

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: P332239-940

Luminaire Tested: **S123DIW-S1165D1535U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332239-940
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S123DIW-S1165D1535U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 8989.5 lumens
Efficiency: N/A
Efficacy: 108.4 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: General Diffuse

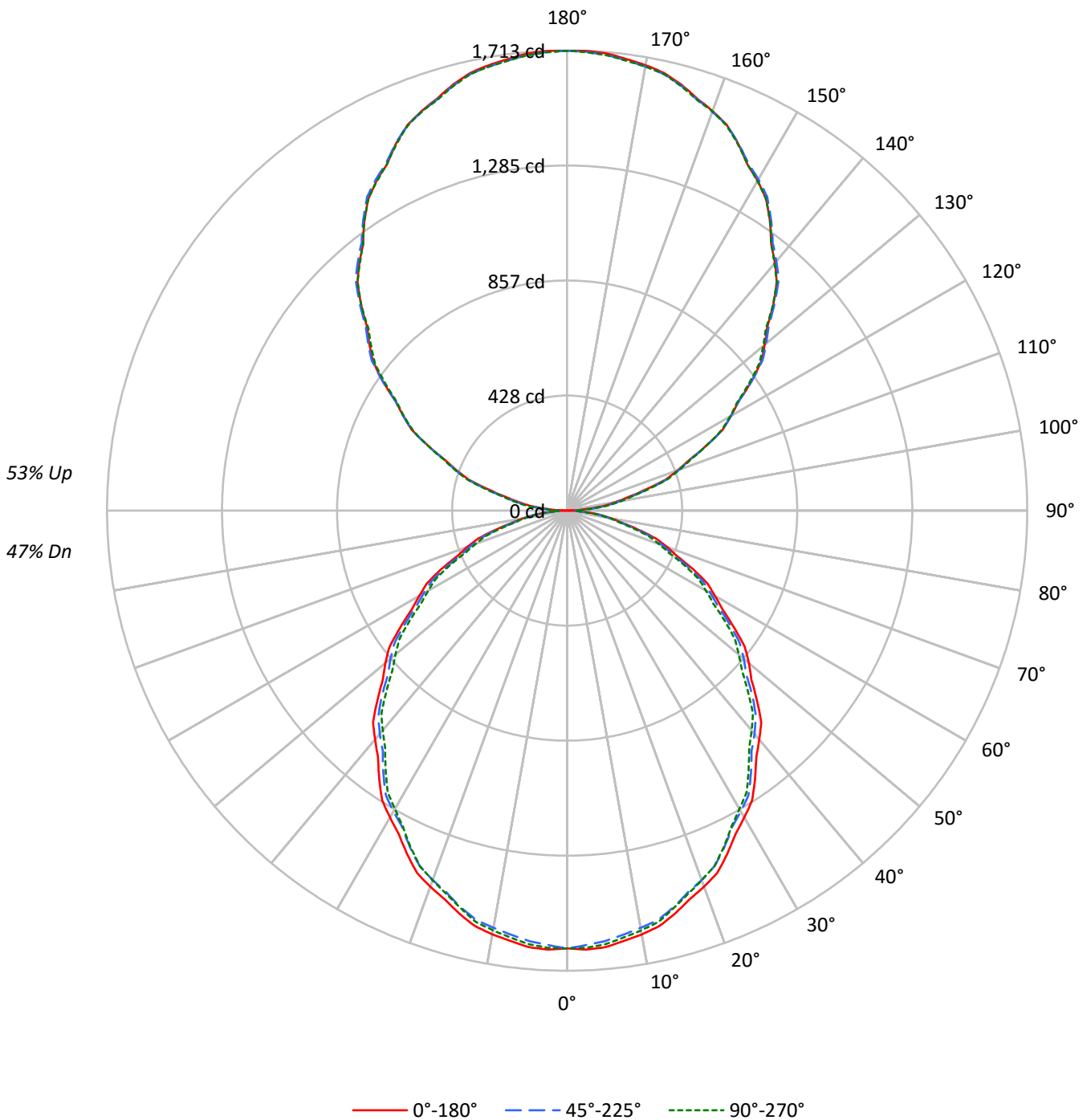
Input Watts (W): 82.9
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	106	106	106	106	98	98	98	98	82	82	82	67	67	67	54	54	54	47
1	97	93	89	85	89	85	82	79	72	69	67	59	57	56	47	46	45	40
2	88	81	75	70	81	75	69	65	63	59	55	52	49	46	42	40	38	33
3	81	71	64	58	74	66	59	54	55	50	47	46	42	39	37	34	32	28
4	74	63	55	49	67	58	51	46	49	44	40	41	37	34	33	30	28	24
5	68	56	48	42	62	52	45	39	44	38	34	36	32	29	30	27	24	21
6	62	50	42	36	57	47	39	34	40	34	30	33	29	25	27	24	21	18
7	58	45	37	32	53	42	35	30	36	30	26	30	26	23	24	21	19	16
8	53	41	33	28	49	38	31	26	33	27	23	27	23	20	22	19	17	15
9	50	38	30	25	46	35	28	24	30	25	21	25	21	18	21	18	15	13
10	46	34	27	22	43	32	26	21	28	22	19	23	19	16	19	16	14	12

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	17546	17546	17546
5°	17629	17386	17507
10°	17511	17235	17343
15°	17307	17041	17072
20°	17068	16763	16778
25°	16747	16431	16397
30°	16394	16063	15940
35°	16025	15674	15471
40°	15638	15244	15008
45°	15213	14850	14487
50°	14788	14364	13966
55°	14230	13863	13440
60°	13670	13276	12854
65°	13173	12638	12246
70°	12441	11909	11383
75°	11366	10959	10493
80°	10253	9819	9732
85°	9003	8657	8312



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	1.7
10°-20°	433.6	4.8
20°-30°	640.5	7.1
30°-40°	748.2	8.3
40°-50°	752.2	8.4
50°-60°	660.7	7.3
60°-70°	492.2	5.5
70°-80°	280.4	3.1
80°-90°	85.6	1.0
90°-100°	111.5	1.2
100°-110°	333.8	3.7
110°-120°	567.7	6.3
120°-130°	746.7	8.3
130°-140°	839.3	9.3
140°-150°	825.0	9.2
150°-160°	694.5	7.7
160°-170°	462.3	5.1
170°-180°	161.9	1.8
0°-30°	1227.6	13.7
0°-40°	1975.8	22.0
0°-60°	3388.7	37.7
0°-90°	4246.9	47.2
90°-120°	1013.0	11.3
90°-150°	3423.9	38.1
