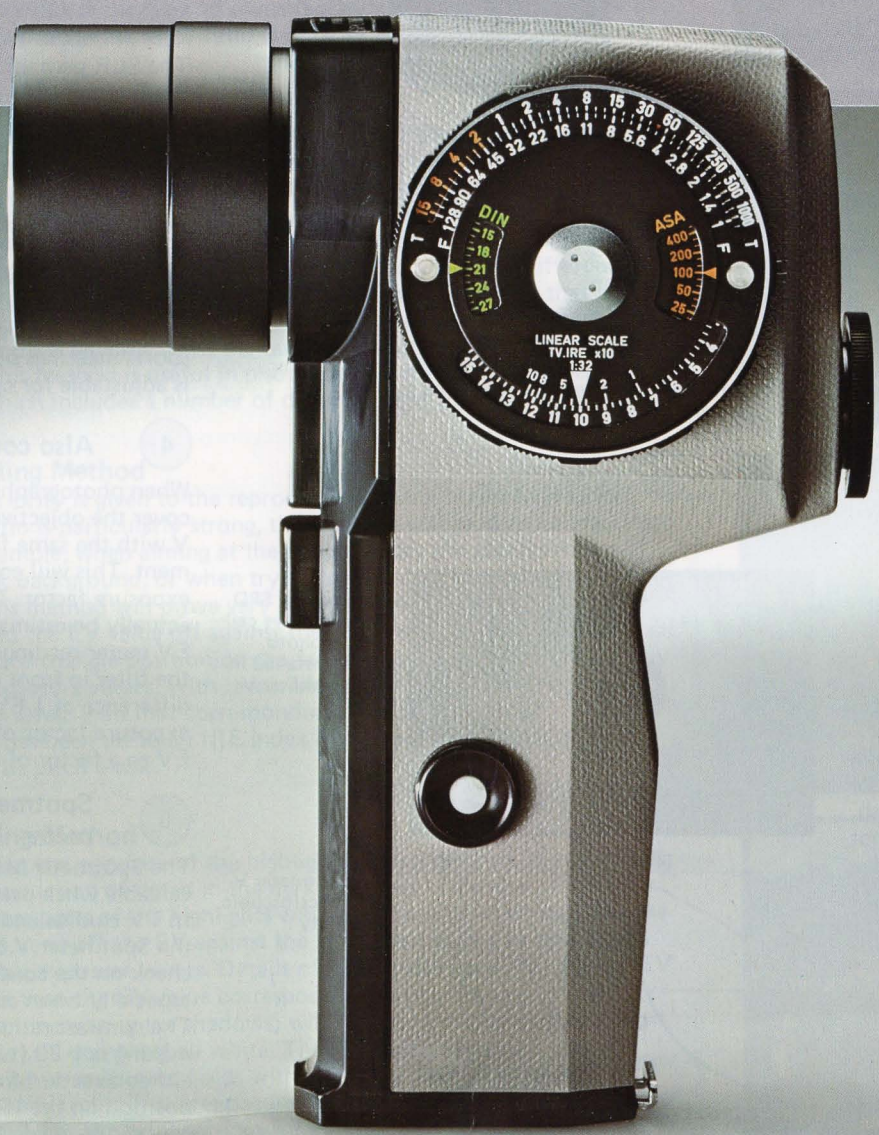
ASAHI

PENTAX SPOTMETER V



THE ASAHI PENTAX SPOTMETER V FOR PRECISION EXPOSURE METERING.

ASAHI PENTAX SPOTMETER V

One of the keys to good photography is accurate exposure metering. This is especially true in professional circles where reversal color film requiring an exposure accuracy of 1/3rd of an f/stop is often employed, and in TV and movie film making where subject illumination has to be measured by spot metering methods. Consequently, they can measure many different parts of the field to be photographed. They can also give a rapid indication of the amount of contrast. When the spot is moved quickly back and forth between the brightest and the darkest areas, the needle deflections will be greater for the stronger contrasts, and smaller for the weaker contrasts. The IRE scale is used to ensure that the amount of needle deflection (indicating degree of subject contrast) does not exceed the maximum reproducible contrast ratio of the film being used (1:32 for reversal film, or 5 EV steps).

