

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: P331521-940

Luminaire Tested: **S122DIW-S485D1440U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331521-940  
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-S485D1440U940-4F0-1E-UDD-D  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 485 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: 6893.7 lumens  
Efficiency: N/A  
Efficacy: 113.8 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.32 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect

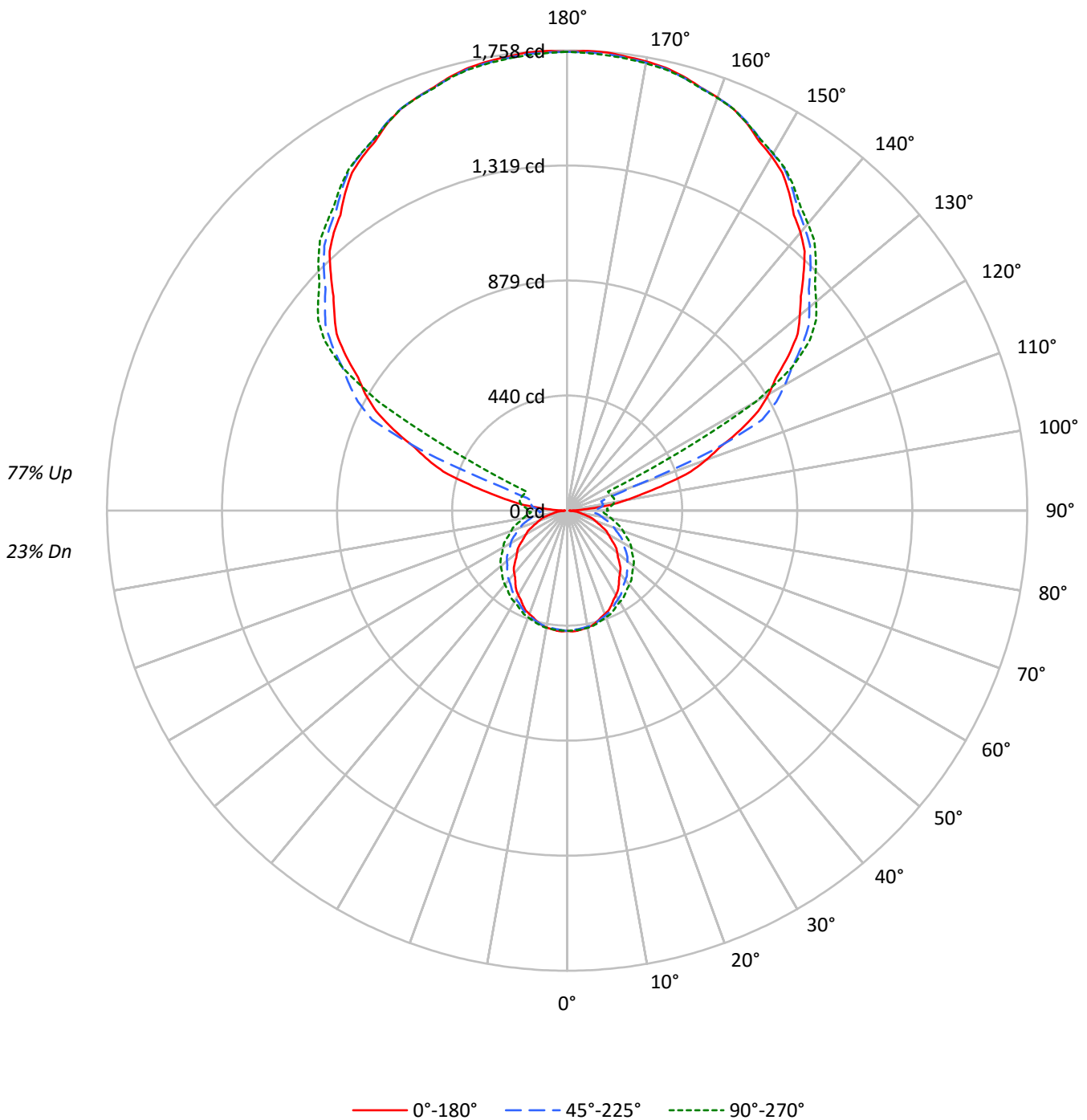
Input Watts (W): 60.6  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P331521-940

