

Welcome to a bounty of treasures beneath the waves.





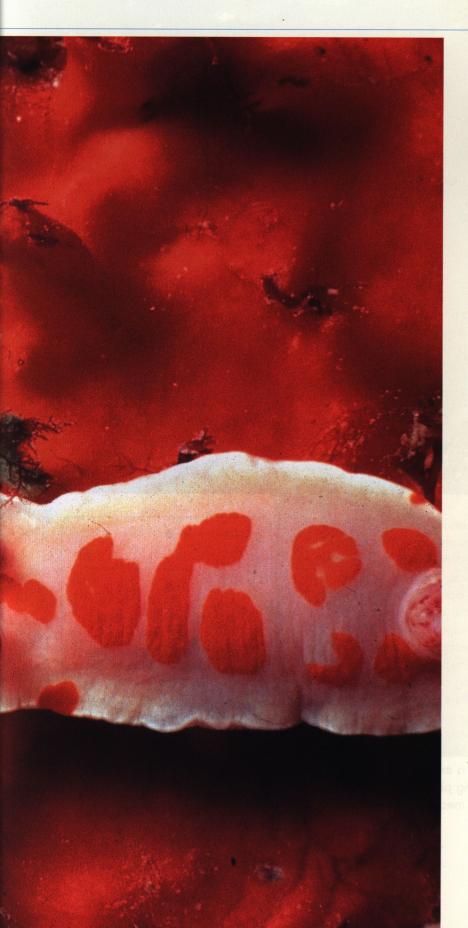


NIKONOS-V



Now any diver can bring back the mysteries of the sea.

You'll marvel at the thrill of capturing the underwater world on film with a Nikonos-V. It features a rugged, compact and easy-to-handle design that is made to withstand the pressure at 50 meters (160 feet). Your first experience with the Nikonos-V will show you how easy it is to take great exposures automatically with TTL flash exposure. Pictures come out crisp and colorful, thanks to the optically superb variety of interchangeable lenses that you will want for creative imaging. Right from your very first photo dive, you'll get incredible photographic results and enjoy diving even more.



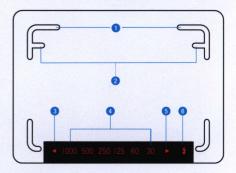


NIKONOS-V EXPOSURE CONTROL

Underwater photography made easy.



The Nikonos-V is the easy answer to quality underwater photography. In the Aperture-Priority automatic exposure mode, you simply set the desired aperture and the Nikonos-V selects the correct shutter speed for proper exposure. As you develop your photographic skills, you will find manual exposure control invaluable for taking complete creative control over different lighting situations or for shooting moving subjects, as you select both aperture and shutter speeds. And even if the camera's battery is exhausted, you can continue taking pictures with the unique "M90" mechanical-shutter setting.



- Film frame mark
- Parallax compensation mark
- Overexposure warning mark
- Shutter speed scale
- 5 Underexposure/camera shake warning mark
- Flash ready-light mark

Exposure data at a glance

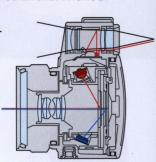
The viewfinder LED shows the shutter speed. On Manual, both the user-selected shutter speed and the recommended shutter speed for correct exposure are indicated.

NIKONOS-V FLASH PHOTOGRAPHY

Everything looks alive!

Perhaps the most amazing experience on a coral reef is witnessing its extraordinary colors. But beneath the waves, colors lose their brilliance and everything takes on a bluish tint. You can restore these dramatic hues by using a Nikonos SB-104 or SB-105 Speedlight. Automatic through-the-lens (TTL) flash control enables you to paint the underwater setting with light, rendering a palette of unimaginable colors. The camera's TTL sensor precisely monitors the amount of light reflected off the subject for optimum flash exposure, so there's no need for guesswork or complicated calculations. Manual

flash exposure is always available for situations in which photographers want to control the exposure.



TTL sensor reads the exact amount of light reflected off the film plane.



NIKONOS-V

INTERCHANGEABLE LENSES

They bring out the artist in you.

The essence of personal expression in underwater photography is realized through the use of Nikonos interchangeable lenses. Nikon Integrated Coating (NIC) makes for lenses of superb optical quality with improved contrast and resolution. Hermetic sealing ensures maximum performance down to 50 meters (160 feet).



