

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: P331279-935

Luminaire Tested: **S122DIP-S290D1080U935-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331279-935  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-2,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S122DIP-S290D1080U935-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1080 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 4739.6 lumens  
Efficiency: N/A  
Efficacy: 112.3 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

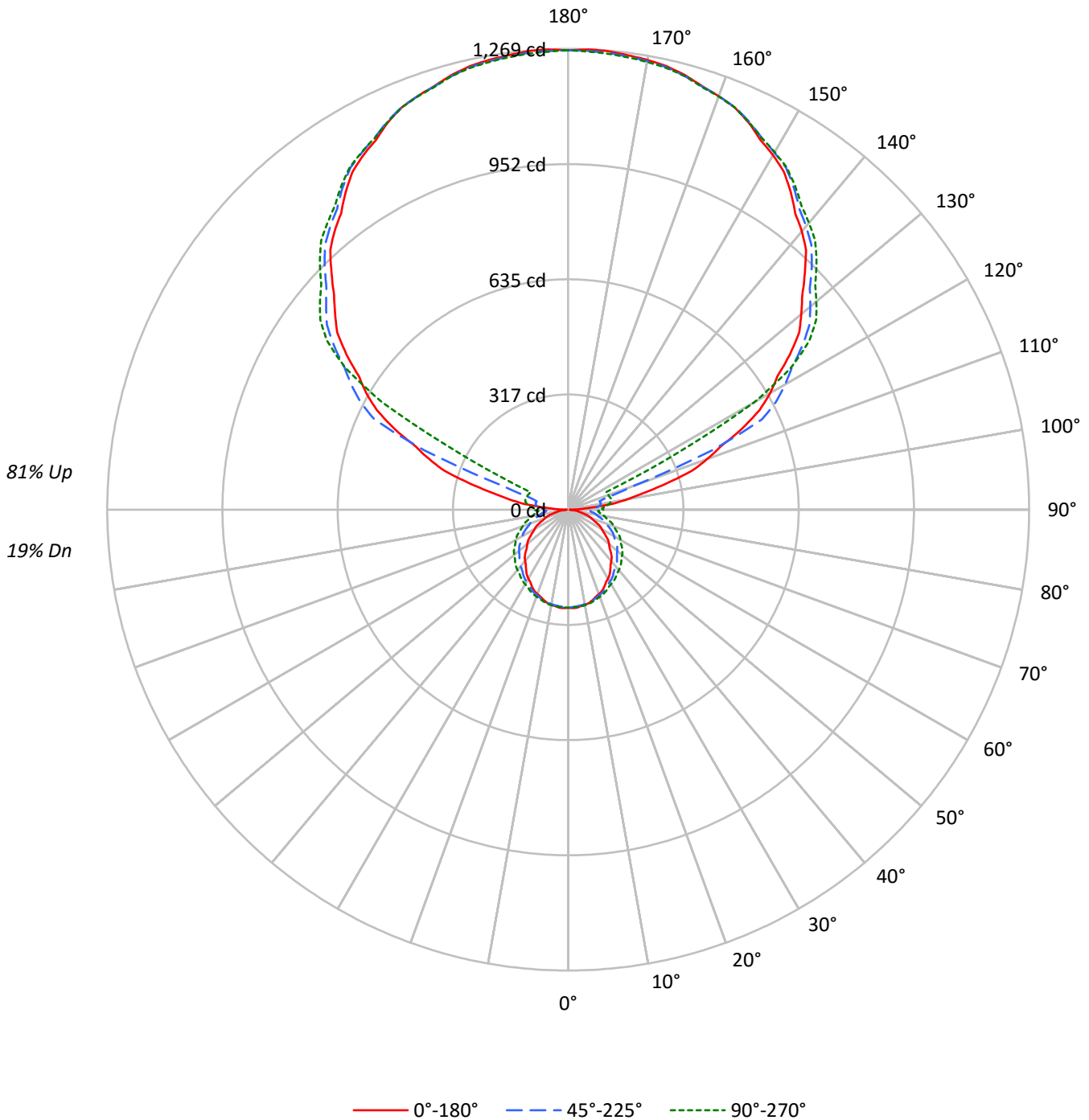
Input Watts (W): 42.2  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	0
RCR																		
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19
1	90	86	82	78	79	76	73	70	57	55	53	40	38	37	24	23	22	15
2	82	75	69	64	72	66	61	57	50	46	43	34	32	31	21	19	18	12
3	75	65	58	53	65	58	52	47	43	39	36	30	28	25	18	17	15	10
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	14	13	8
5	62	51	43	37	55	45	38	33	34	29	26	24	21	18	14	13	11	7
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	12	10	9	6
8	49	37	29	24	43	33	26	22	25	20	17	18	14	12	11	9	8	5
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	7	6	4

