AINOLTA METERS

A fast, accurate, reliable way to measure light





MINOLTA: THE METER COMPANY

Minolta's worldwide reputation as a maker of fine cameras is the perfect introduction to a review of Minolta meters, Quality and reliability are inherent in both kinds of products. Minolta makes some of the most sophisticated light measuring equipment ever created for the working photographer, the motion picture technician, the television cameraman, every person whose professional reputation depends on the quality of the image that is placed on film. When you have reviewed the variety of Minolta meters and meter technology discussed in this brochure, you should not be surprised to learn that a Minolta meter was the choice to travel to the moon with the U.S. Apollo astronauts, and on the historic Apollo-Soyuz space link-up in 1975.

Minolta meters provide a fast, accurate, reliable way to measure light. They represent an unusual state-of-the-art technology that has no peer among present makers of exposure meters. It should interest you to know that a Minolta meter is a total product of Minolta-developed technology, from the advanced silicon photo cells to the myriad of accessories that enhance the use and value of these meters. This dedication to quality and exactness is part of the Minolta heritage.

There are two ways to learn more about Minolta meters. One, you can read the technical reviews and specifications. Two, you can use one yourself. See your Minolta dealer for the facts.

Minolta, the meter company? More and more working professionals who truly care about precise solutions to exposure problems wouldn't think of using any other kind.

CHOOSING A MINOLTA METER

So many cameras have excellent built-in meters today that, for many photographers, the thought of owning another, hand-held meter might seem odd. And indeed, we at Minolta will be the first to admit that an accessory light meter, like the highly sophisticated ones we've featured in this brochure, may not be needed by every photographer.

Nonetheless, built-in camera meters are generally the reflected-light type, and as any professional photographer will tell you, there are some situations that can baffle and confuse even the most advanced reflected-light meter. In fact, there are many important lighting situations that are simply beyond the scope of *any* built-in meter.

This makes the hand-held meter a kind of insurance policy that eliminates second-guessing and gambling with exposure control, especially under the more difficult and extraordinary light conditions that are apt to confront the serious photographer. We could say here that it is the nature of your *involvement* in photography that should dictate whether or not you invest in a hand-held meter. Or, to put another way, one can get by with a single saw; but the professional carpenter, who has to cut through wood in many ways, owns a number of them. One tool is not better than another; it is simply better in certain situations.

This brochure describes four advanced Minolta meters, each designed for specific uses. Which will best serve your purposes?

The Auto Meter II

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This is an automatic power-scale direct-reading exposure meter, perfect for all types of general photographic work. Direct readings of the f-stop and shutter-speed combinations are continuous, automatic and immediate. All information for proper exposure is displayed on a motorized moving scale. This is an incident meter, but it accepts special accessories that convert its capability to reflected light measurement.

The Flash Meter III

The multi-purpose Flash Meter III makes precise incident or reflected-light reading, or bulb flash or continuous illumination, or even combinations of these. This highly-advanced Minolta meter uses both an LSI microcomputer and liquid crystal display to measure to within 1/10-stop accuracy without any calculations or conversions. Both professionals and advanced amateurs will find it to be an indispensable tool for sensitive metering, for with microcomputer and digital memory system a wide measuring range and exceptionally high accuracy are assured. With the Flash Meter III a wide selection of measuring times (corresponding to shutter speeds) makes fill-in flash easy. Its unique exposureindex display mode simplifies the determination of lighting ratios, flash guide numbers and the measuring of subject brightness. The microcomputer in this very lightweight, advanced-feature unit is specially designed to store measurements for cumulative exposures with any number of successive flashes.

The Auto-Spot II

This is a single-lens-reflex-type meter with focusing capability which, working with a 1° angle of acceptance for spot measurement, makes exceptionally precise and careful readings of the selected areas of a photo subject. It uses motorized scales around the viewfinder to give the correct shutterspeed/aperture combinations and EV values. You, the photographer, sight through a bright SLR viewfinder and see a 9° total viewing area. But your exposure reading is taken from the clearly marked 1° center spot. You could think of this meter, and the Auto-Spot II Digital, as a "telephoto light meter." Indeed, whether it be a spotlit figure on the stage, the speaker at a news conference, or an animal at the zoo, often the only way to meter an unapproachable subject accurately is to use a spot meter.

The Auto-Spot II Digital

In addition to the advanced features of the Auto-Spot II, this highly sophisticated meter features direct LED readouts of EV numbers in the finder and correct f-stops in an LED display on its side. Readouts are locked when the metering trigger is released and continue to glow for about 30 seconds after the reading is locked. Everything is operated with one-hand. For precise spot measurements, nobody makes a more sophisticated meter than this one.

