

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: P332814-940

Luminaire Tested: **S124DIW-S1020D770U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332814-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-10,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S124DIW-S1020D770U940-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1020 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 770 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6129.8 lumens
Efficiency: N/A
Efficacy: 114.4 lumens/watt
Spacing Criteria (0/90/45): 1.23 / 1.28 / 1.39
Luminous Opening: Rectangular w/ Sides (W: 0.33' x L: 4' x H: 0.08')
CIE Type: General Diffuse

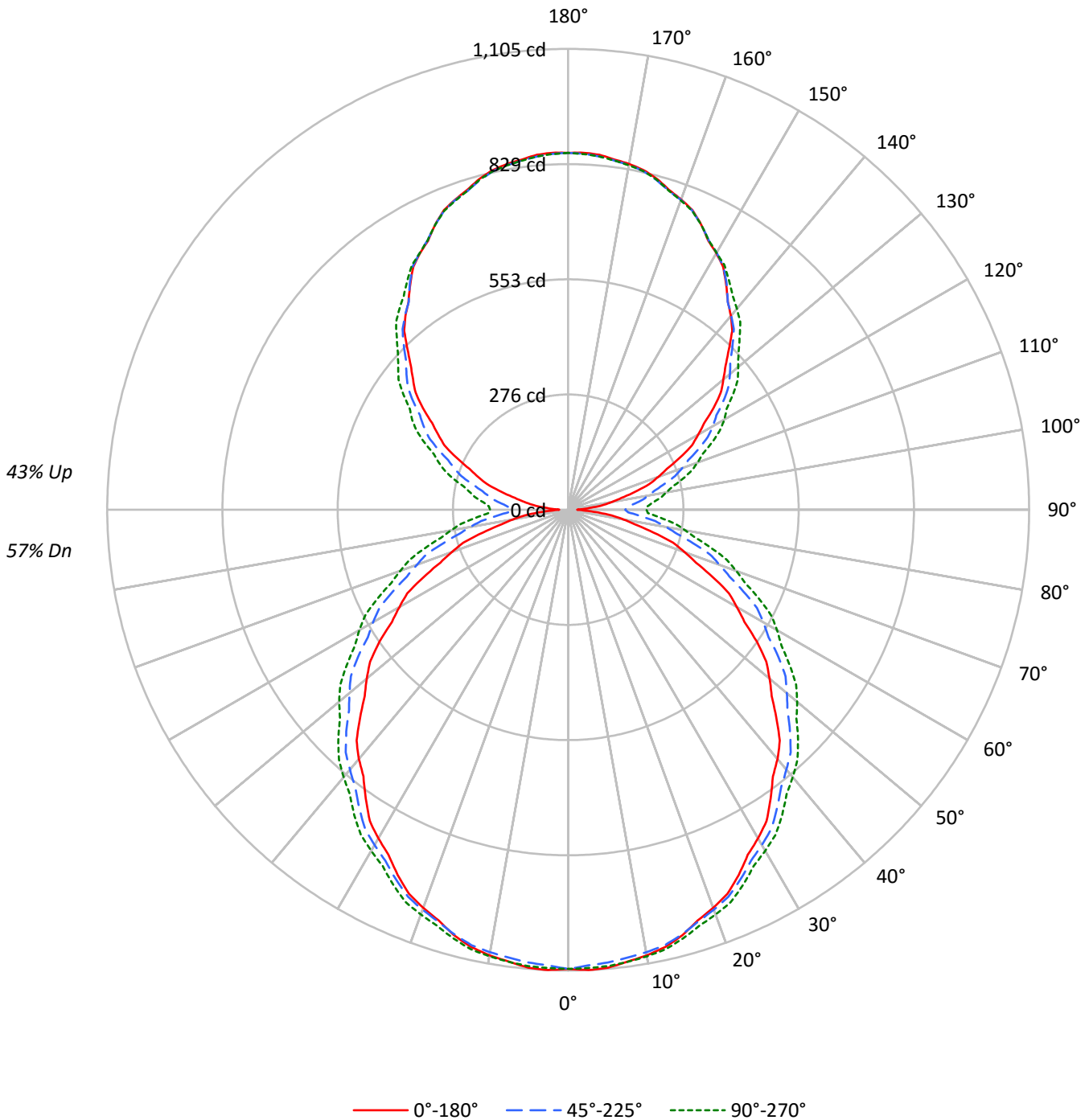
Input Watts (W): 53.6
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	62	62	62	57
1	98	93	89	85	91	87	83	80	75	72	69	63	61	59	53	52	50	45
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	41	37
3	81	71	63	56	75	66	59	53	57	51	47	48	44	41	40	37	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	34	36	32	30	26
5	68	55	47	40	62	52	44	38	45	39	34	38	33	30	32	29	26	22
6	62	50	41	35	57	46	39	33	40	34	29	34	30	26	29	25	22	19
7	57	45	36	31	53	42	34	29	36	30	26	31	26	23	27	23	20	17
8	53	40	32	27	49	38	31	26	33	27	23	29	24	20	24	20	18	15
9	50	37	29	24	46	35	28	23	30	25	20	26	22	18	22	19	16	14
10	46	34	26	21	43	32	25	20	28	22	18	24	20	16	21	17	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8888	8888	8888
5°	8916	8686	8711
10°	8861	8544	8538
15°	8782	8380	8334
20°	8662	8198	8135
25°	8527	7995	7918
30°	8381	7793	7693
35°	8216	7585	7497
40°	8083	7388	7292
45°	7887	7207	7117
50°	7721	6996	6931
55°	7549	6799	6714
60°	7282	6547	6515
65°	6989	6278	6271
70°	6633	5968	5986
75°	6136	5628	5730
80°	5588	5302	5476
85°	4893	5013	5328



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	104.3	1.7
10°-20°	298.7	4.9
20°-30°	451.7	7.4
30°-40°	546.5	8.9
40°-50°	577.7	9.4
50°-60°	543.7	8.9
60°-70°	451.1	7.4
70°-80°	316.9	5.2
80°-90°	181.7	3.0
90°-100°	162.8	2.7
100°-110°	245.9	4.0
110°-120°	336.6	5.5
120°-130°	404.0	6.6
130°-140°	433.1	7.1
140°-150°	415.6	6.8
150°-160°	347.3	5.7
160°-170°	231.1	3.8
170°-180°	80.9	1.3
0°-30°	854.6	13.9
0°-40°	1401.1	22.9
0°-60°	2522.6	41.2
0°-90°	3472.3	56.6
90°-120°	745.4	12.2
90°-150°	1998.1	32.6
90°-180°	2657.0	43.3
0°-180°	6129.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1101	1101	1101	1101	1101	
5°	1102	1098	1090	1099	1098	105
15°	1057	1058	1054	1065	1064	298
25°	967	974	978	991	992	445
