

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: P331733-935

Luminaire Tested: **SA2XXRDIP-C865D1080U935-4F0-1E-UDD-F1**

Issue Date: 10/7/2019

Test Information

Test Method: LM-79-08
Report Number: P331733-935
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 10/7/2019
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: SA2XXRDIP-C865D1080U935-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE
DOWNLIGHT 865 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER, REGRESSED
HOUSING
UPLIGHT 1080 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5915.2 lumens
Efficiency: N/A
Efficacy: 90.4 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: General Diffuse

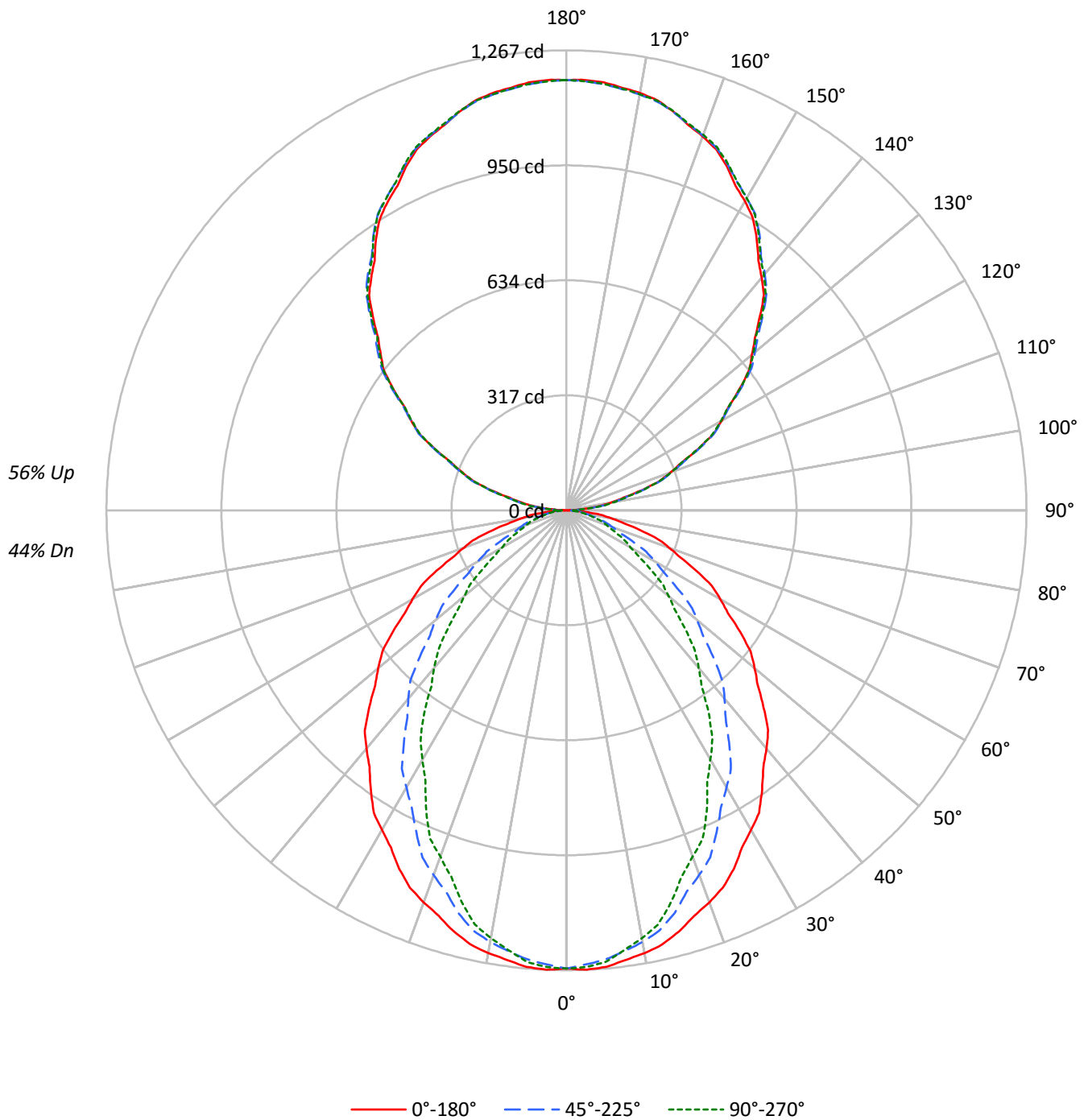
Input Watts (W): 65.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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				0
RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10
RCR																	
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51
1	97	93	89	86	89	85	82	79	71	68	66	57	56	55	45	44	43
2	88	81	76	71	81	75	70	66	62	59	56	51	48	46	40	39	37
3	81	72	65	59	74	66	60	55	55	51	47	45	42	40	36	34	32
4	74	64	56	50	68	59	52	47	49	45	41	41	37	34	33	30	28
5	68	57	49	43	62	53	46	41	44	39	35	37	33	30	30	27	25
6	63	51	44	38	58	47	41	36	40	35	31	33	29	26	27	24	22
7	58	46	39	33	53	43	36	31	37	31	27	30	26	24	25	22	20
8	54	42	35	30	50	39	33	28	33	28	24	28	24	21	23	20	18
9	50	39	31	26	46	36	29	25	31	26	22	26	22	19	21	18	16
10	47	35	28	24	43	33	27	22	28	23	20	24	20	17	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	20384	20384	20384
5°	20462	20128	20238
10°	20305	19799	19630
15°	20072	19211	18658
20°	19747	18374	17452
25°	19417	17423	16283
30°	18957	16444	14783
35°	18510	15380	13466
40°	18061	14280	11944
45°	17532	13045	10565
50°	16990	11796	9211
55°	16434	10452	7910
60°	15791	9038	6568
65°	15060	7595	5979
70°	14186	6255	5500
75°	13119	5702	5128
80°	11576	5095	4677
85°	9114	4020	4020

