

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: P331909-830

Luminaire Tested: **S123DIP-S340D1195U830-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331909-830  
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-S340D1195U830-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5403.3 lumens  
Efficiency: N/A  
Efficacy: 128.0 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

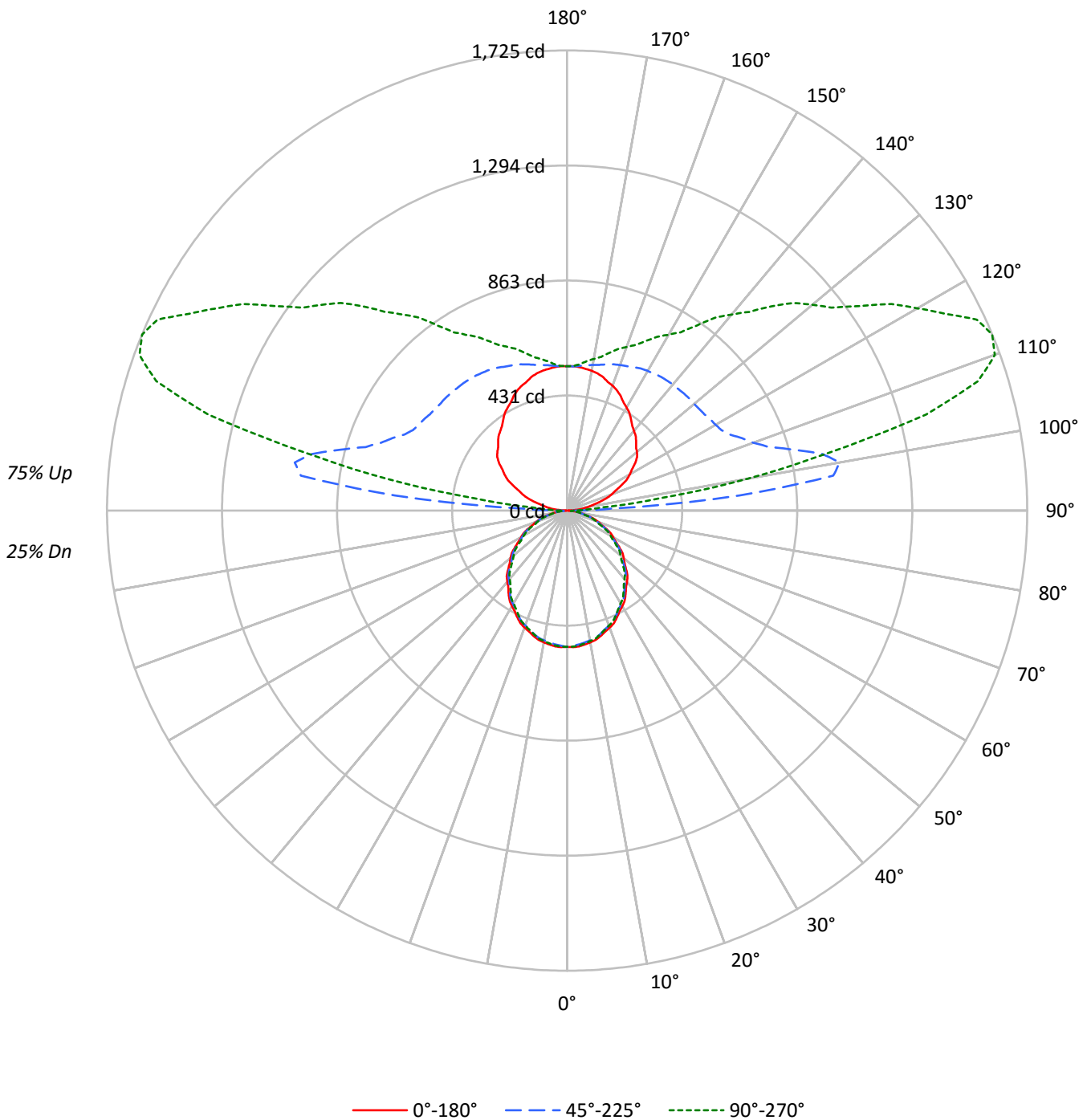
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	33	33	33	25
1	92	88	84	81	82	78	75	72	60	58	57	44	43	42	29	28	28	21
2	84	77	71	66	74	68	63	59	53	50	47	39	37	35	25	24	23	17
3	76	67	60	55	68	60	54	49	47	43	39	34	31	29	22	21	20	15
4	70	59	52	46	62	53	47	42	41	37	33	30	27	25	20	18	17	13
5	64	53	45	39	57	47	41	36	37	32	28	27	24	22	18	16	15	11
6	59	47	39	34	52	42	36	31	33	28	25	24	21	19	16	14	13	10
7	54	42	35	29	48	38	31	27	30	25	22	22	19	16	15	13	11	8
8	50	38	31	26	44	34	28	24	27	22	19	20	17	15	14	12	10	8
9	47	35	28	23	41	31	25	21	25	20	17	18	15	13	13	11	9	7
10	43	32	25	20	39	29	23	19	23	18	15	17	14	12	12	10	8	6

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

	0°	45°	90°
0°	5498	5498	5498
5°	5524	5448	5486
10°	5487	5400	5434
15°	5422	5340	5349
20°	5347	5252	5257
25°	5247	5149	5138
30°	5137	5033	4994
35°	5021	4911	4847
40°	4900	4776	4703
45°	4766	4654	4539
50°	4632	4501	4376
55°	4459	4344	4211
60°	4284	4159	4028
65°	4126	3958	3836
70°	3899	3733	3566
75°	3564	3435	3290
80°	3211	3081	3050
85°	2816	2717	2606



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.1	0.9
10°-20°	135.9	2.5
20°-30°	200.7	3.7
30°-40°	234.4	4.3
40°-50°	235.7	4.4
50°-60°	207.0	3.8
60°-70°	154.2	2.9
70°-80°	87.9	1.6
80°-90°	29.4	0.5
90°-100°	301.1	5.6
100°-110°	852.5	15.8
110°-120°	838.6	15.5
120°-130°	668.9	12.4
130°-140°	527.4	9.8
140°-150°	393.6	7.3
150°-160°	274.4	5.1
160°-170°	161.2	3.0
170°-180°	52.4	1.0
0°-30°	384.6	7.1
0°-40°	619.1	11.5
0°-60°	1061.7	19.6
0°-90°	1333.3	24.7
90°-120°	1992.1	36.9
90°-150°	3582.0	66.3
90°-180°	4070.0	75.3
0°-180°	5403.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	511	511	511	511	511	
5°	511	509	504	508	508	48
15°	487	485	479	482	480	137
25°	442	439	434	434	433	203
35°	382	379	374	371	369	239
45°	313	311	306	301	298	242
55°	238	237	232	227	224	213
65°	162	160	155	152	151	160
75°	86	84	83	80	79	92
85°	23	22	22	21	21	25
90°	2	13	27	31	32	4
