

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: P332230

Luminaire Tested: **S123DIW-S1165D1320U835-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332230
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-S1165D1320U835-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 10131.9 lumens
Efficiency: N/A
Efficacy: 133.0 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: General Diffuse

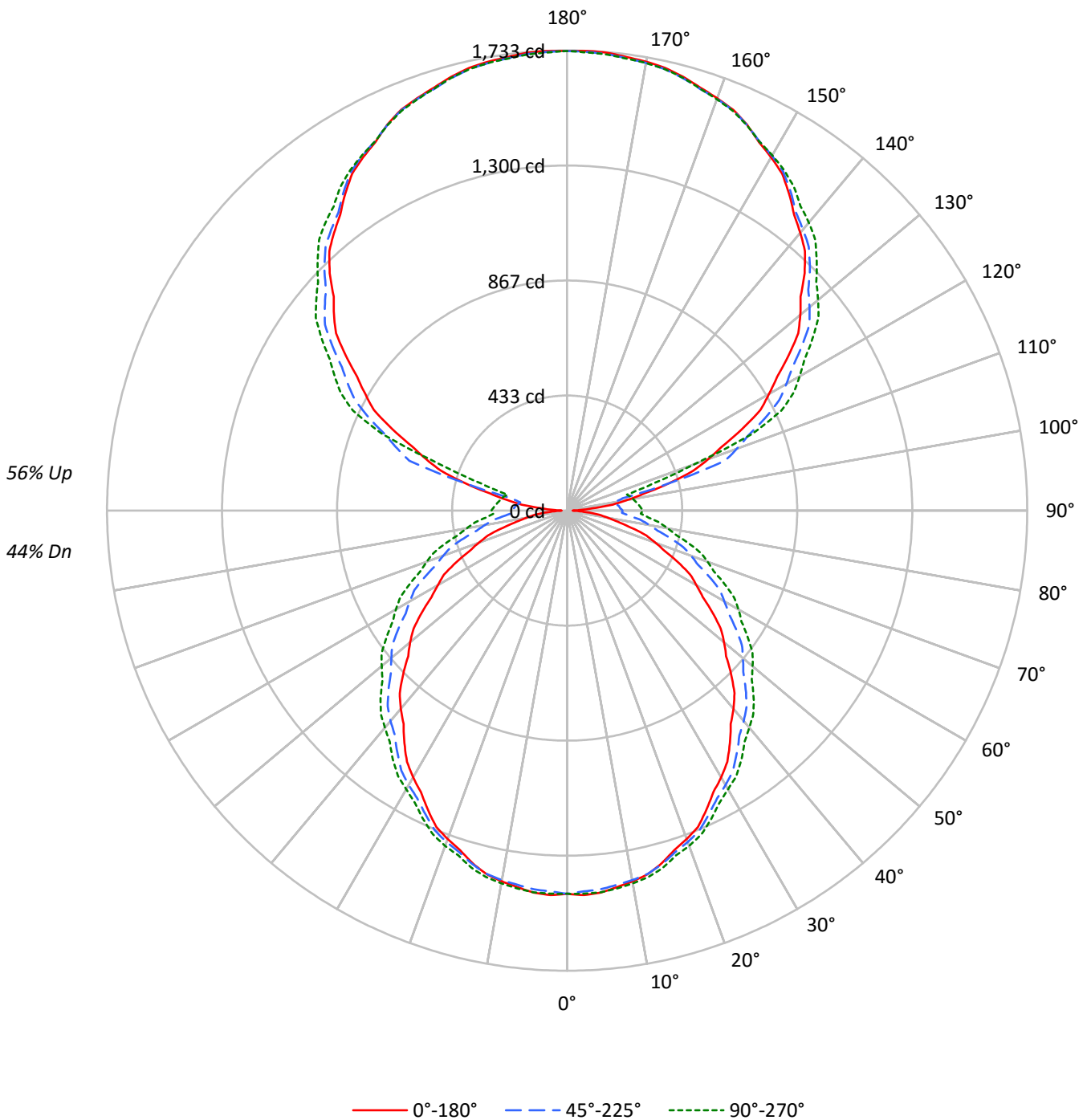
Input Watts (W): 76.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	106	106	106	106	97	97	97	97	80	80	80	65	65	65	51	51	51	44				
1	95	91	87	83	87	83	79	76	69	66	64	55	54	52	43	42	41	35				
2	87	79	72	67	79	72	67	62	60	55	52	48	45	43	37	35	34	29				
3	79	69	61	55	72	63	56	51	52	47	43	42	39	36	33	30	28	24				
4	72	61	53	46	65	56	49	43	46	41	37	37	33	30	29	26	24	20				
5	66	54	46	40	60	50	42	37	41	36	31	33	29	26	26	23	21	17				
6	61	48	40	34	55	44	37	32	37	31	27	30	26	23	24	21	18	15				
7	56	43	35	30	51	40	33	28	33	28	24	27	23	20	22	18	16	13				
8	52	39	32	26	47	36	29	24	30	25	21	25	21	18	20	17	14	12				
9	48	36	28	23	44	33	26	22	28	23	19	23	19	16	18	15	13	11				
10	45	33	26	21	41	30	24	19	26	20	17	21	17	14	17	14	12	10				

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	15532	15532	15532
5°	15581	15141	15150
10°	15441	14792	14718
15°	15242	14397	14247
20°	14958	13944	13729
25°	14607	13423	13185
30°	14248	12956	12632
35°	13844	12460	12191
40°	13459	12010	11719
45°	13033	11577	11342
50°	12611	11149	10926
55°	12146	10713	10553
60°	11692	10267	10169
65°	11230	9793	9712
70°	10529	9260	9244
75°	9643	8650	8768
80°	8626	8052	8224
85°	7681	7639	7911



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	136.8	1.4
10°-20°	390.0	3.8
20°-30°	583.2	5.8
30°-40°	696.5	6.9
40°-50°	728.7	7.2
50°-60°	683.9	6.7
60°-70°	571.2	5.6
70°-80°	408.7	4.0
80°-90°	248.5	2.5
90°-100°	215.8	2.1
100°-110°	412.3	4.1
110°-120°	795.4	7.9
120°-130°	960.2	9.5
130°-140°	999.3	9.9
140°-150°	920.6	9.1
150°-160°	739.3	7.3
160°-170°	477.1	4.7
170°-180°	164.4	1.6
0°-30°	1110.0	11.0
0°-40°	1806.5	17.8
0°-60°	3219.1	31.8
0°-90°	4447.4	43.9
90°-120°	1423.5	14.0
90°-150°	4303.6	42.5
90°-180°	5684.0	56.1
