

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: P331510

Luminaire Tested: **S122DIW-S485D970U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331510  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S485D970U835-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

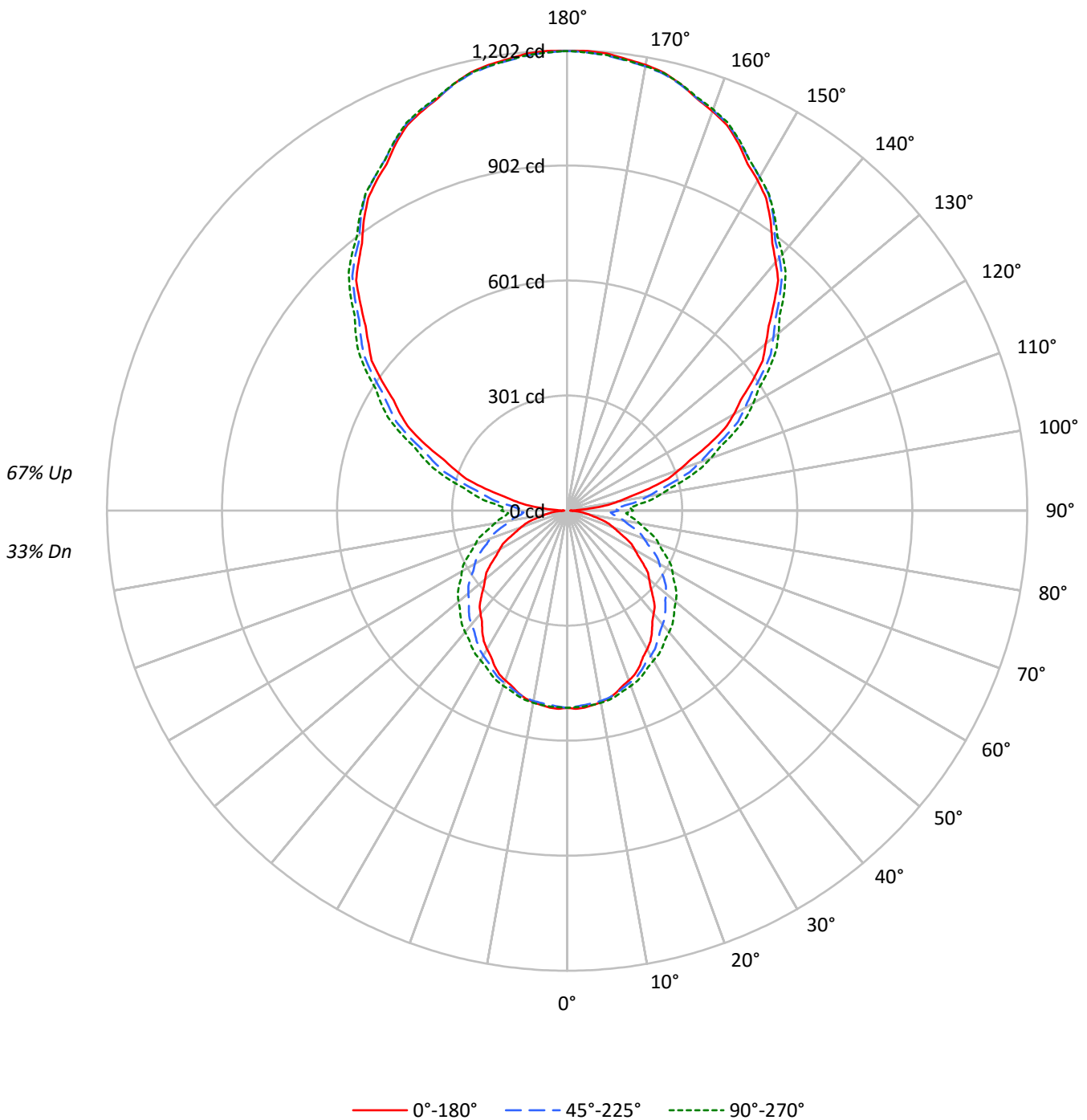
Lumens per Lamp: N/A  
Luminaire Lumens: 5326.8 lumens  
Efficiency: N/A  
Efficacy: 117.9 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 45.2  
Input Voltage (V): 120  
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	103	103	103	103	93	93	93	93	74	74	74	56	56	56	40	40	40	33
1	93	88	84	80	83	80	76	73	63	61	58	48	46	45	34	33	32	26
2	84	76	70	65	75	69	63	59	55	51	47	42	39	37	29	28	26	21
3	77	67	59	53	68	60	54	49	48	43	39	36	33	30	26	24	22	17
4	70	59	51	45	62	53	46	41	42	37	33	32	29	26	23	20	19	14
5	64	52	44	38	57	47	40	35	38	32	28	29	25	22	20	18	16	12
6	59	47	38	33	52	42	35	30	34	28	24	26	22	19	18	16	14	11
7	54	42	34	28	48	38	31	26	30	25	21	23	20	17	17	14	12	9
8	50	38	30	25	45	34	28	23	28	22	19	21	18	15	15	13	11	8
9	47	34	27	22	42	31	25	20	25	20	17	19	16	13	14	12	10	7
10	43	31	24	20	39	29	22	18	23	18	15	18	14	12	13	11	9	7

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

	0°	45°	90°
0°	8320	8320	8320
5°	8361	8009	7978
10°	8308	7773	7685
15°	8193	7522	7376
20°	8049	7253	7078
25°	7906	6994	6809
30°	7704	6728	6536
35°	7501	6472	6346
40°	7287	6254	6154
45°	7084	6058	5992
50°	6865	5879	5830
55°	6634	5689	5666
60°	6355	5493	5493
65°	6063	5262	5287
70°	5738	5012	5065
75°	5319	4768	4860
80°	4657	4519	4652
85°	4025	4303	4491



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	48.8	0.9
10°-20°	140.0	2.6
20°-30°	212.2	4.0
30°-40°	258.4	4.9
40°-50°	278.0	5.2
50°-60°	270.0	5.1
60°-70°	235.8	4.4
70°-80°	181.5	3.4
80°-90°	126.6	2.4
90°-100°	160.0	3.0
100°-110°	297.5	5.6
110°-120°	444.2	8.3
120°-130°	553.6	10.4
130°-140°	605.4	11.4
140°-150°	586.0	11.0
150°-160°	490.1	9.2
160°-170°	325.1	6.1
170°-180°	113.6	2.1
0°-30°	401.0	7.5
0°-40°	659.5	12.4
0°-60°	1207.5	22.7
