





IRIS

Leading Marine Security, Thermal Imaging and Boat Cameras



A Warm Welcome to IRIS

I am delighted to extend the warmest of welcomes and thank you for your interest in our range of specialist marine camera system.

Marine Camera Specialists

Iris is proud to specialise in marine camera solutions; this focus ensures we offer equipment that combines industry-leading technology with intuitive robust design, ideally suited to withstand the range of marine conditions that would spell disaster to lesser camera products. Iris are dedicated to manufacture unique and thoughtful products that are thoroughly put through their paces on your behalf. All Iris products are tested in the environment they are designed for. We test each new product to the very limits of its capabilities to ensure that it will never let you down when you need it the most.

We're Sailors Too

First and foremost we're sailors too. We understand the importance of reliability and trust in the equipment that could literally be the difference between life and death in an emergency at sea. We also understand the difference between must haves and toys. **All our cameras serve a genuine purpose, solve a problem and add pleasure to your time on the water.**

Innovation - Its More Than A Name

Back in 2002, when we had hair, we were scoffed at by many as offering a futile product. How things have changed, nowadays cameras on board are expected as much as depth sounders or radar and with more than 10 years of experience in designing and manufacturing specialist marine camera systems we're always a step ahead of the competition. With Iris, Innovation is guaranteed.

Global Availability

Whether you're in the USA, Europe or Australia, there is always an Iris distributor close by to offer you expert assistance to ensure that you select the best camera package for your particular set up. See our full list of resellers at boat-cameras.com.

Thank You & See You - On The Water!

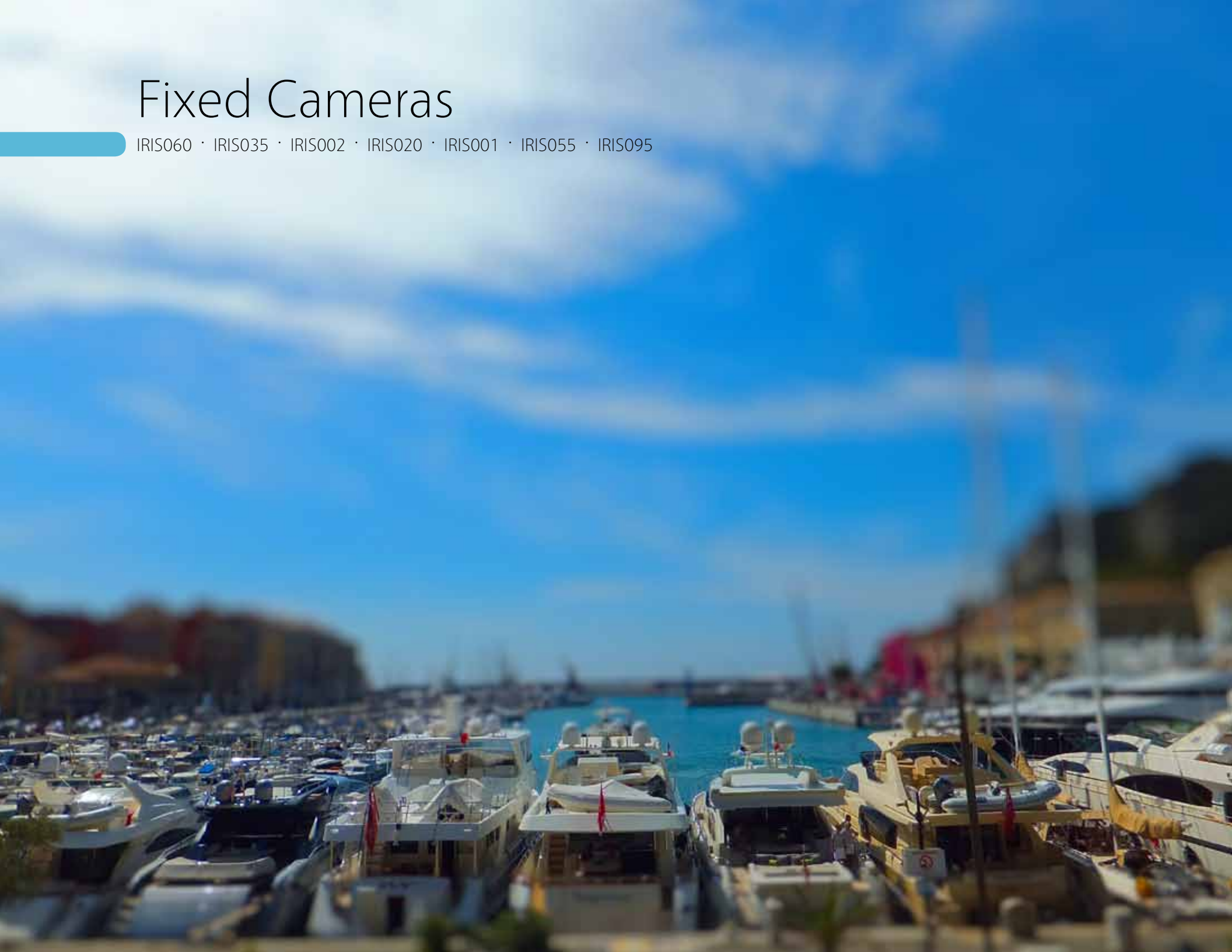
Tony Digweed

4	Fixed Cameras
5	IRIS060
6	IRIS035
7	IRIS002 / IRIS020
8	IRIS001
10	IRIS055
11	IRIS095
12	Controllable Cameras
13	IRIS117 / IRIS118
14	IRIS116
16	IRIS130
17	IRIS106
18	Thermal Camera
20	PTZ16T-VGA
22	IRIS316
23	IRIS216
26	Camera Controllers
27	IRIS516
28	IRIS565
29	IRIS 506 / 507
30	IP2 Camera
32	Monitor
33	MON05 / MONQ7
34	MON07 / 09
36	Switchers
37	VSX0804 / VSX1608
38	IRIS604
39	IRIS606
40	Digital Video Recorder
41	DVRO4 / DVR08
42	GSM02
44	Brackets & Accessories
45	Specifications Tables
46	Terms & Conditions



Fixed Cameras

IRIS060 · IRIS035 · IRIS002 · IRIS020 · IRIS001 · IRIS055 · IRIS095



IRIS060

Introducing the **best selling IRIS060 fixed lens**
Day / Night marine dome camera from iris Innovations.



Designed specifically to meet the strict performance and aesthetic requirements of the marine industry, **the IRIS060 is tough and compact, measuring only 60mm in diameter.** It's unique Cup and Ball style fixing enable the camera to be positioned as desired then locked in place without risk of the the camera shaking loose through the vibration of your boat.

The sleek curves of the IRIS060 mean the camera can be installed anywhere on board without compromising the look of your boat, which along with it's impressive specification list make it an ideal all-round camera.

Perfect as a docking or back-up camera, engine room camera and / or part of an on board security system.



Engine Room



Situational Awareness



Security



Waterproof



Low Light

Fixed Camera





IRIS035

The Amazing IRIS035 from Iris Innovations is not only the smallest waterproof marine IR camera on the market, it also boasts possibly the highest specification for a device in it's class and size.

The IRIS035 measures only 43mm high and 54mm in diameter. That's about the size of a golf ball. **It has an incredible 540 TVL picture resolution and 12 micro-LED's to provide visibility at up to 8 meters in absolute darkness.** With an environmental rating of IP67, the super compact IRIS035 is a great all round on board camera. Perfect for engine rooms, radar arches, as a back-up cam, docking camera, anchor cam and / or part of an on board security system. The IRIS035 represents the ultimate in low cost, high quality camera solutions for on board safety and security.



Engine Room



Situational Awareness



Security



Waterproof



Low Light

Fixed Camera





IRIS002

Introducing the IRIS002 Engine Room Camera from Iris Innovations.

The IRIS002 features a high resolution colour camera module with built-in day/night filter that switches images to monochrome when the Infra Red LEDs operate in the dark.

Housed in a marine grade stainless steel housing, the IRIS002 now features a locking gimble bracket to ensure shake free operation, even in harsh environments prone to excessive vibration.



Engine Room



Situational Awareness



Security



Waterproof



Low Light



IRIS020

Introducing IRIS020, **a fantastic value, general purpose camera for use anywhere on board**, as an engine room camera, for keeping an eye on companion ways or as a great back up camera.

With an IP66 environmental rating, built in LED illumination and neat cable management through the adjustable fixing bracket, the IRIS020 is a superb all rounder in it's own right, but with a budget price tag it's an even better proposition. The IRIS020 also **boasts a hi resolution 540 TVL resolution meaning that despite it's low price tag picture quality isn't compromised.**



Engine Room



Situational Awareness



Security



Waterproof



Low Light





IRIS001

The IRIS001 Dual Module Water Resistant Camera adopts the latest SONY technology, CCD Sensor and driver.



Key features of the IRIS001 are its attractive, stylish housing, environmental protection (IP66 - It's water resistant but don't submerge!), ease of installation and setup and high resolution.

Each housing includes 2 camera modules mounted on fully adjustable brackets that **allow the user to obtain near 180 degree coverage**. The IRIS001 is perfect for use as a docking camera, and can either be used as a pair of housings (4 cameras) looking forward and aft, port and starboard, or mounted sideways with each camera module focused on the port and starboard aft quarters.



