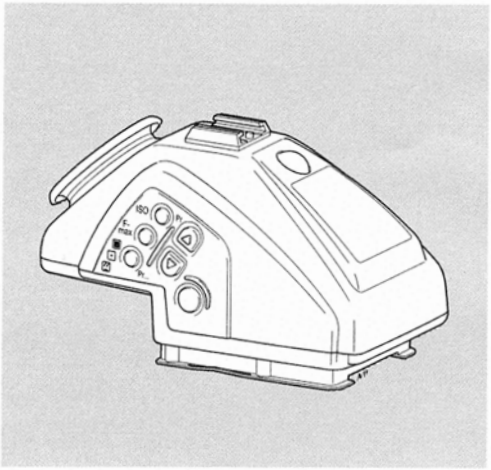
HASSELBLAD



PME45

Instruction Manual, Gebrauchsanweisung, Brugsanvisning, Manual de Instrucciones, Manual d'Instructions, Manuale d'Istruzioni, Gebruiksaanwijzing, Manual de Instruções, Bruksanvisning, Käyttöohjekirja

UK Meter Prism Viewfinder PME 45

The Hasselblad PME45 (42297) is a 45° meter prism viewfinder that provides a convenient viewing angle for both studio and outdoor work. Its built-in exposure meter offers three different metering methods, a choice of shutter- or aperture priority and a wide range of pre-setting possibilities. Film speed can be set within the ISO 12 – 6400 range and maximum lens aperture within f/2 – f/16. The built-in conspicuous Liquid Crystal Display is adjacent to the 2.5x enlarged unreversed image that covers the entire focusing screen.

The large eyepiece, especially suitable for users with eyeglasses, has a dioptre adjustment range of - 2 to + 1 dioptres.

Figures beside the small headings refer to the illustrations relevant to that section. For the sake of clarity, all display illustrations appear in negative form in this manual. In reality the display appears as light figures, symbols, etc. against a dark background. Please also note that most of the display illustrations represent only possible examples as it is not practical to show all combinations of all settings.

Grey symbols and figures in the display illustrations represent continuously updated exposure data, controlled by the exposure meter; solid black symbols and figures are fixed or controlled manually.

Parts & Components 1

1. Removable rubber eyecup
2. Combined 'ISO / Pr' button
3. 'F-max' button
4. Combined 'Metering-method / Pr…' button
5. 'Down' adjustment button – ▼
6. 'Up' adjustment button – ▲
7. Meter activation button
8. Incident light sensor dome
9. Accessory shoe
10. Eyepiece adjustment catch
11. Battery compartment cover
12. Viewfinder retaining plate
13. Viewfinder protective cover

Display 2

1. Audio warning indication (beep on)
2. Plus/minus correction symbol
3. Maximum aperture indication symbol
4. EV indication symbol
5. EV/aperture value
6. Adjustment/reference scale
7. Shutter speed value/program setting indication
8. Film speed (alt. shutter speed seconds) indication
9. Spot metering indication
10. Integral metering indication
11. Incident light metering indication
12. Battery "low power" warning indication

Getting started

This section provides a general overview of the viewfinder including fitting and initial adjustment. Later sections describe how to use the viewfinder in practice and further adjustments to suit personal preferences.

Battery installation 3

The viewfinder uses a CR2 – 3V lithium battery (not supplied). Grasp the battery compartment cover protrusions and pull the cover outwards. Insert the battery in the correct position according to the symbol in the compartment (with the positive terminal on the battery pointing towards the front of the viewfinder). Push the cover back until it snaps into the closed position after inserting the battery.

The condition of the battery is monitored as follows:

The 'low power' warning indication is visible at the far right of the display when power is getting low.

All the symbols flash in the display when the battery is exhausted.

⚠ *Positioning the battery incorrectly will not damage the viewfinder but it will prevent the exposure meter from functioning.*

Attaching the viewfinder 4

1. Remove the film magazine.
2. Slide the present viewfinder to the rear out of the viewfinder mount.
3. Insert the PME45 into the slots and slide it forwards to a positive stop.

