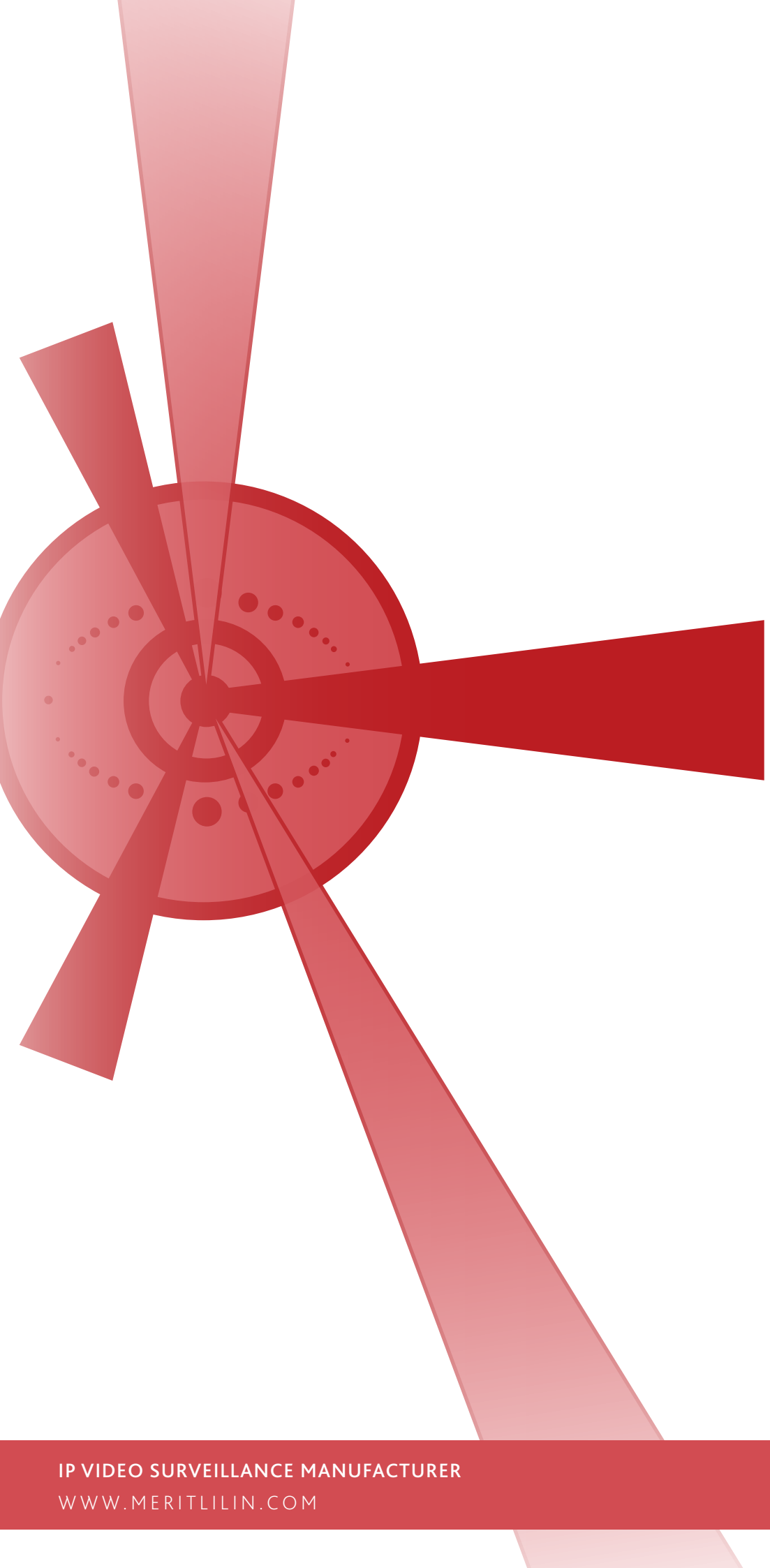


IP VIDEO SURVEILLANCE

SPECIFIERS GUIDE - 2015

WITH

LILIN

IP VIDEO SURVEILLANCE MANUFACTURER

WWW.MERITLILIN.COM

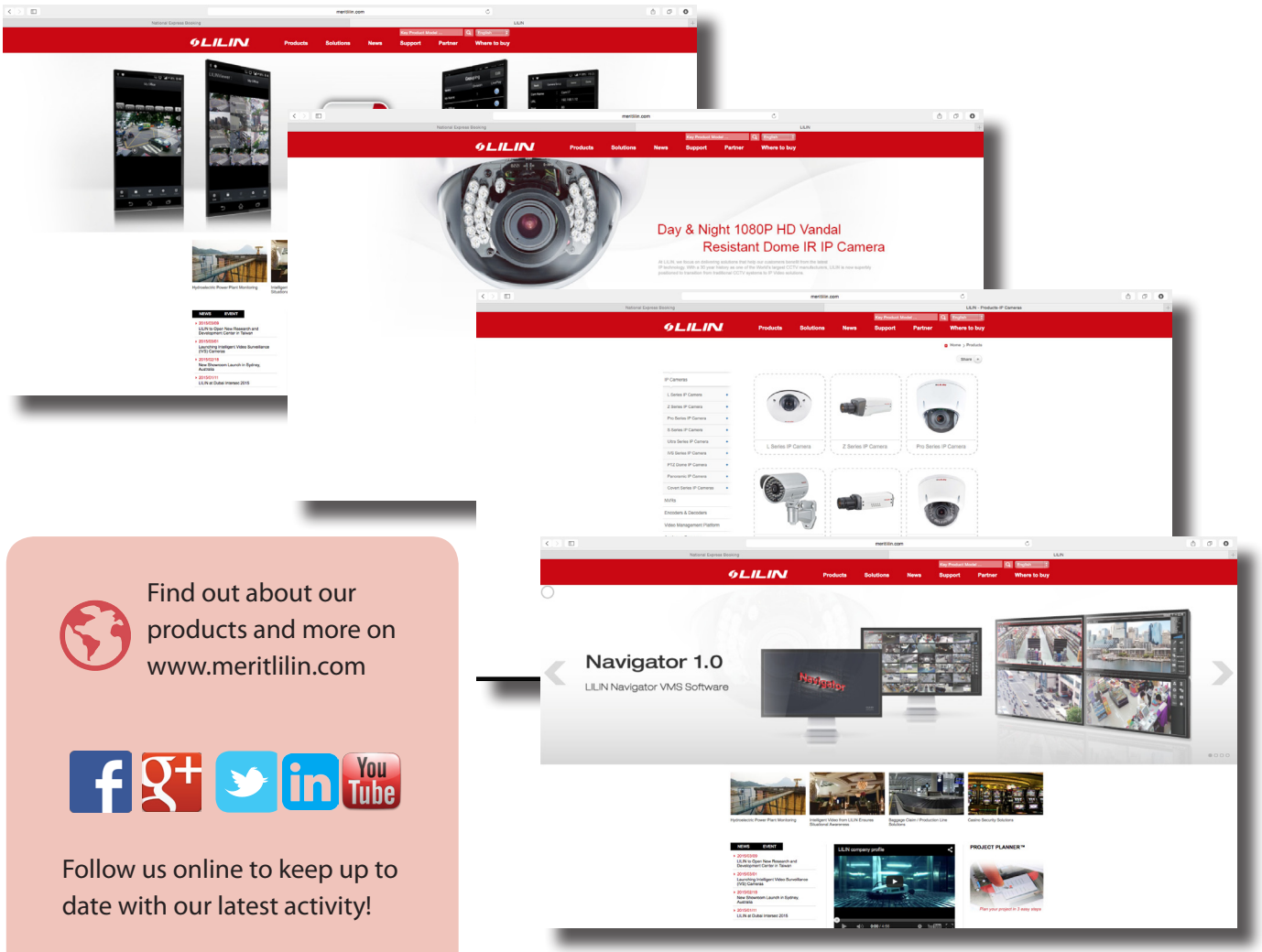
Welcome to the LILIN UK IP Video Surveillance Guide

IP VIDEO SURVEILLANCE

LILIN base their success on Creativity, Progress and Excellence and over the years, they have strived to develop every type of CCTV product for every possible application.

In this guide, you will find a diverse range of IP cameras including invaluable information to assist you in building the perfect surveillance system. You'll also find helpful advice on PoE cabling, best practice for low lighting conditions, tips on resolution and lens choice as well as important recommendations for control system integration.

To discuss any of the products in this guide, please get in touch.



Find out about our products and more on www.meritlilin.com

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IP VIDEO SURVEILLANCE

IP VIDEO SURVEILLANCE

Features and Design

System Integration

Who are LILIN?

Merit LILIN was established in 1980. Over the years, they have developed every type of CCTV product for every type of application. Having transitioned their R & D resources to IP video several years ago, their dedication towards new products, innovations and technologies forms the core focus for LILIN going forward.

Throughout the years, they have remained dedicated to their company philosophy of Creativity, Progress and Excellence and consequently provide expertise in digital video, bringing world's first products to the market.

Their philosophy encompasses the three principles that drive the brand value. The building blocks of their philosophy include working together to develop innovative products, focusing on continuous improvement and providing a high level of service that sets an industry standard.

Creativity

Innovative development, style and design in the product and brand experience.

Excellence

Comitted to providing products and services of the highest standard.

Progress

Focused on continuous technological improvement.

Established in 1980, LILIN designs and manufactures top quality IP Video security products that have represented innovation, performance, reliability and affordability.

LILIN has developed a full line of award-winning products, from megapixel cameras to Network Video Recorders that can be used with many leading companies; including AMX, Crestron, Control4, Elan, RTI, Savant Systems and URC. This integration provides a smart, convenient and efficient home solution for the user.

LILIN

LILIN have been manufacturing video surveillance products since 1980 and have now deeply integrated their products with most Home Automation platforms. LILIN are dedicated to delivering the best possible functionality and slickest integration for the ultimate user experience.

Diverse camera range:

- Vandal Resistant
- Micro Domes
- Long range IR
- Pin hole
- Speed Domes
- Panoramic
- Analogue/IP
- 1080P- 4K
- 15 - 120FPS
- Custom Finishes available
- All ONVIF compliant

NVR's

- 4, 9 and 16 channels
- Storage from 2 - 32TB
- 25 FPS per channel
- IP based drivers for most platforms
- Web based & remote viewing
- SDDP compliant
- ONVIF Profile S
- Various control options: Touch screen, mouse, LILIN twist zoom keyboard or IR remote

AMX RTI URC™ Control the Experience.
CRESTRON ELAN®
SAVANT Control4™ Better. Together.™

Creativity Progress & Excellence

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INTEGRATION
MONITORING
SPECIFICATION
RECORDING
FEATURES
ONVIF
IMEGAPRO
NVR
SPECIFICATION
IP CAMERAS
DESIGN
MONITORING
ONVIF

Specifying LILIN Cameras

LILIN have been manufacturing surveillance cameras since 1980, and have more recently transitioned their resources into developing IP, focussing on their position as video surveillance providers for the CI market.