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### Luminous Intensity Polar Plot





TEST NUMBER: P331521-940

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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	101	101	101	101	89	89	89	89	68	68	68	49	49	49	31	31	31	23				
1	91	87	83	79	80	77	73	70	58	56	54	42	40	39	26	25	25	18				
2	83	75	69	64	73	67	62	57	51	47	44	36	34	32	23	21	20	14				
3	75	66	58	53	66	58	52	47	45	40	37	32	29	27	20	18	17	12				
4	68	58	50	44	60	51	45	40	39	35	31	28	25	23	18	16	14	10				
5	63	51	43	37	55	46	39	34	35	30	26	25	22	19	16	14	12	8				
6	57	46	38	32	51	41	34	29	31	26	23	22	19	17	14	12	11	7				
7	53	41	33	28	47	37	30	25	28	23	20	20	17	15	13	11	9	6				
8	49	37	30	24	43	33	27	22	26	21	17	18	15	13	12	10	8	6				
9	45	34	26	21	40	30	24	19	23	19	15	17	14	11	11	9	8	5				
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	10	8	7	5				

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

	0°	45°	90°
0°	7419	7419	7419
5°	7455	7143	7115
10°	7408	6931	6854
15°	7306	6708	6577
20°	7177	6468	6312
25°	7050	6237	6072
30°	6870	5999	5829
35°	6689	5771	5659
40°	6498	5576	5488
45°	6317	5402	5343
50°	6123	5242	5199
55°	5916	5073	5052
60°	5666	4897	4897
65°	5405	4692	4714
70°	5117	4470	4516
75°	4741	4251	4334
80°	4149	4028	4148
85°	3591	3837	4006



TEST NUMBER: P331521-940

CATALOG NUMBER: S122DIW-S485D1440U940-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	43.5	0.6
10°-20°	124.9	1.8
20°-30°	189.2	2.7
30°-40°	230.5	3.3
40°-50°	247.9	3.6
50°-60°	240.8	3.5
60°-70°	210.2	3.0
70°-80°	161.8	2.3
80°-90°	112.9	1.6
90°-100°	133.3	1.9
100°-110°	269.0	3.9
110°-120°	609.2	8.8
120°-130°	966.2	14.0
130°-140°	1014.5	14.7
140°-150°	936.6	13.6
150°-160°	751.8	10.9
160°-170°	484.5	7.0
170°-180°	166.8	2.4
0°-30°	357.6	5.2
0°-40°	588.1	8.5
0°-60°	1076.8	15.6
0°-90°	1561.8	22.7
90°-120°	1011.5	14.7
90°-150°	3928.8	57.0
90°-180°	5332.0	77.3
0°-180°	6893.7	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	460	460	460	460	460	
5°	461	459	455	459	458	44
15°	440	441	441	446	446	124
25°	400	404	410	418	420	184
35°	344	356	368	382	388	215
45°	282	301	324	344	351	218
55°	216	241	275	298	308	193
65°	148	181	220	246	256	147
75°	82	119	162	189	199	87
85°	24	65	108	135	145	26
90°	8	60	113	145	157	8
95°	88	81	126	156	164	105
105°	389	426	135	170	184	416
115°	732	763	822	282	171	720
125°	1032	1050	1094	1120	1131	920
135°	1276	1297	1315	1340	1344	986
145°	1480	1480	1500	1512	1510	926
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: P331521-940