⚠ *The recommended focusing screen for use with the PME45 is the Acute-Matte D series (42204, 42207, 42210, 42213, 42215, 42217, 42219). See also 'PME45 and focusing screens'.*

Adjusting the eyepiece 5

To adjust the viewfinder to suit individual eyesight, proceed as follows to ensure perfect focus:

1. Slide the eyepiece dioptre adjustment catch to the right (as in the illustration) to loosen the eyepiece.
2. Focus the lens at the infinity setting.
3. Aim the camera at a nearby light-toned subject to create a completely unsharp image on the focusing screen.
4. Turn the eyepiece with the rubber eyecup clockwise or counter-clockwise until the markings on the focusing screen are sharp (The rubber eyecup can be removed if preferred).
5. Lock the eyepiece in the focused position by pushing the eyepiece adjustment catch back again to the left.

Exposure meter activation

The exposure meter is completely self-contained and can be operated on or off the camera body. It is activated by pressing any of the buttons except the ▲ or ▼ buttons. Normally the meter shuts off automatically 16 seconds after the latest manipulation of any button, but the duration of this period can be changed in the Programming mode – **P4**.

Viewfinder LCD display

The exposure meter display is located beneath the image area. The first time the meter is activated the 'default' settings: **MAX** f/2.8; **ISO** 100; Integral metering appear. See later section for detailed display explanation.

Operating details

See fig 1 to become familiar with the position and names of the six control buttons to facilitate a more rapid understanding of their functions when referred to in the text. All of the programming display illustrations appear collectively on one page and so you may find it easier to keep that page folded out as reference while you go through the text and check in the viewfinder for the first time.

Settings can be changed and remain permanent until intentionally changed again. Removing or replacing the battery does not affect the settings.

Before you start, however, it is very important to remember two major points about operation. The F-max setting must always correspond with the lens in use for correct spot and integral metering (see under 'F-max' below for explanation). This means you must make a habit of checking the F-max setting every time you change lenses. Also, there is no informational interface between the viewfinder and the camera so all exposure information must be transferred manually regarding aperture and shutter-speed selection.

⚠ *Remember to check the F-max setting.*

⚠ *Remember to transfer aperture and shutter information.*

Changing the meter settings

There are three basic settings:

- ISO
- MAX (F-max)
- Metering method

They can easily be accessed by pressing the corresponding buttons.

ISO (film speed setting) 6

Press the ISO button and use the ▲ or ▼ buttons to increase or decrease the displayed film speed value in increments corresponding to 1/3 EV.

F-max 7

To give the brightest possible viewfinder image the lens is normally opened up to the maximum aperture. For spot and integral metering, the exposure meter uses the light coming through the lens and therefore it needs to know the maximum aperture of the lens to produce a correct exposure value.

Press the F-max button and use the ▲ or ▼ buttons to increase or decrease the displayed maximum aperture value in increments corresponding to 1/2 EV. The F-max setting appears as **MAX** in the display.

⚠ *Remember to alter this figure, if necessary, when you change lenses!*

Metering method 8

There are three different metering methods available:

- Spot metering – ⊡
- Integral metering – ■
- Incident light metering – 🖻

The corresponding symbol will appear on the right of the display when selected. Press the metering method button and use the ▲ or ▼ buttons to select the required method.

Spot metering 9

Spot metering uses a ⌀12 mm circular area in the centre of the focusing screen. This is indicated by the free area inside the hairline cross members on the Acute-Matte D (42204) focusing screen.

Integral metering 10

Integral metering is a centre-weighted method that measures a central area of approx. 45 x 35 mm. This is the default setting.

Both the spot-meter and the integral meter methods use the light level on the focusing screen of the light reflected off the subject.

⚠ *See also 'PME45 and focusing screens' for further information on the use of different focusing screens.*

Incident light metering 11

Incident light metering uses the sensor dome on top of the viewfinder body to measure the light falling on the subject. See later section for use in detail.

Programming mode

By selecting the programming mode, both the functional characteristics of the meter and the appearance in the display can be changed. This can be done either to suit personal preference or to suit various equipment configurations. Pressing the Meter Activation Button stores the preferences and returns the display to normal. All programming can be changed at any time afterwards.

