

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: P331480-840

Luminaire Tested: **S122DIW-S290D970U840-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331480-840
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D970U840-4F0-1E-UDD-D1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 970 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4601.6 lumens
Efficiency: N/A
Efficacy: 121.1 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')
CIE Type: Semi-Indirect

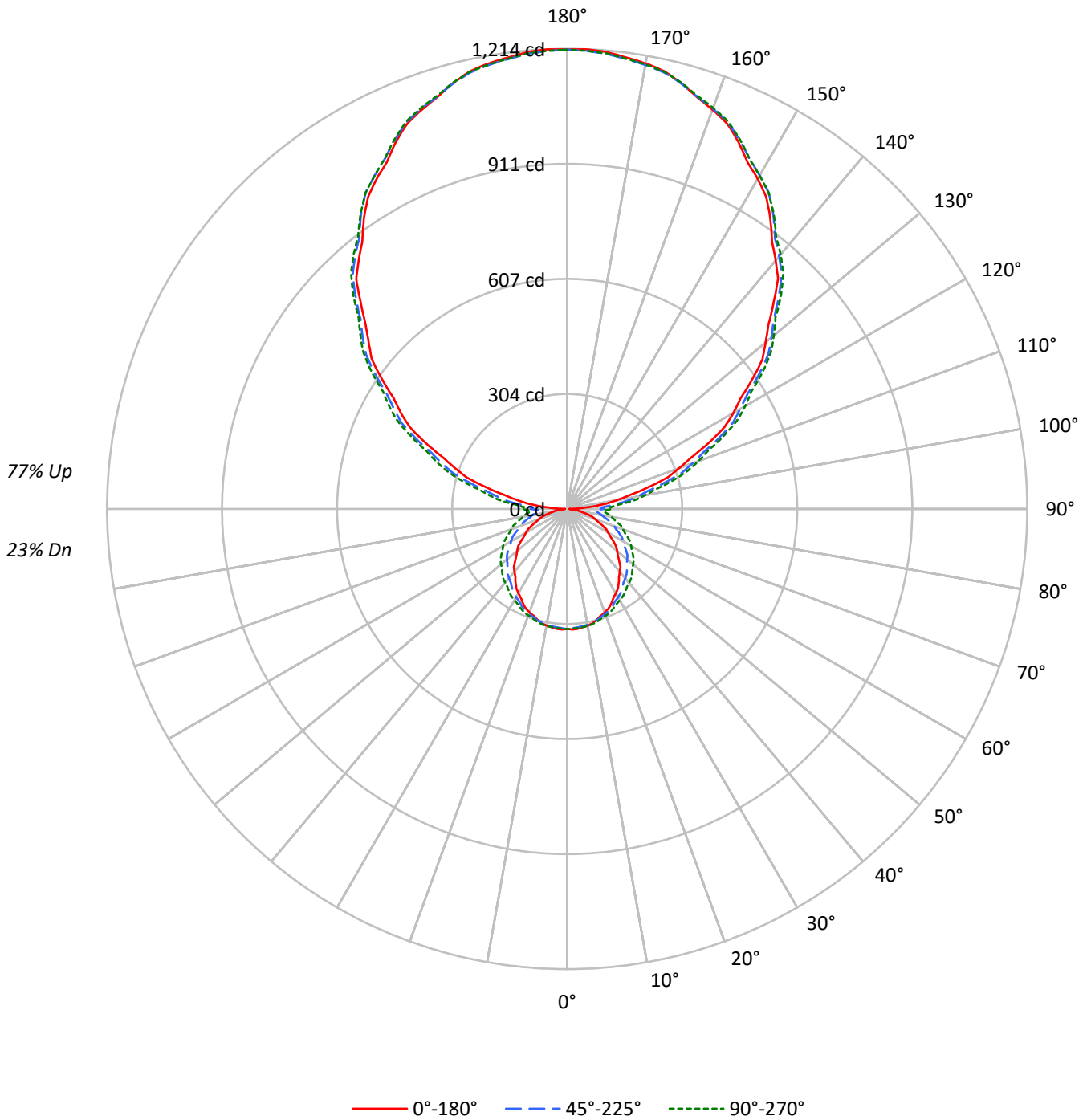
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331480-840

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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	50	30	10	0	
RCR																						
0	101	101	101	101	90	90	90	90	69	69	69	49	49	49	32	32	32	23				
1	91	87	83	79	81	77	74	71	59	57	55	42	41	39	27	26	25	18				
2	83	75	69	64	73	67	62	57	51	48	45	37	34	32	23	22	21	15				
3	75	66	59	53	66	58	52	47	45	41	37	32	29	27	20	19	17	12				
4	69	58	50	44	60	52	45	40	40	35	31	28	25	23	18	16	15	10				
5	63	51	43	38	55	46	39	34	35	30	27	25	22	20	16	14	13	9				
6	58	46	38	32	51	41	34	29	31	27	23	23	19	17	14	13	11	8				
7	53	41	33	28	47	37	30	25	28	24	20	21	17	15	13	11	10	7				
8	49	37	30	24	43	33	27	22	26	21	18	19	15	13	12	10	9	6				
9	46	34	26	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5				
10	42	31	24	19	38	28	21	17	21	17	14	16	13	10	10	8	7	5				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	5112	5112	5112
5°	5137	4921	4901
10°	5105	4774	4722
15°	5033	4621	4531
20°	4944	4456	4348
25°	4857	4297	4181
30°	4733	4133	4015
35°	4608	3975	3898
40°	4476	3840	3780
45°	4351	3721	3681
50°	4218	3612	3581
55°	4076	3496	3482
60°	3902	3373	3374
65°	3723	3232	3247
70°	3523	3079	3110
75°	3270	2929	2984
80°	2861	2776	2858
85°	2484	2642	2759



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	30.0	0.7
10°-20°	86.0	1.9
20°-30°	130.3	2.8
30°-40°	158.8	3.4
40°-50°	170.8	3.7
50°-60°	165.9	3.6
60°-70°	144.8	3.1
70°-80°	111.5	2.4
80°-90°	79.7	1.7
90°-100°	128.3	2.8
100°-110°	276.2	6.0