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

	0°	45°	90°
0°	4358	4358	4358
5°	4379	4195	4179
10°	4352	4070	4026
15°	4290	3939	3863
20°	4215	3798	3707
25°	4141	3663	3565
30°	4034	3524	3423
35°	3928	3389	3323
40°	3818	3275	3223
45°	3709	3172	3137
50°	3596	3079	3053
55°	3474	2979	2968
60°	3329	2876	2878
65°	3174	2756	2769
70°	3001	2623	2653
75°	2784	2499	2544
80°	2445	2366	2436
85°	2110	2255	2350



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	25.6	0.5
10°-20°	73.3	1.5
20°-30°	111.1	2.3
30°-40°	135.3	2.9
40°-50°	145.6	3.1
50°-60°	141.4	3.0
60°-70°	123.5	2.6
70°-80°	95.1	2.0
80°-90°	66.9	1.4
90°-100°	86.2	1.8
100°-110°	186.8	3.9
110°-120°	434.8	9.2
120°-130°	694.6	14.7
130°-140°	731.1	15.4
140°-150°	675.7	14.3
150°-160°	542.6	11.4
160°-170°	349.7	7.4
170°-180°	120.4	2.5
0°-30°	210.0	4.4
0°-40°	345.4	7.3
0°-60°	632.4	13.3
0°-90°	917.8	19.4
90°-120°	707.8	14.9
90°-150°	2809.2	59.3
90°-180°	3822.0	80.6
0°-180°	4739.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	270	270	270	270	270	
5°	271	269	267	269	269	26
15°	258	259	259	262	262	73
25°	235	237	241	245	247	108
35°	202	209	216	225	228	126
45°	166	177	190	202	206	128
55°	127	142	162	175	181	114
65°	87	106	129	145	150	86
75°	48	70	95	111	117	51
85°	14	38	63	79	85	15
90°	5	38	70	89	97	5
95°	63	53	81	99	104	75
105°	280	304	90	112	121	300
115°	528	549	588	196	115	519
125°	745	758	787	803	810	664
135°	921	936	948	964	967	711
145°	1068	1068	1083	1091	1089	668
155°	1176	1169	1179	1184	1177	542
165°	1239	1234	1237	1242	1237	350
175°	1268	1262	1263	1269	1260	121
180°	1265	1265	1265	1265	1265	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	271.5	271.2	271.0	270.8	270.6	270.3	269.8	269.3	268.8	268.3	268.6
5°	270.7	270.4	270.2	269.9	269.6	269.2	268.7	268.2	267.7	267.2	267.7
7.5°	268.2	268.0	267.9	267.7	267.5	267.3	266.8	266.5	266.0	265.6	266.3
10°	266.4	266.2	266.0	265.9	265.7	265.4	265.2	264.9	264.7	264.4	265.1
12.5°	263.2	263.3	263.3	263.4	263.4	263.3	263.1	262.9	262.7	262.5	263.2
15°	258.1	258.3	258.5	258.6	258.8	258.9	258.9	258.9	258.9	258.9	259.7
17.5°	251.6	251.9	252.3	252.7	253.0	253.4	253.7	253.9	254.2	254.5	255.3
20°	247.2	247.6	248.1	248.5	248.9	249.3	249.7	250.0	250.4	250.7	251.7
22.5°	242.5	243.0	243.5	244.0	244.5	245.0	245.5	246.0	246.5	246.9	247.9
25°	234.7	235.3	235.9	236.5	237.1	237.8	238.6	239.4	240.1	240.9	241.9
27.5°	225.3	226.3	227.3	228.3	229.3	230.2	231.1	232.0	233.0	233.9	235.2
30°	219.0	220.2	221.3	222.4	223.5	224.7	225.8	227.0	228.1	229.2	230.6
32.5°	212.2	213.4	214.6	215.9	217.2	218.5	219.9	221.2	222.6	223.9	225.5
35°	202.2	203.7	205.2	206.6	208.1	209.7	211.4	213.0	214.6	216.3	218.2
37.5°	191.4	193.1	194.8	196.6	198.2	200.2	202.3	204.4	206.6	208.7	210.9
40°	184.3	186.1	188.0	189.9	191.8	194.0	196.3	198.7	201.0	203.4	205.6
42.5°	177.4	179.3	181.2	183.0	185.0	187.3	190.0	192.7	195.4	198.0	200.5
45°	165.8	168.2	170.6	172.9	175.2	177.9	181.0	184.0	187.0	190.1	192.8
47.5°	154.5	157.0	159.6	162.1	164.7	167.8	171.3	174.9	178.5	182.0	184.9
50°	146.7	149.4	152.1	154.7	157.5	160.7	164.7	168.6	172.5	176.4	179.3