They provide end to end 1080P solutions without software, PCs and licences. All their cameras are HD 1080P resolution and support POE or POE+. They have a model to suit every application including internal and external ranges, PTZ, vandal proof and IR equipped.

To ensure you pick the right camera for the job, LILIN have designed 3 different model series. These help you to pick and choose the features best suited to your installation and keep the high performance cameras at a competitive price point.

These series comprise of: iMegaPRO L Series, Pro Series and Z Series. All of these include SenseUp+, SD card recording capabilities and are ONVIF compliant. The capabilities of the cameras vary throughout the series and all series are available in a wide range of chassis to suit almost any surveillance need.

LILIN LR7022

Standard Specifications Across The LILIN IP Camera Range:

- HD resolution of 1080P or greater, the same resolution as a high definition movie
- WDR (Wide Dynamic Range) compensates for bright backgrounds to maintain detail and contrast on the foreground image
- SenseUp+ for the best low light performance
- H.264 and MJPEG streaming for hight quality recording and viewing
- ONVIF Profile S: A universal standard to access and view cameras
- Power over Ethernet cable (POE) for a neat single category cable installation
- Day/night switching (IR cameras). At night, the camera will automatically switch to black and white to provide a clearer image
- Superior video quality at efficient bandwidth (typically 2mbps)
- Motion detection alarms to alert, initiate events and to aid locating incidents in recordings
- SD card storage (most models)

iMEGAPRO: L Series

The iMEGAPRO L series is a range of 1080P IP cameras that offer 15FPS streaming and feature day/night switching, WDR, PoE and Sense Up+ technology. Variants include vandal-resistant domes, box cameras, external IR cameras, mini-domes and low profile mini-domes.

Sense Up+ is a built in, unique technology from LILIN that delivers stunning video in low light conditions. Utilizing intelligent image signal processing, AGC control and 3D noise reduction, the combination successfully delivers the ultimate low light image without motion blur.

- 2 megapixel CMOS sensor
- 15 frames per second at 1080P
- H.264 and MJPEG streaming - 3 streams
- ONVIF Profile S
- PoE - Powered over ethernet cable
- Day/night switching (IR cameras)
- Wide Dynamic Range
- Motion detection alarms
- Digital zoom

Model	Description									
		Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other
LD2222E4		Int	12Vdc	Y	4mm	Input	1	---	105 x 39mm	Built in Mic., MSD
LD2122E4		Int	12Vdc	Y	4mm	---	1	---	105 x 39mm	DZ, PM
LR2522E4		Int	12Vdc	Y	4mm	2 Way	0.4	10	85 x 100mm	DZ, PM
LR2522E6		Int	12Vdc	Y	6mm	2 Way	0.4	10	85 x 100mm	DZ, PM
LR2122E4		Int	12Vdc	Y	4mm	---	0.4	16	120 x 102mm	DZ, PM, D/N
LR2122E6		Int	12Vdc	Y	6mm	---	0.5	16	120 x 102mm	DZ, PM, D/N
LD2322EX3.6		Int	12Vdc	Y	3.3-12mm	2 Way	0.25	D/N	150 x 134mm 150 x 70mm (Flush)	Can be embedded in ceiling, MSD
LR6122EX3.6		IP67/ IK10	12Vdc	Y	3.3-12mm	2 Way	0.25	25	145 x 130mm	Vandal Resistant, MSD, D/N
LR6022EX3.6		IP66/ IK10	12Vdc	Y	3.3-12mm	---	0.25	25	130 x 115mm	Vandal Resistant, D/N
LR7022E4		IP66	12Vdc	Y	4mm	---	0.4	30	82 x 72.5 x 154mm	CMB, DZ, D/N
LR7022E6		IP66	12Vdc	Y	6mm	---	0.5	30	82 x 72.5 x 154mm	CMB, DZ, D/N
LR7722EX3.6		IP66	12Vdc	Y	3.3-12mm	2 Way	0.25	35	98.5 x 90 x 195mm	CMB, MSD, DZ, D/N
LR7224EX3.6		IP66	24Vac	PoE+	3.3-12mm	2 Way	0.25	55	124 x 113 x 310mm	CMB, SD Card, DZ, D/N

CMB = Cable Managed Bracket
WM = Weighted Mode
ROI = Region of interest
D/N = Day/Night
SDC = SD Card (Not included)
MSD = Micro SD Card (Not included)
DZ = Digital Zoom
PM = Privacy Masking

iMEGAPRO: Pro Series

The iMEGAPRO Pro series has a bigger sensor than the L series, providing improved low light performance. It also offers 30FPS streaming over the 15FPS of the L series. The entire series still offers the same features in terms of day/night switching, WDR, PoE and Sense Up+ technology.

All cameras in the Pro series are ONVIF compatible and can be set up easily by using the convenient function of WS discovery.

- 2-5 megapixel CMOS sensor
- 30 frames per second at 1080P
- H.264 and MJPEG streaming - 4 streams
- ONVIF Profile S
- Built-in microphone, 2-way audio integration*
- PoE - Powered over ethernet cable
- Day/night switching (IR cameras)
- Wide Dynamic Range
- Motion/face/tampering detection alarms
- Digital PTZ (pan, tilt, zoom)

Model	Description									
		Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other
IPD2220ES4.3		Int	12Vdc	Y	4.3mm	Input	0.6	---	105 x 39mm	Built in Mic, MSD
IPD6222ES4.3		IP67	12Vdc	Y	4.3mm	Input	0.6	---	115 x 40mm	Vandal Resistant, MSD
IPR6122ESX3.6		IP67/ IK10	12Vdc	Y	3.3-12mm	2 Way	0.1	25	145 x 130mm	Vandal Resistant, MSD, D/N
IPR320ESX		IP66/ IK10	---	Y	3.3-12mm	---	0.1	25	130 x 115mm	Vandal Resistant, WM, ROI, D/N
IPR722ES4.3		IP66	12Vdc	Y	4.3mm	---	0.15	30	82 x 72.5 x 154mm	CMB, WM, ROI, D/N
IPR722ES6		IP66	12Vdc	Y	6mm	---	0.18	30	82 x 72.5 x 154mm	CMB, WM,ROI, D/N
IPD2322ESX3.6		Int	12Vdc	Y	3.3-12mm	2 Way	0.1	D/N	150 x 134mm	Can be embedded into ceiling, MSD
IPR7722ESX3.6		IP66	12Vdc	Y	3.3-12mm	2 Way	0.1	35	98.5 x 90 x 195mm	CMB, MSD, WM, ROI, D/N
IPR7424ESX3.6		IP66	24Vac	PoE +	3.3-12mm	2 Way	0.1	45	121.5 x 109 x 231mm	CMB, SD Card, WM, ROI, D/N
IPR424ESX3.6		IP66	24Vac	PoE +	3.3-12mm	2 Way	0.1	55	124 x 113 x 310mm	CMB, SD Card, WM, ROI, D/N
IPR2322ESX3.6		Int	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	150 x 134mm	Vandal Resistant, MSD, D/N
IPG1022ESX3.5		Int	12Vdc	Y	3 - 10.5mm	2 way	0.2	D/N	70 x 50 x 110mm	Lens and Bracket Included, SDC, D/N

* Dependant on model

CMB = Cable Managed Bracket
WM = Weighted Mode
ROI = Region of interest
D/N = Day/Night
SDC = SD Card (Not included)
MSD = Micro SD Card (Not included)
DZ = Digital Zoom
PM = Privacy Masking

iMEGAPRO: Z Series

The iMEGAPRO Z series delivers HD 1080P at 30FPS providing a smooth crisp image. Sense Up+ technology delivers high quality images in low light conditions and its unique ability to Auto-focus and Auto-zoom means that the camera can be focussed once installed, meaning that you don't have to be at the camera to focus it.

The user also gets the benefit of a motorised zoom that can be controlled from a range of control interfaces.

- 2-3.7 megapixel CMOS sensor
- 30 frames per second at 1080P
- H.264 and MJPEG streaming - 4 streams
- ONVIF Profile S
- Built-in microphone, 2-way audio integration*
- PoE - Powered over ethernet cable
- Day/night switching (IR cameras)
- Wide Dynamic Range
- Motion detection alarms
- Digital PTZ (pan, tilt, zoom)

Model	Description									
		Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other
ZD2322EX3		Int	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	150 x 134mm	Can be embedded in ceiling, MSD
ZR2322EX3		Int	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	150 x 134mm	Can be embedded into ceiling, MSD
ZD6122EX3		IP67/ IK10	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	145 x 130mm	Vandal Reistant, MSD
ZR6122EX3		IP67/ IK10	12Vdc	Y	3.3-12mm	2 way	0.1	25	145 x 130mm	Vandal Reistant, MSD

* Dependant on model

Product Focus: ZD6122EX3 Vandal resistant Dome IP Camera

With the built-in IEEE 802.3af compliant PoE for quick installation, IR illuminator technology helps avoiding overexposure under low light condition, and only ~150mm diameter in size, ZD6122X Auto Focus network cameras is able to meet a wide variety of needs for indoor and outdoor surveillance.

- Full HD 2 megapixel CMOS image sensor
- True H.264 AVC/MPEG-4 part 10 real-time video compression
- H.264 and Motion JPEG multi-profile video streaming
- Auto focus with zoom / focus motorized lens
- 3D noise reduction (MCTF)
- 2D WDR function
- Digital PTZ supported
- Face / Tampering / Audio / Motion detection alarm function
- Day & Night (IR cut removable)
- 2-way audio supported
- Digital I/O : 1 in, 1 out
- ONVIF supported

CMB = Cable Managed Bracket
WM = Weighted Mode
ROI = Region of interest
D/N = Day/Night
SDC = SD Card (Not included)
MSD = Micro SD Card (Not included)
DZ = Digital Zoom
PM = Privacy Masking

Dome Cameras

LILIN Dome cameras are available in all 3 series (L, Pro and Z). They are ideal for discreet internal installations and all feature WDR to help with difficult internal lighting situations.
NOTE: Don't position cameras too close to light fittings or looking directly at light sources.

