

What We Can Offer

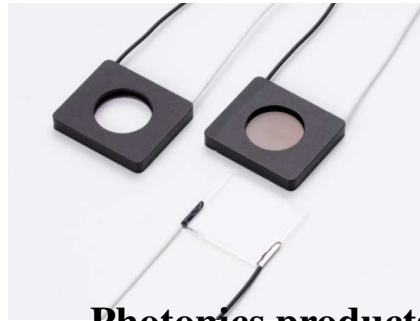
We, CFD / MDCA are LCOS manufacturer who develop and produce Ferroelectric LC materials and manufacture F-LCOS since 2000.

What we can offer is

- **Micro-display Foundry Service**
- **FLC Supply**
- **Various Photonics Devices**
- **LCOS Design Service**
- **Other Micro-display Related Business**



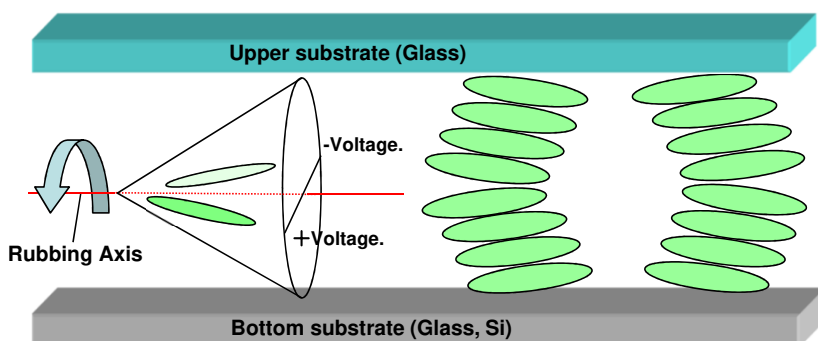
FLCOS / F-SLM



Photonics products

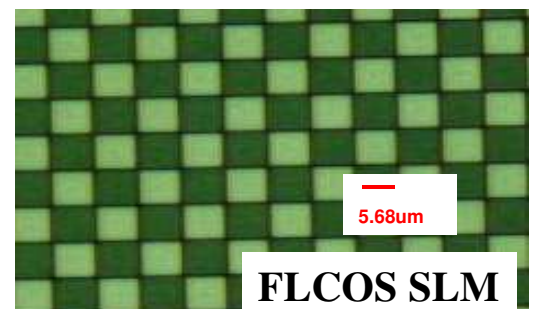
Surface Stabilized FLC (SSFLC) Technology

- Our narrow cell gap technology enables SSFLC based FLCOS
- Differentiated and exceptional characteristic of FLCOS is
 - **Very Fast Switching Speed**
 - **Very Little Crosstalk between Adjacent Pixels**
- FLCOS achieves ultra-small sized micro-display with high resolution and density which is eagerly awaited for Hologram/AR application.



SSFLC Technology

No blurring at pixel boundaries!



FLCOS SLM

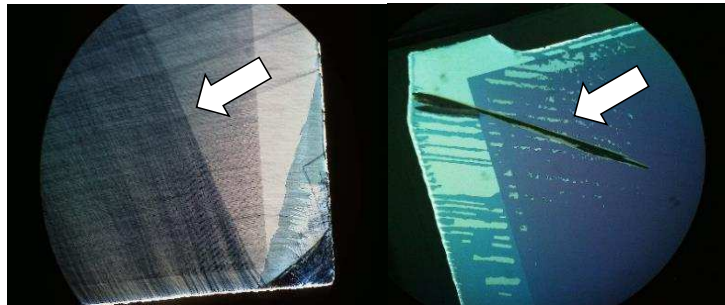
New FLC Development

We have developed a new FLC with a number of improved properties, which increases the value of customers' products.

