

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: P332226-940

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332226-940  
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-S1165D1030U940-4F0-1E-UDD-F  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1030 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

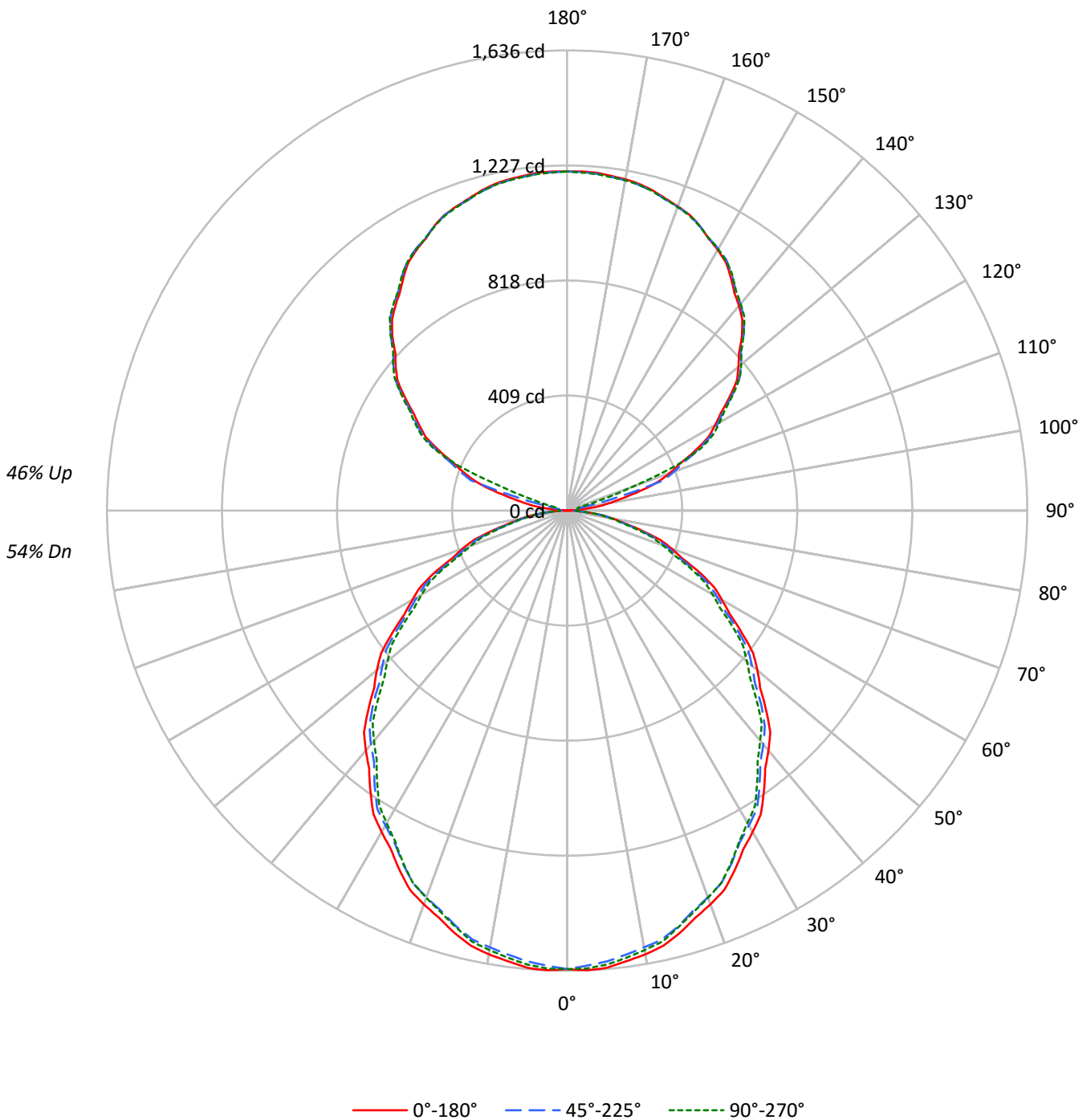
Lumens per Lamp: N/A  
Luminaire Lumens: 7921.5 lumens  
Efficiency: N/A  
Efficacy: 117.5 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse  
  
Input Watts (W): 67.4  
Input Voltage (V): 120  
Input Current (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	108	108	108	108	100	100	100	100	85	85	85	72	72	72	59	59	59	54
1	99	94	90	87	91	87	84	81	75	72	70	63	61	60	52	51	50	45
2	90	82	76	71	83	76	71	66	65	61	58	55	52	50	46	44	42	38
3	82	72	65	59	75	67	61	55	58	53	49	49	45	42	41	38	36	32
4	75	64	56	50	69	60	52	47	51	46	41	44	39	36	36	33	31	27
5	69	57	49	43	63	53	46	40	46	40	36	39	35	31	33	30	27	24
6	63	51	43	37	58	48	40	35	41	36	31	35	31	27	30	26	24	21
7	59	46	38	32	54	43	36	31	37	32	27	32	28	24	27	24	21	18
8	54	42	34	29	50	39	32	27	34	28	24	29	25	22	25	21	19	16
9	51	38	31	26	47	36	29	24	31	26	22	27	23	19	23	20	17	15
10	47	35	28	23	44	33	26	22	29	23	20	25	21	18	21	18	15	13

