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FLASH METER VI

Instruction Manual
Manuel d'instructions

The essentials of imaging
L'essentiel de l'image



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Manual abstract:

It provides a clear and simple graphical decision process for determining the exposure suited to the nature of the photograph. With the analyze scale, you can determine the proportion of flash light and ambient light in a single flash light measurement. The Flash Meter VI provides a memory function capable of storing up to 10 measured values; an averaging function that calculates an average exposure from stored measurement data; and a brightness difference function that displays deviation from the standard exposure. @@@@The clear and legible display eliminates reading errors. The results of spot measurements are shown on the digital display in the viewfinder and on the external data panel. The viewfinder features a dioptic adjustment mechanism. In addition to displaying a conventional 10-level intermediate f-number display, the Flash Meter VI provides an f-number direct reading display. This enables the measured value to be applied to any camera with an f-number direct reading display, eliminating the need for f-number conversion. Safety-related Icons The following icons are used in this manual to alert you to important information for preventing accidents due to improper handling of equipment. This denotes a safety-related caution.

Read the caution carefully to ensure safe use of the product. This denotes actions to be strictly avoided. Make sure to avoid these actions. This denotes actions to be avoided. Do not attempt to disassemble the product.

Safety Warnings and Cautions To ensure proper use of the instrument, take special care to observe the following handling instructions when using this instrument. Read this instruction manual carefully and keep it securely in a place where you can refer to it readily. WARNING indicates a danger that improper use of the instrument will lead to the death or serious injury of the user. Do not use the instrument in a place where inflammable or combustible vapors (e.g. gasoline) are present. Otherwise there is a risk of causing a fire. Do not throw batteries into fire. Do not recharge (nonrechargeable batteries), short circuit, heat or disassemble batteries. Otherwise, there is a risk of causing fire or injury due to an explosion or fluid leakage. Never attempt to disassemble or modify the instrument yourself. Otherwise there is a risk of causing fire or electric shock. Table of Contents Never attempt to look directly at the sun through the viewfinder of the meter. Doing so will damage your eyesight. The instrument should not be operated if it is damaged, or smoke or odd smells occur.

Doing so may result in a fire. In such situations turn off the power immediately, disconnect the AC adapter, and contact the nearest authorized service facility.

Names of Parts and Displays Data panel displays Viewfinder display Preparations Battery 1. Preparing 2. Inserting 3. Checking Setting film speed Setting instant film speed for test shooting Selecting a measuring method suitable for the light-receiving method 1. Incident light measurement 2. Spot measurement * Difference between incident-light and Spot (reflected-light) readings Basic Operation Select a measuring method Measuring ambient light 1. With a still camera 2. With a cine camera Measuring flash light 1.

With a sync cord 2. Without a sync cord (Incident light measurement) * Light Ratio Analyze function Special Functions Latitude display function * Combining incident light measurement and spot measurement Memory function S/A/H (Shadow/Average/Highlight) calculations Brightness difference function * Measuring lighting ratio using the Flat Diffuser * Using the Flash Meter VI as a simplified illuminance meter * Using the Flash Meter VI as a simplified luminance meter Custom settings mode (Alt mode) Accessories Care and Storage 1. Care 2. Storage Handling Instructions After Service Specifications 2 4 8 9 9 9 10 12 13 14 14 15 16 19 19 20 20 24 27 27 32 36 38 38 40 42 45 52 58 63 63 66 74 75 75 76 77 78 CAUTION instrument will lead to injury to the user or to property damage. Do not use any batteries other than those designated for use with the instrument.

When fitting batteries, make sure to align them according to the polarity shown on the instrument (plus "+" and minus "-"). Otherwise there is a risk that the batteries may leak or become damaged, leading to fire, injury or pollution of the surrounding environment. Do not walk around while looking into the viewfinder. Doing so may result in a fall or other accident. indicates a danger that improper use of the STATEMENT OF FCC COMPLIANCE This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules.

These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.

However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures: - Reorient or relocate the receiving antenna. - Increase the separation between the equipment and receiver. - Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. - Consult the dealer or an experienced radio/TV technician for help. This Class B digital apparatus complies with Canadian ICES-003. E1 Names of Parts and Displays Names of Parts and Displays Incident light receptor Spot measurement viewfinder Spot measuring button POWER button Dioptic adjustment dial Incident light measuring button Up/down dial Data panel ISO button LATITUDE button MODE button MEMORY button S/A/H button Sync terminal CLR (Clear) button Instant film ISO button Strap eyelet Battery chamber cover E2 E3 Names of Parts and Displays Names of Parts and Displays 1. Analog scale status indicator The left (L) and right (R) analog scales are used for incident light measurement and spot measurement, respectively.

2. Analog scale L The display of the pointers corresponds to measurement data and memory data for incident light measurement. It also corresponds to the standard exposure or latitude for incident light measurement or spot measurement. Upper limit The small digit to the right of the two-digit reading (f-number) on the digital readout Standard indicates a fractional value between stops. The value value shown on the analog display is rounded down or up to the nearest 0.5 stops. (Values of Lower limit 0.2 or lower are rounded down to 0; those of 0.3 to 0.7 are rounded to 0.5; and those of 0.8 or greater are rounded up to 1.) When a latitude range is indicated, all dots between the upper and lower limits are lit.



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3. Analog scale R The display of the pointers corresponds to measurement data and memory data for spot measurement. The small digit to the right of the two-digit reading (f-number) on the digital readout indicates a fractional value between stops. The value shown on the analog display is rounded down or up to the nearest 0.5 stops. (Values of 0.2 or lower are rounded down to 0; those of 0.3 to 0.7 are rounded to 0.5; and those of 0.8 or greater are rounded up to 1.) 4. Measurement data status indicator When a value measured with incident light measurement is displayed, the indicator appears. When a value measured with spot measurement is displayed, the indicator appears. Data panel displays 1. Analog scale status indicator 4. Measurement data status indicator 5.