Status	Phase trans. C*-A (°C)	Crystallized temp (°C)	Switching time (µsec)	Cone angle (°)	BW & QB defects
Conventional	88.3	<-30	213.2	40.3	Ref.
New	96.7	<-40	91.3	44.0	Better

- Expand Temperature Range
- Faster Response Speed
- Better Contrast
- More Stable Alignment
- Improve Contrast at High Temp.

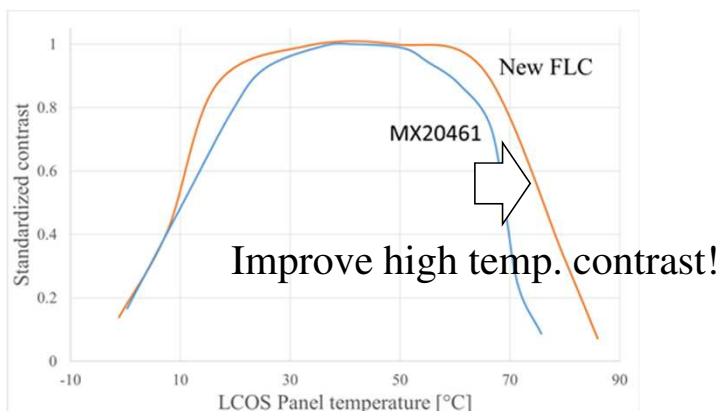
Example of alignment defects



Boat wake

Quasi Bookshelf

Panel temp. vs Contrast



FLCOS display image at 70°C



New FLC

Conventional

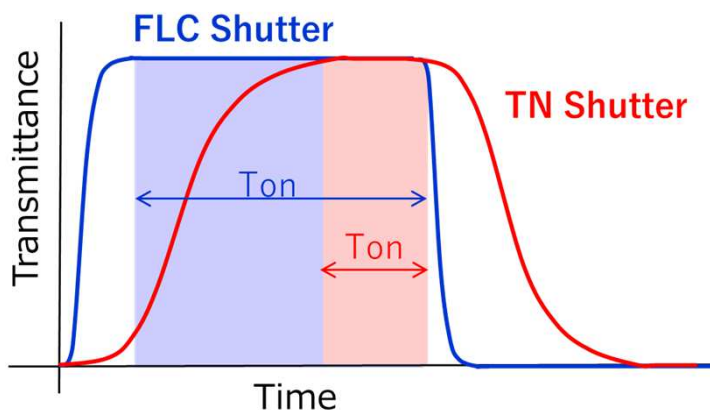
Photonics Device and SLM

We offer kinds of Photonics Devices and SLMs using FLC.

FLC Wave-Plate and Shutter

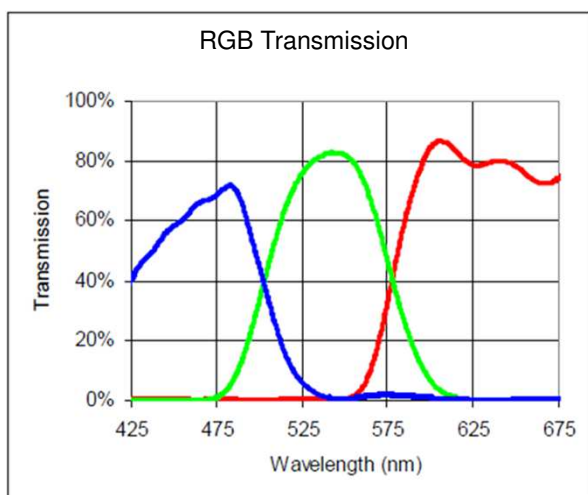
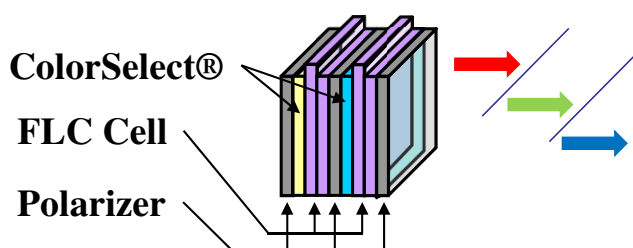
- Very fast switching speed suitable for high frequency applications

