

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: P332143-940

Luminaire Tested: **S123DIW-S560D1320U940-4F0-1E-UDD-F1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332143-940
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-S560D1320U940-4F0-1E-UDD-F1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 560 LUMENS PER FOOT, FLUSH 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: 6150.6 lumens
Efficiency: N/A
Efficacy: 114.3 lumens/watt
Spacing Criteria (0/90/45): 1.21 / 1.18 / 1.31
Luminous Opening: Rectangular (W 0.25' x L: 4' x H: 0')
CIE Type: Semi-Indirect

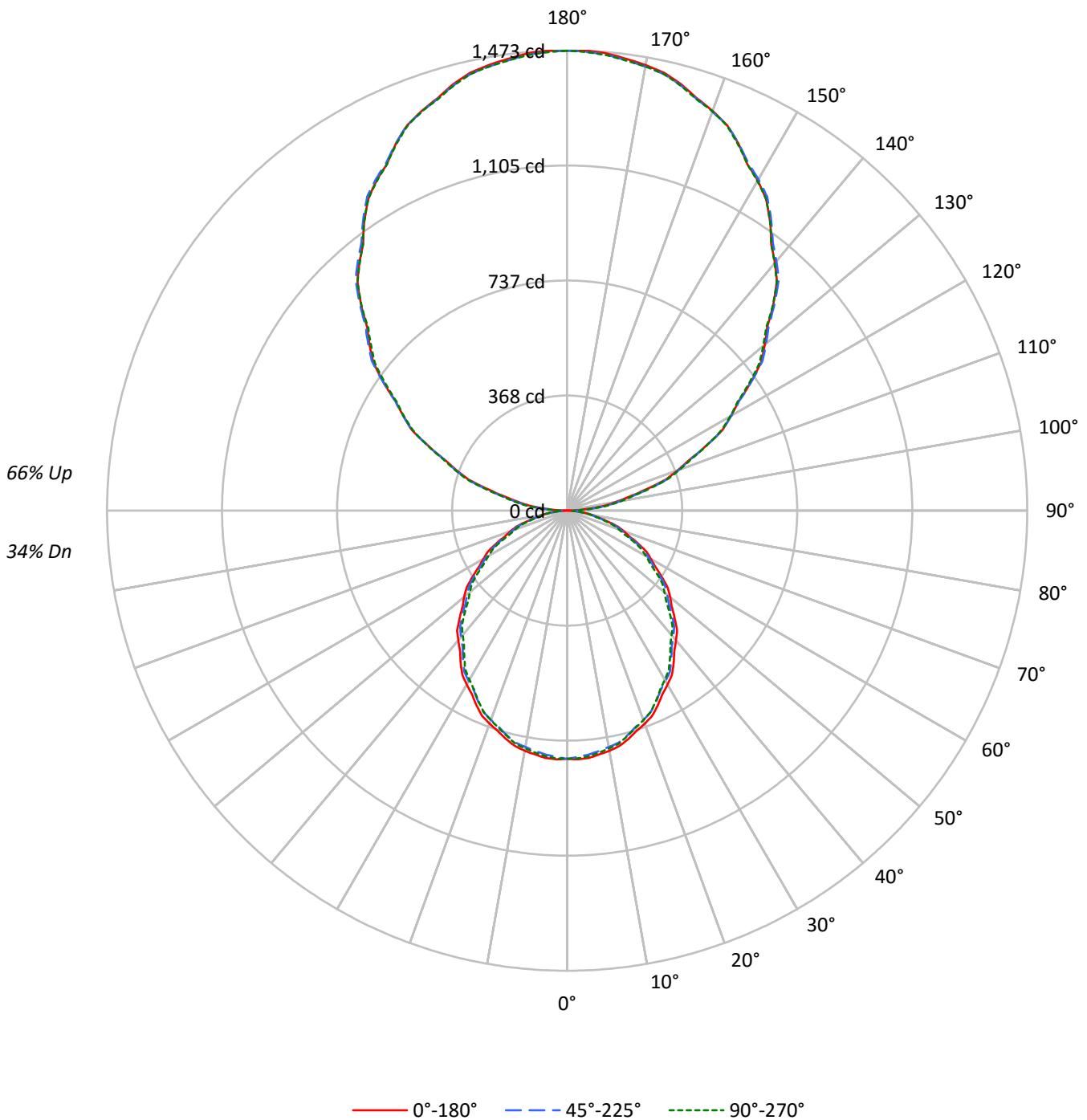
Input Watts (W): 53.8
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	94	90	86	83	85	81	78	75	65	63	61	50	49	47	36	35	35	28
2	86	78	72	67	77	71	66	61	57	53	50	44	41	39	32	30	29	24
3	78	69	62	56	70	62	56	51	50	46	42	39	36	33	28	26	25	20
4	71	61	53	47	64	55	48	43	44	40	36	34	31	28	25	23	21	17
5	65	54	46	40	59	49	42	37	40	35	31	31	27	25	23	20	18	15
6	60	48	40	35	54	44	37	32	36	31	27	28	24	21	21	18	16	13
7	56	44	36	30	50	40	33	28	32	27	23	25	22	19	19	16	14	12
8	51	39	32	27	46	36	29	25	29	24	21	23	19	17	17	15	13	10
9	48	36	29	24	43	33	26	22	27	22	18	21	18	15	16	13	12	9
10	45	33	26	21	40	30	24	20	25	20	17	19	16	13	15	12	11	8

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	8551	8551	8551
5°	8590	8473	8532
10°	8534	8400	8451
15°	8433	8304	8320
20°	8317	8168	8176
25°	8162	8007	7991
30°	7988	7828	7768
35°	7808	7638	7540
40°	7620	7429	7314
45°	7415	7237	7060
50°	7206	7000	6805
55°	6934	6756	6549
60°	6661	6469	6265
65°	6421	6159	5968
70°	6061	5803	5545
75°	5540	5340	5115
80°	4996	4785	4742
85°	4384	4224	4051



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	74.8	1.2
10°-20°	211.3	3.4
20°-30°	312.1	5.1
30°-40°	364.6	5.9
40°-50°	366.5	6.0
50°-60°	322.0	5.2
60°-70°	239.9	3.9
70°-80°	136.7	2.2
80°-90°	43.6	0.7
90°-100°	95.9	1.6
100°-110°	287.1	4.7
110°-120°	488.2	7.9
120°-130°	642.2	10.4
130°-140°	721.9	11.7
140°-150°	709.6	11.5
150°-160°	597.3	9.7
160°-170°	397.6	6.5
170°-180°	139.2	2.3