S/A/H indicator 6. indicator Pointers 3. Analog scale R 2. Analog scale L 5. S/A/H indicator Holding down the S/A/H button while a measured value is displayed lights the S, A or H indicator corresponding to the currently selected mode. 6. indicator This indicator turns on when the LATITUDE button is pressed. For the purpose of explanation, the diagram above shows all indicators that light up on the LCD. E4 E5 Names of Parts and Displays Names of Parts and Displays 7. Digital readout When the measurement data display unit is set to "FNo. or "FNo. direct reading," the f-number (FNo.) is displayed. When the display unit is set to "EV," the exposure value (EV) is displayed in 0.1-stop increments. For flash light measurement, only the FNo. display mode is available. Holding down the incident light measuring button or spot measuring button (which activates the brightness difference function) in latitude display mode causes EV (deviation from the standard exposure) to be displayed. When the measuring button is released, the standard exposure is displayed. 8.

Shutter speed/framing-rate display Displays the shutter speed or frame rate specified with the Up/down dial. When shutter speed is between 0.6 to 50 sec, s is displayed; between 1 min. and 30 min., m is displayed. Setting range: Shutter speed: 30 min. to 1/16000 sec. (1, 1/2, 1/3 stops) Framing-rate: 8, 12, 16, 18, 24, 25, 30, 32, 64, 128 f/s 9. Analyze scale Displays the proportion of flash light in the total exposure value obtained from flash light measurement. For more information on the Light Ratio Analyze function, see p.

36. 10. Flash light measuring indicator This indicator appears together with the analyze scale in CORD and NON CORD mode. 11. Film speed display Displays the film speed setting. Holding down the instant film ISO button displays the Setting range: ISO 3 to ISO 8000 7. Digital readout 8. Shutter speed/framingrate display 9. Analyze scale 10. Flash light measuring indicator 11.

Film speed display 12. Measuring mode display indicator. For the purpose of explanation, the diagram above shows all indicators that light up on the LCD. 12. Measuring mode display Displays one of the three measurement modes (AMBI, CORD or NON CORD) according to the setting of the MODE button. Repeatedly pressing the MODE button cycles the measurement modes in the following sequence: AMBI CORD NON CORD AMBI E6 E7 Names of Parts and Displays Preparations Battery WARNING Do not throw batteries into fire. Do not recharge (nonrechargeable batteries), short circuit, heat or disassemble batteries. Otherwise, there is a risk of causing fire or injury due to an explosion or fluid leakage. Viewfinder display 15. Measuring index circle CAUTION Do not use any batteries other than those designated for use with the instrument.

When fitting batteries, make sure to align them according to the polarity shown on the instrument (plus "+" and minus "-"). Otherwise there is a risk that the batteries may leak or become damaged, leading to fire, injury or pollution of the surrounding environment. 14. Viewfinder FNo./EV display 13. Viewfinder indicator For the purpose of explanation, the above figure shows all available indicators on the display. 1. Preparing The instrument uses a single alkaline dry cell (LR-6/1.5 V). 13.

Viewfinder Same as the indicator indicator on the external data panel. 2. Inserting 14. Viewfinder FNo./EV display Displays an f-number (FNo.) or exposure value (EV) during spot measurement. 15. Measuring index circle The circle's internal area indicates the measuring area for spot measurement. 1 Remove the battery it chamber cover by sliding lightly in the direction of the arrow. the battery with the 2 Insert(+) and minus (-) ends plus oriented g ratio (See page 58.). Attaching the Spherical Diffuser Align the index mark (white circle) of the Spherical Diffuser with the index of the receptor head. Secure the diffuser by turning it in the direction indicated by the arrow until it stops. Removing the Spherical Diffuser Rotate the diffuser anticlockwise until it stops, and pull the diffuser to detach it. 2.

Spot measurement To measure a specific area of a photographic image, select the spot measurement method (with a light-receiving angle of 1 degree). To take a spot measurement, Measuring index circle & middot; rear of the subject generally make little or no contribution to illuminating the subject (Fig. 3(b)). So, for these situations, accurate exposure readings are made using a Flat Diffuser to capture only the illuminating light from the front of the subject. E16 E17 Preparations Spot (reflected-light) readings Spot (reflected-light) exposure readings directly measure the amount of light (luminance) reflected from the subject to the camera.

Unlike the case of incident-light readings, this method does not rely on the assumption of a standard subject reflectance of 18%. Based on the measured amount of light falling on the subject, the meter calculates the appropriate exposure value for reproducing the subject on film at a suitable medium density (midtone). This means that in Spot (reflected-light) readings, all subjects, regardless of their reflectance, i.e. regardless of whether they are bright or dark (white or black), will be reproduced at the same tonal density (midtone). For this reason, when making Spot (reflected-light) exposure readings, it is important to decide which area of the subject to measure, since the reflectance will generally vary quite widely over the composition under different conditions. There are various advanced Spot (reflected-light) readings, such as the highlight standard exposure method, where an exposure reading is taken of a bright (white) part of the composition; the shadow standard exposure method, where a dark (black) part of the composition is measured; and a method for determining exposure by evaluating the contrast of the subject and then forecasting how it will come out on film. To make full use of Spot (reflected-light) readings, refer to specialist books and photo magazines. You will find that selective metering can give you very precise control over exposure. Basic Operation Here we explain the basics of using the MINOLTA FLASH METER VI to take exposure readings.