0°-180°	10131.9	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1443	1443	1443	1443	1443	
5°	1445	1441	1432	1444	1443	137
15°	1375	1380	1379	1393	1393	387
25°	1242	1257	1262	1282	1283	572
35°	1069	1094	1114	1137	1144	668
45°	874	912	951	980	993	674
55°	666	719	775	816	830	597
65°	461	522	591	636	654	455
75°	250	324	402	452	473	267
85°	77	156	239	290	308	81
90°	22	112	208	265	285	18
95°	96	109	196	251	269	110
105°	396	442	400	227	233	419
115°	727	756	821	870	890	717
125°	1018	1030	1079	1113	1128	909
135°	1264	1272	1293	1324	1329	973
145°	1457	1464	1467	1482	1489	911
155°	1603	1601	1602	1608	1601	738
165°	1691	1687	1686	1695	1687	478
175°	1731	1725	1726	1734	1724	165
180°	1731	1731	1731	1731	1731	



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CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1449.3	1448.5	1447.6	1446.8	1445.9	1444.4	1442.2	1439.9	1437.7	1435.5	1437.7
5°	1444.6	1443.9	1443.2	1442.5	1441.8	1440.4	1438.3	1436.2	1434.1	1432.0	1434.8
7.5°	1430.4	1430.6	1430.7	1430.9	1431.0	1430.1	1428.0	1426.0	1424.0	1421.9	1425.4
10°	1417.9	1418.6	1419.3	1420.0	1420.7	1420.1	1418.4	1416.6	1414.9	1413.1	1416.6
12.5°	1402.8	1403.7	1404.7	1405.7	1406.7	1406.6	1405.4	1404.2	1403.0	1401.8	1405.0
15°	1375.4	1376.5	1377.5	1378.6	1379.6	1380.0	1379.6	1379.3	1378.9	1378.6	1382.1
17.5°	1340.8	1342.9	1345.0	1347.1	1349.2	1350.2	1350.1	1349.9	1349.8	1349.6	1352.8
20°	1315.7	1317.8	1319.9	1322.0	1324.1	1325.5	1326.2	1326.9	1327.6	1328.3	1331.4
22.5°	1289.3	1291.4	1293.5	1295.6	1297.7	1299.2	1300.2	1301.2	1302.1	1303.1	1307.1
25°	1241.8	1245.3	1248.8	1252.3	1255.8	1258.0	1259.1	1260.1	1261.2	1262.2	1266.8
27.5°	1194.0	1198.0	1202.0	1206.0	1209.9	1213.1	1215.3	1217.5	1219.8	1222.0	1225.9
30°	1160.1	1164.6	1169.1	1173.7	1178.2	1181.9	1184.7	1187.5	1190.3	1193.1	1197.3
32.5°	1122.3	1127.4	1132.5	1137.6	1142.7	1147.1	1150.7	1154.4	1158.0	1161.6	1166.1
35°	1068.9	1074.5	1080.1	1085.7	1091.3	1096.3	1100.9	1105.4	1109.9	1114.5	1119.7
37.5°	1012.3	1018.6	1024.9	1031.2	1037.5	1043.4	1049.0	1054.6	1060.2	1065.8	1071.7
40°	974.6	980.9	987.2	993.4	999.7	1006.4	1013.4	1020.3	1027.3	1034.3	1040.3
