

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: P332182-940

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

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332182-940  
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-S1000D460U940-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1000 LUMENS PER FOOT, DROP SATIN WHITE DIFFUSER  
UPLIGHT 460 LUMENS PER FOOT, NO LENS  
Light Source: -  
Ballast/Driver: ELECTRONIC DRIVER

**Summary**

Lumens per Lamp: N/A  
Luminaire Lumens: 5389.9 lumens  
Efficiency: N/A  
Efficacy: 116.7 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

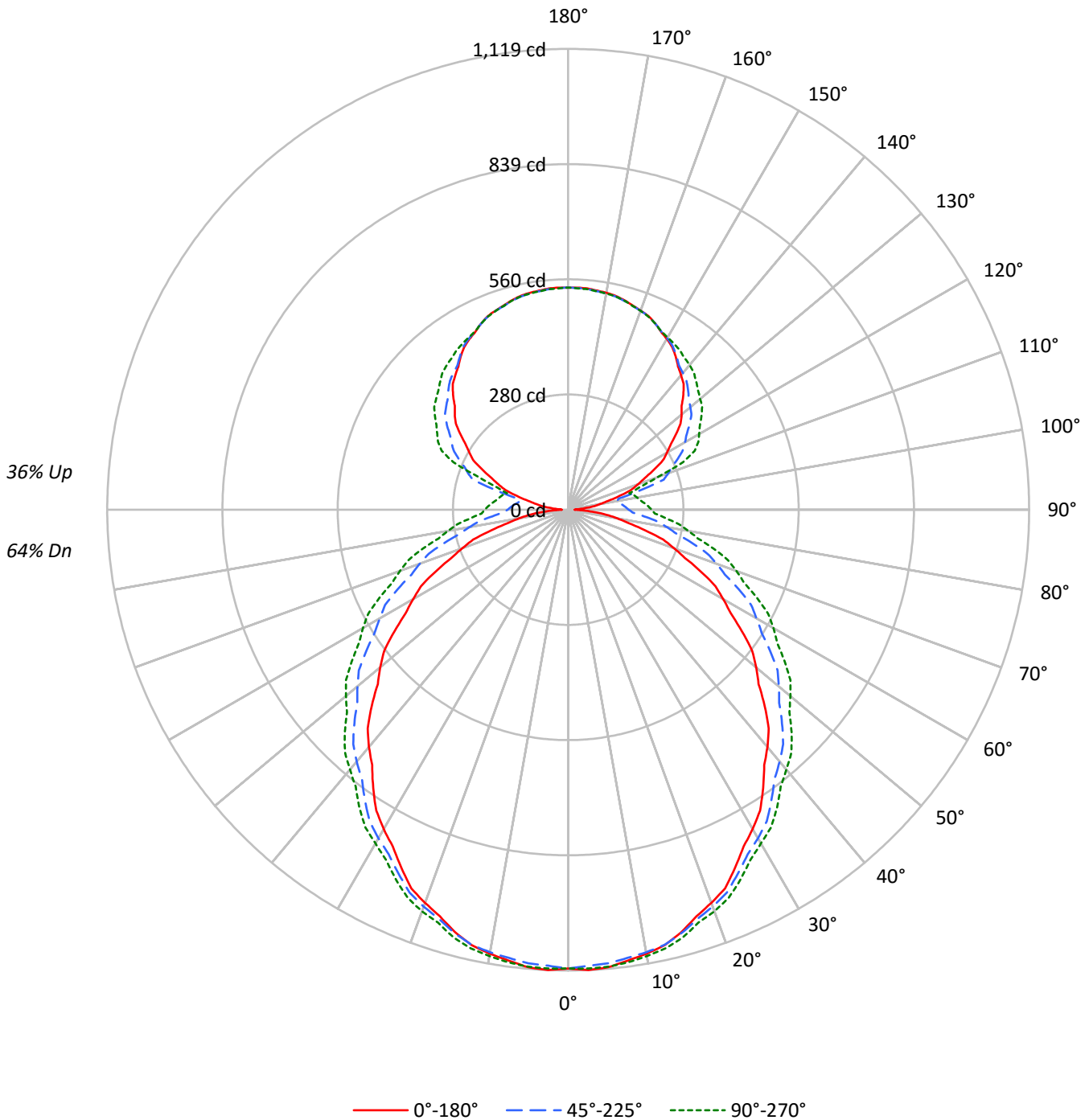
Input Watts (W): 46.2  
Input Voltage (V): 120  
Input Current (A<sub>in</sub>): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332182-940

