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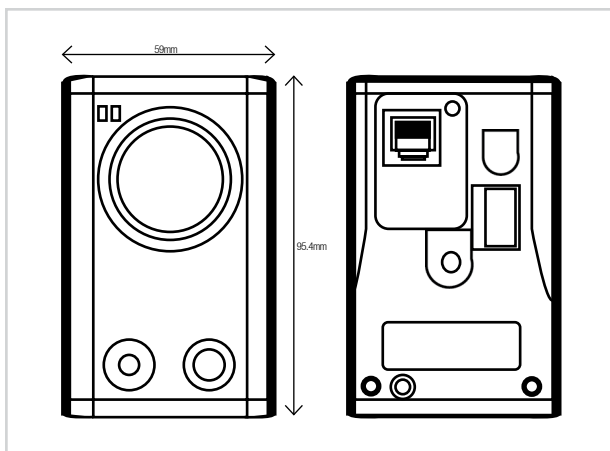
• AVN80X: IVS 1.3 Megapixel Network Camera

This innovative and compact new network camera will provide an immediate remote notification to your iPhone, iPad Smartphone using AV Tech's mobile surveillance software - 'Eagle Eyes'.

Fast and simple to set-up on your network and link with your mobile device, the AVN80X features SD card support for video self-storage, as well as remote event notification from external triggers (such as PIRs or NO/NC switches on doors, windows etc), sending an immediate video of the incident; event to your iPhone/Android device.

Features:

- Easy network setup with your iPhone, iPad, Smartphone
- 1.3 Megapixel live MOS sensor with HDTV 720p quality, allowing users to notice minor details more easily
- SD card support for video storage
- Push Video support to send an event notification to your iPhone and Android phones immediately once the specified event type is triggered, and play video recording once you confirm the receipt
- White LED built-in to illuminate the scene manually, scheduled by a timer, or triggered by a motion, an alarm, or an audio event
- External alarm I/O device connection
- Microphone & speaker built-in for two-way audio transmission
- Remote Surveillance
 - Fully compatible with iPhone & iPad, Internet Explorer® and Windows® operating systems
 - Also accessible via web browsers (Mozilla Firefox®, Safari®, Google Chrome™ and Opera) on Windows® and Mac® operating systems and mobile devices (Blackberry®, Symbian™, Windows® Mobile & Android™) from the web browser or our self-developed mobile program, EagleEyes (see page 426)



Network Specifications:

Model:	AVN80X
Network Compression	H.264, MPEG4, MJPEG
Multiple Video Streaming (Encode Modes, IPS, Resolution)	3 (H.264, MJPEG, MPEG4)
LAN Port / Speed	Yes, 10/100 Based-T Ethernet
Supported Protocols	DDNS, PPPoE, DHCP, NTP, SNTP, TCP/IP, ICMP, SMTP, FTP, HTTP, RTP, RTSP, UPnP
Frame Rate	PAL:25
Number of Online Users	10
Security	Multiple user access levels with password
Web Management	1. Web browsers, such as Internet Explorer, Mozilla Firefox, Google Chrome, Safari & Opera for single device access, or 2. Free CMS software, Video Viewer, for up to 16 network camera control simultaneously

Camera Specifications:

Model:	AVN80X
Image Sensor	1/3" Live MOS image sensor
Video Resolution	SXGA, SXVGA, 720P, VGA, QVGA
Min Illumination	0.1 Lux / F1.5, 0 Lux (LED ON)
Shutter Speed	1/60 (1/50) to 1/100,000 sec.
S/N Ratio	More than 48dB (AGC off)
Lens	f3.8mm / F1.5
Viewing Angle	80.4° (Diagonal)
White LED	Yes (1W, 10m)
White Balance	ATW
AGC	Auto
IRIS Mode	AES
PIR Sensor	Detection Range 76° wide angle with up to 6m long distance at 2m height (under 30°C)
Micro SD Card Slot	Yes
External Alarm I/O	Yes
Microphone	Yes
Speaker	Yes
Power Source (±10%)	5W/2A
Operating Temperature	-0° ~ 40°C

Other Specifications:

Model:	AVN80X
Mobile Surveillance	iPad, iPhone, Android mobile device
Push Video	Yes
Audio Detection	Yes
RTC (real-time clock)	Yes
Motion Detection	Yes
Digital Pan / Tilt / Zoom	Yes
Event Notification	FTP, Email, Push Video
Minimum Web Browsing Requirements	Pentium 4 CPU 1.3 GHz or higher, or equivalent AMD 256MB RAM, AGP graphics card, Direct Draw, 32MB RAM, Windows 7, Vista & XP, DirectX 9.0 or later, Internet Explorer 7.x or later

• **AVC482:** Vari-focal Internal Dome Camera

1/3" Internal Colour Dome Camera.

Features:

- 1/3" colour CCD sensor with SONY Effio DSP
- High resolution
- Low light sensitivity of 0.05 Lux at F1.4
- F1.4 large aperture
- f4.0 ~ f9.0 mm vari-focal lens
- Easy to install, easy to use



Brackets

Interactive & Projectors

Signage/3D

AV Signal Distribution

Faceplates

Cables

Connectors

Cameras

DVRs

Specifications:

Model:	AVC482
Pick up Element	1/3" HR color CCD
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	Super high resolution
Min. Illumination	0.05 Lux, F1.4
S/N Ratio	More than 48dB (AGC off)
Electronic Shutter	1/60 (1/50) to 1/100,000 sec.
Lens	f3.8 ~ f9.5 mm, F1.4
Lens Angle	34.6° ~ 93.9°
Iris Mode	Yes
Smart zoom	AES
White Balance	ATW
Video Output	1.0Vp-p composite, 75Ω
Power Source (±10%)	12v DC
Power Consumption (±10%)	70mA
Dimensions	140(Ø) x 90(H) mm

- **KPC133E:** 1/3" H.R Colour CCD IR Internal Camera

The KPC133E is a 520TVL Internal IR Dome, featuring 21 LEDs (with a range of up to 15 metres) and a 92.6° viewing angle.

Features:

- High sensitivity in the dark environment, 0.1Lux, F2.0, 0Lux (IR ON)
- Day and night features for 24 hour surveillance
- Excellent image quality (500 TVL High Resolution)
- 21 IR LEDs effective range reaches up to 15 metres



Specifications:

Model:	KPC133E
Pick up Element	1/3" H.R. color CCD image sensor
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	500TV lines
Min. Illumination	0.1 Lux / F2.0, 0Lux (IR LED ON)
Effective Range	>15m
IR LED	21 units
S/N Ratio	More than 48dB (AGC off)
Electronic Shutter	1/60(1/50) to 1/100,000 sec
Lens	f3.6mm, F2.0
Lens Angle	92.6°
IRIS Mode	AES
White Balance	ATW
Video Output	1.0 Vp-p composite, 75Ω
Power Source	12v DC, ±10%
Current Consumption	90mA (IR OFF), 280mA (IR ON)±10%
Dimensions	94(Ø) x 70(H) mm

• **AVK016ZP: Vari-Focal Internal Colour Dome Camera**

This vari-focal dome camera is designed for the mid to high end market and features excellent performance under low Lux.

Equipped with F1.4 large aperture, this camera will be the best solution for a gloomy environment. Its f4.0 ~ f9.0mm vari-focal lens (Auto Iris) and its vandal-proof design makes this product versatile.

Features:

- 1/3" HR Color CCD
- F1.4 Large Aperture
- f4.0 ~ f9.0 mm Vari-focal Lens (Auto Iris)
- Supports 0.15 Lux at F1.4
- Vandal-proof housing design



Brackets

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Specifications:

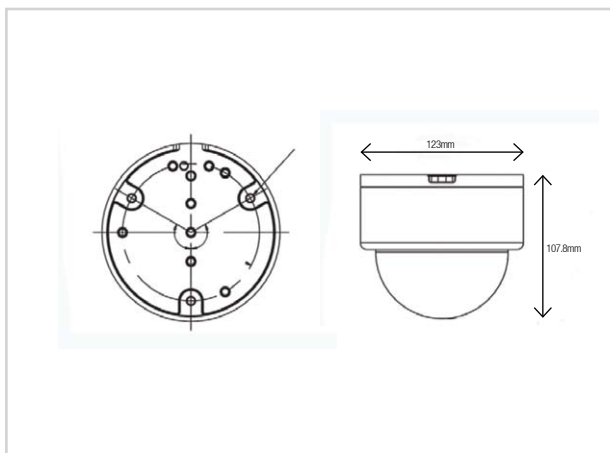
Model:	AVK016ZP
Pick up Element	1/3" HR color CCD
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	520 TVL
Min. Illumination	0.15 Lux, F1.4
S/N Ratio	More than 48dB (AGC off)
Electronic Shutter	1/60 (1/50) to 1/100,000 sec
Vari-focal Auto Iris Lens	f4.0 ~ f9.0mm
Lens Angle	75° ~ 36°
Iris Mode	Auto Iris
White Balance	ATW
Vandal-Proof Rating	IPxx7
Video Output	1.0 Vp-p composite, 75Ω
Power Source (±10%)	12v DC
Current Consumption (±10%)	85mA
Dimensions	124.3(Ø) x 92(H) mm
Weight	0.46kg

• ED610T: 1/3" Vandal-proof Outdoor Dome Camera

8.5mm (1/3") vandal-proof outdoor day/night dome camera with WDR, automatic IR cut filter.

Features:

- Vandal-proof IP66 outdoor housing
- Super-high resolution technology (560TV lines)
- Built-in 3D noise reduction
- Day/night function with automatically swiveling IR cut filter
- Super HAD II sensor with 5 x better native light sensitivity
- On-screen programming
- 8 adjustable privacy zones
- Motion detecting with 4 adjustable zones
- Digital Wide Dynamic Range for properly exposed images
- Up to 32 x digital zoom
- 3-axis positioning for wall or ceiling mounting with flexible viewing angle
- Optional wall bracket (see below)



Specifications:

Model:	ED610T
Sensor	8.5mm (1/3") SONY Super HAD II CCD
Picture element	752(H) x 582(V)
Horizontal resolution	560TV lines
Sensitivity	0.002 lux (sens-up x256), 0.05 lux / F = 1.2
S/N ratio	52dB (AGC off)
Gamma correction	0.45
OSD	Yes, with multiple functions
Day/night control	Automatically swiveling IR cut filter and enhanced b/w sensitivity
IR cut filter control	Auto / colour / b/w / EXT (external light sensor)
Lens	2,8 ~ 10 mm direct drive (DC), IR-corrected, ED glass, auto IR cut filter
Electronic Shutter	1/50 ~ 1/100.000
Back light compensation	OFF, BLC, HS BLC
White balance	ATW, AWB, AWC, manual, indoor, outdoor
AGC	Off, low, middle, high
3D DNR (Dynamic Noise Reduction)	ON/OFF, adjustable level
Digital WDR (Wide Dynamic Range)	Outdoor/Indoor
Digital Slow Shutter	Off, auto: x 2 ~ x 256 selectable
Mirror	Off, mirror, V-flip, rotate
Digital zoom	ON/OFF, up to 32x
Motion detection	ON/OFF, 4 adjustable zones
Privacy zones	ON/OFF, 8 adjustable zones
Video output	BNC, 1,0 Vp-p, 75Ω; test video output 1,0 Vp-p, 75Ω
Sync. mode	internal / line lock
Weatherproof rating	IP66
Power source	12v DC / 24v AC
Power consumption	3W max. at 12v DC, 3 W max. at 24v AC
Ambiente temperature	10° ~ +50°C
Dimensions	123(Ø) x 107.8(H) mm
Weight	0.74kg

• ED WMA: Wall Mount Bracket

For use with ED610T Dome Camera.



Specifications:

Model:	ED WMA
Material	Aluminium
Application	with ED 610 T, EDN 850 H and EDN 800 T
Dimensions	150(W) x 110(H) x 170(D) mm
Max. load	4 kg
Weight	0.6kg

• **EHD525EX: 1/3" Rugged Dome Camera**

8.5mm (1/3") day/night rugged dome camera, high resolution, automatic IR cut filter.

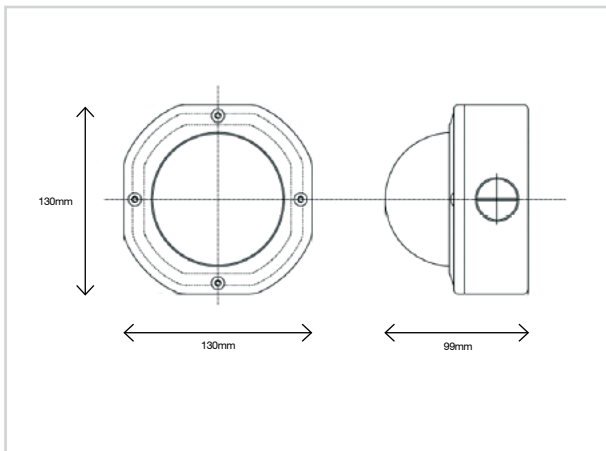
Features:

- Vandal-proof outdoor housing
- High resolution technology (520 TV lines)
- Sony Exview CCD sensor
- Day/night function with automatically swiveling IR cut filter
- Integrated tamper contact (micro switch)
- Integrated DC varifocal lens (f = 3,6 ~ 9 mm)
- Integrated heater
- Optional wall bracket



Specifications:

Model:	EHD525EX
Sensor	8.5mm (1/3") SONY Exview CCD
Picture element	752(H) x 582(V)
Horizontal resolution	520TV lines
Sensitivity	0.5 lux / F = 1.2 colour / 0.1 lux / F = 1.2 B/W
S/N ratio	>48dB
Gamma correction	0.45
Day/night control	automatically swiveling IR cut filter
Video output	1 Vp-p composite PAL
Synchronisation	internal/line-lock (only 24v AC)
Line-lock (24v AC)	ON/OFF
Back light compensation	ON/OFF
Auto white balance	Yes
AGC	ON/OFF
Electronic shutter	1:50 ~ 1:100.000
Tamper contact	micro switch
Lens	DC varifocal lens, f = 3,6 ~ 9 mm
Heater	thermostat controlled
Heater activating temperature	+10°C
Casing	zink diecasted, dome polycarbonate, clear
Weatherproof rating	IP66
Power source	12v DC ± 10%, 24v AC ± 10%
Power consumption	5W max. (15 W with activated heater)
Ambient temperature	-40° ~ +50°C
Dimensions	130(W) x 130(H) x 99(D) mm
Weight	1.7kg



• **EHDWMA: Wall Mount Bracket**

For use with EHD525EX Dome Camera.



Specifications:

Model:	EHDWMA
Material	Aluminium
Application	with EHD camera series
Dimensions	150(W) x 110(H) x 170(D) mm
Max. load	4kg
Weight	0.6kg

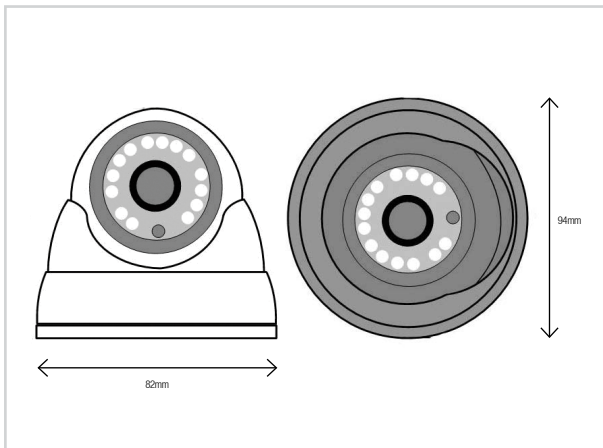
- **EBD330A/W:** 1/3" Day/Night Camera with IR LED-White
- **EBD330A/B:** 1/3" Day/Night Camera with IR LED-Grey
- **AP12A122EO:** Power Supply 230v AC/12v DC

8.5mm (1/3") day/night outdoor IR camera, 480TV lines, IP66, 3.6mm lens, 12v DC, colour:

Features:

- High resolution technology (480TV lines)
- 20 powerful IR LED, controlled by internal twilight switch
- Splitted front glass for low internal IR reflection
- IP66 weatherproof outdoor housing
- Anthracite or white casing available
- IR distance up to 20 metres
- 3-axis adjustment of camera module

* The IR illumination range depends on the location, particularly with regard to the reflection of the installation's surroundings. Locating the device near to highly absorbent surfaces can result in a significantly reduced range.



Specifications:

Model:	EBD330A
Sensor	8.5mm (1/3") SONY CCD
Picture element	752 x 582 (PAL)
Horizontal resolution	480TV lines
Sensitivity	0.5 lux / F = 1.2 (IR LED off)
IR LED	20 x, controlled by internal twilight switch, splitted front glass for low internal IR reflection
IR LED lifetime	up to 50.000h
IR range	5 ~ 20 m (depending on reflections in scenery)
Video output	1 Vp-p composite PAL
S/N ratio	over 48dB
Gamma correction	0.45
Back light compensation	Yes
Auto white balance	Yes
AGC	Yes
Synchronisation	Internal
Electronic shutter	1:50 ~ 1:100.000
Lens	3.6 mm / F2, M12 x P0,5
Mounting	Ceiling or wall mounting, 3-axis adjustment of camera module
Casing	Aluminium, colour white or anthracite
Weatherproof rating	IP 66
Power source	12v DC ± 10%
Power consumption	6W max
Ambient temperature	-10°C ~ +50°C
Dimensions	94(Ø) x 82(H) mm
Weight	0.45kg

• **KPC138E:** 1/3” H.R Colour CCD IR Bullet Camera

The KPC138E is a high resolution IR Bullet Camera, 21LEDs 15 metre range 92.6° VA. For indoor and outdoor applications.