0°-90°	1751.4	32.9
90°-120°	901.7	16.9
90°-150°	2646.6	49.7
90°-180°	3575.0	67.1
0°-180°	5326.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	515	515	515	515	515	
5°	517	514	510	514	514	49
15°	493	494	494	501	500	139
25°	448	453	460	469	471	206
35°	386	399	413	429	435	241
45°	317	337	363	385	394	244
55°	243	270	308	334	345	217
65°	166	203	246	276	287	165
75°	92	134	182	212	223	97
85°	27	73	121	151	163	29
90°	8	65	134	161	172	8
95°	59	104	151	178	186	65
105°	222	247	287	314	323	234
115°	408	423	454	474	481	403
125°	591	601	621	637	644	528
135°	763	774	784	798	802	590
145°	926	933	939	944	944	578
155°	1058	1061	1064	1069	1066	487
165°	1152	1151	1151	1157	1153	325
175°	1198	1195	1193	1200	1194	114
180°	1200	1200	1200	1200	1200	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3
2.5°	518.3	517.9	517.5	517.1	516.7	516.0	515.1	514.2	513.3	512.3	513.0
5°	516.8	516.3	515.8	515.3	514.8	514.1	513.1	512.1	511.1	510.1	511.1
7.5°	512.2	511.8	511.5	511.2	510.9	510.3	509.5	508.8	508.0	507.2	508.4
10°	508.6	508.3	507.9	507.6	507.3	506.9	506.4	505.9	505.4	504.9	506.2
12.5°	502.6	502.7	502.8	502.8	502.9	502.7	502.4	502.0	501.6	501.3	502.6
15°	492.9	493.2	493.6	493.9	494.2	494.4	494.4	494.4	494.4	494.4	495.9
17.5°	480.4	481.1	481.8	482.5	483.2	483.8	484.3	484.8	485.4	485.9	487.4
20°	472.0	472.8	473.7	474.5	475.3	476.1	476.7	477.4	478.1	478.7	480.5
22.5°	463.0	464.0	465.0	465.9	466.9	467.8	468.8	469.7	470.6	471.6	473.4
25°	448.1	449.3	450.4	451.6	452.7	454.1	455.6	457.1	458.6	460.0	462.0
27.5°	430.2	432.1	434.0	435.9	437.7	439.6	441.3	443.1	444.8	446.6	449.1
30°	418.2	420.4	422.5	424.7	426.9	429.0	431.2	433.3	435.5	437.6	440.3
32.5°	405.1	407.5	409.9	412.4	414.8	417.3	419.8	422.4	424.9	427.5	430.5
35°	386.1	388.9	391.8	394.6	397.4	400.4	403.5	406.7	409.8	413.0	416.6
37.5°	365.5	368.8	372.0	375.3	378.5	382.2	386.3	390.3	394.4	398.5	402.6
40°	351.8	355.4	359.1	362.7	366.4	370.4	374.9	379.4	383.9	388.4	392.7
42.5°	338.6	342.3	345.9	349.6	353.2	357.6	362.8	367.9	373.1	378.2	382.9
