

# Installation manual



**Roundshot Livecam Generation 5 Solar**

# CONTENTS

page

<b>1.</b>	<b>System overview</b>	<b>2</b>
1.1	Roundshot Livecam gen 5 solar components	2
1.2	Layout waterproof box with 4G antenna + cabling	3
1.3	Layout Butler Box with 4G antenna	4
1.4	GSM connection (4G) with GSM router + antenna	5
1.5	Livecam GSM – fixed or automatic IP (DHCP)	6
<b>2.</b>	<b>Preparations prior to camera shipment</b>	<b>7</b>
2.1	Site preparation	7
2.2	Installation of camera mast	8
2.3	Camera dimensions	13
<b>3.</b>	<b>Camera installation</b>	<b>16</b>
3.1	Network connection with GSM mobile network (4G)	16
3.2	Network connection trouble-shooting	22
<b>4.</b>	<b>Camera operation</b>	<b>23</b>
4.1	Visualization of power data in Roundshot Cloud	23
4.2	Power management for solar operations	24
<b>5.</b>	<b>CE conformity declaration</b>	<b>26</b>

## Impressum

# 1. System overview

## 1.1 Roundshot Livecam gen 5 solar components

(A)



(B)



(C)



(D)



(E)



(F)



(G)



(H)



(I)



(K)

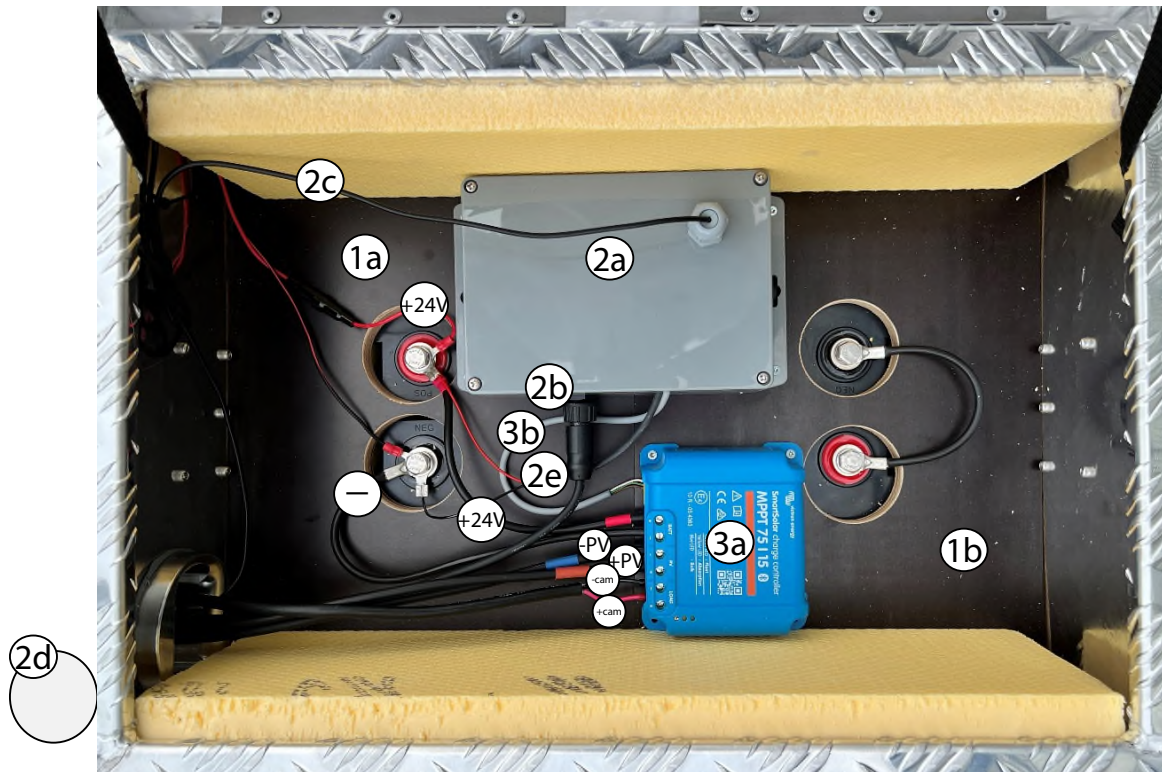


(L)



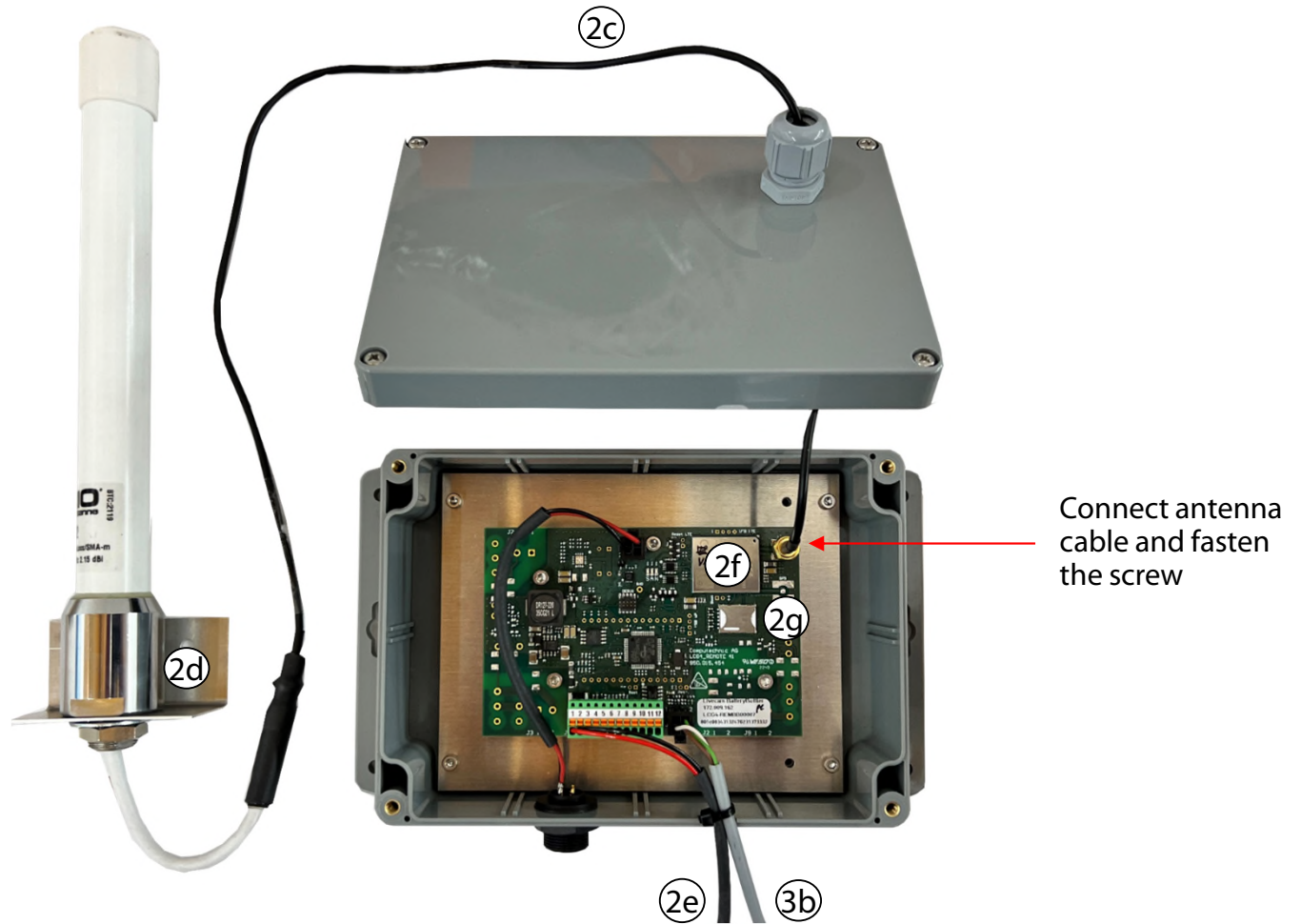
- A: Livecam Generation 5 with 4G router / antenna
- B: Solar panel Offgridtec 180W Mono 36V
- C: Solar panel mount without mast foot + without mast
- D: Waterproof aluminium box Alutec Extreme 70 with 4G antenna
- E: 15m 24V power cable charge controller - camera
- F: 2x Offgridtec AGM battery 101Ah 20HR 12V
- G: Butler IoT device for data transfer into cloud + system reset
- H: Communication cable butler - camera 4 PIN
- I: Victron SmartSolar MPPT 75/15 charge controller
- K: 8m 6mm2 professional connection cable solar panel – power controller (Victron)
- L: Victron Smart Battery Sense Long Range power / temperature sensor

