[Processes Available at Japan Display Ishikawa Plant]

Process Category	Available Processes / Treatments		Process Method / Equipment	Remarks (Dimensions, Accuracy, Materials, etc.)	Film Type	Item	Thickness (nm)	Minimum Line Width / Spacing (μm)	Resistivity (μΩ·cm)	Remarks
■Substrate Processing	Cleaning		UV/ Chemical / High-Pressure / Ultrasonic / DI Water Cleaning							
	Film Deposition	Metal Film Formation	Sputtering	Ti、Al、MoW、Mo、ITO Please consult us if materials other than those listed are required	Ti	Wiring / Electrode	50～150	2.0		Minimum line width / spacing values are based on standard film thickness
					Al	Wiring / Electrode	50～800	2.0	<0.3Ω	
					MoW	Wiring / Electrode	50～300	3.0	<0.7Ω	
					Mo	Wiring / Electrode	5～250	2.0		
					ITO	Wiring / Electrode	15～150	2.5	<200Ω	
		Inorganic Insulating Film Formation	P-CVD	TEOS、SiNx、SiOx	SiNx	Insulating Film	100～300			
					SiOx	Insulating Film	100～400			
					TEOS	Insulating Film				
		Organic Insulating Film Formation	Slit Coater	Acrylic-Based	Positive Photoresist	Organic Insulating Film	2000～3000			
					Negative Photoresist		3000～40000			For Photo Spacer
		Functional Film Formation	P-CVD, Sputtering	LTPS、IGZO	LTPS	Functional Film				LTPS is formed by ELA after a-Si deposition
					IGZO	Functional Film				
	Patterning Photolithography	Photoresist Coating	Slit Coater	Novolac-Based	Positive Photoresist		800～2500			
		Exposure	Mask Aligner	Minimum line width: 5.0 μm / Overlay accuracy: ±2.7 μm				5.0/2.7		Line width values are for Line & Space patterns and differ from hole pattern dimensions
			Stepper (i-line)	Minimum line width: 1.5 μm / Overlay accuracy: ±1.5 μm				1.5/1.5		
			Stepper (g/h-line)	Minimum line width: 3.0 μm / Overlay accuracy: ±1.75 μm				3.0/1.75		
		Development	Developer Processing							
		Etching	Dry Etching	Ti、Al、MoW、Mo、Si、SiNx、SiOx Photoresist	Ti	Wiring	50～150	2.0		
					Al	Wiring	50～800	2.0		Used as a Ti/Al/Ti structure
					MoW	Wiring	50～300	3.0		
					Si	Wiring / Electrode	50～1100	2.5		
					SiNx	Through-Hole Processing	100～300	2.5		
					SiOx	Through-Hole Processing	100～400	2.5		
			Wet Etching	ITO、Mo、Al	Al	Wiring / Electrode	50～800	2.00		Used as a Mo/Al/Mo structure
					Mo	Wiring / Electrode	5～250	2.00		
					ITO	Pixel electrode	15～150	2.50		
		Resist Stripping	Stripping Solution Processing							
	High-Temperature Annealing (Baking)		Clean Hot-Air Circulating Oven	O_2 concentration is monitored under N_2 atmosphere						
Post-Substrate Processing	Sealant Application		Dispensing	Seal width: approx. 0.5–2.0 mm						
	One Drop Fill Material dispensing, substrate alignment, and UV curing		Dispensing Equipment Bonding Equipment UV Curing Equipment	Overlay accuracy: ±3 μm						
	Thermal Curing of Sealant		Hot-Air Circulating Furnace							
	Glass Thinning		Chemical Etching (Outsourced)	Thinning down to 0.2 mm per side is possible; thinner processing may be considered upon request						

(*) The above values represent standard specifications. More advanced manufacturing processes may be available depending on the application. Please consult us for details.