OLYMPUS®

PHOTOMICROGRAPHY SYSTEMS

PM30/PM20

Olympus leads the way with technological innovation in every facet of microscopy, as well as an unwavering commitment to developing products that fulfill the complex needs of our rapidly changing society. When it comes to quality and reliability, you can count on Olympus.

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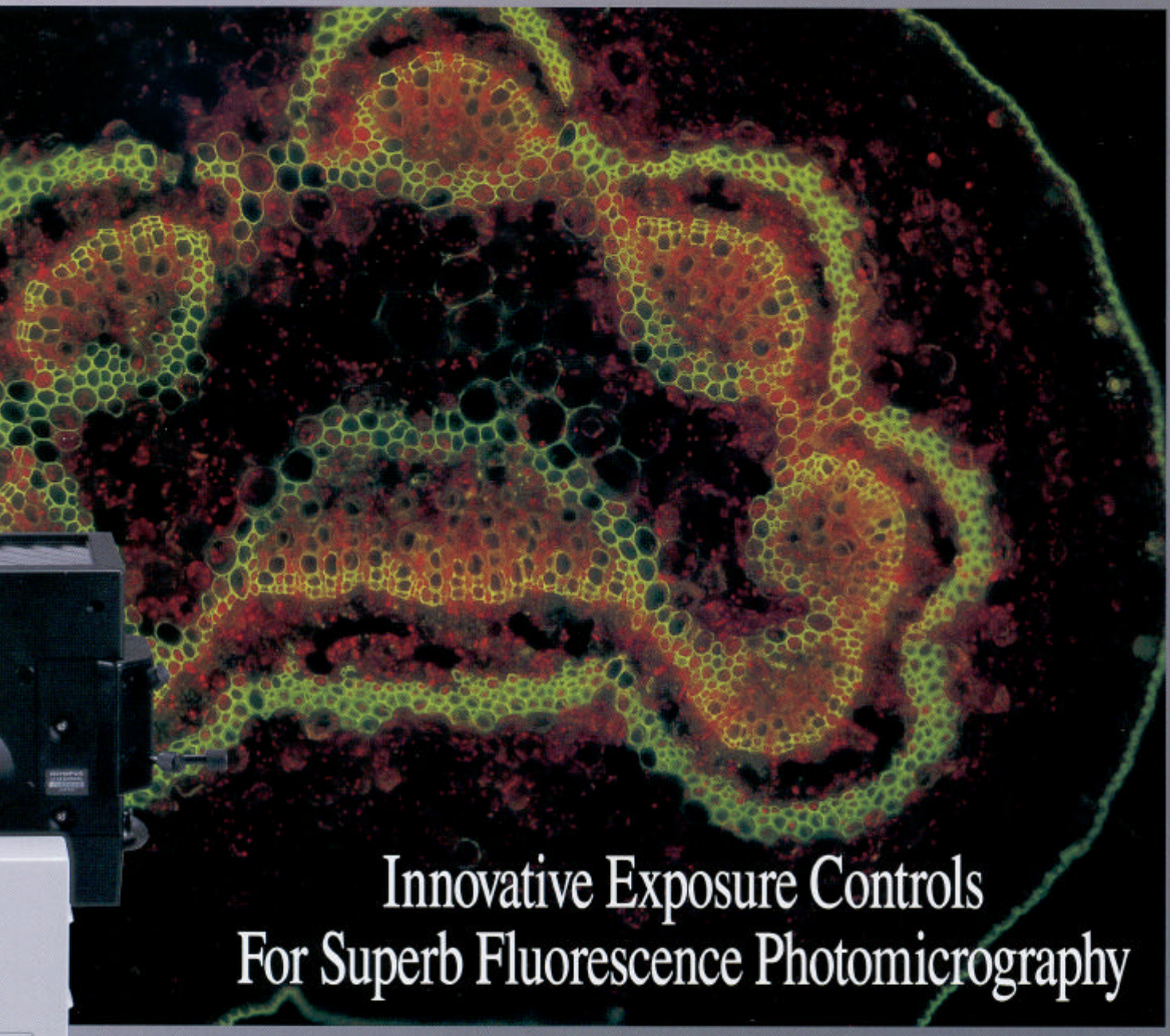


Innovative Exposure Controls For Superb Fluorescence Photomicrography

Olympus introduces the PM30 and PM20, imaginative new photomicrography systems that greatly simplify taking high-quality photomicrographs — of even the most difficult specimens. Designed with real-life requirements in mind, the new PM30 and PM20 systems provide solutions to the complex problems of fluorescence photomicrography. In addition to their automatic exposure controls, both systems utilize special programs designed to easily cope with the sometimes frustrating situations encountered in this difficult type of photomicrography.

