

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: P331486-830

Luminaire Tested: **S122DIW-S290D1240U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331486-830  
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-S290D1240U830-4F0-1E-UDD-D1  
Description: DEFINE 2 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 290 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1240 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

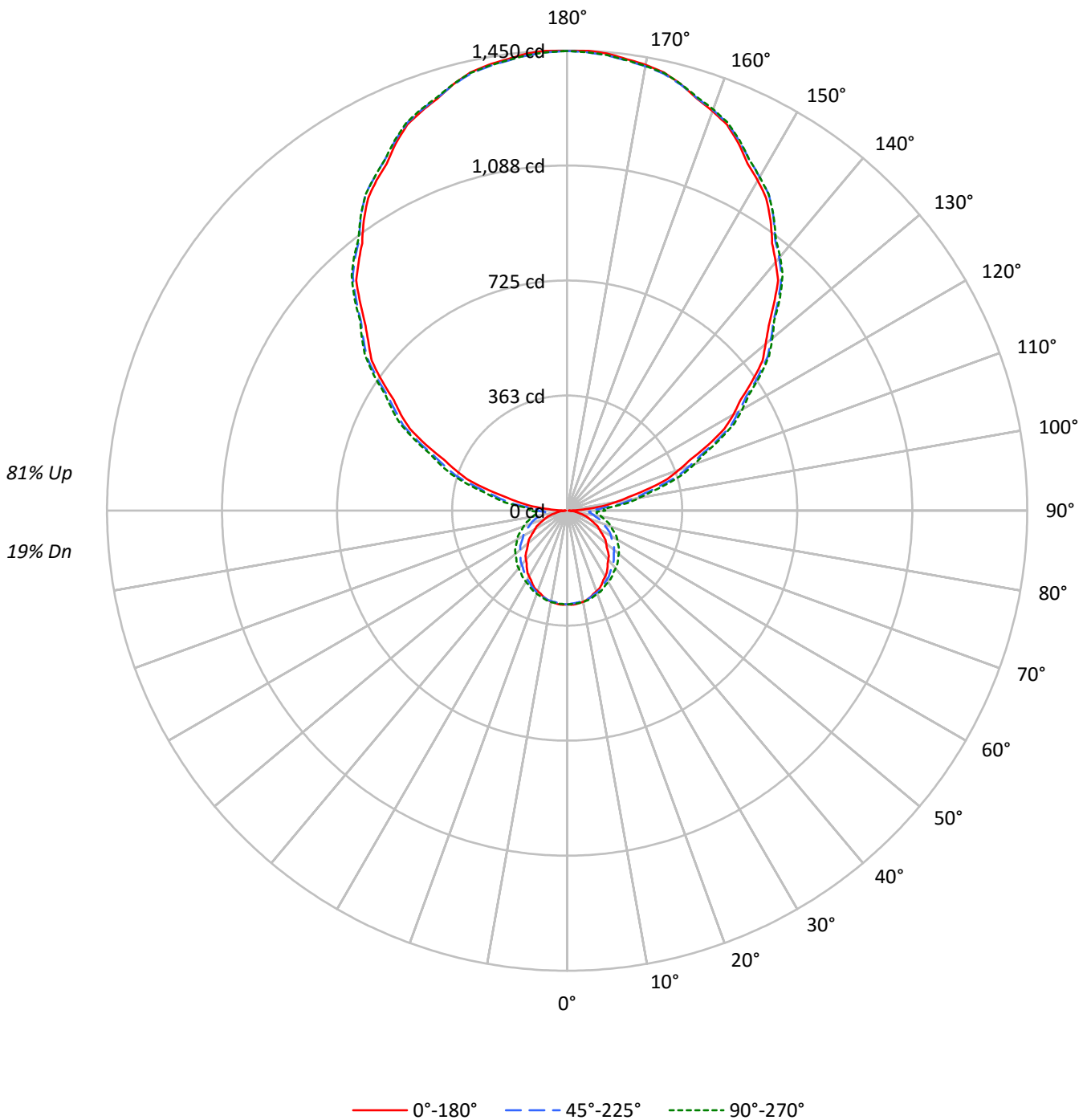
Lumens per Lamp: N/A  
Luminaire Lumens: 5182.4 lumens  
Efficiency: N/A  
Efficacy: 111.2 lumens/watt  
Spacing Criteria (0/90/45): 1.21 / 1.31 / 1.42  
Luminous Opening: Rectangular w/ Sides (W: 0.17' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 46.6  
Input Voltage (V): 120  
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



