

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: P332212-927

Luminaire Tested: **S123DIW-S1165D460U927-4F0-1E-UDD-D**

Issue Date: 3/3/2020

**Test Information**

Test Method: LM-79-08  
Report Number: P332212-927  
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-S1165D460U927-4F0-1E-UDD-D  
Description: DEFINE 3 DIRECT-INDIRECT WALL MOUNT LED LUMINAIRE  
DOWNLIGHT 1165 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: 5303.6 lumens  
Efficiency: N/A  
Efficacy: 101.2 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

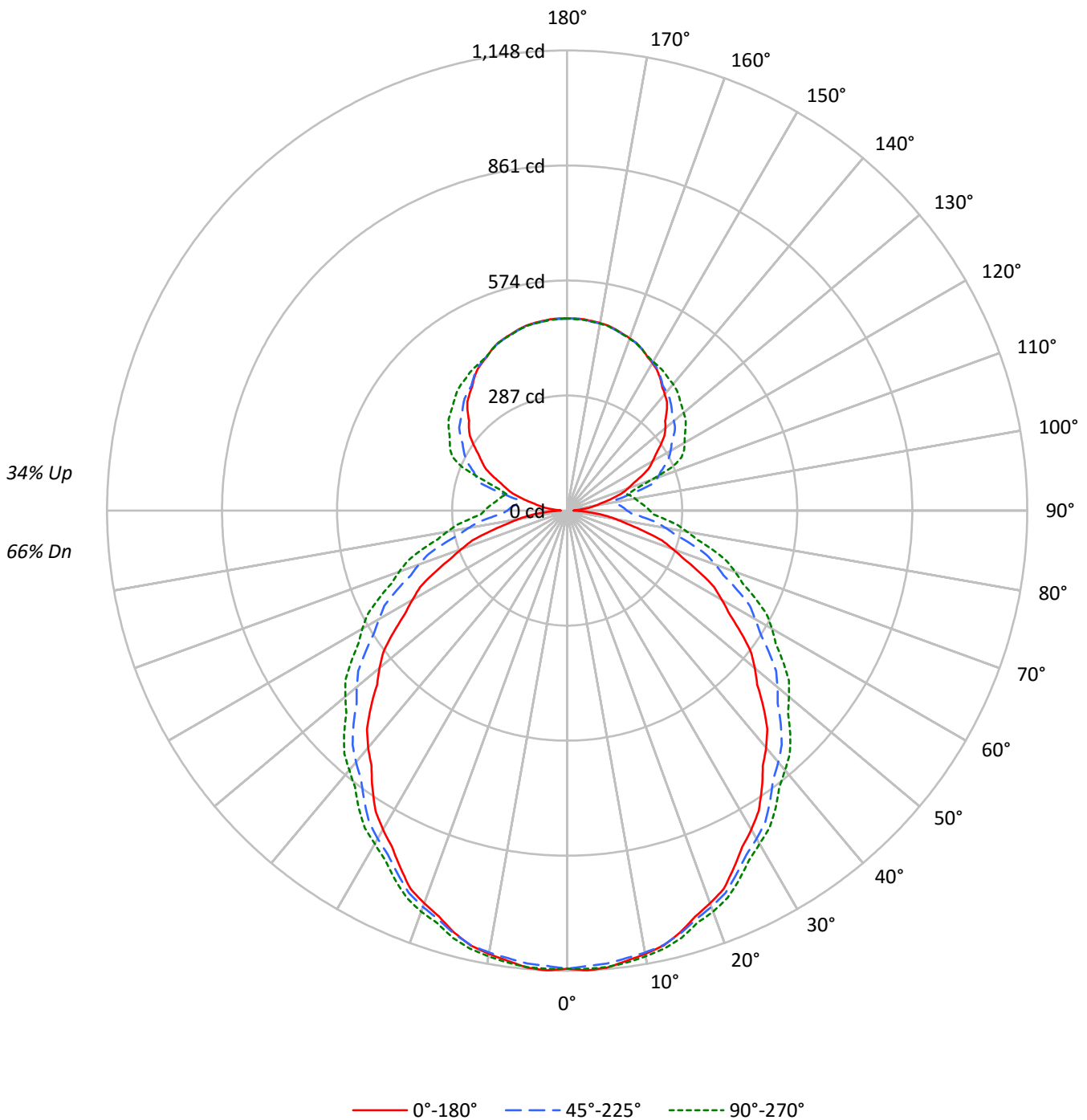
Input Watts (W): 52.4  
Input Voltage (V): 120  
Input Current (Ain): NR  
Voltage Rise (V): NR  
Power Factor: NR  
Total Harmonic Distortion (THDi): NR  
Frequency (hertz): 60  
Stabilization Time: NR  
Operation Time: NR  
Ambient Temperature (°C): NR  
Test Distance: 25 FT



TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

### Luminous Intensity Polar Plot





TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-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	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	70	67	65	61	59	57	53
2	91	82	75	69	85	77	71	66	69	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	64	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°	12304	12304	12304
5°	12343	11994	12001
10°	12232	11718	11659
15°	12075	11405	11287
20°	11849	11047	10876
25°	11571	10634	10444
30°	11287	10264	10006
35°	10967	9871	9658
40°	10663	9514	9284
45°	10325	9172	8985
50°	9990	8832	8655
55°	9622	8486	8359
60°	9263	8134	8056
65°	8896	7758	7694
70°	8341	7336	7323
75°	7640	6853	6946
80°	6835	6380	6515
85°	6085	6053	6268



TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

**ZONAL LUMENS:**

Zone	Lumens	% Fixture
0°-10°	108.4	2.0
10°-20°	308.9	5.8
20°-30°	462.0	8.7
30°-40°	551.8	10.4
40°-50°	577.3	10.9
50°-60°	541.7	10.2
60°-70°	452.5	8.5
70°-80°	323.7	6.1
80°-90°	194.4	3.7
90°-100°	138.5	2.6
100°-110°	172.0	3.2
110°-120°	258.8	4.9
120°-130°	287.9	5.4
130°-140°	286.5	5.4
140°-150°	256.9	4.8
150°-160°	204.7	3.9
160°-170°	132.1	2.5
170°-180°	45.5	0.9
0°-30°	879.3	16.6
0°-40°	1431.1	27.0
0°-60°	2550.1	48.1
0°-90°	3520.7	66.4
90°-120°	569.4	10.7
90°-150°	1400.7	26.4
90°-180°	1783.0	33.6
0°-180°	5303.6	100.0

**CANDELA DISTRIBUTION:**

	0°	22.5°	45°	67.5°	90°	Flux
0°	1143	1143	1143	1143	1143	
5°	1144	1142	1134	1144	1143	108
15°	1090	1093	1092	1104	1103	307
25°	984	996	1000	1015	1016	453
35°	847	866	883	901	906	529
45°	692	722	753	776	787	534
55°	528	569	614	646	658	473
65°	365	414	468	504	518	360
75°	198	257	319	358	375	212
85°	61	124	189	230	244	64
90°	17	81	149	191	206	12
95°	35	71	134	174	188	37
105°	116	149	171	145	155	123
115°	205	224	270	302	315	203
125°	284	289	325	350	361	254
135°	352	353	368	390	396	271
145°	404	405	406	416	422	253
155°	444	443	444	445	443	204
165°	468	467	467	469	467	132
175°	479	477	478	480	477	46
180°	479	479	479	479	479	



TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (FULL):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1148.1	1147.5	1146.8	1146.1	1145.4	1144.2	1142.5	1140.7	1138.9	1137.2	1138.9
5°	1144.4	1143.8	1143.3	1142.7	1142.2	1141.1	1139.4	1137.7	1136.1	1134.4	1136.6
7.5°	1133.1	1133.3	1133.4	1133.5	1133.6	1132.9	1131.2	1129.7	1128.1	1126.4	1129.2
10°	1123.2	1123.8	1124.3	1124.9	1125.5	1125.0	1123.6	1122.2	1120.9	1119.4	1122.2
12.5°	1111.3	1112.0	1112.8	1113.6	1114.4	1114.3	1113.3	1112.4	1111.4	1110.5	1113.0
15°	1089.6	1090.4	1091.2	1092.1	1092.9	1093.2	1092.9	1092.7	1092.3	1092.1	1094.9
17.5°	1062.2	1063.8	1065.5	1067.1	1068.8	1069.6	1069.5	1069.4	1069.3	1069.1	1071.7
20°	1042.3	1043.9	1045.6	1047.3	1048.9	1050.0	1050.6	1051.1	1051.7	1052.3	1054.7
22.5°	1021.4	1023.0	1024.7	1026.4	1028.0	1029.2	1030.0	1030.8	1031.5	1032.3	1035.5
25°	983.7	986.5	989.3	992.0	994.8	996.6	997.4	998.2	999.1	999.9	1003.5
27.5°	945.9	949.0	952.2	955.4	958.5	961.0	962.7	964.5	966.3	968.0	971.1
30°	919.0	922.6	926.1	929.8	933.3	936.3	938.5	940.7	942.9	945.2	948.5
32.5°	889.1	893.1	897.1	901.2	905.2	908.7	911.6	914.5	917.3	920.2	923.8
35°	846.8	851.2	855.6	860.1	864.5	868.5	872.1	875.7	879.2	882.9	887.0
37.5°	801.9	806.9	811.9	816.9	821.9	826.6	831.0	835.4	839.9	844.3	849.0
40°	772.1	777.1	782.0	787.0	791.9	797.3	802.8	808.3	813.8	819.4	824.1
42.5°	739.2	745.3	751.4	757.4	763.5	769.4	775.2	780.9	786.7	792.5	797.6
45°	692.4	699.0	705.6	712.3	718.9	725.7	732.6	739.5	746.5	753.4	758.6
47.5°	643.3	650.8	658.3	665.9	673.4	681.1	689.0	697.0	704.9	712.8	718.7
50°	611.4	619.2	626.9	634.6	642.4	650.5	659.2	667.7	676.3	684.8	691.3
52.5°	577.6	585.7	593.9	602.1	610.3	619.2	628.6	638.0	647.5	657.0	663.6
55°	528.0	537.1	546.2	555.4	564.5	574.0	584.0	594.0	604.0	613.9	621.4
57.5°	479.7	489.2	498.7	508.2	517.8	528.0	538.8	549.8	560.6	571.6	579.1
60°	445.8	455.7	465.7	475.7	485.6	496.3	507.6	519.0	530.4	541.7	549.5
62.5°	413.9	424.1	434.3	444.5	454.6	465.7	477.8	489.7	501.8	513.8	521.5
65°	364.9	375.7	386.4	397.2	408.1	419.5	431.7	443.9	456.1	468.2	476.5
67.5°	315.1	326.5	337.9	349.4	360.8	372.8	385.2	397.6	410.0	422.4	431.4
70°	280.2	292.1	304.0	315.8	327.8	340.4	353.6	366.9	380.2	393.5	402.3
72.5°	248.3	260.2	272.1	284.0	295.9	308.7	322.4	336.1	349.9	363.6	372.7
75°	198.0	211.0	224.0	237.0	250.0	263.4	277.3	291.1	304.9	318.8	327.9
77.5°	154.2	167.3	180.4	193.5	206.6	220.1	234.1	248.0	262.0	275.9	285.6
80°	123.3	136.8	150.4	164.0	177.5	191.5	205.9	220.3	234.6	249.1	258.5
82.5°	96.4	110.2	124.0	137.8	151.5	165.7	180.3	195.0	209.5	224.1	233.5
85°	61.0	74.9	88.7	102.5	116.4	130.6	145.3	159.9	174.6	189.3	198.7
87.5°	33.2	47.1	61.1	75.0	89.0	103.1	117.4	131.7	146.0	160.3	169.8
90°	16.6	30.9	45.2	59.6	73.9	88.7	103.9	119.0	134.1	149.2	159.0
92.5°	21.8	33.8	45.9	57.8	69.9	83.2	97.8	112.5	127.2	141.9	151.5
95°	35.4	42.9	50.5	58.1	65.6	76.6	91.0	105.4	119.9	134.3	143.5
97.5°	55.8	64.1	72.4	80.7	89.0	96.7	104.0	111.2	118.5	125.8	134.7
100°	71.4	81.8	92.2	102.7	113.1	118.5	118.9	119.3	119.7	120.1	128.7
102.5°	89.1	98.2	107.3	116.5	125.6	129.7	128.7	127.7	126.7	125.8	131.6
105°	116.1	123.5	131.0	138.6	146.1	152.2	157.0	161.8	166.5	171.3	165.1
107.5°	143.1	149.5	155.8	162.2	168.5	177.9	190.3	202.7	215.2	227.5	224.7
110°	161.2	166.8	172.5	178.1	183.7	192.4	204.4	216.3	228.3	240.2	244.8



TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	0°	5°	10°	15°	20°	25°	30°	35°	40°	45°	50°
112.5°	179.4	184.1	188.8	193.5	198.1	206.2	217.7	229.2	240.7	252.2	259.2
115°	205.2	209.0	212.8	216.6	220.4	227.6	238.3	248.9	259.6	270.3	277.7
117.5°	231.1	233.7	236.3	238.9	241.6	247.8	257.5	267.2	276.9	286.6	293.8
120°	246.3	248.3	250.5	252.5	254.7	260.4	269.7	279.2	288.5	297.9	304.9
122.5°	262.8	264.1	265.4	266.7	268.0	273.1	282.2	291.1	300.2	309.1	315.7
125°	284.2	284.8	285.4	286.1	286.7	291.2	299.5	307.9	316.2	324.6	330.6
127.5°	306.1	306.5	306.8	307.2	307.5	311.2	318.2	325.3	332.3	339.3	345.1
130°	319.8	320.1	320.5	320.8	321.2	324.3	330.2	336.0	341.8	347.7	353.3
132.5°	331.9	332.5	333.0	333.6	334.2	336.8	341.5	346.2	350.9	355.5	360.9
135°	351.6	351.8	352.0	352.2	352.4	354.2	357.6	360.9	364.3	367.7	372.9
137.5°	368.4	368.8	369.2	369.6	370.0	371.1	373.0	374.9	376.8	378.7	383.4
140°	378.9	379.4	379.9	380.3	380.8	381.5	382.6	383.7	384.8	385.8	390.3
142.5°	389.4	389.7	389.9	390.1	390.4	390.7	391.2	391.6	392.0	392.4	396.3
145°	404.2	404.4	404.7	405.0	405.3	405.4	405.6	405.8	405.9	406.1	408.4
147.5°	416.8	417.2	417.5	417.9	418.2	418.5	418.7	418.8	419.0	419.1	419.9
150°	425.3	425.6	425.8	426.0	426.3	426.4	426.6	426.7	426.9	427.1	427.2
152.5°	433.0	433.1	433.2	433.3	433.5	433.6	433.6	433.7	433.8	434.0	434.2
155°	443.8	443.6	443.5	443.4	443.2	443.1	443.2	443.3	443.4	443.5	443.9
157.5°	452.3	452.2	452.2	452.2	452.2	452.1	452.0	451.9	451.9	451.8	452.3
160°	457.3	457.2	457.2	457.1	457.0	456.9	456.9	456.8	456.7	456.6	457.1
162.5°	462.2	462.0	461.8	461.6	461.4	461.2	461.1	461.1	461.0	460.9	461.4
165°	468.0	467.8	467.5	467.3	467.1	466.9	466.8	466.8	466.7	466.6	467.2
167.5°	472.6	472.3	472.0	471.7	471.3	471.2	471.2	471.2	471.2	471.2	471.8
170°	475.2	474.8	474.5	474.2	473.9	473.7	473.7	473.7	473.7	473.7	474.4
172.5°	476.8	476.5	476.1	475.7	475.3	475.2	475.2	475.3	475.4	475.4	476.0
175°	479.0	478.6	478.2	477.8	477.4	477.3	477.4	477.4	477.5	477.6	478.2
177.5°	479.6	479.3	479.0	478.6	478.3	478.2	478.3	478.3	478.4	478.5	479.0
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0



TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
0°	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1	1143.1
2.5°	1140.7	1142.5	1144.2	1145.0	1144.8	1144.5	1144.3	1144.1
5°	1138.8	1141.1	1143.3	1144.2	1144.0	1143.7	1143.4	1143.1
7.5°	1131.9	1134.7	1137.5	1138.8	1138.4	1138.0	1137.7	1137.4
10°	1125.0	1127.8	1130.5	1131.6	1131.1	1130.5	1130.0	1129.4
12.5°	1115.6	1118.2	1120.7	1121.7	1121.1	1120.5	1120.0	1119.4
15°	1097.6	1100.3	1103.1	1104.4	1104.1	1103.8	1103.6	1103.3
17.5°	1074.1	1076.7	1079.1	1080.1	1079.8	1079.4	1079.0	1078.6
20°	1057.2	1059.7	1062.2	1063.6	1063.8	1064.1	1064.4	1064.7
22.5°	1038.6	1041.8	1044.9	1046.4	1046.2	1046.1	1045.9	1045.8
25°	1007.1	1010.7	1014.3	1016.1	1016.1	1016.1	1016.1	1016.1
27.5°	974.2	977.3	980.4	982.1	982.3	982.5	982.8	983.0
30°	951.8	955.1	958.4	960.0	960.0	960.0	960.0	960.0
32.5°	927.3	930.9	934.4	936.5	937.2	937.9	938.5	939.1
35°	891.2	895.3	899.4	902.1	903.2	904.4	905.5	906.5
37.5°	853.7	858.4	863.1	865.9	866.8	867.7	868.5	869.4
40°	828.8	833.5	838.2	841.1	842.2	843.3	844.4	845.5
42.5°	802.8	807.9	813.1	816.4	817.9	819.5	821.0	822.6
45°	763.9	769.1	774.4	778.2	780.4	782.6	784.8	787.0
47.5°	724.6	730.6	736.5	740.3	742.0	743.7	745.4	747.1
50°	697.6	704.0	710.3	714.5	716.4	718.4	720.3	722.2
52.5°	670.2	676.8	683.3	687.9	690.2	692.6	695.0	697.4
55°	628.8	636.3	643.8	648.6	650.9	653.1	655.3	657.5
57.5°	586.6	594.1	601.7	606.7	609.3	612.0	614.6	617.1
60°	557.1	564.9	572.7	578.1	581.1	584.2	587.2	590.3
62.5°	529.3	537.0	544.8	550.1	552.9	555.7	558.6	561.3
65°	484.8	493.1	501.5	506.9	509.7	512.5	515.2	518.0
67.5°	440.5	449.6	458.7	464.4	466.8	469.1	471.3	473.7
70°	411.2	420.1	428.9	434.7	437.5	440.3	443.0	445.8
72.5°	381.8	390.9	399.9	405.8	408.6	411.4	414.2	416.9
75°	337.1	346.2	355.3	361.6	364.9	368.2	371.5	374.8
77.5°	295.2	304.8	314.5	320.5	323.1	325.7	328.2	330.7
80°	267.8	277.3	286.7	292.8	295.6	298.3	301.1	303.8
82.5°	243.0	252.4	261.7	267.8	270.6	273.4	276.2	278.9
85°	208.1	217.5	226.9	233.0	235.8	238.5	241.3	244.1
87.5°	179.3	188.8	198.2	204.4	207.2	210.0	212.8	215.6
90°	168.7	178.4	188.1	194.5	197.4	200.3	203.3	206.2
92.5°	161.2	171.0	180.6	186.8	189.4	192.1	194.7	197.3
95°	152.6	161.7	170.9	176.8	179.6	182.4	185.1	187.8
97.5°	143.5	152.4	161.3	167.2	170.0	172.9	175.7	178.6
100°	137.4	146.1	154.7	160.5	163.3	166.1	169.0	171.8
102.5°	137.4	143.3	149.2	153.5	156.5	159.3	162.2	165.2
105°	158.8	152.6	146.3	144.5	147.2	149.8	152.5	155.1
107.5°	221.8	219.0	216.1	210.6	202.6	194.4	186.3	178.2
110°	249.4	254.0	258.6	256.3	247.2	238.1	229.0	219.9