Fully Automatic Fluorescence Photomicrography — Only by Olympus

PM30 Automatic Photomicrography System

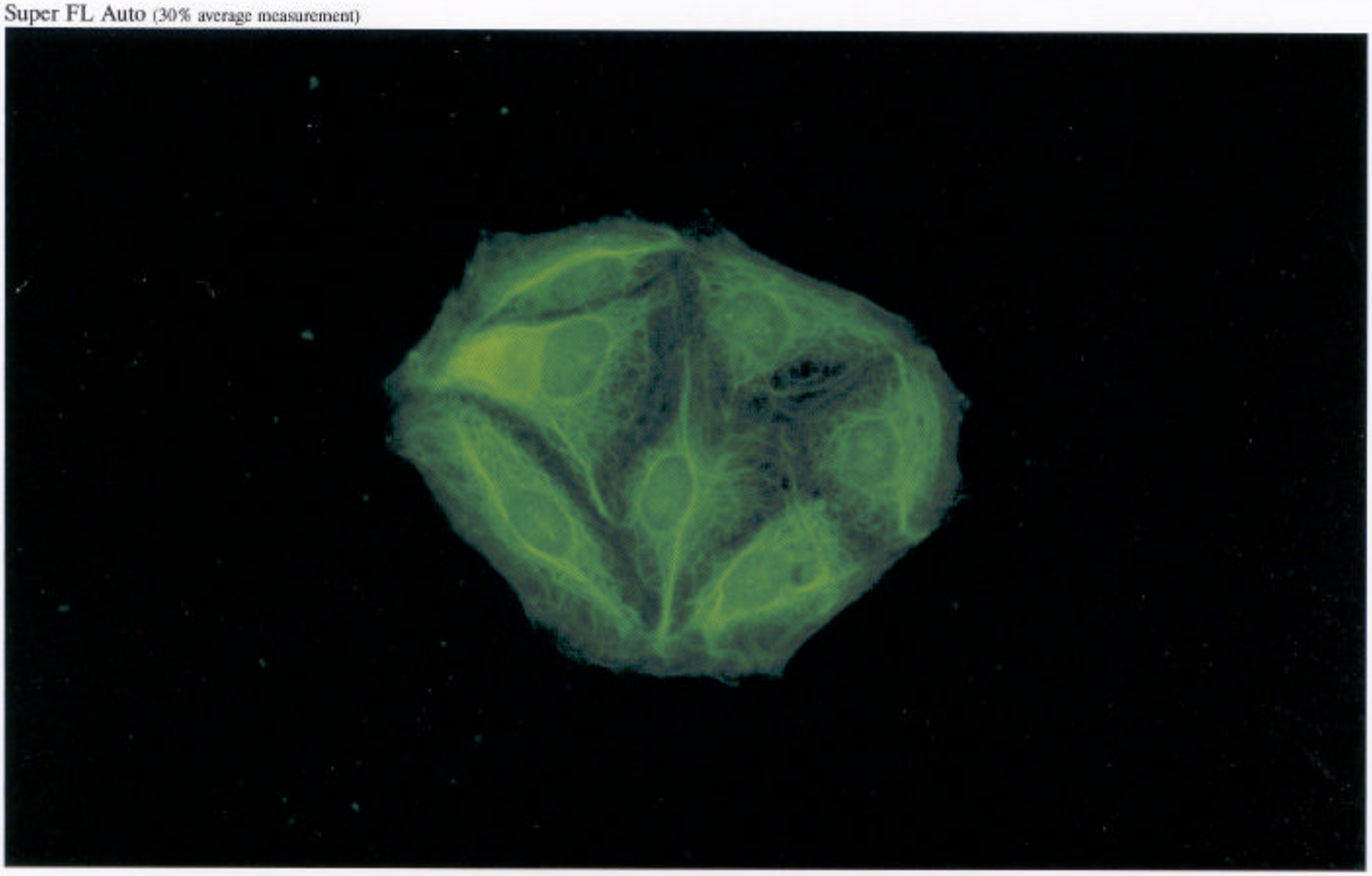
The PM30 features the exclusive Super FL Auto mode that ensures foolproof photomicrography for fluorescence microscopy, which presents extremely difficult parameters. The normal Auto mode and a host of other convenient features facilitates trouble-free photomicrography for all other microscopy techniques.

