

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: P332116-930

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332116-930  
REPORT IS SCALED FROM IESNA LM-79-08 TEST DATA (G3-1807-864-5,  
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-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 1535 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 6179.5 lumens  
Efficiency: N/A  
Efficacy: 115.7 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

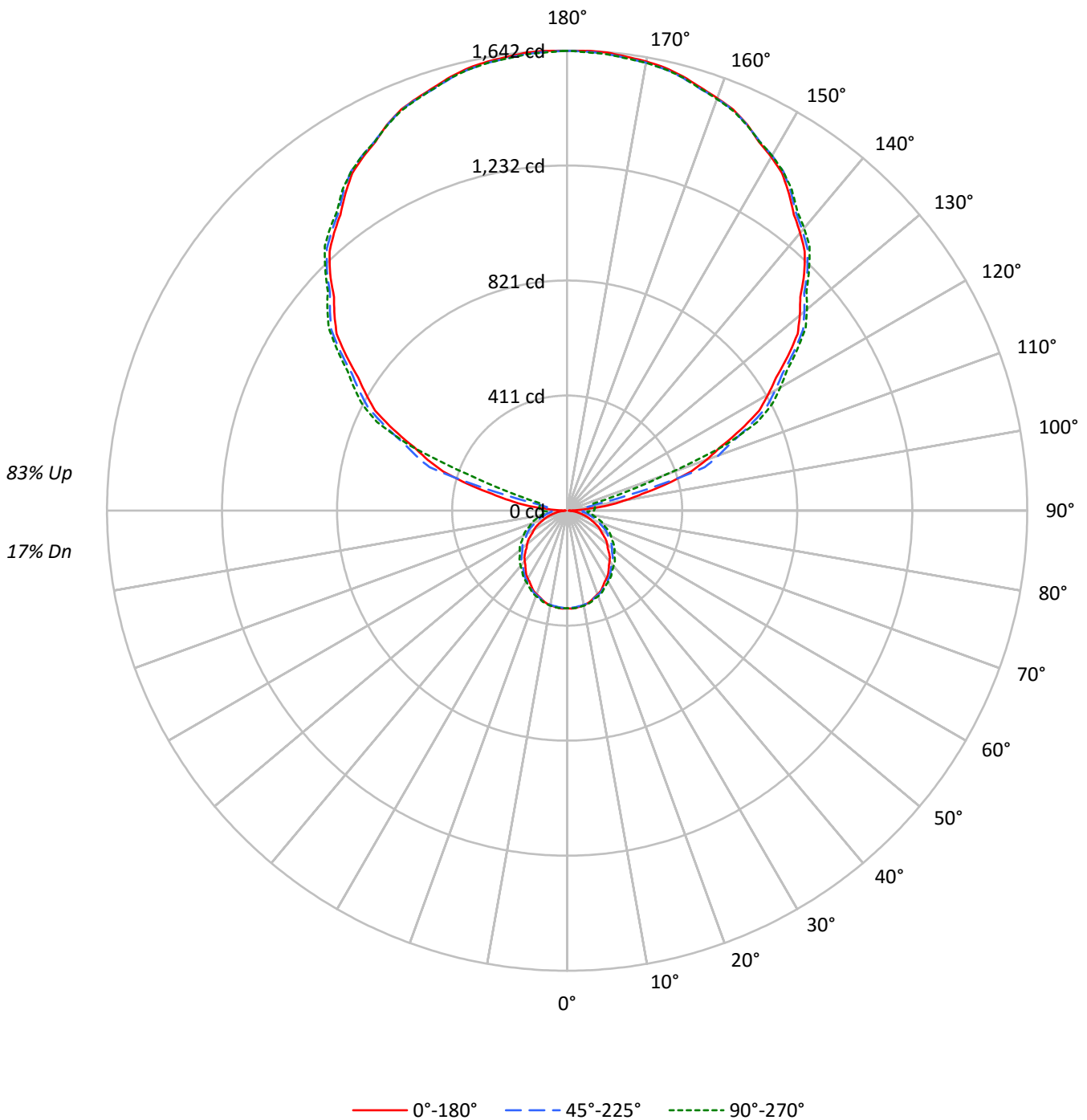
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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	50	30	10	0	
RCR																						
0	99	99	99	99	87	87	87	87	65	65	65	45	45	45	26	26	26	17				17
1	90	86	82	79	79	76	72	70	56	54	52	39	38	36	22	22	21	14				14
2	82	75	69	64	72	66	61	57	49	46	43	34	32	30	20	19	18	11				11
3	74	65	58	53	65	58	52	47	43	39	36	30	27	25	17	16	15	9				9
4	68	58	50	44	59	51	45	40	38	34	30	26	24	21	15	14	13	8				8
5	62	51	43	38	54	45	39	34	34	29	26	23	21	18	14	12	11	7				7
6	57	46	38	32	50	40	34	29	30	26	22	21	18	16	12	11	9	6				6
7	53	41	33	28	46	36	30	25	27	23	19	19	16	14	11	10	8	5				5
8	49	37	30	24	43	33	26	22	25	20	17	17	14	12	10	9	7	5				5
9	45	33	26	22	40	30	24	19	23	18	15	16	13	11	9	8	7	4				4
10	42	30	24	19	37	27	21	17	21	16	13	14	12	10	9	7	6	4				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