**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	1.9
10°-20°	433.6	5.5
20°-30°	640.5	8.1
30°-40°	748.2	9.4
40°-50°	752.2	9.5
50°-60°	660.7	8.3
60°-70°	492.2	6.2
70°-80°	280.4	3.5
80°-90°	83.9	1.1
90°-100°	43.8	0.6
100°-110°	208.9	2.6
110°-120°	501.7	6.3
120°-130°	638.9	8.1
130°-140°	682.7	8.6
140°-150°	638.4	8.1
150°-160°	514.9	6.5
160°-170°	332.3	4.2
170°-180°	114.5	1.4
0°-30°	1227.6	15.5
0°-40°	1975.8	24.9
0°-60°	3388.7	42.8
0°-90°	4245.2	53.6
90°-120°	754.5	9.5
90°-150°	2714.5	34.3
90°-180°	3676.0	46.4
0°-180°	7921.5	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	10	22	25	27	7
95°	55	20	28	34	34	68
105°	267	272	196	46	39	283
115°	501	506	514	523	527	494
125°	706	713	716	718	720	630
135°	879	884	888	890	888	676
145°	1014	1020	1022	1024	1024	634
155°	1117	1115	1116	1120	1115	514
165°	1178	1175	1174	1181	1175	333
175°	1206	1201	1202	1208	1201	115
180°	1206	1206	1206	1206	1206	



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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°	29.3	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	6.9	8.8	11.1	13.7	16.3	18.9	21.5	22.3
92.5°	16.7	16.1	15.5	15.0	14.4	15.2	17.1	19.0	21.0	22.9	24.2
95°	54.7	46.5	38.3	30.1	22.0	19.0	21.2	23.4	25.6	27.7	29.2
97.5°	109.8	106.1	102.5	98.8	95.1	86.1	71.9	57.5	43.2	28.8	30.4
100°	151.3	155.3	159.3	163.3	167.3	153.7	122.7	91.7	60.6	29.5	31.1
102.5°	198.7	201.5	204.4	207.2	210.1	194.6	160.7	126.8	92.8	58.9	54.0
105°	266.9	269.1	271.3	273.5	275.6	267.8	249.9	231.9	214.1	196.2	161.0
107.5°	338.9	340.6	342.4	344.2	345.9	348.2	351.1	353.8	356.7	359.5	333.7
110°	386.9	388.5	390.1	391.7	393.2	395.2	397.3	399.6	401.7	403.9	397.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	432.7	434.2	435.6	437.1	438.5	440.3	442.5	444.7	446.9	449.1	449.2
115°	500.7	501.9	503.0	504.3	505.4	506.9	508.7	510.5	512.3	514.1	516.1
117.5°	566.4	567.8	569.4	570.8	572.3	573.5	574.4	575.3	576.2	577.1	578.7
120°	607.3	609.0	610.8	612.6	614.4	615.6	616.2	616.8	617.4	618.0	619.6
122.5°	648.8	650.2	651.8	653.2	654.7	655.8	656.6	657.3	658.1	658.8	660.0
125°	705.8	707.4	708.9	710.5	712.1	713.4	714.1	714.9	715.7	716.5	716.9
127.5°	760.9	762.5	764.1	765.7	767.3	768.6	769.5	770.5	771.4	772.4	773.0
130°	795.3	796.9	798.5	800.1	801.7	802.9	803.7	804.5	805.3	806.1	806.9
132.5°	828.3	829.9	831.4	833.0	834.6	835.8	836.4	837.0	837.7	838.3	839.1
135°	878.6	879.9	881.0	882.2	883.4	884.4	885.2	886.0	886.8	887.6	888.1
137.5°	921.6	923.1	924.6	926.1	927.6	928.6	929.1	929.5	930.0	930.4	931.3
140°	950.3	951.5	952.7	953.9	955.0	955.9	956.5	957.2	957.7	958.3	959.1
142.5°	976.8	977.9	979.2	980.3	981.6	982.5	983.0	983.6	984.3	984.8	985.5
145°	1013.9	1015.2	1016.6	1018.1	1019.4	1020.3	1020.7	1021.1	1021.5	1021.9	1022.3
147.5°	1048.8	1049.7	1050.6	1051.5	1052.5	1053.1	1053.5	1053.9	1054.3	1054.7	1055.1
150°	1070.3	1070.9	1071.5	1072.1	1072.6	1073.2	1073.5	1074.0	1074.3	1074.8	1075.1
152.5°	1089.7	1089.9	1090.2	1090.5	1090.7	1091.0	1091.3	1091.5	1091.7	1092.0	1092.7
155°	1116.9	1116.4	1116.1	1115.7	1115.3	1115.2	1115.4	1115.5	1115.8	1116.0	1117.0
157.5°	1138.0	1138.0	1137.9	1137.9	1137.8	1137.7	1137.6	1137.3	1137.1	1136.9	1138.1
160°	1150.9	1150.7	1150.5	1150.3	1150.1	1149.9	1149.7	1149.5	1149.3	1149.1	1150.3
162.5°	1163.1	1162.5	1162.1	1161.5	1161.0	1160.7	1160.5	1160.3	1160.0	1159.8	1161.2
165°	1177.8	1177.1	1176.6	1176.0	1175.4	1175.0	1174.7	1174.6	1174.4	1174.2	1175.8
167.5°	1189.2	1188.5	1187.7	1186.9	1186.1	1185.6	1185.6	1185.6	1185.6	1185.6	1187.2
170°	1195.7	1194.9	1194.1	1193.3	1192.5	1192.1	1192.1	1192.1	1192.1	1192.1	1193.6
172.5°	1200.0	1199.0	1198.1	1197.1	1196.1	1195.8	1195.9	1196.1	1196.2	1196.4	1198.0
175°	1205.5	1204.5	1203.5	1202.6	1201.6	1201.1	1201.3	1201.6	1201.8	1201.9	1203.4
177.5°	1206.9	1206.1	1205.4	1204.6	1203.8	1203.5	1203.6	1203.8	1203.9	1204.1	1205.4
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5



