

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: P331390

Luminaire Tested: **SA2XXDIP-C865D530U835-4F0-1E-UDD-F**

Issue Date: 10/7/2019

**Test Information**

Test Method: LM-79-08  
Report Number: P331390  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 10/7/2019  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: SA2XXDIP-C865D530U835-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 530 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

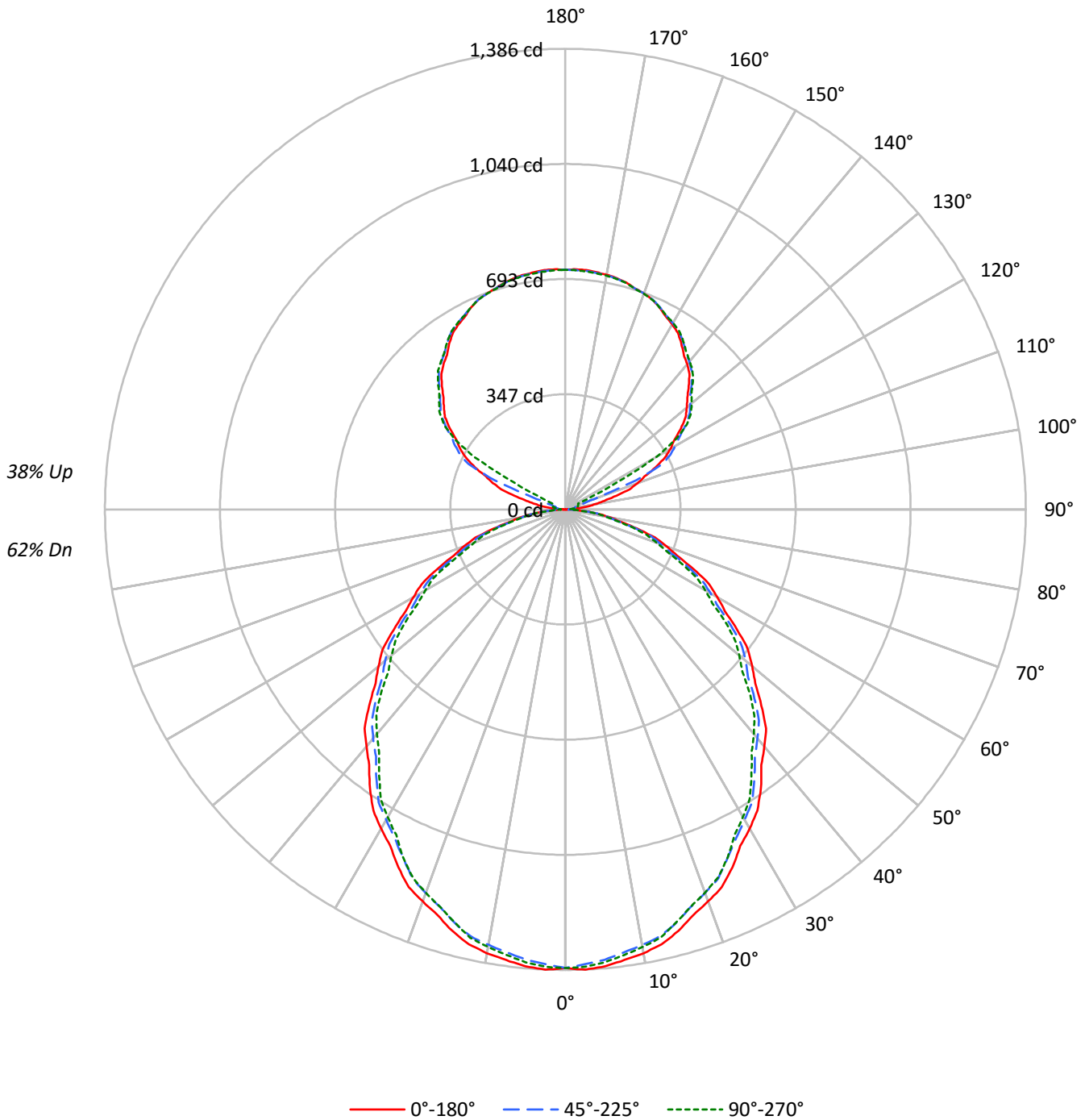
Lumens per Lamp: N/A  
Luminaire Lumens: 5626.3 lumens  
Efficiency: N/A  
Efficacy: 115.3 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Direct

