

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: P332077-840

Luminaire Tested: **S123DIP-S1165D1025U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332077-840  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-17,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIP-S1165D1025U840-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1025 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 8647.3 lumens  
Efficiency: N/A  
Efficacy: 129.5 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

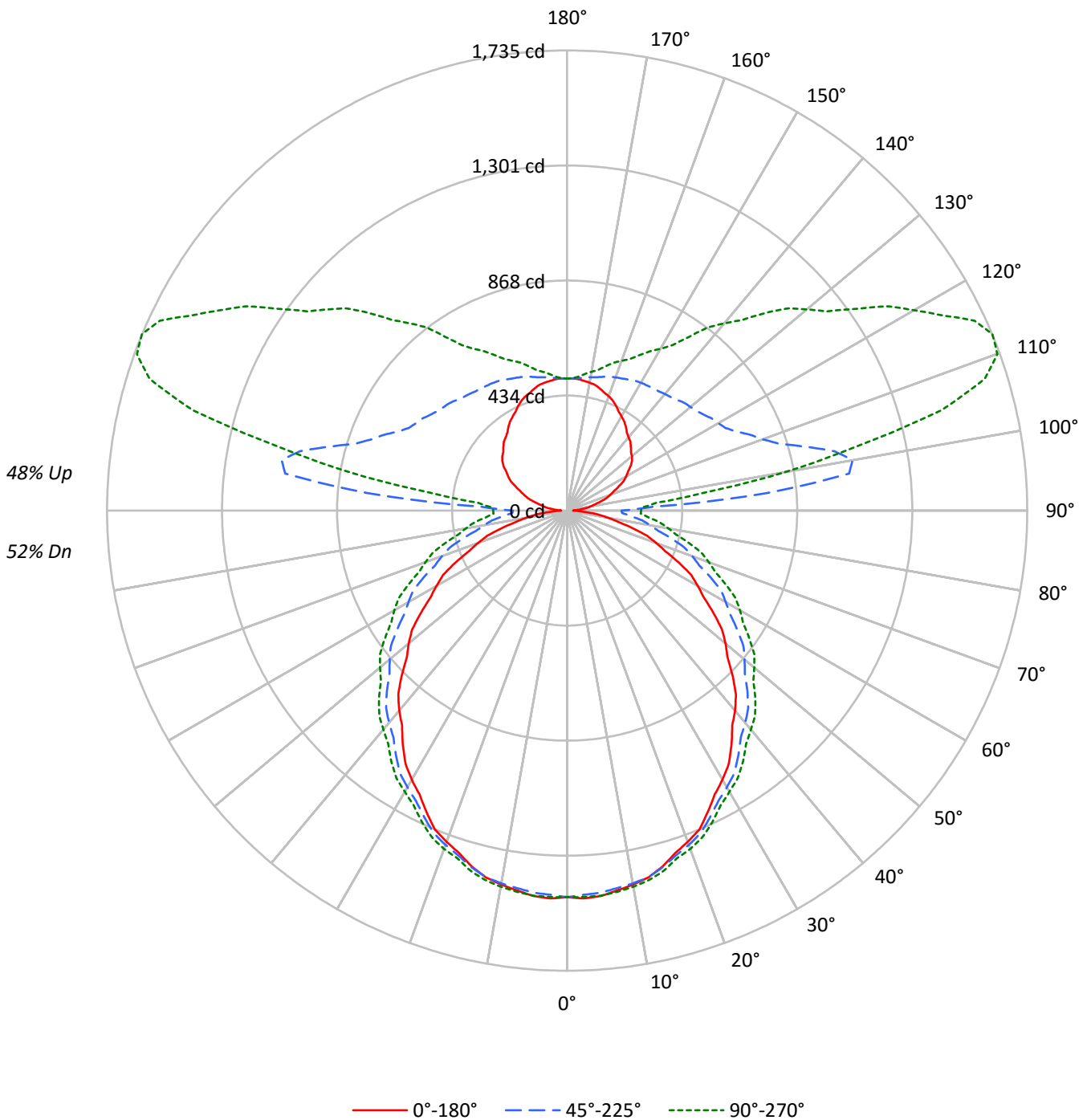
Input Watts (W): 66.8  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	108	108	108	108	100	100	100	100	84	84	84	71	71	71	58	58	58	52
1	97	92	88	84	90	85	82	78	72	70	67	60	58	57	49	48	47	41
2	88	80	73	68	81	74	68	63	63	58	55	52	49	46	43	41	38	34
3	80	70	62	56	74	65	58	52	55	50	45	46	42	39	38	35	32	28
4	73	62	53	47	67	57	50	44	49	43	38	41	36	33	33	30	28	24
5	67	55	46	40	61	51	43	38	43	38	33	36	32	28	30	27	24	21
6	62	49	41	35	57	46	38	33	39	33	29	33	28	25	27	24	21	18
7	57	44	36	30	52	41	34	29	35	29	25	30	25	22	25	21	18	16
8	53	40	32	27	49	37	30	25	32	26	22	27	23	19	23	19	16	14
9	49	37	29	24	45	34	27	22	29	24	20	25	21	17	21	17	15	13
10	46	34	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

