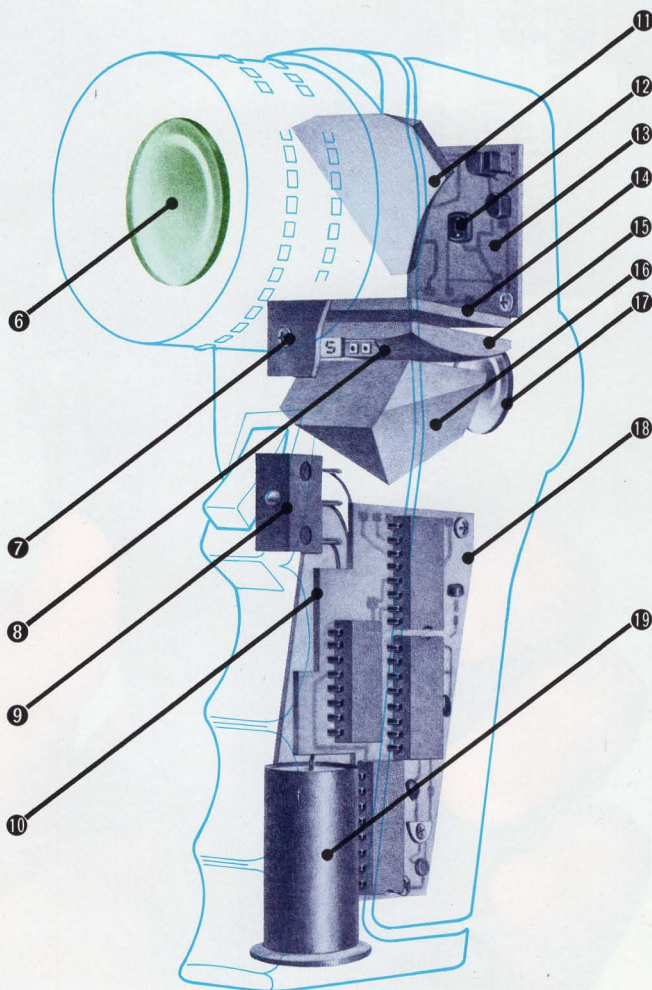


The Asahi Pentax Digital Spotmeter Places Perfect Exposure within Your Grasp

Weighing no more than the average 50mm f/1.4 lens, this highly portable spotmeter is the portable tool for precision exposure measurement. The minute 1° metering angle is approximately equivalent to the angle of view of a 2,000mm ultra-telephoto lens mounted on a 35mm camera. Because of the extremely narrow metering angle, pinpoint exposure measurement is possible without approaching the subject.

The large, bright single lens reflex type viewfinder greatly simplifies the task of the photographer. For all one need do is align the 1° spot found in the center of the viewfinder with the point from which an exposure measurement is desired, and then press the Metering Button. As soon as this is done, the Silicon Photo Diode built into the spotmeter instantly determines the correct exposure which is then displayed on the LED Panel in the viewfinder as an EV Number (100 ASA). The easy-to-use scales surrounding the lens of the spotmeter quickly convert the EV Number into shutter speed and aperture combinations which will render optimum exposure for shadow, highlight, or half-tone detail.

Not only do the LED's which indicate the EV Number assure maximum visibility, but since they are devoid of moving parts, they are not subject to jamming or easily damaged. Thus, the Digital Spotmeter offers increased durability as well as greater convenience. Moreover, the digital display indicates the EV Number in 1/3-Step integrals for superior exposure measurement accuracy, and the broad measuring range of EV 1 - 20 is sufficient to cover the wide variety of lighting conditions which confront the hardworking professional photographer.



1. Metering Button
2. Adjustable Eyepiece (-2 to +1 diopter)
3. Grip
4. Tripod Socket
5. Wrist Strap Eyelet
6. Objective Lens
7. LED Panel
8. LED Mirror
9. Metering Switch
10. Integrated Circuit Board
11. Semi-Transparent Mirror
12. Silicon Photo Diode
13. Head Amplifier Circuit Board
14. Fresnel Lens
15. Condenser Lens
16. Pentaprism
17. Eyepiece Lens
18. Integrated Circuit Board
19. Battery Chamber

DIGITAL SPOTMETER

1 Pinpoint Measurement from a Distance

In contrast to ordinary reflected light meters which must be used close to the subject and can give only an averaged measurement, there is no need to approach the subject when working with the Digital Spotmeter, and pinpoint exposure measurements can be taken from each part of the subject, from the deepest shadow to the brightest highlight. Equivalent to working with a 40 power ultra-telephoto lens, precise exposure measurement is possible with distant subjects such as wildlife, stage performers or athletes.

2 1° Metering Angle

Only with a spotmeter is it possible to measure all light values of a scene, from shadow to highlight. This capability and the IRE (Institute of Radio Engineers) Scale of the Pentax Digital Spotmeter work together to offer the photographer a choice in exposure method: exposure for the shadows, exposure for the highlights, or exposure for the middle tones. Moreover, a glance at the IRE Scale immediately informs the photographer which highlights (if any) will be washed out (appear white), and which shadows (if any) will be underexposed (appear black).



