

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: P332732-840

Luminaire Tested: **S124DIW-S350D1050U840-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332732-840
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-S350D1050U840-4F0-1E-UDD-F1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1050 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 5204.7 lumens
Efficiency: N/A
Efficacy: 137.0 lumens/watt
Spacing Criteria (0/90/45): 1.2 / 1.17 / 1.3
Luminous Opening: Rectangular (W 0.33' x L: 4' x H: 0')
CIE Type: Semi-Indirect

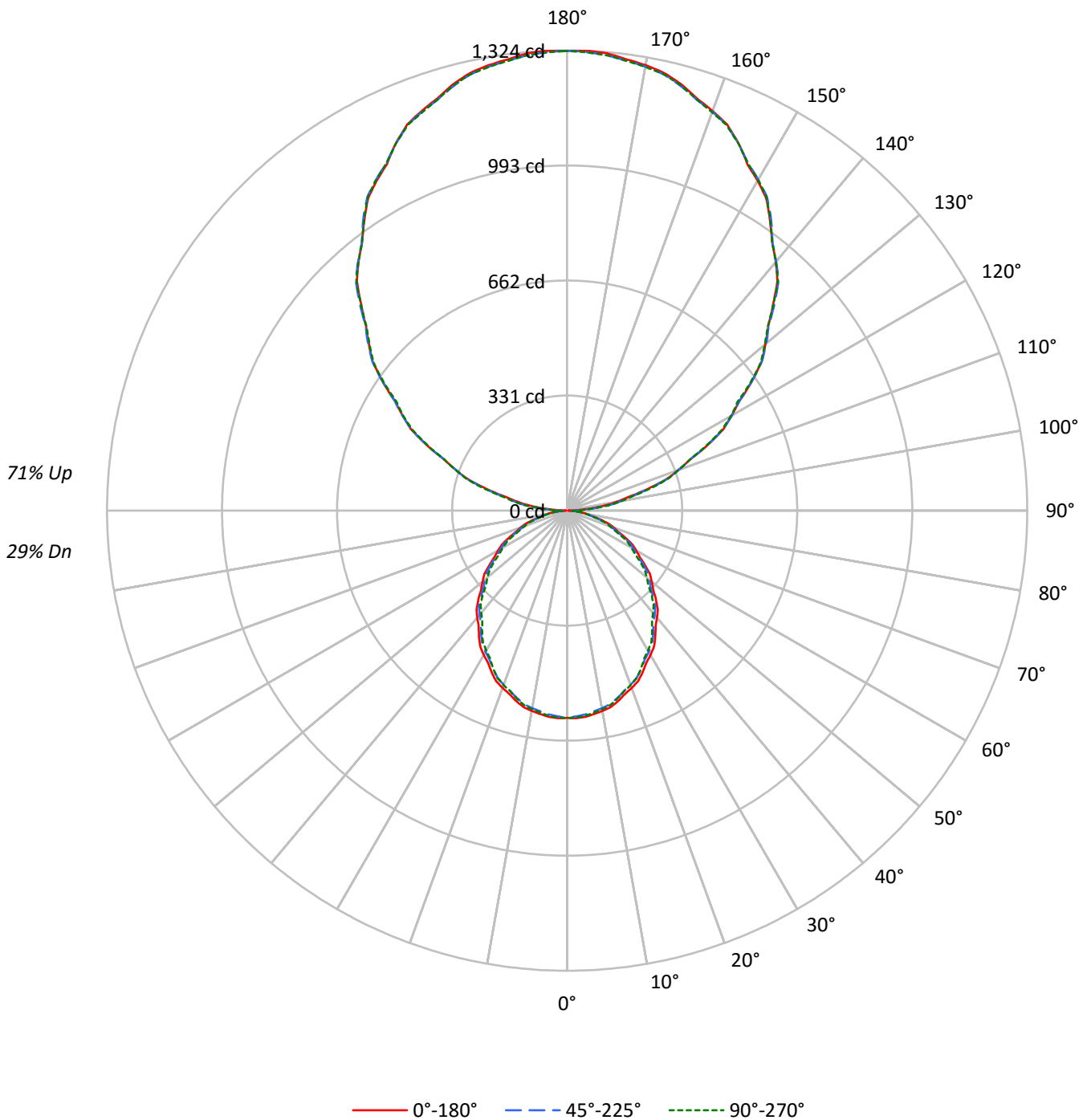
Input Watts (W): 38
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	102	102	102	102	92	92	92	92	72	72	72	54	54	54	37	37	37	29
1	93	89	85	82	83	80	77	74	63	61	59	47	46	45	33	32	31	25
2	85	78	72	67	76	70	65	61	55	52	49	41	39	37	29	28	26	21
3	77	68	61	55	69	61	55	50	48	44	41	37	34	31	26	24	22	18
4	71	60	53	47	63	54	48	43	43	38	35	33	29	27	23	21	19	15
5	65	53	46	40	58	48	42	36	38	33	30	29	26	23	21	18	17	13
6	59	48	40	34	53	43	36	32	34	30	26	26	23	20	19	16	15	11
7	55	43	35	30	49	39	32	28	31	26	23	24	20	18	17	15	13	10
8	51	39	31	26	45	35	29	24	28	23	20	22	18	16	16	13	12	9
9	47	35	28	23	42	32	26	21	26	21	18	20	17	14	14	12	11	8
10	44	32	25	21	39	29	23	19	24	19	16	18	15	13	13	11	10	7

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4816	4816	4816
5°	4830	4772	4807
10°	4800	4733	4757
15°	4741	4667	4679
20°	4665	4582	4587
25°	4577	4488	4475
30°	4470	4376	4336
35°	4357	4258	4202
40°	4241	4126	4051
45°	4120	3995	3919
50°	3986	3878	3758
55°	3842	3727	3606
60°	3696	3559	3450
65°	3534	3396	3261
70°	3352	3182	3059
75°	3072	2923	2848
80°	2734	2627	2552
85°	2399	2297	2251



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	56.2	1.1
10°-20°	158.3	3.0
20°-30°	233.0	4.5
30°-40°	270.8	5.2
40°-50°	270.9	5.2
50°-60°	236.9	4.6
60°-70°	175.9	3.4
70°-80°	100.0	1.9
80°-90°	32.8	0.6
90°-100°	87.2	1.7
100°-110°	258.4	5.0
110°-120°	438.7	8.4
120°-130°	578.4	11.1
130°-140°	649.6	12.5
140°-150°	638.4	12.3
150°-160°	536.9	10.3