TEST NUMBER: P332116-930

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

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	33.1	0.5
10°-20°	94.2	1.5
20°-30°	141.0	2.3
30°-40°	168.3	2.7
40°-50°	176.1	2.9
50°-60°	165.3	2.7
60°-70°	138.0	2.2
70°-80°	98.8	1.6
80°-90°	63.5	1.0
90°-100°	96.6	1.6
100°-110°	311.4	5.0
110°-120°	701.0	11.3
120°-130°	879.9	14.2
130°-140°	933.7	15.1
140°-150°	869.8	14.1
150°-160°	700.8	11.3
160°-170°	452.3	7.3
170°-180°	155.9	2.5
0°-30°	268.3	4.3
0°-40°	436.6	7.1
0°-60°	778.0	12.6
0°-90°	1078.2	17.4
90°-120°	1109.0	17.9
90°-150°	3792.3	61.4
90°-180°	5101.0	82.5
0°-180°	6179.5	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	89	96	7
95°	78	47	75	95	100	95
105°	366	382	295	102	96	388
115°	683	696	720	740	749	674
125°	962	972	987	997	1003	859
135°	1196	1204	1212	1222	1221	921
145°	1380	1388	1391	1396	1398	864
155°	1520	1518	1519	1524	1518	700
165°	1603	1599	1598	1607	1599	453
175°	1640	1635	1636	1643	1634	156
180°	1640	1640	1640	1640	1640	



TEST NUMBER: P332116-930

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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	44.2	49.2	54.2	57.3
90°	6.2	13.0	19.8	26.7	33.5	40.8	48.7	56.5	64.3	72.2	76.1
92.5°	27.3	30.2	33.3	36.2	39.2	44.1	51.0	57.9	64.8	71.7	76.2
95°	78.5	70.7	62.9	55.1	47.3	47.0	54.1	61.1	68.2	75.4	79.9
97.5°	153.2	151.2	149.1	147.1	145.1	136.3	120.7	105.3	89.7	74.1	78.8
100°	209.4	217.5	225.7	233.7	241.9	226.7	188.4	150.0	111.6	73.3	77.9
102.5°	273.5	279.8	286.1	292.4	298.8	280.8	238.5	196.1	153.8	111.5	107.1
105°	366.2	371.3	376.3	381.3	386.3	378.4	357.7	336.9	316.2	295.4	249.8
107.5°	463.8	467.9	472.0	476.1	480.2	485.9	493.2	500.5	507.8	515.1	482.2
110°	528.8	532.6	536.2	539.9	543.6	548.6	555.0	561.3	567.7	574.1	567.3