- Super FL Auto mode, made possible by the unique PM30 sensor, with fully automatic exposure control for fluorescence photomicrography.
- Auto mode assures superb results for brightfield, darkfield, phase contrast and Nomarski DIC.
- Three exposure measurement areas: 0.1% micro-spot and 1% spot as well as 30% field averaging.
- Auto-bracketing function allows sequential photos with automatically increased and decreased exposure times.
- Storage of data settings in internal memory or on optional memory cards.
- RS-232C port for computerized control.
- Built-in alphanumeric data imprinting control for 35mm and Polaroid camera formats.
- Built-in bright frame intensity control to facilitate composition against a dark observation field.
- Easy-to-use compact control unit, with data called-up via the convenient Jog dial and a large backlit LCD screen.

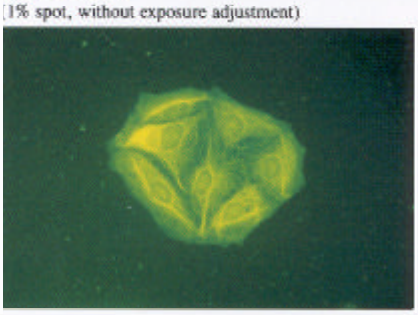
■ **PM30 Specifications**

Automatic exposure control unit	Measuring system	Two-dimensional split measuring
	Photometric modes	Super FL Auto mode FL Auto mode Auto mode Manual mode Time mode (AE Lock, Multi Exp. also possible)
	Auto exposure adjustment range	1/125sec.—68min. (Auto mode, ISO100)
	Measuring area	0.1%/1% spot measurement 30% average measurement
Acceptable cameras		35mm camera, 4" × 5" intermediate adapter, 3-1/4" × 4-1/4" Polaroid camera
Control unit		Data input via sheet switches and Jog dial. Automatic ISO setting via DX code (with PM-C35DX mounted), manual setting also possible. Reciprocity failure adjustment function. Data backup by internal memory. Auto bracketing (3/5/7 frames).
		Large LCD (backlit) screen (320 × 240 dot matrix) RS-232C interface IC memory card/printer interface (optional)
Power supply		100—120V, 220—240V, 50/60Hz, 150VA

Super FL Auto (30% average measurement)



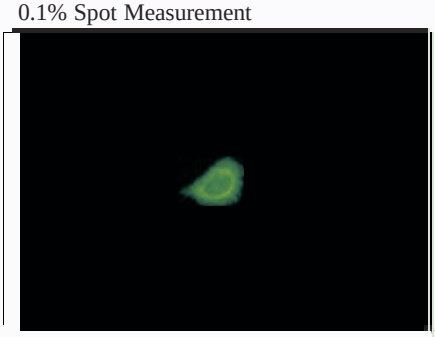
Normal Auto
(1% spot, without exposure adjustment)



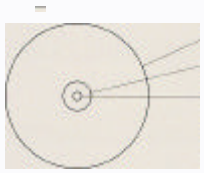
Super FL Auto — Faultless fluorescence photomicrography

Utilizing the two-dimensional CCD, comprising an array of 400 individual detectors in the 30% average metering area, Super FL Auto calculates the precise exposure by measuring only the light from those portions of the fluorescence specimen that exhibit illumination. The Charge-Coupled Device features a response curve that is similar to the human eye, and it is the heart of this advanced system. Absolutely precise fluorescence photomicrographs can easily be taken, under virtually any conditions, without the need for manual exposure compensation.