Engine Room



Situational Awareness



Security



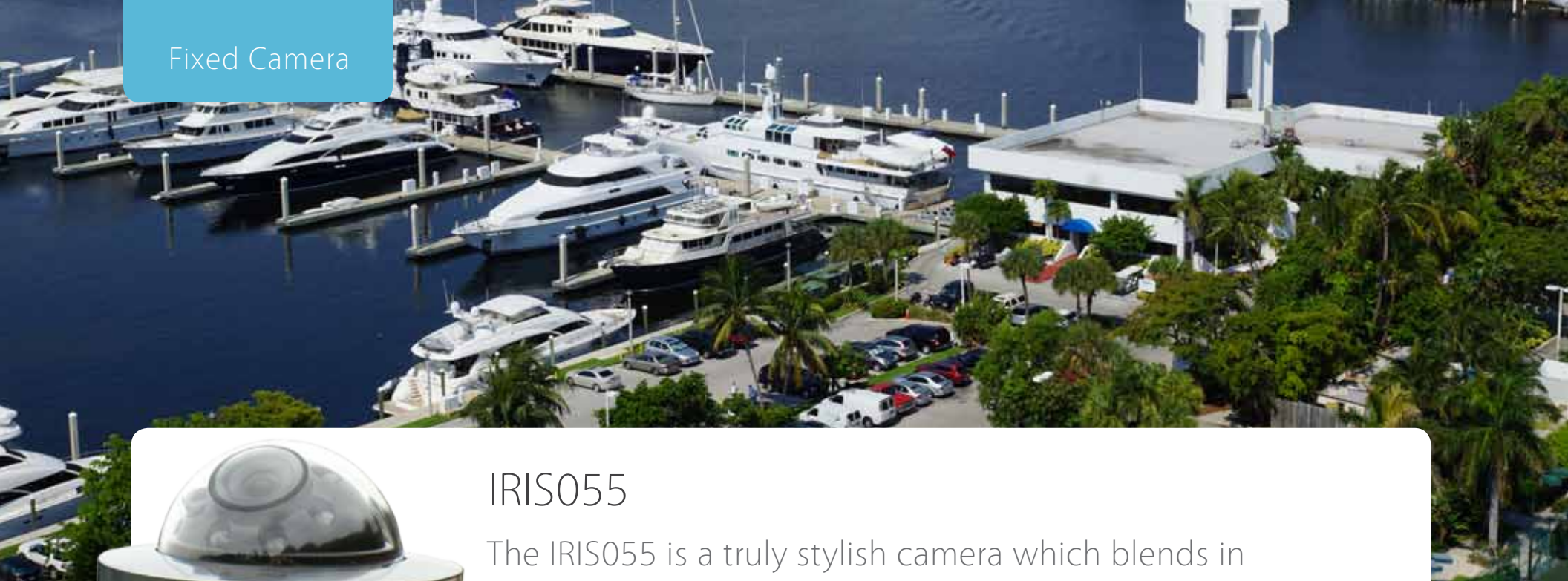
Waterproof



Low Light

Fixed Camera





IRIS055

The IRIS055 is a truly stylish camera which blends in beautifully with the graceful lines of aft radar arches, overhead cockpits and freeboards.

Measuring a mere 82mm diameter it is easy to overlook the camera and mistake it for a flush mount light fitting. The camera technology is the same high end spec as the IRIS060 and also **features its own ring of self illuminating IR lights**, allowing the camera to operate in zero light conditions (picture defaults to monochrome) The "55" also has the extra option of being specified with a 45 degree flush mounting "wedge" which transforms the characteristics of the camera from being a recessed downwards facing camera to offering the potential for opening the scope of opportunities to include peripheral observation to its repertoire.



Engine Room



Situational Awareness



Security



Waterproof



Low Light

Fixed Camera





IRIS095

The Iris-095 is a **high performance long range Infra Red night vision camera** which offers up to 100 meters of visibility in total darkness.

The camera can be used in a wide spectrum of applications, **from navigation at night for pleasure craft through to search and rescue operations and law enforcement activities.** The camera incorporates a high resolution 680 TVL CCD imaging sensor and two powerful Infra Red illuminators that cast an invisible beam to enable the camera to function in total darkness. The housing and sunshield are manufactured from top grade materials and powder coated in a unique modern marine colour finish.



Engine Room



Situational Awareness



Security



Waterproof



Low Light



High-Definition



Fixed Camera



/boatcameras

Controllable Cameras

IRIS117 · IRIS118 · IRIS116 · IRIS130 · IRIS106



IRIS117 / IRIS118

Introducing the latest additions to our 100 series, marine grade Pan, Tilt, Zoom cameras, the 117, with **High Power white LED's** and 118 with Long Range Infra Red LED's.



The IRIS117 range incorporates the same high quality SONY FCB EX985 low light camera module as our popular PTZ16 range with a choice of an incredible 28x or 36x Optical Zoom, each with an additional 12x Digital Zoom. **Both models feature a built in lens de-mister.** With a choice of high bright white LED or long range infra red LED illumination, Iris deliver a low cost, night vision camera that enhances situational awareness, assists searches and fits in as an integral part of any on board security system.

The camera is ideally suited for extreme weather conditions with its IP66 ingress protection rating, and operates over a wide voltage range and features a multitude of extended functions such as the new Wide Dynamic Range feature which increases clarity in extreme light conditions, Digital Noise Reduction and Digital Image Stabilization. The IRIS117 range can be controlled with Iris's new TED65 multi-functional touch screen controller, or any Iris dedicated camera controller.

-  Waterproof
-  High-Definition
-  Security
-  Low Light
-  Situational Awareness



Part Number: IRIS116X-Y
X = Choice of illumination: L for High Bright White LED's / IR for Long Range Infra Red LED's
Y = Zoom Option: 28 for 28x Optical Zoom / 36 for 36x Optical Zoom



IRIS116 Low-Light PTZ Camera

Representing the very pinnacle in compact marine vision systems, the new **IRIS116** Low Light PTZ from marine security leaders Iris Innovations packs an **incredibly powerful, high resolution Sony camera** module into a compact, stylish waterproof housing designed especially for the marine environment.

The IM-PTZ-16 features a massive 28x optical zoom, complemented with an additional 12x digital zoom to provide a full zoom capability of 304x. Because of its compact, lightweight housing, the powerful pan and tilt motors that drive the camera provide an incredible top-speed of 270° per second panning and 130° per second tilt speed.

New features for 2012 include **dynamic positional indicator icon, enhanced continuous zoom, extended power input range** (8 ~ 30VDC) and horizontal image flip capability for rear view optimisation. Video compatible with all major chart plotters with composite video inputs. Control via IM-KBD-16 joystick controller, compatible chart-plotter interface or the new IM-TED-65 dedicated touch screen controller from Iris Innovations.



Waterproof



High-Definition



Security



Low Light



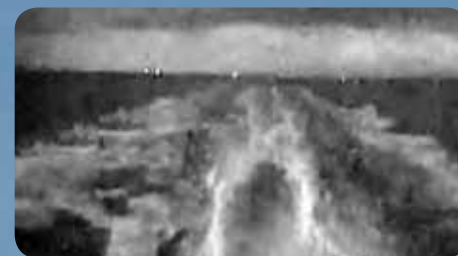
Situational Awareness

Controllable Cameras





Whether navigating inland waterways or near coastal waters, the **IRIS16** enhances situational awareness & extends visibility to make your journey safer.



As well as its amazing zoom performance, the IRIS16 features the latest in ultra-sensitive image processors that use the minutest traces of light to see in extremely low light conditions.



IRIS130

IRIS130 is uniquely designed with a bank of Second Generation, high power, long range infra red LED illuminators as well as a bank of high powered white LED spotlights to provide a new level of visibility at night at sea.

Introducing the latest addition to our 100 series, marine grade Pan, Tilt, Zoom cameras, is the all new IRIS130. The **IRIS130 incorporates the same high quality SONY FCB EX985 low light camera module** as our popular IRIS16 range with an incredible 28x Optical and 12x Digital Zoom, and has the added benefit of extreme weather functionality with features such as heated lens window and screen wiper - recessed to prevent damage.

The camera is ideally suited for extreme weather conditions with its IP67 ingress protection rating, and operates over a wide voltage range. **The camera features a multitude of extended functions such as the new Wide Dynamic Range feature which increases clarity in extreme light conditions, Digital Noise Reduction and Digital Image Stabilization.**



Waterproof



High-Definition



Security



Low Light



Situational Awareness

Controllable Cameras





IRIS106

New for Fall 2012, The IRIS106 fully controllable mini-dome pan tilt zoom camera finally offers the features of a high end PTZ camera in a tiny marine grade flush-mounting housing.

With it's high polished 316 stainless steel bezel and tiny 3" mirrored dome, the IRIS106 has been designed especially to complement the aesthetic of high end luxury boats and deliver features usually associated with PTZ cameras 5 times the size. If you're looking for an on-board camera, no longer do you have to settle for unsightly, domestic style models that stick out like a sore thumb! **The IRIS106 can be used for any on board application such as backing up / docking, situational awareness, engine room monitoring, security and safety and general on board monitoring.**

Key features include Extremely compact housing for flush mounting • 316 Stainless locking bezel • Tiny 3" mirrored dome • Full Pan Tilt Zoom operation • 10x Optical Zoom • 700TVL High Resolution • True Day / Night Filter Switches from colour to monochrome automatically for improved image quality in low light • 128 User Preset / 4 Tours / Scans



Waterproof



High-Definition



Security



Low Light



Situational Awareness

Controllable Cameras



/boatcameras

Thermal Cameras

PTZ16T-VGA · IRIS316 · IRIS216



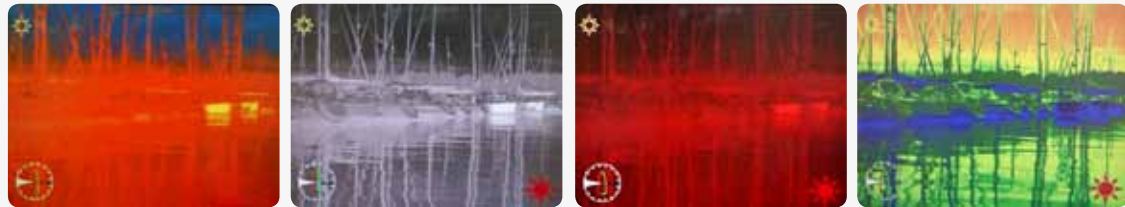




IRIS316

5 'Scene Modes' for optimized viewing in Marina Mode, Fog Mode, Man Over Board Mode, Day Mode and Night Mode.

- 9 Reversible Colour Palettes (18 in total)
- Positional Indicator
- Continuous Digital Zoom
- Continuous Panning through 360°
- 105° Tilt with Autoflip (210° Tilt in total)
- Low Power Consumption
- Horizontal and Vertical Image Flip
- Wide Operating Rang 8 ~ 36 VDC Operation
- IP66 Environmental Rating
- IEC 60945 MIL STD 810E Shock & Vibration Certified
- MIL STD 810E Sand & Dust Certified



Waterproof



High-Definition



Security



Low Light



Situational Awareness







IRIS316

The IRIS316 range of cameras offer industry leading video resolution & a highly advanced feature set in the smallest Pan/Tilt housing unit available, measuring only 13cm in diameter x 16cm high

Fitted with a fixed 25mm lens, Digital Image Stabilisation and boasting the highest zoom ratio available for a marine thermal camera of it's class, the new 316 VGA range deliver a massive detection range of 2370 meters with a recognition range of nearly 800 meters.