- Available in L Series (15fps), Pro Series and Z Series (both 30fps)
- Internal and external models
- Internal 2-way or 3-way gimbal
- Built-in IR (on selected models)

iMEGAPRO Selection of Dome Cameras:

Model	Description										
		Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other	Series
LD2222E4		Int	12Vdc	Y	4mm	Input	1	---	105 x 39mm	Built in Mic., MSD	iMEGAPRO L Series
LD2122E4		Int	12Vdc	Y	4mm	---	1	---	105 x 39mm	DZ, PM	iMEGAPRO L Series
IPR6122ESX3.6		IP67/ IK10	12Vdc	Y	3.3-12mm	2 Way	0.1	25	145 x 130mm	Vandal Resistant, MSD, D/N	iMEGAPRO Pro Series
IPR320ESX		IP66/ IK10	---	Y	3.3-12mm	---	0.1	25	130 x 115mm	Vandal Resistant, WM, ROI, D/N	iMEGAPRO Pro Series
ZD2322EX3		Int	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	150 x 134mm	Can be embedded in ceiling, MSD	iMEGAPRO Z Series
ZR2322EX3		Int	12Vdc	Y	3.3-12mm	2 way	0.1	D/N	150 x 134mm	Can be embedded into ceiling, MSD	iMEGAPRO Z Series

High Speed Dome Cameras:

LILIN's Speed Dome PTZ cameras offer a fully motorised 360 degree pan and tilt enabling the camera to point and zoom in to any area as well as instant switching to pre-set positions initiated by the user and on pre-set tours. Internal PTZ domes can be powered with PoE+ but external PTZ domes require a 24v local power supply or a 24v injector and splitter which carries the 24v down a single cat cable as POE+ will not support an external PTZ camera due to the additional power consumption of the internal fan and heater.

- Pro Series - 30fps
- Motorised zoom up to 30x optical, autofocus
- High speed motorised pan/tilt
- Joystick control available
- 128 presets and tour function
- Dynamic privacy masking
- Internal and external models

Model	Description									
		Presets	Lux	V	Day/ Night	Zoom	Int/ Ext	BNC output	Dimensions (H x D)	Other
IPS4204S		128	0.5	24Vac	Y	20x Optical 12x digital	IP66	Y	210 x 332mm	WDR, 3D Noise, 6 Alarm
IPS4184S		128	0.1	24Vac	Y	18x Optical	IP66		332 x 210mm	WDR, 3D Noise, 6 Alarm

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Bullet Cameras

LILIN's Bullet range come with built in IR, with IR distances ranging from 18M (LR7022) to 60M (IPR7334SX5). Bullet cameras are available in the Pro and L series and all bullets come with Sense Up+ and Wide Dynamic for excellent picture quality.

- Available in L Series (15fps) and Pro Series (30fps)
- IP66 environmental rating for external use
- Integral bracket
- Built in IR

Model	Description										
		Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other	Series
LR7022E4		IP66	12Vdc	Y	4mm	---	0.4	30	82 x 72.5 x 154mm	CMB, DZ, D/N	iMEGAPRO L Series
LR7022E6		IP66	12Vdc	Y	6mm	---	0.5	30	82 x 72.5 x 154mm	CMB, DZ, D/N	iMEGAPRO L Series
LR7722EX3.6		IP66	12Vdc	Y	3.3-12mm	2 Way	0.25	35	98.5 x 90 x 195mm	CMB, MSD, DZ, D/N	iMEGAPRO L Series
LR7224EX3.6		IP66	24Vac	PoE+	3.3-12mm	2 Way	0.25	55	124 x 113 x 310mm	CMB, SD Card, DZ, D/N	iMEGAPRO L Series
IPR722ES4.3		IP66	12Vdc	Y	4.3mm	---	0.15	30	82 x 72.5 x 154mm	CMB, WM, ROI, D/N	iMEGAPRO Pro Series
IPR722ES6		IP66	12Vdc	Y	6mm	---	0.18	30	82 x 72.5 x 154mm	CMB, WM,ROI, D/N	iMEGAPRO Pro Series
IPR7722ESX3.6		IP66	12Vdc	Y	3.3-12mm	2 Way	0.1	35	98.5 x 90 x 195mm	CMB, MSD, WM, ROI, D/N	iMEGAPRO Pro Series
IPR7424ESX3.6		IP66	24Vac	PoE +	3.3-12mm	2 Way	0.1	45	121.5 x 109 x 231mm	CMB, SD Card, WM, ROI, D/N	iMEGAPRO Pro Series
IPR424ESX3.6		IP66	24Vac	PoE +	3.3-12mm	2 Way	0.1	55	124 x 113 x 310mm	CMB, SD Card, WM, ROI, D/N	iMEGAPRO Pro Series
IPG1022ESX3.5		Int	12Vdc	Y	3 - 10.5mm	2 way	0.2	D/N	70 x 50 x 110mm	Lens and Bracket Included, SDC, D/N	iMEGAPRO Pro Series

Product Focus: LR7022E4 L Series 1080P IP Bullet Camera

- Full HD 2 megapixel CMOS image sensor
- True H.264 AVC/MPEG-4 part 10
- H.264 and Motion JPEG triple video streaming
- 3D noise reduction (MCTF)
- 2D WDR function
- Digital zoom supported
- Motion detection alarm function
- High efficiency IR LED, radiant distance up to 30m
- Day & Night (IR cut removable)
- ONVIF supported

CMB = Cable Managed Bracket
WM = Weighted Mode
ROI = Region of interest
D/N = Day/Night
SDC = SD Card (Not included)
MSD = Micro SD Card (Not included)
DZ = Digital Zoom
PM = Privacy Masking

Panoramic Cameras

LILIN's panoramic camera provides a 360° view without any blind spots, and has various layout options including 180° Panoramic view.

The FD2452ES has 2-way audio support, 3D noise reduction, hardware de-warping and also has a digital PTZ without the need of a mechanical motor. It is compatible across various platforms and is also ONVIF Profile S supported. It also now has a vandal resistant option.

- Pro Series (30fps)
- Single 360° view
- Optional quad split
- External rated
- Vandal proof option

Model	Description								
	Int/Ext	V	PoE	Lens	Audio	Lux	Max IR Dist. (metres)	Body Dims excl Bracket (W x H x D)	Other
FD2452ES	Int	12Vdc	Y	1.05mm	2 way	0.7	D/N	145 x 60mm	360 Degrees, MSD

Product Focus: FD2452ES Panoramic IP Camera

- True H.264 AVC/MPEG-4 part 10 real-time video compression
- H.264 and Motion JPEG multi-profile video streaming
- 3D noise reduction
- 2D WDR function
- Provide 360 degree view of entire scene without any blind spot
- 360 degree entire scene from one camera and no mechanical PTZ (Pan, Tilt, Zoom) motor needed
- Up to 4 independent distortion corrected view angle can be specified
- Audio / Motion detection alarm function
- ONVIF Profile S supported

- Don't install higher than 3m
- Use the optional back box for single point cable entry.

Covert Cameras

Pinhole Camera:

The main unit and sensor unit (3.7mm pinhole lens) are connected by a 6 metre long cable providing flexibility when wanting to place the main unit elsewhere – resulting in the possibility for a completely covert camera. With it's small body, yet high performance, the IPC0122 provides the perfect discreet solution.

With the advantage of being IP, you can stream high res images. It also is capable of sending alarms when the camera is tampered with – meaning any security breaches or crime can be dealt with immediately.

- Full HD 2 megapixel CMOS image sensor
- H.264 and Motion JPEG multi-profile video streaming
- 3D noise reduction (MCTF)
- 2D WDR function
- Digital PTZ supported
- Tampering / Audio / Motion detection alarm function
- 2-way audio supported
- SD card supported
- Digital I/O : 2 in, 1 out
- ONVIF supported

Custom Finishes:

It is now easy to get a security camera that fits right into your client's design needs. With finishes such as wood, marble and camouflage, as well as plain colour finishes – it's easy to find something that will match most design requirements.

Custom finishes are available for LILIN's fixed dome cameras, meaning that there is a selection of products to choose from. Cameras in this range include Vandal Resistant Domes, the LD222, Mini Domes and the 360° Panoramic Camera.

LILIN understand that security cameras are often required to fit into custom install designs, and that customers prefer their cameras to be discreet where possible. With this new service, LILIN will be offering this possibility to the security and custom install market with the hope that LILIN cameras will now suit individual design needs, and become discreet and non-obtrusive.

Contact our sales team to find out more: 01359 270280.

INTEGRATION
MONITORING
SPECIFICATION
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IMEGAPRO
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NVR Recording

NVR - Network Video Recorders:

LILIN's award-winning NVR Touch range are available in 4, 9 and 16 channels, and are capable of recording up to 25fps at 1080P. All are available in a range of storage options up to 32TB and are supported by ONVIF Profile S.

They integrate with all major control systems and provide a 1080P HDMI output allowing you to view and control up to 16 cameras at 1080P real time from the comfort of your sofa via a HDMI matrix.

NOTE: An NVR is a 'Network Video Recorder' for IP cameras. This is not to be confused with a DVR (Digital Video Recorder) for analogue systems.

Model	Description	Hard Drive
NVR-116D	**16 Channel IP Standalone Network Video Recorder offering 25 frames per second for each channel at a full 1080P resolution.** • Touch Screen, LILIN twist zoom Keyboard, Front panel or IR remote Control, Easy to navigate menus. • Supporting up to 8 Sata Hard Drives offering up to 24TB of storage and a e-Sata port for external storage. • Motion Detection, Weighted and Scheduled Recording. • Audio recording and playback. • WS discovery for easy camera network discovery. • Jog Shuttle control for instant playback. • DVD, USB or Network Backup. • SVGA and HDMI outputs. • Full CMX support, web based remote viewing & iphone, blackberry and android support. • 19" Rack Mountable.	None
NVR-116D-2TB		2TB
NVR-116D-4TB		4TB
NVR-116D-6TB		6TB
NVR-116D-8TB		8TB
NVR-116D-12TB		12TB
NVR-116D-16TB		16TB
NVR-116D-24TB		24TB
NVR-109	**4 and 9 Channel IP Standalone Network Video Recorder offering 25 frames per second for each channel at a full 1080P resolution.** • Touch Screen, Mouse, LILIN twist zoom Keyboard or IR remote Control, • Easy to navigate menus, • supporting 4 Sata Hard drives (NVR-109) or 2 Sata Hard Drives (NVR-104). • Motion Detection, Weighted and Scheduled Recording. • Audio Recording and playback. • WS discovery for easy network discovery. • USB or Network backup. • HDMI output. • Full CMX support, web based remote viewing & iphone, blackberry and android support.	None
NVR-109-2TB		2TB
NVR-109-4TB		4TB
NVR-109-6TB		6TB
NVR-109-12TB		12TB
NVR-104		None
NVR-104-2TB		2TB
NVR-104-6TB		6TB

LILIN'S ONLINE STORAGE CALCULATOR WILL WORK OUT HOW LONG YOU CAN RECORD FOR WITH A GIVEN DISK SIZE, NUMBER OF CAMERAS, FRAME RATE AND RESOLUTION. VISIT WWW.LILIN.TV/BANDWIDTH-AND-STORAGE-CALCULATOR