42.5°	933.1	940.8	948.5	956.1	963.8	971.3	978.6	985.8	993.1	1000.4	1006.9
45°	874.0	882.4	890.7	899.1	907.5	916.1	924.8	933.5	942.3	951.0	957.6
47.5°	812.0	821.5	831.0	840.6	850.1	859.8	869.8	879.8	889.8	899.8	907.2
50°	771.8	781.6	791.4	801.1	810.9	821.2	832.1	842.9	853.7	864.5	872.6
52.5°	729.1	739.4	749.7	760.1	770.4	781.6	793.5	805.4	817.4	829.3	837.7
55°	666.5	678.0	689.5	701.1	712.6	724.6	737.2	749.8	762.4	775.0	784.4
57.5°	605.5	617.5	629.5	641.5	653.6	666.5	680.2	694.0	707.7	721.5	731.0
60°	562.7	575.3	587.9	600.5	613.0	626.5	640.8	655.1	669.5	683.8	693.6
62.5°	522.5	535.4	548.2	561.1	573.9	587.9	603.1	618.2	633.4	648.6	658.3
65°	460.6	474.2	487.8	501.4	515.1	529.6	544.9	560.3	575.7	591.0	601.5
67.5°	397.7	412.2	426.6	441.1	455.5	470.6	486.2	501.9	517.5	533.2	544.6
70°	353.7	368.7	383.7	398.7	413.8	429.7	446.4	463.2	480.0	496.7	507.9
72.5°	313.4	328.5	343.5	358.5	373.5	389.7	407.0	424.3	441.7	459.0	470.5
75°	249.9	266.4	282.8	299.2	315.6	332.5	350.0	367.5	384.9	402.4	413.9
77.5°	194.6	211.2	227.7	244.3	260.8	277.9	295.5	313.1	330.7	348.3	360.5
80°	155.6	172.7	189.9	207.0	224.1	241.7	259.9	278.1	296.2	314.4	326.3
82.5°	121.7	139.1	156.5	173.9	191.2	209.2	227.6	246.1	264.5	282.9	294.8
85°	77.0	94.5	112.0	129.4	146.9	164.9	183.4	201.9	220.4	238.9	250.8
87.5°	42.1	60.0	78.0	96.0	113.9	132.2	150.8	169.3	187.9	206.4	218.5
90°	21.7	41.7	61.7	81.6	101.6	122.4	143.9	165.4	187.0	208.5	221.5
92.5°	43.1	57.7	72.4	87.0	101.7	119.1	139.5	159.8	180.1	200.5	213.9
95°	95.7	97.6	99.5	101.5	103.4	114.4	134.7	155.0	175.2	195.5	208.3
97.5°	173.0	180.1	187.1	194.2	201.2	202.6	198.4	194.2	189.9	185.7	198.4
100°	231.5	248.3	265.2	282.1	299.0	293.2	264.7	236.2	207.7	179.2	191.6
102.5°	298.1	312.3	326.4	340.6	354.8	345.4	312.5	279.6	246.7	213.8	216.6
105°	395.8	407.3	418.8	430.3	441.9	442.3	431.6	420.9	410.2	399.5	358.7
107.5°	497.2	506.9	516.5	526.2	535.8	549.8	568.1	586.4	604.7	623.0	595.3
110°	564.9	573.5	582.1	590.6	599.2	612.0	629.2	646.3	663.4	680.5	680.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	630.7	638.0	645.2	652.4	659.7	671.5	688.1	704.7	721.2	737.8	746.7
115°	726.6	732.5	738.4	744.4	750.3	760.8	775.9	791.1	806.2	821.4	832.6
