

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: P332183-935

Luminaire Tested: **S123DIW-S1000D460U935-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

Test Information

Test Method: LM-79-08
Report Number: P332183-935
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-S1000D460U935-4F0-1E-UDD-D1
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER
UPLIGHT 460 LUMENS PER FOOT, FLUSH SATIN WHITE DIFFUSER
Light Source: -
Ballast/Driver: ELECTRONIC DRIVER

Summary

Lumens per Lamp: N/A
Luminaire Lumens: 4992.7 lumens
Efficiency: N/A
Efficacy: 108.1 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-Direct

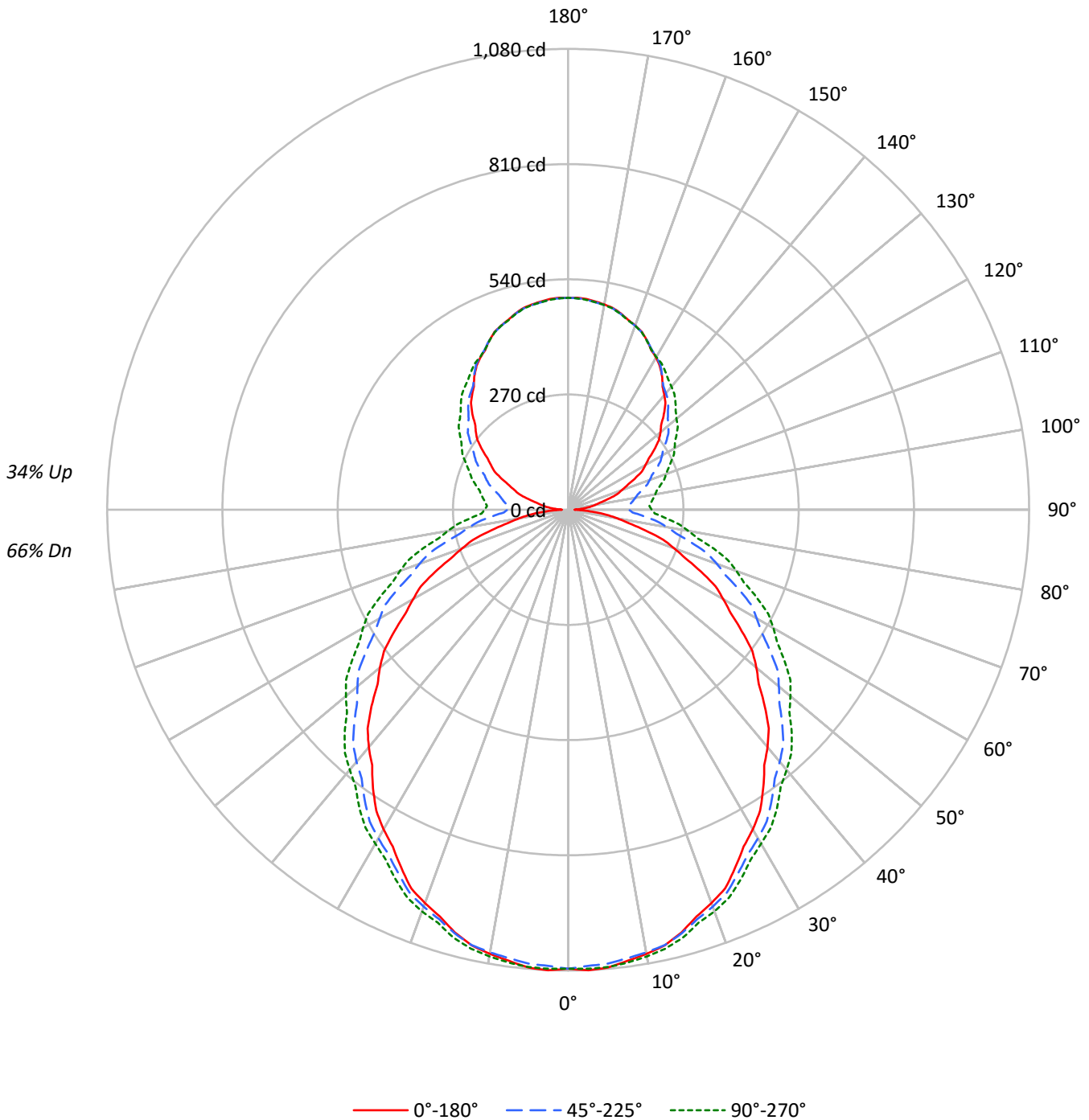
Input Watts (W): 46.2
Input Voltage (V): 120
Input Current (Ain): NR
Voltage Rise (V): NR
Power Factor: NR
Total Harmonic Distortion (THDi): NR
Frequency (hertz): 60
Stabilization Time: NR
Operation Time: NR
Ambient Temperature (°C): NR
Test Distance: 25 FT