## 1.2 Layout waterproof box with 4G antenna + cabling



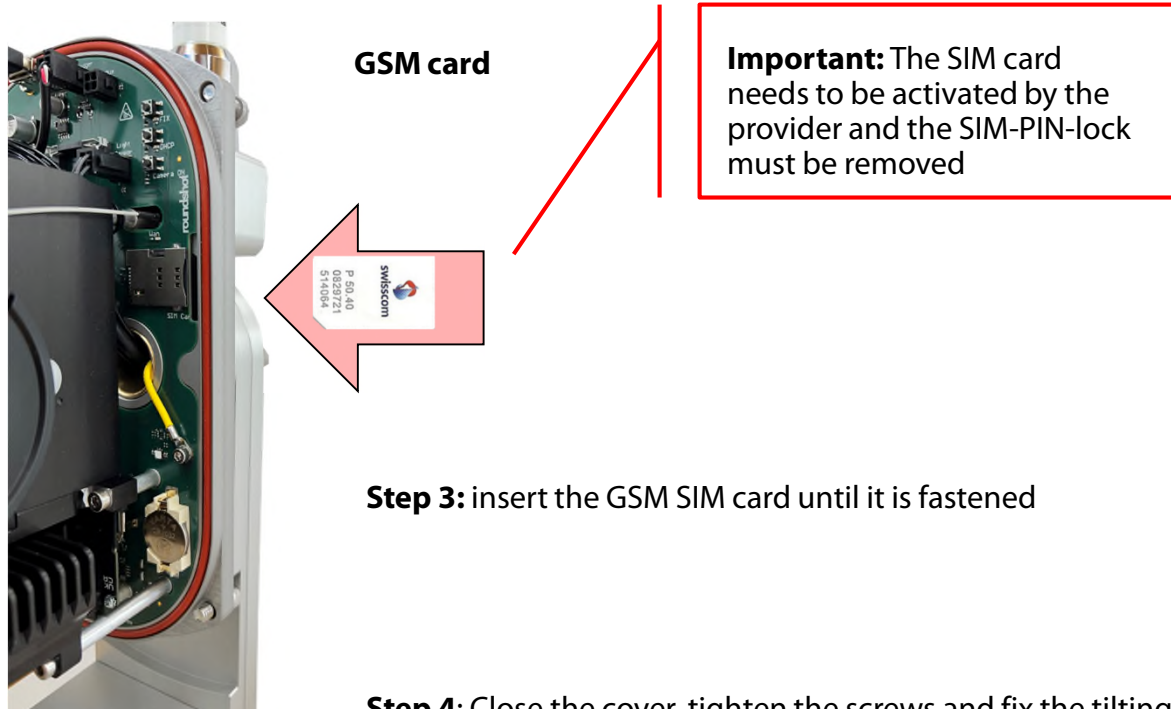
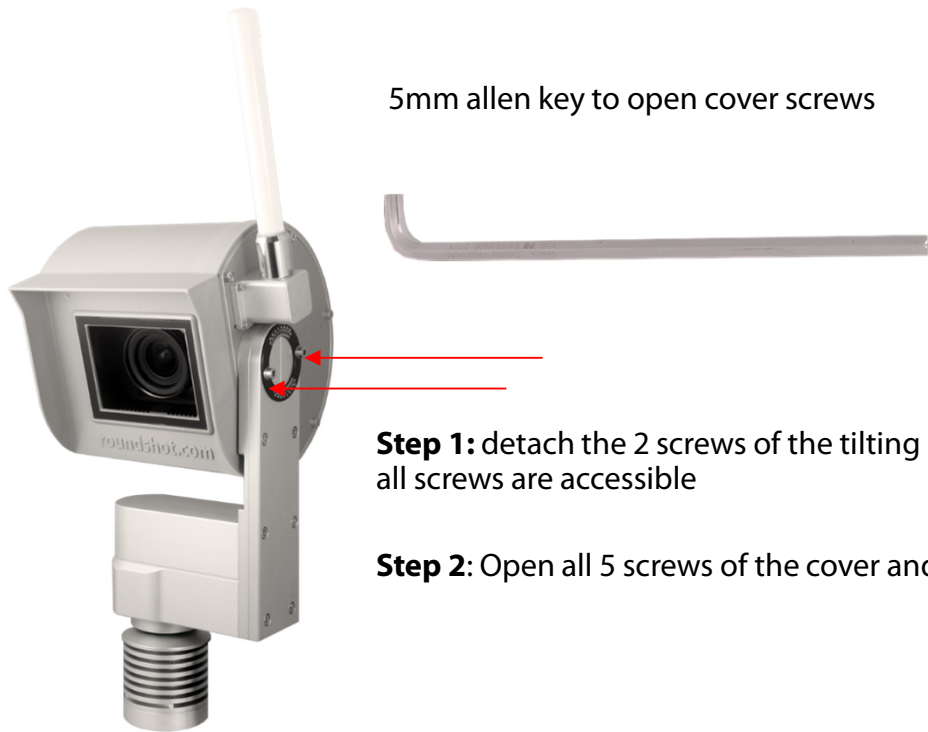
- 1a: Battery
- 1b: Battery
- 2a: Butler box
- 2b: Communication cable butler - camera 4 PIN
- 2c: 4G antenna cable butler
- 2d: 4G antenna butler
- 2e: mains cable butler
- +24V: mains plus
- : mains minus
- 3a: Victron power controller
- 3b: Connection cable Victron power controller - butler

### 1.3 Layout Butler box with 4G antenna



- 2c: 4G antenna cable butler
- 2d: 4G antenna butler
- 2e: mains cable butler
- 2f: Quectel 4G router butler
- 2g: data SIM card
- 3b: connection cable Victron power controller - butler

## 1.4 GSM connection (4G) with GSM router + antenna



The two screws of the tilting mechanism must be tightened to ensure that the case is waterproof.

## 1.5 Livecam GSM – fixed or automatic IP (DHCP)



The network settings of the camera are already prepared (DHCP).

**No more adjustments are necessary**, except if camera access is required to modify the APN setting (see next chapter)



**Push button to set camera computer network IP to ...**

**fixed IP (192.168.1.80)**

**DHCP**

**Socket for large SIM card**

The currently applied setting is indicated with a permanent green LED.



To operate the camera with the onboard 4G router the network setting “DHCP” is required.

## 2. Preparations prior to camera shipment

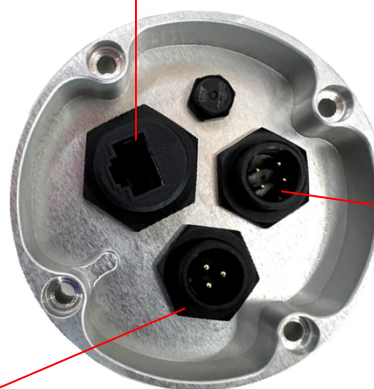
### 2.1 Site preparation

The customer is responsible for selecting the camera site and preparing for the installation of the camera. Proper site preparation includes:

- Selection of best **camera position** (ideally with 360° view)
- Installation of **camera mast**
- Installation of **solar system consisting of solar box, solar panel on mount + camera**
- Installation of the **connection cable between butler + camera (2b)** as well as **24V power cable charge controller – camera (E)** – maximum length: 15m



Optional ethernet cable  
for direct camera  
computer access



**2b:** communication cable  
butler - camera 4 PIN

**E:** 15m 24V power cable  
charge controller - camera



**The ferrite element is installed on the cable strand close to the camera.** Installing it on the opposite side of the cable is possible but will be less beneficial for the camera.



Ferrite beads are used in electronic circuits to suppress interference, noise, crosstalk, and other high-frequency disturbances from supply voltage lines, data signal lines, and ground planes.



