



Your PDF Guides

You can read the recommendations in the user guide, the technical guide or the installation guide for NIKON D3100. You'll find the answers to all your questions on the NIKON D3100 in the user manual (information, specifications, safety advice, size, accessories, etc.). Detailed instructions for use are in the User's Guide.

User manual NIKON D3100
User guide NIKON D3100
Operating instructions NIKON D3100
Instructions for use NIKON D3100
Instruction manual NIKON D3100

Nikon

DIGITAL CAMERA
D3100
Reference Manual

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Manual abstract:

Digitutor "Digitutor", a series of "watch and learn" manuals in movie form, is available from the following website:

http://www.nikondigitutor.com/index_eng.html Q&A Index Table of Contents 0 ii 0 iv 0 1 X Introduction s Basic Photography and Playback ! Guide Mode x Live View y Recording and Viewing Movies k Release Mode z More on Photography (All Modes) t P, S, A, and M Modes I More on Playback Q Connections o The Playback Menu i The Shooting Menu g The Setup Menu u The Retouch Menu w Recent Settings n Technical Notes 0 23 0 33 0 37 0 45 0 53 0 55 0 73 0 99 0 115 0 129 0 131 0 136 0 151 0 165 0 167 i Q&A Index Find what you're looking for using this "question and answer" index. Taking Photographs i Shooting Modes and Framing Options Is there a quick and easy way to take snapshots? How do I use the g position on the mode dial? Can I choose a shutter speed (mode S)? Can I choose an aperture (mode A)? How do I make long ("time") exposures (mode M)? Can I frame photos in the monitor? Can I shoot movies? 0 2327 3336 75 76 78 3743 4546 5, 53 54 5 5556 60 i Release Modes Can I take photos one at a time or in quick succession? How do I take pictures with the self-timer? Can I reduce shutter noise in quiet surroundings? i Focus Can I choose how the camera focuses? Can I choose the focus point? i Image Quality and Size How do I take pictures for printing at large sizes? How can I get more pictures on the memory card? 6466 i Exposure Can I make photos brighter or darker? How do I preserve details in shadows and highlights? 81 8586 i Using the Flash Can I set the flash to fire automatically when needed? How do I keep the flash from firing? How do I avoid "red-eye"? 6770 Viewing Photographs i Playback How do I view photographs on the camera? How do I view more information about a photo? Can I view photos in an automatic slide show? Can I view photos on a TV? Can I protect photos from accidental deletion? 0 30, 99 100104 112 126128 108 31, 109111 i Deletion How do I delete unwanted photos? ii Retouching Photographs How do I create retouched copies of photos? How do I remove "red-eye"? How do I make JPEG copies of RAW (NEF) photos? Can I overlay two NEF (RAW) photos to make a single image? Can I copy a photo to use as a base for a painting? Can I trim movie footage on the camera? 0 151164 153 160 158159 162 5052 Menus and Settings How do I adjust settings in the information display? How do I use the menus? How do I display menus in another language? How do I keep the displays from turning off? How do I focus the viewfinder? Can I display a framing grid in the monitor? How do I set the camera clock? How do I format memory cards? How do I restore default settings? Is there any way to stop the camera beeping? How do I get help for a menu or message? 0 67 1113 18, 140 143 22 41 18, 139 21 131, 136 144 11, 192 Connections How do I copy photos to a computer? How do I print photos? Can I print the date of recording on my photos? 0 115116 117125 119, 125, 147 Maintenance and Optional Accessories What memory cards can I use? What lenses can I use? What optional flash units (Speedlights) can I use? What other accessories are available for my camera? What software is available for my camera? What do I do with the supplied eyepiece cap? How do I clean the camera? Where should I take my camera for servicing and repairs? 0 177 167 172 176 54 179 iii Table of Contents Q&A Index

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. 205 viii For Your Safety To prevent damage to your Nikon product or injury to yourself or to others, read the following safety precautions in their entirety before using this equipment. Keep these safety instructions where all those who use the product will read them. The consequences that could result from failure to observe the precautions listed in this section are indicated by the following symbol: icon A This Nikon marks warnings. To prevent possible injury, read all warnings before using this product.

WARNINGS A Keep the sun out of the frame Keep the sun well out of the frame when shooting backlit subjects. Sunlight focused into the camera when the sun is in or close to the frame could cause a fire. A Do not disassemble Touching the product's internal parts could result in injury. In the event of malfunction, the product should be repaired only by a qualified technician. Should the product break open as the result of a fall or other accident, remove the battery and/or AC adapter and then take the product to a Nikon-authorized service center for inspection. A Do not look at the sun through the viewfinder Viewing the sun or other strong light source through the viewfinder could cause permanent visual impairment. A Using the viewfinder diopter control When operating the viewfinder diopter control with your eye to the viewfinder, care should be taken not to put your finger in your eye accidentally. A Do not place the strap around the neck of an infant or child Placing the camera strap around the neck of an infant or child could result in strangulation. A Turn off immediately in the event of malfunction Should you notice smoke or an unusual smell coming from the equipment or AC adapter (available separately), unplug the AC adapter and remove the battery immediately, taking care to avoid burns. Continued operation could result in injury.

After removing the battery, take the equipment to a Nikon-authorized service center for inspection. A Observe caution when using the flash · Using the camera with the flash in close contact with the skin or other objects could cause burns. · Using the flash close to the subject's eyes could cause temporary visual impairment. Particular care should be observed when photographing infants, when the flash should be no less than one meter (39 in.) from the subject. A Do not use in the presence of flammable gas Do not use electronic equipment in the presence of flammable gas, as this could result in explosion or fire. A Avoid contact with liquid crystal Should the monitor break, care should be taken to avoid injury due to broken glass and to prevent the liquid crystal from the monitor touching the skin or entering the eyes or mouth. A Keep out of reach of children Failure to observe this precaution could result in injury. ix A Observe proper precautions when handling batteries Batteries may leak or explode if improperly handled. Observe the following precautions when handling batteries for use in this product: · Use only batteries approved for use in this equipment.

