

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: P332089-930

Luminaire Tested: **S123DIP-S1165D1195U930-4F0-1E-UDD-F4**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332089-930  
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-S1165D1195U930-4F0-1E-UDD-F4  
Description: DEFINE 3 DIRECT-INDIRECT PENDANT LED LUMINAIRE  
DOWNLIGHT 1165 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1195 LUMENS PER FOOT, BATWING OPTIC  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

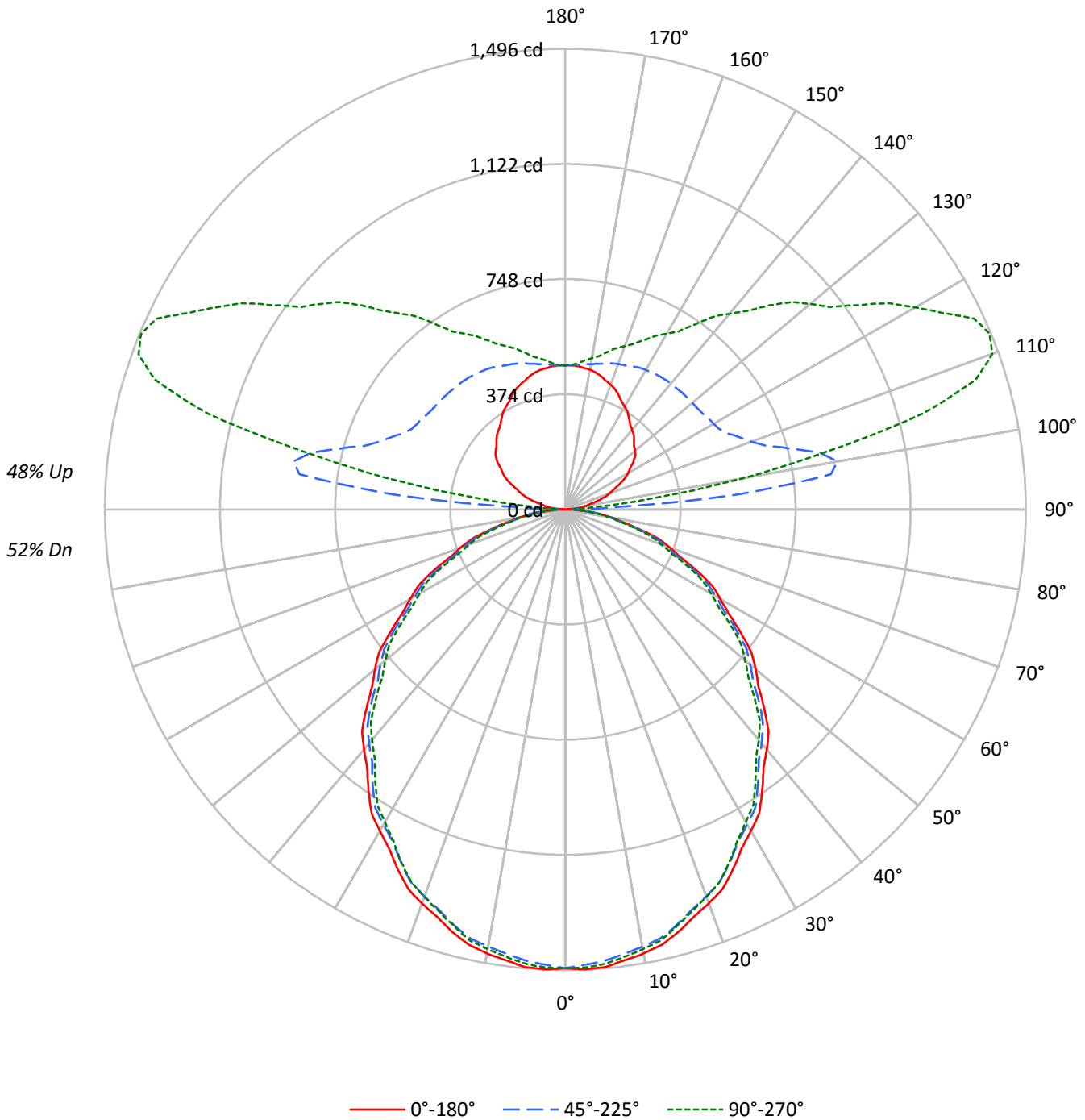
Lumens per Lamp: N/A  
Luminaire Lumens: 7402.5 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31  
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')  
CIE Type: General Diffuse

