

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: P332084-840

Luminaire Tested: **S123DIP-S1165D1195U840-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332084-840  
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: S123DIP-S1165D1195U840-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 9717.3 lumens  
Efficiency: N/A  
Efficacy: 135.5 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

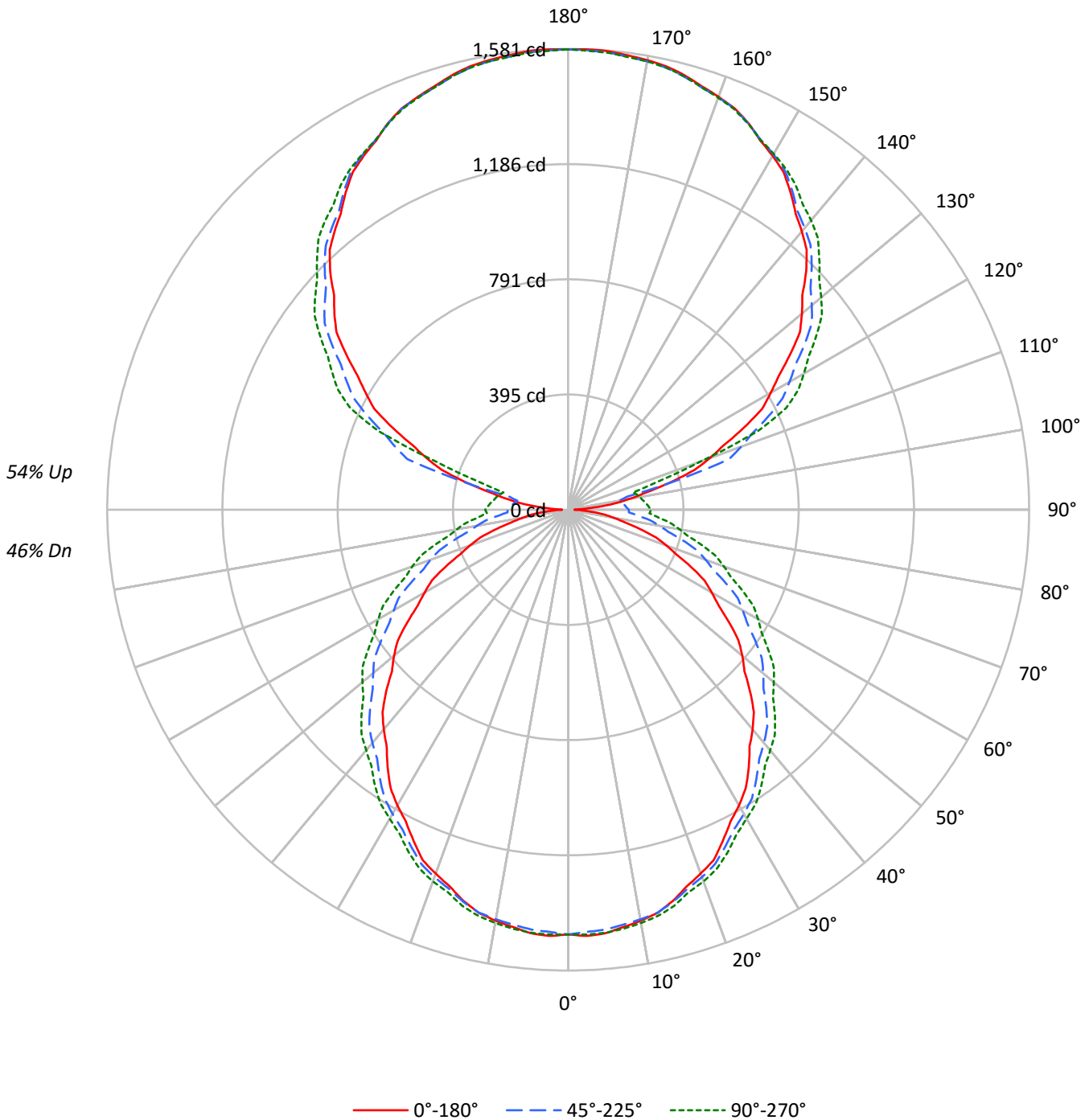
Input Watts (W): 71.7  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	106	106	106	106	98	98	98	98	81	81	81	66	66	66	53	53	53	46
1	96	91	87	83	88	84	80	77	70	67	65	57	55	53	45	44	42	37
2	87	79	73	67	79	73	67	62	61	56	53	49	46	44	39	37	35	30
3	79	69	62	55	72	64	57	52	53	48	44	43	40	37	34	32	29	25
4	72	61	53	47	66	56	49	43	47	41	37	38	34	31	30	27	25	21
5	66	54	46	40	60	50	43	37	42	36	32	34	30	27	27	24	22	18
6	61	48	40	34	56	45	37	32	38	32	28	31	27	23	25	21	19	16
7	56	44	36	30	51	40	33	28	34	28	24	28	24	20	23	19	17	14
8	52	40	32	26	48	37	30	25	31	25	21	26	21	18	21	17	15	13
9	48	36	28	23	44	33	27	22	28	23	19	24	19	16	19	16	13	11
10	45	33	26	21	41	31	24	20	26	21	17	22	18	15	18	14	12	10

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

	0°	45°	90°
0°	15685	15685	15685
5°	15735	15290	15299
10°	15593	14937	14863
15°	15393	14539	14387
20°	15105	14082	13865
25°	14751	13556	13315
30°	14388	13084	12757
35°	13980	12583	12311
40°	13592	12128	11834
45°	13161	11692	11453
50°	12735	11259	11034
55°	12267	10818	10657
60°	11808	10368	10270
65°	11339	9889	9809
70°	10633	9352	9336
75°	9740	8736	8855
80°	8709	8132	8306
85°	7760	7716	7988



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.1	1.4
10°-20°	393.8	4.1
20°-30°	589.0	6.1
30°-40°	703.4	7.2
40°-50°	735.9	7.6
50°-60°	690.6	7.1
60°-70°	576.8	5.9
70°-80°	412.7	4.2
80°-90°	250.5	2.6
90°-100°	211.8	2.2
100°-110°	387.1	4.0
110°-120°	733.1	7.5
120°-130°	880.3	9.1
130°-140°	913.7	9.4
140°-150°	840.4	8.6
150°-160°	674.6	6.9
160°-170°	435.4	4.5
170°-180°	150.0	1.5
0°-30°	1120.9	11.5
0°-40°	1824.3	18.8
0°-60°	3250.8	33.5
0°-90°	4490.8	46.2
90°-120°	1332.0	13.7
90°-150°	3966.5	40.8
90°-180°	5226.0	53.8
