

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: P332227-940

Luminaire Tested: **S123DIW-S1165D1030U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332227-940
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-S1165D1030U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 7431.6 lumens
Efficiency: N/A
Efficacy: 110.3 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

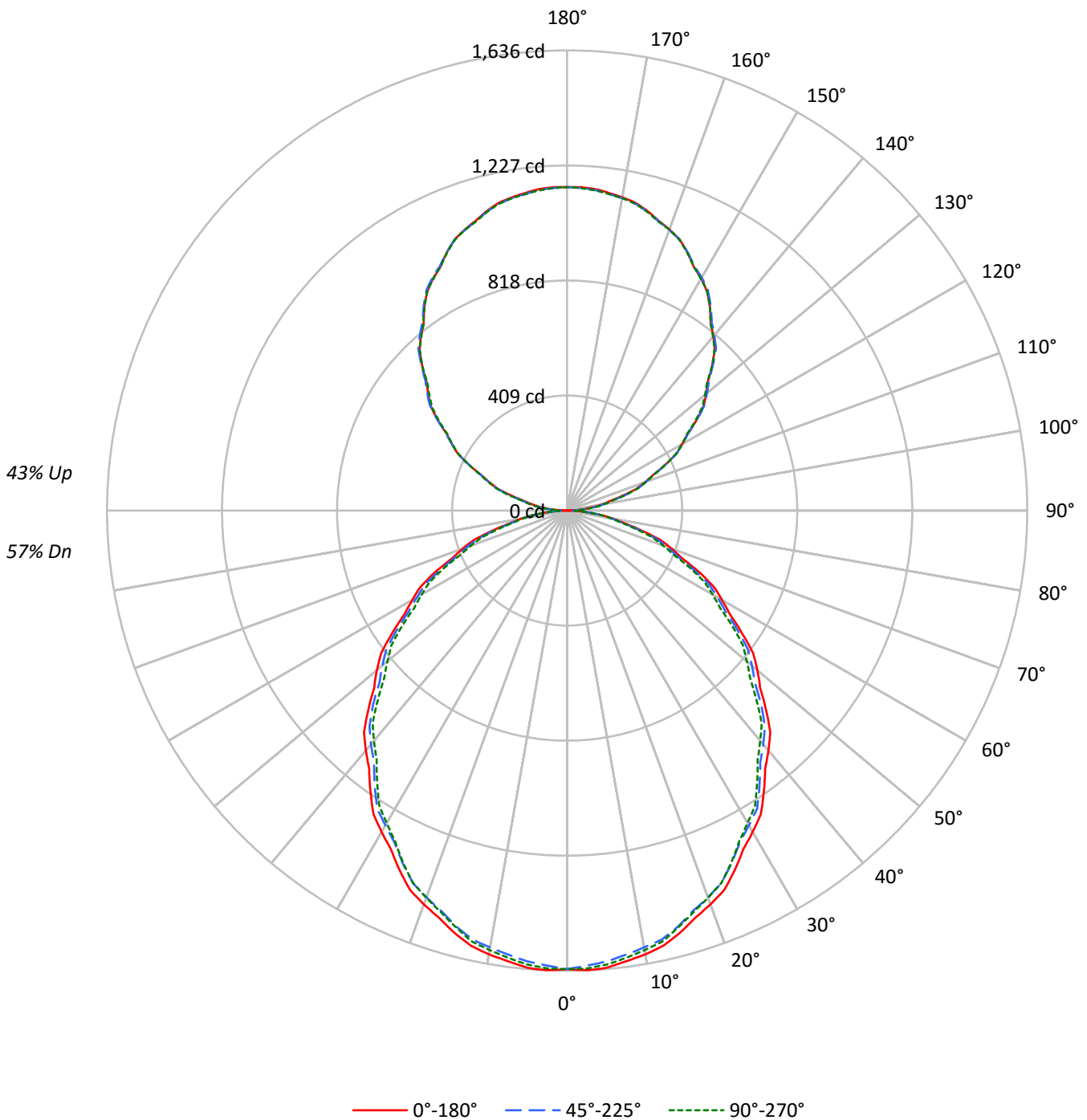
Input Watts (W): 67.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	109	109	109	109	101	101	101	101	87	87	87	74	74	74	63	63	63	57
1	99	95	91	87	92	88	85	82	76	74	72	65	64	62	55	54	53	48
2	90	83	77	71	84	77	72	67	67	63	59	57	54	52	49	46	44	40
3	82	73	65	59	76	68	61	56	59	54	50	51	47	44	43	40	38	34
4	75	64	56	50	70	60	53	48	52	47	42	45	41	37	38	35	33	29
5	69	57	49	43	64	54	46	41	47	41	37	41	36	32	35	31	28	25
6	64	52	43	37	59	48	41	36	42	36	32	37	32	28	31	28	25	22
7	59	47	39	33	55	44	36	31	38	33	28	33	29	25	29	25	22	20
8	55	42	34	29	51	40	33	28	35	29	25	31	26	22	26	23	20	18
9	51	39	31	26	48	36	30	25	32	26	22	28	24	20	24	21	18	16
10	48	36	28	23	44	34	27	22	30	24	20	26	21	18	23	19	16	14