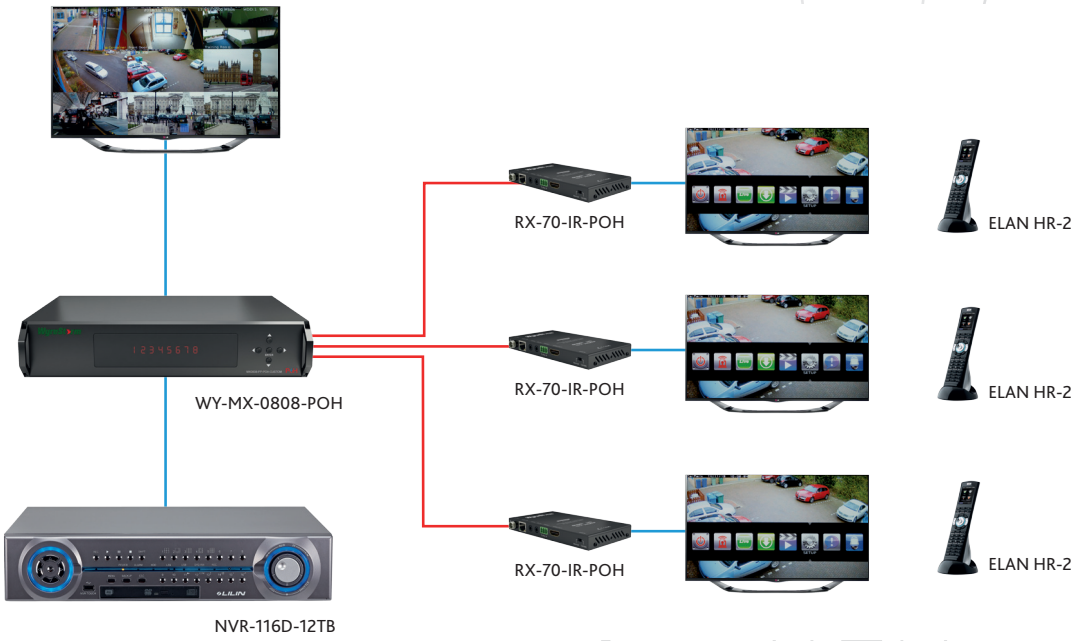
Monitoring and Recording

Recording Time:

The maximum recording time depends on the number of cameras recording, their resolution and the frame rate that they are recording at. The recording frame rate can be lowered to increase recording time (a minimum of 15fps provides a good quality moving image).

Typical system examples with approximate daily storage usage are as follows:

- NVR 104 with 4 cameras recording at 25fps = 107.12GB per day
- NVR 109 with 9 cameras recording at 25fps = 241.01GB per day
- NVR 116 with 16 cameras recording at 25fps = 428.47GB per day

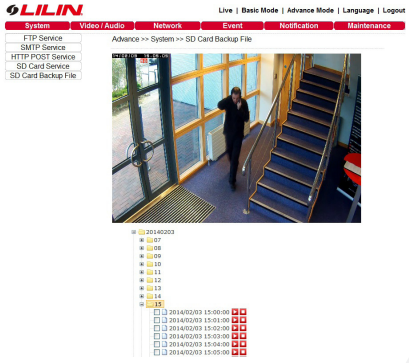


HD Decoder:

The award-winning standalone HD decoder (VD022) is a simple monitoring solution that enables you to view HD streams from your IP cameras without the need for a PC.

You can display up to 9 HD streams on a single HDMI monitor at 1080P resolution. The virtual matrix feature means it can be used to display the video output from NVRs/DVRs in different locations. It can be operated with IR remote, keyboard, web interface and touch screen monitor.

NOTE: The maximum number of decoders that can be connected to an NVR is three.



SD Card Recording:

Most LILIN cameras can record to micro/SD cards with capacities of up to 128GB. The recordings can be continuous or triggered by an alarm event. Playback can be viewed through the web browser, LILIN app, navigator or directly from the card. Ensure you use a good quality branded SD/MicroSD card, minimum speed class 10.

To view the camera in Full HD, add an NVR or decoder which provides a HDMI output.

SECURITY TIP: As the recording is stored outside the protected area we recommend using it in conjunction with an NVR as a backup recording.

INTEGRATION
MONITORING
SPECIFICATION
RECORDING
FEATURES
ONVIF
IMEGAPRO
NVR
SPECIFICATION
IP CAMERAS
DESIGN
MONITORING
ONVIF

Resolution

With any LILIN camera, it is important to consider how much detail is required particularly where identification of people or objects like car number plates is critical. The measure of the detail contained in a 1m wide section of the image is expressed as pixels per metre.

A 1080P screen is made up of 1920 x 1080 pixels, the horizontal resolution (1920) divided by the width of the field of view in metres gives the number of pixels per metre. The higher the pixels per metre value the greater the resolution in the image so when it is digitally zoomed in you will see a greater level of detail for identification purposes.

The larger the viewable area, the less detail there will be in any given section of it. The effect of this is that when an area of interest is magnified, pixilation will occur. This could make something like a car number plate unreadable.

Pixels/Metre: 66
Use for: General surveillance such as capturing information in traffic jams or crowds.

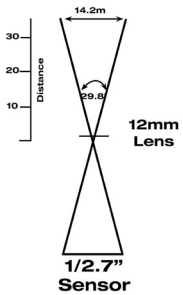
Pixels/Metre: 131
Use for: Forensic detail such as recognising a face or capturing a car number plate.

Pixels/Metre: 262
Use for: High detail surveillace such as capturing casino tables or cash counting rooms.

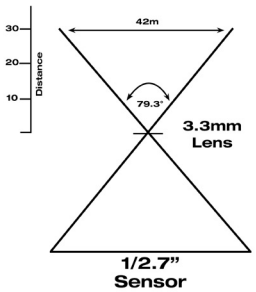
Example - Reading a car number plate:

This diagram illustrates how the field of view widens with a larger size image sensor where the lens focal length remains the same. If the object you wish to identify is a car number plate and the horitonzal width of the screen is 42m:

1920 (pixels) / 14.2 (metres) = 135 pixels per metre. alternatively... 1920 (pixels) / 42 (metres) = 45.7 pixels per metre



IPR7424ESX3.6
Lens set to 12mm
Distance to target: 30m



IPR7424ESX3.6
Lens set to 3.3mm
Distance to target: 30m

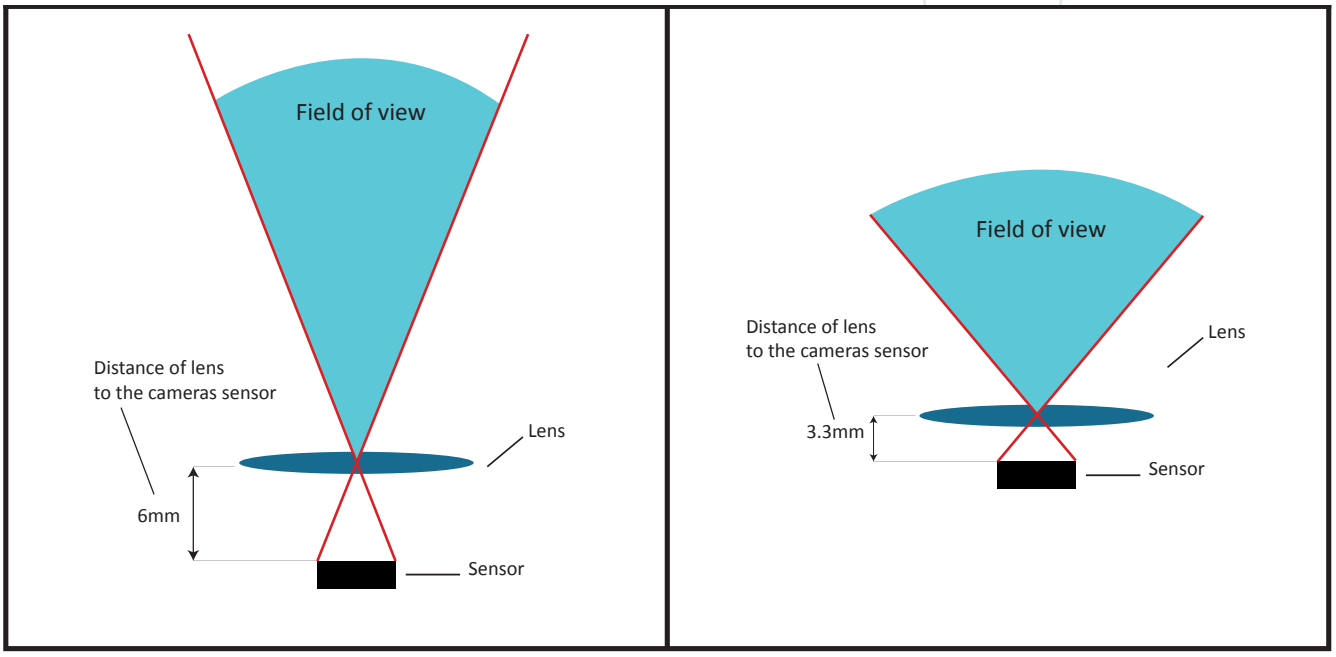
Field of View and Lens Choice

Field of View:

Both the lens choice and sensor size of all LILIN cameras dictates how wide the field of view is and also how fine the pixel count is so the image can be zoomed in without excessive pixillation losing image detail

There are three factors that determine the field of view: Size of image sensor, lens focal length and distance to target.

NOTE: There is a difference between the sensor size on the L Series and Pro Series - The Pro Series gives a wider field of view as its sensor is larger.



NOTE: Use LILIN's online camera resolution calculator - not only will it tell you your field of view, but also your pixels per metre.
WWW.MERITLILIN.COM

Camera installation height	6	Metres
Camera distance to the target	15	Metres
Scene width	12	Metres

Camera Models	Focal Length (mm)	Pixels/ft	Pixels/m
iMEGAPRO 3M	10.6	52	171

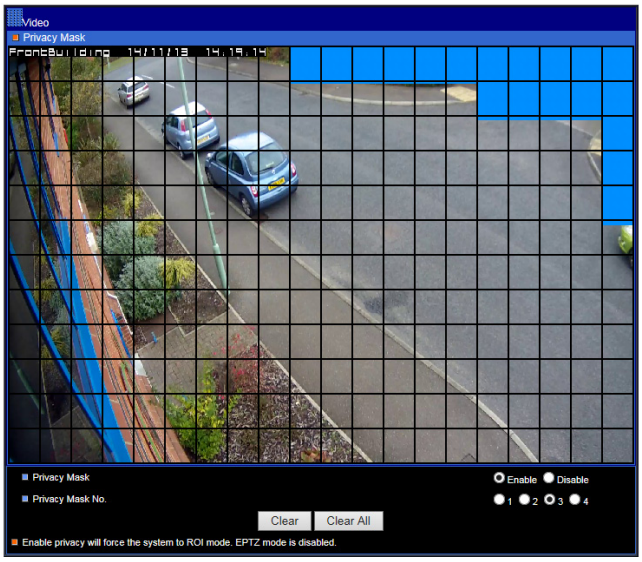
Types of Lens:

There are two types of lenses available: Fixed focal length and varifocal.

