

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: P331491-940

Luminaire Tested: **S122DIW-S290D1440U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331491-940  
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-S290D1440U940-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1440 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6206.9 lumens  
Efficiency: N/A  
Efficacy: 116.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

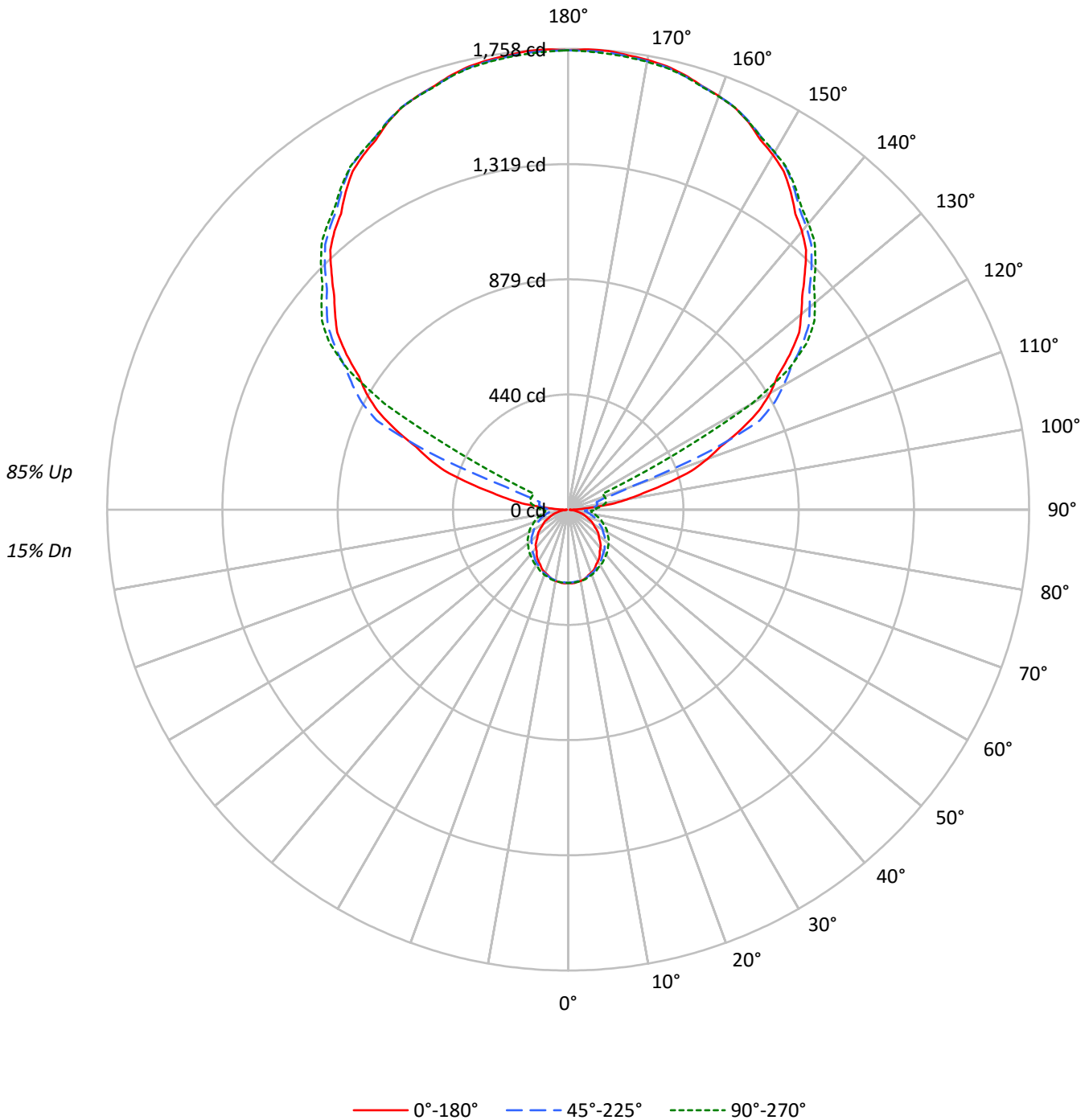
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331491-940

