

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: P332206-940

Luminaire Tested: **S123DIW-S1000D1535U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332206-940  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S1000D1535U940-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

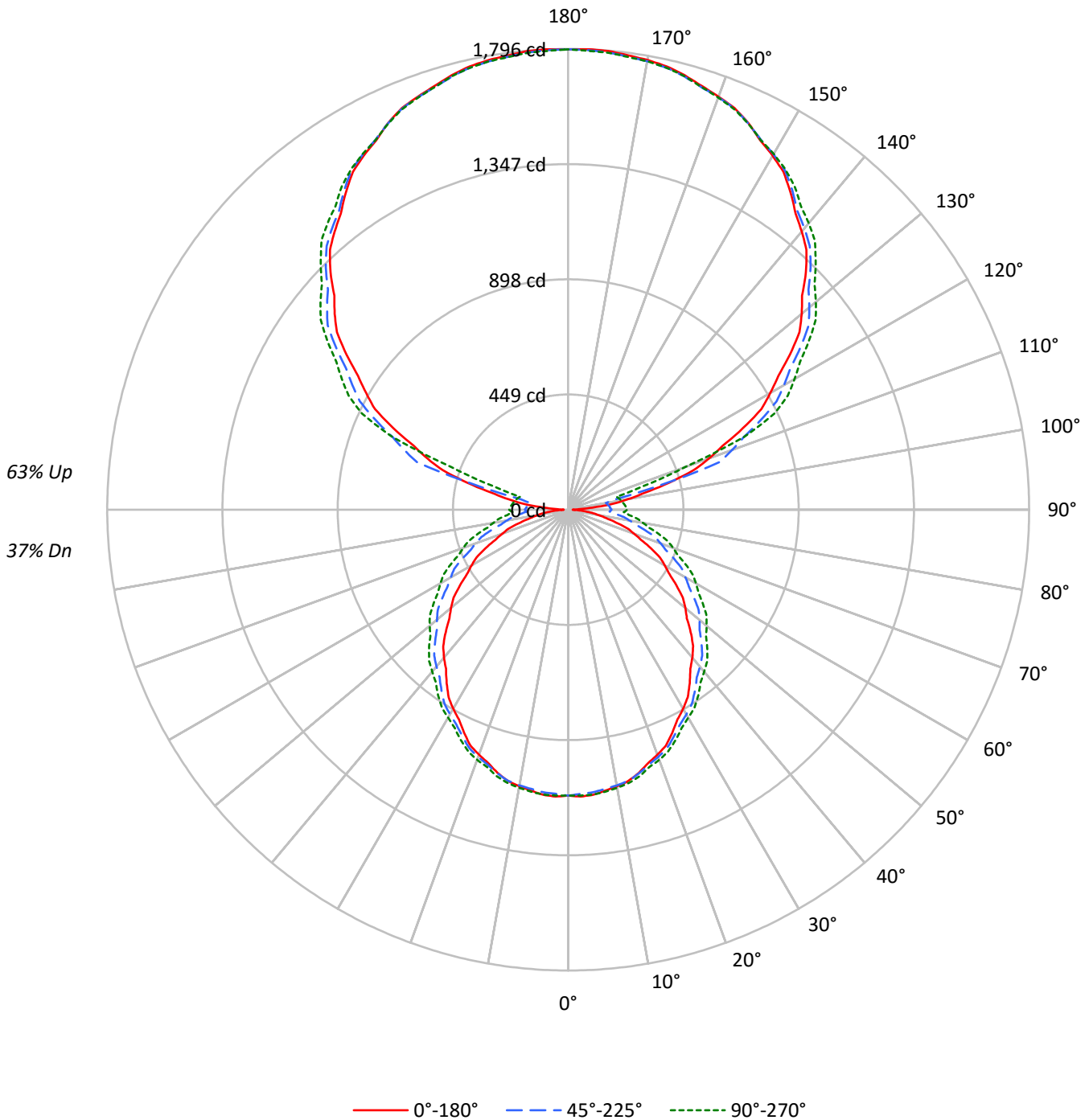
Lumens per Lamp: N/A  
Luminaire Lumens: 9220.9 lumens  
Efficiency: N/A  
Efficacy: 120.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 76.6  
Input Voltage (V): 120  
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			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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	44	44	44	37
1	94	90	85	82	85	81	78	75	66	63	61	51	50	48	38	37	36	30
2	85	78	71	66	77	71	65	60	57	53	50	44	42	39	33	31	30	24
3	78	68	61	55	70	62	55	50	50	45	41	39	36	33	29	27	25	20
4	71	60	52	46	64	55	48	42	44	39	35	35	31	28	26	23	21	17
5	65	53	45	39	58	48	41	36	39	34	30	31	27	24	23	20	18	15
6	60	48	39	34	54	43	36	31	35	30	26	28	24	21	21	18	16	13
7	55	43	35	29	50	39	32	27	32	27	23	25	21	18	19	16	14	11
8	51	39	31	26	46	35	29	24	29	24	20	23	19	16	17	15	13	10
9	47	35	28	23	43	32	26	21	27	21	18	21	17	15	16	13	11	9
10	44	32	25	20	40	30	23	19	24	19	16	19	16	13	15	12	10	8

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

	0°	45°	90°
0°	11992	11992	11992
5°	12030	11690	11697
10°	11922	11421	11364
15°	11768	11114	11000
20°	11548	10767	10600
25°	11278	10365	10179
30°	10999	10002	9754
35°	10689	9620	9413
40°	10391	9273	9048
45°	10062	8938	8757
50°	9737	8608	8436
55°	9378	8270	8147
60°	9028	7928	7850
65°	8670	7563	7499
70°	8127	7150	7138
75°	7448	6679	6770
80°	6658	6216	6350
85°	5935	5899	6108



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.6	1.1
10°-20°	301.1	3.3
20°-30°	450.3	4.9
30°-40°	537.8	5.8
40°-50°	562.6	6.1
50°-60°	528.0	5.7
60°-70°	441.0	4.8
70°-80°	315.5	3.4
80°-90°	193.2	2.1
90°-100°	183.3	2.0
100°-110°	397.7	4.3
110°-120°	804.8	8.7
120°-130°	984.1	10.7
130°-140°	1031.0	11.2
140°-150°	953.4	10.3
150°-160°	766.5	8.3
160°-170°	494.7	5.4
170°-180°	170.5	1.8
0°-30°	857.0	9.3
0°-40°	1394.8	15.1
0°-60°	2485.4	27.0