45°	316.7	321.1	325.6	330.1	334.6	339.7	345.5	351.3	357.2	363.0	368.1
47.5°	295.0	299.9	304.8	309.6	314.5	320.4	327.2	334.0	340.8	347.6	353.0
50°	280.1	285.2	290.4	295.5	300.6	306.9	314.4	321.9	329.4	336.8	342.5
52.5°	265.7	271.1	276.5	282.0	287.4	294.0	301.9	309.7	317.6	325.5	331.2
55°	242.7	248.7	254.7	260.6	266.6	273.9	282.6	291.2	299.8	308.4	314.4
57.5°	220.0	226.8	233.5	240.2	247.0	254.7	263.5	272.3	281.1	289.9	296.4
60°	203.9	211.0	218.2	225.3	232.4	240.7	250.2	259.6	269.1	278.6	284.9
62.5°	189.5	196.9	204.4	211.8	219.2	227.6	237.0	246.5	256.0	265.4	272.1
65°	165.8	173.9	182.1	190.2	198.3	207.3	217.1	226.9	236.7	246.5	253.3
67.5°	144.0	152.5	161.0	169.5	178.0	187.2	197.3	207.3	217.3	227.3	234.2
70°	128.5	137.1	145.7	154.3	163.0	172.4	182.7	193.0	203.3	213.6	220.7
72.5°	114.1	123.0	131.9	140.8	149.7	159.4	169.8	180.2	190.6	201.0	208.1
75°	91.9	101.2	110.4	119.7	129.0	139.0	149.6	160.2	170.9	181.5	188.6
77.5°	70.4	80.1	89.8	99.5	109.3	119.5	130.3	141.1	151.9	162.7	169.8
80°	56.0	66.1	76.3	86.4	96.5	107.0	117.8	128.5	139.3	150.1	157.1
82.5°	44.1	54.1	64.0	74.0	84.0	94.5	105.4	116.3	127.2	138.2	145.1
85°	26.9	37.2	47.5	57.8	68.0	78.5	89.1	99.7	110.4	121.0	128.0
87.5°	14.8	25.3	35.7	46.1	56.6	67.6	79.2	90.8	102.4	114.0	120.7
90°	8.5	20.8	33.1	45.5	57.8	71.7	87.3	102.9	118.5	134.0	140.2
92.5°	24.9	35.8	46.8	57.7	68.7	79.8	91.2	102.6	114.0	125.4	132.0
95°	58.6	68.7	78.7	88.8	98.8	109.1	119.5	129.9	140.3	150.7	157.0
97.5°	101.4	110.4	119.3	128.2	137.1	146.8	157.2	167.6	178.0	188.4	194.6
100°	133.9	141.8	149.7	157.7	165.6	174.6	184.5	194.5	204.5	214.5	220.6
102.5°	167.3	174.3	181.4	188.4	195.5	204.0	213.8	223.7	233.6	243.5	249.7
105°	221.5	227.0	232.5	238.0	243.5	250.7	259.8	268.9	278.0	287.1	293.3
107.5°	276.9	281.7	286.5	291.4	296.2	302.8	311.0	319.3	327.6	335.8	341.6
110°	311.9	316.6	321.2	325.9	330.6	337.0	345.1	353.3	361.4	369.5	374.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	350.8	354.9	359.1	363.2	367.4	373.2	380.8	388.3	395.9	403.4	408.2
115°	408.1	411.3	414.5	417.7	420.8	425.9	432.9	440.0	447.0	454.0	458.8