160°-170°	357.2	6.9
170°-180°	125.1	2.4
0°-30°	447.4	8.6
0°-40°	718.3	13.8
0°-60°	1226.1	23.6
0°-90°	1534.8	29.5
90°-120°	784.3	15.1
90°-150°	2650.7	50.9
90°-180°	3670.0	70.5
0°-180°	5204.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	596	596	596	596	596	
5°	596	594	589	594	593	57
15°	567	565	558	561	560	160
25°	514	510	504	504	502	236
35°	442	439	432	429	426	276
45°	361	357	350	345	343	278
55°	273	271	265	259	256	244
65°	185	182	178	173	171	183
75°	98	96	94	92	91	105
85°	26	26	25	25	24	28
90°	3	14	22	28	31	5
95°	61	70	78	81	81	68
105°	238	240	244	247	250	253
115°	446	446	444	443	442	440
125°	650	650	649	647	644	579
135°	838	844	844	842	839	648
145°	1018	1022	1023	1022	1019	637
155°	1166	1166	1165	1169	1165	536
165°	1270	1267	1264	1270	1266	358
175°	1321	1316	1315	1321	1315	125
180°	1323	1323	1323	1323	1323	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	598.0	597.8	597.5	597.3	597.0	596.4	595.5	594.6	593.7	592.7	593.6
5°	596.0	595.6	595.2	594.8	594.4	593.6	592.4	591.3	590.1	588.9	590.1
7.5°	590.6	590.1	589.7	589.3	588.9	587.9	586.6	585.4	584.1	582.8	583.7
10°	585.5	585.1	584.7	584.3	583.9	583.0	581.6	580.2	578.9	577.4	578.2
12.5°	579.1	578.7	578.2	577.7	577.3	576.4	574.9	573.5	572.0	570.6	571.5
15°	567.3	566.9	566.5	566.1	565.7	564.7	563.1	561.5	559.9	558.4	559.0
17.5°	553.3	552.8	552.3	551.8	551.2	550.2	548.7	547.1	545.6	544.1	544.5
20°	543.0	542.5	542.0	541.4	540.9	539.9	538.3	536.6	535.0	533.4	533.8
22.5°	531.9	531.2	530.5	529.8	529.1	528.0	526.3	524.8	523.2	521.6	522.2
25°	513.8	513.1	512.4	511.6	510.9	509.8	508.3	506.8	505.3	503.8	503.9
27.5°	493.2	492.4	491.7	490.9	490.2	489.1	487.7	486.4	484.9	483.5	483.3
30°	479.5	478.6	477.8	476.9	476.1	474.9	473.5	472.1	470.8	469.4	469.0
32.5°	464.9	464.1	463.3	462.6	461.8	460.7	459.3	457.8	456.4	454.8	454.3
35°	442.1	441.4	440.7	439.9	439.2	438.1	436.6	435.0	433.6	432.1	431.4
37.5°	418.2	417.5	416.8	416.2	415.5	414.3	412.7	411.1	409.5	407.9	407.1
40°	402.4	401.6	400.8	399.9	399.1	397.9	396.3	394.7	393.0	391.5	390.4
