

# A Quick Guide to 360 Film

As a filmmaker, there are several new aspects of filmmaking in 360 or VR. This condensed document covers the most important aspects to get you quickly into 360/VR filmmaking.

## 360 film and Virtual Reality

360 filming means recording and playing your film in 360 degrees all-round. With a special multi-lens camera, the whole scene is recorded in all directions. Watching 360 film is possible on several platforms. On a normal computer a mouse may be used to navigate your viewing angle around. On mobile phones, Facebook, Vimeo and Youtube support watching 360 films. Another way is to use a special Virtual Reality (VR) headset, which will track your movement, so you can literally look around and see the film all around you. If your 360 film is recorded in stereoscopic – with an image for both the left and the right eye – you will also be able to see depth while wearing the VR headset. Both the 360 degree aspect and the depth aspect provide you with new exciting ways to tell your story.

## Equipment

For 360 filmmaking, you need a special camera to record in every direction. Entry level 360 cameras cost a few hundred euros/dollars. Entry level stereoscopic cameras start at 1000 euros/dollars. The range of [professional cameras](#) start at 4000 euros/dollars.

## Storytelling in 360 degrees

Having your camera record everything all-round has a few direct consequences:

- your director, crew, lights and mics preferably hide from the all-seeing camera (\* [note](#))
- moving the camera might cause motion sickness, to avoid this, work with a static camera
- as a director, you have to be aware of [guiding the attention](#) of the viewer around
- your art-direction needs to be 360 degrees all-round
- your actors typically play longer scenes, and every visible actor acts the whole take
- continuity becomes key. There is no frame you can use to crop-out mistakes

For storytelling, this means location itself becomes an important aspect of the narrative, almost like an “extra” character. Because close-up cuts work differently in 360 filmmaking, your acting and directing gets a [touch of theatre](#) – longer scenes, idle acting, etc.

## Immersive storytelling

When your viewer is wearing a VR headset, it is as if your viewer is standing -or sitting- in your scene. This immersive aspect requires a directional choice of how you will treat your viewer:

- as an invisible observer (fly-on-the-wall)
- a visible, but unidentified character (like an extra – a bystander, etc.)
- a passive supporting character, related to one of the main characters (great for empathy)
- as a main character in the film, yet unable to move or be heard

Especially when you are recording in stereoscopic, an immersive viewer role creates a new field of personal interaction. Creatively using this field, 50-150cm around the camera, gives a new powerful dimension to tell narratives on empathy, intimacy and (crossing) personal borders, a dimension that is not directly available in traditional filmmaking.

## Sound and other senses

Just as the visuals, the sound can also be made for 360. This means that the viewer, while looking around, will be able to hear sound coming from specific locations. To set this up, your sound designer will [place all sound recording in a 3D space](#), which will be rendered to a format like Ambisonics, to be played in a VR headset. The sound recording is done by either a 360 microphone or with traditional lavalier microphones and then mixed into 360.

To become even more immersive, there are projects that add smell, touch, taste, wind and heat to the viewing experience. For smell, wind and heat there are automated experiences available. Touch and taste require a sense-operator to be present for each viewer to bring the right sensation at the right moment.

## Editing

All video streams of the different lenses are combined into one video in a process called "stitching". Stitching can be done automatically by a computer or, for high-end productions, by a new crew-member – the stitcher.

The combined image is mostly in equirectangular format, a format similar to how the world is mapped on a world-map, the top and the bottom get stretched. For monoscopic the default format is a 3840x1920 mp4. For stereoscopic, both the left eye and right eye are placed on top of each other, default (compressed) stereoscopic is a 3840x2160 mp4.

Having all images combined into an equirectangular format means that any edit program can be used to cut and sequence the different scenes. However, any edit that changes the content of a frame – or creates frames, like subtitling – needs to be aware of the special equirectangular mapping. Professional editing suites are aware of this mapping.

## Screening your 360 film

To show your new 360 film to the world, you will need to provide each audience member with his/her own VR headset. To give 360 films an audience, some cinemas provide a VR cinema with 5-40 rotating chairs and a headset. More and more festivals also accept 360 films nowadays and provide their audience with this kind of pop-up VR cinemas.

## How to start your 360 film making adventure

Excited to start your own 360 film? These are the first steps of your 360 adventure:

- buy or rent a 360 camera
- get your crew (preferably with art-direction, 360 editor and 3D sound engineer)
- write a script and go for it, film it!

*To challenge yourself with a time-limited film challenge, join a 48 Hour VR this year!*

Confirmed dates of 48 Hours with VR in 2018:

1<sup>st</sup> - 3<sup>rd</sup> June 2018 – Amsterdam, [amsterdam@48hourfilm.com](mailto:amsterdam@48hourfilm.com) for more info