0°-30°	598.2	9.7
0°-40°	962.8	15.7
0°-60°	1651.3	26.8
0°-90°	2071.5	33.7
90°-120°	871.3	14.2
90°-150°	2944.9	47.9
90°-180°	4079.0	66.3
0°-180°	6150.6	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	794	794	794	794	794	
5°	795	791	784	791	790	75
15°	757	754	745	750	747	213
25°	687	683	674	675	673	316
35°	594	590	581	577	574	372
45°	487	484	475	467	464	376
55°	370	368	360	353	349	331
65°	252	248	242	236	234	249
75°	133	131	128	125	123	142
85°	36	34	34	33	33	39
90°	1	13	28	32	35	6
95°	68	76	86	90	90	77
105°	260	263	273	273	275	279
115°	492	495	493	494	493	486
125°	719	723	720	716	711	641
135°	933	940	939	935	932	719
145°	1132	1135	1138	1137	1132	707
155°	1296	1297	1298	1302	1294	597
165°	1412	1409	1409	1415	1408	398
175°	1469	1464	1464	1470	1463	139
180°	1472	1472	1472	1472	1472	



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4
2.5°	797.1	796.7	796.2	795.7	795.2	794.2	792.9	791.6	790.3	789.0	790.1
5°	795.0	794.3	793.5	792.8	792.0	790.9	789.2	787.5	785.9	784.2	785.7
7.5°	787.3	786.6	785.8	785.1	784.3	783.0	781.3	779.5	777.8	776.1	777.5
10°	780.8	780.0	779.3	778.5	777.8	776.3	774.4	772.4	770.4	768.5	769.8
12.5°	772.0	771.3	770.7	770.1	769.5	768.2	766.3	764.5	762.7	760.8	761.8
15°	756.8	756.3	755.6	755.0	754.4	753.1	751.2	749.2	747.2	745.2	746.5
17.5°	739.2	738.4	737.6	736.8	736.0	734.7	732.7	730.8	728.8	726.7	727.6
20°	726.1	725.2	724.2	723.4	722.5	721.0	719.1	717.1	715.1	713.1	713.7
22.5°	711.3	710.4	709.5	708.6	707.7	706.2	704.3	702.3	700.3	698.4	698.8
25°	687.2	686.3	685.4	684.5	683.5	682.1	680.1	678.1	676.2	674.2	674.3
27.5°	661.4	660.5	659.6	658.7	657.8	656.3	654.2	652.1	650.0	647.8	647.9
30°	642.7	642.0	641.2	640.5	639.7	638.3	636.1	634.0	632.0	629.8	629.8
32.5°	624.2	623.2	622.1	621.2	620.2	618.8	617.2	615.5	613.9	612.3	611.4
35°	594.2	593.3	592.5	591.6	590.7	589.2	587.2	585.2	583.3	581.3	580.4
37.5°	563.7	562.5	561.3	560.2	559.0	557.5	555.4	553.5	551.4	549.5	548.4
40°	542.3	541.4	540.6	539.7	538.7	537.2	535.0	533.0	530.8	528.7	527.4
42.5°	521.0	520.0	519.0	517.9	516.9	515.3	513.2	511.1	509.0	506.8	505.6