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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	100	100	100	100	88	88	88	88	66	66	66	46	46	46	28	28	28	19				
1	90	86	82	78	79	76	73	70	57	55	53	40	38	37	24	23	22	15				
2	82	75	69	63	72	66	61	57	50	46	43	34	32	31	21	19	18	12				
3	75	65	58	52	65	58	52	47	43	39	36	30	28	25	18	17	15	10				
4	68	58	50	44	60	51	44	39	38	34	30	27	24	22	16	14	13	8				
5	62	51	43	37	55	45	38	33	34	29	26	24	21	18	14	13	11	7				
6	57	45	38	32	50	40	34	29	31	26	22	21	18	16	13	11	10	6				
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	12	10	9	6				
8	49	37	29	24	43	33	26	22	25	20	17	18	14	12	11	9	8	5				
9	45	33	26	21	40	30	23	19	23	18	15	16	13	11	10	8	7	4				
10	42	30	23	19	37	27	21	17	21	16	13	15	12	10	9	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	1.5
20°-30°	121.6	2.3
30°-40°	148.2	2.9
40°-50°	159.4	3.1
50°-60°	154.8	3.0
60°-70°	135.2	2.6
70°-80°	104.1	2.0
80°-90°	75.6	1.5
90°-100°	139.9	2.7
100°-110°	320.1	6.2
110°-120°	510.4	9.8
120°-130°	653.6	12.6
130°-140°	724.5	14.0
140°-150°	706.0	13.6
150°-160°	591.4	11.4
160°-170°	392.2	7.6
170°-180°	137.1	2.6
0°-30°	229.9	4.4
0°-40°	378.1	7.3
0°-60°	692.3	13.4
0°-90°	1007.1	19.4
90°-120°	970.4	18.7
90°-150°	3054.6	58.9
90°-180°	4175.0	80.6
0°-180°	5182.4	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	46	99	114	120	6
95°	67	99	127	143	146	76
105°	265	281	306	322	328	280
115°	491	503	519	530	532	485
125°	712	723	733	741	744	636
135°	921	934	941	948	948	711
145°	1117	1126	1133	1136	1134	698
155°	1277	1281	1284	1290	1287	588
165°	1390	1388	1388	1396	1391	392
175°	1446	1442	1440	1447	1441	137
180°	1448	1448	1448	1448	1448	



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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	15.0	21.3	27.6	33.9	40.7	48.0	55.3	62.6	69.8	73.6
90°	5.5	14.3	23.1	31.9	40.6	51.0	63.1	75.1	87.2	99.2	102.5
92.5°	25.7	33.2	40.7	48.3	55.8	63.2	70.5	77.8	85.0	92.3	96.1
95°	67.0	74.2	81.3	88.5	95.8	102.5	108.7	115.0	121.2	127.4	131.1
97.5°	119.1	125.5	131.9	138.2	144.6	151.0	157.5	164.0	170.5	177.1	180.6
100°	158.3	163.9	169.6	175.3	181.0	186.9	193.0	199.2	205.3	211.5	215.0
102.5°	199.0	203.9	208.9	213.8	218.8	224.3	230.5	236.8	243.0	249.2	252.8
105°	264.9	268.4	272.0	275.6	279.2	283.7	289.3	294.7	300.2	305.7	309.5
107.5°	331.8	335.2	338.6	342.0	345.4	349.5	354.2	358.9	363.7	368.4	371.8
110°	374.5	378.0	381.5	385.0	388.6	392.7	397.4	402.0	406.7	411.3	414.3



