

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: P331492-830

Luminaire Tested: **S122DIW-S290D1440U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P331492-830
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-S290D1440U830-4F0-1E-UDD-D1
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 290 LUMENS PER FOOT, DROP 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: 5842.1 lumens
Efficiency: N/A
Efficacy: 109.4 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

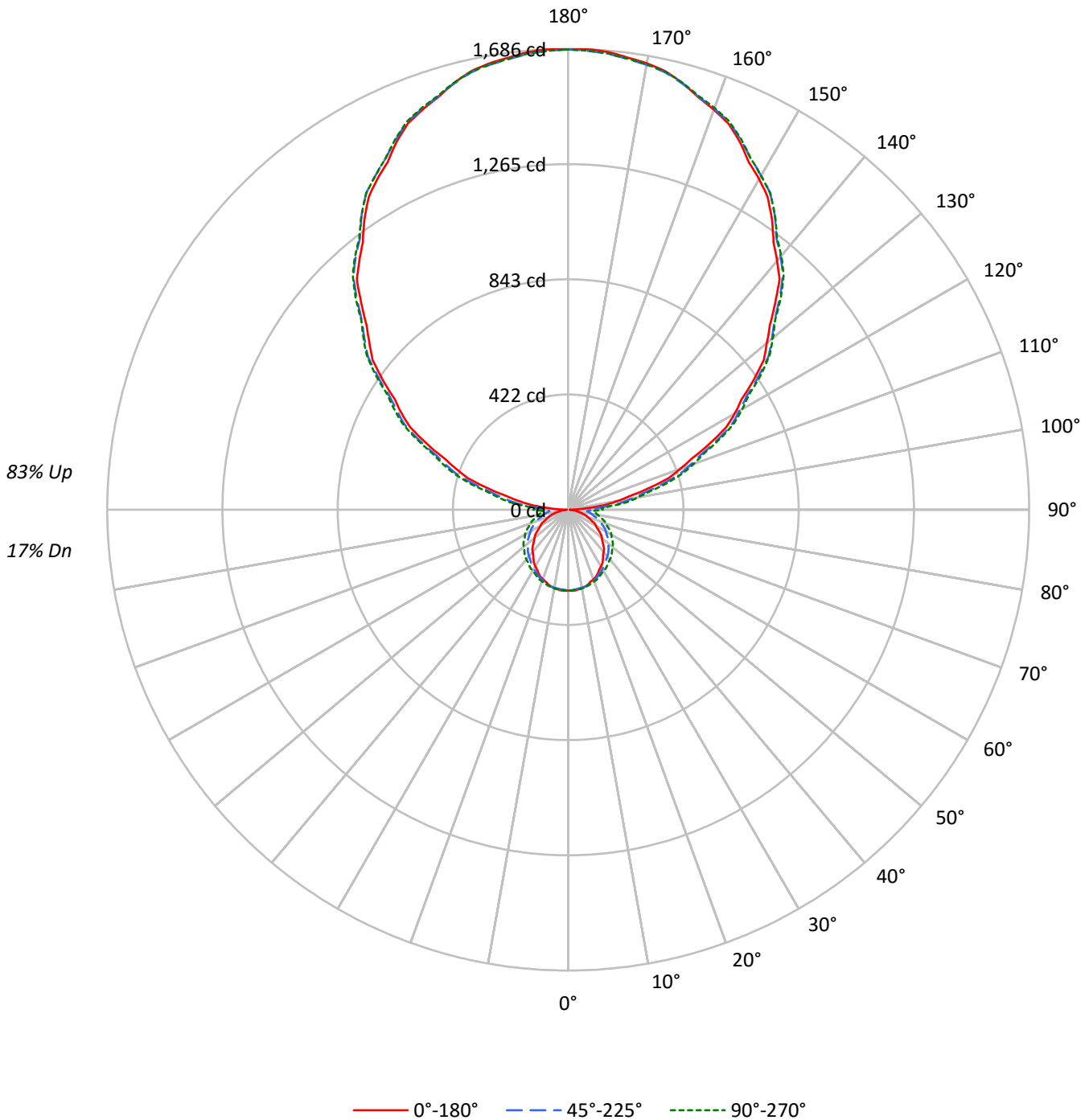
Input Watts (W): 53.4
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