TEST NUMBER: P332212-927

CATALOG NUMBER: S123DIW-S1165D460U927-4F0-1E-UDD-D

**CANDELA DISTRIBUTION (continued):**

	55°	60°	65°	70°	75°	80°	85°	90°
112.5°	266.2	273.2	280.3	283.8	283.8	283.9	283.9	284.0
115°	285.2	292.6	300.0	305.0	307.5	310.1	312.6	315.1
117.5°	301.0	308.3	315.5	320.2	322.4	324.6	326.9	329.1
120°	311.9	318.9	325.9	330.3	332.2	334.2	336.1	338.1
122.5°	322.3	328.9	335.5	339.8	341.7	343.7	345.8	347.8
125°	336.5	342.5	348.5	352.5	354.6	356.6	358.8	360.8
127.5°	350.8	356.5	362.3	366.0	367.7	369.4	371.1	372.9
130°	358.9	364.4	370.0	373.5	375.0	376.5	378.0	379.5
132.5°	366.2	371.6	376.9	380.5	382.1	383.8	385.5	387.1
135°	378.1	383.3	388.5	391.7	392.8	394.0	395.1	396.3
137.5°	388.2	392.9	397.7	400.7	401.9	403.1	404.3	405.6
140°	394.7	399.2	403.7	406.5	407.7	409.0	410.2	411.5
142.5°	400.3	404.3	408.2	410.7	411.9	413.1	414.2	415.4
145°	410.8	413.2	415.6	417.3	418.4	419.5	420.6	421.8
147.5°	420.7	421.6	422.4	423.1	423.7	424.4	425.0	425.6
150°	427.4	427.5	427.7	427.9	428.3	428.6	428.9	429.2
152.5°	434.5	434.7	435.1	435.1	434.8	434.6	434.4	434.0
155°	444.3	444.7	445.0	445.0	444.5	444.0	443.5	443.1
157.5°	452.7	453.2	453.7	453.6	453.0	452.4	451.8	451.1
160°	457.6	458.0	458.5	458.5	458.0	457.4	456.9	456.3
162.5°	462.0	462.6	463.0	463.1	462.6	462.1	461.6	461.1
165°	467.9	468.5	469.1	469.1	468.6	468.1	467.5	467.0
167.5°	472.5	473.0	473.6	473.6	473.0	472.5	471.8	471.2
170°	475.0	475.6	476.3	476.3	475.6	475.0	474.4	473.7
172.5°	476.7	477.3	477.9	477.9	477.2	476.5	475.9	475.2
175°	478.7	479.3	479.8	479.8	479.2	478.6	477.9	477.3
177.5°	479.5	480.0	480.5	480.5	479.8	479.2	478.6	477.9
180°	479.0	479.0	479.0	479.0	479.0	479.0	479.0	479.0

(END OF REPORT)