The Minolta Booster

More specialized metering functions require this innovation, which permits direct, positive, accurate measurement of actual brightness in many situations where precise metering has always before been impossible. When used with a view camera, the Booster can measure the light value of the small spots on the groundglass. It can also measure brightness at an SLR viewfinder eyepiece, do TTL measurement with flash photography through a microscope or a non-metering SLR camera. It also may be used as a conventional reflectedlight receptor, without attachments. Additionally, specialized metering functions with the Minolta Auto Meter II or Flash Meter III are greatly enhanced.



WHAT MAKES A MINOLTA METER A MINOLTA METER?

If you already know about our cameras, it should come as no surprise that our meters are as technically superb as man can make them. Such features as the microcomputer and integrated LCD (Liquid Crystal Display) in the Flash Meter III are the latest examples of the lengths to which Minolta will go for preciseness and convenience in a meter. Other important things that contribute to the overall excellence of Minolta meters are documented here—along with some outstanding reasons why you can always depend on them for absolutely reliable performance at all times:

Silicon Photo Cell Accuracy

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All Minolta meters use a *silicon photo cell*. This is the most advanced of all photoelectric cells, notable for its quick response to a very wide range of light levels and for its unparalleled accuracy for rapid, repeatable measurements. Needless to say, the silicon photo cell is accurate and stable. And because it avoids errors with quick digital displays so necessary in such Minolta meters as the Auto-Spot II Digital and Flash Meter III—it is the perfect cell for critical exposure measurement.



One-Hand, Easy Operation

All Minolta meters are designed and crafted for one-hand operation and quick, easy reading even under the most adverse conditions of use. All Minolta meters provide direct readout of their information. For proper exposure there is no need whatsoever to convert or calculate from EV numbers, no need to switch between high and low ranges as light changes.

In the Minolta tradition, these are lightweight, shock-resistant, beautifully compact meters, human engineered and tested under actual professional studio and outdoor operating conditions. Other important features for ease of operation exemplify considerable attention-to-detail. The use of a bayonet mount on the Auto Meter II and Flash Meter III enables the use of a wide range of optional, interchangeable accessories, and contributes to rapid changing of these accessories under actual working conditions. Likewise, the rotating head that is a standard feature of the Flash Meter III and Auto Meter II contributes to easy light measurement, regardless of light direction or how the photographer positions himself.



Quick, Direct Readout

The Flash Meter III incorporates outstanding new liquid crystal display technology – combined with a microcomputer – for the most efficient and simple readout display of light change values ever in a meter. The Auto-Spot II Digital uses advanced LED (light-emitting-diode) digital displays that rules out all possibilities of incorrect readings of scales. Both systems enhance reliability, accuracy and fast response, while contributing in their own unique way to greater ease of operation, especially under dim lighting conditions. The Auto Meter II and Auto-Spot II incorporate the motorized direct-readout analog display in one range scale.



Versatile Usage

The basic function of all Minolta meters are greatly extended by the availability of a wide range of versatile, optional accessories. Sometimes, these accessories can make meters usable for different purposes: for instance, the Auto Meter II, with the Spot Mask II, can also be used as a meter for determining exposure for enlarging. With the Auto Meter II and Flash Meter III, a mini receptor can be plugged in to measure incident light in otherwise inaccessible positions.





MINOLTA AUTO METER II Automatic power-scale direct-reading exposure meter

The Minolta Auto Meter II displays all exposure information on a motorized moving scale that reacts with precision in easy-to-use one-hand operation. Direct readings of the f-stop and shutter-speed combinations are continuous, automatic and immediate. They are made without further calculation. Manual dial alignment and needle reading are unnecessary. This efficiency means more stable response, increased shock resistance and tremendous ease of operation. These virtues make the Auto Meter II a perfect choice for general photographic work, especially photojournalism and studio work.

The Auto Meter II is an incident meter, but special accessories that are easily attached convert its capability to reflected light measurement as well. The light receptor of this meter is a very sensitive silicon photo cell, and this is coupled with a special transistor circuit and scale motor to give readings over an unusually broad range. No high/low changeover is required to obtain an automatic reading under widely different lighting levels.

The Auto Meter II has three different exposure scales. The time scale indicates shutter speeds in seconds; the aperture scale indicates f-numbers from f/1 to f/90; the cine scale includes frame rates per second (fps) that appear above shutter-speed indications.

Using this lightweight meter is a lesson in effortlessness. The Auto Meter II is pointed at the subject position, with the receptor head turned if necessary. A lockable button is pushed to actuate the motorized moving scales. The reading is made, then held when the button is released. This prevents the scales from moving and preserves the reading.

Extended One-Range Measurement

Use of the highly sensitive silicon photo cell has solved the problems of memory effects. This has also increased the measuring range to 17 through -4 EV (incident at ASA 100). An extended-range motor unit with LSI circuit makes an exposure on a single scale without any need for switching between high and low ranges under widely different lighting levels.

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Motorized, Direct Readout Scale

Pushing the measuring button activates a built-in, motorized moving scale that gives direct readings of the shutter-speed/aperture setting combination.