0.1% Spot Measurement



Choice of spot or field averaging exposure metering



30% average measurement area
1% spot measurement area
0.1% spot measurement area
-35mm film frame

The PM30 features spot metering with a choice of two area sizes in the FL Auto or Auto modes: a 1% spot or the amazing 0.1% micro-spot of the 35mm film frame. The unique 0.1% spot in FL Auto mode is especially useful for extremely precise photomicrography of the most difficult to expose specimens, such as isolated bright spots within the sample. Normal situations are easily metered with the 30% averaging measurement area.

Sophisticated Features, Superior Photomicrography — With Room to Spare

PM20 Automatic Photomicrography System

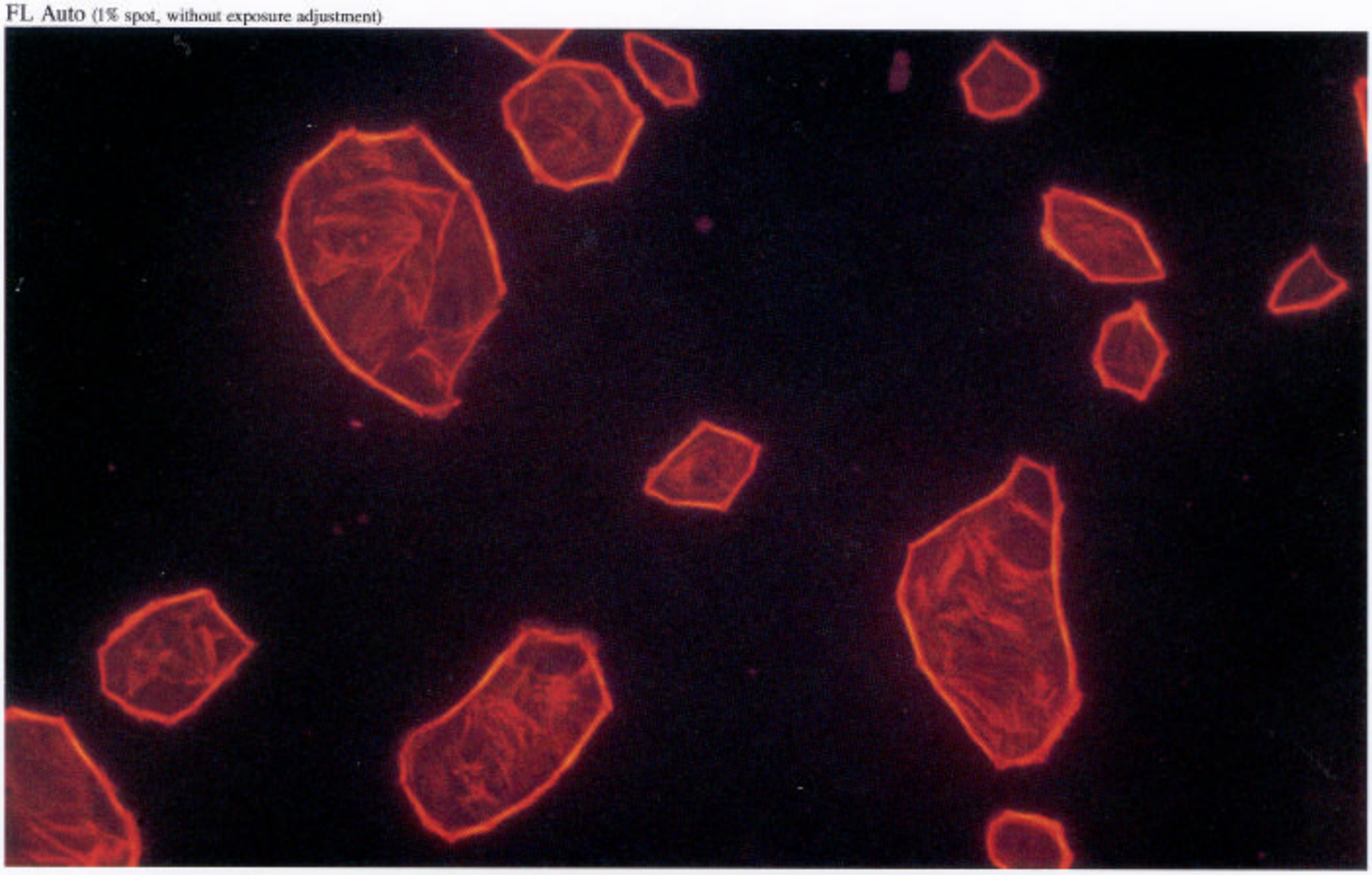
In addition to the normal Auto mode, the PM20 is equipped with a new FL Auto mode, which uses specially-developed exposure adjustment which simplifies intricate fluorescence photomicrography. Despite its many sophisticated features, the PM20 control box is amazingly compact.