· Do not short or disassemble the battery. · Be sure the product is off before replacing the battery. If you are using an AC adapter, be sure it is unplugged. · Do not attempt to insert the battery upside down or backwards. · Do not expose the battery to flame or to excessive heat.

· Do not immerse in or expose to water. · Replace the terminal cover when transporting the battery. Do not transport or store the battery with metal objects such as necklaces or hairpins. · Batteries are prone to leakage when fully discharged. To avoid damage to the product, be sure to remove the battery when no charge remains.

· When the battery is not in use, attach the terminal cover and store in a cool, dry place. · The battery may be hot immediately after use or when the product has been used on battery power for an extended period. Before removing the battery turn the camera off and allow the battery to cool. · Discontinue use immediately should you notice any changes in the battery, such as discoloration or deformation. A Observe proper precautions when handling the charger · Keep dry. Failure to observe this precaution could result in fire or electric shock. · Do not short the charger terminals. Failure to observe this precaution could result in overheating and damage to the charger. · Dust on or near the metal parts of the plug should be removed with a dry cloth. Continued use could result in fire.

· Do not go near the charger during thunderstorms. Failure to observe this precaution could result in electric shock. · Do not handle the plug or charger with wet hands. Failure to observe this precaution could result in electric shock. · Do not use with travel converters or adapters designed to convert from one voltage to another or with DC-to-AC inverters. Failure to observe this precaution could damage the product or cause overheating or fire. A Use appropriate cables When connecting cables to the input and output jacks, use only the cables provided or sold by Nikon for the purpose to maintain compliance with product regulations. A CD-ROMs CD-ROMs containing software or manuals should not be played back on audio CD equipment. Playing CD-ROMs on an audio CD player could cause hearing loss or damage the equipment. x Notices · No part of the manuals included with this product may be reproduced, transmitted, transcribed, stored in a retrieval system, or translated into any language in any form, by any means, without Nikon's prior written permission.

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The following apply only to users in European countries: · This product is designated for separate collection at an appropriate collection point. Do not dispose of as household waste. · For more information, contact the retailer or the local authorities in charge of waste management. This symbol on the battery indicates that the battery is to be collected separately. The following apply only to users in European countries: · All batteries, whether marked with this symbol or not, are designated for separate collection at an appropriate collection point.



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A., use an attachment plug adapter of the proper configuration for the power outlet if needed. This power unit is intended to be correctly oriented in a vertical or floor mount position. Federal Communications Commission (FCC) Radio Frequency Interference Statement 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. D3100 These limits are designed to provide reasonable protection against harmful CAUTIONS interference in a residential installation. This Modifications equipment generates, uses, and can radiate The FCC requires the user be notified that any radio frequency energy and, if not installed changes or modifications made to this device and used in accordance with the instructions, that are not expressly approved by Nikon may cause harmful interference to radio Corporation may void the user's authority to communications. However, there is no operate the equipment. guarantee that interference will not occur in a Interface Cables particular installation. If this equipment does Use the interface cables sold or provided by cause harmful interference to radio or Nikon for your equipment. Using other television reception, which can be interface cables may exceed the limits of determined by turning the equipment off Class B Part 15 of the FCC rules.

and on, the user is encouraged to try to correct the interference by one or more of the Notice for Customers in the State of California following measures:

WARNING: Handling the cord on this product · Reorient or relocate the receiving antenna. may expose you to lead, a chemical known to · Increase the separation between the the State of California to cause birth defects equipment and receiver. or other reproductive harm. Wash hands after · Connect the equipment into an outlet on a handling. circuit different from that to which the Nikon Inc.

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Nikon electronic accessories could damage the camera and may void your Nikon warranty.

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L.C. SEE <http://www.mpegla.com> Before Taking Important Pictures Before taking pictures on important occasions (such as at weddings or before taking the camera on a trip), take a test shot to ensure that the camera is functioning normally.



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A A xiv Introduction X Overview Thank you for your purchase of a Nikon single-lens reflex (SLR) digital camera. To get the most from your camera, please be sure to read all instructions thoroughly and keep them where they will be read by all who use the product. X

Symbols and Conventions To make it easier to find the information you need, the following symbols and conventions are used: D A 0 D This icon marks cautions; information that should be read before use to prevent damage to the camera. This icon marks notes; information that should be read before using the camera. This icon marks references to other pages in this manual. Use Only Nikon Brand Accessories Only Nikon brand accessories certified by Nikon specifically for use with your Nikon digital camera are engineered and proven to operate within its operational and safety requirements.

THE USE OF NON-NIKON ACCESSORIES COULD DAMAGE YOUR CAMERA AND MAY VOID YOUR NIKON WARRANTY. Servicing the Camera and Accessories The camera is a precision device and requires regular servicing. Nikon recommends that the camera be inspected by the original retailer or a Nikon-authorized service representative once every one to two years, and that it be serviced once every three to five years (note that fees apply to these services). Frequent inspection and servicing are particularly recommended if the camera is used professionally. Any accessories regularly used with the camera, such as lenses or optional flash units, should be included when the camera is inspected or serviced.

D A Camera Settings The explanations in this manual assume that default settings are used. 1 Getting to Know the Camera Take a few moments to familiarize yourself with camera controls and displays. You may find it helpful to bookmark this section and refer to it as you read through the rest of the manual. The Camera Body X 1 2 3 4 5 6 7 10 21 22 11 12 13 14 23 24 25 26 19 20 18 15 8 16 17 9 1 2 3 4 5 6 7 8 Mode dial ..

