

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: P331493-927

Luminaire Tested: **S122DIW-S290D1440U927-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331493-927  
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: S122DIW-S290D1440U927-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5519.0 lumens  
Efficiency: N/A  
Efficacy: 103.4 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect

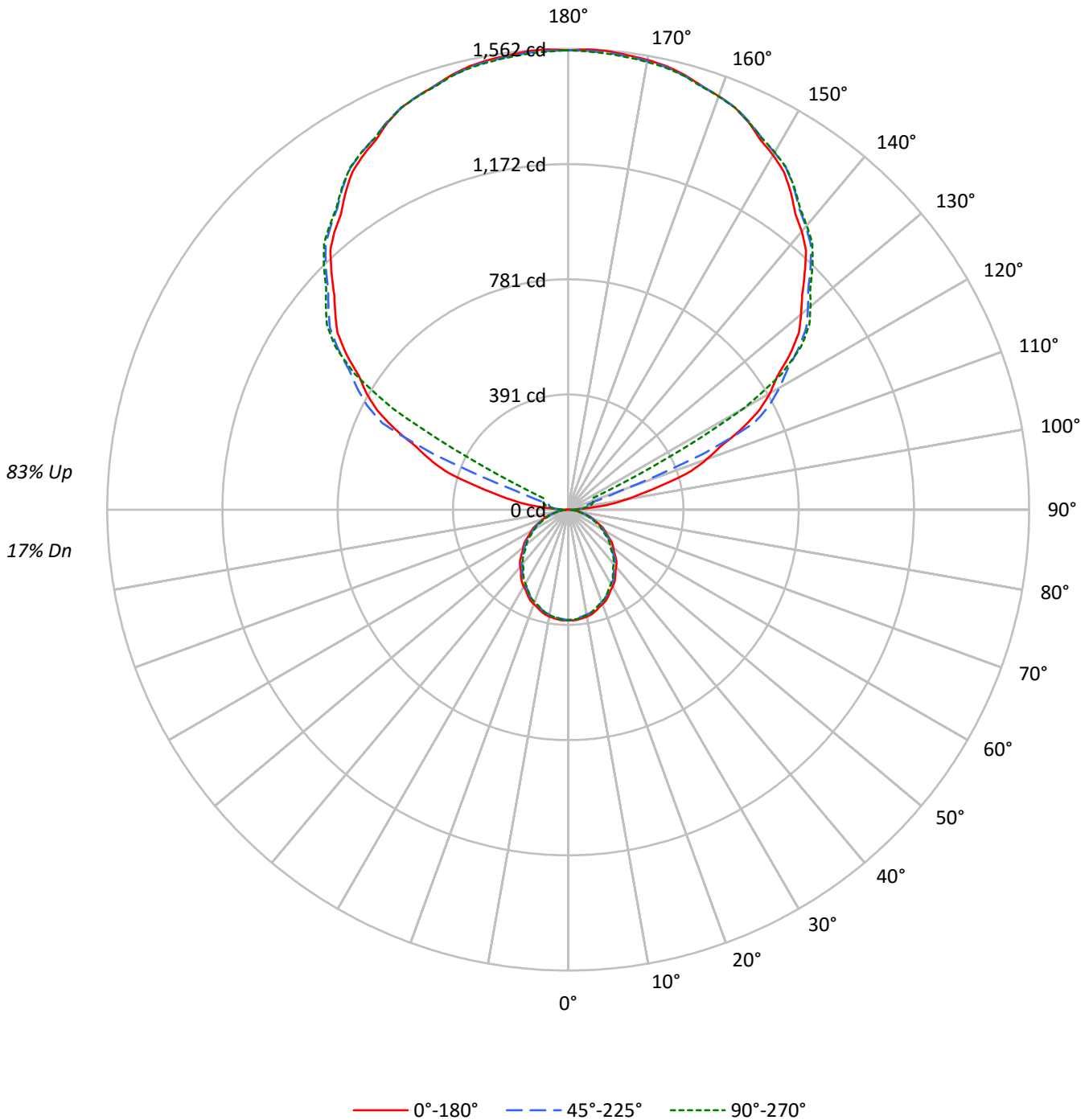
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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### Luminous Intensity Polar Plot