52.5°	139.1	142.0	144.8	147.7	150.5	153.9	158.1	162.2	166.3	170.5	173.5
55°	127.1	130.3	133.4	136.5	139.7	143.4	148.0	152.5	157.0	161.5	164.7
57.5°	115.2	118.7	122.3	125.8	129.3	133.4	138.0	142.6	147.2	151.9	155.2
60°	106.8	110.6	114.3	118.0	121.7	126.1	131.0	136.0	140.9	145.9	149.2
62.5°	99.3	103.1	107.0	110.9	114.8	119.2	124.2	129.1	134.1	139.1	142.5
65°	86.8	91.1	95.3	99.6	103.8	108.6	113.7	118.8	124.0	129.1	132.7
67.5°	75.4	79.9	84.3	88.8	93.2	98.1	103.3	108.6	113.8	119.1	122.7
70°	67.2	71.8	76.3	80.8	85.3	90.3	95.7	101.1	106.5	111.8	115.6
72.5°	59.8	64.4	69.1	73.7	78.4	83.4	88.9	94.4	99.9	105.3	109.0
75°	48.1	53.0	57.9	62.7	67.6	72.8	78.4	83.9	89.5	95.1	98.8
77.5°	36.9	41.9	47.0	52.1	57.3	62.6	68.3	73.9	79.6	85.2	88.9
80°	29.4	34.6	40.0	45.2	50.5	56.1	61.6	67.3	72.9	78.6	82.2
82.5°	23.1	28.3	33.6	38.7	44.0	49.5	55.2	61.0	66.6	72.3	76.0
85°	14.1	19.5	24.9	30.2	35.6	41.1	46.7	52.3	57.8	63.4	67.0
87.5°	7.8	13.5	19.1	24.7	30.4	36.1	42.0	47.9	53.8	59.7	63.5
90°	4.8	12.1	19.4	26.7	33.9	41.2	48.4	55.5	62.8	69.9	74.4
92.5°	22.1	26.6	31.1	35.6	40.0	45.4	51.6	57.7	63.9	70.1	74.0
95°	62.6	60.0	57.3	54.8	52.1	54.2	60.8	67.4	74.0	80.7	85.0
97.5°	120.8	105.6	90.2	75.0	59.7	56.2	64.5	72.8	81.1	89.4	93.4
100°	164.7	140.1	115.5	90.8	66.1	57.9	66.3	74.6	83.0	91.3	96.1
102.5°	212.8	209.8	206.8	203.9	200.9	187.4	163.2	139.0	114.8	90.6	95.8
105°	280.2	288.9	297.5	306.1	314.7	293.5	242.5	191.5	140.5	89.5	94.7
107.5°	357.6	364.5	371.4	378.4	385.3	357.7	295.4	233.2	170.8	108.6	109.3
110°	407.0	413.0	419.0	425.1	431.1	406.8	352.3	297.7	243.2	188.7	171.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	453.9	459.2	464.4	469.6	474.8	472.3	461.8	451.3	440.8	430.3	359.0
115°	527.9	532.3	536.7	541.1	545.5	552.2	561.2	570.2	579.2	588.2	496.6
117.5°	593.6	598.1	602.5	607.0	611.5	617.3	624.4	631.5	638.7	645.8	625.5
120°	641.9	645.2	648.7	652.0	655.5	660.7	667.9	675.0	682.2	689.3	694.1
122.5°	682.9	686.2	689.6	692.9	696.3	701.6	708.9	716.1	723.3	730.6	734.4
125°	744.9	747.5	750.2	752.9	755.4	760.1	766.8	773.4	780.1	786.7	790.5
127.5°	801.5	804.3	807.2	810.0	812.9	816.8	822.0	827.1	832.2	837.3	841.5
130°	837.3	840.5	843.7	846.9	850.0	853.6	857.7	861.8	865.8	869.9	874.2
132.5°	874.0	876.7	879.3	882.0	884.7	887.9	891.5	895.1	898.8	902.4	906.4
135°	921.2	924.5	927.6	930.9	934.2	937.2	939.9	942.5	945.3	948.0	951.8
137.5°	969.3	971.6	973.8	976.1	978.4	980.7	983.2	985.6	988.1	990.5	994.1
140°	1000.8	1002.4	1003.8	1005.4	1006.9	1008.9	1011.3	1013.7	1016.2	1018.6	1021.8
142.5°	1027.2	1028.6	1029.9	1031.3	1032.7	1034.7	1037.2	1039.8	1042.4	1045.1	1047.8
145°	1068.2	1067.9	1067.7	1067.6	1067.3	1068.9	1072.4	1075.8	1079.3	1082.8	1084.7
147.5°	1104.2	1103.5	1102.7	1101.9	1101.1	1102.4	1105.9	1109.2	1112.7	1116.1	1117.2
150°	1127.7	1126.2	1124.8	1123.3	1122.0	1122.8	1126.1	1129.4	1132.6	1135.8	1137.1
152.5°	1147.4	1145.8	1144.2	1142.6	1141.1	1141.8	1144.9	1148.0	1151.1	1154.2	1155.4
155°	1176.1	1174.3	1172.5	1170.6	1168.8	1169.2	1171.6	1174.0	1176.5	1178.9	1180.1
157.5°	1198.7	1197.1	1195.6	1194.0	1192.5	1192.6	1194.3	1195.9	1197.7	1199.4	1200.8