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	462.2	461.8	461.5	461.1	460.7	460.1	459.3	458.5	457.7	456.8	457.4
5°	460.8	460.4	459.9	459.5	459.1	458.4	457.5	456.6	455.8	454.9	455.8
7.5°	456.7	456.4	456.1	455.8	455.6	455.0	454.3	453.7	453.0	452.3	453.3
10°	453.5	453.3	452.9	452.6	452.4	452.0	451.6	451.1	450.7	450.2	451.4
12.5°	448.2	448.3	448.4	448.4	448.4	448.3	448.0	447.6	447.3	447.0	448.2
15°	439.5	439.8	440.1	440.4	440.7	440.9	440.9	440.9	440.9	440.9	442.2
17.5°	428.4	429.0	429.6	430.3	430.9	431.4	431.9	432.3	432.8	433.3	434.6
20°	420.9	421.6	422.4	423.1	423.8	424.5	425.1	425.7	426.3	426.9	428.5
22.5°	412.9	413.8	414.6	415.4	416.3	417.1	418.0	418.8	419.6	420.5	422.1
25°	399.6	400.6	401.6	402.7	403.7	404.9	406.3	407.6	408.9	410.2	412.0
27.5°	383.6	385.3	387.0	388.7	390.3	392.0	393.5	395.1	396.6	398.2	400.5
30°	372.9	374.9	376.7	378.7	380.7	382.5	384.5	386.4	388.3	390.2	392.6
32.5°	361.2	363.4	365.5	367.7	369.9	372.1	374.3	376.7	378.9	381.2	383.9
35°	344.3	346.8	349.4	351.9	354.4	357.0	359.8	362.7	365.4	368.3	371.5
37.5°	325.9	328.9	331.7	334.7	337.5	340.8	344.5	348.0	351.7	355.3	359.0
40°	313.7	316.9	320.2	323.4	326.7	330.3	334.3	338.3	342.3	346.3	350.2
42.5°	301.9	305.2	308.4	311.7	315.0	318.9	323.5	328.1	332.7	337.2	341.4
45°	282.4	286.3	290.3	294.4	298.4	302.9	308.1	313.3	318.5	323.7	328.2
47.5°	263.1	267.4	271.8	276.1	280.4	285.7	291.8	297.8	303.9	310.0	314.8
50°	249.8	254.3	259.0	263.5	268.0	273.7	280.4	287.0	293.7	300.3	305.4
52.5°	236.9	241.7	246.6	251.5	256.3	262.2	269.2	276.2	283.2	290.3	295.3
55°	216.4	221.8	227.1	232.4	237.7	244.2	252.0	259.7	267.3	275.0	280.4
57.5°	196.2	202.2	208.2	214.2	220.3	227.1	235.0	242.8	250.7	258.5	264.3
60°	181.8	188.2	194.6	200.9	207.2	214.6	223.1	231.5	240.0	248.4	254.0
62.5°	169.0	175.6	182.3	188.9	195.5	203.0	211.3	219.8	228.3	236.7	242.6
65°	147.8	155.1	162.4	169.6	176.8	184.9	193.6	202.3	211.1	219.8	225.9
67.5°	128.4	136.0	143.6	151.1	158.7	166.9	175.9	184.9	193.8	202.7	208.8
70°	114.6	122.3	129.9	137.6	145.3	153.7	162.9	172.1	181.3	190.5	196.8
72.5°	101.7	109.7	117.6	125.6	133.5	142.1	151.4	160.7	170.0	179.2	185.6
75°	81.9	90.2	98.4	106.7	115.0	123.9	133.4	142.9	152.4	161.8	168.2
77.5°	62.8	71.4	80.1	88.7	97.5	106.6	116.2	125.8	135.5	145.1	151.4
80°	49.9	58.9	68.0	77.0	86.1	95.4	105.0	114.6	124.2	133.8	140.1
82.5°	39.3	48.2	57.1	66.0	74.9	84.3	94.0	103.7	113.4	123.2	129.4
85°	24.0	33.2	42.4	51.5	60.6	70.0	79.5	88.9	98.4	107.9	114.1
87.5°	13.3	22.7	32.2	41.6	51.1	60.7	70.7	80.6	90.5	100.4	106.7
90°	7.9	19.6	31.3	43.0	54.7	66.3	78.1	89.8	101.6	113.2	120.6
92.5°	31.7	39.4	47.2	54.8	62.6	71.6	81.8	92.0	102.3	112.5	119.0
95°	87.7	85.4	83.1	80.7	78.4	82.7	93.5	104.3	115.2	126.1	133.0
97.5°	168.3	148.2	128.2	108.2	88.2	84.7	97.8	110.8	123.9	137.1	143.7
100°	229.2	196.0	162.8	129.7	96.6	86.6	99.7	112.7	125.8	138.9	146.6
102.5°	295.6	292.4	289.2	286.1	282.9	265.3	233.3	201.3	169.2	137.1	145.4
105°	388.9	401.6	414.4	427.1	439.9	411.6	342.3	273.1	203.8	134.6	142.9
107.5°	496.1	506.3	516.6	526.8	537.1	499.7	414.8	329.9	245.0	160.2	161.9
110°	564.5	573.4	582.3	591.1	600.0	567.3	493.1	418.9	344.7	270.5	247.1