0°-90°	3435.1	37.3
90°-120°	1385.7	15.0
90°-150°	4354.2	47.2
90°-180°	5786.0	62.7
0°-180°	9220.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1114	1114	1114	1114	1114	
5°	1115	1113	1106	1115	1114	106
15°	1062	1065	1064	1076	1075	299
25°	959	970	975	989	990	442
35°	825	844	860	878	884	516
45°	675	704	734	757	767	520
55°	515	555	598	630	641	461
65°	356	403	456	491	505	351
75°	193	250	311	349	365	206
85°	60	120	184	224	238	62
90°	17	90	169	214	230	15
95°	95	92	162	206	221	111
105°	407	445	383	193	195	431
115°	751	776	830	870	887	742
125°	1054	1066	1105	1132	1145	941
135°	1310	1318	1336	1360	1364	1008
145°	1510	1518	1521	1533	1538	945
155°	1662	1660	1661	1667	1660	766
165°	1753	1749	1748	1757	1749	495
175°	1794	1788	1789	1797	1788	171
180°	1794	1794	1794	1794	1794	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1
2.5°	1119.0	1118.4	1117.7	1117.0	1116.4	1115.2	1113.5	1111.8	1110.0	1108.3	1110.0
5°	1115.4	1114.8	1114.3	1113.7	1113.2	1112.1	1110.5	1108.8	1107.2	1105.6	1107.8
7.5°	1104.4	1104.6	1104.7	1104.7	1104.8	1104.1	1102.6	1101.0	1099.4	1097.9	1100.5
10°	1094.8	1095.3	1095.8	1096.4	1096.9	1096.4	1095.1	1093.8	1092.4	1091.1	1093.8
12.5°	1083.1	1083.8	1084.6	1085.3	1086.1	1086.0	1085.1	1084.1	1083.3	1082.4	1084.9
15°	1061.9	1062.7	1063.5	1064.3	1065.1	1065.4	1065.1	1064.9	1064.6	1064.3	1067.1
17.5°	1035.3	1036.9	1038.5	1040.1	1041.7	1042.5	1042.4	1042.2	1042.1	1042.1	1044.5
20°	1015.8	1017.4	1019.0	1020.7	1022.3	1023.4	1024.0	1024.5	1025.0	1025.6	1028.0
22.5°	995.4	997.0	998.7	1000.3	1001.9	1003.1	1003.9	1004.6	1005.4	1006.1	1009.1
25°	958.8	961.4	964.2	966.9	969.6	971.3	972.1	972.9	973.7	974.6	978.0
27.5°	921.9	925.0	928.0	931.1	934.2	936.6	938.3	940.0	941.7	943.5	946.6
30°	895.6	899.2	902.7	906.2	909.7	912.5	914.7	916.9	919.0	921.1	924.4
32.5°	866.6	870.5	874.4	878.3	882.3	885.6	888.5	891.3	894.1	896.9	900.4
35°	825.3	829.6	833.9	838.2	842.6	846.4	850.0	853.5	856.9	860.5	864.5
37.5°	781.6	786.5	791.3	796.1	801.0	805.6	809.9	814.2	818.5	822.9	827.4
40°	752.4	757.3	762.1	767.0	771.9	777.0	782.4	787.8	793.2	798.6	803.2
42.5°	720.4	726.4	732.3	738.2	744.1	749.9	755.5	761.2	766.8	772.4	777.4