Viewfinder DF-11



Viewfinder DF-12













UW-Nikkor 15mm f/2.8

When the action is fast-moving and your subject is large — such as dolphins — or you want to capture the total feeling of the coral reef, there's the 15mm lens. It provides incredibly sharp images down to 30cm(1 foot), with a 94 degree angle of view. The DF-11 Optical Viewfinder is exclusively designed for use with the 15mm lens. Underwater use only.

UW-Nikkor 20mm f/2.8

For wideangle subjects that are difficult to approach, the 20mm lens provides a 78 degree wide view with a larger image magnification capability for dramatic appeal. The DF-12 optional Optical Viewfinder, is available for confirming exact picture coverage. Underwater use only.

UW-Nikkor 28mm f/3.5

The ideal tool for taking close-ups of fish, schools of fish, or other divers. This lens offers a 59 degree angle of view and focuses as close as 60cm (2 feet). The DF-12 optional Optical Viewfinder, can be used with the supplied mounting mask for confirming exact coverage with this lens. Underwater use only.

Specifications

Aperture range: f/2.8 to f/22 Picture angle: 94° Lens construction: 12 elements in 9 groups Close focusing range: Infinity to 0.3m (1 ft.) Attachment size: 87mm (P=0.75mm) Dimensions (dia. × extension from lens flange): 93×90.6 mm (3.7 × 3.6 in.) Weight: 665g (23 oz.)

Specifications

Aperture range: f/2.8 to f/22 Picture angle: 78° Lens construction: 9 elements in 7 groups Close focusing range: Infinity to 0.4m (1.3 ft.) Attachment size: 67mm (P=0.75mm) Dimensions (dia. × extension from lens flange): 70×74 mm (2.7 × 2.9 in.) Weight: 350g (12 oz.)

Specifications

Aperture range: f/3.5 to f/22 Picture angle: 59° Lens construction: 6 elements in 5 groups Close focusing range: Infinity to 0.6m (2 ft.) Attachment size: 58mm (P=0.75mm) Dimensions (dia. × extension from lens flange): 62×43.8 mm (2.4 × 1.7 in.) Weight: 175g (6 oz.)



NIKONOS-V INTERCHANGEABLE LENSES



Viewfinder DF-10











W-Nikkor 35mm f/2.5

General-purpose amphibious lens. Camera's viewfinder matches lens field of view. Great for all active water sports.

Specifications

Aperture range: f/2.5 to f/22
Picture angle: 43°30′
Lens construction: 7 elements in 5 groups
Close focusing range: Infinity to 0.8m (2.6 ft.)
Attachment size: 58mm (P=0.75mm)
Dimensions (dia. × extension from lens flange):
62 × 39.5mm (2.4 × 1.5 in.)
Weight: 160g (6 oz.)

Nikkor 80mm f/4

Amphibious telephoto lens that's perfect for close-ups with Nikonos Close-Up Outfit. Optional DF-10 Optical Viewfinder used for on-land photography.

Specifications

Weight: 275g (10 oz.)

Aperture range: f/4 to f/22 Picture angle: $23^{\circ}45'$ Lens construction: 5 elements in 5 groups Close focusing range: Infinity to 1 m (3.3 ft.) Attachment size: 58mm (P=0.75mm) Dimensions (dia. × extension from lens flange): 62×66 mm (2.4×2.6 in.)