Input Watts (W): 71.7  
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



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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	50	30	10	0	
RCR																						
0	108	108	108	108	100	100	100	100	85	85	85	71	71	71	58	58	58	52				
1	98	94	90	86	91	87	84	81	74	72	69	62	61	59	51	50	49	44				
2	89	82	76	71	82	76	71	66	65	61	57	55	52	49	45	43	41	37				
3	82	72	65	59	75	67	60	55	57	52	48	48	45	42	40	37	35	31				
4	75	64	56	50	69	59	52	47	51	45	41	43	39	36	36	33	30	27				
5	68	57	49	43	63	53	46	40	46	40	35	39	34	31	32	29	26	23				
6	63	51	43	37	58	48	40	35	41	35	31	35	30	27	29	26	23	20				
7	58	46	38	32	54	43	36	31	37	31	27	32	27	24	27	23	21	18				
8	54	42	34	29	50	39	32	27	34	28	24	29	25	21	25	21	18	16				
9	50	38	31	25	47	36	29	24	31	26	22	27	22	19	23	19	17	15				
10	47	35	28	23	44	33	26	22	29	23	20	25	20	17	21	18	15	13				

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

	0°	45°	90°
0°	16043	16043	16043
5°	16119	15896	16008
10°	16010	15759	15856
15°	15824	15581	15610
20°	15605	15326	15340
25°	15311	15023	14992
30°	14989	14686	14574
35°	14651	14331	14146
40°	14299	13939	13722
45°	13910	13577	13247
50°	13520	13134	12769
55°	13011	12675	12288
60°	12499	12140	11752
65°	12045	11556	11196
70°	11374	10889	10408
75°	10393	10019	9590
80°	9372	8976	8901
85°	8225	7916	7608



