

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: P331487

Luminaire Tested: **S122DIW-S290D1240U835-4F0-1E-UDD-F**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331487  
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-S290D1240U835-4F0-1E-UDD-F  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
UPLIGHT 1240 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6160.3 lumens  
Efficiency: N/A  
Efficacy: 132.2 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

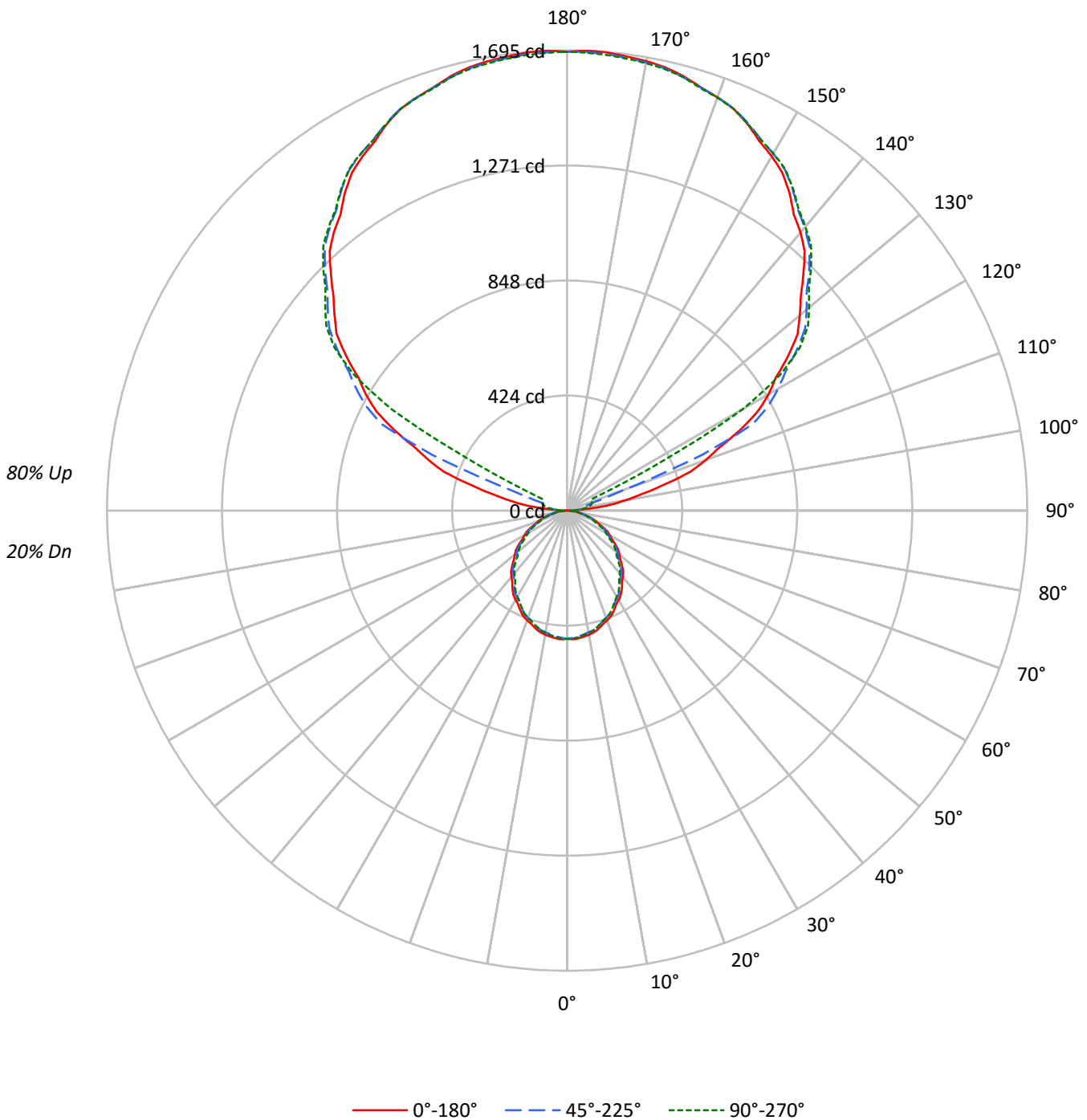
Input Watts (W): 46.6  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331487