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	118.2	2.0
10°-20°	324.5	5.5
20°-30°	455.6	7.7
30°-40°	496.8	8.4
40°-50°	456.8	7.7
50°-60°	358.8	6.1
60°-70°	233.9	4.0
70°-80°	120.6	2.0
80°-90°	36.0	0.6
90°-100°	75.1	1.3
100°-110°	233.2	3.9
110°-120°	398.7	6.7
120°-130°	524.3	8.9
130°-140°	588.5	9.9
140°-150°	577.0	9.8
150°-160°	484.0	8.2
160°-170°	321.0	5.4
170°-180°	112.2	1.9
0°-30°	898.3	15.2
0°-40°	1395.1	23.6
0°-60°	2210.7	37.4
0°-90°	2601.3	44.0
90°-120°	707.0	12.0
90°-150°	2396.8	40.5
90°-180°	3314.0	56.0
0°-180°	5915.2	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1262	1262	1262	1262	1262	
5°	1262	1256	1242	1251	1249	120
15°	1201	1187	1149	1128	1116	338
25°	1090	1051	978	933	914	501
35°	939	878	780	711	683	587
45°	768	689	571	493	463	593
55°	584	493	371	305	281	521
65°	394	301	199	162	156	391
75°	210	133	91	84	82	223
85°	49	26	22	22	22	58
90°	1	14	35	33	34	5
95°	52	62	64	64	62	60
105°	215	218	220	222	222	227
115°	400	406	404	403	400	396
125°	582	590	588	585	584	520
135°	753	764	766	765	762	582
145°	914	921	927	928	924	571
155°	1045	1048	1051	1056	1053	481
165°	1137	1136	1136	1142	1138	321
175°	1183	1180	1178	1184	1179	112
180°	1185	1185	1185	1185	1185	