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Select a measuring method Flash light refers to artificial momentary lighting from light sources such as electronic flashes, strobe flashes, and speed lights. Ambient light refers to continuous lighting from sources such as natural light (sunlight) and electric lights (including fluorescent lights). In either case, both incident-light exposure readings and spot-light exposure readings can be made. Are you using a still camera? Are you using a cine camera? With a still camera Alt mode Select TIME (P.72) Alt mode With a cine camera Select CINE (P.72) Type of light source to measure Ambient light Flash light (mixed light) Are you using a sync cord? With a sync cord Without a sync cord E18 AMBI mode (p. 20) CORD mode (p. 27) NON CORD mode (p. 32) AMBI mode (p. 24) E19 Basic Operation Basic Operation Measuring ambient light 1.

With a still camera Insert a battery (p. 9) Spot measuring button Set film speed (p. 12) 1 Prepare the meter to start taking readings. button 2 Press the MODEdisplay to switch the mode to AMBI. Changing the measuring mode retains the memory data but clears previous measurement data. the desired shutter 3 Specifywith the up/down speed dial. Shutter speed can be set within the range of 30 min. to 1/16000 sec. Turning the up/down dial upward increases the shutter speed. Turning it downward lowers the shutter speed.

The shutter speed can also be changed after meter readings. measuring 4 Press thetake readings. button to The meter takes measurements continuously as you hold down the incident light measuring button. The digital display on the data panel displays the measurement data. At the same time, the measurement data are also displayed on the dot indicator of the analog scale L. When the measuring button is released, the meter stops taking measurements and displays only the latest measurement result. The meter takes measurements continuously as you hold down the spot measuring button. The digital display in the viewfinder displays the measurement data. At the same time, the measurement data are also displayed on the dot indicator of the analog scale R. When the measuring button is released, the meter stops taking measurements.

The latest measurement result appears on the digital display of the external data panel and on the dot indicator of the analog scale R display. Pressing the CLR button clears the measurement data. E21 E20 Incident light measuring button Basic Operation Basic Operation Display example Display units are FNo. Display units are EV If you set your desired shutter speed, the f-number required for proper exposure at that shutter speed is displayed on the digital readout.

The reading is also displayed on the analog scale by a pointer. Ex.: The display shows a reading of F4.0+0.2-stops. If the f-number reading is outside the meter's display range, "FNo.

" blinks and the display shows either " O " (over-range error) or " U " (under-range error). At the same time, the over-range/under-range error indicator (or) appears on the analog scale. If the reading is over the display range, reset the shutter speed to a faster value; if it's under the display range, reset to a slower shutter speed. In this way, you will be able to determine an appropriate combination of shutter speed and f-number. If the f-number reading exceeds or falls below the meter's measuring range, the display shows "E.

o." (over-range error) or "E.u." (under-range error). An exposure value is displayed regardless of the shutter speed setting.

The dot indicator of the analog scale indicates the fnumber corresponding to the shutter speed setting. Ex.: The display shows a reading of 11.2 (EV). E22 If the f-number reading exceeds or falls below the meter's measuring range, the display shows "E.o." (over-range error) or "E.u." E23 (under-range error).

Basic Operation Basic Operation 2.

With a cine camera Insert a battery (p. 9) Set CINE mode (p. 72) The default setting of TIME/CINE mode is "TIME." In the custom setting (Alt) mode, change "TIME" to "CINE." Set film speed (p. 12) If the opening of your camera's shutter is not 180°, the film speed should be adjusted as follows: Shutter opening and film speed adjustment Shutter opening 160° 220° Film-speed adjustment -1/3 +1/3 1 Prepare the meter to start taking readings. 2 In CINE mode, the measuring mode is fixed to AMBI. rate 3 Specify the frame the of your camera with up/down dial. Eight framing-rates can be set: 8, 12, 16, 18, 24, 25, 30, 32, 64, and 128 frames/sec. (The appropriate shutter speed, corresponding to a shutter opening of 180°, is set automatically by the exposure meter.

) Measuring mode cannot be changed. -1/3: Set the film speed to 1/3 stop slower than the film speed you are using. (Ex.: ISO 400 to 320) +1/3: Set the film speed to 1/3 stop faster than the film speed you are using. (Ex.

: ISO 400 to 500) E24 E25 Basic Operation Basic Operation Measuring flash light 1. With a sync cord Insert a battery (p. 9) Set film speed (p. 12) measuring 4 Press thetake readings. button to The meter takes measurements continuously as you hold down the incident light measuring button.

The digital display on the data panel displays the measurement data. At the same time, the measurement data are also displayed on the dot indicator of the analog scale L. When the measuring button is released, the meter stops taking measurements and displays only the latest measurement result. The meter takes measurements continuously as you hold down the spot measuring button. The digital display in the viewfinder displays the measurement data. At the same time, the measurement data are also displayed on the dot indicator of the analog scale R. When the measuring button is released, the meter stops taking measurements. The latest measurement result appears on the digital display of the external data panel and on the dot indicator of the analog scale R display.

1 Prepare the meter to start taking readings. button 2 Press the MODEdisplay to switch the mode to CORD.

Changing the measuring mode retains the memory data but clears previous measurement data. Settings for shutter speed and display units are automatically adjusted as follows. 1/1250 to 1/16000 sec.: adjusted to 1/1000 sec. EV: adjusted to FNo. Pressing the CLR button clears the measurement data. * Display example is the same as the case of a still camera. (Refer to page 22.) E26 E27 Basic Operation Basic Operation Display example the flash sync 3

Attachmeter's sync cord to the terminal. Take care when connecting the flash to the meter, as the flash may fire.

the desired shutter 4 Specifywith the up/down speed dial. Shutter speeds can be set within the range of 30 min. To 1/1000 sec. (The speed can be set within the flash sync speed range of your camera.



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) Turning the up/down dial upward increases the shutter speed.