## 2.2 Installation of camera mast

### Solar mast for flat roof



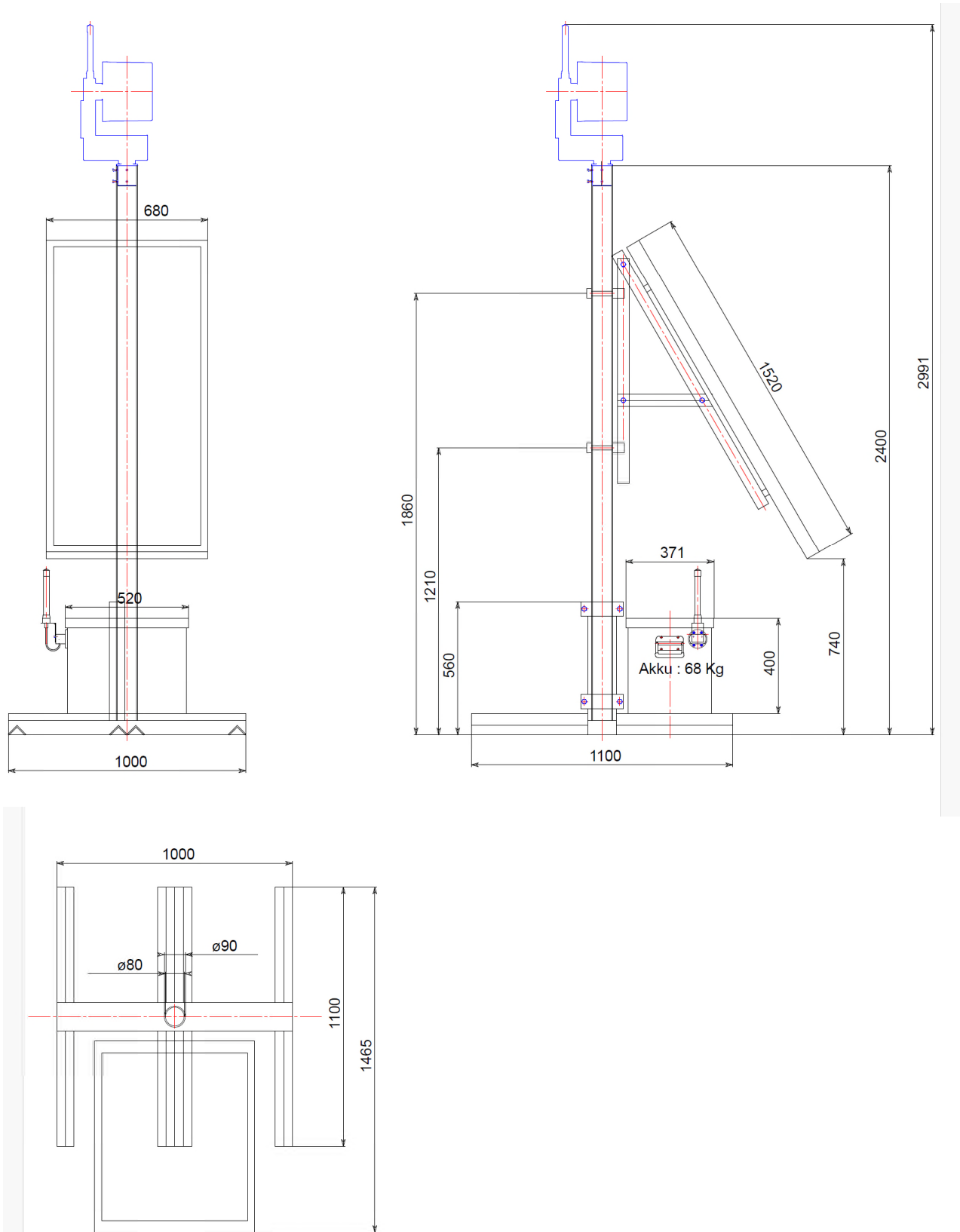
**Very important:** The mast must be grounded.



As the installation conditions for every camera are different, the solar kit of roundshot **does not contain the mast tube nor the mast foot** – these articles need to be ordered separately.

## 2.2 Installation of camera mast (continued)

### Solar mast for flat roof

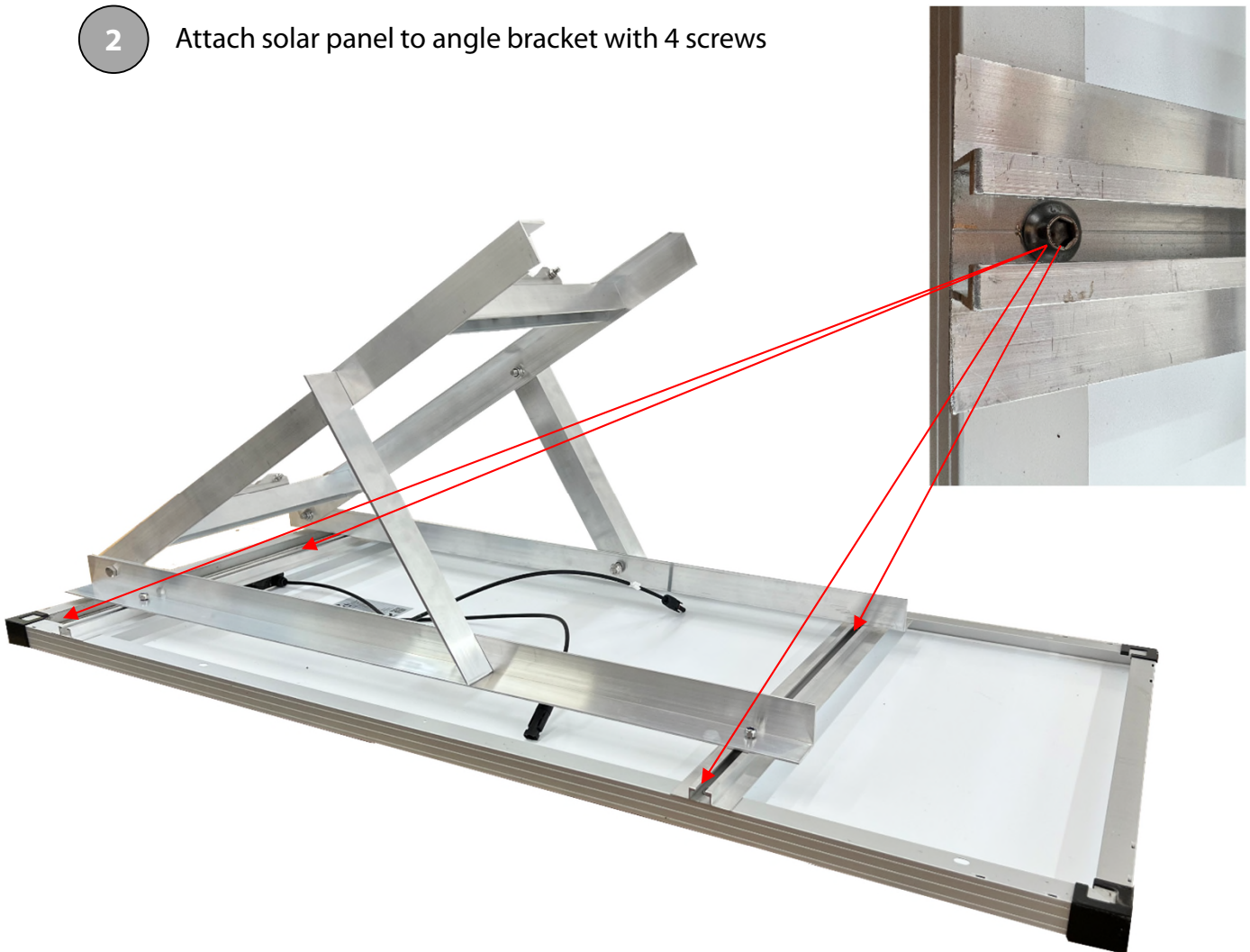


## 2.2 Installation of camera mast (continued)

### Solar panel mount – installation guide

1 Assemble the components of the solar panel holder, which are supplied in individual parts, as shown.

2 Attach solar panel to angle bracket with 4 screws

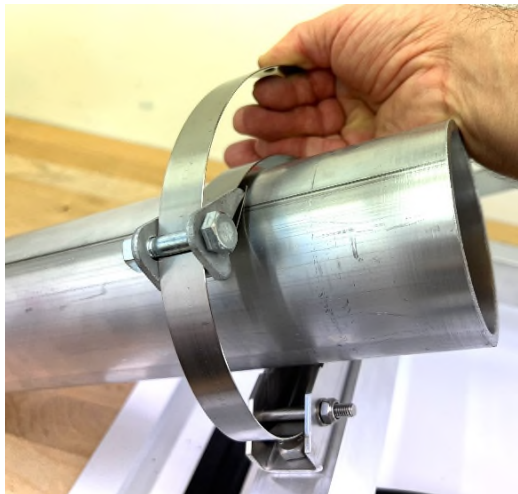


## 2.2 Installation of camera mast (continued)

### Solar panel mount – installation guide

- 3 Fix solar panel with mount onto mast

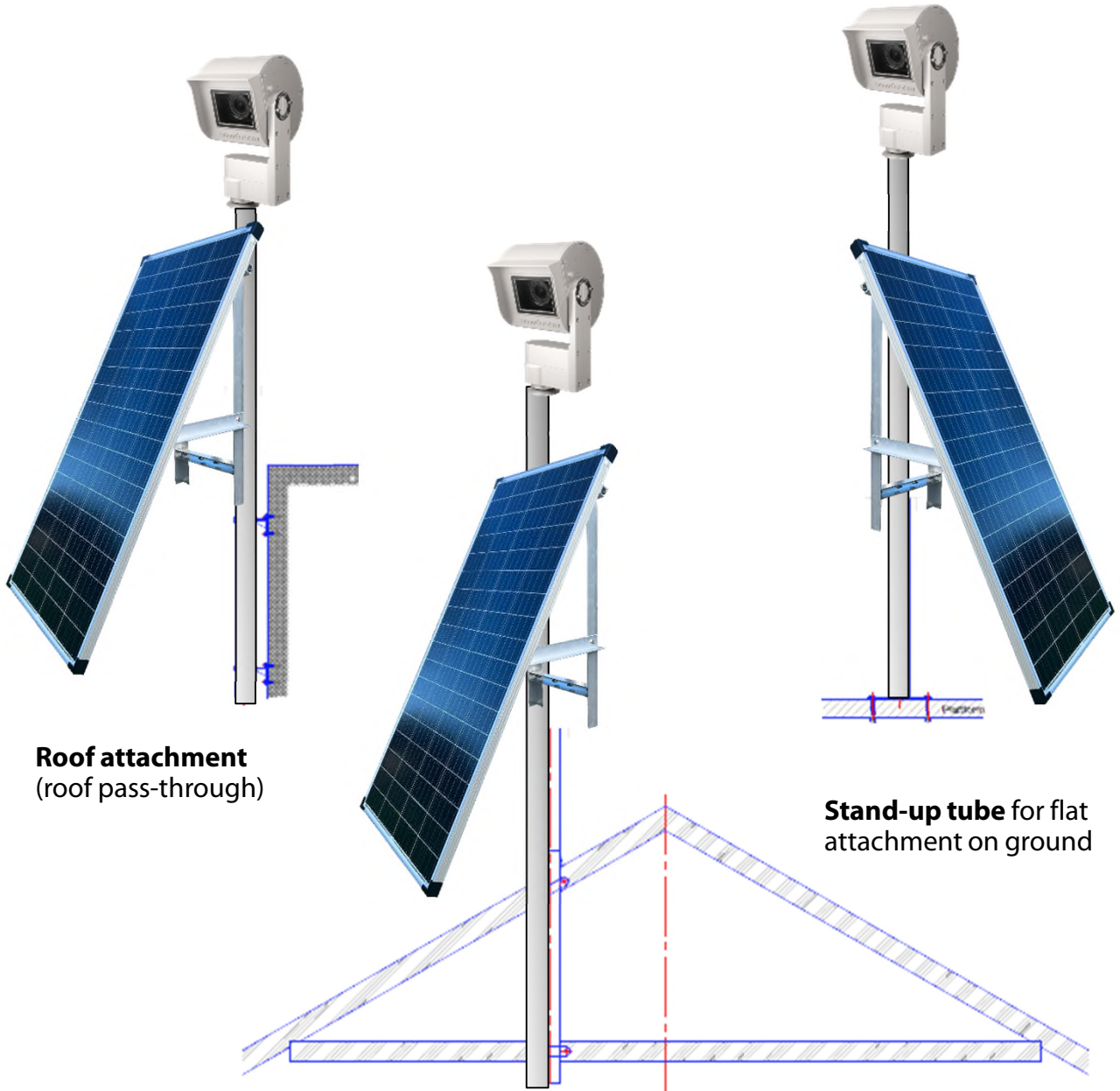
The solar panel mount is attached with **two metallic clamping sets** on the mast