45°	674.8	681.3	687.8	694.2	700.7	707.3	714.0	720.8	727.5	734.2	739.4
47.5°	627.0	634.3	641.7	649.0	656.3	663.9	671.5	679.3	687.0	694.7	700.4
50°	595.9	603.4	611.0	618.6	626.1	634.1	642.4	650.8	659.2	667.5	673.7
52.5°	562.8	570.9	578.9	586.8	594.9	603.4	612.7	621.9	631.1	640.3	646.8
55°	514.6	523.5	532.4	541.3	550.2	559.5	569.2	578.9	588.6	598.3	605.6
57.5°	467.5	476.8	486.1	495.3	504.6	514.6	525.2	535.8	546.4	557.1	564.4
60°	434.5	444.2	453.9	463.6	473.3	483.7	494.7	505.9	516.9	528.0	535.5
62.5°	403.4	413.3	423.3	433.2	443.1	454.0	465.7	477.3	489.0	500.8	508.3
65°	355.6	366.1	376.7	387.2	397.7	408.8	420.7	432.6	444.4	456.4	464.4
67.5°	307.0	318.3	329.4	340.5	351.7	363.4	375.4	387.5	399.6	411.7	420.5
70°	273.0	284.6	296.2	307.9	319.5	331.7	344.6	357.7	370.6	383.5	392.2
72.5°	242.0	253.6	265.2	276.8	288.4	300.9	314.2	327.6	341.0	354.4	363.2
75°	193.0	205.6	218.3	231.0	243.7	256.7	270.3	283.7	297.2	310.7	319.6
77.5°	150.3	163.0	175.8	188.6	201.3	214.5	228.2	241.7	255.4	268.9	278.3
80°	120.1	133.4	146.6	159.8	173.0	186.6	200.6	214.7	228.7	242.7	251.9
82.5°	93.9	107.4	120.8	134.2	147.7	161.5	175.8	189.9	204.2	218.5	227.7
85°	59.5	72.9	86.4	100.0	113.4	127.3	141.6	155.9	170.1	184.5	193.7
87.5°	32.5	46.5	60.6	74.6	88.6	102.9	117.4	132.0	146.5	161.0	170.4
90°	17.1	33.3	49.5	65.6	81.9	98.7	116.3	133.9	151.5	169.2	179.5
92.5°	39.6	50.6	61.8	72.9	84.0	97.7	114.1	130.6	147.0	163.5	174.3
95°	94.7	93.0	91.4	89.8	88.2	95.6	112.1	128.5	145.0	161.5	171.9
97.5°	175.3	179.4	183.4	187.4	191.5	189.1	180.5	171.7	163.0	154.4	164.8
100°	236.2	250.7	265.3	279.9	294.4	284.8	251.0	217.2	183.4	149.5	159.8
102.5°	305.6	317.6	329.7	341.7	353.7	340.6	302.4	264.0	225.8	187.4	187.7
105°	407.0	416.7	426.4	436.1	445.9	443.3	428.2	413.1	398.1	383.0	338.0
107.5°	512.7	520.8	528.9	537.0	545.1	556.8	572.0	587.2	602.4	617.6	586.4
110°	583.2	590.4	597.6	604.8	612.1	622.7	636.8	650.8	664.9	678.9	676.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	651.4	657.5	663.7	669.8	675.9	685.8	699.5	713.0	726.7	740.3	747.3
115°	751.3	756.3	761.3	766.3	771.3	780.0	792.4	804.8	817.2	829.6	838.9
