

### 3 axis Stabilised Camera



- **Integrated HD or 4K camera**
- **Plug-and-Play operation**
- **Up to 8 Axis, Free-D Metadata for VR & AR**
- **Weatherproof & Rugged Carbon Fibre**
- **Full CCU Control**
- **Genlock**
- **18x optical zoom**
- **1.5G, 3G or 12G output options**
- **Slip Rings for continuous rotation**
- **Inverted or Upright Mounting**
- **Switchable to Infra-Red sensitive**
- **Fibre output & control option**
- **Full IP Control and Metadata**

## Introduction

Our objective was to create a fully weatherproof, truly '**plug-and-play**' solution, which takes minimal set-up time to achieve a fully operational system and to make it affordable both in price and performance.

Using the latest sensors and technology, **BR Remote** has created a stabilised camera with new levels of functionality and affordability. Because the camera is enclosed inside an aerodynamic housing it is less susceptible to wind and weather buffeting and is therefore inherently more stable than 'open-frame' systems.

Advanced materials including carbon fibre and 3D printed, carbon-impregnated nylon are used with traditional multi-axis, machined aluminium parts to create a revolutionary product in both size, performance and price.

The applications range from tracking vehicles, boats, and cable cameras however, your imagination will find ever new and interesting uses for the **GS 200**.

## Pictures

It is available in either HD or 4K and the HD version can be upgraded to 4k at a later date if required. A wide-angle lens is fitted as standard giving a HFOV of about 90degrees at the wide end of the lens. The camera uses the latest ½" Sony sensors with 12bit DSP and are switchable to various standards. The 4K unit can also be switched to HD with both 50p and 60p frame rates supported at 4K.

An important feature, especially for live TV is the full Camera CCU control which is remotely controlled via our **Remote Camera Panel Mk3**. The CCU control on a small camera is unmatched, with smooth iris and both white and black level control, together with many other adjustments not normally available on small cameras. 3 dynamic ranges are selectable up to **HLG HDR**.

## Metadata for VR & AR

Accurate metadata is the essential component for virtual reality and augmented reality (VR & AR). The **GS 200** can output **Real Time** continuous angular metadata in '**Free-D**' format, whilst simultaneously responding to command inputs.

5 axes of metadata can be specified. These are; Pitch, Yaw, Roll, Zoom and Focus.

In addition, X, Y & Z metadata can be input via a connector on the base this then inserted into the total Free-D metadata output. This Free-D metadata is available as RS422 and simultaneously streamed onto the IP network.

The metadata is timed to each frame of the picture and does not free-run. Adding a genlock input times both the picture and the metadata to the sync input.

## Environmental Protection

The **GS200** is weatherproof to **IP65** as standard. It can withstand extended periods outdoors in wind and rain without further protection. By specifying alternative connectors, it can also be used on boat decks and will withstand sea spray, although not total immersion. Inside the ball there are dual fans creating a warm 'air wash' over the front port to prevent misting.

## Mechanical

The main parts are machined from aluminium with deep pocketing to give a rigid and strong chassis. The carbon-fibre outer shell makes it very strong and durable. Some parts are 3D printed in carbon-fibre loaded nylon. The motors and moving mechanics have been proven over many years and give a fast and accurate response.

## Electronics

The electronics are improved and amalgamated from many systems we have previously developed as well as taking advantage of the latest stabilisation technology.

Passing 4K through slip rings, for example, is not easy but we have developed this technology in-house to achieve the maximum flexibility of the system. Slip rings enable continuous pans. All power, data and video signals pass through the slip rings and FORJ, delivering 1.5G, 3G or 12G at the fixed base as well as fibre output options.



**GS200**



**Joystick Controller**



**Remote Camera Panel**

## Specifications

Height:	293mm
Diameter:	200mm
Weight:	5.5kg.
Power:	12 – 24v 25w (4K)
Operating Temp:	-10 to +40degC. Out of sunlight
Environmental:	IP65 minimum
Mounting:	5 x 3/8" UNC
Connections:	XLR4, XLR5, 2x BNC (HDSDI, Genlock) <b>or</b> 2x ST Fibre (SDI, Control) RJ45 Network, Input for external metadata
Control Data:	RS485 @ 38,400 or 9,600 baud <b>or</b> IP <b>or</b> Fibre
Pan Range:	360deg. Continuous.
Tilt Range:	+/- 120deg from vertical.
Roll Range:	+/- 45deg.
Pan Speed Range:	<0.05deg/sec - >180deg/sec. 10 gears
Tilt Speed Range:	<0.03deg/sec - >120deg/sec. 10 gears
Positional Accuracy:	0.0055deg.
PTZ Remote:	Pan, Tilt, Zoom, (fully proportional,) Roll, Iris, Focus, Reverse, etc.
Sensor:	Sony 1/2" CMOS, 3840(H) x 2160 (V)
Signal / Noise Ratio HD	>50dB
Zoom:	18x optical
HFOV	90deg. to 5deg (approx.)
MOD:	<30cm
Iris:	F1.6 - F28 – 256 steps. ND Filter options
Sensitivity HD:	1.4 lux. (F1.6 AGC On)
CCU Remote:	Auto / Manual White, Pre-set White, Red gain, Blue gain, Master Pedestal, Red Pedestal, Blue Pedestal, Shutter, Gain, Gamma, Auto Iris On/Off, Auto Focus On/Off, IR Mode On/Off, Chroma, Detail, Shading, Knee, Dynamic Range (HDR), Dynamic Noise Reduction, Matrix RGB balance, Output Standard, Colour Bars, etc.
Metadata:	Free-D D1 metadata as RS422 <b>and</b> streamed onto the IP Network.
Other Features:	High Dynamic Range (HLG), Genlock, Enhanced CCU Control, Slip Rings, Inverted or Upright Mounting, Switchable to Infra-Red sensitive, Genlock, Internal LCD status screen, BT2100, BT709, BT2020
Optional extras:	Wash/wiper, customer specified connections, ND ports, fibre output. Other options by request.

**Specifications subject to change without notice  
E & OE**

Units 14 - 20,  
Setley Ridge Vineyard  
Lymington Road  
Brockenhurst  
SO42 7UF. UK  
Tel: +44 (0)1590 622440  
[www.br-remote.com](http://www.br-remote.com)