35°	846	860	873	889	894	529
45°	705	729	752	772	779	545
55°	552	579	615	639	647	492
65°	382	422	464	493	504	379
75°	212	258	309	343	355	226
85°	65	117	173	208	222	70
90°	22	78	137	175	188	16
95°	56	103	158	192	204	57
105°	165	192	239	270	284	176
115°	296	309	345	371	380	292
125°	425	426	454	475	482	379
135°	544	549	557	575	581	421
145°	660	661	662	668	672	413
155°	754	754	754	756	754	347
165°	821	819	818	822	819	231
175°	854	851	850	854	850	81
180°	856	856	856	856	856	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1104.9	1104.3	1103.6	1103.0	1102.2	1101.1	1099.3	1097.6	1095.8	1094.0	1095.6
5°	1102.2	1101.4	1100.5	1099.7	1098.9	1097.5	1095.6	1093.7	1091.8	1089.8	1092.1
7.5°	1092.8	1092.3	1091.8	1091.4	1090.8	1089.8	1088.2	1086.6	1085.0	1083.4	1085.9
10°	1084.9	1084.7	1084.4	1084.1	1083.9	1083.0	1081.6	1080.3	1078.9	1077.5	1080.0
12.5°	1074.1	1074.1	1074.0	1073.9	1073.9	1073.4	1072.5	1071.5	1070.6	1069.6	1071.9
15°	1056.6	1056.9	1057.1	1057.4	1057.7	1057.4	1056.6	1055.8	1054.9	1054.1	1056.6
17.5°	1032.7	1033.5	1034.3	1035.1	1036.0	1036.3	1036.1	1036.0	1035.8	1035.6	1038.1
20°	1015.9	1016.7	1017.5	1018.3	1019.2	1019.8	1020.0	1020.3	1020.6	1020.8	1023.6
22.5°	997.1	998.2	999.3	1000.3	1001.3	1002.1	1002.6	1003.1	1003.5	1004.1	1006.8
25°	966.6	968.2	969.8	971.5	973.1	974.4	975.2	976.1	976.9	977.7	980.7
27.5°	932.6	935.0	937.4	939.8	942.2	944.1	945.3	946.6	947.8	949.0	951.9
30°	909.9	912.0	914.3	916.4	918.6	920.7	922.6	924.5	926.4	928.4	931.4
32.5°	885.2	887.9	890.5	893.1	895.7	898.1	900.3	902.4	904.6	906.7	910.1
35°	845.8	849.1	852.3	855.6	858.9	861.9	864.7	867.4	870.1	872.9	876.7
37.5°	806.0	809.9	813.6	817.4	821.2	824.7	828.1	831.5	835.0	838.4	842.2
40°	780.4	784.0	787.6	791.1	794.7	798.3	802.2	806.0	809.9	813.7	817.8
42.5°	750.8	754.8	758.8	762.9	766.8	771.1	775.5	780.1	784.5	789.1	793.6
45°	705.2	710.4	715.6	720.9	726.0	731.2	736.5	741.6	746.8	752.1	756.7
47.5°	661.6	666.9	672.3	677.7	683.1	688.8	694.7	700.8	706.9	712.8	717.6
50°	630.0	636.1	642.0	648.1	654.1	660.1	666.2	672.2	678.2	684.2	689.7
52.5°	598.4	604.5	610.5	616.5	622.6	629.0	635.9	642.8	649.7	656.7	662.1
55°	552.3	558.1	563.8	569.6	575.3	582.3	590.6	598.8	607.0	615.2	620.7
57.5°	500.8	507.9	515.1	522.2	529.3	536.9	545.1	553.3	561.4	569.6	576.1
60°	467.3	474.4	481.5	488.7	495.8	503.8	512.9	521.9	530.9	540.0	546.3
62.5°	434.7	442.5	450.3	458.1	465.8	474.2	483.3	492.3	501.4	510.4	516.7
65°	382.2	390.9	399.8	408.5	417.2	426.3	435.6	445.0	454.2	463.6	470.4
