

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: P332059

Luminaire Tested: **S123DIP-S1165D585U835-4F0-1E-UDD-D4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332059  
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-S1165D585U835-4F0-1E-UDD-D4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 585 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6971.2 lumens  
Efficiency: N/A  
Efficacy: 126.5 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: Semi-Direct

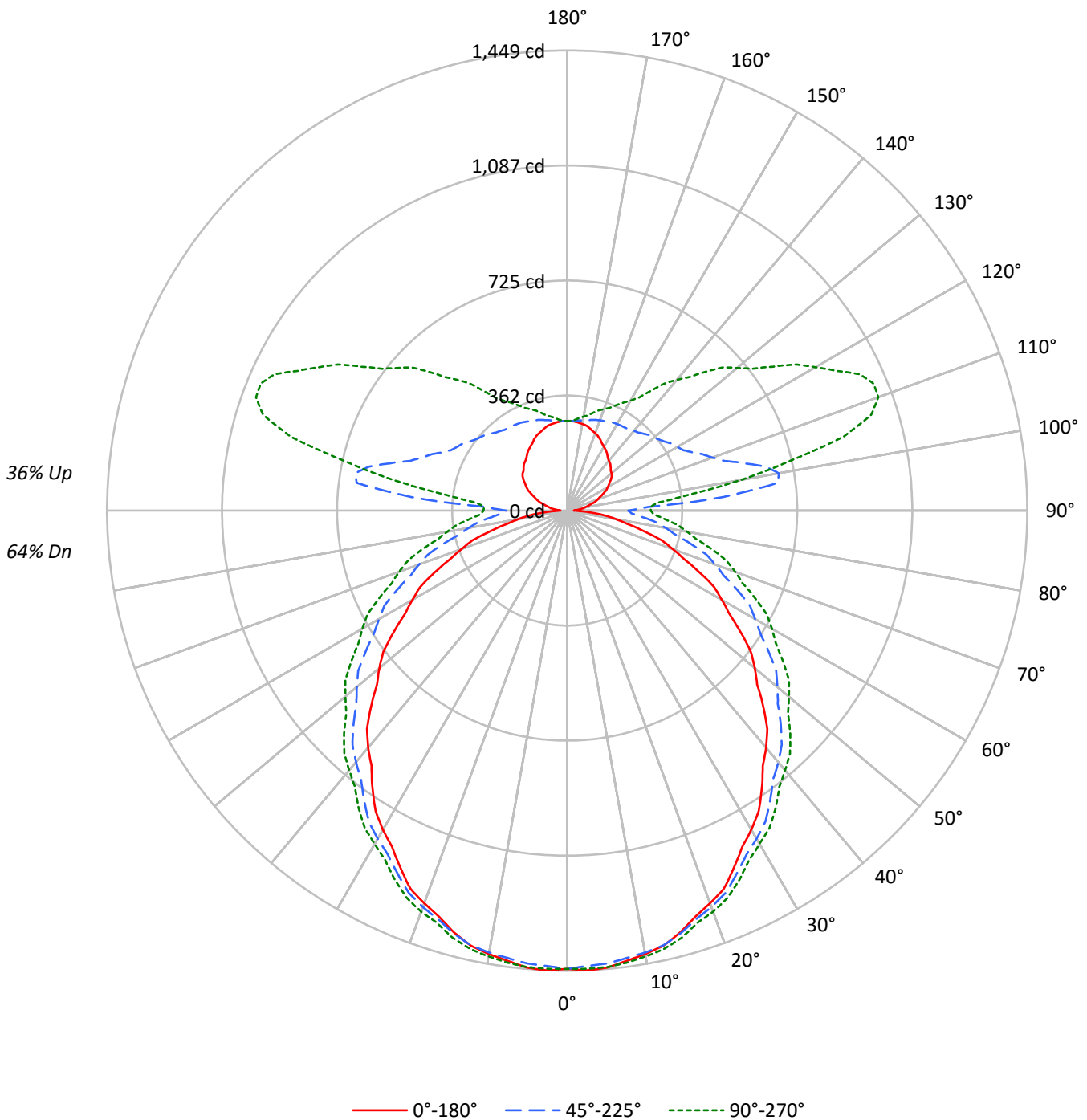
Input Watts (W): 55.1  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

### Luminous Intensity Polar Plot





TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**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	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69	64				
1	100	95	90	86	93	89	85	81	78	75	72	68	66	63	59	57	55	51				
2	90	82	75	69	84	77	71	66	67	63	59	59	55	52	51	48	46	42				
3	82	72	63	57	76	67	60	54	59	53	49	52	47	43	45	41	38	35				
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29				
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25				
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22				
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19				
8	54	41	33	27	51	39	32	26	35	28	24	31	26	22	27	23	20	17				
9	51	38	30	24	47	36	28	23	32	26	22	28	23	20	25	21	18	16				
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14				