One-Hand Operation

The conventional meter needle and manually aligned exposure dial are replaced in the Auto Meter II by a motorized moving scale that gives direct readings of the f-stop and shutter-speed combinations, with one-hand operation. The photographer simply sets the film speed, chooses between reflected or incident light measurement mode, pushes the button; the meter does the rest, indicating the shutter speed and required aperture setting for that speed as well as the EV number for reference. Auto Meter II also provides a cine scale for reading off required shutter speed for making movies. More convenience: All exposure information is indicated on the exposure dials. User can read the EV number on the exposure dials, then refer to the table on the back to find available illumination falling on the surface, as well as other functions.

Rotating Head

The head of the Auto Meter II swivels 270°, and the light receptor may be pointed in any direction while the controls and information readouts face the photographer.



Incident and Reflected Light Measuring Capability

The Auto Meter II is an incident light measuring meter, but special accessories that are easily attached can convert its capability to reflected light measurement at will.

Bayonet Mount

Accessories attach easily and positively by means of the bayonet mount socket on the rotating receptor head of the Auto Meter II.

Off-Lock Mechanism

Battery waste is prevented by the off-lock mechanism of the measuring button. The meter cannot be accidentally activated.





Viewfinder 10°

This accessory is for narrow-angle reflected-light measuring. A 10° circle serves as a clear and accurate viewfinder that pinpoints the reading area. The meter can thus be used to accurately measure small subject areas for parts of a subject or within the approximate angle of view of certain telephoto lenses.

Mini Receptor

For photomacrography and close-up photography, this small remote receptor plugs into the socket provided on the receptor head of the Auto Meter II. It can be used to measure incident light in otherwise inaccessible positions for the entire Auto Meter II.

Flat Diffuser

Attaching this diffuser enables the Auto Meter II to be used to measure the ratio between main and auxiliary light sources (light balancing), illuminance values or incident for flat subjects.

4X, 8X Spherical ND Diffusers

The Auto Meter II's upward sensitivity is effectively extended by two or three full f-stops by these spherical diffusers. Otherwise, they are attached to the meter for use when light is too bright to be measured.

Spot Mask II

This is used to measure exposure when making enlargements. After test printing a typical frame and determining proper aperture setting and exposure time, the spot mask aids in obtaining similar-quality exposure values.



AUTO METER II SPECIFICATIONS

Type: Multi-purpose photoelectric exposure meter with single-range motorized dial **Receptor:** Silicon photo cell Measuring mode: Incident light with spherical diffuser or optional 4X or 8X ND diffusers or mini receptor Reflected light with optional Viewfinder 10° or reflectedlight attachment Illuminance or lighting ratios with optional flat diffuser. Enlarging exposure with optional Spot Mask II Measuring range (at ASA 100): Incident light: EV -4 to 17 Reflected light: EV -1 to 20 Scale ranges: Film speeds: ASA 6 to 25,000, DIN 9 to 45 Apertures: f/1 to f/90 Exposure times: 1/8000 sec. to 2 hr. Cine frame rates: 8 to 128 fps (with 180° sector opening) EV: -8 to 25 Reference numbers: 0 to 30 Circuit: Transistorized type that compensates for cell characteristics and other conditions and combines with extended-range motor unit for maximum response linearity Power source: One 6v silver-oxide battery, Eveready No. 544 or equivalent Other: Bayonet-type receptor mount on head that rotates 300°, measuring-button lock, button-lamp type battery checker. EV-to-lux/ft-c conversion table on back of body, separatereceptor jack, over-/under-range warning Accessories: Included with unit: Spherical diffuser, neck strap, soft pouch case Available optionally: Viewfinder 10° (reflected-light attachment with 10° angle of acceptance), reflected-light attachment (approx. 40° angle of acceptance), flat diffuser, 4X spherical ND diffuser, 8X spherical ND diffuser, mini receptor (each common to Minolta Flash Meter III), Spot Mask II. **Dimensions:** 42×67×131mm (1%×2%×5% in.) Weight: 270g (9½ oz.) NOTE: All accessories, with the exception of the Spot Mask II, are also usable with the Flash Meter III.

Specifications subject to change without notice



MINOLTA FLASH METER III Advanced meter with LSI microcomputer and liquid crystal display

This is the first exposure meter ever made that uses both an LSI microcomputer and a LCD (Liquid Crystal Display) and, overall, a more advanced circuit configuration that leads to higher performance, simplicity of design and operation. Moreover, the Flash Meter III is created to measure all types of flash *and* continuous light, making it the ideal meter for a broad range of uses and for both professional and advanced amateur photographers.

The Flash Meter III makes precise incident or reflected-light readings of electronic or bulb flash or continuous illumination, or even combinations of them. Pushing a button registers the applicable f-number or exposure index number directly on the liquid crystal display to within 1/10-stop accuracy without any calculations or conversions of any kind. The displayed information last for 60 seconds. Strobe readings can be made cordlessly, and a wide selection of measuring times which correspond to shutter speeds make fill-in flash easy.