117.5°	464.5	467.5	470.5	473.5	476.5	480.8	486.5	492.1	497.7	503.4	507.8
120°	502.6	505.1	507.5	510.0	512.4	516.1	520.9	525.8	530.6	535.5	540.1
122.5°	537.4	539.9	542.3	544.7	547.1	550.8	555.8	560.8	565.8	570.8	574.7
125°	591.0	593.0	595.0	597.1	599.1	602.4	607.0	611.7	616.3	621.0	624.8
127.5°	643.8	646.2	648.6	651.0	653.4	656.4	659.9	663.3	666.8	670.3	673.6
130°	677.1	679.8	682.6	685.3	688.1	691.0	694.0	697.1	700.1	703.1	706.7
132.5°	714.3	716.6	718.8	721.0	723.2	725.7	728.5	731.3	734.1	736.8	739.7
135°	763.4	765.9	768.4	770.9	773.3	775.6	777.7	779.8	782.0	784.1	787.3
137.5°	815.9	817.9	819.9	821.9	823.9	825.5	826.8	828.1	829.5	830.8	833.7
140°	847.5	849.4	851.2	853.1	854.9	856.6	858.0	859.5	861.0	862.4	865.1
142.5°	879.9	881.8	883.6	885.5	887.3	888.7	889.5	890.4	891.2	892.0	894.3
145°	925.7	927.3	928.9	930.5	932.1	933.5	934.9	936.2	937.6	938.9	940.1
147.5°	967.3	969.2	971.1	972.9	974.8	976.2	977.1	978.0	978.9	979.8	980.5
150°	995.6	997.0	998.3	999.7	1001.0	1002.2	1003.1	1004.0	1004.9	1005.8	1006.4
152.5°	1020.8	1022.1	1023.5	1024.8	1026.2	1027.4	1028.5	1029.5	1030.6	1031.7	1032.5
155°	1058.4	1059.1	1059.8	1060.5	1061.1	1061.8	1062.5	1063.2	1063.8	1064.5	1065.6
157.5°	1090.6	1091.1	1091.5	1092.0	1092.4	1092.9	1093.3	1093.7	1094.1	1094.5	1096.0
160°	1110.1	1110.5	1111.0	1111.4	1111.9	1112.2	1112.5	1112.7	1112.9	1113.1	1114.5
162.5°	1127.9	1128.0	1128.1	1128.2	1128.3	1128.4	1128.7	1128.9	1129.1	1129.3	1130.9
165°	1151.6	1151.4	1151.2	1150.9	1150.7	1150.6	1150.6	1150.6	1150.6	1150.6	1152.2
167.5°	1171.5	1170.8	1170.1	1169.4	1168.8	1168.4	1168.4	1168.3	1168.3	1168.2	1169.8
170°	1182.0	1181.3	1180.7	1180.0	1179.3	1178.9	1178.6	1178.4	1178.2	1178.0	1179.5
172.5°	1189.3	1188.6	1187.9	1187.3	1186.6	1186.1	1185.9	1185.7	1185.5	1185.2	1186.8
175°	1198.2	1197.5	1196.9	1196.2	1195.5	1194.9	1194.5	1194.0	1193.6	1193.1	1194.7
177.5°	1201.9	1201.3	1200.8	1200.2	1199.7	1199.2	1198.9	1198.5	1198.2	1197.8	1198.9
180°	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	515.3	515.3	515.3	515.3	515.3	515.3	515.3	515.3
