

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: P331494

Luminaire Tested: **S122DIW-S290D1440U835-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331494
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-8,
Test Lab: INNOVATION CENTER
Issue Date: 3/3/2020
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)
Product Line: NEO-RAY
Catalog Number: S122DIW-S290D1440U835-4F0-1E-UDD-F1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
UPLIGHT 1440 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 6204.3 lumens
Efficiency: N/A
Efficacy: 116.2 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

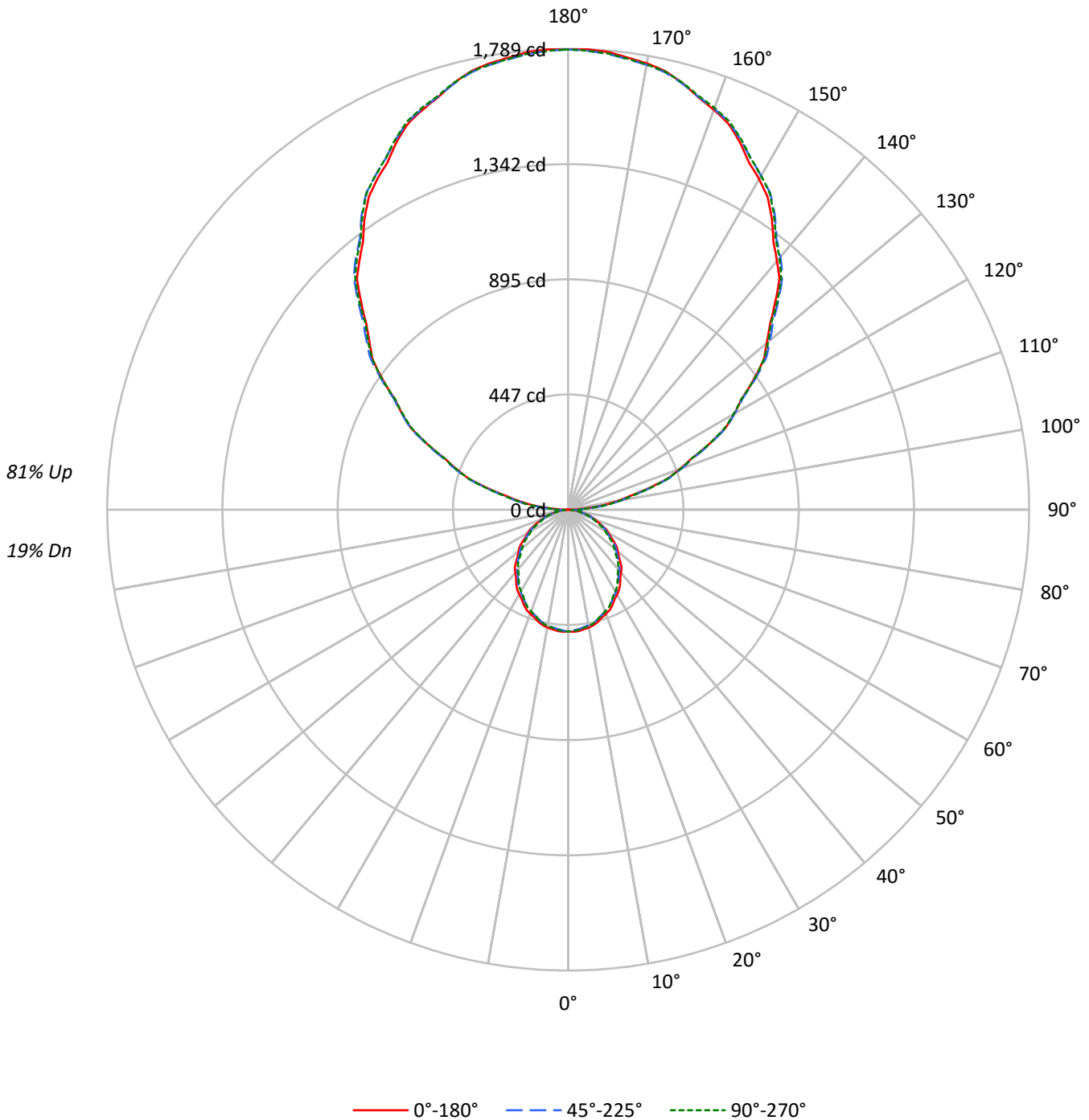
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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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									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	50	30	10	0														
RCR																																						
0	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19																				
1	91	87	83	80	80	77	74	71	58	56	54	41	39	38	25	24	24	16																				
2	83	76	70	65	73	67	62	58	51	47	45	36	34	32	22	21	20	14																				
3	75	66	60	54	66	59	53	48	45	41	38	31	29	27	19	18	17	12																				
4	69	59	51	45	61	52	46	41	40	35	32	28	25	23	17	16	14	10																				
5	63	52	44	39	55	46	40	35	35	31	27	25	22	20	15	14	13	9																				
6	58	46	39	33	51	41	35	30	32	27	24	22	20	17	14	12	11	8																				
7	53	42	34	29	47	37	31	26	28	24	21	20	17	15	13	11	10	7																				
8	49	38	30	25	43	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



