# English

# Swann™

## PRO-SERIES

# PRO-780

M780CAM190312E

# About the Camera

Congratulations on your purchase of this PRO-780 from *Swann*! You've chosen well: we think this is one of the finest vari-focal CCTV video cameras available. The adjustable lens and on-screen menu system make the PRO-780 ideal for monitoring any kind of space in almost any lighting conditions... even no light at all, as it can see up to 40m/130ft in complete darkness!

Our two cents: you've spent the money on a great camera. It's worth spending a bit of time making sure it's set up right. This manual will take you through what you need to do to get the camera delivering high quality images, and will let you know a little about how you can tweak it further.

## The Process: An Overview

1. Choose a spot for your camera. This will be influenced by what you need to monitor, the places nearby which could support a camera, the lighting conditions of the environment and so on.

2. Connect the camera to a monitor. We suggest connecting it directly to a monitor during setup, and to your DVR (or other recording device) afterwards. Having a monitor on hand in the same location as the camera is a real time saver during setup.

3. **Set the zoom.** This will set the viewing angle of the lens, which determines how much the camera can see (page 3).

4. **Set the focus.** This will allow you to choose which parts of what the camera can see is in focus. In actuality, you'll probably go back and forth between steps 3 and 4 until you're happy with the image (page 3).

5. **Connect the camera to your DVR** (or other recording/monitoring device) - see page 4.

## Choosing a Location

The PRO-780 is very flexible, and can be installed practically anywhere. Some of the things you'll have to consider when choosing a location are:

• What you want to monitor, and where you'll get the best view of it.

• How you're going to connect the camera to your monitoring system.

• How to keep the camera out of harm's way. Up high in protected corners is a good option.

## Rules is Rules

Regardless of all the tweaking of the lens and image processing you do, there are a few immutable things that are true for all cameras, CCTV or otherwise.

• **The closer the camera is to what you want to see, the more detail you're going to get.** You can make some alteration by tweaking the zoom, but there's no substitute for proximity.

• **Areas with varied lighting conditions are hard to view completely, with any camera.** If the bright bits are exposed correctly, then the shadows will "black out". If the shadowy areas are exposed correctly, then the bright bits will overexpose and "white out". Aiming the camera at an evenly lit area will always give the best results.

• **That "image enhancement" stuff that they do on *CSI* or *24* is all lies.** You can't zoom in indefinitely on a video image. Licence plates are only readable from a few meters (a dozen or so feet) away. If someone's head is represented by three pixels, that's it. Sorry. This is technology, not magic. This is a ***great*** CCTV camera, but it's still just a video camera - it can't see *that* much better than you can! Still, it does make for good television.

## Adjusting Focus and Zoom

• To access the zoom and focus, remove the two protective caps from the rear of the camera by unscrewing counter-clockwise.

• Use a flat-blade screwdriver to turn the exposed control rod. The zoom is located on the top left, and focus on the lower right.

• Be sure to securely replace the protective caps after adjusting the zoom and focus, otherwise the camera will no longer be weather-proof.
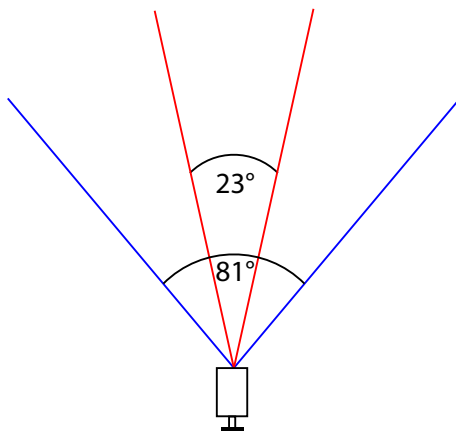
The zoom and focus controls are located on the rear of the camera.

**ZOOM:** The left hand dial controls the level of zoom. You can vary the viewing angle between 23° and 81°. This is an approximately 3x optical zoom, which operates in a similar manner to the zoom on your digital camera. Basically, zooming in makes everything appear to be larger, at the expense of the viewing area.

Check out the diagram to the left for a visual representation of the zooming process.