The Flash Meter III offers significant new measuring advantages for the working photographer. Key among them are the wider measuring range and higher accuracy. Used as either incident or reflected light application, for instance, the Flash Meter III provides a broad measuring range from EV 1 to EV 18.2 (ASA 100), which means that it can readout aperture values up to f/32 (ASA 25). This makes it extremely valuable for flash-lit close-up photography.

Moreover, combining the liquid crystal display device with Minolta's new microcomputer enables the Flash Meter III to offer many display modes not possible with any other meter. Its memory stores cumulative exposure measurements with any number of successive flashes, and provides a direct readout.

Professional uses of the Flash Meter III are many and varied. Electronic flash readings in darkness or with ambient illumination can be taken cordlessly. Fill-in flash is easily accomplished, thanks to the unit's wide choice of measuring times (that correspond to shutter speeds).

Designing a high-performance, versatile meter that works with equal ability with flash and continuous light was Minolta's goal with the Flash Meter III. You will quickly discover that we have succeeded.

Broad Measuring Range, Higher Measuring Accuracy

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Use of the digital memory system gives the Flash Meter III a much wider light measuring range as well as greater accuracy. In either incident or reflected light applications the unit gives a measuring range from EV 1 to EV 18.2 (ASA 100) with accuracy within 1/10-stop. This means that it can readout aperture values up to f/32 (ASA 25). Improved measuring sensitivity is indicated by its plus/minus 0.2EV accuracy, as well as display indication in 0.1 EV steps.

Liquid Crystal Display and Microcomputer

The combination of the Liquid Crystal Display device and microcomputer provides outstanding readout capabilities for the Flash Meter III.

For one, either f-number or an Exposure Index Number is displayed on the front panel for 60 seconds. The latter indicates the amount of available light in terms of EV values for AMBI, and, otherwise, the AV values for CORD or NON. C. At any time the Flash Meter III's LCD readout can be switched to the Exposure Index display. It is most useful when lighting contrast is being measured, or when an external light receptor is used.

Besides measuring cumulative exposures for any number of successive flashes, the Flash Meter III also indicates how many times the measurements are taken.

Also, if each successive measurement is made within 60 seconds, it can be accumulated and displayed in such a way whereby it automatically resets itself for a new 60 second measuring period each time a flash burst is measured.



Ambinient Light Measuring

The Flash Meter III uses the AMBI (Ambinient) light measuring system exclusively for measuring continuous light. Like the Auto Meter II, it reads continuous light over a broad range—changing shutter speed and corresponding aperture value at will after the reading is made. For display accuracy to 0.1 steps or EV for incident or reflected readings, simply press the measuring button.

Total Information Front Panel Display

The Flash Meter III's front panel displays all necessary information for easy operation. Mode indications, set by the measuring mode selector include AMBI, CORD, NON. C (for cordless) or MULTI. Measuring times from 1 second through 1/250 second are printed on the dial in yellow to indicate the usable speed range for CORD, NON. C. and accumulated flash exposure; an extended 30 seconds to 1/1000 in AMBI. Film speed range is ASA 12-ASA 3200 in 1/3-stop click increments set by dial with release. F-numbers and EV numbers are also prominently and logically displayed, as are the number of flashes that are accumulated in the MULTI mode. The over/under exposure warning indications are also displayed. Readings are thus as they should be for a meter this beautifully designed-rapid and obvious.



Incident or Reflected-Light Readings

Versatility is a keynote of the Flash Meter III. Light readings can be taken either by the incident or reflected method. Both incident and 40° reflectedlight receptors are provided with the meter. And an optional accessory, the Viewfinder 10°, is available for narrow-angle reflected light measuring.

One-Hand Operation

Ease of operation of the Flash Meter III begins with the fact that its functions are possible with the use of one hand, and that all exposure information is registered on its face in a LCD display. The ASA of the film and the shutter speed are set, the measuring button is pushed and the reading made. There is no need to switch measuring ranges between high and low.

Rotating Head

The head of the Flash Meter III swivels 270°, and the light receptor may be pointed in any direction while the controls and information readouts face the photographer.

Measuring Level Adjustor

This control, located on the back of the Flash Meter III, permits continuous fine exposure adjustment of up to plus/minus 1 EV, depending on the requirements of the photographer.



Viewfinder 10°

This accessory is for narrow-angle reflected-light measuring of flash and/or continuous light. The 10° circle serves as a clear viewfinder that pinpoints the reading area. The meter can thus be used to accurately spot-measure exposure on parts of a subject or within the approximate angle of view of certain telephoto lenses.

Mini Receptor

For photomacrography and close-up photography, this small remote receptor plugs into the socket provided on the receptor head of the Flash Meter III. It can be used to measure incident continuous and/ or flash light in positions inaccessible to the entire Flash Meter III.