Input Watts (W): 48.8  
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									50									30									10									0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	50	30	10	0										
RCR	0	110	110	110	110	103	103	103	103	90	90	90	78	78	78	68	68	68	62	62	62	62	62	62	62	62	62										
	1	101	96	92	89	94	90	87	84	79	77	74	69	67	65	60	58	57	53	53	53	53	53	53	53	53	53										
	2	92	84	78	72	86	79	73	69	69	65	61	61	57	55	53	50	48	44	44	44	44	44	44	44	44	44										
	3	84	74	66	60	78	70	63	57	61	56	52	54	50	46	47	44	41	37	37	37	37	37	37	37	37	37										
	4	77	65	57	51	71	62	54	49	54	49	44	48	43	40	42	38	35	32	32	32	32	32	32	32	32	32										
	5	70	58	50	44	66	55	48	42	49	43	38	43	38	34	38	34	31	28	28	28	28	28	28	28	28	28										
	6	65	52	44	38	61	50	42	37	44	38	33	39	34	30	34	30	27	24	24	24	24	24	24	24	24	24										
	7	60	47	39	34	56	45	37	32	40	34	29	35	30	27	31	27	24	22	22	22	22	22	22	22	22	22										
	8	56	43	35	30	52	41	34	29	37	31	26	32	28	24	29	25	22	19	19	19	19	19	19	19	19	19										
	9	52	39	32	27	49	37	30	26	34	28	24	30	25	22	26	22	20	18	18	18	18	18	18	18	18	18										
	10	49	36	29	24	46	34	28	23	31	25	21	28	23	20	25	21	18	16	16	16	16	16	16	16	16	16										

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

	0°	45°	90°
0°	22281	22281	22281
5°	22366	22044	22174
10°	22233	21820	21930
15°	21959	21538	21514
20°	21569	21113	21089
25°	21180	20591	20591
30°	20681	20113	19939
35°	20217	19537	19249
40°	19633	18963	18598
45°	19057	18393	17938
50°	18432	17799	17166
55°	17779	17106	16473
60°	17053	16281	15684
65°	16275	15461	14751
70°	15286	14469	13780
75°	13905	13325	12994
80°	12338	11967	11353
85°	10078	9596	8596