The smaller viewing angle (marked 23°) represents the camera's view when "zoomed in", and the larger angle (81°) represents the camera's view when "zoomed out".

You can set the zoom to either of these extremities, or anywhere in between.

When you change the zoom, you'll also have to change the focus. **Why?** Lenses are complicated, and all the bits are joined together. Changing the zoom will also change the focus.

**FOCUS:** The right hand dial controls the focus.

Adjusting the focus control is kind of like trying on a different pair of glasses - it can make sharp things look blurry and blurry things look sharp. It's not quite magic, but it's pretty close.

Basically, once you've set the zoom, twist the focus knob until what you want to see doesn't look blurry anymore. If you can't turn the knob any more one way, go back the other.

You can only have so much in focus at once - photographers refer to the size of the area in focus as the "depth of field".

The diagram to the right shows a couple of different focusing options. The shaded areas represent the depth of field. As you can see, there is no hard edge, some things are "more" in focus than others.

Note that this is for illustrative purposes only - there are many factors which contribute to depth of field which vary from location to location.

**A:** The lens is at its widest, and focused on an area relatively close to the camera. The depth of field is quite large.

**B:** The lens at its widest with focus set to "infinity". Anything in the shaded section will be in focus, and this focus extends to infinity (that is, things in the far distance will also be in focus). However, things in the distance might be too small to see the detail you require.
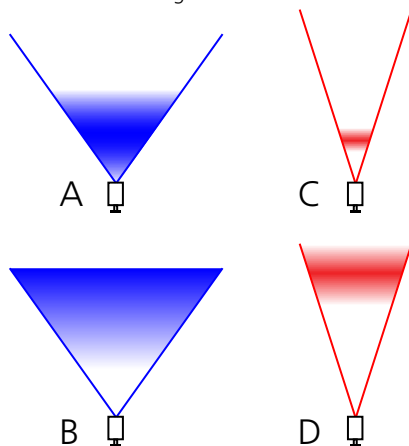
**C:** The lens at its tightest, focused on an area close to the camera. As you can see, the more the lens is zoomed, the smaller the depth of field becomes.

**D:** The lens at its tightest with focus further from the camera. At this distance, the actual depth of field is much larger, but it doesn't extend to infinity like it does when the lens is wide.

