

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: P332117-830

Luminaire Tested: **S123DIW-S340D1535U830-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332117-830  
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-S340D1535U830-4F0-1E-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: 6373.2 lumens  
Efficiency: N/A  
Efficacy: 119.3 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

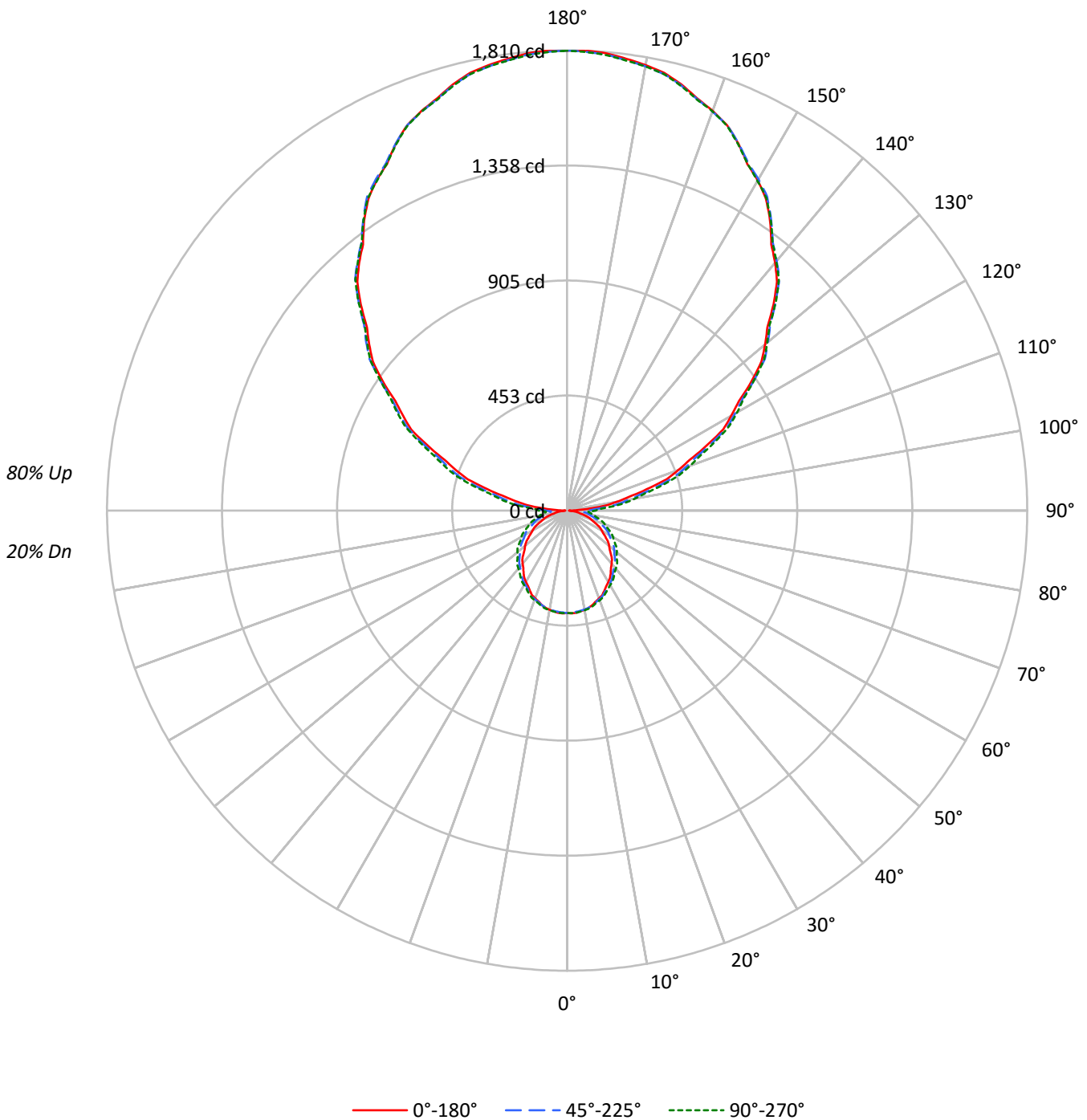
Input Watts (W): 53.4  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



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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°	4339	4339	4339
5°	4353	4230	4232
10°	4315	4133	4112
15°	4259	4022	3980
20°	4179	3896	3836
25°	4080	3751	3684
30°	3980	3620	3529
35°	3867	3481	3406
40°	3760	3356	3274
45°	3641	3235	3169
50°	3525	3116	3054
55°	3393	2993	2948
60°	3266	2869	2842
65°	3138	2736	2714
70°	2941	2586	2582
75°	2693	2416	2450
80°	2412	2249	2299
85°	2145	2133	2211