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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	20
1	91	87	83	80	80	77	74	71	58	56	54	41	40	38	25	24	24	16
2	83	76	70	65	73	67	62	58	51	48	45	36	34	32	22	21	20	14
3	75	66	60	54	66	59	53	48	45	41	38	32	29	27	19	18	17	12
4	69	59	51	46	61	52	46	41	40	35	32	28	25	23	17	16	15	10
5	63	52	44	39	55	46	40	35	35	31	27	25	22	20	15	14	13	9
6	58	47	39	33	51	41	35	30	32	27	24	23	20	17	14	12	11	8
7	53	42	34	29	47	37	31	26	29	24	21	20	17	15	13	11	10	7
8	49	38	30	25	44	34	27	23	26	21	18	19	16	13	12	10	9	6
9	46	34	27	22	40	31	24	20	24	19	16	17	14	12	11	9	8	5
10	43	31	24	20	38	28	22	18	22	17	14	16	13	11	10	8	7	5

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

	0°	45°	90°
0°	7627	7627	7627
5°	7656	7546	7592
10°	7612	7470	7507
15°	7517	7373	7366
20°	7383	7228	7220
25°	7251	7049	7049
30°	7081	6885	6825
35°	6922	6688	6589
40°	6721	6492	6367
45°	6524	6295	6140
50°	6310	6094	5878
55°	6086	5858	5638
60°	5838	5574	5370
65°	5570	5295	5051
70°	5231	4952	4716
75°	4760	4560	4448
80°	4221	4100	3887
85°	3446	3279	2946



TEST NUMBER: P331487

CATALOG NUMBER: S122DIW-S290D1240U835-4F0-1E-UDD-F

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	44.4	0.7
10°-20°	125.0	2.0
20°-30°	183.7	3.0
30°-40°	213.4	3.5
40°-50°	213.2	3.5
50°-60°	185.9	3.0
60°-70°	137.5	2.2
70°-80°	77.9	1.3
80°-90°	25.1	0.4
90°-100°	56.4	0.9
100°-110°	206.8	3.4
110°-120°	552.8	9.0
120°-130°	912.5	14.8
130°-140°	970.4	15.8
140°-150°	902.0	14.6
150°-160°	725.2	11.8
160°-170°	467.3	7.6
170°-180°	160.9	2.6
0°-30°	353.2	5.7
0°-40°	566.6	9.2
0°-60°	965.7	15.7
0°-90°	1206.1	19.6
90°-120°	816.0	13.2
90°-150°	3600.9	58.5
90°-180°	4954.0	80.4
0°-180°	6160.3	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	472	472	472	472	472	
5°	472	470	466	469	468	45
15°	450	447	441	443	441	127
25°	407	403	396	396	396	187
35°	351	346	339	337	334	219
45°	286	282	276	271	269	220
55°	216	213	208	203	200	193
65°	146	143	139	135	132	144
75°	76	75	73	71	71	82
85°	19	18	18	16	16	21
90°	1	14	24	30	33	5
95°	80	42	48	53	53	97
105°	372	388	75	88	93	397
115°	703	725	755	215	100	692
125°	994	1011	1034	1042	1046	886
135°	1231	1250	1261	1273	1271	950
145°	1428	1428	1447	1455	1450	893
155°	1572	1562	1576	1582	1573	724
165°	1656	1650	1653	1660	1653	468
175°	1694	1686	1688	1696	1684	161
180°	1690	1690	1690	1690	1690	



