

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: P331494-830

Luminaire Tested: **S122DIW-S290D1440U830-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P331494-830  
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-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**

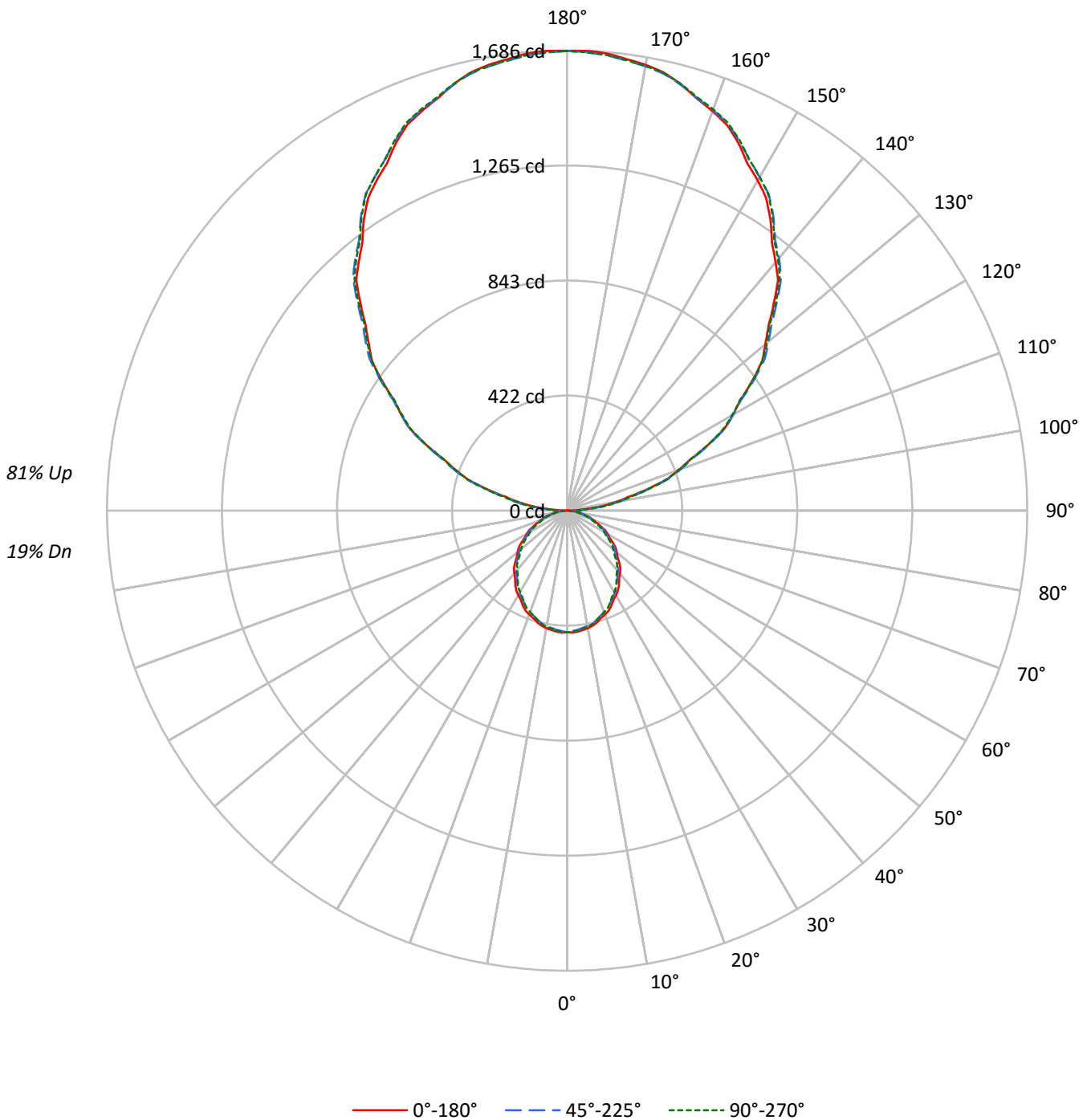
Lumens per Lamp: N/A  
Luminaire Lumens: 5847.8 lumens  
Efficiency: N/A  
Efficacy: 109.5 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.16 / 1.3  
Luminous Opening: Rectangular (W 0.17' x L: 4' x H: 0')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (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				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	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°	7190	7190	7190
5°	7217	7112	7156
10°	7174	7040	7076
15°	7086	6950	6944
20°	6959	6813	6806
25°	6834	6645	6645
30°	6674	6490	6434
35°	6524	6303	6211
40°	6336	6119	6001
45°	6149	5934	5786
50°	5948	5745	5541
55°	5737	5520	5315
60°	5503	5254	5060
65°	5249	4989	4760
70°	4928	4669	4447
75°	4485	4298	4192
80°	3980	3868	3663
85°	3242	3094	2779