42.5°	385.7	385.2	384.7	384.2	383.6	382.4	380.7	378.9	377.2	375.5	374.2
45°	360.9	360.1	359.4	358.7	357.9	356.7	355.0	353.3	351.6	349.9	348.7
47.5°	335.0	334.5	334.0	333.5	333.0	331.9	330.3	328.7	327.2	325.6	324.3
50°	317.4	317.0	316.6	316.1	315.7	314.8	313.3	311.7	310.2	308.8	307.3
52.5°	300.2	299.6	299.1	298.6	298.1	297.1	295.5	294.0	292.4	290.8	289.5
55°	273.0	272.7	272.3	272.0	271.7	270.7	269.2	267.8	266.3	264.8	263.6
57.5°	246.9	246.6	246.2	245.9	245.5	244.6	243.1	241.7	240.1	238.7	237.5
60°	228.9	228.4	227.9	227.3	226.8	225.9	224.5	223.1	221.8	220.4	219.4
62.5°	211.4	211.0	210.5	210.1	209.5	208.6	207.1	205.7	204.2	202.8	201.9
65°	185.0	184.5	183.9	183.4	182.9	182.1	181.0	180.0	178.8	177.8	176.7
67.5°	158.4	157.9	157.4	156.9	156.4	155.7	154.7	153.7	152.7	151.6	150.6
70°	142.0	141.2	140.5	139.8	139.0	138.1	137.3	136.5	135.6	134.8	133.9
72.5°	124.4	123.6	122.9	122.2	121.4	120.7	120.0	119.4	118.7	118.0	117.2
75°	98.5	98.0	97.5	96.8	96.3	95.8	95.3	94.7	94.2	93.7	93.3
77.5°	73.7	73.5	73.2	73.0	72.8	72.4	72.0	71.5	71.0	70.6	70.4
80°	58.8	58.5	58.2	57.9	57.6	57.3	57.1	56.9	56.7	56.5	56.1
82.5°	44.2	44.1	43.9	43.8	43.6	43.5	43.5	43.5	43.4	43.4	43.3
85°	25.9	25.9	25.9	25.9	25.9	25.8	25.4	25.2	25.0	24.8	24.8
87.5°	10.6	11.0	11.4	11.8	12.2	12.5	12.8	13.1	13.4	13.6	13.9
90°	3.0	5.6	8.1	10.6	13.0	15.2	17.1	18.9	20.7	22.5	23.8
92.5°	21.9	24.7	27.7	30.5	33.3	35.4	36.7	38.0	39.3	40.5	41.3
95°	61.4	63.4	65.4	67.6	69.6	71.4	73.0	74.5	76.1	77.8	78.5
97.5°	107.2	108.9	110.5	112.1	113.8	115.5	117.3	119.3	121.1	123.0	123.8
100°	143.2	144.1	145.0	145.9	146.8	148.3	150.4	152.4	154.5	156.5	156.9
102.5°	180.9	181.3	181.6	182.0	182.3	183.4	185.3	187.1	189.0	190.9	191.6
105°	238.3	238.6	238.8	239.0	239.2	239.8	240.8	241.7	242.6	243.5	244.2
107.5°	298.7	299.0	299.2	299.5	299.8	300.0	300.1	300.3	300.4	300.5	301.2
110°	339.6	340.1	340.5	341.0	341.4	341.5	341.3	341.1	340.9	340.6	340.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	382.2	382.3	382.4	382.4	382.5	382.4	382.0	381.6	381.2	380.8	380.7