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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5
2.5°	1267.0	1266.0	1265.0	1263.9	1263.0	1261.4	1259.1	1256.9	1254.6	1252.4	1254.5
5°	1262.5	1261.2	1259.9	1258.6	1257.4	1255.1	1251.8	1248.5	1245.2	1241.9	1244.1
7.5°	1249.4	1247.8	1246.3	1244.7	1243.1	1240.4	1236.6	1232.7	1228.8	1224.9	1225.6
10°	1238.5	1236.7	1234.9	1233.1	1231.3	1228.0	1222.9	1217.8	1212.7	1207.6	1206.9
12.5°	1224.8	1222.5	1220.4	1218.2	1216.0	1211.7	1205.1	1198.7	1192.1	1185.7	1184.3
15°	1200.8	1198.0	1195.2	1192.4	1189.6	1183.9	1175.3	1166.7	1158.0	1149.3	1144.5
17.5°	1171.3	1167.0	1162.8	1158.5	1154.3	1146.6	1135.5	1124.4	1113.4	1102.3	1096.6
20°	1149.3	1144.3	1139.2	1134.1	1129.0	1120.2	1107.4	1094.8	1082.1	1069.4	1063.0
22.5°	1125.6	1119.9	1114.2	1108.5	1102.9	1092.9	1078.5	1064.2	1049.9	1035.5	1027.3
25°	1089.9	1081.8	1073.7	1065.6	1057.5	1045.0	1028.2	1011.5	994.7	978.0	967.6
27.5°	1047.0	1038.1	1029.3	1020.5	1011.7	997.8	978.9	960.0	941.1	922.2	910.1
30°	1016.8	1007.2	997.6	987.9	978.3	963.3	943.0	922.6	902.3	882.0	869.1
32.5°	987.6	976.3	965.0	953.7	942.5	926.5	905.8	885.0	864.4	843.6	828.9
35°	939.1	926.2	913.3	900.3	887.3	869.7	847.3	825.0	802.7	780.3	764.3
37.5°	890.7	876.5	862.3	848.0	833.8	814.8	791.0	767.2	743.4	719.5	701.9
40°	856.9	841.6	826.4	811.1	795.9	776.0	751.4	726.8	702.1	677.5	659.4
42.5°	822.2	806.1	790.1	774.0	757.9	737.2	711.8	686.3	660.9	635.4	616.8
45°	767.8	750.7	733.7	716.7	699.7	677.9	651.3	624.6	597.9	571.3	553.2
47.5°	714.7	696.7	678.7	660.6	642.7	619.8	592.4	564.8	537.3	509.8	491.9
50°	676.4	658.3	640.3	622.2	604.2	581.3	553.4	525.4	497.5	469.6	452.0
52.5°	638.9	620.0	601.2	582.4	563.5	540.4	513.2	485.8	458.5	431.2	414.2
55°	583.8	564.0	544.2	524.4	504.6	481.0	453.6	426.1	398.7	371.3	356.1
57.5°	527.4	507.0	486.7	466.4	446.2	422.8	396.4	370.1	343.7	317.4	303.4
60°	489.0	468.6	448.4	428.1	407.8	384.5	358.3	332.2	306.1	279.9	267.0
62.5°	451.5	431.2	410.9	390.5	370.2	347.7	322.7	297.8	272.9	247.9	235.6
65°	394.2	373.6	353.0	332.4	311.9	290.2	267.3	244.5	221.6	198.8	190.2
67.5°	338.9	318.5	298.1	277.6	257.2	236.7	216.2	195.6	175.0	154.5	150.5
70°	300.5	280.7	260.9	241.1	221.3	202.6	185.1	167.6	150.1	132.5	130.0
72.5°	263.9	245.0	225.9	207.0	188.0	171.4	157.4	143.3	129.2	115.2	113.0
75°	210.3	192.4	174.7	156.9	139.1	126.0	117.3	108.7	100.0	91.4	89.6
77.5°	157.5	141.8	126.2	110.6	95.1	85.2	81.0	76.9	72.8	68.5	67.5
80°	124.5	111.6	98.7	85.7	72.8	65.0	62.4	59.9	57.3	54.8	53.8
82.5°	94.4	84.3	74.1	64.1	54.0	48.0	46.3	44.6	42.9	41.2	40.6
85°	49.2	43.8	38.5	33.1	27.8	24.8	24.0	23.2	22.5	21.7	21.7
87.5°	14.8	13.7	12.7	11.5	10.4	10.4	11.4	12.4	13.3	14.3	14.0
90°	1.0	3.7	6.4	9.0	11.7	15.4	20.3	25.2	30.1	35.0	34.5
92.5°	17.8	19.7	21.7	23.7	25.7	27.2	28.3	29.5	30.7	31.8	31.9
95°	52.0	54.2	56.5	58.6	60.9	62.3	62.7	63.1	63.5	64.0	64.0
97.5°	95.1	96.9	98.9	100.9	102.8	104.3	105.0	105.9	106.8	107.6	107.6
100°	127.0	128.8	130.6	132.3	134.1	135.3	136.0	136.6	137.3	138.0	138.0
102.5°	160.7	162.0	163.5	164.9	166.3	167.5	168.3	169.1	170.0	170.8	171.0
105°	215.0	215.7	216.4	217.1	217.7	218.3	218.7	219.1	219.6	220.0	220.5
107.5°	269.8	270.8	271.8	272.8	273.7	274.2	274.2	274.2	274.2	274.2	274.4
110°	305.1	306.3	307.7	309.0	310.4	311.1	311.1	311.1	311.1	311.1	311.1

