

SEMI D3-91 (Reapproved 0709) QUALITY AREA SPECIFICATION FOR FLAT PANEL DISPLAY SUBSTRATES

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1 Purpose

1.1 This Document defines various areas on the pattern surface of a flat panel display substrate and describes their relationship. It assumes the existence of terminology and a banking convention described in other SEMI flat panel display documents.

2 Scope

NOTICE: SEMI Standards and Safety Guidelines do not purport to address all safety issues associated with their use. It is the responsibility of the users of the Documents to establish appropriate safety and health practices, and determine the applicability of regulatory or other limitations prior to use.

3 Referenced Standards and Documents

3.1 SEMI Standards and Safety Guidelines

SEMI D9 — Terminology for FPD Substrates

NOTICE: Unless otherwise indicated, all documents cited shall be the latest published versions.

4 Significance

4.1 The patterns placed on a flat panel display substrate are expected to occur only in a specified, central area, and certain requirements are applied in that area to both the substrate and pattern quality. The substrate peripheral area(s) outside this zone have different specified properties. Defining the terms to apply and the geometric relationship in these various areas will assist the suppliers and users of substrates and processing/inspection equipment.

5 Summary

5.1 A substrate edge length is defined in two dimensions, L_X and L_Y , with nominal and tolerance values for each.

5.2 A quality area is defined by two dimensions, QA_X and QA_Y , with nominal and tolerance values for each.

5.3 A fixed edge exclusion area is defined for the substrate edges to be placed against reference (also called “banking”) pins.

5.4 Two variable edge exclusion areas result from combining the above three-dimension sets.

6 Procedure

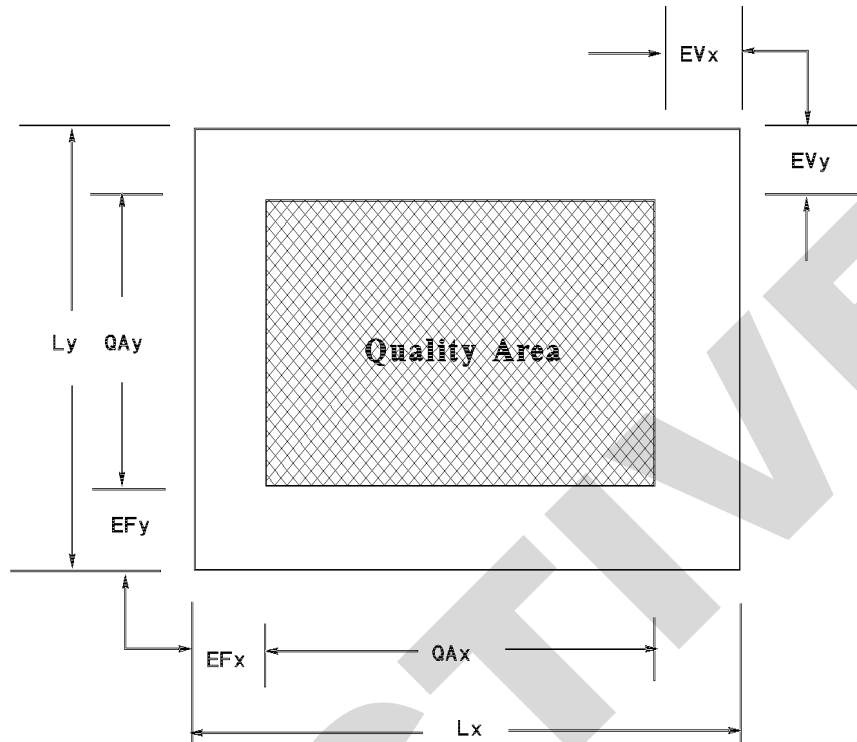
6.1 Locate the properties in ¶¶ 6.2 through 6.4 relative to the substrate origin, using the nominal values assigned by the substrate specification.

6.2 Let L_X = the substrate edge length in the x -direction, and L_Y = the substrate edge length in the y -direction (see Figure 1).

6.3 Let EF_X = the fixed edge exclusion area along the substrate’s lower edge, and EF_Y = the fixed edge exclusion area along the substrate’s left edge.

6.4 Let QA_X = the quality area’s edge length in the x -direction, and QA_Y = the quality area’s edge length in the y -direction.

6.5 Then EV_X and EV_Y , the variable edge exclusions, are not specified. They result from the interaction of substrate tolerance variations from nominal with the fixed location origin.



L_X, L_Y
 QAX, QAY are specified, nominal dimensions
 EF_X, EF_Y
 EV_X, EV_Y are not specified, but result from tolerance effects.

Figure 1
Substrate Area Relationships

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