0°-180°	9717.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1457	1457	1457	1457	1457	
5°	1459	1455	1446	1458	1457	138
15°	1389	1393	1392	1407	1406	391
25°	1254	1269	1275	1294	1295	578
35°	1079	1105	1126	1148	1156	675
45°	883	921	960	990	1003	680
55°	673	726	783	824	838	602
65°	465	528	597	643	660	459
75°	252	327	406	457	478	270
85°	78	157	241	293	311	82
90°	22	112	208	264	284	17
95°	89	107	194	249	267	102
105°	362	408	376	223	229	383
115°	664	692	758	806	825	655
125°	929	941	989	1024	1038	830
135°	1154	1161	1182	1212	1218	888
145°	1330	1336	1339	1353	1360	832
155°	1463	1461	1462	1467	1461	674
165°	1543	1539	1538	1547	1539	436
175°	1579	1574	1574	1582	1573	150
180°	1579	1579	1579	1579	1579	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1463.6	1462.8	1461.9	1461.1	1460.2	1458.6	1456.4	1454.1	1451.9	1449.7	1451.9
5°	1458.9	1458.1	1457.4	1456.7	1456.0	1454.6	1452.5	1450.4	1448.2	1446.1	1449.0
7.5°	1444.5	1444.7	1444.8	1445.0	1445.1	1444.2	1442.1	1440.1	1438.0	1435.9	1439.5
10°	1431.9	1432.6	1433.3	1434.0	1434.7	1434.1	1432.4	1430.6	1428.9	1427.0	1430.6
12.5°	1416.6	1417.5	1418.6	1419.6	1420.6	1420.5	1419.3	1418.1	1416.8	1415.6	1418.9
15°	1389.0	1390.1	1391.1	1392.2	1393.2	1393.6	1393.2	1392.9	1392.5	1392.2	1395.7
17.5°	1354.0	1356.1	1358.3	1360.4	1362.5	1363.5	1363.4	1363.2	1363.1	1362.9	1366.1
20°	1328.7	1330.8	1332.9	1335.0	1337.2	1338.6	1339.3	1340.0	1340.7	1341.4	1344.5
22.5°	1302.0	1304.1	1306.3	1308.4	1310.5	1312.0	1313.0	1314.0	1314.9	1316.0	1320.0
25°	1254.1	1257.6	1261.1	1264.7	1268.2	1270.4	1271.5	1272.5	1273.6	1274.7	1279.3
27.5°	1205.8	1209.8	1213.9	1217.9	1221.8	1225.1	1227.3	1229.5	1231.8	1234.1	1238.0
30°	1171.5	1176.1	1180.6	1185.3	1189.8	1193.6	1196.4	1199.2	1202.0	1204.9	1209.1
32.5°	1133.4	1138.5	1143.7	1148.8	1154.0	1158.4	1162.1	1165.8	1169.4	1173.1	1177.6
35°	1079.4	1085.1	1090.8	1096.4	1102.1	1107.1	1111.8	1116.3	1120.8	1125.5	1130.7
37.5°	1022.3	1028.6	1035.0	1041.4	1047.7	1053.7	1059.3	1065.0	1070.7	1076.3	1082.3
40°	984.2	990.6	996.9	1003.2	1009.6	1016.3	1023.4	1030.4	1037.4	1044.5	1050.6
42.5°	942.3	950.1	957.9	965.5	973.3	980.9	988.3	995.5	1002.9	1010.3	1016.8