The two buttons used in the programming mode are the Pr (combined ISO / Pr button) and the Pr… (Metering method / Pr…) buttons, referred to below as **Pr** *and* **Pr…**.

To help memorise their functions;

Pr *stands for 'programming'. This button is pressed just once, together with the* **Pr…** *button, to select the programming mode.*

Pr… *symbolises that this button must be pressed repeatedly to select individual modes.*

Programme selection 12 – 15

The procedure is as follows:

a. Press **Pr** + **Pr…**, to select programming mode, fig 12
b. Press **Pr…** repeatedly to select individual mode, fig 13
c. Press ▲ or ▼ buttons to alter settings, fig 14
d. Press the meter activation button to store preferences and return to normal display, fig 15

The following is a list of the individual modes available. '**P1**', '**P2**' etc represent the modes and these symbols also temporarily appear on the left side of the display to denote which mode you are changing, as in illustrations **P1** – **P7**. Therefore when **P7** is visible, for example, it means you are changing the audio indicator, and so on.

P1 – Exposure data display type
P2 – Shutter or aperture priority
P3 – Reference mode, warning limits
P4 – Active period duration
P5 – Permanent exposure correction
P6 – Start display of F-max and ISO
P7 – Sound warning signal

The first time the programming mode is selected the display appears as in **P1**; it always returns to the last setting used afterwards. Repeatedly pressing the **Pr…** button causes a consecutive move from one mode to the next from **P1** through **P7**.

P1 – Exposure data display

In this mode you can choose to display aperture / shutter priority instead of EV's.

Switch between **On** and **OFF** by pressing either the ▲ or ▼ button to change the final display appearance.

➢ *Default setting is* **On**

P2 – Exposure priority selection

In this mode you can change between aperture priority (**APEr**) and shutter priority (**Shut**) by pressing either the ▲ or ▼ button. (The **P2** mode appears only when the **P1** mode is set at **OFF**, see **P1** description above).

In use, priority can be changed up or down by the ▲ or ▼ buttons. The non-prioritised function is then continuously updated on the display.

➢ *Default setting is* **Shut** *(shutter priority) the first time* **P1** *is set to* **OFF**.

⚠ *Remember to choose only standard shutter speeds when in aperture priority mode as the integral shutter on C series lenses cannot produce an 'in-between' shutter speed even if set between set markings.*

P3 – Reference mode with warning limits

Pressing the ▼ button switches between **On** and **OFF**. Pressing the ▲ button with the setting at **On** moves the warning limits from 0 towards ± 2 EV in 1/3 EV increments.

When ±2 is reached it restarts at 0. Setting the limits to 0 disables the warning function, but the reference function is still operative. See separate section on "Reference mode".

➢ *Default setting is* **OFF**

P4 – Active period

Pressing ▼ decreases and ▲ increases the duration of the meter's active period until auto shut-off after the latest button operation. The du-

ration can be adjusted from 5s to 60s. Adjustment increments are one second up to 20s and 5 seconds above 20s.

⋗ *Default setting is 16s.*

P5 – Permanent exposure correction

Permanent correction reduces or increases the calculated exposure by a pre-set amount. This function is particularly useful when compensating for the different properties of various focusing screens.

See 'PME45 and focusing screens' for further information on corrections for different focusing screens.

Pressing ▼ decreases and ▲ increases the exposure. The increment is 1/3 EV.

⋗ *Default correction value is 0 EV.*

⚠ *This is an exposure correction, not an adjustment of the EV-setting.*

P6 – MAX and ISO display

Pressing either ▼ or ▲ switches the function **On** or **OFF**. In the **On** setting the pre-set values of maximum aperture (**MAX**) and film speed (**ISO**) are displayed for 1.5 s after activation of the meter as a reminder of the chosen values in operation and are then immediately replaced by aperture and shutter information etc.

⋗ *Default setting is* **On**.

P7 – Audio warning indication

Pressing either t or s switches the sound warning signal **On** or **OFF**. The sound warning (beep) is utilized in the reference mode to:

- confirm introduction of a new reference value *or*
- warn when the difference in light level exceeds the set limits.