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	140.4	1.9
10°-20°	396.4	5.4
20°-30°	585.6	7.9
30°-40°	684.0	9.2
40°-50°	687.7	9.3
50°-60°	604.1	8.2
60°-70°	450.0	6.1
70°-80°	256.4	3.5
80°-90°	77.2	1.0
90°-100°	260.4	3.5
100°-110°	737.4	10.0
110°-120°	725.4	9.8
120°-130°	578.6	7.8
130°-140°	456.2	6.2
140°-150°	340.5	4.6
150°-160°	237.3	3.2
160°-170°	139.4	1.9
170°-180°	45.4	0.6
0°-30°	1122.4	15.2
0°-40°	1806.5	24.4
0°-60°	3098.3	41.9
0°-90°	3882.0	52.4
90°-120°	1723.2	23.3
90°-150°	3098.5	41.9
90°-180°	3521.0	47.6
0°-180°	7402.5	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1490	1490	1490	1490	1490	
5°	1492	1485	1471	1483	1482	141
15°	1420	1414	1398	1407	1401	400
25°	1289	1281	1265	1266	1262	594
35°	1115	1107	1091	1083	1076	697
45°	914	908	892	877	870	705
55°	693	691	675	662	655	621
65°	473	466	454	444	440	466
75°	250	245	241	235	231	267
85°	67	64	64	62	62	73
90°	2	11	24	27	28	6
95°	32	105	562	164	110	35
105°	110	162	762	1332	1205	117
115°	194	242	582	1277	1465	192
125°	270	319	544	985	1156	239
135°	316	378	536	811	937	244
145°	361	414	530	665	732	226
155°	410	442	512	583	607	189
165°	448	461	491	520	530	126
175°	467	468	471	477	476	44
180°	468	468	468	468	468	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1495.6	1494.7	1493.8	1492.9	1491.9	1490.2	1487.8	1485.2	1482.7	1480.2	1482.5
5°	1491.8	1490.4	1488.9	1487.5	1486.0	1483.8	1480.7	1477.5	1474.4	1471.2	1474.1
7.5°	1477.2	1475.7	1474.3	1472.8	1471.5	1469.1	1465.8	1462.6	1459.4	1456.1	1458.7
10°	1464.8	1463.4	1462.0	1460.5	1459.1	1456.6	1452.9	1449.2	1445.4	1441.8	1444.3
12.5°	1448.5	1447.2	1446.0	1444.9	1443.7	1441.3	1437.9	1434.4	1430.9	1427.4	1429.3
15°	1420.0	1418.9	1417.7	1416.6	1415.4	1413.0	1409.3	1405.6	1401.9	1398.2	1400.4
17.5°	1386.9	1385.4	1384.0	1382.5	1381.0	1378.4	1374.7	1371.0	1367.3	1363.6	1365.2
20°	1362.3	1360.6	1358.9	1357.1	1355.5	1352.7	1349.1	1345.4	1341.7	1338.0	1339.1
22.5°	1334.6	1332.9	1331.2	1329.5	1327.8	1325.1	1321.4	1317.7	1314.0	1310.3	1311.2
25°	1289.2	1287.5	1285.8	1284.1	1282.5	1279.7	1276.0	1272.4	1268.6	1264.9	1265.2
27.5°	1240.8	1239.2	1237.5	1235.8	1234.2	1231.4	1227.4	1223.4	1219.4	1215.4	1215.7
30°	1206.0	1204.5	1203.1	1201.7	1200.3	1197.6	1193.6	1189.6	1185.6	1181.6	1181.6
32.5°	1171.1	1169.2	1167.3	1165.5	1163.6	1161.1	1158.1	1155.0	1151.9	1148.8	1147.2
35°	1115.0	1113.3	1111.6	1109.9	1108.2	1105.5	1101.7	1098.0	1094.3	1090.6	1088.9
37.5°	1057.5	1055.4	1053.2	1051.1	1048.9	1045.9	1042.2	1038.4	1034.7	1030.9	1028.8
40°	1017.6	1015.9	1014.2	1012.4	1010.7	1007.9	1003.9	999.9	995.9	992.0	989.7
42.5°	977.5	975.7	973.7	971.8	969.8	966.9	962.9	958.9	954.9	951.0	948.7
45°	913.8	912.6	911.5	910.4	909.2	906.8	903.1	899.4	895.7	891.9	888.6
47.5°	850.4	848.8	847.2	845.5	843.8	841.3	837.8	834.3	830.9	827.4	824.0
50°	807.4	806.0	804.5	803.2	801.7	799.2	795.4	791.7	788.0	784.3	781.2
52.5°	762.3	761.3	760.3	759.4	758.4	755.9	752.0	748.1	744.2	740.2	737.5
55°	693.3	693.1	692.8	692.5	692.2	690.2	686.5	682.8	679.1	675.4	672.3
57.5°	627.7	626.7	625.7	624.8	623.9	621.9	618.9	616.0	613.0	610.0	607.2
60°	580.6	580.2	580.0	579.7	579.4	577.6	574.1	570.7	567.3	563.9	561.3
62.5°	538.5	537.8	537.0	536.3	535.6	533.5	530.0	526.6	523.3	519.8	517.2
65°	472.9	471.5	470.0	468.6	467.2	465.0	462.2	459.3	456.5	453.7	451.4
67.5°	403.4	402.2	401.0	399.7	398.4	396.7	394.5	392.4	390.2	388.1	386.0
70°	361.4	359.7	358.0	356.3	354.6	352.9	351.1	349.4	347.7	346.0	344.1
72.5°	317.3	316.1	314.8	313.6	312.3	310.7	308.8	306.8	304.9	303.0	301.2
75°	249.9	248.7	247.6	246.5	245.3	244.3	243.5	242.6	241.8	240.9	239.5
77.5°	190.2	189.6	188.9	188.3	187.7	186.9	185.8	184.8	183.8	182.8	181.8
80°	151.2	150.3	149.5	148.6	147.8	147.1	146.5	145.9	145.4	144.8	144.6
82.5°	113.3	113.1	112.9	112.8	112.6	112.4	112.3	112.3	112.1	112.0	111.5
85°	66.6	66.0	65.5	64.9	64.3	64.1	64.1	64.1	64.1	64.1	63.5
87.5°	27.1	26.7	26.4	26.3	26.0	25.9	26.3	26.6	27.0	27.3	26.9
90°	1.9	3.8	5.7	8.6	10.4	12.3	15.2	18.0	20.9	23.6	22.7
92.5°	11.7	17.4	25.4	32.8	40.8	54.8	79.6	120.3	160.3	145.7	109.9
95°	32.2	35.1	45.5	61.6	86.2	123.1	203.7	344.8	500.2	561.7	455.6
97.5°	55.0	55.8	64.0	78.0	102.3	142.3	219.2	378.3	637.3	870.5	931.3
100°	70.1	71.0	77.7	90.9	113.7	150.6	217.0	357.1	606.3	897.1	1083.7
102.5°	86.0	87.7	93.6	106.1	126.5	160.5	220.0	338.9	560.8	847.8	1091.2
105°	109.9	112.8	118.4	129.8	147.7	177.2	228.3	325.9	504.9	761.6	1033.5
107.5°	135.3	138.1	143.6	154.7	171.6	198.9	243.9	324.9	469.3	685.4	932.3
110°	153.4	156.3	161.0	171.5	187.5	214.1	256.7	328.7	455.6	642.2	868.6