95°	37	121	649	190	127	40
105°	127	188	880	1540	1393	135
115°	224	280	673	1477	1694	222
125°	312	368	629	1139	1336	277
135°	366	436	620	938	1083	283
145°	417	478	612	769	846	261
155°	474	511	592	673	702	218
165°	518	533	567	602	612	146
175°	540	540	544	552	551	51
180°	541	541	541	541	541	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	512.6	512.2	511.9	511.6	511.2	510.7	509.8	509.0	508.1	507.3	508.0
5°	511.2	510.7	510.2	509.7	509.3	508.5	507.4	506.3	505.2	504.2	505.1
7.5°	506.2	505.7	505.2	504.7	504.3	503.4	502.4	501.2	500.1	499.0	499.8
10°	502.0	501.5	501.0	500.5	500.0	499.2	497.9	496.6	495.3	494.1	494.9
12.5°	496.3	496.0	495.5	495.1	494.7	493.9	492.8	491.5	490.3	489.2	489.8
15°	486.6	486.3	485.8	485.4	485.0	484.2	483.0	481.6	480.4	479.2	479.9
17.5°	475.2	474.8	474.3	473.7	473.3	472.4	471.1	469.9	468.5	467.3	467.8
20°	466.8	466.3	465.7	465.1	464.5	463.5	462.3	461.0	459.8	458.5	458.9
22.5°	457.3	456.8	456.2	455.6	455.1	454.1	452.8	451.6	450.3	449.0	449.3
25°	441.8	441.2	440.6	440.1	439.5	438.6	437.2	436.0	434.7	433.5	433.6
27.5°	425.2	424.6	424.0	423.5	422.9	422.0	420.7	419.2	417.9	416.5	416.6
30°	413.3	412.7	412.3	411.8	411.3	410.4	409.1	407.6	406.3	404.9	404.9
32.5°	401.3	400.7	400.0	399.4	398.8	397.8	396.8	395.8	394.7	393.7	393.1
35°	382.1	381.5	380.9	380.3	379.8	378.8	377.6	376.3	375.0	373.7	373.2
37.5°	362.4	361.7	360.9	360.1	359.5	358.4	357.1	355.8	354.6	353.3	352.6
40°	348.7	348.1	347.5	346.9	346.4	345.3	344.0	342.6	341.3	339.9	339.1
42.5°	335.0	334.3	333.7	333.0	332.3	331.3	330.0	328.6	327.3	325.8	325.1
45°	313.1	312.7	312.4	312.0	311.6	310.8	309.4	308.2	306.9	305.7	304.5
47.5°	291.4	290.9	290.3	289.7	289.2	288.3	287.1	285.9	284.7	283.5	282.4
50°	276.6	276.2	275.7	275.2	274.8	273.8	272.6	271.4	270.0	268.8	267.7
52.5°	261.2	260.9	260.5	260.2	259.9	259.0	257.7	256.4	255.1	253.6	252.8
55°	237.6	237.5	237.4	237.3	237.2	236.5	235.3	233.9	232.7	231.5	230.4
57.5°	215.1	214.8	214.4	214.1	213.8	213.1	212.1	211.0	210.1	209.1	208.1
60°	199.0	198.9	198.8	198.7	198.6	197.9	196.7	195.6	194.4	193.2	192.4
62.5°	184.5	184.3	184.1	183.8	183.5	182.9	181.6	180.5	179.3	178.1	177.3
65°	162.0	161.6	161.1	160.6	160.1	159.4	158.4	157.4	156.5	155.4	154.7
67.5°	138.3	137.8	137.4	137.0	136.6	135.9	135.3	134.5	133.7	133.0	132.3
70°	123.9	123.3	122.7	122.1	121.5	120.9	120.4	119.7	119.1	118.6	117.9
