

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: P331521-840

Luminaire Tested: **S122DIW-S485D1440U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331521-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIW-S485D1440U840-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7807.1 lumens  
Efficiency: N/A  
Efficacy: 128.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

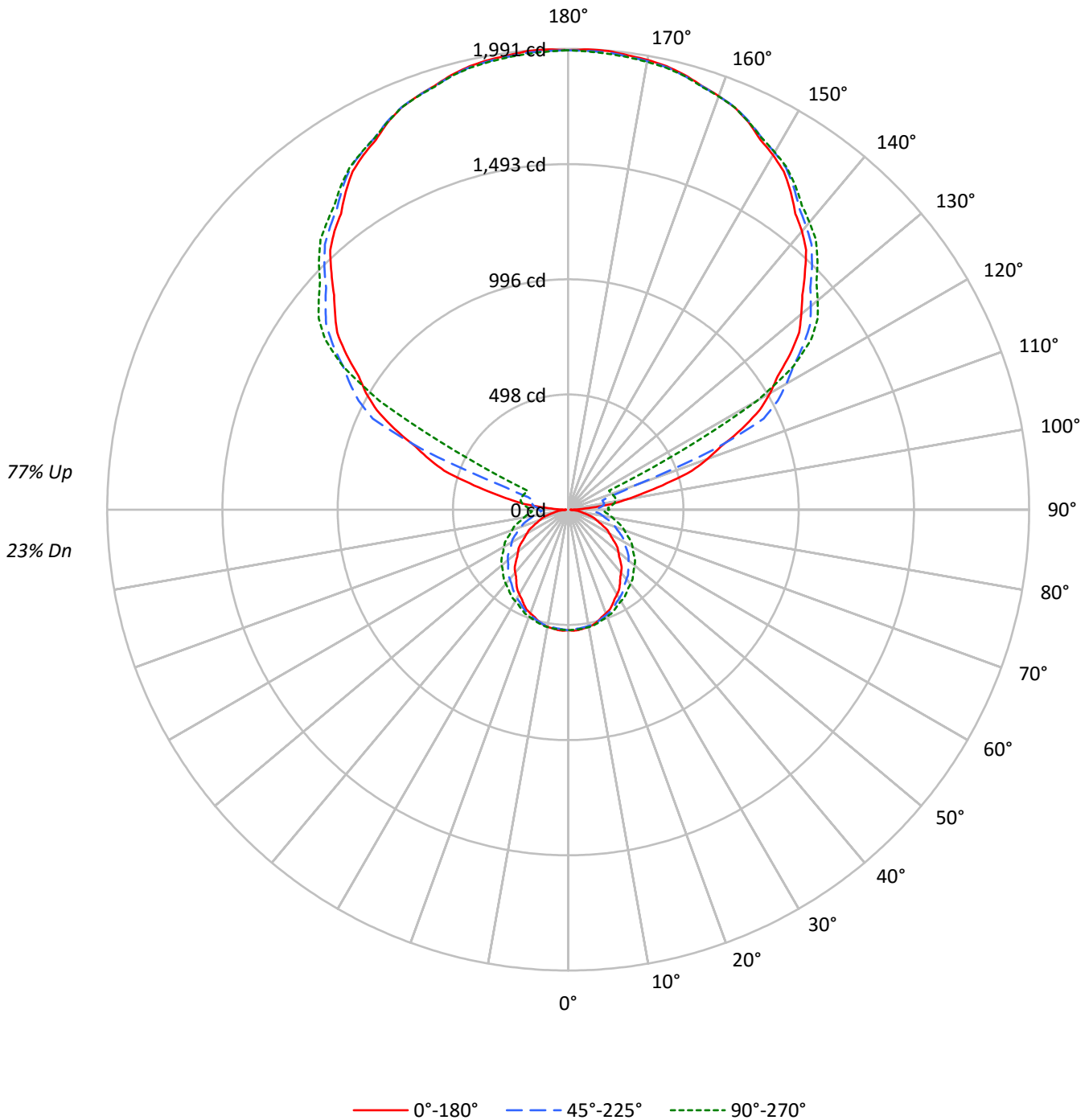
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	23
1	91	87	83	79	80	77	73	70	58	56	54	42	40	39	26	25	25	18
2	83	75	69	64	73	67	62	57	51	47	44	36	34	32	23	21	20	14
3	75	66	58	53	66	58	52	47	45	40	37	32	29	27	20	18	17	12
4	68	58	50	44	60	51	45	40	39	35	31	28	25	23	18	16	14	10
5	63	51	43	37	55	46	39	34	35	30	26	25	22	19	16	14	12	8
6	57	46	38	32	51	41	34	29	31	26	23	22	19	17	14	12	11	7
7	53	41	33	28	47	37	30	25	28	23	20	20	17	15	13	11	9	6
8	49	37	30	24	43	33	27	22	26	21	17	18	15	13	12	10	8	6
9	45	34	26	21	40	30	24	19	23	19	15	17	14	11	11	9	8	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	7	5

**AVERAGE LUMINANCE (cd/sqm):**

	0°	45°	90°
0°	8402	8402	8402
5°	8443	8088	8058
10°	8390	7850	7761
15°	8275	7596	7448
20°	8129	7324	7148
25°	7984	7062	6875
30°	7780	6794	6601
35°	7575	6536	6409
40°	7360	6315	6215
45°	7153	6118	6051
50°	6934	5937	5888
55°	6700	5744	5722
60°	6417	5546	5546
65°	6122	5313	5339
70°	5796	5061	5115
75°	5371	4816	4908
80°	4707	4564	4698
85°	4070	4346	4535



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	49.3	0.6
10°-20°	141.4	1.8
20°-30°	214.3	2.7
30°-40°	261.0	3.3
40°-50°	280.8	3.6
50°-60°	272.7	3.5
60°-70°	238.1	3.0
70°-80°	183.3	2.3
80°-90°	127.9	1.6
90°-100°	151.0	1.9
100°-110°	304.7	3.9
110°-120°	689.9	8.8
120°-130°	1094.2	14.0
130°-140°	1149.0	14.7
140°-150°	1060.7	13.6
150°-160°	851.5	10.9
160°-170°	548.7	7.0
170°-180°	188.9	2.4
0°-30°	405.0	5.2
0°-40°	666.0	8.5
0°-60°	1219.4	15.6
0°-90°	1768.7	22.7
90°-120°	1145.5	14.7
90°-150°	4449.4	57.0
90°-180°	6038.0	77.3
0°-180°	7807.1	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	520	520	520	520	520	