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	421.4	424.6	427.8	431.1	434.3	438.0	442.2	446.5	450.7	454.9	457.3
115°	490.6	493.2	496.0	498.6	501.2	504.4	508.2	512.0	515.7	519.4	522.0
117.5°	559.1	561.9	564.8	567.6	570.5	573.2	575.6	578.1	580.4	582.9	585.0
120°	605.0	607.6	610.1	612.7	615.2	617.4	619.0	620.6	622.3	623.9	626.5
122.5°	647.1	649.8	652.6	655.3	658.1	660.5	662.6	664.6	666.7	668.7	670.7
125°	712.2	714.5	717.0	719.4	721.9	724.2	726.5	728.7	730.9	733.2	734.9
127.5°	775.9	778.9	781.9	784.9	788.0	790.2	791.6	793.1	794.7	796.1	797.5
130°	816.1	819.4	822.9	826.3	829.8	832.2	833.7	835.1	836.6	838.0	839.8
132.5°	861.0	863.7	866.6	869.3	872.1	874.4	876.0	877.7	879.3	881.0	881.9
135°	920.7	923.7	926.7	929.6	932.6	934.9	936.4	937.9	939.3	940.8	942.6
137.5°	984.0	986.5	988.8	991.3	993.7	995.5	996.6	997.8	998.8	999.9	1001.5
140°	1022.1	1024.4	1026.8	1029.2	1031.5	1033.5	1035.0	1036.6	1038.1	1039.7	1041.2
142.5°	1061.2	1063.6	1065.9	1068.3	1070.6	1072.3	1073.3	1074.2	1075.2	1076.1	1077.6
145°	1117.0	1119.0	1120.9	1122.8	1124.6	1126.4	1128.0	1129.6	1131.3	1132.9	1133.8
147.5°	1167.2	1169.4	1171.7	1174.0	1176.3	1178.0	1179.0	1180.2	1181.2	1182.3	1183.0
150°	1201.4	1203.0	1204.7	1206.3	1207.9	1209.3	1210.3	1211.4	1212.5	1213.6	1214.4
152.5°	1231.7	1233.3	1234.9	1236.5	1238.2	1239.6	1241.0	1242.3	1243.6	1244.9	1245.9
155°	1277.1	1278.0	1278.7	1279.6	1280.4	1281.2	1282.0	1282.8	1283.6	1284.5	1285.8
157.5°	1316.0	1316.5	1317.1	1317.7	1318.1	1318.7	1319.2	1319.7	1320.1	1320.7	1322.5
160°	1339.4	1340.0	1340.6	1341.1	1341.6	1342.1	1342.3	1342.6	1342.8	1343.1	1344.7
162.5°	1360.9	1361.1	1361.2	1361.3	1361.4	1361.6	1361.9	1362.2	1362.4	1362.7	1364.5
165°	1389.6	1389.3	1389.0	1388.7	1388.5	1388.4	1388.4	1388.4	1388.4	1388.4	1390.3
167.5°	1413.5	1412.7	1411.9	1411.1	1410.2	1409.9	1409.8	1409.8	1409.7	1409.6	1411.6
170°	1426.3	1425.4	1424.7	1423.8	1423.0	1422.5	1422.2	1421.9	1421.6	1421.4	1423.2
172.5°	1435.0	1434.3	1433.4	1432.6	1431.8	1431.3	1431.0	1430.7	1430.4	1430.1	1432.1
175°	1445.8	1445.0	1444.2	1443.3	1442.6	1441.9	1441.3	1440.8	1440.2	1439.6	1441.6
177.5°	1450.2	1449.5	1448.9	1448.2	1447.6	1447.1	1446.6	1446.1	1445.8	1445.3	1446.6
180°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2