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**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	38.2	0.6
10°-20°	108.9	1.7
20°-30°	163.0	2.6
30°-40°	194.6	3.1
40°-50°	203.6	3.2
50°-60°	191.1	3.0
60°-70°	159.6	2.5
70°-80°	114.2	1.8
80°-90°	73.4	1.2
90°-100°	160.6	2.5
100°-110°	384.2	6.0
110°-120°	621.0	9.7
120°-130°	801.3	12.6
130°-140°	892.5	14.0
140°-150°	873.1	13.7
150°-160°	734.1	11.5
160°-170°	488.7	7.7
170°-180°	171.1	2.7
0°-30°	310.1	4.9
0°-40°	504.7	7.9
0°-60°	899.4	14.1
0°-90°	1246.6	19.6
90°-120°	1165.8	18.3
90°-150°	3732.7	58.6
90°-180°	5127.0	80.4
0°-180°	6373.2	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	403	403	403	403	403	
5°	404	403	400	403	403	38
15°	384	386	385	389	389	108
25°	347	351	353	358	358	160
35°	299	306	311	318	320	187
45°	244	255	266	274	278	188
55°	186	201	216	228	232	167
65°	129	146	165	178	183	127
75°	70	91	112	126	132	75
85°	22	44	67	81	86	23
90°	7	43	84	104	112	9
95°	89	116	149	167	172	98
105°	323	338	368	380	388	346
115°	606	616	629	640	643	600
125°	885	890	900	903	900	789
135°	1148	1156	1159	1161	1161	884
145°	1392	1394	1398	1400	1397	869
155°	1593	1593	1595	1600	1590	733
165°	1735	1731	1731	1739	1730	489
175°	1805	1800	1799	1807	1798	171
180°	1809	1809	1809	1809	1809	



