

Spinner Shark

User manual





Imenco

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Introduction

Thank you for purchasing this Imenco product.

The Imenco Spinner Shark Camera HD-SDI camera is designed primarily for ROV operations.

With 30x optical zoom, horizontal angle of view 65 and a lens system who gives al good optical, and a low barrel distortion.

Spinner shark have Titanium Housing, and fused silica front port.

Depth rating for Spinner shark camera is 4000msw.

Video transfer is by using HD-SDI over coax, or by fiber.

Spinner camera is Nitrogen filled to, prevent camera become misted.

Safety guidelines

Read and understand all sections in this manual before installing or operating this product.

Installation of this product should only be performed by qualified personnel.



Before use

Item checklist

Before starting, check that the following items have been included with your Spinner Shark camera. Contact Imenco or your local dealer if anything is damaged or missing.

1. Spinner Shark HD-SDI camera
2. User manual, this document.
3. Case.
4. (Memory stick, with software and manual.) (option).
5. Test interface box (option).
6. Dummy connector (option)

Function Test

Make sure your new product is working as intended. Connect your system as further described in this manual, and make sure all function is working. Imenco cannot be held liable for any loss or inconvenience caused by the use of a faulty product.



Installation

Installation of this product should only be performed by qualified personnel.

Mount the camera on a secure and vibration free surface if possible.

To avoid corrosion, and pitting, Keep Spinner camera isolated from other metals, by using Plastic, rubber, or similar material to isolate camera.



Operation

Caution: Turn off power before connecting or disconnecting the power cable.

Caution: avoid long term testing in air, as overheating can cause damage to internal components.

Connector configurations

Study the connector configuration diagram in appendix 1 and make connections accordingly.

Operational Temperatures

The HD-SDI camera is designed for subsea usage and should not be operated without adequate cooling for long periods of time.

Camera control

Spinner camera can be controlled in different ways.

RS232: (RS485 option).

You have full control of camera settings.

You can control Zoom, Focus, White balance, Autofocus, video output , etc., all of camera module settings.

Tristate:

Zoom is controlled with one wire, with ref to +12v in camera.

Focus is controlled with one wire, with ref to +12v in camera.

Autofocus can be activated by operating zoom and focus at same time.

Control level is $\pm 5\text{vdc}$ to 24vdc .

Two wire:

Zoom is controlled with two wire.

Focus is controlled with two wire.

Autofocus can be activated by operating zoom and focus at same time.

Input voltage is $\pm 5\text{vdc}$ to 24vdc .

With two wire, control input is optical isolated from camera.



Maintenance

After use in seawater or other corrosive environments, rinse unit and cables in fresh water.

Inspect the front port for dirt and dust and remove any surface dirt using compressed air. Clean the port glass using a mild detergent and a soft cloth. Avoid circular wiping patterns. Reapply silicon based lubricant to the connector regularly as needed.

Service

This product contains no user serviceable parts. Service and modifications are to be carried out by Imenco personnel or by Qualified third party with prior approval from Imenco. Failure to comply may result in personal injury, damage to Equipment and loss of warranty.



Technical specification

Camera

Image device:	1/2.8 Type "Exmor" CMOS Sensor
Image :	1080p
Picture elements	2140K pixels
Video Output:	HD-SDI 1080p/720p 59,94hz/50hz/30hz/25hz Analog SD: VBS
Min. illumination 50%norm mode	1,4lx (F1,6 AGC on, 1,30s)
ICR-OFF	0.35 lx (1/30 sec, 50%, High Sensitivity mode On) 1.4 lx (1/30 sec, 50%, High Sensitivity mode Off)
White Balance	Auto, ATW, Indoor, Outdoor, One Push WB, Manual WB, Outdoor Auto, Sodium Vapor Lamp (Fix/ Auto/Outdoor Auto)
Electronic shutter speed	1/1 sec to 1/10000 sec (22 steps)
Gain	Auto/Manual (0 to 43.1 dB (0 to 28 step)) Max. Gain Limit (9.2 to 43.1 dB (6 to 28 step))



Lens

Angle of view (H)	Approx. 65 degrees
1080p mode	65° (wide end)to 2,3° (tele end).
720p mode	65° (wide end)to 2,3° (tele end).
SD mode	48° (wide end)to 1,7° (tele end).
	30x Zoom
	F= 4.3 mm (WIDE) to 129 mm (TELE), F1.6 to F4.7
	Zoom movement speed
	Optical WIDE – Optical TELE
	4.6 sec (Focus Tracking On)
	3.2 sec (Focus Tracking Off)
	Optical WIDE – Digital TELE
	6.7 sec (29.97p/59.94p mode)
	7.1 sec (25p/50p mode)
	Digital WIDE – Digital TELE
	2.2 sec (29.97p/59.94p mode)
	2.7 sec (25p/50p mode)
	Focus Movement time
	∞ to Near 1.1 sec
Digital Zoom	12x (360x with optical zoom)
Min. working distance	
Front port	Glass (fused silica)



Physical properties

Dimensions: Ø: 140mm x L: 234mm (excl connector)

Weight air / water: 4,9 kg/2,9 kg

Housing Material: Titanium TI-6AL-4V

Depth Range: 4,000 MSW

Temperature :

Operating -5 +50°C

Storage -20 +60

Power

Operating voltage 12-36vdc (24vdc 600ma)

Current draw (24vdc max 600ma)



SONY FCB-EH7500 Specifications:

Image Sensor	1/2.8-type Exmor CMOS (IMX136)
Signal System	1080p : 59.94, 50, 29.97, 25 1080i : 59.94, 50, 720p : 59.94, 50, 29.97, 25 SD
Minimum Illumination (50%, Normal Mode)	Less than 1.4 lx (F1.6, ICR off)
Sync System	Internal
Exposure Control	Auto, Manual, Priority mode (shutter & iris priority), Bright, EV compensation, Slow AE
Backlight Compensation	Yes
Aperture Control	16 steps
Lens	30x optical zoom f = 4.3 mm to 129 mm F1.6 to F4.7
Digital Zoom	12x (360x with optical zoom)
Focusing System	Auto, One-push AF, Manual, Infinity, Interval AF, Zoom Trigger AF
Horizontal Viewing Angle	65.0° (Wide) to 2.3°(Tele)
Minimum Object Distance	10 mm (Wide end)
Auto ICR	Yes
Wide-D	Yes
Noise Reduction	Yes (2D / 3D)
De-fog/De-mist	Yes(by VE)
Image Stabilization	Yes
Stablezoom	Yes
Privacy Zone Masking	Yes (Polygonal, Spherical, Mosaic)
Motion Detection	Yes
Alarm	Yes
Picture Effects	Yes
Slow AE Response	Yes
Slow AE Response	Yes
Temperature Readout	Yes
Title Display	Yes
Camera Mode Display	Yes
Video Output (HD)	Analog : Component (Y/Pb/Pr) Digital : LVDS (SMPTE 274M(FHD)/296M(HD))
Video Output (SD)	VBS, Y/C
Camera Control Interface	VISCA (CMOS 5 V level)
Power Requirements	6.0 V to 12.0 V DC
Operating Temperature	-5°C to 60°C
Dimensions (W x H x D)*1	50 × 60 X 89.7 mm
Mass	Approx. 265g



Appendix 1:

