

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: P331491-830

Luminaire Tested: **S122DIW-S290D1440U830-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331491-830
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-S290D1440U830-4F0-1E-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: 6560.8 lumens
Efficiency: N/A
Efficacy: 122.9 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

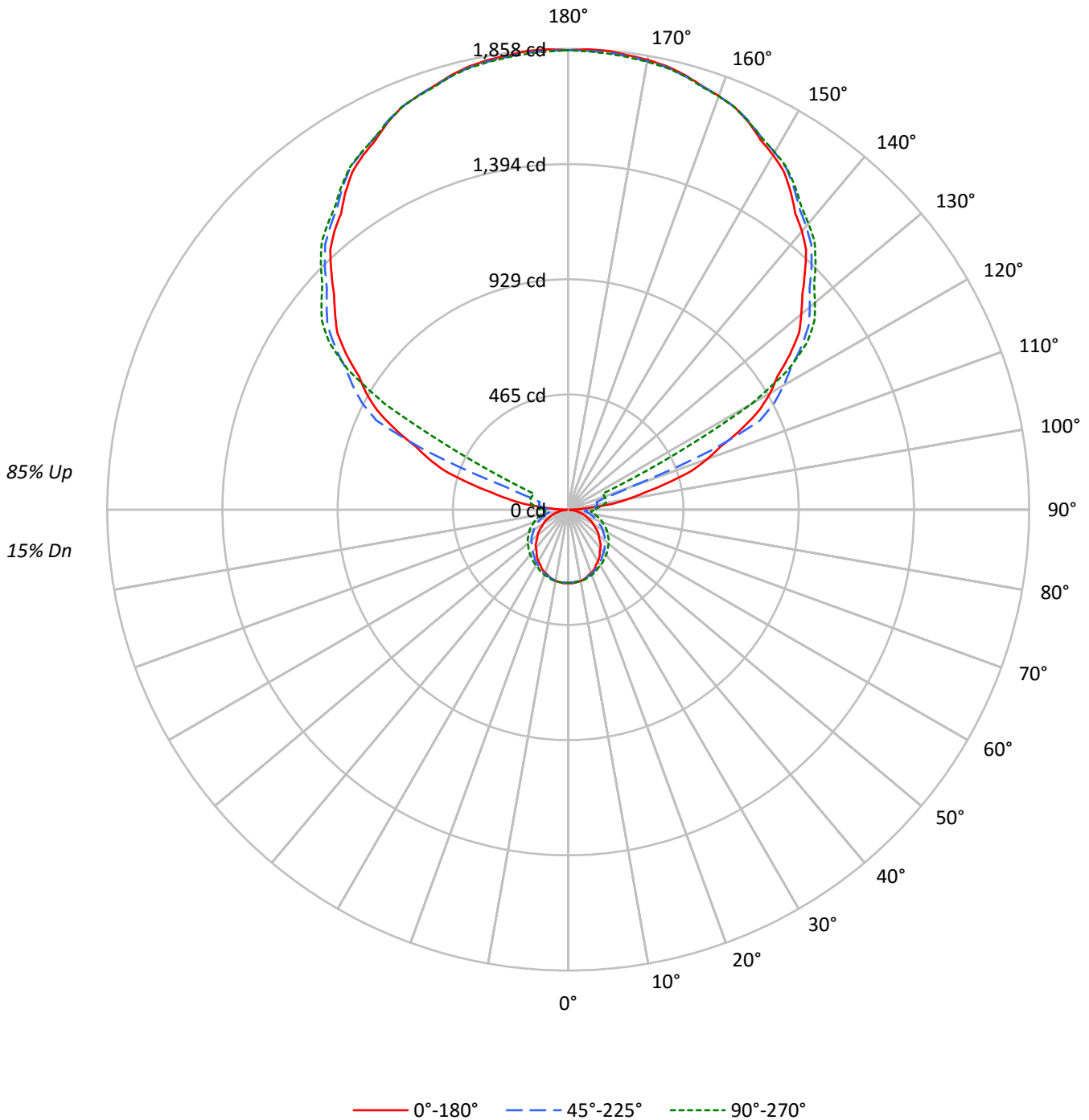
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





TEST NUMBER: P331491-830

CATALOG NUMBER: S122DIW-S290D1440U830-4F0-1E-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°	4771	4771	4771
5°	4794	4593	4573
10°	4763	4457	4407
15°	4698	4312	4229
20°	4614	4159	4059
25°	4533	4009	3902
30°	4418	3857	3747
35°	4301	3711	3638
40°	4178	3584	3528
45°	4060	3473	3434
50°	3936	3371	3343
55°	3802	3261	3248
60°	3643	3149	3150
65°	3474	3016	3031
70°	3286	2872	2904
75°	3050	2735	2786
80°	2669	2592	2667
85°	2319	2468	2574



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ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	28.0	0.4
10°-20°	80.3	1.2
20°-30°	121.6	1.9
30°-40°	148.2	2.3
40°-50°	159.4	2.4
50°-60°	154.8	2.4
60°-70°	135.2	2.1
70°-80°	104.1	1.6
80°-90°	74.4	1.1
90°-100°	109.9	1.7
100°-110°	261.8	4.0
110°-120°	629.0	9.6
120°-130°	1012.9	15.4
130°-140°	1068.9	16.3
140°-150°	989.4	15.1
150°-160°	794.7	12.1
160°-170°	512.1	7.8
170°-180°	176.3	2.7
0°-30°	229.9	3.5
0°-40°	378.1	5.8
0°-60°	692.3	10.6
0°-90°	1005.9	15.3
90°-120°	1000.6	15.3
90°-150°	4071.8	62.1
90°-180°	5555.0	84.7
0°-180°	6560.8	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	296	296	296	296	296	
5°	296	295	292	295	294	28
15°	283	283	283	287	287	80
25°	257	260	264	269	270	118
35°	221	229	237	246	249	138
45°	182	193	208	221	226	140
55°	139	155	177	192	198	124
65°	95	116	141	158	164	94
75°	53	77	104	122	128	56
85°	16	42	69	87	93	17
90°	6	45	83	106	115	7
95°	91	70	102	123	128	109
105°	410	440	119	147	158	438
115°	772	801	853	274	153	760
125°	1091	1109	1147	1168	1176	972
135°	1349	1370	1387	1408	1410	1042
145°	1564	1564	1586	1597	1593	978
155°	1723	1712	1726	1734	1724	793
165°	1815	1808	1811	1819	1811	513
175°	1857	1848	1850	1858	1846	177
180°	1853	1853	1853	1853	1853	