110°-120°	432.6	9.4
120°-130°	550.1	12.0
130°-140°	607.6	13.2
140°-150°	591.1	12.8
150°-160°	494.9	10.8
160°-170°	328.3	7.1
170°-180°	114.7	2.5
0°-30°	246.3	5.4
0°-40°	405.1	8.8
0°-60°	741.7	16.1
0°-90°	1077.7	23.4
90°-120°	837.1	18.2
90°-150°	2586.0	56.2
90°-180°	3524.0	76.6
0°-180°	4601.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	317	317	317	317	317	
5°	318	316	313	316	316	30
15°	303	304	304	308	307	85
25°	275	278	283	288	289	127
35°	237	245	254	263	267	148
45°	194	207	223	237	242	150
55°	149	166	190	205	212	133
65°	102	125	151	170	176	101
75°	56	82	112	130	137	60
85°	17	45	74	93	100	18
90°	6	45	96	112	119	6
95°	57	88	118	135	139	64
105°	222	239	264	282	288	235
115°	411	423	441	453	455	406
125°	596	606	617	626	629	533
135°	771	782	788	797	798	595
145°	935	942	948	952	950	584
155°	1069	1072	1075	1080	1077	492
165°	1163	1162	1162	1168	1164	328
175°	1210	1207	1205	1211	1206	115
180°	1212	1212	1212	1212	1212	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	318.4	318.1	317.9	317.6	317.4	317.0	316.4	315.9	315.3	314.7	315.1
5°	317.5	317.2	316.9	316.6	316.2	315.8	315.2	314.6	314.0	313.4	314.0
7.5°	314.6	314.4	314.2	314.0	313.8	313.5	313.0	312.6	312.0	311.5	312.4
10°	312.5	312.3	312.0	311.8	311.6	311.3	311.0	310.7	310.4	310.1	310.9
12.5°	308.7	308.8	308.8	308.9	308.9	308.8	308.6	308.4	308.1	307.9	308.7
15°	302.8	303.0	303.2	303.4	303.6	303.7	303.7	303.7	303.7	303.7	304.6
17.5°	295.1	295.5	295.9	296.4	296.8	297.2	297.5	297.8	298.1	298.5	299.4
20°	289.9	290.4	290.9	291.4	292.0	292.5	292.9	293.3	293.7	294.1	295.2
22.5°	284.5	285.0	285.6	286.2	286.8	287.4	287.9	288.5	289.1	289.6	290.7
25°	275.3	276.0	276.7	277.4	278.1	278.9	279.8	280.7	281.7	282.6	283.8
27.5°	264.3	265.4	266.6	267.7	268.9	270.0	271.0	272.2	273.3	274.4	275.9
30°	256.9	258.2	259.5	260.8	262.2	263.6	264.9	266.2	267.5	268.8	270.4
32.5°	248.8	250.3	251.8	253.3	254.8	256.3	257.9	259.4	261.1	262.6	264.5
35°	237.2	238.9	240.7	242.4	244.1	245.9	247.9	249.8	251.8	253.7	255.9
37.5°	224.5	226.5	228.5	230.6	232.5	234.8	237.3	239.7	242.3	244.8	247.3
