

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: P243146

Luminaire Tested: **S122DR-H675D927-X4F0-XX-UDD-A-W**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P243146
TEST IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1802-639-58)
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DR-H675D927-X4F0-XX-UDD-A-W
Description: DEFINE 2 DIRECT RECESSED WITH ASYMMETRIC FLUSH DIFFUSER.
HIGH PERFORMANCE LIGHT ENGINE
Light Source: (184) 2700K CCT, 90 CRI LEDS
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 2217.6 lumens
Efficiency: N/A
Efficacy: 94.0 lumens/watt
Spacing Criteria (0/90/45): 1.09 / 1.16 / 1.24
Luminous Opening: Rectangular (W 3.88' x L: 0.15' x H: 0')
CIE Type: Direct

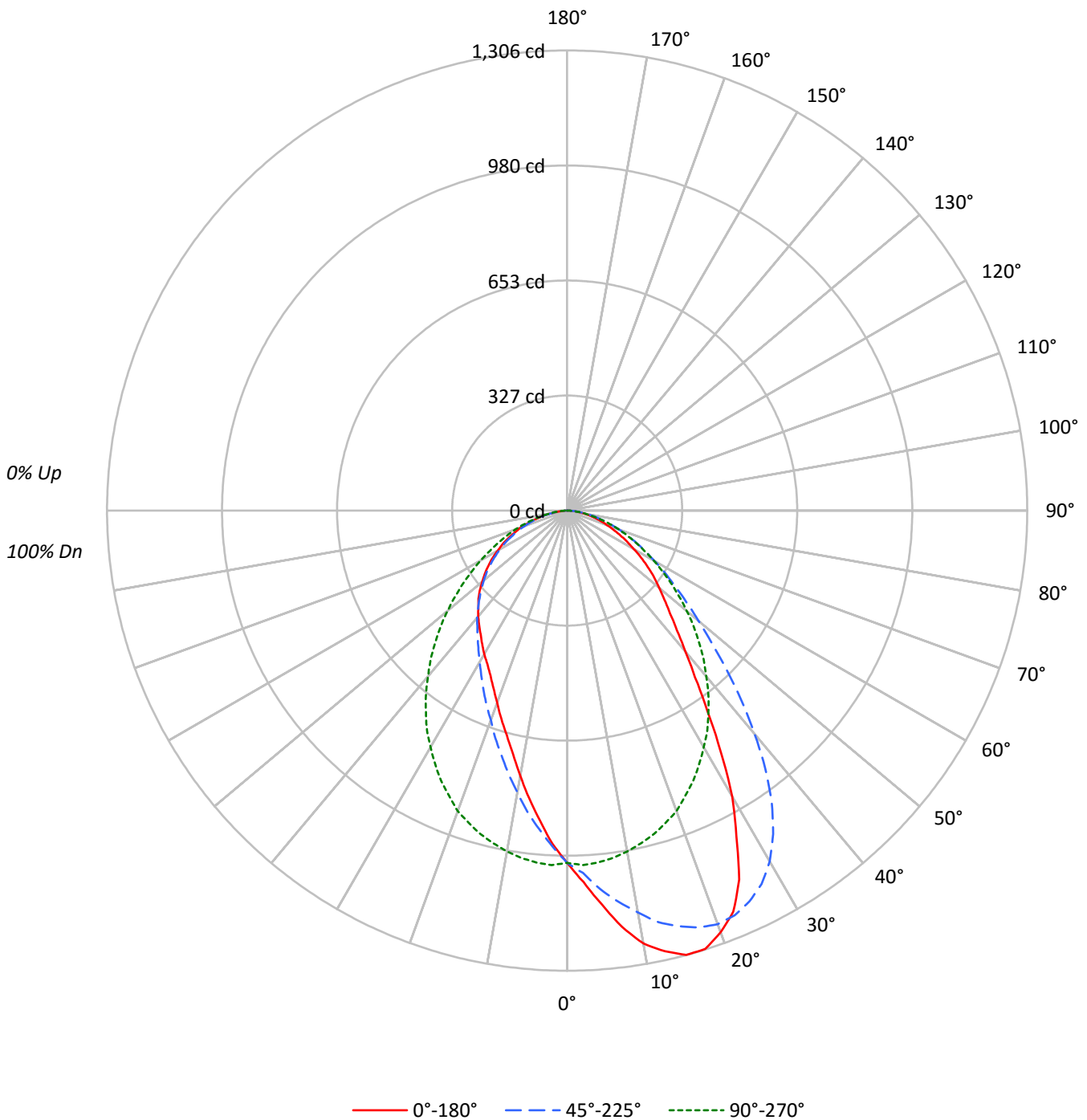
Input Watts (W): 23.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	110	106	102	98	107	103	100	97	99	96	94	95	93	91	92	90	88	86
2	101	93	87	82	98	92	86	81	88	83	79	85	81	77	82	79	76	74
3	93	83	76	70	90	82	75	69	79	73	68	76	71	67	73	69	66	63
4	86	74	66	60	83	73	66	60	71	64	59	68	63	58	66	61	57	55
5	79	67	59	52	77	66	58	52	64	57	52	62	56	51	60	55	51	49
6	73	61	52	46	72	60	52	46	58	51	46	57	50	45	55	49	45	43
7	68	56	47	41	67	55	47	41	53	46	41	52	46	41	51	45	40	39
8	64	51	43	37	62	50	43	37	49	42	37	48	41	37	47	41	37	35
9	60	47	39	34	58	46	39	34	45	38	34	44	38	34	43	38	33	32
10	56	44	36	31	55	43	36	31	42	35	31	41	35	31	40	35	31	29