The IRIS316 VGA range **delivers extremely sharp thermal video imaging in absolute darkness**. Available in low (7.5Hz NTSC / 8.3Hz PAL) or high (30Hz NTSC / 25Hz PAL) refresh rates. Fitted with a high resolution uncooled Amorphous Silicone camera engine, the IRIS316 boasts 5 built in viewing modes to suit environmental conditions, **continuous digital zoom and a built in Man Over Board feature**.

The IRIS316 VGA Thermal Camera gives you the power to see in complete darkness and through adverse weather and is the perfect addition to your on board safety and security systems.



Waterproof



High-Definition



Security



Low Light



Situational Awareness

Thermal Cameras





IRIS216

The PTZ-16 fully controllable PTZ camera is simply head and shoulders above the competition. Imagine being able to spot and identify objects several kilometers away.

The IRIS216 fully controllable PTZ camera is simply head and shoulders above the competition. Imagine being able to spot and identify objects several kilometers away. Imagine the ability to detect and follow objects at night in virtually complete darkness! With the IM-PTZ-16 you can, thanks to an immensely **powerful, true Day / Night Sony camera engine**, complete with 26x Optical Zoom, 10x Digital Zoom and unrivalled low light processing. Even the faintest ambient light is enough to drive the highly sensitive CCD sensor. Unlike most PTZ's available, the IM-PTZ-16 packs it's top end features into an ultra-compact 16cm x 13cm, anticorrosion housing that's been especially designed to withstand the harsh marine conditions as well as complement the stylish aesthetic demanded in luxury marine applications.



Waterproof



High-Definition



Security



Low Light



Situational Awareness

Thermal Cameras



/boatcameras





Camera Controllers

IRIS516 · IRIS565 · IRIS506 · IRIS507 · IP2 Camera · MON05 / MON07 / MON09 / MONQ7





IRIS516

The New IRIS-516 camera system controller provides full control of the extensive range of features on offer within Iris's camera range and also acts as a controller for the new range of VSX video matrix switchers.



Designed for installation in rugged environments, the **516 is manufactured from tough, UV stabilised ABS plastic and is fully sealed against water ingress.** And as the controller measures only 11 x 15.4cm it can easily be integrated into a busy helm setup. Once selected, the **cameras pan and tilt positions are controlled via an ultra-miniature 'thumb'-stick controller.**

Camera selection and extended feature control is achieved via an intuitive menu system displayed on a high bright 20x4 LCD display. 8 feature buttons, 4 either side of the display, are used to make the appropriate selection in accordance with the current menu page.

The controller supports multiple protocols including Pelco-D, Pelco-Pand Iris's Pelco-Hybrid variant and can control Iris 116, 117, 118, 106 and 130 cameras as well as Iris 216 and 316 Thermal Imaging PTZ cameras. You can also control third party cameras that support Pelco protocols.



Waterproof



Security

Camera Controllers





IRIS565

Take full control of your on board cameras with the new 6.5" daylight viewable touch screen controller from Iris Innovations.

Take full control of your on board cameras with the new 6.5" daylight viewable touch screen controller from Iris Innovations. With helm space being of a premium, the best way to access the in depth features of Iris's range of PTZ and Thermal PTZ cameras is via the new IMTED- 65 touch screen controller

Access and control your cameras features easily via the multi-layered interface. **Built in password protection and system setup features allow you to tailor your on board system to your exact requirements.**



Waterproof



Security

Camera Controllers





IRIS506 / 507



Control your on board PTZ cameras with precision using the new KBD-16 range of 3 axis camera controllers.

Consisting of a Joystick Head unit which is installed at the helm and a small control box which stows away safely out of sight, the IRIS506 / 507 controllers are simple to install and take up as little room as possible.

The responsive joystick controls pan, tilt and full optical and digital zoom operation, and the 16T variants also have 2 feature keys to select certain scene modes and colour palettes. Multiple controllers can be used to control cameras by adding an IM-EXP- 485 serial data expander. IRIS506 / 507 controllers are designed to offer basic control, in limited space, whereas full functional control is achieved via the IRIS65 touchscreen controller.



Waterproof



Security

Camera Controllers



/boatcameras





IP2 Hi-Def WDR IP Camera 2MP

The NEW IP2 Network Camera from Iris Innovations. **Sleek, Compact and Feature Rich.** Ideal for on board surveillance, situational awareness and for Sports Fishing applications.

Measuring only 10cm x 6cmØ & weighing only half a kilogram the IP2 can be mounted easily around your boat - even to outriggers, & with dual video outputs (IP & Analogue Composite), interfaces easily with standard or networked systems. The camera's high definition 2 Megapixel video is enhanced by Wide Dynamic Range processing for operation in bright, highly reflective conditions. In addition, the camera features built-in Infra Red illumination & True' Day Night operation via a mechanical IR Cut-out filter for optimised performance in low light conditions.

In addition to the benefits high definition offer, additional network features such as built in video motion detection, on-board video storage, email notification & FTP uploads make the IP2 an extremely powerful on board camera, useful in multiple ways, especially as more & more marine electronics manufacturers migrate their platforms to IP standards. The IP2 is the first marine camera of its class to deliver both analogue & network functionality in a housing both robust & visually attractive enough to benefit the tough requirements of the marine electronics market.



Waterproof



High-Definition



2 Mega Pixel



Low Light



Sports Fishing



ONVIF



PoE

Camera Controllers



Monitors

New Matrix VSXaabb · DS0Q4 Quads Switcher · DSQ06 Channel SwitcherQ7





MON05

The IM-MON-5WP packs a high resolution feature rich 3 input switcher into a low profile and rugged, 5" monitor unit making it the perfect on board camera monitoring head unit. The unit is also certified IP66 meaning it can safely be used in both internal or external helm positions. An intuitive on screen menu system make it simple to configure each camera input as PAL or NTSC, or as Standard or Mirror Image which means you don't have to go through the hassle of specifying difficult to source cameras.



Waterproof



Security



Situational Awareness



Engine Room



Sports Fishing



MONQ7

Introducing the Amazing NEW video quad monitor from Iris Innovations. IP67 Waterproof & Rugged Housing make it the perfect on board camera monitoring solution. The IM-MON-Q4 packs a high resolution feature rich video quad switcher into a low profile and rugged, 7" widescreen monitor unit making it the perfect on board camera monitoring head unit. The unit is also certified IP67 meaning it can safely be used in both internal or external helm positions.



Waterproof



Security



Situational Awareness

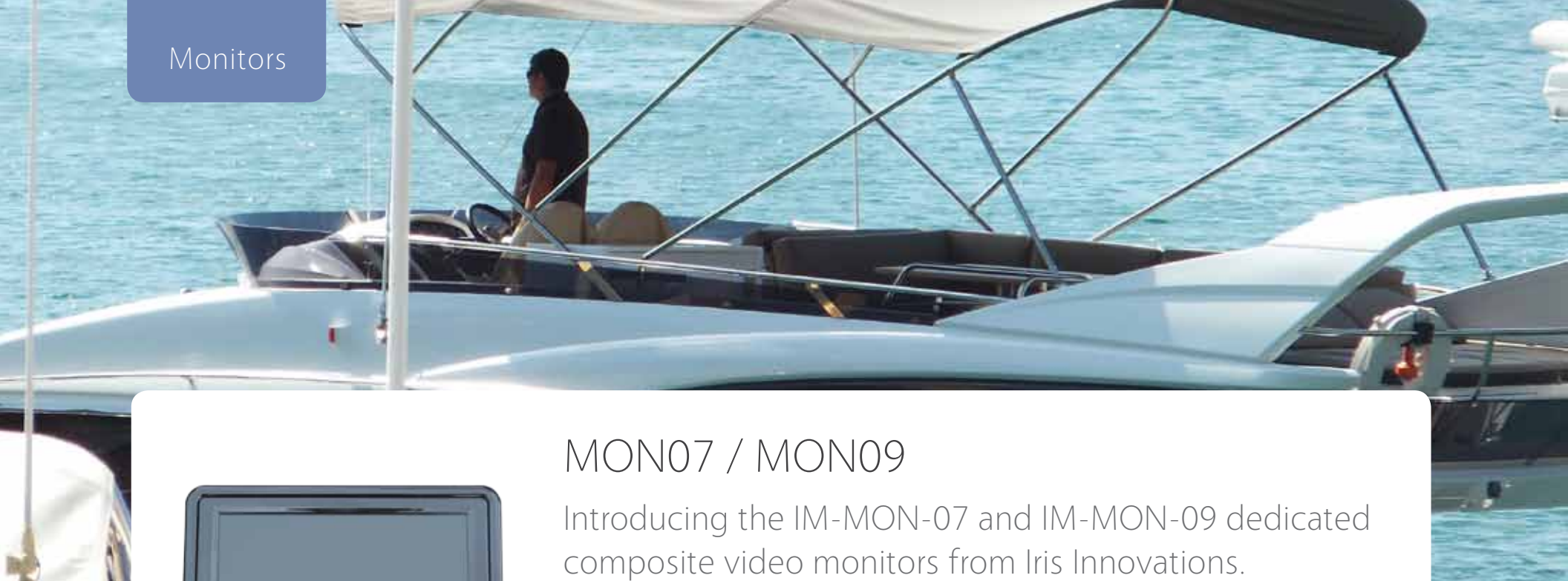


Engine Room



Sports Fishing





MON07 / MON09

Introducing the IM-MON-07 and IM-MON-09 dedicated composite video monitors from Iris Innovations. For applications where a separate video screen is required to view on board camera systems, or where chart plotters do not have a built in video function.

The MON-07/09 both feature dual video inputs, simple front panel operation, high bright displays. Added features include horizontal and vertical mirror function. Horizontal mirror especially useful for rear facing cameras.

The MON-07/09 units are built into stylish, low profile lightweight plastic housings. Extremely easy to install and operate, and with very low power consumption, these new monitors are a perfect solution for monitoring your boat's camera system.



