

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: P331281-935

Luminaire Tested: **S122DIP-S290D1080U935-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331281-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-16,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIP-S290D1080U935-4F0-1E-UDD-D4
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1080 LUMENS PER FOOT, BATWING OPTIC
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4653.5 lumens
Efficiency: N/A
Efficacy: 110.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

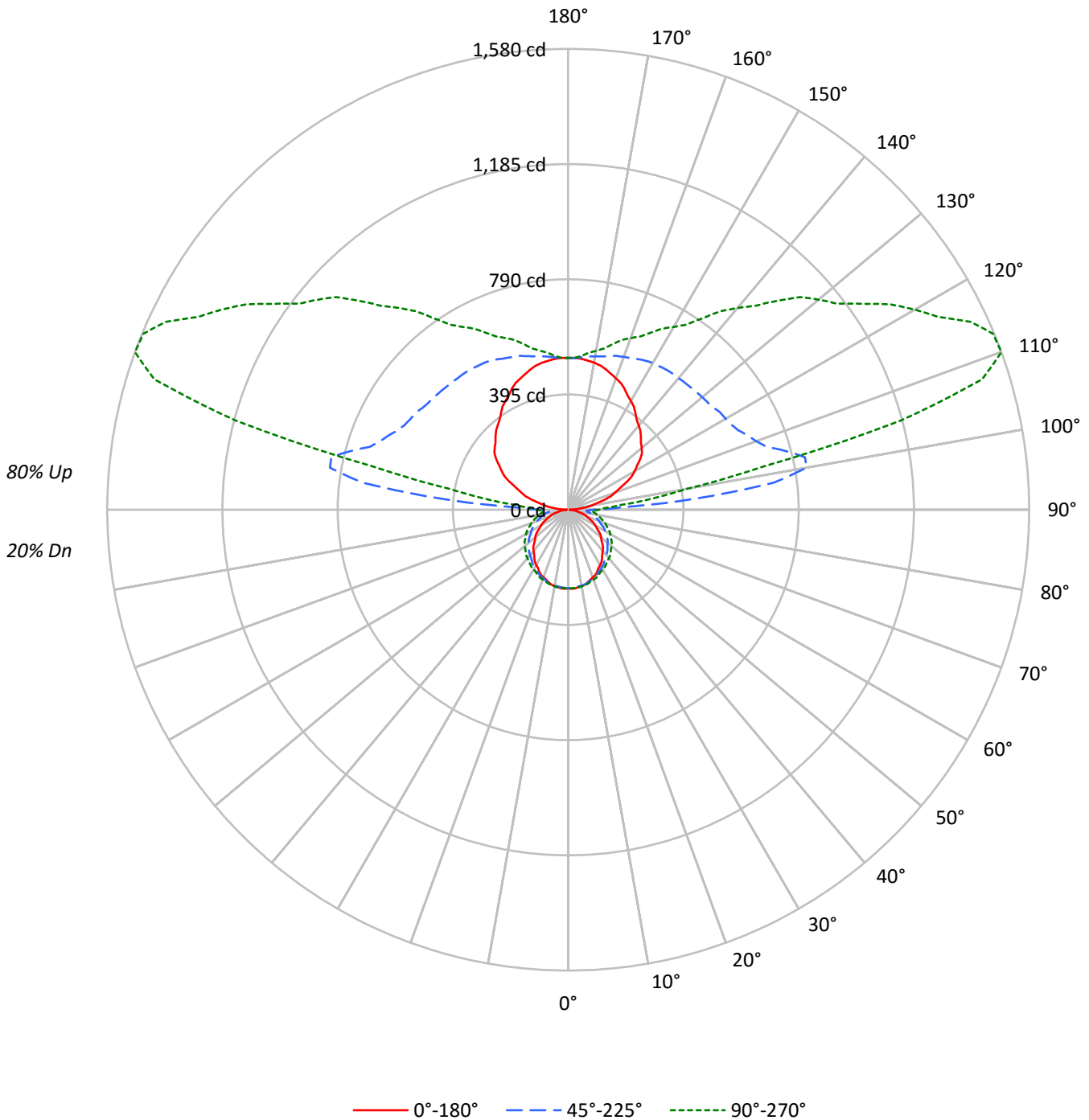
Input Watts (W): 42.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	100	100	100	100	88	88	88	88	67	67	67	47	47	47	28	28	28	20
1	90	86	82	79	80	76	73	70	57	55	53	40	39	37	24	23	23	15
2	82	75	69	64	72	66	61	57	50	46	43	35	33	31	21	20	19	12
3	75	65	58	53	65	58	52	47	44	39	36	30	28	26	18	17	16	10
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	15	13	9
5	62	51	43	37	55	45	38	33	34	30	26	24	21	19	14	13	11	7
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6
7	53	41	33	28	46	36	30	25	28	23	19	19	16	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	20	17	18	15	12	11	9	8	5
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	25.6	0.5
10°-20°	73.3	1.6
20°-30°	111.1	2.4
30°-40°	135.3	2.9
40°-50°	145.6	3.1
50°-60°	141.4	3.0
60°-70°	123.5	2.7
70°-80°	95.1	2.0
80°-90°	68.5	1.5