TEST NUMBER: P331487

CATALOG NUMBER: S122DIW-S290D1240U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4
2.5°	474.6	474.2	473.8	473.4	473.0	472.4	471.5	470.6	469.7	468.8	469.6
5°	472.4	472.0	471.6	471.2	470.8	470.1	469.0	467.9	466.7	465.6	466.4
7.5°	468.3	467.6	467.0	466.4	465.8	464.9	463.8	462.6	461.5	460.4	461.2
10°	464.3	463.6	462.9	462.2	461.4	460.5	459.3	458.1	456.9	455.6	456.4
12.5°	458.8	458.2	457.6	456.9	456.3	455.4	454.2	453.0	451.8	450.6	451.1
15°	449.7	449.1	448.5	447.9	447.3	446.4	445.0	443.7	442.4	441.1	441.5
17.5°	438.1	437.5	436.9	436.3	435.7	434.7	433.4	432.0	430.7	429.4	429.8
20°	429.7	429.1	428.5	427.9	427.3	426.3	424.9	423.5	422.1	420.7	421.0
22.5°	421.4	420.5	419.7	418.8	418.0	416.9	415.6	414.2	412.9	411.6	411.6
25°	407.0	406.2	405.4	404.6	403.8	402.5	400.8	399.1	397.4	395.7	395.9
27.5°	390.7	390.0	389.2	388.5	387.8	386.7	385.4	384.0	382.7	381.3	381.0
30°	379.8	379.0	378.2	377.4	376.5	375.4	373.9	372.4	370.8	369.3	369.0
32.5°	368.1	367.5	366.9	366.2	365.6	364.4	362.8	361.3	359.7	358.1	357.5
35°	351.2	350.1	349.1	348.1	347.1	345.8	344.2	342.6	341.0	339.3	338.7
37.5°	332.0	331.1	330.2	329.3	328.4	327.2	325.6	324.0	322.3	320.7	320.0
40°	318.9	318.1	317.3	316.5	315.7	314.5	312.8	311.2	309.6	308.0	307.1
42.5°	306.2	305.4	304.6	303.8	303.0	301.7	300.1	298.5	296.9	295.3	294.3
45°	285.7	285.0	284.3	283.6	282.9	281.8	280.3	278.8	277.3	275.7	274.6
47.5°	265.4	264.7	264.1	263.4	262.7	261.6	260.0	258.5	256.9	255.3	254.1
50°	251.2	250.7	250.2	249.7	249.2	248.2	246.8	245.4	244.0	242.6	241.2
52.5°	237.4	236.7	236.1	235.4	234.7	233.7	232.4	231.1	229.7	228.4	227.2
55°	216.2	215.6	215.0	214.4	213.8	212.9	211.7	210.5	209.3	208.1	206.8
57.5°	195.0	194.5	194.0	193.5	193.0	192.1	190.8	189.5	188.1	186.8	185.6
60°	180.8	180.4	180.0	179.6	179.2	178.3	176.9	175.5	174.0	172.6	171.5
62.5°	167.0	166.3	165.7	165.1	164.4	163.5	162.4	161.4	160.3	159.2	158.1
65°	145.8	145.2	144.6	144.0	143.4	142.6	141.6	140.6	139.6	138.6	137.6
67.5°	124.3	123.8	123.3	122.8	122.4	121.7	120.7	119.8	118.9	118.0	117.3
70°	110.8	110.4	110.0	109.6	109.2	108.6	107.7	106.8	105.8	104.9	104.2
72.5°	97.0	96.6	96.2	95.8	95.4	94.9	94.3	93.8	93.2	92.6	91.9
75°	76.3	76.1	75.9	75.7	75.5	75.2	74.7	74.1	73.6	73.1	72.5
77.5°	57.8	57.4	57.1	56.8	56.4	56.1	55.9	55.7	55.5	55.3	55.0
80°	45.4	45.3	45.2	45.1	45.0	44.9	44.7	44.5	44.3	44.1	43.8
82.5°	33.8	33.8	33.8	33.7	33.7	33.6	33.5	33.4	33.3	33.2	32.8
85°	18.6	18.5	18.4	18.3	18.2	18.1	18.0	17.9	17.8	17.7	17.4
87.5°	6.8	7.2	7.7	8.1	8.5	8.9	9.2	9.4	9.7	10.0	10.0
90°	1.2	4.2	7.2	10.2	13.2	15.8	17.9	20.1	22.3	24.5	25.8
92.5°	24.7	24.4	24.2	23.9	23.6	24.0	25.1	26.2	27.3	28.4	29.1
95°	79.5	70.5	61.6	52.6	43.6	40.1	42.0	43.9	45.8	47.7	49.1
97.5°	157.8	132.5	107.2	82.0	56.7	46.2	50.6	55.0	59.5	63.9	64.9
100°	216.5	179.3	142.0	104.8	67.6	51.2	55.9	60.5	65.1	69.7	71.9
102.5°	281.1	273.2	265.3	257.5	249.6	226.3	187.6	149.0	110.3	71.7	74.5
105°	371.9	380.0	388.2	396.3	404.5	371.5	297.3	223.0	148.8	74.6	77.6
107.5°	475.4	481.9	488.5	495.1	501.7	460.5	371.5	282.5	193.5	104.5	101.4
110°	541.9	547.6	553.3	559.0	564.7	528.3	449.8	371.2	292.6	214.1	186.9



