

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: P332183-940

Luminaire Tested: **S123DIW-S1000D460U940-4F0-1E-UDD-D1**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332183-940  
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-S1000D460U940-4F0-1E-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: 5170.8 lumens  
Efficiency: N/A  
Efficacy: 111.9 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

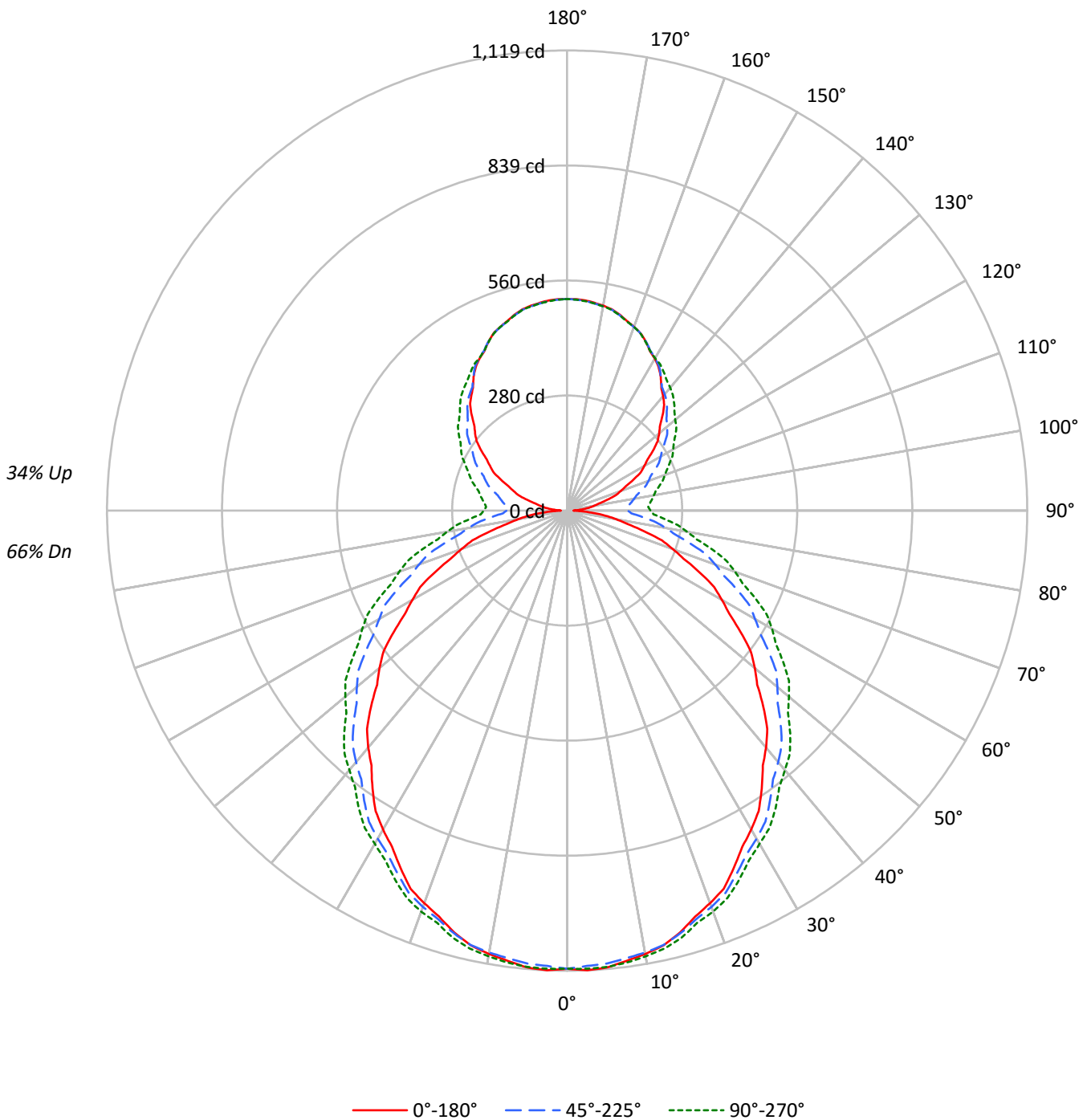
Input Watts (W): 46.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