Flat Diffuser

Attaching this diffuser enables the Flash Meter III to be used to measure the ratio between main auxiliary electronic flashes (light balancing), illuminance value of continuous light, guide number of electronic or M-bulb flash units, or incident light for flat subjects.

4X, 8X Spherical ND Diffusers

The Flash Meter III's upward sensitivity is effectively extended by two or three full f-stops by these spherical diffusers. Otherwise, they are attached to the meter for use when light is too bright to be measured.

Sync. Cord II

This special cord connects the Flash Meter III, the flash unit and the camera's sync. terminal simultaneously, making possible meter-flash and cameraflash synchronization without changing connections.



FLASH METER III SPECIFICATIONS Type:

Multiple function exposure meter for direct digital exposure readings with incident/reflected flash/continuous light **Receptor:**

Silicon photo cell; head rotates through 270° angle **Reception method**:

Incident: Spherical diffuser (or optional other diffusers) Reflected: 40°-angle reflected-light attachment (or optional Viewfinder 10°)

External receptor: Optional Mini Receptor, Minolta Booster **Measuring range:**

- Flash light: Incident: F1.4-F90+0.9 step Reflected: F1.4-F90+0.9 step Continuous: (AMBI):
 - Incident: EV 1 to EV 18.2 at ASA 100 Reflected: EV 1 to EV 18.2 at ASA 100

Accuracy: ±0.1 step

Measuring modes:

- "AMBI" for continuous light readings
- "CORD" for synchronized electronic flash, M-class flashbulbs, with or without surrounding continuous light, using sync. cord of flash unit or optional Sync. Cord II
- "NON.C" for single-burst electronic flash, with or without surrounding light, without cord
- "MULTI" for non-synchronized multiple or cumulative electronic flashes with or without surrounding light, without cord
- by selector slide with click stops

Display modes:

"FNo." in "AMBI", "CORD", "NON.C" and "MULTI", "ExIN." for measuring illuminance and determining lighting ratios in "AMBI", "CORD", and "NON.C" **Film-speed settings:**

ASA 12 - ASA 3200 in 1/3-stop click increments set by dial with release

Measuring times:

"AMBI"; 30, 15, 8, 4, 2, 1, 1/2, 1/4, 1/8, 1/15, 1/30, 1/60, 1/125, 1/500 and 1/1000 sec.

"CORD"; 1, 1/2, 1/4, 1/8, 1/15, 1/30 and 1/60 sec. "NON.C"; 1/125 and 1/250 sec.

"MULTI";

set by dial to correspond with applicable camera shutter speed

F-number indication range:

f/1-f/90 digitally in full stops with intermediate 1/10 stop indication plus blinking under-and over-range signals on liquid crystal display (LCD)

Exposure Index (ExIN.) range: 1 to 23.2 digitally in 1/10 stop increments

Power source:

Six silver-oxide batteries (Eveready No. S76 or equivalent) Battery check:

Automatic low-battery indication by flashing "O" or "E" on display

Size and weight:

 $30 \times 73 \times 153$ mm $(1\%_6 \times 2\% \times 6 \text{ in.})$ 240g $(8\%_6 \text{ oz.})$ without batteries.

Specifications subject to change without notice



MINOLTA BOOSTER A versatile accessory for specialized metering functions

Specialized metering functions with the Minolta Auto Meter II or Flash Meter III are greatly enhanced with the use of this accessory, which is actually a high-sensitivity, reflected-light receptor for through-the-lens light measurement. Used with its versatile and superbly designed complement of accessories, the Minolta Booster permits direct, positive, accurate measurement of actual brightness in many situations where precise metering has heretofore been impossible. Examples of its capabilities are many. It can measure brightness at an SLR viewfinder eyepiece, and even accomplish through-the-lens measurement although the camera may not be equipped with a TTL metering system. The Booster also can do TTL measurement with flash photography, an advantage that conventional meters do not have. This is an important benefit for close-up photography, when electronic or bulb flash is used, since measurement of light value is not Ilways clear when a conventional flash meter is used with a bellows extension. Used with a viewcamera, the Booster's advantage is that it can measure the light value of the small spots on the groundglass. And for photomicrography, it can be used both for electronic or bulb flash, or even with normal light without flash attachment. Finally the Booster also may be used as a conventional reflected-light meter, without attachments.

This is an ingeniously designed unit, certainly a one-of-a-kind. Like all Minolta meters, the Booster is given to unqualified accuracy in all light measurement, thanks to the use of a silicon photo cell. Design is uncomplicated, assuring long-life and extremely easy operation at all times. The entire unit is completely moistureand shock-proof.

Metering on View-Camera Groundglass

Used with the spot-probe attachment, the Booster enables precise reflected-light readings of electronic or bulb flash or continuous illumination with a view-camera. It does this, in conjunction with either the Auto Meter II or Flash Meter III, by measuring the luminance of the small spot on the groundglass. Any professional photographer will find that this is an especially effective means of light measurement for close-ups or photomacrographs, even with electronic or bulb flash, with a view-camera because, with the light reading taken at the film plane, exposure corrections for bellows extensions are not necessary. Using the Booster to meter view-camera groundglass is simple and extremely accurate, involving, first, calibration of the meter, and then the actual measuring of the light passing through the groundglass of the view-camera.