TEST NUMBER: P331487

CATALOG NUMBER: S122DIW-S290D1240U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	604.5	609.6	614.6	619.7	624.8	617.6	598.2	578.8	559.4	539.9	440.8
115°	703.4	708.0	712.6	717.2	721.9	727.6	734.4	741.2	748.0	754.8	628.9
117.5°	791.7	796.9	802.0	807.2	812.4	817.3	821.9	826.6	831.3	836.0	805.5
120°	856.3	860.4	864.4	868.5	872.6	877.1	882.0	886.9	891.8	896.6	899.9
122.5°	911.1	915.4	919.7	924.0	928.3	933.1	938.4	943.7	949.1	954.4	956.3
125°	994.5	998.0	1001.6	1005.1	1008.6	1013.0	1018.2	1023.3	1028.5	1033.7	1035.6
127.5°	1070.1	1074.0	1077.9	1081.9	1085.8	1089.7	1093.5	1097.4	1101.2	1105.1	1107.9
130°	1118.1	1122.4	1126.8	1131.1	1135.5	1139.1	1142.1	1145.1	1148.1	1151.1	1154.1
132.5°	1167.0	1170.7	1174.4	1178.1	1181.8	1185.1	1188.1	1191.1	1194.1	1197.1	1199.6
135°	1230.6	1234.9	1239.3	1243.6	1248.0	1251.4	1253.8	1256.3	1258.7	1261.2	1263.9
137.5°	1294.9	1298.0	1301.0	1304.1	1307.1	1310.0	1312.8	1315.6	1318.3	1321.1	1323.8
140°	1337.0	1339.2	1341.4	1343.5	1345.7	1348.3	1351.3	1354.3	1357.3	1360.3	1362.7
142.5°	1372.3	1374.2	1376.2	1378.1	1380.1	1382.8	1386.2	1389.6	1393.0	1396.5	1398.7
145°	1427.5	1427.3	1427.0	1426.7	1426.5	1428.6	1433.3	1437.9	1442.5	1447.1	1449.0
147.5°	1475.7	1474.7	1473.7	1472.6	1471.6	1473.4	1477.9	1482.5	1487.1	1491.6	1493.1
150°	1507.1	1505.2	1503.3	1501.3	1499.4	1500.7	1505.0	1509.4	1513.7	1518.1	1519.7
152.5°	1533.5	1531.4	1529.2	1527.1	1525.0	1526.0	1530.1	1534.3	1538.4	1542.5	1544.2
155°	1571.9	1569.4	1567.0	1564.5	1562.1	1562.5	1565.8	1569.0	1572.3	1575.6	1577.2
157.5°	1602.0	1599.9	1597.8	1595.8	1593.7	1593.8	1596.1	1598.4	1600.7	1603.0	1604.8
160°	1619.6	1618.0	1616.3	1614.7	1613.1	1613.1	1614.7	1616.3	1618.0	1619.6	1621.2
162.5°	1635.3	1633.6	1632.0	1630.4	1628.7	1628.6	1630.0	1631.4	1632.9	1634.3	1636.1
165°	1656.3	1654.7	1653.0	1651.4	1649.8	1649.4	1650.2	1651.0	1651.8	1652.6	1654.5
167.5°	1672.0	1670.3	1668.7	1667.1	1665.4	1665.0	1665.8	1666.5	1667.3	1668.0	1669.9
170°	1680.8	1679.1	1677.5	1675.9	1674.2	1673.7	1674.2	1674.8	1675.3	1675.9	1677.8
172.5°	1686.6	1685.0	1683.4	1681.7	1680.1	1679.6	1680.1	1680.6	1681.2	1681.7	1683.6
175°	1694.2	1692.3	1690.4	1688.5	1686.6	1685.9	1686.5	1687.0	1687.6	1688.1	1690.0
177.5°	1695.4	1693.9	1692.4	1690.9	1689.3	1688.7	1688.9	1689.1	1689.3	1689.6	1691.1
180°	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5