Situational Awareness



Engine Room



Sports Fishing



Security

Monitors





Switchers

VSX0804 · VSX1608 Video Matrices · IRIS604 Quad Switcher · IRIS606 Video switcher



VSX0804 / VSX1608

WITH Iris's VSX series video matrix switchers it's now possible to view your on board cameras on multiple monitors including chart plotters, TV's & dedicated camera monitors.



The new range of VSX matrix switchers from Iris are available in two configurations and have been especially designed for on board camera systems. The VSX0804 has 8 camera inputs and 4 video outputs and the VSX1608 features 16 camera inputs and 8 video outputs. Whereas standard on board video switchers cater for limited camera inputs and only a single video output, Iris' new VSX switchers **allow users to select different camera and monitor combinations making the VSX range the most flexible on board video management solution available.**

Control is achieved via the new IRIS516 controller or from the IRIS565 Touch Screen controller. Simply select the requested camera and then choose your desired monitor. **The switcher itself is build into a rugged, compact enclosure that's designed to be stowed out of view so there are no unsightly cables on show.** Cameras and monitors connect into the device via dedicated cable tails, making installation a breeze and reducing cost.



Situational Awareness

Waterproof
front panel / bezel only

Sports Fishing



Security

Switchers





IRIS604

The IRIS604 Video Quad Switcher from Iris Innovations is a unique purpose designed marine video switcher to allow up to four CCTV camera images to be displayed individually or simultaneously on a single video screen or chart plotter.

Housed in a rugged ABS plastic housing, the switcher unit itself features four camera inputs and a dual camera output. Control of the switcher is provided by a small, water resistant and UV stabilised keypad controller measuring only 74mm x 74mm mounted on the helm, which means the switcher unit and cabling can safely and neatly be stored well out of the way making for a safer and neater installation.

Additional keypads can be added to provide multiple control positions.

In addition to the individual camera and quad video display options, camera inputs can be inset into other images to provide a picture in picture display. Images can be paused for analysis, and a digital zoom feature allows even further scrutiny. Video loss alarms also alert the in the event that a camera input fails.



Situational Awareness



Waterproof
front panel / bezel only



Sports Fishing



Security

Switchers





IRIS606

The DCS606 Video Quad Switcher from Iris Innovations is a unique purpose designed marine video switcher to allow up to four CCTV camera images to be displayed individually or simultaneously on a single video screen or chart plotter.

- 6 Composite Video Outputs
- 2 Video Outputs (Looped)
- 10cm x 10cm Low Profile, UV Stabilised Keypad
- Switcher installed out of the way, control via KBD06 Keypad (supplied)
- Auto Sequence
- Programmable Dwell Times
- Supports Multiple KBD06 Keypads



Situational Awareness



Waterproof
front panel / bezel only



Sports Fishing



Security

Switchers



Digital Video Recorder

DVR04 / DVR08 · GSM Module with Alarms





DVR04 / DVR08

Iris Innovations range of on board DVR's turn your boat's cameras into a fully integrated security system.

Available in 4 or 8 camera options, features include an **integrated video web server to allow viewing and control of your cameras across the internet**, multi-protocol PTZ control, alarm inputs and outputs, optional GPS input, video motion detection and much much more... Housed in a standard 1 DIN case for easy installation, the IM-DVR-04/08 features a stylish front panel for simple and intuitive operation.

The **built in 2.5" SATA 2 hard drive is mounted on anti-vibration mounts and the unit also features a built in heater**. Each camera input can be individually configured so recording rates can be set independently. Frame rates can also be set to chance depending on alarm conditions or at specif times.



Situational Awareness



Waterproof
front panel / bezel only



Sports Fishing



Security

Digital Video Recorder





GSM02 Alarm / Relay Communicator Module

The new GSM02 from Iris Innovations allows boat owners to monitor up to 8 on board alarms, control two remote devices via relay contacts and provides 2-way audio remote communication, all from their mobile phone.

The GSM02 Communicator is simple to install and can be programmed using a USB Programming Tool with a Windows PC (optional), or via text messages from a mobile phone. Using Data-Only SIM cards which can be purchased Pay As You Go, no contract is necessary, and credit is only used on alarm activations or when you dial in and interact with the device. The device can even be configured to send you a text message to warn when credit is low. The 2 built in relay contacts can control devices such as heaters, lights, bilge pumps, air-con, cameras and any other on board equipment you may wish to operate whilst you're away from your boat. Additionally, the unit features 8 inputs for standard

alarms such as PIR's, Pressure Pads, Beams etc. Upon activation, a text message, or multiples texts can be sent to alert you, your key-holder or the marina office. You can also open a 2 way audio connection to communicate with whoever has come aboard, and operate any device connected to one of the 2 relays such as a siren or other security device. Key Features Include: GSM Text message alert system. Remote switching of relays to control devices such as lights, heaters, security systems. Provides the ability to talk and listen via any telephone. Capable of sending text messages to 4 destinations. Acts as a GSM Digicom using standard fast format protocol



Security

Digital Video Recorder





Brackets

Two fixing brackets are available for IRIS116 series cameras (116, 117 & 118).

BRK-P160 The BRK-P160 is a plate which enables the camera to be flush mounted onto a flat surface. The camera sits into a 5mm counterbore within the 10mm thick x 170mm diameter plate which in turn fixes directly onto the boat.

BRK-16 The BRK-16 is a swing arm bracket that enables the camera to be fixed to a vertical surface such as a bulkhead or mast. The cameras position can be adjusted by means of a pivot in order to achieve the best desired view.

Pre-Made Cables

Iris manufacture a range of pre-made video, data, power and combined signal cables to make life easier for installers.

Cables are available to any desired length & are identified accordingly:

Video Cables: RG59 75Ω Coaxial Cable, terminated with male BNC jacks at each end.

BNC-xx Where xx denotes the desired length in meters.

Power Cables: 2 core, 50v / 5A Cable for DC Equipment.

POW-xx Where xx notes the desired length in meters.

Data Cables: 2 x Twisted Pair data cable with drain wire

JOY-xx Where xx notes the desired length in meters.

Video/Power Combination Cable.

COMB-xx Where xx notes the desired length in meters.

Video/Power/Data Combined Cable (Ideal for controllable PTZ cameras)

COMBPTZ-xx Where xx notes the desired length in meters.

Connecting Multiple Devices (Data)

All Iris PTZ cameras, controllers and matrices communicate using RS485 serial data communications. Although it is possible to connect devices in a star configuration or a daisy chain configuration, cross talk is always a risk which leads to dropped communications and camera 'over-runs'. This symptom can be eliminated by connecting control devices to cameras / matrices using a data expander. Iris offer a 2 input x 4 output data expander with the following part number:

IM-EXP-02/04 Allows connection of 2 controllers and 4 devices (cameras or matrices)

For larger installations, please contact Iris. We can source data expanders in accordance with your requirements.

Video Distribution Amplifiers (VDA's) Iris offer a simple 1 input x 4 output video distribution amplifier with the following part number:

IM-VDA-01/04 1 video input / 4 video outputs

This can be used to distribute video signals to monitoring / switching positions around the vessel whilst avoiding interference to the signal.

Iris can also supply alternative configuration amplifiers if required. Please contact us for more details.

IM-GPC-20

Dimensions	126 (W) x 69 (H) x 67 (D)mm
Weight	700g
Material	Aluminium Hard Anodysed / White Powder Coat Finish
Imaging	1/3" SONY CCD
Horizontal Resoluiton	540 TVL Low Illumination
Pixels PAL	795(H) x 596(V) NTSC: 811(H) x 508(V)
TV System	PAL / NTSC
Scanning PAL	625 Lines, 50 Field/Sec; NTSC:525 Lines, 60 Field/Sec
White Balance	Automatic
Synchronization	Internal
Output Signal	Composite Video 1V P~P 75Ω
Usable Illumination	0 Lux / F2.0 (LED ON)
Shutter Speed Auto	PAL 1/50~1/100,000 Sec ; NTSC 1/60 ~1/100,000 Sec
IR Status	Under 10 Lux by CDS
Connections	Video via BNC Female / Power via DC Jack 2.1mm
Lens	3.6mm Fixed
Illumination	23 Pieces / IR Distance = 20 meters
Power	DC12V 300mA
Operating Temperature	-10°C ~ +50° Relative Humidity 95% Max
Environmental Rating	IP66
Signal / Noise	48db or more (AGC OFF)
Gamma	0.45

IM-ERC-02

Dimensions	66mmØ x 188mm
Weight	300g
Material	Stainless Steel / White Powder Coat Finish
Imaging	1/3" SONY CCD
Horizontal Resoluiton	420 TVL Low Illumination
Pixels PAL	510(h) x 492(v)
TV System	PAL / NTSC
Scanning PAL	2:1 Interlaced
White Balance	Automatic
Synchronization	Internal
Output Signal	Composite Video 1V P~P 75Ω
Usable Illumination	0 Lux / F2.0 (LED ON)
Shutter Speed Auto	PAL 1/50~1/100,000 Sec ; NTSC 1/60 ~1/100,000 Sec
IR Status	Under 10 Lux by CDS
Connections	Video via BNC Female / Power via DC Jack 2.1mm
Lens	3.6mm Fixed
Illumination	23 Pieces / IR Distance = 20 meters
Power	DC12V 300mA
Operating Temperature	-10°C ~ +50° Relative Humidity 95% Max
Environmental Rating	IP68
Signal / Noise	48db or more (AGC OFF)
Gamma	0.45