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

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	111	111	111	111	105	105	105	105	92	92	92	81	81	81	71	71	71	66
1	100	95	90	86	94	89	85	82	79	76	73	69	67	65	61	59	57	53
2	91	82	75	69	85	77	71	66	68	64	60	60	57	53	53	50	47	43
3	82	72	64	57	77	68	60	55	60	54	49	53	48	44	46	43	40	36
4	75	63	55	48	70	60	52	46	53	47	42	47	42	38	41	37	34	31
5	69	56	48	41	64	53	45	39	47	41	36	42	37	33	37	33	29	26
6	63	51	42	36	59	48	40	34	43	36	31	38	33	28	33	29	26	23
7	59	46	37	31	55	43	35	30	39	32	28	34	29	25	30	26	23	20
8	55	41	33	28	51	39	32	27	35	29	24	32	26	22	28	24	20	18
9	51	38	30	25	48	36	29	24	32	26	22	29	24	20	26	21	18	16
10	48	35	27	22	45	33	26	21	30	24	20	27	22	18	24	20	17	15

AVERAGE LUMINANCE (cd/sqm):

	0°	45°	90°
0°	11579	11579	11579
5°	11615	11288	11294
10°	11511	11028	10973
15°	11363	10732	10622
20°	11151	10395	10235
25°	10888	10007	9829
30°	10621	9658	9417
35°	10321	9289	9089
40°	10033	8953	8737
45°	9715	8630	8455
50°	9402	8312	8146
55°	9056	7985	7866
60°	8718	7655	7580
65°	8372	7303	7241
70°	7847	6904	6893
75°	7189	6449	6538
80°	6431	6003	6131
85°	5726	5695	5898



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

ZONAL LUMENS:

Zone	Lumens	% Fixture
0°-10°	102.0	2.0
10°-20°	290.7	5.8
20°-30°	434.8	8.7
30°-40°	519.2	10.4
40°-50°	543.3	10.9
50°-60°	509.8	10.2
60°-70°	425.8	8.5
70°-80°	304.6	6.1
80°-90°	183.1	3.7
90°-100°	146.3	2.9
100°-110°	180.6	3.6
110°-120°	220.7	4.4
120°-130°	248.6	5.0
130°-140°	257.9	5.2
140°-150°	242.5	4.9
150°-160°	201.6	4.0
160°-170°	134.2	2.7
170°-180°	47.0	0.9
0°-30°	827.5	16.6
0°-40°	1346.7	27.0
0°-60°	2399.8	48.1
0°-90°	3313.4	66.4
90°-120°	547.6	11.0
90°-150°	1296.6	26.0
90°-180°	1679.0	33.6
0°-180°	4992.7	100.0

CANDELA DISTRIBUTION:

	0°	22.5°	45°	67.5°	90°	Flux
0°	1076	1076	1076	1076	1076	
5°	1077	1074	1068	1076	1076	102
15°	1025	1029	1028	1039	1038	289
25°	926	937	941	955	956	426
35°	797	815	831	848	853	498
45°	652	680	709	731	741	502
55°	497	536	578	608	619	445
65°	343	389	441	474	488	339
75°	186	242	300	337	353	199
85°	57	116	178	216	230	60
90°	16	77	142	182	196	12
95°	36	85	145	181	194	36
105°	97	128	180	212	224	103
115°	172	188	228	256	266	170
125°	246	249	281	303	310	220
135°	317	319	331	350	356	244
145°	383	383	384	393	396	239
155°	437	437	438	439	437	201
165°	476	475	475	477	475	134
175°	496	494	494	496	494	47
180°	497	497	497	497	497	



