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on test:

Videcon's Concept Pro
external dome camera



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What our experts say ...

IF YOU BELIEVE THE OLD ADAGE ABOUT THE size of one's hands being indicative of the proportions of other parts of the human anatomy then you might wonder what message Videcon is sending to the generally strapping and vigorous members of the installer community.

The VHSD-870EXT dome camera comes with a pair of cotton gloves, a nice touch you might think, and a good way to ensure the dome remains free of greasy finger marks during the final stages of installation. The only trouble is they are quite obviously child-size and barely able to contain more than two thirds of our tester's manly paws. Let's hope that this was just an oversight and that it usually comes with 'extra large' gloves...

On now to more important matters, and the VHSD-870EXT is a top-end day/night dome camera with a high-speed PTZ mechanism programmable with up to 128 preset positions. There's a facility to store 4 manually recorded pattern tours and a feature called Variable Speed Tracking (VST) can be programmed to track the camera between two presets in a repeating sequence; eight VST presets can be stored.

Group Function is another 'macro' recording feature that allows a mixture of actions, including preset positions, tours and VST programs to be sequenced together. There's provision for up to eight groups and each one can contain up to 20 actions. A total of eight dynamic Privacy Zones can be configured to mask off areas, and it has eight alarm inputs that when triggered will move the camera to a preset position.

The pan/tilt mechanism is quick; it tracks at up to 400 degrees per second in preset mode, 180 degs/sec when controlled manually. The camera module is based around a ¼-inch Sony ExView Day/Night CCD assembly, delivering a claimed

Videcon's VHSD-870EXT Concept Pro dome won't blow your mind, but it is a very capable camera indeed...

resolution of 480 lines. It's fitted with an 18x optical zoom and this can be extended with a 12x digital zoom to a maximum magnification of 216x.

Low light sensitivity is in the order of 0.002 lux. Other camera features include auto flip, auto/manual white balance, backlight compensation and the zoom is linked to pan and tilt tracking speed. Control telemetry travels via an RS-485 twisted pair cable link and it uses Pelco D or P protocols; for the record our sample was used with a Videcon VA-KBDPRO keyboard.

Build quality is up to Videcon's usual high standard. The dome is protected by a removable plastic sunshield and the actual housing is in two parts, the upper shell and the lower cap and dome. It's made from a lightweight alloy (apart from the transparent dome, of course) and the two parts come together to form a tight weatherproof seal (the assembly is IP66 rated).

Inside the dome the PTZ mechanism and camera take the form of a removable module bolted to the inside of the upper housing. This is made up of two main parts, the first being the upper stationary chassis plate, which provides mounting points for separate cooling and heating fans, temperature sensors and the single RS-485 socket. This carries power, telemetry alarm connections and the video output. The cable emerges from the apex of the housing and up through the suspension tube to a weatherproof junction box.

A bearing and rotary transformer couple the camera platform to the upper chassis plate, and the lower assembly also houses the two stepper motors with toothed belt-drive reduction gearing for the pan and tilt drives. The bulk of the electronics, responsible for power supply, motor control, telemetry and video processing, is housed on a circular PCB set into the lower camera platform.

Most of the mechanical components and the lower chassis assemblies are made of a tough high-density plastic, to save weight and contribute to the mechanism's agility and positional accuracy. The standard of construction is excellent and with so few moving parts to wear out it should enjoy a long and healthy life.

The dome comes with an impressive assortment of accessories and in addition to the snug gloves there's a very complete fitting kit plus a hex driver and a very meaty-looking T-bar box spanner that between them fit most of the important nuts and bolts that hold the camera and the junction box together.



Setup and operation

Installation is unlikely to cause any problems. All of the cables (power, video and telemetry) are routed through to the junction box attached to the camera's mounting tube. The PCB inside is neatly laid out and the connections are all clearly labelled. The instruction book is adequately illustrated, brief and to the point.

The camera's on-screen menu appears after a somewhat convoluted button pressing exercise and it opens with just five options: System Information, Display Setup, Dome Setting, Factory Reset and Exit. Selections are made by moving the joystick up and down and confirmed or cancelled by pressing the Focus Near and Far buttons.

