

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: P332161-840

Luminaire Tested: **S123DIW-S775D755U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332161-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S775D755U840-4F0-1E-UDD-F1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 775 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 755 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5846.5 lumens  
Efficiency: N/A  
Efficacy: 129.9 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: General Diffuse

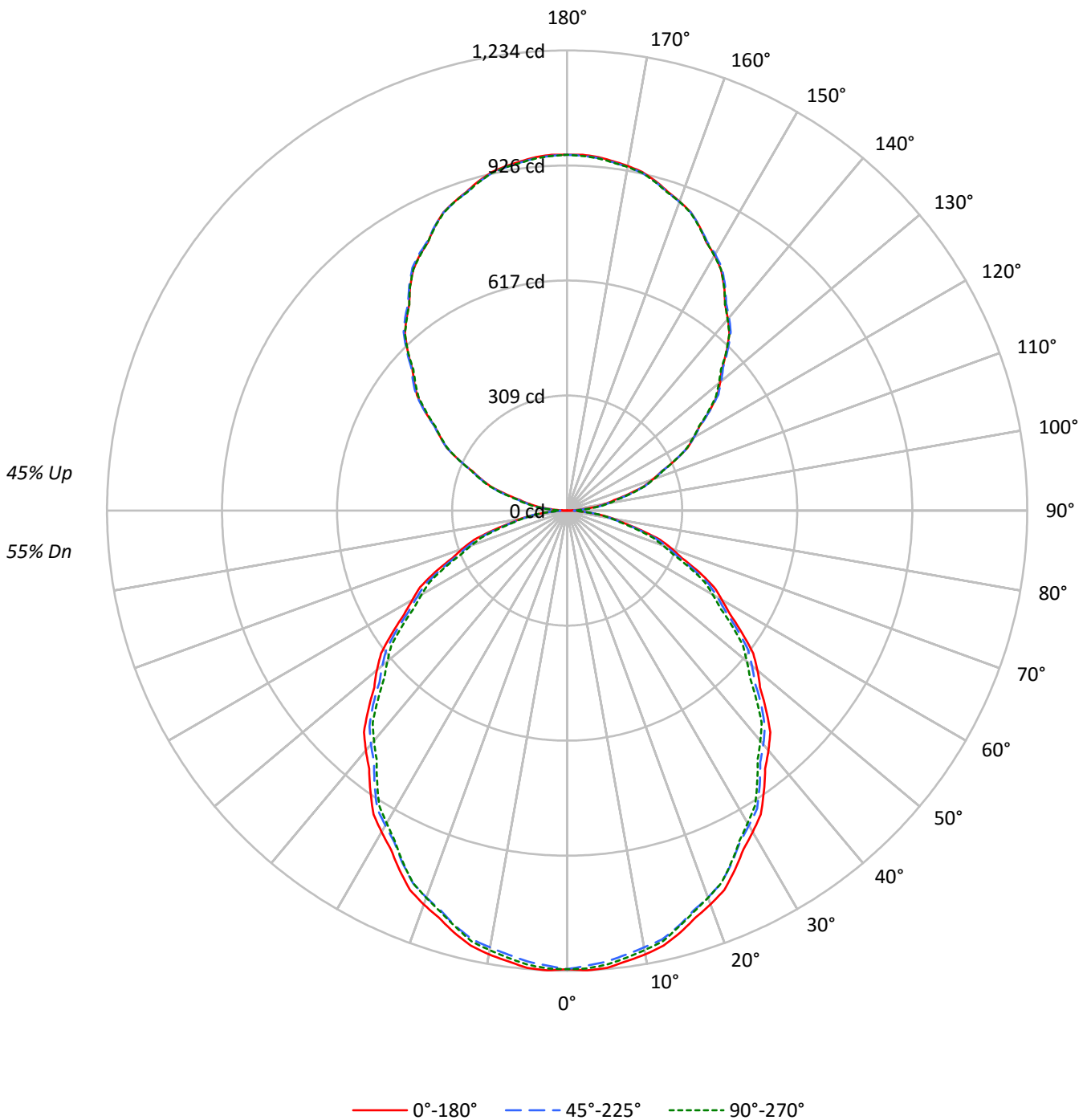
Input Watts (W): 45  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20										
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	50	30	10	50	30	10	0														
RCR																																						
0	108	108	108	108	101	101	101	101	86	86	86	73	73	73	61	61	61	55																				
1	99	94	90	87	92	88	84	81	75	73	71	64	62	60	53	52	51	46																				
2	90	82	76	71	83	77	71	67	66	62	58	56	53	50	47	45	43	38																				
3	82	72	65	59	76	67	61	56	58	53	49	50	46	43	42	39	36	33																				
4	75	64	56	50	69	60	53	47	52	46	42	44	40	37	37	34	31	28																				
5	69	57	49	43	64	53	46	41	46	40	36	40	35	32	33	30	27	24																				
6	63	51	43	37	59	48	41	35	42	36	31	36	31	28	30	27	24	21																				
7	59	46	38	33	54	43	36	31	38	32	28	33	28	25	28	24	21	19																				
8	54	42	34	29	50	39	32	27	34	29	25	30	25	22	25	22	19	17																				
9	51	38	31	26	47	36	29	25	32	26	22	27	23	20	24	20	17	15																				
10	47	35	28	23	44	33	27	22	29	24	20	25	21	18	22	18	16	14																				

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

	0°	45°	90°
0°	13237	13237	13237
5°	13299	13116	13207
10°	13210	13002	13083
15°	13056	12856	12880
20°	12875	12645	12657
25°	12634	12396	12371
30°	12367	12117	12026
35°	12089	11825	11671
40°	11797	11500	11323
45°	11478	11204	10930
50°	11156	10836	10535
55°	10736	10457	10141
60°	10312	10015	9698
65°	9938	9536	9235
70°	9385	8985	8585
75°	8576	8268	7918
80°	7736	7407	7345
85°	6780	6533	6274