117.5°	848.9	853.1	857.3	861.5	865.6	873.0	883.4	893.9	904.4	914.9	923.6
120°	908.7	912.7	916.7	920.7	924.8	931.7	941.5	951.2	961.0	970.8	979.4
122.5°	970.5	973.5	976.3	979.2	982.1	988.4	998.0	1007.5	1017.2	1026.7	1034.4
125°	1054.1	1056.5	1058.8	1061.2	1063.6	1069.3	1078.3	1087.3	1096.3	1105.3	1111.6
127.5°	1136.2	1138.4	1140.4	1142.5	1144.6	1149.6	1157.5	1165.5	1173.3	1181.2	1187.5
130°	1187.4	1189.5	1191.6	1193.7	1195.8	1200.2	1206.8	1213.4	1219.9	1226.5	1232.8
132.5°	1235.6	1237.9	1240.1	1242.4	1244.7	1248.6	1253.8	1259.1	1264.4	1269.6	1275.7
135°	1310.2	1311.7	1313.2	1314.7	1316.3	1319.0	1323.2	1327.3	1331.5	1335.7	1341.4
137.5°	1373.9	1376.0	1378.0	1380.0	1382.1	1384.3	1386.6	1388.9	1391.2	1393.6	1399.3
140°	1415.6	1417.4	1419.2	1420.9	1422.7	1424.5	1426.2	1427.9	1429.6	1431.3	1436.5
142.5°	1455.1	1456.6	1458.2	1459.7	1461.3	1462.7	1463.7	1464.7	1465.8	1466.9	1471.4
145°	1510.3	1512.1	1513.9	1515.7	1517.5	1518.7	1519.3	1519.8	1520.5	1521.1	1523.8
147.5°	1561.0	1562.5	1563.8	1565.1	1566.5	1567.4	1568.1	1568.7	1569.2	1569.9	1571.1
150°	1593.0	1593.9	1594.8	1595.7	1596.6	1597.3	1597.9	1598.6	1599.1	1599.7	1600.3
152.5°	1621.8	1622.3	1622.6	1623.1	1623.5	1623.9	1624.3	1624.6	1625.0	1625.3	1626.4
155°	1662.3	1661.8	1661.2	1660.6	1660.0	1659.8	1660.2	1660.5	1660.7	1661.0	1662.5
157.5°	1693.8	1693.8	1693.7	1693.6	1693.6	1693.4	1693.1	1692.8	1692.6	1692.2	1694.0
160°	1713.1	1712.7	1712.4	1712.2	1711.8	1711.5	1711.3	1710.9	1710.7	1710.4	1712.2
162.5°	1731.2	1730.4	1729.7	1728.8	1728.0	1727.5	1727.2	1727.0	1726.6	1726.4	1728.4
165°	1753.0	1752.1	1751.2	1750.3	1749.4	1748.9	1748.6	1748.3	1748.0	1747.7	1750.1
167.5°	1770.0	1768.9	1767.7	1766.6	1765.3	1764.8	1764.8	1764.8	1764.8	1764.8	1767.1
170°	1779.7	1778.5	1777.3	1776.1	1775.0	1774.3	1774.3	1774.3	1774.3	1774.3	1776.7
172.5°	1786.1	1784.7	1783.2	1781.8	1780.4	1779.8	1780.0	1780.3	1780.5	1780.7	1783.2
175°	1794.3	1792.9	1791.4	1789.9	1788.4	1787.8	1788.1	1788.4	1788.7	1789.0	1791.1
177.5°	1796.4	1795.3	1794.1	1793.0	1791.7	1791.3	1791.5	1791.7	1792.0	1792.2	1794.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1