Features:

- 1/3” H.R. colour CCD image sensor
- High resolution for clearer and sharper images of 500TVL
- Low light sensitivity of 0.6 Lux at F2.0
- Day and night features for 24-hour surveillance
- Excellent image quality
- Auto Electronic Shutter built-in
- Signal-to-noise ration of 48dB
- IP68 standard approved outdoor housing
- IR LED effective range reaches up to 15 metres



Specifications:

Model:	KPC138E
Pick up Element	1/3” H.R. color CCD image sensor
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	500TV lines
Min. Illumination	0.6Lux / F2.0, 0Lux (IR ON)
IR LED	21 units
Effective Range	Up to 15m
S/N Ratio	More than 48dB (AGC off)
Electronic Shutter	1/60 (1/50) to 1/100,000 sec.
Lens Mount	f3.6mm / F2.0
Lens Angle	92.6°
IRIS Mode	AES
White Balance	ATW
IP Rating	IP68
Video Output	1.0 Vp-p composite, 75 ohms
Power Source	12v DC ± 10%
Current Consumption(±10%)	90mA (IR OFF), 280mA (IR ON)
Dimensions	55(W) x 79(H) x 140(L) mm

- **ECZ330E/P:** 8.5 mm (1/3") Day/Night Camera with IR LED, High Res
- **ECZ230E/P:** 8.5 mm (1/3") Day/Night Camera with IR LED, Standard High Res
- **AP121A122E0:** Power Supply, 230v AC/12v DC

Features:

- 14 powerful IR LED, video signal controlled variable LED power
- Splitted front glass for low internal IR reflection
- IR range 5 ~ 20 metres
- IP66 weatherproof outdoor housing
- Integrated wall bracket
- Mounting hole at lower and upper side for camera bracket

* The IR illumination range depends on the location, particularly with regard to the reflection of the installation's surroundings. Locating the device near to highly absorbent surfaces can result in a significantly reduced range.



Specifications:

Model:	ECZ330E
Sensor	8.5mm (1/3") SONY IT CCD
Picture element	752 x 582 (PAL)
Horizontal resolution	520TV lines
Sensitivity	0.5 lux / F = 1.2 (IR LED off)
IR LED	14x, video signal controlled variable LED power, splitted front glass for low internal IR reflection
IR LED lifetime	up to 50.000 h
IR range	5 ~ 20 m*
Video output	1 Vp-p composite PAL
S/N ratio over	48dB
Gamma correction	0.45
Synchronisation	Internal
Back light compensation	Yes
Auto white balance	Yes
AGC	Yes
Electronic shutter	Auto 1:50 ~ 1:100.000
Lens	4.3mm / F2, M12 x P0,5
Mounting	6.35mm (1/4") mounting hole at lower and upper side for camera bracket (incl.)
Casing	Aluminium
Weatherproof rating	IP66
Power source	12v DC ± 10%
Power consumption	6W max
Ambient temperature	-10°C ~ +50°C
Dimensions without sunshield	55(Ø) x 72(D) mm
Dimensions with sunshield	62(W) x 58(H) x 82(D) mm
Weight	0.25 kg

• **KPC131E:** High Resolution Colour Body Internal Camera

Features:

- 1/3" HR Colour CCD
- Low light sensitivity of 0.1 Lux at F2.0
- Built-in microphone



Specifications:

Model:	KPC131E
Pick up Element	1/3" HR colour CCD image sensor
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	500TV lines
Min. Illumination	0.1 Lux / F2.0
S/N Ratio	More than 48dB
Electronic Shutter	1/60 (1/50) to 1/100,000 sec.
Lens Mount	CS Mount
IRIS Mode	AES, VD, DD
BLC	ON/OFF
Gain Control	AGC, MAX
Flickerless	ON/OFF
Video Output	1.0 Vp-p composite, 75 ohms
Microphone	Built-in
Power Source	12v DC ±10%
Current Consumption	80mA ±10%
Dimensions	60(W) x 50(H) x 117(L) mm

• AVK522ZP: IVS Zoom Lens Internal Dome Colour Camera

Controllable Dome Camera, allowing users to manually adjust and set camera parameters from a DVR without additionally connecting RS485 control wires.

It can be used with the AV Tech DCCS DVR series for direct control, or with other brand DVRs controlled via the optional DCCS control box, AVK-T1.

Features:

- Supports DVR/Camera Communication System (DCCS) Technology
- No need to additionally connect RS485 control wires for camera control because the control signals can be transferred by coaxial cables directly
- Camera installation is highly simplified to lower labor cost and working hours

Smart Zoom:

- Zooms in on the object which triggers motion or alarm recording automatically, excellent for evidence collecting



Specifications:

Model:	AVK522ZP
Pick up Element	1/3" HR colour CCD
Number of Pixel	771(H) x 492(V) <NTSC>, 753(H) x 582(V) <PAL>
Resolution	520TVL
Min. Illumination	0.15 Lux / F1.4
S/N Ratio	More than 48dB (AGC off)
Electronic Shutter	1/60 (1/50) to 1/100,000 sec
Lens	f4.0mm ~ f9.0mm
Lens Angle	75° ~ 36°
Iris Mode	AES(Default) / AI
Smart zoom	Yes
White Balance	ATW
Video Output	1.0 Vp-p composite, 75Ω
Power Source (±10%)	12v DC, 2.9WΩ
Power Consumption (±10%)	240mA
Dimensions	124.3(Ø) x 102(H) mm

● **AVK544ZP/22X:** 22x Speed Dome Internal PTZ Camera

Features:

- Supports DVR/Camera Communication System (DCCS) Technology
- No need to additionally connect RS485 control wires for camera control as the control signals can be transferred by coaxial cables directly where DVR supports DCCS technology
- Advanced Auto Tracking accuracy
- Rigid & High-Speed Pan/Tilt Mechanism with Two-Million Rotation Test Passed - for longer operating lifetime
- Pelco-D & Pelco-P Support - for fully compatibility
- Flexible Colour/Shutter Parameter Adjustment - adapts to light conditions
- Hot Point
- Graphical On-Screen Display
- Easy operation via Keyboard Controller
- Up to 256 preset points & eight preset groups + Auto Scan
- IP66



Specifications:

Model:	AVK544ZP/22X
Signal System	NTSC or PAL
Pick-up Element	1/4" Sony Color Super HAD CCD image sensor
Number of Pixels	768(H)* x 494(V) <NTSC>, 752(H)* x 582(V) <PAL>
Resolution	High Resolution
Min. Illumination	0.6 Lux, F1.6
S/N Ratio	More than 48dB (AGC off)
Video Output	1.0 Vp-p. 75Ω
BLC	ON/OFF
Gain Control	Low, Medium & High/Off
Sharpness	Auto, Low, Medium, High
White Balance	Auto, Indoor 1, Indoor 2, Sun, Cloudy * Indoor1 = 9000K; Indoor2 = 3000K; Sun = 5500K; Cloudy = 7000K
Camera Title	10 characters or symbols
Preset Points and Sequence	Total 8 groups, 256 programmable preset points * The sequence of all the preset points will follow the order of the minimal panning route.
Auto Tracking	Yes
Baud Rate	9600
LENS: Focal Length	f3.9 ~ 85.9mm
LENS: F-number	F1.6(Wide) ~ 3.7(Tele)
LENS: Viewing Angle	4° ~ 60°
LENS: Auto Electronic Shutter	1/60 (1/50) to 1/100,000 sec
LENS: Auto Focus	Always, PTZ, Z Only, P Only
MECHANISM: Pan Range	360°
MECHANISM: Pan Speed	360°/1 sec * The pan speed can be adjusted according to the different pan speed mode.
MECHANISM: Tilt Range	90°
MECHANISM: Tilt Speed	0° ~ 90° under 1 sec
MECHANISM: Zoom Ratio	22 x optical zoom
MECHANISM: Zoom Speed	Approx. 7s (Tele ~ Wide)
IP Rating	IP66
Operating Temperature	-20° ~ 40°C
Storage Temperature	0° ~ 70°C
Power Source (±10%)	12v DC
Current Consumption	1.5A
Dimensions	323(W) x 339(H) mm (Bracket included)
Weight	1.2kg

● AVK584: 22x Speed Dome External PTZ Camera

Features:

- Supports DVR/Camera Communication System (DCCS) Technology
- No need to additionally connect RS485 control wires for camera control as the control signals can be transferred by coaxial cables directly where DVR supports DCCS technology.
- Advanced Auto Tracking accuracy
- Rigid & High-Speed Pan/Tilt Mechanism with Two-Million Rotation Test Passed - for longer operating lifetime
- Pelco-D & Pelco-P Support - for fully compatibility
- Flexible Colour/Shutter Parameter Adjustment - adapts light conditions
- Excellent outdoor ID design with cable management
- Graphical On-Screen Display
- Easy Operation via Keyboard Controller
- Up to 256 preset points & eight preset groups plus Auto Scan
- IP66



Specifications:

Model:	AVK584
Signal System	NTSC or PAL
Pick-up Element	1/4" Sony Color Super HAD CCD image sensor
Number of Pixels	768(H)* x 494(V) <NTSC>, 752(H)* x 582(V) <PAL>
Resolution	High Resolution
Min. Illumination	0.6 Lux, F1.6
S/N Ratio	>48dB (AGC off)
Video Output	1.0 Vp-p, 75 ohm
BLC	ON/OFF
Gain Control	Low, Medium & High / Off
Sharpness	Auto, Low, Medium, High
White Balance	Auto, Indoor 1, Indoor 2, Sun, Cloudy * Indoor1 = 9000K; Indoor2 = 3000K; Sun = 5500K; Cloudy = 7000K
Camera Title	10 characters or symbols
Preset Points and Sequence	Total 8 groups, 256 programmable preset points * The sequence of all the preset points will follow the order of the minimal panning route.
Auto Tracking	Yes
Baud Rate	9600
LENS: Focal Length	f3.9 ~ 85.9 mm
LENS: F-number	F1.6 (Wide) ~ 3.7 (Tele)
LENS: Viewing Angle	4° ~ 60°
LENS: Auto Electronic Shutter	1/60 (1/50) to 1/100,000 sec
LENS: Auto Focus	Always, PTZ, Z Only, P Only
MECHANISM: Pan Range	360°
MECHANISM: Pan Speed	360°/ 1 sec * The pan speed can be adjusted according to the different pan speed mode.
MECHANISM: Tilt Range	90°
MECHANISM: Tilt Speed	0° ~ 90° under 1 sec
MECHANISM: Zoom Ratio	22 x optical zoom
MECHANISM: Zoom Speed	Approx. 7s (Tele ~ Wide)
IP Rating	IP66
Ambient Operating Temperature	-20° ~ 50°C (-4° ~ 122 °F)
Fan	40°C on, 30°C off
Heater	5°C on, 15°C off
Power Source (±10%)	12v DC
Current Consumption	3A (max)
Dimensions	323(W) x 339(H) mm (Bracket included)

- **EPTZ-2700:** 1/4" 27x Day/Night Outdoor Speed Dome Camera
- **EPTZ-2700 I:** 1/4" 27x Day/Night Indoor Speed Dome Camera

Features:

- 27 x optical zoom (+10 x digital zoom)
- High resolution technology (480TV lines)
- Integrated DSS digital slow shutter
- Flickerless function
- IP66 outdoor model and indoor model available
- Several built-in protocols
- 192 programmable preset positions
- 4 programmable patterns
- 4 alarm inputs, 2 alarm outputs with tour/position auto triggering



Functions:

Model:	EPTZ-2700 / EPTZ-2700 I
Communication	RS-485
Built-in protocols	Pelco-P / Pelco-D / EverFocus / Samsung (EL) / Panasonic
Communication speed	1200 / 2400 / 4800 / 9600 bps
Address editable through DIP switch	Yes
Speed dome address range	1 ~ 255
Horizontal rotation speed	0,1° / sec. ~ 360° / sec.
Horizontal rotation range	360° unlimited rotation
Tilt rotation range	180° tilt motion with electronic auto flip
Day / night switching	Manual, automatic, by external contact (via alarm in)
Auto zoom speed control	Auto-adjustment of PT control speed acc. to zoom position
Autopan, 2 points scanning	Adjustable speeds, adjustable end stops
Autopan speed	1 ~ 255 steps
Dwell time (2 points)	1 ~ 99 sec
Preset positions	192
Running to position speed	>360°/sec
Pattern	4 x, 1 minute max. each
Auto resume	After inactivity 0,5 ~ 60 min. or after power-up
Auto resume actions	Home position, tour 1, pattern 1, autopan, previous mode
Manual pan speed	0,1° ~ 120°/sec
Manual tilt speed	0,1° ~ 60°/sec
Dwell time at preset position	1 ~ 60 sec
Tours	16
Presets per tour	16 preset positions
Position accuracy	± 0,1°
Alarm	4 inputs, 2 outputs, with tour/position auto triggering
Proportional pan speed	Yes
Built-in menu for functions	Yes, multiline OSD

Specifications:

Model:	EPTZ-2700	EPTZ-2700 I
Sensor	6.35 mm (1/4") CCD SONY Exview HAD	
Effective pixels	440.000	
Horizontal resolution	480TV lines	
Sensitivity	1lux (F 1.6, 50 IRE - colour) / 0,1 lux (F 1.6, 50 IRE - B/W)	
Video output	1 Vp-p (sync. negative), BNC	
S/N ratio	Over 50dB	
Sync. system	Internal	
Electronic shutter	1/50 ~ 1:10.000 sec., 7 steps	
DSS digital slow shutter	ON/OFF, 32 x max.	
White balance	Auto, indoor, outdoor	
Back light compensation	ON/OFF	
Gain	Auto	
Flicker cancel	ON/OFF	
Zoom ratio	27 x optical zoom (+10x digital zoom, max. 270x)	
Focus length	f = 3,25 (wide) ~ 88 (tele) mm	
Aperture	F 1.5 (wide) ~ 3.6 (tele) mm	
Viewing angle	58° (wide end) to 2,3° (tele end)	
Minimum object distance	100mm (wide end) to 1000mm (tele end)	
Focusing method	Auto, one-push AF, manual	
Weatherproof rating	IP 66	IP 30
Power source	24v AC	
Power consumption	14W max	
Fan	thermostat controlled	
Ambient temperature	-40°C ~ +40°C	0°C ~ +40°C
Humidity	~ 90%	
Dimensions	210(Ø) x 250(H) mm (incl. sunshield)	160(Ø) x 220(H) mm
Weight	5.2kg (incl. sunshield)	3.0kg

- **EPTZ3650:** 1/4" 36x Day/Night Outdoor Speed Dome with Auto tracking
- **EPTZ3650I:** 1/4" 36x Day/Night Indoor Speed Dome with Auto-tracking

Features:

- 36 x optical zoom (+12 x digital zoom)
- High resolution technology (up to 570TV lines - B/W mode)
- Smart auto tracking functions
- Automatic exposure control
- Integrated DSS digital slow shutter
- Integrated Wide Dynamic Range
- Flickerless function
- IP66 outdoor model and indoor model available
- Several built-in protocols
- 192 programmable preset positions
- 4 programmable patterns
- 8 freely adjustable privacy zones
- 4 alarm inputs, 2 alarm outputs with tour/position auto triggering



Functions:

Model:	EPTZ3650 / EPTZ3650 I
Communication	RS-485
Built-in protocols	Pelco-P, Pelco-D, EverFocus, Samsung (EI), Panasonic
Communication speed	1200, 2400, 4800, 9600 bps
Address editable through DIP switch	Yes
Speed dome address range	1 ~ 255
Auto tracking tracking	Mask, pan/tilt limits, manual tracking
Horizontal rotation speed	0.1° / sec. ~ 360° / sec.
Horizontal rotation range	360° unlimited rotation
Tilt rotation range	180° tilt motion with electronic auto flip
Day / night switching	Manual / automatic / by external contact (via alarm in)
Auto zoom speed control	Auto-adjustment of PT control speed acc. to zoom position
Autopan, 2 points scanning	Adjustable speeds, adjustable end stops
Autopan speed	1 ~ 255 steps
Dwell time (2 points)	1 ~ 99 sec.
Preset positions	192
Running to position speed	up to 360° / sec.
Pattern	4 x, 1 minute max. each
Auto resume	After inactivity 0,5 ~ 60 min. or after power-up
Auto resume actions	Home position, tour 1, pattern 1, autopan, previous mode
Manual pan speed	0.1° ~ 120° / sec.
Manual tilt speed	0.1° ~ 60° / sec.
Dwell time at preset position	1 ~ 60 sec.
Tours	16
Presets per tour	16 preset positions
Position accuracy	+/- 0,1°
Alarm	4 inputs, 2 outputs, with tour/position auto triggering
Proportional pan speed	Yes
Privacy zones	8, freely adjustable, 10 colours / mosaic
Built-in menu for functions	Yes, multiline OSD

Specifications:

Model:	EPTZ3650	EPTZ3650I
Sensor	6.35 mm (1/4") CCD SONY Exview HAD	
Effective pixels	440.000	
Horizontal resolution	530TV lines (colour) / 570 TV lines (B/W)	
Sensitivity	1.4 lux (F 1.6, 50 IRE - colour) / 0.1 lux (F 1.6, 50 IRE - B/W)	
Video output	1 Vp-p (sync. negative), BNC	
S/N ratio	Over 50dB	
Sync. system	Internal	
Electronic shutter	1/50 ~ 1:10.000 sec., 7 steps	
DSS digital slow shutter	ON/OFF, 50 x max.	
White balance	Auto / indoor / outdoor / one-push / manual	
Back light compensation	ON/OFF	
Gain	Auto	
Exposure control	Automatic	
Flicker cancel	ON/OFF	
WDR Wide Dynamic Range	ON/OFF	
Zoom ratio	36x optical zoom (+12x digital zoom, max. 432x)	
Focus length	f = 3,4 (wide) ~ 122,4 (tele) mm	
Aperture	F 1.6 (wide) ~ F 4.5 (tele)	
Viewing angle	57.8° (wide end) to 1.7° (tele end)	
Minimum object distance	320mm (wide end) to 1500mm (tele end)	
Focusing method	Auto, one-push AF, manual	
Weatherproof rating	IP 66	IP 30
Power source	24v AC	
Power consumption	14W max.	
Fan	Thermostat controlled	
Ambient temperature	-40°C ~ +40°C	0°C ~ +40°C
Humidity	~ 90%	
Dimensions	210(Ø) x 250(H) mm (incl. sunshield)	160(Ø) x 220(H) mm
Weight	5.2 kg (incl. sunshield)	3.0kg