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...4 Release-mode selector 5, 53 R (information) button.

... 7, 41 E (exposure compensation) button.....

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..... 82 N (aperture) button..

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. 77 Flash compensation button

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..... 84 Shutter-release button .

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.. 27 Power switch...

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.3 AF-assist illuminator....

..... 57 Self-timer lamp.

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. 54 Red-eye reduction lamp 69 Body cap 9 CPU contacts 10 Built-in flash....

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.... 67 11 M (flash mode) button

... 67 Y (flash compensation) button.....

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.....	84	12	Focal plane mark (E).
....	63	13	Eyelet for camera strap
	14		Microphone .
..	46	15	Connector cover
	16		Fn (function) button ...
.....	146	17	Mounting mark..
	16	18	Lens release button
....	17	19	20
	21	22	23
	24	25	26
			Mirror.....
			..182
			Lens mount ...
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			Accessory shoe cover
			172
			Accessory shoe (for optional flash units)
			172
			Accessory terminal.....
.....	177		USB connector Connecting to a computer.
		116
			Connecting to a printer ...
	117		HDMI mini-pin connector...
	127		A/V connector
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	2	1	10
	11	12	13
	14	15	16
	17	18	19
	3	4	5
	6	7	8
	23	X	20
	21	22	9
	1		Viewfinder eyepiece.....
.....	54	2	Rubber eyecup
	3		Monitor Viewing settings .
		6
			Live view..
		37
			Viewing pictures.
			.30
			Full-frame playback
.....	99	4	K (playback) button ...
..	30,	99	5
	G	(menu)	button
	11,	129	6
	W	(thumbnail/playback zoom out)	button ...
		
			105
			Q (help) button.
		
		

..11 7 X (playback zoom in) button ...

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.... 107 8 P (information edit) button.

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..6 9 Tripod socket 10 Diopter adjustment control

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..... 22 11 A (AE-L/AF-L) button....

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.. 61, 146 L (protect) button

.. 108 12 Command dial

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.....8 13 Live view switch ..

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..37, 45 14 Movie-record button...

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.... 46 15 Memory card slot cover.....

. 20 16 Multi selector

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..... 12 17 J (OK) button....

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.... 12 18 Memory card access lamp .

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20, 26 19 Speaker

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..... 49 20 Power connector cover for optional power connector

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..178 21 Battery-chamber cover latch

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15 22 Battery-chamber cover.....
... 15 23 O (delete) button Deleting pictures..

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.... 31 Deleting pictures during playback

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...109 A The Power Switch Rotate the power switch as shown to turn the camera on. Rotate the power switch as shown to turn the camera off. 3 The Mode Dial The camera offers a choice of the following shooting modes and g mode: X g Mode (0 33) Take and view pictures and adjust settings with the help of an on-screen guide. P, S, A, and M Modes Select these modes for full control over camera settings. · P--Programmed auto (0 74) · S--Shutter-priority auto (0 75) · A--Aperture-priority auto (0 76) · M--Manual (0 77) Auto Modes Select these modes for simple, point-and-shoot photography. · i Auto (0 23) · j Auto (flash off) (0 23) Scene Modes The camera automatically optimizes settings to suit the scene selected with the mode dial. Match your selection to the scene being photographed.
· k Portrait (0 28) · m Sports (0 29) · l Landscape (0 28) · n Close up (0 29) · p Child (0 29) · o Night portrait (0 29) Scene Auto Selector (Live View) Selecting live view in i or j mode enables automatic scene selection ("scene auto selector"; 0 41) when autofocus is used. A 4 The Release-Mode Selector Use the release-mode selector to choose from the following release modes: 8 Single frame One photo is taken each time the shutter-release button is pressed. I Continuous (0 53) The camera records about 3 frames per second while the shutter-release button is pressed. E Self-timer (0 54) The camera takes a photograph about ten seconds after the shutter-release button is pressed. Use for self-portraits.
J Quiet shutter release As for single frame, except that the camera makes no sound after shooting and that a beep does not sound when the camera focuses, keeping noise to a minimum in quiet surroundings. X 5 The Information Display Camera settings can be viewed and adjusted in the information display. Press the P button once to view settings, and again to make changes to settings. Highlight items using the multi selector and press J to view options for the highlighted item. X 1 7 8 9 10 11 12 13 14 15 P button 23 24 25 26 27 28 29 30 31 2 3 4 5 6 16 17 18 19 20 21 22 1 Shooting mode i auto/ j auto (flash off) .

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... 23 Scene modes

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..... 28 Guide mode

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.... 33 P, S, A, and M modes.

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73 2 Aperture (f-number)76, 77 3 Shutter speed

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....75, 77 4 Shutter-speed display.



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.....	
.....7 5 Aperture display...	
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7 6 Auto-area AF indicator	58 3D-tracking indicator..
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.... 58 Focus point .	
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... 60 7 Eye-Fi connection indicator..	
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.....	
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.. 150 8 Date imprint indicator ...	
.... 147 9 Manual flash indicator	
. 135 Flash compensation indicator for optional flash units ...	175 10 Auto ISO sensitivity indicator
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...132 11 Picture Control	
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.....94 12 Release mode	
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..5, 53 13 "Beep" indicator...	
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.....144 14 Battery indicator....	
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.....23 15 GPS connection indicator....	
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...192 17 Exposure indicator	
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....77 Exposure compensation indicator .	
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.....	
82 Electronic rangefinder.....	144 18 Number of exposures remaining ..
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.....24 19 "K" (appears when memory remains for over 1000 exposures)...	
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....24 20 21 22 23 24 25 26 27 28 29 30 31 Flash mode	

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... 68 Flash compensation

..... 83 Exposure compensation....
.. 81 Image quality...

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..... 64 Image size ...