- Fixed Focal Length: The lens has a fixed focal length and corresponding field of view (For example, 4mm, 6mm). This cannot be changed.
- Varifocal: The focal length can be set anywhere between two fixed points widening or narrowing the field of view (For example, 3.3mm wide to a narrower 12mm). Remember, varifocal is a manually adjusted lens, not a motorised zoom. For this function, use the Z Series range.

Privacy Masking

'Privacy Masking' is the common term covering the need to restrict what can be seen by means of Closed Circuit Television (CCTV) systems. It applies equally to images displayed in real time for surveillance purposes and images recorded for later use.



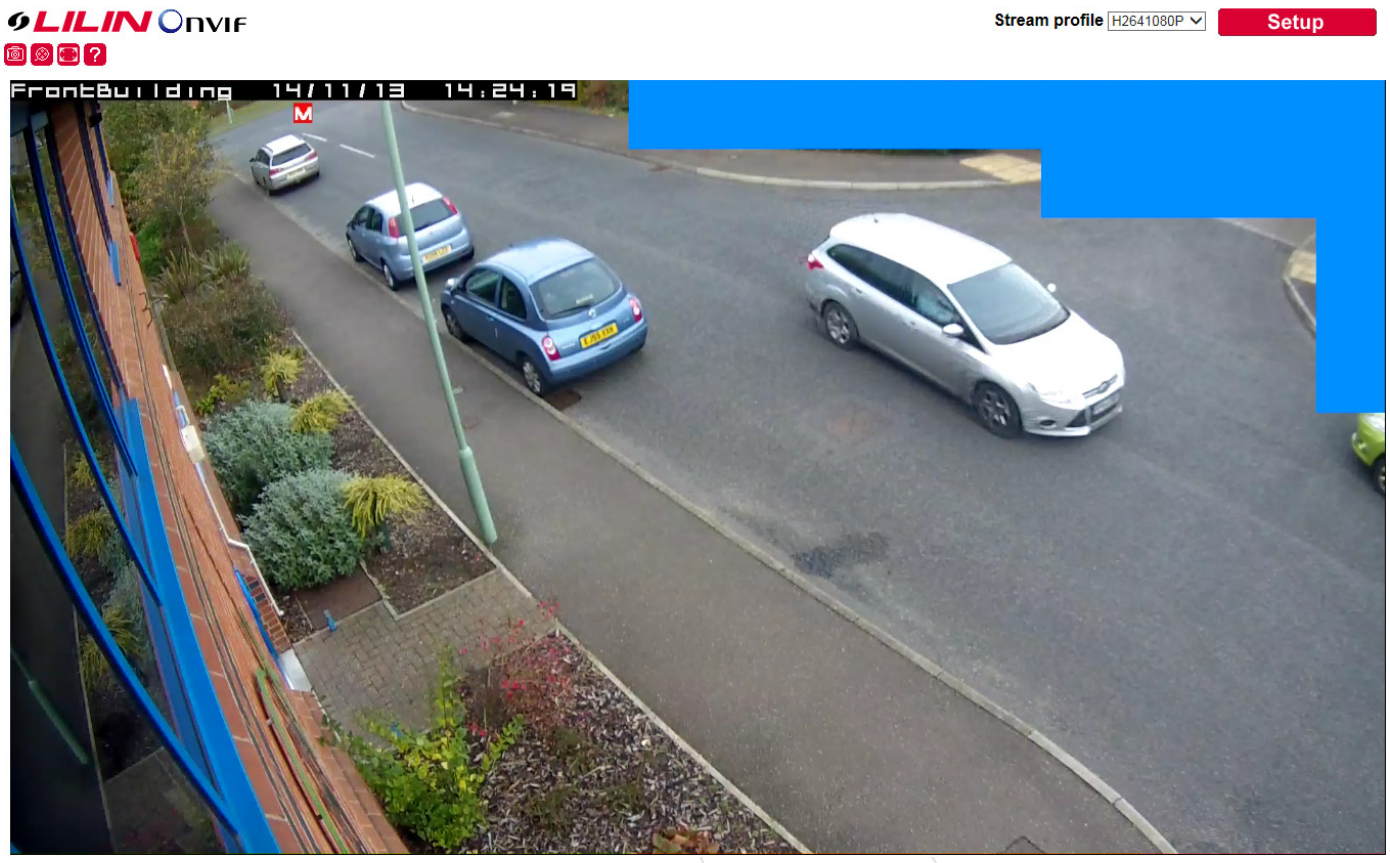
There are two key articles of UK legislation that determine the legal requirements for privacy masking, the Human Rights Act 1998 and the Data Protection Act 1998.

The Human Rights Act 1998 implemented in the UK gives fundamental rights and freedom to everybody, this Act is based on the European Convention on Human Rights (ECHR) and in Article 8 it states that: "Everyone has the right to respect for his private and family life, his home and his correspondence"

The Data Protection Act 1998 places obligations on people and organisations who hold and use personal data. Their are 8 principles set out under DPA that states data must be "fairly and lawfully obtained". This is where privacy masking comes in as people have the right not to be captured under the Human Rights Act above.

The most effective way to restrict the field of view of a camera is by careful selection of camera position and lens field of view to prevent the camera from overlooking private areas.

With fixed cameras this can be relatively straightforward, but with moveable Pan, Tilt and Zoom (PTZ) cameras this may involve setting pan and tilt movement limits either physically or within the control system's settings to restrict the horizontal and or vertical rotation of the unit. If control system settings are used to limit the field of view, it is important to make certain that these are protected via a key switch or pass code so that they cannot be subsequently altered or overridden by unauthorised persons.



IP and IK Ratings

IP Rating:

An IP rating is an "International Protection Rating". It indicates the level of environmental protection the camera enclosure has against ingress of solid materials like dust and water that would have a harmful effect on the internal electronics.

For example, Dust:

The first IP rating digit indicates the level of protection that the enclosure provides against the ingress of solid foreign objects.

IP5 - Ingress of dust is not entirely prevented, but it will not enter in sufficient quantity to interfere with the satisfactory operation of the equipment.

IP6 - No ingress of dust.

The second IP rating digit indicates the level of protection that the enclosure provides against harmful ingress of water.

IPx4 - Splash proof: Water splashing against the enclosure from any direction shall have no harmful effect.

IPx5 - Water jet proof: Water projected by a nozzle (6.3mm) against the enclosure from any direction shall have no harmful effects.

IPx6 - Powerful water jet proof: Water projected in powerful jets (12.5mm nozzle) against the enclosure from any direction shall have no harmful effects.

IPx7 - Submersible - Ingress of water in harmful quantity shall not be possible when immersed up to 1m.

NOTE: Don't confuse environmental IP (International Protection) ratings with network IP (Internet Protocol).

IK Rating:

An IK rating refers to the degree of protection provided by enclosures for electrical equipment against external mechanical impacts.

External Lilin cameras conform to high standards of environmental protection, IP66 or IP67 in addition the Vandal proof cameras conform to the highest impact resistance IK10.

For example, IPR6122ESX3.6:

The IPR6122ESX3.6 is suitable for mounting externally and can be fitted at a lower level where physical attack may be possible due to its high IP and IK rating: IP67 Dust tight and submersible in water and the maximum IK10 impact resistance.

LILIN

IK Rating	Protected against...	Equivalent to...
IK00	Not protected	Not protected
IK01	Protected against 0.14 joules impact	0.25kg mass dropped from 56mm above impacted surface
IK02	Protected against 0.2 joules impact	0.25kg mass dropped from 80mm above impacted surface
IK03	Protected against 0.3 joules impact	0.25kg mass dropped from 140mm above impacted surface
IK04	Protected against 0.5 joules impact	0.25kg mass dropped from 200mm above impacted surface
IK05	Protected against 0.7 joules impact	0.25kg mass dropped from 280mm above impacted surface
IK06	Protected against 1 joules impact	0.25kg mass dropped from 400mm above impacted surface
IK07	Protected against 2 joules impact	0.5kg mass dropped from 400mm above impacted surface
IK08	Protected against 5 joules impact	1.7kg mass dropped from 300mm above impacted surface
IK09	Protected against 10 joules impact	5kg mass dropped from 200mm above impacted surface
IK10	Protected against 20 joules impact	5kg mass dropped from 400mm above impacted surface

Wide Dynamic Range

Wide dynamic range (WDR) is a standard feature across the LILIN range, it is an improved type of 'Backlight Compensation' and provides a much better image quality where there is a brighter background than foreground in the cameras field of view.

When the background of an image is brighter than the foreground there will typically be a silhouette effect of the people or objects in the foreground. WDR digitally adjusts exposure in both the bright and darker areas of the image which maintains optimum level of detail in both the shadows and bright parts of the image.

Low Light Performance

LUX Sensitivity:

Bullet cameras are ideal for external use, though it is important to consider the light levels they will operate in. LUX refers to the amount of light illuminating an image. In surveillance camera specifications, it refers to the level of light required for a camera to pick up a quality image.

A camera with a good low-light capability will have a lower LUX rating. For example, IPR7424X has 0.1LUX at F1.4 (low light mode).

Bright, Sunny Day:
10,000 - 100,000 LUX

Street Lighting:
5 LUX

Overcast Day:
1,000 - 10,000 LUX

Full Moon:
0.1 LUX

Twilight:
1 - 100 LUX

Bright, Clear Starlight:
0.1 - 0.0001 LUX

Low Light Performance without IR:

Manufacturers have traditionally utilised frame integration technology to improve the low light performance in CCTV cameras. Whilst effective at producing a low light image, 'motion blur' is a common problem in areas with movement. Sense Up + technology from Lilin greatly improves low light performance without the need for IR illumination. It utilises intelligent image signal processing with a highly sensitive CMOS sensor. AGC control and 3D noise reduction provide the ultimate low light image without any 'motion blur' or noise.

NOTE: This is real footage.

IR Illuminators:

The LILIN range of IR illuminators are designed to work with all IP and analogue cameras, up to a range of 250m with a wide angle beam of up to 60°.

Black light 950nm options are also available. The wavelength is completely outside the visible spectrum for the human eye, eliminating the red IR glow.

IR illuminators are available in 3 different versions and incorporate 24 IR LEDs to provide quality images in the dark.

What is Infra Red?

IR Cameras:

Infra red is light that cannot be seen by the naked eye. It is light that has a wavelength between 700 and 1,100nm, just beyond the human visible spectrum.

LILIN bullet cameras have IR illumination built in to cover up to 70m. IR ranges are stated as a maximum, specify longer ranges to provide some headroom and allow for absorption and dissipation.

NOTE: Check the specifications for the beam angle of the IR. This is often narrower than your camera's field of view.

IR reflects differently depending on its target surface. For example, grass has a reflective value of 20% whilst a glass window has a reflective value of 70%. Pointing your camera directly at a reflective surface will result in a bright spot.

