

The camera settings shown below offer a starting point for taking pictures with the Nikon Coolpix 990 digital camera. We encourage you to familiarize yourself with the settings and usage of this camera. Nikon has included a help manual on the "Reference Manuals CD-ROM".

A Recommended Settings for Extraoral Photographs

1 Turn the camera on by setting it to the **[A]** setting located on top of the camera, as shown to the right.



2 **Adjust image quality:** Click on the **QUAL** button on the back of the camera until the **FINE** option is displayed.

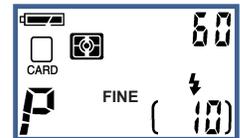
3 **Adjust flash settings:** Click on the flash button  on the back of the camera until the flash displays only the  symbol. This enables the Anytime Flash mode.

4 We suggest using either a **wall mounted lightbox with a built-in slave flash** or a bare **slave flash** to eliminate shadow on the profile images. If you are using a bare slave flash, we have found that it works best when placed precisely behind the patient's head, facing toward a white background. You may need to adjust the brightness on the background lighting that you use in order to generate accurate soft tissue hues. Overhead fluorescent lighting may also affect the color of the images. You can replace the fluorescent bulbs with Vita-Lite, or other **natural lighting bulbs** to produce better color images. Professional photographers spend time setting up their studios for just the right picture. We also have to invest time in setting up our offices for the right lighting for digital images.

Tips for Taking Extraoral Images

When you are taking the lateral head image, make sure the patient's head is level, with no tilting or canting. We suggest that you place a mirror in front of the patient with a vertical line and have them align themselves to it. This will reduce the amount of head tilting, making it easier to align the photos to the x-ray tracings. You should take the photo with the lens roughly along the patient's Frankfurt Horizontal plane to ensure the most accuracy.

Your Control Panel should look like this.



FINE mode with Anytime Flash enabled.

TIP

We recommend using rechargeable Nickel Metal Hydride (NiMH) batteries with this camera, as they hold their charge longer than regular AA batteries.

B Recommended Settings for Intraoral Photographs

For intraoral photographs, we recommend switching to the **Manual** mode on the camera. This allows you to take higher quality pictures than in the auto mode, and allows for greater control over the exposure and depth of field of the images. The manual settings only need to be set once, as the camera "memorizes" these settings.

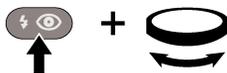
1 To access the manual settings, turn the camera on by setting it to the **[M]** setting located on top of the camera.



2 **General settings:** To take intraoral images, the camera must be switched to the **Macro Close-up** mode. To activate this mode, press the  button until the  icon appears in the Control Panel and the LCD monitor. The **Anytime Flash** mode should be turned on as well.

3 **Adjusting ISO film speed:** The ISO settings define how quickly the camera takes the picture. A higher ISO number means the camera will take the picture quickly, so there's less chance of blurry pictures. This is especially useful for intraoral pictures.

To set the ISO settings, hold down the flash button on the back of the camera and rotate the "Command Dial" located at the top of the camera as shown:



The letters ISO should appear in the Control Panel. You should stop rotating the dial when **ISO 400** appears.

4 **Adjusting Aperture Priority:** For a better depth of field, you should adjust the Aperture settings. Setting the camera on "Aperture Priority" allows you to adjust the camera so you can take pictures where the foreground and the background are both sharp. This is crucial for intraoral photographs.

To enable "Aperture Priority", hold down the "Mode" button and rotate the "Command Dial" located on the top of the camera until the **A** icon appears:

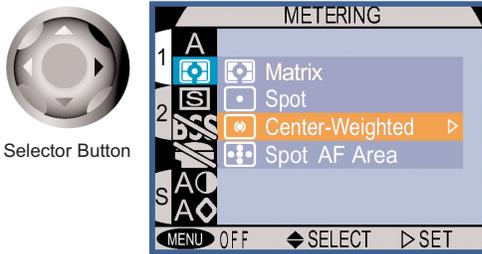


Next, rotate the "Command Dial" all the way to the right until you reach an F-Stop of about 9.0, which appears in the control panel screen at the top of the camera. You will need to use the Zoom buttons to fine tune the value. The macro icon  will then appear yellow on the LCD monitor.