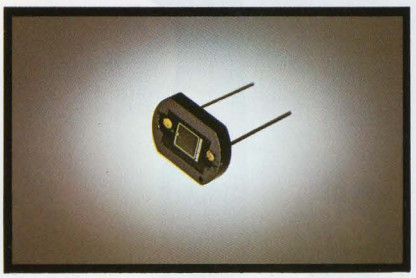
With so much data available, even amateur photographers can match the pros, and produce perfectly exposed photographs by effecting the subtlest change in exposure. The built-in through-the-lens exposure meters of single lens reflex cameras in common use today, are made all the more versatile when used in conjunction with the precision metering Spotmeter V.

The photosensitive element used in the Spotmeter V is a silicon photo diode (SPD) with exceptional performance, even in low levels of light, this being one of the reasons why the measuring range has been expanded to EV 1-19.

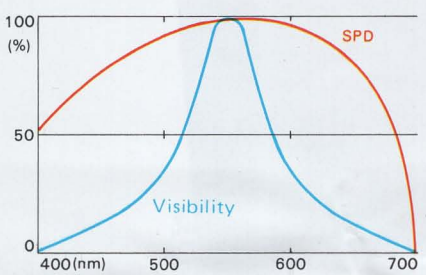
Three G-13 mercury batteries in the power supply provide very stable voltage, a prerequisite for highly accurate measuring capability. The single linear meter scale in the viewfinder makes needle deflections very easy to read, and an IRE index scale can be read off directly from EV values on the side dial. The push button meter switch ensures that the batteries are not consumed unnecessarily.

with the vast technical know-how of the makers of the Asahi Pentax Spotmeter, it has consistently advanced, adding one improvement upon another. Whether it be commercial filming, night scenes, the stage, or the TV studio, no other exposure meter comes anywhere near the Spotmeter V.

1 Objective lens
2 Zero adjustment screw
3 Battery check
4 Meter-on button
5 Shutter speed scale
6 Aperture scale
7 ASA/DIN set button
8 DIN indicator
9 ASA indicator
10 EV value indicator and IRE index scale
11 EV scale
12 Eyepiece and eyepiece adjustment ring
13 Scale illumination button
14 Grip
15 Battery chamber
16 Wrist strap attachment
17 Tripod socket



The high performance SPD photosensitive cell (silicon photo diode) installed in the Spotmeter V.



The Spotmeter V SPD spectroscopic sensitivity

MAIN FEATURES

1 No need to approach subject for accurate measurements

The Spotmeter V does away with the need for close-up metering. Unlike the incident-light exposure meters which require close contact with the subject, or even some of the reflected-light meters which cannot measure highlights etc. correctly unless very close to the subject, the Spotmeter V is capable of accurate metering, contrast balance and stage lighting checks etc. at a considerable distances from the subject.

2 Metering angle of just 1°

The field of vision of standard camera lenses is about 50°. The Spotmeter V metering angle is a mere 1°, equivalent to the field of vision of an ordinary 35mm camera using an ultra-telephoto 2000mm lens. With such an acute measuring angle, only the sections of primary interest in the subject field can be selected and measured with a very high degree of accuracy. For example, clouds, the blue sky, mountains, the branches of trees, grass, or the roof and wall of a house.