⋗ *Default setting is* **On**.

⚠ *Light level differences exceeding 2.5EV disable the sound warning.*

Metering

The metering mode is started by pressing the Metering Activation Button. The reasons for choosing one of the three metering methods – spot, integral, incident light – are beyond the scope of this manual and will not be described in detail here.

⚠ *Remember, all exposure information obtained from the viewfinder display has to be transferred manually to the lens and the camera!*

Spot and integral metering 16 – 19

EV display

With the default settings unchanged, the display appears as in fig. 16 for 1.5 s and then changes to fig. 17. The displayed EV value changes with changing light levels on the focusing screen. This EV value for the selected subject area has to be transferred manually to the EV scale on the camera lens.

Aperture / shutter speed display

When the display is set to indicate aperture and shutter speed instead of EV's (**P1** above) then the **P2** function can be used to select "aperture priority" or "shutter-speed priority".

The chosen priority setting is controlled manually by means of the ▲ or ▼ buttons. The non-prioritised function is then continuously updated on the display. The aperture indication range is from f/64 to f/2 as the largest aperture. The shutter-speed indication range is 68 min to 1/2000 s. Any value outside these ranges will cause the displayed value to flash.

Fig. 18 shows the display for integral metering with aperture priority (solid black) and shutter speed continuously updated (grey).

Fig. 19 shows the display for spot metering with shutter priority (solid black), Reference mode **On**, pre-set Permanent correction and Sound warning (beep) **On**. The central scale shows an arrowhead and is flashing together with the aperture value, indicating that the metered light level is more than 2EV below the entered reference level.

Incident light metering 20 – 22

The incident light metering method is used to measure the light falling upon the subject scene instead of reflected off the subject.

Ideally, the sensor dome should face the opposite direction to that which the camera is pointing when metering is carried out as described below.

⚠ *Generally speaking, do not shade or cover any part of the sensor dome when metering incident light.*

As long as the metering activation button is kept depressed in the incident light mode, the reading and display indication is continuously updated. The actual light value is automatically locked and stored when the button is released (see following note).

⚠ *The locking and storing function is disabled in Reference mode (see 'Reference mode' below).*

The value remains stored until the metering activation button is pressed again. This condition is indicated in the display by an arrowhead, pointing at the metered and stored value, depending on which priority mode has been selected. If the meter is auto-shut-off it can be activated without losing the stored value by a short press on the meter activation button.

The figures 20 –22 show the display in EV mode (fig. 20), with shutter priority (fig. 21) and with aperture priority (fig. 22).

⚠ *As the PME45 functions in incident light metering mode just as a completely separate hand-held meter would (that is, it does not read the amount of light on the focusing screen), remember to adjust the exposure to compensate for any accessories that are attached to the lens that affect light transmission. This includes teleconverters, filters, extension tubes, etc.*

Reference mode

The Reference mode is very useful for keeping track of contrast differences or changes in light conditions in the subject area. It can be used with any of the PME45 light metering methods. The major applications, however, are with the spot metering or the incident light metering methods.

Reference mode & Spot metering

With spot metering in the reference mode a mid-grey (18% grey) subject area is metered and the light value is stored as reference value. By moving the metering spot to other subject areas the subject contrast can easily be checked. The indication range of ± 2EV corresponds approximately to the latitude tolerances of transparency film, for example, providing rapid and accurate control.

Reference mode & Incident light metering

This method is particularly suitable in rapidly changing light conditions, for example. When the exposure conditions have been determined, by means of the PME45 or any other light metering device, the reference value and the warning limits are stored in the PME45. With the reference level and the warning limits set and the sound warning on, the automatic warning indications are easily noticed when the light conditions change beyond the acceptable level.

Reference mode **On** (**P3** above) is indicated in the display by a central EV-scale from -2 to +2 . Pre-set difference limits are indicated by vertical marks beneath the scale. A reference light value is entered and stored by keeping the metering activation button depressed for 2s or longer. With the sound signal **On** (**P7** above), storing the light value is confirmed by two short beep signals. The value remains stored until a new value is entered.