Turning it downward lowers the shutter speed. The shutter speed can also be changed after meter readings. measuring 5 Press the take a reading button to When the flash fires, the meter takes a single measurement and displays the measured value on the digital display. The reading is also displayed on the analog scale.

Pressing the CLR button clears the measurement data. If no flash is connected to the sync terminal, or if the flash does not fire normally because it is not fully charged, the meter cannot take a flash light measurement. Before starting measurement, make sure that the flash is connected to the sync terminal and the flash has been fully charged. The f-number corresponding to the shutter speed set in step 4 is displayed on the digital readout as well as on the analog scale with a pointer (). if the trigger voltage of the flash is too low). Set film speed (p. 1/1250 to 1/16000 sec.: adjusted to 1/1000 sec. to 1/1000 sec. Turning it downward lowers the shutter speed.

In NON CORD mode, the meter cannot take a spot measurement. Pressing the incident light measuring button cancels the error code and sets the meter to standby state. Pressing the CLR button clears the measured value. To take further readings, repeat the process from step 4. If the flash does not fire within approx. Then, even if you fire the flash, no reading will be made. To avoid this risk, take readings in CORD mode using a synch cord. Reading of F2.80 at a shutter speed of 1/60 sec. These settings can be changed in custom settings mode.

For details of custom settings mode, see p.66. The LATITUDE display function is related to the S/A/H (shadow/average/highlight) exposure calculation function (p. 45) and the brightness difference function (p. 52).

The following provide a thorough description of these functions. measurement. 1 Take the LATITUDE Press button. measurement 2 Press the take a button to measurement of the desired measuring area. While the measuring button is held down, the meter continuously takes measurements and displays the exposure difference between the measured value and the standard exposure described in Step 1.

When the measuring button is released, the standard exposure is displayed. See the description of the "Brightness difference function" on p. 52. Pressing the LATITUDE button again cancels the latitude display mode and causes the latest measurement data to be displayed. Pressing the CLR button cancels latitude display mode and clears the measurement data and standard exposure. The indicator appears, and the measured value is fixed. The latitude based on this measured value is displayed on the dot indicator of the analog scale L. Pressing the LATITUDE button while holding down the S/A/H button causes the latitude to be based on the standard exposure calculated from memory data according to S, A or H mode, instead of the current measurement result. E38 E39 Special Functions Special Functions spot 3 Take area of measurement to of the the subject be emphasized, such as the highlight or shadow areas, and store the measured values in memory. Combining incident light measurement and spot measurement The Flash Meter VI offers a comparative display of the results of incident light measurement and spot (reflected light) measurement.

Used with the latitude display function, the meter provides a clear and simple graphical decision process for determining an exposure suited to the nature of the photograph. 4 By comparing the spot measurement result displayed on the analog scale R with the latitude displayed on the analog scale L, you can ensure that the exposure of the spot you are emphasizing is within the latitude range. If the measurement result is outside the latitude range, adjust the lighting conditions and take another spot measurement. light 1 Take an incident determine measurement to the standard exposure. LATITUDE 2 Press theselect latitude button to display mode. A latitude based on the standard exposure measured in Step 1 is displayed on the dot indicator of the analog scale L. The result of the spot measurement is displayed on the pointer of the analog scale R. If the measurement result is outside the latitude range, the dot indicator blinks. While holding down the spot measuring button, you can monitor the deviation from the standard exposure in the viewfinder display with a precision of 0.1 EV.

(See p. 52.) If the measurement result is outside the latitude range, the EV indicator blinks. E40 E41 Special Functions Special Functions Memory function To store measurement data in memory of the Flash Meter VI, simply press the MEMORY button. Up to ten pieces of data (including incident light measurement data and spot measurement data) can be stored.

To display the incident light measurement data stored in memory on the pointer of the analog scale L, simply press the incident light measuring button. To display the spot measurement data stored in memory on the pointer of the analog scale R, simply press the spot measuring button. With the memory function, you can check the lighting ratio graphically on the analog scale. This function is useful for lighting adjustments. (See p.

58.) the CLR button 1 Press existing memory to clear data. first 2 After taking the press the measurement, MEMORY button. When the MEMORY button is released, the measured value is stored in memory and the pointer corresponding to the measured value light up. second 3 After taking the press the measurement, MEMORY button to store the second measurement result in memory. Repeat the above steps as many times as required. Press and hold the MEMORY button to display the number of measurement results stored in memory. Press and hold the MEMORY button to display the number of measurement results stored in memory. E42 E43 Special Functions The measured value is displayed on the digital display. If the latest measurement is an incident light measurement, the pointers corresponding to the measured value on the digital display appear on the analog scale L.

If it is a spot measurement, the pointers corresponding to the measured value on the digital display appear on the analog scale R.

The current data will not be stored in memory. To delete all values from memory, press the CLR button.

E45 Special Functions Average exposure For spot measurement, the meter calculates the average of the maximum and minimum measurements stored in memory. For incident light measurement, the meter calculates an average exposure from up to ten measurements stored in memory. Special Functions Hold down the S/A/H button to display the average of the memory data on the digital display and on the pointer of the analog scale (L). <Display example> While the S/A/H button is held down: Aperture for averaged exposure Number of values in memory 1 Take measurements of up to ten points on the subject, including highlight and shadow areas, and store the measurement data in memory.



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the 2 Set with calculation mode to "A" the up/down dial while pressing the S/A/H button. When the incident light measurement is selected, the calculation mode is automatically set to "A". (It cannot be set to "S" or "H".