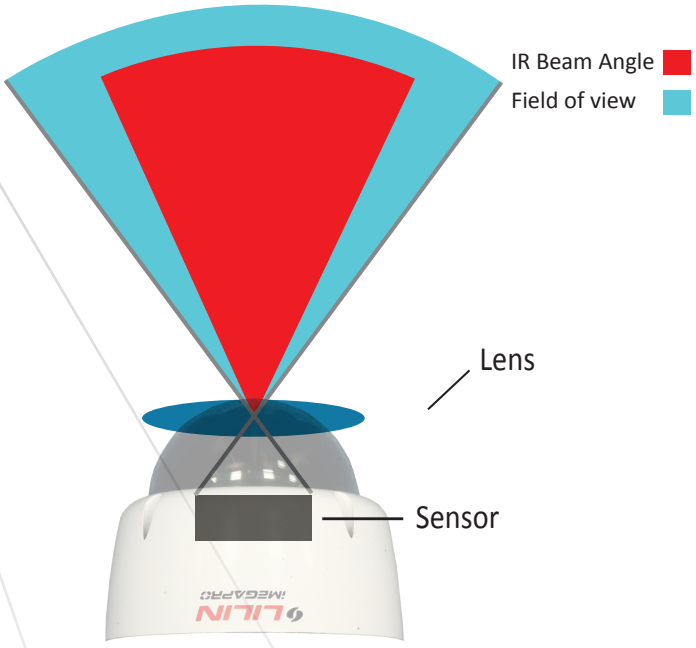
Material	Typical Reflectance (%) White-Light
Standard white paper	75
Aluminium	75
Glass windows	70
White cloth/fabric	65
Concrete (new)	40-50
Light oak wood (varnished)	40-50
Plasterboard	30-60
Bright steel	25
Cast iron	25
Open country (trees/grass)	20
Wood (mahogany/walnut)	15-40
Brickwork (new)	15-30
Brickwork (old)	5-15
Concrete (old)	5-15
Matte black paper	5

Day/Night Cameras:

During the day you get a true colour rendition, and at night the camera switches to monochrome and the IR cut filter is removed making the camera responsive to IR light.

The higher specification bullet cameras feature larger IR arrays to give longer illumination. This draws more current than standard PoE can support so these models are PoE+.

Check the specifications for the beam angle of the IR. This is often narrower than your camera's field of view.



Network Design

Choosing a Switch:

Switch choice is important, if you specify a slower switch than the required network bandwidth, you will create a bottleneck and this will dramatically reduce performance, impacting connection stability.

- Make sure the switch has enough ports for the job
- Port speed 10/100 or gigabit is sufficient when connecting to cameras directly
- Backbone speeds require a minimum of a gigabit connection as they are handling multiple streams of data
- Linking switches by SFP ports utilises fibre optic technology to maximise the distance that can be run over a gigabit connection ensuring optimum performance
- Make sure there is a gigabit port provided for all NVRs in the system

LILIN PMH-POE16260WAT

Luxul XMS-1024P

Managed or Unmanaged?

All LILIN switches are unmanaged. The power and quality of service (QoS) cannot be regulated. If using a managed switch, it is recommended you turn off QoS. Only use a managed switch if you have specific requirement to do so within the network design.

Larger Network Designs:

Standard Ethernet rules apply, the maximum distance that can be cabled on a single run of Cat5e cable (or better) is 90m (excluding 10m patching allowance). For runs longer than this ,you need to use additional switches, extenders or fibre optic links.

Using a Switch to Extend the Network:

When you reach 90m, if there is a location where a few cameras can be star wired, then a PoE switch is ideal at this point. It will provide an additional 90m run per port.

The switch supplying the uplink to the remote switch should be a gigabit. However, it doesn't need to be PoE as it is not connecting directly to the cameras.

Using an Extender:

An extender is an in line powered booster which will allow the network to run an additional 90m, please ensure you use a PoE extender. Where there is a cable feeding a single camera which is over 90m away install an extender, if there are multiple cameras on that route consider using a switch.

Power Over Ethernet

What is PoE?

Power over Ethernet (PoE) integrates power into a standard LAN infrastructure. It enables power to be provided to a network device, such as an IP camera, using the same cable that is used for network connection. This means that the camera only requires a single Cat5e (or better) cable and it eliminates the need for power outlets at the camera locations.

There are two standard types of PoE. It can be supplied from a PoE switch, this is ideal for multiple camera installations. Or alternativly, a PoE injector can be used in conjunction with a normal switch.

- PoE: The original standard, 802.3af, provides up to 15.4W to each device
- PoE+: A new standard, 802.3at, provides up to 25.5W of power to each device

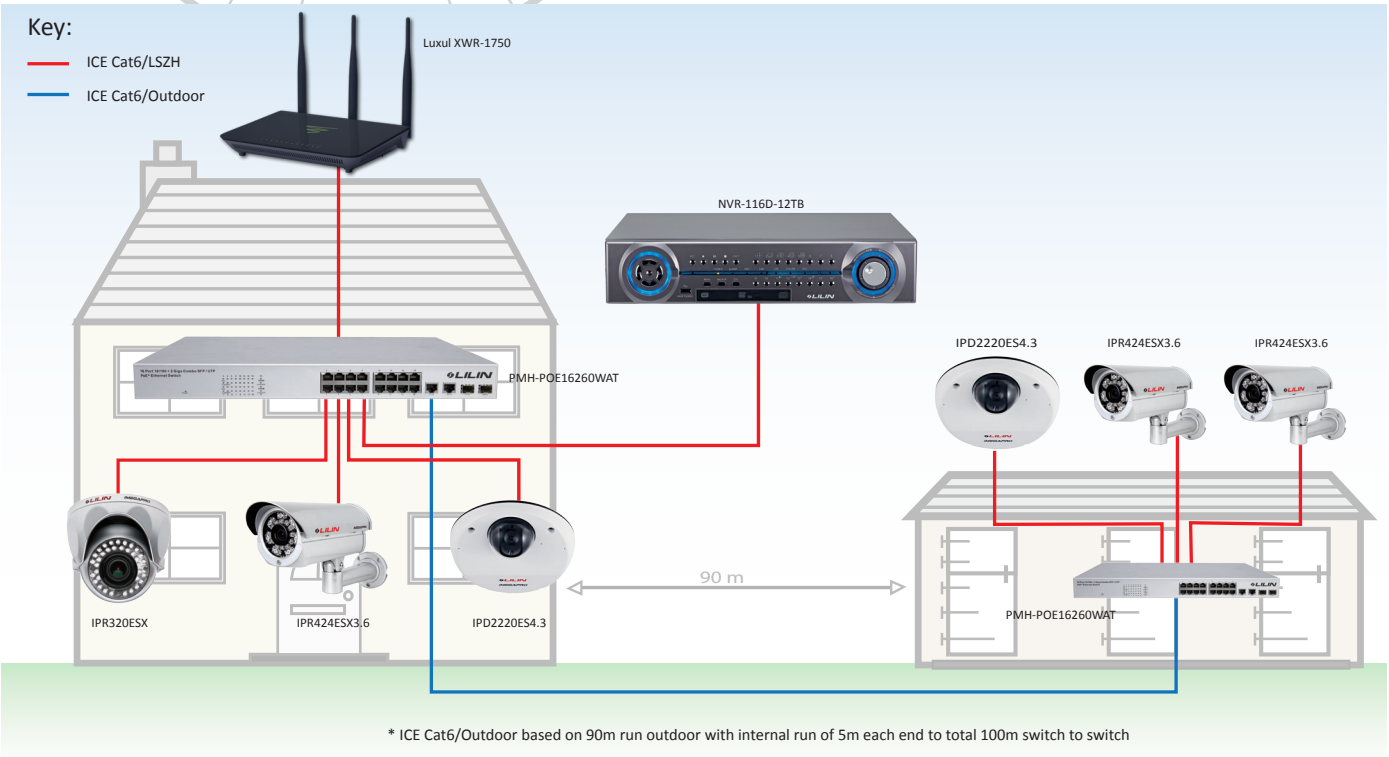
Ensure you check your camera specification in order to make sure you get the correct switch!

PoE Switches:

The overall PoE power output of the switch is important to consider when specifying your PoE switch.

For example, you may have a 24 port PoE switch but that doesn't necessarily mean it can power 24 PoE devices all at once. For this to be true, the switch would need an overall power output of at least 370W. Make sure your switch has enough power by multiplying the number of cameras you have by either 15.4 (standard PoE) or 25.5 (PoE+) depending on their power requirements. This sum needs to be less than the overall power output of your PoE switch.

- 24 Port PoE switch with overall power output of 280W
- Number of standard PoE cameras needing power is 18
- Equation: 18 x 15.4 = 227W needed to power all 18 cameras (Just under what the switch can output)
- The same rule applies for PoE+ based on 25.5W needed per camera



* ICE Cat6/Outdoor based on 90m run outdoor with internal run of 5m each end to total 100m switch to switch

Project Planner

Ever wanted to be able to drag cameras onto an image of your site, move and scale cameras based on their angle view and create a shopping list of the products you require to complete a system, in complete confidence? Wait no longer, the LILIN Project Planner is here.