	Visible Light	NIR
QWP	In Production	Sample Available
HWP	In Production	Sample Available
Shutter	In Production	Sample Available



Color Select Shutter

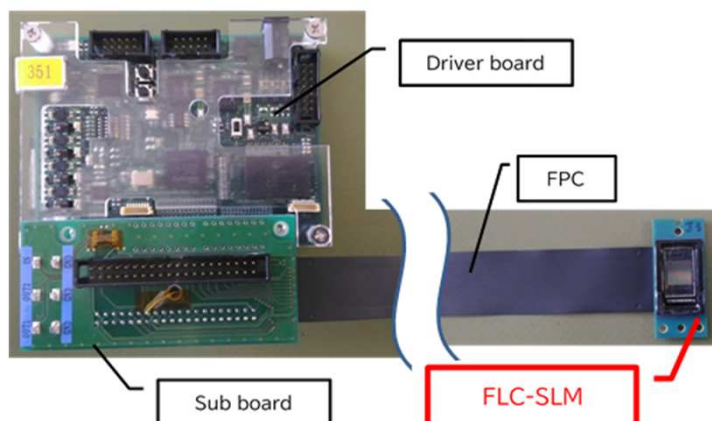
- Output R/G/B light by controlling two FLC cells.



Spatial Light Modulator

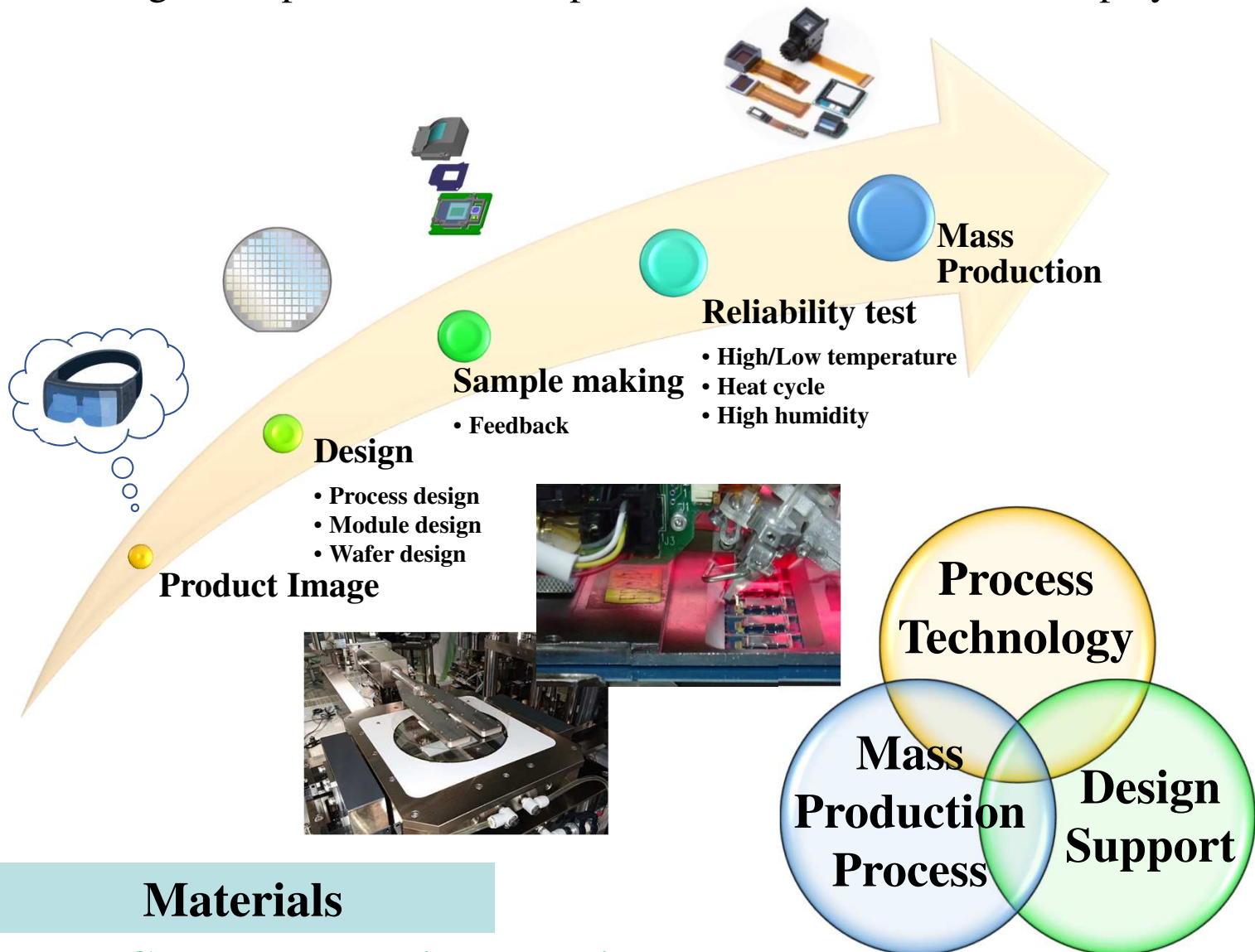
- Create spatial arbitrary pattern by irradiating it with light through a prism.