90°-180°	4743.0	52.8
0°-180°	8989.5	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1630	1630	1630	1630	1630	
5°	1632	1624	1609	1622	1620	155
15°	1553	1547	1529	1539	1532	438
25°	1410	1401	1384	1385	1381	649
35°	1220	1211	1193	1185	1177	763
45°	999	993	976	959	952	771
55°	758	756	739	724	716	679
65°	517	510	496	485	481	510
75°	273	268	264	257	252	292
85°	73	70	70	67	67	80
90°	1	15	32	38	40	9
95°	79	89	100	105	105	89
105°	303	306	317	318	320	324
115°	572	575	573	574	573	565
125°	836	840	838	832	827	746
135°	1085	1093	1092	1087	1084	836
145°	1316	1319	1323	1322	1316	822
155°	1507	1507	1509	1513	1505	694
165°	1642	1638	1638	1645	1636	463
175°	1708	1703	1702	1709	1701	162
180°	1712	1712	1712	1712	1712	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1635.8	1634.8	1633.8	1632.8	1631.7	1629.9	1627.2	1624.4	1621.7	1618.9	1621.4
5°	1631.6	1630.0	1628.4	1626.9	1625.3	1622.8	1619.4	1616.0	1612.6	1609.1	1612.2
7.5°	1615.6	1614.0	1612.5	1610.9	1609.4	1606.8	1603.2	1599.7	1596.2	1592.6	1595.4
10°	1602.1	1600.5	1599.0	1597.4	1595.9	1593.1	1589.0	1585.0	1580.9	1576.9	1579.7
12.5°	1584.2	1582.9	1581.5	1580.3	1579.0	1576.4	1572.6	1568.8	1565.0	1561.2	1563.3
15°	1553.1	1551.8	1550.6	1549.3	1548.1	1545.4	1541.4	1537.3	1533.3	1529.2	1531.7
17.5°	1516.9	1515.3	1513.7	1512.1	1510.4	1507.6	1503.5	1499.5	1495.4	1491.4	1493.2
20°	1490.0	1488.1	1486.2	1484.3	1482.6	1479.5	1475.5	1471.5	1467.4	1463.4	1464.6
22.5°	1459.7	1457.9	1456.0	1454.1	1452.2	1449.3	1445.2	1441.2	1437.2	1433.1	1434.0
25°	1410.1	1408.2	1406.3	1404.4	1402.7	1399.6	1395.6	1391.6	1387.5	1383.5	1383.8
27.5°	1357.1	1355.3	1353.5	1351.7	1349.9	1346.8	1342.5	1338.1	1333.7	1329.4	1329.6
30°	1319.0	1317.4	1315.9	1314.3	1312.8	1309.8	1305.5	1301.1	1296.7	1292.4	1292.4
32.5°	1280.9	1278.8	1276.8	1274.7	1272.6	1269.9	1266.6	1263.2	1259.8	1256.5	1254.7
35°	1219.5	1217.6	1215.8	1213.9	1212.0	1209.1	1205.0	1201.0	1196.9	1192.8	1191.0
37.5°	1156.6	1154.3	1151.9	1149.6	1147.2	1144.0	1139.9	1135.8	1131.7	1127.5	1125.2
40°	1112.9	1111.1	1109.2	1107.3	1105.5	1102.3	1098.0	1093.6	1089.2	1084.9	1082.4
42.5°	1069.2	1067.1	1065.0	1062.8	1060.7	1057.5	1053.1	1048.7	1044.4	1040.1	1037.6