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	115.8	2.0
10°-20°	327.1	5.6
20°-30°	483.2	8.3
30°-40°	564.4	9.7
40°-50°	567.4	9.7
50°-60°	498.4	8.5
60°-70°	371.3	6.4
70°-80°	211.6	3.6
80°-90°	63.6	1.1
90°-100°	62.2	1.1
100°-110°	186.1	3.2
110°-120°	316.4	5.4
120°-130°	416.2	7.1
130°-140°	467.8	8.0
140°-150°	459.9	7.9
150°-160°	387.1	6.6
160°-170°	257.7	4.4
170°-180°	90.2	1.5
0°-30°	926.1	15.8
0°-40°	1490.5	25.5
0°-60°	2556.3	43.7
0°-90°	3202.8	54.8
90°-120°	564.7	9.7
90°-150°	1908.6	32.6
90°-180°	2644.0	45.2
0°-180°	5846.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1230	1230	1230	1230	1230	
5°	1231	1225	1214	1224	1222	117
15°	1172	1167	1154	1161	1156	330
25°	1064	1057	1044	1044	1042	490
35°	920	913	900	894	888	575
45°	754	749	736	724	718	582
55°	572	570	557	546	540	512
65°	390	385	374	366	363	385
75°	206	202	199	194	190	221
85°	55	53	53	51	51	60
90°	1	8	18	21	22	6
95°	44	50	55	58	58	50
105°	169	170	177	177	178	181
115°	319	321	319	320	319	315
125°	466	468	467	464	461	416
135°	605	609	609	606	604	466
145°	734	735	738	737	734	458
155°	840	840	841	844	839	387
165°	915	913	913	917	912	258
175°	952	949	949	953	948	90
180°	954	954	954	954	954	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8
2.5°	1234.0	1233.2	1232.5	1231.7	1231.0	1229.6	1227.5	1225.5	1223.4	1221.3	1223.1
5°	1230.8	1229.6	1228.5	1227.3	1226.1	1224.3	1221.6	1219.1	1216.5	1213.9	1216.3
7.5°	1218.8	1217.6	1216.4	1215.3	1214.1	1212.1	1209.4	1206.8	1204.1	1201.4	1203.6
10°	1208.6	1207.4	1206.3	1205.1	1204.0	1201.8	1198.7	1195.7	1192.7	1189.6	1191.7
12.5°	1195.1	1194.1	1193.2	1192.1	1191.1	1189.2	1186.4	1183.5	1180.6	1177.7	1179.3
15°	1171.6	1170.6	1169.7	1168.8	1167.8	1165.9	1162.8	1159.7	1156.7	1153.7	1155.5
17.5°	1144.3	1143.1	1141.9	1140.6	1139.4	1137.3	1134.3	1131.1	1128.1	1125.1	1126.4
20°	1124.0	1122.6	1121.3	1119.8	1118.4	1116.1	1113.1	1110.0	1107.0	1103.9	1104.9
22.5°	1101.2	1099.7	1098.3	1096.9	1095.5	1093.3	1090.3	1087.2	1084.2	1081.1	1081.9
25°	1063.8	1062.4	1061.0	1059.6	1058.1	1055.9	1052.8	1049.8	1046.7	1043.7	1043.9
27.5°	1023.8	1022.4	1021.1	1019.7	1018.3	1016.0	1012.7	1009.5	1006.1	1002.8	1003.0
