

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: P331678-840

Luminaire Tested: **SA2XXRDIP-C675D330U840-4F0-1E-UDD-F**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331678-840
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: SA2XXRDIP-C675D330U840-4F0-1E-UDD-F
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 675 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 330 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 3666.5 lumens
Efficiency: N/A
Efficacy: 104.8 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 0.99 / 1.16
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')
CIE Type: Semi-Direct

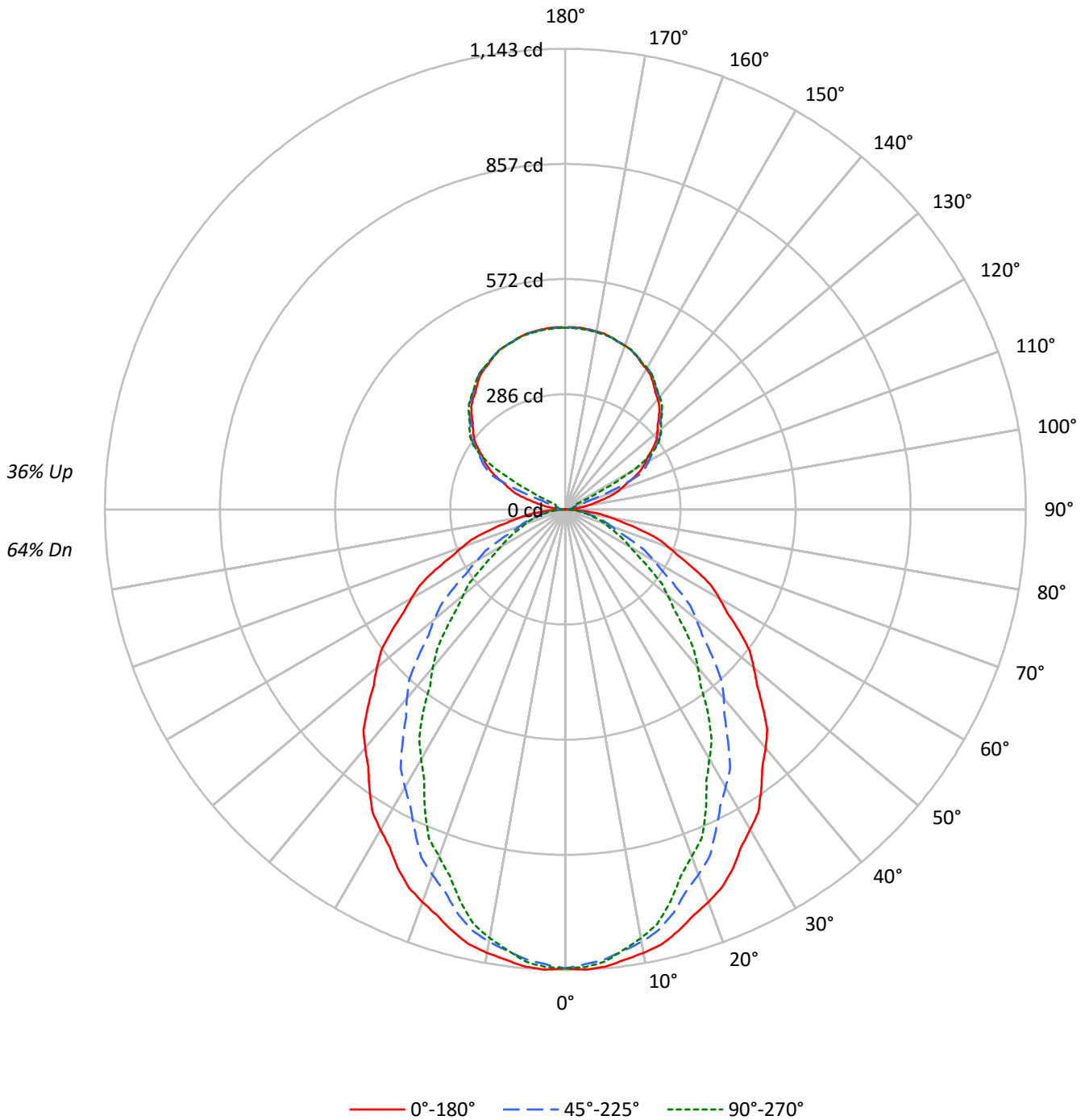
Input Watts (W): 35
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	110	110	110	110	104	104	104	104	91	91	91	80	80	80	69	69	69	64				
1	102	97	94	90	95	92	88	85	81	78	76	71	69	68	62	61	59	55				
2	93	86	80	75	87	81	76	71	72	68	64	63	60	57	55	53	51	47				
3	85	76	69	63	80	72	65	60	64	59	55	56	53	49	49	47	44	41				
4	78	68	60	54	73	64	57	52	57	52	47	51	46	43	45	41	39	35				
5	72	61	53	47	68	58	50	45	51	46	41	46	41	38	41	37	34	31				
6	67	55	47	41	63	52	45	39	47	41	36	42	37	33	37	33	30	28				
7	62	50	42	36	58	47	40	35	43	37	32	38	33	30	34	30	27	25				
8	58	45	38	32	54	43	36	31	39	33	29	35	30	27	31	27	25	22				
9	54	42	34	29	51	40	33	28	36	30	26	32	28	24	29	25	22	20				
10	50	38	31	26	48	37	30	26	33	28	24	30	25	22	27	23	20	19				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	18392	18392	18392
5°	18462	18162	18263
10°	18321	17864	17713
15°	18111	17336	16836
20°	17819	16579	15747
25°	17521	15720	14694
30°	17107	14838	13340
35°	16703	13878	12151
40°	16297	12886	10777
45°	15819	11768	9533
50°	15330	10643	8312
55°	14829	9433	7139
60°	14247	8157	5926
65°	13589	6854	5398
70°	12798	5646	4961
75°	11834	5147	4629
80°	10451	4603	4212
85°	8207	3631	3631



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	106.6	2.9
10°-20°	292.8	8.0
20°-30°	411.1	11.2
30°-40°	448.3	12.2
40°-50°	412.2	11.2
50°-60°	323.8	8.8
60°-70°	211.1	5.8
70°-80°	108.8	3.0
80°-90°	29.4	0.8
90°-100°	15.1	0.4
100°-110°	55.2	1.5
110°-120°	147.6	4.0
120°-130°	243.6	6.6
130°-140°	259.0	7.1
140°-150°	240.8	6.6
150°-160°	193.6	5.3
160°-170°	124.7	3.4
170°-180°	42.9	1.2
0°-30°	810.5	22.1
0°-40°	1258.9	34.3
0°-60°	1994.8	54.4
0°-90°	2344.1	63.9
90°-120°	217.8	5.9
90°-150°	961.2	26.2
90°-180°	1322.0	36.1