3 Eyelevel Viewing Convenience

Because of the Pentaprism employed in the Digital Spotmeter, the image seen in the viewfinder is unreversed and laterally correct, making it as easy to use as an ultra-compact single-lens-reflex camera. Weighing far (43%) less than a presently available 110 SLR and sporting a large, brilliant viewfinder, the Digital Spotmeter offers unsurpassed handling ease. And the approximately life-size (1.15X) magnification makes it possible to take exposure measurements with both eyes open for maximum viewing comfort.

4 Can be Used as a Brightness Meter

The Digital Spotmeter can also prove very valuable when used as a brightness meter. In TV studios and motion picture lots, it can be used to 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 1:32 (two and a half stops in either direction from the standard index mark on the IRE scale). Spot checks can also be made for any unevenness in the light source in projectors and enlargers.

5 Compact, Lightweight Design

Elegant and slim, the Digital Spotmeter will easily fit into one's jacket pocket. Tipping the scales at only 245 grams, it is so light that it can be safely placed even in a shirt pocket. Furthermore, the Grip is designed to perfectly match the configuration of the average human hand, providing a secure grip with the forefinger coming to rest at the trigger-like Metering Button. Because of its compact size, light weight, and rapid handling capabilities, the photographer who owns a Digital Spotmeter will never want to travel without it.

MAIN FEATURES

6 Digital Read-Out

Unlike an indicator needle which may be read incorrectly if the meter is held off-axis to one's line of sight, there is no possibility of error with the Digital Spotmeter because the exposure value is displayed as a large numeral. Furthermore, a large dot to the right of the EV Number indicates +1/3 EV and two large dots indicate +2/3 EV. The Digital Spotmeter, therefore, is "fine-tuned" to instantly display the precise exposure in integrals of 1/3 EV. Since the digital read-out is created by light emitting diodes (LED's), the EV Number is always prominently visible, regardless of whether working indoors or out, and irrespective of whether working with a bright or dark background. Additional features include a "Stabilizer Circuit" to assure a flickerless digital display for viewing comfort, a broad exposure measurement range of EV 1 - 20 (without any need to switch back and forth from a "High" to a "Low" range), and a "Battery Check Circuit" built into the digital display (failure of the LED's to illuminate indicates it is time to replace the battery).

7 Unprecedented Reliability

All components of the exposure measurement system (Integrated Circuit Boards, Silicon Photo Diode, Light Emitting Diodes, Head Amplifier Circuit Board) are completely without moving parts. Hence there is nothing to wear out, disengage, clog, or break. The all electronic Digital Spotmeter is of extremely rugged construction for a lifetime of reliable service.

8 Superior Photosensitive Cell

For superior performance, a Silicon Photo Diode (SPD) is utilized. SPD's respond to light more than 1,000 times faster than CdS cells which are still widely used in exposure measurement systems. The time lag and sluggish response associated with CdS cells have therefore been eliminated. The superior performance is particularly evident when working at low levels of illumination. The instantaneous response of SPD's also does away with the "memory problem," so that the photographer can take spot measurements of the brightest highlights and immediately switch to measurements of the darkest shadows without fear of exposure error due to "memorization" of the highlight reading.

9 Large, Brilliant Viewfinder

For brilliant viewing under the dimmest of lighting conditions, the pentaprism is specially silvered, and both the objective and eyepiece lenses have been treated with seven-layer Super-Multi-Coating. And an exceptionally finely grooved fresnel lens maintains viewfinder brilliance right to the edges.

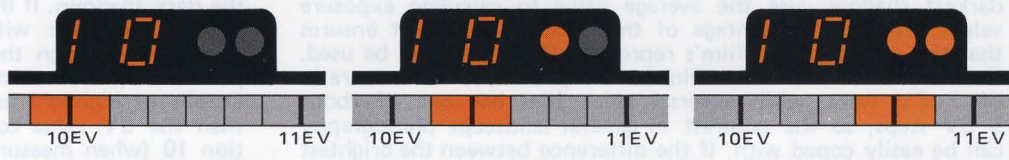
10 Threaded to Accept Filters

The Objective Lens is front-threaded (40.5mm) to accept filters commonly used on 8mm movie cameras, making it possible to determine the correct filter factors easily and quickly. Of course, filters larger than 40.5mm can be hand-held in front of the Objective Lens to achieve the same result. Another aid for the film maker is the Cine Index on the Shutter Speed Scale of the Digital Spotmeter which is used for exposure measurement with movie cameras.

DESIGNED TO MEET THE NEEDS OF THE PROFESSIONAL PHOTOGRAPHER



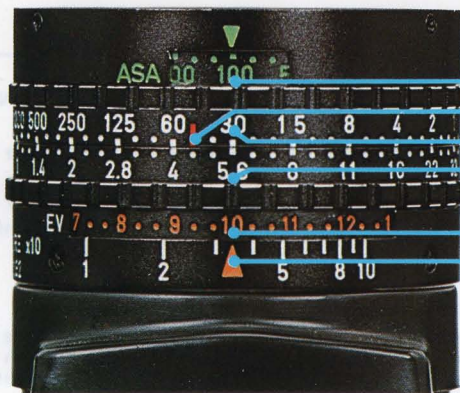
▲ The viewfinder of the Digital Spotmeter.