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	41.9	0.7
10°-20°	117.8	2.0
20°-30°	173.2	3.0
30°-40°	201.2	3.4
40°-50°	200.9	3.4
50°-60°	175.2	3.0
60°-70°	129.6	2.2
70°-80°	73.4	1.3
80°-90°	26.5	0.5
90°-100°	106.7	1.8
100°-110°	331.4	5.7
110°-120°	566.4	9.7
120°-130°	744.9	12.7
130°-140°	836.1	14.3
140°-150°	819.8	14.0
150°-160°	687.6	11.8
160°-170°	456.0	7.8
170°-180°	159.4	2.7
0°-30°	332.9	5.7
0°-40°	534.0	9.1
0°-60°	910.2	15.6
0°-90°	1139.6	19.5
90°-120°	1004.5	17.2
90°-150°	3405.2	58.2
90°-180°	4708.0	80.5
0°-180°	5847.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	445	445	445	445	445	
5°	445	443	439	442	442	42
15°	424	421	416	417	415	119
25°	384	380	373	374	373	176
35°	331	327	320	317	315	207
45°	269	266	260	255	253	208
55°	204	201	196	191	189	182
65°	137	135	131	127	125	136
75°	72	71	69	66	67	77
85°	18	17	17	16	15	20
90°	1	19	50	47	48	5
95°	74	87	91	91	88	85
105°	306	310	313	315	316	323
115°	568	576	574	572	568	562
125°	827	839	836	831	830	739
135°	1070	1085	1088	1087	1083	826
145°	1299	1309	1317	1318	1313	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	