3 Eyelevel viewfinder with erect image

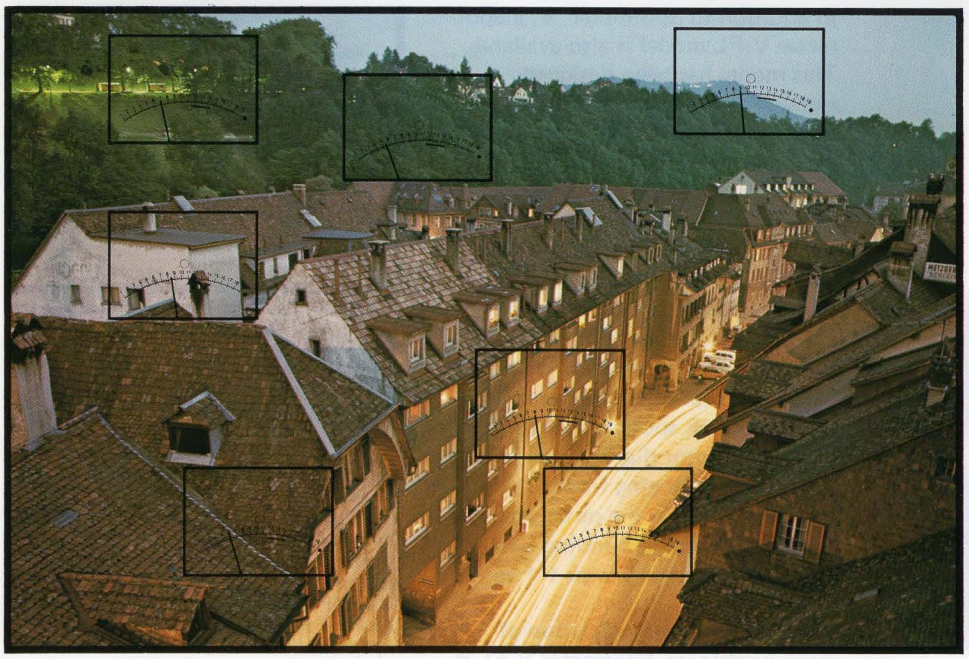
The SLR pentaprism viewfinder of the Spotmeter V has a magnification of 1.5x, for optimum visibility. The actual field of vision is much the same as that with a 105mm lens, while the field covered by the measuring angle is indicated by the small central circle. The EV values are read directly from the scale located right in the field of vision. The ease with which this meter can be used makes quick metering of active subjects such as at sports meetings possible. And the eyepiece is adjustable for close up work.

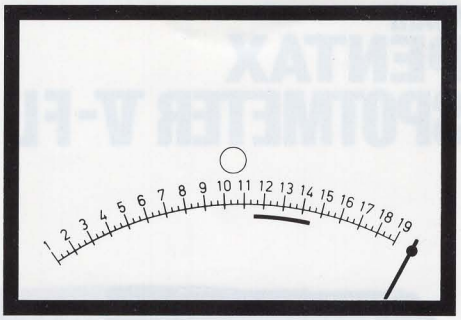
4 Also compatible with filters

When photographing with filters, simply cover the objective lens of the Spotmeter V with the same filter and take a measurement. This will compensate for the filter's exposure factor. The exposure factor can actually be estimated by comparing the EV meter readings with, and then without the filter in front of the object lens. A difference of 1 EV corresponds to an exposure factor of 2, a difference of 2 EV to a factor of 4 etc.

5 Spotmeter V as a brightness meter

The Spotmeter V can also prove very valuable when used as a brightness meter. In TV studios and motion picture lots, the Spotmeter V can keep an accurate check on the contrast ratio of the set, especially when arranging the lighting. The contrast ratio limit in TV and film making is 1:30 (two and a half stops in either direction from the standard triangle position on the IRE scale). Spot checks can also be made for any unevenness in the light source in projectors and enlargers etc.



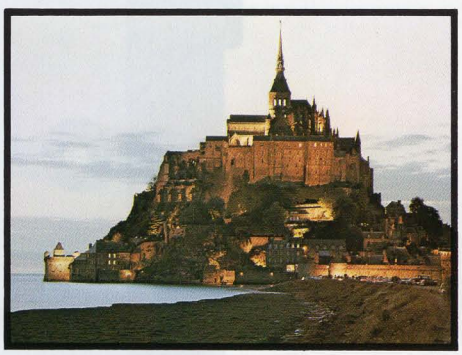


The EV scale as seen through the viewfinder.

The subject area covered by the very small metering angle of 1° (equivalent to the angle used by an ultra-telephoto 2000mm lens) is indicated by a small circle in the pentaprism viewfinder. The brightness of even minute detail in the subject field can be measured easily and quickly (no need to approach the subject).

