

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: P332104-940

Luminaire Tested: **S123DIW-S340D1030U940-4F0-1E-UDD-D**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332104-940
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-S340D1030U940-4F0-1E-UDD-D
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 340 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 1030 LUMENS PER FOOT, NO LENS
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4961.4 lumens
Efficiency: N/A
Efficacy: 130.6 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

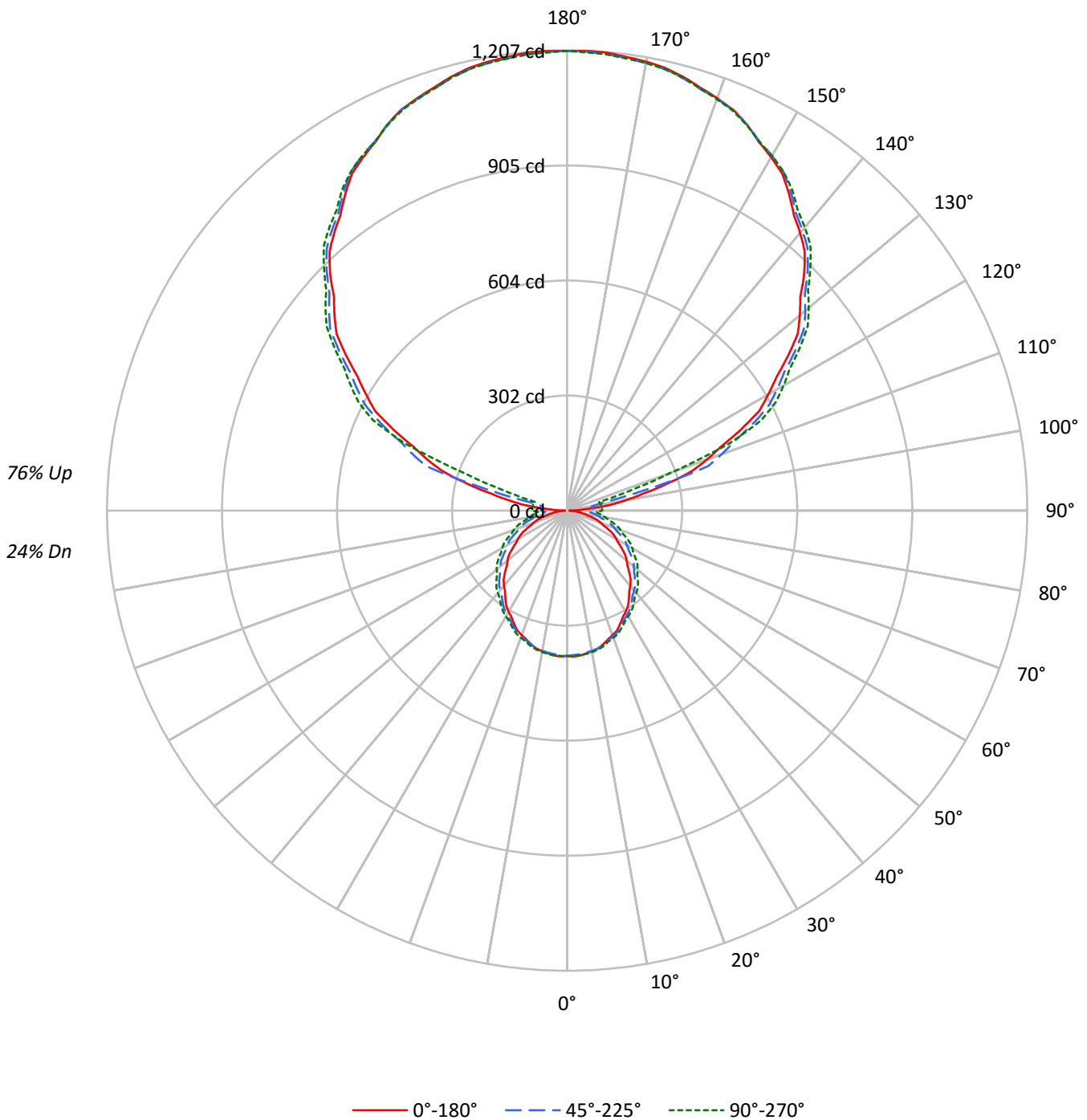
Input Watts (W): 38
Input Voltage (V): 120
Input Current (A_{in}): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

