

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: P332117-930

Luminaire Tested: **S123DIW-S340D1535U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332117-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-9,  
Test Lab: INNOVATION CENTER  
Issue Date: 3/3/2020  
Manufacturer: COOPER LIGHTING SOLUTIONS (FORMERLY EATON)  
Product Line: NEO-RAY  
Catalog Number: S123DIW-S340D1535U930-4F0-1E-UDD-D1  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

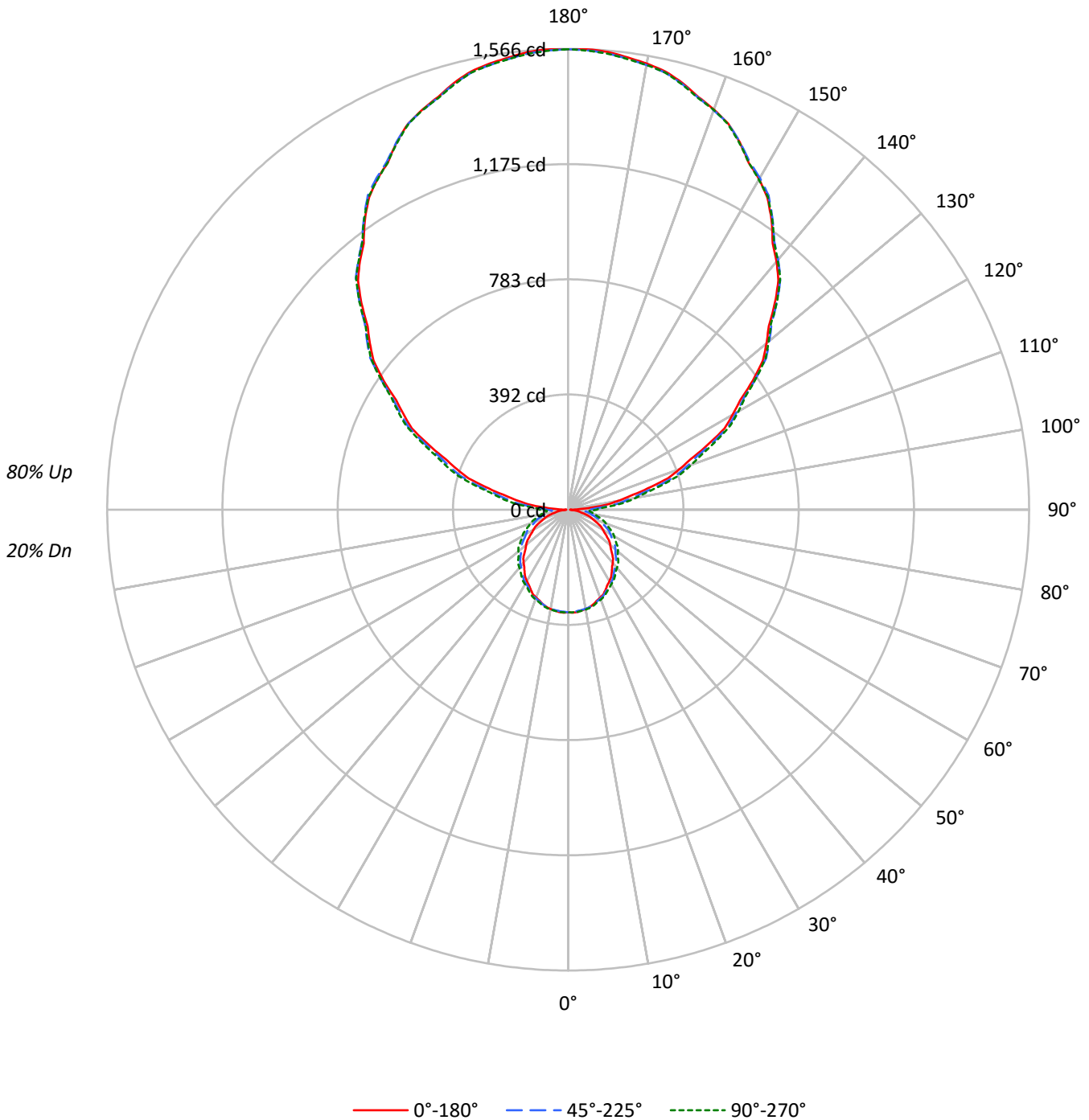
Lumens per Lamp: N/A  
Luminaire Lumens: 5512.8 lumens  
Efficiency: N/A  
Efficacy: 103.2 lumens/watt  
Spacing Criteria (0/90/45): 1.2 / 1.26 / 1.37  
Luminous Opening: Rectangular w/ Sides (W: 0.25' x L: 4' x H: 0.08')  
CIE Type: Semi-Indirect  
  