TEST NUMBER: P331487

CATALOG NUMBER: S122DIW-S290D1240U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	472.4	472.4	472.4	472.4	472.4	472.4	472.4	472.4
2.5°	470.4	471.2	472.0	472.4	472.2	472.0	471.9	471.7
5°	467.3	468.1	468.9	469.2	469.0	468.8	468.6	468.4
7.5°	462.0	462.8	463.6	463.9	463.7	463.4	463.2	463.0
10°	457.3	458.1	458.9	459.1	458.8	458.5	458.2	457.9
12.5°	451.7	452.2	452.8	453.0	452.8	452.5	452.3	452.1
15°	441.9	442.3	442.7	442.7	442.2	441.7	441.2	440.7
17.5°	430.3	430.8	431.2	431.2	430.7	430.3	429.8	429.3
20°	421.3	421.6	421.9	421.8	421.4	421.0	420.6	420.2
22.5°	411.7	411.8	411.8	411.7	411.5	411.2	411.0	410.8
25°	396.1	396.3	396.5	396.5	396.3	396.1	395.9	395.7
27.5°	380.7	380.4	380.1	379.7	379.2	378.7	378.3	377.8
30°	368.7	368.4	368.1	367.8	367.4	367.0	366.6	366.1
32.5°	357.0	356.4	355.9	355.4	355.0	354.6	354.2	353.8
35°	338.1	337.5	336.9	336.4	335.9	335.4	334.9	334.3
37.5°	319.2	318.5	317.7	317.1	316.6	316.1	315.7	315.2
40°	306.2	305.3	304.4	303.7	303.3	302.9	302.5	302.1
42.5°	293.3	292.3	291.3	290.5	290.0	289.4	288.9	288.3
45°	273.5	272.4	271.3	270.5	270.1	269.7	269.3	268.9
47.5°	253.0	251.8	250.6	249.7	249.2	248.6	248.0	247.4
50°	239.8	238.3	236.9	236.0	235.5	235.0	234.5	234.0
52.5°	226.1	224.9	223.7	222.8	222.1	221.5	220.8	220.1
55°	205.6	204.4	203.2	202.4	201.9	201.3	200.8	200.3
57.5°	184.4	183.2	182.0	181.2	180.9	180.5	180.1	179.7
60°	170.4	169.3	168.2	167.5	167.2	166.9	166.6	166.3
62.5°	157.1	156.1	155.1	154.4	154.0	153.6	153.2	152.8
65°	136.7	135.8	134.9	134.2	133.7	133.2	132.7	132.2
67.5°	116.6	115.9	115.2	114.6	114.2	113.8	113.4	113.0
70°	103.5	102.8	102.1	101.6	101.2	100.7	100.3	99.9
72.5°	91.2	90.5	89.8	89.2	88.9	88.6	88.3	87.9
75°	71.9	71.3	70.7	70.5	70.7	70.9	71.1	71.3
77.5°	54.7	54.4	54.1	53.8	53.5	53.3	53.0	52.7
80°	43.5	43.2	42.9	42.6	42.4	42.2	42.0	41.8
82.5°	32.4	32.0	31.6	31.4	31.4	31.3	31.3	31.3
85°	17.1	16.8	16.5	16.3	16.2	16.1	16.0	15.9
87.5°	10.0	10.1	10.1	10.1	10.2	10.2	10.2	10.2
90°	27.2	28.5	29.9	30.9	31.4	31.9	32.5	33.0
92.5°	29.8	30.5	31.2	31.7	32.0	32.4	32.7	33.0
95°	50.4	51.8	53.1	53.7	53.4	53.1	52.9	52.6
97.5°	66.0	67.1	68.2	68.9	69.2	69.6	69.9	70.2
100°	74.1	76.2	78.4	79.8	80.3	80.9	81.4	82.0
102.5°	77.3	80.2	83.0	84.8	85.5	86.3	87.1	87.8
105°	80.6	83.6	86.6	88.6	89.7	90.8	91.9	93.0
107.5°	98.4	95.3	92.3	91.3	92.4	93.5	94.6	95.7
110°	159.7	132.5	105.3	92.3	93.4	94.5	95.6	96.6