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	170.2	173.0	177.7	188.1	204.2	230.0	269.6	336.3	448.1	613.4	813.3
115°	194.2	198.0	203.7	213.1	229.3	254.8	290.8	348.6	445.2	582.5	746.4
117.5°	218.3	222.6	227.3	236.0	254.0	277.8	313.3	364.8	446.9	564.4	706.0
120°	234.9	237.7	242.5	252.0	269.9	293.7	327.8	377.0	450.0	556.0	684.9
122.5°	249.3	252.2	256.9	267.1	284.4	309.6	342.9	388.4	455.3	550.7	667.4
125°	269.9	271.9	277.5	288.0	306.0	331.5	364.7	406.3	463.2	543.7	645.1
127.5°	285.7	288.5	295.5	306.1	326.0	351.6	383.6	421.2	472.3	540.3	625.4
130°	295.5	298.4	306.9	318.3	338.2	363.7	395.0	431.0	478.3	538.0	614.7
132.5°	303.1	306.7	316.0	329.6	349.5	374.4	404.9	440.1	482.9	537.3	605.0
135°	316.4	320.2	330.6	344.8	364.7	390.3	419.6	451.8	489.8	536.1	592.1
137.5°	328.9	332.9	343.1	358.2	378.0	401.6	429.8	460.6	494.3	534.0	580.8
140°	337.2	341.9	351.4	366.6	385.6	409.2	436.7	465.1	497.3	533.3	574.1
142.5°	346.3	350.3	360.5	374.1	393.1	415.3	442.0	469.6	499.6	531.8	567.9
145°	360.9	363.7	372.3	386.5	402.6	424.4	449.0	474.6	501.1	529.5	559.9
147.5°	375.7	377.4	385.7	398.0	413.6	432.1	454.7	477.6	501.1	525.9	551.9
150°	385.6	386.5	394.0	406.3	419.6	436.7	458.4	478.3	501.1	522.9	546.6
152.5°	395.4	395.6	403.2	413.9	425.7	442.0	460.7	479.9	498.8	519.1	540.5
155°	410.2	410.2	415.9	425.3	435.7	449.0	465.1	480.3	496.4	512.5	531.4
157.5°	421.9	422.7	427.2	435.5	444.4	454.7	467.6	481.2	493.2	506.6	521.1
160°	431.0	431.0	434.8	442.4	449.0	458.4	469.9	481.2	491.6	502.1	514.4
162.5°	437.8	437.8	440.8	446.9	452.8	460.7	470.6	480.5	488.6	497.5	507.5
165°	448.1	447.1	449.0	453.7	457.5	464.1	471.7	478.3	484.0	490.6	498.2
167.5°	455.8	454.7	455.6	459.3	461.9	466.0	471.6	476.9	479.5	483.9	489.3
170°	460.4	458.4	459.4	462.3	464.1	466.0	470.8	474.6	476.5	479.3	484.0
172.5°	463.4	462.3	462.4	464.6	465.7	466.8	470.8	473.9	474.2	475.5	478.7
175°	467.0	466.0	465.1	467.0	467.0	468.0	469.9	471.7	470.8	470.8	472.7
177.5°	468.7	468.0	467.2	468.0	468.0	468.0	468.7	470.2	468.7	468.0	468.7
180°	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4	1490.4
2.5°	1484.7	1487.0	1489.3	1490.4	1490.1	1489.9	1489.6	1489.5
5°	1476.9	1479.8	1482.6	1483.8	1483.2	1482.6	1482.1	1481.5
7.5°	1461.3	1463.8	1466.4	1467.5	1467.1	1466.8	1466.5	1466.2
