The Typhoon combines the latest CCD technology with digital enhancements and a wide dynamic range, which compensates for bright backgrounds or low-light conditions to provide clear, low noise video with excellent contrast. The auto white balance maintains natural colours under wide ambient lighting conditions and also the Digital Slow Shutter (DSS) and IR Cut Filter options deliver higher sensitivity at low levels of illumination.

Robust high resolution colour underwater video camera

The Typhoon has an auto-focus zoom lens capable of maintaining focus throughout optical and digital zoom ranges. PAL and NTSC standards are supported.

Optical and digital functions can be controlled via a user-friendly GUI or integrated within an ROV control system via an RS232 command protocol. Alternatively, focus and zoom can be controlled by analogue signal inputs. The Typhoon can also be supplied with an integral over-voltage protected Video Line Driver fitted with selectable gain. This can compensate for video signal attenuation through longer cables.

Fitted with an Ivanoff Corrected lens system the Typhoon Colour Zoom Camera 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.

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

Features
- 4000m or 6000m depth rating available
- Comprehensive set of digital enhancements
- Digital or analogue control
- PAL and NTSC compatible
- x23 optical zoom
- x12 digital zoom
- Seamless transition between zoom ranges
- Amplified video for use with long umbilical

Applications
- Work & Inspection class ROVs
- Surveillance
- Search and inspection (civil or emergency)
- Marine research
- Marine life monitoring
Specifications subject to change according to a policy of continual development.

**Specifications**

**Tritech International Ltd**
Peregrine Road, Westhill Business Park
Westhill, Aberdeenshire, AB32 6JL
United Kingdom
sales@tritech.co.uk
+44(0)1224 744 111

**Document**: 0708-SOM-00003, Issue: 04

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### Video/Optical Properties

<table>
<thead>
<tr>
<th>PAL</th>
<th>NTSC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity with IR cut filter on</td>
<td>1.0 lux at 1/60s shutter speed 0.1 lux at 1/4s shutter speed 0.05 lux at 1/2s shutter speed</td>
</tr>
<tr>
<td>Sensitivity with IR cut filter off</td>
<td>approx. 0.01 lux B&amp;W, 1/4s shutter speed</td>
</tr>
<tr>
<td>Vertical resolution</td>
<td>540 lines (1/4s shutter speed)</td>
</tr>
</tbody>
</table>

**CCD Module**
1/4" progressive scan

**Viewing angle**
66° in water (diagonal)

**Focus range**
10mm to infinity

**Primary lens**
3.6mm to 82.8mm (f/1.6 to f/3.6) Ivanoff water corrected optics

**Optical zoom**
x23

**Digital magnification**
x12

**Iris control**
DSP controlled Auto Iris

**Video output**
1V peak to peak composite, 75Ω unbalanced

**Signal to noise ratio**
>50dB

**GUI functions**
Save/load custom configurations, video preview, reset default settings.

**Other features**
Digital Slow Shutter (DSS), Back light compensation, auto focus, Wide Dynamic Range (WDR), auto/manual white balance, video freeze, frame noise reduction, minimum focus length adjustment.

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### Physical Properties

**Weights**
1.9kg in air, 0.7kg in water (aluminium alloy housing)

**Depth rating**
4000m standard (6000m option)

**Temperature range**
-20°C to 50°C storage
-10°C to 35°C operating

**Shock**
DEF STAN 00-35 Part 3, chapter 2-03
30g, for 0.4ms in each axis (while operating)

**Vibration**
DEF STAN 00-35 Part 3, chapter 2-01
Sinusoidal sweep & dwell in each axis from 5 to 150Hz at 10gmax

**Standard connector**
Tritech 6 pin

**Housing material**
Hard anodised aluminium alloy, stainless steel 316 or titanium alloy 6AL4V

**Lens material**
Acrylic

**Dimensions**
92mm diameter x 189mm body height
(206mm overall height with Tritech connector)

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### Electrical Properties

<table>
<thead>
<tr>
<th>Voltage range</th>
<th>12 to 40V DC</th>
</tr>
</thead>
<tbody>
<tr>
<td>Zoom &amp; focus control</td>
<td>Analog ±12 to 24V DC or RS232 serial interface</td>
</tr>
<tr>
<td>Power consumption</td>
<td>5W at 24V DC</td>
</tr>
</tbody>
</table>

### Options

- **Video Line Driver**
  - Up to 1500m with good quality RG59 coaxial cable

- **Connector options**
  - Schilling 7 pin SeaNet, Burton/Seacon 5506 Series, Subconn BH and MCBH Series

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Image above is without Ivanoff corrected optics

Using Ivanoff corrected optics removes the barrel distortion from underwater images

Specifications subject to change according to a policy of continual development.

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