### Luminous Intensity Polar Plot





TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-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	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°	11992	11992	11992
5°	12030	11690	11697
10°	11922	11421	11364
15°	11768	11114	11000
20°	11548	10767	10600
25°	11278	10365	10179
30°	10999	10002	9754
35°	10689	9620	9413
40°	10391	9273	9048
45°	10062	8938	8757
50°	9737	8608	8436
55°	9378	8270	8147
60°	9028	7928	7850
65°	8670	7563	7499
70°	8127	7150	7138
75°	7448	6679	6770
80°	6658	6216	6350
85°	5935	5899	6108



TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.6	2.0
10°-20°	301.1	5.8
20°-30°	450.3	8.7
30°-40°	537.8	10.4
40°-50°	562.6	10.9
50°-60°	528.0	10.2
60°-70°	441.0	8.5
70°-80°	315.5	6.1
80°-90°	189.7	3.7
90°-100°	151.6	2.9
100°-110°	187.1	3.6
110°-120°	228.5	4.4
120°-130°	257.5	5.0
130°-140°	267.1	5.2
140°-150°	251.1	4.9
150°-160°	208.7	4.0
160°-170°	138.9	2.7
170°-180°	48.7	0.9
0°-30°	857.0	16.6
0°-40°	1394.8	27.0
0°-60°	2485.4	48.1
0°-90°	3431.6	66.4
90°-120°	567.2	11.0
90°-150°	1342.8	26.0
90°-180°	1739.0	33.6
0°-180°	5170.8	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1114	1114	1114	1114	1114	
5°	1115	1113	1106	1115	1114	106
15°	1062	1065	1064	1076	1075	299
25°	959	970	975	989	990	442
35°	825	844	860	878	884	516
45°	675	704	734	757	767	520
55°	515	555	598	630	641	461
65°	356	403	456	491	505	351
75°	193	250	311	349	365	206
85°	60	120	184	224	238	62
90°	16	80	147	188	203	12
95°	37	88	150	188	201	37
105°	101	132	186	219	232	107
115°	178	195	236	265	275	176
125°	255	258	291	314	321	228
135°	328	330	343	362	368	253
145°	397	396	398	407	410	248
155°	453	453	453	455	452	208
165°	493	492	492	494	492	139
175°	513	512	512	514	511	49
180°	514	514	514	514	514	



TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1
2.5°	1119.0	1118.4	1117.7	1117.0	1116.4	1115.2	1113.5	1111.8	1110.0	1108.3	1110.0
5°	1115.4	1114.8	1114.3	1113.7	1113.2	1112.1	1110.5	1108.8	1107.2	1105.6	1107.8
7.5°	1104.4	1104.6	1104.7	1104.7	1104.8	1104.1	1102.6	1101.0	1099.4	1097.9	1100.5
10°	1094.8	1095.3	1095.8	1096.4	1096.9	1096.4	1095.1	1093.8	1092.4	1091.1	1093.8
12.5°	1083.1	1083.8	1084.6	1085.3	1086.1	1086.0	1085.1	1084.1	1083.3	1082.4	1084.9
15°	1061.9	1062.7	1063.5	1064.3	1065.1	1065.4	1065.1	1064.9	1064.6	1064.3	1067.1
17.5°	1035.3	1036.9	1038.5	1040.1	1041.7	1042.5	1042.4	1042.2	1042.1	1042.1	1044.5
20°	1015.8	1017.4	1019.0	1020.7	1022.3	1023.4	1024.0	1024.5	1025.0	1025.6	1028.0
22.5°	995.4	997.0	998.7	1000.3	1001.9	1003.1	1003.9	1004.6	1005.4	1006.1	1009.1
25°	958.8	961.4	964.2	966.9	969.6	971.3	972.1	972.9	973.7	974.6	978.0
27.5°	921.9	925.0	928.0	931.1	934.2	936.6	938.3	940.0	941.7	943.5	946.6
30°	895.6	899.2	902.7	906.2	909.7	912.5	914.7	916.9	919.0	921.1	924.4
32.5°	866.6	870.5	874.4	878.3	882.3	885.6	888.5	891.3	894.1	896.9	900.4
35°	825.3	829.6	833.9	838.2	842.6	846.4	850.0	853.5	856.9	860.5	864.5
37.5°	781.6	786.5	791.3	796.1	801.0	805.6	809.9	814.2	818.5	822.9	827.4
40°	752.4	757.3	762.1	767.0	771.9	777.0	782.4	787.8	793.2	798.6	803.2
42.5°	720.4	726.4	732.3	738.2	744.1	749.9	755.5	761.2	766.8	772.4	777.4
45°	674.8	681.3	687.8	694.2	700.7	707.3	714.0	720.8	727.5	734.2	739.4
47.5°	627.0	634.3	641.7	649.0	656.3	663.9	671.5	679.3	687.0	694.7	700.4
50°	595.9	603.4	611.0	618.6	626.1	634.1	642.4	650.8	659.2	667.5	673.7
52.5°	562.8	570.9	578.9	586.8	594.9	603.4	612.7	621.9	631.1	640.3	646.8
55°	514.6	523.5	532.4	541.3	550.2	559.5	569.2	578.9	588.6	598.3	605.6
57.5°	467.5	476.8	486.1	495.3	504.6	514.6	525.2	535.8	546.4	557.1	564.4
60°	434.5	444.2	453.9	463.6	473.3	483.7	494.7	505.9	516.9	528.0	535.5
62.5°	403.4	413.3	423.3	433.2	443.1	454.0	465.7	477.3	489.0	500.8	508.3
65°	355.6	366.1	376.7	387.2	397.7	408.8	420.7	432.6	444.4	456.4	464.4
67.5°	307.0	318.3	329.4	340.5	351.7	363.4	375.4	387.5	399.6	411.7	420.5
70°	273.0	284.6	296.2	307.9	319.5	331.7	344.6	357.7	370.6	383.5	392.2
72.5°	242.0	253.6	265.2	276.8	288.4	300.9	314.2	327.6	341.0	354.4	363.2
75°	193.0	205.6	218.3	231.0	243.7	256.7	270.3	283.7	297.2	310.7	319.6
77.5°	150.3	163.0	175.8	188.6	201.3	214.5	228.2	241.7	255.4	268.9	278.3
80°	120.1	133.4	146.6	159.8	173.0	186.6	200.6	214.7	228.7	242.7	251.9
82.5°	93.9	107.4	120.8	134.2	147.7	161.5	175.8	189.9	204.2	218.5	227.7
85°	59.5	72.9	86.4	100.0	113.4	127.3	141.6	155.9	170.1	184.5	193.7
87.5°	32.4	46.0	59.6	73.2	86.8	100.6	114.6	128.6	142.6	156.6	165.8
90°	16.1	30.3	44.4	58.5	72.7	87.1	102.1	117.0	131.9	146.9	156.4
92.5°	24.6	37.1	49.7	62.2	74.7	88.1	102.3	116.5	130.7	144.9	154.2
95°	37.2	48.3	59.5	70.6	81.8	94.3	108.3	122.2	136.2	150.1	158.8
97.5°	54.2	64.2	74.2	84.1	94.1	105.7	118.8	131.9	145.1	158.2	166.7
100°	65.9	75.1	84.2	93.4	102.5	113.6	126.4	139.3	152.1	165.0	173.1
102.5°	79.5	87.6	95.7	103.7	111.8	122.3	135.0	147.8	160.6	173.3	181.3
105°	100.7	107.3	114.0	120.6	127.2	136.8	149.2	161.6	174.0	186.4	193.9
107.5°	124.0	129.7	135.3	140.9	146.5	155.0	166.3	177.6	189.0	200.3	207.8
110°	138.6	143.7	148.6	153.7	158.7	166.7	177.7	188.7	199.7	210.6	218.0



TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	154.8	158.9	163.0	167.1	171.2	178.4	188.8	199.2	209.6	220.0	227.2
115°	177.8	181.3	184.9	188.3	191.8	198.3	207.9	217.4	226.9	236.5	243.0
117.5°	202.0	204.1	206.3	208.5	210.7	216.2	225.1	234.0	242.8	251.7	258.2
120°	216.2	218.1	220.0	221.9	223.7	228.9	237.4	245.8	254.2	262.7	268.9
122.5°	232.0	233.1	234.3	235.3	236.4	241.1	249.3	257.5	265.8	274.0	279.8
125°	255.0	255.3	255.6	255.8	256.1	260.0	267.7	275.3	282.9	290.6	295.9
127.5°	277.3	277.6	277.9	278.2	278.5	281.8	288.1	294.4	300.6	306.9	311.7
130°	292.1	292.7	293.1	293.6	294.0	296.8	301.8	307.0	312.1	317.3	322.0
132.5°	306.0	306.7	307.4	308.1	308.7	311.1	315.2	319.3	323.5	327.6	332.1
135°	328.5	328.8	329.0	329.3	329.6	331.2	334.0	337.0	339.8	342.7	347.2
137.5°	349.3	349.6	349.7	350.0	350.3	351.3	353.2	355.1	357.0	358.9	362.8
140°	362.9	363.4	363.8	364.3	364.7	365.3	366.2	367.1	368.0	369.0	372.9
142.5°	376.1	376.4	376.6	376.8	377.1	377.4	377.6	378.0	378.4	378.6	382.2
145°	396.8	396.7	396.6	396.5	396.5	396.5	396.8	397.1	397.3	397.6	399.7
147.5°	413.8	414.0	414.4	414.6	415.0	415.3	415.5	415.8	416.1	416.3	417.0
150°	426.3	426.5	426.7	426.9	427.0	427.2	427.4	427.6	427.8	427.9	427.9
152.5°	436.7	436.9	437.2	437.4	437.7	437.8	437.9	438.1	438.2	438.3	438.5
155°	453.0	453.0	453.0	453.0	453.0	453.1	453.2	453.3	453.3	453.4	453.8
157.5°	466.9	466.8	466.7	466.5	466.5	466.5	466.5	466.6	466.6	466.7	467.1
160°	475.6	475.5	475.3	475.1	474.9	474.8	474.8	474.8	474.8	474.8	475.3
162.5°	483.4	483.1	482.9	482.6	482.4	482.3	482.3	482.4	482.5	482.6	483.0
165°	493.4	493.1	492.8	492.6	492.3	492.2	492.2	492.2	492.2	492.2	492.8
167.5°	501.4	501.1	500.7	500.3	500.0	499.8	499.9	500.0	500.1	500.1	500.7
170°	506.0	505.6	505.2	504.9	504.5	504.4	504.4	504.4	504.4	504.4	505.0
172.5°	509.5	509.2	508.8	508.5	508.0	507.8	507.8	507.8	507.8	507.8	508.5
175°	513.2	512.8	512.5	512.1	511.8	511.6	511.6	511.6	511.6	511.6	512.1
177.5°	514.8	514.4	514.2	513.9	513.6	513.4	513.4	513.4	513.4	513.4	513.9
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4



TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1	1114.1
2.5°	1111.8	1113.5	1115.2	1116.0	1115.7	1115.5	1115.4	1115.1
5°	1109.9	1112.1	1114.3	1115.2	1114.9	1114.6	1114.4	1114.1
7.5°	1103.2	1106.0	1108.7	1109.8	1109.6	1109.2	1108.8	1108.6
10°	1096.4	1099.1	1101.9	1103.0	1102.4	1101.9	1101.4	1100.8
12.5°	1087.3	1089.8	1092.3	1093.2	1092.7	1092.2	1091.6	1091.1
15°	1069.8	1072.5	1075.1	1076.4	1076.1	1075.8	1075.6	1075.3
17.5°	1046.9	1049.4	1051.8	1052.8	1052.4	1052.0	1051.7	1051.2
20°	1030.4	1032.8	1035.3	1036.6	1036.9	1037.1	1037.4	1037.7
22.5°	1012.3	1015.3	1018.4	1019.8	1019.7	1019.6	1019.4	1019.2
25°	981.6	985.1	988.6	990.3	990.3	990.3	990.3	990.3
27.5°	949.5	952.5	955.6	957.2	957.4	957.6	957.9	958.1
30°	927.6	930.9	934.1	935.8	935.8	935.8	935.8	935.8
32.5°	903.8	907.2	910.7	912.8	913.4	914.0	914.7	915.3
35°	868.5	872.6	876.6	879.2	880.3	881.4	882.4	883.5
37.5°	832.1	836.6	841.2	843.9	844.8	845.6	846.5	847.4
40°	807.7	812.3	816.9	819.7	820.8	821.9	823.0	824.0
42.5°	782.4	787.4	792.5	795.7	797.2	798.7	800.2	801.7
45°	744.5	749.7	754.7	758.4	760.5	762.7	764.9	767.0
47.5°	706.2	712.0	717.7	721.5	723.2	724.9	726.5	728.2
50°	679.9	686.1	692.3	696.3	698.3	700.2	702.0	703.9
52.5°	653.2	659.6	666.0	670.4	672.7	675.0	677.3	679.7
55°	612.9	620.2	627.5	632.1	634.4	636.5	638.6	640.8
57.5°	571.8	579.1	586.4	591.4	593.9	596.4	599.0	601.5
60°	543.1	550.6	558.1	563.4	566.4	569.4	572.3	575.2
62.5°	515.9	523.4	530.9	536.1	538.9	541.6	544.4	547.2
65°	472.5	480.6	488.7	494.1	496.8	499.4	502.2	504.9
67.5°	429.4	438.2	447.0	452.6	454.9	457.2	459.4	461.6
70°	400.7	409.4	418.0	423.7	426.4	429.1	431.8	434.5
72.5°	372.1	380.9	389.8	395.6	398.2	400.9	403.7	406.4
75°	328.5	337.4	346.3	352.4	355.6	358.8	362.0	365.3
77.5°	287.8	297.1	306.5	312.5	314.9	317.4	319.9	322.4
80°	261.1	270.3	279.4	285.3	288.0	290.7	293.5	296.1
82.5°	236.8	245.9	255.1	261.1	263.8	266.4	269.1	271.9
85°	202.8	212.0	221.1	227.1	229.8	232.5	235.1	237.9
87.5°	175.0	184.3	193.5	199.5	202.2	205.0	207.7	210.4
90°	165.9	175.4	184.9	191.2	194.0	196.9	199.8	202.7
92.5°	163.4	172.6	181.8	187.7	190.0	192.4	194.7	197.2
95°	167.5	176.2	184.9	190.6	193.3	196.0	198.8	201.4
97.5°	175.1	183.5	192.0	197.6	200.2	202.9	205.5	208.2
100°	181.2	189.2	197.3	202.9	205.7	208.6	211.4	214.4
102.5°	189.1	197.0	204.9	210.2	212.9	215.4	218.1	220.8
105°	201.5	209.0	216.6	221.7	224.3	226.9	229.5	232.1
107.5°	215.3	222.8	230.3	235.2	237.5	239.8	242.0	244.3
110°	225.3	232.7	240.1	244.8	246.7	248.7	250.7	252.7