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



TEST NUMBER: P332227-940

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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	153.6	2.1
10°-20°	433.6	5.8
20°-30°	640.5	8.6
30°-40°	748.2	10.1
40°-50°	752.2	10.1
50°-60°	660.7	8.9
60°-70°	492.2	6.6
70°-80°	280.4	3.8
80°-90°	83.9	1.1
90°-100°	74.9	1.0
100°-110°	224.2	3.0
110°-120°	381.4	5.1
120°-130°	501.7	6.8
130°-140°	563.9	7.6
140°-150°	554.3	7.5
150°-160°	466.6	6.3
160°-170°	310.6	4.2
170°-180°	108.8	1.5
0°-30°	1227.6	16.5
0°-40°	1975.8	26.6
0°-60°	3388.7	45.6
0°-90°	4245.2	57.1
90°-120°	680.6	9.2
90°-150°	2300.3	31.0
90°-180°	3186.0	42.9
0°-180°	7431.6	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	10	22	25	27	7
95°	53	60	67	70	70	60
105°	203	205	213	213	215	218
115°	384	386	385	386	385	380
125°	562	564	563	559	556	501
135°	729	734	734	730	728	562
145°	884	886	889	888	884	552
155°	1013	1013	1014	1017	1011	466
165°	1103	1100	1100	1105	1100	311
175°	1147	1144	1144	1148	1143	109
180°	1150	1150	1150	1150	1150	



TEST NUMBER: P332227-940

CATALOG NUMBER: S123DIW-S1165D1030U940-4F0-1E-UDD-F1

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°	29.3	29.0	28.6	28.3	27.9	27.9	28.2	28.4	28.7	29.0	28.9
90°	0.9	2.9	4.9	7.0	8.9	11.2	13.8	16.5	19.1	21.7	22.5
92.5°	21.8	23.2	24.6	25.9	27.3	28.7	30.2	31.7	33.2	34.7	35.3
95°	53.3	54.7	56.1	57.5	58.9	60.5	62.1	63.7	65.3	66.9	67.7
97.5°	94.7	95.7	96.8	97.8	98.9	100.0	101.1	102.3	103.4	104.6	105.6
100°	122.9	124.0	125.3	126.4	127.7	128.8	129.8	130.8	131.8	132.8	133.4
102.5°	155.4	156.1	156.9	157.6	158.3	159.3	160.6	161.9	163.3	164.6	165.2
105°	203.3	203.7	204.1	204.5	204.9	206.0	207.8	209.6	211.4	213.2	213.2
107.5°	259.0	259.1	259.4	259.7	259.8	260.4	261.1	261.8	262.5	263.2	263.9
110°	293.6	294.0	294.4	294.8	295.2	295.6	296.0	296.4	296.9	297.2	298.0



TEST NUMBER: P332227-940

CATALOG NUMBER: S123DIW-S1165D1030U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	329.8	330.0	330.2	330.5	330.7	330.8	330.9	331.0	331.1	331.2	332.2
115°	384.0	384.5	385.1	385.8	386.4	386.5	386.0	385.7	385.2	384.9	385.0
117.5°	438.5	438.9	439.3	439.7	440.1	440.1	439.5	439.0	438.5	438.0	437.9
120°	472.5	473.7	474.9	476.1	477.3	477.4	476.4	475.4	474.4	473.4	473.1
122.5°	507.9	508.8	509.7	510.5	511.4	511.6	511.1	510.6	510.1	509.5	509.0
125°	562.0	562.5	563.1	563.7	564.4	564.5	564.0	563.7	563.2	562.8	562.0
127.5°	611.8	613.1	614.4	615.6	616.9	617.3	616.9	616.4	616.0	615.5	614.5
130°	645.1	646.7	648.3	649.9	651.5	651.9	651.4	650.8	650.1	649.5	648.7
132.5°	678.2	679.8	681.4	683.1	684.7	685.3	684.8	684.4	683.9	683.5	682.5
135°	729.1	730.2	731.5	732.6	733.9	734.3	734.1	734.0	733.8	733.5	732.7
137.5°	776.1	777.0	778.0	779.0	780.1	780.8	781.3	781.9	782.4	782.9	782.0
140°	808.5	809.6	810.6	811.5	812.5	813.2	813.3	813.6	813.8	814.0	813.8
142.5°	838.2	839.2	840.2	841.2	842.2	842.8	843.2	843.6	844.0	844.4	844.1
145°	884.4	884.8	885.2	885.6	886.0	886.5	887.2	887.8	888.3	888.9	888.8
147.5°	924.9	925.6	926.3	927.1	927.8	928.4	929.0	929.6	930.1	930.7	930.7
150°	953.1	953.5	953.9	954.3	954.7	955.1	955.5	955.9	956.3	956.7	956.7
152.5°	976.2	976.8	977.3	977.9	978.5	978.8	979.1	979.4	979.6	979.8	980.2
155°	1012.7	1012.7	1012.7	1012.7	1012.7	1012.8	1013.0	1013.3	1013.4	1013.6	1014.4
157.5°	1043.8	1043.6	1043.3	1043.0	1042.9	1042.8	1042.9	1043.1	1043.3	1043.4	1044.3
160°	1063.3	1062.9	1062.5	1062.1	1061.7	1061.5	1061.5	1061.5	1061.5	1061.5	1062.5
162.5°	1080.7	1080.1	1079.5	1079.0	1078.4	1078.2	1078.3	1078.5	1078.7	1078.9	1079.9
165°	1103.0	1102.4	1101.9	1101.3	1100.6	1100.4	1100.4	1100.4	1100.4	1100.4	1101.5
167.5°	1121.0	1120.2	1119.4	1118.6	1117.8	1117.4	1117.6	1117.8	1117.9	1118.0	1119.3
170°	1131.0	1130.2	1129.4	1128.6	1127.8	1127.5	1127.5	1127.5	1127.5	1127.5	1128.8
172.5°	1139.0	1138.2	1137.4	1136.6	1135.8	1135.4	1135.4	1135.4	1135.4	1135.4	1136.7
175°	1147.4	1146.6	1145.8	1145.0	1144.2	1143.7	1143.7	1143.7	1143.7	1143.7	1145.0
177.5°	1150.8	1150.1	1149.5	1148.8	1148.2	1147.9	1147.9	1147.9	1147.9	1147.9	1148.8
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0