40°	216.1	218.3	220.6	222.8	225.0	227.5	230.2	233.1	235.8	238.5	241.2
42.5°	208.0	210.3	212.5	214.7	217.0	219.6	222.9	226.0	229.1	232.3	235.2
45°	194.5	197.2	200.1	202.8	205.5	208.6	212.3	215.8	219.3	223.0	226.1
47.5°	181.2	184.2	187.2	190.2	193.2	196.8	201.0	205.1	209.3	213.5	216.8
50°	172.1	175.2	178.3	181.5	184.7	188.5	193.2	197.7	202.3	206.9	210.4
52.5°	163.2	166.5	169.9	173.2	176.5	180.6	185.4	190.3	195.1	200.0	203.5
55°	149.1	152.8	156.4	160.1	163.8	168.2	173.6	178.8	184.2	189.5	193.2
57.5°	135.1	139.3	143.4	147.5	151.7	156.4	161.9	167.2	172.7	178.1	182.1
60°	125.2	129.7	134.0	138.4	142.8	147.8	153.7	159.5	165.3	171.1	175.0
62.5°	116.4	121.0	125.5	130.1	134.6	139.8	145.6	151.4	157.2	163.1	167.1
65°	101.8	106.8	111.8	116.8	121.8	127.3	133.3	139.4	145.4	151.4	155.6
67.5°	88.5	93.7	98.9	104.1	109.4	115.0	121.2	127.3	133.5	139.7	143.9
70°	78.9	84.2	89.5	94.8	100.1	105.9	112.2	118.6	124.9	131.2	135.6
72.5°	70.1	75.5	81.0	86.4	92.0	97.9	104.3	110.7	117.1	123.5	127.8
75°	56.5	62.1	67.9	73.5	79.3	85.3	91.9	98.5	104.9	111.5	115.8
77.5°	43.2	49.2	55.1	61.1	67.2	73.4	80.1	86.6	93.3	99.9	104.3
80°	34.4	40.6	46.9	53.0	59.3	65.7	72.3	79.0	85.5	92.2	96.4
82.5°	27.1	33.2	39.4	45.4	51.6	58.1	64.7	71.5	78.2	84.8	89.2
85°	16.6	22.8	29.2	35.4	41.8	48.2	54.7	61.3	67.8	74.3	78.6
87.5°	9.2	15.9	22.4	29.1	35.6	42.7	50.3	57.8	65.3	72.8	77.0
90°	5.7	14.2	22.9	31.5	40.2	50.3	61.8	73.3	84.8	96.3	100.0
92.5°	22.4	29.9	37.5	44.9	52.4	59.9	67.4	74.8	82.3	89.8	93.9
95°	56.9	63.9	71.0	78.1	85.1	91.9	98.5	105.1	111.7	118.3	122.1
97.5°	100.4	106.6	112.9	119.2	125.4	131.9	138.7	145.4	152.1	158.9	162.7
100°	133.1	138.7	144.3	149.9	155.5	161.5	167.8	174.2	180.7	187.0	190.8
102.5°	167.1	172.0	176.9	181.8	186.7	192.4	198.7	205.2	211.6	218.0	221.9
105°	222.2	225.8	229.4	233.1	236.7	241.5	247.2	253.0	258.7	264.5	268.5
107.5°	278.1	281.6	284.9	288.2	291.6	295.9	300.9	306.0	311.0	316.2	319.7
110°	313.8	317.2	320.6	324.0	327.4	331.6	336.6	341.6	346.6	351.6	354.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	353.0	356.2	359.2	362.3	365.4	369.2	373.8	378.4	382.9	387.5	390.2