45°	487.1	486.4	485.8	485.2	484.6	483.3	481.3	479.4	477.4	475.4	473.6
47.5°	453.3	452.4	451.6	450.7	449.8	448.4	446.6	444.7	442.8	441.0	439.2
50°	430.3	429.5	428.8	428.0	427.3	426.0	423.9	422.0	420.0	418.0	416.3
52.5°	406.3	405.7	405.3	404.7	404.2	402.9	400.8	398.8	396.6	394.6	393.2
55°	369.5	369.3	369.3	369.1	368.9	367.8	365.9	363.9	361.9	360.0	358.3
57.5°	334.6	334.0	333.5	333.1	332.5	331.4	329.8	328.3	326.7	325.1	323.7
60°	309.4	309.2	309.2	309.0	308.8	307.8	306.0	304.2	302.4	300.5	299.2
62.5°	287.0	286.6	286.2	285.9	285.4	284.4	282.5	280.7	278.8	277.1	275.7
65°	252.1	251.3	250.6	249.8	249.1	247.9	246.4	244.9	243.3	241.8	240.6
67.5°	215.0	214.4	213.7	213.0	212.3	211.4	210.3	209.1	207.9	206.9	205.8
70°	192.6	191.7	190.8	189.9	189.0	188.1	187.2	186.3	185.3	184.4	183.3
72.5°	169.2	168.4	167.8	167.1	166.5	165.6	164.6	163.5	162.5	161.5	160.5
75°	133.2	132.6	132.0	131.3	130.8	130.3	129.7	129.3	128.9	128.4	127.7
77.5°	101.4	101.0	100.7	100.4	100.0	99.6	99.1	98.5	97.9	97.4	96.9
80°	80.6	80.2	79.7	79.3	78.7	78.4	78.1	77.8	77.5	77.2	77.0
82.5°	60.4	60.3	60.2	60.1	60.0	59.9	59.9	59.8	59.7	59.7	59.4
85°	35.5	35.2	35.0	34.6	34.3	34.2	34.2	34.2	34.2	34.2	33.9
87.5°	14.4	14.6	14.7	14.9	15.1	15.4	16.0	16.5	17.0	17.6	17.7
90°	1.2	3.7	6.3	8.8	11.4	14.4	17.7	21.0	24.4	27.7	28.8
92.5°	28.0	29.7	31.5	33.3	35.0	36.8	38.7	40.6	42.5	44.4	45.2
95°	68.2	70.0	71.9	73.7	75.4	77.4	79.5	81.5	83.6	85.6	86.6
97.5°	121.2	122.5	123.9	125.2	126.5	128.0	129.5	130.9	132.4	133.9	135.1
100°	157.3	158.8	160.3	161.9	163.5	164.9	166.1	167.5	168.7	170.0	170.8
102.5°	198.9	199.8	200.8	201.7	202.6	203.9	205.6	207.3	209.0	210.7	211.5
105°	260.2	260.7	261.3	261.7	262.3	263.7	266.0	268.3	270.6	273.0	273.0
107.5°	331.4	331.8	332.1	332.4	332.7	333.3	334.2	335.2	336.1	337.0	337.9
110°	375.9	376.4	376.9	377.4	377.9	378.4	379.0	379.5	380.0	380.5	381.6



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	422.1	422.4	422.8	423.0	423.4	423.6	423.7	423.7	423.9	424.0	425.3
115°	491.5	492.3	493.0	493.8	494.6	494.7	494.2	493.7	493.2	492.7	492.9
