

# FM-3910

## Advanced Research Upright Biological Microscope



EPCC / PRODUCTS / APPLICATION / SOFTWARE / ACCESSORIES / CONSUMABLES / SERVICES

**Analytical Technologies Limited**

An ISO 9001 Certified Company

[www.analyticalgroup.net](http://www.analyticalgroup.net)

## ►► **General Technical Data:**

**Body** - Rugged, single die cast, ergonomic design, touch point treated, intensity controller & on/off switch, rubber feet, auto photo preset switch, slot for Ana/ Pol/DIC, variable stage mounting position, inbuilt 3 transmitted diffusion/filters LBD or ND6 or ND8 or ND11 or ND25, ND32 slider, ECO illumination IR sensor (auto cutoff) with filed diaphragm (provision to replace halogen with LED)

**Optical System** - Universal Infinite Optical System, Color/Chromatic & Spherical Aberration APO Corrected, Antifungal, Anti-bacterial Coated (Multi-layered, hard coated), Color Coded Objectives, Parfocal (60mm), Parcentered suitable for BF,DF, phase contrast DIC,

**Koehler illumination** - Uniform colour LED 5W Halogen 50W/100W Full Koehler, having 6000k colour temperature, Life up to 1,00,000Hrs, High Luminescent, ECO Energy Saving Auto Cut Off & Fly Eye Lens suitable for BF, DF, PH, DIC techniques

**Viewing Head** - 30° Sidentopf Trinocular, 2/3 Position, Rotatable 360°, IPD 48-76mm F.O.V 25mm, 0:100, 50:50,20:80/100:0

0°- 40°Ergonomic, Sidentopf, Trinocular 3 Position, Rotatable 360°, IPD 48-76mm F.O.V. 25mm, 0:100, 50:50, 20:80/100:0

**Nosepiece** - Inward Quintuple/Sextuple with slot for ANA/POL/DIC

**Eyepiece** - Antifungus Super Wide lox with FOV upto 25mm Dioptric adjustment on both eye-pieces Eyeguard, Eyepiece Cup, Dust Cover.

**Mechanical Stage** - Next generation, rackless, Amoled glass stage/Anodized surface, Ceramic Coated, super anodized hard & scratch resistant, dual slide holder, left/right hand low drive Control, height adjustable co-axial movement knob, 270 rotatable, two way linear guide, Stage Size 152x190mm, X-Y Movement 78-32mm on wire, Spring Lever Left, precision 0.1mm, tension adjustable, variable mounting position, Stage size & movement can be customized as per requirement

**Objectives** - Infinity Plan / SEMI APO / FLUOTAR APO/Phase Objectives

**Condenser** - Swing Out 0.9 upto 1.1/1.25/1.30/1.40 Suitable for 1x-100x, rack & pinion, iris-diaphragm Five/Six Positions Universal Condenser N.A. 0.9 / 1.25/1.30/1.40 For BF DF, PH, POL & DIC

**Focusing** - Co-axial, Tension Control, Upper Limit Stopper, coarse adjustable distance 25mm, High Sensitivity Focus Drive with 0.10 mm per revolution, Fine adjustment 1.0µm/Div, 3 step focusing coarse, torque & fine.

**Microscopy Techniques** - DIC, Polarizing, Dark Field, Fluorescence, Phase

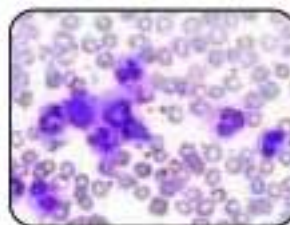
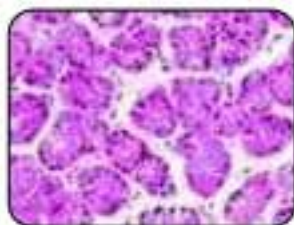
**Filters** - Built in ND Filters, Six Position Filter Wheel

### ►► **Unique Features:**

- Fly Eye Lens
- Gorilla Glass Stage
- Auto Cut OFF
- 60MM Parfocal Objectives
- APO Objectives
- Optional Motorized Control
- Stratum Structure
- Anti Fungal & hard Coated Optics
- Stage Maternal, Movement, Size etc. Optionally can be customized