TEST NUMBER: P332117-830

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**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	404.9	404.7	404.4	404.3	404.0	403.6	402.9	402.3	401.7	401.1	401.7
5°	403.6	403.4	403.2	403.0	402.8	402.5	401.8	401.2	400.7	400.1	400.9
7.5°	399.6	399.7	399.7	399.7	399.8	399.5	399.0	398.4	397.8	397.3	398.2
10°	396.2	396.3	396.5	396.7	396.9	396.8	396.2	395.8	395.3	394.8	395.8
12.5°	391.9	392.2	392.5	392.8	393.0	392.9	392.7	392.3	392.0	391.6	392.6
15°	384.3	384.6	384.8	385.1	385.4	385.6	385.4	385.3	385.2	385.1	386.2
17.5°	374.7	375.2	375.8	376.4	376.9	377.2	377.2	377.1	377.1	377.1	378.0
20°	367.6	368.2	368.7	369.4	369.9	370.3	370.5	370.7	370.9	371.1	372.0
22.5°	360.2	360.8	361.4	361.9	362.6	363.0	363.3	363.5	363.8	364.1	365.2
25°	346.9	347.9	348.9	349.9	350.8	351.5	351.8	352.0	352.3	352.7	353.9
27.5°	333.6	334.7	335.8	337.0	338.1	338.9	339.5	340.2	340.8	341.4	342.5
30°	324.1	325.4	326.7	327.9	329.2	330.2	331.0	331.8	332.5	333.4	334.5
32.5°	313.6	315.0	316.4	317.8	319.2	320.5	321.5	322.5	323.6	324.5	325.8
35°	298.6	300.2	301.8	303.3	304.9	306.3	307.6	308.9	310.1	311.4	312.8
37.5°	282.9	284.6	286.3	288.1	289.8	291.5	293.0	294.6	296.2	297.7	299.4
40°	272.3	274.1	275.8	277.6	279.3	281.2	283.1	285.1	287.0	289.0	290.7
42.5°	260.7	262.9	264.9	267.1	269.3	271.4	273.4	275.4	277.5	279.5	281.3
45°	244.2	246.6	248.8	251.2	253.5	255.9	258.4	260.8	263.3	265.7	267.6
47.5°	226.9	229.5	232.1	234.9	237.5	240.3	243.0	245.8	248.5	251.4	253.4
50°	215.7	218.4	221.1	223.9	226.6	229.4	232.4	235.5	238.6	241.6	243.8
52.5°	203.7	206.6	209.4	212.4	215.3	218.4	221.7	225.1	228.4	231.7	234.0
55°	186.2	189.5	192.7	195.9	199.1	202.5	205.9	209.5	213.0	216.5	219.1
57.5°	169.2	172.5	175.9	179.3	182.6	186.2	190.0	193.9	197.7	201.6	204.2
60°	157.2	160.7	164.3	167.8	171.3	175.0	179.1	183.0	187.0	191.1	193.8
62.5°	146.0	149.6	153.2	156.7	160.3	164.3	168.5	172.8	177.0	181.3	183.9
65°	128.7	132.5	136.3	140.1	143.9	148.0	152.2	156.6	160.8	165.1	168.1
67.5°	111.1	115.2	119.2	123.2	127.2	131.5	135.8	140.3	144.6	149.0	152.1
70°	98.8	103.0	107.2	111.4	115.6	120.1	124.7	129.4	134.1	138.7	141.9
72.5°	87.6	91.8	96.0	100.2	104.3	108.9	113.7	118.6	123.4	128.3	131.5
75°	69.8	74.5	79.0	83.6	88.2	92.9	97.8	102.6	107.5	112.4	115.6
77.5°	54.4	59.0	63.6	68.2	72.9	77.7	82.6	87.5	92.4	97.4	100.8
80°	43.5	48.3	53.1	57.9	62.6	67.6	72.6	77.7	82.8	87.8	91.1
82.5°	34.0	38.8	43.7	48.5	53.4	58.4	63.6	68.7	73.9	79.1	82.4
85°	21.5	26.4	31.3	36.2	41.0	46.1	51.3	56.4	61.5	66.7	70.0
87.5°	12.0	17.4	22.9	28.5	33.9	39.6	45.3	51.2	56.9	62.8	66.4
90°	7.2	15.1	23.0	30.9	38.9	47.4	56.5	65.6	74.6	83.7	88.3
92.5°	39.8	46.2	52.7	59.1	65.6	72.5	79.6	86.9	94.2	101.4	105.7
95°	88.7	94.7	100.8	106.7	112.7	119.4	126.8	134.0	141.4	148.6	153.0
97.5°	153.3	158.3	163.4	168.5	173.5	179.3	185.7	192.1	198.5	204.9	209.2
100°	197.3	202.3	207.3	212.3	217.4	222.9	228.9	235.0	241.1	247.1	250.9
102.5°	248.1	252.0	256.0	260.0	263.8	269.1	275.6	282.1	288.6	295.0	298.8
105°	323.3	326.3	329.2	332.2	335.2	340.2	347.2	354.3	361.4	368.3	371.1
107.5°	410.3	412.7	415.1	417.5	419.8	423.6	428.7	433.8	438.9	444.0	447.6
110°	464.6	466.9	469.3	471.7	474.1	477.6	482.1	486.6	491.2	495.7	499.5