Luminous Intensity Polar Plot





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CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

COEFFICIENT OF UTILIZATION - ZONAL CAVITY METHOD:

RF	20				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	101	101	101	101	90	90	90	90	69	69	69	50	50	50	32	32	32	24
1	91	87	83	80	81	77	74	71	59	57	55	43	41	40	27	27	26	19
2	83	76	70	64	73	67	62	58	52	48	45	37	35	33	24	23	21	15
3	75	66	59	53	67	59	53	48	45	41	38	33	30	28	21	19	18	13
4	69	58	51	45	61	52	45	40	40	35	32	29	26	23	19	17	15	11
5	63	52	44	38	56	46	39	34	36	31	27	26	23	20	17	15	13	9
6	58	46	38	33	51	41	35	30	32	27	23	23	20	17	15	13	12	8
7	53	42	34	28	47	37	30	26	29	24	20	21	18	15	14	12	10	7
8	49	37	30	25	44	34	27	23	26	21	18	19	16	13	13	11	9	6
9	46	34	27	22	41	31	24	20	24	19	16	17	14	12	12	10	8	6
10	43	31	24	19	38	28	22	18	22	17	14	16	13	11	11	9	7	5

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	4105	4105	4105
5°	4118	4002	4004
10°	4082	3910	3890
15°	4029	3805	3766
20°	3954	3686	3630
25°	3860	3549	3485
30°	3767	3425	3339
35°	3659	3294	3223
40°	3557	3175	3098
45°	3445	3060	2998
50°	3333	2947	2888
55°	3211	2831	2789
60°	3090	2713	2689
65°	2967	2588	2567
70°	2783	2448	2443
75°	2551	2287	2318
80°	2278	2128	2175
85°	2025	2018	2090



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	36.2	0.7
10°-20°	103.1	2.1
20°-30°	154.2	3.1
30°-40°	184.1	3.7
40°-50°	192.6	3.9
50°-60°	180.7	3.6
60°-70°	151.0	3.0
70°-80°	108.0	2.2
80°-90°	67.8	1.4
90°-100°	84.2	1.7
100°-110°	238.6	4.8
110°-120°	521.6	10.5
120°-130°	650.3	13.1
130°-140°	687.8	13.9
140°-150°	639.5	12.9
150°-160°	515.0	10.4
160°-170°	332.3	6.7
170°-180°	114.5	2.3
0°-30°	293.4	5.9
0°-40°	477.5	9.6
0°-60°	850.9	17.1
0°-90°	1177.6	23.7
90°-120°	844.4	17.0
90°-150°	2821.9	56.9
90°-180°	3784.0	76.3
0°-180°	4961.4	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	381	381	381	381	381	
5°	382	381	378	382	381	36
15°	364	365	364	368	368	102
25°	328	332	334	339	339	151
35°	282	289	295	301	302	177
45°	231	241	251	259	263	178
55°	176	190	205	216	219	158
65°	122	138	156	168	173	120
75°	66	86	106	120	125	71
85°	20	41	63	77	81	21
90°	6	36	68	86	92	6
95°	59	42	69	87	92	71
105°	270	285	227	89	86	286
115°	503	514	536	554	562	496
125°	707	715	730	740	745	631
135°	880	885	893	902	902	677
145°	1014	1020	1022	1027	1029	635
155°	1117	1115	1116	1120	1115	514
165°	1178	1175	1174	1181	1175	333
175°	1206	1201	1202	1208	1201	115
180°	1206	1206	1206	1206	1206	