### ►► **Area of research applications:**

- Pathology
- Microbiology
- Haematology
- Cytology
- Genetics
- FISH



► **World of Flexible Upgrade for Research At Ease :**  
**Multi Head attachment**

Multi Head attachment for 2/3/5/10/20 viewers, Main Observer sidentopf Trinocular Head/ inclined at 30°, FOV 25mm, rotating 360°, IPD 48-76, Binocular Head for Secondary Observation, inclined at 30°, Eyepieces 10X, upto 25mm, Side by Side Observation Head- 4Nos, multi color LED pointer, 360° rotatable, moveable with joystick, intensity adjustable

**Imaging Camera's**

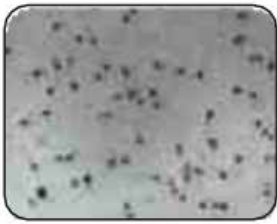
**Compatible with ProCAM Series Camera's**



ProgRes Gryphax / ProgRes indi Series /Prokyon indi /ProCAM , CCD , CMOS & Backlit CMOS Sensor 1.4-20 MP Resolution , 60FPS Up to 1" Sensor size

FM-3910	
<b>Transmitted Illumination</b>	Pre-centered , Pre-focussed & Cordless Lamp House, In built heat adsorbent filter, Koehler's illumination Aspheric collector lens, Filed Diaphragm, Fly Eye Lens for uniform illumination 5W S LED /12V 100W halogen illuminator with Intensity control, Synchronized with objectives, 3 in built filters (2 ND & LBD) IR Sensor for Auto-Off, 100-240V in built wideband SMPS
<b>Eyepiece</b>	Super Wide 10X With 22/25mm FOV. Dioptic Adjustment On Eyepieces
<b>Nosepiece</b>	Interchangeable Reversed Coded, Precise Quintuple/Sextuple/Septuple revolving on multiple ball bearing, Next Generation Auto Sync with light for Light Intensity Manage
<b>Frame / Stand</b>	Co-axial, Tension Control, Upper Limit Stopper, coarse adjustment stroke of 25mm, High Sensitivity Focus Drive with 0.10/0.20 mm per revolution, Fine adjustment 1.0/2.0µm/Div
<b>Mechanical Stage</b>	Next generation, rackless, anodized, Amoled glass/ceramic stage, supper hard & scratch resistant, variable mounting position, dual slide holder, left / right control 270° rotatable, two way linear guide, Std. Stage Size 190x152mm, X-Y Movement Std. 78-32mm, precision 0.1mm, tension adjustable
<b>Condenser</b>	Synchronized with nose piece, Kohler illumination, Abbe condenser N.A. 0.9/1.1/1.25 swing out (2X to 100X) Aplanatic N.A. 1.40 Five/Six Positions Universal Condenser N.A. 0.9/1.1 / 1.40 For BF, DF, PH & DIC
<b>Objectives</b>	Infinity Plan Achromatic Objectives 2X/0.7, 4X/0.10,10X/0.25, 20X(SL)/0.40, 40X/0.65(SL),60X/0.8(SL)& 100X/1.25(SL) Oil Infinity Plan Fluor/S-APO/S-APO Phase Objectives 2X/0.6, 4X/0.13, 10X/0.30, 20X/0.50, 40X/0.8(SL),60X/0.8/63X/0.85(SL)& 100X/1.30(SL) Oil Infinity Plan APO/Super Fluor/DIC Objectives 2X/0.1, 4X/0.20,10X/0.45, 20X/0.75, 40X/0.95(SL),60X/1.40 (SL) Oil & 100X/1.40 (SL) Oil
<b>Observation Head</b>	30° inclined ,interpupillary distance: 48-76mm, diopter adjustable: +/-5 , binocular / trinocular head; 3 position (0:100, 20:80/50:50& 0:100) 0-40° inclined ,interpupillary distance: 48-76mm, diopter adjustable: +/-5 , binocular / trinocular head; 3 position (0:100, 20:80/50:50 & 0:100)
<b>Fluorescence Attachment (Optional)*</b>	Filter Turret: Up to 8 Position turret, with capacity to accommodate upto -8 Fluorescence Filter Block, Instant Switching between BF or FL mode, Diaphragm : Center-able Aperture & Filed Diaphragm , Slots for ND Filters / Pol /Balancer , Unique Noise terminator design ensure protection of light leakage from the housing , resulting High contrast images with greater Signal to Noise ratio even with weaker fluorescence signals. Neutral Density (ND) filters: ND4/ND8 & Nd16 , With HG100W Life upto 300Hrs / Pre-cenetered 120W/200W @ 2500Hrs Life / LED @ 30000 Hrs Life Fluorescence illumination source.
<b>Optional Accessories: Intermediate attachments</b> :Polarizer , Analyzers ,Dual Camera Port, Level Riser 10/20mm , Digital Pointer(1/2/3 Color LED), Multihead attachment with Digital & 360° Rotatable Pointer for 2,3,5 & 10 Observers , Nosepiece Spacer. <b>Eyepieces</b> : WF 15x , WF 20x, Pointer , Grid, Micrometer.Digital Heating Stages, Narrow Band, LP, BP, Dual, Triple Band Fluorescent filters, Universal 5/6 Position Condenser for BF, DF & PH Observation, Neonatal Filter, Dry & Oil Dark-field Condenser, DIC kit including Prisms/Polarizer alongwith prisms for 4x/10x/20x/40x/60x/100x & Polarizer for DIC, Infinity Plan Objective 100X/0.5-1.3 N.A with Iris, ND Filters , Image Analysis Software & Photomicrographic Cameras, Etc.	