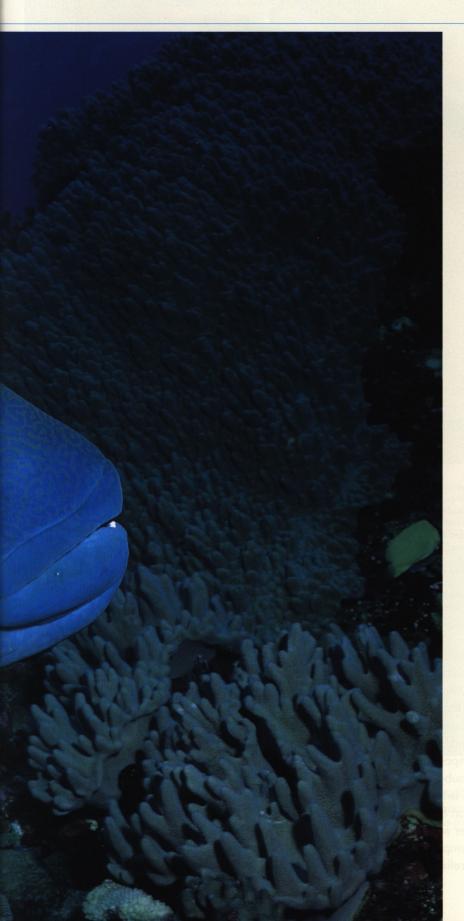
Nikonos Close-Up Outfit

The Nikonos Close-Up Outfit transforms three lenses into creative, close focusing tools for intimate portraits of coral reef creatures. Consists of a close-up attachment lens mounted in front of a 28mm, 35mm or 80mm lens. Three field frames match the area covered by these lenses. A camera-mounted frame support bracket helps determine precise camera-to-subject distance. Variable underwater magnification ratio—1:6 (28mm), 1:4.5 (35mm) and 1:2.2 (80mm).





NIKONOS RSAF

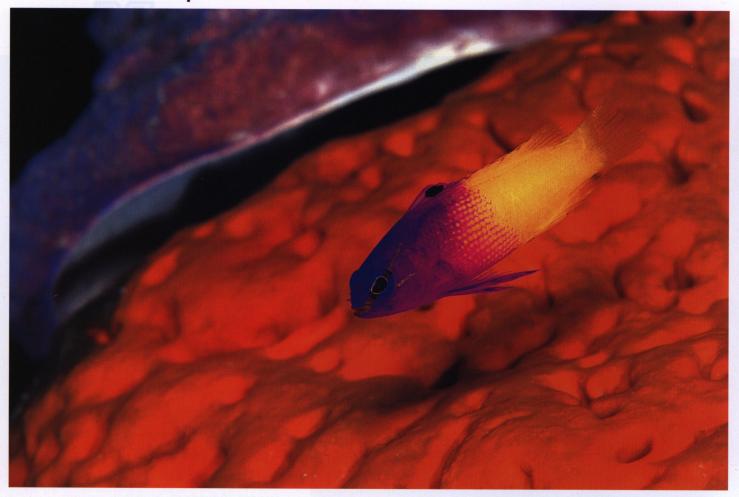




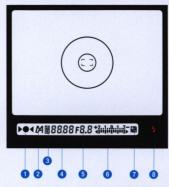
The world's only underwater SLR camera.

When you need precise focusing and critical viewing for creative composition, there is only one camera in the world that offers this capability in a compact, self-contained unit—the Nikonos RS. With lenses designed to take advantage of reflex viewing, the RS is the ultimate photographic tool for creating new and different images. Advanced, high-tech features such as Autofocus and Matrix Metering provide speed and accuracy in an unpredictable photo environment. The Nikonos RS is designed to accommodate the most demanding needs down to depths of 100 meters (328 feet).

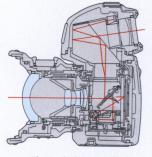
You will see and experience the difference.



- Focus indication shows status: in focus, Focus Tracking, or out of focus
- Exposure mode selected: A for Aperture-Priority auto exposure and M for Manual exposure
- 3 DX-coded film speed set
- Shutter speed in use/Manually selected ISO film speed
- Aperture selected on dial/Exposure compensation value
- 6 Deviation from correct exposure value
- Exposure compensation mark
- Flash ready-light



Comprehensive viewfinder LCD screen



Through the viewfinder, you see exactly the same image that will come out on film.

Demanding photographers need to know exactly where the subject is located within the frame — especially in close-up photography where depth of field is limited. With the Nikonos RS you can pinpoint the exact spot of focus on your subject. The image looms big and bright, thanks to an oversized action finder and a Nikon BriteView finder screen, allowing more skillful compositions. The 60mm high-eyepoint relief combines with a

nine degree offset angle to make viewing very comfortable, even in tight places on the reef. You can confirm picture-taking status in the LCD readout panel in the viewfinder, which is illuminated for clear and easy reading in low light situations or even on a night photo dive. The finder of the RS is so advanced, you will never have to take your eye away while shooting, which allows you to concentrate on composition.