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**COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:**

RF	20									20									20									20									
RC	80									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	50	30	10	0													
RCR																																					
0	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17																			
1	90	86	83	79	79	76	73	70	57	55	53	39	38	37	23	22	22	15																			
2	82	75	70	65	72	66	62	58	50	47	44	34	33	31	20	19	18	12																			
3	75	66	59	54	66	58	53	48	44	40	37	30	28	26	18	17	16	10																			
4	68	58	51	45	60	52	45	40	39	35	31	27	24	22	16	15	13	9																			
5	63	52	44	38	55	46	39	34	35	30	27	24	21	19	14	13	12	8																			
6	58	46	39	33	50	41	34	30	31	26	23	22	19	17	13	11	10	7																			
7	53	41	34	29	47	37	30	26	28	23	20	20	17	15	12	10	9	6																			
8	49	37	30	25	43	33	27	23	25	21	18	18	15	13	11	9	8	5																			
9	46	34	27	22	40	30	24	20	23	19	16	16	13	11	10	8	7	5																			
10	42	31	24	20	37	28	22	18	21	17	14	15	12	10	9	8	7	4																			

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

	0°	45°	90°
0°	6042	6042	6042
5°	6065	5977	6015
10°	6030	5917	5946
15°	5954	5840	5835
20°	5849	5727	5720
25°	5744	5585	5585
30°	5610	5455	5407
35°	5483	5298	5219
40°	5324	5143	5044
45°	5167	4987	4864
50°	4999	4828	4657
55°	4822	4642	4467
60°	4624	4414	4253
65°	4413	4195	4000
70°	4145	3923	3734
75°	3768	3612	3525
80°	3347	3245	3078
85°	2723	2594	2334