115°	446.1	446.1	446.1	446.1	446.1	445.9	445.4	444.9	444.4	444.0	443.7
117.5°	506.2	506.3	506.5	506.8	507.0	506.9	506.5	506.2	505.9	505.5	504.8
120°	546.3	547.2	548.2	549.1	550.0	550.1	549.4	548.7	548.1	547.3	546.2
122.5°	588.0	588.4	588.8	589.2	589.5	589.6	589.2	588.9	588.5	588.2	587.4
125°	649.6	649.6	649.6	649.6	649.6	649.5	649.2	649.0	648.8	648.6	648.1
127.5°	705.5	706.2	706.8	707.5	708.2	708.4	708.0	707.6	707.3	706.9	706.5
130°	744.8	745.5	746.1	746.8	747.5	747.8	747.8	747.8	747.8	747.8	747.4
132.5°	784.9	785.4	785.9	786.4	786.9	787.0	786.9	786.7	786.5	786.3	785.9
135°	837.9	839.2	840.6	841.9	843.3	844.0	844.0	844.0	844.0	844.0	843.5
137.5°	895.5	896.2	896.9	897.5	898.1	898.6	899.0	899.4	899.7	900.1	899.5
140°	934.0	934.5	934.9	935.4	935.8	936.0	936.0	936.0	936.0	936.0	935.8
142.5°	969.3	969.7	970.2	970.6	971.1	971.2	971.0	970.8	970.7	970.5	970.4
145°	1017.9	1018.9	1019.8	1020.7	1021.6	1022.1	1022.4	1022.6	1022.8	1023.0	1022.8
147.5°	1066.2	1067.3	1068.4	1069.4	1070.6	1071.1	1070.9	1070.7	1070.5	1070.3	1070.2
150°	1095.7	1096.6	1097.5	1098.4	1099.3	1099.7	1099.7	1099.7	1099.7	1099.7	1099.7
152.5°	1123.5	1124.1	1124.6	1125.1	1125.7	1126.0	1126.2	1126.4	1126.6	1126.8	1127.3
155°	1166.3	1166.3	1166.3	1166.3	1166.3	1166.2	1165.9	1165.7	1165.5	1165.3	1166.2
157.5°	1202.2	1201.8	1201.4	1201.0	1200.6	1200.4	1200.3	1200.3	1200.2	1200.2	1200.9
160°	1223.6	1223.4	1223.0	1222.8	1222.6	1222.4	1222.1	1221.9	1221.7	1221.5	1222.1
162.5°	1243.1	1242.6	1242.0	1241.4	1240.8	1240.4	1240.2	1240.0	1239.7	1239.5	1240.7
165°	1269.6	1268.9	1268.2	1267.6	1266.9	1266.3	1265.9	1265.4	1265.0	1264.5	1265.9
167.5°	1289.8	1288.9	1288.0	1287.0	1286.1	1285.6	1285.7	1285.7	1285.7	1285.8	1287.1
170°	1301.3	1300.2	1299.0	1297.9	1296.8	1296.3	1296.6	1296.8	1297.0	1297.2	1298.6
172.5°	1309.5	1308.5	1307.6	1306.7	1305.7	1305.3	1305.3	1305.4	1305.4	1305.4	1307.0
175°	1320.7	1319.6	1318.5	1317.4	1316.2	1315.6	1315.2	1315.0	1314.8	1314.6	1316.2
177.5°	1324.4	1323.5	1322.6	1321.7	1320.8	1320.3	1320.3	1320.3	1320.3	1320.3	1321.6