# Connection Guide

**|** Connect the camera's DC and BNC socket cable to the extension cable's DC and BNC plugs

## 2A. Connecting Directly to TV

**2** Connect a BNC to RCA adapter and connect to video input on your TV or VCR

INPUT

**3** Connect the extension cables DC socket to the DC plug on the power adapter

**4** Plug in the camera power adapter into a wall socket
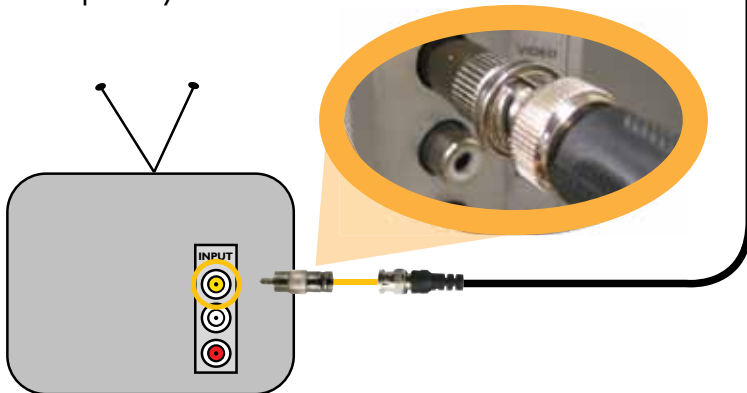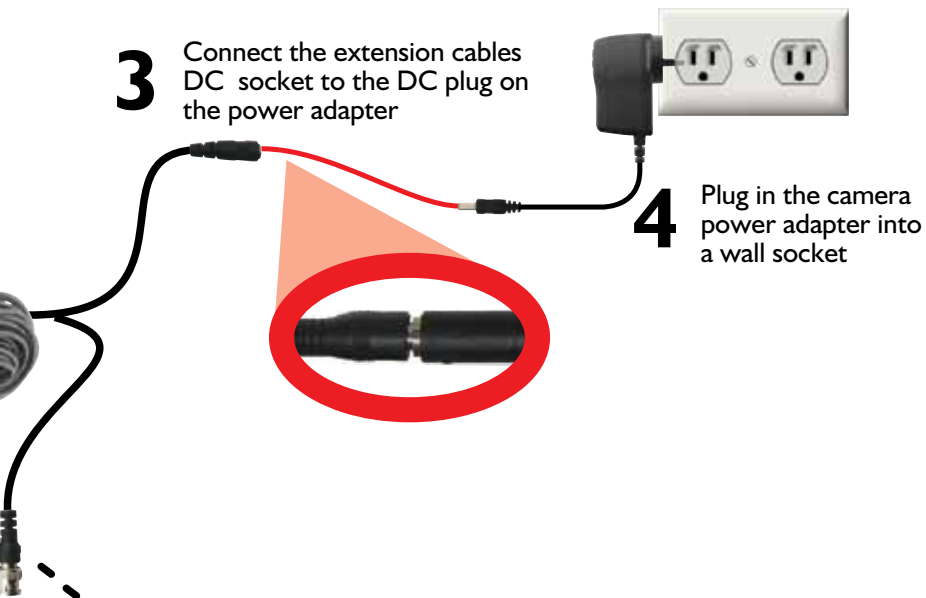
## 2B. Connecting to Your Existing DVR

**2** Connect the BNC extension cable to an open channel on the back of the DVR

**The On-Screen Display**

We're constantly on the lookout for ways to incorporate more features and more advanced technologies into our products. So here's one we're excited about: the PRO-780 features an *On-Screen Display* (OSD) that you can control with the included control unit.

As this is a new, powerful feature, we couldn't possibly fit the full explanation of everything it can do into this booklet. So, we've created an online guide you can access at:

**www.swann.com/osdpro**

Of course, you don't have to use this feature at all. The PRO-780 will work perfectly well if you never even connect the controller – it'll adjust all of its settings automatically.

**Troubleshooting**

**Problem:** At night, all I see is white.

**Solution:** The camera is most likely looking through a window. At night, the infrared light the camera uses to see in the dark can 'bounce back' off a reflective surface (such as glass, water, spider webs, some ceramics and so on) and effectively blind the camera. If you want to see outside, mount the camera outside - we made it weatherproof for a reason!

**Problem:** I see only a blank screen where my image should be.

**Solution:** Check the wiring to the camera, and ensure the camera is being supplied power from the included power adapter. Try using a different video lead, or connecting the camera to a different television or monitor. Be sure there are no devices interrupting your signal, such as a DVR or VCR that isn't outputting the signal correctly.

**Problem:** I can't see anything at night.

**Solution:** The maximum range of the night vision is just that, the maximum range. If there's nothing in this range, you won't see anything. Also, some dark objects (like the proverbial black cat) may not reflect enough light to be seen except as a silhouette if the background is brighter. Some objects which can easily be seen in visible light don't reflect much infrared light.

**Problem:** My image just doesn't seem as "nice" as it should.

**Solution:** That's one of the ironic things about so many configurable options on a high-end camera. You'll probably need to tweak a couple of things before you'll get a really "good" image. We'll deal with the most common issues one at a time.

**Everything looks blurry/soft.**

You probably need to adjust the focus (the knob on the right). This is simply a matter of removing the right protective cap on the rear of the camera, and turning the control knob one way until you find the best focus point or it won't turn any more. Then, turn it back the other way. If there is no "sweet spot" then this indicates one of two things.

1.   Your lens might be dirty. Clean the front of it with a dedicated lens cleaning cloth (available at any camera store). Avoid using solvents or cleaning chemicals, as these can leave a residue.

2.   You might be trying to focus on something outside the "depth of field" - objects need to be at least a certain distance from the camera for you to be able to focus on them. Typically, this will be only a few feet (about 1m) but this distance can increase dramatically if the lens is zoomed in, or in low light conditions.