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	383.1	382.9	382.6	382.5	382.2	381.8	381.2	380.6	380.0	379.4	380.0
5°	381.8	381.7	381.5	381.3	381.1	380.8	380.1	379.6	379.1	378.5	379.2
7.5°	378.1	378.2	378.2	378.2	378.3	378.0	377.5	376.9	376.4	375.9	376.7
10°	374.8	375.0	375.1	375.3	375.5	375.4	374.9	374.4	374.0	373.5	374.4
12.5°	370.8	371.0	371.3	371.6	371.8	371.8	371.5	371.1	370.9	370.5	371.4
15°	363.6	363.8	364.1	364.4	364.6	364.8	364.6	364.5	364.4	364.4	365.3
17.5°	354.5	355.0	355.5	356.1	356.6	356.9	356.9	356.8	356.8	356.8	357.6
20°	347.8	348.3	348.8	349.5	350.0	350.4	350.5	350.7	350.9	351.1	352.0
22.5°	340.8	341.3	341.9	342.4	343.0	343.4	343.7	343.9	344.2	344.5	345.5
25°	328.2	329.1	330.1	331.0	331.9	332.5	332.8	333.1	333.3	333.7	334.8
27.5°	315.6	316.6	317.7	318.8	319.9	320.7	321.2	321.8	322.4	323.0	324.0
30°	306.7	307.8	309.1	310.2	311.5	312.4	313.2	313.9	314.6	315.4	316.5
32.5°	296.7	298.0	299.3	300.7	302.0	303.2	304.2	305.1	306.1	307.0	308.3
35°	282.5	284.0	285.5	287.0	288.5	289.8	291.0	292.2	293.4	294.6	296.0
37.5°	267.6	269.2	270.9	272.6	274.2	275.8	277.2	278.7	280.3	281.7	283.3
40°	257.6	259.3	260.9	262.6	264.2	266.0	267.9	269.7	271.5	273.4	275.0
42.5°	246.6	248.7	250.7	252.7	254.8	256.7	258.7	260.6	262.5	264.4	266.2
45°	231.0	233.3	235.4	237.6	239.9	242.1	244.4	246.7	249.1	251.4	253.2
47.5°	214.6	217.1	219.6	222.2	224.7	227.3	229.9	232.6	235.1	237.8	239.8
50°	204.0	206.6	209.2	211.8	214.4	217.0	219.9	222.8	225.7	228.5	230.7
52.5°	192.7	195.5	198.1	200.9	203.7	206.6	209.7	212.9	216.1	219.2	221.4
55°	176.2	179.2	182.3	185.3	188.3	191.5	194.8	198.2	201.5	204.8	207.3
57.5°	160.1	163.2	166.4	169.6	172.7	176.2	179.8	183.4	187.1	190.7	193.2
60°	148.7	152.0	155.4	158.7	162.0	165.6	169.4	173.2	176.9	180.7	183.3
62.5°	138.1	141.5	144.9	148.3	151.7	155.4	159.4	163.5	167.5	171.5	174.0
65°	121.7	125.4	128.9	132.5	136.2	140.0	144.0	148.1	152.1	156.2	159.0
67.5°	105.1	109.0	112.8	116.5	120.4	124.4	128.5	132.7	136.8	141.0	143.9
70°	93.5	97.5	101.4	105.4	109.3	113.6	118.0	122.4	126.9	131.3	134.3
72.5°	82.8	86.9	90.8	94.8	98.7	103.0	107.5	112.2	116.7	121.4	124.4
75°	66.1	70.4	74.7	79.1	83.5	87.9	92.6	97.1	101.7	106.4	109.4
77.5°	51.5	55.8	60.2	64.6	68.9	73.5	78.1	82.8	87.4	92.1	95.3
80°	41.1	45.7	50.2	54.8	59.2	63.9	68.7	73.5	78.3	83.1	86.2
82.5°	32.2	36.7	41.4	45.9	50.6	55.3	60.2	65.0	69.9	74.8	77.9
85°	20.3	25.0	29.6	34.2	38.8	43.6	48.5	53.3	58.2	63.1	66.3
87.5°	11.2	16.2	21.2	26.2	31.2	36.3	41.6	46.8	52.0	57.2	60.5
90°	6.3	12.8	19.4	25.9	32.4	39.2	46.5	53.9	61.2	68.5	72.4
92.5°	21.8	25.2	28.8	32.3	35.8	40.8	47.4	54.0	60.6	67.2	71.5
95°	59.2	54.7	50.1	45.6	40.9	42.1	48.8	55.5	62.2	68.9	73.1
97.5°	113.9	113.4	113.1	112.6	112.3	107.0	97.0	87.0	77.0	67.0	71.3
100°	155.1	162.0	169.0	175.9	182.8	172.9	146.2	119.3	92.5	65.7	70.0
102.5°	202.1	207.6	213.1	218.6	224.2	212.0	182.4	152.6	122.8	93.1	90.8
105°	270.2	274.6	279.0	283.5	287.8	283.1	269.1	255.2	241.2	227.3	194.7
107.5°	341.7	345.4	349.0	352.7	356.2	361.4	368.0	374.6	381.2	387.8	364.4
110°	389.4	392.6	395.9	399.1	402.4	407.0	412.9	418.7	424.6	430.5	426.3



