

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: P331897-840

Luminaire Tested: **S123DIP-S340D1025U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331897-840  
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-S340D1025U840-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5201.9 lumens  
Efficiency: N/A  
Efficacy: 139.5 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: Semi-Indirect

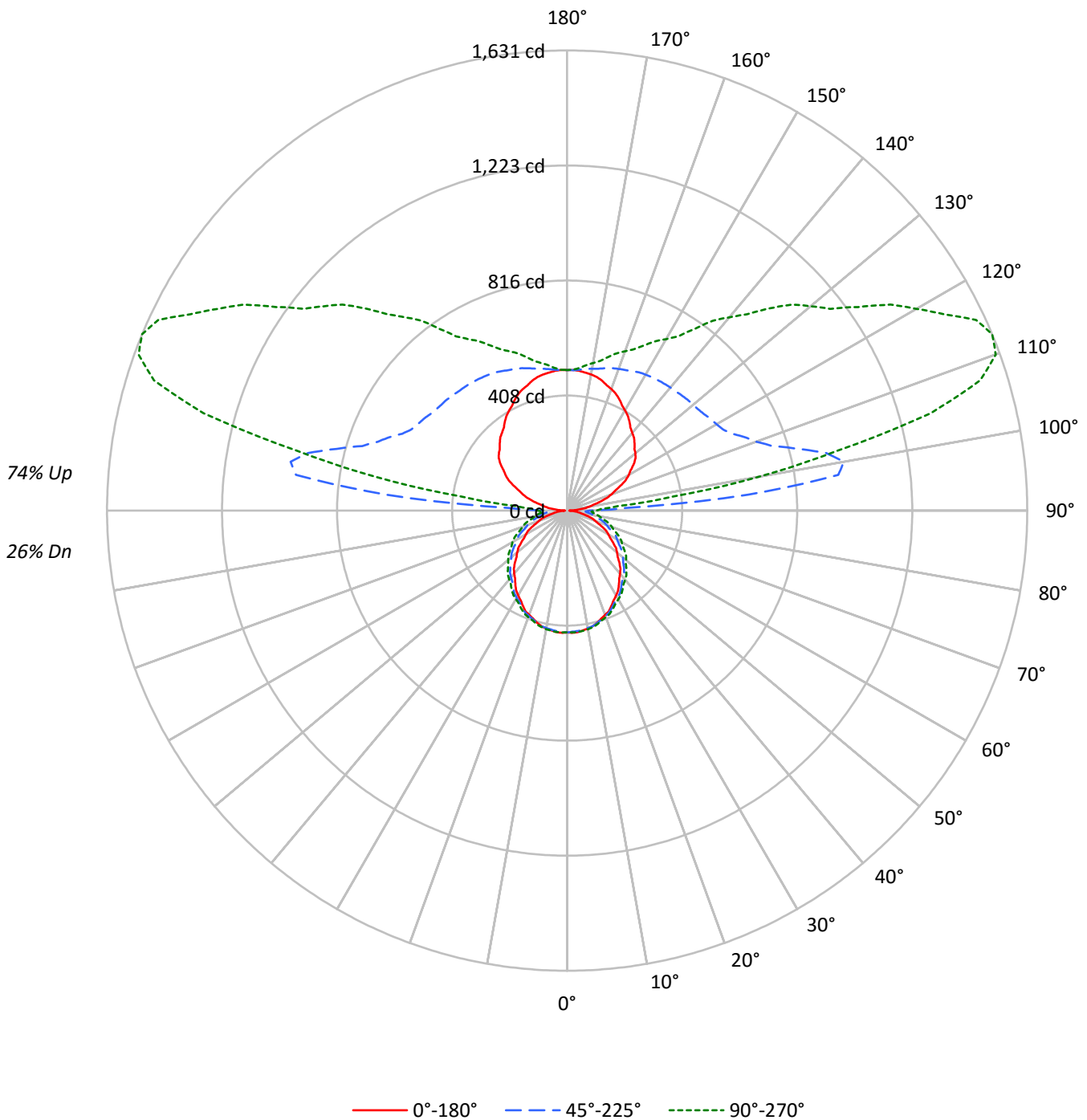
Input Watts (W): 37.3  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	70	70	70	51	51	51	34	34	34	26
1	92	87	83	80	82	78	75	72	60	58	56	44	42	41	29	28	27	20
2	83	76	70	65	74	68	63	58	52	49	46	38	36	34	25	24	23	17
3	76	66	59	54	67	59	53	48	46	42	38	34	31	28	22	20	19	14
4	69	59	51	45	61	52	46	41	41	36	32	30	27	24	20	18	16	12
5	63	52	44	38	56	47	40	35	36	31	28	27	23	21	18	16	14	10
6	58	46	39	33	52	42	35	30	32	27	24	24	21	18	16	14	12	9
7	54	42	34	29	48	37	31	26	29	24	21	22	18	16	14	12	11	8
8	50	38	30	25	44	34	27	23	27	22	18	20	16	14	13	11	10	7
9	46	34	27	22	41	31	24	20	24	19	16	18	15	12	12	10	9	6
10	43	31	24	20	38	28	22	18	22	18	14	17	13	11	11	9	8	6

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

	0°	45°	90°
0°	4649	4649	4649
5°	4664	4533	4534
10°	4622	4428	4406
15°	4562	4309	4265
20°	4477	4174	4110
25°	4372	4019	3947
30°	4265	3879	3780
35°	4143	3731	3649
40°	4030	3595	3508
45°	3902	3466	3395
50°	3776	3338	3272
55°	3636	3207	3158
60°	3499	3074	3045
65°	3360	2931	2907
70°	3149	2772	2766
75°	2886	2590	2626
80°	2583	2410	2462
85°	2294	2286	2367



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	40.9	0.8
10°-20°	116.7	2.2
20°-30°	174.6	3.4
30°-40°	208.5	4.0
40°-50°	218.1	4.2
50°-60°	204.7	3.9
60°-70°	171.0	3.3
70°-80°	122.3	2.4
80°-90°	76.8	1.5
90°-100°	322.9	6.2
100°-110°	818.3	15.7
110°-120°	794.4	15.3
120°-130°	628.5	12.1
130°-140°	491.2	9.4
140°-150°	363.6	7.0
150°-160°	252.6	4.9
160°-170°	148.4	2.9
170°-180°	48.3	0.9
0°-30°	332.3	6.4
0°-40°	540.8	10.4
0°-60°	963.6	18.5
0°-90°	1333.7	25.6
90°-120°	1935.6	37.2
90°-150°	3419.0	65.7
90°-180°	3868.0	74.4
0°-180°	5201.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	432	432	432	432	432	
5°	432	431	429	432	432	41
15°	412	413	413	417	417	116
25°	372	376	378	384	384	171
35°	320	327	334	340	342	200
45°	262	273	285	293	297	202
55°	200	215	232	244	248	179
65°	138	156	177	191	196	136
75°	75	97	120	135	142	80
85°	23	47	72	87	92	24