30°	995.0	993.8	992.7	991.5	990.3	988.1	984.8	981.5	978.3	974.9	974.9
32.5°	966.2	964.7	963.1	961.6	960.1	958.1	955.4	952.9	950.4	947.9	946.5
35°	920.0	918.6	917.2	915.7	914.3	912.1	909.0	905.9	902.9	899.9	898.5
37.5°	872.5	870.8	869.0	867.2	865.5	863.0	859.9	856.8	853.6	850.6	848.9
40°	839.6	838.2	836.8	835.4	833.9	831.6	828.3	825.1	821.7	818.4	816.6
42.5°	806.6	805.0	803.3	801.8	800.2	797.8	794.5	791.1	787.9	784.6	782.7
45°	754.0	753.0	752.0	751.1	750.1	748.2	745.1	742.0	739.0	736.0	733.2
47.5°	701.7	700.3	698.9	697.6	696.2	694.1	691.3	688.4	685.5	682.7	679.8
50°	666.2	665.0	663.8	662.7	661.5	659.3	656.3	653.3	650.2	647.1	644.6
52.5°	628.9	628.1	627.3	626.5	625.7	623.7	620.5	617.2	614.0	610.8	608.5
55°	572.1	571.8	571.6	571.4	571.1	569.5	566.4	563.4	560.3	557.2	554.7
57.5°	518.0	517.2	516.3	515.5	514.7	513.1	510.7	508.2	505.7	503.3	501.0
60°	479.0	478.8	478.6	478.3	478.1	476.6	473.7	470.9	468.1	465.2	463.1
62.5°	444.3	443.7	443.1	442.5	441.9	440.2	437.4	434.5	431.7	428.9	426.8
65°	390.2	389.0	387.8	386.7	385.5	383.7	381.3	379.0	376.7	374.4	372.4
67.5°	332.9	331.8	330.8	329.7	328.7	327.3	325.6	323.8	321.9	320.2	318.5
70°	298.2	296.8	295.4	294.0	292.6	291.1	289.7	288.3	286.9	285.5	283.9
72.5°	261.9	260.7	259.7	258.7	257.7	256.4	254.8	253.2	251.6	249.9	248.5
75°	206.2	205.2	204.3	203.4	202.5	201.6	200.9	200.2	199.4	198.8	197.6
77.5°	156.9	156.4	155.9	155.4	154.8	154.2	153.3	152.5	151.7	150.8	150.0
80°	124.8	124.1	123.4	122.7	122.0	121.4	120.9	120.5	120.0	119.5	119.3
82.5°	93.5	93.3	93.2	93.0	92.9	92.8	92.7	92.6	92.5	92.4	92.0
85°	54.9	54.5	54.0	53.6	53.1	52.9	52.9	52.9	52.9	52.9	52.4
87.5°	22.1	21.9	21.7	21.4	21.2	21.2	21.5	21.7	21.9	22.2	22.1
90°	0.7	2.4	4.0	5.8	7.4	9.3	11.5	13.6	15.9	18.0	18.7
92.5°	18.2	19.3	20.4	21.5	22.6	23.8	25.0	26.4	27.6	28.8	29.3
95°	44.2	45.3	46.6	47.8	48.9	50.1	51.5	52.8	54.1	55.4	56.1
97.5°	78.6	79.4	80.3	81.2	82.0	82.9	83.9	84.8	85.8	86.8	87.6
100°	101.9	102.9	103.9	104.9	105.9	106.8	107.7	108.6	109.4	110.2	110.7
102.5°	129.0	129.6	130.2	130.7	131.3	132.2	133.3	134.4	135.4	136.5	137.0
