

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: P332143-927

Luminaire Tested: **S123DIW-S560D1320U927-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332143-927
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-S560D1320U927-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5464.1 lumens
Efficiency: N/A
Efficacy: 101.6 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: Semi-Indirect

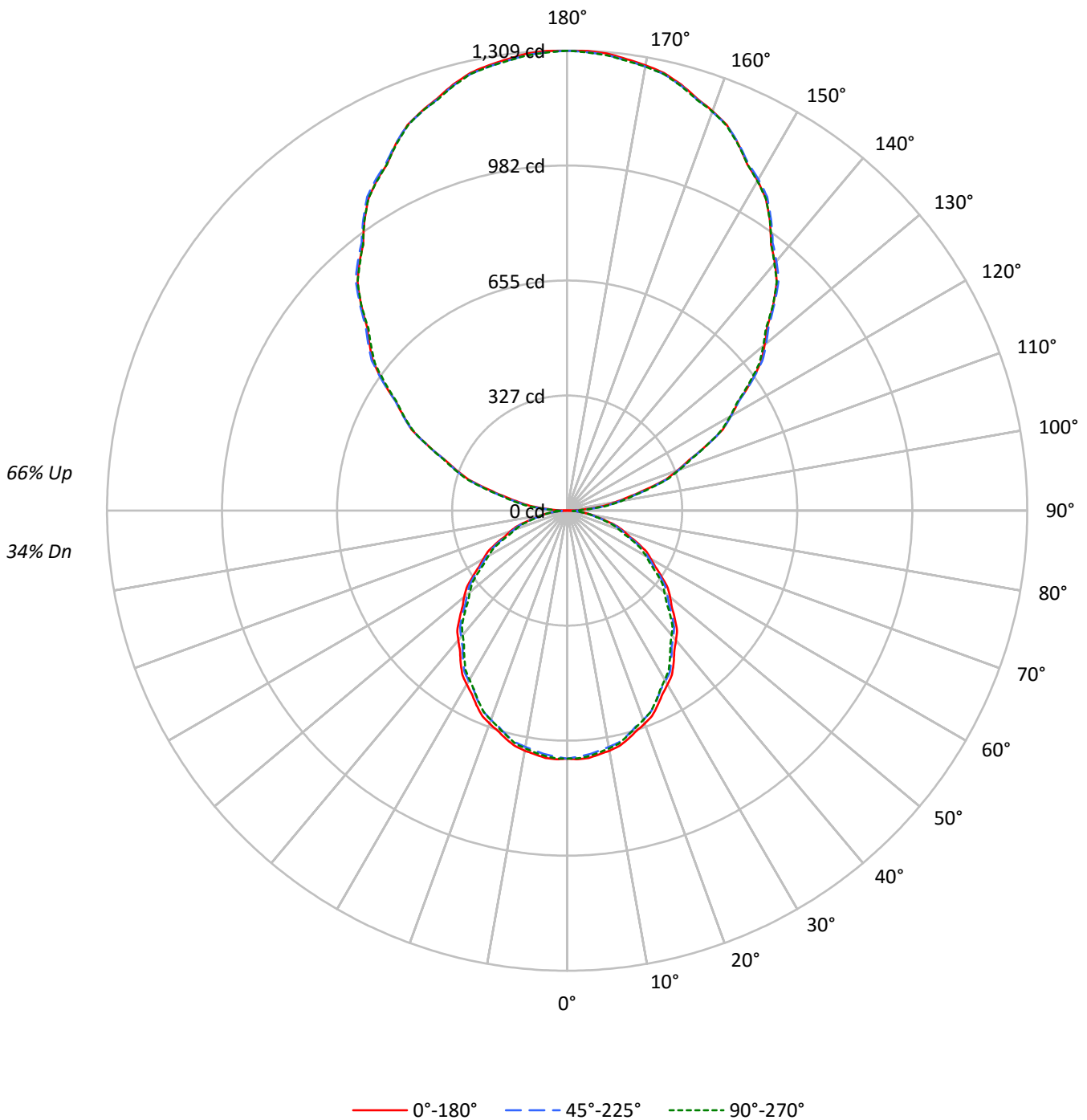
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	47	36	35	35	28
2	86	78	72	67	77	71	66	61	57	53	50	44	41	39	32	30	29	24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20
4	71	61	53	47	64	55	48	43	44	40	36	34	31	28	25	23	21	17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18	15
6	60	48	40	35	54	44	37	32	36	31	27	28	24	21	21	18	16	13
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14	12
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13	10
9	48	36	29	24	43	33	26	22	27	22	18	21	18	15	16	13	12	9
10	45	33	26	21	40	30	24	20	25	20	17	19	16	13	15	12	11	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	7597	7597	7597
5°	7632	7527	7580
10°	7581	7462	7508
15°	7492	7377	7392
20°	7389	7257	7263
25°	7251	7114	7099
30°	7097	6954	6901
35°	6937	6786	6699
40°	6770	6600	6497
45°	6587	6428	6272
50°	6402	6219	6047
55°	6161	6001	5819
60°	5918	5748	5565
65°	5703	5471	5300
70°	5385	5155	4925
75°	4924	4745	4541
80°	4438	4252	4215
85°	3890	3742	3606



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	66.5	1.2
10°-20°	187.7	3.4
20°-30°	277.3	5.1
30°-40°	323.9	5.9
40°-50°	325.6	6.0
50°-60°	286.0	5.2
60°-70°	213.1	3.9
70°-80°	121.4	2.2
80°-90°	38.7	0.7
90°-100°	85.2	1.6
100°-110°	255.0	4.7
110°-120°	433.8	7.9
120°-130°	570.5	10.4
130°-140°	641.3	11.7
140°-150°	630.4	11.5
150°-160°	530.7	9.7
160°-170°	353.3	6.5
170°-180°	123.7	2.3
0°-30°	531.5	9.7
0°-40°	855.4	15.7
0°-60°	1467.0	26.8
0°-90°	1840.3	33.7
90°-120°	774.0	14.2
90°-150°	2616.2	47.9
90°-180°	3624.0	66.3
0°-180°	5464.1	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	706	706	706	706	706	
5°	706	703	697	702	702	67
15°	672	670	662	666	663	189
25°	610	607	599	599	598	281
35°	528	524	516	513	510	330
45°	433	430	422	415	412	334
55°	328	327	320	313	310	294
65°	224	221	215	210	208	221
75°	118	116	114	111	109	127
85°	32	30	30	29	29	35
90°	1	11	25	29	31	5
95°	61	68	76	80	80	68
105°	231	234	242	243	244	248
115°	437	439	438	439	438	432