IM-PTZ-16T-V-L

Video System	PAL/NTSC Switchable	PAL/NTSC Switchable
Image Sensor	IRIS640 ASI Microbolometer	IRIS640 ASI Microbolometer
Resolution	640 x 480	640 x 480
Total Effective Pixels	307,200	307,200
Refresh Rate	7.5Hz NTSC / 8.3Hz PAL	30Hz NTSC / 25Hz PAL
Spectral Response	8~14~µm	8~14~µm
Pixel Pitch	17µm	17µm
Lens	25mm	25mm
Digital Zoom	Continuous to 1 pixel	Continuous to 1 pixel
Horizontal Field of View	25°	25°
Vertical Field of View	18.5°	18.5°
Diagonal Field of View	30.8°	30.8°
Detection on 1.8m	Target 881m	Target 881m
Detection on 2.3m	Target 2.496 kilometers	Target 2.496 kilometers
Minimum Illumination	Not Required	Not Required
Thermal Sensitivity	<50mK	<50mK
Digital Image Stabilization	YES	YES
Video Output	1.0 Vp~p Composite Video	1.0 Vp~p Composite Video
Image Flip	Vertical & Horizontal	Vertical & Horizontal
Scene Modes	5 Modes - Day, Night, Fog, Marina, Man Over Board. Mode Off - MEAN	5 Modes - Day, Night, Fog, Marina, Man Over Board. Mode Off - MEAN
Colour Palettes	9 each with reverse polarity: Monochrome, Redscale, Bluescale, Greenscale, Ironbow, Isotherm, High Contrast, Hot Metal, Rainbow	9 each with reverse polarity: Monochrome, Redscale, Bluescale, Greenscale, Ironbow, Isotherm, High Contrast, Hot Metal, Rainbow
Positional Indicator	YES. 360° divided into 16 Segments at 22.5°	YES. 360° divided into 16 Segments at 22.5°
Heater	YES	YES
Safe Position	YES	YES
Video Pause	YES	YES
Standby Mode	YES	YES
Communications Protocol	RS485 Pelco D / Iris Variant	RS485 Pelco D / Iris Variant
Dimensions	163mm x 130mmØ	163mm x 130mmØ
Power	5VDC ~ 36VDC	5VDC ~ 36VDC
Consumption	6A Peak on Boot-Up(<1sec) then 600mA Nominal / 900mA Under Drive	6A Peak on Boot-Up(<1sec) then 600mA Nominal / 900mA Under Drive
Weight	1.38Kg	1.38Kg
Environmental	IP66 / EN60945	IP66 / EN60945
Operation Temperature	-30°C ~ +55°C	-30°C ~ +55°C
Pan / Tilt Range Tilt:	0.03~38°/sec. Full: Pan 0.05~220°/sec Tilt: 0.03~140	0.03~38°/sec. Full: Pan 0.05~220°/sec Tilt: 0.03~140
Pan Speed Normal	0.05~70°/sec Full: 0.05~220°/sec	0.05~70°/sec Full: 0.05~220°/sec
Tilt Speed Normal	0.03~38°/sec Full: 0.03~140°/sec	0.03~38°/sec Full: 0.03~140°/sec
User Presets	100 User Definable	100 User Definable
Tours	4 Tours / 10 User Definable Positions per Tour	4 Tours / 10 User Definable Positions per Tour
Scans	45° / 90° / 180° / 360° Random	45° / 90° / 180° / 360° Random

IM-PTZ-16T-V-H



IRIS095

Dimensions	207mm x 96mm
Weight	900g
Material	Aluminium Hard Anodysed / White Powder Coat Finish
Imaging	1/3" SONY Super HAD II CCD
Horizontal Resoluiton	680 TVL Low Illumination
Pixels	PAL: 752(H) x 582(V) NTSC: 768(H) x 495(V)
TV System	PAL / NTSC
Scanning	PAL:625 Lines, 50 Field/Sec; NTSC:525 Lines, 60 Field/Sec
White Balance	Automatic
Synchronization	Internal
Output Signal	Composite Video 1V P-P 75Ω
Usable Illumination	0 Lux / F1.2 (LED ON)
Shutter Speed	Auto:PAL 1/50~1/100,000 Sec ; NTSC 1/60 ~1/100,000 Sec
IR Spectrum	850nm
Connections	Video via BNC Female / Power via DC Jack 2.1mm
Lens	12mm Fixed as Standard
Illumination	2 Pieces / IR Distance = 100 meters
Power	DC12V 300mA
Operating Temperature	-10°C ~ +60° Relative Humidity 95% Max
Environmental Rating	IP66
Signal / Noise	48db or more (AGC OFF)
Gamma	0.45

IM-PTZ-16t Thermal Camera

Dimensions	160(H)mm x 130(D)mm
Weight	1.2Kg
Material	Durable, UV Stabilized Plastic Housing. Aluminum Fixing Plate. Carbon Effect Body
Image Resolution	384 x 288 Pixels (Total Pixels: 110,592)
Thermal Engine	Uncooled Amorphous Silicone (a-Si) Microbolometer Thermal Core
Video System / Output	PAL / NTSC - 1 x BNC Connector / 1vP-P, 75Ω Composite Video
Range	Detect @ 375m; Recognise @ 95m; Identify @ 47m
Lens	15mm Fixed Lens (35° Horizontal Field of View)
Image Frequency	8.3 or 25 Hz (PAL) / 7.5 or 30Hz (NTSC) / LWIR (Long Range Infra Red)
Modes	Greyscale, Red-Black, Ironbow, 4 x Selectable Contrast settings
Pan / Tilt Speed Pan	0.05~240°/sec ; Tilt: 0.03~160°/sec
Pan / Tilt Range Pan	0~360° Continuous Rotation ; Tilt: -15°~90° with Auto Flip Feature
Zoom Control	2 Levels of Digital Zoom, x2 & x4
Shock / Vibration	MIL-PRF-28800F, Class 2 Sctn 4.5.5.3.1 / MIL-PRF-28800F, Class 2 Sctn 4.5.5.4.1
Control Mode	RS485 Serial / Iris Protocol
Relative Humidity	5% ~ 90~
Power	12vdc / 15W Max
Operating Temperature	-25°C ~ +70°C

IM-PTZ-16 PTZ Camera

Dimensions	160(H)mm x 130(D)mm
Weight	1.2Kg
Material	Durable, UV Stabilized Rugged Plastic Housing. Aluminum Fixing Plate
Image Resolution	480 TVL
Illumination	0.01 Lux / Mechanical Day/Night Colour/Mono Filter
Video System	PAL / NTSC
Video Output	1 x BNC Connector / 1vP-P, 75Ω Composite Video
Lens	f1.6 ~ f3.8 / f = 3.5 ~ 91mm / Auto Focus, Manual Focus
Camera Module	Sony FCB-EX980
Picture Effects	E-Flip, Nega Art, Black & White, Mirror Image
Pan / Tilt Speed	Pan: 0.05~240°/sec ; Tilt: 0.03~160°/sec
Pan / Tilt Range Pan	0~360° Continuous Rotation ; Tilt: -15°~90° with Auto Flip Feature
White Balance	Auto, Auto-Trace (ATW), Indoor, Outdoor, One-Click Manual Modes
Gain Control	Auto / Manual (-3~28db, 2db stepping)
Control Mode	RS485 Serial / Pelco D Protocol
Relative Humidity	5% ~ 90~
Power	12vdc / 15W Max
Operating Temperature	-25°C ~ +70°C

DVR04 & DVR08

Dimensions	178(W) x 210(D) x 50(H)mm
Weight	2.0kg without 2.5" SATA II HDD
Material	Lightweight Aluminum Casing, Plastic Fascia
Operating System	Embedded Linux 2.6
Operation	Simultaneous record, live, playback, control & remote
Video System	PAL / NTSC Switchable
Video Inputs	IM-DVR-04: 4 Inputs / IM-DVR-08: 8 Inputs 1V p-p
Main Monitor	BNC x 1, S-Video, 1vp-p / 75Ω, Optional VGA
Loss Detection	Per Channel
Motion Detection	Configurable Detection Area & Sensitivity by Channel
Audio	2 RCA Jack, Line in level (100m V-2 Vrms) Out >2 Vrms
Recording Compression	Video - H.264 / Audio ADPCM
Frame Rate / Resolution	NTSC - 30 / 720*480, 60 / 720*240, 120 / 360*240 PAL - 25 / 720*576, 50 / 720*288, 100 / 360*288
Watermark	YES
Network	RJ45 10/100 BaseT Ethernet
Web	Remote setup, backup, monitoring, alarm notifications
Remote Stations	PC, Cell Phone, PDA
Power Requirement	+12 or 24VDC (Range +9 ~ 30 VDC)
Power Output	Up to 1A Max
Operating Temperature	0°C ~ +50°C / Built in Heater

IRIS130

Sensor	1/3" Colour Sony Super HAD II CCD
Video System	PAL / NTSC
Sensitivity	0 Lux @ F1.2 (Infrared LED On)9
Resolution	1/3" SONY Super HAD II CCD
TV Lines	550 TVL
Image Stabilization	On / Off
Lens	f=3.5mm~98mm F1.35 to F3.7
Digital Noise Reduction	1~5 Steps
Video Output	1 V P-P, 75Ω Composite, BNC
Infrared Spectrum	840nm
S/N Ratio	More than 50db (AGC OFF)
Infrared Lamp Power	30W
Lamp Brightness	2100 LM
Illumination Range	120 Meters
Colour Temperature	6500K
Wide Dynamic Range	Yes (150X)
Day Night Filter	Mechanical Colour/Mono
Pan Speed	0.04° ~ 120° sec adjustable
Tilt Speed	0.3° sec ~ 90° sec adjustable
Environmental	IP67
Protocol	Pelco D / Pelco P
Power Supply	9~36VDC
Current Consumption	20W min / 70W Max
Dimensions	190mm x 275mm
Net Weight	4.9KG
Operating Temperature	-45°C ~ +65°C

IM-DCS-01

Dimensions	134 (W) x 82 (H) x 53 (D)mm
Weight	400g
Material	Aluminium Hard Anodysed / White Powder Coat Finish
Imaging	1/3" SONY CCD
Horizontal Resoluiton	420 TVL Low Illumination
Pixels PAL	795(H) x 596(V) NTSC: 811(H) x 508(V)
TV System	PAL / NTSC
Scanning PAL	625 Lines, 50 Field/Sec; NTSC:525 Lines, 60 Field/Sec
White Balance	Automatic
Synchronization	Internal
Output Signal	2 x Composite Video 1V P-P 75Ω
Usable Illumination	0.8 Lux / F1.2
Shutter Speed Auto	PAL 1/50~1/100,000 Sec ; NTSC 1/60 ~1/100,000 Sec
IR Status	N/A
Connections	Video via 2 x BNC Female / Power via DC Jack 2.1mm
Lens	3.6mm Fixed (other options available upon request)
Illumination	IR Version available soon!
Power	DC12V 120 mA (60mA per camera module)
Operating Temperature	-10°C ~ +50° Relative Humidity 95% Max
Environmental Rating	IP66
Signal / Noise	48db or more (AGC OFF)
Gamma	0.45