TEST NUMBER: P332116-930

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

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	591.3	594.4	597.6	600.8	604.1	608.7	615.0	621.2	627.4	633.7	635.9
115°	683.2	685.9	688.5	691.1	693.8	697.8	703.4	708.8	714.3	719.7	724.5
117.5°	772.7	775.3	777.9	780.5	783.2	786.5	790.6	794.7	798.8	802.9	807.1
120°	827.9	830.8	833.6	836.5	839.4	842.6	846.2	849.8	853.4	857.0	861.0
122.5°	884.4	886.7	888.9	891.1	893.3	896.3	900.0	903.7	907.3	911.0	914.4
125°	961.6	963.8	966.0	968.1	970.3	973.1	976.6	980.2	983.7	987.2	989.5
127.5°	1036.7	1038.8	1040.8	1042.9	1045.1	1047.7	1051.0	1054.3	1057.7	1061.0	1063.6
130°	1083.5	1085.6	1087.7	1089.7	1091.8	1094.2	1097.0	1099.8	1102.5	1105.3	1108.0
132.5°	1128.0	1130.2	1132.4	1134.5	1136.6	1138.8	1141.0	1143.3	1145.5	1147.7	1150.3
135°	1196.5	1198.0	1199.5	1201.1	1202.6	1204.4	1206.4	1208.4	1210.5	1212.4	1214.8
137.5°	1254.9	1256.9	1258.9	1260.9	1262.8	1264.4	1265.5	1266.6	1267.8	1268.9	1271.5
140°	1293.6	1295.2	1296.8	1298.4	1300.1	1301.5	1302.5	1303.6	1304.6	1305.7	1308.1
142.5°	1329.7	1331.2	1332.8	1334.3	1335.9	1337.1	1338.0	1338.8	1339.7	1340.6	1342.6
145°	1380.1	1381.9	1383.7	1385.6	1387.4	1388.5	1389.1	1389.6	1390.2	1390.7	1392.0
147.5°	1427.3	1428.6	1429.8	1431.0	1432.2	1433.1	1433.7	1434.3	1434.8	1435.3	1436.1
150°	1456.5	1457.3	1458.2	1459.0	1459.8	1460.4	1461.0	1461.6	1462.1	1462.6	1463.1
152.5°	1482.9	1483.3	1483.6	1484.0	1484.4	1484.7	1485.1	1485.4	1485.7	1486.0	1487.0
155°	1519.9	1519.4	1518.8	1518.3	1517.8	1517.6	1517.9	1518.2	1518.4	1518.7	1520.0
157.5°	1548.7	1548.7	1548.6	1548.5	1548.5	1548.3	1548.0	1547.8	1547.5	1547.2	1548.8
160°	1566.3	1565.9	1565.7	1565.5	1565.1	1564.9	1564.6	1564.3	1564.1	1563.8	1565.5
162.5°	1582.8	1582.1	1581.4	1580.7	1580.0	1579.5	1579.2	1579.0	1578.7	1578.4	1580.3
165°	1602.8	1602.0	1601.2	1600.4	1599.5	1599.0	1598.7	1598.5	1598.2	1597.9	1600.1
167.5°	1618.4	1617.3	1616.2	1615.2	1614.0	1613.6	1613.6	1613.6	1613.6	1613.6	1615.7
170°	1627.2	1626.1	1625.0	1623.9	1622.9	1622.3	1622.3	1622.3	1622.3	1622.3	1624.5
172.5°	1633.0	1631.7	1630.4	1629.1	1627.8	1627.3	1627.5	1627.7	1627.9	1628.2	1630.4
175°	1640.5	1639.2	1637.9	1636.6	1635.2	1634.6	1634.9	1635.2	1635.4	1635.7	1637.6
177.5°	1642.5	1641.4	1640.4	1639.3	1638.2	1637.8	1638.0	1638.2	1638.4	1638.7	1640.4
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5