105°	168.6	169.0	169.4	169.7	170.0	170.9	172.4	173.9	175.4	176.9	176.9
107.5°	214.8	215.0	215.2	215.4	215.6	216.0	216.6	217.2	217.8	218.4	218.9
110°	243.6	244.0	244.3	244.6	244.9	245.3	245.6	245.9	246.3	246.6	247.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	273.6	273.8	274.0	274.2	274.4	274.5	274.6	274.7	274.7	274.8	275.6
115°	318.6	319.0	319.5	320.0	320.5	320.6	320.3	320.0	319.6	319.3	319.5
117.5°	363.9	364.2	364.5	364.9	365.2	365.2	364.7	364.3	363.9	363.3	363.3
120°	392.0	393.0	394.0	395.1	396.1	396.1	395.3	394.5	393.6	392.7	392.6
122.5°	421.4	422.1	422.8	423.6	424.3	424.4	424.0	423.6	423.2	422.7	422.3
125°	466.3	466.8	467.3	467.8	468.3	468.3	468.0	467.7	467.3	467.0	466.4
127.5°	507.6	508.7	509.8	510.8	511.9	512.2	511.9	511.5	511.1	510.8	509.8
130°	535.2	536.5	537.9	539.2	540.5	541.0	540.5	540.0	539.5	539.0	538.3
132.5°	562.8	564.1	565.4	566.7	568.2	568.6	568.3	567.8	567.4	567.1	566.3
135°	604.9	605.9	606.9	607.9	608.8	609.4	609.2	608.9	608.8	608.6	607.9
137.5°	643.9	644.7	645.5	646.4	647.2	647.8	648.2	648.7	649.1	649.5	648.8
140°	670.9	671.7	672.6	673.4	674.2	674.7	674.9	675.0	675.2	675.4	675.2
142.5°	695.5	696.3	697.1	697.9	698.7	699.3	699.6	699.9	700.2	700.5	700.3
145°	733.9	734.2	734.5	734.8	735.2	735.6	736.1	736.6	737.1	737.6	737.4
147.5°	767.4	768.0	768.6	769.2	769.8	770.3	770.8	771.2	771.7	772.2	772.2
150°	790.8	791.1	791.4	791.8	792.1	792.4	792.7	793.1	793.5	793.8	793.8
152.5°	810.0	810.4	810.9	811.4	811.8	812.1	812.3	812.5	812.7	812.9	813.2
155°	840.3	840.3	840.3	840.3	840.3	840.3	840.5	840.7	840.8	841.0	841.7
157.5°	866.1	865.9	865.7	865.5	865.3	865.3	865.4	865.5	865.7	865.8	866.5
160°	882.2	881.9	881.6	881.2	880.9	880.7	880.7	880.7	880.7	880.7	881.6
162.5°	896.7	896.2	895.6	895.2	894.7	894.6	894.7	894.8	895.0	895.1	896.0
165°	915.2	914.7	914.2	913.7	913.2	912.9	912.9	912.9	912.9	912.9	913.9
167.5°	930.1	929.4	928.8	928.1	927.4	927.2	927.3	927.4	927.6	927.7	928.7
170°	938.5	937.8	937.2	936.4	935.7	935.4	935.4	935.4	935.4	935.4	936.6
172.5°	945.0	944.4	943.7	943.0	942.4	942.0	942.0	942.0	942.0	942.0	943.1
175°	951.9	951.3	950.6	950.0	949.3	949.0	949.0	949.0	949.0	949.0	950.0