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (FULL):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7
2.5°	1080.5	1079.9	1079.2	1078.6	1078.0	1076.8	1075.1	1073.5	1071.8	1070.1	1071.8
5°	1076.9	1076.4	1075.9	1075.4	1074.9	1073.8	1072.3	1070.7	1069.1	1067.6	1069.6
7.5°	1066.3	1066.5	1066.6	1066.7	1066.8	1066.1	1064.6	1063.1	1061.5	1060.1	1062.6
10°	1057.0	1057.6	1058.1	1058.6	1059.1	1058.7	1057.4	1056.1	1054.8	1053.5	1056.1
12.5°	1045.8	1046.5	1047.2	1047.9	1048.7	1048.6	1047.8	1046.8	1045.9	1045.1	1047.5
15°	1025.4	1026.1	1026.9	1027.7	1028.5	1028.7	1028.5	1028.2	1027.9	1027.7	1030.4
17.5°	999.6	1001.2	1002.7	1004.3	1005.8	1006.6	1006.5	1006.3	1006.3	1006.2	1008.5
20°	980.9	982.4	984.0	985.5	987.1	988.2	988.7	989.2	989.7	990.2	992.6
22.5°	961.1	962.7	964.3	965.9	967.4	968.5	969.3	970.0	970.8	971.5	974.4
25°	925.7	928.3	931.0	933.6	936.2	937.9	938.7	939.4	940.2	941.0	944.3
27.5°	890.1	893.1	896.0	899.1	902.0	904.3	906.0	907.7	909.3	911.0	914.0
30°	864.8	868.2	871.6	874.9	878.4	881.1	883.2	885.3	887.3	889.4	892.6
32.5°	836.7	840.5	844.3	848.1	851.9	855.1	857.9	860.6	863.3	866.0	869.4
35°	796.9	801.0	805.2	809.3	813.6	817.3	820.7	824.1	827.4	830.9	834.7
37.5°	754.7	759.4	764.1	768.7	773.4	777.8	782.0	786.2	790.3	794.5	798.9
40°	726.5	731.2	735.9	740.6	745.3	750.3	755.4	760.7	765.9	771.1	775.5
42.5°	695.6	701.4	707.1	712.8	718.5	724.1	729.5	734.9	740.4	745.8	750.6
45°	651.5	657.8	664.1	670.3	676.6	682.9	689.4	695.9	702.5	708.9	713.9
47.5°	605.4	612.4	619.6	626.6	633.7	641.0	648.4	655.9	663.3	670.8	676.3
50°	575.4	582.6	590.0	597.3	604.5	612.3	620.3	628.4	636.5	644.5	650.5
52.5°	543.5	551.2	559.0	566.6	574.4	582.6	591.6	600.5	609.3	618.3	624.5
55°	496.9	505.5	514.0	522.6	531.2	540.2	549.6	559.0	568.3	577.7	584.8
57.5°	451.4	460.4	469.3	478.3	487.2	496.9	507.1	517.4	527.6	537.9	544.9
60°	419.6	428.9	438.2	447.6	457.0	467.0	477.7	488.4	499.1	509.8	517.0
62.5°	389.5	399.1	408.7	418.3	427.8	438.3	449.6	460.9	472.2	483.5	490.8
65°	343.4	353.5	363.7	373.8	384.0	394.8	406.2	417.7	429.1	440.7	448.4
67.5°	296.4	307.3	318.1	328.8	339.6	350.9	362.5	374.2	385.8	397.5	406.0
70°	263.6	274.8	286.0	297.3	308.5	320.3	332.8	345.3	357.8	370.3	378.7
72.5°	233.7	244.9	256.1	267.3	278.4	290.5	303.4	316.3	329.2	342.2	350.7
75°	186.3	198.5	210.8	223.1	235.3	247.9	261.0	274.0	287.0	300.0	308.6
77.5°	145.1	157.4	169.8	182.1	194.4	207.2	220.3	233.4	246.6	259.7	268.7
80°	116.0	128.8	141.5	154.3	167.0	180.2	193.7	207.3	220.8	234.4	243.2
82.5°	90.7	103.7	116.7	129.6	142.6	155.9	169.7	183.4	197.2	210.9	219.8
85°	57.4	70.4	83.4	96.5	109.5	123.0	136.7	150.5	164.3	178.1	187.0
87.5°	31.3	44.4	57.5	70.7	83.8	97.1	110.6	124.2	137.7	151.2	160.1
90°	15.6	29.3	42.9	56.5	70.2	84.1	98.6	113.0	127.3	141.8	151.0
92.5°	23.8	35.8	48.0	60.0	72.2	85.1	98.8	112.4	126.2	139.9	148.9
95°	35.9	46.7	57.4	68.2	79.0	91.1	104.5	118.0	131.5	144.9	153.3
97.5°	52.3	62.0	71.6	81.2	90.8	102.0	114.7	127.3	140.1	152.7	160.9
100°	63.6	72.5	81.3	90.1	99.0	109.7	122.1	134.5	146.9	159.3	167.1
102.5°	76.7	84.6	92.4	100.1	108.0	118.0	130.4	142.8	155.1	167.4	175.0
105°	97.2	103.6	110.0	116.4	122.9	132.1	144.0	156.0	168.0	179.9	187.3
107.5°	119.8	125.2	130.6	136.0	141.5	149.6	160.6	171.5	182.4	193.4	200.6
110°	133.8	138.7	143.5	148.4	153.3	161.0	171.6	182.2	192.8	203.4	210.5