117.5°	820.7	825.4	830.1	834.8	839.5	848.4	861.5	874.7	887.8	900.9	911.5
120°	878.1	882.4	886.7	891.0	895.4	903.7	916.1	928.5	940.9	953.2	963.6
122.5°	937.7	940.8	943.8	946.8	949.8	957.4	969.4	981.5	993.5	1005.6	1014.9
125°	1017.9	1020.2	1022.5	1024.8	1027.1	1033.9	1045.1	1056.4	1067.7	1079.0	1086.9
127.5°	1097.2	1099.1	1101.0	1103.0	1104.9	1110.7	1120.5	1130.3	1140.0	1149.8	1157.6
130°	1146.5	1148.5	1150.4	1152.3	1154.3	1159.3	1167.4	1175.6	1183.7	1191.8	1199.6
132.5°	1192.6	1194.8	1197.0	1199.2	1201.5	1205.8	1212.3	1218.8	1225.3	1231.8	1239.3
135°	1264.5	1265.9	1267.3	1268.6	1270.0	1273.2	1278.2	1283.1	1288.1	1293.1	1300.3
137.5°	1325.9	1327.8	1329.7	1331.6	1333.5	1335.9	1338.7	1341.4	1344.2	1347.0	1353.9
140°	1365.8	1367.5	1369.3	1371.0	1372.7	1374.5	1376.4	1378.3	1380.2	1382.1	1388.5
142.5°	1403.9	1405.3	1406.8	1408.2	1409.6	1410.9	1412.0	1413.0	1414.1	1415.2	1420.7
145°	1457.1	1458.8	1460.4	1462.1	1463.7	1464.8	1465.4	1466.0	1466.6	1467.1	1470.5
147.5°	1505.7	1507.0	1508.3	1509.6	1511.0	1511.9	1512.5	1513.0	1513.6	1514.2	1515.6
150°	1536.6	1537.4	1538.3	1539.1	1540.0	1540.7	1541.3	1541.8	1542.4	1543.0	1543.6
152.5°	1564.3	1564.7	1565.1	1565.5	1565.9	1566.3	1566.7	1567.0	1567.3	1567.7	1568.7
155°	1603.4	1602.9	1602.3	1601.7	1601.1	1601.0	1601.3	1601.6	1601.9	1602.1	1603.6
157.5°	1633.8	1633.7	1633.7	1633.6	1633.5	1633.4	1633.1	1632.8	1632.5	1632.2	1633.9
160°	1652.3	1652.0	1651.7	1651.4	1651.1	1650.9	1650.6	1650.3	1650.0	1649.7	1651.4
162.5°	1669.8	1669.0	1668.3	1667.5	1666.8	1666.3	1666.0	1665.7	1665.4	1665.1	1667.1
165°	1690.9	1690.0	1689.1	1688.3	1687.4	1686.9	1686.6	1686.3	1686.0	1685.7	1688.0
167.5°	1707.3	1706.2	1705.0	1703.9	1702.7	1702.2	1702.2	1702.2	1702.2	1702.2	1704.5
170°	1716.6	1715.4	1714.3	1713.2	1712.0	1711.4	1711.4	1711.4	1711.4	1711.4	1713.7
172.5°	1722.8	1721.4	1720.0	1718.6	1717.3	1716.7	1716.9	1717.2	1717.4	1717.6	1719.9
175°	1730.7	1729.3	1727.9	1726.4	1725.0	1724.4	1724.7	1725.0	1725.3	1725.6	1727.6
177.5°	1732.8	1731.6	1730.5	1729.4	1728.2	1727.8	1728.0	1728.2	1728.4	1728.7	1730.5
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0	1443.0