IM-PTZ-16P

Video System	PAL	NTSC
Image Sensor	1/4" SONY Super HAD CCD II	1/4" SONY Super HAD CCD II
Resolution	752H x 582V	768H x 494V
TV Lines	550 TVL	550 TVL
Total Effective Pixels	Approx 440K	Approx 380K
Lens	f=3.5mm(wide) to 98mm(tele)	f=3.5mm(wide) to 98mm(tele)
Optical Zoom	28 x Optical	28 x Optical
Digital Zoom	12 x Digital	12 x Digital
Horizontal Field of View	55.8° (wide) to 2.1° (tele)	55.8° (wide) to 2.1° (tele)
Video Output	1.0 Vp-p Composite Video 75Ω	1.0 Vp-p Composite Video 75Ω
Image Flip	Vertical / Horizontal	Vertical / Horizontal
Positional Indicator	YES	YES
Communications Protocol	RS485 Half Duplex - Pelco D (Iris Command Mapping)*	RS485 Half Duplex - Pelco D (Iris Command Mapping)*
Dimensions	160mm x 130mmØ	160mm x 130mmØ
Power	8 ~ 30 VDC. <1000mA@ 12VDC	8 ~ 30 VDC. <1000mA@ 12VDC
Weight	1.2 kg	1.2 kg
Environmental	IP66	IP66
Pan Range	360° Continuous Rotation	360° Continuous Rotation
Pan Speed	0.05~70°/sec Normal / 0.05~240°/sec Max Speed	0.05~70°/sec Normal / 0.05~240°/sec Max Speed
Tilt Range	-15° ~ 90° / Auto-flip / 90 ~ -15° (Total 210° Tilt Range)	-15° ~ 90° / Auto-flip / 90 ~ -15° (Total 210° Tilt Range)
Tilt Speed	0.03~38°/sec Normal / 0.03°~140°/sec max Speed	0.03~38°/sec Normal / 0.03°~140°/sec max Speed
User Presets	100 User Presets + 79 Presets reserved for Scan & Tours	100 User Presets + 79 Presets reserved for Scan & Tours
Tours	4 User Definable Tours of 10 presets each Scans Narrow Scan, Wide Scan, Random Scan, Autoscan	4 User Definable Tours of 10 presets each Scans Narrow Scan, Wide Scan, Random Scan, Autoscan

*Certain extended features not available through generic Pelco D control devices or IM-KBD-16 Joystick Controller. For Iris Protocol details contact Iris Innovations.

IM-PTZ-16N

Specifications Tables

IM-DCS-Q4 Video Quad Switcher

Dimensions - Switcher	280(W) x 180(D) x 60(H)mm
Dimensions - Keypad	74(W) x 74(D) x 10(H)mm
Material	Enclosure, ABS Plastic. Keypad Bezel, Delrin UV Stabilised Keypad, UV Stabilised Membrane Keypad
Video Inputs	4 x Composite Video 1vP~P 75Ω
Video Outputs	2 x Parralled Composite Video 1vP~P 75Ω
Video System	PAL / NTSC Switchable
Video Inputs	IM-DVR-04: 4 Inputs / IM-DVR-08: 8 Inputs 1V p-p
Video Connections	BNC 75Ω
Control	Via KBDQ4 Keypad (Supplied)
System Expansion	Via additional KBDQ4 Keypads, connected in parallel
Power Requirement	12VDC ±3V <400mA (300mA Typical at 12VDC)
Temperature / Humidity	Keypad -20°C ~ +60°C

IM-DND60

Sensor	1/3" Colour Sony Super HAD II CCD
Video System	PAL / NTSC
Sensitivity	0 Lux @ F1.2 (Infrared LED On)
Resolution	752H x 582V
TV Lines	540 TVL
Scanning System	625 TVL / 2:1 Interlace
Lens	f3.6mm Standard Lens
Lens Mount	M12 x P0.5mm Thread
Video Output	1 V P-P, 75Ω Composite, BNC
Infrared Spectrum	850nm
S/N Ratio	More than 50db (AGC OFF)
Infrared LEDs	LEDS 6 LEDs
Infrared Range	5 Meters
Gain Correction	Auto
White Balance	Auto
Electronic Shutter	Auto
Back Light Compensation	Auto
Gamma Ratio	0.45
Day / Night Operation	Switch to Monochrome
Environmental	IP66
Synchronization	Internal
Power Supply	9~36VDC
Current Consumption	12VDC ± 10%, 2.1mm DC Jack
Dimensions	57 x 60mm
Net Weight	320 grams
Operating Temperature	-10°C ~ +50°C

IM-DCS-35

Sensor	1/3" Colour Sony Super HAD II CCD
Video System	PAL / NTSC
Sensitivity	0 Lux @ F1.2 (Infrared LED On)
Resolution	752H x 582V
TV Lines	540 TVL
Scanning System	625 TVL / 2:1 Interlace
Lens	f3.6mm Standard Lens
Lens Mount	M12 x P0.5mm Thread
Video Output	1 V P-P, 75Ω Composite, BNC
Infrared Spectrum	850nm
S/N Ratio	More than 50db (AGC OFF)
Infrared LEDs	12 LEDs
Infrared Range	8 Meters
Gain Correction	Auto
White Balance	Auto
Electronic Shutter	Auto
Back Light Compensation	Auto
Gamma Ratio	0.45
Day / Night Operation	Switch to Monochrome
Environmental	IP67
Synchronization	Internal
Power Supply	9~36VDC
Current Consumption	12VDC ± 10%, 2.1mm DC Jack
Dimensions	54 x 43mm
Net Weight	106 grams
Operating Temperature	-10°C ~ +50°C

IP2 Hi-Def WDR IP Camera 2MP

System	Embedded Linux, ARM based 32-Bit RISC Processor, 16MB Flash ROM
Video Compression	H.264, MPEG4, MJPEG
Resolution	Up to HD1080 (1920x1080)
Frame Rate	30fps
Image Sensor	1/2.7" Progressive Scan CMOS sensor
Lens	Board type, 4.0mm, F1.5, Fixed Iris as standard. Others by request
Minimum Illumination	0 Lux with IR ON ICR (Removable IR-cut filter) for Day & Night Vision WDR / AEC / AWB / Brightness, Contrast, Saturation, Sharpness
Image Settings	Image Flip & Mirror OSD Timestamp and text caption overlay
Event Triggers	Motion Detection, Digital Input, Manual Trigger
Event Actions	Digital Output Email Notification, FTP, SD with attached video clip or snapshot
On-board Storage	Micro SD card slot (4MB Max)
Network Interface	10/100 Base-T ethernet
Network Protocols	IPv4, HTTP, HTTPS, SMTP, FTP, DHCP, NTP, TCP/IP, UPnP, RTSP/RTMP/RTCP, DNS, DDNS, PPPoE, IGMP, QoS, Bonjour, Samba, Multicast
Power Supply	DC 12V / 2A Maximum. Built in PoE IEEE 802.3af compliant
Operating Temperature	-10°C ~ 50°C (14°F ~ 122°F)
Operating Humidity	20% - 90% RH
Dimensions	(L x W x H) 114mm x 60mm x 60mm
Net Weight	548 grammes
Approvals	CE, FCC, ONVIF Compliant
Connections	1 x RJ45 ethernet LAN connector 2 x Phono Jacks (external MIC In and Audio out) 1 x DC 12V Jack connector 2.1mm Barrel type. 1 x BNC Connector Micro SD Card Slot



1. Interpretation 1.1 In these Conditions: IRIS INNOVATIONS LIMITED TERMS & CONDITIONS OF SALE "Buyer" means the person whose order for the Goods and/or Services is accepted by the Seller "Conditions" means these standard terms and conditions of sale and (unless the context otherwise requires) includes any special terms and conditions agreed in writing between the Buyer and the Seller "Contract" means the contract for the purchase and sale of the Goods and/or Services "Delivery" means the actual or deemed delivery of the Goods in accordance with clause 6 "Goods" means the goods (including any installment of the goods) which the Seller is to supply in accordance with these Conditions "Order Acknowledgement" means the acceptance in writing by the Seller in response to the Buyer's order, to sell the Goods and/or provide the Services in accordance with the Seller's quotation "Seller" means Iris Innovations Limited "Services" means the services that the Seller is to supply in accordance with these Conditions. 1.2 Any reference in these Conditions to any provision of a statute shall be construed as a reference to that provision as amended, re-enacted or extended at the relevant time. 1.3 The provisions of Appendices 1-4 shall apply in addition to these Conditions where stated on the Order Acknowledgement to be applicable.

Basis of the Sale

2.1 The Seller shall sell and the Buyer shall purchase the Goods and/or Services in accordance with any written or electronic (email) order of the Buyer which is accepted by the Seller by way of Order Acknowledgement, subject in either case to these Conditions, which shall govern the Contract to the exclusion of any other terms and conditions. Unless otherwise agreed in writing, prior communications between the parties concerning the Goods or Services do not form part of the Contract. 2.2 No variation to these Conditions shall be binding unless agreed in writing by a Director of the Seller. No other employee or agent of the Seller is authorised to make any representation varying these Conditions. 2.3 The Seller endeavours to ensure that all descriptions, drawings and other information in sales literature and other documentation issued by the Seller is accurate, however, all of the foregoing are intended to give a general idea of the Goods and, except where expressly stated on the Order Acknowledgement, do not form part of the Contract. 2.4 Typographical or clerical errors or omissions in quotations, price lists, Order Acknowledgements, invoices or other such documentation issued by the Seller shall be subject to correction without any liability on the part of the Seller. 2.5 Any performance data, which may be given by the Seller to the Buyer, are based on the Seller's experience and give only an indication of the performance levels the Goods are expected to achieve. The Seller accepts no liability for failure of the Goods to achieve such performance levels unless they have been specifically guaranteed in writing by the Seller on the Order Acknowledgement and provided that such failure is outside of any tolerance limits which may be applicable in the relevant industry.