45°	999.4	998.2	996.9	995.7	994.4	991.8	987.7	983.6	979.6	975.5	971.9
47.5°	930.1	928.4	926.6	924.7	922.9	920.2	916.3	912.5	908.7	904.9	901.3
50°	883.1	881.5	879.9	878.4	876.8	874.1	870.0	865.9	861.8	857.8	854.4
52.5°	833.7	832.7	831.6	830.5	829.5	826.8	822.5	818.2	814.0	809.6	806.6
55°	758.3	758.0	757.7	757.4	757.1	754.9	750.8	746.8	742.7	738.7	735.3
57.5°	686.5	685.5	684.4	683.4	682.3	680.2	676.9	673.7	670.5	667.2	664.1
60°	635.0	634.6	634.4	634.0	633.7	631.7	627.9	624.2	620.5	616.7	613.9
62.5°	589.0	588.2	587.4	586.6	585.8	583.4	579.7	576.0	572.3	568.6	565.7
65°	517.2	515.7	514.1	512.6	511.0	508.6	505.5	502.4	499.3	496.2	493.7
67.5°	441.2	439.9	438.5	437.1	435.8	433.9	431.5	429.2	426.8	424.5	422.2
70°	395.3	393.4	391.6	389.7	387.8	385.9	384.1	382.2	380.3	378.4	376.3
72.5°	347.1	345.7	344.3	343.0	341.6	339.8	337.7	335.6	333.5	331.4	329.4
75°	273.3	272.1	270.8	269.6	268.3	267.2	266.4	265.4	264.5	263.5	262.0
77.5°	208.0	207.3	206.6	206.0	205.3	204.4	203.2	202.2	201.0	199.9	198.9
80°	165.4	164.4	163.5	162.6	161.7	160.9	160.2	159.6	159.0	158.4	158.1
82.5°	123.9	123.7	123.5	123.3	123.1	123.0	122.9	122.8	122.6	122.5	122.0
85°	72.9	72.2	71.6	71.0	70.4	70.1	70.1	70.1	70.1	70.1	69.5
87.5°	29.4	29.2	29.2	29.0	28.8	29.0	29.5	30.1	30.6	31.1	31.1
90°	1.3	4.4	7.3	10.3	13.3	16.8	20.6	24.5	28.4	32.3	33.4
92.5°	32.5	34.6	36.6	38.6	40.7	42.8	45.0	47.2	49.4	51.6	52.6
95°	79.4	81.4	83.6	85.6	87.7	90.0	92.3	94.7	97.1	99.5	100.7
97.5°	140.9	142.5	144.0	145.6	147.1	148.7	150.5	152.2	154.0	155.7	157.1
100°	182.9	184.7	186.5	188.2	190.0	191.7	193.1	194.7	196.2	197.7	198.6
102.5°	231.3	232.4	233.4	234.5	235.6	237.1	239.1	241.0	243.0	245.0	245.9
105°	302.6	303.2	303.7	304.3	305.0	306.6	309.2	311.9	314.7	317.4	317.4
107.5°	385.4	385.8	386.1	386.5	386.8	387.5	388.6	389.7	390.7	391.8	392.8
110°	437.0	437.7	438.2	438.8	439.4	440.0	440.6	441.2	441.8	442.4	443.6



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	490.8	491.2	491.5	491.9	492.2	492.5	492.6	492.7	492.8	492.9	494.4
115°	571.5	572.4	573.3	574.2	575.1	575.2	574.6	574.0	573.5	572.8	573.1