CATALOG NUMBER: S122DIW-S290D1440U940-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P331491-940

CATALOG NUMBER: S122DIW-S290D1440U940-4F0-1E-UDD-D

**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	99	99	99	99	87	87	87	87	64	64	64	43	43	43	24	24	24	15
1	90	85	81	78	78	75	72	69	55	53	51	37	36	35	21	20	19	12
2	81	74	68	63	71	65	60	56	48	45	42	32	30	29	18	17	16	10
3	74	65	58	52	64	57	51	46	42	38	35	28	26	24	16	14	13	8
4	67	57	50	44	59	50	44	39	37	33	30	25	22	20	14	13	11	7
5	62	51	43	37	54	45	38	33	33	29	25	22	20	17	12	11	10	6
6	57	45	37	32	49	40	33	28	30	25	22	20	17	15	11	10	8	5
7	52	40	33	28	45	36	29	25	27	22	19	18	15	13	10	9	7	4
8	48	36	29	24	42	32	26	22	24	20	16	16	14	11	9	8	7	4
9	45	33	26	21	39	29	23	19	22	18	15	15	12	10	8	7	6	3
10	42	30	23	19	36	27	21	17	20	16	13	14	11	9	8	6	5	3

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

	0°	45°	90°
0°	4514	4514	4514
5°	4536	4345	4328
10°	4507	4215	4169
15°	4443	4079	4001
20°	4366	3935	3839
25°	4289	3793	3693
30°	4180	3650	3544
35°	4070	3510	3442
40°	3952	3391	3338
45°	3841	3286	3250
50°	3723	3189	3162
55°	3597	3086	3074
60°	3447	2979	2980
65°	3288	2854	2867
70°	3108	2717	2746
75°	2883	2585	2636
80°	2528	2450	2524
85°	2185	2333	2436



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	26.5	0.4
10°-20°	75.9	1.2
20°-30°	115.1	1.9
30°-40°	140.2	2.3
40°-50°	150.8	2.4
50°-60°	146.5	2.4
60°-70°	127.9	2.1
70°-80°	98.4	1.6
80°-90°	70.4	1.1
90°-100°	104.0	1.7
100°-110°	247.6	4.0
110°-120°	595.1	9.6
120°-130°	958.3	15.4
130°-140°	1011.2	16.3
140°-150°	936.0	15.1
150°-160°	751.8	12.1
160°-170°	484.5	7.8
170°-180°	166.8	2.7
0°-30°	217.5	3.5
0°-40°	357.7	5.8
0°-60°	654.9	10.6
0°-90°	951.6	15.3
90°-120°	946.7	15.3
90°-150°	3852.2	62.1
90°-180°	5255.0	84.7
0°-180°	6206.9	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	280	280	280	280	280	
5°	280	279	277	279	279	27
15°	267	268	268	272	271	75
25°	243	246	250	254	256	112
35°	210	216	224	233	236	131
45°	172	183	197	209	214	133
55°	132	147	167	181	187	118
65°	90	110	134	150	156	89
75°	50	73	98	115	121	53
85°	15	40	66	82	88	16
90°	5	43	79	101	109	7
95°	86	66	96	117	121	103
105°	388	417	112	139	150	414
115°	731	758	807	259	145	719
125°	1032	1050	1085	1105	1113	920
135°	1276	1296	1312	1332	1334	985
145°	1480	1480	1500	1511	1507	925
155°	1630	1620	1633	1640	1631	751
165°	1717	1710	1713	1721	1713	485
175°	1756	1748	1750	1758	1746	167
180°	1753	1753	1753	1753	1753	