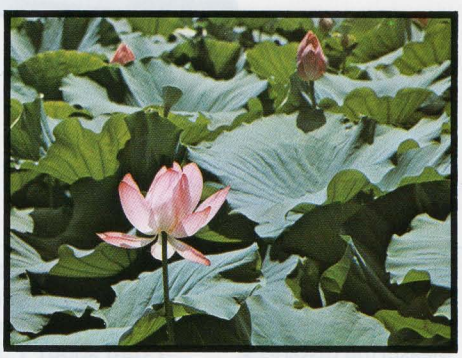
1 General Measuring Method

Take half-tone measurements of the more important sections of the photograph, and disregard the darker and brighter areas. For example, a person's face in a portrait, and the area occupying the largest part of a landscape. Set the EV value thus obtained against the standard index mark on the exposure calculator dial, and then select a suitable pair of shutter speed and aperture values. This method is really much the same as an ordinary exposure meter, and is useful when in a hurry, or when there are no strong contrasts, or when the film has sufficient latitude. Since this method measures in half-tone only, it is very simple, but the clue to success with this method lies in the way in which the half-tone reflectivity ratio is measured. Measure the gray 18 percent standard reflection card directly, or else something with a reflectivity ratio very close to it to get the best results.



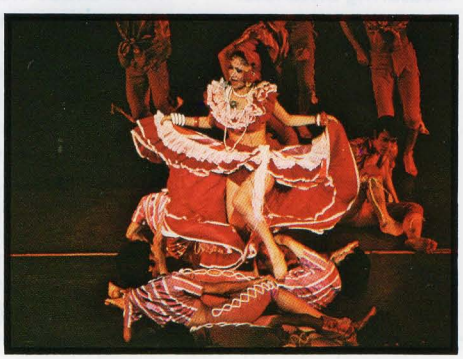
2 Averaging Method

Measure the brightest highlight of the subject, and then the darkest shadow. Use the average value to calculate exposure values. The main advantage of this method is that it ensures that the center of the film's reproducibility range will be used. Ordinary black and white film has a reproducible contrast ratio of 7 EV steps, while reversal color film has one of about 5 EV steps, so the contrast in general landscape photography can be easily coped with. If the difference between the brightest highlight and the darkest shadow is too large, that part of the highlight which exceeds the film's reproducible range will be overexposed, while the shadow parts which exceed the range in the other direction will be underexposed. This method is useful in photographs with more complicated subject matter which includes a number of different light sources.



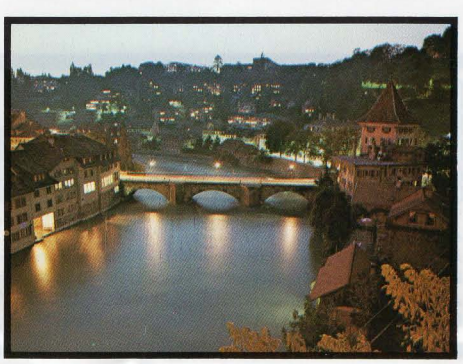
3 Highlight Reading Method

In this method priority is given to the reproduction of the bright highlights. If the contrast ratio is particularly strong, the shadows will tend to be blackened right out. For example, when aiming at the people under the spotlight on a stage with a black background, or when trying to capture the color of neon lights at night, this method will prove very successful. Measure the brightest highlight, and read the EV value off against the IRE index scale position 10 (not the central standard triangle position)on the far left hand side. Then choose any suitable pair of exposure values. With reversible color film, shadow detail with an EV reading no lower than that corresponding to an IRE index of 1 (when the highlight EV has been set to an IRE index of 10) will be reproduced. All darker areas will be pitch black.



4 Shadow Reading Method

This method is just the opposite of the highlight reading method, priority being given to the reproduction of detail in the dark shadows. If the contrast is very strong, the brighter parts of the highlights will appear just plain white. Measure the shadow areas, read off the EV against the IRE index scale position 1, and then select suitable exposure values. Details of highlight areas which give an EV reading no higher than the EV value corresponding to the IRE index scale position 10 (when measuring the shadows) will still be reproduced. Anything brighter than that will come out all white. The readings given by ordinary exposure meters when measuring fields with extensive shadow areas such as a night scene, usually result in overexposure. But the accuracy of the Spotmeter V ensures just the right exposure settings for almost realistic results.

