

Filming and Production Handbook

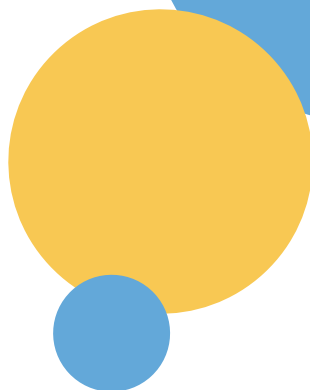
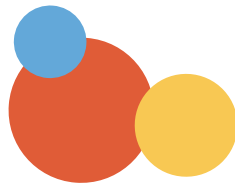


Table of Contents

01

EQUIPMENT YOU NEED

360° CAMERA

02

HOW DO 360° CAMERAS WORK?

03

EQUIPMENT CHECKLIST

04

PRE-PRODUCTION

CAMERA TESTING

05

PRODUCTION AND FILMING

PRODUCTION

07

POST-PRODUCTION



Equipment You Need

360° CAMERA

01

Consumer-Level 360° Camera

Easy-to-use consumer-level cameras are affordable, yet take great images and videos. Many brands also have self-stitching, audio, and many accessories.



Insta360 One X2 - Instructions



Insta360 Blog
Article



Insta360 Guides



Insta360
Preparation
Tutorial



Video Tutorials



25 tips to use your
Insta360 video

Professional-Level 360° Camera

02

When you want high-end quality, professional-level cameras are the go. With 8K resolution 3D or 4K 2D filming on photos and videos, they enable many options.

Insta360 Pro 2 - Instructions



Insta360 Guides



Video Tutorials



Equipment You Need

HOW DO 360° CAMERAS WORK?

**01**

A 360° camera captures an image or video with each extreme fisheye lens taking an image of its surroundings. The images are then stitched together to produce a 360° digital version. The way it works is to imagine the camera is inside a sphere taking a photo of the inside surface. The resulting file is called an equirectangular image or video file. This is also the perspective that a viewer has when they look at the 360° file. A great tip is to image the camera as your viewer's head, whatever the camera sees is what your viewer will see.



Insta360 One X2



Insta360 Pro 2

Equipment You Need

EQUIPMENT CHECKLIST

☐ **Mobile phone paired with a Camera app**

☐ **Camera Tripod**

- A three-legged stand is recommended that can meet your desired viewer's eye level. The three-legged tripod will help with filming on uneven ground and provide stability so your camera won't fall over as easily.

☐ **SD Cards**

Physical Size:

- SD cards come in different sizes.
- You will need **Standard SD cards** for the **Insta360 Pro2**.
- You will need **Mini SD cards** for the **Insta360 OneX2**.

Speed:

- Purchase a minimum rating of 10 (10MB/sec read/write speed) speed class.
- Purchase a minimum Ultra High Speed (UHS) rating of 3 (30MB/sec).
- If you are filming a 360° video, you will need a minimum of V30 (HD/Full HD video), V60 (4K recording), and V90 (which supports up to 8K video recording).
- Opt for A2 Application performance if you can, vs A1.
- Opt for a higher speed you can find. E.g.: 170 MB/s.

Capacity or Storage Size:

- Look for SD Extended Capacity (SDXC) that allows cards 32GB to 2TB in size.
- If you are shooting a video, then look for a larger capacity size.
 - 10mins of 360° video footage equals approx. 8GB.
- Suggest a minimum of 128GB and purchase a few cards for backup.

☐ **Lens cleaner**

☐ **Bag**

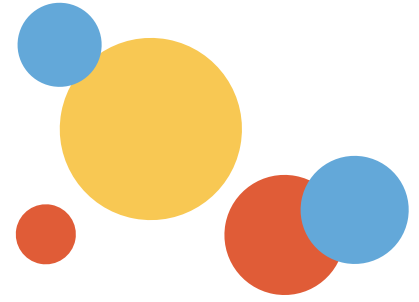
☐ **Pen or pencil**

☐ **Paper to take filming notes**



Pre-Production

CAMERA TESTING



Take your Insta360 camera and film the following types of content:

01 INDOORS

- Take a 360° photo indoors to test the image quality. Try to have objects in the foreground (within 1m), middle ground (2m) and in the background (+3m).
- Take a video as well. Speak to the camera as well, so you can see and hear how that works.
- Film in different locations within the same room to see what it is like from a different perspective.
- Turn on different lights indoors to see what it is like with bright lights, overhead lights, lamps in parts of the room or low light.