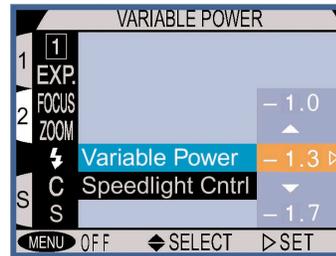
5 Adjusting the Metering:

Metering allows the camera to determine how much light is necessary for illuminating a certain picture. You should use **Center-Weighted metering** for intraoral pictures, as it allows you to preserve background detail while providing the right amount of light output for the teeth. To select this, click on the **Menu** button on the back of the camera and use the **Selector** button to navigate to the **Metering** option, as shown below. When Center-Weighted is highlighted, push on the right arrow of the Selector button to select.

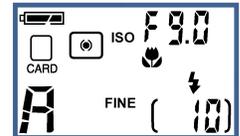


6 Adjust the Speedlight settings:

To eliminate overexposure for intraoral pictures, you can adjust the flash output of Nikon's **Speedlight**. To do this, click on the Menu button on the back of the camera, then select the lightning bolt icon. Choose "Variable Power" as shown in the picture below. We recommend using a setting of **-1.3** for intraorals. However, you may need to adjust this value to fit the lighting in your office.



After all of the adjustments have been made, the Control Panel at the top of the camera should resemble the image shown below.



Manual Mode with:
Macro setting
Anytime Flash
ISO 400 setting
Aperture Priority
Center Weighted Metering
Reduced Flash output

Tips for Taking Intraoral Images

For intraoral images, we recommend taking pictures about 6 inches from the patient's mouth. This allows the flash to meter correctly without overexposing the picture. With the camera's high resolution, you will not lose clarity when cropping the images.

When you are taking the buccal and frontal intraoral pictures, make sure to take the picture at a 90° angle to the teeth. Also, try to align the horizontal plane of the camera with the patient's occlusal plane. This will save time, as you will not have to rotate the image inside Quick Ceph later.

NOTE: The flash is located on the left side of the camera. When taking right side buccal pictures, we recommend turning the camera upside down. This eliminates shadows and gives you images with consistent exposure and color. The image can then be rotated inside Quick Ceph.

For occlusal pictures, we recommend framing the picture in the LCD monitor and leaving a left and right margin. If the picture is taken too close, it may not fit within the cropping windows. We recommend using mirrors for the occlusal pictures.

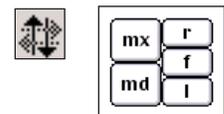
TIP

If the occlusal pictures appear too dark, you should set the camera to the A-mode and turn on the Macro. This adds more light to the occlusal pictures.

C Adjusting Images While in QCIPro and QC2000

Rotating Intraoral Images Inside QCIPro and QC2000

To flip mirror pictures within QCIPro and QC2000, use the **Flip** tool located on the Tool Bar. Make sure the intraoral images are displayed on-screen. Click on the **Flip** tool and from the display box that appears, choose the image that you would like to flip across the mirror plane.



If you've taken your right buccal pictures by turning your camera upside down, the image must then be re-rotated 180° using the **Flip** tool. To simulate a 180° rotation, the image must be flipped both horizontally and vertically. First, flip the picture horizontally by clicking on the **Flip** tool. To flip the buccal picture vertically, hold down the "option" key before clicking on the **Flip** tool.

The **Rotate 90°** tool is used to rotate extraoral images 90° in QC2000. Clicking on this tool rotates the image clockwise. For counterclockwise rotation, hold down the "option" key and click on the **90°** tool. This tool is not available in QCIPro.



Please Note: We only recommend this camera. We do not manufacture it. If you have technical difficulties, please contact Nikon Support at 1-800-645-6689.