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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	3.4
40°-50°	213.2	3.4
50°-60°	185.9	3.0
60°-70°	137.5	2.2
70°-80°	77.9	1.3
80°-90°	28.1	0.5
90°-100°	113.2	1.8
100°-110°	351.6	5.7
110°-120°	601.0	9.7
120°-130°	790.3	12.7
130°-140°	887.0	14.3
140°-150°	869.7	14.0
150°-160°	729.5	11.8
160°-170°	483.8	7.8
170°-180°	169.1	2.7
0°-30°	353.2	5.7
0°-40°	566.6	9.1
0°-60°	965.7	15.6
0°-90°	1209.1	19.5
90°-120°	1065.7	17.2
90°-150°	3612.8	58.2
90°-180°	4995.0	80.5
0°-180°	6204.3	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°	2	20	53	50	51	5
95°	78	93	96	96	94	90
105°	324	329	332	334	335	342
115°	603	611	609	607	603	596
125°	877	890	886	882	880	784
135°	1135	1151	1155	1153	1149	877
145°	1378	1388	1398	1399	1393	860
155°	1575	1580	1584	1591	1588	725
165°	1714	1713	1713	1722	1716	483
175°	1783	1779	1776	1785	1777	169
180°	1786	1786	1786	1786	1786	



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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	7.5	8.1	8.8	9.4	10.4	11.7	13.0	14.3	15.6	15.3
90°	1.5	5.5	9.5	13.6	17.6	23.3	30.7	38.0	45.4	52.8	52.1
92.5°	26.8	29.8	32.7	35.7	38.6	41.0	42.7	44.5	46.2	47.9	48.1
95°	78.4	81.7	85.1	88.4	91.8	93.8	94.5	95.1	95.8	96.5	96.5
97.5°	143.2	146.2	149.1	152.1	155.0	157.1	158.4	159.7	160.9	162.2	162.2
100°	191.5	194.1	196.8	199.5	202.2	204.0	205.0	206.0	207.0	208.0	208.0
102.5°	242.1	244.3	246.4	248.5	250.7	252.4	253.7	254.9	256.2	257.5	257.8
105°	324.1	325.1	326.1	327.1	328.1	329.0	329.7	330.3	331.0	331.7	332.3
107.5°	406.7	408.2	409.7	411.2	412.6	413.4	413.4	413.4	413.4	413.4	413.6
110°	459.8	461.8	463.8	465.8	467.8	468.9	468.9	468.9	468.9	468.9	468.9



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	517.7	519.7	521.7	523.7	525.7	526.6	526.3	526.1	525.8	525.5	524.7
115°	603.0	605.0	607.0	609.1	611.1	611.7	611.1	610.4	609.7	609.1	608.7
117.5°	688.1	690.7	693.4	696.1	698.8	699.2	697.3	695.4	693.5	691.7	690.9
120°	744.7	747.4	750.1	752.8	755.5	755.5	752.8	750.1	747.4	744.7	744.7
122.5°	796.6	799.8	803.0	806.2	809.5	810.1	808.3	806.4	804.5	802.6	801.8
125°	877.4	880.4	883.4	886.4	889.5	890.5	889.5	888.5	887.5	886.4	885.4
127.5°	956.1	959.9	963.7	967.6	971.4	972.7	971.5	970.3	969.1	967.9	966.6
130°	1005.5	1009.9	1014.3	1018.6	1023.0	1024.8	1024.1	1023.5	1022.8	1022.1	1021.5
132.5°	1061.0	1064.6	1068.1	1071.7	1075.2	1077.1	1077.2	1077.3	1077.5	1077.6	1076.1
135°	1135.2	1138.9	1142.6	1146.2	1149.9	1152.1	1152.8	1153.5	1154.1	1154.8	1154.5
137.5°	1213.3	1216.3	1219.3	1222.3	1225.3	1227.3	1228.2	1229.0	1229.9	1230.8	1230.5
140°	1260.3	1263.3	1266.4	1269.4	1272.4	1274.7	1276.4	1278.1	1279.8	1281.4	1281.4
142.5°	1308.6	1311.6	1314.6	1317.6	1320.6	1322.7	1323.8	1325.0	1326.1	1327.3	1327.5
145°	1377.9	1380.3	1382.6	1384.9	1387.3	1389.5	1391.5	1393.5	1395.5	1397.5	1397.8
147.5°	1439.7	1442.5	1445.3	1448.2	1451.0	1453.1	1454.4	1455.7	1457.1	1458.4	1459.2
150°	1481.9	1483.9	1486.0	1488.0	1490.0	1491.6	1493.0	1494.3	1495.7	1497.0	1498.0
152.5°	1519.3	1521.3	1523.3	1525.3	1527.4	1529.2	1530.8	1532.4	1534.0	1535.6	1536.9
155°	1575.4	1576.4	1577.4	1578.4	1579.4	1580.4	1581.4	1582.4	1583.4	1584.4	1586.1
157.5°	1623.3	1624.0	1624.7	1625.4	1626.0	1626.7	1627.3	1627.9	1628.5	1629.1	1631.3
160°	1652.3	1653.0	1653.6	1654.3	1655.0	1655.5	1655.8	1656.1	1656.5	1656.8	1658.8
162.5°	1678.8	1679.0	1679.1	1679.2	1679.4	1679.6	1679.9	1680.3	1680.6	1680.9	1683.2
165°	1714.1	1713.8	1713.4	1713.1	1712.8	1712.6	1712.6	1712.6	1712.6	1712.6	1714.9
167.5°	1743.6	1742.6	1741.6	1740.6	1739.6	1739.1	1739.0	1739.0	1738.9	1738.8	1741.2
170°	1759.3	1758.3	1757.3	1756.3	1755.3	1754.6	1754.3	1754.0	1753.6	1753.3	1755.6
172.5°	1770.2	1769.2	1768.2	1767.2	1766.2	1765.5	1765.2	1764.8	1764.5	1764.1	1766.5
175°	1783.4	1782.4	1781.4	1780.4	1779.4	1778.6	1777.9	1777.2	1776.6	1775.9	1778.3
177.5°	1788.9	1788.1	1787.3	1786.5	1785.7	1785.0	1784.4	1783.9	1783.4	1782.8	1784.4
180°	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5