160°	1211.9	1210.7	1209.4	1208.2	1206.9	1206.9	1208.2	1209.4	1210.7	1211.9	1213.1
162.5°	1223.6	1222.4	1221.1	1219.9	1218.7	1218.6	1219.6	1220.7	1221.8	1222.8	1224.2
165°	1239.3	1238.0	1236.8	1235.6	1234.4	1234.1	1234.7	1235.4	1236.0	1236.6	1237.9
167.5°	1251.0	1249.8	1248.5	1247.3	1246.1	1245.8	1246.4	1246.9	1247.5	1248.1	1249.5
170°	1257.6	1256.4	1255.2	1254.0	1252.8	1252.3	1252.8	1253.1	1253.5	1254.0	1255.3
172.5°	1262.0	1260.8	1259.6	1258.4	1257.1	1256.7	1257.1	1257.5	1257.9	1258.4	1259.7
175°	1267.7	1266.3	1264.8	1263.4	1262.0	1261.5	1261.9	1262.3	1262.7	1263.1	1264.6
177.5°	1268.6	1267.5	1266.3	1265.2	1264.0	1263.5	1263.7	1263.9	1264.0	1264.2	1265.3
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	269.9	269.9	269.9	269.9	269.9	269.9	269.9	269.9
2.5°	269.0	269.3	269.7	269.8	269.7	269.5	269.4	269.2
5°	268.2	268.7	269.2	269.4	269.3	269.2	269.1	269.1
7.5°	266.9	267.5	268.2	268.5	268.4	268.3	268.2	268.1
10°	265.8	266.5	267.2	267.5	267.4	267.3	267.3	267.2
12.5°	263.9	264.6	265.3	265.6	265.5	265.4	265.4	265.3
15°	260.5	261.3	262.1	262.4	262.3	262.3	262.2	262.1
17.5°	256.1	256.9	257.7	258.1	258.1	258.1	258.1	258.1
20°	252.6	253.6	254.5	255.0	255.0	255.0	255.0	255.0
22.5°	248.9	249.9	250.8	251.3	251.5	251.6	251.8	251.9
25°	243.1	244.1	245.1	245.7	246.0	246.2	246.5	246.8
27.5°	236.5	237.9	239.2	240.0	240.1	240.3	240.5	240.7
30°	232.0	233.4	234.8	235.6	235.8	236.1	236.3	236.6
32.5°	227.0	228.7	230.3	231.4	231.8	232.3	232.7	233.2
35°	220.2	222.1	223.9	225.2	225.8	226.4	227.0	227.6
37.5°	212.9	215.1	217.2	218.6	219.2	219.9	220.5	221.1
40°	207.9	210.2	212.4	214.0	214.7	215.5	216.3	217.1
42.5°	203.0	205.4	207.9	209.6	210.3	211.1	211.9	212.7
45°	195.4	198.2	200.9	202.7	203.5	204.4	205.3	206.1
47.5°	187.7	190.5	193.3	195.2	196.1	197.1	198.0	199.0
50°	182.3	185.3	188.2	190.2	191.1	192.1	193.0	194.0
52.5°	176.5	179.5	182.5	184.6	185.6	186.7	187.7	188.6
55°	167.8	170.9	174.1	176.2	177.3	178.5	179.6	180.7
57.5°	158.6	162.0	165.3	167.6	168.8	169.9	171.0	172.2
60°	152.5	155.8	159.1	161.4	162.6	163.8	165.1	166.3
62.5°	146.0	149.6	153.1	155.4	156.5	157.6	158.9	160.0
65°	136.2	139.7	143.4	145.7	146.8	147.9	149.0	150.2
67.5°	126.2	129.8	133.5	135.9	137.0	138.2	139.4	140.6
70°	119.3	123.0	126.8	129.2	130.3	131.3	132.3	133.4
72.5°	112.6	116.3	119.9	122.4	123.6	124.9	126.2	127.4
75°	102.5	106.2	110.0	112.4	113.6	114.7	115.8	116.9
77.5°	92.6	96.3	100.0	102.5	103.8	105.0	106.2	107.4
80°	85.9	89.5	93.2	95.7	96.9	98.1	99.3	100.5
82.5°	79.6	83.3	87.0	89.4	90.5	91.7	92.8	93.9
85°	70.7	74.3	78.0	80.4	81.6	82.8	84.0	85.2
87.5°	67.2	70.9	74.6	77.1	78.4	79.6	80.8	81.9
90°	79.0	83.4	87.9	90.9	92.3	93.8	95.2	96.7
92.5°	77.9	81.9	85.8	88.4	89.7	91.0	92.3	93.6
95°	89.3	93.7	98.0	100.6	101.3	102.2	103.1	103.9
97.5°	97.5	101.5	105.5	108.1	109.4	110.7	111.9	113.2
100°	101.0	105.8	110.6	113.7	115.1	116.5	117.9	119.2
102.5°	101.1	106.3	111.6	115.0	116.5	118.0	119.6	121.1
105°	100.0	105.3	110.6	114.1	115.9	117.6	119.4	121.2
107.5°	109.9	110.6	111.2	112.4	114.2	115.9	117.7	119.4
110°	153.6	136.0	118.5	110.6	112.4	114.2	115.9	117.7