117.5°	561.4	561.9	562.4	562.9	563.5	563.4	562.7	562.0	561.3	560.7	560.6
120°	604.8	606.4	608.0	609.5	611.0	611.2	609.8	608.6	607.3	606.0	605.7
122.5°	650.2	651.3	652.5	653.6	654.7	655.0	654.2	653.6	652.9	652.3	651.6
125°	719.3	720.1	720.9	721.7	722.5	722.6	722.0	721.6	721.0	720.5	719.5
127.5°	783.2	784.9	786.5	788.1	789.8	790.3	789.8	789.2	788.6	788.1	786.6
130°	825.7	827.8	829.9	832.0	834.0	834.6	833.8	833.1	832.3	831.5	830.5
132.5°	868.3	870.4	872.4	874.5	876.6	877.3	876.7	876.2	875.6	875.0	873.8
135°	933.4	934.9	936.4	937.9	939.5	940.1	939.9	939.6	939.3	939.1	938.1
137.5°	993.5	994.7	996.0	997.3	998.6	999.6	1000.2	1000.9	1001.6	1002.3	1001.1
140°	1035.1	1036.3	1037.7	1038.9	1040.3	1041.0	1041.3	1041.5	1041.8	1042.1	1041.8
142.5°	1073.0	1074.3	1075.6	1076.9	1078.2	1079.1	1079.5	1080.0	1080.4	1080.9	1080.7
145°	1132.2	1132.7	1133.3	1133.8	1134.3	1135.0	1135.7	1136.5	1137.3	1138.0	1137.7
147.5°	1184.0	1185.0	1185.9	1186.9	1187.8	1188.6	1189.3	1190.0	1190.7	1191.4	1191.4
150°	1220.1	1220.7	1221.2	1221.6	1222.2	1222.7	1223.2	1223.7	1224.2	1224.8	1224.8
152.5°	1249.7	1250.4	1251.2	1251.9	1252.6	1253.1	1253.5	1253.7	1254.1	1254.4	1254.8
155°	1296.5	1296.5	1296.5	1296.5	1296.5	1296.6	1296.8	1297.1	1297.4	1297.6	1298.7
157.5°	1336.2	1336.0	1335.6	1335.3	1335.0	1335.0	1335.2	1335.3	1335.6	1335.8	1336.9
160°	1361.2	1360.8	1360.2	1359.7	1359.1	1358.9	1358.9	1358.9	1358.9	1358.9	1360.2
162.5°	1383.4	1382.7	1382.0	1381.3	1380.5	1380.3	1380.5	1380.7	1380.9	1381.1	1382.4
165°	1412.1	1411.3	1410.6	1409.8	1409.1	1408.6	1408.6	1408.6	1408.6	1408.6	1410.2
167.5°	1435.0	1434.0	1433.0	1431.9	1430.9	1430.5	1430.7	1430.9	1431.1	1431.3	1432.9
170°	1448.0	1447.0	1445.9	1444.9	1443.9	1443.3	1443.3	1443.3	1443.3	1443.3	1445.1
172.5°	1458.1	1457.1	1456.1	1455.1	1454.0	1453.5	1453.5	1453.5	1453.5	1453.5	1455.1
175°	1468.8	1467.8	1466.8	1465.7	1464.6	1464.2	1464.2	1464.2	1464.2	1464.2	1465.7
177.5°	1473.2	1472.4	1471.5	1470.7	1469.9	1469.5	1469.5	1469.5	1469.5	1469.5	1470.7
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	794.4	794.4	794.4	794.4	794.4	794.4	794.4	794.4