5°	522	520	515	519	519	49
15°	498	499	499	506	505	140
25°	452	458	464	473	476	208
35°	390	403	417	433	439	244
45°	320	340	367	389	398	247
55°	245	273	311	338	348	219
65°	167	205	249	279	290	166
75°	93	135	183	214	226	98
85°	27	74	122	153	164	29
90°	9	68	128	164	178	9
95°	99	91	143	177	186	119
105°	440	482	152	193	209	471
115°	829	864	931	319	194	816
125°	1169	1190	1239	1269	1281	1042
135°	1446	1468	1489	1518	1522	1116
145°	1676	1676	1699	1713	1710	1048
155°	1846	1834	1850	1857	1847	850
165°	1945	1937	1940	1949	1940	549
175°	1989	1980	1982	1991	1978	189
180°	1985	1985	1985	1985	1985	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4
2.5°	523.4	523.0	522.6	522.2	521.8	521.1	520.2	519.3	518.4	517.4	518.1
5°	521.9	521.4	520.9	520.4	519.9	519.2	518.2	517.2	516.1	515.1	516.1
7.5°	517.3	516.8	516.5	516.2	515.9	515.3	514.5	513.8	513.0	512.2	513.4
10°	513.6	513.3	512.9	512.6	512.3	511.9	511.4	510.9	510.4	509.9	511.2
12.5°	507.6	507.7	507.8	507.8	507.9	507.7	507.4	507.0	506.5	506.2	507.6
15°	497.8	498.1	498.5	498.8	499.1	499.3	499.3	499.3	499.3	499.3	500.8
17.5°	485.1	485.8	486.6	487.3	488.0	488.6	489.1	489.6	490.2	490.7	492.2
20°	476.7	477.5	478.4	479.2	480.0	480.8	481.4	482.1	482.8	483.4	485.2
22.5°	467.6	468.6	469.6	470.5	471.5	472.4	473.4	474.3	475.2	476.3	478.1
25°	452.5	453.7	454.8	456.1	457.2	458.6	460.1	461.6	463.1	464.5	466.6
27.5°	434.4	436.4	438.3	440.2	442.0	443.9	445.7	447.5	449.2	451.0	453.5
30°	422.3	424.5	426.7	428.9	431.1	433.2	435.5	437.6	439.8	441.9	444.6
32.5°	409.1	411.5	413.9	416.5	418.9	421.4	423.9	426.6	429.1	431.7	434.7
35°	389.9	392.7	395.7	398.5	401.3	404.3	407.5	410.7	413.8	417.1	420.7
37.5°	369.1	372.4	375.7	379.0	382.2	386.0	390.1	394.2	398.3	402.4	406.6
40°	355.3	358.9	362.6	366.3	370.0	374.1	378.6	383.1	387.7	392.2	396.6
42.5°	341.9	345.7	349.3	353.0	356.7	361.1	366.4	371.5	376.8	381.9	386.7
45°	319.8	324.3	328.8	333.4	337.9	343.1	348.9	354.8	360.7	366.6	371.7
47.5°	297.9	302.9	307.8	312.7	317.6	323.6	330.4	337.3	344.2	351.0	356.5
50°	282.9	288.0	293.3	298.4	303.6	309.9	317.5	325.1	332.6	340.1	345.9