TEST NUMBER: P332117-830

CATALOG NUMBER: S123DIW-S340D1535U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	521.4	523.2	525.1	526.9	528.7	531.6	535.5	539.3	543.2	547.1	551.0
115°	606.2	608.4	610.5	612.7	614.7	617.3	620.1	623.0	625.8	628.8	631.4
117.5°	692.0	693.3	694.7	696.1	697.4	699.4	701.8	704.3	706.8	709.3	711.5
120°	745.1	747.4	749.9	752.2	754.6	756.7	758.3	760.0	761.6	763.2	765.2
122.5°	800.8	802.5	804.1	805.8	807.4	809.4	811.5	813.8	816.1	818.3	819.6
125°	885.3	886.3	887.3	888.3	889.2	890.7	893.0	895.1	897.3	899.6	900.3
127.5°	963.8	965.7	967.7	969.6	971.5	973.3	975.0	976.6	978.3	979.9	980.1
130°	1016.2	1018.5	1021.0	1023.4	1025.9	1027.6	1028.6	1029.5	1030.6	1031.6	1032.2
132.5°	1068.1	1070.6	1073.1	1075.6	1078.1	1079.8	1080.6	1081.6	1082.4	1083.3	1083.5
135°	1147.8	1149.7	1151.5	1153.3	1155.1	1156.3	1157.1	1157.8	1158.6	1159.3	1159.9
137.5°	1221.7	1223.2	1224.7	1226.2	1227.7	1229.2	1230.6	1232.0	1233.4	1234.8	1235.1
140°	1272.5	1274.1	1275.6	1277.2	1278.8	1279.9	1280.5	1281.1	1281.8	1282.3	1283.5
142.5°	1319.1	1320.6	1322.1	1323.6	1325.1	1326.2	1326.8	1327.5	1328.0	1328.7	1329.7
145°	1391.9	1392.4	1393.0	1393.5	1394.0	1394.8	1395.7	1396.7	1397.6	1398.5	1399.0
147.5°	1455.1	1456.2	1457.4	1458.6	1459.7	1460.7	1461.6	1462.4	1463.3	1464.2	1464.4
150°	1499.5	1500.2	1500.7	1501.4	1502.0	1502.6	1503.3	1503.9	1504.5	1505.1	1505.1
152.5°	1535.9	1536.7	1537.7	1538.5	1539.4	1540.0	1540.4	1540.8	1541.2	1541.5	1542.1
155°	1593.3	1593.3	1593.3	1593.3	1593.3	1593.5	1593.7	1594.0	1594.4	1594.7	1596.0
157.5°	1642.2	1641.8	1641.4	1641.1	1640.7	1640.6	1640.9	1641.1	1641.3	1641.6	1642.9
160°	1672.9	1672.3	1671.6	1670.9	1670.4	1670.0	1670.0	1670.0	1670.0	1670.0	1671.6
162.5°	1700.2	1699.3	1698.4	1697.5	1696.7	1696.3	1696.6	1696.9	1697.0	1697.3	1698.9
165°	1735.4	1734.5	1733.5	1732.6	1731.6	1731.2	1731.2	1731.2	1731.2	1731.2	1733.1
167.5°	1763.6	1762.3	1761.0	1759.7	1758.5	1758.0	1758.2	1758.5	1758.8	1759.0	1761.0
170°	1779.4	1778.2	1777.0	1775.7	1774.4	1773.8	1773.8	1773.8	1773.8	1773.8	1776.0
172.5°	1792.0	1790.7	1789.4	1788.2	1787.0	1786.3	1786.3	1786.3	1786.3	1786.3	1788.3
175°	1805.1	1803.8	1802.5	1801.3	1800.0	1799.4	1799.4	1799.4	1799.4	1799.4	1801.3
177.5°	1810.4	1809.5	1808.5	1807.4	1806.4	1805.9	1805.9	1805.9	1805.9	1805.9	1807.4
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3



TEST NUMBER: P332117-830

CATALOG NUMBER: S123DIW-S340D1535U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	403.1	403.1	403.1	403.1	403.1	403.1	403.1	403.1
2.5°	402.3	402.9	403.6	403.8	403.8	403.7	403.6	403.5
5°	401.6	402.5	403.2	403.6	403.5	403.3	403.2	403.1
7.5°	399.3	400.2	401.1	401.6	401.5	401.3	401.2	401.1
10°	396.8	397.8	398.7	399.1	398.9	398.7	398.5	398.3
12.5°	393.4	394.4	395.2	395.6	395.4	395.2	395.0	394.8
15°	387.1	388.0	389.1	389.5	389.4	389.3	389.2	389.1
17.5°	378.8	379.8	380.6	381.0	380.8	380.7	380.6	380.4
20°	372.9	373.7	374.7	375.1	375.2	375.3	375.4	375.5
22.5°	366.3	367.4	368.5	369.1	369.0	368.9	368.9	368.8
25°	355.2	356.5	357.7	358.4	358.4	358.4	358.4	358.4
27.5°	343.6	344.7	345.8	346.4	346.5	346.6	346.6	346.7
30°	335.6	336.9	338.0	338.6	338.6	338.6	338.6	338.6
32.5°	327.1	328.3	329.5	330.3	330.5	330.7	331.0	331.2
35°	314.3	315.8	317.3	318.2	318.6	319.0	319.3	319.7
37.5°	301.0	302.7	304.4	305.4	305.7	306.0	306.3	306.6
40°	292.3	294.0	295.6	296.6	297.0	297.5	297.8	298.2
42.5°	283.1	284.9	286.7	287.9	288.5	289.0	289.5	290.1
45°	269.4	271.3	273.1	274.5	275.2	276.0	276.8	277.6
47.5°	255.5	257.7	259.8	261.1	261.6	262.3	262.9	263.5
50°	246.0	248.3	250.5	252.0	252.7	253.4	254.0	254.8
52.5°	236.4	238.7	241.0	242.6	243.5	244.3	245.1	245.9
55°	221.8	224.4	227.1	228.8	229.5	230.4	231.1	231.9
57.5°	206.9	209.5	212.2	214.0	214.9	215.8	216.8	217.6
60°	196.5	199.3	202.0	203.9	204.9	206.0	207.1	208.2
62.5°	186.6	189.4	192.1	194.0	195.0	196.0	197.0	198.0
65°	171.0	173.9	176.8	178.8	179.7	180.8	181.7	182.7
67.5°	155.3	158.5	161.7	163.8	164.6	165.4	166.3	167.0
70°	145.1	148.2	151.3	153.4	154.3	155.2	156.3	157.2
72.5°	134.6	137.8	141.0	143.2	144.1	145.1	146.1	147.0
75°	118.9	122.1	125.4	127.5	128.7	129.9	131.0	132.2
77.5°	104.2	107.5	110.9	113.0	114.0	114.9	115.7	116.7
80°	94.4	97.8	101.1	103.2	104.2	105.2	106.2	107.2
82.5°	85.7	89.0	92.4	94.4	95.5	96.4	97.4	98.4
85°	73.4	76.7	80.0	82.2	83.1	84.2	85.1	86.1
87.5°	69.9	73.5	77.1	79.4	80.5	81.6	82.7	83.8
90°	92.9	97.5	102.1	105.2	106.8	108.4	110.0	111.6
92.5°	109.9	114.1	118.4	120.7	121.3	121.8	122.3	122.8
95°	157.2	161.6	165.8	168.4	169.4	170.4	171.4	172.4
97.5°	213.6	218.0	222.3	225.0	225.8	226.7	227.5	228.4
100°	254.7	258.4	262.2	264.9	266.6	268.2	269.8	271.4
102.5°	302.5	306.1	309.8	312.2	313.0	313.9	314.7	315.6
105°	373.8	376.5	379.3	381.4	383.0	384.5	386.0	387.5
107.5°	451.3	454.9	458.5	460.6	461.1	461.6	462.0	462.5
110°	503.3	507.1	511.0	512.9	513.0	513.2	513.3	513.5





