306.0	307.3	308.4	309.6	310.9	311.9	312.9	313.9	314.9	315.8	317.3
37.5°	291.7	293.0	294.5	295.8	297.2	298.4	299.7	301.0	302.2	303.4	304.8
40°	282.4	283.7	285.0	286.3	287.6	288.9	290.3	291.7	293.0	294.5	296.0
42.5°	271.7	273.1	274.6	276.1	277.5	279.0	280.7	282.3	283.9	285.5	287.2
45°	255.1	257.0	258.9	260.8	262.7	264.6	266.5	268.3	270.2	272.1	273.8
47.5°	239.4	241.4	243.3	245.2	247.1	249.2	251.4	253.6	255.8	258.0	259.7
50°	228.0	230.2	232.3	234.5	236.7	238.8	241.1	243.3	245.4	247.6	249.6
52.5°	216.6	218.8	220.9	223.1	225.3	227.6	230.1	232.6	235.1	237.6	239.6
55°	199.9	202.0	204.1	206.1	208.2	210.8	213.7	216.7	219.6	222.6	224.6
57.5°	181.3	183.8	186.3	189.0	191.5	194.3	197.3	200.2	203.1	206.1	208.5
60°	169.1	171.6	174.3	176.8	179.4	182.3	185.6	188.9	192.1	195.4	197.7
62.5°	157.3	160.1	163.0	165.8	168.5	171.6	174.8	178.1	181.4	184.7	187.0
65°	138.3	141.5	144.7	147.8	151.0	154.3	157.6	161.0	164.4	167.8	170.2
67.5°	120.0	123.4	126.8	130.2	133.5	137.0	140.6	144.2	147.8	151.4	153.9
70°	107.5	110.8	114.2	117.6	121.0	124.6	128.4	132.1	135.9	139.7	142.3
72.5°	95.4	98.9	102.3	105.8	109.1	112.9	116.9	120.9	124.9	128.9	131.5
75°	76.7	80.4	84.1	87.8	91.4	95.3	99.5	103.7	107.8	112.0	114.8
77.5°	59.4	63.2	67.1	71.0	74.8	79.0	83.3	87.8	92.1	96.4	99.2
80°	48.6	52.6	56.6	60.5	64.5	68.6	73.0	77.4	81.7	86.1	89.1
82.5°	37.9	42.0	46.2	50.3	54.4	58.6	63.1	67.4	71.7	76.2	79.2
85°	23.7	27.8	32.0	36.1	40.3	44.6	49.1	53.5	58.0	62.5	65.4
87.5°	13.4	17.7	22.1	26.4	30.5	34.8	40.0	44.3	48.9	53.6	56.4
90°	7.9	13.3	19.5	24.2	28.9	33.0	41.7	46.0	51.7	57.4	59.6
92.5°	15.2	22.6	33.1	45.6	59.9	79.2	120.9	182.4	242.3	275.8	239.5
95°	30.2	35.6	46.3	59.1	80.0	114.7	182.9	307.8	488.0	639.4	659.1
97.5°	48.9	51.7	60.9	72.5	90.5	119.9	173.3	277.1	456.2	668.6	814.5
100°	60.9	63.5	71.3	82.7	99.2	126.0	173.4	260.5	414.7	626.4	817.8
102.5°	72.7	76.2	82.9	93.5	109.1	134.6	177.8	254.8	386.5	574.6	771.8
105°	90.2	94.4	100.1	110.9	126.2	150.3	189.5	254.3	361.1	512.9	688.6
107.5°	110.5	113.6	118.9	130.0	144.3	167.9	203.8	263.0	354.6	477.3	621.1
110°	123.7	126.6	131.7	141.9	156.6	178.9	214.7	269.8	354.3	464.7	587.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	136.3	139.0	144.5	154.0	168.5	190.7	225.3	277.2	356.3	457.6	566.9
115°	154.5	157.6	163.6	171.9	186.8	208.8	241.4	288.8	360.5	452.1	547.1
117.5°	173.9	176.4	181.5	190.2	203.9	226.2	257.2	300.9	365.2	448.7	536.7
120°	186.4	188.2	193.7	202.1	214.9	237.1	268.1	309.2	368.8	447.0	530.7
122.5°	198.3	199.8	205.0	212.6	226.4	247.8	278.5	317.2	372.6	444.5	524.2
125°	213.3	216.1	220.5	228.5	242.4	264.2	293.2	329.6	378.5	441.4	514.1
127.5°	227.0	229.2	234.4	243.6	258.1	279.7	307.3	340.4	382.8	437.2	500.8
130°	234.2	237.0	242.9	253.8	267.8	289.8	316.5	346.9	386.0	434.8	492.6
132.5°	241.9	244.1	251.8	262.1	277.2	297.9	324.2	353.7	389.0	432.7	485.1
135°	252.2	255.1	262.5	275.0	290.5	310.0	335.1	362.3	393.2	429.2	473.6
137.5°	263.0	265.7	273.7	285.5	301.5	319.9	342.9	368.1	395.2	427.1	463.7
140°	270.6	272.8	280.8	293.2	308.6	326.2	348.5	372.1	397.3	425.4	458.4
142.5°	278.5	280.7	288.2	300.1	315.0	332.1	353.5	375.3	399.1	424.7	453.9
145°	290.1	292.2	299.4	309.7	323.6	339.8	358.9	378.8	400.2	423.0	447.2
147.5°	303.2	303.9	310.2	320.7	332.2	346.9	364.9	382.2	401.0	420.4	441.2
150°	311.4	312.1	317.9	326.6	337.6	351.6	367.8	384.0	401.0	418.6	437.1