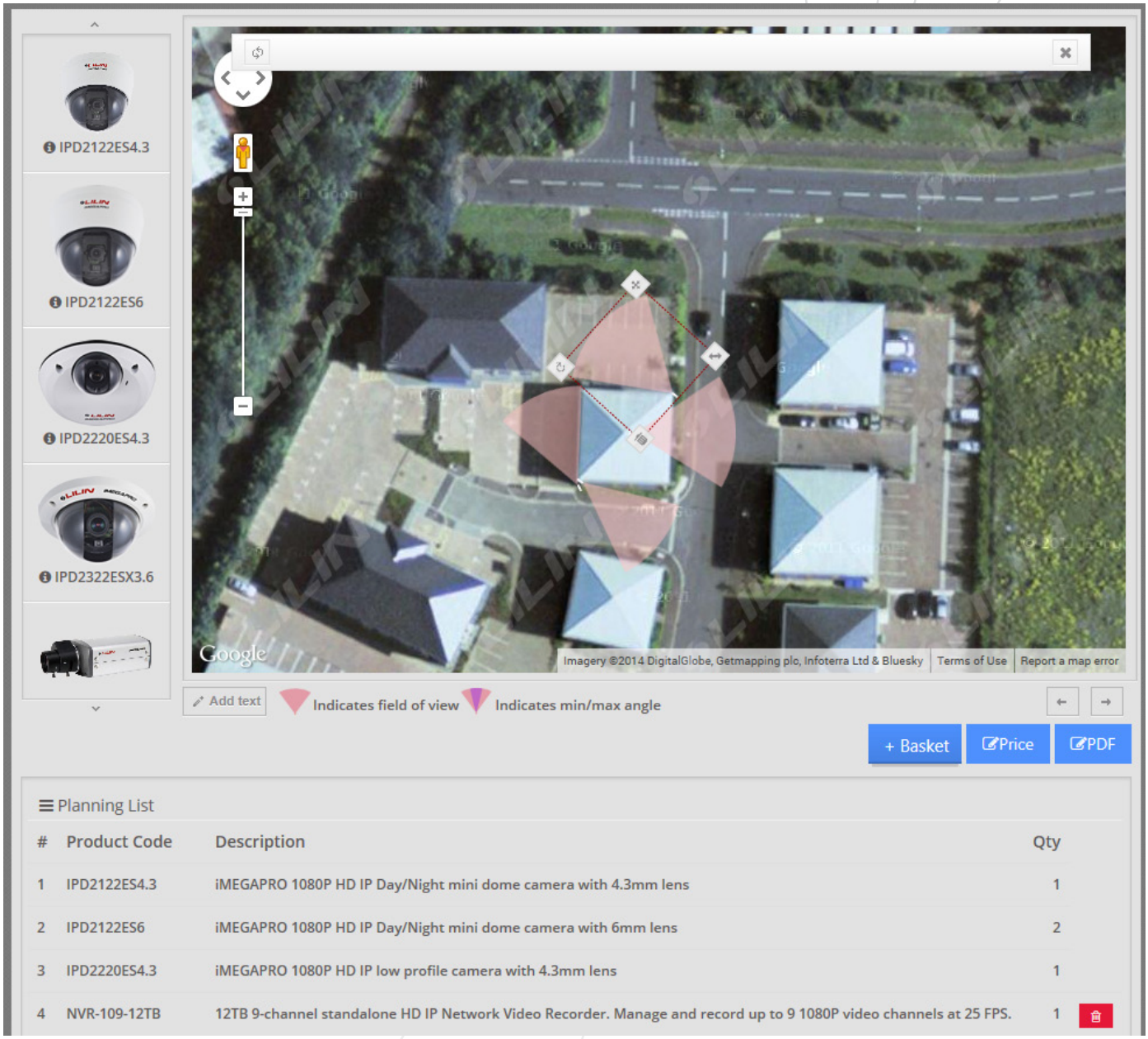
The Project Planner has been designed to revolutionise the way security installers plan their projects. In three easy steps users can design a complete system; from selecting a site to creating a product list, LILIN have made the design and specification of a project a whole lot easier.

Here's how it works…

Step 1: Upload your own image or search for your chosen location using Google Maps.

Step 2: Drag and drop different cameras onto your chosen site. Move, scale and rotate cameras based on the lens angle. The planner will calculate your bandwidth and storage requirements to make selecting an NVR easier.

Step 3: Now you are ready to print a PDF of your project or you can send it through to us so we can provide you with a quote. The project can be edited at any time making it easy to add to your list of products if required.



WWW.LILIN.TV/PROJECTPLANNER

IP VIDEO SURVEILLANCE

INTEGRATION
MONITORING
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IMEGAPRO
NVR
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Integrating LILIN with Control Systems

LILIN have established themselves as an industry-leading manufacturer of IP surveillance systems, intent on building and diversifying their product range and providing a high choice of products to offer their clients. Integration drivers provide full, two-way integration with leading control solutions for all compatible network cameras, as well as one-way control of DVRs/NVRs.

Offering a full complement of pan, tilt and zoom controls, as well as monitoring of MJPEG or H.264 streams on an iPad, these drivers provide all the control functionality the client will need. For the security conscious, motion and tamper variables can be programmed to alert the user, initiate recording, and/or trigger any appropriate action within the control system. The ability to save and recall preset camera positions at high speed, and with accuracy is an added bonus.

The DVR/NVR driver provides a complete set of one-way commands, providing the user with the ability to easily navigate through the on-screen menus and review recorded camera footage and monitor your premises from anywhere in the world with remote access.

Integration Matrix:

LILIN Series	AMX	Control4	Crestron	Elan g!	RTI	Savant	URC
L Series	✓	✓	✓	✓	✓	✓	✓
iMEGAPro	✓	✓	✓	✓	✓	✓	✓
NVR	✓	✓	✓	✓	✓	✓	Coming Soon
DVR 7/8	✓	✓	✓	✓	✓	✓	Coming Soon
DVR 3/5	✓	✓	✓	No	View	View	Coming Soon

Drivers

Camera Driver:

The driver allows viewing of camera streams directly within the control system in-wall keypad, handheld remote or iPad/tablet app. Camera driver functions include:

- Viewing the camera's IP stream
- Control of PTZ cameras
- Remote viewing through an iPad if the control system supports it
- Alarm events

The supported resolution withinthe control system is usually a maximum of 720 x 480, frame rates will also vary according to each control system capability. For Full HD and full frame rate viewing, use the HDMI output from an NVR or decoder.

NVR Driver:

The driver for the NVR allows full control of all functions over IP including full and split camera views and access to search for recoded footage by date and time. When integrated with a control system and matrix, the user can view live cameras and recordings from the comfort of their living room.

Decoder Driver:

The decoder also provides a HDMI output and can be controlled over IP whether it's operating as a camera view or as a virtual matrix displaying the NVR video output.

Janus Technology:

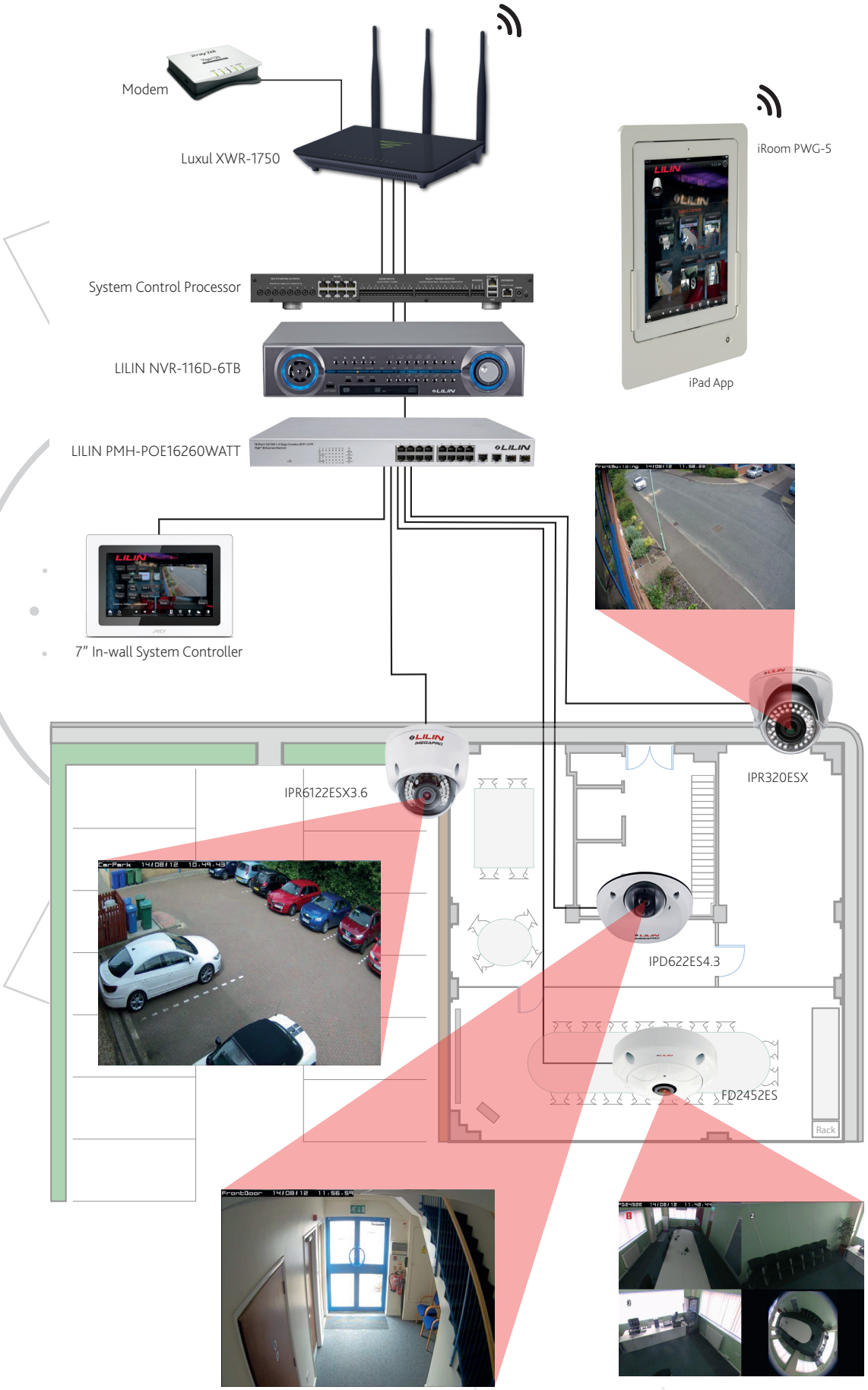
Janus Technology have developed a range of drivers for CI platforms that simplify the integrator's job and are adding to the collection all the time. All LILIN drivers are available from their online store (www.janustechnology.co.uk).

How does it work?

The control processor communicates directly with cameras and NVR/DVRs connected to the network. The following features are supported:

- Full PTZ control of network cameras.
- Save and recall preset camera positions.
- Alarm / motion monitoring.
- One-way IP control of NVR/DVR.