90°	8	41	78	97	103	7
95°	40	135	644	235	183	41
105°	121	188	846	1465	1335	128
115°	209	266	645	1395	1599	207
125°	289	341	594	1073	1258	256
135°	338	402	576	877	1013	261
145°	385	440	564	712	785	241
155°	436	471	545	620	646	201
165°	477	490	522	554	564	134
175°	497	498	501	508	507	47
180°	498	498	498	498	498	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	433.8	433.6	433.3	433.1	432.8	432.4	431.7	431.0	430.4	429.7	430.4
5°	432.4	432.2	432.0	431.8	431.6	431.2	430.5	429.9	429.3	428.7	429.5
7.5°	428.2	428.3	428.3	428.3	428.4	428.1	427.5	426.9	426.3	425.7	426.7
10°	424.4	424.6	424.9	425.1	425.3	425.2	424.5	424.0	423.5	423.0	424.0
12.5°	419.9	420.2	420.5	420.8	421.1	421.0	420.7	420.3	420.0	419.6	420.6
15°	411.7	412.0	412.3	412.6	412.9	413.1	412.9	412.8	412.7	412.6	413.7
17.5°	401.4	402.0	402.6	403.2	403.8	404.1	404.1	404.0	404.0	404.0	405.0
20°	393.8	394.5	395.1	395.8	396.4	396.8	397.0	397.2	397.4	397.6	398.6
22.5°	386.0	386.6	387.2	387.8	388.5	388.9	389.2	389.5	389.8	390.1	391.3
25°	371.7	372.7	373.9	374.9	375.9	376.6	376.9	377.2	377.5	377.9	379.2
27.5°	357.4	358.6	359.8	361.0	362.2	363.1	363.8	364.5	365.2	365.8	367.0
30°	347.3	348.6	350.0	351.3	352.7	353.8	354.7	355.5	356.3	357.2	358.4
32.5°	336.0	337.5	339.0	340.5	342.0	343.4	344.5	345.6	346.7	347.7	349.1
35°	319.9	321.6	323.4	325.0	326.7	328.2	329.5	330.9	332.2	333.7	335.2
37.5°	303.1	304.9	306.8	308.7	310.5	312.4	314.0	315.7	317.4	319.0	320.8
40°	291.8	293.7	295.5	297.4	299.2	301.2	303.4	305.5	307.5	309.6	311.4
42.5°	279.3	281.7	283.9	286.2	288.5	290.7	293.0	295.1	297.3	299.4	301.4
45°	261.7	264.2	266.6	269.1	271.7	274.2	276.8	279.4	282.1	284.7	286.7
47.5°	243.1	245.9	248.7	251.7	254.5	257.4	260.3	263.4	266.3	269.3	271.6
50°	231.1	234.0	236.9	239.8	242.8	245.8	249.0	252.4	255.6	258.8	261.3
52.5°	218.2	221.4	224.4	227.5	230.7	234.0	237.5	241.2	244.7	248.2	250.7
55°	199.5	203.0	206.4	209.8	213.3	216.9	220.7	224.5	228.2	232.0	234.8
57.5°	181.3	184.8	188.4	192.1	195.6	199.5	203.6	207.7	211.9	216.0	218.8
60°	168.4	172.2	176.0	179.8	183.5	187.5	191.9	196.1	200.4	204.7	207.6
62.5°	156.4	160.3	164.1	167.9	171.8	176.0	180.6	185.1	189.7	194.2	197.0
65°	137.8	142.0	146.0	150.1	154.2	158.5	163.1	167.7	172.3	176.9	180.1
67.5°	119.1	123.4	127.7	132.0	136.3	140.9	145.5	150.3	154.9	159.7	163.0
70°	105.8	110.4	114.8	119.4	123.8	128.7	133.6	138.7	143.7	148.7	152.1