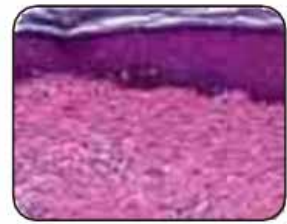
▶▶ **Compatible Software Based Solutions:**



Sperm Analysis



Karyotyping/FISH



Morphology |

▶▶ **CCD HS T-Series Cameras:**



Welcome to the world of Microscopic imaging, ATL introduces range of world class economic camera CAM.

CAM can be directly interface with Tnnocular port of any 5stereozoom, Biological, Metallurgical or Measuring Microscope with a C-mount adaptor, making compatible with most of microscope with latest USB-3.0 port for interfacing with computer system, USB-3.0 having 5gbps transfer speed makes it faster than firewire interface.

CAM a Scientific grade camera with high -fidelity color reproduction, one click image acquisitions and storage capabilities It comes along with Stand Alone software & Twain acquisition drivers to ease software integration with any Image Analysis software. Stand alone software also feature's Measurement tools, Annotation tools, Calibration Tools & Image editing Tools & lot more to ease your application.

▶▶ **Features of capture & measurement software:**

**Features:**

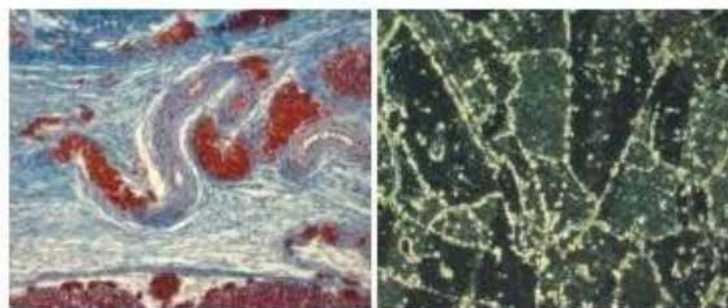
- Multi-fluorescence mode
- Individual user profiles
- Exposure control
- Multi-camera operation
- Image annotations
- Programmable resolution
- Measurement capabilities
- Multi-focus

**Features:**

- Excellent color reproduction
- Superior image quality
- Best price-performance ratio