TEST NUMBER: P331491-830

CATALOG NUMBER: S122DIW-S290D1440U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	297.2	296.9	296.7	296.4	296.2	295.9	295.3	294.8	294.3	293.7	294.1
5°	296.3	296.1	295.8	295.5	295.1	294.7	294.2	293.6	293.0	292.5	293.0
7.5°	293.6	293.4	293.2	293.0	292.8	292.6	292.1	291.7	291.2	290.8	291.5
10°	291.6	291.4	291.2	291.1	290.9	290.6	290.3	290.0	289.7	289.5	290.2
12.5°	288.1	288.2	288.2	288.3	288.3	288.2	288.0	287.9	287.6	287.4	288.1
15°	282.6	282.8	283.0	283.1	283.3	283.4	283.4	283.4	283.4	283.4	284.3
17.5°	275.4	275.8	276.2	276.6	277.0	277.4	277.7	278.0	278.2	278.6	279.5
20°	270.6	271.1	271.5	272.0	272.5	273.0	273.3	273.7	274.1	274.5	275.5
22.5°	265.5	266.0	266.6	267.1	267.7	268.2	268.7	269.3	269.8	270.3	271.4
25°	256.9	257.6	258.3	258.9	259.6	260.3	261.2	262.0	262.9	263.7	264.9
27.5°	246.7	247.7	248.8	249.9	251.0	252.0	253.0	254.0	255.1	256.1	257.5
30°	239.8	241.0	242.2	243.5	244.7	246.0	247.2	248.5	249.7	250.9	252.4
32.5°	232.2	233.7	235.0	236.4	237.8	239.2	240.7	242.1	243.6	245.1	246.9
35°	221.4	223.0	224.6	226.2	227.8	229.5	231.4	233.2	235.0	236.8	238.8
37.5°	209.5	211.4	213.3	215.2	217.0	219.1	221.5	223.8	226.1	228.5	230.8
40°	201.7	203.8	205.9	207.9	210.0	212.4	214.9	217.5	220.1	222.6	225.1
42.5°	194.2	196.2	198.3	200.4	202.6	205.0	208.0	210.9	213.9	216.8	219.5
45°	181.5	184.1	186.7	189.3	191.8	194.7	198.1	201.4	204.7	208.1	211.0
47.5°	169.1	171.9	174.7	177.5	180.3	183.7	187.6	191.4	195.4	199.3	202.4
50°	160.6	163.5	166.5	169.4	172.4	176.0	180.3	184.5	188.8	193.1	196.3
52.5°	152.3	155.4	158.5	161.6	164.8	168.5	173.1	177.6	182.1	186.6	189.9
55°	139.1	142.6	146.0	149.4	152.9	157.0	162.0	166.9	171.9	176.8	180.3
57.5°	126.1	130.0	133.8	137.7	141.6	146.0	151.1	156.1	161.2	166.3	169.9
60°	116.9	121.0	125.1	129.1	133.3	138.0	143.5	148.8	154.3	159.7	163.3
62.5°	108.7	112.9	117.2	121.4	125.6	130.4	135.9	141.3	146.8	152.2	156.0
65°	95.0	99.7	104.3	109.1	113.7	118.9	124.4	130.1	135.7	141.3	145.2
67.5°	82.6	87.5	92.3	97.2	102.1	107.4	113.1	118.9	124.6	130.4	134.3
70°	73.6	78.6	83.5	88.5	93.4	98.9	104.7	110.7	116.6	122.4	126.6
72.5°	65.4	70.5	75.6	80.7	85.9	91.3	97.4	103.3	109.3	115.3	119.3
75°	52.7	58.0	63.3	68.6	74.0	79.6	85.8	91.9	97.9	104.1	108.1
77.5°	40.3	45.9	51.5	57.0	62.7	68.5	74.7	80.9	87.1	93.2	97.4
80°	32.1	37.9	43.7	49.5	55.3	61.4	67.5	73.7	79.8	86.1	90.0
82.5°	25.3	31.0	36.8	42.4	48.2	54.2	60.4	66.7	73.0	79.2	83.2
85°	15.5	21.3	27.2	33.1	39.0	45.0	51.1	57.2	63.2	69.4	73.3
87.5°	8.7	15.0	21.3	27.6	33.9	40.4	46.9	53.5	60.1	66.6	70.9
90°	5.7	14.4	23.2	32.0	40.8	49.5	57.9	66.4	74.8	83.3	88.6
92.5°	31.0	35.8	40.7	45.5	50.3	56.4	63.3	70.4	77.5	84.5	89.1
95°	90.6	85.2	79.8	74.5	69.1	70.3	78.1	86.0	93.7	101.5	106.6
97.5°	175.9	152.2	128.5	104.7	81.1	74.3	84.6	94.9	105.2	115.6	120.3
100°	240.3	203.0	165.7	128.4	91.1	77.7	88.0	98.4	108.9	119.2	125.2
102.5°	310.7	305.3	299.8	294.5	289.0	267.7	230.5	193.3	156.2	118.9	125.5
105°	409.6	421.3	433.1	444.8	456.5	424.1	347.7	271.4	195.0	118.6	125.2
107.5°	523.0	532.4	541.8	551.2	560.6	519.0	426.1	333.4	240.6	147.8	147.7
110°	595.6	603.7	611.9	620.0	628.2	591.5	510.1	428.7	347.2	265.9	239.1