TEST NUMBER: P331494-830

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	445.3	445.3	445.3	445.3	445.3	445.3	445.3	445.3	445.3	445.3	445.3
2.5°	447.3	447.0	446.6	446.2	445.8	445.3	444.4	443.6	442.7	441.9	442.6
5°	445.3	444.9	444.5	444.1	443.7	443.1	442.1	441.0	439.9	438.8	439.6
7.5°	441.4	440.7	440.2	439.6	439.0	438.2	437.2	436.0	435.0	433.9	434.7
10°	437.6	437.0	436.3	435.6	434.9	434.0	432.9	431.8	430.6	429.4	430.2
12.5°	432.4	431.9	431.3	430.6	430.1	429.2	428.1	427.0	425.8	424.7	425.2
15°	423.9	423.3	422.7	422.2	421.6	420.8	419.4	418.2	417.0	415.8	416.1
17.5°	412.9	412.4	411.8	411.2	410.7	409.7	408.5	407.2	406.0	404.7	405.1
20°	405.0	404.4	403.9	403.3	402.7	401.8	400.5	399.2	397.8	396.5	396.8
22.5°	397.2	396.3	395.6	394.7	394.0	392.9	391.7	390.4	389.2	388.0	388.0
25°	383.6	382.9	382.1	381.4	380.6	379.4	377.8	376.2	374.6	373.0	373.2
27.5°	368.3	367.6	366.8	366.2	365.5	364.5	363.3	361.9	360.7	359.4	359.1
30°	358.0	357.2	356.5	355.7	354.9	353.8	352.4	351.0	349.5	348.1	347.8
32.5°	346.9	346.4	345.8	345.2	344.6	343.5	342.0	340.5	339.0	337.5	337.0
35°	331.0	330.0	329.0	328.1	327.2	325.9	324.4	322.9	321.4	319.8	319.2
37.5°	312.9	312.1	311.2	310.4	309.5	308.4	306.9	305.4	303.8	302.3	301.6
40°	300.6	299.8	299.1	298.3	297.6	296.4	294.8	293.3	291.8	290.3	289.5
42.5°	288.6	287.9	287.1	286.3	285.6	284.4	282.9	281.3	279.8	278.3	277.4
45°	269.3	268.6	268.0	267.3	266.6	265.6	264.2	262.8	261.4	259.9	258.8
47.5°	250.2	249.5	248.9	248.3	247.6	246.6	245.1	243.6	242.1	240.6	239.5
50°	236.8	236.3	235.8	235.4	234.9	233.9	232.6	231.3	230.0	228.7	227.3
52.5°	223.8	223.1	222.5	221.9	221.2	220.3	219.0	217.8	216.5	215.3	214.1
55°	203.8	203.2	202.6	202.1	201.5	200.7	199.5	198.4	197.3	196.1	194.9
57.5°	183.8	183.3	182.9	182.4	181.9	181.1	179.8	178.6	177.3	176.1	174.9
60°	170.4	170.0	169.7	169.3	168.9	168.1	166.7	165.4	164.0	162.7	161.6
62.5°	157.4	156.7	156.2	155.6	155.0	154.1	153.1	152.1	151.1	150.1	149.0
65°	137.4	136.9	136.3	135.7	135.2	134.4	133.5	132.5	131.6	130.6	129.7
67.5°	117.2	116.7	116.2	115.7	115.4	114.7	113.8	112.9	112.1	111.2	110.6
70°	104.4	104.1	103.7	103.3	102.9	102.4	101.5	100.7	99.7	98.9	98.2
72.5°	91.4	91.0	90.7	90.3	89.9	89.4	88.9	88.4	87.8	87.3	86.6
75°	71.9	71.7	71.5	71.4	71.2	70.9	70.4	69.8	69.4	68.9	68.3
77.5°	54.5	54.1	53.8	53.5	53.2	52.9	52.7	52.5	52.3	52.1	51.8
80°	42.8	42.7	42.6	42.5	42.4	42.3	42.1	41.9	41.8	41.6	41.3
82.5°	31.9	31.9	31.9	31.8	31.8	31.7	31.6	31.5	31.4	31.3	30.9
85°	17.5	17.4	17.3	17.2	17.2	17.1	17.0	16.9	16.8	16.7	16.4
87.5°	6.4	7.1	7.6	8.3	8.9	9.8	11.0	12.3	13.5	14.7	14.4
90°	1.4	5.2	9.0	12.8	16.6	22.0	28.9	35.8	42.8	49.8	49.1
92.5°	25.3	28.1	30.8	33.6	36.4	38.6	40.2	41.9	43.5	45.1	45.3
95°	73.9	77.0	80.2	83.3	86.5	88.4	89.1	89.6	90.3	91.0	91.0
97.5°	135.0	137.8	140.5	143.4	146.1	148.1	149.3	150.5	151.7	152.9	152.9
100°	180.5	182.9	185.5	188.0	190.6	192.3	193.2	194.2	195.1	196.0	196.0
102.5°	228.2	230.3	232.2	234.2	236.3	237.9	239.1	240.3	241.5	242.7	243.0
105°	305.5	306.4	307.4	308.3	309.2	310.1	310.8	311.3	312.0	312.6	313.2
107.5°	383.3	384.7	386.2	387.6	388.9	389.6	389.6	389.6	389.6	389.6	389.8
110°	433.4	435.3	437.2	439.0	440.9	442.0	442.0	442.0	442.0	442.0	442.0