With a reference value stored, the difference between that value and the value for the presently metered subject area is indicated by a row of marks beneath the central scale. Each mark corresponds to 1/3EV. When the difference exceeds the pre-set limit, the row of marks flash. If the sound warning is **On** it is actuated. When the difference range is set to zero, the sound warning is disabled.

A difference exceeding +2 EV or - 2 EV is indicated by a full row of marks, ended with an arrowhead. Fig. 19 shows the display in reference mode with warning limits at ± 1EV, sound warning **On**, F-max 2.8, shutter priority, permanent correction, spot metering and a light value difference exceeding -2EV but not -2.5EV. The aperture figures and the difference scale are flashing and the sound warning is beeping. If the difference is exceeding - 2.5EV the beeping is disabled.

Self-test

When the meter is activated in metering mode, pressing the ISO, F-max and Metering Method buttons simultaneously starts the self-test, which shows all characters and symbols in the display (as in fig 2). Pressing any button while the self-test is running results in a temporary display turn-off and a short beep. The self-test is shut off by simultaneously pressing the ISO, F-max and Metering Method buttons again.

Care, Service and Guarantee

HANDLING

Although ruggedly built and designed for long and troublefree professional use in most environments, the PME45 viewfinder is still an electro-optical instrument and should be treated with the same care as the camera itself. Protect it from rain, salt-water spray, sand, dust, grit, etc. Do not use it as a carrying handle or leave it where it can fall or roll about!

Whenever removed from the camera body the protective cover should be attached to the viewfinder to protect the optical surface of the prism and the retaining plate.

Always remove the battery when the PME45 is not to be used for a longer period.

CLEANING

Never use any kind of liquid when cleaning the PME45. Use a blower brush to remove dust on the glass surfaces and a lintfree cloth for the other surfaces. Do not touch the glass surfaces with your fingers!

SERVICE

Faultless equipment performance is essential for the professional user. Therefore it is advisable to check the function of your equipment before an important assignment. The "Hasselblad Authorized Service Center" has the expert staff and the specialized tools necessary to ensure that your equipment remains in perfect working order.

GUARANTEE

Provided that you bought your equipment from an authorized Hasselblad outlet, it is covered by an international guarantee for one year. Keep the guarantee document supplied with the equipment carefully.

Technical Specifications

Viewfinder

Viewfinder type:	45° Prism Viewfinder with built-in exposure meter.
Viewfinder image:	Unreversed, enlarged 2.5 x.
Eyepiece:	High eyepoint. Diopter adjustment -2 to +1 dioptres.
Weight:	440 g (15.4 oz) with battery.

Exposure meter

Operating modes:	Metering mode; Programming mode with 7 programmable functions.
Metering methods:	Spot metering, centre-weighted integral meter ing, incident light metering.
Metering areas:	Spot meter: central ∅12 (1/2 in.); Integral meter: approx. 35 x 45 mm (1.4 x 1.8 in.), vertical and horizontal resp.
Metering ranges, ISO 100:	Spot metering: +1 to +21 EV Integral metering: -1 to +19 EV Incident light metering: -3 to +17 EV
Display:	LCD type beneath the image area. Automatically controlled brightness
Battery type:	3 V Lithium type CR-2

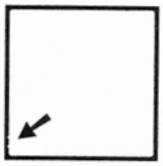
PME45 and focusing screens

Screen type	Integral metering	Spot metering
Acute-Matte D Standard:42204 For PME90/45: 42207 For 202FA/203FE: 42210 For 205 FCC: 42213	No restrictions	*Lenses without teleconverters:* No restrictions. *Lenses with teleconverters:* The exposure should be ***reduced*** by 1 EV (*) when the combined aperture is f/7 or smaller.
Acute-Matte D Microprism/split image 42215 Grid/split image: 42217 Grid/split image for 202FA /203FE: 42219	No restrictions	Will work for lenses only, and in the f/2 – f/4 range ***provided*** the split image line is in the horizontal position.
Acute-Matte (older type) 42165, 42167, 42203, 42170	For lenses or lens/teleconverter combinations with a maximum effective aperture of f/5.6 or larger: Exposure should be ***increased*** by 1/3 - 2/3 EV (*). For lenses or lens/teleconverter combinations with a maximum effective aperture of f/8 or smaller: Exposure should be ***reduced*** by 1/3 - 2/3 EV (*).	Will work for lenses only, and in the f/2 – f/4 range ***provided*** the split image line is in the horizontal position.
Other Hasselblad screens	*Correction factor must be determined by the user	*Correction factor must be determined by the user