2.5°	513.7	514.3	515.0	515.2	514.9	514.7	514.4	514.1
5°	512.1	513.1	514.1	514.5	514.3	514.2	514.0	513.8
7.5°	509.6	510.8	512.0	512.5	512.4	512.2	512.0	511.9
10°	507.5	508.8	510.2	510.8	510.6	510.4	510.3	510.1
12.5°	503.9	505.3	506.6	507.2	507.0	506.8	506.7	506.5
15°	497.4	498.9	500.4	501.0	500.9	500.7	500.5	500.4
17.5°	489.0	490.6	492.1	492.9	492.9	492.9	492.9	492.9
20°	482.4	484.2	486.0	486.9	486.9	486.9	486.9	486.9
22.5°	475.2	477.0	478.9	479.9	480.2	480.4	480.7	481.0
25°	464.0	466.0	468.0	469.3	469.8	470.3	470.8	471.3
27.5°	451.7	454.2	456.7	458.1	458.5	458.9	459.2	459.6
30°	443.0	445.6	448.3	449.8	450.3	450.8	451.3	451.8
32.5°	433.6	436.6	439.7	441.7	442.6	443.5	444.4	445.3
35°	420.3	424.0	427.6	430.0	431.2	432.3	433.5	434.7
37.5°	406.6	410.7	414.7	417.3	418.6	419.8	421.0	422.3
40°	397.0	401.3	405.6	408.5	410.0	411.5	413.0	414.5
42.5°	387.6	392.3	397.0	400.2	401.6	403.1	404.6	406.1
45°	373.3	378.4	383.5	386.9	388.6	390.3	391.9	393.6
47.5°	358.3	363.7	369.1	372.7	374.5	376.3	378.2	380.0
50°	348.1	353.7	359.4	363.1	365.0	366.8	368.6	370.4
52.5°	337.0	342.8	348.6	352.4	354.4	356.4	358.3	360.3
55°	320.4	326.4	332.3	336.4	338.6	340.7	342.9	345.0
57.5°	302.8	309.2	315.7	320.0	322.2	324.4	326.6	328.8
60°	291.2	297.5	303.8	308.1	310.4	312.8	315.1	317.4
62.5°	278.8	285.5	292.2	296.7	298.9	301.1	303.3	305.5
65°	260.1	266.9	273.7	278.2	280.3	282.5	284.6	286.8
67.5°	241.1	247.9	254.8	259.4	261.6	263.9	266.2	268.4
70°	227.9	235.0	242.1	246.7	248.7	250.7	252.7	254.7
72.5°	215.1	222.1	229.1	233.8	236.1	238.5	240.9	243.3
75°	195.8	202.9	210.0	214.7	216.8	219.0	221.1	223.3
77.5°	176.9	184.0	191.1	195.8	198.1	200.4	202.8	205.1
80°	164.1	171.0	178.0	182.6	185.0	187.3	189.6	191.9
82.5°	152.1	159.1	166.0	170.6	172.8	175.0	177.2	179.4
85°	134.9	141.9	148.9	153.5	155.8	158.2	160.5	162.8
87.5°	127.4	134.1	140.8	145.2	147.4	149.5	151.7	153.9
90°	146.4	152.6	158.8	163.0	165.2	167.4	169.6	171.9
92.5°	138.6	145.2	151.8	156.1	158.1	160.2	162.2	164.3
95°	163.3	169.6	175.9	179.9	181.4	182.9	184.5	186.0