**Fields of Application**

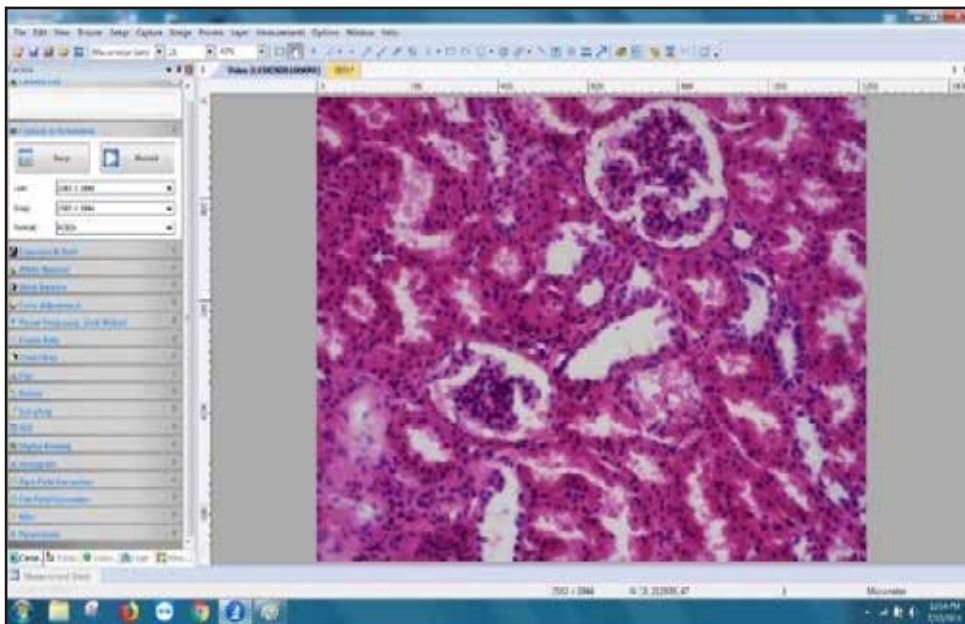
- Materialography
- Petrography
- Geology
- Pathology
- Histology
- Forensic
- Quality Control
- Mineralogy
- Hematology
- Cell Biology
- Fluorescence(USB3.0)


**▶▶ Electronic Rolling Shutter**

<b>Model</b>	FM-3910
<b>Pixels</b>	16MP (Color/mono)
<b>Sensor Size</b>	1/2.33"
<b>Pixel Size</b>	1.33im xl. 33pm
<b>Resolution/Frame Rate (Live &amp; Capture)</b>	4648x3506 : 6.OFPS 2304x1750: 15.OFPS 1536x1168 : 28.OFPS Any Area (ROI)
<b>Exposure Time</b>	100p-30s
<b>Sensitivity</b>	0.53 V/lux-sec
<b>Spectral Range(nm)</b>	380 nm 720nm (with infrared filter)
<b>Dynamic Range</b>	72d B
<b>SN Ratio</b>	46dB
<b>Binning</b>	1x1,2x2,3x3,4x4
<b>Cooling</b>	Natural/Peltier fan cooling (optional)
<b>Shutter</b>	Electronic Rolling shutter (Global Optional)12 bit, 14 bit (Optional)
<b>Image Data Format</b>	
<b>Operating Mode</b>	Continuous output
<b>Scanning Mode</b>	Progressive Scan
<b>Exposure Control</b>	Manual/ Auto/ Area



<b>White Balance</b>	Manual / One time /Auto! Area
<b>Image Processing</b>	GAMMA! Contrast/ Black Level! Noise Reduction /3D Noise Reduction/ Sharpness / Saturation
<b>Quantum Efficiency</b>	Upto 70%
<b>Picture Format</b>	JPEG/BMP/PNG/RAW
<b>Colour rendering technique</b>	Ultra fine colour engine
<b>Software interface</b>	CAM Software, Native C/C++, C# (Supports Direct Show/TWAIN/Lab View)
<b>Operating System</b>	Windows XP/Vista /7/8/10 (32 & 64 bit) OS X (Mac OS X), Linux
<b>Data Interface</b>	USB3.0(B Type)
<b>Lens Mount</b>	0.5X C/CS Mount
<b>Dimensions / Weight</b>	Metallic square body 58mm, height 36mm/ (Exclude Lens Mount)/Approx. 180g
<b>Rated Voltage/Power</b>	5V via USB
<b>Temperature /Humidity</b>	Operation: 050°C /storage: -20°C 60°C/ Working: 10%'90% RH (No Condensation) 10% 60%



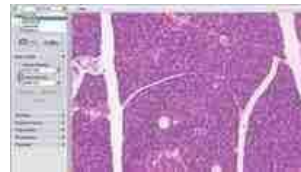
## ▶▶ CAM Software

CAM Software is a high-performance professional imaging software. It explores the whole potential of professional procam cameras. Furthermore, it also possesses powerful image processing, combination and measurement functions.

