

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: P332111-930

Luminaire Tested: **S123DIW-S340D1320U930-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332111-930
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-S340D1320U930-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1320 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4905.5 lumens
Efficiency: N/A
Efficacy: 105.3 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

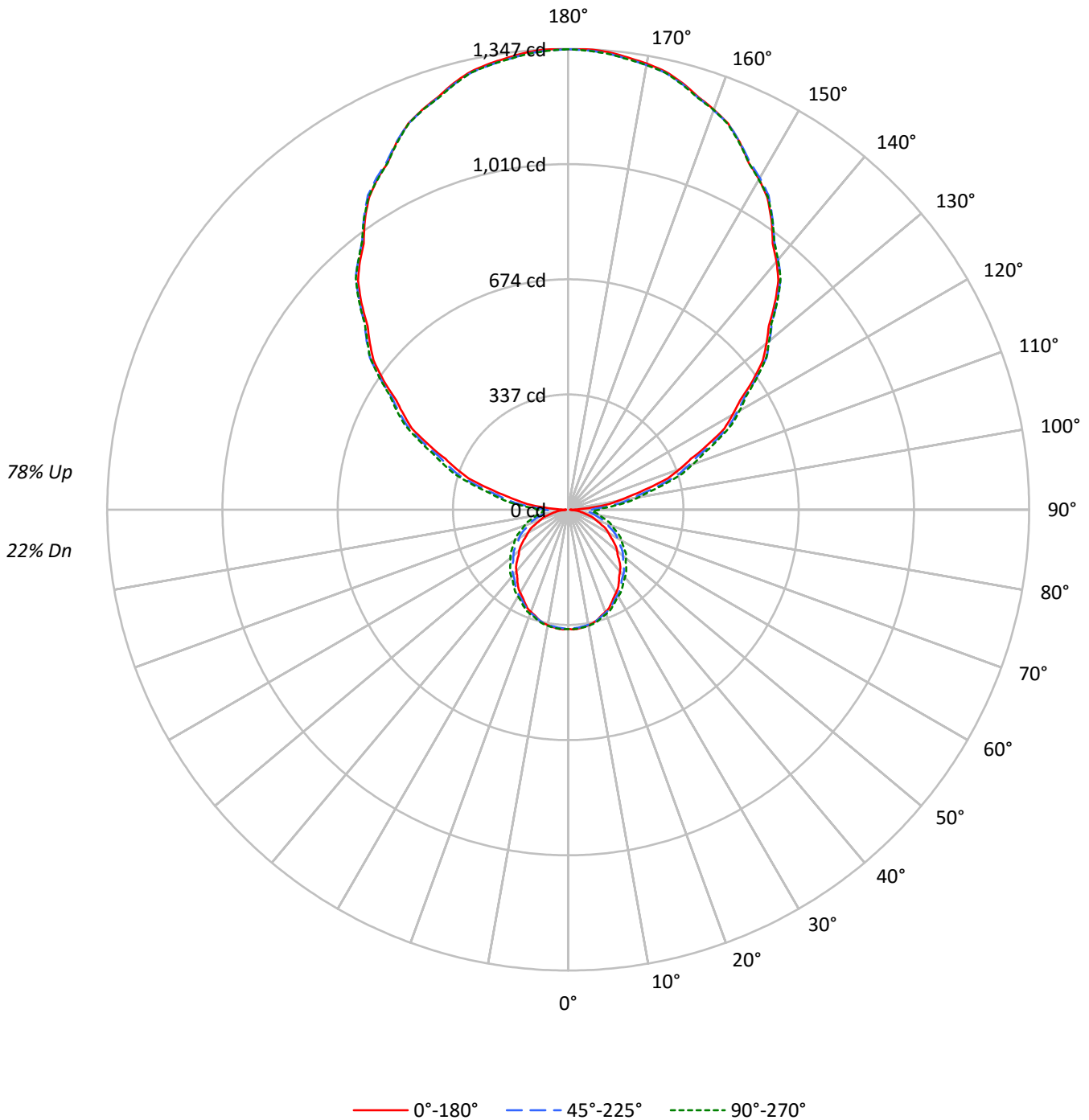
Input Watts (W): 46.6
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

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	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	91	87	83	79	80	77	74	71	58	56	54	42	40	39	26	25	25	17
2	83	75	69	64	73	67	62	58	51	48	45	36	34	32	23	21	20	14
3	75	66	59	53	66	59	53	48	45	41	37	32	29	27	20	18	17	12
4	69	58	51	45	60	52	45	40	40	35	31	28	25	23	18	16	15	10
5	63	52	44	38	55	46	39	34	35	30	27	25	22	20	16	14	13	9
6	58	46	38	33	51	41	34	29	31	27	23	23	19	17	14	12	11	8
7	53	41	34	28	47	37	30	26	28	24	20	20	17	15	13	11	10	7
8	49	37	30	25	43	33	27	22	26	21	18	19	15	13	12	10	9	6
9	46	34	27	22	40	30	24	20	23	19	16	17	14	12	11	9	8	5
10	42	31	24	19	38	28	22	18	21	17	14	16	13	10	10	8	7	5