Input Watts (W): 53.4  
Input Voltage (V): 120  
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	20
1	91	86	82	79	80	76	73	70	57	55	53	40	39	38	24	23	23	16
2	82	75	69	64	72	66	61	57	50	47	44	35	33	31	21	20	19	13
3	75	66	59	53	66	58	52	47	44	40	36	31	28	26	18	17	16	11
4	68	58	50	44	60	51	45	40	39	34	31	27	24	22	16	15	14	9
5	62	51	44	38	55	45	39	34	34	30	26	24	21	19	15	13	12	8
6	57	46	38	32	50	41	34	29	31	26	23	22	19	16	13	12	10	7
7	53	41	33	28	46	37	30	25	28	23	20	20	17	14	12	10	9	6
8	49	37	30	25	43	33	27	22	25	21	17	18	15	13	11	9	8	5
9	45	34	26	22	40	30	24	20	23	18	15	16	13	11	10	8	7	5
10	42	31	24	19	37	27	21	17	21	17	14	15	12	10	9	8	6	4

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

	0°	45°	90°
0°	3753	3753	3753
5°	3765	3659	3661
10°	3732	3575	3556
15°	3684	3479	3443
20°	3615	3370	3318
25°	3530	3245	3186
30°	3444	3132	3053
35°	3345	3012	2946
40°	3252	2903	2833
45°	3149	2798	2741
50°	3047	2695	2641
55°	2936	2589	2550
60°	2826	2482	2458
65°	2714	2366	2347
70°	2542	2237	2234
75°	2331	2092	2120
80°	2084	1946	1988
85°	1855	1845	1910



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.1	0.6
10°-20°	94.2	1.7
20°-30°	141.0	2.6
30°-40°	168.3	3.1
40°-50°	176.1	3.2
50°-60°	165.3	3.0
60°-70°	138.0	2.5
70°-80°	98.8	1.8
80°-90°	63.5	1.2
90°-100°	138.9	2.5
100°-110°	332.3	6.0
110°-120°	537.2	9.7
120°-130°	693.1	12.6
130°-140°	772.0	14.0
140°-150°	755.3	13.7
150°-160°	635.0	11.5
160°-170°	422.7	7.7
170°-180°	148.0	2.7
0°-30°	268.3	4.9
0°-40°	436.6	7.9
0°-60°	778.0	14.1
0°-90°	1078.3	19.6
90°-120°	1008.4	18.3
90°-150°	3228.8	58.6
90°-180°	4434.0	80.4
0°-180°	5512.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	349	349	349	349	349	
5°	349	348	346	349	349	33
15°	332	333	333	337	337	94
25°	300	304	305	310	310	138
35°	258	264	269	275	276	162
45°	211	220	230	237	240	163
55°	161	174	187	197	201	144
65°	111	126	143	154	158	110
75°	60	78	97	109	114	64
85°	19	38	58	70	74	20
90°	6	37	72	90	96	8
95°	77	100	129	145	149	85
105°	280	292	319	329	335	299
115°	524	533	544	554	556	519
125°	766	770	778	781	779	683
135°	993	1000	1003	1005	1004	765
145°	1204	1206	1210	1211	1208	752
155°	1378	1378	1379	1384	1376	634
165°	1501	1498	1498	1504	1496	423
175°	1561	1557	1556	1563	1555	148
180°	1565	1565	1565	1565	1565	