125°	639	642	640	636	632	570
135°	829	835	834	830	828	639
145°	1006	1008	1011	1010	1006	628
155°	1152	1152	1153	1156	1150	530
165°	1254	1252	1251	1257	1250	354
175°	1305	1301	1301	1306	1300	124
180°	1308	1308	1308	1308	1308	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8
2.5°	708.1	707.7	707.3	706.9	706.5	705.6	704.4	703.2	702.1	700.9	702.0
5°	706.3	705.7	705.0	704.3	703.6	702.6	701.1	699.6	698.2	696.6	698.0
7.5°	699.4	698.8	698.1	697.4	696.7	695.6	694.1	692.5	691.0	689.5	690.7
10°	693.6	692.9	692.3	691.6	690.9	689.7	687.9	686.2	684.4	682.7	683.9
12.5°	685.9	685.2	684.7	684.1	683.6	682.5	680.8	679.1	677.6	675.9	676.8
15°	672.3	671.8	671.3	670.7	670.2	669.1	667.3	665.6	663.8	662.0	663.1
17.5°	656.7	656.0	655.3	654.6	653.9	652.7	650.9	649.2	647.5	645.6	646.4
20°	645.1	644.3	643.4	642.6	641.8	640.6	638.8	637.1	635.3	633.5	634.1
22.5°	631.9	631.1	630.3	629.5	628.7	627.4	625.7	623.9	622.2	620.4	620.8
25°	610.5	609.7	608.9	608.1	607.2	605.9	604.2	602.5	600.7	599.0	599.0
27.5°	587.6	586.8	586.0	585.2	584.4	583.0	581.1	579.3	577.4	575.5	575.6
30°	571.0	570.4	569.7	569.0	568.3	567.0	565.1	563.2	561.4	559.5	559.5
32.5°	554.5	553.7	552.7	551.8	551.0	549.8	548.3	546.8	545.4	544.0	543.2
35°	527.9	527.1	526.3	525.5	524.7	523.4	521.7	519.9	518.2	516.4	515.6
37.5°	500.7	499.7	498.7	497.6	496.6	495.3	493.5	491.7	489.9	488.1	487.2
40°	481.8	481.0	480.2	479.4	478.6	477.2	475.3	473.5	471.6	469.7	468.6
42.5°	462.9	462.0	461.1	460.1	459.2	457.8	455.9	454.1	452.2	450.3	449.2
45°	432.7	432.1	431.6	431.0	430.5	429.4	427.6	425.9	424.1	422.3	420.7
47.5°	402.7	401.9	401.2	400.4	399.6	398.3	396.7	395.1	393.4	391.7	390.1
50°	382.3	381.6	381.0	380.2	379.6	378.4	376.6	374.9	373.1	371.4	369.9
52.5°	360.9	360.4	360.0	359.6	359.1	357.9	356.1	354.3	352.4	350.5	349.3
55°	328.3	328.1	328.0	327.9	327.7	326.8	325.0	323.3	321.5	319.8	318.3
57.5°	297.2	296.8	296.3	295.9	295.4	294.5	293.0	291.7	290.3	288.8	287.6
60°	274.9	274.7	274.6	274.5	274.3	273.5	271.9	270.2	268.6	267.0	265.8
62.5°	255.0	254.6	254.3	254.0	253.6	252.6	251.0	249.4	247.7	246.1	244.9
65°	223.9	223.2	222.6	221.9	221.3	220.2	218.9	217.5	216.2	214.8	213.7
67.5°	191.0	190.4	189.8	189.3	188.6	187.8	186.8	185.8	184.7	183.8	182.8
70°	171.1	170.3	169.5	168.7	167.9	167.1	166.3	165.5	164.6	163.8	162.9
72.5°	150.3	149.6	149.1	148.5	147.9	147.1	146.2	145.3	144.3	143.5	142.6
75°	118.4	117.8	117.2	116.7	116.2	115.7	115.3	114.9	114.5	114.1	113.4