..... 66 White balance ..

.. 87 ISO sensitivity.....

..... 71 Focus mode ...

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....38, 55 AF-area mode .

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... 58 Metering..

.. 79 Active D-Lighting...

..... 85 Movie frame size

..... 47 6 A Hiding Shooting Information To turn the monitor off, press the R button. Note that the monitor turns off automatically while the shutter-release button is pressed or if no operations are performed for about 8 s (for information on choosing how long the monitor stays on, see Auto off timers on page 143). The information display can be restored by pressing the R button again. X R button Information display Monitor off A Rotating the Camera When the camera is rotated 90 °, shooting information rotates to match camera orientation. A The Shutter-Speed and Aperture Displays These displays provide visual indications of shutter speed and aperture.

Fast shutter speed, large aperture (small f-number). Slow shutter speed, small aperture (large f-number). While the mode dial is rotated, this display is replaced by an image of the mode dial. A See Also For information on choosing a design for the information display, see Info display format, (0 137). For information on choosing whether information is displayed when the shutter-release button is pressed; see Auto info display (0 139). 7 The Command Dial The command dial can be used with other controls to adjust a variety of settings when shooting information is displayed in the monitor. M button X Fn button E button Mode dial Command dial Choose a combination of aperture and shutter speed (mode P; 0 74). Mode P Command dial Information display Choose a shutter speed (mode S or M; 0 75, 77). Mode S or M Command dial Information display Choose an aperture (mode A; 0 76). Mode A Command dial Information display Choose an aperture (mode M; 0 77).

Mode M E button + Command dial Information display 8 Set exposure compensation (mode P, S, or A; 0 81). Mode P, S, or A E button + Command dial Information display Choose a flash mode (0 68). X + M button Command dial Information display Adjust flash compensation (mode P, S, A, or M; 0 83). + P, S, A, or M M button E button + Command dial Information display The role of the Fn button can be selected using the Buttons > Fn button option in the setup menu (0 146), allowing the following settings to be adjusted by pressing the Fn button and rotating the command dial: Fn button Image quality/size (0 64) ISO sensitivity (0 71) + Command dial White balance (0 87) Active D-Lighting (0 85) 9 The Viewfinder X 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 1 Focus points ..

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60 2 Focus indicator

.....26, 63 3 Autoexposure (AE) lock indicator....

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..... 80 4 Shutter speed ...

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75, 77 5 Aperture (f-number)

.76, 77 6 Battery indicator

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23 7 Number of exposures remaining

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..... 24 Number of shots remaining before memory buffer fills ...

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... 53 White balance recording indicator ..

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.... 90 Exposure compensation value .

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..... 81 Flash compensation value...

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83 ISO sensitivity.....

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71 8 "K" (appears when memory remains for over 1000 exposures)

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..... 24 9 Flash-ready indicator...

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....27 10 Flexible program indicator .

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74 11 Exposure indicator

.....77 Exposure compensation display....

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..82 Electronic rangefinder....

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..63 12 Flash compensation indicator

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..83 13 Exposure compensation indicator

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...81 14 Auto ISO sensitivity indicator

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..132 15 Warning indicator.....

.....192 D The Viewfinder The response time and brightness of the viewfinder display may vary with temperature. 10 Camera Menus Most shooting, playback, and setup options can be accessed from the camera menus.

To view the menus, press the G button. G button Tabs Choose from the following menus: · D: Playback (0 129) · C: Shooting (0 131) · B: Setup (0 136) X · · N: Retouch (0 151) m: Recent settings (0 165) Slider shows position in current menu. Current settings are shown by icons. Menu options Options in current menu. If a d icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the Q (W) button.

A description of the currently selected option or menu will be displayed while the button is pressed. Press 1 or 3 to scroll through the display. Q (W) button d A Guide Mode To display the on-screen guide, rotate the mode dial to g (0 33). 11 Using Camera Menus The multi selector and J button are used to navigate the camera menus. Move cursor up J button: select highlighted item Cancel and return to previous menu Select highlighted item or display sub-menu X Move cursor down Follow the steps below to navigate the menus.

1 Display the menus. Press the G button to display the menus. G button 2 Highlight the icon for the current menu. Press 4 to highlight the icon for the current menu. 3 Select a menu. Press 1 or 3 to select the desired menu. 12 4 Position the cursor in the selected menu. Press 2 to position the cursor in the selected menu. 5 Highlight a menu item. Press 1 or 3 to highlight a menu item.

X 6 Display options. Press 2 to display options for the selected menu item. 7 Highlight an option. Press 1 or 3 to highlight an option. 8 Select the highlighted item. Press J to select the highlighted item. To exit without making a selection, press the G button. Note the following: · Menu items that are displayed in gray are not currently available. · While pressing 2 generally has the same effect as pressing J, there are some cases in which selection can only be made by pressing J. · To exit the menus and return to shooting mode, press the shutter-release button halfway (0 27).

13 First Steps Charge the Battery The camera is powered by an EN-EL14 rechargeable Li-ion battery (supplied). To maximize shooting time, charge the battery in the supplied MH-24 battery charger before use. About 1 hour and 30 minutes are required to fully recharge the battery when no charge remains. X A The Plug Adapter Depending on the country or region of purchase, a plug adapter may be supplied with the charger. The shape of the adapter varies with the country or region of purchase.

If a plug adapter is supplied, raise the wall plug and connect the plug adapter as shown at right, making sure the plug is fully inserted.



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Attempting to forcibly remove the plug adapter could damage the product. 1 2 Remove the terminal cover. Remove the terminal cover from the battery. Insert the battery.