- **EPTZPBOX:** Connector Box with Power Supply For Speed Dome
- **EPTZ-PB-A:** Mounting Adaptor for EPTZ PLM or EPTZ CNM
- **EPTZ-PB-P12:** Converter 230v AC to 12v DC/500 mA

Features:

- Vandal-proof metal housing
- Dual power input 100 ~ 120v AC / 220 ~ 240v AC
- Designed for direct speed dome mount (EPTZ series with wall mount bracket)
- Separate installation possible (blind cover for cable hole in package)
- Universal mounting adaptor for additional equipment (video server, twisted pair transmitter, fiber optic transmitter)
- Optional 110/230v AC to 12v DC converter for additional equipment
- Mounting option (optional adaptor) to pole mount and corner mount adaptor



EPTZ PBOX with speed dome EPTZ 3650



EPTZ PBOX inside view

Specifications:

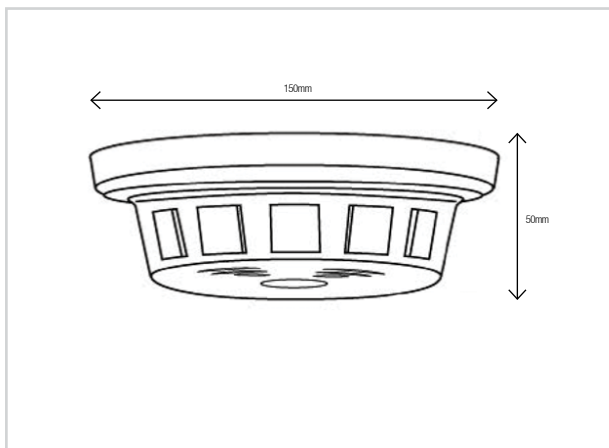
Model:	EPTZ-PBOX
Power source	100 ~ 120v AC, 60Hz or 220 ~ 240v AC, 50Hz (set by internal switch), 120 VA max.
Power output	24v AC, 3.5 A max.
Connectors	Power in: 3x screwless terminal Power out: 5,5mm power plug Molex connector for 12v DC converter RS-485, alarm: 2 x 10-pin screwless terminal, looped
Ambient temperature	-20°C ~ +40°C
Dimensions	270(W) x 245(H) x 80.5(D) mm (with cable gland / hinge / flanges)
Dimensions universal mounting plate	120 x 77 mm
Weight	4.1kg

- **ESD200E:** 1/3" Colour Smoke Detector Camera
- **AP12A122E0:** Power supply, 230v AC/12v DC, 600 mA

8.5mm (1/3") colour smoke detector camera, incl lens $f = 4.3\text{mm}$, 12v DC

Features:

- Compact size
- Discreet surveillance through covert smoke detector casing



Specifications:

Model:	ESD200E
Sensor	8.5mm (1/3") SONY CCD
Picture element	500 x 582 (PAL)
Horizontal resolution	340TV lines
Sensitivity	0.3 lux / $F = 1.2$
Video output	1 Vp-p composite PAL, BNC
S/N ratio	Over 48 dB
Gamma correction	>0.45
Synchronisation	Internal
Back light compensation	Yes
Auto white balance	Yes
AGC	Yes
Electronic shutter	1:50 ~ 1:100.000
Number of cameras	1
Lens	$f = 4,3\text{mm}$
Lens mount	M12 x P 0.5
Power source	12v DC $\pm 10\%$, 200 mA
Ambient temperature	0°C ~ +50°C
Dimensions	150(Ø) x 50(H) mm
Weight	0.14 kg

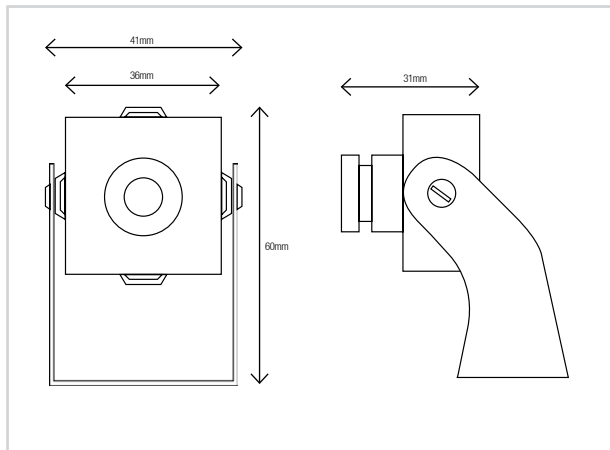
• **EM200E: 1/3" Colour Metal Case Camera**

Features:

- Compact size for discreet surveillance
- Exchangeable board lens included (EM 200 E also 3.7mm pinhole lens)

Models:

Model:	Description
EM200E/P-3	8.5 mm (1/3") colour metal case camera, incl. lens f = 3,6 mm, 12v DC
EM200E/P-3P	8.5 mm (1/3") colour metal case camera, incl. pinhole lens f = 3,7 mm, 12v DC
EM200E/P-00	8.5 mm (1/3") colour metal case camera, without lens, 12v DC
AP12A122E0	Power supply, 230v AC/12v DC, 600 mA



Specifications:

Model:	EM200E
Sensor	8.5 mm (1/3") SONY CCD
Picture element	500 x 582 (PAL)
Horizontal resolution	340TV lines
Sensitivity	0.3 lux, F = 1.2
S/N ratio	over 48 dB
Gamma correction	>0.45
Video output	1 Vp-p composite PAL, BNC
Synchronisation	Internal
Back light compensation	Yes
Auto white balance	Yes
AGC	Yes
Electronic shutter	1:50 ~ 1:100.000
Lens	f = 3.6mm Pinhole lens f = 3.7mm
Lens mount	M12 x P 0,5
Power source	12v DC ± 10%, 200 mA
Ambient temperature	0°C ~ +50°C
Dimensions (WxHxD) mm	41(W) x 60(H) x 31(D) mm
Weight	0.18 kg

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DVRs

● AVD744D: 4 Channel H.264 IVS 1TB HDD DVR

AV Tech's 'IVS' (Intelligent Video Surveillance) Series are the world's first DVRs to fully integrate PC, mobile phone/PDA and CCTV technology.

These intelligent DVRs realise active call-out notifications to smart phones for instant remote surveillance, supporting all popular smart phone platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.

An incredibly high specification DVR at a surprisingly low cost!

Features:

● Remote Surveillance

- Mobile surveillance via our self-developed, free software application 'Eagle Eyes' is supported on all popular mobile platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.
- Network/remote surveillance via the licensed software 'Video Viewer', Internet Explorer, Mozilla Firefox or Google Chrome web browsers; QuickTime player supported for up to 10 user logins simultaneously.

● iPhone Push Notification

- Supports pending Push Notification to iPhones for instant event notification of human detection

● Intelligent Surveillance

- Virtual Fence; an intruder virtual detection line can be set to detect intruders crossing a specified line
- Flow Counting; a virtual detection line can be set to detect the direction of pedestrians for flow counting
- Individual Channel Motion Recording; only channels detecting activity will record, effectively saving significant amounts of hard disk space and ensuring maximum recording time.
- Supports pre-alarm recording

● USB Mouse Control with GUI OSD

● DVR-Camera Communication System (DCCS)

- For PTZ and zoom lens controllable cameras, both video signal and control signal are transmitted down one coaxial cable, removing the need for an additional RS485 control cable
- Camera installation is significantly simplified, reducing labour costs and working hours

● Remote Independent Operation

- Allowing remote users to view/monitor live/playback images independently and privately from the local site view

● H.264 Video Compression Technology

- Significantly improved image quality for live, recorded and network video broadcast
- Recording file size is minimized for maximum recording times and reduced hard disk space use
- Lower bit rate for faster image transfer over network

● Multiplex

- Allows live display, record, playback, backup and network operation at the same time

● Backup Function

- Supports DVD writer, USB flash drive and network backup

● Audio / Video Support

- 4 audio In, 1 Audio out
- Built-in VGA interface



Specifications:

Model:	AVD744D
Video System	NTSC, PAL (auto detection)
Video Compression Format	H.264
Video Input	8 Channels (Composite Video Signal 1 Vp-p 750 BNC)
Video Output (BNC)	Main Monitor: For stable display Call Monitor: For sequence display
Video Output (VGA)	Built-in VGA output for LCD monitor
Audio Input / Output	4 audio inputs, 1 audio output (Mono)
Multiplex Operating	Supports live display, recording, playback, backup, and network simultaneously
Maximum Recording Rate	Frame: 704 × 480 pixels with 30FPS <NTSC>, 704 × 576 pixels with 25FPS <PAL>; Field: 704 x 240 pixels with 60FPS <NTSC>, 4 × 288 pixels with 50FPS <PAL>; CF: 352 × 240 pixels with 120FPS <NTSC>, 352 × 288 pixels with 100FPS <PAL>
DCCS Support	Yes (All channels)
IVS Support	Yes (4 channels)
Recording Mode	Manual, Timer, Motion, Alarm, Remote
Recording Quality Options	Best, High, Normal and Basic
Pre-alarm Recording	Yes (8MB)
HDD Type	SATA
HDD Storage	With DVD Writer Model: Accommodates 1 SATA HDD (1HDD capacity up to 2TB)
Quick Search	Time, Motion, Alarm search mode
Backup Device	DVD writer (optional), USB flash drive, network
Compression Format	H.264
Network Live Audio	Yes
Ethernet	10, 100 Base-T
Network Protocol	TCP/IP, PPPoE, DHCP and DDNS (Dynamic IP)
Network Surveillance Interface	Licensed software "Video Viewer", Internet Explorer, Mozilla Firefox or Google Chrome web browser, QuickTime player Network Surveillance Interface (10 users access simultaneously)
Remote Independent Operation	Yes
Event Notification	By FTP, e-mail
R.E.T.R. (Remote Event Trigger Recording)	Yes
IR Remote Control	Yes
Mobile Surveillance	Yes
Motion Detection Area	16 × 12 grids per channel
Motion Detection Sensitivity	4 adjustable parameters for accurate detection
PTZ Control	Yes
External Alarm	4 inputs, 1 output
Picture Zoom	2 x digital zoom
User Level	Administrator & Operator
Video Loss Detection	Yes
Camera Title	Supports up to 6 letters
Video Adjustable	Hue, Color, Contrast, Brightness
Power Source (±10%)	19v DC
Power Consumption (±10%)	<42W
Operating Temperature	10 ~ 40°C (50 ~ 104°F)
System Recovery	System auto recovery after power failure
Dimensions	375(W) × 61(H) × 281(D) mm

● **AVD746D:**
8 Channel H.264 IVS, 1TB HDD DVR

AV Tech's 'IVS' (Intelligent Video Surveillance) Series are the world's first DVRs to fully integrate PC, mobile phone/PDA and CCTV technology.

These intelligent DVRs realise active call-out notifications to smart phones for instant remote surveillance, supporting all popular smart phone platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.

An incredibly high specification DVR at a surprisingly low cost!

Features:

- **Remote Surveillance**
 - Mobile surveillance via our self-developed, free software application 'Eagle Eyes' is supported on all popular mobile platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.
 - Network/remote surveillance via the licensed software 'Video Viewer', Internet Explorer, Mozilla Firefox or Google Chrome web browsers; QuickTime player supported for up to 10 user logins simultaneously.
- **iPhone Push Notification**
 - Supports pending Push Notification to iPhones for instant event notification of human detection
- **Intelligent Surveillance**
 - Virtual Fence; an intruder virtual detection line can be set to detect intruders crossing a specified line
 - Flow Counting; a virtual detection line can be set to detect the direction of pedestrians for flow counting
 - Individual Channel Motion Recording; only channels detecting activity will record, effectively saving significant amounts of hard disk space and ensuring maximum recording time.
 - Supports pre-alarm recording
- **USB Mouse Control with GUI OSD**
- **DVR-Camera Communication System (DCCS)**
 - For PTZ and zoom lens controllable cameras, both video signal and control signal are transmitted down one coaxial cable, removing the need for an additional RS485 control cable
 - Camera installation is significantly simplified, reducing labour costs and working hours
- **Remote Independent Operation**
 - Allowing remote users to view/monitor live/playback images independently and privately from the local site view
- **H.264 Video Compression Technology**
 - Significantly improved image quality for live, recorded and network video broadcast
 - Recording file size is minimized for maximum recording times and reduced hard disk space use
 - Lower bit rate for faster image transfer over network
- **Multiplex**
 - Allows live display, record, playback, backup and network operation at the same time
- **Backup Function**
 - Supports DVD writer, USB flash drive and network backup
- **Audio / Video Support**
 - 4 audio In, 2 Audio out
 - Built-in VGA interface



Specifications:

Model:	AVD746D
Video System	NTSC, PAL (auto detection)
Video Compression Format	H.264
Video Input	8 Channels (Composite video signal 1 Vp-p 750 BNC)
Video Loop Input	8 Channels (Composite video signal 1 Vp-p 750 BNC)
Video Output (BNC)	Main Monitor: For stable display, Call Monitor: For sequence display
Video Output (VGA)	Built-in VGA output for LCD monitor
Audio Input / Output	4 audio inputs, 2 audio output (Mono)
Multiplex Operating simultaneously	Supports live display, recording, playback, backup, and network
Maximum Recording Rate	Frame: 704 × 480 pixels with 60FPS <NTSC>, 704 × 576 pixels with 50FPS <PAL>, Field: 704x240 pixels with 120FPS <NTSC>, 704 × 288 pixels with 100FPS <PAL>, CF: 352 × 240 pixels with 240FPS <NTSC>, 352 × 288 pixels with 200FPS <PAL>
DCCS Support	Yes (All channels)
IVS Support	Yes (4 channels)
Recording Mode	Manual, Timer, Motion, Alarm, Remote
Recording Quality Options	Best, High, Normal and Basic
Pre-alarm Recording	Yes (8MB)
HDD Type	SATA
HDD Storage	With DVD Writer Model: Accommodates 2 SATA HDDs (1HDD capacity up to 2TB)
Quick Search	Time, Motion, Alarm search mode
Backup Device	DVD writer (optional), USB flash drive, network
Compression Format	H.264
Network Live Audio	Yes
Ethernet	10, 100 Base-T
Network Protocol	TCP/IP, PPPoE, DHCP and DDNS (Dynamic IP)
Network Surveillance Interface	Licensed software "Video Viewer", Internet Explorer, Mozilla Firefox or Google Chrome web browser, QuickTime player Network Surveillance Interface (10 users access simultaneously)
Remote Independent Operation	Yes
Event Notification	By FTP, e-mail
R.E.T.R. (Remote Event Trigger Recording)	Yes
IR Remote Control	Yes
Mobile Surveillance	Yes
Motion Detection Area	16 × 12 grids per channel
Motion Detection Sensitivity	4 adjustable parameters for accurate detection
PTZ Control	Yes
External Alarm	8 inputs, 1 output
Picture Zoom	2 x digital zoom
User Level	Administrator & Operator
Video Loss Detection	Yes
Camera Title	Supports up to 6 letters
Video Adjustable	Hue, Color, Contrast, Brightness
Power Source (±10%)	19v DC
Power Consumption (±10%)	<64W
Operating Temperature	10 ~ 40°C (50 ~ 104°F)
System Recovery	System auto recovery after power failure
Dimensions	432(W) × 90(H) × 326(D) mm

● **AVD748D:**
16 Channel H.264 IVS, 1TB HDD DVR

AV Tech's 'IVS' (Intelligent Video Surveillance) Series are the world's first DVRs to fully integrate PC, mobile phone/PDA and CCTV technology.

These intelligent DVRs realise active call-out notifications to smart phones for instant remote surveillance, supporting all popular smart phone platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.

An incredibly high specification DVR at a surprisingly low cost!