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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°	14.9	14.5	14.1	13.9	13.9	13.9	13.9	13.9
90°	51.4	50.8	50.1	49.9	50.3	50.6	50.9	51.3
92.5°	48.2	48.3	48.5	48.6	48.6	48.7	48.8	48.8
95°	96.5	96.5	96.5	96.1	95.5	94.8	94.1	93.5
97.5°	162.2	162.2	162.2	162.2	162.1	162.0	162.0	161.9
100°	208.0	208.0	208.0	207.9	207.5	207.2	206.9	206.5
102.5°	258.0	258.3	258.6	258.5	258.2	257.9	257.5	257.2
105°	333.0	333.7	334.3	334.7	334.7	334.7	334.7	334.7
107.5°	413.9	414.2	414.4	413.8	412.3	410.7	409.2	407.6
110°	468.9	468.9	468.9	468.3	467.3	466.3	465.3	464.3



TEST NUMBER: P331494

CATALOG NUMBER: S122DIW-S290D1440U835-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	523.9	523.1	522.3	521.5	520.8	520.1	519.3	518.6
115°	608.4	608.0	607.7	607.0	606.0	605.0	604.0	603.0
117.5°	690.1	689.3	688.5	687.5	686.5	685.5	684.5	683.5
120°	744.7	744.7	744.7	744.2	743.2	742.2	741.2	740.2
122.5°	801.0	800.2	799.4	798.6	797.9	797.2	796.4	795.7
125°	884.4	883.4	882.4	881.8	881.4	881.1	880.8	880.4
127.5°	965.4	964.2	963.0	961.9	960.8	959.7	958.7	957.6
130°	1020.8	1020.1	1019.4	1018.4	1017.1	1015.8	1014.4	1013.1
132.5°	1074.7	1073.2	1071.7	1070.4	1069.4	1068.3	1067.2	1066.1
135°	1154.1	1153.8	1153.5	1152.8	1151.8	1150.8	1149.8	1148.8
137.5°	1230.2	1230.0	1229.7	1228.9	1227.6	1226.2	1224.9	1223.5
140°	1281.4	1281.4	1281.4	1280.8	1279.4	1278.1	1276.7	1275.4
142.5°	1327.8	1328.1	1328.3	1327.8	1326.5	1325.1	1323.8	1322.4
145°	1398.2	1398.5	1398.8	1398.3	1397.0	1395.7	1394.3	1393.0
147.5°	1459.9	1460.6	1461.4	1461.1	1459.8	1458.5	1457.3	1456.0
150°	1499.0	1500.0	1501.0	1501.0	1500.0	1499.0	1498.0	1497.0
152.5°	1538.1	1539.4	1540.7	1540.7	1539.4	1538.1	1536.9	1535.6
155°	1587.8	1589.5	1591.1	1591.5	1590.5	1589.5	1588.5	1587.5
157.5°	1633.6	1635.9	1638.2	1638.5	1636.9	1635.3	1633.7	1632.1
160°	1660.8	1662.8	1664.8	1665.2	1663.8	1662.5	1661.2	1659.8
162.5°	1685.5	1687.8	1690.0	1690.4	1688.8	1687.2	1685.6	1683.9
165°	1717.3	1719.6	1722.0	1722.3	1720.6	1719.0	1717.3	1715.6
167.5°	1743.5	1745.9	1748.2	1748.5	1746.8	1745.0	1743.3	1741.5
170°	1758.0	1760.3	1762.7	1762.8	1760.8	1758.8	1756.8	1754.8
172.5°	1768.8	1771.2	1773.5	1773.7	1771.7	1769.7	1767.7	1765.7
175°	1780.6	1782.9	1785.3	1785.5	1783.4	1781.4	1779.4	1777.4
177.5°	1786.1	1787.7	1789.3	1789.3	1787.7	1786.1	1784.4	1782.8
180°	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5	1786.5

(END OF REPORT)