117.5°	652.7	653.3	653.9	654.5	655.1	655.0	654.2	653.4	652.6	651.9	651.8
120°	703.3	705.1	706.9	708.6	710.4	710.6	709.1	707.6	706.1	704.6	704.3
122.5°	756.0	757.2	758.6	759.9	761.3	761.5	760.7	759.9	759.2	758.4	757.6
125°	836.3	837.2	838.2	839.1	840.0	840.1	839.5	838.9	838.3	837.8	836.5
127.5°	910.6	912.5	914.4	916.3	918.3	918.9	918.2	917.6	916.9	916.2	914.5
130°	960.1	962.5	964.8	967.2	969.6	970.4	969.5	968.6	967.7	966.8	965.6
132.5°	1009.6	1011.9	1014.3	1016.7	1019.1	1020.0	1019.3	1018.7	1018.0	1017.4	1015.9
135°	1085.1	1086.9	1088.7	1090.5	1092.3	1093.1	1092.8	1092.4	1092.2	1091.9	1090.7
137.5°	1155.0	1156.5	1158.1	1159.6	1161.0	1162.2	1163.0	1163.7	1164.5	1165.3	1164.0
140°	1203.5	1205.0	1206.5	1207.9	1209.4	1210.3	1210.7	1210.9	1211.2	1211.6	1211.2
142.5°	1247.6	1249.0	1250.5	1252.1	1253.6	1254.5	1255.1	1255.6	1256.2	1256.7	1256.4
145°	1316.4	1317.1	1317.6	1318.2	1318.8	1319.6	1320.4	1321.3	1322.2	1323.1	1322.9
147.5°	1376.6	1377.7	1378.8	1379.9	1381.0	1381.9	1382.8	1383.6	1384.4	1385.3	1385.3
150°	1418.6	1419.2	1419.8	1420.4	1421.0	1421.6	1422.2	1422.8	1423.3	1424.0	1424.0
152.5°	1453.0	1453.8	1454.7	1455.5	1456.3	1457.0	1457.3	1457.7	1458.0	1458.4	1458.9
155°	1507.3	1507.3	1507.3	1507.3	1507.3	1507.5	1507.8	1508.1	1508.4	1508.7	1509.9
157.5°	1553.6	1553.3	1552.9	1552.6	1552.2	1552.1	1552.4	1552.6	1552.8	1553.1	1554.3
160°	1582.7	1582.1	1581.4	1580.8	1580.3	1579.9	1579.9	1579.9	1579.9	1579.9	1581.4
162.5°	1608.5	1607.7	1606.8	1606.0	1605.2	1604.8	1605.1	1605.3	1605.5	1605.8	1607.3
165°	1641.8	1640.9	1640.0	1639.1	1638.3	1637.8	1637.8	1637.8	1637.8	1637.8	1639.6
167.5°	1668.5	1667.2	1666.1	1664.8	1663.7	1663.2	1663.4	1663.7	1663.9	1664.1	1666.0
170°	1683.5	1682.3	1681.1	1679.9	1678.7	1678.1	1678.1	1678.1	1678.1	1678.1	1680.3
172.5°	1695.3	1694.2	1692.9	1691.8	1690.6	1690.0	1690.0	1690.0	1690.0	1690.0	1691.8
175°	1707.7	1706.6	1705.3	1704.1	1702.9	1702.4	1702.4	1702.4	1702.4	1702.4	1704.1
177.5°	1712.8	1711.9	1710.9	1709.9	1709.0	1708.5	1708.5	1708.5	1708.5	1708.5	1709.9
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1	1630.1
2.5°	1623.9	1626.4	1628.9	1630.0	1629.8	1629.5	1629.2	1629.1
