

SEMI D6-0211 (Reapproved 0117) SPECIFICATION FOR LIQUID CRYSTAL DISPLAY (LCD) MASK SUBSTRATES

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1 Purpose

1.1 This Specification defines standard for substrates used to fabricate liquid crystal display masks.

2 Scope

2.1 This Specification applies to photomasks that are principally used in fabricating liquid crystal displays. The edge lengths specified range from 202.8 mm × 202.8 mm to 1220 mm × 1400 mm.

2.2 Substrates with an edge length less than 200 mm follow the specifications for a semiconductor mask (see SEMI P1).

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 P1 — Specification for Hard Surface Photomask Substrates

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

4 Terminology

4.1 None.

5 Ordering Information

5.1 Ordering information shall be discussed between suppliers and users.

6 Edge Length and Thickness Specification

6.1 *Edge Length* — Units are in mm. See Tables 1 and 2, 3 and 4, 5 and 6, 7 and 8, and 9 and 10 for a combination of materials, edge length, and thickness.

6.2 *Edge Length Tolerance* — ±0.4 mm. Applies to all groups.

6.3 *Thickness, Tolerance*

6.3.1 Thickness of substrates shall be specified by the edge length group and materials as shown in Tables 2, 4, 6, 8, and 10.

6.3.2 *Tolerance* — For Groups A and B: -0.4 mm through + 0.2 mm. For Group C: See Table 6. For Group D: See Table 8. For Group E: See Table 9 and Table 10.

6.4 *Material* — See § 7.

6.5 *Special Chamfered Edge* — See Figure 1 and Table 11 for dimensions of parts involving special chamfered edge.

Table 1 Edge Length (Group A) in mm

202.8 × 202.8				
200 × 250	250 × 250			
	250 × 300	300 × 300		
		300 × 350	350 × 350	
			350 × 400	400 × 400

Table 2 Plate Thickness and Materials (Group A) in mm

<i>Material</i>			
<i>HTE</i>	<i>MTE/LTE</i>	<i>ULTE</i>	<i>Thickness (mm)</i>
+	+	+	3.0
+			4.8
	+	+	5.0

Table 3 Edge Length (Group B) in mm

330 × 450			
	400 × 500		
		450 × 550	
			500 × 600

Table 4 Plate Thickness and Materials (Group B) in mm

<i>Material</i>			
<i>HTE</i>	<i>MTE/LTE</i>	<i>ULTE</i>	<i>Thickness (mm)</i>
+			4.8
	+	+	5.0

Table 5 Edge Length (Group C) in mm

520 × 610
500 × 750
520 × 800
620 × 720
650 × 750
650 × 800
700 × 800
800 × 920
850 × 1000
850 × 1200
850 × 1400