177.5°	954.8	954.2	953.7	953.2	952.7	952.4	952.4	952.4	952.4	952.4	953.2
180°	954.2	954.2	954.2	954.2	954.2	954.2	954.2	954.2	954.2	954.2	954.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8	1229.8
2.5°	1225.1	1227.0	1228.8	1229.7	1229.5	1229.3	1229.1	1228.9
5°	1218.6	1220.9	1223.4	1224.3	1223.8	1223.4	1222.8	1222.3
7.5°	1205.7	1207.8	1209.9	1210.8	1210.5	1210.2	1209.9	1209.7
10°	1193.9	1195.9	1198.0	1198.9	1198.4	1197.9	1197.5	1197.0
12.5°	1180.8	1182.3	1184.0	1184.6	1184.3	1184.0	1183.8	1183.5
15°	1157.4	1159.2	1161.1	1161.3	1159.9	1158.5	1157.2	1155.8
17.5°	1127.7	1129.0	1130.3	1130.7	1130.2	1129.7	1129.2	1128.7
20°	1105.8	1106.7	1107.7	1107.8	1107.1	1106.4	1105.7	1105.0
22.5°	1082.6	1083.4	1084.1	1084.0	1083.2	1082.3	1081.4	1080.5
25°	1044.1	1044.4	1044.6	1044.4	1043.7	1043.0	1042.3	1041.6
27.5°	1003.2	1003.4	1003.6	1003.2	1002.4	1001.5	1000.6	999.7
30°	974.9	974.9	974.9	974.1	972.5	970.8	969.2	967.6
32.5°	945.2	943.9	942.6	941.5	940.6	939.7	938.8	938.0
35°	897.1	895.6	894.2	892.9	891.7	890.6	889.4	888.2
37.5°	847.2	845.5	843.8	842.6	841.8	841.1	840.3	839.6
40°	814.7	812.8	810.9	809.5	808.6	807.6	806.7	805.8
42.5°	780.8	778.9	777.1	775.7	774.8	773.8	772.8	771.9
45°	730.3	727.5	724.7	722.7	721.5	720.3	719.1	718.0
47.5°	677.1	674.4	671.6	669.6	668.6	667.6	666.6	665.5
50°	642.0	639.3	636.8	634.8	633.4	632.0	630.6	629.1
52.5°	606.3	604.1	601.9	600.2	598.7	597.3	595.9	594.5
55°	552.1	549.5	546.9	545.0	543.8	542.7	541.5	540.4
57.5°	498.7	496.4	494.1	492.3	490.9	489.6	488.2	486.9
60°	461.0	458.9	456.8	455.1	453.9	452.8	451.6	450.5
62.5°	424.6	422.5	420.4	419.0	418.2	417.4	416.6	415.8
65°	370.5	368.7	366.8	365.5	364.8	364.1	363.3	362.6
67.5°	316.9	315.3	313.6	312.3	311.3	310.3	309.3	308.3
70°	282.3	280.5	278.9	277.5	276.3	275.2	274.0	272.8
72.5°	247.0	245.6	244.2	243.1	242.5	241.9	241.3	240.7
75°	196.4	195.3	194.1	193.2	192.5	191.8	191.1	190.4
77.5°	149.2	148.3	147.5	147.2	147.2	147.2	147.2	147.2
80°	119.1	118.8	118.6	118.5	118.5	118.5	118.5	118.5
82.5°	91.6	91.2	90.7	90.4	90.3	90.1	89.9	89.7
85°	51.9	51.5	51.0	50.8	50.8	50.8	50.8	50.8