10°	1446.9	1449.4	1452.0	1453.0	1452.5	1451.9	1451.3	1450.7
12.5°	1431.2	1433.1	1434.9	1435.7	1435.3	1435.0	1434.7	1434.4
15°	1402.7	1405.0	1407.3	1407.6	1405.9	1404.2	1402.5	1400.8
17.5°	1366.8	1368.4	1369.9	1370.4	1369.9	1369.2	1368.6	1368.0
20°	1340.3	1341.4	1342.6	1342.6	1341.8	1340.9	1340.1	1339.2
22.5°	1312.1	1313.0	1313.9	1313.9	1312.8	1311.7	1310.6	1309.5
25°	1265.5	1265.8	1266.1	1265.8	1264.9	1264.0	1263.2	1262.3
27.5°	1215.9	1216.1	1216.3	1215.9	1214.9	1213.7	1212.7	1211.6
30°	1181.6	1181.6	1181.6	1180.6	1178.6	1176.6	1174.6	1172.6
32.5°	1145.6	1144.0	1142.4	1141.1	1140.0	1138.9	1137.8	1136.8
35°	1087.2	1085.5	1083.8	1082.2	1080.8	1079.4	1077.9	1076.5
37.5°	1026.8	1024.7	1022.7	1021.2	1020.3	1019.4	1018.5	1017.6
40°	987.4	985.1	982.8	981.1	980.0	978.8	977.7	976.6
42.5°	946.4	944.1	941.8	940.1	939.0	937.8	936.7	935.6
45°	885.2	881.7	878.3	875.9	874.5	873.0	871.6	870.2
47.5°	820.7	817.3	813.9	811.6	810.4	809.1	807.9	806.7
50°	778.0	774.9	771.8	769.4	767.7	766.0	764.3	762.5
52.5°	734.9	732.2	729.5	727.3	725.6	723.9	722.2	720.5
55°	669.1	666.0	662.8	660.6	659.2	657.7	656.3	654.8
57.5°	604.5	601.7	598.8	596.6	595.0	593.4	591.7	590.0
60°	558.8	556.2	553.7	551.6	550.2	548.8	547.4	545.9
62.5°	514.7	512.1	509.6	507.8	506.8	505.8	504.9	503.9
65°	449.1	446.9	444.6	443.0	442.1	441.3	440.4	439.6
67.5°	384.1	382.0	380.1	378.5	377.3	376.1	374.9	373.7
70°	342.0	340.1	338.0	336.3	334.9	333.5	332.1	330.7
72.5°	299.5	297.7	295.9	294.6	293.9	293.2	292.4	291.7
75°	238.1	236.7	235.2	234.1	233.3	232.4	231.5	230.6
77.5°	180.8	179.9	178.9	178.4	178.4	178.4	178.4	178.4
80°	144.2	144.0	143.7	143.6	143.6	143.6	143.6	143.6
82.5°	111.0	110.5	110.0	109.6	109.3	109.2	108.9	108.7
85°	62.9	62.4	61.8	61.6	61.6	61.6	61.6	61.6
87.5°	26.8	26.8	26.7	27.0	26.8	27.0	27.2	27.0
90°	23.6	24.6	25.6	27.5	26.5	27.5	28.5	27.5
92.5°	79.7	63.3	55.8	51.0	49.2	46.4	47.4	45.7
95°	341.0	231.1	180.9	146.8	128.8	120.3	113.7	109.9
97.5°	850.0	680.9	558.7	445.4	375.5	332.9	307.3	299.1
100°	1116.8	1040.1	929.3	794.8	699.0	629.9	593.0	593.9
102.5°	1205.5	1203.0	1138.4	1053.1	978.7	924.0	893.1	871.3
105°	1231.4	1326.2	1344.2	1319.6	1275.9	1240.0	1209.7	1204.9
107.5°	1156.7	1310.6	1393.6	1427.3	1428.1	1415.9	1405.7	1397.0
110°	1085.6	1259.9	1379.2	1445.5	1472.0	1479.6	1477.7	1475.9