72.5°	93.8	98.4	102.8	107.3	111.8	116.6	121.8	127.0	132.2	137.4	140.9
75°	74.8	79.8	84.6	89.6	94.5	99.6	104.8	110.0	115.2	120.5	123.9
77.5°	58.3	63.2	68.2	73.1	78.1	83.2	88.5	93.7	99.0	104.3	108.0
80°	46.6	51.7	56.9	62.0	67.1	72.4	77.8	83.2	88.7	94.1	97.7
82.5°	36.5	41.6	46.9	52.0	57.3	62.6	68.2	73.6	79.2	84.7	88.3
85°	23.0	28.3	33.5	38.8	43.9	49.4	54.9	60.4	65.9	71.5	75.0
87.5°	12.9	18.5	24.1	30.0	35.5	41.2	47.2	53.1	59.1	65.0	68.4
90°	8.2	15.2	22.4	30.6	37.7	44.9	53.3	61.7	70.0	78.4	80.9
92.5°	18.3	28.9	42.0	54.5	67.6	87.5	119.1	167.6	215.5	205.2	170.6
95°	39.5	46.6	61.7	82.9	113.2	157.1	247.9	403.2	573.7	644.3	534.7
97.5°	63.1	67.8	80.1	98.8	128.2	175.0	261.8	436.1	716.5	969.6	1037.4
100°	78.9	83.2	93.6	111.1	138.6	182.0	257.3	411.3	681.3	995.5	1197.2
102.5°	95.4	100.2	109.5	125.8	150.6	190.6	258.5	389.9	630.7	940.9	1202.9
105°	120.7	126.2	134.8	149.4	171.1	205.8	264.8	373.0	568.0	845.8	1138.0
107.5°	147.1	152.3	160.3	174.3	194.4	226.6	278.6	369.2	527.1	761.4	1026.9
110°	166.1	171.1	177.9	191.0	210.0	241.2	290.7	371.5	510.8	713.6	957.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	183.9	188.4	195.0	207.6	226.3	256.5	302.7	377.7	500.6	680.6	896.0
115°	209.0	214.3	221.6	232.9	251.4	281.0	323.2	388.4	494.9	644.9	821.7
117.5°	234.5	239.9	245.7	255.8	275.7	303.1	344.5	402.8	493.7	622.2	775.5
120°	251.9	255.4	260.9	271.6	291.2	318.4	358.2	414.0	495.1	611.5	750.9
122.5°	267.2	270.4	275.8	287.0	305.6	334.2	372.9	424.6	499.1	603.9	730.4
125°	288.7	290.7	296.8	307.8	327.0	355.8	394.0	441.4	504.9	593.7	703.7
127.5°	305.4	308.3	315.7	326.9	348.0	376.4	412.9	455.3	512.3	587.2	679.8
130°	315.9	318.8	327.8	339.8	360.8	389.1	424.4	464.8	517.4	582.9	666.5
132.5°	323.6	327.4	337.3	351.7	372.9	400.1	434.2	473.4	520.7	580.3	654.1
135°	337.6	341.5	352.5	367.6	388.6	416.4	448.8	484.1	525.6	576.2	637.5
137.5°	350.8	355.0	365.8	381.8	402.7	428.2	458.9	492.2	528.8	571.7	623.2
140°	359.3	364.4	374.5	390.6	410.7	436.1	465.6	496.1	530.8	569.4	614.3
142.5°	369.0	373.1	384.0	398.4	418.5	442.0	470.5	500.0	532.0	566.3	606.2
145°	384.6	387.5	396.4	411.4	428.5	451.6	477.8	505.0	533.2	563.5	596.6
147.5°	399.8	401.6	410.5	423.5	440.1	459.9	483.8	508.3	533.2	559.7	587.5
150°	410.3	411.3	419.3	432.4	446.6	464.7	487.9	509.1	533.2	556.4	581.6
152.5°	420.7	420.9	429.0	440.5	453.0	470.4	490.3	510.7	530.8	552.4	575.2
155°	436.5	436.5	442.5	452.6	463.7	477.8	494.9	511.1	528.2	545.3	565.5