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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°	77.4	81.2	84.9	87.5	88.8	90.0	91.3	92.6
90°	105.8	109.1	112.4	114.7	116.1	117.5	118.9	120.4
92.5°	100.0	103.8	107.6	110.2	111.4	112.5	113.8	115.0
95°	134.7	138.3	141.9	144.0	144.6	145.2	145.8	146.4
97.5°	184.1	187.7	191.1	193.4	194.5	195.6	196.6	197.7
100°	218.5	222.1	225.6	227.7	228.5	229.2	230.1	230.8
102.5°	256.5	260.1	263.8	266.0	266.8	267.6	268.3	269.1
105°	313.4	317.4	321.2	323.7	324.7	325.7	326.8	327.8
107.5°	375.2	378.7	382.1	383.7	383.5	383.2	383.0	382.9
110°	417.5	420.5	423.5	425.2	425.4	425.7	425.8	426.1





TEST NUMBER: P331486-830

CATALOG NUMBER: S122DIW-S290D1240U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	459.7	462.0	464.5	465.9	466.4	466.7	467.2	467.7
115°	524.6	527.2	529.8	531.2	531.4	531.6	531.9	532.1
117.5°	587.2	589.4	591.5	592.7	592.9	593.0	593.1	593.3
120°	629.1	631.9	634.5	635.9	636.2	636.4	636.7	636.9
122.5°	672.6	674.6	676.5	677.6	677.9	678.2	678.5	678.8
125°	736.7	738.5	740.2	741.4	742.0	742.5	743.1	743.7
127.5°	798.9	800.2	801.6	802.3	802.3	802.2	802.2	802.2
130°	841.5	843.3	845.0	845.7	845.4	845.1	844.7	844.4
132.5°	883.0	884.0	885.0	885.4	885.3	885.2	885.1	885.0
135°	944.3	946.0	947.8	948.6	948.6	948.5	948.5	948.4
137.5°	1003.1	1004.6	1006.2	1006.6	1006.3	1005.8	1005.3	1004.9
140°	1042.7	1044.2	1045.8	1046.3	1045.8	1045.3	1044.7	1044.2
142.5°	1079.0	1080.4	1081.9	1082.3	1081.8	1081.1	1080.5	1080.0
145°	1134.6	1135.5	1136.3	1136.4	1135.8	1135.2	1134.5	1134.0
147.5°	1183.6	1184.3	1185.0	1185.0	1184.1	1183.4	1182.5	1181.8
150°	1215.2	1216.1	1216.8	1216.8	1216.1	1215.2	1214.4	1213.6
152.5°	1247.0	1247.9	1249.0	1249.0	1247.9	1247.0	1245.9	1244.9
155°	1287.2	1288.5	1289.9	1290.2	1289.4	1288.5	1287.7	1286.9
157.5°	1324.4	1326.2	1328.0	1328.3	1327.0	1325.7	1324.4	1323.0
160°	1346.4	1348.0	1349.6	1349.9	1348.9	1347.7	1346.7	1345.6
162.5°	1366.4	1368.2	1370.1	1370.4	1369.0	1367.7	1366.4	1365.2
165°	1392.1	1394.0	1396.0	1396.2	1394.9	1393.5	1392.1	1390.8
167.5°	1413.4	1415.3	1417.2	1417.5	1416.1	1414.7	1413.2	1411.8
170°	1425.1	1427.0	1429.0	1429.1	1427.5	1425.9	1424.2	1422.6
172.5°	1434.0	1435.9	1437.8	1437.8	1436.2	1434.6	1433.0	1431.3
175°	1443.5	1445.4	1447.3	1447.5	1445.8	1444.2	1442.6	1440.9
177.5°	1447.9	1449.3	1450.5	1450.5	1449.3	1447.9	1446.6	1445.3
180°	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2	1448.2

(END OF REPORT)