TEST NUMBER: P331491-940

CATALOG NUMBER: S122DIW-S290D1440U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	281.2	280.9	280.7	280.4	280.3	279.9	279.4	278.9	278.4	277.9	278.2
5°	280.4	280.1	279.8	279.6	279.2	278.8	278.3	277.8	277.2	276.7	277.2
7.5°	277.8	277.6	277.4	277.2	277.1	276.8	276.3	276.0	275.5	275.1	275.8
10°	275.9	275.7	275.5	275.4	275.2	274.9	274.6	274.4	274.1	273.8	274.6
12.5°	272.6	272.7	272.7	272.8	272.8	272.7	272.5	272.3	272.1	271.9	272.6
15°	267.3	267.5	267.7	267.9	268.0	268.1	268.1	268.1	268.1	268.1	268.9
17.5°	260.6	260.9	261.3	261.7	262.1	262.4	262.7	263.0	263.2	263.6	264.4
20°	256.0	256.5	256.9	257.3	257.8	258.2	258.6	259.0	259.3	259.7	260.6
22.5°	251.2	251.6	252.2	252.7	253.2	253.8	254.2	254.8	255.3	255.7	256.7
25°	243.1	243.7	244.3	245.0	245.6	246.3	247.1	247.9	248.7	249.5	250.6
27.5°	233.4	234.3	235.4	236.4	237.5	238.4	239.3	240.3	241.3	242.3	243.6
30°	226.9	228.0	229.2	230.3	231.5	232.7	233.9	235.1	236.2	237.4	238.8
32.5°	219.7	221.1	222.3	223.6	225.0	226.3	227.7	229.1	230.5	231.8	233.5
35°	209.5	211.0	212.5	214.0	215.5	217.1	218.9	220.6	222.3	224.0	226.0
37.5°	198.2	200.0	201.8	203.6	205.3	207.3	209.6	211.7	213.9	216.2	218.4
40°	190.8	192.8	194.7	196.7	198.7	200.9	203.3	205.8	208.2	210.6	212.9
42.5°	183.7	185.7	187.6	189.6	191.6	193.9	196.8	199.6	202.3	205.1	207.7
45°	171.7	174.2	176.6	179.1	181.5	184.2	187.4	190.6	193.7	196.9	199.7
47.5°	160.0	162.6	165.3	167.9	170.6	173.8	177.5	181.1	184.9	188.5	191.5
50°	151.9	154.7	157.5	160.2	163.1	166.5	170.6	174.6	178.6	182.7	185.7
52.5°	144.1	147.0	150.0	152.9	155.9	159.4	163.7	168.0	172.3	176.6	179.7
55°	131.6	134.9	138.1	141.3	144.6	148.6	153.3	157.9	162.6	167.3	170.6
57.5°	119.3	123.0	126.6	130.3	133.9	138.1	142.9	147.7	152.5	157.3	160.8
60°	110.6	114.5	118.3	122.2	126.1	130.5	135.7	140.8	146.0	151.1	154.5
62.5°	102.8	106.8	110.8	114.9	118.9	123.4	128.6	133.7	138.8	144.0	147.6
65°	89.9	94.3	98.7	103.2	107.5	112.4	117.7	123.1	128.4	133.7	137.4
67.5°	78.1	82.8	87.3	91.9	96.6	101.6	107.0	112.4	117.9	123.3	127.1
70°	69.6	74.4	79.0	83.7	88.4	93.5	99.1	104.7	110.3	115.8	119.8
72.5°	61.9	66.7	71.5	76.3	81.2	86.4	92.1	97.7	103.4	109.1	112.9
75°	49.8	54.8	59.9	64.9	70.0	75.3	81.1	86.9	92.6	98.4	102.3
77.5°	38.2	43.4	48.7	53.9	59.3	64.8	70.7	76.5	82.4	88.2	92.1
80°	30.4	35.8	41.4	46.8	52.3	58.1	63.8	69.7	75.5	81.4	85.2
82.5°	23.9	29.3	34.8	40.1	45.6	51.3	57.2	63.1	69.0	74.9	78.7
85°	14.6	20.2	25.8	31.3	36.9	42.5	48.3	54.1	59.8	65.6	69.4
87.5°	8.2	14.2	20.2	26.1	32.1	38.3	44.4	50.6	56.9	63.0	67.1
90°	5.4	13.6	21.9	30.3	38.6	46.8	54.8	62.8	70.8	78.8	83.8
92.5°	29.3	33.9	38.5	43.1	47.6	53.3	59.9	66.6	73.3	80.0	84.3
95°	85.7	80.6	75.5	70.4	65.4	66.5	73.9	81.3	88.6	96.0	100.9
97.5°	166.4	144.0	121.5	99.1	76.7	70.3	80.1	89.8	99.5	109.3	113.8
100°	227.3	192.1	156.8	121.5	86.2	73.5	83.3	93.1	103.0	112.8	118.4
102.5°	293.9	288.8	283.7	278.6	273.4	253.2	218.1	182.9	147.8	112.5	118.8
105°	387.5	398.6	409.7	420.8	431.9	401.3	329.0	256.7	184.5	112.2	118.4
107.5°	494.8	503.7	512.6	521.5	530.4	491.0	403.1	315.4	227.7	139.8	139.7
110°	563.5	571.1	578.9	586.6	594.3	559.6	482.6	405.6	328.5	251.6	226.2