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	149.5	153.4	157.4	161.4	165.3	172.3	182.3	192.3	202.4	212.4	219.4
115°	171.7	175.0	178.5	181.8	185.2	191.5	200.7	209.9	219.1	228.3	234.6
117.5°	195.0	197.1	199.2	201.3	203.5	208.8	217.3	225.9	234.5	243.1	249.3
120°	208.8	210.6	212.4	214.2	216.0	221.0	229.2	237.4	245.5	253.7	259.6
122.5°	224.0	225.1	226.2	227.2	228.3	232.8	240.7	248.7	256.7	264.6	270.2
125°	246.2	246.5	246.8	247.0	247.3	251.1	258.5	265.8	273.2	280.6	285.7
127.5°	267.8	268.0	268.4	268.6	268.9	272.1	278.2	284.2	290.2	296.4	301.0
130°	282.1	282.6	283.0	283.4	283.9	286.5	291.4	296.4	301.4	306.3	310.9
132.5°	295.5	296.2	296.8	297.5	298.1	300.4	304.4	308.3	312.4	316.3	320.6
135°	317.2	317.5	317.7	318.0	318.2	319.8	322.5	325.4	328.1	330.9	335.3
137.5°	337.3	337.5	337.7	337.9	338.2	339.2	341.0	342.9	344.7	346.6	350.3
140°	350.4	350.9	351.3	351.7	352.1	352.8	353.6	354.5	355.3	356.3	360.1
142.5°	363.2	363.4	363.6	363.9	364.1	364.4	364.6	365.0	365.3	365.6	369.0
145°	383.1	383.1	383.0	382.9	382.8	382.9	383.1	383.4	383.7	383.9	385.9
147.5°	399.5	399.8	400.1	400.4	400.7	401.0	401.2	401.5	401.7	402.0	402.6
150°	411.6	411.8	412.0	412.2	412.3	412.5	412.7	412.8	413.0	413.2	413.2
152.5°	421.6	421.9	422.1	422.3	422.6	422.8	422.8	423.0	423.1	423.2	423.4
155°	437.4	437.4	437.4	437.4	437.4	437.5	437.6	437.6	437.7	437.8	438.2
157.5°	450.8	450.7	450.6	450.5	450.4	450.4	450.5	450.6	450.6	450.6	451.0
160°	459.3	459.1	458.9	458.7	458.6	458.5	458.5	458.5	458.5	458.5	458.9
162.5°	466.7	466.5	466.2	466.0	465.8	465.7	465.7	465.8	465.9	466.0	466.4
165°	476.4	476.1	475.9	475.6	475.4	475.3	475.3	475.3	475.3	475.3	475.8
167.5°	484.1	483.8	483.5	483.1	482.8	482.6	482.7	482.8	482.8	482.8	483.5
170°	488.5	488.2	487.8	487.5	487.2	487.0	487.0	487.0	487.0	487.0	487.6
172.5°	492.0	491.6	491.3	490.9	490.5	490.3	490.3	490.3	490.3	490.3	490.9
175°	495.5	495.2	494.8	494.5	494.1	494.0	494.0	494.0	494.0	494.0	494.5
177.5°	497.1	496.7	496.5	496.2	495.9	495.8	495.8	495.8	495.8	495.8	496.2
180°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7	1075.7
2.5°	1073.5	1075.1	1076.8	1077.5	1077.3	1077.1	1076.9	1076.7
5°	1071.7	1073.8	1075.9	1076.8	1076.5	1076.2	1076.0	1075.7
7.5°	1065.2	1067.9	1070.5	1071.6	1071.3	1071.0	1070.7	1070.4