Orders

3.1 All quotations given by the Seller shall be valid for the period stated on the quotation. 3.2 No order submitted by the Buyer shall be deemed to be accepted by the Seller unless and until confirmed by way of Order Acknowledgement. 3.3 The quantity, quality and description of and any specification for the Goods and/or Services shall be those set out in the Order Acknowledgement. 3.4 No order which has been accepted by the Seller may be cancelled by the Buyer except with the agreement in writing of the Seller and on terms that the Buyer shall indemnify the Seller in full against all loss (including loss of profit), costs (including the cost of all labour and materials), damages, charges and expenses incurred by the Seller as a result of such cancellation. 3.5 In the event that the Buyer wishes to amend an order, the Buyer should notify the Seller in writing and the Seller will respond within 14 days of receipt of such notification with details in writing of any timescale and/or price implications of such proposed amendment. The Buyer must then advise the Seller in writing within 7 days of receipt of such response whether it wishes to proceed with the proposed amendment on that basis. 3.6 Goods supplied pursuant to the Contract may be subject to United Kingdom export control and may also be subject to export and/or import restrictions in other countries. The Buyer shall not and shall procure that its buyers do not, sell or re-export the Goods outside of the European Community to buyers in any countries to which the export of the Goods is controlled under English or other applicable law unless the Buyer has obtained all relevant licences and has complied with all such applicable laws and regulations. The Seller shall give the Buyer reasonable assistance in obtaining any relevant licences or permissions but accepts no liability for the Buyer's failure to comply with the above.

Price

4.1 The price of the Goods and/or Services shall be the price quoted by the Seller and confirmed in the Order Acknowledgement. 4.2 Except as otherwise stated in the Order Acknowledgement prices for Goods shall be ex-works (as defined in Incoterms 2000) the Seller or the Seller's supplier and where the Seller agrees to deliver the Goods otherwise than at the premises of the Seller or its supplier, the Buyer shall be liable to pay the Seller's charges for any transport, packaging and insurance as stated on the Order Acknowledgement. 4.3 The price is exclusive of VAT or other applicable value added tax and other taxes including but not limited to import duties, which the Buyer shall be additionally liable to pay for where appropriate.

Terms of Payment

5.1 Unless otherwise agreed in writing by the parties payment of the price shall be due and payable in sterling within 30 days following the date of the invoice. 5.2 If the Buyer fails to make any payment on the due date then, without prejudice to any other right or remedy available to the Seller, the Seller shall be entitled: 5.2.1 to cancel the Contract or suspend any further deliveries or Services to the Buyer; IPU 40010 Issue 3 IPU 40010 Issue 3 5.2.2 to appropriate any payment made by the Buyer to such of the Goods or Services (or the goods or services supplied under any other contract between the Buyer and the Seller) as the Seller may think fit (notwithstanding any purported appropriation by the Buyer); and 5.2.3 to charge interest to the Buyer at a rate of 2% per month on the unpaid balance (such interest to accrue on a day to day basis from the due date for payment until receipt by the Seller of the full amount whether before or after judgement); and 5.2.4 the Buyer shall indemnify the Seller against all costs and expenses (including any legal costs and expenses on a full indemnity basis) incurred or sustained by the Seller in recovering sums due or in exercising rights pursuant to Clause 5. 5.3 In the event that the Seller cancels any Contract in accordance with clause 5.2.1, the Buyer shall reimburse the Seller in full for all losses (excluding loss of profit), costs (including the cost of all labour and materials) and non-cancelable commitments, damages, charges and expenses which the Seller has incurred as a result of Goods ordered by the Buyer

Delivery

6.1 Unless otherwise agreed all deliveries are ex-works and in accordance with the terms defined in Incoterms 2000. Where the Goods are to be collected by the Buyer, Delivery occurs when the Goods are handed over to the Buyer or its carrier by the Seller or its representatives. If the Seller has agreed to transport the Goods, Delivery shall occur when the Seller or its carrier arrives at the delivery address specified on the Order Acknowledgement and notifies the Buyer of such arrival. 6.2 Any dates quoted for Delivery of the Goods are approximate only and the Seller shall not be liable for any delay in Delivery of the Goods howsoever caused. Time of Delivery shall not be of the essence. 6.3 The Seller reserves the right to deliver the Goods in installments. 6.4 If the Buyer or its representative fails to take Delivery of the Goods or fails to give the Seller adequate delivery instructions when notified that the Goods are ready for delivery then, without prejudice to any other right or remedy available to the Seller, the Seller may store the Goods until actual delivery and charge the Buyer its storage charges current at the date thereof (including insurance).

Risk and Property

7.1 Risk of damage to or loss of the Goods shall pass to the Buyer upon Shipment. 7.2 Notwithstanding Delivery and the passing of risk in the Goods, or any other provision of these Conditions, the property in the Goods shall not pass to the Buyer until the Seller has received in cash or cleared funds payment in full of the price of the Goods and all other goods agreed to be sold by the Seller to the Buyer for which payment is then due. 7.3 Until such time as the property in the Goods passes to the Buyer, the Buyer shall hold the Goods as the Seller's fiduciary agent and bailee, and shall keep the Goods separate from those of the Buyer and third parties and properly stored, protected and insured and identified as the Seller's property. Until that time the Buyer shall be entitled to resell or use the Goods in the ordinary course of its business, but shall account to the Seller for the proceeds of sale or otherwise of the Goods, whether tangible or intangible, including insurance proceeds, and shall keep all such proceeds separate from any moneys or property of the Buyer and third parties and, in the case of tangible proceeds, properly stored, protected and insured. 7.4 Until such time as the property in the Goods passes to the Buyer (and provided the Goods are still in existence and have not been resold) the Seller shall be entitled at any time to require the Buyer to deliver up the Goods to the Seller and, if the Buyer fails to do so forthwith, to enter upon any premises of the Buyer or any third party where the Goods are situated and repossess the Goods.

Warranty

8.1 Subject to the conditions set out below the Seller warrants that the Goods will for a period of 24 months from the date of Delivery correspond with any specification of the Goods forming part of the Contract, will be free from defects (except minor defects) in material or workmanship and will conform to the relevant safety standards governing goods of that nature in force from time to time. The Seller warrants that any software which may accompany the Goods will perform in accordance with any specification supplied with such software for a period of 90 days from Delivery. 8.2 The Seller shall be under no liability under the above warranty in respect of:- 8.2.1 any defect in the Goods arising from any drawing; product, circuit or other design; specification or materials supplied by the Buyer; 8.2.2 any defects arising in the Goods as a result of installation unless such installation was carried out by the Seller; 8.2.3 the replacement of consumables; 8.2.4 any defect arising from fair wear and tear; wilful damage, incorrect movement, misuse, alteration or maintenance of the Goods (other than by the Seller or its agents or with the Seller's approval); or failure to follow the Seller's instructions (whether oral or in writing); 8.2.5 any Goods for which the total price has not been paid by the due date; 8.2.6 any Goods or parts thereof which are not manufactured by the Seller (for which Goods or parts the Seller will extend the manufacturer's warranty to the Buyer to the extent that it is able to do so.) 8.3 In the event of loss or damage occurring to Goods during transit where the Goods are transported by the Seller or its carrier the Buyer must give written notice to the Seller within two working days of the date of Delivery and further where such Goods are consigned by a carrier of the Seller the Buyer or its representative must in addition comply in all respects with that carrier's conditions of carriage for notification for omissions from the delivery or loss or damage in transit. The Buyer or its representative must give written notice to the Seller within three working days of receipt of invoice if the Goods have not been delivered by the Seller or its carrier to the destination agreed in the Contract. Failure to give written notice pursuant to this sub-clause shall mean that the Buyer or its representative shall be deemed to have accepted the Goods as being in good order and in conformity with the Contract. 8.4 Any claim by the Buyer which is based on any defect in the quality or condition of the Goods or their failure to correspond with specification shall be notified in writing to the Seller within 7 days from the date of delivery or (where the defect or failure was not apparent on reasonable inspection) within a reasonable time after discovery of the defect or failure and the defective Goods should be returned to the Seller carriage paid. If the Buyer does not notify the Seller accordingly, the Buyer shall not be entitled to reject the Goods and the Seller shall have no liability for such defect or failure, and the Buyer shall be bound to pay the price as if the Goods had been delivered in accordance with the Contract. 8.5 Where any valid claim in respect of any of the Goods which is based on any defect in the quality or condition of the Goods or their failure to meet specification is notified to the Seller in accordance with these Conditions, the Seller shall at its option IPU 40010 Issue 3 repair or replace the Goods (or the part of the Goods in question) and deliver the same to the Buyer free of charge but the Seller shall have no further liability to the Buyer.

Liability

9.1 Except in respect of death or personal injury caused by the Seller's negligence, the Seller shall not be liable to the Buyer by reason of any representation (other than a fraudulent representation) or any implied warranty, condition or other term, or any duty at common law, or under the express terms of the Contract, for any loss of profits, business or anticipated savings or for any indirect or consequential loss or damage howsoever arising out of or in connection with the supply of the Goods or their use or resale by the Buyer or the supply of Services to the Buyer. 9.2 The Seller shall not be liable to the Buyer or be deemed to be in breach of the Contract by reason of delay in performing, or any failure to perform, any of the Seller's obligations in relation to the Goods or Services, if the delay or failure was due to any cause beyond the Seller's reasonable control. Without prejudice to the generality of the foregoing, the following shall be regarded as causes beyond the Seller's reasonable control: Act of God, explosion, flood, tempest, fire or accident; war or threat of war, sabotage, insurrection, civil disturbance or requisition; acts, restrictions, bye-laws, prohibitions or measures of any kind on the part of any governmental, parliamentary or local authority;

import or export regulations or embargoes; strikes, lock-outs or other industrial actions or trade disputes (whether involving employees of the Seller or a third party); difficulties in obtaining raw materials, labour, fuel, parts or machinery; power failure or breakdown in machinery or vehicles. 9.3 Subject as expressly provided in these conditions, and except where the Goods are sold or Services provided to a person dealing as a consumer (within the meaning of the Unfair Contract Terms Act 1977), all warranties, conditions or other terms implied by statute or common law are excluded to the fullest extent permitted by law. 9.4 Save for liability for death or personal injury resulting from negligence of the Seller or for fraudulent misrepresentation, the Seller's aggregate liability under these Conditions and any Contract for: 9.4.1 damage to the Buyer's tangible property resulting directly from the Seller's negligence or that of its employees shall not exceed £5,000,000; 9.4.2 any other loss or damage not covered by clause 9.4.1 and which arises directly out of the Seller's negligence shall not exceed £500,000 per claim or series of connected claims; 9.4.3 any other direct loss not covered by clauses 9.4.1 or 9.4.2 shall not exceed 100% of the price of the Goods that are the subject of the claim.