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Luminous Intensity Polar Plot





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COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20					20					20					20					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	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17				
1	90	86	82	78	79	75	72	69	56	54	52	38	37	36	22	21	21	13				
2	82	74	68	63	71	65	60	56	49	45	43	33	31	30	19	18	17	11				
3	74	65	58	52	65	57	51	47	43	39	35	29	27	25	17	15	14	9				
4	68	57	50	44	59	51	44	39	38	33	30	26	23	21	15	13	12	8				
5	62	51	43	37	54	45	38	33	34	29	25	23	20	18	13	12	10	6				
6	57	45	37	32	50	40	33	29	30	25	22	21	18	15	12	10	9	6				
7	52	41	33	28	46	36	29	25	27	22	19	19	16	13	11	9	8	5				
8	48	37	29	24	42	32	26	22	24	20	17	17	14	12	10	8	7	4				
9	45	33	26	21	39	29	23	19	22	18	15	15	13	10	9	7	6	4				
10	42	30	23	19	37	27	21	17	20	16	13	14	11	9	8	7	6	4				

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	0.5
10°-20°	80.3	1.4
20°-30°	121.6	2.1
30°-40°	148.2	2.5
40°-50°	159.4	2.7
50°-60°	154.8	2.6
60°-70°	135.2	2.3
70°-80°	104.1	1.8
80°-90°	76.6	1.3
90°-100°	154.8	2.6
100°-110°	366.5	6.3
110°-120°	589.6	10.1
120°-130°	757.9	13.0
130°-140°	841.5	14.4
140°-150°	820.7	14.0
150°-160°	687.6	11.8
160°-170°	456.0	7.8
170°-180°	159.4	2.7
0°-30°	229.9	3.9
0°-40°	378.1	6.5
0°-60°	692.3	11.9
0°-90°	1008.1	17.3
90°-120°	1110.9	19.0
90°-150°	3531.0	60.4
90°-180°	4834.0	82.7
0°-180°	5842.1	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	49	106	120	127	7
95°	77	111	140	156	159	87
105°	308	325	349	366	372	325
115°	570	583	600	611	612	564
125°	828	840	850	857	860	740
135°	1070	1086	1093	1100	1100	827
145°	1299	1309	1317	1321	1318	811
155°	1485	1489	1493	1500	1496	683
165°	1616	1614	1614	1623	1617	455
175°	1681	1677	1674	1683	1675	160
180°	1684	1684	1684	1684	1684	



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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	15.1	21.5	28.0	34.4	41.4	48.8	56.3	63.8	71.3	75.0
90°	5.7	15.0	24.3	33.6	43.0	54.1	67.1	80.2	93.2	106.2	109.4
92.5°	29.2	37.1	45.1	53.0	60.9	68.6	76.2	83.6	91.1	98.6	102.5
95°	77.3	84.9	92.6	100.2	107.8	114.8	121.1	127.5	133.8	140.2	143.8
97.5°	138.0	144.8	151.5	158.3	165.0	171.7	178.4	185.1	191.8	198.4	202.0
100°	183.4	189.5	195.6	201.6	207.6	213.8	220.1	226.4	232.6	238.9	242.4
102.5°	230.8	236.1	241.3	246.6	251.8	257.6	264.0	270.3	276.7	283.1	286.8
105°	307.6	311.3	315.1	318.8	322.4	327.2	332.7	338.3	343.8	349.4	353.4
107.5°	385.4	389.0	392.7	396.2	399.8	404.0	408.7	413.5	418.2	422.9	426.4
110°	435.1	438.9	442.7	446.5	450.3	454.5	459.2	463.8	468.5	473.2	476.2