NIKONOS RSAF

Speed and sharpness beyond imagining.



Underwater photo subjects move incredibly fast and can elude the best of photographers.

But when you finally capture that long sought-after image, the satisfaction is immense. Nothing helps the photographer more in this quest than the autofocus system of the Nikonos RS. Even in macro photography, when refocusing is necessary, the RS reliably produces accurate, sharply focused results. Single Servo AF allows you to lock focus and recompose for creative off-center composition. Continuous Servo AF adjusts for moving subjects. And Focus Tracking automatically detects and predicts the precise point of focus of subjects moving toward the camera. You may also choose to focus manually with the Power Manual Focus mode, or set the camera on Freeze Focus which fires the shutter when your subject swims into sharp focus.



Focus Tracking







Advanced AM200 autofocus sensor assures accurate autofocus in light as dim as EV minus 1.

NIKONOS RSAF **METERING & EXPOSURE**

Unmatched, unfailing accuracy.

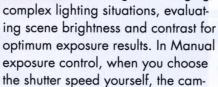




Matrix Meter



The Nikonos RS incorporates Nikon's revolutionary Matrix Metering for handling fast-changing,



era activates a Center-Weighted Meter which concentrates 75% of its sensitivity in the finder's 12mm center circle. There is a "B" setting for long time exposures, and an Exposure Compensation control to brighten or



darken the scene in 1/3 step increments, up to ±2 EV.



Exposure Compensation (+1 EV)

NIKONOS RSAF

Restore the colors in underwater photography.

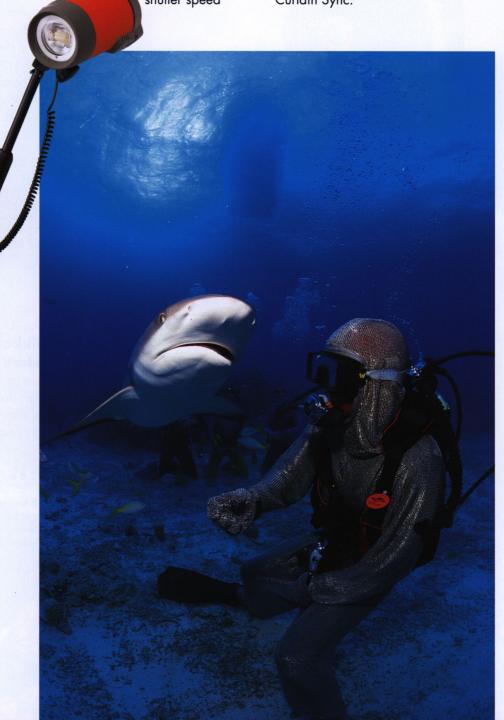


Rear-curtain sync

Just adding light to underwater photography is not enough. It must be the right amount of light, and the right quality light if you expect the results you demand. The Nikonos RS can control any Nikonos Speedlight to produce the exact amount of light for proper exposure. Matrix Balanced Fill-Flash automatically blends the Speedlight's artificial light with the ambient light. It accomplish-

es this by varying the shutter speed

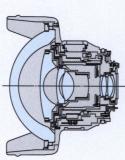
between 1/30 sec. and 1/125 sec. for the proper ambient light setting for the aperture you set, then compensates the amount of flash to properly illuminate your foreground subject and blend it with the background ambient light to produce a natural effect. Standard TTL auto flash control and Manual flash control are options creative photographers can choose to produce special lighting effects down to one full second or with Rear-Curtain Sync.



Creative tools for personal expression.

A close-focusing standard lens, the world's first underwater zoom lens, a Micro-Nikkor for shooting life-size and a Fisheye lens for extreme coverage. Each made of Nikon optical glass and corrected for superb underwater performance. And utilizing a double bayonet lens mount that's both airtight and watertight.





R-UW AF FISHEYE-NIKKOR 13mm f/2.8 A panoramic view

As the name implies, the lens approximates the way a fish might see the world. 170° underwater angle of view across the diagonal of the 24mm x 36mm picture format plus close focusing down to 14cm (0.5 ft). Sharp, dynamic pictures of subjects up close with vivid colors. Multilayer coating reduces flare and ghost for superb color balance.