2.5°	1111.8	1113.5	1115.2	1116.0	1115.7	1115.5	1115.4	1115.1
5°	1109.9	1112.1	1114.3	1115.2	1114.9	1114.6	1114.4	1114.1
7.5°	1103.2	1106.0	1108.7	1109.8	1109.6	1109.2	1108.8	1108.6
10°	1096.4	1099.1	1101.9	1103.0	1102.4	1101.9	1101.4	1100.8
12.5°	1087.3	1089.8	1092.3	1093.2	1092.7	1092.2	1091.6	1091.1
15°	1069.8	1072.5	1075.1	1076.4	1076.1	1075.8	1075.6	1075.3
17.5°	1046.9	1049.4	1051.8	1052.8	1052.4	1052.0	1051.7	1051.2
20°	1030.4	1032.8	1035.3	1036.6	1036.9	1037.1	1037.4	1037.7
22.5°	1012.3	1015.3	1018.4	1019.8	1019.7	1019.6	1019.4	1019.2
25°	981.6	985.1	988.6	990.3	990.3	990.3	990.3	990.3
27.5°	949.5	952.5	955.6	957.2	957.4	957.6	957.9	958.1
30°	927.6	930.9	934.1	935.8	935.8	935.8	935.8	935.8
32.5°	903.8	907.2	910.7	912.8	913.4	914.0	914.7	915.3
35°	868.5	872.6	876.6	879.2	880.3	881.4	882.4	883.5
37.5°	832.1	836.6	841.2	843.9	844.8	845.6	846.5	847.4
40°	807.7	812.3	816.9	819.7	820.8	821.9	823.0	824.0
42.5°	782.4	787.4	792.5	795.7	797.2	798.7	800.2	801.7
45°	744.5	749.7	754.7	758.4	760.5	762.7	764.9	767.0
47.5°	706.2	712.0	717.7	721.5	723.2	724.9	726.5	728.2
50°	679.9	686.1	692.3	696.3	698.3	700.2	702.0	703.9
52.5°	653.2	659.6	666.0	670.4	672.7	675.0	677.3	679.7
55°	612.9	620.2	627.5	632.1	634.4	636.5	638.6	640.8
57.5°	571.8	579.1	586.4	591.4	593.9	596.4	599.0	601.5
60°	543.1	550.6	558.1	563.4	566.4	569.4	572.3	575.2
62.5°	515.9	523.4	530.9	536.1	538.9	541.6	544.4	547.2
65°	472.5	480.6	488.7	494.1	496.8	499.4	502.2	504.9
67.5°	429.4	438.2	447.0	452.6	454.9	457.2	459.4	461.6
70°	400.7	409.4	418.0	423.7	426.4	429.1	431.8	434.5
72.5°	372.1	380.9	389.8	395.6	398.2	400.9	403.7	406.4
75°	328.5	337.4	346.3	352.4	355.6	358.8	362.0	365.3
77.5°	287.8	297.1	306.5	312.5	314.9	317.4	319.9	322.4
80°	261.1	270.3	279.4	285.3	288.0	290.7	293.5	296.1
82.5°	236.8	245.9	255.1	261.1	263.8	266.4	269.1	271.9
85°	202.8	212.0	221.1	227.1	229.8	232.5	235.1	237.9
87.5°	179.9	189.2	198.7	204.7	207.6	210.4	213.2	216.1
90°	189.8	200.2	210.5	217.4	220.7	224.0	227.2	230.5
92.5°	185.2	196.1	206.9	213.7	216.6	219.5	222.2	225.1
95°	182.4	192.8	203.2	209.8	212.5	215.2	217.8	220.6
97.5°	175.1	185.6	196.0	202.7	205.6	208.7	211.6	214.6