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	35.2	0.6
10°-20°	99.0	1.8
20°-30°	145.6	2.6
30°-40°	169.1	3.1
40°-50°	168.9	3.1
50°-60°	147.3	2.7
60°-70°	108.9	2.0
70°-80°	61.7	1.1
80°-90°	20.4	0.4
90°-100°	51.9	0.9
100°-110°	190.5	3.5
110°-120°	509.1	9.2
120°-130°	840.4	15.2
130°-140°	893.8	16.2
140°-150°	830.7	15.1
150°-160°	667.9	12.1
160°-170°	430.4	7.8
170°-180°	148.2	2.7
0°-30°	279.8	5.1
0°-40°	448.8	8.1
0°-60°	765.0	13.9
0°-90°	956.0	17.3
90°-120°	751.5	13.6
90°-150°	3316.5	60.1
90°-180°	4563.0	82.7
0°-180°	5519.0	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	374	374	374	374	374	
5°	374	373	369	372	371	35
15°	356	354	349	351	349	100
25°	322	319	314	314	314	148
35°	278	274	269	267	265	174
45°	226	224	218	215	213	175
55°	171	169	165	161	159	153
65°	116	113	110	107	105	114
75°	60	60	58	56	56	65
85°	15	14	14	13	13	17
90°	1	13	22	28	30	4
95°	73	39	44	49	48	90
105°	342	357	69	81	86	366
115°	648	668	695	198	92	638
125°	916	931	952	960	963	816
135°	1134	1151	1162	1172	1171	875
145°	1315	1315	1333	1340	1335	822
155°	1448	1439	1451	1457	1449	667
165°	1526	1519	1522	1529	1522	431
175°	1560	1553	1555	1562	1551	148
180°	1557	1557	1557	1557	1557	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	376.0	375.7	375.3	375.0	374.7	374.2	373.5	372.8	372.1	371.4	372.0
5°	374.2	373.9	373.6	373.3	373.0	372.4	371.5	370.7	369.7	368.8	369.5
7.5°	371.0	370.4	369.9	369.5	369.0	368.3	367.4	366.5	365.6	364.7	365.4
10°	367.8	367.3	366.7	366.1	365.5	364.8	363.8	362.9	361.9	360.9	361.6
12.5°	363.5	363.0	362.5	361.9	361.5	360.8	359.8	358.9	357.9	357.0	357.4
15°	356.2	355.8	355.3	354.8	354.3	353.6	352.5	351.5	350.5	349.4	349.7
17.5°	347.1	346.6	346.1	345.6	345.2	344.4	343.3	342.2	341.2	340.2	340.5
20°	340.4	339.9	339.5	339.0	338.5	337.7	336.6	335.5	334.4	333.3	333.5
22.5°	333.8	333.1	332.5	331.8	331.1	330.3	329.2	328.1	327.1	326.1	326.1
25°	322.4	321.8	321.2	320.5	319.9	318.9	317.5	316.2	314.8	313.5	313.6
27.5°	309.5	309.0	308.3	307.8	307.2	306.3	305.3	304.2	303.2	302.1	301.8
30°	300.9	300.2	299.6	299.0	298.3	297.4	296.2	295.0	293.7	292.6	292.3
32.5°	291.6	291.1	290.7	290.1	289.6	288.7	287.4	286.2	284.9	283.7	283.2
35°	278.2	277.3	276.6	275.8	275.0	273.9	272.7	271.4	270.1	268.8	268.3
37.5°	263.0	262.3	261.6	260.9	260.2	259.2	257.9	256.7	255.3	254.1	253.5
40°	252.6	252.0	251.4	250.7	250.1	249.1	247.8	246.5	245.3	244.0	243.3
42.5°	242.6	241.9	241.3	240.7	240.0	239.0	237.7	236.5	235.2	233.9	233.1
45°	226.3	225.8	225.2	224.7	224.1	223.2	222.0	220.9	219.7	218.4	217.5
47.5°	210.2	209.7	209.2	208.7	208.1	207.2	206.0	204.8	203.5	202.2	201.3
50°	199.0	198.6	198.2	197.8	197.4	196.6	195.5	194.4	193.3	192.2	191.1
52.5°	188.1	187.5	187.0	186.5	185.9	185.1	184.1	183.1	182.0	180.9	180.0
55°	171.3	170.8	170.3	169.8	169.4	168.7	167.7	166.8	165.8	164.9	163.8
57.5°	154.5	154.1	153.7	153.3	152.9	152.2	151.1	150.1	149.0	148.0	147.0
60°	143.2	142.9	142.6	142.3	142.0	141.2	140.1	139.0	137.8	136.7	135.9