TEST NUMBER: P331521-940

CATALOG NUMBER: S122DIW-S485D1440U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	629.5	637.1	644.9	652.6	660.3	657.5	644.4	631.2	617.9	604.7	506.6
115°	731.9	738.3	744.8	751.2	757.6	767.7	781.3	795.0	808.8	822.4	696.4
117.5°	822.8	829.2	835.6	842.0	848.5	857.2	868.2	879.2	890.2	901.2	874.1
120°	889.7	894.6	899.4	904.2	909.0	916.9	927.9	938.9	949.9	960.9	968.4
122.5°	946.6	951.3	955.9	960.6	965.4	973.2	984.3	995.4	1006.5	1017.5	1023.6
125°	1032.4	1036.1	1039.7	1043.4	1047.0	1053.9	1064.0	1074.2	1084.2	1094.3	1100.3
127.5°	1110.8	1114.7	1118.6	1122.5	1126.4	1132.3	1140.1	1147.9	1155.7	1163.6	1170.1
130°	1160.5	1164.8	1169.2	1173.6	1177.9	1183.2	1189.5	1195.6	1201.8	1208.1	1214.7
132.5°	1211.2	1214.9	1218.6	1222.3	1225.9	1230.6	1236.1	1241.5	1247.1	1252.5	1258.6
135°	1276.5	1281.0	1285.5	1290.0	1294.5	1298.8	1302.8	1306.8	1310.8	1314.8	1320.8
137.5°	1343.2	1346.3	1349.4	1352.5	1355.8	1359.1	1362.5	1366.1	1369.6	1373.1	1378.7
140°	1386.9	1388.9	1391.1	1393.1	1395.3	1398.0	1401.4	1404.8	1408.2	1411.6	1416.5
142.5°	1423.3	1425.2	1427.1	1429.0	1430.9	1433.6	1437.3	1440.8	1444.5	1448.0	1452.2
145°	1480.1	1479.7	1479.4	1479.2	1478.9	1481.1	1485.9	1490.8	1495.5	1500.3	1503.2
147.5°	1530.0	1528.9	1527.9	1526.8	1525.7	1527.5	1532.2	1537.0	1541.8	1546.5	1548.1
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