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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	343.5	344.7	346.1	347.4	348.8	349.4	349.1	349.0	348.8	348.6	348.1
115°	400.0	401.4	402.7	404.1	405.4	405.8	405.4	404.9	404.5	404.1	403.8
117.5°	456.4	458.2	460.0	461.8	463.6	463.8	462.6	461.3	460.1	458.8	458.3
120°	494.0	495.8	497.7	499.4	501.2	501.2	499.4	497.7	495.8	494.0	494.0
122.5°	528.5	530.6	532.7	534.9	537.0	537.4	536.2	534.9	533.7	532.4	531.9
125°	582.0	584.1	586.1	588.1	590.0	590.7	590.0	589.4	588.8	588.1	587.4
127.5°	634.3	636.8	639.4	641.9	644.4	645.3	644.5	643.7	642.9	642.0	641.3
130°	667.1	669.9	672.9	675.7	678.6	679.8	679.4	679.0	678.6	678.1	677.6
132.5°	703.9	706.3	708.6	710.9	713.3	714.5	714.6	714.7	714.8	714.9	713.9
135°	753.1	755.5	758.0	760.4	762.8	764.3	764.7	765.2	765.7	766.1	765.9
137.5°	804.9	806.9	808.9	810.9	812.9	814.2	814.8	815.4	815.9	816.5	816.3
140°	836.1	838.1	840.1	842.1	844.1	845.7	846.8	847.9	849.0	850.1	850.1
142.5°	868.1	870.1	872.1	874.1	876.1	877.4	878.2	879.0	879.8	880.5	880.7
145°	914.1	915.7	917.2	918.8	920.3	921.8	923.1	924.5	925.7	927.1	927.3
147.5°	955.1	957.0	958.8	960.7	962.6	964.0	964.8	965.8	966.6	967.5	968.0
150°	983.1	984.5	985.8	987.1	988.4	989.5	990.5	991.4	992.2	993.2	993.8
152.5°	1007.9	1009.3	1010.6	1011.9	1013.2	1014.4	1015.5	1016.6	1017.7	1018.7	1019.6
155°	1045.2	1045.8	1046.5	1047.1	1047.8	1048.4	1049.1	1049.8	1050.5	1051.1	1052.2
157.5°	1076.9	1077.4	1077.8	1078.2	1078.7	1079.1	1079.5	1080.0	1080.3	1080.7	1082.3
160°	1096.1	1096.6	1097.0	1097.4	1097.9	1098.2	1098.5	1098.7	1098.9	1099.2	1100.4
162.5°	1113.7	1113.8	1113.9	1114.0	1114.1	1114.2	1114.5	1114.7	1114.9	1115.2	1116.6
165°	1137.1	1137.0	1136.7	1136.4	1136.3	1136.2	1136.2	1136.2	1136.2	1136.2	1137.7
167.5°	1156.8	1156.1	1155.4	1154.8	1154.1	1153.7	1153.7	1153.7	1153.6	1153.6	1155.1
170°	1167.2	1166.5	1165.8	1165.1	1164.5	1164.1	1163.8	1163.6	1163.4	1163.1	1164.7
172.5°	1174.3	1173.7	1173.0	1172.3	1171.6	1171.2	1171.0	1170.8	1170.5	1170.4	1171.9
175°	1183.2	1182.5	1181.8	1181.1	1180.5	1179.9	1179.5	1179.1	1178.6	1178.1	1179.7
177.5°	1186.7	1186.2	1185.7	1185.2	1184.6	1184.1	1183.8	1183.4	1183.1	1182.8	1183.8
180°	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5	1262.5
2.5°	1256.5	1258.5	1260.5	1261.4	1260.9	1260.5	1260.2	1259.7