157.5°	449.0	449.8	454.6	463.5	472.9	483.8	497.6	512.1	524.8	539.1	554.6
160°	458.7	458.7	462.7	470.7	477.8	487.9	500.0	512.1	523.2	534.2	547.3
162.5°	466.0	466.0	469.2	475.5	481.8	490.3	500.8	511.3	520.0	529.4	540.1
165°	476.8	475.7	477.8	482.8	486.9	493.9	502.0	509.1	515.1	522.2	530.2
167.5°	485.0	483.8	484.8	488.7	491.5	495.9	501.8	507.5	510.3	514.9	520.8
170°	489.9	487.9	488.9	491.9	493.9	495.9	501.0	505.0	507.1	510.1	515.1
172.5°	493.1	491.9	492.1	494.3	495.5	496.8	501.0	504.2	504.6	506.0	509.5
175°	497.0	495.9	494.9	497.0	497.0	498.0	500.0	502.0	501.0	501.0	503.0
177.5°	498.8	498.0	497.2	498.0	498.0	498.0	498.8	500.4	498.8	498.0	498.8
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	431.9	431.9	431.9	431.9	431.9	431.9	431.9	431.9
2.5°	431.0	431.7	432.4	432.6	432.6	432.5	432.4	432.3
5°	430.3	431.2	432.0	432.4	432.3	432.1	432.0	431.9
7.5°	427.8	428.8	429.8	430.3	430.2	430.0	429.9	429.8
10°	425.2	426.2	427.2	427.6	427.4	427.2	427.0	426.8
12.5°	421.5	422.5	423.4	423.8	423.6	423.4	423.2	423.0
15°	414.8	415.8	416.9	417.3	417.2	417.1	417.0	416.9
17.5°	405.9	406.9	407.8	408.2	408.0	407.9	407.8	407.6
20°	399.5	400.4	401.4	401.9	402.0	402.1	402.2	402.3
22.5°	392.4	393.6	394.9	395.5	395.4	395.3	395.3	395.2
25°	380.5	381.9	383.2	384.0	384.0	384.0	384.0	384.0
27.5°	368.1	369.3	370.5	371.1	371.2	371.3	371.3	371.4
30°	359.6	360.9	362.1	362.7	362.7	362.7	362.7	362.7
32.5°	350.4	351.7	353.0	353.9	354.2	354.4	354.7	354.9
35°	336.8	338.3	339.9	340.9	341.3	341.7	342.1	342.5
37.5°	322.6	324.4	326.2	327.2	327.5	327.9	328.2	328.5
40°	313.2	315.0	316.7	317.8	318.2	318.7	319.1	319.5
42.5°	303.4	305.3	307.2	308.5	309.1	309.6	310.2	310.8
45°	288.6	290.6	292.7	294.1	294.9	295.7	296.6	297.4
47.5°	273.8	276.1	278.3	279.7	280.3	281.0	281.7	282.4
50°	263.6	266.0	268.4	270.0	270.7	271.5	272.2	273.0
52.5°	253.3	255.7	258.2	259.9	260.8	261.8	262.6	263.5
55°	237.6	240.4	243.3	245.1	245.9	246.8	247.6	248.4
57.5°	221.7	224.5	227.3	229.2	230.2	231.3	232.3	233.2
60°	210.6	213.5	216.4	218.4	219.5	220.8	221.9	223.1
62.5°	200.0	202.9	205.8	207.8	208.9	210.0	211.1	212.2
65°	183.2	186.3	189.5	191.6	192.6	193.7	194.7	195.7
67.5°	166.4	169.9	173.3	175.5	176.3	177.2	178.1	178.9
70°	155.4	158.8	162.1	164.3	165.3	166.3	167.4	168.4
72.5°	144.2	147.6	151.1	153.4	154.4	155.4	156.5	157.5
75°	127.3	130.8	134.3	136.6	137.8	139.2	140.4	141.7
77.5°	111.6	115.2	118.9	121.1	122.1	123.1	124.0	125.0