- Auto mode, as well as the new FL Auto mode specifically designed for fluorescence photomicrography.
- 1% spot and 30% averaging exposure measurement areas.
- Internal memory stores up to four photomicrographic condition data settings.
- Ultra-compact control unit with data called-up via the convenient Jog dial and backlit LCD screen.
- Auto-bracketing function allows sequential photos with automatically increased and decreased exposure times.
- Auto-setting of ISO film speed with DX code recognition 35mm camera back.
- Accepts the bright frame control unit and optical viewfinder for ease of focusing and composition against a dark observation field.

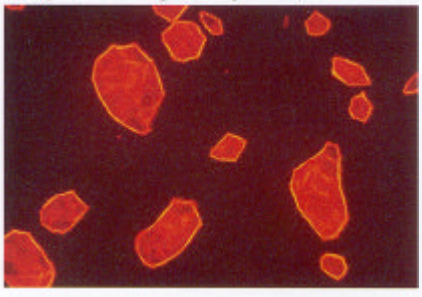
■ **PM20 Specifications**

Automatic exposure control unit	Measuring system	Realtime measuring (TTL)
	Photometric modes	FL Auto mode Auto mode Manual mode Time mode (AE Lock, Multi Exp. also possible)
	Auto exposure adjustment range	1/125sec.—68min. (Auto mode, ISO100)
	Measuring area	1% spot measurement 30% average measurement
Acceptable cameras		35mm camera, 4" × 5" intermediate adapter, 3-1/4" × 4-1/4" Polaroid camera
Control unit		Data input via sheet switches and Jog dial. Automatic ISO setting via DX code (with PM-C35DX mounted), manual setting also possible. Reciprocity failure adjustment function. Data backup by internal memory. Auto bracketing (3/5/7 frames).
		LCD (backlit) screen
Power supply		100—120V, 220—240V, 50/60Hz, 50VA

FL Auto (1% spot, without exposure adjustment)



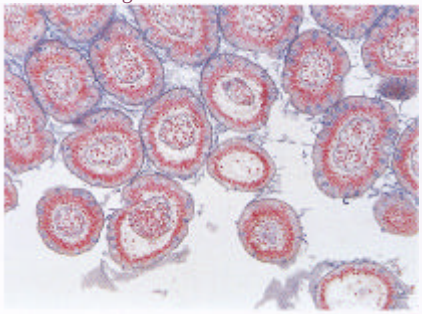
Normal Auto
(1% spot, without exposure adjustment)



FL Auto — Superior fluorescence photomicrography

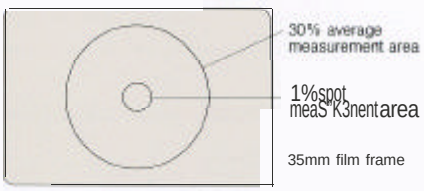
The new FL Auto mode utilizes a specially-developed exposure correction program to precisely adjust for the exacting conditions of fluorescence photomicrography: brightly illuminating specimen constituents against a dark background. Unlike normal automatic exposure for fluorescence photomicrography which inevitably requires additional correction for overexposure, exposure adjustment for the distribution of the specimen is generally not required by FL Auto, and by using the 1% spot metering area, brilliant, correctly exposed fluorescence photomicrographs can be obtained with ease.

30 % Average Measurement



1% Spot Measurement

Choice of spot or field averaging exposure metering

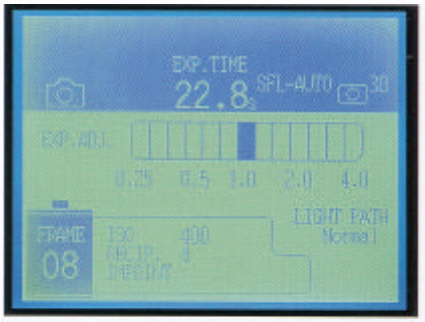


Optimum Ease of Operation

PM30 PM20

Fast, easy retrieval of information and control

The easy-to-read liquid crystal display screens and the tactile sheet switches are backlit. This, combined with logical switch placement and (with PM30) easy-to-understand graphic symbols, facilitates use of the PM30 and PM20 control panels even In darkened areas Erroneous settings or insufficient light are signalled by an LCD “error” display and a continuous acoustic warning