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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	350.3	350.1	349.8	349.7	349.4	349.1	348.5	348.0	347.5	346.9	347.5
5°	349.1	348.9	348.8	348.6	348.5	348.1	347.6	347.1	346.6	346.1	346.7
7.5°	345.7	345.8	345.8	345.8	345.8	345.6	345.1	344.6	344.1	343.6	344.5
10°	342.7	342.8	343.0	343.2	343.3	343.2	342.8	342.3	341.9	341.5	342.3
12.5°	339.0	339.2	339.5	339.7	340.0	339.9	339.7	339.3	339.1	338.8	339.6
15°	332.4	332.6	332.9	333.1	333.4	333.5	333.4	333.3	333.2	333.1	334.0
17.5°	324.1	324.6	325.1	325.5	326.0	326.3	326.3	326.2	326.2	326.2	326.9
20°	318.0	318.5	318.9	319.5	320.0	320.3	320.5	320.7	320.8	321.0	321.8
22.5°	311.6	312.1	312.6	313.1	313.6	314.0	314.2	314.5	314.7	315.0	315.9
25°	300.1	300.9	301.8	302.6	303.5	304.0	304.3	304.5	304.8	305.1	306.1
27.5°	288.5	289.5	290.5	291.5	292.4	293.2	293.7	294.2	294.8	295.3	296.3
30°	280.4	281.4	282.6	283.6	284.8	285.6	286.3	287.0	287.6	288.4	289.3
32.5°	271.3	272.5	273.7	274.9	276.1	277.2	278.1	279.0	279.9	280.7	281.8
35°	258.3	259.7	261.1	262.4	263.7	265.0	266.0	267.2	268.2	269.4	270.6
37.5°	244.7	246.1	247.7	249.2	250.7	252.2	253.5	254.9	256.2	257.6	259.0
40°	235.5	237.1	238.6	240.1	241.6	243.2	244.9	246.6	248.3	250.0	251.4
42.5°	225.5	227.4	229.2	231.1	232.9	234.7	236.5	238.2	240.0	241.7	243.4
45°	211.2	213.3	215.2	217.3	219.3	221.4	223.5	225.6	227.7	229.8	231.5
47.5°	196.2	198.5	200.8	203.2	205.5	207.8	210.2	212.6	215.0	217.4	219.2
50°	186.5	188.9	191.3	193.6	196.0	198.4	201.1	203.7	206.4	209.0	210.9
52.5°	176.2	178.7	181.2	183.7	186.2	188.9	191.8	194.7	197.5	200.4	202.4
55°	161.1	163.9	166.6	169.4	172.2	175.1	178.1	181.2	184.3	187.3	189.6
57.5°	146.3	149.2	152.1	155.1	157.9	161.1	164.4	167.7	171.0	174.4	176.7
60°	136.0	139.0	142.1	145.1	148.1	151.4	154.9	158.3	161.8	165.3	167.6
62.5°	126.3	129.4	132.5	135.6	138.7	142.1	145.8	149.4	153.1	156.8	159.1
65°	111.3	114.6	117.9	121.2	124.5	128.0	131.7	135.4	139.1	142.8	145.4
67.5°	96.1	99.6	103.1	106.6	110.1	113.7	117.5	121.3	125.1	128.9	131.6
70°	85.4	89.1	92.7	96.4	100.0	103.9	107.9	111.9	116.0	120.0	122.8
72.5°	75.7	79.4	83.0	86.7	90.3	94.2	98.3	102.6	106.7	111.0	113.7
75°	60.4	64.4	68.3	72.3	76.3	80.4	84.6	88.8	93.0	97.3	100.0
77.5°	47.0	51.0	55.0	59.0	63.0	67.2	71.4	75.7	79.9	84.2	87.2
80°	37.6	41.7	45.9	50.1	54.1	58.5	62.8	67.2	71.6	76.0	78.8
82.5°	29.4	33.6	37.8	42.0	46.2	50.5	55.0	59.4	63.9	68.4	71.3
85°	18.6	22.8	27.1	31.3	35.5	39.9	44.4	48.8	53.2	57.7	60.6
87.5°	10.4	15.1	19.8	24.6	29.4	34.2	39.2	44.3	49.2	54.3	57.4
90°	6.2	13.0	19.9	26.7	33.7	41.0	48.8	56.7	64.6	72.4	76.4
92.5°	34.4	39.9	45.6	51.1	56.7	62.7	68.9	75.2	81.4	87.7	91.4
95°	76.7	81.9	87.2	92.3	97.5	103.3	109.7	115.9	122.3	128.6	132.3
97.5°	132.6	137.0	141.4	145.8	150.1	155.1	160.6	166.2	171.7	177.2	181.0
100°	170.6	175.0	179.3	183.6	188.0	192.8	198.0	203.3	208.6	213.8	217.0
102.5°	214.6	218.0	221.4	224.9	228.2	232.8	238.4	244.0	249.6	255.2	258.4
105°	279.6	282.3	284.8	287.4	289.9	294.2	300.4	306.5	312.6	318.6	321.0
107.5°	354.9	357.0	359.1	361.1	363.1	366.4	370.8	375.2	379.7	384.1	387.2
110°	401.9	403.9	405.9	408.1	410.1	413.1	417.0	420.9	424.9	428.8	432.1