Specifications

Aperture range: f/2.8 to f/22

Picture angle: 170°

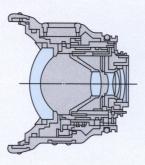
Lens construction: 10 elements in 7 groups Close focusing range: Infinity to 0.14m (0.5 ft.)

Dimensions (dia. × extension from lens flange): 126 × 94mm (5.0

 $\times 3.7$ in.

Weight: 970g (34.2 oz.)





R-UW AF Nikkor 28mm f/2.8 A great standard

Begin with moderately wide shots, come in for tight photos of another diver, then get even closer for dramatic close-ups of fish with up to a 1:6 reproduction ratio. A compact and light choice.

Specifications

Aperture range: f/2.8 to f/22

Picture angle: 60°

Lens construction: 6 elements in 6 groups

Close focusing range: Infinity to 0.26m (0.85 ft.)

Attachment size: 88mm (P=1mm)

Dimensions (dia. \times extension from lens flange): 99 \times 77mm (3.9 \times

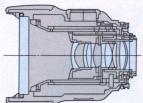
3.0 in.)

Weight: 550g (19.4 oz.)



NIKONOS REALES





R-UW AF Micro-Nikkor 50mm f/2.8 Life-size creativity

As you carefully move in close to your subject, you keep on triggering the shutter without readjusting or measuring the distance. You focus continuously through the entire macro range up to 1:1. The Micro-Nikkor 50mm f/2.8 is the workhorse lens in your toolbox. Perfect for classic close-up fish portraits, macro photography and general photography.

Specifications

Aperture range: f/2.8 to f/22

Picture angle: 35°

Lens construction: 10 elements in 9 groups Close focusing range: Infinity to 0.17m (0.55 ft.)

Attachment size: 88mm (P=1mm)

Dimensions (dia. \times extension from lens flange): 103×126 mm

 $(4.0 \times 5.0 \text{ in.})$

Weight: 1,100g (38.8 oz.)







R-UW AF Zoom-Nikkor 20-35mm f/2.8 The world's first underwater zoom

Shoot with any focal length for many creative compositions without moving. You can also shoot the same subject from various perspectives. Since you can't change lenses underwater, it's the ideal choice — you stay put, and simply zoom in or out. Perfect for shy subjects. No worrying about silt. Plus you can do in-camera cropping.

Specifications

Aperture range: f/2.8 to f/22

Picture angle: 80° to 51°

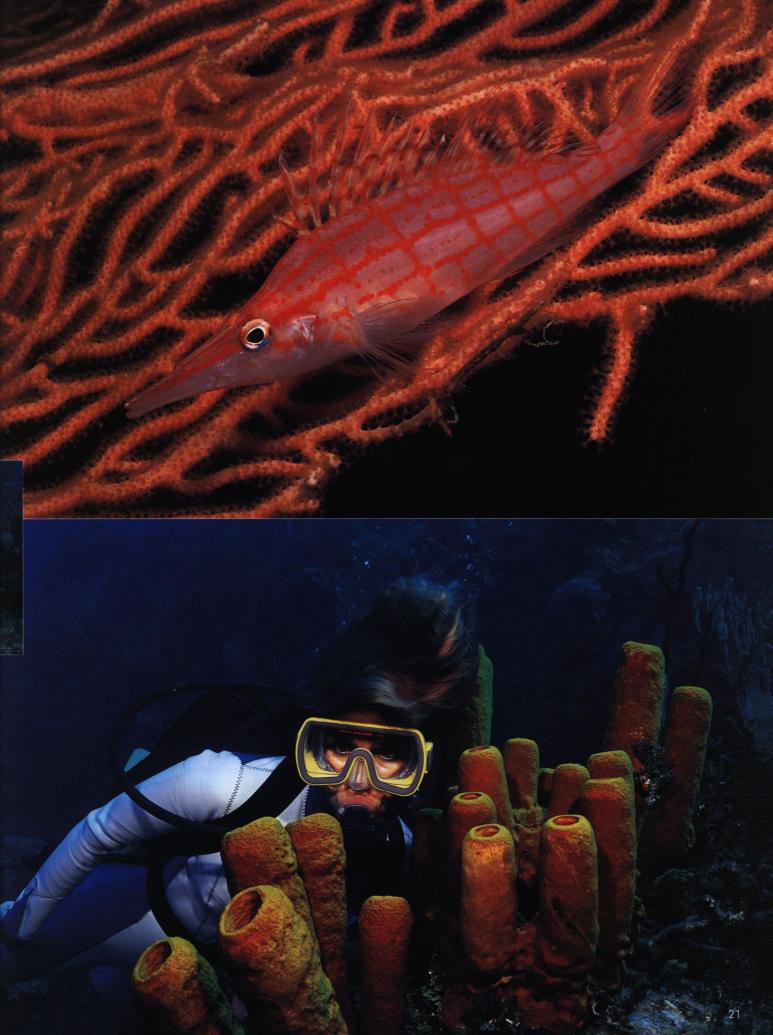
Lens construction: 10 elements in 10 groups Close focusing range: Infinity to 0.38m (1.2 ft.)