Metering Through the SLR Camera Eyepiece

The special eyepiece attachment enables the Booster to make centered, circular, through-thelens exposure readings of an SLR camera eyepiece. This function makes the Booster especially important if you own an SLR camera without a built-in TTL light-metering system. It is also valuable for TTL measurements of electronic or bulb flash when it is used in conjunction with the Auto Meter II or Flash Meter III. There are special calibration steps for cameras with and without manual stopdown mechanisms, and then a final metering procedure when the eyepiece attachment is screwed onto the Booster and then attached over the camera's eyepiece frame. Metering through the eyepiece is also possible when making close-up photos with a bellows and SLR camera.



Metering on the Film Plane

When used with a 35mm SLR camera, the 35mm Film Plane Attachment permits an extremely accurate measurement of the amount of light reaching the camera's film plane. With this attachment, the Booster enables the Minolta Auto Meter II or Flash Meter III to measure directly the light arriving at the film plane through the lens, and so the measurement is much more accurate than measurements of the light through the pentaprism and eyepiece. Use is simple: set the shutter speed dial of the camera to BULB, hold the shutter open, and take the reading on the meter.

Metering Through a Microscope

Photomicrography takes on new and important dimensions with the use of the Minolta Booster. Metering through a microscope is both rapid and accurate, in keeping with the versatility of this instrument. When coupled to the Flash Meter III (or the Minolta Flash Meter II), the Booster enables flash measurement through the optics of a microscope which heretofore had been impossible. The Booster may be used with both full-frame 35mm SLR cameras and non-SLR cameras.





35mm Film Plane Attachment

This attachment, used on 35mm SLR cameras, permits the most accurate measurement of the amount of light reaching the film plane through the lens.

Eyepiece Attachment

When attached to the eyepiece of an SLR camera, the attachment permits light measurement at and around the center of the camera's focusing screen.

Spot-Probe Attachment

Measures the brightness of light on the focusing ground-glass of a view camera, permitting accurate TTL calculations of exposure or light contrast on the subject. It also eliminates the need for adjusting exposure calculations when greatly extending a bellows for close-up or macro photography.

Microscope Receptor

Used for light measurement at the eyepiece of a microscope, and also for flash measurement through the optics of a microscope.



BOOSTER SPECIFICATIONS Type:

High-sensitivity, reflected-light receptor for through-thelens light measurement with Minolta's Auto Meter II and Flash Meter III.

Receptor:

Silicon photo cell

Reading Method:

On the focusing screen with spot-probe attachment; through an SLR viewfinder eyepiece with eyepiece attachment; at the film plane of a full-frame 35mm camera with film-plane attachment; through a microscope eyepiece with microscope attachment; without attachment and hood extended for normal reflected reading of 60°.

Measuring Range:

Auto Meter II: 0.001 to 20,000 luces (=EV -7 to EV 17 at ASA 100) Flash Meter III: 0.002 to 2,320 lux. sec.

(=EV - 6.3 to EV 18.2 at ASA 100)

Power Source:

One silver-oxide battery, Eveready No. 544 or equivalent **Size**:

Length 74mm (2% in.) diameter 39mm (3½ in.) Weight:

100g (3½ oz.) without battery

Accessories: Spot-probe attachment, Eyepiece attachment, Microscope attachment, Film-plane attachment

Specifications subject to change without notice



MINOLTA AUTO-SPOT II & AUTO-SPOT II DIGITAL

Spot type exposure meters with power-scale or digital display

Working with a 1° angle of acceptance for critical spot measurement, these single-lens-reflex-type meters can make a careful reading of the individual areas of a photo subject. They do not average a variety of brightness levels nor are they influenced by light from surrounding areas. This makes them ideal for metering unapproachable subjects. The Auto-Spot II uses motorized scales around the viewfinder which rotate to give the correct shutter-speed/aperture combinations and EV values. The Auto-Spot II Digital, a highly sophisticated unit, features direct LED readouts of EV numbers in the finder and correct f-stops in an LED display on its side. The result with either meter is true exposure accuracy.

Both meters utilize sensitive silicon photo cells and IC-transistor circuits which instantly respond to incoming light as the photographer sights through a bright SLR viewfinder. What he sees with either meter is a 9° total viewing area, with exposure readings taken from the clearly marked 1° center spot. He views and focuses in much the same way that he focuses his SLR camera, and then squeezes a measuring trigger to instantly measure only the light in the spot.

Each meter is powered by a single 9-volt battery. All transistors and diodes and other circuit parts are completely moisture- and shock-proof.