0°-180°	3666.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1139	1139	1139	1139	1139	
5°	1139	1134	1121	1129	1127	108
15°	1084	1071	1037	1018	1007	305
25°	984	949	882	842	825	452
35°	847	793	704	642	616	530
45°	693	622	515	445	418	535
55°	527	445	335	276	254	471
65°	356	272	179	146	141	352
75°	190	120	82	76	74	201
85°	44	24	20	20	20	52
90°	0	4	7	8	9	3
95°	21	11	13	14	14	26
105°	99	104	20	23	25	106
115°	188	193	202	57	27	185
125°	266	270	276	278	279	237
135°	328	334	337	340	339	254
145°	381	381	386	388	387	238
155°	420	417	420	422	420	193
165°	442	440	441	443	441	125
175°	452	450	451	453	450	43
180°	451	451	451	451	451	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1143.3	1142.4	1141.5	1140.5	1139.6	1138.1	1136.1	1134.1	1132.2	1130.1	1132.0
5°	1139.1	1138.0	1136.9	1135.7	1134.6	1132.6	1129.5	1126.6	1123.6	1120.6	1122.7
7.5°	1127.4	1126.0	1124.6	1123.2	1121.8	1119.2	1115.8	1112.4	1108.8	1105.4	1105.9
10°	1117.5	1115.9	1114.3	1112.7	1111.1	1108.0	1103.4	1098.8	1094.3	1089.6	1089.0
12.5°	1105.1	1103.2	1101.2	1099.2	1097.2	1093.4	1087.5	1081.7	1075.7	1069.9	1068.6
15°	1083.5	1081.0	1078.4	1075.9	1073.4	1068.2	1060.5	1052.7	1044.9	1037.1	1032.8
17.5°	1056.9	1053.1	1049.2	1045.3	1041.5	1034.6	1024.6	1014.6	1004.6	994.6	989.5
20°	1037.1	1032.5	1027.9	1023.4	1018.8	1010.8	999.3	987.8	976.4	964.9	959.2
22.5°	1015.6	1010.6	1005.4	1000.3	995.1	986.1	973.2	960.3	947.4	934.4	927.1
25°	983.5	976.1	968.9	961.5	954.2	942.9	927.9	912.7	897.6	882.4	873.0
27.5°	944.7	936.8	928.8	920.8	912.8	900.3	883.3	866.3	849.2	832.1	821.2
30°	917.6	908.8	900.1	891.4	882.7	869.2	850.8	832.5	814.2	795.9	784.2
32.5°	891.1	880.9	870.8	860.6	850.4	836.0	817.3	798.6	779.9	761.2	747.9
35°	847.4	835.8	824.0	812.3	800.7	784.8	764.6	744.5	724.3	704.1	689.6
37.5°	803.8	790.8	778.0	765.2	752.3	735.2	713.8	692.3	670.8	649.2	633.4
40°	773.2	759.4	745.7	732.0	718.2	700.2	678.0	655.8	633.6	611.4	595.1
42.5°	741.8	727.4	712.9	698.4	684.0	665.2	642.3	619.4	596.3	573.4	556.5
45°	692.8	677.4	662.1	646.7	631.4	611.7	587.6	563.6	539.5	515.4	499.2
47.5°	644.9	628.6	612.4	596.1	579.9	559.4	534.5	509.7	484.8	460.0	443.8
50°	610.3	594.0	577.7	561.5	545.2	524.5	499.3	474.1	448.9	423.7	407.9
52.5°	576.5	559.5	542.5	525.5	508.5	487.7	463.0	438.4	413.7	389.1	373.9
55°	526.8	509.0	491.1	473.2	455.3	434.0	409.3	384.6	359.8	335.1	321.3
57.5°	475.8	457.6	439.2	420.9	402.5	381.5	357.7	334.0	310.1	286.4	273.8