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	628.4	635.2	641.9	648.6	655.4	650.8	634.9	618.9	603.1	587.1	487.1
115°	730.8	736.6	742.4	748.2	753.9	762.4	773.5	784.6	795.7	806.8	679.0
117.5°	822.0	828.0	834.0	840.0	846.1	853.3	861.9	870.5	879.1	887.7	858.8
120°	888.9	893.6	898.1	902.8	907.3	913.9	922.7	931.3	940.0	948.7	954.6
122.5°	945.7	950.4	955.0	959.6	964.2	970.9	979.8	988.7	997.6	1006.6	1011.0
125°	1031.9	1035.5	1039.2	1042.9	1046.5	1052.5	1060.7	1069.0	1077.2	1085.4	1089.8
127.5°	1110.3	1114.2	1118.2	1122.1	1126.1	1131.3	1137.6	1143.9	1150.2	1156.5	1161.7
130°	1159.9	1164.4	1168.8	1173.2	1177.7	1182.3	1187.3	1192.3	1197.3	1202.3	1207.6
132.5°	1210.7	1214.4	1218.2	1221.9	1225.7	1229.8	1234.4	1238.9	1243.5	1248.0	1252.8
135°	1276.2	1280.8	1285.2	1289.8	1294.3	1298.2	1301.7	1305.1	1308.6	1312.0	1316.7
137.5°	1342.9	1346.1	1349.2	1352.4	1355.5	1358.7	1362.0	1365.2	1368.5	1371.8	1376.2
140°	1386.6	1388.8	1390.9	1393.0	1395.3	1397.9	1401.2	1404.5	1407.8	1411.0	1415.1
142.5°	1423.1	1425.0	1427.0	1428.9	1430.8	1433.6	1437.2	1440.8	1444.4	1448.0	1451.4
145°	1480.1	1479.7	1479.4	1479.2	1478.9	1481.1	1485.9	1490.8	1495.5	1500.3	1502.8
147.5°	1530.0	1528.9	1527.9	1526.8	1525.7	1527.5	1532.2	1537.0	1541.8	1546.5	1548.0
150°	1562.5	1560.5	1558.5	1556.6	1554.5	1555.9	1560.3	1564.9	1569.3	1573.9	1575.6
152.5°	1589.8	1587.7	1585.5	1583.2	1581.1	1582.1	1586.4	1590.6	1594.9	1599.2	1600.9
155°	1629.7	1627.1	1624.6	1622.0	1619.5	1620.0	1623.4	1626.7	1630.1	1633.4	1635.1
157.5°	1660.9	1658.8	1656.6	1654.5	1652.3	1652.4	1654.7	1657.2	1659.5	1661.9	1663.8
160°	1679.1	1677.4	1675.8	1674.1	1672.4	1672.4	1674.1	1675.8	1677.4	1679.1	1680.8
162.5°	1695.3	1693.7	1692.0	1690.3	1688.6	1688.5	1690.0	1691.4	1692.9	1694.3	1696.3
165°	1717.2	1715.5	1713.8	1712.1	1710.4	1710.0	1710.8	1711.6	1712.5	1713.3	1715.4
167.5°	1733.4	1731.7	1730.0	1728.3	1726.6	1726.2	1727.0	1727.8	1728.6	1729.4	1731.3
170°	1742.6	1740.9	1739.2	1737.5	1735.8	1735.2	1735.8	1736.3	1736.9	1737.5	1739.5
172.5°	1748.6	1747.0	1745.3	1743.6	1741.9	1741.3	1741.9	1742.4	1743.0	1743.6	1745.5
175°	1756.5	1754.5	1752.6	1750.6	1748.6	1747.9	1748.5	1749.0	1749.6	1750.2	1752.1
177.5°	1757.7	1756.2	1754.6	1753.0	1751.4	1750.8	1751.0	1751.2	1751.4	1751.7	1753.3
180°	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	279.6	279.6	279.6	279.6	279.6	279.6	279.6	279.6