Features:

- **Remote Surveillance**
 - Mobile surveillance via our self-developed, free software application 'Eagle Eyes' is supported on all popular mobile platforms such as iPhone, BlackBerry, Nokia Symbian, Android and Windows Mobile.
 - Network/remote surveillance via the licensed software 'Video Viewer', Internet Explorer, Mozilla Firefox or Google Chrome web browsers; QuickTime player supported for up to 10 user logins simultaneously.
- **iPhone Push Notification**
 - Supports pending Push Notification to iPhones for instant event notification of human detection
- **Intelligent Surveillance**
 - Virtual Fence; an intruder virtual detection line can be set to detect intruders crossing a specified line
 - Flow Counting; a virtual detection line can be set to detect the direction of pedestrians for flow counting
 - Individual Channel Motion Recording; only channels detecting activity will record, effectively saving significant amounts of hard disk space and ensuring maximum recording time.
 - Supports pre-alarm recording
- **USB Mouse Control with GUI OSD**
- **DVR-Camera Communication System (DCCS)**
 - For PTZ and zoom lens controllable cameras, both video signal and control signal are transmitted down one coaxial cable, removing the need for an additional RS485 control cable
 - Camera installation is significantly simplified, reducing labour costs and working hours
- **Remote Independent Operation**
 - Allowing remote users to view/monitor live/playback images independently and privately from the local site view
- **H.264 Video Compression Technology**
 - Significantly improved image quality for live, recorded and network video broadcast
 - Recording file size is minimized for maximum recording times and reduced hard disk space use
 - Lower bit rate for faster image transfer over network
- **Multiplex**
 - Allows live display, record, playback, backup and network operation at the same time
- **Backup Function**
 - Supports DVD writer, USB flash drive and network backup
- **Audio / Video Support**
 - 4 audio In, 2 Audio out
 - Built-in VGA interface



Specifications:

Model:	AVD748D
Video System	NTSC, PAL (auto detection)
Video Compression Format	H.264
Video Input	16 Channels (Composite video signal 1 Vp-p 750 BNC)
Video Loop Input	16 Channels (Composite video signal 1 Vp-p 750 BNC)
Video Output (BNC)	Main Monitor: For stable display, Call Monitor: For sequence display
Video Output (VGA)	Built-in VGA output for LCD monitor
Audio Input / Output	4 audio inputs, 2 audio output (Mono)
Multiplex Operating	Supports live display, recording, playback, backup, and network simultaneously
Maximum Recording Rate	Frame: 704 × 480 pixels with 120IPS <NTSC>, 704 × 576 pixels with 100IPS <PAL>, Field: 704 × 240 pixels with 240IPS <NTSC>, 704 × 288 pixels with 200IPS <PAL>, CIF: 352 × 240 pixels with 480IPS <NTSC>, 352 × 288 pixels with 400IPS <PAL>
DCCS Support	Yes (All channels)
IVS Support	Yes (4 channels)
Recording Mode	Manual, Timer, Motion, Alarm, Remote
Recording Quality Options	Best, High, Normal and Basic
Pre-alarm Recording	Yes (8MB)
HDD Type	SATA
HDD Storage	With DVD Writer Model: Accommodates 1 SATA HDD (1 HDD capacity up to 2TB)
Quick Search	Time, Motion, Alarm search mode
Backup Device	DVD writer (optional), USB flash drive, network
Compression Format	H.264
Network Live Audio	Yes
Ethernet	10, 100 Base-T
Network Protocol	TCP/IP, PPPoE, DHCP and DDNS (Dynamic IP)
Network Surveillance Interface	Licensed software "Video Viewer", Internet Explorer, Mozilla Firefox or Google Chrome web browser, QuickTime player Network Surveillance Interface (10 users access simultaneously)
Remote Independent Operation	Yes
Event Notification	By FTP / E-Mail
R.E.T.R. (Remote Event Trigger Recording)	Yes
IR Remote Control	Yes
Mobile Surveillance	Yes
Motion Detection Area	16 × 12 grids per channel
Motion Detection Sensitivity	4 adjustable parameters for accurate detection
PTZ Control	Yes
External Alarm	16 inputs, 1 output
Picture Zoom	2 x digital zoom
User Level	Administrator & Operator
Video Loss Detection	Yes
Camera Title	Supports up to 6 letters
Video Adjustable	Hue / Color / Contrast / Brightness
Power Source (±10%)	19v DC
Power Consumption (±10%)	<64W
Operating Temperature	10 ~ 40°C (50 ~ 104°F)
System Recovery	System auto recovery after power failure
Dimensions	432(W) × 90(H) × 326(D) mm

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• **ECOR 264x1-4: 4-channel Pentaplex H.264 DVR**

The new compact Everfocus ECOR264 DVR series offers H.264 compression for efficient disk storage and network bandwidth conversion.

Ideal for small to medium installation applications the ECOR range include high specification features normally found on more expensive recorders including mobile viewing allowing you to check your home and business while on the go.

All ECOR DVRs are equipped with a simple graphical user interface for quick and easy configuration.

Features:

- User-friendly graphic user interface (GUI) with easy mouse or front panel operation
 - Multi-language menu operation
 - Express setup for quick installation in standard applications
 - Audio recording capability*
 - Latest H.264 compression technology
 - Real time recording and playback rate for all cameras
 - Individual recording settings for each channel
 - Pentaplex operation for simultaneous recording, playback, archiving, live view and network access
 - Snapshot search function
 - Data archiving via USB 2.0 port or built in DVD-RW drive*
 - Programmable motion detection area (22 x 18) for each channel
 - Local (through USB mouse) and network PTZ control
 - Fast network video transmission with dual stream for mobile phone streaming (3GPP)
 - Network operation independent from local operation
 - Event notification incl. e-mail alarm and network alarm with optional PowerCon 4.x software
 - Watchdog function with notification options
 - Optional RS-485 remote control (EKB 500)
 - Free EverFocus DDNS service: DDNS account registration directly from DVR setup
- * feature, function depending on DVR model



Specifications:

Model: ECOR 264 x 1-4	
Video format	PAL, CCIR
Display format main monitor	1, 4 x multiscreen, PIP
Display format call monitor	1, 4 x multiscreen, sequence
Video input	4 inputs 1 Vp-p composite PAL, BNC, autom. 75Ω termination
Video output	4 loop-through outputs, 1 Vp-p at 75Ω, 1 main monitor output, 1 Vp-p at 75Ω, 1 main monitor output VGA 800 x 600, 15-pin Sub-D, 1 multiplex call monitor output, 1 Vp-p at 75Ω, BNC
Video compression	H.264
Display resolution VGA output	800 x 600
Harddisk storage	up to 2 x internal 8,9 cm (3,5") SATA harddisks OR up to 1x removable 8,9 cm (3,5") SATA harddisk*
Recording resolution	704 x 576, 704 x 288, 352 x 288
Recording rate	1 ~ 100 IPS for all resolutions 1 ~ 25 IPS individual setup per channel for normal and event recording (remaining rate to be distributed among remaining channels)
Recording modes	continuous, schedule or event recording
Playback search	via date/time or event, smart search incl. snapshot search function
Video pause	Yes
Video loss detection	Yes
Motion detection	yes, with configurable detection area (22 x 18) and sensitivity
Event log	Yes
Alarm	4 alarm inputs, 4 alarm outputs
Audio	4 line inputs, 1 line output*
Setup	On-screen display with graphic user interface (GUI)
Control	USB mouse control, front panel control, IR remote control, optional: network, RS-485 keyboard EKB 500
Timer	Built-in real time clock
Title	16-characters title generator for each camera
Archive	USB 2.0 interface, internal DVD-RW drive*
Ethernet	RJ45 network connector
Interfaces	1 x RS-232 (9-pin Sub-D), 1 x RS-485 screw terminal connector
Password protection	3 levels with individual user rights assignment
Watchdog function	For cooler fan, HDD status, HDD temperature, recording and HDD fault
Power source	12v DC, via external power supply 100 ~ 240v AC
Power consumption	40W max
Ambient temperature	0 ~ +40°C
Dimensions	355(W) x 71(H) x 353(D) mm
Weight	4kg (w/o HDD)

● ECOR 264x1-9: 9-channel Pentaplex H.264 DVR

The new compact Everfocus ECOR264 DVR series offers H.264 compression for efficient disk storage and network bandwidth conversion.

Ideal for small to medium installation applications the ECOR range include high specification features normally found on more expensive recorders including mobile viewing allowing you to check your home and business while on the go.

All ECOR DVRs are equipped with a simple graphical user interface for quick and easy configuration.

Features:

- User-friendly graphic user interface (GUI) with easy mouse or front panel operation
 - Multi-language menu operation
 - Express setup for quick installation in standard applications
 - Audio recording capability*
 - Latest H.264 compression technology
 - Real time recording and playback rate for all cameras
 - Individual recording settings for each channel
 - Pentaplex operation for simultaneous recording, playback, archiving, live view and network access
 - Snapshot search function
 - Data archiving via USB 2.0 port or built in DVD-RW drive*
 - Programmable motion detection area (22 x 18) for each channel
 - Local (through USB mouse) and network PTZ control
 - Fast network video transmission with dual stream for mobile phone streaming (3GPP)
 - Network operation independent from local operation
 - Event notification incl. e-mail alarm and network alarm with optional PowerCon 4.x software
 - Watchdog function with notification options
 - Optional RS-485 remote control (EKB 500)
 - Free EverFocus DDNS service: DDNS account registration directly from DVR setup
- * feature, function depending on DVR model



Specifications:

Model:	ECOR 264 x 1-4
Video format	PAL, CCIR
Display format main monitor	1, 4, 6, 8, 9 x multiscreen, PIP
Display format call monitor	1, 4, 9 x multiscreen, sequence
Video input	9 inputs 1 Vp-p composite PAL, BNC, autom. 75Ω termination
Video output	9 loop-through outputs, 1 Vp-p at 75Ω, 1 main monitor output, 1 Vp-p at 75Ω, 1 main monitor output VGA 800 x 600, 15-pin Sub-D, 1 multiplex call monitor output, 1 Vp-p at 75Ω, BNC
Video compression	H.264
Display resolution VGA output	800 x 600
Harddisk storage	up to 2 x internal 8,9 cm (3,5") SATA harddisks OR up to 1x removable 8,9 cm (3,5") SATA harddisk*
Recording resolution	704 x 576, 704 x 288, 352 x 288
Recording rate	1 ~ 225 IPS (352 x 288) 1 ~ 200 IPS (704 x 288) 1 ~ 100 IPS (704 x 576) 1 ~ 25 IPS individual setup per channel for normal and event recording (remaining rate to be distributed among remaining channels)
Recording modes	continuous, schedule or event recording
Playback search	via date/time or event, smart search incl. snapshot search function
Video pause	Yes
Video loss detection	Yes
Motion detection	yes, with configurable detection area (22 x 18) and sensitivity
Event log	Yes
Alarm	9 alarm inputs, 4 alarm outputs
Audio	4 line inputs, 1 line output*
Setup	On-screen display with graphic user interface (GUI)
Control	USB mouse control, front panel control, IR remote control, optional: network, RS-485 keyboard EKB 500
Timer	Built-in real time clock
Title	16-characters title generator for each camera
Archive	USB 2.0 interface, internal DVD-RW drive*
Ethernet	RJ45 network connector
Interfaces	1 x RS-232 (9-pin Sub-D), 1 x RS-485 screw terminal connector
Password protection	3 levels with individual user rights assignment
Watchdog function	For cooler fan, HDD status, HDD temperature, recording and HDD fault
Power source	12v DC, via external power supply 100 ~ 240v AC
Power consumption	40W max
Ambient temperature	0 ~ +40°C
Dimensions	355(W) x 71(H) x 353(D) mm
Weight	4kg (w/o HDD)

• **ECOR 264x1-16: 16-channel Pentaplex H.264 DVR**

The new compact Everfocus ECOR264 DVR series offers H.264 compression for efficient disk storage and network bandwidth conversion.

Ideal for small to medium installation applications the ECOR range include high specification features normally found on more expensive recorders including mobile viewing allowing you to check your home and business while on the go.

All ECOR DVRs are equipped with a simple graphical user interface for quick and easy configuration.

Features:

- User-friendly graphic user interface (GUI) with easy mouse or front panel operation
 - Multi-language menu operation
 - Express setup for quick installation in standard applications
 - Audio recording capability*
 - Latest H.264 compression technology
 - Real time recording and playback rate for all cameras
 - Individual recording settings for each channel
 - Pentaplex operation for simultaneous recording, playback, archiving, live view and network access
 - Snapshot search function
 - Data archiving via USB 2.0 port or built in DVD-RW drive*
 - Programmable motion detection area (22 x 18) for each channel
 - Local (through USB mouse) and network PTZ control
 - Fast network video transmission with dual stream for mobile phone streaming (3GPP)
 - Network operation independent from local operation
 - Event notification incl. e-mail alarm and network alarm with optional PowerCon 4.x software
 - Watchdog function with notification options
 - Optional RS-485 remote control (EKB 500)
 - Free EverFocus DDNS service: DDNS account registration directly from DVR setup
- * feature, function depending on DVR model



Specifications:

Model: ECOR 264 x 1-4	
Video format	PAL, CCIR
Display format main monitor	1, 4, 6, 8, 9, 10, 13, 16 x multiscreen, PIP
Display format call monitor	1, 4, 9, 16 x multiscreen, sequence
Video input	16 inputs 1 Vp-p composite PAL BNC, autom. 75Ω termination
Video output	16 loop-through outputs, 1 Vp-p at 75Ω, 1 main monitor output, 1 Vp-p at 75Ω, 1 main monitor output VGA 800 x 600, 15-pin Sub-D, 1 multiplex call monitor output, 1 Vp-p at 75Ω, BNC
Video compression	H.264
Display resolution VGA output	800 x 600
Harddisk storage	up to 2 x internal 8,9 cm (3,5") SATA harddisks OR up to 1x removable 8,9 cm (3,5") SATA harddisk*
Recording resolution	704 x 576, 704 x 288, 352 x 288
Recording rate	1 ~ 400 IPS (352 x 288) 1 ~ 200 IPS (704 x 288) 1 ~ 100 IPS (704 x 576) 1 ~ 25 IPS individual setup per channel for normal and event recording (remaining rate to be distributed among remaining channels)
Recording modes	continuous, schedule or event recording
Playback search	via date/time or event, smart search incl. snapshot search function
Video pause	Yes
Video loss detection	Yes
Motion detection	yes, with configurable detection area (22 x 18) and sensitivity
Event log	Yes
Alarm	16 alarm inputs, 4 alarm outputs
Audio	4 inputs, 1 line output
Setup	On-screen display with graphic user interface (GUI)
Control	USB mouse control, front panel control, IR remote control, optional: network, RS-485 keyboard EKB 500
Timer	Built-in real time clock
Title	16-characters title generator for each camera
Archive	USB 2.0 interface, internal DVD-RW drive*
Ethernet	RJ45 network connector
Interfaces	1 x RS-232 (9-pin Sub-D), 1 x RS-485 screw terminal connector
Password protection	3 levels with individual user rights assignment
Watchdog function	For cooler fan, HDD status, HDD temperature, recording and HDD fault
Power source	12v DC, via external power supply 100 ~ 240v AC
Power consumption	40W max
Ambient temperature	0 ~ +40°C
Dimensions	355(W) x 71(H) x 353(D) mm
Weight	4kg (w/o HDD)

● **Paragon 264x4-16: 16-channel D1 Real-Time H.264 Digital Video Recorder**

The latest EverFocus Paragon H.264 full size digital video recorder is based on H.264 compression technology resulting in enhanced recording capacity and improved network image transmission speed. The main monitor output offers a true 1080i HDMI digital output to deliver stunning images from any resolution which enhances motion reproduction.

Comprehensive features and extended record settings allow universal application of this DVR series. Easy express configuration using a graphical user interface for setup, archive, search and playback. Available as a 16 channel unit with DVD burner and optimal internal or hot swap HDDs.

Features:

- D1 real-time recording and playback for all cameras
- HDMI video output with full HD resolution (1080p)
- Latest H.264 compression technology
- User-friendly graphic user interface (GUI) with easy mouse or front panel operation
- Multi-language menu operation
- Express setup for quick installation in standard applications
- Audio recording for all 16 channels
- Separately configured HDMI 1080p and VGA/BNC main monitor outputs and additional call monitor
- Individual recording settings for each channel incl. holiday calendar, express schedule and pre-alarm
- Pentaplex operation for simultaneous recording, playback, archiving, live view and network access
- Snapshot search function
- Data archiving via USB 2.0 port, network or built in DVD-RW drive*
- Programmable motion detection area (22 x 16) for each channel
- Local (through USB mouse) and network PTZ control
- Fast network video transmission with dual stream for mobile phone streaming (3GPP)



Specifications:

Model:	Paragon 264 x 4-16
Video format	PAL, CCIR
Display format main monitor	VGA / BNC: 1, 4, 9, 10, 13, 16 x multiscreen, PIP // HDMI: 1, 4, 6, 8, 9, 12, 16 x multiscreen
Display format call monitor	full screen, 4 x multiscreen, sequence (live)
Display format HD monitor	1920 x 1080 (full HD 1080p)
Display format VGA monitor	1024 x 768
Main/call monitor assignment monitor HDMI	Option 1: main monitor VGA and BNC (simultaneous view) and call Option 2: main monitor HDMI and call monitor VGA and BNC (simultaneous view)
Video input	16 inputs 1 Vp-p composite PAL, BNC, autom. 75Ω termination
Video output	16 loop-through outputs, 1 Vp-p at 75Ω, BNC 1 main monitor output, 1 Vp-p at 75Ω, BNC 1 main monitor output VGA 1024x768, 15-pin Sub-D 1 call monitor output, 1 Vp-p at 75Ω, BNC 1 HDMI output 1920 x 1080 (1080p)
Video compression	H.264
Harddisk storage	Up to 4 x internal 8.9cm (3.5") SATA harddisks OR up to 2 x removable 8.9cm (3.5") SATA harddisks*
Recording resolution	704 x 576, 704 x 288, 352 x 288
Recording rate	1 ~ 400 IPS for all resolutions individual setup per channel for normal and event recording (remaining rate to be distributed among remaining channels)
Recording modes	Continuous, schedule (with holiday calendar) or event recording
Playback search	Via date/time or event, smart search incl. snapshot search function
Video pause	Yes
Video loss detection	Yes
Motion detection	Yes, with configurable detection area (22x16) and sensitivity
Event log	Yes
Pre-alarm	Yes
Alarm	16 alarm inputs, 4 relay outputs
Audio	16 line inputs, 1 line output
Setup	On-screen display
Control	USB mouse control, front panel control with jog/shuttle, IR remote control, network; optional: RS-485 keyboard EKB 500
Timer	Built-in real time clock with automatic time synchronisation via global NTP server through Internet
Title	12-characters title generator for each camera
Archive	USB 2.0 interface, internal DVD-RW drive*
Ethernet	RJ45 network connector
Interfaces	1 x RS-232 (9-pin Sub-D), 1 x RS-485 screw terminal connector
Password protection	3 levels
Watchdog function	for cooler fan, HDD status, HDD temperature, recording and HDD fault
Power source	100 ~ 240v AC
Power consumption	60W max
Ambient temperature	0 ~ +40°C
Dimensions	430(W) x 95(H) x 410(D) mm
Weight	6.8kg (w/o HDD)



• AVP101: Multi-Function Keyboard Controller

Full-function keyboard controller for use with the AVTech range of DVRs, PTZs and Speed Domes.

Features:

- Controls up to 64 devices through one keyboard controller (Devices such as the PTZs, Speed Domes and DVRs)
- User-friendly button placement & LCD touch panel (128 x 64 pixels) for easy operation
- Network upgrade available for future scalability
- Supports multi-protocols
- Password protection to prevent unauthorized intruder
- Built-in microphone for broadcast function



CCTV Software

Monitors & Screens

Testers

Installation Advice

Specifications:

Model:	AVP101
Device Control	PTZ camera & DVR...etc.
Remote Control	RS-485
Multi-Protocols:	Yes
Baud Rate	2400 ~ 115200
LCD Display	128*64
Ethernet Port	10, 100 Base-T
External I/O Port	9 Pin, D-Sub
Input Voltage	12v DC
Power Consumption	<2W
Operating Temperature	0° ~ +40°C
Operating Humidity	<95%
Dimensions	380(W) x 180(H) x 95(D) mm

• **EKB-500: Multi-function Keyboard Controller**

Full-function keyboard controller for use with the complete EverFocus product range and other leading brand Pelco D/Pelco P compatible PTZs and Speed Domes.