72.5°	108.8	108.3	107.9	107.4	107.0	106.5	105.8	105.2	104.5	103.9	103.2
75°	85.7	85.2	84.8	84.5	84.1	83.7	83.4	83.1	82.8	82.6	82.1
77.5°	65.1	64.9	64.8	64.6	64.3	64.0	63.7	63.3	63.0	62.6	62.3
80°	51.8	51.6	51.3	51.0	50.6	50.4	50.2	50.0	49.9	49.7	49.5
82.5°	38.8	38.7	38.7	38.6	38.5	38.5	38.5	38.5	38.5	38.4	38.2
85°	22.8	22.6	22.4	22.2	22.1	22.0	22.0	22.0	22.0	22.0	21.8
87.5°	9.6	9.8	10.0	10.4	10.7	10.9	11.5	12.1	12.6	13.2	12.9
90°	2.2	4.3	6.6	9.9	12.1	14.2	17.5	20.8	24.1	27.3	26.3
92.5°	13.6	20.2	29.3	37.9	47.1	63.3	92.0	139.1	185.3	168.4	127.1
95°	37.2	40.5	52.6	71.2	99.6	142.3	235.4	398.6	578.2	649.4	526.7
97.5°	63.5	64.6	74.0	90.2	118.3	164.5	253.4	437.3	736.8	1006.4	1076.7
100°	81.1	82.1	89.8	105.1	131.4	174.1	250.8	412.8	700.9	1037.1	1252.8
102.5°	99.4	101.4	108.2	122.6	146.3	185.5	254.3	391.8	648.3	980.1	1261.5
105°	127.1	130.4	136.9	150.1	170.8	204.8	263.9	376.7	583.7	880.4	1194.8
107.5°	156.4	159.7	166.0	178.9	198.4	230.0	281.9	375.6	542.5	792.4	1077.8
110°	177.4	180.7	186.2	198.2	216.8	247.5	296.8	380.0	526.7	742.4	1004.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	196.7	200.0	205.5	217.4	236.1	265.9	311.7	388.8	518.0	709.2	940.3
115°	224.5	228.8	235.4	246.4	265.0	294.5	336.2	403.0	514.7	673.4	862.9
117.5°	252.3	257.3	262.8	272.9	293.7	321.1	362.2	421.8	516.7	652.4	816.2
120°	271.5	274.8	280.3	291.3	312.1	339.5	378.9	435.8	520.2	642.8	791.7
122.5°	288.2	291.5	297.0	308.8	328.8	357.9	396.4	449.0	526.3	636.7	771.6
125°	312.1	314.3	320.8	332.9	353.7	383.2	421.6	469.8	535.5	628.6	745.7
127.5°	330.3	333.6	341.7	353.9	376.9	406.5	443.5	486.9	546.0	624.6	723.0
130°	341.7	345.0	354.8	368.0	391.0	420.5	456.7	498.2	553.0	622.0	710.7
132.5°	350.4	354.6	365.3	381.1	404.1	432.8	468.1	508.8	558.3	621.1	699.4
135°	365.8	370.1	382.2	398.6	421.6	451.2	485.1	522.4	566.2	619.8	684.5
137.5°	380.2	384.8	396.6	414.2	437.0	464.3	496.9	532.4	571.5	617.4	671.5
140°	389.8	395.3	406.2	423.8	445.7	473.1	504.8	537.7	575.0	616.5	663.6
142.5°	400.4	405.0	416.8	432.5	454.5	480.1	511.0	542.9	577.6	614.8	656.6
145°	417.3	420.5	430.4	446.8	465.4	490.6	519.1	548.7	579.3	612.2	647.2
147.5°	434.3	436.3	445.9	460.1	478.2	499.5	525.7	552.1	579.3	608.0	638.0
150°	445.7	446.8	455.5	469.8	485.1	504.8	530.0	553.0	579.3	604.5	631.9
152.5°	457.1	457.3	466.1	478.5	492.1	511.0	532.6	554.8	576.6	600.1	624.9
155°	474.2	474.2	480.8	491.7	503.7	519.1	537.7	555.3	573.8	592.5	614.3