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**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	451.0	452.6	454.2	455.8	457.3	459.8	463.2	466.5	469.9	473.2	476.6
115°	524.4	526.3	528.1	529.9	531.7	533.9	536.4	538.9	541.4	543.9	546.2
117.5°	598.6	599.7	601.0	602.1	603.2	605.0	607.1	609.2	611.4	613.5	615.5
120°	644.5	646.5	648.7	650.7	652.7	654.5	655.9	657.4	658.8	660.1	661.9
122.5°	692.7	694.1	695.5	697.0	698.4	700.1	702.0	703.9	705.9	707.8	709.0
125°	765.8	766.6	767.5	768.3	769.2	770.5	772.4	774.3	776.2	778.1	778.8
127.5°	833.7	835.4	837.1	838.7	840.3	841.9	843.3	844.7	846.2	847.6	847.7
130°	879.0	881.0	883.1	885.3	887.4	888.8	889.7	890.6	891.4	892.3	892.8
132.5°	923.9	926.1	928.2	930.4	932.5	934.0	934.7	935.6	936.3	937.0	937.3
135°	992.9	994.5	996.1	997.6	999.1	1000.2	1000.9	1001.5	1002.2	1002.8	1003.3
137.5°	1056.8	1058.1	1059.4	1060.6	1061.9	1063.2	1064.5	1065.7	1066.9	1068.1	1068.4
140°	1100.7	1102.1	1103.4	1104.8	1106.2	1107.1	1107.7	1108.2	1108.7	1109.2	1110.2
142.5°	1141.0	1142.3	1143.6	1144.9	1146.2	1147.1	1147.7	1148.3	1148.8	1149.3	1150.2
145°	1204.0	1204.4	1204.9	1205.3	1205.8	1206.5	1207.3	1208.1	1208.9	1209.7	1210.1
147.5°	1258.7	1259.6	1260.6	1261.7	1262.7	1263.5	1264.3	1265.0	1265.8	1266.6	1266.7
150°	1297.1	1297.6	1298.1	1298.7	1299.3	1299.8	1300.3	1300.9	1301.4	1302.0	1302.0
152.5°	1328.5	1329.3	1330.1	1330.8	1331.5	1332.1	1332.4	1332.8	1333.1	1333.4	1333.9
155°	1378.2	1378.2	1378.2	1378.2	1378.2	1378.3	1378.6	1378.8	1379.2	1379.4	1380.5
157.5°	1420.5	1420.2	1419.8	1419.5	1419.2	1419.1	1419.4	1419.5	1419.8	1420.0	1421.1
160°	1447.1	1446.5	1445.9	1445.4	1444.9	1444.5	1444.5	1444.5	1444.5	1444.5	1445.9
162.5°	1470.6	1469.9	1469.1	1468.4	1467.6	1467.3	1467.5	1467.8	1467.9	1468.2	1469.6
165°	1501.1	1500.3	1499.5	1498.7	1497.9	1497.5	1497.5	1497.5	1497.5	1497.5	1499.1
167.5°	1525.5	1524.4	1523.3	1522.2	1521.1	1520.7	1520.9	1521.1	1521.3	1521.5	1523.2
170°	1539.2	1538.1	1537.1	1535.9	1534.9	1534.3	1534.3	1534.3	1534.3	1534.3	1536.3
172.5°	1550.0	1549.0	1547.8	1546.8	1545.7	1545.2	1545.2	1545.2	1545.2	1545.2	1546.9
175°	1561.4	1560.3	1559.2	1558.1	1557.0	1556.5	1556.5	1556.5	1556.5	1556.5	1558.1
177.5°	1566.0	1565.2	1564.3	1563.4	1562.5	1562.1	1562.1	1562.1	1562.1	1562.1	1563.4
180°	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0