80°	101.2	104.8	108.4	110.6	111.7	112.7	113.8	114.8
82.5°	91.8	95.3	99.0	101.2	102.3	103.3	104.3	105.4
85°	78.7	82.2	85.7	88.1	89.1	90.2	91.2	92.2
87.5°	72.1	75.8	79.6	82.3	83.1	84.4	85.6	86.5
90°	85.4	90.1	94.6	99.0	99.0	101.0	103.1	103.1
92.5°	142.0	127.9	123.5	120.5	119.7	117.5	119.6	118.7
95°	416.0	302.3	252.1	217.9	199.9	191.8	185.8	182.8
97.5°	954.0	777.1	650.2	531.7	458.4	414.0	387.9	380.2
100°	1235.5	1156.8	1042.0	900.8	800.1	727.5	689.2	691.4
102.5°	1327.4	1327.7	1261.9	1173.2	1095.0	1037.8	1005.9	983.8
105°	1351.6	1455.3	1477.4	1453.1	1407.7	1370.3	1339.0	1334.9
107.5°	1268.6	1435.1	1526.2	1564.0	1565.7	1553.7	1543.8	1535.4
110°	1190.7	1379.0	1508.6	1581.0	1610.0	1619.0	1617.8	1616.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1113.4	1305.5	1450.5	1543.0	1595.5	1621.4	1629.9	1631.3
115°	1010.8	1188.7	1339.4	1450.9	1527.3	1572.6	1593.6	1599.4
117.5°	935.4	1089.3	1224.9	1338.1	1417.6	1469.4	1499.1	1506.8
120°	895.5	1034.0	1157.4	1260.7	1341.1	1398.3	1423.2	1430.0
122.5°	863.6	989.2	1103.6	1199.6	1271.1	1322.6	1350.0	1358.4
125°	820.8	932.9	1031.9	1114.0	1179.2	1224.3	1250.2	1258.0
127.5°	783.0	883.1	972.5	1047.2	1105.4	1144.1	1167.5	1174.7
130°	759.2	851.9	935.6	1005.4	1059.6	1096.4	1118.2	1126.9
132.5°	737.0	822.4	900.3	966.9	1017.8	1054.9	1074.3	1080.7
135°	707.0	780.4	847.8	906.5	956.4	987.1	1005.8	1013.4
137.5°	679.4	739.7	797.9	848.8	890.8	922.0	937.9	943.0
140°	663.3	716.2	766.2	810.6	849.4	878.2	894.8	894.3
142.5°	647.7	693.3	736.6	775.3	808.4	833.9	849.0	848.5
145°	629.7	663.8	696.9	726.7	752.3	774.0	782.4	784.9
147.5°	615.0	641.7	667.9	689.0	708.5	723.2	731.2	732.5
150°	604.8	628.0	649.1	668.4	683.8	695.1	701.4	701.6
152.5°	595.9	615.9	634.7	650.6	662.6	672.9	676.5	676.6
155°	582.6	598.7	613.9	626.0	635.1	643.1	645.1	646.1
157.5°	568.6	582.0	593.7	603.2	611.1	617.1	618.7	618.5
160°	560.5	571.6	581.6	588.7	595.7	601.8	601.8	600.8
162.5°	550.8	560.3	569.6	575.8	580.5	585.6	585.6	584.6
165°	538.3	544.3	551.4	556.4	560.5	564.5	563.5	563.5
167.5°	527.4	532.0	536.0	539.7	541.5	544.3	543.3	543.3
170°	520.2	523.2	527.1	529.2	530.2	532.2	531.2	531.2
172.5°	513.7	515.9	519.2	520.4	520.6	522.6	520.8	520.0
175°	505.0	506.0	508.1	508.1	508.1	509.1	508.1	507.1
177.5°	499.6	500.4	501.2	501.2	500.4	501.2	499.6	499.6
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0

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