152.5°	318.8	318.9	324.8	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°	398.4	398.4	398.4	398.4	398.4	398.4	398.4	398.4
2.5°	397.0	397.6	398.1	398.3	398.3	398.2	398.1	398.0
5°	396.0	396.7	397.6	397.9	397.8	397.7	397.6	397.5
7.5°	393.9	394.7	395.7	396.1	396.0	395.9	395.8	395.7
10°	391.7	392.6	393.5	393.9	393.8	393.7	393.6	393.5
12.5°	388.7	389.6	390.3	390.7	390.7	390.7	390.7	390.6
15°	383.2	384.1	385.0	385.4	385.3	385.2	385.1	385.0
17.5°	376.5	377.5	378.4	378.8	378.7	378.6	378.6	378.5
20°	371.4	372.4	373.3	373.9	373.9	373.9	373.9	373.9
22.5°	365.3	366.3	367.3	367.9	368.1	368.2	368.3	368.5
25°	356.0	357.0	358.2	358.7	358.8	358.9	359.0	359.1
27.5°	345.4	346.5	347.5	348.1	348.2	348.3	348.4	348.6
30°	338.1	339.2	340.3	340.9	341.1	341.4	341.6	341.8
32.5°	330.5	331.9	333.1	333.8	334.0	334.2	334.4	334.6
35°	318.7	320.0	321.4	322.3	322.5	322.8	323.2	323.5
37.5°	306.2	307.6	309.0	309.9	310.2	310.5	310.9	311.1
40°	297.5	298.9	300.4	301.3	301.7	302.2	302.6	302.9
42.5°	288.8	290.5	292.1	293.1	293.4	293.7	294.1	294.4
45°	275.5	277.2	278.9	279.9	280.5	281.0	281.4	281.9
47.5°	261.5	263.2	264.9	266.1	266.7	267.3	267.9	268.5
50°	251.6	253.5	255.5	256.8	257.4	258.0	258.6	259.2
52.5°	241.6	243.6	245.5	246.9	247.4	248.0	248.6	249.2
55°	226.6	228.6	230.5	231.9	232.4	233.0	233.7	234.2
57.5°	210.8	213.2	215.6	217.0	217.5	218.1	218.7	219.2
60°	200.0	202.3	204.5	206.0	206.9	207.6	208.5	209.2
62.5°	189.3	191.5	193.8	195.4	196.1	196.9	197.7	198.5
65°	172.7	175.2	177.7	179.3	180.1	180.9	181.7	182.5
67.5°	156.5	159.0	161.5	163.2	163.9	164.7	165.4	166.3
70°	145.0	147.7	150.3	152.0	152.7	153.4	154.1	154.8
72.5°	134.1	136.8	139.3	141.0	141.8	142.5	143.4	144.1
75°	117.5	120.3	123.1	124.9	125.8	126.7	127.6	128.5
77.5°	102.1	104.9	107.7	109.6	110.6	111.5	112.4	113.4
80°	92.1	95.0	98.0	99.9	100.7	101.5	102.3	103.0
82.5°	82.2	85.3	88.3	90.3	91.1	92.0	92.9	93.8
85°	68.4	71.4	74.4	76.3	77.3	78.3	79.3	80.3
87.5°	59.4	62.4	65.4	67.3	68.3	69.3	70.0	70.9
90°	63.2	66.8	70.4	72.2	73.8	75.3	75.4	76.2
92.5°	192.4	159.4	139.9	127.0	119.0	115.8	114.1	114.9
95°	590.3	478.7	382.7	312.9	277.7	255.8	243.4	234.7
97.5°	848.1	808.2	738.8	663.5	611.5	568.0	546.7	532.3
100°	928.1	945.5	912.1	859.2	795.8	751.5	730.1	724.9
102.5°	922.0	997.7	1010.8	989.8	951.2	919.4	896.8	893.0
105°	859.9	989.9	1065.3	1097.1	1099.4	1094.3	1084.8	1081.1
107.5°	773.0	911.2	1016.3	1083.7	1120.8	1138.3	1146.4	1149.1
110°	720.6	850.4	959.5	1042.1	1095.2	1127.0	1141.0	1148.4



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	681.5	796.4	899.6	982.1	1042.4	1080.6	1099.9	1111.5
115°	641.5	734.3	822.7	894.8	953.8	998.7	1023.0	1029.6
117.5°	620.3	697.4	767.2	828.7	879.1	917.0	941.7	947.1
120°	610.1	680.6	741.5	795.2	838.0	871.3	891.3	900.1
122.5°	601.2	669.4	725.0	772.2	808.4	836.9	853.8	862.6
125°	586.7	652.0	704.7	746.5	776.6	798.5	813.1	818.1
127.5°	569.1	631.4	683.9	723.6	753.9	773.6	786.1	791.2
130°	555.5	615.5	667.4	707.7	738.5	757.5	769.9	774.9
132.5°	541.5	597.9	648.6	688.8	719.0	740.4	752.1	757.1
135°	521.6	571.1	617.6	655.5	685.7	706.9	719.3	724.2
137.5°	503.8	545.8	585.1	619.4	647.4	668.3	678.5	684.3
140°	493.6	529.5	563.9	595.8	622.1	638.8	649.6	656.0
142.5°	484.3	515.9	545.5	573.1	596.3	611.8	621.4	625.9
145°	471.4	497.0	519.7	540.9	559.7	572.6	580.4	584.5
147.5°	460.8	480.8	498.5	514.9	528.9	539.9	545.8	547.4
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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