Insert the battery as shown in the illustration on the charger. D Charging the Battery Charge the battery indoors at ambient temperatures between 535°C (41-95°F). The battery will not charge if its temperature is below 0 °C (32 °F) or above 60 °C (140 °F). 3 Plug the charger in. The CHARGE lamp will blink while the battery charges. D During Charging Do not move the charger or touch the battery during charging. Failure to observe this precaution could in very rare instances result in the charger showing that charging is complete when the battery is only partially charged. Remove and reinsert the battery to begin charging again. Battery charging Charging complete 4 14 Remove the battery when charging is complete. Charging is complete when the CHARGE lamp stops blinking.

Unplug the charger and remove the battery. Insert the Battery 1 Turn the camera off. A Inserting and Removing Batteries Always turn the camera off before inserting or removing batteries. 2 Open the battery-chamber cover. Unlatch (q) and open (w) the battery-chamber cover. w X q 3 Insert the battery. Insert the battery as shown at right. 4 Close the battery-chamber cover. A Removing the Battery To remove the battery, turn the camera off, open the battery-chamber cover, and pull the battery out. The Battery and Charger Read and follow the warnings and cautions on pages ixx and 184185 of this manual.

Do not use the battery at ambient temperatures below 0°C/32°F or above 40°C/104°F; failure to observe this precaution could damage the battery or impair its performance. Capacity may be reduced and charging times may increase at battery temperatures from 0°C/32°F to 15°C/59°F and from 45°C/113°F to 60°C/140°F. If the CHARGE lamp flickers during charging, confirm that the temperature is in the correct range and then unplug the charger and remove and reinsert the battery. If the problem persists, cease use immediately and take battery and charger to your retailer or a Nikon-authorized service representative.

Do not attempt to charge a fully-charged battery.

Failure to observe this precaution will result in reduced battery performance. Use the charger with compatible batteries only. Unplug when not in use. D 15 Attach a Lens Care should be taken to prevent dust from entering the camera when the lens is removed. The lens generally used in this manual for illustrative purposes is an AF-S DX NIKKOR 1855mm f/3.

55.6G VR. Focal length mark X Focal length scale Lens cap Mounting mark CPU contacts (0 168) Rear lens cap A-M switch (see below) VR (vibration reduction) switch (0 17) Focus ring (0 43, 62) Zoom ring 1 2 Turn the camera off. Remove the rear lens cap and the camera body cap. 3 Attach the lens.

Keeping the mounting mark on the lens aligned with the mounting mark on the camera body, position the lens in the camera's bayonet mount (q). Being careful not to press the lens-release button, rotate the lens counter-clockwise until it clicks into place (w). Slide the A-M switch to A (autofocus; if the lens has an M/A-M switch, select M/A for autofocus with manual override). D Autofocus Autofocus is supported with only AF-S and AF-I lenses, which are equipped with autofocus motors. Autofocus is not available with other AF lenses (0 167).

16 Vibration Reduction (VR) AF-S DX NIKKOR 1855mm f/3.55.6G VR lenses support vibration reduction (VR), which reduces blur caused by camera shake even when the camera is panned, allowing shutter speeds to be slowed by approximately 3 EV at a focal length of 55 mm (Nikon measurements; effects vary with the user and shooting conditions). To use vibration reduction, slide the VR switch to ON. Vibration reduction is activated when the shutter-release button is pressed halfway, reducing the effects of camera shake on the image in the viewfinder and simplifying the process of framing the subject and focusing in both autofocus and manual focus modes. When the camera is panned, vibration reduction applies only to motion that is not part of the pan (if the camera is panned horizontally, for example, vibration reduction will be applied only to vertical shake), making it much easier to pan the camera smoothly in a wide arc.

Vibration reduction can be turned off by sliding the VR switch to OFF. Turn vibration reduction off when the camera is securely mounted on a tripod, but leave it on if the tripod head is not secured or when using a monopod. X A Detaching the Lens Be sure the camera is off when removing or exchanging lenses.

To remove the lens, press and hold the lens release button (q) while turning the lens clockwise (w).

After removing the lens, replace the lens caps and camera body cap. CPU Lenses with Aperture Rings In the case of CPU lenses equipped with an aperture ring (0 168), lock aperture at the minimum setting (highest f-number). D D Vibration Reduction Do not turn the camera off or remove the lens while vibration reduction is in effect. If power to the lens is cut while vibration reduction is on, the lens may rattle when shaken. This is not a malfunction, and can be corrected by reattaching the lens and turning the camera on.

Vibration reduction is disabled while the built-in flash is charging. When vibration reduction is active, the image in the viewfinder may be blurred after the shutter is released. This does not indicate a malfunction. 17 Basic Setup A language-selection dialog will be displayed the first time the camera is turned on.

Choose a language and set the time and date.

Photographs can not be taken until you have set the time and date. 1 X Turn the camera on. A language-selection dialog will be displayed. 2 Select a language. Press 1 or 3 to highlight the desired language and press J. 3 Choose a time zone. A time-zone selection dialog will be displayed. Press 4 or 2 to highlight the local time zone (the UTC field shows the difference between the selected time zone and Coordinated Universal Time, or UTC, in hours) and press J. 4 Choose a date format. Press 1 or 3 to choose the order in which the year, month, and day will be displayed.

Press J to proceed to the next step. 5 Turn daylight saving time on or off. Daylight saving time options will be displayed. Daylight saving time is off by default; if daylight saving time is in effect in the local time zone, press 1 to highlight On and press J. 6 Set the date and time. The dialog shown at right will be displayed. Press 4 or 2 to select an item, 1 or 3 to change. Press J to set the clock and exit to shooting mode. 18 A A The Setup Menu Language and date/time settings can be changed at any time using the Language (0 140) and Time zone and date (0 139) options in the setup menu.



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The Clock Battery The camera clock is powered by an independent, rechargeable power source, which is charged as necessary when the main battery is installed or the camera is powered by an optional EP-5A power connector and EH-5a AC adapter (0 178).