5°	1615.3	1618.5	1621.6	1622.8	1622.2	1621.6	1621.0	1620.3
7.5°	1598.2	1601.0	1603.8	1605.0	1604.6	1604.3	1603.9	1603.6
10°	1582.5	1585.3	1588.1	1589.2	1588.6	1588.0	1587.3	1586.7
12.5°	1565.3	1567.4	1569.4	1570.3	1569.9	1569.5	1569.1	1568.8
15°	1534.2	1536.7	1539.2	1539.5	1537.7	1535.8	1533.9	1532.0
17.5°	1494.9	1496.6	1498.3	1498.9	1498.3	1497.5	1496.8	1496.2
20°	1465.9	1467.1	1468.4	1468.5	1467.6	1466.6	1465.7	1464.7
22.5°	1435.1	1436.1	1437.1	1437.0	1435.8	1434.6	1433.4	1432.3
25°	1384.1	1384.4	1384.7	1384.4	1383.5	1382.5	1381.6	1380.6
27.5°	1329.9	1330.1	1330.3	1329.9	1328.7	1327.5	1326.3	1325.2
30°	1292.4	1292.4	1292.4	1291.3	1289.1	1286.9	1284.7	1282.5
32.5°	1252.9	1251.2	1249.5	1248.0	1246.9	1245.6	1244.5	1243.3
35°	1189.1	1187.2	1185.4	1183.7	1182.1	1180.5	1178.9	1177.4
37.5°	1123.0	1120.8	1118.6	1117.0	1115.9	1114.9	1113.9	1112.9
40°	1080.0	1077.5	1075.0	1073.1	1071.8	1070.6	1069.3	1068.1
42.5°	1035.1	1032.6	1030.1	1028.2	1027.0	1025.7	1024.5	1023.2
45°	968.1	964.4	960.6	958.0	956.4	954.8	953.3	951.7
47.5°	897.6	893.9	890.2	887.7	886.4	884.9	883.6	882.3
50°	851.0	847.6	844.1	841.5	839.6	837.8	835.9	834.0
52.5°	803.8	800.8	797.9	795.5	793.6	791.8	789.9	788.0
55°	731.8	728.4	725.0	722.5	720.9	719.3	717.8	716.2
57.5°	661.1	658.1	655.0	652.6	650.8	649.0	647.1	645.3
60°	611.2	608.3	605.6	603.3	601.8	600.2	598.7	597.1
62.5°	562.9	560.1	557.3	555.4	554.3	553.2	552.2	551.2
65°	491.2	488.7	486.2	484.6	483.6	482.7	481.7	480.8
67.5°	420.1	417.9	415.7	413.9	412.7	411.3	410.0	408.8
70°	374.1	371.9	369.7	367.8	366.3	364.7	363.2	361.7
72.5°	327.5	325.6	323.6	322.3	321.5	320.7	319.9	319.1
75°	260.4	258.9	257.3	256.0	255.1	254.1	253.2	252.3
77.5°	197.8	196.7	195.6	195.1	195.1	195.1	195.1	195.1
80°	157.7	157.5	157.1	157.0	157.0	157.0	157.0	157.0
82.5°	121.4	120.8	120.3	119.8	119.6	119.4	119.1	118.9
85°	68.8	68.2	67.6	67.3	67.3	67.3	67.3	67.3
87.5°	31.1	31.1	31.1	31.1	31.3	31.4	31.5	31.7
90°	34.7	35.8	37.1	38.0	38.5	39.1	39.8	40.3
92.5°	53.5	54.5	55.5	55.7	55.4	55.0	54.7	54.3
95°	101.9	103.1	104.2	104.9	104.9	104.9	104.9	104.9