Attachment size: 148mm (P=1mm)

Dimensions (dia. \times extension from lens flange): 162×129 mm

 $(6.4 \times 5.1 \text{ in.})$

Weight: 1,750g (61.7 oz.)



Bright buddies for underwater excursions.

SB-104

The Nikonos SB-104 Speedlight brings the deep to light. A powerful unit with a Guide Number of 16 in meters (53 in feet), at ISO 100 underwater. The color temperature of 4,700° Kelvin assures warm, natural-looking colors. Coverage is a wide 100-degree angle. And the fast three-second recycle time will make you incredibly prolific. The SB-104's Wireless Slave Flash capability helps you become even more versatile and creative.

SB-105

The Nikonos SB-105 Speedlight with its compact size and high performance should be a part of your diving gear. The Guide Number is 10 in meters (33 in feet), at ISO 100 underwater. Used with the Wide Flash Adapter SW-103, it covers the picture angle of a 15mm

lens. You have a choice of

Manual Flash Output

and TTL. With the

Nikonos RS,

Balanced Fill-

Flash is avail-

able. Wireless

function is also

Slave Flash

available.

Matrix

Bracket System SK-104

One-touch detachable arm for speedy handling. Extension Arm SK-104E also available.

Double Bracket SK-104W for multiple flash

Double bracket for use of two speedlights for more creative lighting. Double flash bracket and double TTL sync cord available.

Battery

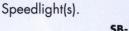
Rechargeable NiCd Battery Pack SN-104 and Quick Charger SH-104 available. SH-104 enables 2-hour high-speed full charge to offer 120 flashes at full power.

Exposure calculator

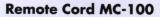
Calculation plates for various ISO ratings can be inserted at the SB-104's back.

Underwater sync cords

Special Sync Cords that attach the camera to Nikonos Speedlights let you change equipment underwater. The SC-103 connects to the camera, while the SC-101 (for single flash sync) and the SC-102 (for double sync)



connect to the



Enables remote photography from three meters away by pushbutton operation.

Eyepiece Cover DK-100

Prevents external light from entering the camera through the viewfinder during remote-control photography.

O-rings and lubricant

Available for required maintenance.

Carrying Case CT-N1

Easy carrying protection for Nikonos RS photographic systems.





SC-102



Nikonos-V Specifications

Type of camera: Electronically controlled 35mm amphibious focal plane shutter camera

Construction: Body made of die-cast copper silumin oxidized aluminum alloy; all joints sealed by O-ring gaskets to ensure absolute watertightness; camera able to withstand pressures up to 6kg/cm² at a depth of 50m (160 ft.)