All About the Unique Spot Meter SLR Viewfinder Both the Auto-Spot II and the Auto-Spot II Digital feature "spot" focusing viewfinders, a flareless optical system that assures totally accurate measurement of the subject in the finder's 1° angle of acceptance. This optical system offers a bright, normal-erect image, magnified 2.96 times, made possible by theuse of a total-reflection mirror, and a narrow angle of view. The viewfinder can focus from one meter to infinity.

The Auto-Spot II features a total information viewfinder that indicates all necessary information at a glance for proper exposure. With this meter, the scales in the finder move continuously until the precise reading for the spot area is achieved. When the trigger is released, the scales remain stationary and preserve the reading.

Indicated in the Auto-Spot II finder is the following information:



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Dots and numbers on the scales around the top half of the circular viewfield indicate exposure values of 2 to 18 EV (measuring range 3 to 17 EV at ASA 100). On the outermost scale around the bottom half of the circular viewfield are figures indicating f-numbers of lens aperture with intermediate markings indicating third stops. The moving "time" scale on the inner side of the f-scale indicates exposure times. Figures on this scale indicate their reciprocals as shutter speeds in seconds— "250" equals 1/250 of a second. Figures and intermediate dots on the innermost "cine" scale represent frame rates from 128 down to 8 frames per second (fps).

With the Auto-Spot II Digital, LED readout of EV numbers measured at the standard ASA 100. appear in the finder, and correct f-stops on the side. The red LED square marked "ERROR" in the finder lights when the reading is above or below the EV measuring range of 1.0 to 19.9. These readouts are locked when the metering trigger is released. They continue to glow for approximately 30 seconds after the reading is locked. During this period, the shutter speed can be reset which will cause the digital f-stop display to change accordingly. The LED aperture readout ranges from f/1 to f/90. There are also intermediate plus 1/3- and 2/3-stop indicators, which light if less exposure is indicated. These are matched with shutter-speed settings ranging from 1/2000 to 15 seconds. Included also is a "cine" scale that indicates selected frames per second.

Flare Reduction Capability

One of the most important considerations in the construction of a spot-type luminance meter is the reduction of light influence from outside the photo cell's angle of acceptance. Two important design features make the Auto-Spot II and Auto-Spot II Digital the most accurate spot meters available. First, the objective lens precisely focuses the light entering the meter so that only those rays within the indicated 1° reading spot are measured. Then, instead of a pellicle-type mirror which could diffuse the light before it strikes the photo cell. Minolta utilizes a total-reflection type mirror to transmit the subject image to the viewfinder. These features, along with careful construction and quality control, result in a flare factor that is below 1.5 percent. When a small, bright area moves from point A to point C, the flare noise at C is less than 0.1 percent as seen in the graph below.



Photo cell's angle of receptance in minutes

Flareless Optical System

This is how Minolta's Flareless Optical System works. Light reflected from the subject enters through the objective lens, marked (A). 25% of this light is deflected by the total-reflection mirror (B) to the Porror prism (C). This renders the light as an erect aerial image at the glass plate (D), on which the spot circle is silvered. This circle and the scales in the Auto-Spot II or the LED EV readout in the Digital model are viewed through the eyepiece's ocular lenses (E). The remaining 75% of the light is imaged directly at the same focal distance as the aerial image; and the part exactly corresponding to the viewfinder's 1° circle passes through a mask aperture (F) to the receptor, which is a silicon photo cell (G).



Sensitive, Precise, One-Range Measurement

The Minolta silicon photo cell assures accurate, stable measurement of a wide range of light levels, from dark to bright, with both meters. Use of a monolithic IC in the computing circuit guarantees stable performance over long periods of use in wide ranges of temperature variations. The Auto-Spot II measures from 3 EV to 17 EV at ASA 100 steplessly; the Digital measures from 1 EV to 19.9 EV in 0.1 EV steps at ASA 100. There is no need for switching between high and low ranges under widely different lighting levels.



Lightweight, Compact Design

Both the Auto-Spot II and Auto-Spot II Digital are compactly designed and lightweight to encourage one-hand operation. You aim either meter at your subject, release the measuring trigger, and all information for exposure is instantly indicated. As with all Minolta meters, there is no need to refer to separate conversion tables.

Measuring Level Adjustor

This control, located on the side of each meter, permits continuous fine exposure adjustment of up to plus/minus 1 EV, depending on the requirements of the photographer.

Illuminance Meter Capability

Both meters can be used as illuminance meters. This function is achieved by reading the EV number in the viewfinder, then consulting the conversion table on the side of each meter to read available illuminance either in ft-lambert or candela/square meter designations.