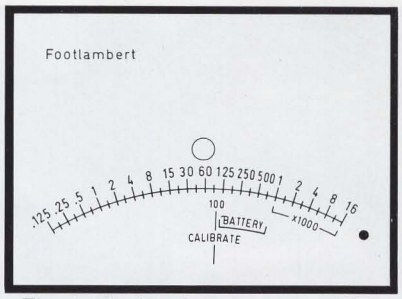


ASAHI PENTAX SPOTMETER V-FL

In addition to Spotmeter V, a Spotmeter V-FL model is also available. This model has been designed exclusively for TV and film metering and is exactly the same mechanically and optically as model V, except that it gives readings in foot lamberts (ft/L). Both the viewfinder scale and the calculator dial are calibrated directly in foot lamberts, eliminating the time required for conversion of EV values into foot lamberts.

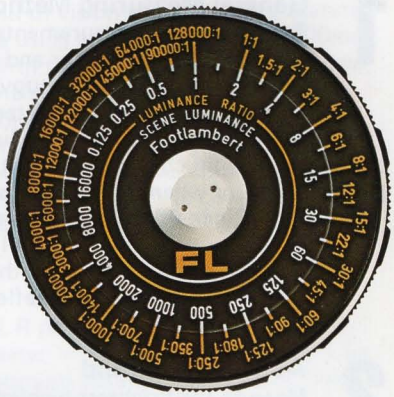
To enable easy calculation of luminance ratio variations between light spots and dark spots, the inner scale of the calculator dial features a foot lambert scale ranging from 0.125 to 16000 ft/L; while the outer scale of the dial gives corresponding luminance ratios ranging from 1:1 to 1:128,000.

Capable of instant evaluation of scene brightness, Spotmeter V-FL is highly convenient in making lighting adjustments for matching and integrating live TV studio with film material. It is also useful in establishing TV studio light for new shows and one-time productions, and it enables achievement of the proper live-color gradations for compatible black and white telecasting.



The viewfinder of the Spotmeter V-FL

Looking through the viewfinder, take a foot lambert reading by centering the small circle on the subject. Luminance ratios are determined by reading both the brightest and the darkest spots in a given area. If the brightest spot reads 1000 ft/L, for instance, and the darkest spot reads 2 ft/L, align the 2 ft/L calibration of the inner scale with the 1:1 luminance ratio of the outer scale. A glance at the luminance ratio number matching the 1000/ft/L calibration for the brightest spot on the inner scale informs you immediately that the luminance ratio is 500:1.



SPECIFICATIONS

Measuring ranges:	EV1-19, ASA 6-6400 or DIN 9-39, aperture f1-f128, shutter speeds 1/4000 sec. - 4 mins., scales marked in 1/3rd f-stop increments.
Measuring angle:	The field enclosed by the small circle in the center of the viewfinder; this representing 1°.
Measuring distances:	From about 1.5m to infinity – fixed focal length. (Focusing down to about 1m possible by screwing the eyepiece out as far as it will go).
Measuring method:	Spot measuring of reflected light. (Meter switches on when button pressed). EV direct reading. IRE scale.
Photosensitive cell:	Silicon photo diode (SPD)
Power supply:	Three G-13 mercury batteries (1.5V)
Battery check:	Battery check indicated in viewfinder.
Viewfinder:	Single lens reflex pentaprism type, giving erect projected image. Fresnel lens, field of vision 17° horiz. and 12° vert. (same as 35mm half frame camera). Magnification 1.5x. Eyepiece correction 0 ~ -1 Dptr. Scale illumination.
Weight and size:	62mmW x 163mmH x 127mmL. Width of grip 34mm. Weight 450g (with batteries).
Accessories:	Mercury batteries, wrist strap and case.

ASAHI PENTAX

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