## 2.2 Installation of camera mast (continued)

### Other possible mast types

**Wall attachment** with straight tube



**Roof attachment**  
(roof pass-through)

**Stand-up tube** for flat  
attachment on ground

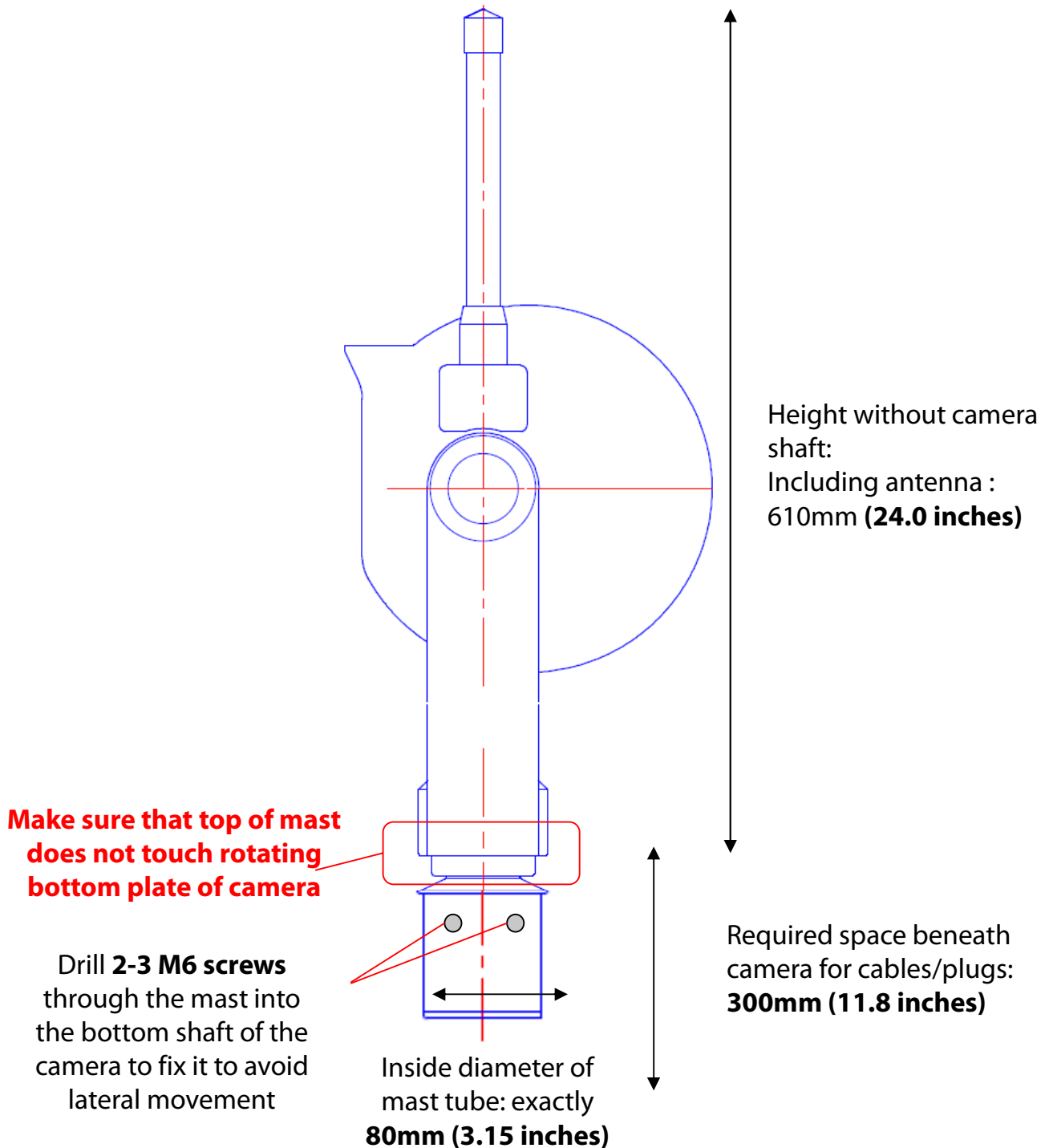


**Very important:** The mast must be grounded.

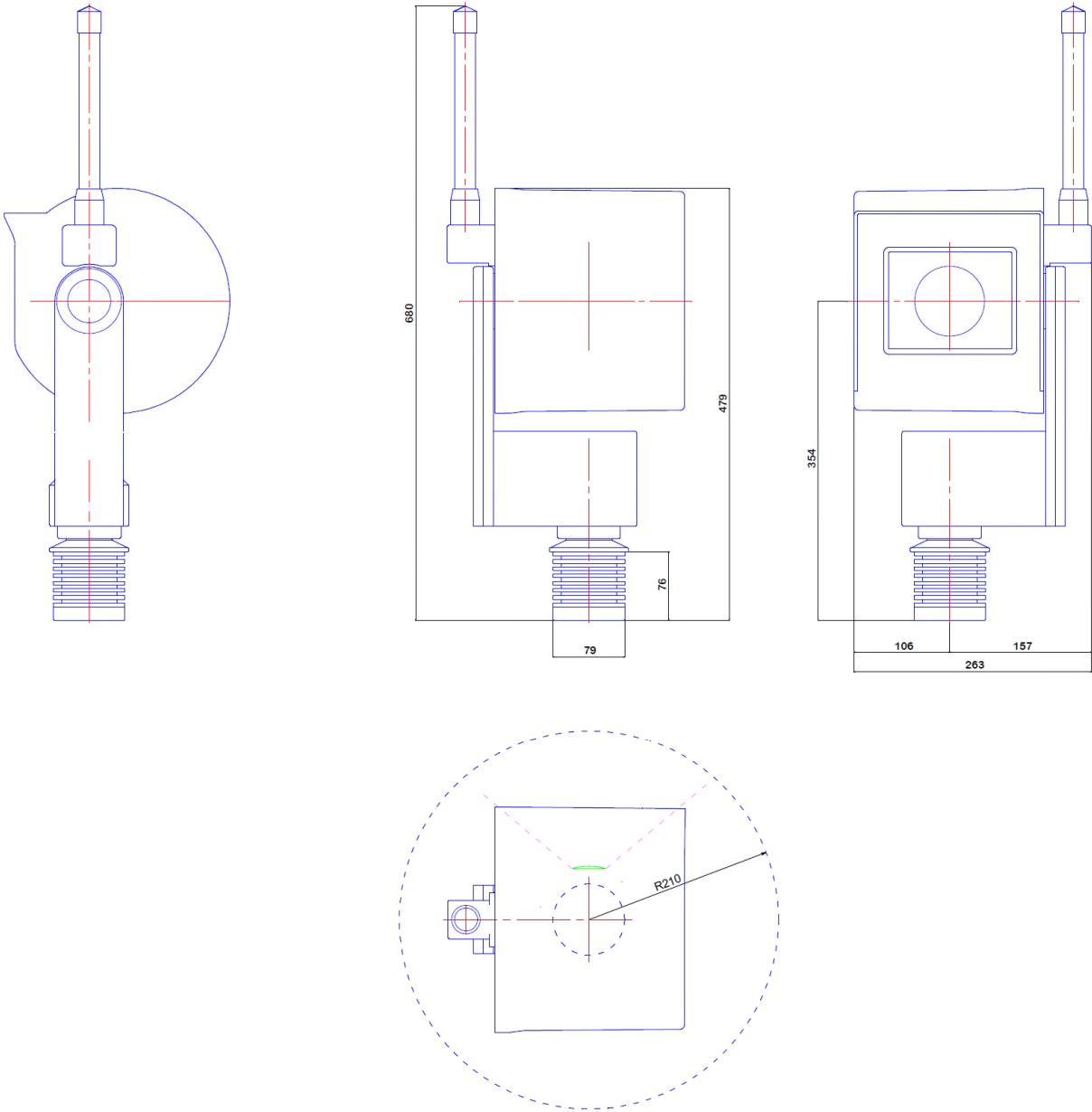


The solar panel can also be installed at a distance and connected with a 15m 24V power cable to the box