TEST NUMBER: P332116-930

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

**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°	60.4	63.5	66.6	68.6	69.5	70.5	71.5	72.4
90°	80.1	84.1	88.0	90.7	92.0	93.4	94.8	96.2
92.5°	80.8	85.3	89.8	92.7	93.8	94.9	96.0	97.1
95°	84.4	88.9	93.4	96.1	96.9	97.8	98.7	99.5
97.5°	83.5	88.1	92.9	95.7	96.9	98.0	99.1	100.2
100°	82.5	87.2	91.7	94.6	95.7	96.9	97.9	99.1
102.5°	102.7	98.4	94.1	92.6	93.9	95.2	96.6	97.9
105°	204.2	158.7	113.1	91.0	92.3	93.6	94.9	96.2
107.5°	449.3	416.4	383.5	349.4	314.0	278.6	243.2	207.8
110°	560.5	553.8	547.1	524.6	486.6	448.5	410.5	372.4





TEST NUMBER: P332116-930

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	638.2	640.5	642.8	640.2	632.8	625.3	617.9	610.5
115°	729.2	733.9	738.7	741.9	743.7	745.4	747.2	749.0
117.5°	811.2	815.5	819.6	822.1	823.0	823.9	824.8	825.7
120°	865.2	869.3	873.4	875.7	876.4	876.9	877.5	878.1
122.5°	917.8	921.2	924.6	926.7	927.5	928.3	929.1	929.9
125°	991.9	994.2	996.5	998.3	999.4	1000.5	1001.6	1002.7
127.5°	1066.1	1068.6	1071.1	1072.4	1072.5	1072.5	1072.5	1072.6
130°	1110.7	1113.4	1116.1	1117.4	1117.4	1117.4	1117.3	1117.3
132.5°	1152.9	1155.5	1158.1	1159.4	1159.2	1159.0	1158.9	1158.6
135°	1217.1	1219.4	1221.8	1222.8	1222.4	1222.0	1221.6	1221.2
137.5°	1274.1	1276.8	1279.4	1280.7	1280.6	1280.4	1280.3	1280.2
140°	1310.4	1312.7	1315.1	1316.2	1316.1	1316.0	1315.9	1315.7
142.5°	1344.6	1346.5	1348.6	1349.4	1349.1	1348.7	1348.3	1348.0
145°	1393.2	1394.4	1395.5	1396.4	1396.7	1397.0	1397.3	1397.7
147.5°	1436.8	1437.5	1438.3	1438.2	1437.3	1436.3	1435.4	1434.4
150°	1463.7	1464.3	1464.8	1464.8	1464.1	1463.5	1462.8	1462.2
152.5°	1488.0	1489.0	1490.0	1489.8	1488.6	1487.4	1486.2	1485.0
155°	1521.4	1522.7	1524.1	1524.0	1522.3	1520.7	1519.1	1517.5
157.5°	1550.5	1552.1	1553.7	1553.5	1551.4	1549.2	1547.1	1545.0
160°	1567.1	1568.6	1570.3	1570.2	1568.2	1566.4	1564.5	1562.6
162.5°	1582.1	1584.0	1585.8	1585.8	1584.2	1582.5	1580.9	1579.2
165°	1602.2	1604.4	1606.6	1606.7	1604.8	1603.0	1601.0	1599.1
167.5°	1617.9	1620.0	1622.2	1622.2	1620.0	1617.9	1615.7	1613.6
170°	1626.6	1628.8	1631.0	1631.0	1628.8	1626.6	1624.5	1622.3
172.5°	1632.5	1634.7	1636.8	1636.7	1634.3	1632.0	1629.5	1627.2
175°	1639.5	1641.4	1643.3	1643.2	1641.0	1638.8	1636.6	1634.5
177.5°	1642.1	1643.8	1645.6	1645.4	1643.2	1641.0	1638.8	1636.7
180°	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5	1640.5

(END OF REPORT)