2.5°	791.4	792.6	793.8	794.3	794.2	794.1	794.0	793.9
5°	787.2	788.7	790.2	790.9	790.5	790.2	790.0	789.6
7.5°	778.8	780.2	781.6	782.1	781.9	781.8	781.6	781.4
10°	771.2	772.6	773.9	774.5	774.2	773.8	773.6	773.2
12.5°	762.8	763.8	764.8	765.2	765.0	764.8	764.6	764.5
15°	747.7	748.9	750.1	750.2	749.3	748.4	747.5	746.6
17.5°	728.5	729.3	730.2	730.4	730.1	729.8	729.4	729.1
20°	714.3	715.0	715.5	715.6	715.2	714.7	714.3	713.8
22.5°	699.4	699.8	700.3	700.3	699.7	699.1	698.6	697.9
25°	674.5	674.7	674.8	674.7	674.2	673.8	673.2	672.8
27.5°	648.1	648.2	648.3	648.1	647.5	646.9	646.3	645.8
30°	629.8	629.8	629.8	629.3	628.2	627.1	626.1	625.0
32.5°	610.6	609.8	608.9	608.1	607.6	607.1	606.5	605.9
35°	579.4	578.5	577.7	576.8	576.0	575.3	574.5	573.8
37.5°	547.2	546.2	545.1	544.3	543.9	543.3	542.9	542.3
40°	526.3	525.0	523.9	522.9	522.3	521.7	521.1	520.5
42.5°	504.4	503.2	501.9	501.1	500.4	499.9	499.3	498.6
45°	471.8	469.9	468.1	466.8	466.1	465.3	464.6	463.8
47.5°	437.4	435.6	433.8	432.6	431.9	431.2	430.6	429.9
50°	414.7	413.0	411.3	410.1	409.1	408.2	407.3	406.4
52.5°	391.7	390.3	388.9	387.6	386.7	385.8	385.0	384.1
55°	356.6	355.0	353.3	352.0	351.3	350.5	349.8	349.0
57.5°	322.2	320.7	319.2	318.0	317.1	316.3	315.4	314.5
60°	297.8	296.5	295.1	294.0	293.3	292.5	291.8	291.0
62.5°	274.3	273.0	271.6	270.6	270.1	269.7	269.1	268.6
65°	239.3	238.2	236.9	236.1	235.7	235.2	234.8	234.3
67.5°	204.7	203.7	202.6	201.7	201.1	200.5	199.8	199.2
70°	182.3	181.3	180.2	179.2	178.5	177.7	177.0	176.2
72.5°	159.6	158.6	157.7	157.0	156.7	156.2	155.9	155.4
75°	126.9	126.2	125.4	124.8	124.3	123.9	123.4	123.0
77.5°	96.4	95.9	95.3	95.1	95.1	95.1	95.1	95.1
80°	76.9	76.7	76.6	76.5	76.5	76.5	76.5	76.5
82.5°	59.1	58.9	58.6	58.4	58.3	58.1	58.1	58.0
85°	33.5	33.3	32.9	32.8	32.8	32.8	32.8	32.8
87.5°	17.7	17.8	17.9	18.0	18.1	18.2	18.3	18.5
90°	29.8	30.9	31.8	32.6	33.2	33.7	34.2	34.7
92.5°	46.0	46.9	47.7	48.0	47.6	47.3	47.0	46.7
95°	87.7	88.6	89.7	90.2	90.2	90.2	90.2	90.2
97.5°	136.3	137.5	138.7	139.2	139.1	139.0	138.9	138.8