## 2.3 Camera dimensions



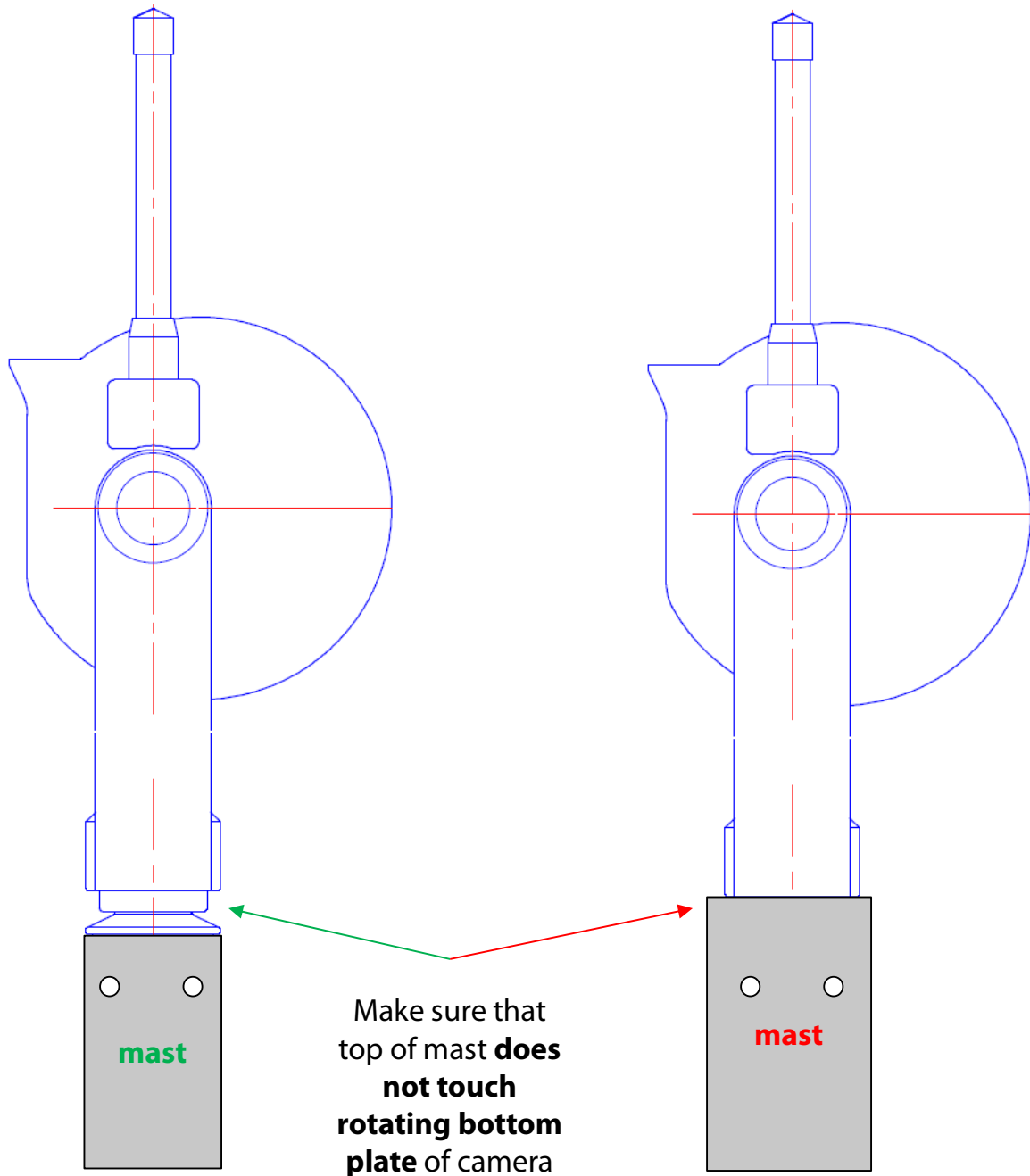
### 2.3 Camera dimensions (continued)



## 2.3 Camera dimensions (continued)

Correct mounting

Incorrect mounting  
(camera motor sits on mast  
inner dimensions of mast > 80 mm)





# 3. Camera installation

## 3.1 Network connection with GSM mobile network (4G)

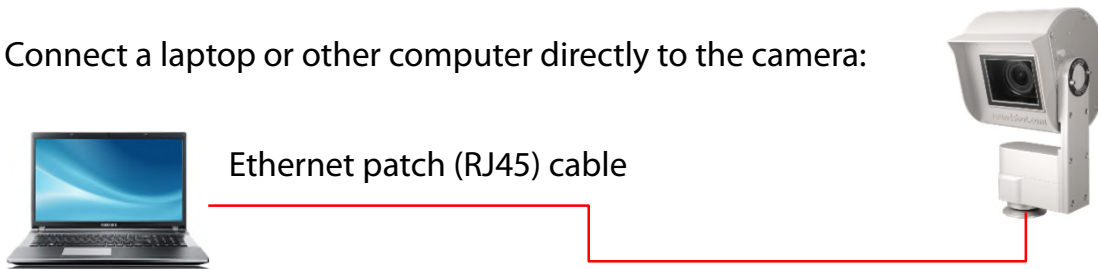
Please **test the network connection in the office before installing** the Livecam on the mast. This avoids lengthy installations/deinstallations.

For Livecams that connect to the network by wifi or by mobile network a **special module** needs to be installed in the camera computer. Please make sure to specify this requirement when ordering the camera.

In this case, **the Roundshot team will set the IP for the camera computer to DHCP and preconfigure the APN settings of your data plan provider.**

If it is necessary to reconfigure the APN settings, please set the IP to fixed (192.168.1.80, see page 4 for instructions) and connect as follows:

Connect a laptop or other computer directly to the camera:



Set the IP of your computer (ethernet card) within the same range and subnet as the camera, for example:

IP-Adresse automatisch beziehen

Folgende IP-Adresse verwenden:

IP-Adresse:

Subnetzmaske:

Standardgateway:

DNS-Serveradresse automatisch beziehen

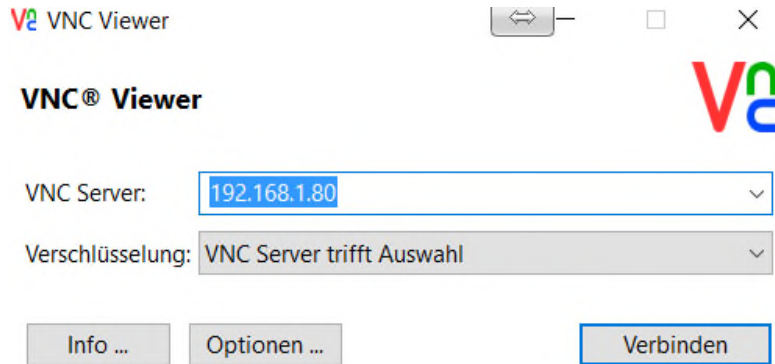
Folgende DNS-Serveradressen verwenden:

Bevorzugter DNS-Server:

Alternativer DNS-Server:

### 3.1 Network connection with GSM mobile network (4G) – (continued)

Download and install a **VNC software** to establish the connection, for example VNC Viewer. Enter the fixed IP of the camera to connect:



User: livecam

Only the **password** needs to be entered.