3.   Be sure to replace the protective cap once you've set the focus!
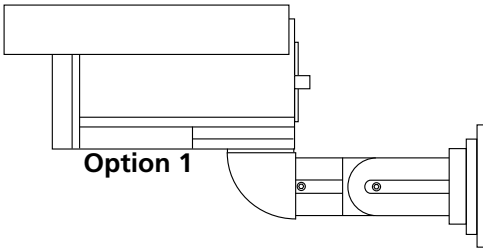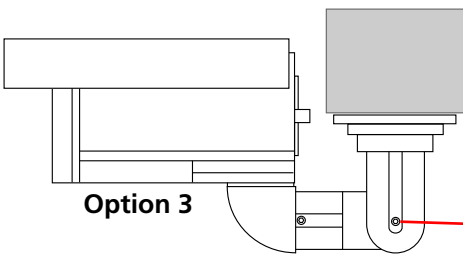
**Option 1**

**Option 2**

**Option 3**

*Diagrams Not to Scale*
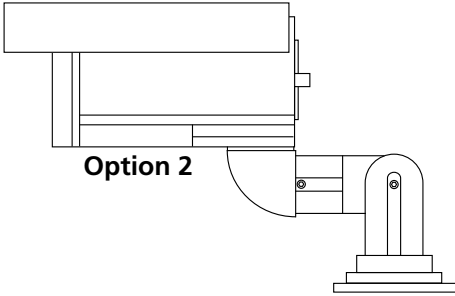
There are three ways that you can mount the PRO-780: to a wall (1, recommended) or to a horizontal surface, either above (2) or suspended (3, requires additional hardware).

To mount the camera, use the supplied mounting hardware (screws). If you're mounting onto a wooden surface, you can drive the screws directly into the wood. You may need to drill guide holes first, particularly if mounting the camera onto hardwood. If mounting on masonry or similar surface, use the included wall plugs.

We recommend mounting the camera onto a wall or other vertical surface - this is what the stand has been designed for. See diagram 1.

You can also mount the camera above a flat surface (2). This is useful if, for example, you wanted to mount the camera on a roof overlooking a yard.

If necessary, you can mount the camera onto a ceiling or other horizontal surface (3) by using a mounting block or bracket (represented on the diagram to the left by the grey box). We don't recommend doing this as it's the most difficult mounting option and will require additional hardware and skill to execute. Be sure to use a bracket or block with sufficient strength. Mounting in this way will make it more difficult to access the zoom and focus controls.

You can change the angle of the stand by loosening the screw on the hinge, shown here. Tighten it once the camera is in the desired position.

*Technical Specifications*

**Video**

| | |
|---|---|
| Image Sensor | 1/3" Sony 'Effio' CCD |
| Video Quality | 700 TV Lines |
| Effective Pixels | NTSC: 976 x 494 |
| | PAL: 976 x 582 |
| Min. Illumination | 0 Lux (IR on) |
| White Balance | Automatic / Manual / Custom |
| Electronic Shutter | NTSC: 1/60 ~ 1/100 000 |
| | PAL: 1/50 ~ 1/100 000 |
| Gain Control | Automatic |
| Backlight Comp. | Yes (Adjustable) |
| Wide Dynamic Range | Yes (Adjustable) |
| Lens | Vari-focal |
| | 2.8mm ~ 12mm |
| Viewing Angle | Max: 81, Min: 23 |

**Night Vision**

| | |
|---|---|
| Range | Up to 40m (130ft) |
| IR Cut Filter | No |
| Number of IR LEDs | 36 |
| Infrared Wavelength | 850nm |
| IR LED Life (Average) | 10, 000 hours |

**General**

| | |
|---|---|
| Operating Power | DC 12V @ 400mA |
| Operating Temp. | -20°C ~ 45°C (-4°F ~ 113°F) |
| Casing | Aluminium |
| Dimensions | 260mm x 160mm x 83mm |
| | (10.25" x 6.3" x 3.25") |
| Weight | 865 / 32oz (approx) |

# Helpdesk / Technical Support Details

# Warranty Information

### FCC Verification