100°	171.6	172.3	173.1	173.7	174.2	174.8	175.3	175.8
102.5°	212.2	213.0	213.8	214.1	214.0	213.9	213.8	213.7
105°	273.0	273.0	273.0	273.2	273.8	274.2	274.7	275.3
107.5°	338.7	339.5	340.3	340.5	340.3	339.9	339.7	339.3
110°	382.5	383.6	384.6	384.9	384.3	383.9	383.3	382.8



TEST NUMBER: P332143-940

CATALOG NUMBER: S123DIW-S560D1320U940-4F0-1E-UDD-F1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	426.4	427.7	428.9	429.4	429.4	429.3	429.2	429.1
115°	493.2	493.5	493.7	493.7	493.5	493.2	492.9	492.7
117.5°	560.6	560.5	560.4	560.1	559.4	558.7	557.9	557.2
120°	605.5	605.3	605.0	604.6	604.1	603.6	603.1	602.5
122.5°	650.9	650.2	649.6	648.9	648.2	647.5	646.8	646.0
125°	718.5	717.5	716.4	715.4	714.3	713.3	712.3	711.2
127.5°	785.2	783.7	782.3	781.0	779.8	778.6	777.5	776.2
130°	829.5	828.5	827.4	826.0	824.2	822.4	820.6	818.9
132.5°	872.5	871.3	870.1	868.8	867.4	866.0	864.6	863.3
135°	937.0	936.0	935.0	934.2	933.7	933.2	932.6	932.2
137.5°	1000.1	999.0	997.9	996.9	996.0	995.0	994.0	993.0
140°	1041.5	1041.3	1041.0	1040.0	1038.2	1036.3	1034.6	1032.8
142.5°	1080.4	1080.1	1079.9	1079.1	1077.6	1076.3	1074.9	1073.5
145°	1137.5	1137.3	1137.0	1136.4	1135.3	1134.3	1133.3	1132.2
147.5°	1191.4	1191.4	1191.4	1190.7	1189.2	1187.6	1186.1	1184.5
150°	1224.8	1224.8	1224.8	1224.0	1222.4	1220.9	1219.3	1217.8
152.5°	1255.2	1255.6	1256.0	1255.5	1254.2	1252.9	1251.5	1250.2
155°	1299.7	1300.7	1301.7	1301.4	1299.6	1297.8	1295.9	1294.1
157.5°	1337.9	1339.0	1340.2	1339.9	1338.5	1337.0	1335.6	1334.2
160°	1361.5	1362.8	1364.1	1364.2	1363.2	1362.2	1361.1	1360.0
162.5°	1383.7	1385.0	1386.3	1386.1	1384.5	1382.8	1381.2	1379.5
165°	1411.8	1413.3	1414.8	1414.7	1412.9	1411.1	1409.3	1407.5
167.5°	1434.5	1436.1	1437.7	1437.7	1436.1	1434.5	1432.9	1431.3
170°	1447.0	1448.8	1450.5	1450.5	1448.8	1447.0	1445.1	1443.3
172.5°	1456.7	1458.3	1459.9	1459.8	1458.0	1456.2	1454.4	1452.6
175°	1467.2	1468.8	1470.3	1470.2	1468.4	1466.6	1464.8	1463.0
177.5°	1471.9	1473.2	1474.4	1474.4	1472.8	1471.4	1470.0	1468.6
180°	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3	1472.3

(END OF REPORT)