Usable film: Standard 35mm cartridge-type film

Picture format: 24mm × 36mm (standard 35mm film format)

Lens mount: Nikonos bayonet mount

Lenses: Dedicated Nikonos Lenses; five additional lenses from super-

wideangle to medium telephoto available

Viewfinder: Reverse Galilean-type Albada finder built into camera for use with standard 35mm lens; film frame marks show approx. 85% picture coverage at infinity (∞); 0.55× magnification; +0.9 diopter; high eyepoint allows viewing with eye 40mm away from finder; parallax compensation marks provided; optical viewfinders or frame finders available for dedicated Nikonos lenses

Viewfinder information: LED shutter speed indications; LED over- and underexposure warning arrows; thunderbolt-shaped ready-light

Shutter: Electronically controlled vertical-travel metal focal-plane type Shutter speeds: A (AUTO): Electronically controlled stepless speeds from 1/30 to 1/1000 sec.; M (MANUAL): Quartz-controlled speeds from 1/30 to 1/1000 sec.; M90 (MECHANICAL): Mechanically controlled at 1/90 sec.; B (BULB): Mechanically controlled for long exposures; R (REWIND): Setting used when rewinding film

Shutter release: Button at top of anatomical grip; initial pressure on button switches on meter, meter remains on for 16 sec. after

finger is removed; shutter release lock incorporated Exposure control: Two exposure control modes: A (aperture-priority auto) and M (manual) modes provided Exposure metering: Through-the-lens (TTL) light intensity feedback metering; TTL flash with SB-104 and others Metering range: EV 8 to EV 19 at ISO 100 with f/2.8 lens (from 1/30 sec. at f/2.8 to 1/1000 sec. at f/22)

Film speed range: ISO 25 to 1600

Accessory shoe: Provided; built into top of viewfinder Flash synchronization: X-sync only via flash socket in camera's base; synchronizes at 1/90 sec. or slower; with Nikonos SB-104 and other Speedlights, shutter speed automatically switches to 1/90 sec. when shutter speed/mode selector dial is at "A" or at 1/125 or higher in manual mode; at 1/60 sec. or slower on manual, shutter fires at speed set

Flash ready-light: Thunderbolt-shaped LED in viewfinder lights up when SB-104, SB-105 and others have recy-

cled; blinks to warn of insufficient light output, improper shutter speed/mode selector dial setting, and film speed setting beyond ISO 400 for TTL flash operation

Film advance lever: Wound in single stroke or series of strokes; 144° winding angle; hinged for compact storage; when shutter speed/mode selector dial is at "A," shutter releases at approx. 1/1500 sec. until film frame counter reaches frame "1"

Frame counter: Additive type; advances one frame with each complete stroke of film advance lever whether film is loaded or not; resets when camera back is opened

Film rewind: Manual via film rewind crank after shutter speed/mode selector dial is set to "R" (Rewind); shutter release button is automatically locked

Camera back: Hinged type with camera back locking pin; opened and locked via camera back lock/release latch and camera back release button Pressure plate: Hinged type, attached to camera body; locking catch provided

Tripod socket: Located at base plate of camera body; standard 1/4

Batteries: One 3V lithium battery (CR 1/3 type), two 1.55V silver-oxide batteries (SR-44 type) or one 1.5V alkaline battery (LR-44 type)

Battery check: Possible when shutter speed/mode selector dial is at any setting except M90, B, R, and frame counter is at or beyond "1"; viewfinder LED lights to indicate proper battery installation and sufficient battery power when shutter release button is depressed; if batteries are exhausted, replace with fresh ones

Body finish: Black with orange, or black with moss-green **Dimensions (W** \times **H** \times **D):** Approx. 146 \times 99 \times 58mm (5.7 \times 3.9 \times 2.3 in.) Weight (body only): Approx. 700g (24.7 oz.)

Nikonos RS Specifications

Type of camera: Integral-motor autofocus, 35mm single-lens reflex underwater camera

Construction: Body made of die-cast copper silumin oxidized aluminum alloy; all joints sealed by O-ring gaskets to ensure absolute watertightness; camera able to withstand pressures to a depth of 100m (328 ft.)