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: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	33.1	0.7
10°-20°	94.2	1.9
20°-30°	141.0	2.9
30°-40°	168.3	3.4
40°-50°	176.1	3.6
50°-60°	165.3	3.4
60°-70°	138.0	2.8
70°-80°	98.8	2.0
80°-90°	62.9	1.3
90°-100°	124.7	2.5
100°-110°	289.6	5.9
110°-120°	464.5	9.5
120°-130°	597.6	12.2
130°-140°	664.6	13.5
140°-150°	649.7	13.2
150°-160°	546.2	11.1
160°-170°	363.6	7.4
170°-180°	127.3	2.6
0°-30°	268.3	5.5
0°-40°	436.6	8.9
0°-60°	778.0	15.9
0°-90°	1077.6	22.0
90°-120°	878.8	17.9
90°-150°	2790.8	56.9
90°-180°	3828.0	78.0
0°-180°	4905.5	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	35	68	85	91	7
95°	66	89	116	131	136	73
105°	241	253	278	288	294	258
115°	451	459	471	480	483	446
125°	659	662	671	674	673	587
135°	854	860	863	866	866	658
145°	1036	1037	1040	1042	1040	647
155°	1185	1185	1186	1190	1183	545
165°	1291	1288	1288	1294	1287	364
175°	1343	1339	1339	1344	1338	128
180°	1346	1346	1346	1346	1346	



TEST NUMBER: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

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	15.0	19.6	24.4	29.0	33.8	38.7	43.6	48.6	53.5	56.5
90°	6.0	12.5	19.0	25.4	32.0	38.9	46.2	53.6	61.0	68.3	72.2
92.5°	30.2	35.5	40.8	46.2	51.5	57.2	63.2	69.1	75.1	81.1	84.6
95°	66.5	71.5	76.5	81.4	86.3	91.8	97.8	103.8	109.8	115.9	119.4
97.5°	114.5	118.7	122.9	127.1	131.3	136.1	141.4	146.7	152.0	157.4	160.9
100°	147.2	151.3	155.5	159.6	163.7	168.3	173.3	178.4	183.4	188.5	191.7
102.5°	185.0	188.3	191.5	194.9	198.1	202.4	207.8	213.1	218.5	223.9	227.0
105°	240.9	243.4	246.0	248.4	250.9	255.0	260.8	266.5	272.3	278.0	280.4
107.5°	305.7	307.6	309.7	311.7	313.6	316.8	321.1	325.4	329.7	333.9	337.0
110°	345.9	348.0	349.9	351.9	353.9	356.9	360.7	364.5	368.4	372.2	375.4



TEST NUMBER: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	388.2	389.8	391.3	392.8	394.4	396.8	400.1	403.5	406.8	410.2	413.4
115°	451.3	453.1	454.8	456.5	458.2	460.3	462.9	465.5	468.1	470.6	472.9
117.5°	515.1	516.2	517.3	518.4	519.5	521.1	523.4	525.6	527.9	530.1	532.1
120°	554.6	556.4	558.2	560.0	561.9	563.6	565.2	566.8	568.4	570.1	571.8
122.5°	596.0	597.3	598.5	599.7	601.0	602.7	604.7	606.7	608.8	610.8	612.1
125°	658.8	659.6	660.2	661.0	661.7	663.0	665.0	667.0	669.0	670.9	671.7
127.5°	717.2	718.7	720.1	721.5	722.9	724.4	725.9	727.4	728.9	730.4	730.8
130°	756.1	757.9	759.7	761.5	763.3	764.8	765.7	766.7	767.7	768.7	769.3
132.5°	794.8	796.6	798.5	800.4	802.2	803.6	804.4	805.2	806.1	806.9	807.3
135°	854.1	855.4	856.7	858.1	859.4	860.4	861.1	861.8	862.5	863.2	863.7
137.5°	909.0	910.1	911.3	912.3	913.5	914.5	915.7	916.8	917.9	919.1	919.4
140°	946.8	947.9	949.1	950.3	951.5	952.3	952.8	953.2	953.7	954.2	955.3
142.5°	981.5	982.6	983.7	984.8	985.9	986.7	987.2	987.7	988.1	988.6	989.4
145°	1035.6	1036.0	1036.4	1036.7	1037.1	1037.7	1038.4	1039.1	1039.8	1040.5	1041.0
147.5°	1082.6	1083.5	1084.3	1085.2	1086.0	1086.7	1087.4	1088.0	1088.7	1089.3	1089.6
150°	1115.6	1116.1	1116.6	1117.0	1117.4	1117.9	1118.4	1118.8	1119.3	1119.8	1119.8
152.5°	1142.6	1143.3	1143.9	1144.6	1145.3	1145.7	1146.1	1146.3	1146.6	1146.9	1147.3
155°	1185.4	1185.4	1185.4	1185.4	1185.4	1185.5	1185.7	1185.9	1186.2	1186.4	1187.4
157.5°	1221.7	1221.5	1221.2	1220.9	1220.6	1220.6	1220.7	1220.9	1221.2	1221.3	1222.3
160°	1244.6	1244.1	1243.7	1243.2	1242.7	1242.4	1242.4	1242.4	1242.4	1242.4	1243.7
162.5°	1264.9	1264.2	1263.6	1262.9	1262.2	1262.0	1262.2	1262.4	1262.6	1262.7	1264.0
165°	1291.1	1290.4	1289.7	1289.0	1288.3	1287.9	1287.9	1287.9	1287.9	1287.9	1289.3
167.5°	1312.1	1311.1	1310.2	1309.2	1308.3	1307.9	1308.1	1308.3	1308.5	1308.6	1310.1
170°	1323.9	1323.0	1322.0	1321.1	1320.1	1319.6	1319.6	1319.6	1319.6	1319.6	1321.3
172.5°	1333.2	1332.3	1331.3	1330.4	1329.4	1328.9	1328.9	1328.9	1328.9	1328.9	1330.4
175°	1343.0	1342.0	1341.1	1340.1	1339.1	1338.7	1338.7	1338.7	1338.7	1338.7	1340.1
177.5°	1347.0	1346.2	1345.4	1344.7	1343.9	1343.5	1343.5	1343.5	1343.5	1343.5	1344.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1