5°	1246.5	1248.7	1251.0	1251.8	1251.0	1250.3	1249.5	1248.7
7.5°	1226.3	1226.9	1227.6	1227.3	1226.0	1224.7	1223.3	1222.0
10°	1206.1	1205.3	1204.5	1203.4	1201.9	1200.4	1198.9	1197.3
12.5°	1182.9	1181.6	1180.2	1178.3	1175.7	1173.2	1170.6	1168.1
15°	1139.7	1134.9	1130.1	1126.4	1123.9	1121.3	1118.8	1116.2
17.5°	1090.8	1085.0	1079.3	1074.3	1069.9	1065.6	1061.2	1056.8
20°	1056.7	1050.3	1044.0	1038.0	1032.4	1026.8	1021.2	1015.7
22.5°	1019.3	1011.1	1002.9	996.7	992.6	988.3	984.2	980.1
25°	957.2	946.8	936.3	929.2	925.4	921.6	917.8	914.0
27.5°	897.9	885.8	873.7	864.6	858.6	852.5	846.4	840.4
30°	856.1	843.2	830.2	820.3	813.5	806.6	799.8	792.9
32.5°	814.1	799.3	784.5	773.9	767.5	761.0	754.6	748.1
35°	748.3	732.4	716.4	705.6	700.0	694.4	688.8	683.2
37.5°	684.3	666.7	649.1	637.1	630.7	624.2	617.9	611.5
40°	641.4	623.5	605.4	593.1	586.5	579.9	573.3	566.7
42.5°	598.2	579.5	560.9	548.4	542.0	535.6	529.2	522.8
45°	535.2	517.2	499.1	487.1	481.0	474.9	468.8	462.7
47.5°	473.9	456.0	438.1	426.4	420.9	415.3	409.7	404.2
50°	434.5	417.0	399.5	388.1	382.7	377.4	372.0	366.7
52.5°	397.4	380.5	363.5	352.7	347.7	342.8	337.9	332.9
55°	340.9	325.6	310.4	300.3	295.5	290.7	285.9	281.0
57.5°	289.5	275.5	261.6	252.5	248.5	244.4	240.3	236.3
60°	254.0	241.1	228.1	219.6	215.5	211.5	207.4	203.4
62.5°	223.3	210.9	198.5	191.1	188.7	186.3	183.8	181.4
65°	181.5	172.9	164.3	159.5	158.8	158.1	157.3	156.5
67.5°	146.5	142.6	138.6	136.2	135.4	134.6	133.8	133.0
70°	127.4	124.9	122.3	120.6	119.6	118.6	117.5	116.5
72.5°	110.9	108.7	106.6	105.3	104.6	104.0	103.4	102.8
75°	87.8	86.1	84.3	83.3	83.0	82.7	82.5	82.2
77.5°	66.6	65.5	64.5	63.8	63.4	62.9	62.6	62.2
80°	52.8	51.8	50.8	50.3	50.3	50.3	50.3	50.3
82.5°	40.0	39.3	38.7	38.4	38.4	38.4	38.4	38.4
85°	21.7	21.7	21.7	21.7	21.7	21.7	21.7	21.7
87.5°	13.7	13.4	13.2	13.0	13.1	13.1	13.2	13.2
90°	34.1	33.7	33.2	33.1	33.3	33.6	33.8	34.0
92.5°	31.9	32.0	32.2	32.2	32.3	32.3	32.4	32.4
95°	64.0	64.0	64.0	63.8	63.4	62.9	62.4	62.0
97.5°	107.6	107.6	107.6	107.6	107.5	107.5	107.5	107.5
100°	138.0	138.0	138.0	137.9	137.7	137.5	137.2	137.0
102.5°	171.2	171.3	171.5	171.5	171.3	171.1	170.8	170.7
105°	220.9	221.4	221.8	222.1	222.1	222.1	222.1	222.1
107.5°	274.6	274.7	274.9	274.5	273.5	272.5	271.5	270.4
110°	311.1	311.1	311.1	310.7	310.0	309.4	308.7	308.1