2.5°	278.6	278.9	279.3	279.5	279.3	279.1	279.0	278.8
5°	277.8	278.3	278.8	279.0	278.9	278.8	278.7	278.7
7.5°	276.4	277.1	277.8	278.0	277.9	277.9	277.8	277.7
10°	275.3	276.0	276.7	277.1	277.0	276.9	276.8	276.7
12.5°	273.3	274.0	274.7	275.1	275.0	274.9	274.8	274.7
15°	269.7	270.6	271.4	271.8	271.7	271.6	271.5	271.4
17.5°	265.3	266.1	266.9	267.3	267.3	267.3	267.3	267.3
20°	261.6	262.6	263.6	264.1	264.1	264.1	264.1	264.1
22.5°	257.8	258.8	259.8	260.3	260.5	260.6	260.7	260.9
25°	251.7	252.8	253.9	254.5	254.8	255.0	255.3	255.6
27.5°	245.0	246.4	247.7	248.5	248.7	248.9	249.1	249.3
30°	240.2	241.7	243.2	244.0	244.2	244.5	244.8	245.0
32.5°	235.1	236.8	238.5	239.6	240.0	240.6	241.0	241.5
35°	228.0	230.0	231.9	233.3	233.9	234.5	235.1	235.8
37.5°	220.5	222.7	225.0	226.4	227.0	227.7	228.4	229.0
40°	215.3	217.7	220.0	221.6	222.4	223.2	224.0	224.8
42.5°	210.3	212.8	215.3	217.0	217.8	218.6	219.5	220.3
45°	202.4	205.3	208.0	209.9	210.8	211.7	212.6	213.5
47.5°	194.4	197.2	200.2	202.2	203.1	204.1	205.1	206.1
50°	188.8	191.9	194.9	197.0	198.0	198.9	199.9	200.9
52.5°	182.8	185.9	189.0	191.2	192.3	193.3	194.4	195.4
55°	173.8	177.0	180.3	182.4	183.6	184.9	186.0	187.2
57.5°	164.3	167.7	171.2	173.5	174.8	175.9	177.1	178.3
60°	157.9	161.4	164.8	167.1	168.4	169.6	170.9	172.2
62.5°	151.2	154.9	158.5	161.0	162.1	163.3	164.5	165.7
65°	141.1	144.7	148.5	150.9	152.0	153.2	154.4	155.5
67.5°	130.7	134.5	138.2	140.7	141.9	143.1	144.4	145.6
70°	123.6	127.4	131.3	133.8	134.9	136.0	137.1	138.1
72.5°	116.6	120.5	124.2	126.8	128.0	129.4	130.7	132.0
75°	106.2	110.0	114.0	116.5	117.6	118.8	119.9	121.1
77.5°	95.9	99.8	103.6	106.2	107.5	108.7	109.9	111.2
80°	89.0	92.7	96.6	99.1	100.3	101.6	102.8	104.1
82.5°	82.5	86.3	90.1	92.6	93.7	95.0	96.1	97.3
85°	73.2	77.0	80.8	83.3	84.5	85.8	87.0	88.3
87.5°	71.0	74.9	78.9	81.5	82.8	84.0	85.3	86.6
90°	88.8	93.9	98.9	102.2	103.9	105.5	107.1	108.8
92.5°	88.5	92.7	97.0	99.9	101.3	102.7	104.2	105.6
95°	105.7	110.6	115.4	118.2	119.0	119.8	120.6	121.4
97.5°	118.2	122.7	127.2	130.1	131.4	132.9	134.3	135.6
100°	123.9	129.6	135.1	138.8	140.3	141.8	143.4	144.9
102.5°	124.9	131.2	137.3	141.3	143.1	144.9	146.6	148.4
105°	124.7	131.0	137.2	141.4	143.5	145.6	147.8	149.9
107.5°	139.6	139.5	139.3	140.3	142.4	144.5	146.6	148.7
110°	200.9	175.6	150.3	138.8	140.8	142.9	145.1	147.2