TEST NUMBER: P331279-935

CATALOG NUMBER: S122DIP-S290D1080U935-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	287.6	216.1	144.7	109.8	111.4	113.0	114.6	116.2
115°	405.1	313.5	222.0	169.3	155.6	141.9	128.2	114.6
117.5°	605.4	585.1	564.9	531.2	484.0	436.7	389.5	342.2
120°	699.0	703.9	708.8	697.9	671.5	645.0	618.5	591.9
122.5°	738.3	742.1	745.9	745.5	741.1	736.6	732.0	727.5
125°	794.3	798.1	801.8	804.3	805.8	807.2	808.6	809.9
127.5°	845.8	850.1	854.3	856.9	857.7	858.6	859.5	860.4
130°	878.6	882.9	887.2	889.6	890.1	890.5	891.0	891.6
132.5°	910.2	914.2	918.2	920.3	920.8	921.4	921.8	922.3
135°	955.7	959.5	963.4	965.4	965.8	966.0	966.3	966.6
137.5°	997.7	1001.3	1004.9	1006.7	1006.6	1006.4	1006.3	1006.3
140°	1025.0	1028.2	1031.5	1032.9	1032.3	1031.8	1031.3	1030.9
142.5°	1050.6	1053.3	1056.2	1057.3	1056.7	1056.1	1055.6	1055.0
145°	1086.7	1088.6	1090.5	1091.2	1090.6	1090.1	1089.5	1088.9
147.5°	1118.4	1119.5	1120.6	1120.8	1120.2	1119.6	1118.9	1118.3
150°	1138.3	1139.5	1140.7	1140.8	1139.8	1138.8	1137.8	1136.8
152.5°	1156.6	1157.9	1159.1	1159.0	1157.6	1156.3	1154.9	1153.7
155°	1181.3	1182.6	1183.8	1183.5	1181.9	1180.3	1178.7	1177.1
157.5°	1202.1	1203.5	1204.9	1204.8	1203.2	1201.6	1200.1	1198.4
160°	1214.3	1215.5	1216.7	1216.6	1215.2	1213.8	1212.4	1210.9
162.5°	1225.5	1226.9	1228.4	1228.1	1226.4	1224.7	1222.9	1221.2
165°	1239.4	1240.8	1242.3	1242.3	1240.8	1239.4	1237.9	1236.6
167.5°	1250.9	1252.3	1253.8	1253.5	1251.7	1249.9	1248.1	1246.2
170°	1256.8	1258.2	1259.6	1259.4	1257.6	1255.8	1254.0	1252.1
172.5°	1261.2	1262.6	1264.0	1263.9	1262.0	1260.2	1258.4	1256.5
175°	1265.9	1267.4	1268.8	1268.5	1266.4	1264.4	1262.4	1260.3
177.5°	1266.4	1267.6	1268.8	1268.6	1267.1	1265.7	1264.2	1262.7
180°	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9	1264.9

(END OF REPORT)