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	435.2	438.1	440.9	443.6	446.5	450.8	456.5	462.2	468.0	473.7	476.1
115°	502.7	505.1	507.4	509.6	511.9	515.7	520.8	525.9	531.0	536.1	540.3
117.5°	568.4	570.5	572.7	574.9	577.0	580.1	584.2	588.2	592.2	596.3	600.0
120°	608.9	611.2	613.4	615.6	618.0	620.9	624.6	628.1	631.8	635.4	639.2
122.5°	650.5	652.2	653.9	655.6	657.3	660.0	663.6	667.3	670.9	674.6	677.8
125°	707.0	708.6	710.2	711.8	713.4	716.0	719.3	722.8	726.3	729.8	732.2
127.5°	762.1	763.7	765.2	766.7	768.2	770.5	773.6	776.9	780.1	783.2	785.7
130°	796.6	798.1	799.6	801.1	802.5	804.7	807.3	809.9	812.6	815.2	817.8
132.5°	829.2	830.8	832.3	833.9	835.5	837.3	839.5	841.6	843.6	845.8	848.3
135°	879.5	880.6	881.6	882.8	883.9	885.3	887.2	888.9	890.7	892.6	894.8
137.5°	922.4	923.8	925.2	926.7	928.1	929.3	930.3	931.4	932.4	933.4	935.8
140°	950.7	951.9	953.1	954.3	955.5	956.5	957.3	958.2	959.1	960.0	962.2
142.5°	977.2	978.3	979.5	980.5	981.7	982.6	983.2	983.9	984.5	985.2	987.0
145°	1014.3	1015.6	1016.9	1018.2	1019.5	1020.3	1020.7	1021.1	1021.5	1021.9	1023.1
147.5°	1048.8	1049.7	1050.6	1051.5	1052.5	1053.1	1053.5	1053.9	1054.3	1054.7	1055.3
150°	1070.3	1070.9	1071.5	1072.1	1072.6	1073.2	1073.5	1074.0	1074.3	1074.8	1075.1
152.5°	1089.7	1089.9	1090.2	1090.5	1090.7	1091.0	1091.3	1091.5	1091.7	1092.0	1092.7
155°	1116.9	1116.4	1116.1	1115.7	1115.3	1115.2	1115.4	1115.5	1115.8	1116.0	1117.0
157.5°	1138.0	1138.0	1137.9	1137.9	1137.8	1137.7	1137.6	1137.3	1137.1	1136.9	1138.1
160°	1150.9	1150.7	1150.5	1150.3	1150.1	1149.9	1149.7	1149.5	1149.3	1149.1	1150.3
162.5°	1163.1	1162.5	1162.1	1161.5	1161.0	1160.7	1160.5	1160.3	1160.0	1159.8	1161.2
165°	1177.8	1177.1	1176.6	1176.0	1175.4	1175.0	1174.7	1174.6	1174.4	1174.2	1175.8
167.5°	1189.2	1188.5	1187.7	1186.9	1186.1	1185.6	1185.6	1185.6	1185.6	1185.6	1187.2
170°	1195.7	1194.9	1194.1	1193.3	1192.5	1192.1	1192.1	1192.1	1192.1	1192.1	1193.6
172.5°	1200.0	1199.0	1198.1	1197.1	1196.1	1195.8	1195.9	1196.1	1196.2	1196.4	1198.0
175°	1205.5	1204.5	1203.5	1202.6	1201.6	1201.1	1201.3	1201.6	1201.8	1201.9	1203.4
177.5°	1206.9	1206.1	1205.4	1204.6	1203.8	1203.5	1203.6	1203.8	1203.9	1204.1	1205.4
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	381.4	381.4	381.4	381.4	381.4	381.4	381.4	381.4
