

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: P332068-840

Luminaire Tested: **S123DIP-S1165D805U840-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332068-840  
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-S1165D805U840-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 805 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 7834.4 lumens  
Efficiency: N/A  
Efficacy: 129.1 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

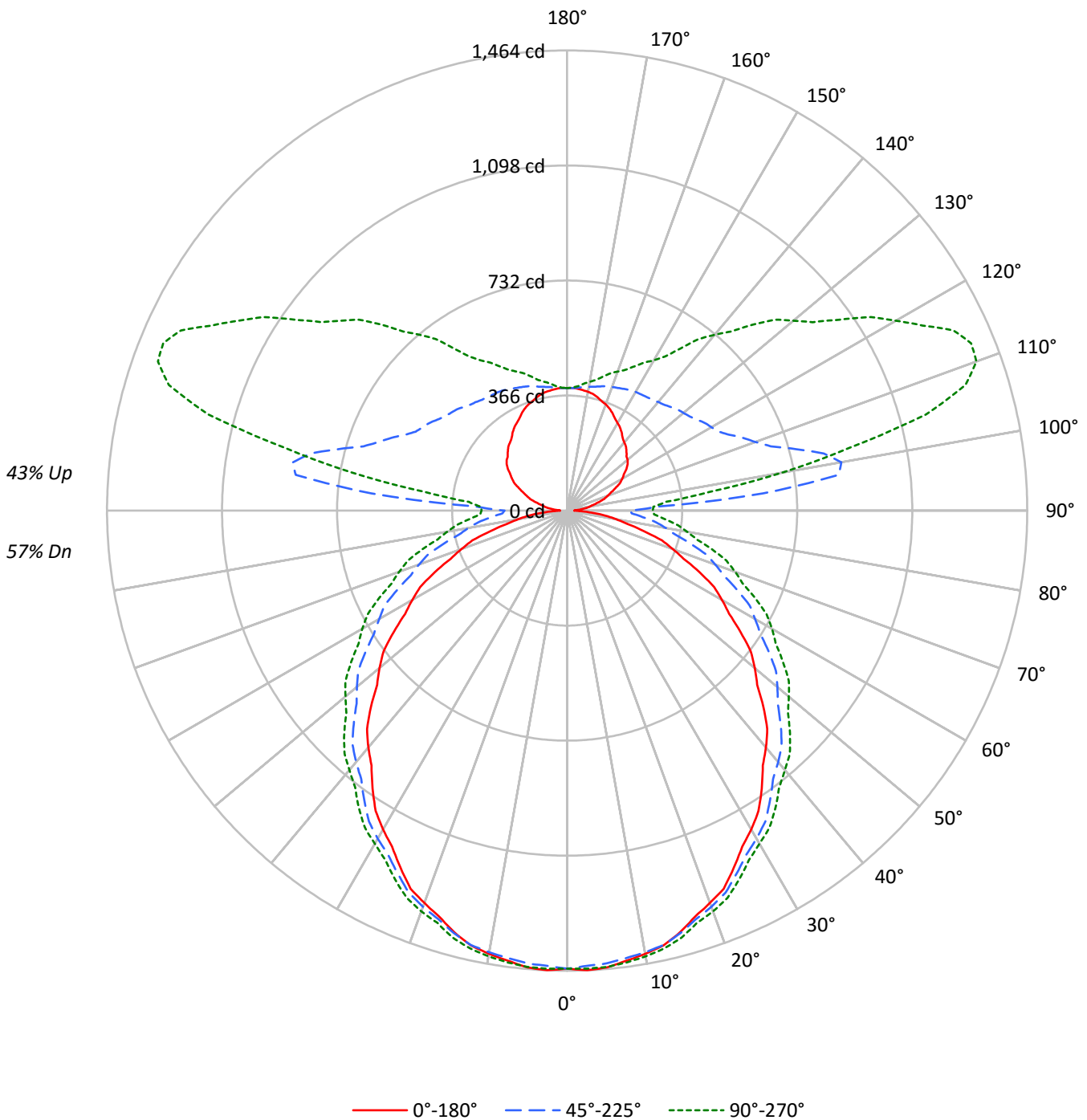
Input Watts (W): 60.7  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332068-840

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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	75	75	75	63	63	63	57
1	98	93	89	85	91	87	83	80	75	72	69	64	62	60	54	52	51	46
2	89	81	74	68	82	75	69	64	65	60	56	55	52	49	46	44	42	37
3	81	71	63	56	75	66	59	53	57	51	47	49	44	41	41	38	35	31
4	74	62	54	47	68	58	51	45	50	44	40	43	38	35	36	33	30	26
5	68	55	47	40	63	52	44	38	45	39	34	39	34	30	33	29	26	23
6	62	50	41	35	58	46	39	33	40	34	30	35	30	26	29	26	23	20
7	58	45	36	31	53	42	34	29	37	30	26	32	27	23	27	23	20	17
8	53	41	33	27	50	38	31	26	33	27	23	29	24	20	25	21	18	16
9	50	37	29	24	46	35	28	23	31	25	21	27	22	18	23	19	16	14
10	46	34	27	22	43	32	25	21	28	22	19	25	20	17	21	17	15	13