115°	411.0	413.4	416.0	418.4	420.9	424.2	428.4	432.5	436.7	440.8	443.6
117.5°	468.2	470.8	473.3	475.8	478.4	481.2	484.1	487.2	490.1	493.0	495.5
120°	506.6	508.9	511.1	513.3	515.5	517.9	520.1	522.3	524.6	526.8	529.7
122.5°	541.9	544.2	546.5	548.9	551.2	553.7	556.2	558.8	561.4	563.9	566.1
125°	596.2	598.2	600.3	602.4	604.4	606.7	609.3	611.9	614.4	617.0	619.1
127.5°	649.6	652.1	654.6	657.1	659.5	661.8	663.5	665.3	667.1	668.9	670.7
130°	683.2	686.0	688.8	691.8	694.6	696.8	698.5	700.2	701.9	703.6	705.6
132.5°	720.8	723.1	725.4	727.7	730.0	732.1	733.8	735.6	737.3	739.0	740.4
135°	770.6	773.2	775.7	778.2	780.6	782.6	784.2	785.6	787.1	788.5	790.4
137.5°	823.6	825.7	827.7	829.7	831.7	833.2	834.4	835.4	836.4	837.5	839.1
140°	855.6	857.5	859.5	861.4	863.3	864.9	866.4	867.7	869.0	870.3	872.0
142.5°	888.3	890.2	892.2	894.1	896.1	897.5	898.3	899.1	899.9	900.7	902.2
145°	934.8	936.4	938.1	939.7	941.3	942.7	944.1	945.4	946.8	948.2	949.0
147.5°	976.8	978.8	980.7	982.5	984.4	985.8	986.7	987.6	988.6	989.5	990.1
150°	1005.4	1006.8	1008.1	1009.6	1010.9	1012.1	1013.0	1013.9	1014.8	1015.7	1016.3
152.5°	1030.9	1032.2	1033.6	1034.9	1036.3	1037.5	1038.6	1039.7	1040.8	1041.9	1042.7
155°	1068.8	1069.5	1070.3	1071.0	1071.6	1072.3	1073.0	1073.7	1074.3	1075.0	1076.1
157.5°	1101.4	1101.9	1102.3	1102.8	1103.2	1103.7	1104.1	1104.5	1104.9	1105.3	1106.8
160°	1121.1	1121.5	1122.0	1122.4	1122.9	1123.2	1123.5	1123.7	1123.9	1124.1	1125.5
162.5°	1139.0	1139.1	1139.2	1139.3	1139.4	1139.5	1139.8	1140.0	1140.2	1140.4	1142.1
165°	1163.0	1162.8	1162.6	1162.3	1162.1	1162.0	1162.0	1162.0	1162.0	1162.0	1163.6
167.5°	1183.1	1182.3	1181.6	1180.9	1180.3	1179.9	1179.9	1179.8	1179.8	1179.7	1181.3
170°	1193.7	1193.0	1192.3	1191.6	1190.9	1190.5	1190.2	1190.0	1189.8	1189.6	1191.1
172.5°	1201.0	1200.3	1199.6	1199.0	1198.3	1197.8	1197.6	1197.4	1197.2	1196.9	1198.5
175°	1210.0	1209.3	1208.7	1208.0	1207.3	1206.7	1206.3	1205.8	1205.4	1204.9	1206.5
177.5°	1213.8	1213.2	1212.6	1212.0	1211.5	1211.0	1210.7	1210.3	1210.0	1209.6	1210.7