Picture format: 24mm × 36mm (standard 35mm film format)

Lens mount: Nikonos R-UW mount

Lens: Dedicated R-UW AF Nikkor lenses having CPU contacts

Viewfinder: Fixed eyelevel pentaprism high-eyepoint type; offset angle 9°; 0.39× magnification with 28mm lens at infinity; 92% frame coverage; -0.7 diopter; 60mm (2.4 in.) eyepoint relief

Focusing screen: Fixed Nikon advanced B-type BriteView screen with

central focus brackets for autofocus operation

Viewfinder information: The following LCD indications appear: focus indicators, exposure mode, shutter speed, aperture, film speed, DX mark, ISO mark, electronic analog display, exposure compensation mark, overor underexposure alert, ready-light; illuminated while meter is ON

Film speed range: ISO 25 to 5000 for DX-coded film; ISO 6 to 6400 for manual setting

Film speed setting: At DX position, automatically set to ISO speed of DX-coded film used; with non-DX-coded film, ISO speed is set manually Film loading: Film automatically advances to first frame when shutter release button is depressed once

Film advance: Film automatically advances one frame when shutter is released

Frame counter: Additive type; counts back while film is rewinding; illuminated by LED

> Film rewind: Automatic when film rewind lever is turned; approx. 25 sec. per 36-exposure roll; stops automatically when film is rewound

Focus modes: Single-Servo or Continuous-Servo autofocus, Power Focus and Freeze Focus

Autofocus detection system: TTL phase detection system using Nikon Advanced AM200 autofocus module Autofocus detection range: Approx. EV minus 1 to EV 19 (ISO 100)

Autofocus lock: By lightly pressing shutter release button in Single-Servo autofocus

Focus tracking: Automatically activated in Single-Servo and Continuous-Servo autofocus

Electronic rangefinder: Available in Power Focus

Exposure metering: Matrix and Center-Weighted Metering built-in

Exposure meter: Activated by lightly pressing shutter release button; stays on for approx. 16 sec. after finger is lifted off button Metering range: EV 3 to EV 20 (ISO 100)

Exposure modes: Aperture-priority auto (A) and manual (M)

Aperture-priority auto exposure control: Shutter speed automatically set to match manually selected aperture

Manual exposure control: Both aperture and shutter speed are set

Exposure compensation: Possible using exposure compensation dial within +/- 2 EV range in 1/3 EV steps

Shutter: Electromagnetically controlled vertical-travel focal-plane shutter Shutter speeds: Lithium niobate oscillator-controlled speeds from 1/2000 to 1 sec.; electromagnetically controlled long exposure at B setting Reflex mirror: Automatic, instant-return type

Camera back: Hinged type; opened and locked via camera back lock/release latch; inner camera door is also provided

Flash synchronization: 1/30 to 1/125 sec. in A mode, down to one. sec. shutter is available in rear-curtain sync; in M mode, shutter fires at speed set, and when set from 1/250 sec. or higher, shutter is automatically set to 1/125 sec.

Flash sync control: Front-curtain sync and rear-curtain sync provided; selected via switch inside body

Flash ready-light: Viewfinder LED lights up when dedicated Nikonos Speedlight is ready to fire; blinks to warn of insufficient light for correct exposure

Power source: One 6V lithium battery pack (CR-P2 or DL223A) **Tripod socket:** Located at base plate of camera body; standard 1/4 in. (JIS) Terminals: Accessory shoe, flash sync socket, remote socket **Dimensions (W** \times **H** \times **D):** 196 \times 151 \times 85mm (7.7 \times 5.9 \times 3.3 in.) Weight (body only): 2,130g (75.1 oz.), 920g (32.5 oz.) underwater

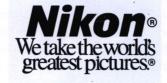


Important!

To prevent water from entering camera body, be sure to wipe all traces of water from camera before opening or closing camera back. Make certain O-ring is thoroughly covered with recommended lubricant. (Do not use silicon grease as it may cause damage and water leakage.) When removing lenses or cords, hold the camera with lens pointing downward. Before re-installing, remove all traces of water from lens mount or cord receptacle.

This product is a strategic product subject to export regulation. It should not be exported without authorization from the appropriate governmental authorities.

NIKON CORPORATION



Awards won by the Nikonos RS

Best of the Category

Consumer products category, 38th Annual Design Review I.D. Magazine (U.S.)



Grand Award

Photography category, Best of What's New '92 Poplular Science (U.S.)



The Best New Products The Best of 1992

The Best of 1992 Business Week (U.S.)

THE BEST OF 1992

BusinessWeek

Special Prize

Camera Grand Prix '93 Camera Press Club (Japan)