**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	1.6
10°-20°	393.8	4.6
20°-30°	589.0	6.8
30°-40°	703.4	8.1
40°-50°	735.9	8.5
50°-60°	690.6	8.0
60°-70°	576.8	6.7
70°-80°	412.7	4.8
80°-90°	250.0	2.9
90°-100°	431.5	5.0
100°-110°	898.2	10.4
110°-120°	847.7	9.8
120°-130°	659.0	7.6
130°-140°	504.9	5.8
140°-150°	366.5	4.2
150°-160°	252.6	2.9
160°-170°	148.4	1.7
170°-180°	48.3	0.6
0°-30°	1120.9	13.0
0°-40°	1824.3	21.1
0°-60°	3250.8	37.6
0°-90°	4490.2	51.9
90°-120°	2177.4	25.2
90°-150°	3707.8	42.9
90°-180°	4157.0	48.1
0°-180°	8647.3	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°	23	111	205	260	278	16
95°	52	192	755	379	339	51
105°	130	225	930	1579	1460	137
115°	215	287	704	1480	1694	213
125°	292	346	629	1131	1325	260
135°	340	404	590	910	1052	263
145°	386	440	564	720	798	241
155°	436	471	545	620	646	201
165°	477	490	522	554	564	134
175°	497	498	501	508	507	47
180°	498	498	498	498	498	



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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°	42.6	60.6	78.6	96.7	114.7	132.9	151.5	170.1	188.6	207.3	219.0
90°	22.6	41.9	61.3	81.6	100.9	120.5	141.6	162.6	183.6	204.6	215.6
92.5°	31.9	53.5	77.6	101.0	125.1	156.6	200.8	261.9	322.0	324.3	297.9
95°	51.7	68.5	93.3	124.2	164.2	219.0	322.0	489.5	672.1	754.9	653.0
97.5°	74.0	87.5	108.6	135.8	174.1	231.1	329.4	515.3	807.4	1072.1	1147.3
100°	88.9	101.2	119.6	144.9	180.4	233.5	320.2	485.6	767.0	1092.7	1301.5
102.5°	104.5	116.5	132.9	156.4	188.3	237.4	316.7	459.3	711.2	1032.7	1301.7
105°	129.7	141.1	155.6	176.2	203.8	246.9	316.5	435.5	641.2	929.5	1228.7
107.5°	154.7	164.9	178.0	197.1	222.3	262.1	324.3	425.0	592.9	837.4	1109.5
110°	172.8	182.2	193.6	211.1	234.5	273.0	332.4	423.1	572.4	785.1	1035.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	190.6	198.8	209.0	225.4	247.7	284.6	340.2	424.7	557.2	746.8	968.4
115°	214.6	222.9	233.2	247.4	268.8	304.5	355.5	429.7	545.2	704.1	887.0
117.5°	239.8	247.1	254.8	266.6	288.4	320.8	370.7	437.5	536.6	673.6	832.8
120°	256.3	261.2	267.9	279.7	300.7	332.5	380.5	444.5	533.8	658.4	803.5
122.5°	271.7	275.6	281.6	293.4	312.7	345.5	392.0	451.4	533.7	646.4	778.4
125°	292.1	294.1	300.1	311.2	330.3	362.6	408.2	462.8	533.5	629.4	744.7
127.5°	308.8	311.4	318.5	329.5	350.3	381.6	424.1	472.5	535.4	616.2	713.8
130°	319.2	321.9	330.6	342.4	363.2	393.7	434.1	479.5	536.9	607.4	695.8
132.5°	326.1	329.8	339.6	354.1	375.2	404.3	442.4	485.6	536.8	600.4	678.7
135°	339.8	343.6	354.3	369.0	389.8	418.8	453.9	492.1	536.3	589.6	655.4
137.5°	352.8	356.8	367.4	383.2	403.9	430.1	462.3	497.2	535.2	579.8	635.1
140°	360.4	365.5	375.6	391.7	411.8	437.6	467.9	499.2	534.5	573.9	622.5
142.5°	370.1	374.1	384.7	398.9	418.8	442.3	471.0	500.6	532.7	567.1	610.4
145°	385.7	388.3	397.1	411.8	428.6	451.6	477.8	505.0	533.2	563.5	598.5
147.5°	399.8	401.6	410.5	423.5	440.1	459.9	483.8	508.3	533.2	559.7	588.1
150°	410.3	411.3	419.3	432.4	446.6	464.7	487.9	509.1	533.2	556.4	581.6
152.5°	420.7	420.9	429.0	440.5	453.0	470.4	490.3	510.7	530.8	552.4	575.2
155°	436.5	436.5	442.5	452.6	463.7	477.8	494.9	511.1	528.2	545.3	565.5
157.5°	449.0	449.8	454.6	463.5	472.9	483.8	497.6	512.1	524.8	539.1	554.6
160°	458.7	458.7	462.7	470.7	477.8	487.9	500.0	512.1	523.2	534.2	547.3
162.5°	466.0	466.0	469.2	475.5	481.8	490.3	500.8	511.3	520.0	529.4	540.1
165°	476.8	475.7	477.8	482.8	486.9	493.9	502.0	509.1	515.1	522.2	530.2
167.5°	485.0	483.8	484.8	488.7	491.5	495.9	501.8	507.5	510.3	514.9	520.8
170°	489.9	487.9	488.9	491.9	493.9	495.9	501.0	505.0	507.1	510.1	515.1
172.5°	493.1	491.9	492.1	494.3	495.5	496.8	501.0	504.2	504.6	506.0	509.5
175°	497.0	495.9	494.9	497.0	497.0	498.0	500.0	502.0	501.0	501.0	503.0
177.5°	498.8	498.0	497.2	498.0	498.0	498.0	498.8	500.4	498.8	498.0	498.8
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0