157.5°	487.8	488.6	493.9	503.5	513.8	525.7	540.5	556.3	570.1	585.7	602.5
160°	498.2	498.2	502.7	511.4	519.1	530.0	543.2	556.3	568.4	580.4	594.7
162.5°	506.1	506.1	509.6	516.7	523.5	532.6	544.0	555.4	564.9	575.1	586.7
165°	518.0	516.9	519.1	524.5	529.0	536.6	545.4	553.0	559.6	567.2	576.0
167.5°	527.0	525.7	526.7	530.9	534.0	538.8	545.2	551.3	554.3	559.4	565.7
170°	532.3	530.0	531.1	534.4	536.6	538.8	544.2	548.7	550.8	554.1	559.6
172.5°	535.7	534.4	534.6	537.1	538.4	539.7	544.2	547.8	548.2	549.7	553.5
175°	539.9	538.8	537.7	539.9	539.9	541.0	543.2	545.4	544.2	544.2	546.5
177.5°	541.9	541.0	540.1	541.0	541.0	541.0	541.9	543.6	541.9	541.0	541.9
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	510.8	510.8	510.8	510.8	510.8	510.8	510.8	510.8
2.5°	508.8	509.6	510.4	510.8	510.7	510.6	510.5	510.4
5°	506.1	507.1	508.1	508.5	508.3	508.1	507.8	507.7
7.5°	500.8	501.6	502.5	502.8	502.8	502.7	502.6	502.4
10°	495.9	496.7	497.6	497.9	497.8	497.6	497.4	497.2
12.5°	490.4	491.1	491.7	492.0	491.9	491.7	491.6	491.5
15°	480.7	481.5	482.3	482.4	481.7	481.2	480.6	480.0
17.5°	468.3	468.9	469.5	469.7	469.4	469.2	469.0	468.8
20°	459.3	459.7	460.1	460.1	459.8	459.5	459.2	458.9
22.5°	449.6	450.0	450.3	450.3	449.9	449.5	449.1	448.7
25°	433.7	433.8	433.9	433.8	433.5	433.2	432.9	432.6
27.5°	416.7	416.8	416.8	416.7	416.3	415.9	415.6	415.2
30°	404.9	404.9	404.9	404.5	403.9	403.2	402.6	401.8
32.5°	392.6	392.0	391.5	391.1	390.7	390.3	389.9	389.6
35°	372.6	372.0	371.4	370.9	370.4	369.9	369.4	368.9
37.5°	351.9	351.2	350.4	350.0	349.7	349.3	349.0	348.7
40°	338.4	337.6	336.8	336.2	335.8	335.5	335.1	334.7
42.5°	324.3	323.5	322.7	322.2	321.8	321.4	321.0	320.6
45°	303.3	302.2	301.0	300.2	299.6	299.2	298.7	298.2
47.5°	281.3	280.1	278.9	278.1	277.7	277.3	276.8	276.4
50°	266.6	265.5	264.5	263.6	263.1	262.5	261.9	261.3
52.5°	251.8	250.9	250.0	249.2	248.6	248.1	247.5	246.9
55°	229.3	228.2	227.2	226.4	225.9	225.4	224.9	224.4
57.5°	207.2	206.1	205.2	204.4	203.9	203.3	202.7	202.2
60°	191.5	190.6	189.7	189.1	188.5	188.0	187.6	187.1
62.5°	176.3	175.5	174.7	174.0	173.7	173.3	173.1	172.7
65°	153.9	153.2	152.3	151.8	151.6	151.2	150.9	150.6
67.5°	131.6	130.9	130.3	129.7	129.3	128.8	128.5	128.1
70°	117.3	116.5	115.8	115.3	114.8	114.3	113.8	113.3
72.5°	102.6	102.0	101.4	100.9	100.8	100.5	100.2	99.9
75°	81.6	81.1	80.6	80.2	79.9	79.6	79.4	79.1
