

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: P332742

Luminaire Tested: **S124DIW-S350D1560U835-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332742
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-S350D1560U835-4F0-1E-UDD-D1
Description: DEFINE 4 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 350 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1560 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6855.8 lumens
Efficiency: N/A
Efficacy: 128.4 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: Semi-Indirect

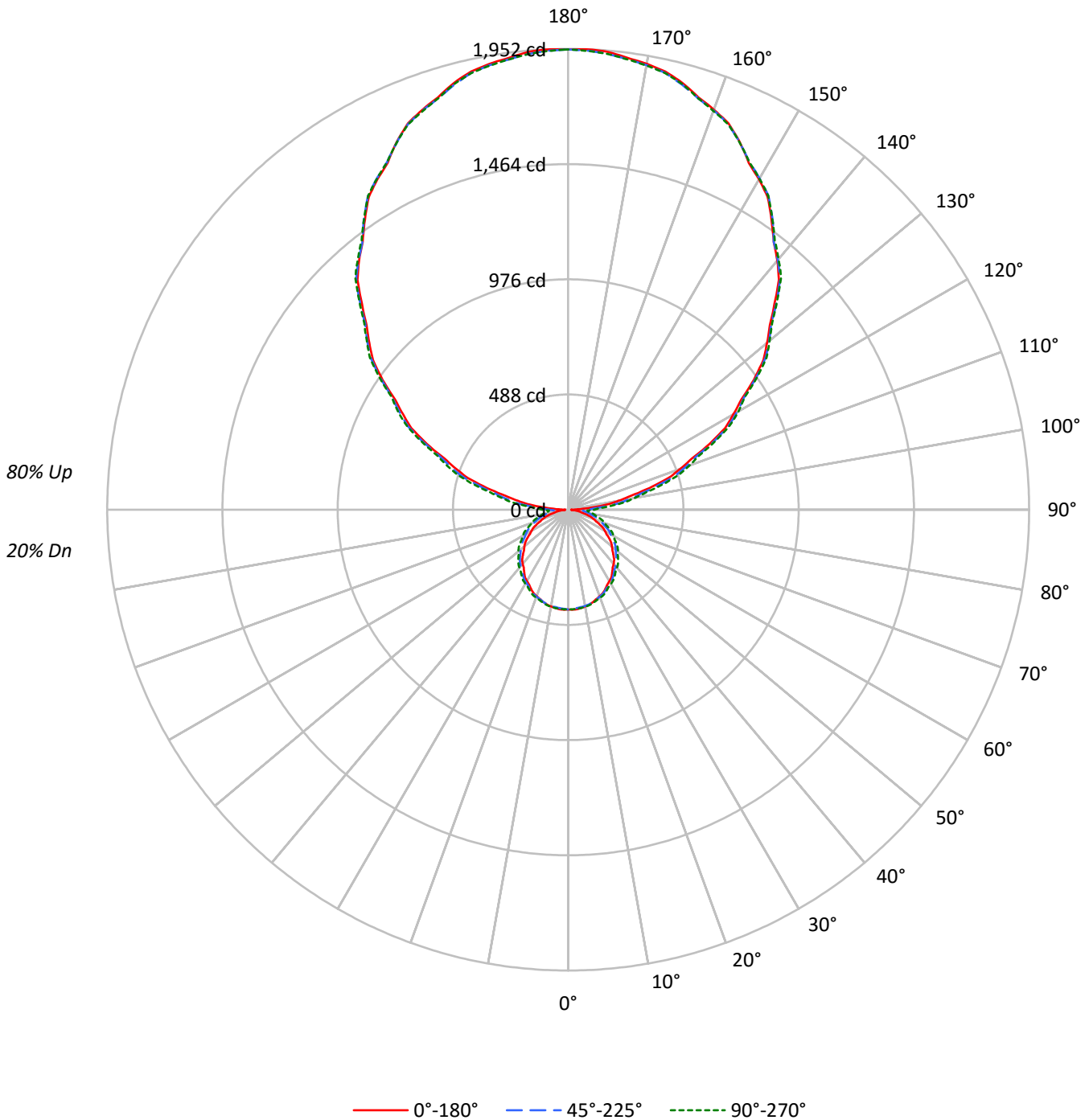
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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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	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	20				
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16				
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13				
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11				
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9				
5	62	51	43	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8				
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	11	10	7				
7	53	41	33	28	46	36	30	25	28	23	20	20	17	14	12	10	9	6				
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5				
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	3412	3412	3412
5°	3423	3335	3344
10°	3402	3281	3278
15°	3371	3217	3200
20°	3325	3147	3124
25°	3274	3070	3039
30°	3217	2992	2954
35°	3154	2912	2878
40°	3103	2836	2800
45°	3027	2766	2732
50°	2964	2686	2661
55°	2899	2610	2577
60°	2796	2513	2501
65°	2682	2410	2407
70°	2547	2292	2298
75°	2356	2161	2199
80°	2145	2037	2102
85°	1878	1926	2046



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	40.0	0.6
10°-20°	114.7	1.7
20°-30°	173.4	2.5
30°-40°	209.8	3.1
40°-50°	221.8	3.2
50°-60°	208.8	3.0
60°-70°	173.2	2.5
70°-80°	121.7	1.8
80°-90°	74.6	1.1
90°-100°	169.4	2.5
100°-110°	411.2	6.0
110°-120°	666.9	9.7
120°-130°	864.0	12.6
130°-140°	962.4	14.0
140°-150°	941.9	13.7
150°-160°	791.3	11.5
160°-170°	526.5	7.7
170°-180°	184.4	2.7
0°-30°	328.1	4.8
0°-40°	537.9	7.8
0°-60°	968.5	14.1
0°-90°	1337.9	19.5
90°-120°	1247.4	18.2
90°-150°	4015.7	58.6
90°-180°	5518.0	80.5
0°-180°	6855.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	423	423	423	423	423	
5°	423	422	418	422	422	40
15°	406	406	405	409	408	114
25°	371	374	375	380	381	171
35°	325	330	335	341	343	203
45°	271	280	289	296	299	209
55°	212	222	236	245	248	189