60°	441.2	422.9	404.6	386.3	367.9	347.0	323.4	299.7	276.2	252.6	240.9
62.5°	407.4	389.1	370.7	352.4	334.1	313.7	291.2	268.7	246.2	223.7	212.6
65°	355.7	337.1	318.5	300.0	281.4	261.9	241.3	220.7	200.0	179.4	171.6
67.5°	305.8	287.3	268.9	250.5	232.1	213.6	195.0	176.5	157.9	139.4	135.8
70°	271.1	253.3	235.4	217.5	199.7	182.8	167.0	151.2	135.4	119.6	117.2
72.5°	238.1	221.0	203.9	186.7	169.6	154.7	142.0	129.3	116.6	103.9	102.0
75°	189.7	173.7	157.6	141.6	125.5	113.6	105.8	98.1	90.3	82.5	80.9
77.5°	142.1	127.9	113.9	99.9	85.8	76.9	73.1	69.4	65.6	61.9	60.9
80°	112.4	100.7	89.0	77.4	65.6	58.7	56.4	54.0	51.8	49.5	48.6
82.5°	85.1	76.0	67.0	57.8	48.7	43.3	41.8	40.2	38.7	37.2	36.6
85°	44.3	39.5	34.7	29.9	25.0	22.3	21.6	21.0	20.3	19.6	19.6
87.5°	13.2	11.9	10.6	9.4	8.1	7.5	7.6	7.7	7.8	7.9	7.8
90°	0.3	1.1	1.9	2.7	3.5	4.2	4.7	5.4	6.0	6.6	6.9
92.5°	6.6	6.6	6.5	6.4	6.3	6.5	6.7	7.0	7.3	7.6	7.8
95°	21.2	18.8	16.5	14.0	11.6	10.7	11.2	11.7	12.2	12.7	13.1
97.5°	42.1	35.3	28.6	21.9	15.1	12.3	13.5	14.6	15.9	17.1	17.4
100°	57.8	47.9	37.9	28.0	18.1	13.6	14.9	16.2	17.4	18.6	19.2
102.5°	75.0	72.9	70.8	68.8	66.7	60.4	50.1	39.8	29.5	19.1	19.9
105°	99.3	101.4	103.6	105.8	108.0	99.2	79.4	59.6	39.7	19.9	20.7
107.5°	126.8	128.7	130.4	132.2	133.9	122.9	99.2	75.4	51.6	27.9	27.1
110°	144.6	146.1	147.7	149.3	150.8	141.0	120.1	99.1	78.1	57.2	49.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	161.4	162.7	164.1	165.4	166.7	164.8	159.7	154.5	149.3	144.1	117.6
115°	187.7	188.9	190.3	191.5	192.7	194.2	196.0	197.8	199.7	201.5	167.8
117.5°	211.4	212.7	214.1	215.5	216.8	218.1	219.4	220.7	221.9	223.2	215.0
120°	228.5	229.6	230.8	231.9	232.9	234.1	235.4	236.7	238.0	239.3	240.2
122.5°	243.2	244.4	245.5	246.6	247.8	249.0	250.4	251.9	253.4	254.8	255.3
125°	265.5	266.4	267.3	268.3	269.2	270.4	271.8	273.2	274.5	275.9	276.4
127.5°	285.6	286.7	287.7	288.8	289.8	290.8	291.9	293.0	294.0	295.0	295.7
130°	298.4	299.6	300.7	301.9	303.1	304.1	304.9	305.7	306.5	307.3	308.0
132.5°	311.5	312.5	313.5	314.5	315.5	316.3	317.1	317.9	318.7	319.5	320.2
135°	328.5	329.6	330.8	331.9	333.2	334.1	334.7	335.4	336.0	336.7	337.4
137.5°	345.7	346.5	347.3	348.1	348.9	349.7	350.4	351.1	351.9	352.6	353.4
140°	356.9	357.5	358.0	358.6	359.2	359.9	360.7	361.5	362.3	363.0	363.8
142.5°	366.3	366.8	367.3	367.9	368.4	369.1	370.0	370.9	371.8	372.7	373.3
145°	381.0	381.0	380.9	380.8	380.7	381.3	382.5	383.8	385.1	386.3	386.8