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	596.5	596.5	596.5	596.5	596.5	596.5	596.5	596.5
2.5°	594.4	595.3	596.1	596.5	596.4	596.3	596.2	596.1
5°	591.3	592.4	593.6	594.0	593.8	593.6	593.4	593.2
7.5°	584.6	585.6	586.5	586.9	586.8	586.6	586.5	586.4
10°	579.2	580.0	580.9	581.2	581.0	580.7	580.5	580.3
12.5°	572.4	573.3	574.3	574.6	574.3	574.0	573.7	573.4
15°	559.6	560.2	560.9	561.0	560.7	560.4	560.1	559.8
17.5°	544.9	545.3	545.7	545.8	545.6	545.4	545.2	545.0
20°	534.1	534.4	534.7	534.8	534.5	534.3	534.1	533.9
22.5°	522.7	523.3	523.9	524.0	523.6	523.2	522.8	522.5
25°	504.0	504.1	504.2	504.1	503.6	503.2	502.8	502.4
27.5°	483.0	482.8	482.5	482.1	481.6	481.1	480.5	480.0
30°	468.6	468.2	467.7	467.3	466.7	466.2	465.6	465.1
32.5°	453.8	453.3	452.8	452.3	451.8	451.2	450.7	450.2
35°	430.6	429.9	429.1	428.5	428.0	427.5	426.9	426.4
37.5°	406.3	405.5	404.7	403.9	403.2	402.5	401.8	401.1
40°	389.4	388.3	387.3	386.5	385.9	385.4	384.9	384.4
42.5°	372.9	371.7	370.5	369.7	369.3	369.0	368.6	368.3
45°	347.6	346.4	345.3	344.5	344.2	343.9	343.6	343.3
47.5°	323.0	321.6	320.3	319.3	318.5	317.7	316.9	316.1
50°	305.8	304.4	302.9	301.7	301.1	300.5	299.8	299.2
52.5°	288.2	286.9	285.6	284.5	283.7	282.9	282.1	281.2
55°	262.3	260.9	259.7	258.7	258.1	257.5	256.8	256.2
57.5°	236.3	235.1	233.9	233.0	232.4	231.8	231.2	230.5
60°	218.4	217.5	216.5	215.8	215.3	214.7	214.2	213.7
62.5°	201.1	200.2	199.2	198.5	198.0	197.5	197.0	196.4
65°	175.7	174.6	173.6	172.8	172.3	171.7	171.2	170.7
67.5°	149.6	148.6	147.5	146.9	146.8	146.6	146.5	146.3
70°	133.1	132.3	131.4	130.8	130.5	130.2	129.9	129.6
72.5°	116.6	115.9	115.2	114.7	114.4	114.1	113.8	113.5
75°	92.8	92.4	92.0	91.7	91.6	91.5	91.4	91.3
77.5°	70.3	70.2	70.1	69.9	69.6	69.3	69.0	68.8
80°	55.9	55.7	55.5	55.4	55.2	55.1	55.0	54.9
82.5°	43.1	43.0	42.9	42.8	42.7	42.5	42.4	42.3
85°	24.8	24.8	24.8	24.8	24.7	24.6	24.4	24.3
87.5°	14.2	14.5	14.7	14.9	15.0	15.1	15.2	15.3
90°	25.2	26.6	28.0	28.9	29.3	29.8	30.2	30.7
92.5°	42.1	42.9	43.8	44.3	44.6	44.8	45.1	45.4
95°	79.1	79.8	80.5	80.8	80.8	80.8	80.8	80.8