System Information seems like an odd choice for the first menu page since all it does is display the Firmware version, protocol, colour system and a couple of comms settings, there are no adjustments. The Display Setup menu is only

The bench test [1]



marginally more interesting and this has sub menus for enabling or disabling the Camera ID, Action display, PTZ info, Preset title, alarm info and Privacy display.

Things start to perk up on the Dome Settings menu; this has seven sub menus that delve deeper into the camera's configuration. Camera Setup includes a switch for the digital zoom, Focus Mode (auto or manual) Backlight on/off, Day/Night (day/night/auto), White Balance (manual, auto, indoor, outdoor, 1-push, auto-tracking), and Camera Flip (inverts image for

bench-testing).

Next is Motion Setup and this has switches and selectors for Power-up Action (resume after power cut), Auto Flip, Jog Speed (manual pan/tilt speed - normal/fast/slow), Jog Direction (reverse joystick/pan direction). Park Actions (return to preset position after period of inactivity), Origin Position (power up preset) and Alarm Define (sets alarm preset position).

The Preset Setup sub menu deals with assigning each preset a title or Label, setting the position, dwell time and alarm output relay. Pattern Setup is used to record a series of manual movements lasting up to a minute. The Swing Setup menu programs the Variable Speed Tracking (VST) feature. Group Setup includes programming functions for storing a sequence of actions, and last but not least, Privacy Setup superimposes a white rectangle on the image to mask out sensitive areas, such as windows. Finally on the main menu there's an option to return the camera to the factory default.

Most menu operations are fairly intuitive and the use of the joystick to make selections saves a fair amount of time and effort, especially on repetitive actions, like composing position titles.

Performance

Pan-tilt action is silky smooth with virtually no trace of jitter or overshoot. It's also very precise; speed control is tied in with the zoom so there is no loss of control, even at the highest magnification levels.

Picture quality is very good indeed, lots of fine, crisp detail, and resolution is as close to the manufacturer's specs as makes no difference. Colour fidelity in natural light is fine and the auto functions cope admirably with a very wide range of lighting conditions. The white balance system produces only minor colour error when dealing with notoriously difficult tube and mixed lighting and the day/night function kicks in at precisely the right moment, just before the image descends into a noisy mush. We noticed some internal reflections from the dome, though to be fair these were under fairly unfavourable, not to say quite unusual lighting conditions, but they're certainly no worse than most of the domes we've seen recently.

The only blot on an otherwise almost spotless copybook is the Privacy function. The positioning of the white rectangle is not terribly accurate, or effective, nor is there any way to alter its shape. It comes and goes in large jumpy blocks and with careful juggling of the camera position and zoom control it's possible to see what's behind the mask.

