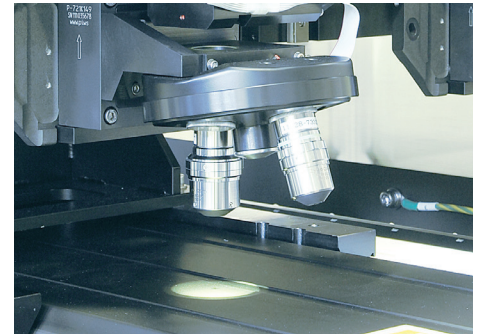


# FPM Series

## Optical Profilers

Toho Technology proudly offers the FPM Series of 3-D Optical Profilers built exclusively with technology and measurement heads acquired from Zygo Corporation. Toho's Zygo-FPM Optical Profilers are non-contact metrology systems designed for large area R&D analysis and production applications to provide a wide range of capabilities and value. Although the FPM is a series specifically designed to inspect cellular flat panels or large displays requiring high-res analyses, MEMS, Micro-Electronics, and Display manufacturers worldwide rely on the Toho FPM Series for superior 3-D feature analysis.



## Standard Features

### Comprehensive Measurements

FPM systems and their measurement data are used to improve production yield especially in Color Filter, TFT process lines and ODF (One Drop Fill) processes. Height and width, area data of Photo Spacer and VA structure, Black Matrix, and Color Filter can be measured at one time with our proprietary OneShot™ system. SureShot™ provides Halftone process feature measurement such as film thickness and Critical Dimensions. DropShot™ also provides droplet volume and shapes.

### Dynamic Software

The advanced software platform provides the process engineers with enhanced high-speed data retrieval/analysis, using the latest digital imaging technology. Includes world renowned Zygo MetroPro 3-D analysis software suite.

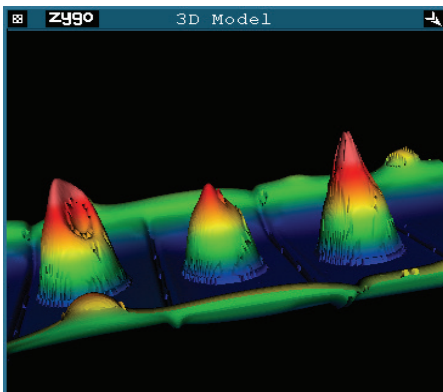
### Flexibility/Speed

Toho FPM systems reduce critical TACT time by allowing the operator to adjust sensor head utilization on multi-head tools. 2 seconds for complete 3-D/CD measurement of bare and film covered samples.

## Applications

Toho FPM Series tools are designed to provide accurate measurements within a vast array of applications.

- Color Filter Pixel Volume on ODF process
- Main PS and Sub PS on Touch Screen
- ITO CD Overlay for mask alignment
- 3-D/CD inspection for Halftone Exposure
- Photo-Resist film thickness
- Surface form and thickness of RGB filters
- Volume, Form, Height of pixel for Ink Jet print control



**zygo**®

The Toho FPM Series incorporates original Zygo Measurement Heads and design.

### Toho Technology Inc.

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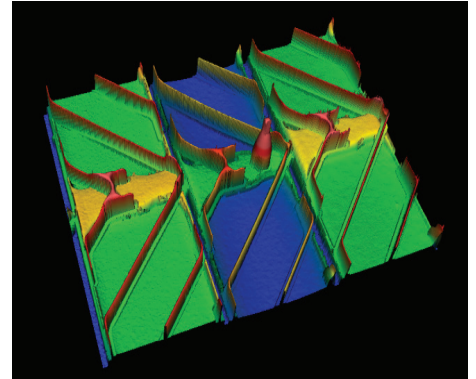
Tel: 773.583.7183

[www.tohototechnology.com](http://www.tohototechnology.com)

# FPM Series

## Optical Profilers

Toho Optical Profilers are white light interferometer systems, offering fast, non-contact, high-precision 3-D metrology of surface features. Toho systems include the proprietary MetroPro® Software. Choosing the right surface measurement system depends on your application's requirements, including precision, speed, automation, configuration flexibility, and vertical range. Using ZYGO's patented scanning white light interferometry (SWLI) technology, the FPM series 3-D optical surface profilers easily measure a wide range of surfaces, including smooth, rough, flat, sloped, and stepped surfaces.



## Specifications

### Performance

TACT Time	2.5 to 5 sec FAAM; average 17 sec Glass Prep
Uptime	≥ 95%
Throughput	40K glass/month (4-heads)
Height Repro	≤ 20-30 nm (3-σ)
Lateral CD/OL Repro	≤ .2 micron (3-σ @ 20x)
Head-to-Head Correlation	≤ 20-30 nm (3-σ)

### Key Technologies

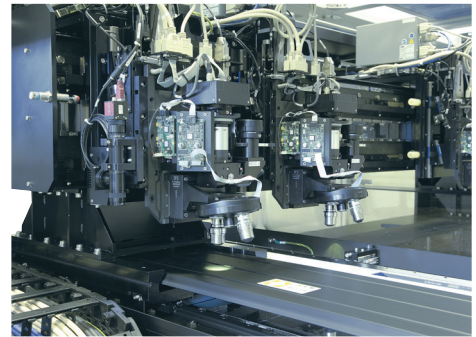
- High-speed SWLI
- Surface profiling of transparent films
- Custom 20x or 50x FPM objective
- Large stage mecha-tronics
- High-speed motion with nanometer stability and micron absolute positioning

### Vertical Metrology

- Measurement precision on large FPM stages
- Repro ≤ 20-30 nm, App. dependant, (3σ @20x) standard
- SuperOneShot for sub 20nm applications
- Film thickness measured / films 1 to 50 μm, standard
- TFT HalfTone (HT) options to below 400nm
- Film surface topography measured for films ≥ 400nm

### Lateral Metrology

- IntelliVision™ Pattern recognition & feature finding
- Lateral CD precision to 1 / 20th pixel
- Repro ≤ 0.2 μm (3σ with 20x objective; full pixel coverage)
- Repro ≤ 0.05 μm (3σ with 50x objective)



Toho-Zygo FPM multi-head systems



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