65°	147	162	178	189	194	145
75°	81	99	119	132	136	87
85°	25	45	66	80	85	27
90°	12	47	80	102	110	11
95°	97	126	156	172	177	106
105°	356	367	390	406	415	378
115°	660	665	677	685	687	651
125°	959	959	969	975	975	855
135°	1236	1245	1248	1252	1251	956
145°	1501	1506	1508	1509	1506	939
155°	1719	1719	1717	1723	1717	791
165°	1871	1867	1864	1872	1867	527
175°	1947	1939	1938	1947	1938	185
180°	1950	1950	1950	1950	1950	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	424.2	423.9	423.7	423.4	423.2	422.7	422.1	421.4	420.7	420.0	420.6
5°	423.2	422.8	422.5	422.2	421.9	421.4	420.6	419.9	419.2	418.4	419.3
7.5°	419.6	419.4	419.2	419.0	418.8	418.4	417.8	417.2	416.6	416.0	416.9
10°	416.5	416.4	416.3	416.2	416.1	415.8	415.3	414.7	414.2	413.7	414.6
12.5°	412.4	412.3	412.3	412.3	412.3	412.1	411.7	411.4	411.0	410.7	411.5
15°	405.6	405.8	405.9	406.0	406.1	406.0	405.6	405.3	405.0	404.7	405.6
17.5°	396.5	396.8	397.1	397.4	397.7	397.9	397.8	397.7	397.7	397.6	398.6
20°	390.0	390.3	390.7	391.0	391.3	391.5	391.6	391.7	391.8	391.9	393.0
22.5°	382.8	383.2	383.6	384.0	384.4	384.7	384.9	385.1	385.3	385.5	386.5
25°	371.1	371.7	372.4	373.0	373.6	374.1	374.4	374.7	375.0	375.4	376.5
27.5°	358.0	359.0	359.9	360.8	361.7	362.4	362.9	363.4	363.9	364.4	365.4
30°	349.3	350.2	351.0	351.8	352.7	353.5	354.2	354.9	355.7	356.4	357.6
32.5°	339.9	340.9	341.9	342.9	343.9	344.8	345.6	346.4	347.3	348.1	349.4
35°	324.7	326.0	327.2	328.5	329.8	330.9	332.0	333.0	334.1	335.1	336.6
37.5°	309.5	310.9	312.4	313.8	315.3	316.6	318.0	319.3	320.6	321.9	323.4
40°	299.6	301.0	302.4	303.7	305.1	306.5	308.0	309.5	310.9	312.4	314.0
42.5°	288.3	289.8	291.3	292.9	294.4	296.0	297.8	299.5	301.2	302.9	304.7
45°	270.7	272.7	274.7	276.7	278.7	280.7	282.7	284.7	286.7	288.7	290.5
47.5°	254.0	256.1	258.1	260.2	262.2	264.4	266.7	269.1	271.4	273.7	275.5
50°	241.9	244.2	246.5	248.8	251.1	253.4	255.8	258.1	260.4	262.7	264.8
52.5°	229.8	232.1	234.4	236.7	239.0	241.5	244.1	246.8	249.4	252.1	254.2
55°	212.1	214.3	216.5	218.7	220.9	223.6	226.7	229.9	233.0	236.2	238.3
57.5°	192.3	195.0	197.7	200.5	203.2	206.1	209.3	212.4	215.5	218.7	221.2
60°	179.4	182.1	184.9	187.6	190.3	193.4	196.9	200.4	203.8	207.3	209.7
62.5°	166.9	169.9	172.9	175.9	178.8	182.1	185.5	189.0	192.5	196.0	198.4
65°	146.7	150.1	153.5	156.8	160.2	163.7	167.2	170.8	174.4	178.0	180.6
67.5°	127.3	130.9	134.5	138.1	141.6	145.3	149.2	153.0	156.8	160.6	163.3
70°	114.1	117.6	121.2	124.8	128.4	132.2	136.2	140.2	144.2	148.2	151.0
