

# **Underwater Drop Video Camera**

## *Operators manual*



**2008**

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# 1. Description

DCAM is a high-resolution, color or B/W underwater camera with LED lights, cable, reel.

## 1.1. Purpose

Drop Cam is intended for video surveys and inspections of underwater objects such as ship hulls, underwater constructions, etc. It can be used for underwater pipeline inspection, searching and rescue, sport fishing, treasure hunting or marine biology research. The drop camera can be installed on the diver's helmet.

## 1.2. Design

### Basic set



1. Underwater camera with lights
2. Control/power module
3. Cable reel
4. LCD display
5. Transportation case

**Underwater camera module [1]**

contains aluminum waterproof cylindrical hull with holes for mounting clamp for horizontal position of the camera. The glass dome with a CCD 1/3" color camera and ring of ultra-bright LEDs locates at the front part of the module. The electronic board is installed into main cylindrical hull. Hermetic waterproof connector is at the back roof of the hull together with hole for vertical cam position mounting clam.

**Surface control/power module [2]**

provides powering of underwater module and transmission of video, contains the LEDs brightness controller.

**Cable [3]**

Basic length of the cable is 50 m, max 300m. It is used for power and video transmission.

**Transportation waterproof case [5]**

Can be metal or plastic case.

**Additional equipment (can be installed upon request)**

- Cable (up to 300 m)
- Cable reel with no slip ring
- Cable reel with slip ring connector
- Converter 12VDC/230VAC
- 12V battery
- Connector cable set
- LCD/TV
- Video recorder

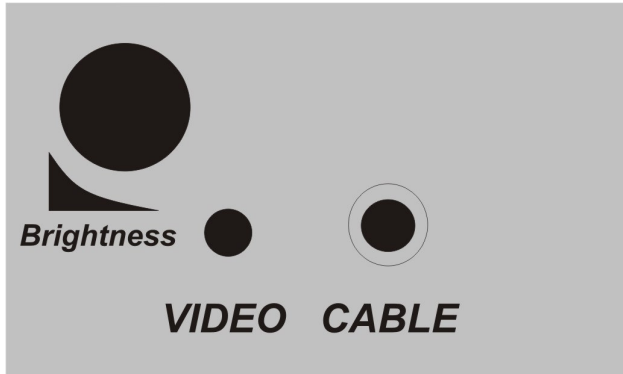
**1.3. Technical specifications**

1. Operation depth – up to 300 m
2. Cable length – 50 - 300 m
3. Cable is strengthened by the Kevlar threads and the additional polyethylene shield, negatively buoyant, weight on air 40 g/m, in water 10 g/m
4. Cable diameter – 3 mm up to 100 m length, 6.5 mm from 100 m, breaking effort – 100 kg
5. 15-45 ultra-bright LEDs
6. Color camera PAL CCD 1/3", 380 (600 b/w) TV Lines, 0.5 lux  
The video camera together with lights provides 15-20 m daylight visibility in the transparent water. Maximum 3-4 m visibility can be reached during the night.
7. Power supply and control module
8. Power supply – 12-24VDC or 230VAC
9. Maximum power consumption 50Watt
10. Operating environment humidity – up to 100%
11. Operating temperature range – -20 ...+ 45° C.
12. Full system is packed in a high-performance waterproof STORMCASE
13. underwater module weight – 0.3 kg, full weight of system (with cable 50 m) – 4 kg
14. Module dimensions 115x52x52 mm

## 2. User's manual for operation with Drop Camera

2.1. Before using, please, check up all parts of module dome.

2.2. Plug in 3-sockets connector to reel and video cable to monitor video input. Connect AC power cable.



### **WARNING!**

**Be very careful with the cable, do not:**

- Stand on it
- Press on it
- Twist it

**If any damages happened you must repair or change the cable**

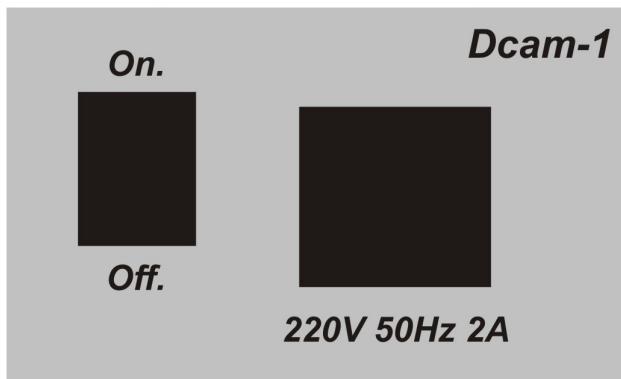
### **Only for reels with no slip ring connector**

- Before connect the reel, please, pull out the cable the length you need
- Connect black cable from control module to the connector on the reel
- To pull out more cable during the operation you must switch power OFF then disconnect black cable from the reel, then pull out the cable

2.3. If use any additional display or audio/video recorder, please, connect video cable to RCA jack of additional video device

### **2.4. Power supply from 230V**

Set switch 220V "I" (UP position). LED indicator is on during the operation.  
To finish operation set switch 230V "O" (DOWN position)



**2.5.** To mount LCD (2) use a special bracket (1) at the case cover. When pack the system demount the LCD from the bracket. During the transportation LCD must be placed in the case.