77.5°	61.9	61.6	61.3	61.2	61.2	61.2	61.2	61.2
80°	49.4	49.3	49.2	49.2	49.2	49.2	49.2	49.2
82.5°	38.1	37.9	37.7	37.5	37.5	37.4	37.3	37.2
85°	21.6	21.4	21.2	21.1	21.1	21.1	21.1	21.1
87.5°	13.0	13.2	13.3	13.8	13.5	13.8	13.9	13.8
90°	27.3	28.5	29.6	31.8	30.6	31.8	32.9	31.8
92.5°	92.2	73.1	64.6	58.9	56.9	53.6	54.8	52.8
95°	394.3	267.2	209.2	169.8	148.9	139.1	131.4	127.1
97.5°	982.7	787.1	645.9	514.9	434.1	384.8	355.2	345.8
100°	1291.1	1202.4	1074.3	918.8	808.1	728.2	685.5	686.6
102.5°	1393.6	1390.7	1316.1	1217.5	1131.4	1068.2	1032.5	1007.3
105°	1423.6	1533.1	1554.0	1525.5	1475.1	1433.5	1398.5	1393.0
107.5°	1337.3	1515.1	1611.1	1650.1	1651.0	1636.9	1625.1	1615.0
110°	1255.0	1456.5	1594.5	1671.1	1701.8	1710.5	1708.4	1706.2





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1173.5	1379.4	1534.0	1632.6	1688.7	1715.8	1724.1	1724.6
115°	1065.5	1256.0	1417.0	1536.4	1618.5	1666.7	1688.7	1694.1
117.5°	987.3	1151.8	1296.4	1417.5	1503.2	1558.3	1589.9	1597.3
120°	946.1	1094.0	1225.4	1336.1	1422.5	1483.8	1510.1	1516.7
122.5°	913.7	1047.5	1169.3	1272.1	1349.0	1404.1	1433.0	1441.3
125°	870.6	990.0	1095.0	1182.7	1252.8	1301.0	1328.3	1336.1
127.5°	832.9	939.3	1034.2	1113.9	1176.4	1217.5	1242.3	1249.2
130°	809.3	907.9	996.6	1071.0	1129.1	1168.5	1191.5	1200.2
132.5°	787.4	878.1	960.6	1031.6	1086.1	1125.5	1145.9	1152.1
135°	757.8	835.6	906.7	969.1	1022.8	1055.6	1075.3	1083.1
137.5°	730.8	794.6	855.9	910.0	955.2	988.4	1005.0	1010.1
140°	715.1	770.9	823.5	870.6	912.2	942.9	960.4	959.3
142.5°	700.2	748.2	793.7	834.7	870.2	897.3	913.0	912.0
145°	682.2	718.4	753.5	785.1	812.6	835.6	844.3	846.5
147.5°	667.6	696.3	724.5	747.1	767.9	783.4	791.7	792.6
150°	657.0	682.2	705.2	726.0	742.4	754.5	761.1	761.1
152.5°	647.4	669.1	689.5	706.8	719.7	730.8	734.8	734.8
155°	632.9	650.4	666.9	680.0	689.9	698.7	700.9	701.9
157.5°	617.6	632.4	645.0	655.3	663.8	670.4	672.1	671.9
160°	608.9	620.9	631.9	639.5	647.2	653.7	653.7	652.7
162.5°	598.3	608.7	618.7	625.5	630.6	636.2	636.2	635.2
165°	584.8	591.4	599.0	604.5	608.9	613.2	612.2	612.2
167.5°	573.0	578.0	582.4	586.4	588.2	591.4	590.2	590.2
170°	565.1	568.4	572.7	575.0	576.0	578.2	577.1	577.1
172.5°	558.1	560.4	564.0	565.2	565.5	567.7	565.7	564.9
175°	548.7	549.7	552.0	552.0	552.0	553.0	552.0	550.8
177.5°	542.7	543.6	544.5	544.5	543.6	544.5	542.7	542.7
180°	541.0	541.0	541.0	541.0	541.0	541.0	541.0	541.0

(END OF REPORT)