180°	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	316.6	316.6	316.6	316.6	316.6	316.6	316.6	316.6
2.5°	315.5	315.9	316.3	316.5	316.3	316.1	316.0	315.8
5°	314.6	315.2	315.8	316.0	315.9	315.8	315.7	315.6
7.5°	313.1	313.8	314.6	314.9	314.8	314.7	314.6	314.5
10°	311.7	312.6	313.4	313.8	313.7	313.6	313.5	313.4
12.5°	309.5	310.3	311.1	311.5	311.4	311.3	311.2	311.1
15°	305.5	306.5	307.4	307.8	307.7	307.6	307.5	307.4
17.5°	300.4	301.3	302.3	302.8	302.8	302.8	302.8	302.8
20°	296.3	297.4	298.5	299.1	299.1	299.1	299.1	299.1
22.5°	292.0	293.1	294.2	294.8	295.0	295.1	295.3	295.5
25°	285.1	286.3	287.5	288.2	288.5	288.8	289.1	289.4
27.5°	277.4	279.0	280.5	281.4	281.7	281.9	282.1	282.4
30°	272.1	273.8	275.4	276.3	276.6	276.9	277.2	277.5
32.5°	266.3	268.2	270.1	271.4	271.9	272.5	273.0	273.5
35°	258.2	260.4	262.7	264.2	264.9	265.6	266.3	267.0
37.5°	249.7	252.3	254.8	256.4	257.1	257.9	258.6	259.3
40°	243.9	246.5	249.1	251.0	251.9	252.8	253.7	254.6
42.5°	238.1	241.0	243.9	245.8	246.7	247.6	248.5	249.4
45°	229.2	232.5	235.6	237.7	238.7	239.7	240.8	241.8
47.5°	220.2	223.4	226.7	228.9	230.0	231.2	232.3	233.4
50°	213.8	217.3	220.8	223.1	224.2	225.3	226.4	227.5
52.5°	207.0	210.6	214.1	216.5	217.7	218.9	220.2	221.3
55°	196.8	200.5	204.2	206.6	207.9	209.3	210.7	212.0
57.5°	186.0	190.0	193.9	196.5	197.9	199.2	200.6	202.0
60°	178.8	182.8	186.6	189.2	190.7	192.1	193.6	195.0
62.5°	171.3	175.4	179.6	182.3	183.6	184.9	186.3	187.6
65°	159.8	163.9	168.1	170.9	172.2	173.5	174.8	176.1
67.5°	148.0	152.3	156.5	159.4	160.7	162.1	163.5	164.9
70°	140.0	144.3	148.8	151.6	152.8	154.0	155.2	156.4
72.5°	132.1	136.4	140.7	143.6	145.0	146.5	148.0	149.5
75°	120.3	124.6	129.1	131.9	133.2	134.5	135.8	137.1
77.5°	108.7	113.0	117.3	120.3	121.7	123.1	124.5	125.9
80°	100.8	105.0	109.4	112.2	113.6	115.0	116.4	117.9
82.5°	93.4	97.8	102.0	104.8	106.1	107.6	108.9	110.2
85°	82.9	87.2	91.5	94.3	95.7	97.1	98.6	100.0
87.5°	81.0	85.0	89.2	91.8	93.2	94.5	95.9	97.3
90°	103.6	107.2	110.9	113.4	114.8	116.3	117.8	119.2
92.5°	98.0	102.0	106.1	108.8	110.1	111.4	112.6	113.9