LILIN Control System Integration



Fully ONVIF Compliant

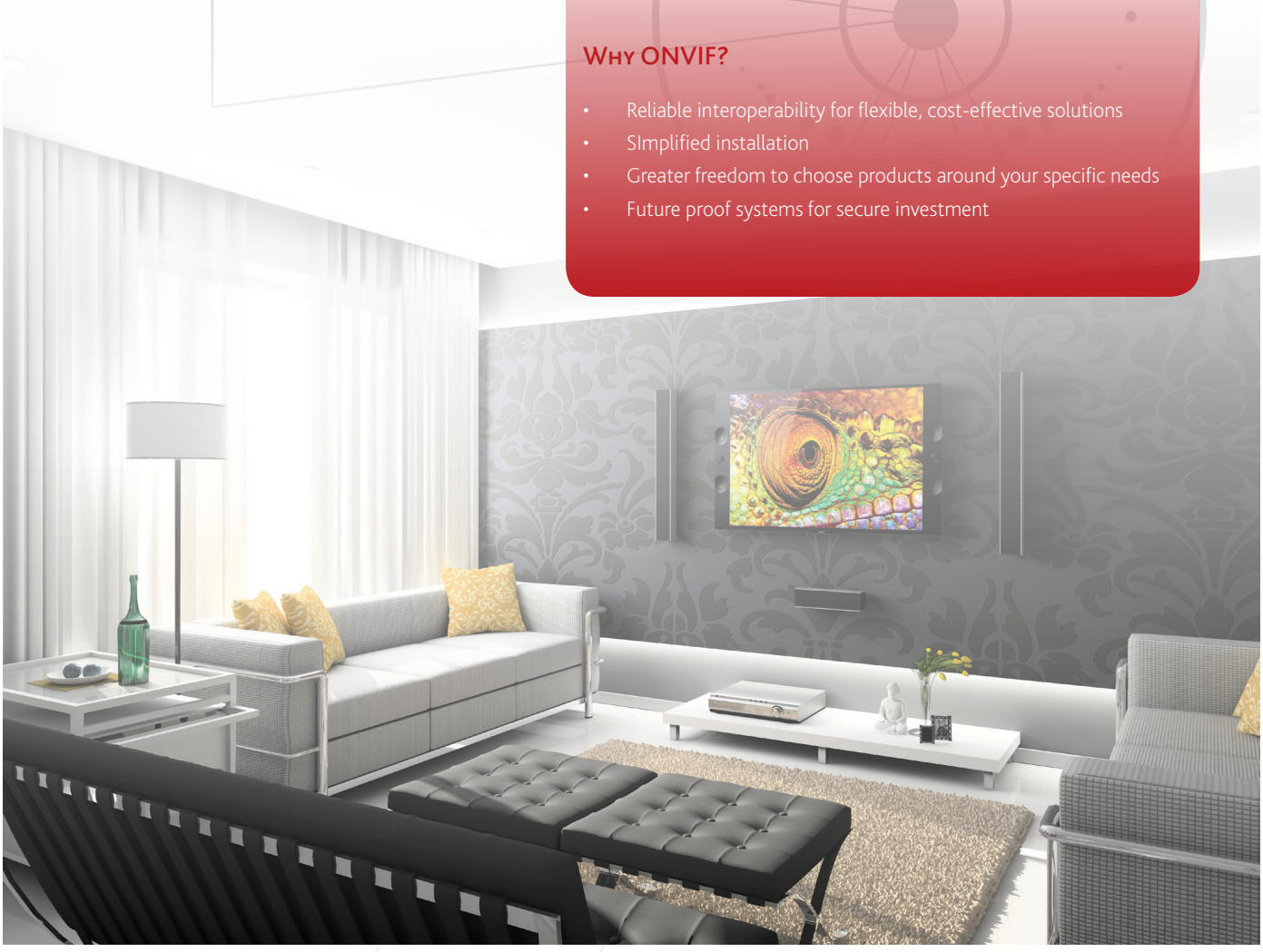
ONVIF is committed to the adoption of IP in the security market. The ONVIF specification will ensure interoperability between products regardless of manufacturer. The cornerstones of ONVIF are:

- Standardisation of communication between IP-based physical security
- Interoperability between IP-based physical security products regardless of manufacturer
- Open to all companies and organizations

The ONVIF specification defines a common protocol for the exchange of information between network video devices including automatic device discovery, video streaming and intelligence metadata.

Currently, there are 24 ONVIF full members including prestigious market leaders in the security industry. LILIN users will profit from interoperability between ONVIF compatible IP devices and LILIN products by adopting ONVIF IP-based security standard, therefore LILIN products are able to work smoothly and perfectly with other brands in the video surveillance market. As of now, entire IP camera line of LILIN is ONVIF Profile S compliant.

ONVIF IS AN OPEN INDUSTRY FORUM FOR THE DEVELOPMENT OF A GLOBAL STANDARD FOR THE INTERFACE OF IP-BASED PHYSICAL SECURITY PRODUCTS.



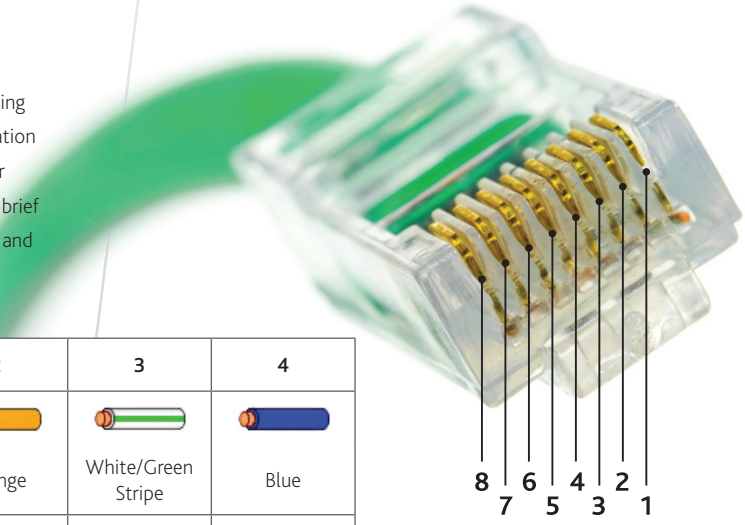
WHY ONVIF?

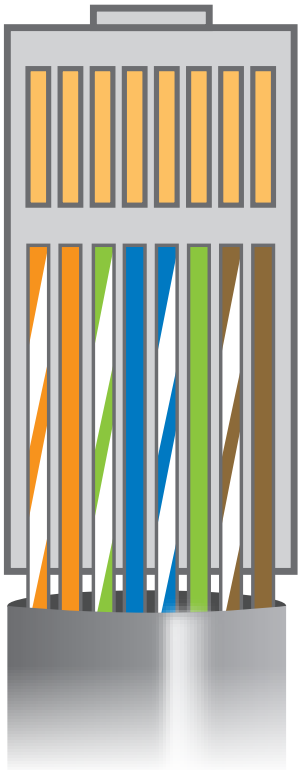
- Reliable interoperability for flexible, cost-effective solutions
- SImplified installation
- Greater freedom to choose products around your specific needs
- Future proof systems for secure investment

IP VIDEO SURVEILLANCE

Category Cable Standards

Lilin cameras conform to networking standards, an IP surveillance installation requires good quality infrastructure cabling and termination. Correct Cat 5e termination is the most vital element of making your Network install work properly. Here is a brief overview on how to terminate correctly and how to test your cabling prior to install.





Pin	1	2	3	4
T568B Colour	White/Orange stripe	Orange	White/Green Stripe	Blue
Pin	**5**	**6**	**7**	**8**
T568B Colour	White/Blue stripe	Green	White/Brown stripe	Brown

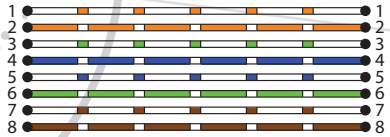
CEDIA CUSTOM ELECTRONIC DESIGN & INSTALLATION ASSOCIATION

WIREMAPPING

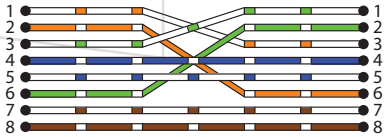
The wiremap shows some common examples of incorrect terminations that can show up in testing. These are used for testing to make sure pin 1 on patch panel goes to pin 1 on outlet etc.

Additional testing is possible for: Continuity, Shorts, Crossed Pairs, Reversed Pairs. Split Pairs will not be detected by a simple wiremap test, Split pairs will undermine balanced line operation. More sophisticated test required to detect split pairs.

Correct straight through wiring



Correct cross-over wiring



T568B T568A

CAT5e STANDARDS

The specification for **Cat5 cable** was defined in ANSI/TIA/EIA-568-A, with clarification in TSB-95. These documents specify performance characteristics and test requirements for frequencies from **100MHz**. Cable types, connector types and cabling topologies are defined by TIA/EIA-568-B. Nearly always, **RJ45 connectors**, are used for connecting Cat5e cable. The cable should be terminated in the the **T568B scheme**, but T568A can be used. The two schemes work equally well and may be mixed in an installation so long as the same scheme is used on both ends of each cable.

Each of the four pairs in a Cat5e cable has differing precise number of twists per metre to minimise crosstalk between the pairs. Although cable assemblies containing 4 pairs are common, Cat5e is not limited to 4 pairs. Backbone applications involve using up to 100 pairs. This use of balanced lines helps preserve a high signal-to-noise ratio despite interference from both external sources and crosstalk from other pairs.

The cable is available in both **stranded and solid conductor forms**. The stranded form is more flexible and withstands more bending without breaking. Permanent wiring (eg. the wiring that connects a wall socket to a central patch panel) is solid-core, while patch cables (eg. cable that plugs a computer into the network port in the wall) are stranded.

CAT6/6a STANDARDS

Cat6 cable, is a standardised cable for Gigabit Ethernet and other network physical layers that is backward compatible with the Cat5/5e cable standards. Compared with Cat5e, Cat6 features more stringent specifications for crosstalk and system noise. The cable standard provides performance of from **250MHz** and is suitable for 1**0BASE-T, 100BASE-TX** (Fast Ethernet), **1000BASE-T/1000BASE-TX** (Gigabit Ethernet) and **10GBASE-T** (10-Gigabit Ethernet).

Whereas **Cat6 cable** has a reduced maximum length when used for **10GBASE-T**. **Cat6a cable**, (or Augmented Category 6), is characterised from **500MHz** and has improved alien crosstalk characteristics, allowing **10GBASE-T** to be run for the same distance as previous protocols.

Cat6 patch cables are normally terminated in **RJ45 connectors**. If Cat6 rated patch cables, jacks and connectors are not used with Cat6 wiring, overall performance is degraded and will not meet Cat6 performance specifications.

Connectors use either T568A or T568B pin assignments; although performance is comparable provided both ends of a cable are the same.

Glossary of Terms

VR

Vandal Resistant, physically protected from damage and IK rated.

IK Rating

International classification for the degrees of protection provided by enclosures for electrical equipment against external mechanical images. For example:

The highest rating for vandal proof cameras is IK10.

Varifocal Lens

Manually adjust the focal length like the lens on an SLR camera to zoom in and out. On some models, this function is motorised.

FPS

Frames Per Second. The more frames per second the smoother the video will be. 25fps provides smooth playback, higher frame rates won't miss any motion, and are commonly used for viewing card games in casinos.

Tech Tip: NVR can only record a maximum of 25fps, no matter what the camera is providing.

IP Rating

International Protection Rating. This is a rating against dust and water ingress. The first number rates dusts and the second rates water. For example:

- *IP66 Rating protects from total dust ingress and high water pressure jets from any direction.*
- *IP67 Rating protects from total dust ingress and immersion between 15cm and 1m in depth.*

DI/DO

Digital input/output can be provided by cameras to further integrate with other systems. For example: control, monitoring and security.

Auto Iris

The lens adjusts the amount of light allowed through.

Day/Night

The camera switches between colour and monochrome.

IR

Infra Red. This is used to illuminate dark areas, invisible to the human eye but picked up by cameras in night (black and white) mode.

Lux

Measurement of light levels.

PTZ

Pan, Tilt, Zoom. This is for 360° motorised movement and can zoom to any area.

PoE

Power Over Ethernet. This allows for a single Cat 5e cable (or better) to supply the camera with both power and data.

WDR

Wide Dynamic Range. This compensates for bright backgrounds to maintain detail and contrast on the foreground image.

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