

# Typhoon

## COLOUR ZOOM CAMERA

### Benefits

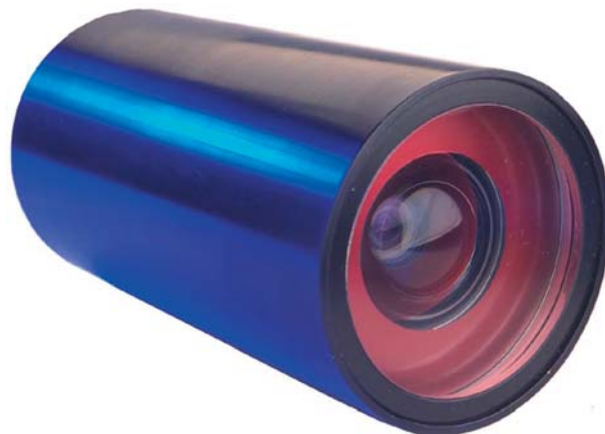
- Digitally enhanced video capabilities
- User friendly Graphical User Interface (GUI)
- Water corrected optics
- Optimised zoom function

### Features

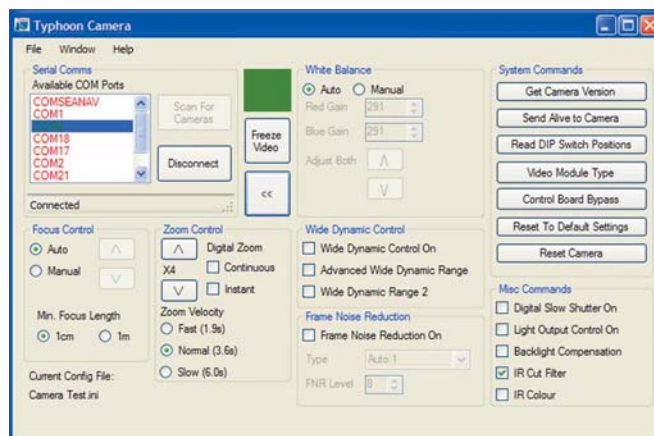
- Available in 4,000m or 6,000m depth rated construction
- Digital enhancements:
  - Wide dynamic range
  - Optimised white balance sensitivity
  - Back light compensation
  - Digital slow shutter: higher sensitivity for low levels of illumination
- Digital (GUI or RS232 Protocol) control
- Analogue control option
- Optimised optics: Ivanoff Correction
- Seamless transition between optical (x23) and digital zoom (x12)
- Amplified video for use with a long umbilical option

### Applications

- Work & inspection class ROV: main colour zoom camera
- Surveillance camera: ROV or diver deployed
- Civil / emergency services search & inspection
- Marine science research



Typhoon



Typhoon Graphical User Interface (GUI)

The Tritech Typhoon is a robust, high resolution colour underwater video camera with an auto-focus zoom lens, which maintains focus throughout x23 Optical and additional x12 Digital Zoom ranges. Both PAL and NTSC Broadcast Standards are supported.

Combining the latest CCD with numerous digital enhancements, Typhoon's wide dynamic range technology compensates for bright backgrounds and low light conditions; providing clear, low noise video with good contrast. The auto white balance maintains natural colours under wide ambient lighting conditions and also the Digital Slow Shutter and IR Cut Filter options deliver higher sensitivity at low levels of illumination.

All optical and digital functions can be controlled via a user-friendly GUI, or integrated within an ROV control system via a RS232 Command Protocol. The GUI provides default system settings or user-specific configurations.

Alternatively, focus and zoom can be controlled by analogue signal inputs. Digital Slow Shutter and Back Light Compensation functions can be optionally 'hard-wired'.

An 'Ivanoff Corrected' lens system optimises picture quality by reducing radial distortion and chromatic aberration. In benchmark tests, the Typhoon delivered sharper definition and better colour rendering than similar cameras.

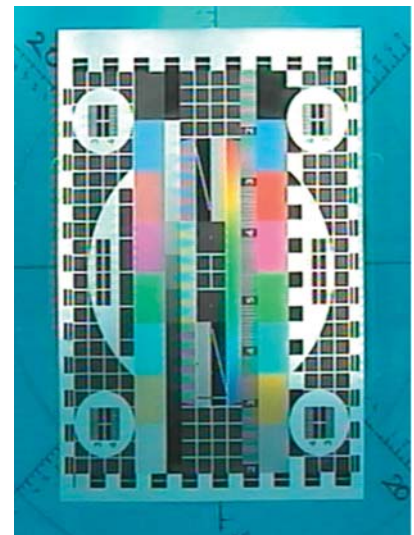
Typhoon can be supplied with an integral overvoltage protected Video Line Driver, which with electable gain, this can compensate for video signal attenuation through longer umbilicals.