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

### Luminous Intensity Polar Plot





TEST NUMBER: P332182-940

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

**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	110	110	110	110	104	104	104	104	91	91	91	79	79	79	69	69	69	64
1	99	94	90	86	93	89	85	81	78	75	72	68	66	63	59	57	55	51
2	90	82	75	69	84	77	71	66	67	63	59	59	55	52	51	48	46	42
3	82	71	63	57	76	67	60	54	59	53	49	52	47	43	45	41	38	35
4	75	63	55	48	70	59	52	46	52	46	41	46	41	37	40	36	33	29
5	69	56	47	41	64	53	45	39	47	40	35	41	36	32	36	32	28	25
6	63	50	42	35	59	47	40	34	42	36	31	37	32	28	32	28	25	22
7	58	45	37	31	55	43	35	30	38	32	27	34	28	24	29	25	22	19
8	54	41	33	27	51	39	32	26	35	28	24	31	26	22	27	23	20	17
9	51	38	30	24	47	36	28	23	32	26	22	28	23	20	25	21	18	16
10	47	35	27	22	44	33	26	21	29	23	19	26	21	18	23	19	16	14

**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: P332182-940

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

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	105.6	2.0
10°-20°	301.1	5.6
20°-30°	450.3	8.4
30°-40°	537.8	10.0
40°-50°	562.6	10.4
50°-60°	528.0	9.8
60°-70°	441.0	8.2
70°-80°	315.5	5.9
80°-90°	189.7	3.5
90°-100°	137.6	2.6
100°-110°	180.2	3.3
110°-120°	282.4	5.2
120°-130°	318.9	5.9
130°-140°	320.2	5.9
140°-150°	288.7	5.4
150°-160°	230.4	4.3
160°-170°	148.7	2.8
170°-180°	51.2	1.0
0°-30°	857.0	15.9
0°-40°	1394.8	25.9
0°-60°	2485.4	46.1
0°-90°	3431.6	63.7
90°-120°	600.2	11.1
90°-150°	1528.1	28.4
90°-180°	1958.0	36.3
0°-180°	5389.9	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°	38	71	133	171	185	41
105°	129	162	179	145	154	136
115°	230	249	294	326	339	227
125°	319	324	359	385	395	286
135°	396	397	412	434	440	304
145°	455	456	457	467	472	284
155°	500	499	499	501	499	230
165°	527	526	525	528	526	149
175°	539	537	538	540	537	51
180°	539	539	539	539	539	



TEST NUMBER: P332182-940

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

**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	72.6	87.1	102.0	116.9	131.9	146.8	156.3
92.5°	22.3	34.0	45.6	57.2	68.9	81.9	96.4	110.8	125.2	139.6	149.2
95°	37.8	44.7	51.5	58.4	65.3	75.8	90.0	104.2	118.4	132.6	141.5
97.5°	61.0	68.8	76.7	84.5	92.5	99.4	105.7	111.9	118.1	124.3	133.0
100°	78.6	89.1	99.4	109.9	120.3	124.8	123.2	121.8	120.3	118.8	127.3
102.5°	98.8	107.9	116.9	126.0	135.0	138.0	135.1	132.1	129.1	126.1	131.5
105°	129.1	136.5	144.0	151.4	158.9	164.4	168.0	171.6	175.1	178.8	170.6
107.5°	159.9	166.1	172.5	178.7	185.0	194.3	206.5	218.8	231.0	243.3	239.0
110°	180.4	185.9	191.5	197.1	202.6	211.2	223.0	234.8	246.6	258.3	262.4



TEST NUMBER: P332182-940

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

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	200.9	205.5	210.1	214.7	219.4	227.4	238.7	250.0	261.4	272.7	279.6
115°	230.1	233.8	237.6	241.3	245.1	252.3	262.8	273.2	283.7	294.3	301.7
117.5°	259.2	261.8	264.5	267.2	269.8	275.9	285.4	295.0	304.4	314.0	321.1
120°	276.5	278.7	280.8	282.9	285.1	290.7	299.9	309.1	318.3	327.4	334.3
122.5°	295.1	296.4	297.8	299.2	300.5	305.6	314.4	323.2	332.0	340.8	347.3
125°	319.3	320.0	320.7	321.5	322.2	326.6	334.8	343.0	351.2	359.4	365.2
127.5°	344.0	344.5	344.9	345.4	345.8	349.5	356.3	363.3	370.1	377.0	382.7
130°	359.4	359.8	360.3	360.7	361.1	364.3	370.0	375.8	381.5	387.3	392.7
132.5°	373.2	373.8	374.5	375.1	375.8	378.4	383.0	387.6	392.3	396.8	402.1
135°	395.5	395.7	396.0	396.3	396.5	398.3	401.6	404.9	408.2	411.6	416.7
137.5°	414.5	414.9	415.4	415.8	416.3	417.4	419.3	421.2	423.0	424.9	429.6
140°	426.2	426.8	427.3	427.8	428.4	429.2	430.3	431.4	432.5	433.5	437.9
142.5°	438.1	438.5	438.8	439.1	439.4	439.8	440.2	440.7	441.0	441.5	445.4
145°	454.7	455.0	455.4	455.8	456.1	456.4	456.6	456.7	456.9	457.1	459.4
147.5°	469.1	469.6	469.9	470.4	470.7	471.1	471.3	471.4	471.6	471.8	472.6
150°	478.8	479.0	479.3	479.6	479.8	480.0	480.2	480.4	480.5	480.7	480.9
152.5°	487.4	487.5	487.7	487.8	487.9	488.0	488.1	488.2	488.3	488.5	488.7
155°	499.5	499.4	499.2	499.1	498.9	498.8	498.9	499.0	499.1	499.2	499.6
157.5°	509.1	509.0	509.0	509.0	509.0	508.9	508.8	508.7	508.6	508.5	509.1
160°	514.8	514.7	514.6	514.5	514.4	514.3	514.2	514.2	514.1	514.0	514.5
162.5°	520.2	520.0	519.8	519.6	519.3	519.2	519.1	519.0	518.9	518.8	519.4
165°	526.8	526.6	526.3	526.0	525.8	525.6	525.5	525.4	525.3	525.2	525.9
167.5°	532.0	531.6	531.3	530.9	530.6	530.4	530.4	530.4	530.4	530.4	531.1
170°	534.8	534.5	534.1	533.8	533.4	533.2	533.2	533.2	533.2	533.2	534.0
172.5°	536.7	536.4	535.9	535.5	535.0	534.8	534.9	535.0	535.1	535.1	535.8
175°	539.2	538.8	538.3	537.9	537.4	537.3	537.3	537.4	537.5	537.6	538.2
177.5°	539.8	539.5	539.1	538.8	538.4	538.3	538.4	538.4	538.5	538.6	539.1
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2