67.5°	331.6	341.0	350.3	359.6	368.9	378.5	388.5	398.5	408.5	418.5	425.4
70°	297.1	306.5	315.8	325.0	334.4	344.3	354.6	365.1	375.5	385.9	393.3
72.5°	263.6	273.1	282.7	292.2	301.8	312.0	323.1	334.1	345.3	356.3	363.5
75°	212.0	222.2	232.3	242.5	252.6	263.4	274.9	286.4	297.9	309.4	317.1
77.5°	164.0	174.7	185.5	196.2	207.0	218.3	230.4	242.5	254.5	266.5	274.3
80°	134.4	145.3	156.3	167.3	178.3	189.8	201.8	213.8	225.9	237.9	246.2
82.5°	104.8	116.2	127.6	139.0	150.3	162.1	174.2	186.2	198.3	210.4	218.7
85°	65.4	76.9	88.4	99.9	111.4	123.3	135.6	147.9	160.2	172.6	180.8
87.5°	36.9	48.4	59.9	71.4	82.9	94.8	107.0	119.2	131.4	143.7	151.9
90°	21.7	34.3	46.9	59.5	72.1	84.8	97.7	110.7	123.7	136.6	145.4
92.5°	32.9	44.6	56.4	68.0	79.8	91.9	104.5	117.2	129.7	142.3	150.6
95°	55.7	66.1	76.5	86.9	97.2	108.5	120.7	133.0	145.3	157.6	165.4
97.5°	83.9	92.7	101.6	110.4	119.2	129.8	142.1	154.5	166.8	179.1	186.9
100°	106.2	114.0	121.6	129.4	137.1	147.0	158.9	170.9	183.0	194.9	202.7
102.5°	130.5	137.1	143.6	150.0	156.5	165.6	177.3	189.0	200.6	212.2	219.9
105°	165.3	170.9	176.6	182.2	187.8	196.0	206.7	217.4	228.2	238.9	246.2
107.5°	204.1	208.7	213.5	218.1	222.7	230.0	239.6	249.3	259.0	268.7	275.8
110°	229.6	233.7	237.8	242.0	246.1	252.9	262.3	271.8	281.2	290.7	296.7



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	256.1	259.6	263.1	266.5	269.9	276.2	285.0	293.9	302.8	311.7	317.7
115°	296.0	298.5	300.9	303.4	305.9	311.3	319.8	328.2	336.7	345.2	351.1
117.5°	334.7	336.2	337.8	339.4	341.0	345.8	353.7	361.7	369.7	377.6	382.8
120°	359.5	361.0	362.4	363.8	365.2	369.7	377.2	384.7	392.2	399.7	404.4
122.5°	386.6	387.0	387.4	387.8	388.2	392.0	399.3	406.6	413.9	421.2	426.2
125°	425.2	424.9	424.6	424.4	424.1	427.3	434.0	440.7	447.4	454.1	459.1
127.5°	461.1	461.3	461.4	461.5	461.7	464.3	469.4	474.4	479.4	484.5	489.1
130°	485.5	485.6	485.8	486.0	486.2	488.5	492.8	497.2	501.6	506.0	510.6
132.5°	511.5	511.5	511.6	511.6	511.7	513.4	516.7	520.1	523.5	526.9	531.4
135°	544.5	545.4	546.3	547.2	548.0	549.4	551.3	553.2	555.2	557.1	561.2
137.5°	581.8	581.9	582.1	582.2	582.4	583.0	584.2	585.3	586.6	587.7	591.3
140°	606.7	606.7	606.7	606.8	606.8	606.9	607.2	607.5	607.8	608.1	611.4
142.5°	628.5	628.7	628.9	629.2	629.5	629.5	629.1	628.8	628.6	628.3	631.4
145°	659.8	660.0	660.4	660.7	661.0	661.2	661.4	661.6	661.6	661.8	663.3
147.5°	691.0	691.4	691.9	692.2	692.7	692.9	692.8	692.6	692.5	692.4	692.5
150°	710.1	710.3	710.7	711.0	711.3	711.5	711.5	711.5	711.5	711.5	711.5