When the exposure value is 9-5/6 - 10-1/6 EV, 10 EV is displayed.

When the exposure value is 10-1/6 - 10-1/3 EV, 10-1/3 EV is displayed (● represents 1/3 EV).

When the exposure value is 10-1/3 - 10-5/6 EV, 10-2/3 EV is displayed (●● represents 2/3 EV). When the exposure value exceeds 19 ●● or falls below 1, zero (0) is displayed.



ASA Scale

Cine Index

Shutter Speed Scale

Aperture Scale

EV Scale

IRE Scale

OUTLINE OF OPERATING PROCEDURE

1. Set the ASA Scale to the appropriate value, clickstops are provided at 1/3-stop intervals.
2. Aim the spotmeter so that the small circle in the center of the viewfinder is aligned with the area to be measured.
3. Squeeze the Metering Button and read the exposure value (digital display).
4. Adjust the EV Scale so that the previous read exposure value is aligned with the appropriate index of the IRE Scale. Then merely select any of the indicated aperture/shutter speed combinations.

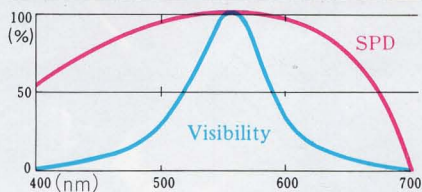
EASY-TO-USE SCALES

The exceptional design of the scales used for exposure computation is readily apparent, for all are divided into 1/3 EV increments, have legible numerals, are color-coded, and surround the Objective Lens for rapid and easy handling.

The high performance Silicon Photo Diode employed in the Digital Spotmeter.



Spectral Sensitivity of the SPD employed in the Digital Spotmeter.



Aperture (f) → Shutter Speed (sec.) ↓	1.4	2	2.8	4	5.6	8	11	16	22	32
60	-5	-4	-3	-2	-1	0	1	2	3	4
30	-4	-3	-2	-1	0	1	2	3	4	5
15	-3	-2	-1	0	1	2	3	4	5	6
8	-2	-1	0	1	2	3	4	5	6	7
4	-1	0	1	2	3	4	5	6	7	8
2	0	1	2	3	4	5	6	7	8	9
1	1	2	3	4	5	6	7	8	9	10
1/2	2	3	4	5	6	7	8	9	10	11
1/4	3	4	5	6	7	8	9	10	11	12
1/8	4	5	6	7	8	9	10	11	12	13
1/15	5	6	7	8	9	10	11	12	13	14
1/30	6	7	8	9	10	11	12	13	14	15
1/60	7	8	9	10	11	12	13	14	15	16
1/125	8	9	10	11	12	13	14	15	16	17
1/250	9	10	11	12	13	14	15	16	17	18
1/500	10	11	12	13	14	15	16	17	18	19
1/1000	11	12	13	14	15	16	17	18	19	20

• Table of EV Numbers (100 ASA)

With an exposure value of 10 EV, any of the following combinations will result in correct exposure: f/1.4 · 1/500 sec., f/2 · 1/250 sec., f/32 · 1 sec. The Aperture and Shutter Speed Scales of the Digital Spotmeter reveal all of the appropriate combinations at a glance.

• 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 IRE Scale, 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.

• 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 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.

• 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 a 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 align the exposure value with the IRE Scale at position 10 (not the central standard index mark) on the far right hand side. Then choose any aperture/shutter speed combination. 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.

• 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 area, align the exposure value with the IRE Scale at position 1, and then select suitable exposure combinations. 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 Digital Spotmeter ensures just the right exposure setting for realistic results.

• ASAHI PENTAX DIGITAL SPOTMETER SPECIFICATIONS

Measuring Range:	EV 1 - 20 (100 ASA)
Scales:	ASA, 6 - 6400; Shutter Speed, 1/4000 sec. - 4 min.; Aperture, F 1 - 128; EV Number, 1 - 19-2/3; IRE, 1-10.
Measuring Angle:	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 provided.
Exposure Read-Out:	LED digital display of EV Numbers (100 ASA), and up to two dots (each of which equals + 1/3 EV).
Photosensitive Cell:	Silicon Photo Diode.
Power Source:	One 6V silver oxide battery.
Battery Check:	Failure of LED digital display to illuminate indicates battery needs replacing.
Viewfinder:	Pentaprism type with unreversed, laterally correct image. Objective and eyepiece lenses Super-Multi-Coated and pentaprism specially silvered for brilliant viewfinder image. Even illumination achieved with finely grooved fresnel lens. 1° spot indicated in center of viewfinder, and large LED Panel appears at the bottom. Viewfinder coverage similar in shape to that of a 35mm SLR, and with a diagonal field of view of 26°.
Filter Size:	40.5mm
Dimensions:	44mm (D) x 144mm (H) x 83mm (W)
Weight:	245g (without battery).
Additional:	Equipped with Tripod Socket, supplied with case, Wrist Strap, battery, and Lens Cap.



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