AVERAGE LUMINANCE (cd/sqm):

	0°	90°	180°
0°	19036	19036	19036
5°	21444	19172	16889
10°	24136	19001	14781
15°	25746	18745	13027
20°	25820	18405	11757
25°	24285	17793	10836
30°	20615	17052	10348
35°	16117	16256	9959
40°	12950	15277	9767
45°	11139	14269	9584
50°	10105	13130	9317
55°	9312	11965	9066
60°	8370	10781	8651
65°	7536	9686	8234
70°	6716	8610	7702
75°	6042	7404	6749
80°	5276	5967	5276
85°	4524	4437	2907



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	95.2	4.3
10°-20°	273.7	12.3
20°-30°	398.0	17.9
30°-40°	426.9	19.3
40°-50°	382.6	17.3
50°-60°	305.0	13.8
60°-70°	206.3	9.3
70°-80°	105.2	4.7
80°-90°	24.7	1.1
90°-100°	0.0	0.0
100°-110°	0.0	0.0
110°-120°	0.0	0.0
120°-130°	0.0	0.0
130°-140°	0.0	0.0
140°-150°	0.0	0.0
150°-160°	0.0	0.0
160°-170°	0.0	0.0
170°-180°	0.0	0.0
0°-30°	766.9	34.6
0°-40°	1193.8	53.8
0°-60°	1881.4	84.8
0°-90°	2217.6	100.0
90°-120°	0.0	0.0
90°-150°	0.0	0.0
90°-180°	0.0	0.0
0°-180°	2217.6	100.0

CANDELA DISTRIBUTION:

	0°	45°	90°	135°	180°	Flux
0°	999	999	999	999	999	
5°	1122	1078	1003	908	883	111
15°	1306	1221	951	719	661	366
25°	1156	1224	847	562	516	520
35°	693	1013	699	443	428	439
45°	414	641	530	351	356	323
55°	280	372	360	265	273	250
65°	167	216	215	174	183	166
75°	82	102	101	87	92	88
85°	21	24	20	16	13	24
90°	0	0	0	0	0	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4
2.5°	1054.9	1058.2	1055.2	1054.1	1051.9	1051.2	1045.3	1040.4	1037.5	1029.4	1030.1
5°	1121.5	1128.8	1124.8	1124.4	1116.3	1111.1	1105.9	1098.5	1087.4	1078.5	1071.5
7.5°	1191.7	1188.0	1186.9	1182.9	1176.9	1169.5	1158.1	1147.3	1133.3	1120.3	1110.7
10°	1247.9	1246.8	1248.7	1238.3	1234.6	1223.2	1213.2	1196.5	1178.4	1158.1	1145.5
12.5°	1281.2	1284.6	1287.2	1283.1	1274.2	1270.9	1254.2	1230.9	1224.6	1196.9	1181.7
15°	1305.6	1307.1	1307.5	1303.1	1298.6	1290.1	1280.1	1265.3	1245.0	1220.9	1209.5
17.5°	1304.2	1303.8	1306.0	1303.4	1300.8	1298.3	1290.5	1279.0	1263.1	1240.6	1221.3
20°	1273.8	1280.5	1285.7	1286.8	1286.4	1287.9	1284.2	1276.8	1265.3	1249.1	1227.2
22.5°	1232.4	1229.8	1240.9	1240.2	1245.0	1256.1	1260.9	1257.9	1253.5	1243.1	1225.8
25°	1155.5	1158.1	1165.8	1174.0	1192.8	1199.5	1213.9	1225.0	1226.5	1223.9	1213.2
27.5°	1040.1	1058.6	1062.6	1073.4	1099.6	1121.5	1150.7	1168.1	1192.8	1195.1	1190.2
30°	937.3	936.5	942.8	962.0	986.1	1019.0	1056.7	1101.5	1130.0	1149.6	1156.6
32.5°	810.8	813.7	830.0	853.7	878.1	911.0	954.6	1009.4	1047.5	1088.2	1111.1
35°	693.1	702.4	717.9	734.2	760.8	806.0	854.4	899.9	958.3	1012.7	1049.7
37.5°	596.2	608.8	620.6	636.2	662.1	696.8	740.5	800.8	858.8	924.3	978.7
40°	520.8	525.6	533.7	548.9	566.3	601.0	645.1	690.2	753.1	828.1	899.5
42.5°	461.6	460.5	469.4	479.0	494.9	520.8	559.2	604.4	666.9	733.5	805.6
45°	413.5	413.9	417.6	427.6	440.1	454.9	484.5	527.1	574.4	640.6	717.2
47.5°	374.3	375.4	381.0	388.0	395.4	409.1	428.7	456.4	500.8	556.3	628.0
50°	341.0	342.9	346.6	351.7	357.3	366.9	381.7	403.5	438.7	485.6	550.7
52.5°	311.4	312.2	313.3	318.1	322.5	331.4	342.5	359.5	387.3	426.5	477.1
55°	280.4	279.6	282.2	286.3	290.3	296.6	308.1	321.8	341.4	372.5	414.3
57.5°	248.6	249.7	251.5	253.7	261.1	267.8	276.3	288.9	304.4	328.8	363.6
60°	219.7	219.7	221.9	224.9	229.7	234.1	242.3	253.7	267.4	286.3	315.5
62.5°	191.6	193.1	195.3	196.8	201.2	206.8	213.0	221.9	234.5	249.7	271.5
65°	167.2	166.4	168.7	171.6	174.9	178.6	185.7	193.1	202.7	216.4	234.5
67.5°	142.0	144.3	145.0	146.5	149.1	153.9	157.2	165.0	172.7	184.9	200.1
70°	120.6	122.1	123.2	125.0	127.2	129.5	132.8	139.1	146.8	155.3	166.1
72.5°	101.3	102.5	101.3	103.2	104.3	106.5	111.0	113.9	119.8	127.2	136.9
75°	82.1	82.9	82.5	84.3	84.7	86.9	89.1	91.7	98.4	102.5	109.1
77.5°	64.4	65.1	65.5	66.2	66.9	68.1	69.2	71.8	75.5	79.2	84.3
80°	48.1	48.1	49.2	49.6	49.9	50.7	52.5	53.3	55.9	57.0	61.0
82.5°	33.3	33.7	34.0	34.0	34.4	35.1	35.5	37.0	37.7	39.6	41.4
85°	20.7	21.1	21.1	21.1	22.2	21.8	21.8	22.6	23.7	23.7	24.4
87.5°	10.4	10.7	10.7	10.7	11.1	11.1	11.1	11.1	11.1	11.8	11.5
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°	95°	100°	105°
0°	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4
2.5°	1029.7	1029.4	1027.9	1021.2	1016.0	1009.4	1008.3	1007.2	997.9	987.9	985.0
5°	1066.0	1059.3	1050.1	1039.0	1027.9	1015.7	1008.6	1002.7	988.7	973.1	964.3
7.5°	1101.5	1088.5	1074.1	1056.7	1038.2	1018.6	1006.1	994.2	975.0	954.6	942.4
10°	1131.8	1114.4	1094.5	1071.5	1046.0	1019.4	1000.9	982.4	958.0	933.2	916.9
12.5°	1157.0	1134.8	1108.5	1077.4	1054.1	1017.5	991.6	967.2	940.2	908.0	890.3
15°	1176.2	1154.4	1118.9	1087.4	1056.7	1007.9	976.5	950.6	914.3	882.9	854.8
17.5°	1199.5	1168.4	1133.3	1088.2	1054.1	998.3	962.8	929.1	889.9	852.9	821.9
20°	1209.9	1177.3	1139.6	1089.3	1046.0	987.9	940.6	908.0	860.7	818.2	783.0
22.5°	1211.3	1180.3	1139.2	1085.9	1031.9	972.8	918.4	875.9	828.5	783.4	743.8
25°	1205.0	1175.5	1132.9	1080.0	1016.4	956.5	895.8	846.6	791.9	745.3	705.0
27.5°	1188.0	1164.0	1123.7	1067.1	1000.5	931.3	865.1	811.5	757.5	704.6	666.1
30°	1160.7	1144.8	1110.0	1050.1	980.2	904.0	837.8	775.3	716.8	667.2	625.8
32.5°	1125.5	1117.8	1088.9	1029.7	959.4	874.0	804.8	740.5	676.9	629.9	587.4
35°	1080.8	1084.8	1060.4	1006.8	933.2	843.7	766.4	699.1	636.9	587.0	547.8