62.5°	132.3	131.7	131.3	130.8	130.2	129.5	128.7	127.9	127.0	126.1	125.2
65°	115.5	115.0	114.5	114.1	113.6	113.0	112.2	111.4	110.6	109.8	109.0
67.5°	98.5	98.1	97.7	97.3	97.0	96.4	95.6	94.9	94.2	93.5	92.9
70°	87.8	87.5	87.1	86.8	86.5	86.0	85.3	84.6	83.8	83.1	82.5
72.5°	76.8	76.5	76.2	75.9	75.6	75.2	74.7	74.3	73.8	73.4	72.8
75°	60.4	60.3	60.1	60.0	59.8	59.6	59.2	58.7	58.3	57.9	57.4
77.5°	45.8	45.5	45.2	45.0	44.7	44.4	44.3	44.1	44.0	43.8	43.6
80°	36.0	35.9	35.8	35.7	35.6	35.6	35.4	35.3	35.1	34.9	34.7
82.5°	26.8	26.8	26.8	26.7	26.7	26.6	26.5	26.5	26.4	26.3	26.0
85°	14.7	14.7	14.6	14.5	14.4	14.3	14.3	14.2	14.1	14.0	13.8
87.5°	5.4	5.9	6.3	6.7	7.1	7.4	7.7	8.0	8.2	8.6	8.6
90°	1.1	3.9	6.7	9.4	12.1	14.5	16.6	18.5	20.5	22.5	23.8
92.5°	22.7	22.5	22.3	22.0	21.8	22.1	23.1	24.2	25.1	26.1	26.8
95°	73.2	65.0	56.7	48.5	40.2	36.9	38.7	40.4	42.2	44.0	45.2
97.5°	145.4	122.1	98.8	75.5	52.2	42.6	46.7	50.7	54.7	58.8	59.8
100°	199.4	165.1	130.8	96.5	62.2	47.2	51.4	55.7	60.0	64.2	66.2
102.5°	258.9	251.7	244.4	237.1	229.9	208.4	172.9	137.2	101.6	66.0	68.6
105°	342.5	350.0	357.5	365.0	372.6	342.1	273.8	205.4	137.0	68.8	71.5
107.5°	437.8	443.9	450.0	456.0	462.1	424.1	342.1	260.2	178.2	96.3	93.4
110°	499.2	504.4	509.6	514.9	520.1	486.6	414.2	341.9	269.5	197.2	172.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	556.8	561.4	566.1	570.8	575.4	568.8	551.0	533.1	515.2	497.3	406.0
115°	647.8	652.1	656.3	660.6	664.9	670.1	676.4	682.6	688.9	695.1	579.2
117.5°	729.2	734.0	738.7	743.5	748.2	752.7	757.0	761.4	765.6	770.0	742.0
120°	788.7	792.4	796.1	799.9	803.7	807.8	812.3	816.8	821.3	825.9	828.9
122.5°	839.2	843.1	847.1	851.0	855.0	859.4	864.3	869.2	874.1	879.0	880.8
125°	916.0	919.2	922.5	925.7	929.0	933.0	937.8	942.5	947.3	952.0	953.8
127.5°	985.6	989.2	992.8	996.4	1000.1	1003.6	1007.2	1010.7	1014.3	1017.9	1020.4
130°	1029.8	1033.8	1037.8	1041.8	1045.8	1049.2	1051.9	1054.7	1057.4	1060.2	1063.0
132.5°	1074.8	1078.2	1081.6	1085.1	1088.5	1091.5	1094.3	1097.0	1099.8	1102.6	1104.9
135°	1133.5	1137.4	1141.5	1145.4	1149.5	1152.5	1154.8	1157.1	1159.4	1161.6	1164.1
137.5°	1192.7	1195.5	1198.3	1201.1	1203.9	1206.6	1209.1	1211.7	1214.3	1216.8	1219.2
140°	1231.4	1233.4	1235.5	1237.5	1239.4	1241.8	1244.6	1247.4	1250.1	1252.8	1255.1
142.5°	1263.9	1265.7	1267.5	1269.3	1271.1	1273.6	1276.8	1279.9	1283.0	1286.2	1288.2
145°	1314.9	1314.5	1314.3	1314.1	1313.8	1315.8	1320.1	1324.4	1328.6	1332.8	1334.6
147.5°	1359.2	1358.3	1357.3	1356.4	1355.4	1357.0	1361.2	1365.5	1369.7	1373.9	1375.1
150°	1388.1	1386.3	1384.6	1382.8	1381.0	1382.2	1386.2	1390.2	1394.2	1398.2	1399.7
152.5°	1412.4	1410.5	1408.5	1406.5	1404.6	1405.5	1409.3	1413.1	1416.9	1420.7	1422.2
155°	1447.8	1445.5	1443.3	1441.0	1438.8	1439.2	1442.2	1445.2	1448.2	1451.1	1452.6
157.5°	1475.5	1473.6	1471.7	1469.8	1467.9	1468.0	1470.1	1472.2	1474.3	1476.4	1478.1
160°	1491.7	1490.2	1488.7	1487.2	1485.7	1485.7	1487.2	1488.7	1490.2	1491.7	1493.2