2.5°	1439.9	1442.2	1444.4	1445.4	1445.1	1444.8	1444.5	1444.3
5°	1437.6	1440.4	1443.2	1444.4	1444.1	1443.7	1443.4	1443.0
7.5°	1428.9	1432.4	1435.9	1437.5	1437.0	1436.6	1436.2	1435.8
10°	1420.1	1423.6	1427.1	1428.5	1427.8	1427.1	1426.4	1425.7
12.5°	1408.3	1411.5	1414.7	1415.9	1415.2	1414.5	1413.8	1413.1
15°	1385.5	1389.0	1392.5	1394.1	1393.8	1393.4	1393.1	1392.7
17.5°	1355.9	1359.1	1362.2	1363.5	1363.1	1362.6	1362.1	1361.6
20°	1334.5	1337.7	1340.8	1342.6	1342.9	1343.3	1343.6	1344.0
22.5°	1311.1	1315.1	1319.0	1320.9	1320.7	1320.5	1320.3	1320.1
25°	1271.3	1275.9	1280.4	1282.7	1282.7	1282.7	1282.7	1282.7
27.5°	1229.8	1233.7	1237.6	1239.7	1240.0	1240.3	1240.6	1240.9
30°	1201.5	1205.7	1209.8	1211.9	1211.9	1211.9	1211.9	1211.9
32.5°	1170.6	1175.1	1179.5	1182.2	1183.0	1183.9	1184.7	1185.5
35°	1125.0	1130.2	1135.4	1138.8	1140.2	1141.6	1143.0	1144.3
37.5°	1077.6	1083.6	1089.5	1093.0	1094.2	1095.3	1096.4	1097.5
40°	1046.2	1052.1	1058.1	1061.7	1063.1	1064.5	1065.9	1067.3
42.5°	1013.4	1019.9	1026.4	1030.6	1032.5	1034.5	1036.4	1038.4
45°	964.3	970.9	977.6	982.3	985.1	987.9	990.7	993.4
47.5°	914.7	922.2	929.7	934.5	936.6	938.8	941.0	943.1
50°	880.6	888.7	896.7	901.9	904.4	906.8	909.3	911.7
52.5°	846.0	854.3	862.6	868.3	871.3	874.3	877.3	880.3
55°	793.8	803.2	812.7	818.8	821.6	824.4	827.2	830.0
57.5°	740.5	750.0	759.5	765.9	769.2	772.5	775.8	779.0
60°	703.3	713.1	722.9	729.7	733.6	737.4	741.2	745.1
62.5°	668.1	677.9	687.7	694.4	697.9	701.5	705.1	708.6
65°	612.0	622.5	633.0	639.9	643.4	646.9	650.4	653.9
67.5°	556.1	567.6	579.0	586.2	589.2	592.1	595.0	598.0
70°	519.1	530.3	541.4	548.8	552.3	555.8	559.2	562.7
72.5°	481.9	493.4	504.8	512.3	515.8	519.3	522.8	526.3
75°	425.5	437.0	448.5	456.4	460.6	464.8	469.0	473.1
77.5°	372.6	384.8	397.0	404.6	407.9	411.1	414.3	417.5
80°	338.1	350.0	361.9	369.6	373.1	376.6	380.1	383.5
82.5°	306.7	318.6	330.4	338.1	341.6	345.1	348.6	352.1
85°	262.7	274.6	286.4	294.1	297.6	301.1	304.6	308.1
87.5°	230.6	242.7	254.9	262.7	266.3	269.9	273.5	277.1
90°	234.5	247.5	260.6	269.1	273.2	277.2	281.3	285.4
92.5°	227.3	240.8	254.2	262.7	266.2	269.8	273.3	276.9
95°	221.1	234.0	246.8	255.0	258.4	261.9	265.4	268.9