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CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	489.7	493.1	496.6	500.1	503.6	507.5	511.6	515.9	520.0	524.2	526.5
115°	570.0	573.1	576.0	578.9	581.8	585.1	588.8	592.5	596.1	599.7	602.3
117.5°	649.8	653.0	656.2	659.4	662.6	665.3	667.5	669.8	671.9	674.1	676.2
120°	703.2	706.2	709.1	711.9	714.8	717.0	718.2	719.5	720.8	722.1	724.7
122.5°	752.1	755.3	758.5	761.7	764.9	767.3	769.1	771.0	772.8	774.6	776.4
125°	827.8	830.7	833.5	836.4	839.2	841.7	843.8	845.8	848.0	850.1	851.7
127.5°	902.0	905.5	909.0	912.6	916.1	918.4	919.7	921.1	922.4	923.7	924.9
130°	948.7	952.6	956.7	960.6	964.7	967.3	968.7	970.1	971.5	972.8	974.5
132.5°	1000.9	1004.2	1007.4	1010.7	1013.9	1016.3	1018.0	1019.7	1021.3	1023.0	1023.9
135°	1070.4	1073.8	1077.3	1080.8	1084.3	1086.8	1088.4	1090.0	1091.6	1093.2	1094.9
137.5°	1144.0	1146.8	1149.6	1152.4	1155.3	1157.3	1158.6	1159.8	1161.0	1162.2	1163.8
140°	1188.4	1191.1	1193.8	1196.6	1199.3	1201.6	1203.3	1205.1	1206.9	1208.6	1210.1
142.5°	1233.8	1236.5	1239.3	1242.1	1244.8	1246.7	1247.8	1249.0	1250.1	1251.1	1252.6
145°	1298.7	1301.0	1303.2	1305.3	1307.6	1309.7	1311.5	1313.4	1315.3	1317.2	1318.1
147.5°	1357.0	1359.6	1362.3	1365.0	1367.6	1369.6	1370.8	1372.1	1373.4	1374.6	1375.4
150°	1396.8	1398.6	1400.6	1402.5	1404.4	1405.9	1407.2	1408.4	1409.8	1411.0	1411.9
152.5°	1432.0	1433.9	1435.8	1437.7	1439.6	1441.3	1442.8	1444.4	1445.9	1447.4	1448.6
155°	1484.9	1485.8	1486.8	1487.7	1488.7	1489.6	1490.5	1491.5	1492.4	1493.4	1495.0
157.5°	1530.0	1530.7	1531.3	1532.0	1532.6	1533.2	1533.8	1534.4	1534.9	1535.5	1537.6
160°	1557.4	1558.0	1558.6	1559.2	1559.9	1560.4	1560.7	1560.9	1561.3	1561.6	1563.5
162.5°	1582.3	1582.5	1582.6	1582.7	1582.9	1583.1	1583.4	1583.8	1584.0	1584.3	1586.5
165°	1615.6	1615.3	1615.0	1614.7	1614.4	1614.2	1614.2	1614.2	1614.2	1614.2	1616.4
167.5°	1643.4	1642.5	1641.5	1640.6	1639.6	1639.2	1639.1	1639.1	1639.0	1638.9	1641.2
170°	1658.2	1657.3	1656.3	1655.4	1654.4	1653.8	1653.5	1653.2	1652.8	1652.6	1654.7
172.5°	1668.5	1667.5	1666.6	1665.7	1664.7	1664.1	1663.8	1663.4	1663.1	1662.7	1665.0
175°	1680.9	1680.0	1679.0	1678.1	1677.2	1676.4	1675.7	1675.1	1674.5	1673.9	1676.1
177.5°	1686.1	1685.4	1684.6	1683.9	1683.1	1682.4	1681.9	1681.4	1680.9	1680.4	1681.9
180°	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9