52.5°	268.3	273.8	279.2	284.8	290.2	296.9	304.9	312.8	320.7	328.7	334.5
55°	245.1	251.2	257.2	263.2	269.2	276.6	285.4	294.1	302.8	311.4	317.5
57.5°	222.2	229.0	235.8	242.6	249.4	257.2	266.1	275.0	283.9	292.8	299.3
60°	205.9	213.1	220.4	227.5	234.7	243.1	252.7	262.2	271.8	281.3	287.7
62.5°	191.4	198.8	206.4	213.9	221.4	229.8	239.3	248.9	258.5	268.0	274.8
65°	167.4	175.6	183.9	192.1	200.3	209.3	219.2	229.1	239.0	248.9	255.8
67.5°	145.4	154.0	162.6	171.2	179.8	189.0	199.2	209.3	219.4	229.5	236.5
70°	129.8	138.5	147.1	155.8	164.6	174.1	184.5	194.9	205.3	215.7	222.9
72.5°	115.2	124.2	133.2	142.2	151.2	161.0	171.5	182.0	192.5	203.0	210.2
75°	92.8	102.2	111.5	120.9	130.3	140.4	151.1	161.8	172.6	183.3	190.5
77.5°	71.1	80.9	90.7	100.5	110.4	120.7	131.6	142.5	153.4	164.3	171.5
80°	56.6	66.8	77.1	87.3	97.5	108.1	119.0	129.8	140.7	151.6	158.6
82.5°	44.5	54.6	64.6	74.7	84.8	95.4	106.4	117.4	128.5	139.6	146.5
85°	27.2	37.6	48.0	58.4	68.7	79.3	90.0	100.7	111.5	122.2	129.3
87.5°	15.0	25.8	36.5	47.2	57.9	68.8	80.1	91.3	102.5	113.7	120.9
90°	9.0	22.2	35.4	48.7	61.9	75.1	88.5	101.7	115.0	128.3	136.5
92.5°	36.0	44.6	53.4	62.1	70.9	81.1	92.6	104.2	115.8	127.4	134.8
95°	99.4	96.7	94.1	91.4	88.8	93.6	105.8	118.2	130.5	142.8	150.7
97.5°	190.6	167.8	145.2	122.5	99.9	95.9	110.8	125.5	140.4	155.2	162.7
100°	259.5	222.0	184.4	146.9	109.4	98.1	112.9	127.6	142.5	157.3	166.0
102.5°	334.8	331.1	327.5	324.0	320.3	300.4	264.2	227.9	191.7	155.3	164.7
105°	440.4	454.8	469.3	483.7	498.2	466.2	387.7	309.3	230.9	152.5	161.9
107.5°	561.8	573.4	585.0	596.6	608.2	565.9	469.8	373.7	277.5	181.4	183.4
110°	639.2	649.3	659.4	669.4	679.5	642.5	558.5	474.4	390.4	306.4	279.8



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	712.9	721.5	730.3	739.1	747.8	744.7	729.7	714.8	699.7	684.8	573.7
115°	828.9	836.2	843.4	850.7	858.0	869.4	884.8	900.4	915.9	931.4	788.7
117.5°	931.8	939.1	946.3	953.6	960.9	970.8	983.2	995.7	1008.1	1020.6	989.9
120°	1007.6	1013.1	1018.5	1024.0	1029.5	1038.4	1050.9	1063.3	1075.8	1088.2	1096.7