**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



TEST NUMBER: P332068-840

CATALOG NUMBER: S123DIP-S1165D805U840-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	138.1	1.8
10°-20°	393.8	5.0
20°-30°	589.0	7.5
30°-40°	703.4	9.0
40°-50°	735.9	9.4
50°-60°	690.6	8.8
60°-70°	576.8	7.4
70°-80°	412.7	5.3
80°-90°	249.1	3.2
90°-100°	371.5	4.7
100°-110°	728.1	9.3
110°-120°	680.4	8.7
120°-130°	525.6	6.7
130°-140°	399.7	5.1
140°-150°	288.0	3.7
150°-160°	197.8	2.5
160°-170°	116.2	1.5
170°-180°	37.8	0.5
0°-30°	1120.9	14.3
0°-40°	1824.3	23.3
0°-60°	3250.8	41.5
0°-90°	4489.4	57.3
90°-120°	1780.0	22.7
90°-150°	2993.1	38.2
90°-180°	3345.0	42.7
0°-180°	7834.4	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	108	199	253	272	16
95°	44	168	625	341	314	43
105°	104	188	754	1272	1182	110
115°	170	231	570	1185	1356	168
125°	230	273	504	904	1058	204
135°	267	317	466	723	836	206
145°	302	345	441	567	629	189
155°	342	369	427	486	506	157
165°	373	384	409	434	441	105
175°	389	390	392	398	397	37
180°	390	390	390	390	390	



TEST NUMBER: P332068-840

CATALOG NUMBER: S123DIP-S1165D805U840-4F0-1E-UDD-D4

**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°	42.5	60.4	78.3	96.3	114.2	132.3	150.8	169.3	187.7	206.2	218.0
90°	22.2	41.1	60.0	79.6	98.5	117.6	138.0	158.4	178.7	199.1	210.4
92.5°	29.2	49.5	71.7	93.4	115.7	144.0	182.4	234.1	285.1	290.6	272.6
95°	44.3	60.4	82.9	110.1	144.3	190.7	275.1	410.0	556.7	625.3	547.9
97.5°	61.4	74.5	93.7	117.9	150.5	198.2	278.9	428.1	660.5	871.3	932.5
100°	72.7	84.8	101.6	123.9	154.2	198.7	270.2	403.3	627.2	885.8	1051.6
102.5°	84.7	96.2	111.4	131.9	159.2	200.5	266.0	381.1	582.0	837.1	1050.0
105°	104.3	115.1	128.4	146.2	169.8	206.0	263.9	360.3	524.7	753.9	990.3
107.5°	123.5	133.1	144.9	161.4	182.7	216.2	268.0	349.9	484.7	679.2	894.4
110°	137.4	146.1	156.4	171.5	191.3	223.6	273.3	347.3	467.3	636.9	834.8



TEST NUMBER: P332068-840

CATALOG NUMBER: S123DIP-S1165D805U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	151.3	159.0	168.0	182.0	200.7	231.5	278.0	347.2	453.8	605.3	780.7
115°	169.8	177.2	186.1	198.2	215.9	245.7	288.4	349.3	442.5	569.7	714.8
117.5°	189.6	195.8	202.4	212.2	229.8	256.8	298.4	353.4	433.6	543.4	669.9
120°	202.2	206.3	212.0	221.7	238.4	264.9	304.9	357.6	430.1	530.1	645.6
122.5°	214.2	217.4	222.3	231.8	247.0	274.1	312.9	361.8	428.7	519.4	624.5
125°	229.7	231.4	236.1	244.8	259.7	286.2	324.1	369.0	426.7	504.0	595.9
127.5°	242.9	244.9	250.3	258.9	275.1	300.4	335.7	375.4	426.5	491.6	569.5
130°	251.1	253.1	259.8	269.0	285.2	309.9	343.0	380.0	426.6	483.4	554.0
132.5°	256.1	259.0	266.7	278.0	294.6	318.0	349.1	384.1	425.5	476.4	539.2
135°	266.9	269.6	278.0	289.5	305.7	328.8	357.2	387.9	423.3	466.0	518.9
137.5°	277.0	280.0	288.2	300.6	316.8	337.4	363.1	390.9	421.2	456.6	501.1
140°	282.7	286.6	294.5	307.1	323.0	343.2	367.2	391.9	419.8	450.9	490.1
142.5°	290.2	293.3	301.5	312.7	328.1	346.6	369.0	392.3	417.5	444.5	479.4
145°	302.4	304.4	311.1	322.7	335.7	353.8	374.3	395.6	417.7	441.3	469.5
147.5°	313.2	314.6	321.5	331.7	344.7	360.2	379.0	398.1	417.7	438.4	460.8
150°	321.3	322.1	328.4	338.7	349.7	364.0	382.1	398.7	417.7	435.9	455.6
152.5°	329.5	329.7	336.0	345.1	354.8	368.4	384.1	400.0	415.8	432.6	450.5
155°	341.8	341.8	346.6	354.5	363.1	374.3	387.7	400.3	413.7	427.2	442.9
157.5°	351.6	352.2	356.1	363.0	370.4	379.0	389.7	401.1	411.0	422.2	434.4
160°	359.2	359.2	362.4	368.7	374.3	382.1	391.6	401.1	409.8	418.5	428.7
162.5°	365.0	365.0	367.5	372.5	377.4	384.1	392.2	400.4	407.3	414.7	423.0
165°	373.4	372.6	374.3	378.2	381.3	386.9	393.1	398.7	403.4	409.0	415.3
167.5°	379.9	379.0	379.8	382.7	385.0	388.5	393.0	397.5	399.7	403.3	407.9
170°	383.7	382.1	382.9	385.3	386.9	388.5	392.4	395.6	397.2	399.5	403.4
172.5°	386.3	385.3	385.5	387.2	388.1	389.1	392.4	395.0	395.3	396.4	399.0
175°	389.2	388.5	387.7	389.2	389.2	390.0	391.6	393.1	392.4	392.4	393.9
177.5°	390.6	390.0	389.4	390.0	390.0	390.0	390.6	391.9	390.6	390.0	390.6
180°	390.0	390.0	390.0	390.0	390.0	390.0	390.0	390.0	390.0	390.0	390.0