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	129.8	2.3
10°-20°	365.1	6.5
20°-30°	536.7	9.5
30°-40°	623.4	11.1
40°-50°	622.7	11.1
50°-60°	543.1	9.7
60°-70°	401.6	7.1
70°-80°	227.4	4.0
80°-90°	62.9	1.1
90°-100°	24.1	0.4
100°-110°	88.2	1.6
110°-120°	235.8	4.2
120°-130°	389.3	6.9
130°-140°	414.0	7.4
140°-150°	384.8	6.8
150°-160°	309.4	5.5
160°-170°	199.4	3.5
170°-180°	68.6	1.2
0°-30°	1031.6	18.3
0°-40°	1655.0	29.4
0°-60°	2820.8	50.1
0°-90°	3512.7	62.4
90°-120°	348.1	6.2
90°-150°	1536.2	27.3
90°-180°	2114.0	37.6
0°-180°	5626.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1380	1380	1380	1380	1380	
5°	1380	1374	1360	1370	1368	131
15°	1314	1305	1288	1293	1287	370
25°	1189	1178	1156	1158	1156	547
35°	1026	1012	991	983	977	640
45°	835	825	806	791	786	644
55°	632	623	608	592	585	565
65°	426	418	405	393	386	421
75°	223	220	214	206	208	238
85°	54	53	52	48	46	62
90°	0	6	10	13	14	4
95°	34	18	20	23	22	41
105°	159	166	32	37	40	170
115°	300	309	322	92	43	295
125°	424	431	441	444	446	378
135°	525	533	538	543	542	405
145°	609	609	617	621	618	381
155°	671	666	672	675	671	309
165°	707	704	705	708	705	200
175°	723	719	720	723	719	69
180°	721	721	721	721	721	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1386.4	1385.2	1384.0	1382.9	1381.7	1379.8	1377.2	1374.6	1372.0	1369.4	1371.8
5°	1380.0	1378.8	1377.7	1376.5	1375.3	1373.1	1369.9	1366.6	1363.4	1360.1	1362.5
7.5°	1367.8	1366.0	1364.2	1362.3	1360.5	1357.9	1354.6	1351.3	1348.0	1344.7	1347.1
10°	1356.1	1354.1	1352.0	1349.9	1347.9	1345.1	1341.5	1338.0	1334.5	1330.9	1333.3
12.5°	1340.2	1338.4	1336.6	1334.7	1332.9	1330.2	1326.7	1323.1	1319.6	1316.1	1317.7
15°	1313.7	1311.9	1310.1	1308.4	1306.6	1303.8	1300.0	1296.1	1292.3	1288.5	1289.6
17.5°	1279.7	1277.9	1276.2	1274.4	1272.6	1269.8	1265.9	1262.0	1258.1	1254.2	1255.6
20°	1255.3	1253.5	1251.8	1250.0	1248.2	1245.3	1241.1	1237.0	1232.9	1228.8	1229.6
22.5°	1230.9	1228.4	1225.9	1223.4	1221.0	1217.8	1213.9	1210.0	1206.1	1202.2	1202.4
25°	1188.9	1186.6	1184.2	1181.9	1179.5	1175.8	1170.8	1165.8	1160.8	1155.8	1156.4
27.5°	1141.2	1139.1	1136.9	1134.8	1132.7	1129.6	1125.7	1121.7	1117.8	1113.8	1113.0
30°	1109.3	1107.0	1104.6	1102.3	1099.9	1096.5	1092.1	1087.7	1083.2	1078.8	1077.9