**SPECIFICATION**

<b>VIDEO/ OPTION</b>		
<b>TV STANDARD</b>	<b>PAL</b>	<b>NTSC</b>
Sensitivity (IR Cut Filter 'On')	1.0 Lux (1/60s Shutter Speed)	1.0 Lux (1/50s Shutter Speed)
	0.1 Lux (1/4s Shutter Speed)	0.1 Lux (1/3s Shutter Speed)
	0.05 Lux (1/2s Shutter Speed)	0.05 Lux (2/2s Shutter Speed)
Sensitivity (IR Cut Filter 'Off')	Approx. 0.01 Lux (B&W, 1/4s Shutter Speed)	Approx. 0.01 Lux (B&W, 1/3s Shutter Speed)
Vertical resolution (No. of horizontal lines)	540 Lines (1/4s Shutter Speed)	470 Lines (1/3s Shutter Speed)
CCD Module	1/4" Progressive Scan CCD	
Viewing Angle	66° in water (diagonal)	
Focus Range	10mm to Infinity (1m to Infinity GUI option)	
Primary Lens	3.6mm to 82.8mm, F1.6 to F3.6	Ivanoff Water Corrected Optics
Optical Zoom	x23	2x Digital Instantaneous (DI)
Digital Magnification	x12	
Iris Control	DSP controlled Auto Iris (AI)	
Video Output	1v Peak to Peak Composite, 75Ω unbalanced	
Signal to Noise Ratio	>50dB	
Other Features (RS232 and Tritech GUI Controlled)	Digital Slow Shutter (DSS), Back Light Compensation, Auto Focus (Enabled / Disabled), Wide Dynamic Range (WDR) and Auto / Manual White Balance, Video Freeze, Frame Noise Reduction and Minimum Focus Length Adjustment	
Additional GUI Functions	Saving and loading of custom configurations, video preview window and return to default settings	
<b>ELECTRICAL</b>		
Voltage Range	12v to 40v DC	
Zoom/ Focus Controls	Analog ±12v to 24v, Serial I/F: RS232	
Power Consumption	5w @ 24v	
<b>PHYSICAL</b>		
Weight in Air/ Water	1.9Kg/ 0.7Kg (with Tritech Connector and Aluminium Alloy Housing)	
Depth Rating	<b>4000M</b>	<b>6000M</b>
Pressure Housing	Hard Anodised Aluminium Alloy Housing (as detailed)	SS 316 OR Ti Alloy 6AL4V Housing (please contact Tritech for these options)
<b>STORAGE</b>		<b>OPERATING</b>
Temperature Range	-20°C to +50°C	-10°C to 40°C
Shock (DEF STAN 00-35 (Part 3)/3 Chapter 2-03)	30g for 6ms in each axis (operating)	
Vibration (DEF STAN 00-35 (Part3)/3 Chapter 2-01)	Sinusoidal sweep & dwell in each axis from 5 to 150Hz @ 10g (operating)	
Connector	Tritech 6w connector	
<b>MATERIALS</b>		
Pressure Housing	Hard Anodised Aluminium Alloy / Stainless Steel 316 / Titanium Alloy	
Lens	Water Corrected Optical Acrylic	
<b>CUSTOMER SPECIFIED OPTIONS</b>		
Other Connection Options	Schilling 7w SeaNet, Burton / Seacon 5506 Series, Subconn BH Series (if not listed please contact Tritech with your specific connector requirement)	
Video Line Driver	Up to 1,500m with good quality RG59 Co-axial Cable (with selected variable gain)	
<b>CONTROL</b>		<b>FUNCTIONS</b>
Analogue Control (Switch 1 & 2 on Typhoon Control PCB)	Bi-polar	<b>Control Off:</b> focus and zoom functionality <b>On start-up (hard wired):</b> Digital Slow Shutter (DSS), back light compensation and auto focus (enabled / disabled)
	Dual wire	



All dimensions are in mm



The Typhoon 'Ivanoff Corrected' Lens System optimises picture quality by reducing radial distortion and chromatic aberration

All specifications are subject to change in line with Tritech's policy of continual product development.

Ref: EDS-CAM-006.6