87.5°	22.1	22.0	22.0	22.0	22.0	22.1	22.2	22.2
90°	19.3	20.0	20.7	21.1	21.5	21.8	22.1	22.5
92.5°	29.9	30.4	30.9	31.1	30.9	30.7	30.5	30.3
95°	56.8	57.5	58.2	58.5	58.5	58.5	58.5	58.5
97.5°	88.4	89.1	89.9	90.2	90.2	90.1	90.0	90.0
100°	111.2	111.7	112.2	112.6	112.9	113.3	113.6	113.9
102.5°	137.5	138.0	138.6	138.8	138.8	138.7	138.6	138.6
105°	176.9	176.9	176.9	177.0	177.4	177.7	178.0	178.4
107.5°	219.4	220.0	220.6	220.8	220.6	220.4	220.2	219.9
110°	247.9	248.6	249.2	249.4	249.1	248.7	248.4	248.1





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	276.4	277.2	278.0	278.3	278.3	278.2	278.1	278.1
115°	319.6	319.8	320.0	320.0	319.8	319.6	319.5	319.3
117.5°	363.3	363.2	363.2	363.0	362.5	362.0	361.6	361.1
120°	392.4	392.2	392.1	391.8	391.5	391.2	390.8	390.5
122.5°	421.9	421.4	421.0	420.6	420.1	419.6	419.2	418.7
125°	465.6	464.9	464.3	463.6	463.0	462.3	461.6	461.0
127.5°	508.9	508.0	507.1	506.1	505.4	504.6	503.9	503.1
130°	537.7	536.9	536.2	535.3	534.2	533.0	531.9	530.7
132.5°	565.5	564.7	563.9	563.1	562.2	561.3	560.4	559.5
135°	607.3	606.6	606.0	605.5	605.1	604.8	604.5	604.1
137.5°	648.1	647.4	646.8	646.1	645.5	644.8	644.2	643.6
140°	675.0	674.9	674.7	674.0	672.9	671.7	670.6	669.3
142.5°	700.2	700.0	699.8	699.3	698.4	697.5	696.6	695.7
145°	737.2	737.1	736.9	736.5	735.8	735.2	734.5	733.9
147.5°	772.2	772.2	772.2	771.7	770.7	769.7	768.7	767.7
150°	793.8	793.8	793.8	793.2	792.2	791.3	790.3	789.3
152.5°	813.5	813.7	814.1	813.7	812.8	812.0	811.1	810.3
155°	842.3	843.0	843.6	843.4	842.2	841.1	839.9	838.8
157.5°	867.2	867.9	868.6	868.4	867.5	866.6	865.7	864.6
160°	882.4	883.2	884.0	884.1	883.5	882.8	882.1	881.5
162.5°	896.8	897.7	898.5	898.4	897.3	896.3	895.1	894.0
165°	914.9	915.9	917.0	916.9	915.7	914.5	913.4	912.2
167.5°	929.7	930.8	931.8	931.8	930.8	929.7	928.7	927.7
170°	937.8	939.0	940.1	940.1	939.0	937.8	936.6	935.4
172.5°	944.1	945.1	946.1	946.1	944.9	943.8	942.6	941.5
175°	951.0	951.9	952.9	952.9	951.7	950.5	949.4	948.2
177.5°	954.0	954.8	955.6	955.5	954.6	953.6	952.7	951.8
180°	954.2	954.2	954.2	954.2	954.2	954.2	954.2	954.2

(END OF REPORT)