TEST NUMBER: P331521-940

CATALOG NUMBER: S122DIW-S485D1440U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	459.5	459.5	459.5	459.5	459.5	459.5	459.5	459.5
2.5°	458.1	458.6	459.2	459.4	459.1	459.0	458.7	458.4
5°	456.6	457.5	458.4	458.8	458.6	458.5	458.3	458.2
7.5°	454.4	455.5	456.6	457.0	456.9	456.7	456.6	456.5
10°	452.5	453.7	455.0	455.5	455.3	455.1	455.0	454.9
12.5°	449.3	450.6	451.7	452.3	452.1	451.9	451.8	451.7
15°	443.5	444.9	446.2	446.7	446.7	446.5	446.3	446.2
17.5°	436.0	437.5	438.8	439.5	439.5	439.5	439.5	439.5
20°	430.2	431.8	433.4	434.2	434.2	434.2	434.2	434.2
22.5°	423.7	425.3	427.0	427.9	428.2	428.4	428.6	428.9
25°	413.8	415.5	417.3	418.5	418.9	419.4	419.8	420.3
27.5°	402.8	405.0	407.2	408.5	408.8	409.2	409.5	409.8
30°	395.0	397.3	399.8	401.1	401.5	402.0	402.4	402.9
32.5°	386.6	389.3	392.1	393.9	394.7	395.5	396.3	397.1
35°	374.8	378.1	381.3	383.4	384.5	385.5	386.6	387.6
37.5°	362.6	366.2	369.8	372.1	373.3	374.3	375.4	376.6
40°	354.0	357.8	361.7	364.3	365.6	366.9	368.3	369.6
42.5°	345.6	349.8	354.0	356.9	358.1	359.4	360.8	362.1
45°	332.9	337.4	342.0	345.0	346.5	348.0	349.5	351.0
47.5°	319.5	324.3	329.1	332.3	333.9	335.6	337.2	338.9
50°	310.4	315.4	320.5	323.8	325.5	327.1	328.7	330.3
52.5°	300.5	305.7	310.9	314.2	316.0	317.8	319.5	321.3
55°	285.7	291.1	296.3	300.0	301.9	303.8	305.8	307.6
57.5°	270.0	275.7	281.5	285.3	287.3	289.3	291.2	293.2
60°	259.7	265.3	270.9	274.7	276.8	278.9	281.0	283.0
62.5°	248.6	254.6	260.6	264.6	266.5	268.5	270.5	272.4
65°	231.9	238.0	244.1	248.1	249.9	251.9	253.8	255.7
67.5°	215.0	221.1	227.2	231.3	233.3	235.3	237.4	239.3
70°	203.2	209.6	215.9	220.0	221.8	223.6	225.3	227.1
72.5°	191.8	198.0	204.3	208.5	210.5	212.7	214.8	217.0
75°	174.6	180.9	187.3	191.5	193.3	195.3	197.2	199.1
77.5°	157.7	164.1	170.4	174.6	176.6	178.7	180.8	182.9
80°	146.3	152.5	158.7	162.8	165.0	167.0	169.1	171.1
82.5°	135.6	141.9	148.0	152.1	154.1	156.0	158.0	160.0
85°	120.3	126.5	132.8	136.9	138.9	141.1	143.1	145.2
87.5°	113.1	119.4	125.7	129.9	131.9	133.9	135.9	137.9
90°	128.0	135.3	142.6	147.4	149.7	152.1	154.4	156.8
92.5°	125.6	132.2	138.7	143.0	145.1	147.2	149.4	151.4
95°	140.1	147.1	154.2	158.5	160.0	161.4	162.9	164.4
97.5°	150.3	156.9	163.5	167.8	169.9	172.0	174.1	176.1
100°	154.4	162.1	169.8	174.8	176.9	179.1	181.4	183.5
102.5°	153.7	162.0	170.3	175.7	178.1	180.5	183.0	185.4
105°	151.2	159.4	167.7	173.3	176.0	178.8	181.6	184.3
107.5°	163.7	165.6	167.4	169.7	172.5	175.2	177.9	180.7
110°	223.6	200.2	176.7	166.4	169.2	171.9	174.7	177.5





TEST NUMBER: P331521-940

CATALOG NUMBER: S122DIW-S485D1440U940-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	408.5	310.5	212.4	164.6	167.1	169.7	172.2	174.7
115°	570.3	444.3	318.3	245.9	227.2	208.6	189.9	171.3
117.5°	846.9	819.7	792.5	746.3	681.1	615.9	550.8	485.6
120°	976.0	983.5	991.0	976.6	940.1	903.7	867.3	830.9
122.5°	1029.7	1035.7	1041.8	1041.8	1035.8	1029.8	1023.9	1017.9
125°	1106.3	1112.2	1118.2	1122.2	1124.4	1126.6	1128.8	1131.0
127.5°	1176.6	1183.2	1189.7	1193.7	1195.2	1196.7	1198.2	1199.6
130°	1221.4	1228.0	1234.7	1238.4	1239.3	1240.3	1241.2	1242.1
132.5°	1264.7	1270.8	1276.8	1280.3	1281.3	1282.2	1283.1	1284.0
135°	1326.7	1332.7	1338.5	1341.8	1342.5	1343.1	1343.7	1344.3
137.5°	1384.1	1389.6	1395.1	1397.8	1397.9	1397.9	1398.0	1398.0
140°	1421.4	1426.3	1431.2	1433.4	1432.9	1432.4	1431.8	1431.3
142.5°	1456.5	1460.7	1464.9	1466.7	1466.1	1465.4	1464.7	1464.1
145°	1506.0	1508.9	1511.7	1512.9	1512.2	1511.5	1510.8	1510.2
147.5°	1549.6	1551.2	1552.8	1553.2	1552.4	1551.5	1550.7	1549.9
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)