TEST NUMBER: P332089-930

CATALOG NUMBER: S123DIP-S1165D1195U930-4F0-1E-UDD-F4

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	1015.0	1193.2	1326.9	1412.2	1460.7	1484.2	1491.3	1491.8
115°	921.7	1086.5	1225.7	1329.0	1400.0	1441.7	1460.7	1465.4
117.5°	854.0	996.3	1121.4	1226.1	1300.2	1347.9	1375.2	1381.7
120°	818.4	946.3	1060.0	1155.7	1230.4	1283.5	1306.3	1312.0
122.5°	790.4	906.1	1011.5	1100.3	1166.9	1214.6	1239.6	1246.8
125°	753.1	856.3	947.2	1023.0	1083.7	1125.4	1149.0	1155.7
127.5°	720.5	812.5	894.5	963.5	1017.6	1053.1	1074.6	1080.6
130°	700.0	785.3	862.0	926.4	976.6	1010.7	1030.6	1038.2
132.5°	681.1	759.5	831.0	892.3	939.5	973.5	991.2	996.5
135°	655.5	722.8	784.3	838.3	884.8	913.1	930.2	936.9
137.5°	632.2	687.3	740.4	787.2	826.2	855.0	869.4	873.8
140°	618.6	666.8	712.3	753.1	789.0	815.6	830.7	829.8
142.5°	605.7	647.2	686.6	722.0	752.7	776.2	789.8	788.9
145°	590.1	621.4	651.8	679.1	702.9	722.8	730.3	732.2
147.5°	577.5	602.3	626.7	646.2	664.2	677.7	684.9	685.6
150°	568.3	590.1	610.0	628.0	642.2	652.6	658.4	658.4
152.5°	560.0	578.8	596.4	611.4	622.6	632.2	635.6	635.6
155°	547.5	562.6	576.9	588.2	596.8	604.4	606.3	607.2
157.5°	534.3	547.0	557.9	566.8	574.2	579.9	581.4	581.2
160°	526.7	537.1	546.6	553.2	559.9	565.5	565.5	564.6
162.5°	517.6	526.5	535.2	541.0	545.4	550.3	550.3	549.4
165°	505.8	511.5	518.1	522.9	526.7	530.4	529.5	529.5
167.5°	495.6	499.9	503.8	507.2	508.8	511.5	510.5	510.5
170°	488.8	491.6	495.4	497.3	498.2	500.2	499.2	499.2
172.5°	482.7	484.8	487.9	488.9	489.2	491.1	489.3	488.6
175°	474.6	475.5	477.4	477.4	477.4	478.3	477.4	476.5
177.5°	469.4	470.2	471.0	471.0	470.2	471.0	469.4	469.4
180°	468.0	468.0	468.0	468.0	468.0	468.0	468.0	468.0

(END OF REPORT)