32.5°	1075.4	1073.5	1071.6	1069.7	1067.8	1064.5	1059.9	1055.2	1050.6	1045.9	1044.3
35°	1025.7	1022.8	1019.8	1016.9	1013.9	1010.1	1005.4	1000.7	995.9	991.2	989.5
37.5°	969.7	967.1	964.5	961.9	959.4	955.7	951.0	946.3	941.5	936.8	934.6
40°	931.5	929.2	926.8	924.4	922.1	918.5	913.8	909.1	904.4	899.7	897.0
42.5°	894.4	892.0	889.6	887.3	884.9	881.4	876.7	872.0	867.2	862.5	859.6
45°	834.6	832.6	830.5	828.5	826.4	823.1	818.7	814.3	809.9	805.5	802.2
47.5°	775.2	773.3	771.3	769.4	767.4	764.1	759.5	754.9	750.3	745.7	742.3
50°	733.8	732.3	730.9	729.4	727.9	725.1	721.0	716.8	712.7	708.6	704.5
52.5°	693.5	691.5	689.6	687.6	685.7	682.8	678.9	675.0	671.1	667.2	663.8
55°	631.6	629.9	628.1	626.3	624.5	621.9	618.4	614.8	611.3	607.7	604.2
57.5°	569.5	568.1	566.7	565.3	563.9	561.2	557.3	553.4	549.5	545.6	542.2
60°	528.1	526.9	525.8	524.6	523.4	520.8	516.6	512.5	508.4	504.2	501.0
62.5°	487.8	485.9	484.0	482.1	480.2	477.7	474.5	471.3	468.1	465.0	462.0
65°	426.0	424.2	422.4	420.6	418.9	416.5	413.6	410.6	407.7	404.7	402.1
67.5°	363.1	361.6	360.2	358.8	357.4	355.4	352.7	350.0	347.4	344.7	342.7
70°	323.8	322.6	321.4	320.2	319.1	317.1	314.5	311.8	309.2	306.5	304.5
72.5°	283.4	282.3	281.1	279.9	278.7	277.3	275.6	273.9	272.1	270.4	268.4
75°	222.9	222.3	221.7	221.2	220.6	219.5	218.1	216.6	215.1	213.6	211.9
77.5°	168.8	167.8	166.8	165.8	164.8	164.0	163.4	162.8	162.2	161.6	160.7
80°	132.7	132.4	132.1	131.8	131.5	131.1	130.5	129.9	129.3	128.7	127.8
82.5°	98.7	98.7	98.6	98.5	98.5	98.3	97.9	97.6	97.2	96.9	95.7
85°	54.4	54.1	53.8	53.5	53.2	52.9	52.6	52.3	52.0	51.8	50.9
87.5°	19.2	19.0	18.8	18.6	18.3	18.1	17.8	17.5	17.2	16.9	16.4
90°	0.5	1.8	3.1	4.3	5.6	6.7	7.7	8.6	9.5	10.4	11.0
92.5°	10.5	10.4	10.3	10.2	10.1	10.3	10.7	11.2	11.6	12.1	12.4
95°	33.9	30.1	26.3	22.4	18.6	17.1	17.9	18.7	19.5	20.4	20.9
97.5°	67.3	56.5	45.8	35.0	24.2	19.7	21.6	23.5	25.4	27.2	27.7
100°	92.4	76.5	60.6	44.7	28.8	21.9	23.8	25.8	27.8	29.7	30.7
102.5°	119.9	116.6	113.2	109.8	106.5	96.5	80.1	63.6	47.1	30.6	31.8
105°	158.6	162.1	165.6	169.1	172.6	158.5	126.8	95.2	63.5	31.8	33.1
107.5°	202.8	205.6	208.4	211.2	214.0	196.4	158.5	120.5	82.5	44.6	43.3
110°	231.2	233.6	236.1	238.5	240.9	225.4	191.9	158.4	124.8	91.3	79.7