Menu screen of PM30

PM20 control box

Menu screen of PM20

PM30 tactile function switches

PM30 PM20

Jog dial for fast, smooth adjustment

The combination of tactile function switches with the Jog dial and interactive LCD screen allows quick and easy setting of important parameters such as IS0 film speed, reciprocity failure correction values and exposure adjustment. The number of switches is minimized to enhance user-friendliness; switches used in conjunction with the Jog dial are color-coded and concentrated near the Jog dial to further clarify function.

①RECIP switch
Corrects reciprocity failure
②ISO switch
Sets ISO film speed
@IMPRINT switch
Imprints data on film and sends data to printer
④BRIGHT. F switch
Sets brightness and color of bright frame
@MULTI. EXP switch (for 35mm film)
Sets multi-exposure mode and locks auto-winding function
⑥AUTO BR. switch
Sets f-stop value for auto bracketing
⑦AE. LOCK switch
Locks exposure time
⑧EXP. ADJ switch
Corrects exposure time

Efficient Data Recording and Storage

Memory card

PM30

Optional data memory card

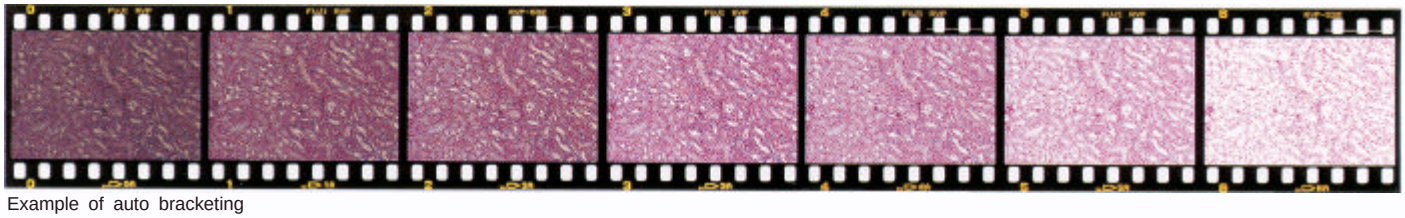
To supplement the internal memory of the PM30, an optional data memory card can be used to store up to 100 “files” of user-programmed data settings, allowing instant retrieval when needed. Exposure time and correction values as well as other useful data for each frame can also be saved and monitored on the control unit LCD screen. The memory card system is the ideal way to program the PM30 for multiple users.

PM30 PM20

Multi-exposure bracketing

Auto bracketing can be pre-programmed with a variety of f-stop values for automatic exposure of multiple frames (three, five and seven*). The exposure correction step can be selected from three possibilities: 1/3 2/3 and full steps. Thus the best match for specific conditions can be chosen to ensure error-free photography of important specimens.

**With seven frames, only 1/3 or 2/3 steps are possible.*



Example of auto bracketing

PM30

Operation via personal computer

The built-in RS232C interface allows connectron to a personal computer for remote shutter release and photographic settings. Special functions such as time-lapse photography can also be input and controlled through personal computer by using a customized program.

PM30

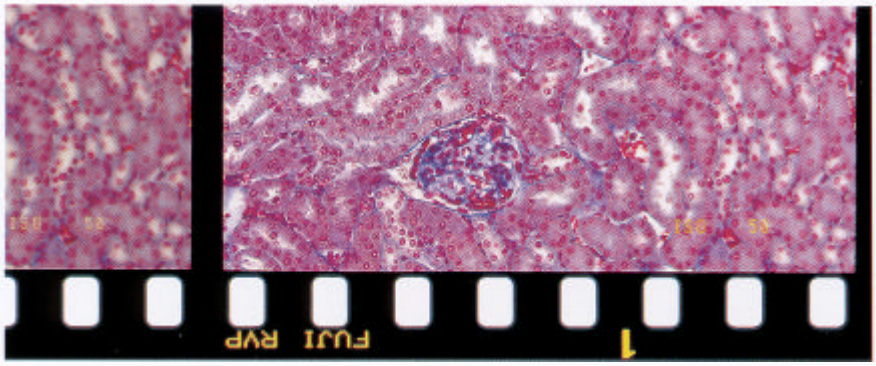
Printer connection option

The RS232C port may be disconnected and replaced by an optional Centronix printer interface. An external printer can be connected for frame-by-frame hard-copy data output. Photographic data for each file stored on the optional data memory card also can be quickly printed-out.