10°	1058.7	1061.3	1063.9	1065.0	1064.5	1063.9	1063.4	1062.9
12.5°	1049.8	1052.2	1054.6	1055.6	1055.1	1054.6	1054.0	1053.5
15°	1032.9	1035.5	1038.1	1039.3	1039.1	1038.8	1038.5	1038.3
17.5°	1010.8	1013.2	1015.5	1016.5	1016.2	1015.8	1015.5	1015.0
20°	994.9	997.2	999.6	1000.9	1001.2	1001.4	1001.7	1001.9
22.5°	977.4	980.3	983.3	984.7	984.6	984.5	984.3	984.1
25°	947.8	951.1	954.5	956.2	956.2	956.2	956.2	956.2
27.5°	916.8	919.7	922.6	924.2	924.5	924.6	924.9	925.1
30°	895.7	898.8	901.9	903.5	903.5	903.5	903.5	903.5
32.5°	872.7	876.0	879.3	881.3	881.9	882.5	883.2	883.8
35°	838.6	842.6	846.4	848.9	850.0	851.0	852.0	853.1
37.5°	803.4	807.8	812.3	814.9	815.7	816.5	817.3	818.2
40°	779.9	784.4	788.8	791.5	792.6	793.6	794.6	795.7
42.5°	755.4	760.3	765.2	768.3	769.7	771.2	772.7	774.1
45°	718.8	723.8	728.8	732.3	734.3	736.4	738.6	740.6
47.5°	681.9	687.5	693.0	696.6	698.3	699.9	701.5	703.1
50°	656.5	662.5	668.5	672.4	674.2	676.1	677.9	679.7
52.5°	630.7	636.9	643.1	647.3	649.5	651.8	654.0	656.3
55°	591.8	598.8	605.9	610.4	612.5	614.6	616.6	618.7
57.5°	552.1	559.1	566.2	571.0	573.4	575.8	578.3	580.7
60°	524.3	531.7	538.9	544.0	546.9	549.7	552.6	555.4
62.5°	498.1	505.4	512.6	517.6	520.3	523.0	525.6	528.3
65°	456.2	464.1	471.8	477.1	479.7	482.2	484.9	487.5
67.5°	414.6	423.1	431.6	437.0	439.2	441.4	443.6	445.7
70°	386.9	395.3	403.6	409.1	411.7	414.3	416.9	419.6
72.5°	359.3	367.8	376.3	381.9	384.5	387.1	389.8	392.4
75°	317.2	325.8	334.3	340.3	343.4	346.5	349.6	352.8
77.5°	277.8	286.9	295.9	301.7	304.0	306.4	308.8	311.3
80°	252.1	261.0	269.8	275.5	278.1	280.7	283.4	285.9
82.5°	228.7	237.5	246.3	252.1	254.7	257.3	259.8	262.5
85°	195.8	204.7	213.5	219.3	221.9	224.5	227.0	229.7
87.5°	169.0	178.0	186.8	192.6	195.3	197.9	200.5	203.2
90°	160.1	169.4	178.6	184.6	187.4	190.1	193.0	195.7
92.5°	157.7	166.7	175.6	181.2	183.5	185.8	188.0	190.4
95°	161.7	170.1	178.6	184.1	186.7	189.2	191.9	194.5
97.5°	169.1	177.2	185.4	190.8	193.3	195.9	198.5	201.0
100°	175.0	182.7	190.5	195.9	198.6	201.4	204.1	207.0
102.5°	182.6	190.2	197.9	202.9	205.5	208.0	210.6	213.2
105°	194.6	201.8	209.1	214.0	216.5	219.0	221.6	224.1
107.5°	207.9	215.2	222.4	227.1	229.3	231.5	233.7	235.9
110°	217.6	224.7	231.9	236.3	238.2	240.1	242.1	244.0