122.5°	1072.0	1077.3	1082.6	1087.9	1093.3	1102.2	1114.7	1127.3	1139.8	1152.4	1159.2
125°	1169.2	1173.4	1177.5	1181.6	1185.8	1193.6	1205.0	1216.5	1227.9	1239.3	1246.1
127.5°	1258.0	1262.4	1266.8	1271.2	1275.7	1282.3	1291.2	1300.0	1308.9	1317.8	1325.1
130°	1314.2	1319.2	1324.1	1329.1	1334.0	1340.0	1347.1	1354.0	1361.1	1368.2	1375.6
132.5°	1371.7	1375.8	1380.1	1384.2	1388.4	1393.6	1399.9	1406.0	1412.3	1418.5	1425.4
135°	1445.6	1450.8	1455.8	1461.0	1466.0	1470.9	1475.4	1480.0	1484.5	1489.0	1495.8
137.5°	1521.2	1524.7	1528.2	1531.8	1535.4	1539.1	1543.1	1547.1	1551.1	1555.1	1561.4
140°	1570.6	1573.0	1575.4	1577.7	1580.1	1583.3	1587.1	1590.9	1594.8	1598.6	1604.2
142.5°	1611.9	1614.1	1616.2	1618.3	1620.5	1623.6	1627.7	1631.7	1635.9	1639.9	1644.7
145°	1676.2	1675.8	1675.5	1675.2	1674.9	1677.4	1682.8	1688.3	1693.6	1699.1	1702.3
147.5°	1732.7	1731.5	1730.3	1729.1	1727.9	1729.9	1735.3	1740.7	1746.1	1751.4	1753.2
150°	1769.5	1767.3	1765.0	1762.8	1760.5	1762.0	1767.1	1772.2	1777.3	1782.4	1784.3
152.5°	1800.5	1798.1	1795.5	1793.0	1790.6	1791.7	1796.5	1801.4	1806.2	1811.1	1813.0
155°	1845.6	1842.7	1839.9	1836.9	1834.1	1834.6	1838.5	1842.3	1846.1	1849.9	1851.8
157.5°	1881.0	1878.6	1876.1	1873.7	1871.3	1871.4	1874.0	1876.7	1879.4	1882.1	1884.3
160°	1901.6	1899.7	1897.8	1895.9	1894.0	1894.0	1895.9	1897.8	1899.7	1901.6	1903.5
162.5°	1920.0	1918.1	1916.2	1914.3	1912.4	1912.2	1913.9	1915.5	1917.2	1918.8	1921.1
165°	1944.7	1942.8	1940.9	1938.9	1937.0	1936.6	1937.5	1938.4	1939.4	1940.4	1942.7
167.5°	1963.1	1961.2	1959.2	1957.3	1955.4	1954.9	1955.8	1956.7	1957.6	1958.5	1960.8
170°	1973.5	1971.6	1969.6	1967.7	1965.8	1965.1	1965.8	1966.4	1967.0	1967.7	1969.9
172.5°	1980.3	1978.4	1976.5	1974.6	1972.7	1972.1	1972.7	1973.3	1974.0	1974.6	1976.8
175°	1989.2	1987.0	1984.8	1982.6	1980.3	1979.5	1980.1	1980.7	1981.5	1982.1	1984.3
177.5°	1990.6	1988.9	1987.1	1985.3	1983.5	1982.8	1983.0	1983.3	1983.5	1983.8	1985.6
180°	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	520.4	520.4	520.4	520.4	520.4	520.4	520.4	520.4
2.5°	518.8	519.4	520.1	520.3	520.0	519.8	519.5	519.2