72.5°	101.2	104.9	108.5	112.2	115.8	119.8	124.0	128.3	132.5	136.8	139.5
75°	81.4	85.3	89.2	93.1	97.0	101.1	105.6	110.0	114.4	118.8	121.8
77.5°	63.0	67.1	71.2	75.3	79.4	83.8	88.4	93.1	97.7	102.3	105.3
80°	51.6	55.8	60.0	64.2	68.4	72.8	77.5	82.1	86.7	91.4	94.5
82.5°	40.2	44.6	49.0	53.4	57.7	62.2	66.9	71.5	76.1	80.8	84.0
85°	25.1	29.5	33.9	38.3	42.8	47.3	52.1	56.8	61.5	66.3	69.4
87.5°	14.9	19.9	25.0	30.0	35.0	40.1	45.3	50.4	55.5	60.7	64.1
90°	12.1	20.0	27.9	35.8	43.7	51.2	58.4	65.6	72.8	80.0	85.1
92.5°	39.5	47.5	55.5	63.5	71.5	78.7	85.1	91.5	97.9	104.3	108.5
95°	96.6	103.1	109.6	116.1	122.6	129.1	135.8	142.5	149.1	155.8	159.6
97.5°	163.6	169.0	174.4	179.8	185.2	191.4	198.4	205.5	212.5	219.5	223.4
100°	216.3	220.4	224.5	228.5	232.6	238.2	245.3	252.4	259.6	266.7	270.2
102.5°	271.8	274.7	277.7	280.6	283.5	288.4	295.1	301.9	308.7	315.4	319.1
105°	355.6	358.0	360.5	362.9	365.3	369.2	374.4	379.6	384.9	390.1	393.7
107.5°	444.5	446.6	448.7	450.8	453.0	456.0	459.8	463.7	467.6	471.5	475.0
110°	504.4	506.5	508.7	510.8	513.0	515.7	519.1	522.4	525.7	529.1	530.8



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	566.7	568.2	569.6	571.1	572.5	574.7	577.6	580.5	583.4	586.3	588.5
115°	660.3	661.2	662.2	663.1	664.0	665.9	668.6	671.3	674.0	676.6	678.6
117.5°	748.8	749.7	750.5	751.3	752.2	753.9	756.6	759.2	761.9	764.6	765.6
120°	807.6	809.2	810.9	812.5	814.2	816.0	818.1	820.1	822.2	824.2	824.6
122.5°	869.1	869.7	870.3	870.9	871.5	873.0	875.4	877.8	880.2	882.6	883.6
125°	959.4	959.3	959.2	959.1	958.9	960.0	962.3	964.6	966.9	969.2	970.6
127.5°	1041.6	1042.5	1043.4	1044.3	1045.2	1046.4	1047.9	1049.4	1050.8	1052.3	1053.6
130°	1099.1	1100.0	1100.9	1101.8	1102.7	1104.0	1105.7	1107.4	1109.1	1110.7	1112.0
132.5°	1158.2	1158.9	1159.5	1160.1	1160.8	1161.6	1162.7	1163.8	1164.9	1165.9	1167.1
135°	1235.9	1237.9	1239.9	1241.9	1243.9	1245.3	1246.0	1246.8	1247.5	1248.2	1249.2
137.5°	1320.9	1321.7	1322.6	1323.4	1324.2	1325.1	1326.0	1326.9	1327.8	1328.7	1329.3
140°	1377.6	1378.2	1378.7	1379.3	1379.9	1380.2	1380.3	1380.4	1380.5	1380.6	1381.7
142.5°	1429.1	1429.7	1430.4	1431.0	1431.7	1431.8	1431.5	1431.2	1430.9	1430.5	1431.7
145°	1500.8	1502.0	1503.2	1504.5	1505.7	1506.5	1506.8	1507.2	1507.5	1507.8	1508.1
147.5°	1571.9	1573.4	1574.9	1576.5	1578.0	1578.6	1578.3	1578.0	1577.8	1577.5	1577.3
150°	1615.4	1616.6	1617.8	1619.1	1620.3	1620.9	1620.9	1620.9	1620.9	1620.9	1620.9
152.5°	1656.0	1656.8	1657.6	1658.4	1659.1	1659.7	1659.9	1660.2	1660.5	1660.7	1661.5
155°	1718.9	1718.9	1718.9	1718.9	1718.9	1718.8	1718.4	1718.1	1717.8	1717.4	1718.8