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**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	348.7	348.7	348.7	348.7	348.7	348.7	348.7	348.7
2.5°	348.0	348.5	349.1	349.3	349.3	349.2	349.1	349.0
5°	347.4	348.1	348.8	349.1	349.0	348.9	348.8	348.7
7.5°	345.4	346.2	347.0	347.4	347.3	347.2	347.1	347.0
10°	343.2	344.1	344.9	345.2	345.0	344.9	344.7	344.5
12.5°	340.3	341.1	341.9	342.2	342.0	341.9	341.7	341.5
15°	334.8	335.7	336.6	336.9	336.8	336.7	336.6	336.6
17.5°	327.7	328.5	329.2	329.5	329.4	329.3	329.2	329.1
20°	322.5	323.3	324.1	324.5	324.6	324.7	324.7	324.8
22.5°	316.8	317.8	318.8	319.3	319.2	319.1	319.1	319.0
25°	307.2	308.3	309.4	310.0	310.0	310.0	310.0	310.0
27.5°	297.2	298.2	299.1	299.6	299.7	299.8	299.8	299.9
30°	290.3	291.4	292.4	292.9	292.9	292.9	292.9	292.9
32.5°	282.9	284.0	285.0	285.7	285.9	286.1	286.3	286.5
35°	271.9	273.1	274.4	275.2	275.6	275.9	276.2	276.5
37.5°	260.4	261.9	263.3	264.2	264.4	264.7	265.0	265.2
40°	252.8	254.3	255.7	256.6	256.9	257.3	257.6	258.0
42.5°	244.9	246.5	248.0	249.1	249.6	250.0	250.5	250.9
45°	233.0	234.6	236.3	237.4	238.1	238.7	239.5	240.1
47.5°	221.0	222.9	224.7	225.8	226.3	226.9	227.4	228.0
50°	212.8	214.7	216.7	218.0	218.6	219.2	219.7	220.4
52.5°	204.5	206.4	208.5	209.9	210.6	211.3	212.0	212.7
55°	191.8	194.1	196.4	197.9	198.5	199.3	199.9	200.6
57.5°	179.0	181.2	183.5	185.1	185.9	186.7	187.5	188.3
60°	170.0	172.4	174.7	176.3	177.2	178.2	179.1	180.1
62.5°	161.4	163.8	166.2	167.8	168.7	169.5	170.4	171.3
65°	147.9	150.4	153.0	154.7	155.5	156.4	157.2	158.0
67.5°	134.4	137.1	139.9	141.7	142.4	143.1	143.8	144.5
70°	125.5	128.2	130.9	132.6	133.5	134.3	135.2	136.0
72.5°	116.4	119.2	122.0	123.8	124.7	125.5	126.4	127.2
75°	102.8	105.6	108.4	110.3	111.3	112.3	113.3	114.4
77.5°	90.1	93.0	96.0	97.8	98.6	99.4	100.1	100.9
80°	81.7	84.6	87.5	89.3	90.2	91.0	91.9	92.7
82.5°	74.1	77.0	79.9	81.7	82.6	83.4	84.2	85.1
85°	63.5	66.4	69.2	71.1	71.9	72.8	73.6	74.4
87.5°	60.5	63.6	66.7	68.6	69.6	70.6	71.5	72.5
90°	80.4	84.3	88.3	91.0	92.4	93.8	95.1	96.5
92.5°	95.1	98.7	102.4	104.4	104.9	105.3	105.8	106.2
95°	136.0	139.7	143.4	145.7	146.5	147.4	148.2	149.1
97.5°	184.7	188.6	192.3	194.6	195.3	196.1	196.8	197.5
100°	220.3	223.6	226.8	229.2	230.6	232.0	233.3	234.7
102.5°	261.6	264.8	268.0	270.0	270.8	271.5	272.2	273.0
105°	323.3	325.7	328.1	330.0	331.3	332.6	333.9	335.2
107.5°	390.4	393.5	396.6	398.4	398.8	399.3	399.7	400.1
110°	435.4	438.6	442.0	443.7	443.8	443.9	444.0	444.2