TEST NUMBER: P332183-935

CATALOG NUMBER: S123DIW-S1000D460U935-4F0-1E-UDD-D1

CANDELA DISTRIBUTION (continued):

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	226.4	233.3	240.3	245.0	247.2	249.4	251.8	254.0
115°	241.0	247.4	253.7	257.9	259.8	261.8	263.8	265.8
117.5°	255.5	261.6	267.8	271.7	273.5	275.3	277.2	279.0
120°	265.4	271.4	277.2	281.0	282.8	284.4	286.0	287.7
122.5°	275.7	281.3	286.8	290.4	292.0	293.5	295.2	296.7
125°	290.8	295.9	301.1	304.4	305.8	307.3	308.8	310.3
127.5°	305.7	310.4	315.0	318.1	319.4	320.8	322.2	323.6
130°	315.6	320.1	324.7	327.5	328.5	329.4	330.4	331.3
132.5°	324.9	329.2	333.6	336.4	337.7	339.0	340.4	341.6
135°	339.6	343.9	348.3	351.0	352.1	353.3	354.4	355.5
137.5°	354.0	357.8	361.5	363.9	364.9	365.8	366.9	367.8
140°	363.9	367.7	371.5	373.8	374.4	375.1	375.8	376.5
142.5°	372.4	375.8	379.2	381.3	382.2	383.0	383.8	384.7
145°	388.0	389.9	391.9	393.3	394.0	394.7	395.4	396.1
147.5°	403.2	403.8	404.5	405.0	405.4	405.8	406.2	406.7
150°	413.2	413.2	413.2	413.2	413.2	413.2	413.2	413.2
152.5°	423.4	423.6	423.8	423.6	423.3	422.9	422.6	422.2
155°	438.5	438.9	439.2	439.0	438.4	437.8	437.2	436.6
157.5°	451.4	451.8	452.1	452.0	451.6	451.1	450.6	450.1
160°	459.3	459.8	460.2	460.2	459.9	459.5	459.2	458.8
162.5°	466.8	467.3	467.7	467.6	467.1	466.5	466.0	465.4
165°	476.3	476.8	477.3	477.3	476.6	476.0	475.4	474.8
167.5°	484.0	484.5	485.0	485.0	484.5	484.0	483.5	482.8
170°	488.2	488.8	489.4	489.4	488.8	488.2	487.6	487.0
172.5°	491.5	492.0	492.5	492.5	491.9	491.3	490.7	490.1
175°	495.0	495.5	496.0	496.0	495.4	494.8	494.2	493.6
177.5°	496.6	497.1	497.4	497.4	496.9	496.5	495.9	495.4
180°	496.7	496.7	496.7	496.7	496.7	496.7	496.7	496.7

(END OF REPORT)