Features:

- Use of EEPbus for simultaneous control of DVRs and speed domes on one single RS-485 bus
- Capable of controlling speed dome cameras and DVRs
- 3D joystick control of PTZ function
- Jog/shuttle DVR control
- Matrix control (EverFocus DVR series' products)
- LCD display (20 x 2 lines), illuminated
- Multi-protocol support (EverFocus, Pelco-P/D, Samsung (EI), EQ 2700 S, Panasonic)
- Password protection
- Ergonomic buttons placement with sound indication for easy usage
- OSD access to connected devices
- Two independent RS-485 communication ports with selectable baud rate
- Camera / monitor mapping for easy reorganization
- Housing allows countersunk installation



CCTV Software

Monitors & Screens

Testers

Installation Advice

Specifications:

Model:	EKB-500
Keys	48
Joystick	3D PTZ function control
Jog/shuttle	DVR control
Display	LCD 2 lines with 20 characters each
Baud rate	1.200 ~ 38.400
Serial interfaces	RS-232 (service) / 2 x RS-485
Protocols	Pelco-P / Pelco-D / EverFocus / Samsung (EI) / EQ 2700 S / Panasonic
Devices	Control of speed dome and DVR
Cascading	Up to 8 keyboards addressable
Wiring box	Yes
Supported DVR models	Paragon 16, Paragon 264x4 ECOR 8, 4, ECOR 264 x 1~16, -9, -4 EDR 1640 / 1610 / 920 / 910 EDR 810 H / 810 M / 410 H / 410 M EDSR 1600 / 900 / 600 / 400 H / 400 M / 100 H / 100 M
Power source	12v DC, via included power supply 230v AC
Power consumption	10W max
Ambient temperature	0° ~ +40°C
Dimensions	360(W) x 110(H) x 200(D) mm
Weight	1.5kg

• **AVK-T1: DCCS Keyboard (Individual Camera) Control Box**

Features:

- Current non-DCCS surveillance system upgrade to control and configure DCCS devices
- Simple keypad design for intuitive menu operation
- Alarm output & RS485 control support
- OSD available for easy operation
- Compact unit



Specifications:

Model:	AVK-T1
Power	7.5v ~ 12v DC
Video Input	DCCS Camera
Video Output	1.0 Vp-p Composite, 75Ω
Alarm Output	1 Alarm Output
Remote Control I/O	RS-485
OSD	Yes
Dimensions	380(W) x 180(H) x 95(D) mm



• **'Eagle Eyes' Remote Surveillance Application**

Making full use AV Tech's integrated IVS Range functionality, 'Eagle Eyes' software provides fast, powerful control and monitoring of your CCTV/ surveillance system in the palm of your hand, directly from your smart phone!

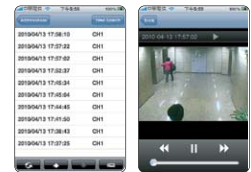
5-Sec Active Push Notification

When an event happens and is detected by our human detection camera, this DCCS DVR will immediately send a push notification to your iPhone which will then activate our mobile surveillance software, EagleEyes, automatically for remote access within 5 seconds.



Event Search and Playback

Remote event search and playback are available from your Smartphone, allowing you to check all important events at any time, from anywhere.



Flow Counting

In "Address Book": select the item which you want to activate the flow counting function and touch the second button from the bottom right side to enter the month mode.

In the month mode: Place the Smartphone horizontally to display the bar chart. To enter the day mode, touch one of the dates; to enter the time mode, touch one of the time ranges.





Touch Control & Icon Use


Touch Control & Icon Use: Intuitive touch control with easy icon use to manage and control all power functions on IVS products remotely via EagleEyes



Specifications:

EagleEyes	Lite	Plus
Comparison of Features/Versions		
Address Book	1	10
Download playback	N	Y
Auto playback after an event alarm is triggered	Y	Y
Time Search	N	Y
People Counting	Y	Y
Smart Zoom Control	Y	Y
IR On/Off Control	Y	Y
PTZ Auto Tracking Control	Y	Y
PTZ Preset Point Setting	Y	Y
Real Time Video Streaming	Y	Y
Real Time Audio Streaming	Y	Y
Video Quality Control	Y	Y
Auto Re-login	Y	Y
Push Notification	Y	Y
PTZ Hot Point Control	Y	Y
Touch to zoom in/out in PTZ mode	Y	Y
Double-Click to zoom max in PTZ mode	Y	Y



AVTECH 'Eagle Eyes' Remote Surveillance Application; available free at  iTunes and  Android Market.



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• TS-17R: 17" Touch Screen Display

A stylish 17" touch screen display with superb touch panel sensitivity and long-term durability built to last in demanding point-of-sale environments.

The TS-17R provides durable touch screen functionality and features highly accurate 5-wire resistive touch technology. The TS-17R's slim design demands less space than competing touch screen displays, and the VESA compliant design makes for easy mounting in a variety of environments.

The TS-17R is expressly designed for use in point-of-sale systems, information kiosks, museum displays and other high-traffic public environments.

Features:

- 17" scratch resistant touch panel
- 5-wire resistive touch technology
- SXGA 1280 x 1024 resolution
- Slim bezel design
- Sharp 800:1 contrast ratio
- High 300 cd/m² brightness
- Lifetime 35 million finger-touch hits
- 100,000 characters input stability
- Dual serial touch interface
- Auto-adjustment for optimal settings
- User-friendly OSD with lockable key function
- Kensington® security socket
- VESA compliant for wall/arm mounting



VESA compliant design provides for an unlimited array of mounting options



Scratch resistant touch panel with 5-wire Resistive touch technology



TS-17R provides dual serial touch interface for RS-232 and USB



Specifications:

Model:	TS-17R
Panel -	
Panel Type	TFT LCD
Panel Size	17.0" (432mm)
Max. Resolution	SXGA 1280 x 1024
Pixel Pitch	0.264mm
Brightness	300 cd/m ² (Typical)
Contrast Ratio	800:1 (Typical)
Surface Treatments	Hard Coating (3H), Anti-glare Treatment
Viewing Angle	160°(H) x 160°(V) (Typical)
Display Colour	16.2M
Response Time	4 ms (GTG)
Panel Life Time	50,000 hrs (Minimum)
Frequency (H/V)	H: 30 ~ 80KHz V: 56 ~ 75Hz
Max. Pixel Clock	140MHz
Input -	
Touch Interface	8-Pin, Mini Dim
Analogue	15-Pin, D-Sub
Digital	24-Pin, DVI-D
Power -	
AC-DC Adaptor	External
Power Consumption	100 - 240v AC, 50 - 60 Hz <42W (On) <2W (Stand-by) <1W (Off)
Touch Screen -	
Technology	5-wire Resistive
Optical Transmission	>80%
Positional Accuracy	<1% Deviation Error
Panel Resolution	1024 x 1024
Active Force	<300g
Panel Interface	Dual RS-232/USB interface
Glass Thickness	2.1 mm
Life Performance	35 million hits (finger)
Plug & Play - VESA	DCC 2B ; DCC/CI
Operating Conditions -	
Temperature	0° ~ 40°C
Humidity	10% ~ 90%
Mounting - VESA FPMPMI	Yes (100 mm)
Tilt	5° ~ 25° (+5° when bracket hooked)
Dimensions	436(W) x 427(H) x 200(D) mm
Weight	7.5kg

• **SC-17: 17" Surveillance Display Screen**

A cost-effective 17" surveillance display with the quality, connectivity and performance essential for any security environment.

With the AG Neovo SC-17, security centres can keep an eye on budgets without losing sight of performance.

Digital and analogue video inputs, including looping BNC I/O, minimise installation cost. Auto NTSC/PAL detection, settings key lock and auto settings adjustment reduce maintenance hassle. Quick signal-switching and rapid response time improve surveillance efficiency, while built-in speakers provide an additional level of security.

All this and more make the SC-17 the perfect value display choice for any security environment.

Features:

- High 1280 x 1024 SXGA resolution
- Anti-Burn-in™ technology
- Video inputs (BNC in x 1, BNC out x 1)
- Looping video inputs for multiple connections
- Quick signal-switching time (≤ 0.8 sec)
- NTSC/PAL auto-detection
- Selectable signal source
- PC compatible
- Built-in speakers
- Key lock function
- Auto-adjustment for optimal setting
- Security socket
- VESA standard wall mount



Built-in speakers enable more rigorous security monitoring



Looping video inputs allow multiple display connections



Video versatility, including VGA, DVI, S-Video and BNC In/Out



Specifications:

Model:	SC-17
Panel -	
Panel Type	TFT LCD
Panel Size	17.0" (433mm)
Max. Resolution	SXGA 1280 x 1024
Pixel Pitch	0.264mm
Brightness	250 cd/m2 (Typical)
Contrast Ratio	1000:1 (Typical)
Viewing Angle	170°(H) x 160°(V) (Typical)
Display Colour	16.7M
Response Time	3ms (GTG)
Frequency (H/V)	H: 31 ~ 80kHz V: 50 ~ 75Hz
Max. Pixel Clock	140MHz
Input -	
Analogue	15-Pin, D-Sub
Digital	24-Pin, DVI-D
CVBS	BNC x 1
S-Video	4-Pin mini DIN
Out - CVBS	BNC x 1 (Loop through)
Audio -	
Audio In	3.5mm Audio Line-in
Audio Out	3.5 mm Audio Line-in
Speaker	1W x 2
Power -	
AC-DC Adaptor	External
Power Consumption	100 ~ 240v AC, 50 ~ 60Hz <26 W(On) <1.5 W(Off)
Plug & Play - VESA	DCC 2B
Operating Conditions -	
Temperature	0° ~ 40°C
Humidity	10% ~ 85%
Mounting - VESA FPM PMI	Yes (100mm)
Tilt	-5° ~ +15°
Dimensions	372(W) x 360(H) x 164(D) mm
Weight	3.6kg

• SC-19: 19" Surveillance Display Screen

A value 19" surveillance display with rapid response time, quick signal-switching and robust video support for security and control centre environments.

For a cost-effective surveillance display solution, look no further than the AG Neovo SC-19. A bright, high resolution full colour screen with quick signal-switching and 3ms response time ensures sharp, smooth video playback. Looping BNC video inputs and NTSC/PAL support maximise flexibility for system integration.

And with built-in speakers, stylishly slim profile and VESA mountability, the SC-19 will look just as attractive as its amazingly affordable price.

Features:

- High 1280 x 1024 SXGA resolution
- Anti-Burn-in™ technology
- Video inputs (BNC in x 1, BNC out x 1)
- Looping video inputs for multiple connections
- Quick signal-switching time (≤ 0.8 sec.)
- NTSC/PAL auto-detection
- Selectable signal source
- PC compatible
- Built-in speakers
- Key lock function
- Auto-adjustment for optimal setting
- Security socket
- VESA standard wall mount



Built-in speakers enable more rigorous security monitoring



Looping video inputs allow multiple display connections



Video versatility, including VGA, DVI, S-Video and BNC In/Out



Specifications:

Model:	SC-19
Panel -	
Panel Type	TFT LCD
Panel Size	19.0" (483 mm)
Max. Resolution	SXGA 1280 x 1024
Pixel Pitch	0.294mm
Brightness	250 cd/m ² (Typical)
Contrast Ratio	1000:1 (Typical)
Viewing Angle (H/V)	170°/160° (Typical)
Display Colour	16.7M
Response Time	3 ms (GTG)
Frequency (H/V)	H: 31 ~ 80kHz V: 50 ~ 75Hz
Max. Pixel Clock	140MHz
Input -	
Analogue	15-Pin, D-Sub
Digital	24-Pin, DVI-D
CVBS	BNC x 1
S-Video	4-Pin mini DIN
Out - CVBS	BNC x 1 (Loop through)
Audio -	
Audio In	3.5mm Audio Line-in
Audio Out	3.5 mm Audio Line-in
Speaker	1W x 2
Power -	
AC-DC Adaptor	External
Power	100 ~ 240v AC, 50 ~ 60Hz
Consumption	< 26 W (On) < 1.5 W (Off)
Plug & Play - VESA	DCC 2B
Operating Conditions -	
Temperature	0°C ~ 40°C
Humidity	10% ~ 85%
Mounting - VESA FPMPPM	Yes (100 mm)
Tilt	-5° ~ +15°
Dimensions	420(W) x 406(H) x 190(D) mm
Weight	5.5kg

• **RX-W32: 32" Widescreen Full HD Display Screen**

A large-format, featured-packed 32" widescreen display protected by NeoV™ Optical Glass and a durable metal frame for serious 24/7 security environments.

Introducing the RX-W32, a large-format hard glass display designed for the serious surveillance centre. A high resolution 32" screen, image-enhancing 3D Comb Filter / 3D Deinterlace technology, and versatile Picture-in-Picture (PIP) options provide sharp images and features security professionals need.

All this, plus protective NeoV™ Optical Glass and sturdy metal casing, makes the RX-W32 the most robust and advanced display choice for maximum surveillance performance.

Features:

- 1920 x 1080 Full HD resolution
- 5000:1 contrast ratio
- NeoV™ Optical Glass
- Anti-Burn-in™ technology
- Horizontal resolution up to 600TVL (NTSC), 620TVL (PAL)
- Smart Omni Viewer: PIP, PBP and VOV functions
- Built-in Image Enhancer: 3D Comb Filter / Deinterlace / Noise Reduction
- Multiple video inputs (BNC in x 2, BNC out x 2)
- RS-232 for individual and multi-display control
- Built-in HDCP allows HD-format video
- Power DC-out design to power connected peripherals
- Selectable aspect ratio for ultimate image: Native, Overscan, Underscan
- NTSC/PAL/SECAM video system support
- Quick signal-switching time (≤0.8 sec)
- IR remote control
- Durable metal housing
- VESA standard wall mount
- Rigorous screening of the components for mission-critical 24/7 applications



NeoV™ Optical Glass protects against scratches, impacts and other physical damage



Viewing versatility with Picture-in-Picture (PIP), Picture-by-Picture (PBP) and Video-on-Video (VOV)



Anti-Burn-in™ technology prevents image sticking



Multiple video inputs (VGA, DVI, dual BNC, S-Video and Component) allow for effortless system integration



Durable metal casing for enhanced strength and secure mounting

Specifications:

Model:	RX-W32
Panel -	
Panel Type	TFT LCD
Panel Size	31.6" (801 mm)
Max. Resolution	FHD 1920 x 1080
Pixel Pitch	0.36375mm
Brightness	450 cd/m ² (Typical)
Contrast Ratio	5000:1 (Typical)
Viewing Angle (H/V)	178°/178° (Typical)
Display Colour	16.7M
Response Time	6.5ms (GTG)
Horizontal resolution - TV Lines	600TVL (NTSC), 620TVL (PAL)
Frequency (H/V)	H: 24 ~ 82kHz, V: 50 ~ 85Hz
Input -	
VGA	15-Pin, D-Sub
DVI	24-Pin, DVI-D
CVBS	BNC x 2
S-Video	4-Pin mini DIN
Component(Y PbPr)	RCA x 2
Output -	
CVBS	BNC x 2
S-Video	4-Pin mini DIN
External Control -	
RS-232 in/out	9-Pin, D-Sub
Audio -	
Audio In	1 x stereo audio in for PC (3.50), 1 x stereo audio in for CVBS (RCA), 1 x stereo audio in for S-Video (RCA), 2 x stereo audio in for YPbPr (RCA)
Audio Out	1 x stereo audio out for CVBS (RCA)
Speaker	2W x 2
Power -	
DC Output	12v, 350mA, DC jack 2.50
Power Consumption	100 ~ 240v, 50 - 60Hz <120 W (On), <10 W (Off)
NeoV™ Optical Glass -	
Thickness	3.0mm (0.12")
Reflection Rate	< 1%
Transmission Rate	> 96%
Coating Hardness	> 9H
Operating Conditions -	
Temperature	0° ~ 40°C
Humidity	10% ~ 85%
Mounting - VESA FPM/PMI	
	Yes (400 x 200 mm)
Dimensions -	
w/o base	788(W) x 478(H) x 101(D) mm
w/ base	788(W) x 541(H) x 170(D) mm
Weight -	
w/o base	16.8kg
w/ base	18.3kg

Need help choosing the right product?
Call our technical support team now on:
Tel. +44(0)115 977 0075

• **RX-W42: 42" Widescreen Full HD Display Screen**

A full HD, full-featured 42" display protected by NeoV™ Optical Glass and Anti-Burn-in™ technology designed for the best run professional 24/7 security environments.

With a feature list as big as its 42" screen, the RX-W42 brings the ideal combination of size and specs to the professional security environment. Review highly-detailed, smooth and accurate images on a bright Full HD display with AG Neovo's Advanced Image Platform™. Save costs and time by taking advantage of multiple video inputs and convenient Picture-in-Picture (PIP) options.

And thanks to protective NeoV™ Optical Glass, Anti-Burn-in™ technology, long-life screen and a durable metal frame, these best-run security environments will also be some of the longest running.