Password: **livecamG3**



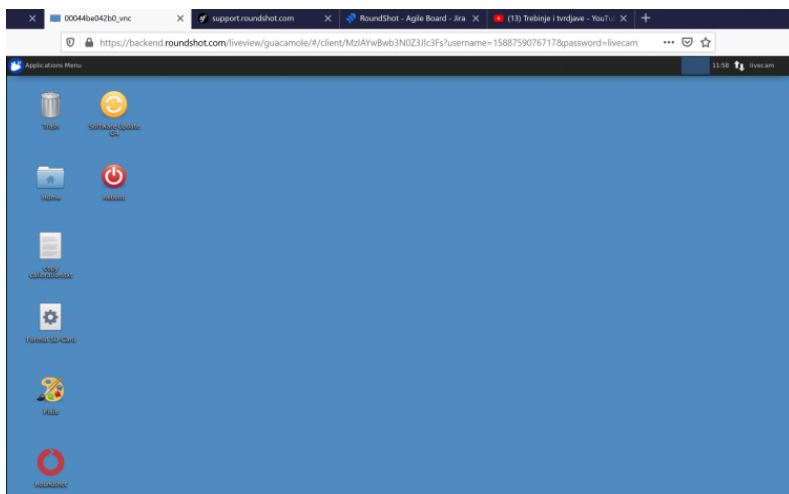
Factory **default password** (without upload password)

Password: \*\*\*\*\*



Equal to **upload password** if the Livecam has already been prepared with upload credentials prior to shipping

This opens a connection to the Livecam computer with Linux operating system:

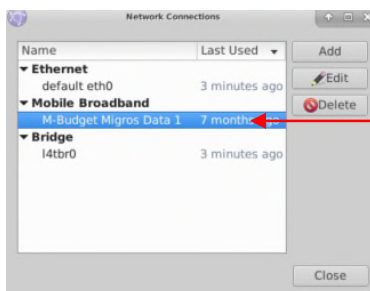
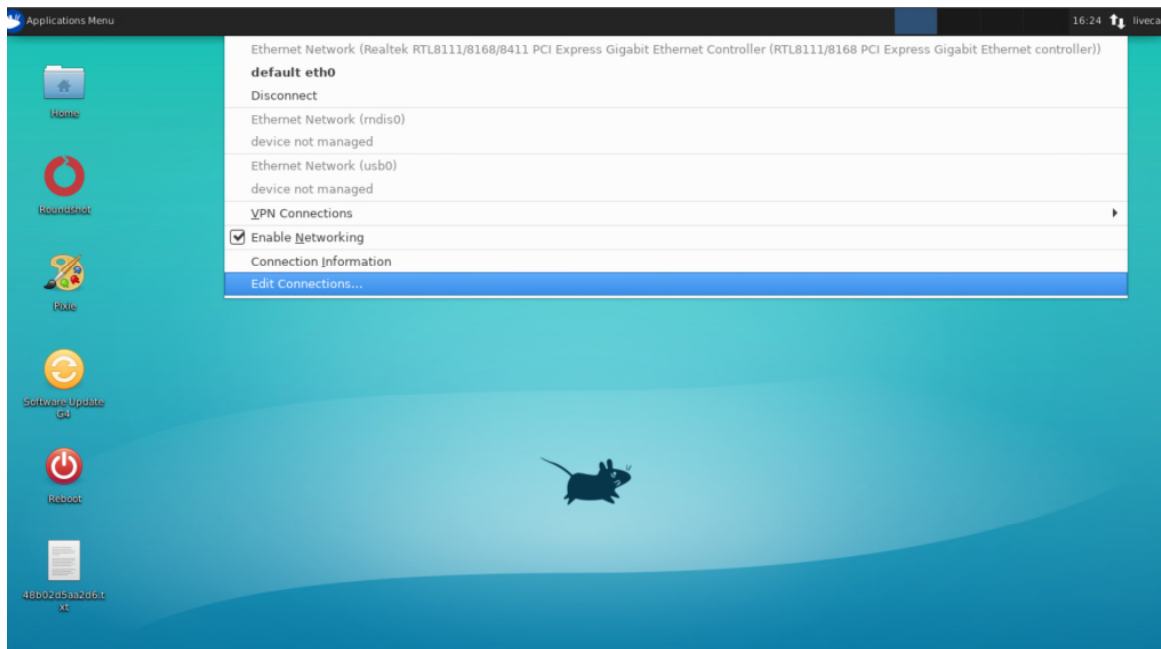


Once the Uploader is activated with an **upload password**, it will automatically be set as **access password** to the camera.

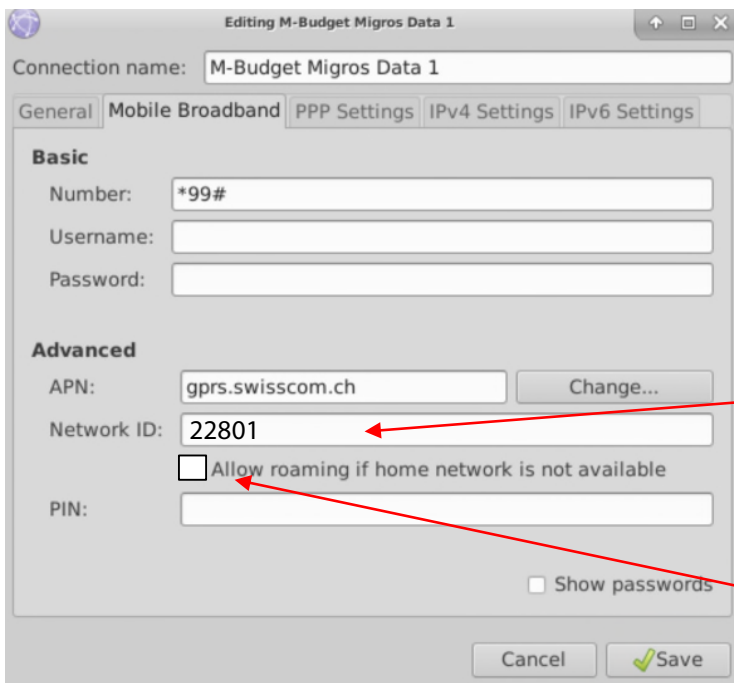


If the upload configuration of the Livecam has already been prepared by roundshot prior to shipping, please contact roundshot to obtain this password.

### 3.1 Network connection with GSM mobile network (4G) – (continued)



Open up the **edit connections menu** and make a left mouse-click on the mobile broadband connection and press "Edit".



Enter the **Network ID** of your provider to always lock the connection. This prevents potential roaming.

Make sure that the option «**Allow roaming if home network is not available**» is **not activated** (not ticked).

### 3.1 Network connection with GSM mobile network (4G) – (continued)

Edit now the settings for this GSM Connection and enter the data according to the following table:

- Number
- Username
- Password
- APN
- Network ID

Provider	Country	Number	User name	Password	APN	Network ID
Swisscom	Switzerland	*99#			gprs.swisscom.ch	22801
Sunrise	Switzerland	*99#			internet	22802
Salt (Orange)	Switzerland	*99#			internet	22803
Digital Republic (Sunrise)	Switzerland	*99#			dr.m2m.ch	22802
Orange	France	*99#	orange	orange	orange.fr	20801
SFR	France	*99#			wapsfr / s12sfr	20810
TIM	Italy	*99#			ibox.tim.it	22201

Enter the **Network ID** of your provider to always lock the connection. This prevents potential roaming.

**Untick «Allow roaming»** to fix the connection to your provider.

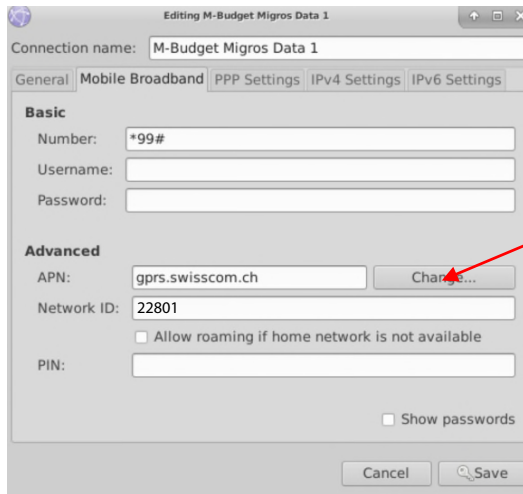
**PIN:** The PIN code needs to be deactivated on the SIM card (for example by using the SIM in a mobile phone)

Confirm all settings by pressing **«save»**.



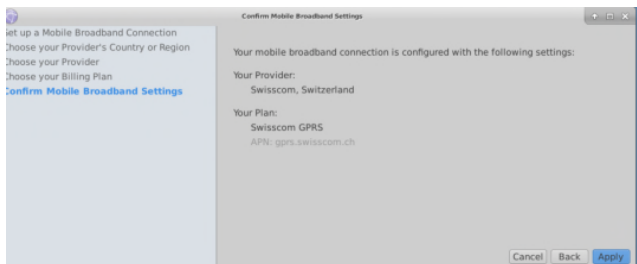
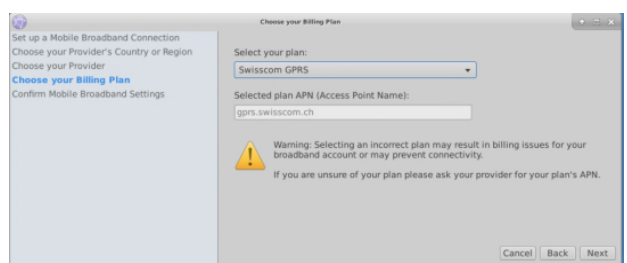
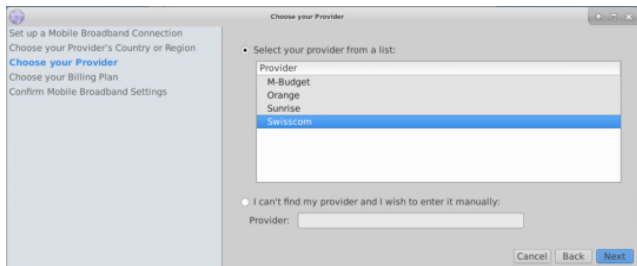
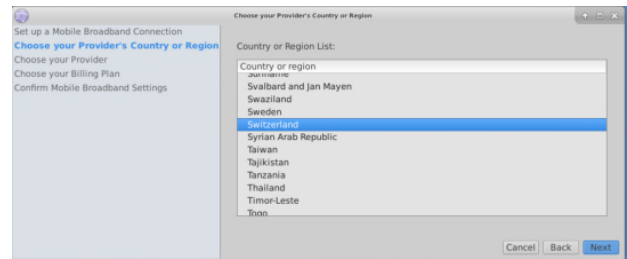
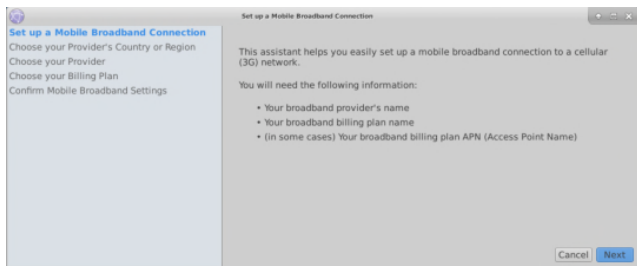
The APN settings of your GSM provider can be found by a google search, for example “APN settings orange france”.