02 OUTDOORS

- Take a 360° photo outdoors using a tripod.
 - Write down the time of the day you are filming. If there is a cloudy or overcast day and a sunny day, take a photo in the same spot each day.
- Take a Google Street View style sequence of 3 x shots.
 - For example: Take a 360° photo in one spot, choose a direction to move, then walk 3m-4m away and take another photo, then repeat the action to take another photo.
- Take a 360° video.
 - Make sure to use a tripod. Please stand 1m and then start to move to the 2m-3m zone, then to the 4m plus zone and go further. This will show you the clarity of the shot the further away you get from the camera.
 - Speak to the camera as well so you can see and hear how that works.

03 PERSPECTIVE

- The last task would be to try to set the camera level at different heights.
 - E.g.: think of the viewer since they will be viewing based on your original set-up.
 - For example, put the camera at a high angle for a tall view of the world versus a low angle for a short person's point of view.

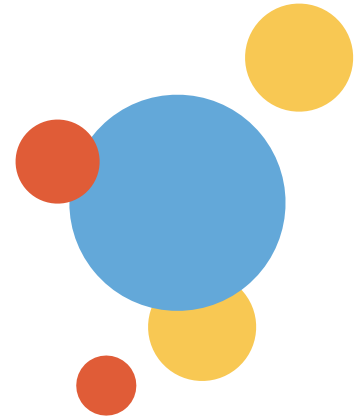


Production & Filming

PRODUCTION

Production Requirements

- Shoot Scenes and content.
- Create and collect interaction markers, content and assets.
- Source content from third parties (if required).
- Format, prepare and assign to scenes.



Preparation

- Keep recharged batteries.
- Have extra SD cards.
- Take screen wipes.
- Take a bag.
- Write down shoot details for post-production.
- Create your overall storyboard to guide you on your shot selection and content collection.



Filming

- Pick less crowded places unless that is what you want to capture.
- There is no "behind the camera".
 - You will be in the shot unless you hide. If you do hide, make sure the camera is not a trip hazard or gets stolen easily.
- Do not have the camera on the move.
 - Remember that the camera is someones' head. Avoid putting the camera on a moving object. However, it works as long as the camera is fixed at one point inside a vehicle.
- Objects within 2m to 5m from the camera are in the best focus.
 - They can get warped when it is closer to the camera. Also, further away from the camera, it can get pixelated.

Production & Filming

PRODUCTION

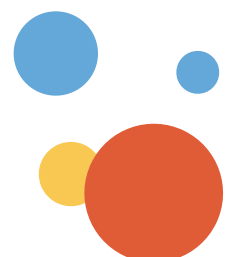


Lighting

1. Brighter lighting will help with the final footage.
2. Shoot closer to the lighting or the best lighting in a room.
3. Pick places that are more open spaces with more natural light than a crowded or darker place, unless that is what you want to capture.
4. Make sure to calibrate your camera in the location before each shoot.

Marker Content

- Take normal photos and videos and write down text which can be inserted later on the VRTY platform.
- You cannot zoom in VR/360°, so capture photos that can show objects enlarged or for audiences to see.
- You cannot walk around in VR/360°, so take 360° shots at different locations. Audiences can teleport to each location just like in a Google Maps street view.



Post-Production



01 Post-Production

- Photo or 360° footage editing
- Visual effects
- Sound effects
- Voice over

02 Stitching

- For best quality, take the content off the SD cards and stitch the 360° photos and videos using the provided software.

03 Editing

- You can edit 360° photos in a variety of photo editing software.
 - E.g.: Adobe Photoshop or Pixlr.
 - You can crop, play with the image colours, balance, saturation or even delete or add elements to the image.
- You can also edit 360° videos in a variety of video editing software.
 - E.g.: Final Cut or Adobe Premiere Pro.
 - You can crop length, splice, edit or add sound or music, play with the video colours, balance, saturation or even delete or add elements to the video.

04 File Size Optimisation

- You must optimise or compress each file before uploading your content to the VRTY platform.
- This step will help reduce the overall size of your project, which can have implications for the viewer who will need to stream your project (the larger the project size, the stronger the bandwidth and internet are needed).
- The project size will also impact how quickly or smoothly content will pop up.
- You can compress images such as JPEGs using the free software called Compress JPEG <https://compressjpeg.com>.
- You can compress videos using free software called Handbrake <https://handbrake.fr>.