97.5°	200.7	206.9	213.0	217.0	218.9	220.9	222.8	224.7
100°	226.7	232.9	239.0	242.9	244.5	246.1	247.7	249.3
102.5°	255.9	262.1	268.2	272.1	273.7	275.3	276.9	278.5
105°	299.6	305.8	312.1	316.1	318.0	319.8	321.6	323.4
107.5°	347.3	353.1	358.9	362.1	362.9	363.7	364.5	365.3
110°	380.1	385.4	390.8	394.0	395.1	396.3	397.4	398.6





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	413.0	417.7	422.5	425.6	426.9	428.2	429.5	430.9
115°	463.5	468.3	473.0	476.0	477.1	478.3	479.4	480.6
117.5°	512.1	516.5	520.9	523.6	524.6	525.6	526.6	527.6
120°	544.7	549.4	554.0	556.9	558.1	559.2	560.4	561.5
122.5°	578.7	582.7	586.7	589.2	590.2	591.3	592.4	593.4
125°	628.6	632.4	636.2	638.7	640.0	641.2	642.5	643.8
127.5°	676.9	680.2	683.5	685.5	686.3	687.0	687.7	688.5
130°	710.2	713.7	717.3	719.3	719.7	720.1	720.5	721.0
132.5°	742.6	745.4	748.3	750.0	750.6	751.2	751.8	752.4
135°	790.6	793.8	797.1	799.1	799.7	800.4	801.0	801.7
137.5°	836.5	839.4	842.3	843.8	844.1	844.3	844.5	844.7
140°	867.7	870.4	873.0	874.4	874.5	874.6	874.7	874.8
142.5°	896.6	898.9	901.2	902.4	902.3	902.3	902.3	902.2
145°	941.4	942.6	943.8	944.4	944.3	944.2	944.2	944.1
147.5°	981.1	981.7	982.3	982.4	982.0	981.5	981.1	980.6
150°	1007.1	1007.8	1008.5	1008.5	1007.8	1007.1	1006.4	1005.8
152.5°	1033.4	1034.3	1035.1	1035.1	1034.3	1033.4	1032.5	1031.7
155°	1066.8	1067.9	1069.0	1069.2	1068.6	1067.9	1067.2	1066.5
157.5°	1097.6	1099.1	1100.6	1100.8	1099.8	1098.7	1097.6	1096.5
160°	1115.8	1117.2	1118.5	1118.8	1117.9	1117.0	1116.1	1115.2
162.5°	1132.4	1133.9	1135.5	1135.7	1134.6	1133.5	1132.4	1131.4
165°	1153.8	1155.3	1156.9	1157.1	1156.0	1154.9	1153.8	1152.6
167.5°	1171.4	1173.0	1174.5	1174.7	1173.6	1172.4	1171.2	1170.1
170°	1181.1	1182.7	1184.3	1184.4	1183.0	1181.7	1180.3	1179.0
172.5°	1188.4	1190.0	1191.5	1191.7	1190.3	1189.0	1187.6	1186.3
175°	1196.3	1197.9	1199.4	1199.6	1198.2	1196.9	1195.5	1194.2
177.5°	1200.0	1201.0	1202.1	1202.1	1201.0	1200.0	1198.9	1197.8
180°	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2	1200.2

(END OF REPORT)