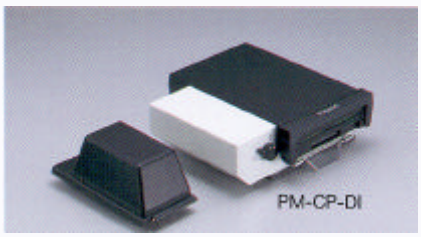
Connected with a personal computer

Connected with a printer

Helpful Functions for Smooth Photomicrography



Example of data imprinting



PM-D135

Data imprinting unit

Control box for data imprinting unit

PM30 PM20

Data imprinting capability
Data imprinting accessories allow such information as date, time, temperature, operator name, and other photographic data to be printed directly on the film. Eight alphanumeric characters can be selected from a choice of 72, including single digit numbers, upper case and lower case letters, or 10 special symbols. Imprinters are available for 35mm or Polaroid instant film.
(Control function is built into PM30)

A wide selection of cameras
Various attachments are provided to accept a 35mm camera with auto film advance, large-format camera, as well as 3-1/4 " x 4-1/4 " Polaroid camera.

Automatic DX code setting of IS0
When a PM-C35DX camera with DX code compatibility is used with either PM30 or PM20, the camera's IS0 film speed can be set automatically to match the film. In addition, film loading, winding and rewinding are carried out automatically, another time-saving benefit. With the PM30, the type of camera in use is automatically detected and the format is designated accordingly. This eliminates the need for manual resetting every time the camera is changed, thus saving the operator time and reducing the chance of error.

