

Flat Panel Inspection System

Chess



Continuous
high-speed
efficient
Surface
Scanner

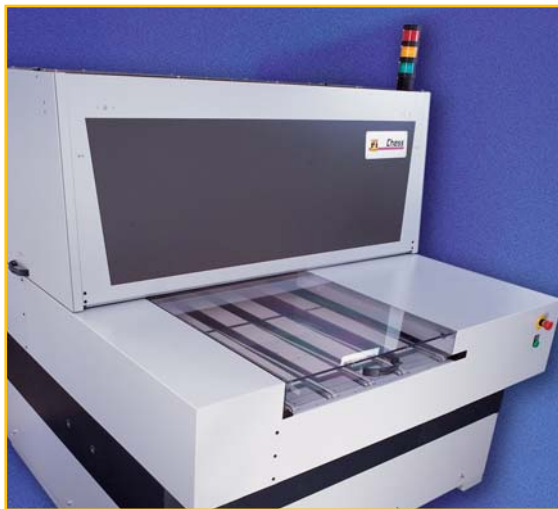
Introduction

The flat panel inspection system Chess is based on high-resolution cameras using Dr. Schenk proprietary pattern elimination technology. Chess is a modular optical system capable of inspecting all panel sizes and types, including bare glass substrates, coated glass, color filters and OLED structures.

A variety of resolution ranges is provided by the Chess flat panel inspection system in order to accommodate customer specific manufacturing and inspection environments.



Chess for Bare Glass Substrates Gen7



Continuous Self Learning Pattern Adaptation

Continuous self learning pattern adaptation results in heretofore unmatched cycle times of 10 seconds. And Chess flat panel inspection results are not influenced by uncritical variations on the panel.

Modular System Design

The Chess flat panel system inspects a wide range of panel sizes. Its modular design also allows the system resolution and configuration to be adjusted in order to optimize the price / performance ratio. In-line as well as stand alone systems are available with loading and unloading capability.

Optional Measurement Channels

Thickness Measurement

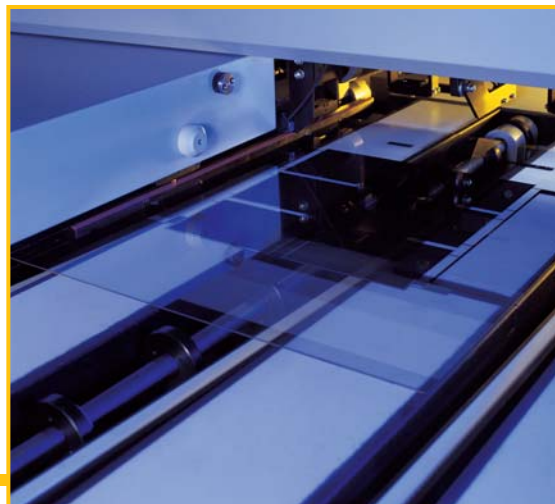
- White Light Spectrometer Modules
- Laser Interferometer Modules

Warpage Measurement

- High Precision Triangulation Sensors

Color Measurement

- Spectrometer Modules
- Single Sensor Modules



Chess



Proprietary Dr. Schenk Flat Panel Inspection Technology CAPE

The CAPE continuously adapting pattern elimination technology was custom-developed for the Flat Panel Display industry. CAPE is based on hardware video compensation at a very early scanning stage which effectively overcomes the shortcomings of conventional image processing systems.

This revolutionary technology enables the Chess flat panel inspection system to scan and process structured surfaces at the highest speed in the industry. And structured as well as unstructured surfaces can be inspected with the same cycle time.

CAPE pattern elimination for flat panel inspection systems is yet another innovative milestone from Dr. Schenk in the field of quality assurance and process control equipment.

Chess

Inspection Items

Bare Glass Substrates

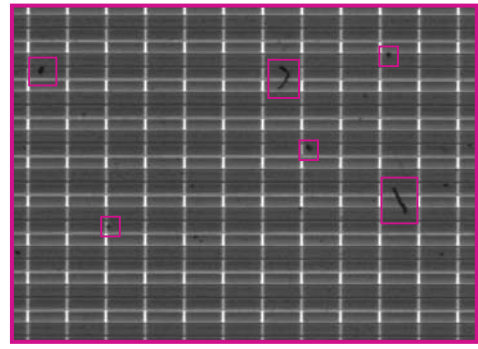
Bubbles (Blisters, Awa),
Inclusions (Stones, Knots),
Platinum (Tin), Culletts, Glass
Chips, Protrusions (Tokki),
Particles, Scratches, Surface
Spots, Stains, Streaks (Brush
Lines, Cords), Water Marks,
Broken Corners, Edge Chips,
Edge Cracks



Bare Glass Substrate

Coated Glass

Coating Voids, Missing Coating,
Pinholes, Coating-Burns/Arcs,
Coating Scratches, Coating
Splashes (Metal Spots), Peelings



Color Filter

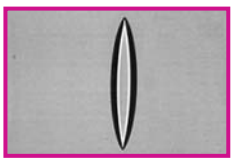
Color Filters

Black Matrix (Metal or Resin),
R, RG, RGB Photo Spacer
Patterns, Dust Particles,
Scratches, Pinholes, Missing
Edge and Shape, Muras,
Color Misalignment, Stains

System Highlights

- Unique pattern elimination technology - CAPE
- Unmatched cycle time
- Superior defect sensitivity
- Wide range of panel sizes and types
- Innovative glass handling technology

Sample Images of the Flat Panel Inspection System *Chess*



Blister



Glass Chip



Metal Inclusion



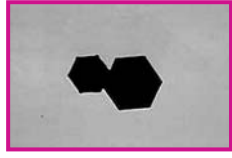
Platinum



Inclusion



Glass Chip



Metal Inclusion



Scratch