162.5°	1506.1	1504.7	1503.2	1501.7	1500.2	1500.0	1501.3	1502.6	1504.0	1505.2	1507.0
165°	1525.5	1524.0	1522.5	1521.0	1519.5	1519.2	1519.9	1520.6	1521.4	1522.1	1523.9
167.5°	1539.9	1538.4	1536.9	1535.4	1533.9	1533.5	1534.2	1534.9	1535.6	1536.4	1538.1
170°	1548.1	1546.6	1545.1	1543.6	1542.1	1541.5	1542.1	1542.5	1543.0	1543.6	1545.3
172.5°	1553.5	1552.0	1550.5	1549.0	1547.4	1547.0	1547.4	1547.9	1548.5	1549.0	1550.7
175°	1560.4	1558.7	1557.0	1555.2	1553.5	1552.8	1553.3	1553.8	1554.3	1554.8	1556.6
177.5°	1561.5	1560.2	1558.8	1557.4	1555.9	1555.4	1555.5	1555.8	1555.9	1556.2	1557.6
180°	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	374.2	374.2	374.2	374.2	374.2	374.2	374.2	374.2
2.5°	372.6	373.3	373.9	374.2	374.1	373.9	373.8	373.7
5°	370.2	370.8	371.5	371.7	371.5	371.4	371.2	371.1
7.5°	366.0	366.6	367.3	367.5	367.3	367.1	366.9	366.8
10°	362.3	362.9	363.5	363.7	363.5	363.2	363.0	362.7
12.5°	357.8	358.2	358.7	358.9	358.7	358.5	358.3	358.1
15°	350.1	350.4	350.7	350.7	350.3	349.9	349.5	349.1
17.5°	340.9	341.3	341.6	341.6	341.2	340.9	340.5	340.1
20°	333.7	334.0	334.2	334.1	333.8	333.5	333.2	332.9
22.5°	326.1	326.2	326.2	326.1	326.0	325.7	325.6	325.4
25°	313.8	313.9	314.1	314.1	313.9	313.8	313.6	313.5
27.5°	301.6	301.3	301.1	300.8	300.4	300.0	299.7	299.3
30°	292.1	291.8	291.6	291.4	291.0	290.7	290.4	290.0
32.5°	282.8	282.3	281.9	281.5	281.2	280.9	280.6	280.3
35°	267.8	267.4	266.9	266.5	266.1	265.7	265.3	264.8
37.5°	252.9	252.3	251.7	251.2	250.8	250.4	250.1	249.7
40°	242.6	241.9	241.1	240.6	240.3	240.0	239.6	239.3
42.5°	232.3	231.6	230.8	230.1	229.7	229.3	228.9	228.4
45°	216.7	215.8	214.9	214.3	214.0	213.7	213.3	213.0
47.5°	200.4	199.5	198.5	197.8	197.4	196.9	196.5	196.0
50°	190.0	188.8	187.7	187.0	186.6	186.2	185.8	185.4
52.5°	179.1	178.2	177.2	176.5	175.9	175.5	174.9	174.4
55°	162.9	161.9	161.0	160.3	159.9	159.5	159.1	158.7
57.5°	146.1	145.1	144.2	143.5	143.3	143.0	142.7	142.4
60°	135.0	134.1	133.2	132.7	132.5	132.2	132.0	131.7
62.5°	124.5	123.7	122.9	122.3	122.0	121.7	121.4	121.0
65°	108.3	107.6	106.9	106.3	105.9	105.5	105.1	104.7
67.5°	92.4	91.8	91.3	90.8	90.5	90.2	89.8	89.5
70°	82.0	81.4	80.9	80.5	80.2	79.8	79.5	79.1
72.5°	72.2	71.7	71.1	70.7	70.4	70.2	69.9	69.6
75°	57.0	56.5	56.0	55.8	56.0	56.2	56.3	56.5
77.5°	43.3	43.1	42.9	42.6	42.4	42.2	42.0	41.7
80°	34.5	34.2	34.0	33.7	33.6	33.4	33.3	33.1
82.5°	25.7	25.3	25.0	24.9	24.9	24.8	24.8	24.8
85°	13.5	13.3	13.1	12.9	12.8	12.8	12.7	12.6
87.5°	8.6	8.7	8.8	8.8	8.9	8.9	9.0	9.0
90°	25.0	26.3	27.6	28.4	28.9	29.4	29.9	30.4
92.5°	27.4	28.1	28.8	29.2	29.5	29.8	30.1	30.4
95°	46.4	47.7	49.0	49.4	49.2	49.0	48.7	48.5
97.5°	60.8	61.8	62.8	63.5	63.8	64.1	64.4	64.6
100°	68.2	70.3	72.2	73.5	74.0	74.5	75.0	75.5
102.5°	71.2	73.8	76.4	78.1	78.8	79.5	80.2	80.9
105°	74.2	77.0	79.8	81.6	82.6	83.7	84.6	85.6
107.5°	90.6	87.8	85.0	84.1	85.1	86.1	87.1	88.1
110°	147.1	122.1	97.0	85.0	86.0	87.0	88.0	89.0