TEST NUMBER: P331491-940

CATALOG NUMBER: S122DIW-S290D1440U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	387.3	287.3	187.3	138.4	140.3	142.1	144.0	145.9
115°	551.3	423.5	295.7	222.1	202.8	183.5	164.3	144.9
117.5°	829.9	801.0	772.1	724.8	659.0	593.3	527.4	461.7
120°	960.5	966.3	972.2	956.7	919.6	882.5	845.5	808.4
122.5°	1015.5	1020.0	1024.5	1023.4	1016.9	1010.4	1003.8	997.3
125°	1094.2	1098.7	1103.0	1106.1	1107.7	1109.4	1111.1	1112.7
127.5°	1166.8	1171.9	1177.0	1180.0	1181.0	1182.0	1182.9	1183.8
130°	1212.8	1218.1	1223.3	1226.2	1226.6	1227.1	1227.5	1228.0
132.5°	1257.5	1262.3	1267.0	1269.6	1270.1	1270.5	1270.9	1271.3
135°	1321.4	1326.2	1330.8	1333.3	1333.5	1333.6	1333.7	1333.9
137.5°	1380.6	1385.0	1389.5	1391.5	1391.2	1390.8	1390.4	1390.1
140°	1419.1	1423.0	1427.0	1428.5	1427.6	1426.8	1425.9	1425.0
142.5°	1454.9	1458.4	1461.8	1463.1	1462.1	1461.2	1460.3	1459.3
145°	1505.3	1507.9	1510.4	1511.2	1510.2	1509.2	1508.2	1507.3
147.5°	1549.5	1551.1	1552.6	1552.9	1551.9	1551.0	1550.0	1549.1
150°	1577.3	1579.0	1580.6	1580.7	1579.4	1578.0	1576.5	1575.1
152.5°	1602.6	1604.3	1606.0	1605.9	1604.0	1602.2	1600.4	1598.5
155°	1636.8	1638.5	1640.2	1639.9	1637.7	1635.5	1633.2	1630.9
157.5°	1665.7	1667.6	1669.6	1669.4	1667.2	1665.0	1662.8	1660.6
160°	1682.5	1684.2	1685.9	1685.8	1683.8	1681.8	1679.8	1677.8
162.5°	1698.2	1700.1	1702.0	1701.7	1699.3	1696.9	1694.5	1692.1
165°	1717.3	1719.3	1721.3	1721.3	1719.3	1717.3	1715.4	1713.3
167.5°	1733.3	1735.3	1737.2	1737.0	1734.5	1731.9	1729.4	1726.8
170°	1741.4	1743.4	1745.3	1745.1	1742.6	1740.0	1737.5	1734.9
172.5°	1747.5	1749.4	1751.4	1751.1	1748.6	1746.1	1743.6	1741.0
175°	1754.1	1756.0	1758.0	1757.7	1754.8	1751.9	1749.2	1746.3
177.5°	1754.8	1756.4	1758.0	1757.7	1755.7	1753.7	1751.7	1749.6
180°	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7	1752.7

(END OF REPORT)