152.5°	727.0	727.4	727.6	727.9	728.3	728.4	728.5	728.7	728.8	728.9	729.2
155°	754.5	754.5	754.5	754.5	754.5	754.4	754.2	754.1	753.9	753.9	754.4
157.5°	777.8	777.5	777.2	776.9	776.7	776.6	776.5	776.5	776.5	776.4	776.9
160°	791.6	791.4	791.2	791.1	790.9	790.8	790.7	790.5	790.3	790.2	790.7
162.5°	804.2	803.9	803.4	803.1	802.7	802.5	802.3	802.2	802.0	801.8	802.6
165°	821.4	820.9	820.5	820.0	819.6	819.2	818.9	818.6	818.3	818.0	818.9
167.5°	834.4	833.8	833.2	832.6	832.0	831.6	831.7	831.7	831.7	831.8	832.7
170°	841.9	841.1	840.3	839.6	838.9	838.6	838.7	838.9	839.0	839.2	840.1
172.5°	847.1	846.5	845.9	845.3	844.6	844.4	844.4	844.5	844.5	844.5	845.5
175°	854.4	853.6	852.9	852.2	851.5	851.0	850.9	850.7	850.6	850.4	851.5
177.5°	856.8	856.2	855.6	855.1	854.4	854.2	854.2	854.2	854.2	854.2	855.0
180°	855.7	855.7	855.7	855.7	855.7	855.7	855.7	855.7	855.7	855.7	855.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0	1101.0
2.5°	1097.2	1098.7	1100.2	1100.8	1100.6	1100.4	1100.2	1100.0
5°	1094.2	1096.4	1098.7	1099.6	1099.3	1099.0	1098.8	1098.5
7.5°	1088.4	1090.8	1093.3	1094.4	1094.1	1093.9	1093.6	1093.3
10°	1082.4	1084.9	1087.4	1088.5	1088.2	1088.0	1087.7	1087.4
12.5°	1074.2	1076.4	1078.6	1079.8	1079.7	1079.6	1079.6	1079.5
15°	1059.1	1061.5	1064.0	1065.1	1064.8	1064.5	1064.3	1064.0
17.5°	1040.6	1043.2	1045.7	1046.9	1046.6	1046.4	1046.2	1046.0
20°	1026.3	1029.0	1031.8	1033.1	1033.1	1033.1	1033.1	1033.1
22.5°	1009.5	1012.3	1015.0	1016.6	1017.1	1017.4	1017.9	1018.3
25°	983.7	986.7	989.7	991.4	991.7	991.9	992.2	992.5
27.5°	954.7	957.4	960.3	961.8	962.2	962.5	962.8	963.1
30°	934.4	937.4	940.4	942.2	942.7	943.3	943.9	944.4
32.5°	913.6	917.0	920.5	922.5	923.0	923.5	924.1	924.7
35°	880.6	884.4	888.2	890.6	891.4	892.2	893.0	893.9
37.5°	846.1	850.1	853.9	856.3	857.2	858.1	858.9	859.8
40°	821.9	826.0	830.2	832.8	833.8	834.9	836.1	837.1
42.5°	798.2	802.7	807.3	809.9	810.8	811.7	812.6	813.4
45°	761.3	766.1	770.7	773.7	775.1	776.4	777.8	779.2
47.5°	722.5	727.3	732.2	735.4	737.0	738.7	740.3	742.0
50°	695.2	700.7	706.1	709.7	711.4	713.0	714.6	716.3
52.5°	667.6	673.1	678.6	682.1	683.8	685.4	687.1	688.7
55°	626.2	631.7	637.1	640.7	642.3	644.0	645.6	647.3
57.5°	582.6	589.2	595.7	599.7	601.2	602.8	604.3	605.8
60°	552.6	558.9	565.2	569.4	571.7	573.8	576.0	578.2
62.5°	523.0	529.3	535.7	539.8	542.1	544.2	546.4	548.7
65°	477.2	484.1	491.0	495.5	497.7	499.9	502.0	504.3
67.5°	432.4	439.3	446.3	450.8	453.0	455.1	457.3	459.4