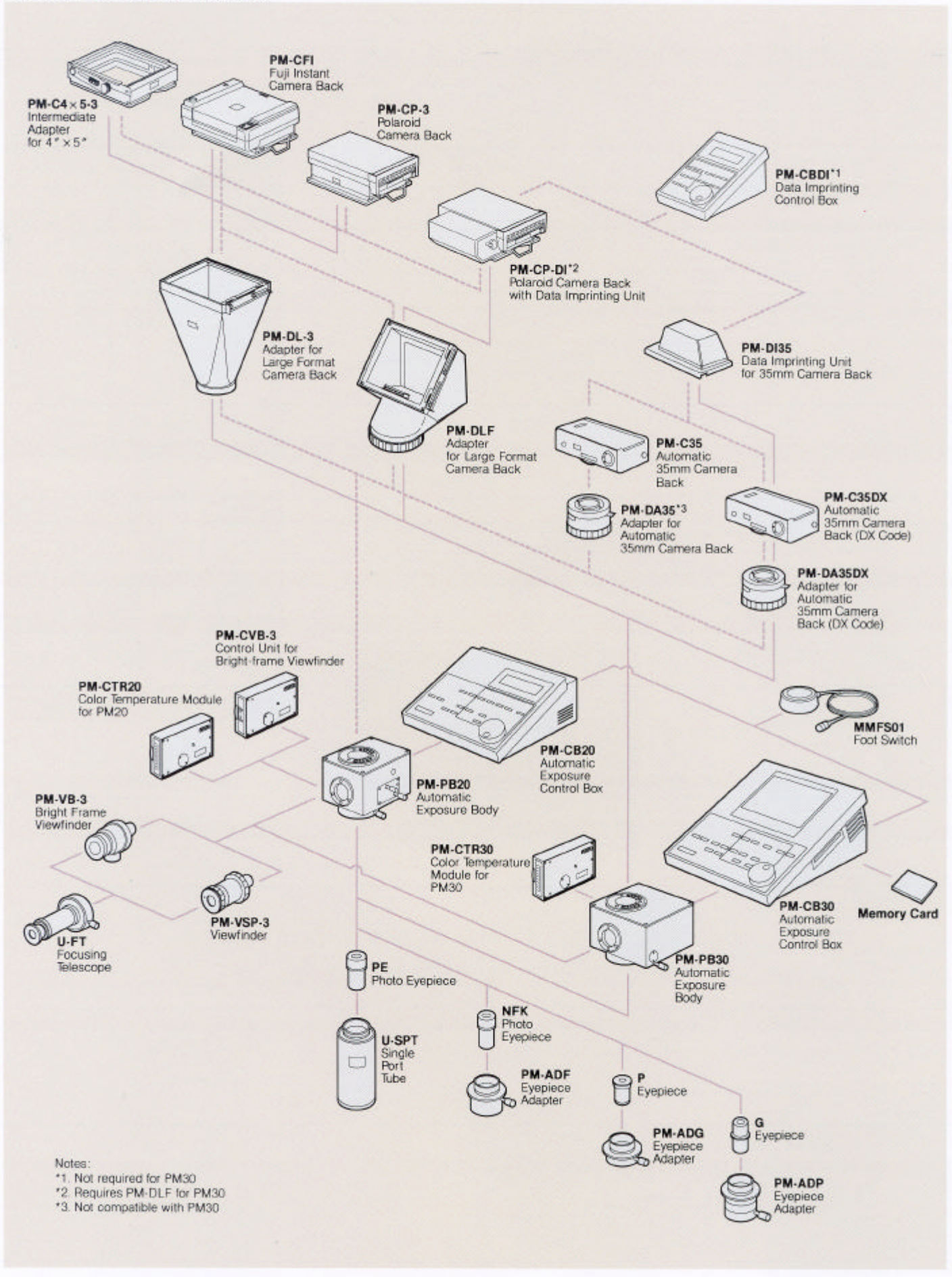
Bright frame viewfinder

Bright frame for simple framing of dark specimens
The bright frame control capability illuminates the reticle lines of the film format frame in the bright frame viewfinder to facilitate focusing and framing against a dark background, such as in darkfield and fluorescence observations. The frame color can be switched between yellow and red, with adjustable brightness.
(Control function is built into PM30)

Color temperature module

Color temperature module
This high-sensitivity module permits accurate measurement of color temperature even at low illumination levels. An LED scale indicates the reference point, against which the reading will be calibrated. Color temperature can be measured in the range of 2,500" to 10,000" Kelvin.

PM30/PM20 SYSTEM DIAGRAM



PM-10AK3 Automatic Photography System

PM-10AK3 is a highly cost-effective system featuring automatic exposure 30% average measurement, with a selection of automatic film advance camera bodies. In addition, symplified control of a wide range of operations is possible by the dial on exposure body and the control unit. Moreover, the compact control unit is conveniently designed to occupy a minimum of desk space.

■PM-10AK3 Specifications

Automatic exposure control unit	Measuring system	Realtime (TTL)
	Exposure mode	Auto mode Time mode
	Auto exposure adjustment range	1/125sec.—4min. (Auto mode, ISO100)
	Measuring area	30% average measurement
Acceptable cameras		35mm camera, 3-1/4" × 4-1/4" Polaroid camera, 4" × 5" sheet film (Recordata back can be mounted on 35mm camera back)
Control unit		Data input via dial Manual ISO setting Estimated exposure time is indicated in 4 step LED

PM-10M3 Manual Photography System

Compact and easy to use, the PM-10M3's shutter incorporates a specially designed rubber cushion to prevent shutter vibration transmission. Attaching the EMM-7 photographic exposure meter to the exposure body enables exposure and color temperature measurement to be performed easily and accurately.

■PM-10M3 Specifications

Exposure mode	Manual
Shutter speed	1/250, 1/125, 1/60, 1/30, 1/15, 1/8, 1/4, 1/2, 1 sec. B
Acceptable cameras	35mm camera, 4" × 5" sheet film, 3-1/4" × 4-1/4" Polaroid camera (Recordata back can be mounted on 35mm camera back)

PMT-35TA/RA Photomacrography System

The addition of an optional Olympus OM series SLR camera body makes PMT-35TA and PMT-35RA systems ideal for sharply focused close-up whole specimen photography.

Specifications are subject to change without any obligation on the part of the manufacturer.

Photographic,
Medical,
Microscopic,
Industrial & Business Equipment

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