77.5°	90.1	89.8	89.4	89.2	88.9	88.5	88.0	87.5	87.0	86.5	86.1
80°	71.6	71.2	70.8	70.4	69.9	69.6	69.4	69.1	68.8	68.6	68.4
82.5°	53.6	53.6	53.5	53.4	53.3	53.2	53.2	53.2	53.1	53.1	52.8
85°	31.5	31.3	31.1	30.7	30.5	30.3	30.3	30.3	30.3	30.3	30.1
87.5°	12.8	13.0	13.1	13.2	13.4	13.7	14.2	14.7	15.1	15.6	15.7
90°	1.0	3.3	5.6	7.8	10.1	12.8	15.8	18.7	21.7	24.6	25.6
92.5°	24.9	26.4	28.0	29.5	31.1	32.7	34.4	36.0	37.8	39.5	40.2
95°	60.6	62.2	63.8	65.4	67.0	68.8	70.6	72.4	74.2	76.0	76.9
97.5°	107.7	108.8	110.0	111.2	112.4	113.7	115.0	116.3	117.6	119.0	120.0
100°	139.7	141.1	142.4	143.9	145.2	146.5	147.6	148.8	149.9	151.1	151.7
102.5°	176.7	177.5	178.4	179.2	180.0	181.2	182.7	184.2	185.7	187.2	187.9
105°	231.2	231.6	232.1	232.5	233.0	234.2	236.3	238.4	240.4	242.5	242.5
107.5°	294.5	294.8	295.0	295.3	295.6	296.1	296.9	297.8	298.6	299.4	300.2
110°	333.9	334.4	334.9	335.3	335.7	336.2	336.7	337.2	337.5	338.0	339.0



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	375.0	375.3	375.6	375.8	376.1	376.3	376.4	376.4	376.6	376.7	377.8
115°	436.7	437.4	438.0	438.7	439.4	439.5	439.0	438.6	438.2	437.7	437.9
117.5°	498.8	499.2	499.6	500.1	500.6	500.5	499.9	499.3	498.7	498.1	498.0
120°	537.3	538.7	540.1	541.5	542.8	543.0	541.8	540.7	539.6	538.4	538.1
122.5°	577.7	578.6	579.6	580.7	581.6	581.9	581.2	580.7	580.0	579.5	578.8
125°	639.1	639.8	640.4	641.1	641.8	641.9	641.4	641.0	640.6	640.1	639.2
127.5°	695.8	697.3	698.7	700.1	701.6	702.1	701.6	701.1	700.6	700.1	698.8
130°	733.6	735.4	737.3	739.1	740.9	741.5	740.8	740.1	739.4	738.7	737.8
132.5°	771.4	773.2	775.1	776.9	778.7	779.3	778.9	778.4	777.8	777.4	776.3
135°	829.2	830.5	831.9	833.2	834.6	835.2	835.0	834.7	834.5	834.2	833.4
137.5°	882.6	883.7	884.9	886.0	887.2	888.0	888.6	889.2	889.8	890.4	889.4
140°	919.6	920.7	921.9	923.0	924.2	924.8	925.0	925.3	925.5	925.7	925.5
142.5°	953.2	954.4	955.5	956.7	957.8	958.6	959.0	959.4	959.8	960.3	960.0
145°	1005.8	1006.3	1006.8	1007.3	1007.7	1008.3	1008.9	1009.6	1010.3	1011.0	1010.7
147.5°	1051.9	1052.7	1053.5	1054.4	1055.2	1055.9	1056.5	1057.2	1057.8	1058.4	1058.4
150°	1083.9	1084.4	1084.9	1085.3	1085.8	1086.2	1086.7	1087.1	1087.6	1088.1	1088.1
152.5°	1110.2	1110.9	1111.5	1112.1	1112.8	1113.3	1113.6	1113.8	1114.1	1114.4	1114.8
155°	1151.8	1151.8	1151.8	1151.8	1151.8	1151.9	1152.1	1152.3	1152.5	1152.8	1153.7
157.5°	1187.1	1186.8	1186.5	1186.3	1186.0	1186.0	1186.1	1186.3	1186.5	1186.7	1187.6