) A measured value cannot be used for the average exposure calculation unless it has been stored in memory. If there is no value in memory and the current measurement value is displayed on the digital readout: the measurement value is stored in memory and used in average exposure calculations. If there is no value in memory and no reading on the digital readout: no exposure value is calculated. E46 E47 Special Functions Shadow calculations (for spot readings only) When you want to reproduce some detail in the darkest areas of a composition (shadow areas) without blocking them out, take a spot reading of the shadow area and use the meter's shadow exposure calculation function to determine the appropriate exposure for the shot. Special Functions Hold down the S/A/H button to view the result of the shadow-based exposure calculation on the digital display and on the dot indicator of the analog scale L.

If there are any measurement values already stored in memory, the meter will determine the exposure for the darkest area measured and stored in memory. The meter can only make shadow exposure calculations with measurements stored in memory. If there are no measurements stored in memory, the meter determines the appropriate exposure based on the latest measurement (displayed reading). If you take photographs according to the aperture given by the shadow exposure calculation, the shadow areas will be accurately reproduced on film as shadows (lower latitude). <Display example> While the S/A/H button is held down: Aperture for shadow exposure the 1 Take a reading of the highlight area subject.

down 2 While holding set the S/A/H button, calculation mode to "S" with the up/down dial. Apertures for measurements in memory In the above example, the shadow exposure for the darkest measured area (aperture: F2.0+0.0) was determined. E48 E49 Special Functions Highlight calculations (for spot readings only) When you want to reproduce some detail in the brightest areas of a composition (highlight area), without washing them out, take a spot reading of the highlight area and use the meter's highlight exposure calculation function to determine the appropriate exposure. Special Functions Hold down the S/A/H button to display the result of the highlight-based exposure calculation on the digital display and on the dot indicator of the analog scale L. If there are any measurement values already stored in memory, the meter will determine the exposure for the brightest area measured and stored in memory. The meter can only make highlight exposure calculations with measurements stored in memory. If there are no measurements stored in memory, the meter determines the appropriate exposure based on the latest measurement (displayed reading). If you take photographs according to the aperture given by the highlight exposure calculation, the highlight areas will be accurately reproduced on film as highlights (upper latitude).

<Display example> While the S/A/H button is held down: the 1 Take a reading of the highlight area subject. down 2 While holding set the S/A/H button, calculation mode to "H" with the up/down dial. Apertures for measurements in memory Aperture for highlight exposure In the above example, the highlight exposure for the brightest area measured (aperture: F16+0.5 stops) was determined. E50 E51 Special Functions Special Functions Measuring brightness difference relative to an exposure reading reading and 1 Take the LATITUDE then press button. In AMBI mode Pressing the incident light measuring button or the spot measuring button takes continuous readings. As each reading is taken, the exposure difference between the current measurement value and the fixed measurement value of step 1 is displayed. When you release the measuring button, the fixed reference value of step 1 is displayed. In CORD mode Each time you press the incident light measuring button or the spot measuring button, the flash is fired and a single exposure reading is taken. While the measuring button is pressed, the exposure difference between the current measurement value and the fixed measurement value of step 1 is displayed.

When you release the measuring button, the fixed measurement value of step 1 is displayed again. (The data panel display is the same in AMBI mode.) If you press the LATITUDE button, the display reverts to normal display mode. (The value measured in step 1 is stored in memory.) Pressing the CLR button cancels latitude display mode and clears the measurement data and standard exposure.

Brightness difference function To fix the displayed measurement result or calculation result, press the LATITUDE button after taking an ordinary measurement or while holding down the S/A/H button. When the next measurement is taken with the meter, the exposure difference between the fixed measurement/calculation result and the new measurement result appears on the digital display. This function is useful for photography, with the measurement value and the aperture value taken by holding the S/A/H button or for ordinary measurement. It allows you to quickly check the brightness differences between one part of a composition and another, (e.g.

front and background), or to measure the unevenness of illumination over a scene, by directly showing exposure differences between the current reading and a reference exposure value (previous measurement value or aperture value fixed using the LATITUDE button). This function can also be used for directly measuring the lighting ratio of a scene, by showing the exposure difference between the shadow and highlight areas of a composition, for highly precise lighting designs. The brightness difference function can be used in AMBI mode and CORD mode. Exposure differences cannot be displayed in NON CORD mode, even if you take readings. Displayable range of exposure differences is $\pm 10.0\text{Ev}$ (0.1Ev steps). turns on to indicate the measurement value is fixed. (In this case, the fixed measurement value is F8.0+0.

9-stops.) measuring 2 Press the take a reading of button to the area whose brightness you want to compare with the fixed value. The measurement result will not appear on the viewfinder display if the incident light measuring button is pressed. The measurement result will appear on the viewfinder display if the spot measuring button is pressed. The external data panel displays "- - - ." E52 E53 Special Functions If the incident light measuring button is used to take the measurement described in Step 1 and to monitor the exposure difference: Measured value for the point monitored (When AMBI mode is selected, the meter continuously takes measurements as long as the measuring button is held down.



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The positions of the lit dots change with the measurement result.) Indicates that the exposure of the monitored point is less than the fixed measurement result by 1.5 stops. (When AMBI mode is selected, the meter continuously takes measurements as long as the measuring button is held down.

The dot lighting position changes according to the measurement result.) Special Functions If the spot measuring button is used to take the measurement described in Step 1 and to monitor the exposure difference: Fixed measurement result Fixed measurement result Measured value for the point monitored (When AMBI mode is selected, the meter continuously takes measurements as long as the measuring button is held down. The positions of the lit dots change with the measurement result.) Indicates that the exposure of the monitored point is less than the fixed measurement result by 1.5 stops.