**2.6. To adjust brightness of LEDs use handle “brightness”**  
**Do not switch lights on a full power on air!**

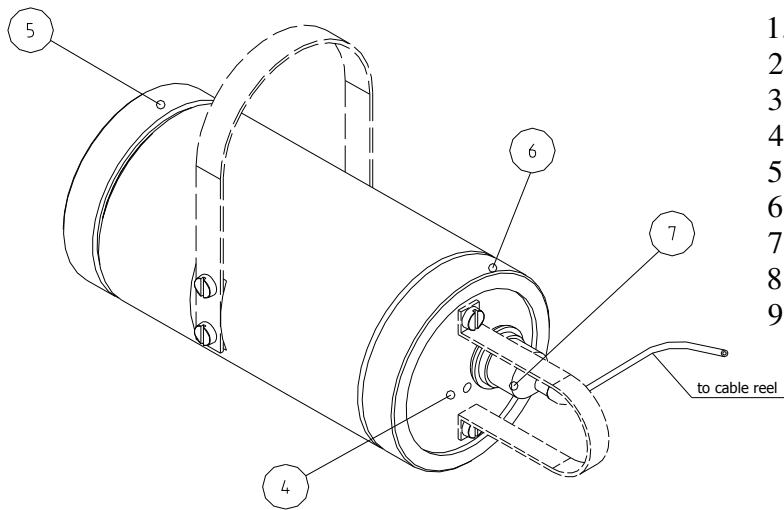
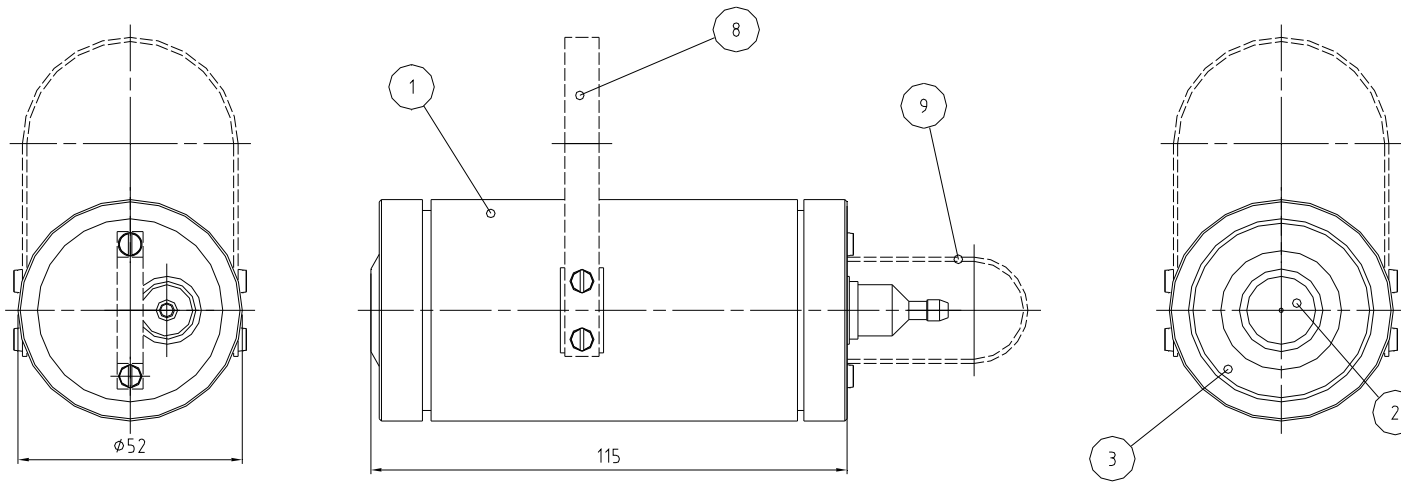
2.7. To fix the operating position of the module use mounting clamps. The cable can be fixed on a clamp using special ring.

### **WARNING!!!!**

1. Rinse the camera in the fresh water after using in the sea
2. Inspect the cable after the operation. In a case of any damages the cable must be repaired or changed.
3. Keep the module and the cable reel dry.

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# Appendix



1. Main hull section
2. Forward-viewing window
3. Light port
4. Backwall
5. Nut
6. Nut
7. Cable pressure seal
8. Horizontal cable clip
9. Vertical cable clip