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	664.2	671.4	678.4	685.6	692.8	687.9	671.1	654.2	637.4	620.6	514.9
115°	772.5	778.6	784.8	790.9	796.9	805.9	817.6	829.3	841.0	852.8	717.7
117.5°	868.8	875.2	881.6	887.9	894.3	901.9	911.1	920.1	929.3	938.3	907.8
120°	939.6	944.5	949.3	954.2	959.0	966.0	975.2	984.4	993.5	1002.8	1009.0
122.5°	999.7	1004.6	1009.5	1014.3	1019.2	1026.2	1035.7	1045.1	1054.5	1063.9	1068.7
125°	1090.7	1094.6	1098.4	1102.3	1106.2	1112.5	1121.2	1129.9	1138.6	1147.3	1152.0
127.5°	1173.6	1177.7	1181.9	1186.1	1190.3	1195.8	1202.4	1209.1	1215.8	1222.5	1227.9
130°	1226.1	1230.8	1235.4	1240.1	1244.8	1249.7	1255.0	1260.3	1265.6	1270.8	1276.4
132.5°	1279.7	1283.6	1287.6	1291.6	1295.5	1300.0	1304.8	1309.6	1314.4	1319.2	1324.2
135°	1349.0	1353.8	1358.5	1363.3	1368.1	1372.2	1375.9	1379.5	1383.2	1386.8	1391.8
137.5°	1419.5	1422.9	1426.2	1429.5	1432.8	1436.2	1439.6	1443.0	1446.5	1450.0	1454.6
140°	1465.7	1467.9	1470.2	1472.4	1474.8	1477.6	1481.1	1484.6	1488.1	1491.5	1495.7
142.5°	1504.2	1506.3	1508.4	1510.3	1512.4	1515.3	1519.1	1523.0	1526.7	1530.5	1534.2
145°	1564.4	1564.1	1563.8	1563.5	1563.2	1565.6	1570.7	1575.7	1580.7	1585.8	1588.5
147.5°	1617.2	1616.1	1615.0	1613.8	1612.7	1614.6	1619.6	1624.7	1629.7	1634.7	1636.3
150°	1651.5	1649.4	1647.4	1645.3	1643.1	1644.5	1649.3	1654.1	1658.8	1663.6	1665.4
152.5°	1680.5	1678.2	1675.8	1673.5	1671.2	1672.3	1676.8	1681.3	1685.8	1690.4	1692.1
155°	1722.6	1719.9	1717.2	1714.5	1711.8	1712.3	1715.9	1719.5	1723.1	1726.5	1728.3
157.5°	1755.6	1753.3	1751.1	1748.8	1746.5	1746.6	1749.1	1751.6	1754.1	1756.6	1758.7
160°	1774.8	1773.0	1771.3	1769.5	1767.7	1767.7	1769.5	1771.3	1773.0	1774.8	1776.6
162.5°	1792.0	1790.3	1788.5	1786.7	1784.9	1784.7	1786.3	1787.8	1789.4	1790.9	1793.0
165°	1815.1	1813.3	1811.5	1809.7	1807.9	1807.5	1808.4	1809.2	1810.2	1811.0	1813.2
167.5°	1832.2	1830.4	1828.6	1826.8	1825.0	1824.6	1825.4	1826.3	1827.1	1828.0	1830.0
170°	1841.9	1840.1	1838.3	1836.5	1834.8	1834.1	1834.8	1835.3	1835.9	1836.5	1838.6
172.5°	1848.3	1846.5	1844.7	1843.0	1841.2	1840.6	1841.2	1841.7	1842.4	1843.0	1845.0
175°	1856.6	1854.5	1852.5	1850.4	1848.3	1847.6	1848.1	1848.7	1849.4	1849.9	1852.0
177.5°	1857.9	1856.3	1854.6	1852.9	1851.2	1850.6	1850.8	1851.1	1851.2	1851.5	1853.2
180°	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6



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CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	295.5	295.5	295.5	295.5	295.5	295.5	295.5	295.5
2.5°	294.5	294.8	295.2	295.4	295.2	295.0	294.9	294.7
5°	293.6	294.2	294.7	294.9	294.8	294.7	294.6	294.5
7.5°	292.2	292.8	293.6	293.9	293.8	293.7	293.6	293.5
10°	291.0	291.7	292.5	292.8	292.8	292.7	292.6	292.5
12.5°	288.9	289.6	290.4	290.8	290.7	290.6	290.5	290.4
15°	285.1	286.1	286.9	287.3	287.2	287.1	287.0	286.9
17.5°	280.4	281.3	282.1	282.6	282.6	282.6	282.6	282.6
20°	276.5	277.6	278.6	279.2	279.2	279.2	279.2	279.2
22.5°	272.5	273.5	274.6	275.1	275.3	275.4	275.6	275.8
25°	266.1	267.2	268.3	269.0	269.3	269.6	269.8	270.1
27.5°	258.9	260.4	261.8	262.7	262.9	263.1	263.3	263.5
30°	253.9	255.5	257.0	257.9	258.2	258.4	258.7	259.0
32.5°	248.5	250.3	252.1	253.3	253.7	254.3	254.8	255.2
35°	241.0	243.1	245.2	246.6	247.2	247.9	248.5	249.2
37.5°	233.1	235.4	237.8	239.3	240.0	240.7	241.4	242.0
40°	227.6	230.1	232.5	234.2	235.1	235.9	236.8	237.6
42.5°	222.3	224.9	227.6	229.4	230.3	231.1	232.0	232.8
45°	214.0	217.0	219.9	221.9	222.8	223.8	224.7	225.6
47.5°	205.5	208.5	211.6	213.7	214.7	215.7	216.8	217.8
50°	199.5	202.8	206.0	208.2	209.2	210.3	211.3	212.4
52.5°	193.2	196.5	199.8	202.1	203.2	204.3	205.5	206.5
55°	183.7	187.1	190.6	192.8	194.1	195.4	196.6	197.8
57.5°	173.6	177.3	181.0	183.4	184.7	186.0	187.2	188.5
60°	166.9	170.6	174.2	176.6	178.0	179.3	180.7	182.0
62.5°	159.9	163.7	167.6	170.1	171.4	172.6	173.9	175.1
65°	149.1	153.0	156.9	159.5	160.7	161.9	163.2	164.4
67.5°	138.2	142.1	146.1	148.7	150.0	151.3	152.6	153.9
70°	130.6	134.7	138.8	141.5	142.6	143.7	144.9	146.0
72.5°	123.3	127.3	131.3	134.0	135.3	136.8	138.2	139.5
75°	112.3	116.3	120.5	123.1	124.3	125.5	126.8	128.0
77.5°	101.4	105.5	109.5	112.3	113.6	114.9	116.2	117.5
80°	94.1	98.0	102.1	104.7	106.0	107.4	108.7	110.0
82.5°	87.2	91.2	95.2	97.8	99.1	100.4	101.6	102.8
85°	77.4	81.3	85.4	88.0	89.4	90.7	92.0	93.3
87.5°	75.0	79.2	83.4	86.1	87.5	88.8	90.2	91.5
90°	93.9	99.2	104.5	108.0	109.8	111.5	113.2	115.0
92.5°	93.5	98.0	102.5	105.6	107.1	108.6	110.1	111.6
95°	111.7	116.9	122.0	124.9	125.7	126.6	127.4	128.3
97.5°	125.0	129.7	134.4	137.5	138.9	140.4	141.9	143.4
100°	131.0	137.0	142.8	146.7	148.3	149.9	151.6	153.2
102.5°	132.1	138.6	145.2	149.4	151.3	153.2	155.0	156.8
105°	131.8	138.5	145.1	149.5	151.7	153.9	156.2	158.4
107.5°	147.5	147.4	147.2	148.3	150.5	152.8	155.0	157.2
110°	212.4	185.6	158.9	146.7	148.8	151.1	153.4	155.6