100°	170.0	180.1	190.4	197.0	199.9	203.0	205.9	208.9
102.5°	188.0	188.2	188.5	190.3	193.5	196.7	199.9	203.2
105°	293.2	248.3	203.4	182.5	185.6	188.5	191.5	194.6
107.5°	555.2	524.0	492.8	458.5	421.4	384.2	347.1	310.0
110°	673.3	670.6	667.8	646.4	606.2	566.0	525.8	485.5





TEST NUMBER: P332206-940

CATALOG NUMBER: S123DIW-S1000D1535U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	754.2	761.2	768.1	768.4	761.8	755.2	748.7	742.1
115°	848.4	857.8	867.3	873.6	877.0	880.3	883.7	887.0
117.5°	932.5	941.2	950.0	955.6	958.0	960.3	962.6	964.9
120°	987.9	996.5	1005.1	1010.3	1012.2	1014.1	1016.0	1017.9
122.5°	1042.1	1049.7	1057.3	1062.2	1064.3	1066.5	1068.6	1070.7
125°	1117.8	1124.1	1130.3	1134.7	1137.2	1139.7	1142.1	1144.6
127.5°	1193.8	1200.1	1206.4	1210.1	1211.4	1212.6	1213.9	1215.1
130°	1239.1	1245.5	1251.7	1255.4	1256.4	1257.4	1258.5	1259.5
132.5°	1281.8	1287.9	1294.0	1297.5	1298.5	1299.6	1300.6	1301.5
135°	1347.1	1352.9	1358.6	1361.7	1362.2	1362.6	1363.1	1363.6
137.5°	1404.9	1410.6	1416.3	1419.5	1420.2	1421.0	1421.7	1422.5
140°	1441.7	1447.0	1452.2	1455.2	1455.9	1456.7	1457.4	1458.2
142.5°	1476.0	1480.5	1485.1	1487.6	1488.2	1488.6	1489.2	1489.7
145°	1526.5	1529.3	1532.0	1534.0	1535.1	1536.2	1537.2	1538.3
147.5°	1572.4	1573.6	1574.9	1575.2	1574.9	1574.5	1574.0	1573.7
150°	1600.9	1601.5	1602.0	1602.2	1601.9	1601.5	1601.2	1600.8
152.5°	1627.5	1628.5	1629.6	1629.5	1628.3	1626.9	1625.7	1624.4
155°	1664.0	1665.4	1667.0	1666.8	1665.0	1663.2	1661.4	1659.7
157.5°	1695.8	1697.5	1699.3	1699.1	1696.7	1694.4	1692.1	1689.8
160°	1714.0	1715.7	1717.4	1717.3	1715.2	1713.2	1711.1	1709.1
162.5°	1730.4	1732.4	1734.4	1734.5	1732.7	1730.8	1729.0	1727.2
165°	1752.4	1754.8	1757.2	1757.3	1755.2	1753.2	1751.1	1749.0
167.5°	1769.5	1771.8	1774.2	1774.2	1771.8	1769.5	1767.1	1764.8
170°	1779.1	1781.5	1783.9	1783.9	1781.5	1779.1	1776.7	1774.3
172.5°	1785.5	1787.9	1790.2	1790.1	1787.5	1784.9	1782.3	1779.7
175°	1793.1	1795.2	1797.3	1797.2	1794.7	1792.4	1790.0	1787.7
177.5°	1796.0	1797.9	1799.8	1799.6	1797.2	1794.8	1792.4	1790.1
180°	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3	1794.3

(END OF REPORT)