90°-100°	251.9	5.4
100°-110°	737.8	15.9
110°-120°	770.9	16.6
120°-130°	629.0	13.5
130°-140°	500.6	10.8
140°-150°	375.4	8.1
150°-160°	263.2	5.7
160°-170°	154.9	3.3
170°-180°	50.4	1.1
0°-30°	210.0	4.5
0°-40°	345.4	7.4
0°-60°	632.4	13.6
0°-90°	919.4	19.8
90°-120°	1760.6	37.8
90°-150°	3265.5	70.2
90°-180°	3734.0	80.2
0°-180°	4653.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	40	86	99	105	5
95°	38	108	437	207	179	40
105°	124	198	775	1372	1179	132
115°	217	278	644	1314	1523	215
125°	301	357	609	1060	1231	267
135°	352	421	593	883	1013	272
145°	402	462	586	730	800	252
155°	457	494	569	644	669	210
165°	498	513	545	578	587	140
175°	519	520	524	531	529	49
180°	520	520	520	520	520	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.6	19.6	25.2	30.8	36.8	43.3	50.3	57.1	62.9	66.1
90°	4.9	12.9	22.0	29.0	36.1	44.3	54.9	67.5	79.0	85.7	88.1
92.5°	15.8	25.9	37.8	46.9	58.4	72.8	100.7	137.9	171.7	178.8	162.0
95°	38.1	46.2	60.3	73.4	93.5	122.2	173.4	265.6	386.8	437.0	391.3
97.5°	59.8	68.8	83.0	100.2	122.3	153.8	216.6	342.9	540.7	710.9	747.0
100°	79.7	85.9	98.2	117.4	140.6	172.7	230.6	357.4	578.3	829.2	976.5
102.5°	97.8	103.0	114.9	133.9	157.6	189.4	243.1	356.4	561.1	831.1	1060.7
105°	124.0	130.5	140.0	157.6	182.1	213.6	265.1	358.7	528.2	774.8	1043.9
107.5°	152.7	157.9	166.8	182.5	206.4	237.7	287.7	369.6	510.4	714.8	952.7
110°	171.6	177.4	185.1	199.8	222.6	254.6	302.8	379.1	505.4	685.7	895.5