157.5°	1772.0	1771.4	1770.8	1770.2	1769.6	1769.3	1769.2	1769.1	1769.1	1769.0	1770.0
160°	1803.4	1803.0	1802.7	1802.4	1802.0	1801.7	1801.4	1801.0	1800.7	1800.4	1801.4
162.5°	1832.3	1831.5	1830.6	1829.7	1828.8	1828.2	1827.9	1827.6	1827.2	1826.9	1828.7
165°	1871.2	1870.2	1869.2	1868.2	1867.2	1866.4	1865.7	1865.0	1864.4	1863.7	1865.7
167.5°	1901.1	1899.7	1898.3	1896.9	1895.5	1894.8	1894.9	1894.9	1895.0	1895.1	1897.1
170°	1918.0	1916.3	1914.6	1912.9	1911.3	1910.6	1910.9	1911.3	1911.6	1911.9	1913.9
172.5°	1930.0	1928.6	1927.2	1925.8	1924.4	1923.7	1923.8	1923.9	1923.9	1924.0	1926.3
175°	1946.6	1944.9	1943.3	1941.6	1939.9	1938.9	1938.6	1938.2	1937.9	1937.6	1939.9
177.5°	1952.0	1950.7	1949.4	1948.0	1946.7	1946.0	1946.0	1946.0	1946.0	1946.0	1947.9
180°	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	422.7	422.7	422.7	422.7	422.7	422.7	422.7	422.7
2.5°	421.2	421.8	422.4	422.6	422.6	422.5	422.4	422.3
5°	420.1	420.9	421.8	422.2	422.1	421.9	421.8	421.7
7.5°	417.9	418.8	419.8	420.2	420.1	420.0	419.9	419.8
10°	415.6	416.5	417.5	417.9	417.8	417.7	417.6	417.5
12.5°	412.4	413.3	414.1	414.5	414.5	414.5	414.5	414.4
15°	406.6	407.5	408.5	408.9	408.8	408.7	408.6	408.5
17.5°	399.5	400.5	401.5	401.9	401.8	401.7	401.7	401.6
20°	394.0	395.1	396.1	396.7	396.7	396.7	396.7	396.7
22.5°	387.6	388.6	389.7	390.3	390.5	390.6	390.8	391.0
25°	377.7	378.8	380.0	380.6	380.7	380.8	380.9	381.0
27.5°	366.5	367.6	368.7	369.3	369.4	369.5	369.6	369.8
30°	358.7	359.9	361.0	361.7	361.9	362.2	362.4	362.6
32.5°	350.7	352.1	353.4	354.2	354.4	354.6	354.8	355.0
35°	338.1	339.5	341.0	341.9	342.2	342.5	342.9	343.2
37.5°	324.9	326.3	327.8	328.8	329.1	329.4	329.8	330.1
40°	315.6	317.1	318.7	319.7	320.1	320.6	321.0	321.4
42.5°	306.4	308.2	309.9	311.0	311.3	311.6	312.0	312.3
45°	292.3	294.1	295.9	297.0	297.6	298.1	298.6	299.1
47.5°	277.4	279.2	281.1	282.3	283.0	283.6	284.2	284.9
50°	266.9	269.0	271.1	272.5	273.1	273.7	274.4	275.0
52.5°	256.3	258.4	260.5	261.9	262.5	263.1	263.8	264.4
55°	240.4	242.5	244.6	246.0	246.6	247.2	247.9	248.5
57.5°	223.7	226.2	228.7	230.2	230.8	231.4	232.0	232.6
60°	212.2	214.6	217.0	218.6	219.5	220.3	221.2	222.0
62.5°	200.8	203.2	205.6	207.3	208.1	208.9	209.8	210.6
65°	183.2	185.9	188.5	190.2	191.1	191.9	192.8	193.6
67.5°	166.0	168.7	171.3	173.1	173.9	174.7	175.5	176.4
70°	153.8	156.7	159.5	161.3	162.0	162.8	163.5	164.2
72.5°	142.3	145.1	147.8	149.6	150.4	151.2	152.1	152.9
75°	124.7	127.6	130.6	132.5	133.5	134.4	135.4	136.3