TEST NUMBER: P332227-940

CATALOG NUMBER: S123DIW-S1165D1030U940-4F0-1E-UDD-F1

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°	28.8	28.7	28.6	28.6	28.7	28.8	28.9	29.0
90°	23.3	24.1	24.9	25.5	25.9	26.3	26.7	27.1
92.5°	35.9	36.6	37.3	37.5	37.2	37.0	36.7	36.5
95°	68.5	69.3	70.1	70.4	70.4	70.4	70.4	70.4
97.5°	106.5	107.4	108.3	108.7	108.6	108.6	108.5	108.4
100°	134.0	134.6	135.2	135.7	136.1	136.5	136.9	137.3
102.5°	165.8	166.4	167.0	167.3	167.2	167.1	167.0	166.9
105°	213.2	213.2	213.2	213.4	213.8	214.2	214.6	215.0
107.5°	264.6	265.2	265.8	266.0	265.8	265.6	265.3	265.0
110°	298.8	299.6	300.4	300.6	300.2	299.8	299.4	299.0



TEST NUMBER: P332227-940

CATALOG NUMBER: S123DIW-S1165D1030U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	333.1	334.0	335.0	335.5	335.4	335.3	335.3	335.2
115°	385.2	385.5	385.7	385.7	385.5	385.2	385.0	384.9
117.5°	437.9	437.8	437.8	437.5	436.9	436.4	435.8	435.2
120°	473.0	472.8	472.6	472.3	471.9	471.4	471.1	470.6
122.5°	508.5	507.9	507.5	506.8	506.3	505.8	505.2	504.6
125°	561.2	560.4	559.6	558.8	558.0	557.2	556.4	555.6
127.5°	613.3	612.2	611.1	610.0	609.1	608.2	607.3	606.4
130°	647.9	647.1	646.3	645.2	643.8	642.4	641.1	639.6
132.5°	681.6	680.6	679.7	678.7	677.5	676.5	675.4	674.3
135°	731.9	731.1	730.3	729.8	729.3	729.0	728.5	728.2
137.5°	781.2	780.3	779.5	778.7	777.9	777.2	776.4	775.7
140°	813.6	813.3	813.2	812.3	810.9	809.6	808.2	806.7
142.5°	843.9	843.7	843.6	842.8	841.8	840.7	839.6	838.6
145°	888.6	888.3	888.1	887.6	886.8	886.0	885.2	884.4
147.5°	930.7	930.7	930.7	930.1	928.9	927.6	926.5	925.2
150°	956.7	956.7	956.7	956.1	954.9	953.7	952.5	951.3
152.5°	980.4	980.8	981.1	980.8	979.7	978.7	977.6	976.6
155°	1015.2	1016.0	1016.8	1016.6	1015.1	1013.7	1012.4	1010.9
157.5°	1045.1	1046.0	1046.8	1046.7	1045.5	1044.5	1043.3	1042.1
160°	1063.5	1064.5	1065.5	1065.6	1064.8	1064.0	1063.2	1062.4
162.5°	1080.8	1081.8	1082.9	1082.7	1081.5	1080.1	1078.9	1077.5
165°	1102.8	1103.9	1105.2	1105.1	1103.7	1102.2	1100.8	1099.5
167.5°	1120.5	1121.8	1123.0	1123.0	1121.8	1120.5	1119.3	1118.0
170°	1130.2	1131.7	1133.1	1133.1	1131.7	1130.2	1128.8	1127.5
172.5°	1137.9	1139.2	1140.4	1140.3	1138.9	1137.5	1136.0	1134.7
175°	1146.1	1147.4	1148.5	1148.4	1147.0	1145.6	1144.2	1142.8
177.5°	1149.8	1150.8	1151.7	1151.6	1150.5	1149.4	1148.3	1147.2
180°	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0	1150.0

(END OF REPORT)