5°	517.2	518.2	519.2	519.6	519.4	519.3	519.1	518.9
7.5°	514.6	515.8	517.1	517.6	517.5	517.3	517.1	516.9
10°	512.5	513.8	515.2	515.8	515.6	515.4	515.3	515.1
12.5°	508.9	510.3	511.6	512.2	512.0	511.8	511.7	511.5
15°	502.3	503.8	505.3	505.9	505.8	505.6	505.4	505.3
17.5°	493.8	495.4	497.0	497.8	497.8	497.8	497.8	497.8
20°	487.2	489.0	490.8	491.7	491.7	491.7	491.7	491.7
22.5°	479.9	481.7	483.6	484.6	484.9	485.1	485.4	485.7
25°	468.6	470.6	472.6	473.9	474.4	474.9	475.4	475.9
27.5°	456.2	458.7	461.2	462.6	463.0	463.4	463.7	464.1
30°	447.4	450.0	452.7	454.2	454.7	455.2	455.8	456.3
32.5°	437.9	440.9	444.0	446.1	447.0	447.9	448.8	449.7
35°	424.4	428.2	431.8	434.2	435.5	436.6	437.8	439.0
37.5°	410.6	414.8	418.8	421.4	422.7	423.9	425.2	426.5
40°	400.9	405.3	409.6	412.5	414.0	415.6	417.1	418.6
42.5°	391.4	396.2	400.9	404.1	405.6	407.1	408.6	410.1
45°	377.0	382.1	387.3	390.7	392.4	394.2	395.8	397.5
47.5°	361.8	367.3	372.7	376.4	378.2	380.0	381.9	383.7
50°	351.5	357.2	362.9	366.7	368.6	370.4	372.2	374.1
52.5°	340.3	346.2	352.0	355.9	357.9	359.9	361.8	363.9
55°	323.6	329.6	335.6	339.7	341.9	344.1	346.3	348.4
57.5°	305.8	312.3	318.8	323.2	325.4	327.6	329.8	332.0
60°	294.1	300.4	306.8	311.1	313.5	315.9	318.2	320.5
62.5°	281.6	288.3	295.1	299.6	301.8	304.1	306.3	308.5
65°	262.7	269.5	276.4	280.9	283.1	285.3	287.4	289.6
67.5°	243.5	250.3	257.3	262.0	264.2	266.5	268.8	271.0
70°	230.1	237.3	244.5	249.1	251.2	253.2	255.2	257.2
72.5°	217.2	224.3	231.4	236.1	238.4	240.9	243.3	245.7
75°	197.7	204.9	212.1	216.8	218.9	221.2	223.3	225.5
77.5°	178.6	185.8	193.0	197.7	200.1	202.4	204.8	207.1
80°	165.7	172.7	179.8	184.4	186.8	189.1	191.5	193.8
82.5°	153.6	160.7	167.6	172.3	174.5	176.7	178.9	181.2
85°	136.2	143.3	150.4	155.0	157.3	159.8	162.1	164.4
87.5°	128.1	135.2	142.4	147.1	149.4	151.7	153.9	156.2
90°	144.9	153.2	161.5	166.9	169.6	172.3	174.9	177.5
92.5°	142.3	149.7	157.0	162.0	164.3	166.7	169.2	171.5
95°	158.6	166.6	174.6	179.5	181.2	182.8	184.5	186.2
97.5°	170.2	177.6	185.1	190.1	192.4	194.8	197.1	199.4
100°	174.8	183.6	192.3	197.9	200.4	202.9	205.4	207.8