Three days of charging will power the clock for about a month. If a message warning that the clock is not set is displayed when the camera is turned on, the clock battery is exhausted and the clock has been reset. Set the clock to the correct time and date. *The Camera Clock* The camera clock is less accurate than most watches and household clocks. Check the clock regularly against more accurate time pieces and reset as necessary.

X A 19 Insert a Memory Card The camera stores pictures on Secure Digital (SD) memory cards (available separately; 0 177). *1 X Turn the camera off. A Inserting and Removing Memory Cards* Always turn the camera off before inserting or removing memory cards. *2 Open the card slot cover. Slide the card slot cover out (q) and open the card slot (w).*

3 Insert the memory card. Holding the memory card as shown at right, slide it in until it clicks into place. The memory card access lamp will light for a few seconds. Close the memory card slot cover. D Inserting Memory Cards Inserting memory cards upside down or backwards could damage the camera or the card. Check to be sure the card is in the correct orientation. *Front Access lamp* If this is the first time the memory card will be used in the camera or the card has been formatted in another device, format the card as described on page 21. *A Removing Memory Cards* After confirming that the access lamp is off, turn the camera off, open the memory card slot cover, and press the card in to eject it (q). The card can then be removed by hand (w). *A The Write Protect Switch* Memory cards are equipped with a write protect switch to prevent accidental loss of data.

When this switch is in the "lock" position, the memory card can not be formatted and photos can not be deleted or recorded (a beep will sound if you attempt to release the shutter). To unlock the memory card, slide the switch to the "write" position. *Write-protect switch* *20 4GB 4GB 4GB Format the Memory Card* Memory cards must be formatted before first use or after being formatted in other devices. Format the card as described below. *D Formatting Memory Cards*

Formatting memory cards permanently deletes any data they may contain. Be sure to copy any photographs and other data you wish to keep to a computer before proceeding (0 115). *X 1 2 Turn the camera on. Display format options. Press the G button to display the menus. Highlight Format memory card in the setup menu and press 2.*

For more information on using the menus, see page 11. *G button 3 Highlight Yes. To exit without formatting the memory card, highlight No and press J. 4 Press J. The message at right will be displayed while the card is formatted.*

Do not remove the memory card or remove or disconnect the power source until formatting is complete. *Memory Cards - Memory cards may be hot after use. Observe due caution when removing memory cards from the camera. · Turn the power off before inserting or removing memory cards. Do not remove memory cards from the camera, turn the camera off, or remove or disconnect the power source during formatting or while data are being recorded, deleted, or copied to a computer.*

Failure to observe these precautions could result in loss of data or in damage to the camera or card. · Do not touch the card terminals with your fingers or metal objects. · Do not bend, drop, or subject to strong physical shocks. · Do not apply force to the card casing. Failure to observe this precaution could damage the card. · Do not expose to water, heat, high levels of humidity, or direct sunlight. *D 21 Adjust Viewfinder Focus* The camera is equipped with diopter adjustment to accommodate individual differences in vision. Check that the display in the viewfinder is in focus before framing pictures in the viewfinder. *1 X Remove the lens cap. Turn the camera on.*

Focus the viewfinder. Rotate the diopter adjustment control until the viewfinder display and focus point are in sharp focus. When operating the control with your eye to the viewfinder, be careful not to put your fingers or fingernails in your eye. *2 3 Focus point Adjusting Viewfinder Focus* If you are unable to focus the viewfinder as described above, select single-servo autofocus (AF-S; 0 55), single-point AF (c; 0 58), and the center focus point (0 60), and then frame a high-contrast subject in the center focus point and press the shutter-release button halfway to focus the camera. With the camera in focus, use the diopter adjustment control to bring the subject into clear focus in the viewfinder. If necessary, viewfinder focus can be further adjusted using optional corrective lenses (0 176). *A 22 Basic s Photography and Playback "Point-and-Shoot" Photography (i and j Modes)* This section describes how to take photographs in i (auto) mode, an automatic "point-and-shoot" mode in which the majority of settings are controlled by the camera in response to shooting conditions, and in which the flash will fire automatically if the subject is poorly lit. To take photographs with the flash off while leaving the camera in control of other settings, rotate the mode dial to j to select auto (flash off) mode. *s Step 1: Turn the Camera On 1 2 Turn the camera on. Remove the lens cap and turn the camera on. The information display will appear in the monitor. Check the battery level. Check the battery level in the information display or the viewfinder (if the monitor is off, press the P button to view the information display; if the monitor does not turn on, the battery is exhausted and must be recharged). Information display L K H H (blinks) Viewfinder Description -- Battery fully charged. -- Battery partially discharged.*

Low battery. Ready fully-charged spare battery or d prepare to charge battery. d Battery exhausted; shutter release disabled. Charge or (blinks) exchange battery. *A Image Sensor Cleaning* The camera vibrates the low-pass filter covering the image sensor to remove dust when the camera is turned on or off (0 180).

2 3 Check the number of exposures remaining. The information display and viewfinder show the number of photographs that can be stored on the memory card (values over 1,000 are rounded down to the nearest hundred; e.g., values between 1,200 and 1,299 are shown as 1.2 K). If a warning is displayed stating that there is not enough memory for additional photographs, insert another memory card (0 20) or delete some photos (0 31, 109). s Step 2: Select i or j Mode To shoot where use of a flash is prohibited, Mode dial photograph infants, or capture natural lighting under low light conditions, rotate the mode dial to j.



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Otherwise, rotate the mode dial to i. j mode i mode 24 Step 3: Frame the Photograph 1 Ready the camera. When framing photographs in the viewfinder, hold the handgrip in your right hand and cradle the camera body or lens with your left.