2.5°	380.6	381.2	381.8	382.0	382.0	381.9	381.8	381.7
5°	380.0	380.8	381.5	381.8	381.7	381.6	381.5	381.4
7.5°	377.7	378.6	379.5	380.0	379.9	379.7	379.6	379.5
10°	375.4	376.3	377.2	377.6	377.4	377.2	377.0	376.8
12.5°	372.2	373.1	373.9	374.3	374.1	373.9	373.7	373.5
15°	366.2	367.1	368.1	368.5	368.4	368.3	368.2	368.1
17.5°	358.4	359.3	360.1	360.4	360.3	360.2	360.1	359.9
20°	352.8	353.6	354.5	354.9	355.0	355.1	355.2	355.3
22.5°	346.5	347.6	348.7	349.2	349.1	349.0	349.0	348.9
25°	336.0	337.2	338.4	339.0	339.0	339.0	339.0	339.0
27.5°	325.0	326.1	327.2	327.7	327.8	327.9	327.9	328.0
30°	317.5	318.7	319.8	320.3	320.3	320.3	320.3	320.3
32.5°	309.4	310.6	311.7	312.5	312.7	312.9	313.2	313.3
35°	297.4	298.7	300.1	301.0	301.4	301.8	302.1	302.5
37.5°	284.8	286.4	288.0	288.9	289.2	289.5	289.8	290.1
40°	276.5	278.1	279.6	280.6	281.0	281.4	281.8	282.1
42.5°	267.9	269.6	271.3	272.4	273.0	273.4	273.9	274.5
45°	254.9	256.6	258.4	259.7	260.4	261.1	261.9	262.6
47.5°	241.7	243.8	245.8	247.0	247.5	248.2	248.7	249.3
50°	232.7	234.9	237.0	238.4	239.1	239.7	240.3	241.0
52.5°	223.6	225.8	228.0	229.5	230.3	231.1	231.8	232.6
55°	209.8	212.3	214.8	216.4	217.1	217.9	218.6	219.4
57.5°	195.7	198.2	200.7	202.4	203.3	204.2	205.1	205.9
60°	185.9	188.5	191.1	192.9	193.9	194.9	195.9	197.0
62.5°	176.6	179.1	181.7	183.5	184.5	185.4	186.4	187.3
65°	161.8	164.5	167.3	169.2	170.0	171.0	171.9	172.8
67.5°	147.0	150.0	153.0	155.0	155.7	156.5	157.3	158.0
70°	137.2	140.2	143.1	145.1	146.0	146.9	147.8	148.7
72.5°	127.3	130.4	133.4	135.5	136.3	137.2	138.2	139.1
75°	112.4	115.5	118.6	120.6	121.7	122.9	123.9	125.1
77.5°	98.5	101.7	105.0	106.9	107.8	108.7	109.5	110.4
80°	89.3	92.6	95.7	97.6	98.6	99.5	100.5	101.4
82.5°	81.1	84.2	87.4	89.3	90.3	91.2	92.1	93.1
85°	69.5	72.6	75.7	77.8	78.6	79.6	80.5	81.4
87.5°	63.8	67.1	70.4	72.6	73.6	74.5	75.6	76.6
90°	76.3	80.3	84.2	86.9	88.1	89.4	90.8	92.1
92.5°	75.9	80.3	84.5	87.3	88.4	89.4	90.6	91.7
95°	77.4	81.7	86.0	88.5	89.4	90.3	91.3	92.2
97.5°	75.7	80.0	84.4	87.1	88.2	89.3	90.4	91.6
100°	74.3	78.5	82.8	85.5	86.6	87.7	88.8	90.0
102.5°	88.5	86.1	83.7	83.2	84.5	85.8	87.1	88.4
105°	162.0	129.4	96.8	81.1	82.2	83.5	84.7	86.0
107.5°	341.1	317.7	294.4	269.7	244.1	218.3	192.5	166.8
110°	422.2	418.0	413.8	397.9	370.1	342.5	314.8	287.0