Intellectual Property

10.1 If the Goods are to be manufactured or any process is to be applied to the Goods by the Seller in accordance with a specification submitted by the Buyer, the Buyer shall indemnify the Seller against all loss, damages, costs and expenses awarded against or incurred by the Seller in connection with or paid or agreed to be paid by the Seller in settlement of any claim for infringement of any patent, copyright, design, trade mark or other intellectual property rights of any other person which results from the Seller's use of the Buyer's specification. 10.2 All intellectual property in or relating to the Goods is and shall remain the absolute property of the Seller or third party licensors and the Buyer shall not use or permit any third party to use any such intellectual property, other than in the use of the Goods in the normal course of business, without the prior written consent of the Seller. 10.3 The Buyer agrees not to remove, alter or deface or allow to be removed, altered or defaced any marks, names or numbers affixed to the Goods without the prior written consent of the Seller.

Insolvency of Buyer

11.1 This Clause applies if the Buyer makes any voluntary arrangements with its creditors; becomes subject to an administration order; goes into liquidation (otherwise than for the purpose of amalgamation or reconstruction); or if an encumbrancer takes possession, or an administrative receiver or administrator is appointed, of any of the property or assets of the Buyer, or the Buyer ceases, or threatens to cease, to carry on business or suffers any action in consequence or debt; or the Seller reasonably apprehends that any of the events mentioned above is about to occur in relation to the Buyer and notifies the Buyer accordingly. 11.2 If this Clause applies then, without prejudice to any other right or remedy available to the Seller, the Seller shall be entitled to cancel the Contract or suspend any further deliveries under the Contract without liability to the Buyer, and if the Goods have been delivered but not paid for the price shall become immediately due and payable notwithstanding any previous agreement or arrangement to the contrary.

General

12.1 No waiver by the Seller of any breach of the Contract by the Buyer shall be considered as a waiver of any subsequent breach of the same or any other provision. 12.2 If any provision of these Conditions is held by a competent authority to be invalid or enforceable in whole or in part the validity of the other provisions of these Conditions and the remainder of the provisions in question shall not be affected thereby. 12.3 A person who is not a party to the Contract has no right under the Contracts (Rights of Third Parties) Act 1999 to enforce any term of the Contract but this does not affect any right or remedy of a third party which exists or is available apart from that Act. 12.4 The Contract shall be governed by the laws of England & Wales, and any dispute arising out of or in connection with it shall be determined by the non-exclusive jurisdiction of the English courts.

Appendix 1 Additional clauses where the order involves disclosure of confidential information "Confidential Information" shall mean all data, drawings, models, documentation and information of all kinds whether in oral, documentary, electronic or any other form relating to the subject matter of the order which are clearly identified by the party disclosing such Information ("the Disclosing Party") as confidential. The party receiving Confidential Information ("the Receiving Party") agrees to receive in confidence all such Confidential Information, not to reproduce such Confidential Information nor disclose the same to any third party nor use such Confidential Information for its own benefit or for the benefit of any third party without the Disclosing Party's prior written consent. The Receiving Party agrees to treat the Confidential Information disclosed to it as confidential and to use its best efforts to prevent the disclosure of such Confidential Information to others. In this respect, the Receiving Party agrees to disclose such Confidential Information only to those of its employees or advisers who need to know such Confidential Information and who are under obligations of confidentiality to the Receiving Party. IPU 40010 Issue 3 The Receiving Party shall not be liable in damages for inadvertent, accidental or mistaken disclosure of confidential information by its employees provided that the Receiving Party shall have exercised the same degree of care in protecting such Confidential Information as it would have taken in respect of its own Confidential Information of a similar nature and provided that the Receiving Party takes such additional precautions as may be reasonable to prevent further disclosure. 5. The foregoing restrictions and obligations shall not apply to Confidential Information which: 5.1 at the time of disclosure is in the public domain or which subsequently comes into the public domain other than as a result of a breach of this Appendix 1; 5.2 at the time of disclosure is already in the possession of the Receiving Party; 5.3 is subsequently disclosed to the Receiving Party by a third party without restrictions as to use or disclosure; 5.4 the Receiving Party can show was independently developed by employees of the Receiving Party who have not had access to the Confidential Information; 5.5 is required to be disclosed by law. Notwithstanding any of the foregoing provisions, the parties understand and agree that nothing contained in this Appendix shall be construed as giving the Receiving Party any license or other rights in respect of any of the Confidential Information provided to it under these terms. All Confidential Information shall be and remain the property of the Disclosing Party and upon completion of the purpose for which such Confidential Information was supplied or upon earlier request by the Disclosing Party, the Receiving Party shall return all tangible material provided to it (whether in documentary form or on electronic media) to the Disclosing Party together with all copies.

Appendix 2

Additional clauses where the order is for the provision of services 1. For the purpose of this Appendix: 1.1 "Deliverables" means any software, prototypes, models or other such output supplied by the Seller in connection with its performance of the Services; 1.2 "Intellectual Property" means any patent, trade mark, copyright, registered or unregistered design, database right and applications for any of the same, trade secret, right in unpatented know-how, right of confidence and any other intellectual property right of any nature throughout the world; The Seller warrants that it will exercise reasonable skill and care in the performance of the Services. In the event that the Seller is in breach of its warranty at 2. above, the Seller's sole liability shall be to re-perform the Services or, where such re-performance is not possible, to refund the price paid for such Services by the Buyer. Any advice or recommendation given by the Seller to the Buyer in its performance of the Services shall represent solely the views of the Seller on the relevant subject and is followed or acted upon entirely at the Buyer's own risk. The Seller makes no warranties or representations on the sufficiency or accuracy of such advice or recommendation and shall not be liable for any loss or damage suffered by the Buyer as a result of its reliance on the same. This sub-clause shall apply in respect of Deliverables in lieu of clauses 8.1, 8.4 and 8.5 of the Conditions. In the event that any Deliverables are found to be defective or do not perform substantially in accordance with any claim made by the Seller in respect thereof within three months of their supply to the Buyer, the Seller shall rectify such defect free of charge provided that written notice is given to the Seller of such defect within 14 days of its discovery and that the Seller is satisfied that such defect was due to a failure by the Seller to perform the Services in accordance with the specification on the Order Acknowledgement. Unless otherwise agreed by the parties in writing, all Intellectual Property arising, obtained, developed or generated by the Seller in the Deliverables or otherwise in the course of the provision of the Services by the Seller shall be and remain the exclusive property of the Seller.

Appendix 3

Additional clauses where the order is for research and development services For the purpose of this Appendix: 1.1 "Intellectual Property" means any patent, trade mark, copyright, registered or unregistered design, database right and applications for any of the same, trade secret, right in unpatented know-how, right of confidence and any other intellectual property right of any nature throughout the world; 1.2 "Background Intellectual Property" means any Intellectual Property used in the performance of the services other than Foreground Intellectual Property; 1.3 "Foreground Intellectual Property" means any Intellectual Property that arises or is obtained, developed or generated in the performance of the research and development services ordered by the Buyer. All Background Intellectual Property is and shall remain vested in the party owning such Intellectual Property. The Buyer shall be deemed to have granted to the Seller a licence to use any Background Intellectual Property provided by the Buyer in the performance by the Seller of the Services ordered by the Buyer. All Foreground Intellectual Property generated by the Seller is and shall remain the exclusive property of the Seller All Foreground Intellectual Property generated or otherwise acquired jointly by the Buyer and the Seller shall belong to the parties jointly and except that applications for patents or other protections related to such Foreground Intellectual Property shall be made in joint names, each party shall have the freedom to exploit the same (including the granting of licences) in any manner and anywhere without reference or accounting to the other joint owner.

Appendix 4

Additional clauses where the order is for export sales

Payment

1. In the case of orders for the export of any Goods, the Seller may require the Buyer to arrange payment by letter of credit in the following manner: 1.1 the Buyer shall ensure that payments are made to the Seller according to the payment schedules set out in the Order Acknowledgement from an irrevocable Letter of Credit issued by a United Kingdom bank of the Seller's choice ("the ILOC"); 1.2 the terms of the ILOC shall be subject always to the Seller's agreement; 1.3 the Buyer shall open the ILOC within 30 days of the date of the Order Acknowledgement initially in the sum of 100% of the price in such Order Acknowledgement and shall amend it from time to time to accommodate any changes in the price; 1.4 the price shall be paid upon delivery and presentation of the following documentation, each bearing the ILOC reference number and Order number: 1.4.1 one copy of the relevant Seller's invoice; and, where applicable, 1.4.2 a complete set of the relevant clean on board bills of lading, blank endorsed and marked freight prepaid, or, alternatively, one complete set of the relevant clean airway bills, or, alternatively, one copy of the forwarding agent's store or warehouse receipt in lieu of such bills of lading as appropriate. 1.5 The costs of setting up and administering the ILOC shall be borne by the Buyer. IPU 40010 Issue 3

Export and Import Licences

2. Any order accepted by the Seller shall be subject to the following: 2.1 the procurement by the Buyer at his own expense of any import licence necessarily required for the import of the Goods into the country to which the Goods are to be exported. The import licence number and expiry date must be furnished at the time that the order is placed with the Seller in order for the Seller to accept such order. In the event that the licence expires before the Goods have been made available it shall be the responsibility of the Buyer to obtain a renewal of such licence. The Seller shall not be liable for any expense or loss caused by delay in obtaining such import licence or the renewal thereof; and 2.2 in the case of an order placed from an address in the United Kingdom, the procurement by the Buyer at its expense of any export licence, which may be required for the export of the Goods from the United Kingdom. Where the Seller has, however, accepted responsibility for shipping arrangements, the Seller will make reasonable endeavours, at the Buyer's cost, to obtain such export licence; 2.3 where the order is placed from an address outside of the United Kingdom, the Seller will, at the Buyer's expense, make reasonable endeavours to obtain any export licence which may be necessary.