147.5°	393.9	393.6	393.3	393.0	392.8	393.2	394.5	395.8	397.0	398.2	398.5
150°	402.2	401.7	401.2	400.7	400.2	400.6	401.7	402.9	404.0	405.3	405.7
152.5°	409.3	408.8	408.2	407.6	407.1	407.3	408.4	409.5	410.6	411.7	412.1
155°	419.6	418.9	418.3	417.6	417.0	417.1	418.0	418.8	419.7	420.5	421.0
157.5°	427.6	427.1	426.5	426.0	425.4	425.5	426.1	426.7	427.3	427.9	428.4
160°	432.3	431.9	431.4	431.0	430.6	430.6	431.0	431.4	431.9	432.3	432.7
162.5°	436.5	436.1	435.7	435.2	434.7	434.7	435.0	435.5	435.9	436.3	436.8
165°	442.1	441.7	441.2	440.8	440.4	440.3	440.5	440.7	440.9	441.1	441.6
167.5°	446.3	445.9	445.5	444.9	444.5	444.4	444.6	444.8	445.0	445.2	445.8
170°	448.7	448.2	447.8	447.4	446.9	446.8	446.9	447.1	447.2	447.4	447.9
172.5°	450.2	449.8	449.3	448.9	448.5	448.3	448.5	448.6	448.8	448.9	449.4
175°	452.2	451.7	451.2	450.7	450.2	450.0	450.2	450.3	450.5	450.6	451.1
177.5°	452.5	452.1	451.7	451.3	450.9	450.8	450.8	450.9	450.9	451.0	451.4
180°	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1	1139.1
2.5°	1133.8	1135.6	1137.4	1138.1	1137.8	1137.4	1137.1	1136.7
5°	1124.7	1126.8	1128.8	1129.5	1128.8	1128.1	1127.5	1126.8
7.5°	1106.5	1107.1	1107.7	1107.4	1106.2	1105.1	1103.9	1102.7
10°	1088.3	1087.6	1086.9	1085.9	1084.5	1083.2	1081.8	1080.4
12.5°	1067.4	1066.2	1064.9	1063.2	1060.9	1058.6	1056.3	1054.0
15°	1028.4	1024.0	1019.7	1016.3	1014.1	1011.8	1009.5	1007.2
17.5°	984.3	979.1	973.9	969.4	965.4	961.5	957.6	953.6
20°	953.5	947.8	942.0	936.6	931.6	926.6	921.5	916.5
22.5°	919.7	912.3	904.9	899.4	895.5	891.8	888.1	884.3
25°	863.6	854.2	844.9	838.5	835.1	831.6	828.2	824.8
27.5°	810.2	799.3	788.4	780.1	774.7	769.2	763.8	758.3
30°	772.5	760.8	749.1	740.2	734.0	727.8	721.6	715.5
32.5°	734.6	721.2	707.9	698.3	692.5	686.7	680.9	675.1
35°	675.3	660.9	646.4	636.6	631.6	626.5	621.6	616.5
37.5°	617.4	601.6	585.7	574.8	569.1	563.3	557.5	551.8
40°	578.8	562.5	546.2	535.1	529.2	523.2	517.3	511.3
42.5°	539.8	522.9	506.1	494.8	489.1	483.3	477.6	471.7
45°	482.9	466.7	450.4	439.5	434.0	428.5	423.0	417.5
47.5°	427.7	411.5	395.3	384.8	379.7	374.8	369.7	364.8
50°	392.1	376.3	360.5	350.1	345.4	340.5	335.8	330.9
52.5°	358.6	343.3	328.0	318.2	313.8	309.3	304.9	300.4
55°	307.6	293.8	280.0	271.0	266.7	262.3	257.9	253.6
57.5°	261.2	248.6	236.0	227.8	224.2	220.6	216.8	213.2
60°	229.2	217.5	205.8	198.1	194.5	190.9	187.1	183.5
62.5°	201.5	190.3	179.2	172.5	170.3	168.1	165.9	163.7
65°	163.8	156.0	148.2	144.0	143.3	142.6	141.9	141.3