### 3.1 Network connection with GSM mobile network (4G) – (continued)



It is also possible to use the **Set-up Assistant** by clicking on **“Change”**:

The Set-up Assistant will guide you step-by-step through selecting the country, provider and billing plan to obtain the correct APN settings:



Confirm all settings by pressing **«apply»** and **“save”**.

### 3.1 Network connection with GSM mobile network (4G) – (continued)

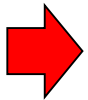
The camera is now connected to your GSM network. Unplug your ethernet cable.

After a reboot the camera will connect to the GSM network within 5-10 minutes.

Contact the Roundshot team who will check if the connection to the VPN (remote access to camera) has been successfully established.



If yes, go ahead with the installation of the camera on the mast. Once the camera is installed, the Roundshot team will now connect to the camera to configure it for service.



If no, please go to section «trouble-shooting» to establish the connection.

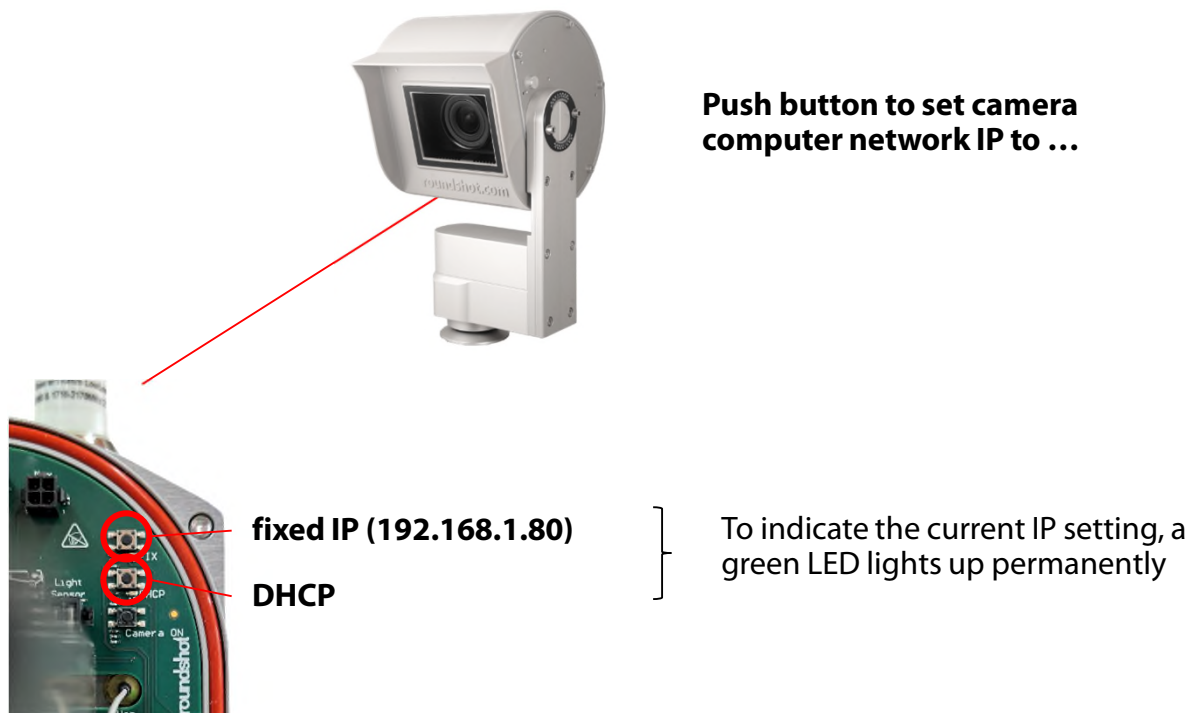
### 3.2 Network connection trouble shooting

If the connection cannot be established please follow these steps:

1. Is the power cable with mains adaptor plugged-in and is the camera powered-up? If so, the fans turn which creates a distinctive noise (even with closed waterproof case).
2. Do you know the IP of your camera? The standard (factory) IP is 192.168.1.80.
3. Have you set **the correct IP** on your computer? The computer IP needs to be different from the camera IP but in the same range, for example:

```
camera: 192.168.1.80  
  
computer IP: 192.168.1.70  
subnet mask: 255.255.255.0  
gateway: 192.168.1.1
```

4. If all fails, please **reset the camera IP** either to a fixed (factory) IP or to DHCP:



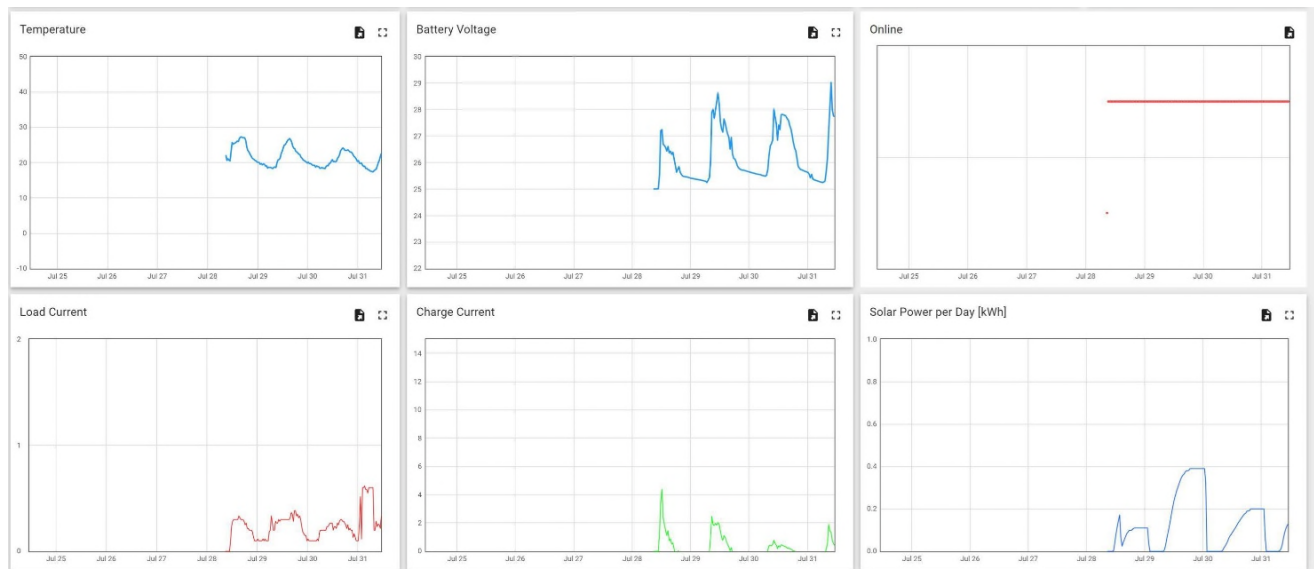
Reboot the computer by turning the power off/on.  
Wait approximately 5 minutes for the camera to reinitialise.  
It may be necessary to repeat this procedure.

## 4. Camera operation

### 4.1 Visualization of power data in Roundshot Cloud

The solar system with Butler continuously measures all electricity data and transmits it to the Roundshot Cloud every 10 minutes.

The following data is available:



#### Temperature - °C

The temperature measurement shows the heat of the IoT device (Butler) in °C.

#### Battery Voltage - V

This parameter measures the battery charge from 25V (minimum) to 29V (maximum). The course of this curve also shows the power consumption of the system.

#### Online - yes/no

This value indicates whether the solar butler (not the camera) is online or not.

#### Load Current - V

This parameter measures the final electricity consumption of the system.

#### Charge Current - V

This value indicates the current with which the battery is charged.