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	257.9	260.1	262.2	264.4	266.5	263.5	255.2	246.9	238.6	230.4	188.0
115°	300.1	302.0	304.0	306.0	308.0	310.4	313.3	316.2	319.1	322.0	268.3
117.5°	337.8	340.0	342.2	344.4	346.6	348.7	350.7	352.7	354.7	356.6	343.7
120°	365.3	367.0	368.8	370.5	372.3	374.2	376.3	378.4	380.4	382.5	383.9
122.5°	388.7	390.5	392.4	394.2	396.0	398.1	400.3	402.6	404.9	407.2	408.0
125°	424.3	425.8	427.3	428.8	430.3	432.2	434.4	436.6	438.8	441.0	441.8
127.5°	456.5	458.2	459.9	461.5	463.2	464.9	466.5	468.2	469.8	471.5	472.6
130°	477.0	478.8	480.7	482.6	484.4	486.0	487.3	488.5	489.8	491.1	492.4
132.5°	497.9	499.4	501.0	502.6	504.2	505.6	506.9	508.2	509.4	510.7	511.8
135°	525.0	526.9	528.7	530.6	532.4	533.9	534.9	536.0	537.0	538.0	539.2
137.5°	552.5	553.7	555.0	556.3	557.6	558.9	560.1	561.3	562.4	563.6	564.8
140°	570.4	571.3	572.3	573.2	574.1	575.2	576.5	577.8	579.0	580.3	581.4
142.5°	585.4	586.3	587.1	587.9	588.8	589.9	591.4	592.8	594.3	595.8	596.7
145°	609.0	608.9	608.8	608.7	608.6	609.5	611.5	613.4	615.4	617.4	618.2
147.5°	629.6	629.1	628.7	628.3	627.8	628.6	630.5	632.5	634.4	636.4	637.0
150°	642.9	642.1	641.3	640.5	639.7	640.2	642.1	643.9	645.8	647.6	648.3
152.5°	654.2	653.3	652.4	651.5	650.6	651.0	652.8	654.6	656.3	658.1	658.8
155°	670.6	669.6	668.5	667.5	666.4	666.6	668.0	669.4	670.8	672.2	672.9
157.5°	683.4	682.6	681.7	680.8	679.9	680.0	680.9	681.9	682.9	683.9	684.6
160°	691.0	690.3	689.6	688.9	688.2	688.2	688.9	689.6	690.3	691.0	691.7
162.5°	697.6	696.9	696.2	695.5	694.9	694.8	695.4	696.0	696.6	697.2	698.0
165°	706.6	705.9	705.2	704.5	703.8	703.7	704.0	704.3	704.7	705.0	705.9
167.5°	713.3	712.6	711.9	711.2	710.5	710.3	710.6	711.0	711.3	711.6	712.4
170°	717.0	716.4	715.7	715.0	714.3	714.0	714.3	714.5	714.7	715.0	715.8
172.5°	719.6	718.9	718.2	717.5	716.8	716.5	716.8	717.0	717.2	717.5	718.3
175°	722.8	722.0	721.2	720.4	719.5	719.3	719.5	719.7	719.9	720.2	721.0
177.5°	723.3	722.7	722.0	721.4	720.7	720.4	720.5	720.6	720.7	720.8	721.5
180°	721.2	721.2	721.2	721.2	721.2	721.2	721.2	721.2	721.2	721.2	721.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0	1380.0
2.5°	1374.1	1376.5	1378.8	1379.8	1379.3	1378.8	1378.4	1377.9
5°	1364.8	1367.2	1369.6	1370.4	1369.9	1369.3	1368.7	1368.1
7.5°	1349.4	1351.8	1354.2	1355.0	1354.4	1353.7	1353.1	1352.4
10°	1335.6	1338.0	1340.4	1341.1	1340.2	1339.3	1338.4	1337.6
12.5°	1319.4	1321.0	1322.7	1323.2	1322.5	1321.9	1321.2	1320.6
15°	1290.8	1292.0	1293.2	1293.0	1291.6	1290.1	1288.6	1287.1
17.5°	1256.9	1258.3	1259.7	1259.6	1258.2	1256.8	1255.4	1254.0
20°	1230.5	1231.4	1232.3	1232.1	1231.0	1229.8	1228.6	1227.4
22.5°	1202.6	1202.7	1202.9	1202.7	1201.9	1201.2	1200.5	1199.8
25°	1157.0	1157.5	1158.1	1158.1	1157.5	1157.0	1156.4	1155.8
27.5°	1112.1	1111.2	1110.3	1109.2	1107.7	1106.3	1104.9	1103.5
30°	1077.0	1076.2	1075.3	1074.2	1073.1	1071.9	1070.7	1069.5
32.5°	1042.7	1041.1	1039.5	1038.1	1037.0	1035.8	1034.6	1033.4
35°	987.7	985.9	984.2	982.5	981.1	979.6	978.1	976.6
37.5°	932.5	930.3	928.1	926.3	924.9	923.5	922.1	920.6