Keep your elbows propped lightly against your torso for support and place one foot half a pace ahead of the other to keep your upper body stable. Hold the camera as shown at right when framing photographs in portrait (tall) orientation. In j mode, shutter speeds slow when lighting is poor; use of a tripod is recommended. s 2 Frame the photograph. Frame a photograph in the viewfinder with the main subject in at least one of the 11 focus points. Focus point A Using a Zoom Lens Use the zoom ring to zoom in on the subject so that it fills a larger area of the frame, or zoom out to increase the area visible in the final photograph (select longer focal lengths on the lens focal length scale to zoom in, shorter focal lengths to zoom out). Zoom in Zoom ring A The AF-S DX NIKKOR 1855mm f/3.55.6G VR Lens In the case of the AF-S DX NIKKOR 1855mm f/3.55.

6G VR, changes to zoom can alter maximum aperture by up to 11/3 EV. The camera however automatically takes this into account when setting exposure, and no modifications to camera settings are required following adjustments to zoom. Zoom out 25 Step 4: Focus 1 Press the shutter-release button halfway. Press the shutter-release button halfway to focus. The camera will select the focus points automatically.

If the subject is poorly lit, the flash may pop up and the AF-assist illuminator may light. s 2 Check the indicators in the viewfinder. When the focus operation is complete, the selected focus points will be briefly highlighted, a beep will sound (a beep may not sound if the subject is moving), and the in-focus indicator (I) will appear in the viewfinder. In-focus indicator Description 1 Subject in focus. Camera unable to focus using I (blinks) autofocus.

See page 56. In-focus indicator Buffer capacity While the shutter-release button is pressed halfway, the number of exposures that can be stored in the memory buffer ("1"; 0 53) will be displayed in the viewfinder. Step 5: Shoot Smoothly press the shutter-release button the rest of the way down to release the shutter and record the photograph. The access lamp next to the memory card slot cover will light and the photograph will be displayed in the monitor for a few seconds (the photo will automatically clear from the display when the shutter-release button is pressed halfway). Do not eject the memory card or remove or disconnect the power source until the lamp has gone out and recording is complete. Access lamp 26 The Shutter-Release Button The camera has a two-stage shutter-release button. The camera focuses when the shutter-release button is pressed halfway. To take the photograph, press the shutter-release button the rest of the way down. A Focus: press halfway Shoot: press all the way down Auto-Meter Off The viewfinder and information display will turn off if no operations are performed for about 8 seconds (auto-meter off), reducing the drain on the battery. Press the shutter-release button halfway to reactivate the display.

The auto-meter off delay can be selected using the Auto off timers option in the setup menu (0 143). 8s Exposure meters on Exposure meters off Exposure meters on A s A The Built-in Flash If additional lighting is required for correct exposure in i mode, the built-in flash will pop up automatically when the shutter-release button is pressed halfway. If the flash is raised, photographs can only be taken when the flash-ready indicator (M) is displayed. If the flash-ready indicator is not displayed, the flash is charging; remove your finger briefly from the shutter-release button and try again. To save battery power when the flash is not in use, return it to its closed position by pressing it gently downward till the latch clicks into place. 27 Creative Photography (Scene Modes) The camera offers a choice of "scene" modes. Choosing a scene mode automatically optimizes settings to suit the selected scene, making creative photography as simple as selecting a mode, framing a picture, and shooting as described on pages 2327. The Mode Dial The following scenes can be selected with the mode dial: Mode dial s k l p m n o Portrait Landscape Child Sports Close up Night portrait Mode Scene Modes k Portrait l Landscape Use for portraits with soft, natural-looking skin tones. If the subject is far from the background or a telephoto lens is used, background details will be softened to lend the composition a sense of depth. Use for vivid landscape shots in daylight.

The built-in flash and AF-assist illuminator turn off; use of a tripod is recommended to prevent blur when lighting is poor. 28 p Child n Close Up s Use for snapshots of children. Clothing and background details are vividly rendered, while skin tones remain soft and natural. Use for close-up shots of flowers, insects, and other small objects (a macro lens can be used to focus at very close ranges). Use of a tripod is recommended to prevent blur.

m Sports o Night Portrait Fast shutter speeds freeze motion for dynamic sports shots in which the main subject stands out clearly. The built-in flash and AF-assist illuminator turn off. To take a sequence of shots, select continuous release mode (0 5, 53). Use for a natural balance between the main subject and the background in portraits taken under low light. Use of a tripod is recommended to prevent blur.

29 Basic Playback Photographs are automatically displayed for about 4 s after shooting. If no photograph is displayed in the monitor, the most recent picture can be viewed by pressing the K button. 1 s Press the K button. A photograph will be displayed in the monitor. K button 2 View additional pictures. Additional pictures can be displayed by pressing 4 or 2 or rotating the command dial. To view additional information on the current photograph, press 1 and 3 (0 100). 1/12 NIKON D3100 1. 3 1/250 F11 +1. 0 100 35mm AUTO A6, M1 100D3100 DSC_0001.

JPG 15/04/2010 10: 02 : 27 NOR AL ORMAL 4608x3072 To end playback and return to shooting mode, press the shutter-release button halfway. 30 Deleting Unwanted Photographs To delete the photograph currently displayed in the monitor, press the O button. Note that photographs can not be recovered once deleted. 1 Display the photograph. Display the photograph you wish to delete as described on the preceding page. s 2 Delete the photograph. Press the O button. A confirmation dialog will be displayed; press the O button again to delete the image and return to playback (to exit without deleting the picture, press K). O button A Delete To delete selected images (0 110), all images taken on a selected date (0 111), or all images in the current playback folder (0 129), use the Delete option in the playback menu.



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31 s 32 Guide ! Mode The Guide Guide mode gives access to a variety of frequently-used and useful functions.