TEST NUMBER: P332183-940

CATALOG NUMBER: S123DIW-S1000D460U940-4F0-1E-UDD-D1

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	234.4	241.7	248.9	253.7	256.0	258.3	260.7	263.1
115°	249.6	256.2	262.7	267.1	269.1	271.2	273.2	275.3
117.5°	264.6	270.9	277.3	281.4	283.3	285.2	287.0	288.9
120°	274.9	281.1	287.1	291.1	292.8	294.5	296.2	297.9
122.5°	285.5	291.3	297.0	300.8	302.4	304.0	305.7	307.3
125°	301.2	306.5	311.8	315.2	316.7	318.3	319.8	321.4
127.5°	316.6	321.5	326.3	329.4	330.8	332.3	333.7	335.1
130°	326.8	331.5	336.3	339.2	340.2	341.2	342.1	343.1
132.5°	336.5	341.0	345.5	348.4	349.7	351.1	352.5	353.8
135°	351.7	356.1	360.7	363.6	364.7	365.9	367.0	368.2
137.5°	366.7	370.6	374.4	376.9	377.9	378.9	380.0	380.9
140°	376.8	380.8	384.8	387.1	387.8	388.5	389.2	389.9
142.5°	385.7	389.2	392.7	394.9	395.8	396.6	397.5	398.4
145°	401.8	403.9	405.9	407.3	408.0	408.8	409.5	410.2
147.5°	417.6	418.2	418.9	419.5	419.9	420.3	420.7	421.2
150°	427.9	427.9	427.9	427.9	427.9	427.9	427.9	427.9
152.5°	438.5	438.7	438.9	438.7	438.4	438.0	437.7	437.3
155°	454.1	454.5	454.9	454.7	454.1	453.4	452.8	452.2
157.5°	467.5	467.9	468.2	468.1	467.7	467.2	466.6	466.2
160°	475.7	476.2	476.6	476.6	476.3	475.9	475.5	475.2
162.5°	483.5	483.9	484.4	484.3	483.8	483.1	482.6	482.0
165°	493.3	493.8	494.4	494.3	493.7	493.0	492.4	491.8
167.5°	501.2	501.8	502.3	502.3	501.8	501.2	500.7	500.1
170°	505.6	506.2	506.8	506.8	506.2	505.6	505.0	504.4
172.5°	509.0	509.5	510.1	510.1	509.4	508.8	508.2	507.6
175°	512.6	513.2	513.7	513.7	513.1	512.5	511.8	511.2
177.5°	514.3	514.8	515.1	515.1	514.6	514.2	513.6	513.1
180°	514.4	514.4	514.4	514.4	514.4	514.4	514.4	514.4

(END OF REPORT)