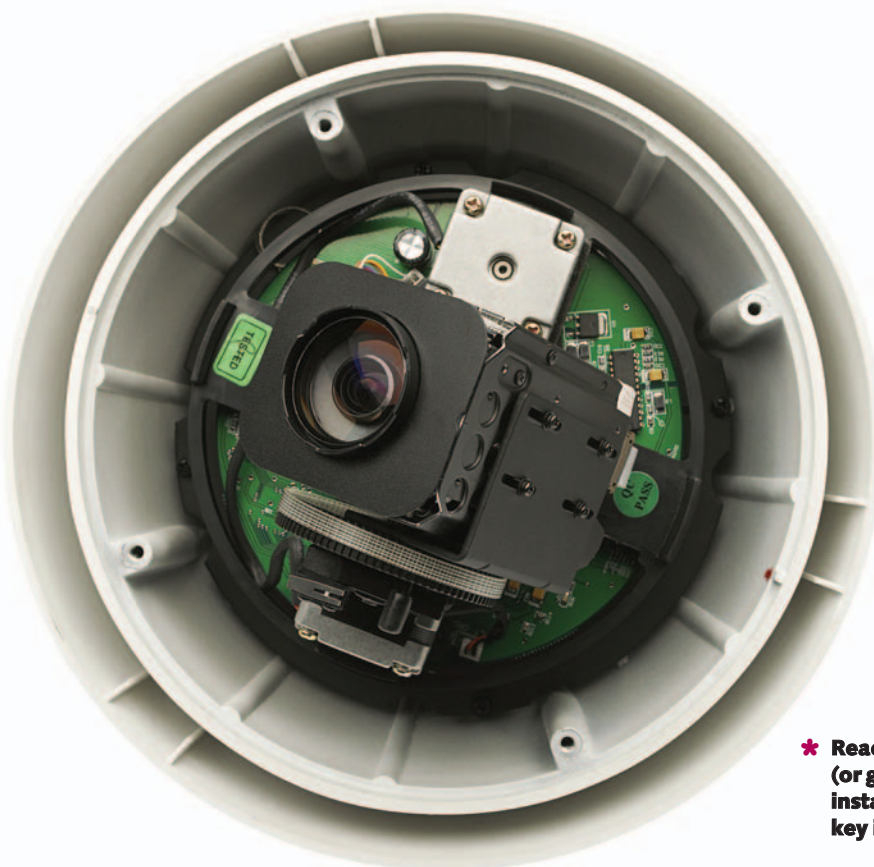
Factspanel

Equipment:	VHSD-870EXT
Product group:	External Day/Night High Speed Dome
Application:	360 deg Vision
Distributor:	Videcon PLC
Brand:	Concept Pro
Address:	Vision House, High Street Heckmondwike West Yorkshire, WF16 0AD
Telephone:	01924 528000
Fax:	01924 528005
Email:	sales@videcon.co.uk
Available from:	Videcon PLC
Trade price:	£499
CE Mark awarded:	Yes
Mono or colour:	Mono/Colour
Lens:	18x optical & 12x digital zoom. 4.1mm ~ 73.8mm
F No:	F 1.4 ~ 3.0
Vertical angle of view:	4.1mm ~ 44o 73.8mm ~ 2.5o
Horizontal angle of view:	4.1mm ~ 57o 73.8mm ~ 3.4o
Pick-up device:	Sony Ex-view CCD
Pixel array:	720 x 576
Resolution:	480 TVL
Sensitivity:	0.002 Lux
Preset view positions:	Up to 127 preset positions. Adjustable dwell time per preset (1 sec ~ 4 mins)
Weather resistance:	IP66
Size in mm:	530 x 230 x 342
Housing material:	Aluminium
Power supply voltage:	24v AC
Max current consumption:	24v - 20Watts max
Warranty:	3 years

Overall assessment

The VHSD-870EXT doesn't boast any particularly new or innovative features, and performance, whilst very good, isn't going to set any new records, but looking at the bigger picture, what we have here is a fast, versatile and highly adaptable dome camera, suited to a very wide range of applications.

Design features, like having a single cable connection to the dome with a separate junction box, should gladden the heart of any installer who has struggled with dome cameras in the past. It should last the course too, and judging by the quality of the materials and the standard of construction there should be few calls made upon the unusually generous/optimistic 3-year warranty.



* Reader Service No 100 (or go to www.security-installer.co.uk/enquiries and key in 100)

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 ...

BUILT FOR TODAY'S MOST DEMANDING SECURITY APPLICATIONS, THE CONCEPT Pro high speed dome combines a range of cutting-edge features to deliver a truly efficient performance. The VHSD-870EXT incorporates all the functions generally associated with the higher-priced, premium brands. Featuring eight (user definable) privacy zones, the camera is fully compliant with the legal requirements for privacy masking determined in the Data Protection Act 1998 and the Human Rights Act 1998.

Amongst a host of reliable features, including 127 preset positions, four pattern tours, and eight variable speed tracking (VST) zones, the VHSD-870EXT offers up to eight group functions. The group function allows the operator to define a sequence of dome actions to form an automatic patrol sequence. This can include a mixture of presets, pattern tours or VST functions, which can be programmed to repeat continuously until interrupted by either the operator or alarm input.

VST is an extremely useful feature particularly for perimeter and border monitoring. The VST function will smoothly and accurately move from one preset to another and then back again in a repeating sequence. The speed between presets can be adjusted as necessary.

Eight alarm inputs and four alarm outputs included at the head of the dome offer sufficient flexibility for connection of external detectors. The camera supports Pelco P and Pelco D protocols at different baud rates making it fully compliant with the vast majority of control equipment available today, such as the VA-KBDPRO.

In addition to enhanced functionality, ease of installation and competitive pricing the VHSD-870EXT comes with an exceptional 3 year warranty.