TEST NUMBER: P332068-840

CATALOG NUMBER: S123DIP-S1165D805U840-4F0-1E-UDD-D4

**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°	230.1	242.4	254.5	262.6	265.9	269.6	273.3	276.7
90°	223.1	235.9	248.6	258.0	260.7	265.1	269.4	272.2
92.5°	259.1	257.1	262.7	266.0	267.8	268.7	272.8	274.6
95°	463.2	382.6	351.7	330.5	319.0	315.5	313.5	313.9
97.5°	875.3	744.8	653.5	566.0	511.3	479.3	461.5	458.3
100°	1089.4	1035.7	953.5	848.3	772.1	718.0	690.7	695.1
102.5°	1155.2	1163.1	1119.1	1054.8	996.3	954.2	932.0	917.4
105°	1165.2	1254.1	1278.9	1265.0	1231.7	1205.0	1182.9	1182.0
107.5°	1091.1	1228.7	1307.3	1341.7	1345.4	1338.5	1333.0	1328.9
110°	1024.7	1179.2	1287.9	1349.1	1374.0	1383.2	1384.4	1385.6





TEST NUMBER: P332068-840

CATALOG NUMBER: S123DIP-S1165D805U840-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	957.9	1115.1	1235.5	1312.5	1356.0	1378.8	1387.9	1391.3
115°	869.3	1015.1	1139.6	1231.3	1293.4	1331.0	1349.6	1356.3
117.5°	801.6	928.7	1041.3	1134.2	1198.6	1241.2	1266.7	1274.8
120°	765.1	879.8	982.6	1067.6	1132.5	1179.2	1200.6	1207.8
122.5°	734.8	839.1	934.7	1013.9	1071.8	1114.1	1137.4	1145.9
125°	693.3	786.8	870.0	938.1	991.1	1028.2	1050.5	1058.4
127.5°	655.8	739.5	814.9	877.0	924.4	956.5	976.7	984.2
130°	631.8	709.5	780.2	838.3	882.2	912.8	931.5	940.0
132.5°	609.0	680.9	746.8	802.4	844.1	874.9	892.0	898.9
135°	578.1	640.6	698.2	747.2	787.7	813.1	829.1	836.4
137.5°	549.5	601.1	650.9	693.5	727.8	753.6	767.3	772.7
140°	532.5	578.0	621.3	658.7	690.4	714.4	728.7	729.7
142.5°	515.5	554.8	592.4	625.2	652.6	673.9	687.0	688.0
145°	497.6	526.4	554.5	579.5	600.7	618.6	626.3	629.3
147.5°	483.0	504.5	525.7	543.1	559.4	571.8	579.1	581.0
150°	473.7	491.9	508.5	523.8	536.3	545.7	551.2	551.9
152.5°	466.8	482.4	497.1	509.7	519.1	527.3	530.3	530.4
155°	456.4	469.0	480.8	490.3	497.4	503.7	505.3	506.0
157.5°	445.2	455.9	465.0	472.4	478.6	483.3	484.6	484.4
160°	439.0	447.7	455.6	461.1	466.7	471.3	471.3	470.6
162.5°	431.4	438.8	446.1	451.0	454.6	458.7	458.7	458.0
165°	421.6	426.4	431.9	435.9	439.0	442.1	441.3	441.3
167.5°	413.0	416.7	419.9	422.7	424.1	426.4	425.6	425.6
170°	407.4	409.8	412.9	414.5	415.3	416.9	416.1	416.1
172.5°	402.3	404.0	406.6	407.6	407.7	409.3	407.9	407.3
175°	395.6	396.4	397.9	397.9	397.9	398.7	397.9	397.2
177.5°	391.3	391.9	392.5	392.5	391.9	392.5	391.3	391.3
180°	390.0	390.0	390.0	390.0	390.0	390.0	390.0	390.0

(END OF REPORT)