Features:

- 1920 x 1080 Full HD resolution
- 4000:1 contrast ratio
- NeoV™ Optical Glass
- Anti-Burn-in™ technology
- Smart Omni Viewer: PIP, PBP & VOV functions
- Built-in Image enhancer: 3D Comb Filter/Deinterlace/Noise Reduction
- Multiple video inputs (BNC in x 2, BNC out x 2)
- RS-232 for individual and multi-display control
- Horizontal resolution up to 630TVL (NTSC), 650TVL (PAL)
- Built-in HDCP allows HD-format video
- Power DC-out design to power connected peripherals
- Selectable aspect ratio for ultimate image: Native, Overscan, Underscan
- NTSC/PAL/SECAM video system support
- Quick signal-switching time (≤0.8 sec)
- IR remote control
- Durable metal housing
- VESA standard wall mount
- Rigorous screening of the components for mission-critical 24/7 applications



NeoV™ Optical Glass protects against scratches, impacts and other physical damage



Viewing versatility with Picture-in-Picture (PIP), Picture-by-Picture (PBP) and Video-on-Video (VOV)



Anti-Burn-in™ technology prevents image sticking



Durable metal casing for enhanced strength and secure mounting



Multiple video inputs (VGA, DVI, dual BNC, S-Video and Component) allow for effortless system integration

Specifications:

Model:	RX-W42
Panel -	
Panel Type	TFT LCD
Panel Size	42.0" (1067mm)
Max. Resolution	FHD 1920 x 1080
Pixel Pitch	0.48455mm
Brightness	450 cd/m ² (Typical)
Contrast Ratio	4000:1 (Typical)
Viewing Angle (H/V)	178°(H), 178°(V) (Typical)
Display Colour	16.7M
Response Time	6.5ms (GTG)
Horizontal resolution - TV Lines	630TVL (NTSC), 650TVL (PAL)
Frequency (H/V)	H: 24 ~ 82KHz, V: 50 ~ 85Hz
Input -	
VGA	15-Pin, D-Sub
DVI	24-Pin, DVI-D
CVBS	BNC x 2
S-Video	4-Pin mini DIN
Component(Y PbPr)	RCA x 2
Output -	
CVBS	BNC x 2
S-Video	4-Pin mini DIN
Audio -	
Audio In	1 x stereo audio in for PC (3.50), 1 x stereo audio in for CVBS (RCA), 1 x stereo audio in for S-Video (RCA), 2 x stereo audio in for YPbPr (RCA)
Audio Out Speaker	1 x stereo audio out for CVBS (RCA) 2W x 2
Power -	
DC Output	12v, 350 mA, DC jack 2.50
Power	100 ~ 240v, 50 ~ 60Hz
Consumption	< (165) W (On), < (10) W (Off)
NeoV™ Optical Glass -	
Thickness	3.0mm (0.12")
Reflection Rate	<1%
Transmission Rate	>96%
Coating Hardness	>9H
Operating Conditions -	
Temperature	0°C ~ 40°C
Humidity	10% ~ 85%
Mounting - VESA FPMPLM	Yes (600 x 400 mm, 400 x 200 mm)
Dimensions -	
w/o base	1011(W) x 604(H) x 106(D) mm
w/ base	1011(W) x 667(H) x 190(D) mm
Weight -	
w/o base	27kg
w/ base	28.4kg

- **DS-42A22:** 2 x 2 Multi-Screen Video Wall System
- **DS-42A33:** 3 x 3 Multi-Screen Video Wall System
- **DS-42A44:** 4 x 4 Multi-Screen Video Wall System
- **DS-42A55:** 5 x 5 Multi-Screen Video Wall System
- **DS-MS-C:** Multi-Screen Controller



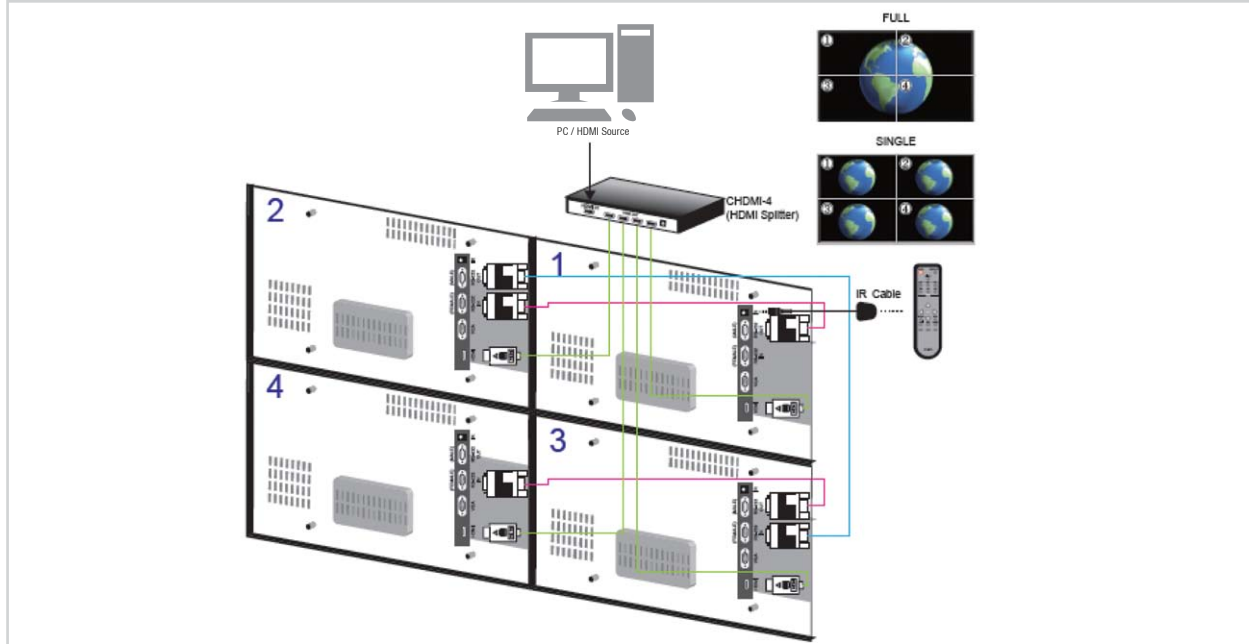
Flexibility is the key to the CYP Digital Signage Solutions. There are three standard packages which provide a complete system solution for many commercial applications. The packages include a Single 42" screen option, 2x2, 3x3, 4x4 and a 5x5 complete digital signage system.

All CYP screen packages include built-in control modules and use the latest LED technology with screens operating at full HD resolutions of 1920 x 1080P, with bi-directional RS-232 control functionality enabled.

All package solutions are supplied with a full mounting system to enable the installer to secure the system to any wall or display area.

Features:

- Supports 4-Screen (2 x 2), 9-Screen (3 x 3), or 16-Screen (4 x 4), or 25-screen (5 x 5) video wall panel combinations
- Supports Full HD 1920 x 1080 resolution LCD panels
- Full two-way RS-232 Control
- Horizontal or Vertical Screen Orientation (both Mounting Kits available)
- Single Image or Independent Split Screen Images
- Independent Controller available for integration with third-party Screens
- 10mm Bezel
- ALSO AVAILABLE IN 47" 6mm Bezel option: Contact for details



Specifications:

DS-MS-C (Multi-Screen Controller)	DS-42A22	DS-42A33	DS-42A44	DS-42A55
For use with third party screens to emulate a video wall. This controller will control the digital signage content for each screen on a video wall system using up to 16 screens. One controller is required per screen. If the user has only one HDMI or VGA source, then an appropriate Distribution Amplifier will be required to split the source signal to each of the Multi-Screen Controllers.	2 x 2 Video Wall System 4 x 42" 1080P LCD Screens (with HDMI & VGA Connections) 4 x Wallmount Kit 1 x 4-way splitter 1 x IR remote and cable	3 x 3 Video Wall System 9 x 42" 1080P LCD Screens (with HDMI & VGA Connections) 9 x Wallmount Kit 1 x 10-way splitter 1 x IR remote and cable	4 x 4 Video Wall System 16 x 42" 1080P LCD Screens (with HDMI & VGA Connections) 16 x Wallmount Kit 1 x 16-way splitter 1 x IR remote and cable	5 x 5 Video Wall System 25 x 42" 1080P LCD Screens (with HDMI & VGA Connections) 25 x Wallmount Kit 2 x 16-way splitter 1 x IR remote and cable

- **EN 220: TFT LCD Monitor with Service Kit**

Field Service Kit for viewing camera images (focus, direction, etc) during installation.

High quality LCD screen with charger, battery and PSU supplied in padded zip case.



Specifications:

Model:	EN 220
Screen size	87 x 116 mm (5,6")
Effective display area	83.52 x 111.36 mm
Dot matrix	320 x 240
Pixel distance	0.116 x 0.348
Brightness	270 cd / m ²
Video input	1Vp-p FBAS
Audio input	50mV (min.), stereo
Audio output	Built-in 4cm, 200mW speaker, stereo earphone
Control	Brightness, contrast, colour, volume
Power source	9 ~ 20v DC, via included power supply 230v AC
Power consumption	8W max. at 12v DC
Ambient temperature	0° ~ +50°C
Colour casing	Black
Delivery scope service kit	Bag, accumulator, charger, mains supply, cables
Dimensions	162(W) x 131(H) x 54(D) mm
Weight	2.95kg (incl. service kit)



Instant Voltage Testers	436 ~ 439
Instant Magnetic Field Testers	440
Multimeters	441 ~ 442
Clamp Meters	443 ~ 444
Sound Level Meters	444 ~ 446
Light Meters	447 ~ 448

SAGAB

• Volt Stick 230Y: Instant Voltage Tester (230v)

The original and still the best, Volt Stick is an instant tester for safely checking the presence of an AC voltage, without making any disconnections in cables, wall sockets, fuses, circuit breakers, junction boxes, etc. No current flow is needed for correct operation.

The red indicator in the tip will illuminate on detection of AC voltage simply by applying the tip close to any connection point, or moving it along any insulated cable.

All Volt Stick models are fully approved to IEC 61010-1, CAT111 1000v AC and CE.

Features:

- Locates breaks in cables
- Detects blown fuses inside plugs or fuse holders
- Distinguishes between live and neutral wires in both single and three-phase supplies
- Identifies voltage-carrying cables in junction boxes
- Identifies faulty in-line switches
- Locates defective in-series light bulbs
- Optimised for 230v AC



Specifications:

Model:	Volt Stick 230Y
Voltage range	220 ~ 230v AC
Sensitivity	Indicator will illuminate at 4mm distance of a 2.5mm conductor carrying 220v
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x Standard AAA alkaline batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)

• Volt Stick SOUND: Instant Voltage Tester with Sounder (230v)

The Volt Stick SOUND features a detection buzzer for even greater clarification. Also ideal for 'detection round corners', in bright daylight and in awkward out of sight areas. High visibility green tube for ease of identification if dropped or hidden in the toolbox.

Features:

- Added Sounder feature
- Locates breaks in cables
- Detects blown fuses inside plugs or fuse holders
- Distinguishes between live and neutral wires in both single and three-phase supplies
- Identifies voltage-carrying cables in junction boxes
- Identifies faulty in-line switches
- Locates defective in-series light bulbs



Specifications:

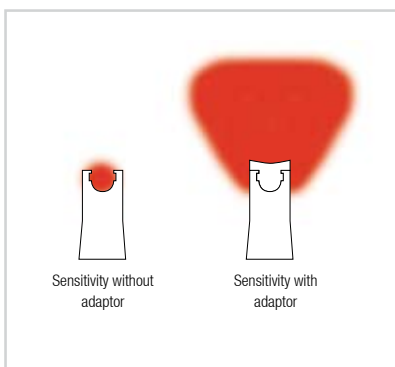
Model:	Volt Stick SOUND
Voltage range	220 ~ 230v AC
Sensitivity	Functions @ 4mm distance from 2.5mm ² conductor carrying 220v AC
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x Standard AAA alkaline batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.04kg (including batteries)

• **Volt Stick PRO230:** Instant Voltage Tester with Shielded Fork Tip (230v)

The PRO230 features a unique 'shielded' fork tip for highly selective and accurate testing for presence of AC voltage in specific cables or wires. Ideal for professional, close proximity testing and installation work.

Features:

- Unique forked tip gives unsurpassed selectivity and reduces the risk of spurious indications
- Live cables can easily be detected in equipment cabinets, fuse boxes, etc
- Cables and connections can easily be checked in low voltage equipment too
- Extremely safe when measuring in junction boxes
- With the supplied field strength amplifier, anti-tamper, earthed outlets can be checked.
- Powerful red light in the tip to indicate voltage
- Fully insulated for safe use



CCTV Software

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Installation Advice

Specifications:

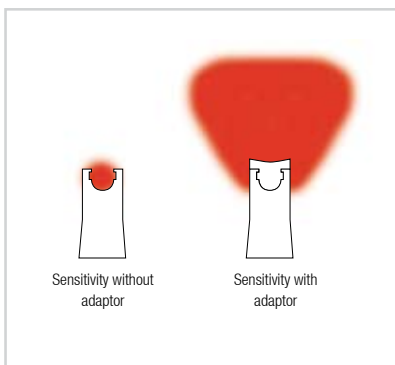
Model:	Volt Stick PRO230
Voltage range	230v AC
Sensitivity	Functions upon contact with cable carrying 220v AC
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x AAA (LR03) batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-10° ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.04kg (including batteries)

• **Volt Stick PRO12:** Instant Voltage Tester with Shielded Fork Tip (12 ~ 600v)

The PRO12 features a unique 'shielded' fork tip for highly selective and accurate testing for presence of AC voltage in specific cables or wires. Ideal for professional, close proximity testing and installation work.

Features:

- Unique forked tip (patented for) gives unsurpassed selectivity and reduces the risk of spurious indications
- Live cables can easily be detected in equipment cabinets, fuse boxes, etc
- Cables and connections can easily be checked in low voltage equipment too
- Extremely safe when measuring in junction boxes
- With the supplied field strength amplifier, anti-tamper, earthed outlets can be checked.
- Powerful red light in the tip to indicate voltage
- Fully insulated for safe use



Specifications:

Model:	Volt Stick PRO12
Voltage range	12 ~ 600v AC
Sensitivity	Functions upon contact with cable carrying 220v AC
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x AAA (LR03) batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.04kg (including batteries)

SAGAB

• Volt Stick 110: Instant Voltage Tester (110v)

This high sensitivity version of the Volt Stick provides instant, non contact checking for the presence of AC voltage down to 110v, without making any disconnections in cables, wall sockets, fuses, circuit breakers, junction boxes etc.

This 110v version is ideal for construction site temporary supplies and, of course, for use in mains testing in the USA.

The red indicator in the tip will illuminate on detection of AC voltage simply by applying the tip close to any connection point, or moving it along any insulated cable.

Features:

- Locates breaks in cables
- Detects blown fuses inside plugs or fuse holders
- Distinguishes between live and neutral wires in both single and three-phase supplies
- Identifies voltage-carrying cables in junction boxes
- Identifies faulty in-line switches
- Locates defective in-series light bulbs
- Special flat tip for use on US-style sockets
- Optimised for 110v AC



Specifications:

Model:	Volt Stick 110
Voltage range	90 ~ 400v AC
Sensitivity	Indicator will illuminate at 4mm distance of a 2.5mm conductor carrying 110v
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x Standard AAA alkaline batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)

• VSPU1: Volt Stick Proving Unit

This newly-developed Proving Unit has been specifically designed to test the functionality of the Volt Stick 230v range and LV50. The instrument internally generates a 220 ~ 240v source when the tip of a Volt Stick is inserted into the test portal of the Proving Unit.

Always test the operation of the Volt Stick with the Proving Unit prior to use and immediately following use to ensure the Volt Stick is operating correctly.

Suitable for use on Volt Sticks with a 4mm diameter tip that works on 220 ~ 240v, 50/60Hz AC supplies.

Features:


- Immediate functionality proving of Volt Stick 230v product range
- Simple, effective and lightweight unit
- Sealed, battery-powered unit
- Provides easy storage for a single Volt Stick unit

(Not suitable for PRO12, PRO 230 and 110v models)



Specifications:

Model:	VSPU1
Compatible with	Volt Stick 230Y, 230B, SOUND, LV50
Electrical Field Output	220 ~ 240v
Response Time	Immediate
Power Requirements	Battery powered, sealed unit
Dimensions	185(L) x 41(W) x 41(H) mm
Weight	0.2kg

- **Volt Stick EX110:** Instant Voltage Tester (110v) - Intrinsically Safe 
- **Volt Stick EX230:** Instant Voltage Tester (230v) - Intrinsically Safe 

These intrinsically-safe EX110 & EX230 versions are ATEX approved for use in hazardous areas such as chemical plants, oil refineries and off-shore rigs.

Features:

- Locates breaks in cables
- Detects blown fuses inside plugs or fuse holders
- Distinguishes between live and neutral wires in both single and three-phase supplies
- Identifies voltage-carrying cables in junction boxes
- Identifies faulty in-line switches
- Locates defective in-series light bulbs
- Intrinsically safe



CCTV Software


Monitors &
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Specifications:

Model:	Volt Stick EX110	Volt Stick EX230
Voltage range	110 ~ 230v AC	220 ~ 230v AC
Sensitivity	Indicator will illuminate at 4mm distance of a 2.5mm conductor carrying 110v	Indicator will illuminate at 4mm distance of a 2.5mm conductor carrying 240v
Response Time	Immediate	Immediate
Intrinsically Safe	Yes	Yes
Power Requirements	2 x Standard AAA alkaline batteries (supplied)	2 x Standard AAA alkaline batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C	-20 ~ +50°C
Overvoltage	CAT III 1000v AC	CAT III 1000v AC
Dimensions	145(L) x 18(Ø) mm	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)	0.035 kg (including batteries)

Testers

Installation
Advice

- **Volt Stick LV50:** Instant Voltage Tester (50v) - Intrinsically Safe 

This product could save your life! This high sensitivity version (testing down to 50v) is also intrinsically safe, making it an essential 'life-saver' testing tool for utilities engineers as well as for use in hazardous areas such as chemical plants, oil refineries and off shore rigs.

Used as a safety device to make sure metallic surfaces, pipework and cables are safe from potentially lethal voltages.

Approvals:

EEx IB IICT4
Nemko 03ATEX 1456
Nemko 0470

Features:

- EEx approved voltage indicator for use in explosive environments
- Voltage indicator with safety handguard to avoid unintentional contact with live conductors
- Voltage range 50 ~ 1000v AC
- Fully insulated for safe use
- Intrinsically safe



Specifications:

Model:	Volt Stick LV50
Voltage range	50 ~ 1000v
Sensitivity	Indicator will illuminate at 4mm distance of a 2.5mm conductor carrying 50v
Response Time	Immediate
Intrinsically Safe	Yes
Power Requirements	2 x Standard AAA alkaline batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)

SAGAB

• Magnet Stick: Instant Magnetic Field Tester

The Magnet Stick provides safe and simple checking for the presence of magnetism.