TEST NUMBER: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

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°	59.6	62.6	65.7	67.7	68.6	69.5	70.5	71.4
90°	75.9	79.7	83.6	86.1	87.4	88.7	90.1	91.4
92.5°	88.2	91.8	95.3	97.3	97.8	98.3	98.8	99.3
95°	122.9	126.5	130.1	132.3	133.1	134.0	134.9	135.7
97.5°	164.5	168.1	171.7	173.9	174.6	175.4	176.1	176.9
100°	194.8	198.0	201.1	203.3	204.6	205.9	207.2	208.6
102.5°	230.1	233.2	236.2	238.1	238.9	239.6	240.4	241.2
105°	282.7	285.1	287.5	289.3	290.5	291.8	293.0	294.2
107.5°	340.0	343.0	346.0	347.7	348.2	348.7	349.1	349.6
110°	378.5	381.6	384.7	386.5	386.6	386.9	387.0	387.3



TEST NUMBER: P332111-930

CATALOG NUMBER: S123DIW-S340D1320U930-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	416.6	419.9	423.1	425.1	425.7	426.4	427.1	427.7
115°	475.2	477.4	479.6	481.0	481.4	481.8	482.3	482.7
117.5°	534.0	536.0	537.9	538.9	538.9	538.9	538.9	538.9
120°	573.5	575.2	576.9	577.8	577.9	578.0	578.1	578.3
122.5°	613.3	614.6	615.9	616.4	616.4	616.4	616.3	616.2
125°	672.6	673.4	674.3	674.5	674.2	673.8	673.4	673.1
127.5°	731.1	731.5	731.8	731.7	731.2	730.8	730.3	729.7
130°	770.0	770.6	771.3	771.0	769.9	768.8	767.7	766.5
132.5°	807.7	808.1	808.5	808.4	807.7	807.0	806.3	805.6
135°	864.4	865.0	865.5	865.8	865.7	865.7	865.6	865.6
137.5°	919.8	920.1	920.5	920.4	920.0	919.5	919.0	918.5
140°	956.3	957.3	958.4	958.3	957.1	955.9	954.6	953.4
142.5°	990.3	991.2	992.1	992.2	991.3	990.5	989.6	988.8
145°	1041.4	1041.8	1042.3	1042.2	1041.5	1041.0	1040.4	1039.8
147.5°	1089.7	1090.0	1090.1	1089.7	1088.6	1087.5	1086.4	1085.3
150°	1119.8	1119.8	1119.8	1119.2	1117.9	1116.7	1115.5	1114.2
152.5°	1147.6	1148.0	1148.3	1147.9	1146.8	1145.6	1144.4	1143.2
155°	1188.3	1189.3	1190.2	1189.8	1188.2	1186.6	1184.9	1183.2
157.5°	1223.3	1224.3	1225.3	1225.1	1223.8	1222.5	1221.2	1219.9
160°	1244.8	1246.0	1247.2	1247.3	1246.3	1245.5	1244.5	1243.5
162.5°	1265.1	1266.3	1267.5	1267.3	1265.8	1264.3	1262.8	1261.3
165°	1290.8	1292.2	1293.6	1293.5	1291.8	1290.2	1288.5	1286.9
167.5°	1311.6	1313.0	1314.5	1314.5	1313.0	1311.6	1310.1	1308.6
170°	1323.0	1324.6	1326.2	1326.2	1324.6	1323.0	1321.3	1319.6
172.5°	1331.9	1333.3	1334.8	1334.7	1333.1	1331.4	1329.8	1328.1
175°	1341.5	1343.0	1344.3	1344.2	1342.6	1340.9	1339.3	1337.7
177.5°	1345.8	1347.0	1348.1	1348.0	1346.6	1345.3	1344.0	1342.7
180°	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1	1346.1

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