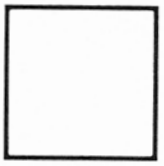
* When a correction factor has been determined, it can be pre-set on the viewfinder by using the procedure described in P5 (see under 'Programming mode').

⚠ *Incident light metering can be used without restrictions since it is independent of the focusing screen.*

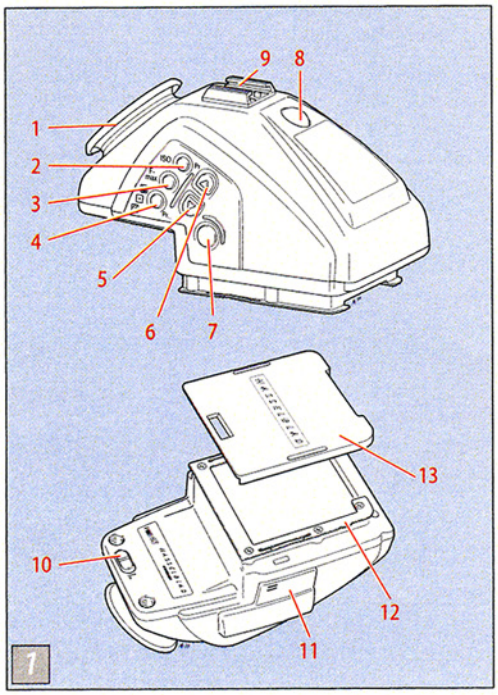
The Acute-Matte D series of focusing screens is strongly recommended, as the exposure system is calibrated according this type. Other focusing screens may provide uncertain results.



An Acute-Matte D focusing screen has notches in the frame.



An Acute-Matte focusing screen has no notches in the frame.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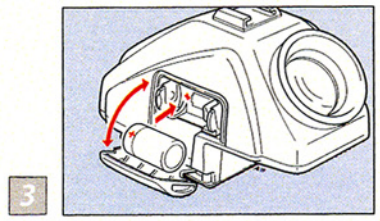

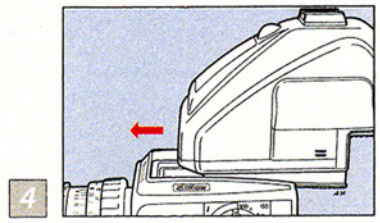

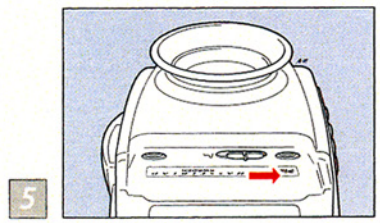

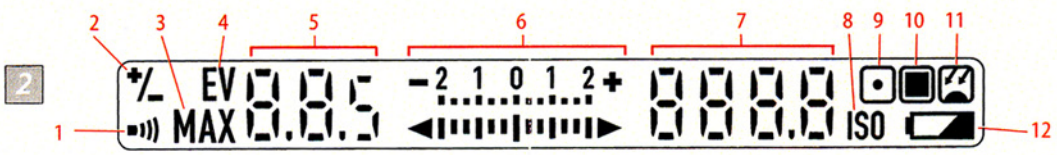
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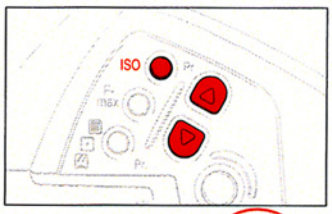
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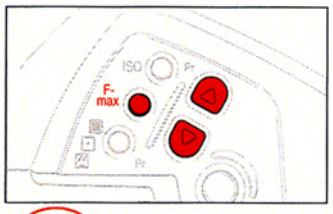
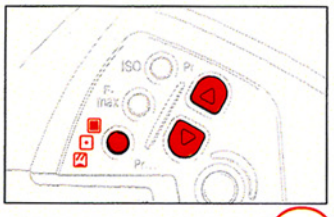
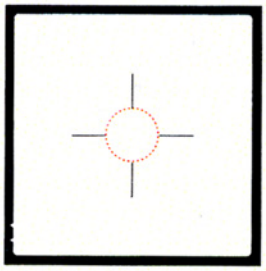
100 ISO