37.5°	1022.7	1042.7	1027.1	976.8	899.5	813.0	726.1	658.4	593.3	545.2	510.8
40°	957.6	992.7	985.3	943.2	863.3	777.1	687.2	614.4	550.7	505.2	472.3
42.5°	881.0	932.1	940.2	902.1	827.4	732.3	643.6	573.3	511.9	467.1	435.7
45°	795.2	858.5	885.8	855.9	785.6	689.1	598.8	529.7	469.0	430.9	404.6
47.5°	709.0	785.2	822.2	807.8	736.8	642.8	554.4	486.8	429.4	396.1	371.4
50°	624.0	705.7	759.7	750.1	688.7	598.8	509.7	443.1	390.6	359.9	338.8
52.5°	549.3	626.6	685.4	690.2	635.1	548.5	462.3	400.6	355.8	328.1	310.3
55°	475.7	547.4	611.8	623.6	578.8	495.6	418.7	360.3	319.6	296.6	282.2
57.5°	409.8	474.9	538.9	559.6	523.4	448.3	371.7	320.3	285.2	267.4	254.8
60°	354.0	412.8	467.9	489.0	464.2	395.8	328.8	283.0	253.7	237.8	227.8
62.5°	305.1	350.6	399.5	422.8	406.1	346.6	288.1	247.4	223.8	210.1	202.3
65°	261.1	296.3	334.7	361.7	343.2	298.9	250.0	214.9	194.9	182.3	176.8
67.5°	220.4	249.7	280.4	301.8	292.6	252.3	211.2	183.8	167.2	157.6	152.4
70°	183.5	205.3	230.1	246.7	240.0	209.0	176.4	154.6	140.6	133.9	129.5
72.5°	150.5	164.6	183.5	197.1	190.1	168.3	145.0	127.6	117.2	109.5	106.2
75°	119.5	131.7	145.0	154.2	148.7	132.4	113.9	100.6	93.6	88.8	86.6
77.5°	90.6	100.2	109.5	113.9	111.3	99.5	86.9	76.6	70.6	67.7	65.1
80°	65.1	70.6	76.9	81.0	79.5	71.4	62.5	54.4	51.8	48.1	47.3
82.5°	43.6	48.1	49.6	51.4	50.3	46.6	40.3	35.5	33.3	31.4	31.1
85°	25.9	27.0	28.9	28.9	27.7	25.2	21.8	20.3	18.1	17.8	16.6
87.5°	11.5	11.5	11.5	11.5	11.5	10.7	9.2	8.5	7.8	7.4	7.0
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	110°	115°	120°	125°	130°	135°	140°	145°	150°	155°	160°
0°	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4	999.4
2.5°	982.4	978.7	973.5	967.6	962.4	954.3	951.7	951.7	953.5	951.3	949.5
5°	956.9	949.5	942.1	930.6	921.0	908.0	904.3	900.6	900.3	896.6	891.8
7.5°	929.5	918.4	903.2	887.0	876.6	862.5	854.8	852.6	845.5	838.9	831.1
10°	897.7	880.7	862.5	847.0	830.7	812.6	803.4	797.1	790.0	781.9	776.4
12.5°	859.2	840.0	823.3	805.2	791.5	766.0	763.0	754.9	740.9	728.6	724.2
15°	835.5	801.9	783.0	766.4	745.7	719.4	709.8	700.9	687.6	679.8	673.5
17.5°	793.7	763.4	739.7	717.6	697.6	677.2	662.8	655.4	644.7	638.0	631.7
20°	755.6	722.7	697.9	672.1	651.3	632.9	620.6	611.4	605.9	599.2	592.9
22.5°	717.2	682.8	659.1	632.9	608.4	597.3	582.9	575.2	567.8	562.6	555.9
25°	672.4	645.1	615.5	595.1	573.7	562.2	548.5	541.1	535.2	529.3	526.0
27.5°	632.5	604.7	577.4	557.0	538.9	527.8	519.3	512.3	504.9	500.4	497.8
30°	591.1	565.5	541.5	521.9	507.8	495.6	490.5	483.8	478.2	476.4	472.3
32.5°	554.1	525.6	506.4	488.6	476.8	468.3	464.6	457.5	456.4	454.6	452.4
35°	517.1	492.7	474.2	459.0	449.0	442.7	437.9	436.1	434.2	432.4	430.5
37.5°	480.5	461.2	443.8	431.6	423.5	418.7	417.6	413.9	413.5	410.9	410.9
40°	447.5	427.9	415.7	406.1	399.5	397.2	394.3	393.5	392.4	391.7	393.2
42.5°	414.6	401.3	391.0	381.0	375.8	373.9	373.2	372.1	371.4	373.6	374.3
45°	383.9	372.5	363.6	356.6	353.6	351.4	351.4	352.5	352.1	353.2	353.2
47.5°	355.4	345.1	337.7	335.1	331.4	330.7	331.0	330.7	332.5	334.0	335.5
50°	328.4	319.2	313.3	310.7	310.0	308.8	310.3	311.1	312.2	313.7	314.4
52.5°	298.5	294.0	290.3	287.8	287.4	287.8	287.4	290.0	291.1	293.3	292.9
55°	273.0	269.6	267.0	264.1	263.7	264.8	265.6	267.8	269.3	271.1	270.7
57.5°	248.9	246.3	243.4	242.6	242.3	242.6	246.0	245.6	247.8	249.3	250.0
60°	222.7	220.8	218.2	218.2	219.3	220.1	221.2	223.0	225.3	224.9	227.5
62.5°	198.6	196.4	195.7	196.8	196.4	198.3	199.4	199.4	202.3	203.4	204.2
65°	174.6	173.8	172.7	172.7	173.8	174.2	176.1	177.2	178.3	180.5	182.3
67.5°	152.0	150.2	150.2	149.4	150.9	152.0	153.1	154.6	155.3	157.9	159.0
70°	128.3	127.6	127.2	128.0	128.0	129.1	130.9	132.8	134.3	134.6	136.9
72.5°	105.4	105.4	105.4	106.5	107.3	108.4	108.7	110.2	112.4	112.8	113.9
75°	84.7	85.1	84.7	85.1	85.4	86.6	87.3	88.8	90.2	90.6	91.4
77.5°	65.5	64.7	64.0	65.1	65.8	68.1	67.7	68.4	69.9	69.2	69.9
80°	45.9	47.0	45.5	47.7	47.7	47.3	48.1	49.2	48.8	49.6	48.8
82.5°	31.1	30.0	30.0	31.1	31.4	30.3	31.1	31.4	31.8	31.1	30.7
85°	17.0	16.6	17.4	16.3	16.6	15.9	15.9	15.2	15.9	15.2	14.4
87.5°	6.3	5.9	6.3	5.2	4.8	4.4	4.1	4.1	3.3	3.3	3.3
90°	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0