40°	894.4	891.7	889.1	887.1	886.0	884.8	883.6	882.4
42.5°	856.7	853.8	851.0	848.7	847.0	845.4	843.7	842.1
45°	799.0	795.7	792.5	790.3	789.1	787.9	786.7	785.6
47.5°	738.9	735.5	732.1	729.5	727.8	726.1	724.4	722.7
50°	700.3	696.2	692.1	689.3	687.8	686.3	684.9	683.4
52.5°	660.3	656.9	653.5	650.8	648.9	646.9	645.0	643.0
55°	600.7	597.1	593.6	591.1	589.6	588.1	586.7	585.2
57.5°	538.7	535.2	531.7	529.4	528.3	527.2	526.1	524.9
60°	497.8	494.5	491.3	489.2	488.3	487.4	486.5	485.7
62.5°	458.9	455.9	452.9	450.9	449.7	448.6	447.5	446.4
65°	399.4	396.8	394.1	392.0	390.6	389.1	387.6	386.1
67.5°	340.6	338.5	336.5	334.9	333.7	332.5	331.3	330.1
70°	302.4	300.3	298.3	296.6	295.5	294.3	293.1	291.9
72.5°	266.3	264.2	262.2	260.7	259.7	258.8	257.8	256.9
75°	210.1	208.3	206.6	206.0	206.6	207.2	207.7	208.3
77.5°	159.9	159.0	158.1	157.2	156.4	155.6	154.8	153.9
80°	126.9	126.1	125.2	124.4	123.8	123.3	122.7	122.1
82.5°	94.6	93.5	92.4	91.8	91.6	91.5	91.4	91.3
85°	50.0	49.1	48.2	47.6	47.3	47.0	46.7	46.4
87.5°	15.8	15.2	14.6	14.2	14.0	13.8	13.6	13.4
90°	11.6	12.2	12.8	13.2	13.4	13.6	13.9	14.1
92.5°	12.7	13.0	13.3	13.5	13.7	13.8	14.0	14.1
95°	21.5	22.1	22.7	22.9	22.8	22.7	22.6	22.4
97.5°	28.2	28.6	29.1	29.4	29.5	29.7	29.8	30.0
100°	31.6	32.5	33.5	34.0	34.3	34.5	34.7	35.0
102.5°	33.0	34.2	35.4	36.2	36.5	36.8	37.1	37.5
105°	34.4	35.7	36.9	37.8	38.3	38.7	39.2	39.7
107.5°	42.0	40.7	39.4	39.0	39.4	39.9	40.3	40.8
110°	68.1	56.5	44.9	39.4	39.8	40.3	40.8	41.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	145.7	103.4	61.1	40.2	40.5	40.9	41.3	41.6
115°	214.6	160.9	107.2	76.2	67.8	59.5	51.1	42.8
117.5°	330.7	317.7	304.7	284.5	257.0	229.6	202.2	174.7
120°	385.3	386.7	388.1	381.0	365.3	349.7	334.0	318.3
122.5°	408.8	409.7	410.5	409.4	406.4	403.3	400.3	397.2
125°	442.6	443.4	444.2	444.8	445.2	445.5	445.9	446.2
127.5°	473.8	475.0	476.2	476.8	476.9	477.0	477.0	477.1
130°	493.6	494.9	496.2	496.8	496.6	496.5	496.4	496.3
132.5°	512.9	514.0	515.1	515.5	515.4	515.3	515.2	515.1
135°	540.4	541.5	542.7	543.2	542.9	542.7	542.5	542.2
137.5°	565.9	567.0	568.2	568.5	568.1	567.7	567.4	567.0
140°	582.4	583.4	584.5	584.7	584.1	583.6	583.0	582.4
142.5°	597.7	598.6	599.6	599.8	599.2	598.6	598.0	597.4
145°	619.0	619.8	620.6	620.7	620.2	619.6	619.0	618.4
147.5°	637.6	638.2	638.8	638.8	638.4	637.9	637.4	636.9
150°	649.0	649.7	650.4	650.5	649.9	649.3	648.7	648.2
152.5°	659.5	660.2	660.9	660.8	660.1	659.3	658.5	657.8
155°	673.6	674.3	675.0	674.8	673.9	673.0	672.1	671.1
157.5°	685.4	686.2	687.0	687.0	686.0	685.1	684.2	683.3
160°	692.3	693.0	693.7	693.7	692.9	692.1	691.2	690.4
162.5°	698.8	699.6	700.4	700.3	699.3	698.3	697.3	696.3
165°	706.7	707.5	708.3	708.3	707.5	706.7	705.9	705.0
167.5°	713.2	714.1	714.9	714.8	713.7	712.7	711.6	710.6
170°	716.6	717.4	718.2	718.1	717.0	716.0	715.0	713.9
172.5°	719.1	719.9	720.7	720.6	719.6	718.5	717.5	716.4
175°	721.8	722.6	723.4	723.3	722.1	720.9	719.8	718.6
177.5°	722.1	722.8	723.4	723.3	722.5	721.6	720.8	720.0
180°	721.2	721.2	721.2	721.2	721.2	721.2	721.2	721.2

(END OF REPORT)