The top level of the guide is displayed when the mode dial is rotated to g. ! Battery indicator (0 23) Number of exposures remaining (0 24) Shooting mode: A guide mode indicator appears on the shooting mode icon. Choose from the following items: Shoot Take pictures. View/delete Set up View and/or delete pictures. Change camera settings.

33 Guide Mode Menus To access these menus, highlight Shoot, View/delete, or Set up and press J. Shoot Easy operation Advanced operation ! 4 5 9 ! 8 9 7 6 " Auto No flash Distant subjects Close-ups Sleeping faces Moving subjects Landscapes Portraits Night portrait # Soften backgrounds Bring more into focus Freeze motion (people) Adjust aperture. Select a shutter \$ Freeze motion (vehicles) speed. Show water flowing Use a timer/quiet shutter 8 I E J Single frame Continuous 10-second self-timer Quiet shutter release "Start Shooting" To start shooting, highlight Start shooting and press 2. The options shown below at right will be displayed.

Highlight an option and press J. · Use the viewfinder · Use live view · Shoot movies "More Settings" If More settings is displayed, you can highlight this option and press 2 to access the following settings (the settings available vary with the shooting option selected): · Set Picture Control · Exposure comp. · Flash compensation · Flash mode · Release mode · ISO sensitivity 34 View/Delete View single photos View multiple photos Choose a date View a slide show Delete photos Set Up Image quality Image size Playback folder Print set (DPOF) Format memory card LCD brightness Info background color Auto info display Video mode Time zone and date Language Auto off timers Beep Date imprint Slot empty release lock Movie settings HDMI Flicker reduction Eye-Fi upload * * Only available when compatible Eye-Fi memory card is inserted (0 150). Changes to Image quality, Image size, LCD brightness, Info background color, Auto info display, Auto off timers, Beep, Date imprint, and Movie settings only apply in guide mode and are not reflected in other shooting modes. ! A Guide Mode Guide mode is reset to Easy operation > Auto when the mode dial is rotated to another setting or the camera is turned off. 35 The following operations can be performed while the guide is displayed: To Return to top level of guide Turn monitor on Highlight a menu Use Description Press G to turn the monitor on or return to the top level of the guide. G button Press 4 or 2 to highlight a menu. Press 1 or 3 to highlight options in the menus. ! Highlight options Press 1, 3, 4, or 2 to highlight options in displays like that shown at right. Select highlighted menu or option J Press J to select the highlighted menu or option.

Press 4 to return to the previous display. Return to previous display To cancel and return to the previous display from displays like that shown at right, highlight & and press J. View help If a d icon is displayed at the bottom left corner of the monitor, help can be displayed by pressing the Q (W) button. A description of the currently selected option will be displayed while the button is pressed. Press 1 or 3 to scroll d (help) icon through the display. Q (W) button 36 Live x View Framing Photographs in the Monitor Follow the steps below to take photographs in live view. 1 Rotate the live view switch. The mirror will be raised and the view through the lens will be displayed in the camera monitor. The subject will no longer be visible in the viewfinder. Live view switch q w x i o !0 Item q Shooting mode Description 0 The mode currently selected with the mode dial.

Select i or 23, 28, j for automatic scene selection (autofocus only; 0 41). 73 47 45 42 38 38 39 46 47 54 Audio recording Indicates whether sound is being recorded with movies. w indicator e "No movie" icon Indicates that movies can not be recorded. The amount of time remaining before live view ends r Time remaining automatically. Displayed if shooting will end in 30 s or less.

The current focus mode. t Focus mode The current AF-area mode. y AF-area mode The current focus point. The display varies with the option u Focus point selected for AF-area mode (0 38). Time remaining The recording time remaining in movie mode.

i (movie mode) o Movie frame size The frame size of movies recorded in movie mode. Displayed in self-timer release mode. !0 Self-timer 37 2 Choose a focus mode. Press the P button and use the multi selector to highlight the current focus mode in the monitor. Press J to display the following options. Highlight an option and press J. P button Description For stationary subjects. Focus locks when shutter-release AF-S Single-servo AF button is pressed halfway. Shutter can only be released if camera is able to focus. For moving subjects.

Camera focuses continuously during AF-F Full-time servo AF live view and movie recording. Shutter can only be released if camera is able to focus. MF Manual focus Focus manually (0 43). Option x The description in Steps 3, 4, and 5 assumes that AF-S or AF-F is selected. If MF is selected, proceed to Step 6 after focusing manually. 3 Choose an AF-area mode. AF-area mode can be selected in all shooting modes except i and j. Highlight the current AF-area mode in the monitor. Press J to display the following options. Highlight an option and press J.

Description The camera automatically detects and focuses on portrait 8 Face-priority AF subjects facing the camera. Use for portraits. Use for hand-held shots of landscapes and other non-portrait 9 Wide-area AF subjects. Use the multi selector to select the focus point. Use for pin-point focus on a selected spot in the frame.

A ! Normal-area AF tripod is recommended. " Subject-tracking AF Track a selected subject as it moves through the frame. Mode Press the P button again to return to live view. A Live View AF-Area Mode The AF-area modes for live view can also be chosen using the AF-area mode > Live view/ movie option in the shooting menu. 38 4 Choose the focus point.

Face-priority AF: A double yellow border will be displayed when the camera detects a portrait subject facing the camera (if multiple faces, up to a maximum of 35, are detected, the camera will focus on the closest subject; to choose a different subject, press the multi selector up, down, left, or right). Wide- and normal-area AF: Use the multi selector to move the focus point to any point in the frame, or press J to position the focus point in the center of the frame.

Focus point Focus point x Subject-tracking AF: Position the focus point over your subject and press J. The focus point will track the selected subject as it moves through the frame. Focus point 39 5 Focus.



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