Active Area	7.27 x 7.27 mm
Resolution	1280 x 1280
Pixel Pitch	5.68 x 5.68 μ m



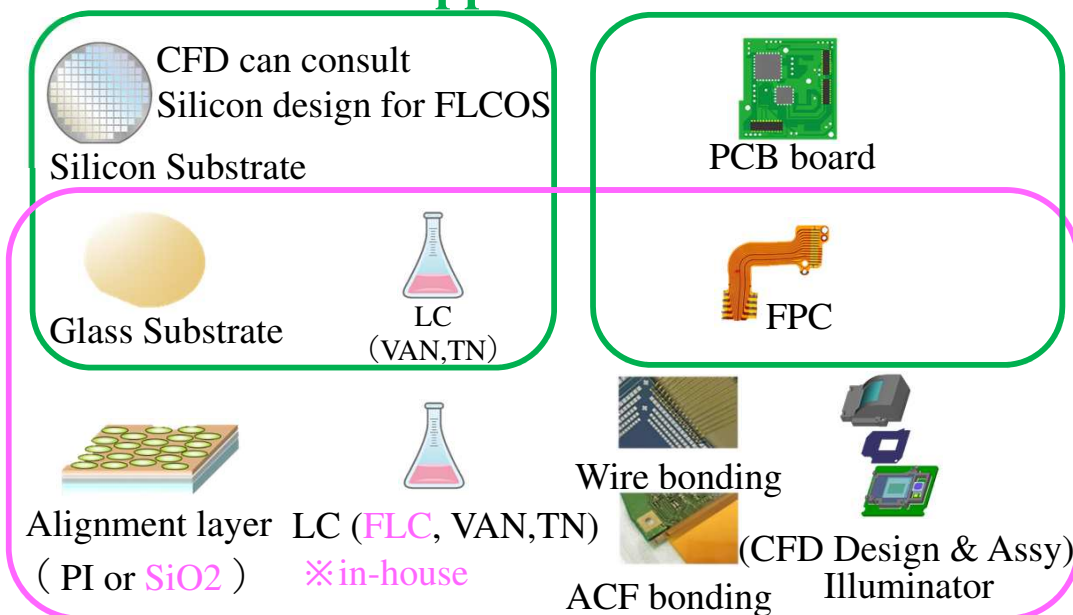
Micro-display Foundry Service

We have great experience in mass production of various micro-display.



Materials

Customer-supplied materials



Micro-Display Module for Scope, HMD, HUD, Projector

CFD provide Materials & Assembly