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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°	78.8	82.6	86.2	88.8	90.1	91.3	92.7	94.0
90°	112.6	115.7	118.9	121.3	122.7	124.2	125.6	127.1
92.5°	106.3	110.2	114.0	116.6	117.8	118.9	120.2	121.4
95°	147.4	151.0	154.7	156.7	157.2	157.7	158.3	158.7
97.5°	205.5	209.1	212.5	214.8	215.8	217.0	218.0	219.0
100°	245.9	249.5	253.0	255.1	255.8	256.6	257.3	258.1
102.5°	290.5	294.2	297.9	300.1	300.9	301.6	302.3	303.0
105°	357.3	361.3	365.2	367.8	368.8	369.9	370.9	371.9
107.5°	429.8	433.3	436.8	438.3	437.8	437.4	437.1	436.6
110°	479.3	482.3	485.3	486.9	487.0	487.1	487.2	487.3



TEST NUMBER: P331492-830

CATALOG NUMBER: S122DIW-S290D1440U830-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	528.8	531.0	533.4	534.7	535.0	535.4	535.7	536.1
115°	604.8	607.4	609.9	611.2	611.3	611.4	611.5	611.6
117.5°	678.3	680.3	682.3	683.3	683.4	683.4	683.4	683.4
120°	727.4	730.1	732.7	734.1	734.2	734.3	734.4	734.5
122.5°	778.3	780.0	781.9	782.9	783.2	783.3	783.5	783.7
125°	853.3	855.0	856.6	857.6	858.2	858.8	859.2	859.8
127.5°	926.1	927.4	928.6	929.2	929.0	928.8	928.6	928.4
130°	976.1	977.8	979.4	980.0	979.5	979.0	978.5	978.0
132.5°	1024.7	1025.5	1026.3	1026.6	1026.3	1026.1	1025.9	1025.6
135°	1096.6	1098.2	1099.9	1100.6	1100.4	1100.2	1100.0	1099.9
137.5°	1165.3	1166.8	1168.3	1168.8	1168.1	1167.5	1166.9	1166.2
140°	1211.7	1213.2	1214.7	1215.1	1214.5	1213.8	1213.1	1212.4
142.5°	1254.1	1255.6	1257.1	1257.4	1256.6	1255.8	1255.1	1254.3
145°	1319.0	1319.8	1320.8	1320.8	1320.0	1319.3	1318.4	1317.7
147.5°	1376.1	1377.0	1377.7	1377.6	1376.6	1375.6	1374.7	1373.8
150°	1412.9	1413.8	1414.8	1414.8	1413.8	1412.9	1411.9	1411.0
152.5°	1449.7	1451.0	1452.2	1452.2	1451.0	1449.7	1448.6	1447.4
155°	1496.6	1498.2	1499.7	1500.1	1499.1	1498.2	1497.2	1496.3
157.5°	1539.7	1541.9	1544.1	1544.4	1542.8	1541.3	1539.8	1538.3
160°	1565.4	1567.3	1569.1	1569.5	1568.2	1567.0	1565.8	1564.4
162.5°	1588.7	1590.8	1592.9	1593.3	1591.8	1590.3	1588.7	1587.1
165°	1618.6	1620.8	1623.1	1623.3	1621.7	1620.2	1618.6	1617.0
167.5°	1643.3	1645.6	1647.8	1648.0	1646.4	1644.7	1643.1	1641.4
170°	1657.0	1659.2	1661.4	1661.5	1659.6	1657.7	1655.9	1654.0
172.5°	1667.2	1669.4	1671.6	1671.8	1669.9	1668.0	1666.1	1664.2
175°	1678.3	1680.5	1682.7	1682.9	1680.9	1679.0	1677.2	1675.3
177.5°	1683.5	1685.0	1686.5	1686.5	1685.0	1683.5	1681.9	1680.4
180°	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9	1683.9

(END OF REPORT)