Upon testing and without metallic contact, the lamp lights immediately where there is a magnetic field (e.g. an activated coil in a solenoid valve). Equipment can be tested without having to switch it off and magnetic coils can often be tested through their protective cover, saving hours of dismantling time.

The Magnet Stick responds to all kinds of magnetic fields from alternating or direct current, to permanent magnets.

Features:

- Powerful red light in the tip to indicate presence of a magnetic field
- Easy to use
- Solenoid valves in pneumatic and hydraulic control equipment can easily be tested
- Test relays with coils and electrically controlled solenoid valves in all types of vehicles and machines
- Test solenoid valves when servicing oil burners

Applications:

- Testing operating solenoid valves in pneumatic and hydraulic control equipment
- Testing relays with coils and electrically-controlled solenoid valves in all types of vehicles and machines
- Testing solenoid valves when servicing oil burners



Specifications:

Model:	Magnet Stick
Sensitivity	300 Gauss, (0,3 mTV)
Response Time	Immediate
Intrinsically Safe	No
Power Requirements	2 x AAA (LR03) batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III, 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)

• Magnet Stick EX: Instant Magnetic Field Tester - Intrinsically Safe

The ATEX-Approved version of the Magnet Stick for use in hazardous areas such as chemical plants, oil refineries, offshore rigs and explosive environments.

Features:

- Powerful red light in the tip to indicate presence of a magnetic field
- Easy to use
- Solenoid valves in pneumatic and hydraulic control equipment can easily be tested
- Test relays with coils and electrically controlled solenoid valves in all types of vehicles and machines
- Test solenoid valves when servicing oil burners
- Intrinsically safe

Applications:

- Testing operating solenoid valves in pneumatic and hydraulic control equipment
- Testing relays with coils and electrically-controlled solenoid valves in all types of vehicles and machines
- Testing solenoid valves when servicing oil burners



Specifications:

Model:	Magnet Stick EX
Sensitivity	300 Gauss, (0,3 mTV)
Response Time	Immediate
Intrinsically Safe	Yes
Power Requirements	2 x AAA (LR03) batteries (supplied)
Relative Humidity	80% @ 30°C, 50% @ 40°C
Operating Temperature	-20 ~ +50°C
Overvoltage	CAT III 1000v AC
Dimensions	145(L) x 18(Ø) mm
Weight	0.035kg (including batteries)

- **DMM902:** Pocket-Size Multimeter
- **DMM903:** Pocket-Size Multimeter
- **DMM904:** Pocket-Size Multimeter

A handy, pocket-sized everyday range of meters for every engineer, with the added benefit of a built-in Volt Stick and torch.

Despite their small size, these instruments have a very high safety approval (CAT IV 600v, CAT III 1000v). They are protected against overloading by an electronic fuse. When not in use, the test probes can be parked at the rear of the instrument body.

All DMM models are autoranging and have diode test, continuity buzzer, auto power off and ion battery indicator.

Features:

- LCD display with backlight
- Built-in non-contact AC voltage detector plus flashlight
- Measures voltage, resistance, diode function & continuity
- Double-moulded case
- CAT III 1000v, CAT IV 600
- Auto-ranging with auto power off
- Silicone test leads
- Protective holster



Extremely compact meters

Specifications:

Model:	DMM902	DMM903	DMM904
Display	2000-count	2000-count	4000-count
DC Voltage Ranges	0.1mv ~ 600v		
AC Voltage Ranges	1mv ~ 600v		
AC/DC Current	-	0.1µA ~ 200mA	0.1µA ~ 200mA
Resistance	0.1Ω ~ 20mΩ	0.1Ω ~ 20mΩ	0.1Ω ~ 40mΩ
Capacitance	-	-	1pF ~ 200µF
Frequency	-	-	0.001Hz ~ 10kHz
Measuring Rate	2 per second		
Dimension	54(W) x 104(H) x 36(D) mm		
Weight	0.14kg		
Power Supply	2 x AAA 1.5v batteries (inc)		
Approvals	CAT III 1000v, CAT IV 600v		
Safety Standards	EN 61010-1, CE, Pollution Degree II		

SAGAB

- **SMM202:** Smart Multimeter
- **SMM203:** Smart Multimeter
- **SMM204:** Smart Multimeter

Smart Multimeters that automatically know what to measure.

If there is a voltage, the multimeter measures the voltage; if there is resistance, it measures resistance; Quite simply SMART.

SMM-202 and SMM-203 have smart measurement functionality, while SMM-204 also has an option for manual measurement selection. Functions such as diode testing, continuity buzzer and capacitance measurement can be selected at the touch of a button.

All instruments feature automatic shut-off to conserve battery life.

Instruments are supplied with batteries and thin, flexible silicone-insulated leads.

Features:

- Voltage AC/DC 0 ~ 600v (SMM 202, 203 & 204)
- Current AC/DC 0 ~ 4A (SMM 203 & 204)
- Resistance 0 ~ 40m Ohm (SMM 202, 203 & 204)
- Buzzer (<100 Ohm) (SMM 204 only)
- Capacitance 0.01nF ~ 4000 uF (SMM 204 only)
- Hold and Min-Max functions (SMM 204 only)



Specifications:

Model:	SMM202	SMM203	SMM204
Display	3 3/4 Digits, 4000 Counts, Updates 3sec		
AC/DC Voltage Ranges	0 ~ 500v		
AC/DC Current	-	0 ~ 4A	0 ~ 4A
Ohm	0Ω ~ 40mΩ		
Diode Test	-	-	Yes, approx 2.8v
Buzzer	-	-	Yes < approx 100Ω
Capacitance	-	-	0 ~ 4000μF
Max Voltage	Between any terminal and earth ground 600v RMS		
Overload Indication	'OL' displayed in top right of the LCD		
Dimension	84(W) 161(H) x x 30(D) mm		
Weight	0.21kg	0.21kg	0.21kg
Power Supply	2 x 1.5v AA alkaline (included)		
Safety Standards	Standards of IEC61010 Pollution Degree 2		

• **TM-1016:** HVAC Auto-ranging Clamp Meter

Features:

- Jaw size 30mm
- Supplied with TP-03 Beaded temperature probe
- Data Hold
- Auto Range
- Backlit Display

Specifications:

Model:	TM-1016
Max Measuring Current	400A
Display Counts	4000 Count Backlit LCD
Max. Conductor Size	30mm
AC Current	0.1 ~ 4000uA, 0.01A~400A ±(2.0%+10)
DC Current	0.1 ~ 4000uA, ±(1.0%+2)
AC Voltage	1mv ~ 600v, ±(1.0%+3)
DC Voltage	mv ~ 600v, ±(0.8%+2)
Resistance	0.1 ~ 40MΩ, ±(0.8%+2)
Continuity Buzzer	Yes
Bargraph	Yes
Autorange	Yes
Auto Power OFF	Yes
Data Hold	Yes
Dimension	64(W) x 39(H) x 205(L) mm
Weight	0.28kg (including battery)
Power	2 batteries 1.5v AAA type



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• **TM-27E:** 600A AC/DC True RMS Digital Clamp Meter

Features:

- Jaw size 35mm
- Data Hold
- Auto Range
- Backlit Display

Specifications:

Model:	TM-27E
Max Measuring Current	600A
Display Counts	4000
Max Conductor Size	35mm
AC Current	0.1A ~ 600A, ±(2.0%+5)
DC Current	0.1A ~ 600A, ±(1.5%+5)
AC Voltage	0.1mv ~ 600v, ±(1.2%+7)
DC Voltage	0.1mv ~ 600v, ±(0.5%+3)
Resistance	0.1 ~ 40MΩ
Continuity Buzzer	Yes
Frequency	1Hz ~ 400kHz
Backlit	Yes
Autorange	Yes
Auto Power OFF	Yes
Data Hold	Yes
MAX/MIN	Yes
REL(ZERO)	Yes
Size	218(W) x 75(H) x 43(D) mm
Weight	0.38kg



• YF-8030A: 1200A AC/DC Clamp Meter

Features:

- Jaw size 50mm
- 3½ digit LCD with maximum reading 4000
- Low battery indicator
- Max/Min hold key

Specifications:

Model:	YF-8030A
Max measuring current	1200A
Display counts	4000
Max conductor size	52mm
AC Current	0.1A ~ 1200A, $\pm(2.0\% + 5)$
DC Current	0.1A ~ 1200A, $\pm(1.5\% + 5)$
AC Voltage	1mv ~ 750v, $\pm(1.2\% + 3)$
DC Voltage	0.1mv ~ 1000v (Auto), $\pm(1.5\% + 5)$
Resistance	100m Ω ~ 40M Ω
Continuity buzzer	Yes
Diode	Test Volt, 3v
Frequency	0.01Hz ~ 500kHz
AC/DC WATT	-----
Autorange	Yes
Bargraph	Yes
Auto power OFF	Yes
Peak hold	-----
Data hold	-----
MAX/MIN	Yes
REL(ZERO)	Yes
Size	221(W) x 62(H) x 35(D) mm
Weight	0.5kg



• YF-20: Analogue Sound Level Meter

Features:

- Analogue display with quick and accurate measurement
- Compressed scales minimize range switching
- Unique selecting switch for easy operation by one-hand
- Special integrated circuit for long stability
- Battery test function

Specifications:

Model:	YF-20
Ranges	LO (40 ~ 80dB), HI (80 ~ 120dB)
Microphone	Capacitance microphone
Current	5mA (when operating)
Consumption	14mA (BATT test)
Size	65(W) x 38(H) x 160(L) mm
Weight	0.16kg



• **TM-100:** Sound Level Calibrator

Features:

- Setting standard sound level at 94dB and 114dB
- According Standard: ANSI S1.4-1984 and IEC 942 1988 Class 2
- Low battery indicator



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Specifications:

Model:	TM-100	
Size	48(Ø) x125(H) mm	
Weight	0.29kg	
Output Frequency	Test Condition	Accuracy
1kHz ±4%	a. Environment Temp: 20°C b. Relative humidity: 65% c. Atmospheric pressure: 1013 mbar	±0.5dB

• **TM-101:** Professional Digital Sound Level Meter

Features:

- Fast/Slow sampling - with hold feature
- Analogue AC/DC output
- Alarm feature
- DC power input (PSU not supplied)
- Approved to IEC-651 Type2 and ANSI S1.4 Type2
- 1/4" UNC tripod mount fitting
- Supplied in carry case
- Supplied with batteries



Specifications:

Model:	TM-101
Test ranges	30 ~ 130dB, L0: 30~80dB, MED: 50 ~ 100dB, HI: 80 ~ 130dB
Accuracy	±1.5dB (ref 94dB @ 1kHz)
Resolution	0.1dB
Microphone	1/2" Electret condenser microphone
Frequency Weighting	AC
Time Weighting	Fast/Slow
Dynamic Range	50dB
Frequency Range	31.5Hz ~ 8kHz
Size	80(W) x 280(H) x 32(D) mm
Weight (including battery)	0.3kg

• TM-102: Digital Sound Level Meter

Features:

- Fast/Slow sampling - with hold feature
- Analogue AC/DC output
- Alarm feature
- DC power input (PSU not supplied)
- Approved to IEC-651 Type2 and ANSI S1.4 Type2
- 1/4" UNC tripod mount fitting
- Supplied in carry case
- Supplied with batteries



Specifications:

Model:	TM-102
Test ranges	30 ~ 130dB, LO: 30 ~ 80dB, MED: 50 ~ 100dB, HI: 80 ~ 130dB
Accuracy	±1.5dB (ref 94dB @ 1kHz)
Resolution	0.1dB
Microphone	1/2" Electret condenser microphone
Frequency Weighting	AC
Time Weighting	Fast/Slow
Dynamic Range	50dB
Frequency Range	30Hz ~ 8kHz
Size	55(W) x 200(H) x 38(D) mm
Weight (including battery)	0.29kg

• TM-103: Autoranging Sound Level Meter with Datalogger

Features:

- 3½ digit LCD display with maximum reading of 2000
- Test range: 30 ~ 130dB
- Backlit LCD
- USB interface software for data download to Windows® compatible pc
- USB interface, 14000 records data logger
- According standard: EN61672 type 2



Specifications:

Model:	TM-103
Test ranges	30 ~ 130dB, LO: 30 ~ 80dB, MED: 50 ~ 100dB, HI: 80 ~ 130dB
Accuracy	±1.5dB (ref 94dB @ 1kHz)
Resolution	0.1dB
Microphone	1/2" Electret condenser microphone
Frequency Weighting	AC
Time Weighting	Fast/Slow
Datalogger	14,000 records
Dynamic Range	50dB
Frequency Range	30Hz ~ 8kHz
Size	55(W) x 200(H) x 38(D) mm
Weight (including battery)	0.29kg

• **TM-201: Digital Light Level Meter**

Features:

- Range ~ 200,000 Lux, 20 ~ 20,000 footcandles
- Data Hold, Max Hold & Zero adjustment features
- 1.5m flexible sensor cable
- 3½ digit LCD display with maximum reading 2000
- Overload indication
- Low battery indication



CCTV Software

Monitors & Screens

Testers

Installation Advice

Specifications:

Model:	TM-201	
Data hold	Yes	
Max hold	Yes	
Zero adjustment	Yes	
Sensor	Silicon photodiode and filter	
Measuring range	200, 2000, 20000, 200000 Lux 20,200, 2000, 20000 Foot-candle	
Accuracy	±3% (Calibrated to standard incandescent lamp 2856° K) ±8% (other visible light source)	
Angle deviation from cosine characteristics	30°	±2%
	60°	±6%
	80°	±25%

• **TM-203: Autoranging Datalogging Light Meter**

Features:

- 3½ digit LCD with maximum reading 2000
- Overload indication
- Low battery indication
- According to JISC1609:1993 and CNS 5119 general A class specifications
- Spectral response close to CIE luminous spectral efficiency
- Measuring intensities of illumination in unit of Lux or Foot-candle
- Measuring lights source include all visible range
- Cosine angular corrected
- Autorange
- Datalogger: RS-232 interface, 7000 Records



Specifications:

Model:	TM-203	
Data hold	Yes	
Max/ Min /AVG hold	Yes	
Zero adjustment	Yes	
Auto ranging	Yes	
Auto power off	Yes	
Datalogger	Yes	
Sensor	Silicon photodiode and filter	
Measuring range	20, 200, 2000, 20000, 200000 Lux 20,200, 2000, 20000 Foot-candle	
Accuracy	±3% (Calibrated to standard incandescent lamp 2856° K) ±6% (other visible light source)	
Angle deviation from cosine characteristics	30°	±2%
	60°	±6%
	80°	±25%

• TM-206: Solar Power Meter

Features:

- 3½ digit LCD display with maximum reading 2000
- End-mount sensor
- Select either Power or Transmission, Select either W/m² or BTU/FT²h
- Data Hold/Min/Max functions

Specifications:

Model:	TM-206
Display	LCD, 3-1/2 digit, 2000 readings
Ranges	2000 W/m ² , 634 BTU/ft ² h
Accuracy	Typically within ±10W/m ² [±3BTU/(ft ² h)] or ±5% whichever is greater in sunlight; Additional temperature error included ±0.38 W/m ² /°C [±0.12BTU/(ft ² h)/°C] from 25°C
Angular Accuracy	Cosine corrected <5% for angles <60°
Drift	<±2% per year
Input Overload	"OL" displayed
Sampling Rate	0.25/sec
Operating Temperature	0°C to 50°C
Relative Humidity	below 80%
Dimensions	55(W) x 130(L) x 39(D) mm
Weight	150g approx



• TM-208: Datalogging 3-in-1 UVA Light Meter

Features:

- 3¾ digit LCD with backlit with maximum reading 3999
- 3 in 1 light sensor design, you can select either one (UV Power, Solar or Illumination) for measurement
- Max/Min/Avg and data hold
- Auto power off with disable function
- Low battery indication
- USB interface, Datalogging capacity: 45,000 records
- Backlit function
- Real time clock with calendar
- Rel (relative) function / Zero Adjustment

UVA Features:

- Highly reliable direct reading Instrument designed expressly for measuring light intensity at the wafer plane of mask aligners
- UV curing light sources, and any other UV light source

Solar Power Features:

- The accuracy is +/-3% at 1,000 Watts/m²
- Solar power research
- Physics and optical laboratories
- Just point the calibrated PV cell at the sun and read the irradiance in Watts/m² or Btu/ft².h.
- It's great for those who test PV modules or arrays in the field

Illumination Features:

- According to JIS C1609: 1993 and CNS 5119 general A class spec
- Spectral response close to CIE luminous spectral efficiency
- Measuring intensities of illumination in unit of Lux or Foot-candle
- Silicon photodiode and filter. Cosine angular corrected



Specifications:

Model:	TM-208: UVA	TM-208: Illumination	TM-208: Solar
Measuring range	40uW, 400uW, 4,000uW, 20mW	40, 400, 4,000, 40,000, 400,000 Lux, 40, 400, 4,000, 40,000 Foot-candle	40, 400, 1000 W/m ² , 13, 127, 634 Btu/ft ² .h
Resolution	0.01uW, 0.1uW, 1uW, 0.01mW	0.01, 0.1, 1, 10, 100 Lux 0.01, 0.1, 1, 10 Foot-candle	0.01, 0.1, 1 W/m ² .01, 0.1, 1 Btu/ft ² .h
Accuracy	±3%	±3% (Calibrated to standard incandescent lamp 2856° K) ±6% (other visible light source)	±5%
Wavelength	320 ~ 390nm	400 ~ 1100nm	400 ~ 1100nm
Datalogging capacity	4500 records		
Sample Time	Approx. 0.4 sec		
Data Output	USB PC serial interface		
Power Supply	9v battery(NEDA 1604 IEC 6F 22 JIS 006P)		
Battery life	Approx. 100hr		
Weight	Approx. 160g		
Accessories	Instruction manual, 9v battery(NEDA 1604 IEC 6F 22 JIS 006P), Carrying case		
	UVA sensor probe	SOLAR sensor probe	Illumination sensor probe
Main instrument	55(W) x 38(H) x 130(L) mm		
Sensor probe	49(Ø) x 28(H) mm	55(W) x 25(H) x 80(L) mm	55(W) x 25(H) x 80(L) mm



Audio Installation Advice

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AV Signal Distribution Installation Advice

454 ~ 455

Audio Installation Advice

The basic principles of effective surface-mount ceiling loudspeaker installation

The first priority of a high quality sound reproduction system is that of providing listeners with an acoustic level higher than that of any possible background noise. The system must simultaneously ensure a wide frequency range and maximum intelligibility. It should also guarantee a flat frequency response and uniform sound pressure level to give optimum listening pleasure and clarity. To meet these criteria, the hypothetical ideal solution would be to place each sound source at an equal distance from all required listening points.

