FUJIFILM Measurement Film Solutions

Pressure measurement film
PRESCALE

Heat distribution measurement film
THERMOSCALE

Utilized in Smartphones and Tablet Computers
Utilizing PRESCALE and THERMOSCALE in LCDs, Touch panels, and Smartphone Assembly

**PRESCALE Measurement Results**

- **ACF bonding**
- **OCA/cover glass lamination**
- **Backlight lamination**

**Good**

- **Smartphone lamination**

**Poor**

**LCD Process**

1. **Pre-Process**
   - LCD panel polishing and cleaning
   - Check uniformity of presser plate for cutting glass

2. **Polarization plate lamination**
   - Check nip pressure for polarization plate lamination equipment

3. **Driver IC ACF bonding**
   - Check contact and heat distribution during ACF bonding

4. **Backlight lamination**
   - Check uniformity for LED backlight lamination equipment

**Small-and-medium LCD modules**

**Smartphone Assembly**

1. **Touch panel/LCD laminating**
   - **ACF bonding**
     - Check contact at terminal position during ACF bonding

2. **OCA Lamination**
   - Check uniformity for touch panel and lamination equipment

3. **Touch panel + LCD / smartphone laminating**
   - **ACF bonding**
     - Check contact at terminal position during ACF bonding

4. **OCA lamination**
   - Confirm uniformity for smartphone lamination equipment

**Completed product**
Use THERMOSCALE for processes that use heat to check the heat distribution.

- Check rough heat distribution during ACF bonding
- Check the wiring pattern and heat loss during circuit board design

Touch panel Process

**Pre-Process**

Controller IC ACF bonding

- Check contact and heat distribution during ACF bonding

Touch panel / OCA lamination

- Check roller uniformity and stage parallelism during OCA lamination

Touch panel / cover glass lamination

- Check roller uniformity and stage parallelism during touch panel / cover glass lamination

Touch panel module
Example Uses of PRESCALE/THERMOSCALE for Parts Manufacturing

**Camera modules**
- Pressure
- Heat
- Check contact and heat distribution during ACF bonding

**Semiconductor wafers**
- Pressure
- Heat
- Uniform pressure and check heat distribution when wafers are joined

**Semiconductor chips**
- Pressure
- Die collect adjustment for die bonding

**Ceramic laminated device filter**
- Pressure
- Heat
- Check contact of molds for laminators
- Check uniform pressure and heat distribution for laminators

**Print circuit boards**
- Pressure
- Squeegee pressure distribution measurement during cream solder printing
- Pressure
- Heat
- Check dry film resist (DFR) laminate nip pressure and heat distribution

**Other parts**
- Flash memory
  - Check balancing during multilayer circuit board mounting process
  - Adjusting the molds when manufacturing the semiconductor package
- Crystal transducers
  - Check contact when cutting crystal
  - Adjusting the cutting equipment
- Connectors
  - Check contact for injection molding machine molds


*The specifications and performance described in this catalog may change without notice to improve the product. The images used here are examples and differ from actual measurements.*