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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	347.6	347.1	346.6	346.0	345.5	345.0	344.6	344.1
115°	403.6	403.4	403.1	402.7	402.1	401.4	400.7	400.0
117.5°	457.8	457.3	456.8	456.2	455.5	454.8	454.1	453.5
120°	494.0	494.0	494.0	493.7	493.1	492.4	491.7	491.0
122.5°	531.4	530.9	530.3	529.9	529.3	528.8	528.4	527.9
125°	586.8	586.1	585.4	585.0	584.7	584.5	584.3	584.1
127.5°	640.5	639.6	638.9	638.1	637.4	636.7	636.0	635.2
130°	677.2	676.7	676.3	675.6	674.8	673.8	673.0	672.1
132.5°	712.9	712.0	711.0	710.2	709.5	708.7	708.0	707.3
135°	765.7	765.4	765.2	764.7	764.1	763.4	762.8	762.1
137.5°	816.1	816.0	815.8	815.3	814.3	813.5	812.6	811.7
140°	850.1	850.1	850.1	849.6	848.8	847.9	847.0	846.1
142.5°	880.9	881.1	881.2	880.9	879.9	879.1	878.2	877.3
145°	927.6	927.8	928.0	927.6	926.8	925.9	925.0	924.1
147.5°	968.5	969.0	969.5	969.3	968.5	967.6	966.7	966.0
150°	994.5	995.1	995.8	995.8	995.1	994.5	993.8	993.2
152.5°	1020.5	1021.2	1022.1	1022.1	1021.2	1020.5	1019.6	1018.7
155°	1053.3	1054.5	1055.6	1055.8	1055.2	1054.5	1053.8	1053.1
157.5°	1083.7	1085.3	1086.8	1087.0	1085.9	1084.9	1083.8	1082.7
160°	1101.8	1103.1	1104.5	1104.7	1103.8	1102.9	1102.0	1101.1
162.5°	1118.2	1119.6	1121.2	1121.4	1120.3	1119.3	1118.2	1117.1
165°	1139.3	1140.8	1142.4	1142.5	1141.5	1140.4	1139.3	1138.2
167.5°	1156.7	1158.2	1159.8	1159.9	1158.8	1157.6	1156.5	1155.4
170°	1166.2	1167.8	1169.3	1169.5	1168.1	1166.8	1165.4	1164.2
172.5°	1173.5	1175.0	1176.6	1176.6	1175.4	1174.0	1172.7	1171.3
175°	1181.3	1182.8	1184.4	1184.5	1183.2	1181.8	1180.5	1179.1
177.5°	1184.9	1185.9	1187.0	1187.0	1185.9	1184.9	1183.8	1182.8
180°	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2	1185.2

(END OF REPORT)