45°	882.6	891.1	899.5	908.0	916.5	925.1	933.9	942.7	951.6	960.4	967.0
47.5°	820.0	829.6	839.2	848.9	858.5	868.3	878.4	888.5	898.6	908.7	916.1
50°	779.4	789.3	799.2	809.0	818.9	829.3	840.3	851.2	862.1	873.0	881.2
52.5°	736.3	746.7	757.1	767.6	778.0	789.3	801.3	813.3	825.5	837.5	846.0
55°	673.1	684.7	696.3	708.0	719.6	731.7	744.5	757.2	769.9	782.6	792.1
57.5°	611.5	623.6	635.7	647.8	660.0	673.1	686.9	700.8	714.7	728.6	738.2
60°	568.3	581.0	593.7	606.4	619.0	632.7	647.1	661.6	676.1	690.5	700.4
62.5°	527.7	540.7	553.6	566.6	579.6	593.7	609.0	624.3	639.6	655.0	664.8
65°	465.1	478.9	492.6	506.3	520.2	534.8	550.3	565.8	581.4	596.8	607.4
67.5°	401.6	416.3	430.8	445.5	460.0	475.2	491.0	506.9	522.6	538.5	550.0
70°	357.2	372.3	387.5	402.6	417.9	433.9	450.8	467.8	484.7	501.6	512.9
72.5°	316.5	331.7	346.9	362.0	377.2	393.5	411.0	428.5	446.1	463.5	475.1
75°	252.4	269.0	285.6	302.2	318.7	335.8	353.5	371.1	388.7	406.4	418.0
77.5°	196.5	213.3	229.9	246.7	263.4	280.6	298.4	316.2	334.0	351.7	364.1
80°	157.1	174.4	191.8	209.0	226.3	244.1	262.5	280.8	299.1	317.5	329.5
82.5°	122.9	140.5	158.0	175.6	193.1	211.3	229.8	248.5	267.1	285.7	297.7
85°	77.8	95.4	113.1	130.7	148.3	166.5	185.2	203.9	222.6	241.3	253.3
87.5°	42.4	60.6	78.7	96.7	114.8	133.2	151.9	170.6	189.2	207.8	220.0
90°	21.8	41.7	61.6	81.5	101.4	122.0	143.4	164.8	186.1	207.5	220.6
92.5°	41.2	56.0	70.9	85.7	100.7	118.2	138.5	158.8	178.9	199.2	212.7
95°	89.1	92.1	95.1	98.3	101.3	112.9	133.1	153.2	173.4	193.5	206.3
97.5°	159.4	167.0	174.6	182.3	189.9	192.6	190.3	188.0	185.8	183.5	196.1
100°	212.6	229.0	245.6	262.1	278.6	274.6	250.1	225.7	201.3	176.8	189.1
102.5°	273.3	287.2	301.0	315.0	328.9	321.6	293.2	264.7	236.2	207.7	211.2
105°	362.3	373.7	385.0	396.4	407.7	409.2	400.9	392.6	384.3	376.0	339.7
107.5°	454.7	464.2	473.7	483.2	492.7	506.5	524.6	542.7	560.8	578.9	554.5
110°	516.3	524.8	533.2	541.7	550.1	562.8	579.8	596.8	613.8	630.8	631.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	576.4	583.5	590.7	597.7	604.8	616.6	633.0	649.4	665.8	682.3	691.3
115°	663.8	669.6	675.4	681.2	687.0	697.4	712.5	727.5	742.6	757.6	768.7