160°	1209.3	1208.9	1208.4	1207.9	1207.4	1207.2	1207.2	1207.2	1207.2	1207.2	1208.4
162.5°	1229.0	1228.4	1227.7	1227.1	1226.5	1226.2	1226.5	1226.6	1226.8	1226.9	1228.1
165°	1254.5	1253.8	1253.2	1252.4	1251.8	1251.4	1251.4	1251.4	1251.4	1251.4	1252.8
167.5°	1274.9	1273.9	1273.0	1272.1	1271.2	1270.8	1271.0	1271.2	1271.4	1271.5	1273.0
170°	1286.3	1285.5	1284.5	1283.7	1282.7	1282.2	1282.2	1282.2	1282.2	1282.2	1283.8
172.5°	1295.4	1294.5	1293.6	1292.7	1291.7	1291.3	1291.3	1291.3	1291.3	1291.3	1292.7
175°	1304.9	1303.9	1303.1	1302.1	1301.2	1300.8	1300.8	1300.8	1300.8	1300.8	1302.1
177.5°	1308.8	1308.1	1307.3	1306.5	1305.8	1305.4	1305.4	1305.4	1305.4	1305.4	1306.5
180°	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	705.8	705.8	705.8	705.8	705.8	705.8	705.8	705.8
2.5°	703.1	704.1	705.2	705.7	705.6	705.4	705.4	705.3
5°	699.3	700.7	702.0	702.6	702.3	702.0	701.8	701.5
7.5°	691.9	693.1	694.3	694.8	694.7	694.5	694.3	694.2
10°	685.1	686.3	687.5	688.0	687.8	687.5	687.2	686.9
12.5°	677.6	678.6	679.5	679.8	679.6	679.5	679.3	679.1
15°	664.2	665.3	666.4	666.5	665.7	664.9	664.1	663.3
17.5°	647.2	647.9	648.7	648.9	648.6	648.3	648.0	647.7
20°	634.6	635.2	635.6	635.7	635.3	634.9	634.5	634.1
22.5°	621.3	621.7	622.2	622.1	621.6	621.1	620.6	620.0
25°	599.2	599.4	599.4	599.4	599.0	598.6	598.1	597.7
27.5°	575.8	575.8	575.9	575.8	575.2	574.7	574.2	573.7
30°	559.5	559.5	559.5	559.0	558.1	557.1	556.2	555.2
32.5°	542.5	541.7	540.9	540.3	539.8	539.3	538.8	538.3
35°	514.8	514.0	513.2	512.5	511.7	511.1	510.4	509.8
37.5°	486.2	485.2	484.3	483.5	483.2	482.7	482.3	481.8
40°	467.5	466.4	465.4	464.5	464.0	463.5	463.0	462.4
42.5°	448.1	447.0	445.9	445.1	444.6	444.1	443.5	443.0
45°	419.1	417.5	415.9	414.7	414.1	413.4	412.7	412.0
47.5°	388.6	387.0	385.4	384.3	383.7	383.1	382.5	381.9
50°	368.4	366.9	365.4	364.3	363.5	362.7	361.9	361.1
52.5°	348.0	346.7	345.5	344.4	343.6	342.8	342.0	341.2
55°	316.8	315.4	313.9	312.8	312.1	311.4	310.8	310.1
57.5°	286.2	284.9	283.6	282.5	281.7	281.0	280.2	279.4
60°	264.6	263.4	262.1	261.2	260.5	259.8	259.2	258.5
62.5°	243.7	242.5	241.3	240.4	240.0	239.6	239.1	238.6
65°	212.6	211.6	210.5	209.8	209.4	209.0	208.6	208.1
67.5°	181.9	180.9	180.0	179.2	178.6	178.1	177.5	177.0
70°	161.9	161.1	160.1	159.2	158.6	157.9	157.2	156.5
72.5°	141.8	140.9	140.1	139.5	139.2	138.8	138.5	138.1
75°	112.7	112.1	111.4	110.8	110.4	110.0	109.6	109.2