TEST NUMBER: P332182-940

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

**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	184.2	193.5	199.5	202.2	204.9	207.7	210.4
90°	165.8	175.3	184.9	191.1	193.9	196.8	199.7	202.6
92.5°	158.6	168.2	177.7	183.8	186.4	189.0	191.5	194.1
95°	150.5	159.5	168.5	174.3	177.0	179.8	182.4	185.1
97.5°	141.8	150.5	159.3	165.1	167.8	170.7	173.4	176.2
100°	135.9	144.4	152.9	158.6	161.4	164.2	166.9	169.8
102.5°	136.9	142.3	147.8	151.9	154.7	157.6	160.4	163.3
105°	162.4	154.2	146.0	143.1	145.7	148.4	151.0	153.6
107.5°	234.7	230.3	226.0	219.1	209.6	200.1	190.6	181.1
110°	266.5	270.5	274.6	271.4	260.8	250.2	239.7	229.1





TEST NUMBER: P332182-940

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

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	286.4	293.3	300.1	303.4	303.1	302.7	302.5	302.1
115°	309.0	316.4	323.7	328.7	331.2	333.7	336.2	338.8
117.5°	328.2	335.4	342.5	347.1	349.4	351.5	353.7	355.9
120°	341.3	348.1	355.1	359.4	361.3	363.3	365.2	367.0
122.5°	353.8	360.3	366.8	371.0	372.9	374.9	376.8	378.8
125°	371.0	376.8	382.7	386.6	388.7	390.7	392.9	394.9
127.5°	388.3	394.0	399.6	403.2	404.8	406.5	408.1	409.8
130°	398.2	403.7	409.2	412.7	414.1	415.5	417.0	418.4
132.5°	407.3	412.6	417.9	421.3	422.9	424.5	426.1	427.7
135°	421.9	427.0	432.0	435.2	436.2	437.3	438.5	439.5
137.5°	434.3	439.0	443.6	446.6	447.7	449.0	450.1	451.3
140°	442.3	446.7	451.1	453.9	455.1	456.3	457.4	458.6
142.5°	449.3	453.2	457.1	459.6	460.7	461.8	462.9	464.0
145°	461.8	464.1	466.5	468.1	469.2	470.3	471.4	472.5
147.5°	473.4	474.2	475.1	475.7	476.4	476.9	477.4	478.0
150°	481.1	481.3	481.4	481.7	482.0	482.2	482.5	482.8
152.5°	489.1	489.4	489.7	489.7	489.5	489.1	488.8	488.6
155°	500.1	500.5	501.0	500.9	500.3	499.8	499.3	498.8
157.5°	509.6	510.1	510.7	510.6	509.9	509.3	508.5	507.8
160°	515.1	515.6	516.1	516.1	515.5	514.9	514.2	513.6
162.5°	520.0	520.7	521.2	521.3	520.7	520.1	519.6	519.1
165°	526.6	527.4	528.1	528.1	527.4	526.9	526.3	525.7
167.5°	531.8	532.4	533.2	533.2	532.4	531.8	531.1	530.4
170°	534.7	535.4	536.1	536.1	535.4	534.7	534.0	533.2
172.5°	536.5	537.3	538.0	538.0	537.2	536.4	535.7	534.8
175°	538.9	539.5	540.1	540.1	539.4	538.7	538.0	537.3
177.5°	539.8	540.3	540.9	540.8	540.1	539.4	538.7	538.0
180°	539.2	539.2	539.2	539.2	539.2	539.2	539.2	539.2

(END OF REPORT)