TEST NUMBER: P332117-930

CATALOG NUMBER: S123DIW-S340D1535U930-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	480.0	483.6	487.0	489.0	489.6	490.2	490.9	491.5
115°	548.5	550.7	553.1	554.4	554.8	555.2	555.6	556.0
117.5°	617.4	619.4	621.3	622.2	622.2	622.0	621.9	621.8
120°	663.5	665.2	666.8	667.7	667.7	667.8	667.8	667.9
122.5°	710.1	711.3	712.5	713.0	712.8	712.7	712.5	712.3
125°	779.4	780.2	780.8	780.9	780.4	779.9	779.4	778.9
127.5°	847.9	848.1	848.2	847.9	847.3	846.5	845.9	845.1
130°	893.3	893.8	894.4	893.9	892.5	891.1	889.7	888.3
132.5°	937.5	937.7	937.9	937.6	936.7	935.8	934.9	934.0
135°	1003.7	1004.1	1004.5	1004.7	1004.6	1004.4	1004.4	1004.2
137.5°	1068.5	1068.7	1068.9	1068.7	1068.0	1067.5	1066.8	1066.2
140°	1111.3	1112.2	1113.2	1113.0	1111.5	1109.9	1108.5	1107.0
142.5°	1151.0	1151.9	1152.8	1152.7	1151.6	1150.6	1149.5	1148.4
145°	1210.6	1211.0	1211.4	1211.2	1210.4	1209.7	1208.9	1208.2
147.5°	1267.0	1267.1	1267.4	1266.8	1265.4	1264.1	1262.8	1261.4
150°	1302.0	1302.0	1302.0	1301.2	1299.8	1298.3	1296.8	1295.3
152.5°	1334.3	1334.7	1335.2	1334.7	1333.3	1332.0	1330.6	1329.2
155°	1381.6	1382.7	1383.8	1383.4	1381.4	1379.6	1377.6	1375.7
157.5°	1422.3	1423.4	1424.6	1424.4	1422.9	1421.3	1419.8	1418.3
160°	1447.3	1448.7	1450.0	1450.2	1449.1	1448.0	1446.9	1445.8
162.5°	1470.9	1472.3	1473.7	1473.5	1471.7	1470.0	1468.2	1466.5
165°	1500.7	1502.4	1504.0	1503.9	1501.9	1500.1	1498.1	1496.2
167.5°	1524.9	1526.6	1528.3	1528.3	1526.6	1524.9	1523.2	1521.5
170°	1538.1	1540.1	1542.0	1542.0	1540.1	1538.1	1536.3	1534.3
172.5°	1548.5	1550.2	1551.9	1551.8	1549.9	1548.0	1546.1	1544.2
175°	1559.7	1561.4	1563.0	1562.8	1561.0	1559.0	1557.1	1555.3
177.5°	1564.7	1566.0	1567.3	1567.2	1565.7	1564.2	1562.7	1561.1
180°	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0	1565.0

(END OF REPORT)