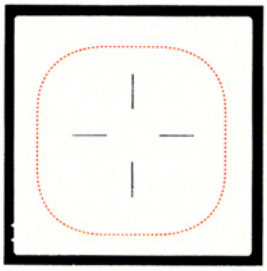
ISO

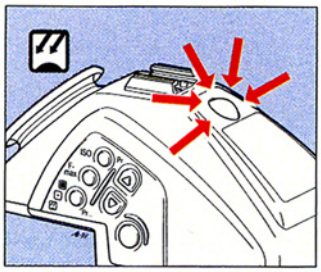

F-max
MAX 2.8

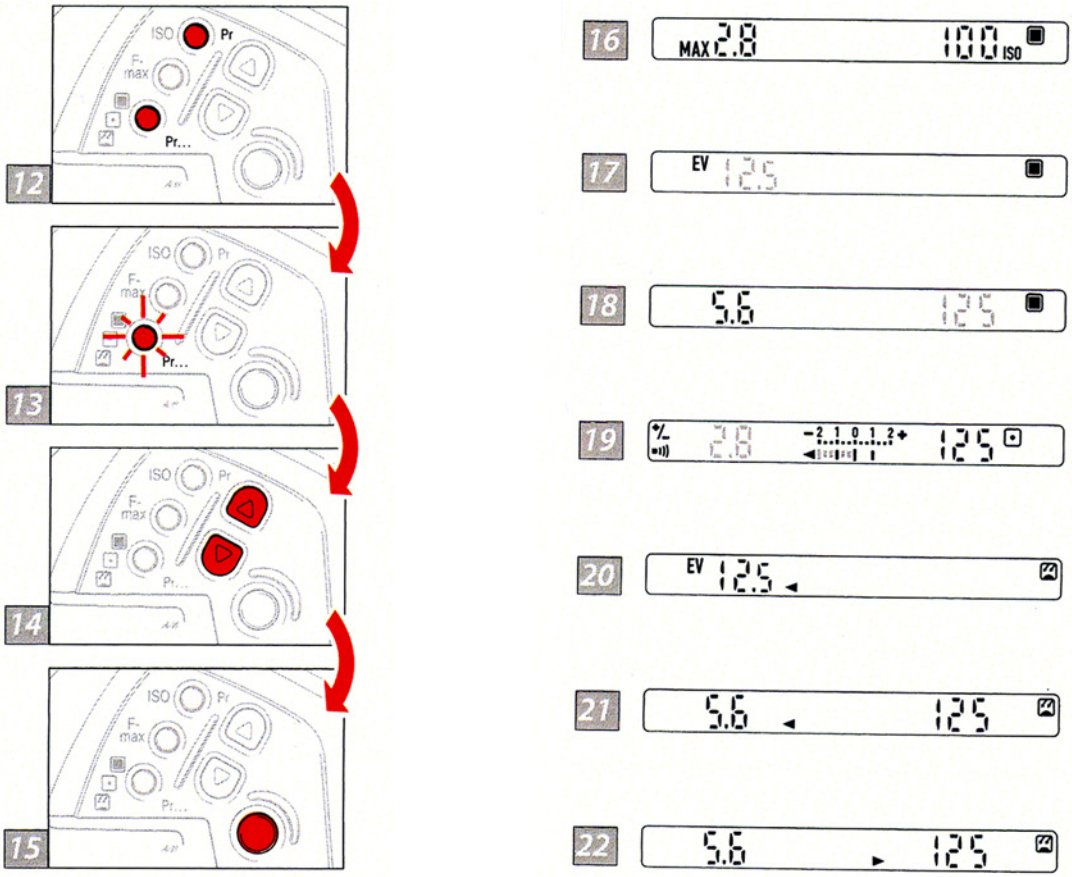
F-max







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Pr...
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EV 12.5
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5.6
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EV 12.5