77.5°	108.3	111.3	114.3	116.3	117.3	118.3	119.3	120.3
80°	97.7	100.8	104.0	106.0	106.8	107.7	108.5	109.3
82.5°	87.2	90.5	93.7	95.8	96.7	97.6	98.6	99.5
85°	72.6	75.7	78.9	81.0	82.0	83.1	84.1	85.2
87.5°	67.6	71.0	74.5	76.8	77.8	78.9	79.9	81.0
90°	90.2	95.2	100.3	103.6	105.1	106.6	108.1	109.6
92.5°	112.6	116.8	121.0	123.7	124.9	126.2	127.4	128.7
95°	163.5	167.3	171.2	173.6	174.5	175.4	176.4	177.3
97.5°	227.4	231.4	235.3	237.8	238.7	239.6	240.5	241.4
100°	273.7	277.2	280.7	282.8	283.6	284.3	285.0	285.8
102.5°	322.8	326.5	330.2	332.6	333.7	334.8	335.9	337.0
105°	397.4	401.0	404.6	407.4	409.2	411.1	412.9	414.8
107.5°	478.5	482.1	485.6	487.7	488.4	489.1	489.8	490.5
110°	532.6	534.3	536.1	537.9	539.7	541.6	543.4	545.3



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	590.7	592.9	595.1	596.7	597.8	598.8	599.9	600.9
115°	680.6	682.6	684.6	685.8	686.2	686.6	687.0	687.4
117.5°	766.7	767.7	768.8	769.4	769.6	769.7	769.9	770.1
120°	825.1	825.5	825.9	826.9	828.4	829.9	831.4	832.9
122.5°	884.6	885.5	886.5	886.7	886.3	885.8	885.4	884.9
125°	971.9	973.2	974.5	975.2	975.1	975.1	975.1	975.0
127.5°	1054.8	1056.0	1057.2	1057.9	1058.1	1058.3	1058.5	1058.6
130°	1113.2	1114.4	1115.6	1115.9	1115.2	1114.5	1113.8	1113.1
132.5°	1168.2	1169.3	1170.5	1171.1	1171.2	1171.3	1171.4	1171.5
135°	1250.3	1251.3	1252.3	1252.6	1252.2	1251.8	1251.5	1251.1
137.5°	1330.0	1330.7	1331.3	1332.0	1332.8	1333.5	1334.2	1334.9
140°	1382.7	1383.7	1384.7	1385.4	1385.6	1385.7	1385.9	1386.1
142.5°	1432.8	1433.9	1435.1	1435.8	1436.2	1436.6	1436.9	1437.3
145°	1508.4	1508.7	1509.0	1508.9	1508.3	1507.7	1507.1	1506.5
147.5°	1577.1	1576.9	1576.8	1576.7	1576.7	1576.7	1576.7	1576.7
150°	1620.9	1620.9	1620.9	1620.8	1620.4	1620.1	1619.8	1619.4
152.5°	1662.3	1663.1	1663.9	1663.9	1663.0	1662.2	1661.3	1660.4
155°	1720.1	1721.4	1722.8	1722.8	1721.4	1720.1	1718.8	1717.4
157.5°	1771.0	1772.0	1773.0	1772.9	1771.8	1770.7	1769.5	1768.4
160°	1802.4	1803.4	1804.4	1804.0	1802.4	1800.7	1799.0	1797.3
162.5°	1830.5	1832.3	1834.1	1834.2	1832.5	1830.9	1829.2	1827.5
165°	1867.7	1869.7	1871.7	1872.1	1870.7	1869.4	1868.0	1866.7
167.5°	1899.1	1901.1	1903.1	1903.1	1901.0	1898.9	1896.8	1894.7
170°	1916.0	1918.0	1920.0	1919.8	1917.5	1915.1	1912.8	1910.4
172.5°	1928.6	1930.8	1933.1	1933.1	1930.7	1928.4	1926.0	1923.7
175°	1942.3	1944.6	1947.0	1947.0	1944.6	1942.3	1939.9	1937.6
177.5°	1949.8	1951.6	1953.5	1953.4	1951.2	1949.1	1947.0	1944.8
180°	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6	1949.6

(END OF REPORT)