117.5°	749.6	754.2	758.7	763.3	767.8	776.6	789.7	802.8	816.0	829.1	839.6
120°	801.8	806.0	810.0	814.2	818.3	826.6	839.0	851.4	863.8	876.3	886.5
122.5°	856.3	859.1	861.9	864.8	867.7	875.1	887.2	899.3	911.3	923.4	932.7
125°	929.3	931.4	933.5	935.5	937.7	944.3	955.6	966.8	978.2	989.4	997.3
127.5°	1001.6	1003.3	1005.0	1006.7	1008.6	1014.2	1023.9	1033.7	1043.4	1053.1	1061.0
130°	1046.6	1048.3	1050.1	1051.9	1053.6	1058.4	1066.6	1074.7	1082.8	1090.9	1098.6
132.5°	1088.5	1090.6	1092.6	1094.6	1096.6	1100.9	1107.3	1113.8	1120.2	1126.7	1134.2
135°	1154.2	1155.4	1156.6	1157.8	1159.0	1162.1	1167.0	1171.9	1176.8	1181.7	1188.9
137.5°	1210.1	1211.8	1213.6	1215.3	1217.0	1219.2	1221.9	1224.7	1227.5	1230.2	1237.1
140°	1246.5	1248.0	1249.6	1251.1	1252.6	1254.4	1256.3	1258.1	1259.9	1261.7	1268.1
142.5°	1281.1	1282.4	1283.7	1285.1	1286.3	1287.4	1288.4	1289.4	1290.4	1291.4	1297.0
145°	1329.7	1331.2	1332.7	1334.1	1335.6	1336.7	1337.2	1337.7	1338.2	1338.7	1342.0
147.5°	1373.9	1375.1	1376.3	1377.5	1378.7	1379.6	1380.1	1380.6	1381.1	1381.6	1383.0
150°	1402.1	1402.8	1403.6	1404.4	1405.2	1405.8	1406.3	1406.8	1407.4	1408.0	1408.5
152.5°	1427.4	1427.7	1428.2	1428.5	1428.9	1429.2	1429.5	1429.9	1430.2	1430.5	1431.4
155°	1463.1	1462.6	1462.0	1461.5	1461.0	1460.9	1461.1	1461.4	1461.7	1461.9	1463.2
157.5°	1490.8	1490.7	1490.7	1490.6	1490.6	1490.4	1490.2	1489.9	1489.7	1489.3	1491.0
160°	1507.6	1507.4	1507.1	1506.9	1506.6	1506.3	1506.1	1505.8	1505.6	1505.3	1506.9
162.5°	1523.6	1523.0	1522.3	1521.6	1520.9	1520.5	1520.1	1519.9	1519.6	1519.3	1521.2
165°	1542.9	1542.1	1541.3	1540.5	1539.7	1539.2	1538.9	1538.6	1538.4	1538.1	1540.2
167.5°	1557.9	1556.8	1555.8	1554.8	1553.7	1553.2	1553.2	1553.2	1553.2	1553.2	1555.3
170°	1566.3	1565.3	1564.3	1563.2	1562.2	1561.7	1561.7	1561.7	1561.7	1561.7	1563.7
172.5°	1572.0	1570.7	1569.4	1568.2	1566.9	1566.4	1566.6	1566.8	1567.0	1567.2	1569.3
175°	1579.2	1577.9	1576.6	1575.3	1574.0	1573.5	1573.8	1574.0	1574.3	1574.5	1576.4
177.5°	1581.1	1580.0	1579.0	1578.0	1576.9	1576.5	1576.7	1576.9	1577.1	1577.3	1579.0
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2	1457.2
2.5°	1454.1	1456.4	1458.6	1459.7	1459.4	1459.1	1458.8	1458.5