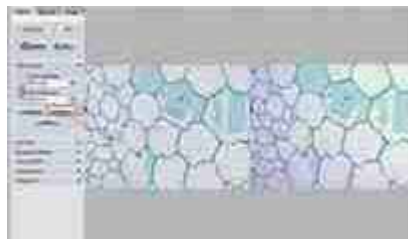
With easy-to-use and intuitive user interface and simple operations, CAM helps you perform image acquisition and advanced image processing with ease. It is a completely free software. You can get the upgraded version software and enjoy the great new features at the first time without paying any extra charge.

### Camera Control & Image Management

CAM allows you the completely control of procam cameras, including camera basic control like resolution and white balance; exposure control like integration time, gain, data width; and color control like color enhancement, contrast, saturation etc.



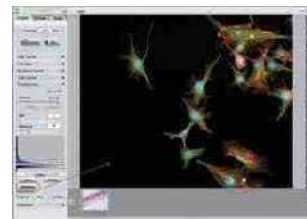
**Excellent solution for image management & annotation.**



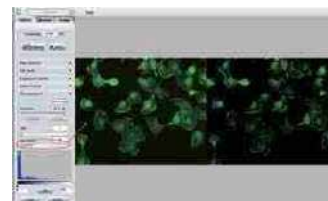
**Remarkable camera correction capacity, flat fielding is only one of them.**

### Fluorescence Imaging

Fluorescence imaging is more and more widely use. ProCAM Software provides great support for this application. Black level function makes your camera more sensitive.



In fluorescence imaging, most area of the image is dark. In such case, the white balance is not able to give the correct color reference for the images. How can you do the color correction for the images? Black Balance helps you solve this.

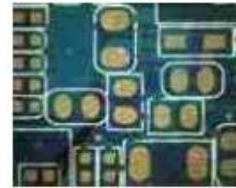




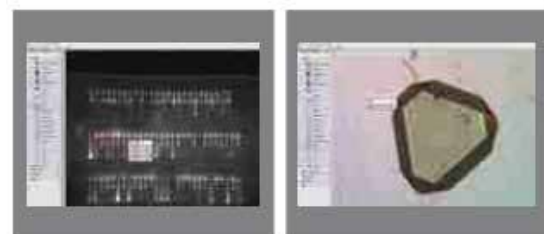
## ►► Technical Features :-

- Continuous automatic exposure control
- Automatic/manual white balance
- Multi-focus (Z-Stacking/3D imaging)
- Multi-fluorescence/channel mode mixing/unmixing
- Measurement capabilities
- Image/text annotations
- Image processing and enhancement
- Optical configuration setting
- Layout configuration setting
- Image combine
- Image comparison
- Tile imaging
- Multiple image alignment
- Truecolor Imaging
- Gallery view
- Batch conversion
- Live Preview, HDR Image enhancement function
- Microscope Control, Active denoising, Active Sharpening
- Professional Segmentation & Count function
- Image Stitching
- Management visualization and Printing of metadata and image.
- Saving formats (image) JPEG, TIFF, PNG, BMP etc.
- Saving formats (video) AVI, MP4, (H264), MP4(H265), WMV etc
- Time-lapse
- Macro manager
- High dynamic range viewing
- Optical configuration
- Layout configuration
- Shading calibrations/Adjustment
- Multi-camera operation
- Merge, crop and image arithmetic
- Multipoint experiments/Capture
- Individual user profiles

High Dynamic Range(HDR)



Accurate and advanced measurements are suitable for almost any application and allow you to carry out your work easily.