TEST NUMBER: P332117-830

CATALOG NUMBER: S123DIW-S340D1535U830-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	555.0	559.0	563.0	565.3	566.0	566.8	567.5	568.3
115°	634.0	636.7	639.4	640.9	641.4	641.9	642.3	642.8
117.5°	713.8	716.0	718.3	719.3	719.3	719.1	719.0	718.9
120°	767.0	769.0	770.9	771.9	771.9	772.0	772.0	772.1
122.5°	821.0	822.4	823.7	824.3	824.1	823.9	823.7	823.5
125°	901.1	901.9	902.7	902.8	902.2	901.6	901.1	900.4
127.5°	980.2	980.4	980.5	980.2	979.5	978.6	977.9	977.0
130°	1032.7	1033.3	1034.0	1033.4	1031.8	1030.2	1028.6	1026.9
132.5°	1083.8	1084.0	1084.3	1083.9	1082.9	1081.9	1080.8	1079.8
135°	1160.4	1160.8	1161.3	1161.5	1161.4	1161.2	1161.1	1160.9
137.5°	1235.3	1235.5	1235.8	1235.5	1234.7	1234.1	1233.3	1232.7
140°	1284.7	1285.8	1286.9	1286.7	1285.0	1283.2	1281.5	1279.8
142.5°	1330.7	1331.7	1332.7	1332.6	1331.3	1330.1	1328.9	1327.7
145°	1399.5	1400.0	1400.4	1400.2	1399.3	1398.5	1397.6	1396.8
147.5°	1464.7	1464.9	1465.2	1464.5	1462.9	1461.4	1459.9	1458.3
150°	1505.1	1505.1	1505.1	1504.3	1502.6	1500.9	1499.2	1497.5
152.5°	1542.6	1543.0	1543.6	1543.0	1541.4	1539.8	1538.2	1536.6
155°	1597.2	1598.5	1599.8	1599.3	1597.0	1594.9	1592.6	1590.4
157.5°	1644.3	1645.6	1646.9	1646.7	1644.9	1643.1	1641.3	1639.6
160°	1673.2	1674.8	1676.3	1676.5	1675.3	1674.0	1672.7	1671.4
162.5°	1700.4	1702.0	1703.6	1703.5	1701.4	1699.4	1697.3	1695.4
165°	1734.9	1736.8	1738.7	1738.6	1736.4	1734.2	1731.9	1729.8
167.5°	1762.9	1764.9	1766.8	1766.8	1764.9	1762.9	1761.0	1759.0
170°	1778.2	1780.5	1782.6	1782.6	1780.5	1778.2	1776.0	1773.8
172.5°	1790.2	1792.2	1794.1	1794.0	1791.8	1789.6	1787.3	1785.2
175°	1803.2	1805.1	1806.9	1806.8	1804.6	1802.3	1800.2	1798.0
177.5°	1808.9	1810.4	1811.9	1811.8	1810.1	1808.3	1806.6	1804.8
180°	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3	1809.3

(END OF REPORT)