97.5°	211.1	223.8	236.5	244.7	248.5	252.3	256.1	259.8
100°	204.0	216.4	228.9	236.9	240.7	244.5	248.3	252.1
102.5°	219.3	222.1	224.9	228.3	232.3	236.3	240.3	244.3
105°	317.9	277.1	236.3	217.8	221.5	225.2	228.9	232.6
107.5°	567.6	539.8	512.1	480.7	445.7	410.6	375.6	340.6
110°	679.8	679.5	679.1	659.9	621.8	583.8	545.7	507.6



TEST NUMBER: P332230

CATALOG NUMBER: S123DIW-S1165D1320U835-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	755.7	764.7	773.7	775.4	769.8	764.3	758.7	753.2
115°	843.9	855.1	866.3	873.9	877.9	881.8	885.7	889.7
117.5°	922.1	932.7	943.3	950.1	953.0	956.0	958.9	961.9
120°	973.9	984.2	994.5	1000.9	1003.3	1005.8	1008.2	1010.7
122.5°	1024.3	1033.7	1043.0	1049.0	1051.7	1054.4	1057.0	1059.7
125°	1094.8	1102.7	1110.6	1116.1	1119.1	1122.1	1125.1	1128.1
127.5°	1165.4	1173.3	1181.1	1185.9	1187.7	1189.5	1191.3	1193.1
130°	1207.4	1215.2	1222.9	1227.6	1229.1	1230.6	1232.2	1233.7
132.5°	1246.8	1254.3	1261.8	1266.4	1267.9	1269.5	1271.1	1272.7
135°	1307.4	1314.6	1321.7	1325.7	1326.6	1327.5	1328.4	1329.3
137.5°	1360.8	1367.7	1374.6	1378.6	1379.8	1381.0	1382.2	1383.3
140°	1394.9	1401.3	1407.7	1411.4	1412.6	1413.8	1415.0	1416.1
142.5°	1426.3	1431.9	1437.5	1440.8	1441.8	1442.7	1443.6	1444.6
145°	1473.9	1477.2	1480.6	1483.0	1484.4	1485.8	1487.2	1488.6
147.5°	1517.0	1518.4	1519.8	1520.5	1520.4	1520.4	1520.3	1520.3
150°	1544.1	1544.7	1545.3	1545.5	1545.3	1545.2	1545.0	1544.9
152.5°	1569.7	1570.8	1571.8	1571.7	1570.5	1569.4	1568.2	1567.0
155°	1605.0	1606.4	1607.9	1607.7	1606.0	1604.3	1602.6	1600.9
157.5°	1635.7	1637.4	1639.1	1638.8	1636.6	1634.4	1632.1	1629.9
160°	1653.1	1654.9	1656.6	1656.4	1654.4	1652.4	1650.4	1648.4
162.5°	1669.0	1671.0	1672.9	1673.0	1671.2	1669.5	1667.7	1665.9
165°	1690.3	1692.6	1694.9	1695.0	1693.0	1691.0	1689.0	1687.0
167.5°	1706.8	1709.0	1711.3	1711.3	1709.0	1706.8	1704.5	1702.2
170°	1716.0	1718.3	1720.6	1720.6	1718.3	1716.0	1713.7	1711.4
172.5°	1722.2	1724.5	1726.8	1726.6	1724.1	1721.6	1719.1	1716.6
175°	1729.6	1731.6	1733.6	1733.4	1731.2	1728.9	1726.6	1724.3
177.5°	1732.3	1734.2	1736.0	1735.8	1733.5	1731.2	1728.9	1726.6
180°	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7	1730.7

(END OF REPORT)