- Image Overlapping,grid/circle overlay
- Objective Calibration
- Line profile/histogram, Magnifier (zoom) function
- Intensity Measurement & Profile
- Contour Based measurement data (area box parameter, Gray value)
- Image analysis
- Manual counting, spatial measurements, length, width, area, box, gray values, perimeter, micrometer/microbar, vector layer, etc.

### ►► **Technical Specifications:-**

Exposure & Gain, White Balance(Auto & Manual), Color Adjustment, Frame Rate Control, Power Frequency Setting(Anti-flicker), Flip, Skip and bin sampling, Parameters, Video functions, Image Processing and Enhancement, 2D Measurement (Live & Capture), Image Stitching (Live & Saved Images/Panorama), EDF (Extended Depth of Focus), Professional Segmentation & Count function, Image Stacking, Color Composite, Video Interface, Other Features, Operating System

### **Compatible with ProCAM Cameras**



## HPLC Servicing, Validation, Trainings and Preventive Maintenance :

**HPLC Servicing** :HPLC Servicing : We have team of service engineers who can attend to any make of HPLC promptly @the most affordable cost.

**Trainings** :We also take up preventive Maintenance to reduce downtime of HPLC's Trainings.

**AMC's/CMC** :AMC's/CMC :We offer user training both in-House and at customer sites on HPLC principles, operations, trouble-shooting.

**Validations** :Validations :We have protocols for carrying out periodic Validations as per GLP/GMP/USFDA norms.

**Instruments** :Instruments :We offer instruments/Renting Services Modules like pumps,detector etc. on Rent.



## About Analytical Technologies

Analytical Technologies is synonymous for offering technologies for doing analysis and is the Fastest Growing Global Brand having presence in at least 96 countries across the global. Analytical Technologies Limited is an ISO:9001 Certified Company engaged in Designing, Manufacturing, Marketing & providing Services for the Analytical, Chromatography, Spectroscopy, Bio Technology, Bio Medical, Clinical Diagnostics, Material Science & General Laboratory Instrumentation. Analytical Technologies, India has across the Country operations with at least 4 Regional Offices, 6 Branch Offices & Service Centers. Distributors & Channel partners worldwide.

## Our Products & Technologies





## Regulatory compliances



## Corporate Social Responsibility

Analytical Foundation is a nonprofit organization (NGO) found for the purpose of:



# Analytical Foundation

1. Research & Innovation Scientist's awards/QC Professional Award : Quality life is possible by innovation only and the innovation is possible by research only, hence ANALYTICAL FOUNDATION is committed to identify such personalities for their contributions across various field of Science and Technology and awarding them yearly. To participate for award, send us your details of research / testing / publication at [Info@analyticalfoundation.org](mailto:Info@analyticalfoundation.org)

2. Improving quality of life by offering YOGA Training courses, Work shops/Seminars etc.

3. ANALYTICAL FOUNDATION aims to DETOXYFY human minds,souls and body by means of yoga, Meditation, Ayurveda, Health Care, Awards, Media, Events, Camps etc.

## Reach us @



**HPLC Solutions   MultipleLabs   Analytical Bio-Med   Analytical Distributors   Analytical Foundation (Trust)**

**Corporate & Regd. Office:**  
Analytical House, # E67 & E68,  
Ravi Park, Vasna Road, Baroda,  
Gujarat 390 015. INDIA

T: +91 265 2253620  
+91 265 2252839  
+91 265 2252370  
F: +91 265 2254395

E: [info@hplctechnologies.com](mailto:info@hplctechnologies.com)  
[info@multiplelabs.com](mailto:info@multiplelabs.com)  
[info@analyticalgroup.net](mailto:info@analyticalgroup.net)  
[info@analyticalbiomed.com](mailto:info@analyticalbiomed.com)

W: [www.analycalgroup.net](http://www.analycalgroup.net)  
[www.hplctechnologies.com](http://www.hplctechnologies.com)  
[www.multiplelabs.com](http://www.multiplelabs.com)  
[www.ais-india.com](http://www.ais-india.com)

Sales & Support Offices:  
across the country :  
Distributors & Channel  
partners World Wide

Note : Company reserves rights to add/delete/modify the contents / technical specifications of the catalogue without prior notice.