#### Solar Power per day - kWh

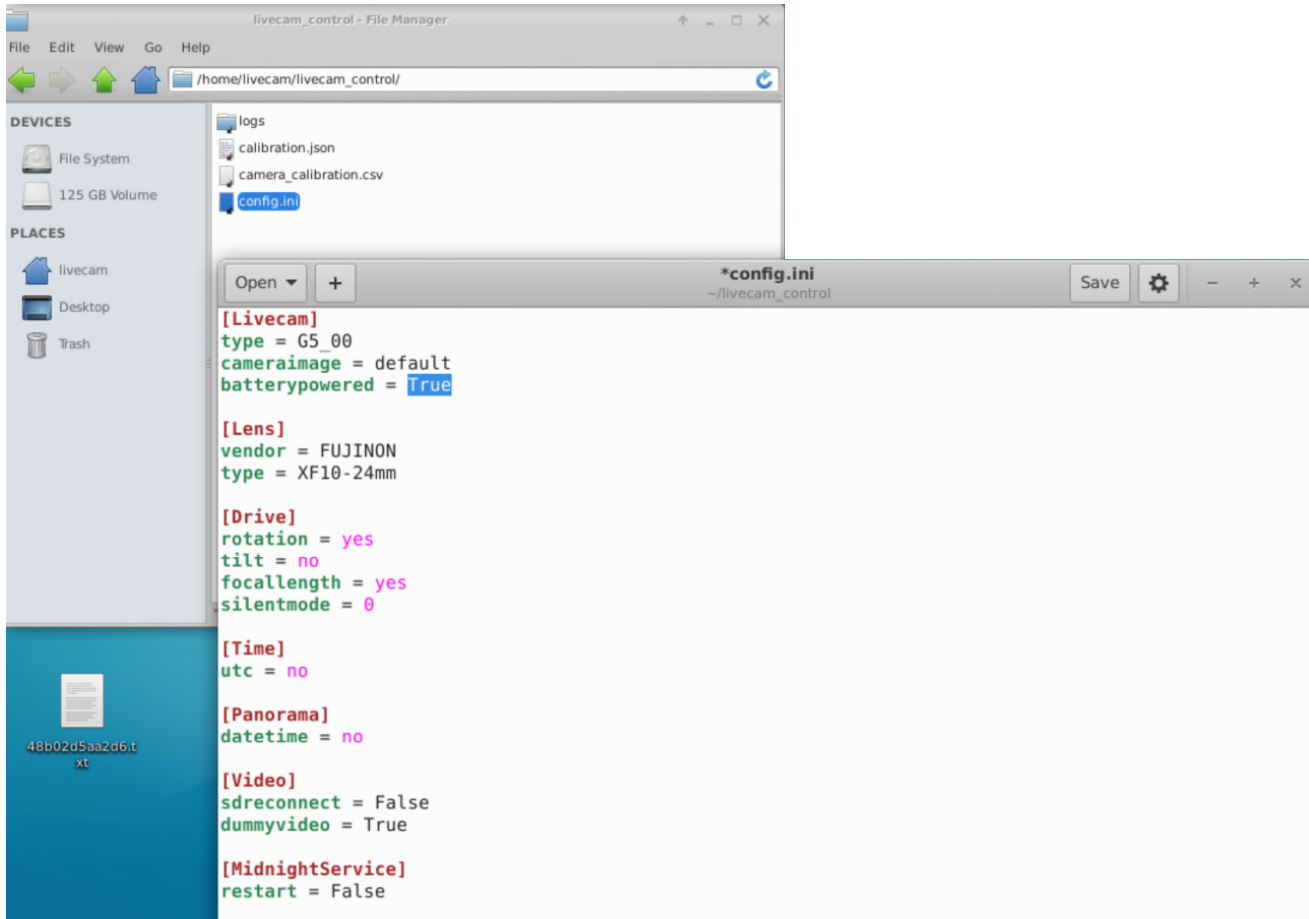
This parameter visualizes the electricity production of the solar panel.



## 4.2 Power management for solar operations

As soon as the camera is online and the roundshot team has put the camera into operation via remote maintenance, power management is activated.

To do this, the following setting is required in the camera computer:



```
[Livecam]
type = G5_00
cameraimage = default
batterypowered = True

[Lens]
vendor = FUJINON
type = XF10-24mm

[Drive]
rotation = yes
tilt = no
focallength = yes
silentmode = 0

[Time]
utc = no

[Panorama]
datetime = no

[Video]
sdreconnect = False
dummyvideo = True

[MidnightService]
restart = False
```

The power saving mode is activated immediately after deactivating the VPN connection.

The camera computer and the 4G connection are only active during image capture and image transfer.

The remote maintenance connection via VPN is therefore only available every 10 minutes for 2-3 minutes in normal mode (battery voltage > 24V).

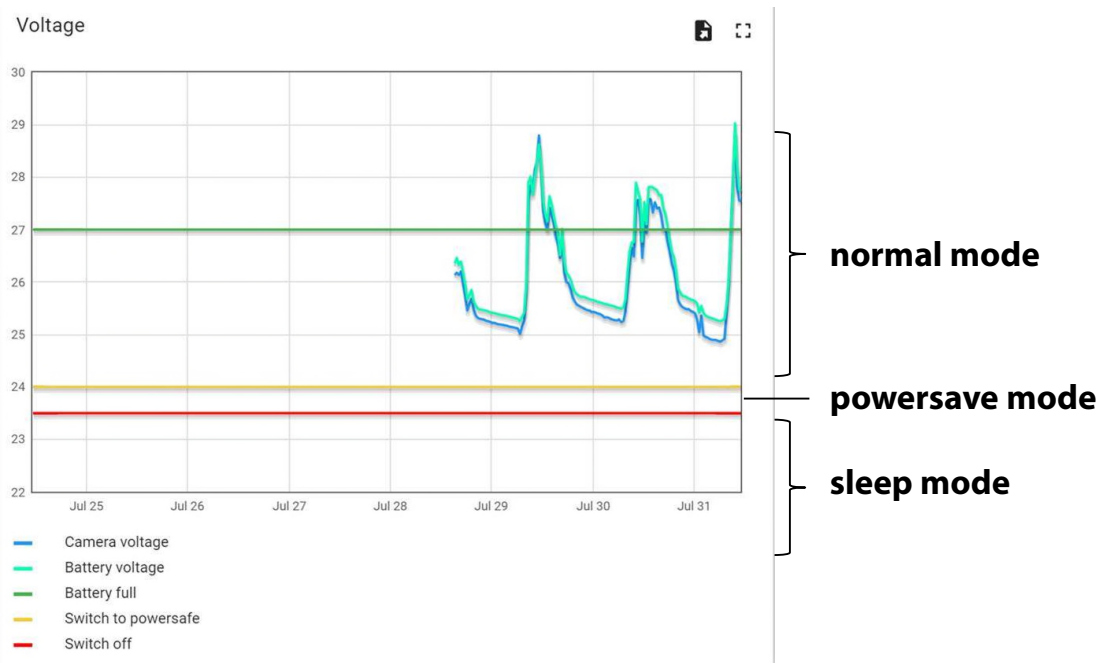
In power saving mode (battery voltage 23.5 - 24V), the VPN connection is only active once per hour, while in sleep mode (voltage < 23.5V) it is completely inactive.

## 4.2 Power management for solar operations (continued)

The camera computer monitors the charge in volts available in the battery and actively controls the entire system.

This means that the camera with 4G router and computer as well as the solar system with butler and separate 4G router are activated or deactivated depending on the available power.

This is done according to the following **limits:**



### systems

battery volt range	image capture (scheduler)	heating system	computer
24 – 29 V	1 image / 10 min.	on	on
23.5 – 24 V	1 image / 1h	off	on
< 23.5 V	no images	off	off

## 5. CE conformity declaration



Seitz Phototechnik AG  
Frauenfelderstrasse 26  
8512 Lustdorf / Switzerland  
ph: +41 52 369 68 00  
info@roundshot.com www.roundshot.com



We declare under our own responsibility that our product

### Livecam Generation 5

is compliant with the main requirements of machinery directive 2006/42/EG.

The following standards have been applied:

Model/Type reference:	Roundshot Livecam G4	Serial no:	00:04:4B:DE:DA:E0
Trade mark:	Seitz Phototechnik AG	Date of tests:	2020-01-16 until 2020-02-11

Standards		Result
EN 55032:2015 CISPR 32:2015	Electromagnetic compatibility of multimedia equipment - Emission requirements	Pass
EN 55035:2017 CISPR 35:2016	Electromagnetic compatibility of multimedia equipment - Immunity requirements	Pass
EN IEC 61000-6-2:2019 IEC 61000-6-2:2016	Electromagnetic compatibility (EMC) – Part 6-2: Generic standards - Immunity for industrial environments	Pass
EN 61000-6-3:2007 +A1:2011 + AC:2012 IEC 61000-6-3:2006 /AMD1:2010	Electromagnetic compatibility (EMC) – Part 6-3: Generic standards - Emission standard for residential, commercial and light-industrial environments	Pass

Date and location:

Lustdorf / Switzerland, 28. September 2022

Seitz Phototechnik AG

Peter Seitz

Werner Seitz

Attachment:

Eurofins test report

# Impressum



## Copyright 2024 by

Seitz Phototechnik AG  
Frauenfelderstrasse 26  
8512 Lustdorf / Switzerland

ph: +41 52 369 68 00  
email: [info@roundshot.com](mailto:info@roundshot.com)

[www.roundshot.com](http://www.roundshot.com)

Technical changes reserved  
April 2024