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	488.0	489.8	491.7	493.6	495.5	496.3	496.1	495.9	495.6	495.3	494.6
115°	568.4	570.2	572.1	574.1	576.0	576.6	576.0	575.3	574.7	574.1	573.7
117.5°	648.6	651.0	653.6	656.1	658.6	659.0	657.2	655.4	653.7	652.0	651.2
120°	701.9	704.5	707.0	709.5	712.1	712.1	709.5	707.0	704.5	701.9	701.9
122.5°	750.8	753.8	756.9	759.9	763.0	763.6	761.9	760.1	758.3	756.5	755.7
125°	827.0	829.8	832.6	835.5	838.4	839.3	838.4	837.4	836.5	835.5	834.5
127.5°	901.2	904.7	908.3	912.0	915.6	916.8	915.7	914.5	913.4	912.3	911.1
130°	947.7	951.9	956.0	960.1	964.2	965.9	965.3	964.7	964.0	963.4	962.8
132.5°	1000.0	1003.4	1006.7	1010.1	1013.4	1015.2	1015.3	1015.4	1015.6	1015.7	1014.3
135°	1070.0	1073.5	1076.9	1080.3	1083.8	1085.9	1086.6	1087.2	1087.8	1088.4	1088.2
137.5°	1143.6	1146.4	1149.2	1152.1	1154.9	1156.8	1157.6	1158.4	1159.2	1160.1	1159.8
140°	1187.9	1190.7	1193.6	1196.5	1199.3	1201.5	1203.1	1204.7	1206.3	1207.8	1207.8
142.5°	1233.4	1236.2	1239.1	1241.9	1244.7	1246.7	1247.7	1248.9	1249.9	1251.0	1251.2
145°	1298.7	1301.0	1303.2	1305.3	1307.6	1309.7	1311.5	1313.4	1315.3	1317.2	1317.5
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°	445.3	445.3	445.3	445.3	445.3	445.3	445.3	445.3
2.5°	443.4	444.1	444.9	445.3	445.1	444.9	444.8	444.6
5°	440.5	441.2	442.0	442.2	442.1	441.9	441.7	441.5
7.5°	435.5	436.2	437.0	437.2	437.1	436.8	436.6	436.4
10°	431.0	431.8	432.5	432.7	432.4	432.2	431.9	431.6
12.5°	425.7	426.2	426.8	427.0	426.8	426.5	426.3	426.1
15°	416.5	416.9	417.3	417.3	416.8	416.3	415.8	415.4
17.5°	405.6	406.0	406.4	406.4	406.0	405.6	405.1	404.6
20°	397.1	397.4	397.7	397.6	397.2	396.8	396.4	396.1
22.5°	388.0	388.1	388.1	388.0	387.9	387.6	387.4	387.2
25°	373.3	373.5	373.7	373.7	373.5	373.3	373.2	373.0
27.5°	358.8	358.5	358.3	357.9	357.4	356.9	356.6	356.1
30°	347.5	347.2	346.9	346.7	346.3	345.9	345.5	345.1
32.5°	336.5	335.9	335.5	335.0	334.6	334.2	333.8	333.5
35°	318.7	318.1	317.5	317.1	316.6	316.1	315.7	315.1
37.5°	300.9	300.2	299.4	298.9	298.4	297.9	297.6	297.1
40°	288.6	287.8	286.9	286.3	285.9	285.5	285.1	284.7
42.5°	276.4	275.5	274.6	273.8	273.3	272.8	272.3	271.7
45°	257.8	256.7	255.7	255.0	254.6	254.2	253.8	253.4
47.5°	238.5	237.3	236.2	235.4	234.9	234.3	233.8	233.2
50°	226.0	224.6	223.3	222.4	222.0	221.5	221.0	220.6
52.5°	213.1	212.0	210.8	210.0	209.3	208.8	208.1	207.5
55°	193.8	192.7	191.5	190.8	190.3	189.7	189.3	188.8
57.5°	173.8	172.7	171.5	170.8	170.5	170.1	169.8	169.4
60°	160.6	159.6	158.5	157.9	157.6	157.3	157.0	156.7
62.5°	148.1	147.1	146.2	145.5	145.2	144.8	144.4	144.0
65°	128.8	128.0	127.1	126.5	126.0	125.5	125.1	124.6
67.5°	109.9	109.2	108.6	108.0	107.6	107.3	106.9	106.5
70°	97.6	96.9	96.2	95.8	95.4	94.9	94.5	94.2
72.5°	86.0	85.3	84.6	84.1	83.8	83.5	83.2	82.8
75°	67.8	67.2	66.6	66.4	66.6	66.8	67.0	67.2
77.5°	51.6	51.3	51.0	50.7	50.4	50.2	50.0	49.7
80°	41.0	40.7	40.4	40.2	40.0	39.8	39.6	39.4
82.5°	30.5	30.2	29.8	29.6	29.6	29.5	29.5	29.5
85°	16.1	15.8	15.6	15.4	15.3	15.2	15.1	15.0
87.5°	14.0	13.7	13.3	13.1	13.1	13.1	13.1	13.1
90°	48.4	47.9	47.2	47.0	47.4	47.7	48.0	48.4
92.5°	45.4	45.5	45.7	45.8	45.8	45.9	46.0	46.0
95°	91.0	91.0	91.0	90.6	90.0	89.4	88.7	88.1
97.5°	152.9	152.9	152.9	152.9	152.8	152.7	152.7	152.6
100°	196.0	196.0	196.0	196.0	195.6	195.3	195.0	194.6
102.5°	243.2	243.5	243.7	243.6	243.4	243.1	242.7	242.4
105°	313.9	314.5	315.1	315.5	315.5	315.5	315.5	315.5
107.5°	390.1	390.4	390.6	390.0	388.6	387.1	385.7	384.2
110°	442.0	442.0	442.0	441.4	440.5	439.5	438.6	437.6