5°	1451.8	1454.6	1457.4	1458.6	1458.3	1457.9	1457.6	1457.2
7.5°	1443.0	1446.5	1450.1	1451.7	1451.2	1450.8	1450.4	1450.0
10°	1434.1	1437.6	1441.2	1442.6	1441.9	1441.2	1440.5	1439.8
12.5°	1422.2	1425.4	1428.7	1429.9	1429.2	1428.5	1427.7	1427.0
15°	1399.2	1402.7	1406.2	1407.9	1407.5	1407.1	1406.8	1406.4
17.5°	1369.3	1372.5	1375.6	1377.0	1376.5	1376.0	1375.5	1375.0
20°	1347.7	1350.9	1354.0	1355.8	1356.1	1356.6	1356.9	1357.3
22.5°	1324.0	1328.1	1332.0	1333.9	1333.7	1333.5	1333.3	1333.1
25°	1283.8	1288.5	1293.0	1295.4	1295.4	1295.4	1295.4	1295.4
27.5°	1241.9	1245.9	1249.8	1251.9	1252.2	1252.5	1252.8	1253.1
30°	1213.4	1217.6	1221.7	1223.9	1223.9	1223.9	1223.9	1223.9
32.5°	1182.1	1186.7	1191.1	1193.9	1194.7	1195.6	1196.4	1197.2
35°	1136.1	1141.3	1146.6	1150.0	1151.4	1152.9	1154.3	1155.6
37.5°	1088.2	1094.3	1100.2	1103.8	1105.0	1106.1	1107.2	1108.3
40°	1056.5	1062.5	1068.5	1072.2	1073.6	1075.0	1076.4	1077.8
42.5°	1023.4	1030.0	1036.5	1040.8	1042.7	1044.7	1046.6	1048.6
45°	973.8	980.5	987.2	992.0	994.8	997.6	1000.5	1003.2
47.5°	923.7	931.3	938.9	943.7	945.8	948.1	950.3	952.4
50°	889.3	897.5	905.5	910.8	913.3	915.7	918.3	920.7
52.5°	854.3	862.7	871.1	876.9	879.9	882.9	886.0	889.0
55°	801.6	811.1	820.7	826.9	829.7	832.5	835.4	838.2
57.5°	747.8	757.4	767.0	773.5	776.8	780.1	783.5	786.7
60°	710.2	720.1	730.0	736.9	740.8	744.7	748.5	752.5
62.5°	674.7	684.6	694.5	701.3	704.8	708.4	712.1	715.6
65°	618.0	628.6	639.2	646.2	649.7	653.3	656.8	660.4
67.5°	561.6	573.2	584.7	592.0	595.0	597.9	600.9	603.9
70°	524.2	535.5	546.7	554.2	557.7	561.3	564.7	568.3
72.5°	486.7	498.3	509.8	517.4	520.9	524.4	528.0	531.5
75°	429.7	441.3	452.9	460.9	465.1	469.4	473.6	477.8
77.5°	376.3	388.6	400.9	408.6	411.9	415.2	418.4	421.6
80°	341.4	353.5	365.5	373.2	376.8	380.3	383.8	387.3
82.5°	309.7	321.7	333.7	341.4	345.0	348.5	352.0	355.6
85°	265.3	277.3	289.2	297.0	300.5	304.1	307.6	311.1
87.5°	232.3	244.5	256.7	264.6	268.2	271.9	275.5	279.1
90°	233.6	246.6	259.6	268.2	272.3	276.3	280.3	284.4
92.5°	226.0	239.4	252.8	261.3	264.8	268.3	272.0	275.5
95°	219.0	231.8	244.6	252.7	256.2	259.7	263.3	266.8
97.5°	208.7	221.3	233.9	242.1	245.9	249.6	253.5	257.2