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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°	231.3	243.5	255.7	263.8	267.1	270.8	274.6	277.9
90°	228.5	241.6	254.6	264.4	266.9	271.5	275.9	278.4
92.5°	277.5	271.7	275.5	277.8	279.2	279.4	283.7	285.1
95°	541.9	436.0	393.4	364.4	348.7	343.2	339.7	339.2
97.5°	1071.4	901.8	782.3	668.7	597.9	556.0	532.4	527.3
100°	1347.1	1275.6	1167.9	1031.7	933.3	863.3	827.5	832.0
102.5°	1433.2	1440.6	1381.7	1297.8	1222.0	1167.3	1137.9	1118.3
105°	1449.3	1559.9	1588.9	1569.2	1526.1	1491.0	1461.9	1460.0
107.5°	1357.9	1531.1	1628.8	1670.9	1674.9	1665.1	1657.3	1651.1
110°	1275.2	1469.8	1606.0	1682.5	1713.5	1724.4	1725.3	1726.1





TEST NUMBER: P332077-840

CATALOG NUMBER: S123DIP-S1165D1025U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1191.9	1390.4	1541.6	1638.3	1693.0	1721.1	1731.9	1735.4
115°	1081.9	1265.8	1422.4	1537.9	1616.3	1663.6	1686.5	1694.4
117.5°	998.7	1158.4	1299.9	1416.9	1498.5	1552.1	1583.9	1593.5
120°	953.8	1098.0	1227.1	1334.2	1416.3	1475.2	1501.9	1510.5
122.5°	917.1	1048.1	1168.0	1267.7	1341.0	1394.2	1423.3	1433.4
125°	867.0	984.3	1088.4	1174.1	1241.0	1287.9	1315.6	1325.0
127.5°	821.9	927.0	1021.2	1099.2	1159.1	1199.4	1224.6	1233.4
130°	793.2	890.7	979.1	1052.0	1107.5	1145.9	1169.2	1179.4
132.5°	766.2	856.1	938.5	1008.2	1060.9	1099.5	1120.6	1128.7
135°	729.3	807.2	879.1	940.6	991.8	1023.8	1043.7	1052.5
137.5°	695.3	759.6	821.6	875.0	918.4	950.8	967.9	974.2
140°	675.2	731.8	785.6	832.4	872.5	902.5	920.4	921.1
142.5°	655.3	704.2	750.8	791.7	826.2	852.9	869.2	870.0
145°	633.7	669.7	704.8	736.2	762.8	785.4	794.9	798.3
147.5°	616.2	643.5	670.2	692.2	712.6	728.1	737.1	739.1
150°	604.8	628.0	649.1	668.6	684.5	696.3	703.1	703.8
152.5°	595.9	615.9	634.7	650.7	662.7	673.1	676.9	677.0
155°	582.6	598.7	613.9	626.0	635.1	643.1	645.1	646.1
157.5°	568.6	582.0	593.7	603.2	611.1	617.1	618.7	618.5
160°	560.5	571.6	581.6	588.7	595.7	601.8	601.8	600.8
162.5°	550.8	560.3	569.6	575.8	580.5	585.6	585.6	584.6
165°	538.3	544.3	551.4	556.4	560.5	564.5	563.5	563.5
167.5°	527.4	532.0	536.0	539.7	541.5	544.3	543.3	543.3
170°	520.2	523.2	527.1	529.2	530.2	532.2	531.2	531.2
172.5°	513.7	515.9	519.2	520.4	520.6	522.6	520.8	520.0
175°	505.0	506.0	508.1	508.1	508.1	509.1	508.1	507.1
177.5°	499.6	500.4	501.2	501.2	500.4	501.2	499.6	499.6
180°	498.0	498.0	498.0	498.0	498.0	498.0	498.0	498.0

(END OF REPORT)