97.5°	124.6	125.4	126.2	126.6	126.6	126.6	126.6	126.6
100°	157.4	157.8	158.3	158.5	158.5	158.5	158.5	158.5
102.5°	192.2	192.8	193.5	193.9	194.0	194.2	194.4	194.6
105°	244.9	245.5	246.2	246.9	247.6	248.2	248.9	249.6
107.5°	301.8	302.5	303.2	303.4	303.4	303.4	303.3	303.3
110°	339.7	339.3	338.8	339.0	339.6	340.3	341.0	341.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	380.6	380.5	380.4	380.4	380.6	380.7	380.8	381.0
115°	443.5	443.3	443.1	442.8	442.6	442.4	442.2	441.9
117.5°	504.0	503.2	502.5	501.9	501.4	501.0	500.5	500.1
120°	545.0	543.9	542.8	542.4	542.9	543.3	543.8	544.2
122.5°	586.7	585.9	585.1	584.3	583.5	582.7	581.9	581.1
125°	647.7	647.2	646.8	646.3	645.9	645.4	645.0	644.5
127.5°	706.0	705.6	705.1	704.7	704.3	704.0	703.6	703.3
130°	746.9	746.5	746.0	745.4	744.5	743.6	742.7	741.7
132.5°	785.4	785.0	784.5	784.1	783.8	783.4	782.9	782.6
135°	843.1	842.6	842.2	841.6	840.9	840.2	839.6	838.9
137.5°	898.9	898.3	897.7	897.5	897.6	897.8	897.9	898.0
140°	935.6	935.4	935.1	934.9	934.7	934.5	934.2	934.0
142.5°	970.4	970.3	970.3	970.2	970.2	970.2	970.1	970.1
145°	1022.6	1022.4	1022.1	1021.7	1021.0	1020.3	1019.7	1019.0
147.5°	1070.0	1069.8	1069.5	1069.3	1069.1	1068.9	1068.6	1068.4
150°	1099.7	1099.7	1099.7	1099.6	1099.4	1099.2	1098.9	1098.7
152.5°	1127.8	1128.4	1128.9	1128.9	1128.3	1127.7	1127.1	1126.6
155°	1167.1	1168.0	1168.9	1168.9	1168.0	1167.1	1166.2	1165.3
157.5°	1201.6	1202.2	1203.0	1203.0	1202.1	1201.3	1200.6	1199.8
160°	1222.8	1223.6	1224.3	1224.0	1222.8	1221.7	1220.6	1219.4
162.5°	1241.9	1243.1	1244.5	1244.5	1243.3	1242.2	1241.0	1239.9
165°	1267.2	1268.6	1269.9	1270.1	1269.2	1268.3	1267.4	1266.5
167.5°	1288.5	1289.8	1291.2	1291.2	1289.8	1288.4	1287.0	1285.6
170°	1299.9	1301.3	1302.6	1302.5	1301.0	1299.4	1297.8	1296.2
172.5°	1308.5	1310.0	1311.6	1311.5	1310.0	1308.4	1306.8	1305.1
175°	1317.8	1319.4	1321.0	1321.0	1319.4	1317.8	1316.2	1314.6
177.5°	1322.9	1324.1	1325.4	1325.3	1323.8	1322.4	1321.0	1319.5
180°	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8	1322.8

(END OF REPORT)