67.5°	132.2	128.7	125.1	122.9	122.2	121.5	120.8	120.0
70°	115.0	112.7	110.4	108.9	107.9	106.9	106.0	105.1
72.5°	100.1	98.2	96.2	95.0	94.4	93.9	93.3	92.8
75°	79.3	77.7	76.0	75.1	74.9	74.7	74.4	74.2
77.5°	60.0	59.1	58.2	57.6	57.2	56.9	56.5	56.0
80°	47.7	46.8	45.8	45.3	45.3	45.3	45.3	45.3
82.5°	36.1	35.4	34.9	34.6	34.6	34.6	34.6	34.6
85°	19.6	19.6	19.6	19.6	19.6	19.6	19.6	19.6
87.5°	7.7	7.6	7.5	7.4	7.5	7.5	7.5	7.6
90°	7.3	7.6	8.0	8.3	8.4	8.5	8.7	8.8
92.5°	8.0	8.2	8.3	8.5	8.6	8.7	8.7	8.8
95°	13.4	13.8	14.1	14.3	14.2	14.1	14.1	14.0
97.5°	17.7	17.9	18.2	18.4	18.5	18.6	18.7	18.8
100°	19.8	20.4	20.9	21.3	21.4	21.6	21.7	21.9
102.5°	20.6	21.4	22.1	22.6	22.8	23.0	23.2	23.4
105°	21.5	22.3	23.1	23.6	23.9	24.2	24.5	24.8
107.5°	26.3	25.4	24.6	24.3	24.6	24.9	25.2	25.5
110°	42.6	35.3	28.1	24.6	24.9	25.2	25.5	25.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	91.2	64.7	38.3	25.1	25.3	25.5	25.9	26.1
115°	134.3	100.7	67.1	47.7	42.4	37.3	32.0	26.8
117.5°	206.9	198.7	190.7	178.0	160.9	143.7	126.5	109.4
120°	241.1	242.0	242.8	238.3	228.5	218.7	208.9	199.1
122.5°	255.8	256.3	256.8	256.1	254.3	252.4	250.4	248.5
125°	276.9	277.4	277.9	278.3	278.5	278.7	278.9	279.1
127.5°	296.5	297.2	297.9	298.3	298.4	298.4	298.4	298.5
130°	308.8	309.6	310.4	310.8	310.7	310.6	310.6	310.5
132.5°	320.9	321.5	322.2	322.6	322.4	322.4	322.3	322.2
135°	338.1	338.8	339.5	339.8	339.7	339.5	339.4	339.2
137.5°	354.1	354.8	355.5	355.7	355.5	355.3	355.0	354.8
140°	364.4	365.1	365.7	365.9	365.5	365.2	364.8	364.4
142.5°	374.0	374.6	375.2	375.3	374.9	374.6	374.2	373.8
145°	387.3	387.8	388.3	388.4	388.0	387.7	387.3	386.9
147.5°	398.9	399.3	399.7	399.7	399.4	399.1	398.8	398.5
150°	406.1	406.5	407.0	407.0	406.7	406.3	405.9	405.6
152.5°	412.6	413.0	413.4	413.4	412.9	412.5	412.0	411.5
155°	421.4	421.8	422.3	422.2	421.6	421.1	420.5	419.9
157.5°	428.9	429.4	429.8	429.8	429.2	428.7	428.1	427.6
160°	433.2	433.6	434.0	434.0	433.5	433.0	432.5	432.0
162.5°	437.2	437.7	438.2	438.2	437.5	436.9	436.3	435.7
165°	442.1	442.6	443.1	443.1	442.6	442.1	441.6	441.1
167.5°	446.3	446.8	447.3	447.2	446.6	445.9	445.2	444.5
170°	448.4	448.9	449.4	449.3	448.7	448.0	447.4	446.7
172.5°	449.9	450.4	450.9	450.9	450.2	449.6	448.9	448.3
175°	451.6	452.1	452.6	452.5	451.8	451.1	450.3	449.6
177.5°	451.8	452.2	452.6	452.5	452.0	451.5	451.0	450.5
180°	451.2	451.2	451.2	451.2	451.2	451.2	451.2	451.2

(END OF REPORT)