(When AMBI mode is selected, the meter continuously takes measurements as long as the measuring button is held down. The dot lighting position changes according to the measurement result.) When the measuring button is released: When the measuring button is released: Fixed measurement result The display returns to the fixed measurement result display mode. Fixed measurement result Measured value for the point monitored (Measurement taken when the measuring button is released) The display returns to the fixed measurement result display mode. E54 E55 Special Functions Monitoring exposure difference after shadow-based exposure calculation spot measurement 1 Take a shadow area of the of the subject.

down 2 While holding set the S/A/H button, calculation mode to "S" with the up/down dial. measuring 4 Press the take a reading of button to the area whose brightness you want to compare with the fixed value. Special Functions Fixed aperture value Measurement value of the shadow area measured in Step 1 3 Press the LATITUDE down button while holding the S/A/H button. The indicator appears and the calculated standard exposure is fixed. (In this case, the standard exposure is fixed to F4.0 +0.7 stops.) The difference from highlight based exposure and average exposure for spot measurement, and from average-based exposure for incident light measurement, can be displayed in the same manner. The measurement result will not appear on the viewfinder display if the incident light measuring button is pressed. The measurement result will appear on the viewfinder display if the spot measuring button is pressed.

The external data panel displays "- - -" AMBI mode When the incident light measuring button or spot measuring button is held down, the meter continuously takes measurements and displays the difference between the measurement result and the exposure determined in Step 3. When the measuring button is released, the exposure determined in Step 3 is displayed. CORD mode Each time the incident light measuring button or spot measuring button is pressed, the flash fires and the meter takes a single measurement. While the measuring button is held down, the difference between the measurement result and the exposure determined in Step 3 is displayed. When the measuring button is released, the exposure determined in Step 3 is displayed. (The indication on the data panel is the same as that for AMBI mode.) Press the LATITUDE button to return the meter to the original measurement display mode. Pressing the CLR button cancels latitude display mode and clears the measurement data and standard exposure. Current measurement value (In AMBI mode, measurements are made continuously while the measuring button is pressed.

The positions of the pointers change accordingly.) This shows that the currently measured area is 2.0 stops brighter than the fixed aperture value. (In AMBI mode, measurements are made continuously while the measuring button is pressed. The reading on the digital readout changes accordingly.

) When the measuring button is released: Fixed aperture value Measured value for the point being monitored (Measurement taken when the measuring button is released) Measurement value of the shadow area measured in Step 1 The display returns to the fixed exposure calculation display mode. E56 E57 Special Functions Special Functions Flat Diffuser to the 1 Attach a of the instrument. receptor See page 14 for details on how to attach a Flat Diffuser. Measuring lighting ratio using the Flat Diffuser The lighting ratio is the brightness ratio between the highlight and shadow areas of a composition. For example, if the difference in measurement values (exposure difference) obtained by an incident light measurement is one stop, the lighting ratio is 2:1; if it's two stops, the ratio is 4:1.

In general, lighting ratios from 4:1 to 8:1 (exposure difference of 2 to 3 stops) are considered best when using color films, since these ratios allow colors to be reproduced naturally. By adjusting the lighting ratio, you can control the subject's highlight-to-shadow relationship or the relationship between the main subject and the background when photographing people or objects in a studio. To check lighting characteristics such as the brightness difference between a main subject and background, a Spherical Diffuser can be used in most cases. However, if a subject is receiving light from different directions, it is necessary to measure the brightness of the individual light sources illuminating it, using a Flat Diffuser (incident light measurement, see page 14). This allows control over the shadow areas of the main subject. By replacing a Spherical Diffuser with a Flat Diffuser, the brightness of light sources illuminating a subject can be measured individually, and the lighting ratio can be checked easily. In addition, you can use the meter's memory function and brightness difference function to read these values easily. Battery (p. 9) Film speed (p. 12) the meter 2 Prepare reading.

for taking a 3 Set the measuring mode with the MODE button according to the light source to be measured. the desired shutter 4 Specify with the up/down speed dial. E58 E59 Special Functions Special Functions light 5 Press the incident while measuring button holding the meter near the subject with the Flat Diffuser facing the main light source. 6 Press the MEMORY button to store the measurement value. light 7 Press the incident while measuring button holding the meter near the subject with the Flat Diffuser facing the fill light source. Block out all light from the main light source with your hands or other means, so that it does not directly fall on the Flat Diffuser, or if possible, turn off the main light source. The two pointers on the analog scale L indicate the brightness of the main light source and the brightness of the fill light source. Read the difference in exposure of the two values. The reading accuracy of the analog scale L is 0.5 stops.

E60 E61 Special Functions Using the brightness difference function of the instrument, the lighting ratio can be read with an accuracy of 0.



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1 stops. Alternatively, instead of storing the readings in memory, as explained in step 6 on page 60, the following method can be used: Special Functions Using the Flash Meter VI as a simplified illuminance meter Attach the Flat Diffuser (optional accessory), to the meter. In AMBI mode, hold the Flat Diffuser parallel to the surface you want to measure. Then, press the incident light measuring button and read the EV value from the meter.

Now, look up the approximate illuminance from the EV-lx conversion table on the next page. Film speed is set to ISO100 (p. 12) and display units are set to EV (p. 69). If the instrument has been recalibrated, set it back to the standard setting of 0 using Alt mode.

If you need to measure illuminance precisely, use the MINOLTA DIGITAL ILLUMINANCE METER T-10, which is designed specifically for this function. is on 6 Press the LATITUDE button. for displayed light the data is panel, and the exposure reading the main source fixed. a reading with the Flat Diffuser facing towards the fill 7 Takesource. While holding down the incident light measuring light button, the difference (or lighting ratio) between the fill light source exposure and main light source exposure, which was fixed in step 6, is displayed directly on the digital readout. Read the value. The lighting ratio of main light source to fill light source can be calculated from the following table. Table for determining lighting ratio Brightness differences (exposure differences) + 1.0 (1 stop) + 2.0 (2 stops) + 3.