TEST NUMBER: P331487

CATALOG NUMBER: S122DIW-S290D1240U835-4F0-1E-UDD-F

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	341.6	242.5	143.3	94.1	95.0	95.9	96.7	97.6
115°	503.0	377.2	251.3	178.6	159.0	139.5	119.9	100.3
117.5°	775.1	744.6	714.2	666.8	602.5	538.2	473.9	409.5
120°	903.2	906.4	909.7	893.0	856.3	819.6	782.9	746.2
122.5°	958.3	960.3	962.2	959.6	952.5	945.4	938.3	931.1
125°	1037.5	1039.4	1041.3	1042.6	1043.4	1044.3	1045.1	1045.9
127.5°	1110.6	1113.4	1116.2	1117.7	1117.8	1118.0	1118.1	1118.3
130°	1157.1	1160.1	1163.0	1164.4	1164.1	1163.9	1163.6	1163.3
132.5°	1202.2	1204.7	1207.3	1208.4	1208.2	1207.9	1207.6	1207.4
135°	1266.6	1269.3	1272.1	1273.1	1272.6	1272.1	1271.5	1271.0
137.5°	1326.4	1329.1	1331.8	1332.6	1331.7	1330.8	1329.9	1328.9
140°	1365.2	1367.6	1370.1	1370.6	1369.2	1367.9	1366.5	1365.2
142.5°	1400.9	1403.2	1405.4	1405.8	1404.5	1403.1	1401.7	1400.4
145°	1450.9	1452.8	1454.7	1455.0	1453.6	1452.3	1450.9	1449.6
147.5°	1494.5	1495.9	1497.3	1497.4	1496.3	1495.1	1494.0	1492.9
150°	1521.3	1523.0	1524.6	1524.7	1523.4	1522.0	1520.6	1519.3
152.5°	1545.8	1547.4	1549.1	1549.0	1547.2	1545.4	1543.6	1541.8
155°	1578.8	1580.5	1582.1	1581.8	1579.6	1577.5	1575.3	1573.1
157.5°	1606.7	1608.5	1610.4	1610.2	1608.1	1606.0	1603.9	1601.7
160°	1622.9	1624.5	1626.1	1626.0	1624.1	1622.2	1620.3	1618.4
162.5°	1638.0	1639.8	1641.7	1641.4	1639.1	1636.7	1634.4	1632.1
165°	1656.4	1658.3	1660.2	1660.2	1658.3	1656.4	1654.5	1652.6
167.5°	1671.8	1673.7	1675.6	1675.4	1672.9	1670.5	1668.0	1665.6
170°	1679.7	1681.6	1683.5	1683.2	1680.8	1678.3	1675.9	1673.4
172.5°	1685.5	1687.4	1689.3	1689.1	1686.6	1684.2	1681.7	1679.3
175°	1691.9	1693.8	1695.7	1695.3	1692.6	1689.9	1687.1	1684.4
177.5°	1692.6	1694.1	1695.7	1695.4	1693.5	1691.5	1689.6	1687.6
180°	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5	1690.5

(END OF REPORT)