TEST NUMBER: P331494-830

CATALOG NUMBER: S122DIW-S290D1440U830-4F0-1E-UDD-F1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	493.8	493.0	492.3	491.5	490.9	490.2	489.5	488.8
115°	573.4	573.1	572.8	572.1	571.2	570.2	569.3	568.4
117.5°	650.4	649.7	648.9	648.0	647.1	646.1	645.2	644.2
120°	701.9	701.9	701.9	701.4	700.5	699.6	698.6	697.7
122.5°	755.0	754.2	753.5	752.7	752.1	751.4	750.6	750.0
125°	833.6	832.6	831.7	831.1	830.8	830.5	830.2	829.8
127.5°	909.9	908.8	907.7	906.6	905.6	904.6	903.6	902.6
130°	962.1	961.5	960.8	959.9	958.7	957.4	956.1	954.9
132.5°	1013.0	1011.5	1010.1	1008.9	1008.0	1006.9	1005.9	1004.8
135°	1087.8	1087.5	1087.2	1086.6	1085.6	1084.7	1083.7	1082.8
137.5°	1159.5	1159.3	1159.0	1158.3	1157.1	1155.7	1154.5	1153.2
140°	1207.8	1207.8	1207.8	1207.2	1205.9	1204.7	1203.3	1202.1
142.5°	1251.5	1251.8	1252.0	1251.5	1250.3	1249.0	1247.7	1246.4
145°	1317.9	1318.1	1318.4	1318.0	1316.7	1315.5	1314.2	1313.0
147.5°	1376.0	1376.7	1377.4	1377.1	1375.9	1374.7	1373.6	1372.3
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)