

# Ready for the night

## The bench test [2]

### What our experts say ...

IT'S THE SMALL THINGS, THE ATTENTION TO detail and the extra flourishes, that catch your attention with the Samsung Techwin HD-550 Day/Night camera.

Video surveillance cameras are by their nature a fit-and-forget technology and all that really matters is that they meet the required reliability and performance criteria, but that doesn't mean they have to be entirely utilitarian.

Samsung Techwin appears to have gone that extra mile with the SDN-550.

Why, for example, use a machined knurled knob for the back-focus adjustment when a cheap set screw would do the job just as well?

Why bother fitting transparent sheaths to cables inside the case when they would be perfectly okay loose or held in check with a cable tie?

Why use an expensive metallic paint finish on the heavy gauge all-metal housing when a simple plastic case would suffice?

Time and the market will decide if Samsung's efforts will have been worth it but there are other good reasons for considering this camera.

#### Attention to detail

It has been well blessed in the sensor department and the 1/3-inch Sony Hyper HAD CCD has a 795 x 596 (752 x 582 effective) pixel array giving a claimed 530 lines resolution in colour and 570 lines in black and white Night mode.

Minimum B/W illumination is down to 0.002lux with all of the low light and gain up options engaged.

Our test sample bears the 'P' suffix, which indicates that it is mains-powered; a low voltage AC/DC model is also available.

Common to both types is the Day/Night function, with a servo-assisted UV filter that slides out from in front of the CCD when it switches modes from Day (colour) to Night (mono) operation.

### Samsung Techwin's SDN-550P Day/Night camera really does live up to its name...

It has an extensive set of exposure options, motion detector, privacy mask, on-screen display, digital zoom, mirror mode and camera ID. It supports a wide range of lens configurations (C/CS mount, DC or Video controlled auto iris etc) and the instruction manual has to be one of the most clearly written and lavishly illustrated efforts we've seen in quite a while.

The back-focus adjustment mentioned a moment ago is on the left side of the case. It is elegantly simple in design and use; just slacken the knurled knob, move it up or down as required and tighten it up again.

There's not much to see on the other side either, just a standard 4-pin socket for an auto iris lens. A mounting block with a standard 1/4-inch threaded mounting boss can be fixed to the top or bottom of the case.

The rear panel is where it all happens and this has the BNC socket for the video output, a 3-pin spring terminal for the motion detector alarm output and Day/Night mode external control.

To the left of that is a group of four buttons for the on-screen display system and above those are a switch for selecting AI mode and a green power on LED.

The mains cable emerges just below the video output socket.

Cast alloy mouldings are used at either end of the case and in between there's a two-part steel shell.

It's quite busy inside the case with the mains power supply taking up much of the centre section.

There's another PCB underneath with more power supply components but all of the clever stuff is housed behind an earthed metal screen (another neat and practical touch), at the front of the case where you will find the camera PCB that holds the CCD and all of the video processing circuitry.

As we suggested earlier the quality of construction is remarkably good.

The materials and components are of a noticeably higher than normal standard, as is build quality, and there's nothing in the design to give us any concerns over its long term reliability.

#### Setup and operation

No nasty surprises here and it is all very intuitive. Pressing the Setup button on the rear panel brings



up the first page of the on-screen display.

The first item is Lens and this has the option to switch between manual or auto iris. Next is Shutter, and when Manual AI has been selected there's a choice of Flickerless display, Manual shutter adjustment (x128 to x2 and 1/50 to 120,000th sec in 26 steps) and a second manual mode that uses brightness level to represent the effects of changing shutter speed.

The White balance menu gives a choice of Auto, Auto Tracking and Manual with independent red/blue adjustment.

# ght shift

Backlight Compensation is unusually sophisticated with Low, Medium and High presets and a 'Spotlight' mode for manually masking out a bright light anywhere in the image area.

AGG has two preset ranges (Normal and High) each with manual fine-tuning adjustment. SSSNR or Samsung Super Noise Reduction has 3 settings (Low, Middle & High) for applying varying degrees of noise reduction and 'Sens Up' enables the camera's slow-speed shutter function for

anywhere on the screen, and the same firmware is used to create four movable and resizable Privacy masks.

The last three menu items are Mirror (to flip the image horizontally), a variable picture Sharpness control and a Reset function to return the camera to its factory defaults.

## Performance

With so many manual exposure options to tinker with it is difficult to foresee a situation the 550 cannot cope with.

Nevertheless unless they are all switched off there is often evidence of the extensive processing going on behind the scenes.

It's most noticeable when noise reduction is engaged and the image looks as though there's a fine mesh gauze in front of the lens and any movement results in image lag or 'ghosting'.

Without the digital assistants and in good natural light the picture is crisp and clean with hardly any trace of noise.