77.5°	85.6	85.2	84.7	84.4	84.4	84.4	84.4	84.4
80°	68.3	68.1	68.0	68.0	68.0	68.0	68.0	68.0
82.5°	52.5	52.3	52.0	51.9	51.8	51.7	51.6	51.5
85°	29.8	29.5	29.2	29.2	29.2	29.2	29.2	29.2
87.5°	15.8	15.8	15.9	16.0	16.1	16.2	16.2	16.4
90°	26.5	27.4	28.3	29.0	29.5	29.9	30.3	30.8
92.5°	40.9	41.7	42.4	42.6	42.3	42.1	41.7	41.5
95°	77.9	78.7	79.7	80.2	80.2	80.2	80.2	80.2
97.5°	121.0	122.2	123.2	123.7	123.6	123.5	123.4	123.3
100°	152.4	153.0	153.8	154.3	154.8	155.3	155.7	156.1
102.5°	188.5	189.3	190.0	190.2	190.1	190.0	190.0	189.9
105°	242.5	242.5	242.5	242.7	243.2	243.6	244.1	244.5
107.5°	300.9	301.6	302.3	302.5	302.3	302.0	301.7	301.4
110°	339.8	340.8	341.7	341.9	341.4	341.0	340.6	340.1



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	378.8	379.9	381.0	381.5	381.4	381.4	381.3	381.2
115°	438.2	438.4	438.6	438.6	438.4	438.2	437.9	437.7
117.5°	498.0	498.0	497.9	497.6	496.9	496.3	495.7	495.0
120°	537.9	537.7	537.5	537.1	536.7	536.2	535.8	535.3
122.5°	578.3	577.7	577.1	576.5	575.8	575.2	574.6	573.9
125°	638.3	637.4	636.4	635.6	634.6	633.7	632.8	631.8
127.5°	697.5	696.2	695.0	693.8	692.8	691.7	690.7	689.6
130°	736.9	736.0	735.1	733.8	732.2	730.6	729.0	727.5
132.5°	775.2	774.0	773.0	771.8	770.6	769.4	768.1	766.9
135°	832.4	831.6	830.6	830.0	829.5	829.0	828.5	828.1
137.5°	888.4	887.5	886.5	885.7	884.8	883.9	883.0	882.2
140°	925.3	925.0	924.8	923.9	922.3	920.7	919.1	917.5
142.5°	959.8	959.6	959.3	958.6	957.4	956.2	954.9	953.7
145°	1010.5	1010.3	1010.1	1009.6	1008.6	1007.7	1006.8	1005.8
147.5°	1058.4	1058.4	1058.4	1057.8	1056.5	1055.0	1053.7	1052.3
150°	1088.1	1088.1	1088.1	1087.3	1086.0	1084.7	1083.2	1081.9
152.5°	1115.1	1115.5	1115.8	1115.4	1114.2	1113.0	1111.8	1110.6
155°	1154.6	1155.6	1156.4	1156.1	1154.5	1152.9	1151.3	1149.7
157.5°	1188.6	1189.5	1190.6	1190.3	1189.1	1187.8	1186.5	1185.3
160°	1209.5	1210.7	1211.8	1212.0	1211.0	1210.1	1209.2	1208.2
162.5°	1229.2	1230.4	1231.5	1231.4	1229.9	1228.4	1227.0	1225.5
165°	1254.2	1255.5	1256.9	1256.8	1255.2	1253.6	1252.0	1250.4
167.5°	1274.4	1275.8	1277.2	1277.2	1275.8	1274.4	1273.0	1271.5
170°	1285.5	1287.1	1288.6	1288.6	1287.1	1285.5	1283.8	1282.2
172.5°	1294.1	1295.5	1297.0	1296.9	1295.3	1293.6	1292.0	1290.5
175°	1303.5	1304.9	1306.2	1306.1	1304.5	1302.9	1301.3	1299.7
177.5°	1307.7	1308.8	1309.9	1309.8	1308.4	1307.2	1305.9	1304.6
180°	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0	1308.0

(END OF REPORT)