TEST NUMBER: P332104-940

CATALOG NUMBER: S123DIW-S340D1030U940-4F0-1E-UDD-D

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	478.6	481.0	483.5	482.1	476.9	471.7	466.5	461.3
115°	544.6	548.8	552.9	555.8	557.3	558.9	560.4	562.0
117.5°	603.9	607.6	611.4	613.8	614.7	615.5	616.4	617.2
120°	642.8	646.6	650.3	652.5	653.1	653.8	654.4	655.1
122.5°	680.9	684.1	687.2	689.3	690.1	690.9	691.7	692.5
125°	734.5	736.8	739.1	740.8	741.9	743.0	744.0	745.0
127.5°	788.1	790.6	793.1	794.4	794.6	794.9	795.1	795.3
130°	820.3	822.9	825.5	826.8	826.9	827.1	827.2	827.4
132.5°	850.8	853.2	855.7	856.9	857.0	857.1	857.2	857.3
135°	897.1	899.4	901.6	902.7	902.5	902.4	902.2	902.1
137.5°	938.2	940.7	943.1	944.3	944.3	944.4	944.5	944.5
140°	964.4	966.5	968.8	969.8	969.9	970.0	970.0	970.1
142.5°	988.9	990.8	992.7	993.5	993.5	993.4	993.3	993.2
145°	1024.2	1025.4	1026.4	1027.3	1027.6	1028.0	1028.3	1028.7
147.5°	1056.0	1056.6	1057.2	1057.2	1056.6	1056.1	1055.4	1054.9
150°	1075.6	1075.9	1076.4	1076.4	1075.9	1075.5	1075.1	1074.7
152.5°	1093.4	1094.1	1094.8	1094.8	1093.9	1093.0	1092.1	1091.3
155°	1117.9	1118.9	1120.0	1119.8	1118.7	1117.5	1116.2	1115.1
157.5°	1139.3	1140.5	1141.7	1141.5	1140.0	1138.4	1136.8	1135.3
160°	1151.5	1152.7	1153.9	1153.8	1152.4	1151.0	1149.6	1148.2
162.5°	1162.5	1164.0	1165.3	1165.3	1164.1	1162.9	1161.6	1160.4
165°	1177.3	1178.9	1180.5	1180.6	1179.3	1177.9	1176.4	1175.1
167.5°	1188.8	1190.4	1192.0	1192.0	1190.4	1188.8	1187.2	1185.6
170°	1195.2	1196.9	1198.5	1198.5	1196.9	1195.2	1193.6	1192.1
172.5°	1199.6	1201.1	1202.7	1202.7	1201.0	1199.2	1197.4	1195.7
175°	1204.7	1206.1	1207.6	1207.5	1205.9	1204.3	1202.7	1201.0
177.5°	1206.7	1207.9	1209.2	1209.1	1207.5	1205.9	1204.3	1202.7
180°	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5	1205.5

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