70°	400.6	408.0	415.4	420.2	422.0	424.0	425.9	427.8
72.5°	370.7	377.8	385.0	389.7	391.8	394.0	396.1	398.2
75°	324.8	332.4	340.1	345.2	347.7	350.2	352.6	355.1
77.5°	282.1	289.9	297.7	302.9	305.5	308.2	310.8	313.4
80°	254.4	262.6	270.8	276.0	278.2	280.4	282.6	284.8
82.5°	227.2	235.7	244.1	249.5	251.9	254.3	256.7	259.1
85°	189.0	197.2	205.5	211.0	213.7	216.4	219.2	221.9
87.5°	160.0	168.1	176.2	181.5	184.0	186.5	188.9	191.4
90°	154.3	163.1	171.9	177.5	180.0	182.5	185.0	187.5
92.5°	158.8	167.1	175.4	180.7	183.1	185.4	187.8	190.1
95°	173.3	181.1	189.0	194.0	196.5	199.0	201.4	203.9
97.5°	194.6	202.3	210.0	215.0	217.4	219.7	222.1	224.4
100°	210.4	218.0	225.7	230.5	232.5	234.3	236.3	238.2
102.5°	227.5	235.1	242.6	247.5	249.8	252.1	254.3	256.5
105°	253.4	260.7	268.0	273.0	275.6	278.3	280.9	283.6
107.5°	282.9	290.1	297.3	301.8	303.7	305.7	307.6	309.6
110°	302.6	308.7	314.7	319.0	321.6	324.3	326.9	329.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	323.7	329.8	335.7	339.9	342.2	344.5	346.8	349.0
115°	357.0	362.8	368.7	372.6	374.3	376.0	377.8	379.6
117.5°	388.0	393.2	398.4	402.0	403.9	405.7	407.7	409.6
120°	409.2	413.9	418.7	422.3	424.7	427.2	429.7	432.2
122.5°	431.2	436.1	441.1	444.3	445.8	447.3	448.7	450.1
125°	464.0	468.9	473.8	476.9	478.2	479.6	480.9	482.3
127.5°	493.7	498.4	503.0	506.1	507.7	509.3	511.0	512.6
130°	515.2	519.9	524.5	527.4	528.4	529.5	530.6	531.6
132.5°	535.7	540.2	544.6	547.5	548.9	550.4	551.7	553.1
135°	565.3	569.4	573.5	576.1	577.3	578.5	579.7	580.9
137.5°	594.9	598.5	602.2	604.7	606.2	607.6	609.0	610.6
140°	614.8	618.3	621.7	624.0	625.3	626.4	627.7	628.9
142.5°	634.5	637.6	640.7	642.7	643.9	645.0	646.1	647.3
145°	664.8	666.3	667.8	668.9	669.5	670.2	670.8	671.5
147.5°	692.6	692.7	692.8	693.2	693.9	694.6	695.4	696.2
150°	711.5	711.5	711.5	711.4	711.2	711.1	711.0	710.8
152.5°	729.6	730.0	730.3	730.3	730.0	729.6	729.2	728.8
155°	755.0	755.5	756.2	756.2	755.5	755.0	754.4	753.9
157.5°	777.3	777.8	778.2	778.2	777.7	777.2	776.7	776.1
160°	791.1	791.6	792.0	791.8	791.1	790.3	789.6	788.9
162.5°	803.4	804.2	805.0	805.0	804.3	803.6	802.9	802.1
165°	819.7	820.6	821.5	821.7	821.1	820.5	819.9	819.3
167.5°	833.6	834.4	835.3	835.3	834.4	833.5	832.6	831.6
170°	841.0	841.9	842.8	842.7	841.6	840.6	839.5	838.6
172.5°	846.5	847.5	848.5	848.5	847.4	846.4	845.3	844.4
175°	852.5	853.5	854.5	854.5	853.5	852.5	851.5	850.4
177.5°	855.8	856.6	857.5	857.4	856.4	855.5	854.5	853.6
180°	855.7	855.7	855.7	855.7	855.7	855.7	855.7	855.7

(END OF REPORT)