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	189.2	194.7	202.9	216.6	238.2	270.8	317.3	389.3	504.2	665.9	854.9
115°	216.6	222.6	229.5	242.5	263.5	292.9	339.8	404.8	505.7	643.6	804.3
117.5°	244.6	249.3	255.9	267.1	287.0	317.0	360.5	421.3	510.0	630.9	771.0
120°	262.3	266.6	272.9	282.2	302.6	332.5	375.1	432.5	513.0	623.5	752.9
122.5°	279.1	282.4	288.5	298.4	318.6	349.1	389.0	442.3	516.9	618.5	737.4
125°	300.8	303.8	309.9	321.8	341.8	371.3	410.0	457.8	522.6	609.4	714.8
127.5°	318.5	322.4	330.7	343.8	362.9	392.8	430.1	472.7	528.9	603.2	693.8
130°	328.8	332.8	342.7	356.6	376.5	405.4	442.2	482.1	533.9	599.7	679.8
132.5°	338.5	343.2	353.9	368.6	389.3	418.0	452.8	491.4	538.8	597.0	668.3
135°	352.5	356.5	368.4	383.5	406.5	434.9	467.8	503.7	544.6	593.4	652.3
137.5°	366.1	370.8	382.8	398.8	421.6	447.8	479.7	512.8	549.6	591.0	640.3
140°	376.4	380.4	392.3	408.2	430.2	456.2	486.4	517.5	551.7	588.9	633.3
142.5°	386.8	389.9	401.1	417.0	438.2	462.5	491.7	522.0	553.6	588.2	626.8
145°	402.1	406.0	416.1	431.1	451.1	473.1	500.1	528.1	556.1	586.1	618.6
147.5°	418.9	421.9	431.4	445.3	461.9	481.5	506.9	531.5	556.9	582.6	610.6
150°	430.1	433.1	441.1	454.1	469.1	487.1	510.1	533.1	556.1	580.1	604.1
152.5°	441.3	442.7	450.6	462.1	476.3	492.7	513.3	533.9	554.5	576.1	598.5
155°	457.1	458.1	464.1	475.1	486.1	501.1	518.1	535.1	552.1	569.1	588.1
157.5°	470.3	471.3	476.1	485.7	494.5	507.1	521.5	535.1	547.5	561.9	578.3
160°	479.1	480.1	484.1	492.1	500.1	511.1	523.1	535.1	545.1	557.2	571.1
162.5°	487.9	487.3	491.3	497.7	504.9	513.5	523.9	534.3	542.7	553.1	564.7
165°	498.1	497.1	499.1	505.1	510.1	516.1	525.1	532.1	538.1	545.1	554.1
167.5°	506.5	505.3	507.1	510.9	514.5	518.3	524.9	530.7	533.5	538.1	543.7
170°	512.1	510.1	511.1	514.1	516.1	519.1	524.1	529.1	531.1	534.1	538.1
172.5°	515.3	514.1	513.5	516.5	517.7	519.9	523.3	526.7	527.9	529.3	532.5
175°	519.1	518.1	517.1	519.1	519.1	520.1	522.1	524.1	523.1	524.1	525.1
177.5°	520.9	519.3	518.5	520.1	520.1	520.1	520.9	522.5	520.9	520.1	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	69.5	72.7	76.6	79.1	80.2	81.4	82.5	83.6
90°	90.6	92.0	97.6	100.8	101.9	102.9	103.9	105.0
92.5°	142.8	133.9	128.9	124.8	125.1	123.0	124.8	124.2
95°	313.7	255.9	217.2	197.4	185.5	178.5	176.5	178.6
97.5°	659.6	551.6	446.6	376.4	329.7	306.1	292.5	285.2
100°	958.7	837.9	704.1	585.1	503.1	461.1	433.0	415.9
102.5°	1154.0	1129.2	1032.1	905.9	816.7	744.2	708.9	685.5
105°	1255.0	1371.1	1387.1	1356.1	1295.0	1234.0	1191.9	1178.9
107.5°	1176.3	1349.4	1456.4	1506.8	1515.5	1513.0	1505.4	1487.7
110°	1109.3	1291.2	1421.9	1505.8	1549.8	1569.8	1579.8	1579.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1047.9	1222.5	1362.2	1458.0	1518.8	1551.6	1569.5	1575.9
115°	971.9	1128.5	1262.1	1366.9	1438.9	1485.9	1512.9	1522.8
117.5°	913.8	1051.6	1172.9	1271.4	1344.6	1394.1	1422.5	1430.9
120°	884.4	1010.9	1119.3	1212.0	1283.0	1331.0	1361.0	1371.9
122.5°	860.8	976.8	1079.6	1163.4	1227.0	1274.0	1300.6	1309.8
125°	826.1	931.5	1021.9	1098.5	1157.3	1196.0	1221.8	1230.6
127.5°	791.9	887.3	972.5	1043.2	1094.5	1130.9	1153.3	1160.5
130°	769.9	858.1	939.1	1006.5	1056.3	1091.0	1111.6	1120.3
132.5°	748.7	830.3	905.0	968.4	1017.3	1052.0	1071.1	1078.9
135°	719.1	787.0	854.8	912.1	955.7	989.5	1008.1	1012.9
137.5°	695.0	751.7	805.8	855.7	895.5	924.5	940.9	947.4
140°	679.7	729.1	776.5	821.5	854.0	880.5	896.0	902.6
142.5°	667.3	709.2	749.9	787.6	818.4	842.5	856.4	858.0
145°	650.1	683.7	715.2	744.7	769.1	786.6	797.0	800.5
147.5°	637.1	663.1	687.4	708.8	728.8	742.6	749.6	751.6
150°	628.1	650.1	671.1	689.1	704.1	716.2	722.1	723.2
152.5°	619.3	639.7	657.5	673.1	684.9	695.3	699.7	699.9
155°	607.1	623.1	638.1	649.1	660.1	667.1	671.1	669.2
157.5°	592.9	606.3	618.9	627.5	635.3	641.1	642.9	642.9
160°	584.1	595.1	606.1	613.1	620.1	625.1	626.1	626.1
162.5°	575.3	584.7	594.1	599.5	606.5	609.9	610.9	610.1
165°	562.1	569.1	576.1	580.1	584.1	588.1	588.1	587.1
167.5°	549.5	554.9	559.7	563.4	565.1	567.3	567.1	565.9
170°	543.1	546.1	550.1	552.1	553.1	556.1	555.1	553.1
172.5°	535.9	538.1	541.3	542.5	543.5	544.9	543.9	542.7
175°	528.1	529.1	530.1	531.1	531.1	532.1	531.1	529.1
177.5°	522.5	522.5	523.3	523.3	523.3	523.3	522.5	520.9
180°	520.1	520.1	520.1	520.1	520.1	520.1	520.1	520.1

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