97.5°	158.5	159.8	161.2	161.8	161.8	161.6	161.5	161.4
100°	199.5	200.4	201.3	202.0	202.6	203.2	203.8	204.4
102.5°	246.8	247.7	248.6	249.0	248.9	248.7	248.6	248.5
105°	317.4	317.4	317.4	317.6	318.3	318.9	319.4	320.0
107.5°	393.8	394.7	395.7	395.9	395.6	395.2	394.8	394.5
110°	444.8	445.9	447.2	447.5	446.8	446.3	445.7	445.1



TEST NUMBER: P332239-940

CATALOG NUMBER: S123DIW-S1165D1535U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	495.8	497.2	498.6	499.4	499.3	499.1	499.0	498.8
115°	573.5	573.7	574.0	574.0	573.7	573.5	573.1	572.8
117.5°	651.8	651.8	651.7	651.2	650.3	649.5	648.7	647.8
120°	704.0	703.7	703.4	702.9	702.4	701.8	701.2	700.5
122.5°	756.8	756.1	755.3	754.5	753.7	752.8	752.0	751.1
125°	835.4	834.1	832.9	831.7	830.5	829.4	828.1	827.0
127.5°	912.9	911.2	909.5	908.0	906.7	905.3	903.9	902.5
130°	964.4	963.2	962.1	960.4	958.3	956.2	954.1	952.0
132.5°	1014.5	1013.1	1011.6	1010.1	1008.5	1006.9	1005.2	1003.6
135°	1089.5	1088.2	1087.1	1086.2	1085.6	1084.9	1084.4	1083.8
137.5°	1162.8	1161.5	1160.3	1159.0	1157.9	1156.8	1155.7	1154.5
140°	1210.9	1210.7	1210.3	1209.2	1207.0	1205.0	1202.8	1200.8
142.5°	1256.2	1255.8	1255.5	1254.5	1252.9	1251.3	1249.7	1248.1
145°	1322.5	1322.2	1322.0	1321.2	1320.0	1318.8	1317.6	1316.4
147.5°	1385.3	1385.3	1385.3	1384.4	1382.6	1380.8	1378.9	1377.2
150°	1424.0	1424.0	1424.0	1423.1	1421.3	1419.5	1417.7	1415.9
152.5°	1459.4	1459.8	1460.4	1459.8	1458.2	1456.7	1455.1	1453.6
155°	1511.1	1512.3	1513.5	1513.1	1510.9	1508.9	1506.7	1504.7
157.5°	1555.6	1556.8	1558.1	1557.9	1556.2	1554.5	1552.8	1551.2
160°	1583.0	1584.5	1585.9	1586.1	1584.9	1583.7	1582.5	1581.3
162.5°	1608.7	1610.3	1611.8	1611.6	1609.6	1607.8	1605.8	1603.9
165°	1641.4	1643.2	1644.9	1644.8	1642.7	1640.7	1638.5	1636.5
167.5°	1667.9	1669.7	1671.5	1671.5	1669.7	1667.9	1666.0	1664.1
170°	1682.3	1684.4	1686.5	1686.5	1684.4	1682.3	1680.3	1678.1
172.5°	1693.6	1695.5	1697.4	1697.3	1695.1	1693.1	1691.0	1688.9
175°	1705.9	1707.7	1709.5	1709.3	1707.3	1705.1	1703.1	1701.0
177.5°	1711.4	1712.8	1714.2	1714.1	1712.4	1710.7	1709.1	1707.4
180°	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7	1711.7

(END OF REPORT)