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CANDELA DISTRIBUTION (continued):

	165°	170°	175°	180°
0°	999.4	999.4	999.4	999.4
2.5°	952.1	948.0	946.1	947.6
5°	886.6	887.7	881.0	883.3
7.5°	830.0	825.2	826.7	824.1
10°	770.1	767.5	763.4	764.2
12.5°	729.8	712.4	711.3	707.9
15°	673.2	663.6	661.3	660.6
17.5°	628.0	619.9	622.9	620.6
20°	587.4	587.7	582.9	580.0
22.5°	551.5	550.7	548.9	545.9
25°	521.1	521.1	516.7	515.6
27.5°	493.4	494.1	490.5	490.5
30°	472.7	470.1	469.7	470.5
32.5°	452.0	449.0	449.4	449.0
35°	429.8	430.5	429.4	428.3
37.5°	410.9	410.9	410.9	409.8
40°	392.4	393.2	392.1	392.8
42.5°	373.9	374.3	374.3	372.8
45°	355.4	355.1	354.3	355.8
47.5°	336.2	336.2	335.8	336.6
50°	315.1	315.9	314.8	314.4
52.5°	293.7	294.0	293.7	294.4
55°	271.9	271.9	272.2	273.0
57.5°	249.3	251.9	250.0	251.5
60°	227.1	227.5	227.8	227.1
62.5°	206.0	205.6	206.0	207.1
65°	183.1	183.8	183.5	182.7
67.5°	160.5	159.8	160.9	159.8
70°	136.5	138.0	136.9	138.3
72.5°	114.7	114.3	115.0	113.2
75°	91.7	91.7	92.1	91.7
77.5°	70.3	69.5	69.2	68.1
80°	48.5	48.5	47.0	48.1
82.5°	29.6	30.0	30.3	28.1
85°	14.1	14.1	13.7	13.3
87.5°	3.0	3.0	3.3	3.7
90°	0.0	0.0	0.0	0.0

(END OF REPORT)