Ceiling-mounted Loudspeakers

In environments offering suitable ceiling height, this 'hypothetical' ideal standard can be approximated by using loudspeakers with very wide frequency response and dispersion angles which remain consistent at different frequencies, arranged in a ceiling or 'shower'-type configuration.

This provides the following acoustic benefits:

- Maximum sound distribution uniformity
- Maximum speech intelligibility
- Constant quality of music reproduction
- Reduced reverberation in the environment
- Sound source remains at a constant distance from the listening position

Once the required loudspeaker type has been chosen and the characteristic parameters considered (eg. dispersion angle, room shape and size), the number of loudspeaker units needed to obtain constant and uniform sound dispersion can easily be calculated. The required speaker quantity is calculated by dividing the floor area in square metres by the area of coverage of each loudspeaker on the listening plane.

[Figure 1 illustrates this concept]

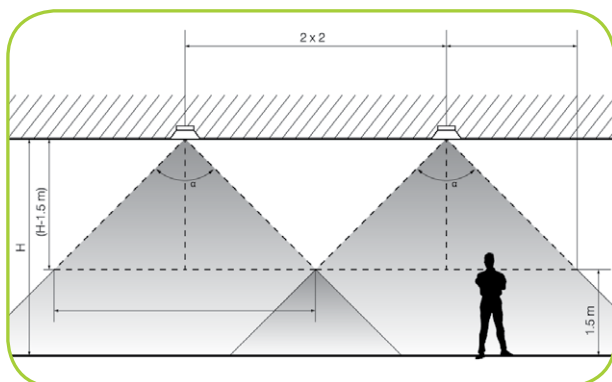


Figure 1

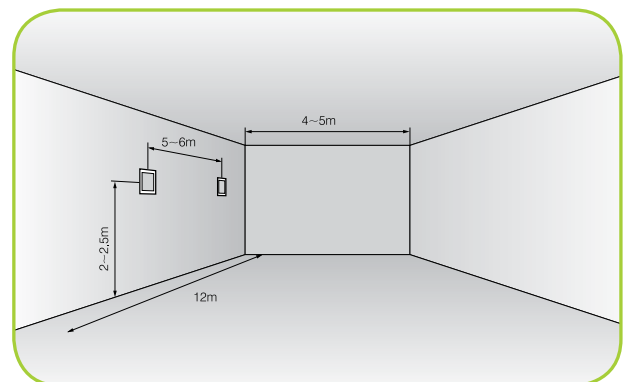


Figure 2

Wall-mounted Loudspeakers

If the architectural features of the room are not compatible with ceiling-mounted loudspeakers or if a wall-mounted solution is preferred, it is essential to observe a few basic rules to obtain the most effective sound distribution. In order to maintain the most efficient listening point inside the direct signal area, both in-wall and surface mounted loudspeakers with power from 6 to 20W should be installed at a height between 2 and 2.5 metres.

The maximum distance between adjacent loudspeakers must be no more than 5~6 metres along the length of the room, where the room is no wider than 4~5 metres.

For wider rooms (eg, 8~10 metres), it is recommended to install loudspeakers in an alternate pattern along both opposite walls, to provide adequate coverage and maintain sound pressure at the best possible constant level throughout the area for coverage.

[see Figures 2 and 3]

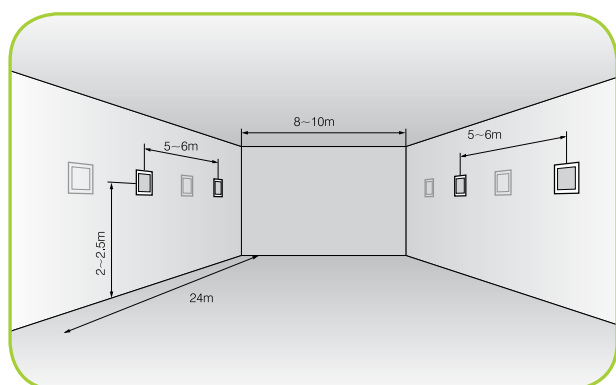


Figure 3

Corridor/Tunnel: Area Coverage

For effective sound distribution in corridors, tunnels or passenger platforms in railway/underground stations, horn speakers (A) are normally specified for increased voice clarity in these high ambient noise conditions. For higher quality sound reproduction, 'sound projectors' can be used as an alternative.

In all cases, these loudspeakers must be installed at a maximum distance of 15 metres from one another, mounted all in the same direction and in observance with the phase of each loudspeaker. Alternatively, bi-directional versions (B) of these loudspeakers can be considered, positioned at a maximum of 30 metres apart (again observing phasing).

[see Figure 4]

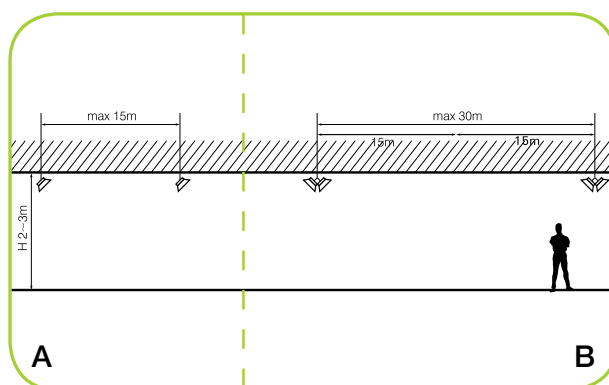


Figure 4



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Degrees of protection (I.P. rating)

The characteristics of a product in terms of its resistance to the penetration of solid objects and liquids is indicated by the letters IP (Ingress Protection) followed by two numbers in accordance with EN standards 60529-CEI 70-1.

IP degree of protection

- The first number identifies the level of protection against the ingress of solid objects. Number from 0 to 6.
- The second number identifies the level of protection against penetration of liquids. Number from 0 to 8.

Speakers, Decibels, SPL:

Distance from speaker:	1m	2m	3m
Lose 6dB each time distance is doubled from speaker	Add 3dB when power is doubled		
SPL(dB)@1W	95	89	83
SPL(dB)@2W	98	92	86
SPL(dB)@4W	101	95	89
SPL(dB)@8W	104	98	92

Quantity of Ceiling Speakers per Sq/metre for background music:

Floor Area:	Quantity of Speakers:	Floor Area:
Ceiling Height = 2.5m	Speaker Spacing = 5m	Coverage = 25Sq.m
100 Sq.m	4 x Speakers	Quiet 55dB Tap @1W
250 Sq.m	10 x Speakers	Normal 60dB Tap @2W
1000 Sq.m	40 x Speakers	Noisy 65dB Tap @3W



First IP number:

- 0 Not protected
- 1 Protected against the ingress of solid objects larger than 50mm diameter
- 2 Protected against the ingress of solid objects larger than 12mm diameter
- 3 Protected against the ingress of solid objects larger than 2.5mm diameter
- 4 Protected against the ingress of solid objects larger than 1mm diameter
- 5 Protected against dust penetration
- 6 Totally dust-proof

Second IP number:

- 0 Not protected
- 1 Protected against vertically dripping water
- 2 Protected against water dripping at an angle (up to 15° from the vertical)
- 3 Protected against rain
- 4 Protected against water spray
- 5 Protected against water jets
- 6 Protected against waves
- 7 Protected against the effects of temporary immersion
- 8 Protected against the effects of permanent immersion



A few basic rules must always be observed

1. When the load is on 'constant impedance'; it must be connected to the relative socket.

For example, a load of 4W must be connected to a socket marked 4W, and so on. The power that the load can withstand must always be greater than the amplifier's rated power.

For example in the case of a load of 100W, the amplifier must have a power equal to or less than 100W.

2. When the load is at 'constant voltage'; it must be connected to the sockets indicating output at constant voltage - 50, 70 or 100v; the power that the load can withstand must always be less than or equal to the amplifier rated power. For example, with a load of 100W, the amplifier must have a power equal to or greater than 100W.

To calculate the required value of a 100v line amplifier power, simply add together the power of each loudspeaker. (See Figure 5).

However, on a constant impedance system, the load must have an equivalent impedance (series/parallel) equal to or greater than the minimum value indicated on the amplifier output (See Figure 6).

The loudspeaker power supply lines, with no connected attenuator, must be with 2 sheathed wires; cables with 3 sheathed wires are required in the case of lines using attenuators which can be disabled if an emergency is activated. Adequate wire sections are required:

1.5mm² for lines up to 500W power, 2.5mm² for lines with power over 500W. The following general standards must also be observed:

- Never use a single cable (lead) for loudspeaker connections: this would cause disturbance producing a loud 'HUM'
- Never use shielded cables for the loudspeaker connections: this would cause serious damage to the power units.

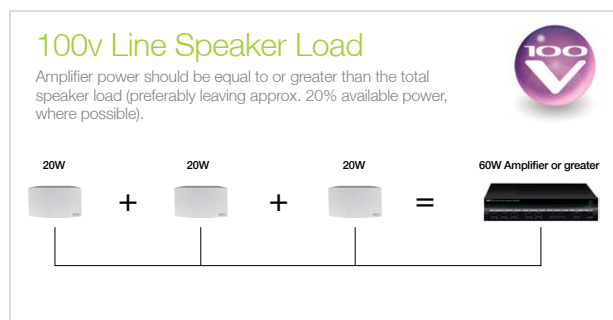


Figure 5

Low Impedance and 100v Line Systems

Constant impedance lines (low impedance) are used normally in the case of a low number of loudspeakers, placed at a minimum distance from the amplifier <20m.

The constant voltage connection system (e.g. 100V line) offers a host of advantages making it ideal for sound systems of all sizes, above all in the case of long distance speaker runs. This connection system requires each loudspeaker to be equipped with its own line transformer, which adapts the impedance of the loudspeaker (usually very low) to the much higher level of the line itself. In proportion to power transmitted, the current circulating on a line at 100V is considerably lower than that circulating on wires of a constant impedance system and, consequently, drops along the line are less frequent; therefore the cable gauge can be lower.

The function of the amplifier device is **to raise the signal of a sound source**, such as a microphone, CD player, MP3 player or an AM/FM tuner **to a sufficient level to pilot the transducer LOUDSPEAKER**. The amplifier has several inputs, to which the various sound sources are connected.

The sound sources have to be mixed (mixer) and acoustically modified with tone control and equalisers to optimise listening in relation to the environment's characteristics. A terminal board is also fitted to the power units.

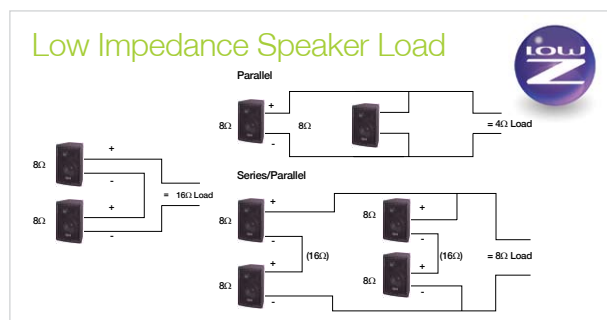


Figure 6

AV Signal Distribution Installation Advice

Our DataBay and CYP ranges of AV signal distribution equipment are capable of high quality results. This guide is intended to help achieve optimum performance from the equipment by following simple guidelines and good installation practice.

Cable:

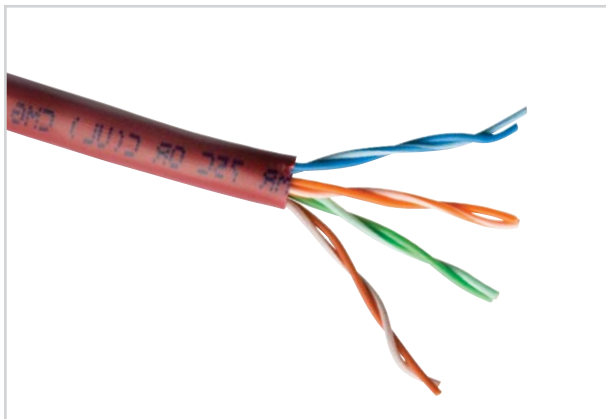
These products range distribute AV signals via various cable types. As with any installation, the type and quality of cable can have a dramatic effect on the resultant performance.

For example, a CCTV system may be installed with all manner of RG59 cable, but the resultant differences in image quality from best to worst can be huge.

Where an AV system is extended via Cat5e / Cat6 cable, we strongly recommend the use of a Low Skew cable. Skew is a measurement (normally in nanoseconds) that measures the time delay between the first and last signal arrival in different twisted pairs. If the time difference is too large, image quality can be affected, possibly manifesting itself in bright vertical lines, ghosting, colour smudging or worst case, no image at all. Low Skew in video terms is cable with Skew rates lower than 15nS per 100m.

The following Cat-X cables should all perform well:

Belden 7987R
Belden 1700A
Canford 31-953
Mohawk M58813



Environmental issues:

The area surrounding an installation can also have an impact on its performance. In particular electrical noise from mains cables, fluorescent lighting or electric motors / installations, etc, could result in interference being induced into the AV cabling system and affecting its performance.

The same applies to airborne radio frequency interference.

Common sense and good installation practice should minimise these effects through careful cable routing, avoiding mains cables or other areas of potential interference. In areas of high susceptibility, it would be sensible to use low skew screened cables.

Display resolutions and refresh rates:

Higher display resolutions and video refresh rates all require higher bandwidths and data rates. The result of the greater demands on the cable is, consequently, reduced achievable distances.

For example:

A display running a resolution of 480p may happily work across a 100m link; the same infrastructure running a display @ 1080p may only achieve 30m.

FAQs:

Q. What is Low Skew Cat-X cable?

- A. Skew is a measurement (normally in nanoseconds) which measures signal delays between different twisted pairs in a cable. Low Skew in video terms is cable with Skew rates lower than 15nS per 100m.

Q. Can I extend the distances further than specified?

- A. This could be possible by:
- Reducing the display resolutions
 - Using better quality Cat-X cable (low skew, shielded)
 - Using better quality video cables (e.g. Cat2 HDMI cable)

Q. I'm only using a 5 metre Cat-X link cable between the transmitter and receiver, but I cannot get a picture...

- A. This can occur when using short cables of maybe 5 or 10 metres with receivers that are optimised to function over much longer distances e.g. 300m. In this case either use a slightly longer Cat-X cable or use a different receiver.

Q. I'm using a short range HDMI non-powered receiver (p/n HDMI-HR), but cannot see an image; why?

- A. Some flat panel monitors use a slightly non-standard input which requires power at the HDMI input socket to function correctly. Some Samsung and Goodmans monitors are known to suffer from this issue (there may be others). However, the problem can be easily overcome by using our p/n ET-HC0101-Z in place of the non-powered HDMI-HR.

Q. If I 'mix' transmitters and receivers of different distance capabilities (e.g. AVE-301T 300m and the receiver from the AVE-M180TR 180m), what is the maximum distance achievable?

- A. In all such cases you are limited to the distance of the shortest device (in this case 180m).

Q. How many levels of cascading can be achieved on HDMI?

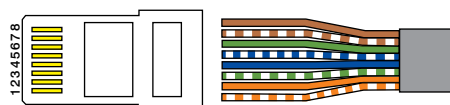
- A. Normally two is recommended, although at lower resolutions and with good quality cables further cascading may be perfectly possible.

Q. Can I use stranded Cat-X patch cord?

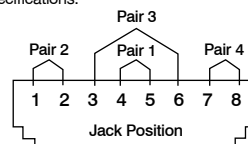
- A. Stranded Cat-X cable is not recommended – use solid installation Cat-X cable for best results.

Q. How should I wire the Cat-X cable?

- A. The cable should be terminated to EIA 568B specifications.



EIA 568B specifications:



The EIA/TIA definition of 568B in the pin assignment is (1) orange white, (2) orange, (3) green white, (4) blue, (5) blue white, (6) green, (7) brown white, and (8) brown

Hints and Tips

When commissioning a professional AV system the following tips could help speed up the process and ensure a trouble-free installation:

Pre-Installation:

Undertake a full site survey. In addition to standard practice, take particular note of accurate cable lengths required, makes/models of the monitors to be connected and take into account any potential environmental factors that could cause interference. It is also preferential to have all devices powered from the same electrical phase and with common grounding.

Wherever possible, bench test your proposed system set-up at your facility before proceeding to site. Use interconnecting cables as they will be used on site, i.e. the same cable types and lengths.

During Installation:

Follow the user manuals to assist the installation process.

Firstly, if the first transmitter in the link has a local monitor output, then connect up a monitor to this port to confirm that the transmitter is receiving a valid signal. Use the EQ control (if available) on the transmitter to obtain the optimum picture quality. You can then proceed to setting up the receiver end.

Set-up the system by starting with the lowest video resolution outputs from the video source and establishing a working link. You can then increase the display resolutions in stages to ensure full system compatibility. Ensure the monitor is capable of displaying at the desired resolutions and refresh rates.

Most devices should function correctly with the EQ set to AUTO. However, if this does not give satisfactory results, then the EQ can be set manually. Please note that in manual mode the changes may not be instantaneous and may lag by a second or two. Therefore, adjust the EQ in small stages at a time and check the result on screen.

If a monitor does not appear to be displaying video, check the obvious things like power(!) correct source mode selected (e.g. HDMI, VGA, S-Video) and for correctly engaged connectors. If this fails, completely power down the monitor (not just standby) and then re-apply the power.



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