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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°	28.8	28.7	28.6	28.6	28.7	28.8	28.8	28.9
90°	23.1	23.9	24.7	25.2	25.7	26.0	26.5	26.8
92.5°	25.5	26.8	28.0	28.8	29.0	29.2	29.5	29.7
95°	30.6	31.9	33.3	34.1	34.1	34.1	34.1	34.1
97.5°	32.0	33.6	35.2	36.1	36.3	36.5	36.7	36.9
100°	32.7	34.3	35.9	36.8	37.0	37.2	37.5	37.6
102.5°	49.0	44.1	39.1	36.9	37.3	37.6	38.0	38.3
105°	125.7	90.4	55.2	37.8	38.3	38.6	39.0	39.4
107.5°	307.8	282.0	256.2	230.0	203.4	176.9	150.3	123.8
110°	390.8	384.2	377.6	360.2	331.7	303.2	274.7	246.3





TEST NUMBER: P332226-940

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	449.3	449.4	449.5	446.6	440.6	434.6	428.6	422.6
115°	518.1	520.0	522.1	523.4	524.2	525.0	525.8	526.6
117.5°	580.3	581.9	583.5	584.4	584.5	584.7	584.9	585.1
120°	621.2	622.8	624.4	625.2	625.2	625.2	625.2	625.2
122.5°	661.0	662.2	663.3	664.0	664.1	664.2	664.4	664.6
125°	717.3	717.7	718.1	718.5	718.9	719.3	719.7	720.1
127.5°	773.6	774.3	775.0	775.1	774.6	774.3	773.9	773.5
130°	807.7	808.4	809.2	809.5	809.0	808.7	808.2	807.9
132.5°	839.9	840.7	841.5	841.6	841.1	840.5	840.0	839.4
135°	888.8	889.4	889.9	889.9	889.4	888.8	888.1	887.6
137.5°	932.3	933.3	934.2	934.5	934.1	933.7	933.3	932.9
140°	959.9	960.7	961.5	961.7	961.4	960.9	960.6	960.1
142.5°	986.1	986.8	987.4	987.4	986.9	986.3	985.8	985.2
145°	1022.7	1023.1	1023.5	1023.7	1023.7	1023.7	1023.7	1023.7
147.5°	1055.5	1055.9	1056.3	1056.1	1055.2	1054.2	1053.3	1052.4
150°	1075.6	1075.9	1076.4	1076.3	1075.7	1075.0	1074.5	1073.9
152.5°	1093.4	1094.1	1094.8	1094.8	1093.8	1092.9	1092.0	1091.1
155°	1117.9	1118.9	1120.0	1119.8	1118.7	1117.5	1116.2	1115.1
157.5°	1139.3	1140.5	1141.7	1141.5	1140.0	1138.4	1136.8	1135.3
160°	1151.5	1152.7	1153.9	1153.8	1152.4	1151.0	1149.6	1148.2
162.5°	1162.5	1164.0	1165.3	1165.3	1164.1	1162.9	1161.6	1160.4
165°	1177.3	1178.9	1180.5	1180.6	1179.3	1177.9	1176.4	1175.1
167.5°	1188.8	1190.4	1192.0	1192.0	1190.4	1188.8	1187.2	1185.6
170°	1195.2	1196.9	1198.5	1198.5	1196.9	1195.2	1193.6	1192.1
172.5°	1199.6	1201.1	1202.7	1202.7	1201.0	1199.2	1197.4	1195.7
175°	1204.7	1206.1	1207.6	1207.5	1205.9	1204.3	1202.7	1201.0
177.5°	1206.7	1207.9	1209.2	1209.1	1207.5	1205.9	1204.3	1202.7
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5

(END OF REPORT)