95°	125.9	129.9	133.7	136.0	136.8	137.5	138.4	139.2
97.5°	166.4	170.2	174.0	176.4	177.5	178.7	179.9	181.1
100°	194.6	198.3	202.1	204.5	205.3	206.2	207.1	208.0
102.5°	225.7	229.6	233.5	235.9	236.8	237.6	238.5	239.4
105°	272.6	276.5	280.5	283.2	284.3	285.4	286.5	287.6
107.5°	323.4	327.0	330.6	332.4	332.5	332.5	332.6	332.8
110°	358.1	361.4	364.7	366.5	367.0	367.4	367.8	368.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	392.9	395.7	398.4	400.0	400.6	401.2	401.9	402.5
115°	446.5	449.3	452.1	453.7	454.1	454.6	455.0	455.4
117.5°	498.0	500.5	502.9	504.3	504.7	505.0	505.4	505.7
120°	532.6	535.4	538.3	539.9	540.4	540.8	541.2	541.7
122.5°	568.4	570.6	572.8	574.2	574.6	575.1	575.5	576.0
125°	621.2	623.3	625.3	626.7	627.4	628.0	628.7	629.4
127.5°	672.4	674.1	675.8	676.7	676.9	677.1	677.2	677.4
130°	707.6	709.5	711.6	712.5	712.4	712.4	712.3	712.2
132.5°	741.7	743.2	744.5	745.2	745.3	745.4	745.5	745.6
135°	792.3	794.3	796.2	797.2	797.4	797.5	797.6	797.8
137.5°	840.8	842.5	844.2	845.0	844.8	844.6	844.3	844.0
140°	873.6	875.3	876.9	877.6	877.3	877.0	876.7	876.4
142.5°	903.6	905.1	906.7	907.2	906.9	906.5	906.1	905.6
145°	949.9	950.7	951.5	951.8	951.4	951.0	950.6	950.2
147.5°	990.7	991.3	991.8	991.8	991.2	990.6	990.0	989.4
150°	1017.0	1017.7	1018.4	1018.4	1017.7	1017.0	1016.3	1015.7
152.5°	1043.6	1044.5	1045.3	1045.3	1044.5	1043.6	1042.7	1041.9
155°	1077.3	1078.4	1079.5	1079.7	1079.1	1078.4	1077.7	1077.0
157.5°	1108.4	1109.9	1111.5	1111.7	1110.6	1109.5	1108.4	1107.3
160°	1126.8	1128.2	1129.5	1129.8	1128.9	1128.0	1127.1	1126.2
162.5°	1143.6	1145.1	1146.7	1146.9	1145.8	1144.7	1143.6	1142.6
165°	1165.2	1166.7	1168.3	1168.5	1167.4	1166.3	1165.2	1164.0
167.5°	1183.0	1184.6	1186.1	1186.3	1185.2	1184.0	1182.8	1181.6
170°	1192.8	1194.4	1196.0	1196.1	1194.7	1193.4	1191.9	1190.6
172.5°	1200.1	1201.7	1203.3	1203.5	1202.0	1200.7	1199.3	1198.0
175°	1208.1	1209.7	1211.2	1211.4	1210.0	1208.7	1207.3	1206.0
177.5°	1211.8	1212.8	1214.0	1214.0	1212.8	1211.8	1210.7	1209.6
180°	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0	1212.0

(END OF REPORT)