TEST NUMBER: P331491-830

CATALOG NUMBER: S122DIW-S290D1440U830-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	409.3	303.7	198.0	146.3	148.3	150.2	152.2	154.2
115°	582.7	447.6	312.5	234.8	214.3	194.0	173.6	153.2
117.5°	877.2	846.7	816.1	766.1	696.5	627.1	557.5	488.0
120°	1015.2	1021.4	1027.7	1011.3	972.0	932.8	893.7	854.5
122.5°	1073.4	1078.2	1082.9	1081.8	1074.9	1068.0	1061.0	1054.1
125°	1156.6	1161.3	1165.9	1169.1	1170.8	1172.6	1174.4	1176.1
127.5°	1233.3	1238.7	1244.1	1247.3	1248.3	1249.3	1250.4	1251.3
130°	1282.0	1287.5	1293.1	1296.1	1296.6	1297.0	1297.5	1298.0
132.5°	1329.2	1334.3	1339.3	1342.0	1342.5	1342.9	1343.3	1343.8
135°	1396.8	1401.7	1406.7	1409.3	1409.5	1409.6	1409.8	1409.9
137.5°	1459.3	1464.0	1468.7	1470.8	1470.5	1470.1	1469.7	1469.3
140°	1500.0	1504.1	1508.4	1510.0	1509.0	1508.2	1507.2	1506.3
142.5°	1537.9	1541.5	1545.1	1546.5	1545.5	1544.5	1543.5	1542.5
145°	1591.1	1593.8	1596.5	1597.3	1596.3	1595.3	1594.2	1593.2
147.5°	1637.9	1639.6	1641.2	1641.4	1640.4	1639.4	1638.3	1637.4
150°	1667.2	1669.0	1670.8	1670.8	1669.4	1667.9	1666.4	1664.9
152.5°	1693.9	1695.7	1697.5	1697.4	1695.4	1693.6	1691.6	1689.6
155°	1730.1	1731.9	1733.7	1733.4	1731.1	1728.7	1726.3	1723.9
157.5°	1760.7	1762.6	1764.7	1764.5	1762.3	1759.9	1757.6	1755.3
160°	1778.4	1780.2	1782.0	1781.9	1779.8	1777.6	1775.6	1773.5
162.5°	1795.0	1797.1	1799.0	1798.7	1796.2	1793.7	1791.1	1788.6
165°	1815.2	1817.3	1819.4	1819.4	1817.3	1815.2	1813.2	1811.0
167.5°	1832.1	1834.2	1836.3	1836.0	1833.3	1830.6	1828.0	1825.2
170°	1840.7	1842.8	1844.8	1844.6	1841.9	1839.2	1836.5	1833.8
172.5°	1847.1	1849.2	1851.2	1851.0	1848.3	1845.6	1843.0	1840.2
175°	1854.1	1856.1	1858.2	1857.8	1854.8	1851.8	1848.9	1845.9
177.5°	1854.8	1856.5	1858.2	1857.9	1855.8	1853.7	1851.5	1849.4
180°	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6	1852.6

(END OF REPORT)