102.5°	174.1	183.5	192.9	198.9	201.7	204.4	207.2	210.0
105°	171.3	180.6	190.0	196.2	199.3	202.5	205.6	208.7
107.5°	185.4	187.5	189.6	192.2	195.3	198.4	201.5	204.6
110°	253.3	226.7	200.2	188.4	191.6	194.7	197.8	201.0





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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	462.6	351.6	240.5	186.4	189.2	192.2	195.0	197.8
115°	645.9	503.2	360.4	278.5	257.3	236.2	215.1	194.0
117.5°	959.1	928.3	897.5	845.2	771.3	697.5	623.8	550.0
120°	1105.3	1113.8	1122.4	1106.0	1064.7	1023.5	982.2	941.0
122.5°	1166.1	1173.0	1179.8	1179.8	1173.1	1166.3	1159.5	1152.8
125°	1252.8	1259.6	1266.4	1270.9	1273.4	1275.9	1278.4	1280.8
127.5°	1332.5	1340.0	1347.4	1351.9	1353.6	1355.2	1357.0	1358.6
130°	1383.2	1390.7	1398.3	1402.5	1403.5	1404.6	1405.6	1406.6
132.5°	1432.3	1439.2	1446.0	1450.0	1451.1	1452.1	1453.1	1454.1
135°	1502.5	1509.2	1515.9	1519.6	1520.4	1521.1	1521.8	1522.5
137.5°	1567.5	1573.8	1579.9	1583.1	1583.2	1583.2	1583.3	1583.3
140°	1609.7	1615.3	1620.8	1623.4	1622.8	1622.1	1621.5	1620.9
142.5°	1649.5	1654.3	1659.0	1661.0	1660.3	1659.6	1658.8	1658.1
145°	1705.6	1708.8	1712.0	1713.3	1712.5	1711.8	1711.0	1710.3
147.5°	1754.9	1756.8	1758.6	1759.0	1758.1	1757.1	1756.2	1755.2
150°	1786.2	1788.2	1790.1	1790.2	1788.7	1787.1	1785.4	1783.8
152.5°	1814.9	1816.8	1818.8	1818.7	1816.5	1814.5	1812.4	1810.3
155°	1853.7	1855.6	1857.5	1857.2	1854.7	1852.2	1849.6	1847.0
157.5°	1886.4	1888.5	1890.8	1890.6	1888.1	1885.6	1883.1	1880.7
160°	1905.4	1907.3	1909.3	1909.1	1906.9	1904.6	1902.4	1900.2
162.5°	1923.2	1925.4	1927.5	1927.2	1924.5	1921.8	1919.0	1916.3
165°	1944.9	1947.1	1949.3	1949.3	1947.1	1944.9	1942.7	1940.4
167.5°	1963.0	1965.2	1967.4	1967.1	1964.3	1961.4	1958.5	1955.6
170°	1972.2	1974.4	1976.6	1976.3	1973.5	1970.5	1967.7	1964.8
172.5°	1979.0	1981.3	1983.5	1983.2	1980.3	1977.4	1974.6	1971.7
175°	1986.5	1988.7	1990.9	1990.5	1987.3	1984.1	1981.0	1977.7
177.5°	1987.3	1989.1	1990.9	1990.6	1988.3	1986.1	1983.8	1981.5
180°	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9	1984.9

(END OF REPORT)