0 (3 stops) + 4.0 (4 stops) + 5.0 (5 stops) + 6.0 (6 stops) + 7.0 (7 stops) Brightness ratio between main light source and fill light source (lighting ratio) 2:1 4:1 8:1 16:1 32:1 64:1 128:1 Using the Flash Meter VI as a simplified luminance meter The Flash Meter VI can also function as a simplified luminance meter. To determine approximate luminance, press the spot measuring button in AMBI mode to take a measurement of the desired area of the subject. Read the resulting EV value in the EVcd/m2 conversion table. Film speed is set to ISO100 (p. 12) and display units are set to EV (p. 69).

If the instrument has been recalibrated, set it back to the standard setting of 0 using Alt mode. To determine accurate luminance, use the LS-100/LS-110 Minolta Luminance Meter, a dedicated luminance measuring device. The formula for calculating the lighting ratio is: Main light: Fill light = 2 Difference: 1 "Difference" can be either brightness difference in ±EV or difference in stops between apertures. E62 E63 Special Functions EV-lx conversion table (with Flat Diffuser attached) Decimal Integer Special Functions EV-cd/m2 conversion table Decimal Integer How to read the EV-lx conversion table The EV-lx conversion table lists the integer component of EV values vertically and the decimal fraction components of EV values horizontally. For example, if the meter displays a reading of EV 10.

2, the row for the integer 10 and the column for the decimal 0.2 intersect at 2900 lx, the corresponding approximate illuminance value. How to read the EV-cd/m2 conversion table The EV-cd/m2 conversion table lists the integer component of EV values vertically and the decimal fraction components of EV values horizontally. For example, if the meter displays a reading of EV 10.2, the row for the integer 10 and the column for the decimal 0.

2 intersect at 160 cd/m2, the corresponding approximate luminance value. E64 E65 Special Functions Special Functions 1) Exposure correction value This sets the exposure correction value. The set value is displayed when you turn the power on. You can adjust this setting to recalibrate the meter to your choice of exposure values Custom settings mode (Alt mode) The operation settings of the Flash Meter VI, such as exposure correction value and shutter speed increment settings, can be customized to suit your preferences. Selecting Alt mode To set the meter to "Alt" mode, turn on the power by pressing the POWER button while holding down either the incident light measuring button, spot measuring button, ISO button, S/A/H button, LATITUDE button or MODE button.

In "Alt" mode, you can change the settings with the incident light measuring button, spot measuring button, or the ISO, S/A/H, LATITUDE and MODE buttons. Use the up/down dial to change the preset values. To register the custom settings, turn off the power after entering or selecting the desired values. Setting Exposure correction value (for incident light measurement) Exposure correction value (for spot measurement) Shutter speed increments Display unit Operation Incident light measuring button + Power-ON Spot measuring button + Power-ON ISO button + Power-ON S/A/H button + Power-ON LATITUDE button + Power-ON MODE button + Power-ON Setting range -10.0 to +10.

0 Default setting 0 an exposure 1 To specify value for correction incident light measurement, turn on the power while pressing the incident light measuring button. To specify an exposure correction value for spot measurement, turn on the power while pressing the spot measuring button. You can also specify a correction value for each measurement mode by pressing the corresponding measuring button in Alt mode. exposure 2 Specify an value with the correction up/down dial. The displayed value can be changed in 0.1-EV increments/decrements. The setting range is ±10.0Ev. Once an exposure correction value is changed, it is reflected in the data stored in memory. After an exposure correction value has been specified, the set value is displayed for 0.

5 seconds at power-on. After correction values for both incident light measurement and spot measurement have been specified, these settings are displayed for 0.5 seconds each in sequence. Correction value Correction value for incident light for spot measurement measurement -10.0 to +10.

0 0 1, 1/2, 1/3 FNo. + fraction, FNo. direct reading, EV H: +0.1 to +10.0 S: -0.

1 to -10.0 H: +0.1 to +10.0 S: -0.1 to -10.0 1 FNo. + fraction +2.3 -2.7 +2.3 -2.

7 TIME Latitude Correction value Correction value for incident light for spot measurement measurement TIME/CINE TIME, CINE E66 E67 Special Functions 2) Shutter speed increments Choose between increments of 1/2-stop, 1/3-stop and 1-stop, according to the shutter speed settings your camera. 3) Display unit Select the desired display unit. Special Functions while 1 Turn the power on button, or pressing the ISO press the ISO button in Alt mode. 2 Turn the up/down dial to set the step value. Choose from values of 1.0 (1), 0.5 (1/2) and 0.3 (1/3). 1 Turn on the power while pressing the S/H/A button, or press the S/H/A button in Alt mode. 2 Select the desired display unit with the up/down dial.

Select any of the following display modes: FNo. 000: Displays intermediate readings between f-numbers as FNo. + 1/10 stops. FNo. 0.

0: Displays direct reading of an intermediate reading between f-numbers. (e.g., F3.5, F4.

5) EV 00.



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0: Displays an EV value in 1/10-stop increments. The pointer of the analog scale displays "FNo.," even when the display unit is set to "EV." When CORD or NON CORD mode is selected, the display mode is set to "FNo.000". E68 E69 Special Functions 4) Latitude Specify an upper limit (H) and lower limit (S) for latitude display mode. Specify a shift value (H) for highlight-based exposure calculation and a shift value (S) for shadow-based exposure calculation. Special Functions 1 Turn on the power while pressing the LATITUDE button, or press the LATITUDE button in Alt mode. 3 Press the LATITUDE button.