Resolution on our sample, while not quite up to the slightly optimistic numbers quoted on the spec sheet, is close enough.

Colours are strong, vibrant and normally very lifelike, though manual intervention will probably be needed if there's a lot of tube lighting to contend with.

The auto exposure controls react quickly to changes in light level and the Day/Night switchover point occurs at just the right level, as noise levels in the colour image start to seriously degrade the picture.

Low light performance is exceptional for a Day/Night camera, which much of the time only slightly extend the capabilities of the colour camera on which they are based.

This one will continue to produce a useable image well past the point at which many of its rivals has given up.

Mechanical stability is excellent and it endured a severe beating with the *S*/rubber mallet without any sign of distress.

**\* Reader Service No 101 (or go to [www.security-installer.co.uk/enquiries](http://www.security-installer.co.uk/enquiries) and key in 101)**

improving image definition in very low light conditions.

Selecting 'Special' opens the second page of menu options and at the top of the list is Camera ID, which is used to compose a one line, 15-character ident that can be positioned anywhere on the screen. Day/Night switches between auto and colour (Day) or black and white (Night) modes, or external control.

Next on the menu is the camera's digital Zoom function with up to 10x magnification, and this is followed by the Synch mode switch (Internal or Line Lock) with an on-screen Phase adjustment.

Motion Detection provides four selectable and resizable 'targets', which can be positioned



## Factspanel

<b>Equipment</b>	SDN-550
<b>Product group</b>	High Res True Day & Night Camera
<b>Manufacturer</b>	Samsung Techwin
<b>Address</b>	Samsung House 1000 Hillswood Drive Hillswood Business Park Chertsey, Surrey KT16 0PS
<b>Telephone</b>	01932 455000 x 5306 / 3708
<b>Fax</b>	01932 455325
<b>Email</b>	a.cassidy@samsung.com
<b>Available from</b>	Norbain, ADI-Gardiners, Dynamic CCTV, Provision, Enterprise and DVS
<b>Trade price (ex Vat)</b>	£189
<b>Mono or colour</b>	Colour
<b>Lens</b>	1/3-inch
<b>Vert angle of view</b>	50Hz
<b>Horiz angle of view</b>	15,625Hz
<b>Pick-up device</b>	1/3-inch Super HAD CCD
<b>Total Pixel array</b>	795 x 596
<b>Effective Pixel array Resolution</b>	752 x 582 530TVL
<b>Sensitivity</b>	0.002Lux @ F1.2
<b>Size in mm</b>	60 x 52 x 130
<b>Power supply Voltage</b>	12v DC/24v AC or 230v AC
<b>Max current consumption</b>	300 ma
<b>Warranty</b>	2 years

## Overall assessment

Even without the embellishments the 550 would still be an excellent camera, and for once the Day/Night facility really does live up to its name. Image quality over a very wide range of lighting conditions remains above average and there's the extra safety net of a very comprehensive set of manual controls to deal with anything the auto systems cannot cope with.



## Product assessment

Design and design features	★★★★★
Circuitry and components	★★★★★
Ease of installation and wiring	★★★★★
Range and variety of functions	★★★★★
Accompanying instructions	★★★★★
Technical advice and backup	★★★★★
Value for money	★★★★★

Grading Key: Outstanding ★★★★★ Very good  
 ★★★★★ Above average ★★★ Average ★★  
 Below average ★

## What the manufacturer says ...

Our recently introduced SDN-550 Day/Night camera is specifically intended to succeed the highly popular SDN-520.

The SDN-550 is equipped with SSNR – Samsung Super Noise Reduction technology – and is therefore able to deliver high resolution images at very low light levels without any smear or "ghosting". The bonus offered by SSNR is that the amount of disk space required for recording is reduced by up to 70 per cent.

Installers who have seen a demonstration of the SDN-550 have expressed an opinion that it is a worthy successor to the SDN-520 and suitable for a wide range of applications including large office buildings, department stores, car parks and perimeter surveillance – in fact anywhere lighting conditions are difficult. The installers were impressed with the depth of field, back light functionality and true colour reproduction of the SDN-550 compared to other manufacturers' cameras.

The SDN-550 incorporates Techwin's WIII DSP chip, which, together with a super HAD CCD sensor, produces superb high resolution colour images at Lux levels as low as 0.3. At night the camera is capable of producing up to 570 TV lines at Lux levels down to 0.002.

Samsung Techwin's unique Spotlight BLC (Back Light Compensation) is built into the SDN-550 and as such is able to detect any strong spots of light and rapidly react when needed to produce clear images. This will be of particular benefit for applications such as where there is a requirement to read car number plates.

Privacy image masking, infrared cut filter, on-screen display, dual voltage and motion detection are all built-in as standard.

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on test:  
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SDN-550P**