TEST NUMBER: P331493-927

CATALOG NUMBER: S122DIW-S290D1440U927-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	314.7	223.3	132.0	86.7	87.5	88.3	89.1	89.9
115°	463.3	347.4	231.5	164.5	146.5	128.4	110.4	92.4
117.5°	713.9	685.9	657.8	614.2	554.9	495.7	436.4	377.2
120°	831.9	834.9	837.9	822.4	788.7	754.9	721.0	687.3
122.5°	882.6	884.5	886.2	883.8	877.3	870.8	864.2	857.6
125°	955.5	957.3	959.0	960.3	961.1	961.8	962.6	963.3
127.5°	1022.9	1025.5	1028.0	1029.4	1029.5	1029.7	1029.8	1030.0
130°	1065.7	1068.5	1071.2	1072.5	1072.2	1072.0	1071.7	1071.4
132.5°	1107.2	1109.6	1112.0	1113.0	1112.8	1112.5	1112.3	1112.0
135°	1166.6	1169.1	1171.6	1172.6	1172.1	1171.6	1171.1	1170.6
137.5°	1221.7	1224.2	1226.6	1227.4	1226.5	1225.7	1224.9	1224.0
140°	1257.4	1259.6	1261.9	1262.3	1261.2	1259.9	1258.6	1257.4
142.5°	1290.3	1292.4	1294.4	1294.8	1293.6	1292.3	1291.1	1289.8
145°	1336.3	1338.1	1339.9	1340.1	1338.9	1337.6	1336.3	1335.1
147.5°	1376.5	1377.8	1379.1	1379.2	1378.2	1377.1	1376.0	1375.0
150°	1401.2	1402.7	1404.2	1404.3	1403.1	1401.8	1400.6	1399.3
152.5°	1423.7	1425.2	1426.7	1426.6	1425.0	1423.4	1421.7	1420.1
155°	1454.1	1455.6	1457.1	1456.9	1454.9	1452.9	1450.9	1448.9
157.5°	1479.8	1481.5	1483.2	1483.0	1481.1	1479.2	1477.2	1475.3
160°	1494.7	1496.2	1497.7	1497.6	1495.9	1494.1	1492.3	1490.6
162.5°	1508.6	1510.4	1512.0	1511.8	1509.7	1507.5	1505.4	1503.2
165°	1525.7	1527.4	1529.1	1529.1	1527.4	1525.7	1523.9	1522.1
167.5°	1539.8	1541.6	1543.3	1543.1	1540.9	1538.6	1536.4	1534.1
170°	1547.1	1548.8	1550.5	1550.3	1548.1	1545.8	1543.6	1541.3
172.5°	1552.4	1554.2	1555.9	1555.7	1553.5	1551.2	1549.0	1546.7
175°	1558.3	1560.0	1561.8	1561.5	1558.9	1556.4	1553.9	1551.4
177.5°	1558.9	1560.4	1561.8	1561.5	1559.7	1558.0	1556.2	1554.3
180°	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0	1557.0

(END OF REPORT)