5 Press the LATITUDE button. 7 Press the LATITUDE button. value 2 Specify the Hdial. with the up/down value 4 Specify the Sdial. with the up/down the H value 6 Specifyfilm with the for instant up/down dial. the S value 8 Specifyfilm with the for instant up/down dial. Press the LATITUDE button again to return to Step 2. E70 E71 Special Functions 5) TIME/CINE setting Switches between shutter speed and framing-rate in AMBI mode Note that it is not possible to switch to another measuring mode (CORD or NON CORD) while the framing-rate setting is active. @@1. Turn the power on.

2. Hold down the POWER button for approx. 2 sec. while pressing the CLR button. The power turns off and the default settings are restored. The shutter speed is set to 1/60 sec. Both the film speed and instant film speed are set to ISO 100. @@Cord III Care and Storage 1. @@Do not use solvents such as thinners or benzene at all. @@3) Never attempt to disassemble the meter if it becomes damaged or faulty.

Please contact a Minolta Service Facility. With this diffuser attached, the Flash Meter VI can be used to measure lighting contrast (ratio of brightness) and exposure for flat subjects. This is a 5-meter long cord that connects together the Flash Meter VI, flash unit and camera's sync terminal. Using this cord, you can take flash exposure readings by simply releasing the shutter, without changing any connections. 2. Storage 1) The meter should not be stored in areas where it may be subject to temperatures higher than 55°C (131°F) or lower than -20°C (-4°F), or in areas subject to high humidity. @@@@Set exposure correction to +3.0Ev. @@In such situations, be careful to protect the meter as much as possible. 2) Do not subject the meter to shock or vibration.

For protection, store the meter in its case when carrying it. 3) Be careful not to damage or soil the Spherical Diffuser; otherwise, the meter will not take accurate measurements. 4) Do not press on or damage the data panel. 5) Avoid using the meter under the following temperature conditions or under the following situations, since it is composed of precision electronic parts such as LSIs and LCD elements. A) Do not use the meter in areas subject to temperatures higher than 50°C (122°F) or lower than -10°C (14°F). B) When the temperature of the meter falls below -10°C (14°F), the display response becomes very slow and the display may become very difficult to read. * At temperatures between 0°(0°F) and -10°C (14°F), the display response is relatively slow, but there is no risk to the meter in such environments. C) When the temperature of the meter rises above 50°C (122°F), the display may become very difficult to read and the data panel will turn black. * If the meter is left under direct sunlight in the summer or near a heater, the temperature of the meter may get much hotter than the surroundings. So avoid this situation.

Handling Instructions This instrument contains a microprocessor. If it is affected by electromagnetic interference or other influences, it may fail to function properly. If this happens, remove the battery and replace it. In such a case, remove and reinstall the battery. Turn on the power again, and reset the meter to the default settings (by holding down the POWER button while pressing the CLR button).

If the following error code appears, the calibration data have been damaged and the meter must be repaired. After Service 1) Parts for repair of this product shall be available for at least seven years from the time of purchase. 2) For further details regarding After Service, please contact a Minolta Service Facility.

E76 E77 Specifications Hand-held exposure meter for measuring ambient and flash light Reception method Incident-light and spot reflected-light readings Receptors Incident-light readings: Spherical Diffuser, Flat Diffuser, Swivels 270° Spot reflected-light: angle 1° Receptor element Silicon photocell Measuring modes AMBI mode: Ambient light CORD mode: Flash light using a sync cord NON CORD mode: Flash light without a sync cord (for incident-light reading only) Measuring range (ISO100) Ambient light Incident-light readings: EV-2.0 to 19.

9 Spot reflected-light: Ev2.0 to 24.5 Flash light Incident-light readings: FNO. 1.0 to 128+0.9 stop Spot reflected-light: FNO. 2.8 to 128+0.9 stop Measuring distance 1.3 m to infinity () (for spot measurement) Viewfinder Single-lens reflect type with fixed focal point Magnification: 1.

2x Viewing angle: 12° (vertical) x 17° (horizontal) Dioptric adjustment range: -3.0 to +1.0 Repeatability ±0.1 EV Calibration coefficient Incident-light readings: C=330 (Spherical Diffuser) C=250 (Flat Diffuser) Spot reflected-light: K=14 Type Display range Specifications Other functions Others Power Battery life Operating temperature/humidity range Storage temperature/humidity range Dimensions Weight Standard accessories *Optional accessories change without notice. Exposure: F1.0 to 128+0.9 stop (0.1 stop increments) EV: -17 to 40.9 (0.1 stop increments) Shutter speed (ambient): 30 min. to 1/16000 sec. (1, 1/2, 1/3 stop increments) Shutter speed (flash): 30 min. to 1/1000 sec. (1, 1/2, 1/3 stop increments) Frame rate (Opening angle of 180°): 8, 12, 16, 18, 24, 25, 30, 32, 64, 128 ISO: 3 to 8000 (1/3 increments) Exposure difference: -10 to +10 (0.1 stop increments) Analog scale: FNO.

1.0 to 90 (1/2 stop increments) Analyze scale: Flash light proportion 0 to 100% (25% increments) Latitude display function, Light Ratio Analyze function, Memory function (10 measured values), S/A/H calculation, Brightness difference function, Exposure correction function: -10 to +10 (0.1 stop increments) Sync terminal One AA alkaline dry cell (LR-6/1.5 V) Approx. 30 hours: (Continuous operation for ambient light/incident light measurement, with alkaline dry cell) -10°C to 50°C (14°F to 122°F) Relative humidity 85% max.

[at 35°C (95°F)], no condensation -20°C to 55°C (-4°F to 131°F) Relative humidity 85% max. [at 35°C (95°F)], no condensation 63 (W) x 175 (H) x 30 (D) mm 170 g (excluding battery) Spherical Diffuser, strap, case Flat Diffuser, Sync. Cord III Specifications and external appearances described herein are subject to E78 E79 Minolta Co.



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