	EV	ft-L	cd/m ²	EV	ft-L	cd/m ²	EV	ft-L	cd/m ²	
3	3	0.33	1.1	8	10	36	13	330	1150	6
	4	0.65	2.2	9	21	72	14	670	2300	
	5	1.3	4.5	10	42	140	15	1300	4600	
	6	2.6	9.0	11	84	290	16	2700	9200	
	7	5.2	18	12	170	570	17	5400	18000	

Power Switch

This switch turns the battery power on or off and prevents battery power waste when meters are not in use. In the Auto-Spot II, sliding the power switch to "lamp" lights the viewfinder; on the Digital model it lights the ASA value and the time (shutter speed) windows for easy viewing in darkness.

Eyepiece Adjustment

The built-in eyepiece of each meter can be continuously adjusted to your vision, eliminating the need for a separate correction lens. You look through the viewfinder and rotate the eyepiece until the center circle is perfectly clear. This eyepiece adjustment is from -4.57 to +2.73 diopters.

Flexible Rubber Hood

The lens barrel is provided with a flexible rubber hood that extends during use and can be folded back for storage. It serves to protect the lens.





Versatile Accessories

Two optional accessories may be used with either meter. A 16X (4EV) neutral density filter is used to decrease light to the receptor sufficiently to allow readings to be made in conditions that otherwise would result in over-range readings. A close-up lens adapter ring lets you attach Minolta SLR close-up lenses to either meter for spot measurement of light in close-up, macro or other fine photographic work.





AUTO-SPOT II SPECIFICATIONS

Туре:

Reflex-viewing spot-reading automatic photographic light meter

Measuring method:

Reflected light by silicon photo cell with 1° angle of acceptance

Viewing system:

Focusing, through-the-lens reflex type; angle of view; Circular 9° with central 1° marked circle; magnification: 2.96X focused at infinity

Focusing:

1m (3.3 ft.) to infinity by objective-component single helicoid; eyepiece adjustable from -4.58 to +2.73 diopters

Exposure indications:

By motorized moving scales visible through finder: Film speed: ASA 3 to 25,000 Time: 1/2000 to 30 sec. Aperture: f/1 to f/45

EV: 2 to 18 Cine: 8 to 128 fps

Cine: 8 to 128 fps (with 180° shutter-sector opening) **EV measuring range at ASA 100:**

3 to 17 (up to 21 with standard accessory ND filter) Film-speed settings:

ASA 3 to 25,000 in 1/3-stop increments by self-releasing knob with indication in finder

Exposure-time settings:

Unnecessary

Circuit components:

2 IC's, 13 transistors, 1 diode, micromotor, etc. **Power source:**

One 9v battery: Eveready No. 216 or equivalent Battery check:

Button-lamp type **Scale illumination:**

Built-in lamp to illuminate viewfinder scales **Other:**

Folding rubber lens hood, rubber eyepiece guard, EV-to-luminance conversion table panel, ASA/DIN conversion table and tripod socket on end of handgrip, screw for ± 1 EV fine measuring adjustment, hand strap; filter screw

Accessories:

16X ND filter, close-up lens adaptor ring **Dimensions:** 62×162×119mm (2%×6%×4¹% in.)

Weight:

560g (19% oz.) without battery

AUTO-SPOT II DIGITAL SPECIFICATIONS

Type:

Reflex-viewing spot-reading automatic photographic light meter

Measuring method:

Reflected light by silicon photo cell with 1° angle of acceptance

Viewing system:

Focusing, through-the-lens reflex type; angle of view; Circular 9° with central 1° marked circle; magnification: 2.96X focused at infinity

Focusing:

1m (3.3 ft.) to infinity by objective-component single helicoid; eyepiece adjustable from -4.58 to -2.73 diopters

Exposure indications:

By direct LED (light-emitting-diode) digital readout: In finder: EV numbers 1.0 to 19.9 in 0.1 EV steps at standard ASA 100, under-/over-range "ERROR" LED warning. On side panel: Apertures f/1 to f/90 digitally in full stops, with intermediate +1/3 and +2/3-stop, under- and over-range LED indicators

EV measuring range at ASA 100: 1.0 to 19.9

Film-speed settings:

ASA 12 to 6400 in 1/3-stop click increments by self-releasing knob

Exposure-time settings:

1/2000 to 15 sec. in window scale by click-stop knob; cine scale: 8 to 128 fps (with shutter-sector opening of 180°)

Circuit components:

20 IC's, 23 transistors, etc.

Power source:

One 9v battery: Eveready No. 216 or equivalent **Battery check:**

By lighting of EV number in the viewfinder **Scale illumination:**

Built-in lamp to illuminate non-LED scales; actuated by spring-loaded extension of power-switch slide **Other:**

Folding rubber lens hood, rubber eyepiece guard, EV-to-luminance conversion-table panel, ASA/DIN conversion table and tripod socket on end of handgrip, screw for ±1 EV fine measuring adjustment, hand strap; filter screw

Accessories:

16X ND filter, close-up lens adaptor ring **Dimensions:**

$62 \times 162 \times 119$ mm (2% $\times 6\% \times 4^{11}$ /₁₆ in.) Weight:

545g (19¼ oz.) without battery

Specifications subject to change without notice.



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