100°	201.5	213.8	226.1	234.2	237.9	241.8	245.5	249.3
102.5°	214.7	218.1	221.6	225.4	229.3	233.4	237.3	241.4
105°	303.5	267.2	231.0	214.6	218.3	222.1	225.7	229.4
107.5°	530.1	505.7	481.3	453.3	421.6	389.9	358.3	326.6
110°	631.9	632.5	633.0	616.0	581.6	547.1	512.7	478.2





TEST NUMBER: P332084-840

CATALOG NUMBER: S123DIP-S1165D1195U840-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	700.3	709.4	718.4	720.5	715.8	711.0	706.3	701.5
115°	779.7	790.8	801.9	809.3	813.2	817.1	820.9	824.9
117.5°	850.0	860.5	871.0	877.7	880.7	883.6	886.6	889.6
120°	896.7	906.9	917.1	923.3	925.8	928.3	930.8	933.2
122.5°	942.0	951.3	960.6	966.5	969.2	971.9	974.5	977.2
125°	1005.3	1013.2	1021.2	1026.6	1029.6	1032.6	1035.5	1038.5
127.5°	1068.7	1076.5	1084.4	1089.2	1091.1	1093.0	1094.9	1096.7
130°	1106.4	1114.1	1121.9	1126.5	1128.1	1129.7	1131.4	1132.9
132.5°	1141.7	1149.1	1156.6	1161.1	1162.9	1164.5	1166.2	1167.8
135°	1196.0	1203.2	1210.3	1214.4	1215.4	1216.3	1217.3	1218.3
137.5°	1243.9	1250.7	1257.5	1261.5	1262.8	1264.0	1265.3	1266.6
140°	1274.4	1280.7	1287.1	1290.9	1292.1	1293.3	1294.6	1295.9
142.5°	1302.5	1308.1	1313.6	1317.0	1318.0	1319.0	1320.0	1321.1
145°	1345.3	1348.8	1352.1	1354.4	1355.8	1357.3	1358.7	1360.1
147.5°	1384.4	1385.7	1387.2	1387.9	1387.9	1388.0	1388.1	1388.2
150°	1409.0	1409.5	1410.0	1410.3	1410.2	1410.1	1410.0	1410.0
152.5°	1432.3	1433.3	1434.2	1434.1	1433.1	1432.0	1431.0	1429.9
155°	1464.5	1465.8	1467.1	1466.9	1465.4	1463.9	1462.3	1460.8
157.5°	1492.5	1494.0	1495.6	1495.4	1493.4	1491.3	1489.2	1487.2
160°	1508.4	1510.0	1511.6	1511.5	1509.6	1507.8	1505.9	1504.1
162.5°	1523.0	1524.7	1526.5	1526.5	1524.9	1523.3	1521.7	1520.0
165°	1542.4	1544.4	1546.5	1546.6	1544.8	1543.0	1541.2	1539.3
167.5°	1557.3	1559.4	1561.6	1561.6	1559.4	1557.3	1555.3	1553.2
170°	1565.8	1567.9	1569.9	1569.9	1567.9	1565.8	1563.7	1561.7
172.5°	1571.5	1573.5	1575.6	1575.5	1573.2	1570.9	1568.6	1566.3
175°	1578.2	1580.0	1581.9	1581.7	1579.6	1577.5	1575.5	1573.4
177.5°	1580.6	1582.4	1584.0	1583.8	1581.8	1579.6	1577.5	1575.5
180°	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2	1579.2

(END OF REPORT)