21
5.6
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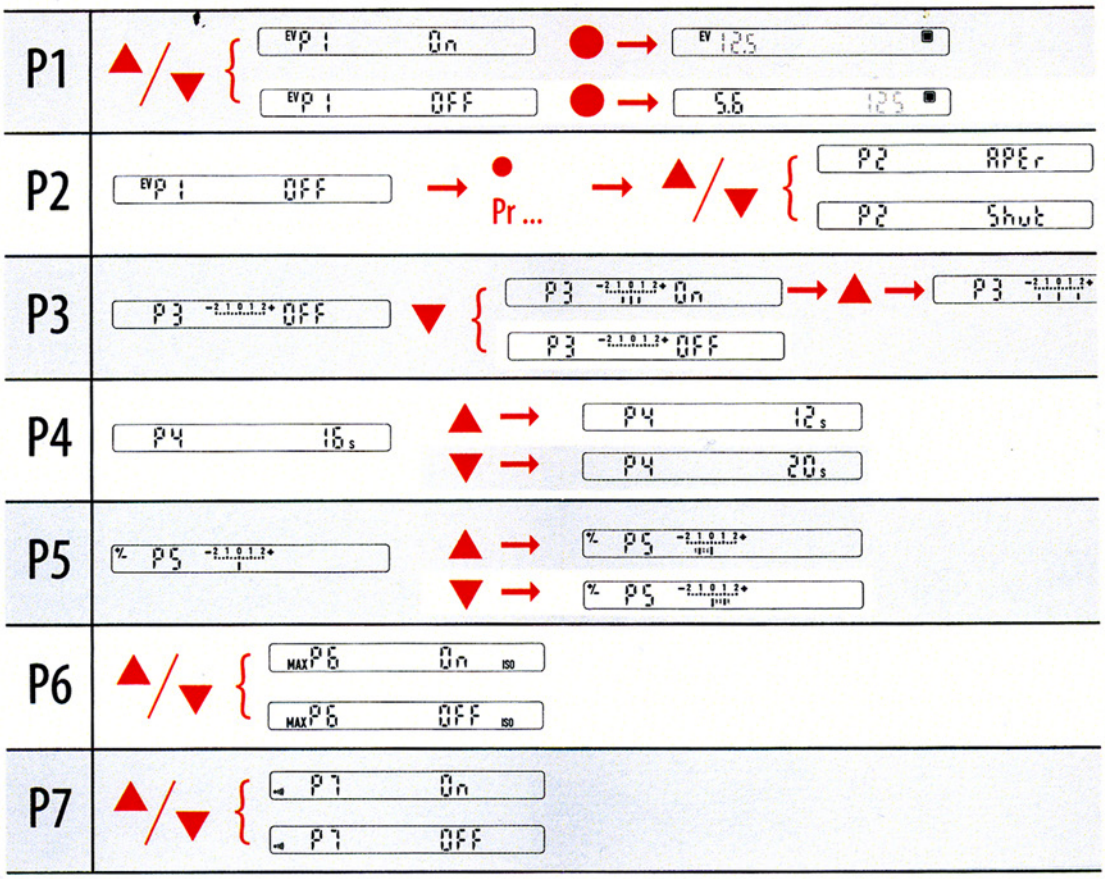
22
5.6
125


P1
EV P 1 On
EV P 1 OFF
EV 12.5
5.6 125
P2
EV P 1 OFF
Pr...
P2 APEr
P2 Shut
P3
P3 -2 1 0 1 2+ OFF
P3 -2 1 0 1 2+ On
P3 -2 1 0 1 2+
P3 -2 1 0 1 2+ OFF
P4
P4 16s
P4 12s
P4 20s
P5
% P5 -2 1 0 1 2+
% P5 -2 1 0 1 2+
% P5 -2 1 0 1 2+
P6
MAX P6 On ISO
MAX P6 OFF ISO
P7
P7 On
P7 OFF