**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



TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	136.8	2.0
10°-20°	390.0	5.6
20°-30°	583.2	8.4
30°-40°	696.5	10.0
40°-50°	728.7	10.5
50°-60°	683.9	9.8
60°-70°	571.2	8.2
70°-80°	408.7	5.9
80°-90°	245.9	3.5
90°-100°	309.7	4.4
100°-110°	556.4	8.0
110°-120°	511.8	7.3
120°-130°	391.3	5.6
130°-140°	293.9	4.2
140°-150°	209.1	3.0
150°-160°	142.9	2.1
160°-170°	83.9	1.2
170°-180°	27.3	0.4
0°-30°	1110.0	15.9
0°-40°	1806.5	25.9
0°-60°	3219.1	46.2
0°-90°	4444.8	63.8
90°-120°	1377.9	19.8
90°-150°	2272.2	32.6
90°-180°	2526.0	36.2
0°-180°	6971.2	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	104	192	245	263	15
95°	37	142	494	301	286	34
105°	79	150	576	962	902	83
115°	125	175	434	889	1016	124
125°	167	199	378	675	790	149
135°	194	230	342	535	619	150
145°	219	249	319	413	460	137
155°	247	266	309	351	366	114
165°	270	278	296	313	319	76
175°	281	282	284	288	287	27
180°	282	282	282	282	282	



TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**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°	42.0	59.7	77.3	95.0	112.7	130.5	148.6	166.8	185.0	203.1	214.9
90°	21.6	39.8	58.1	76.9	95.2	113.8	133.3	152.8	172.4	191.9	203.2
92.5°	26.2	45.1	65.3	85.2	105.5	130.4	162.9	204.9	246.5	255.3	245.3
95°	36.7	52.0	71.9	95.2	123.7	161.3	226.9	329.0	439.7	493.9	440.8
97.5°	48.5	61.4	78.6	99.3	126.2	164.6	227.2	339.4	511.7	668.5	715.5
100°	56.4	68.1	83.3	102.4	127.3	163.2	219.2	319.7	485.7	676.9	799.4
102.5°	64.7	75.8	89.4	107.0	129.3	162.7	214.3	301.7	451.1	639.7	796.1
105°	78.7	88.8	100.6	115.9	135.1	164.5	210.3	284.1	406.9	576.5	750.0
107.5°	92.1	101.0	111.4	125.3	142.5	169.7	210.9	274.0	375.2	519.6	677.6
110°	101.8	109.8	119.0	131.5	147.5	173.6	213.3	270.6	361.0	487.3	632.7



TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	111.9	118.8	126.8	138.2	153.1	177.9	215.1	268.7	349.4	462.4	591.6
115°	124.8	131.3	138.9	148.8	162.7	186.4	220.7	268.1	338.8	434.1	541.1
117.5°	139.0	144.2	149.6	157.4	170.9	192.3	225.6	268.4	329.6	412.1	505.8
120°	147.7	151.2	155.8	163.2	175.8	196.7	228.8	270.0	325.4	400.8	486.4
122.5°	156.4	159.0	162.8	169.9	181.1	202.3	233.3	271.6	322.9	391.3	469.4
125°	167.3	168.4	171.8	178.1	188.9	209.4	239.5	274.7	319.1	377.7	446.1
127.5°	176.7	178.1	182.0	188.0	199.6	219.1	246.7	277.7	316.9	366.2	424.3
130°	182.7	184.0	188.8	195.3	206.9	225.7	251.5	280.1	315.6	358.6	411.4
132.5°	186.0	188.1	193.6	201.7	213.6	231.4	255.3	282.1	313.5	351.8	398.9
135°	193.6	195.6	201.5	209.7	221.3	238.5	260.0	283.2	309.9	341.7	381.6
137.5°	200.9	203.0	208.9	217.7	229.3	244.5	263.7	284.3	306.8	332.9	366.6
140°	204.6	207.5	213.2	222.3	233.7	248.5	266.1	284.2	304.7	327.4	357.2
142.5°	210.1	212.2	218.1	226.0	237.2	250.5	266.8	283.6	301.9	321.5	347.9
145°	218.9	220.2	225.0	233.2	242.6	255.5	270.4	285.8	301.7	318.8	339.9
147.5°	226.2	227.2	232.3	239.7	249.0	260.2	273.8	287.6	301.7	316.7	333.1
150°	232.1	232.7	237.3	244.7	252.7	262.9	276.1	288.0	301.7	314.8	329.1
152.5°	238.1	238.2	242.8	249.3	256.3	266.1	277.4	289.0	300.4	312.6	325.5
155°	247.0	247.0	250.4	256.1	262.4	270.4	280.1	289.2	298.9	308.6	320.0
157.5°	254.0	254.5	257.2	262.3	267.6	273.8	281.5	289.8	296.9	305.0	313.8
160°	259.5	259.5	261.8	266.4	270.4	276.1	282.9	289.8	296.0	302.3	309.7
162.5°	263.6	263.6	265.5	269.1	272.6	277.4	283.4	289.3	294.2	299.6	305.6
165°	269.8	269.2	270.4	273.2	275.5	279.5	284.0	288.0	291.5	295.5	300.0
167.5°	274.5	273.8	274.3	276.5	278.1	280.6	283.9	287.1	288.7	291.3	294.7
170°	277.2	276.1	276.6	278.3	279.5	280.6	283.5	285.8	286.9	288.6	291.5
172.5°	279.0	278.3	278.5	279.7	280.4	281.1	283.5	285.3	285.5	286.3	288.3
175°	281.2	280.6	280.1	281.2	281.2	281.8	282.9	284.0	283.5	283.5	284.6
177.5°	282.2	281.8	281.3	281.8	281.8	281.8	282.2	283.1	282.2	281.8	282.2
180°	281.8	281.8	281.8	281.8	281.8	281.8	281.8	281.8	281.8	281.8	281.8



TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**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°	226.9	238.9	250.8	258.8	262.1	265.7	269.4	272.7
90°	215.6	228.1	240.5	249.4	252.3	256.3	260.4	263.3
92.5°	238.8	240.5	247.6	252.0	254.2	255.7	259.5	261.7
95°	382.6	327.3	307.9	294.5	287.2	285.5	285.0	286.2
97.5°	677.0	585.5	522.3	461.1	422.5	400.3	388.4	387.0
100°	829.5	793.4	736.8	662.6	608.5	570.4	551.6	555.7
102.5°	874.8	883.1	854.1	809.4	768.1	738.6	723.5	713.9
105°	878.9	945.8	966.4	958.0	934.9	916.4	901.3	901.6
107.5°	822.2	924.1	983.5	1010.0	1013.5	1009.3	1006.2	1004.0
110°	772.4	886.4	967.4	1013.3	1032.0	1039.4	1041.0	1042.7





TEST NUMBER: P332059

CATALOG NUMBER: S123DIP-S1165D585U835-4F0-1E-UDD-D4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	721.9	837.9	927.2	984.5	1016.8	1034.0	1041.4	1044.7
115°	655.1	762.7	854.9	922.7	968.2	996.1	1010.3	1016.0
117.5°	603.2	697.2	780.8	849.4	896.7	928.2	947.3	953.9
120°	574.9	659.9	736.4	799.3	846.8	881.1	897.3	903.1
122.5°	551.2	628.6	699.8	758.4	800.9	832.1	849.6	856.4
125°	518.4	587.9	650.0	700.5	739.5	767.0	783.7	790.2
127.5°	488.5	550.9	607.2	653.4	688.3	712.1	727.3	733.4
130°	469.4	527.3	580.2	623.3	655.6	678.3	692.4	699.0
132.5°	451.1	504.7	554.1	595.4	626.2	649.1	662.1	667.6
135°	426.1	472.9	516.3	552.8	582.5	601.4	613.4	619.1
137.5°	403.0	441.7	479.2	511.0	536.3	555.3	565.8	570.1
140°	389.2	423.6	456.2	484.2	507.6	525.3	536.2	537.4
142.5°	375.3	405.0	433.4	457.9	478.2	494.1	504.0	505.2
145°	360.9	382.5	403.6	422.2	437.9	451.3	457.2	459.8
147.5°	349.4	365.2	380.7	393.5	405.6	415.0	420.6	422.3
150°	342.2	355.3	367.3	378.5	387.8	394.7	398.9	399.6
152.5°	337.2	348.5	359.1	368.2	375.1	381.0	383.2	383.3
155°	329.7	338.8	347.4	354.2	359.3	363.9	365.0	365.6
157.5°	321.7	329.3	336.0	341.3	345.8	349.2	350.1	350.0
160°	317.1	323.4	329.1	333.1	337.1	340.5	340.5	339.9
162.5°	311.7	317.0	322.3	325.8	328.4	331.4	331.4	330.8
165°	304.6	308.0	312.0	314.8	317.1	319.4	318.8	318.8
167.5°	298.4	301.0	303.3	305.4	306.4	308.0	307.4	307.4
170°	294.3	296.0	298.3	299.4	300.0	301.2	300.6	300.6
172.5°	290.7	291.9	293.7	294.4	294.5	295.7	294.7	294.2
175°	285.8	286.3	287.5	287.5	287.5	288.0	287.5	286.9
177.5°	282.7	283.1	283.6	283.6	283.1	283.6	282.7	282.7
180°	281.8	281.8	281.8	281.8	281.8	281.8	281.8	281.8

(END OF REPORT)