

## Technical requirements for theatrical screenings during Berlinale 2010

### High Definition (HD)- and Standard Definition (SD)- Video

As of 2009 the Berlin International Film Festival has launched a festival-wide server-based distribution system for E-Cinema content.

For that reason all video content, which is provided for the screenings in the Festival or in the European Film Market, will be encoded into normalised MPEG2-MXF Interop files according to current standards.

For protecting the film files against piracy the Festival uses a 128-Bit encryption process. The files will only be distributed within the Festival's screening locations and onto cinema servers owned by the Festival. The duration of the KDMs (digital keys), which make the film files accessible for the screenings, is limited to the Festival period. After the Festival all files are deleted logically as well as physically.

In order to allow for all programmed films to be included in this workflow it is absolutely crucial that all respective screening material is readily available in Berlin **at least 3 days before the first screening of each film !**

Therefore: please do observe our screening material **entry deadline on Feb. 1<sup>st</sup>, 2010 !**

In order to guarantee an unobstructed distribution process the following technical specifications for the delivered content are mandatory.

<u>Data-Media:</u>	Video-DVD:	Codecs: MPEG-2 ISO/IEC 13818-2, PAL 25 fps, 625 lines, NTSC 29.97 fps, 525 lines, maximum bitrate: 9.8 Mb/s
	Blu-ray Video-Disc:	Codecs: MPEG-2 HL@MP (ISO/IEC 13818-2), MPEG4-AVC / H.264 (ISO/IEC 14496) Region code: B/2

**Please notice: The content must be unencrypted.**

Supported 1/2 –inch tape formats:      - Digital BETACAM (SD, PAL/NTSC)  
  - BETACAM / BETACAM SP (SD, PAL/NTSC)  
  - HDCAM (HD)

Supported 1/4 –inch tape formats:      - DVCAM (SD, PAL/NTSC)  
  - HDV (HD)  
  used in Mini-Cassettes or Standard-Cassettes

Colour Space:                               SD-Video: ITU-R BT.601  
  HD-Video: ITU-R BT.709

Supported resolutions and frame rates of delivered content:

SD (active pixels):	720 x 576 (PAL) / 720 x 480 (NTSC)
HD (active pixels) / frame rates:	1440 x 1080i / 50, 60 Hz (only HDV(HD)) 1920 x 1080p / 23.98, 24, 25, 29.97, 30 Hz
Screen aspect ratio:	4:3 (1:1.33)      (Pillarbox) 16:9 (1:1.78)     (Letterbox, if 2048x1080-panel is in use) 1:1.66             (Pillarbox) 1:1.85 / 1:2.35   (Letterbox)

During the festival the following physical resolutions are in use:  
1400 x 788 x 3 pixel (DILA)  
1920 x 1080 x 3 pixels (LCD or DMD™)  
2048 x 1080 x 3 pixels (DMD™)

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The delivery of the soundtrack on the digital medium must be in one of the following formats:

- 1-track analog audio soundtrack (conventional mono playback)  
using track 1 and / or track 2 of the Digital Betacam- or HDCAM- Tape
- 2-track analog audio soundtracks (conventional stereo playback)  
using track 1 and / or track 2 of the Digital Betacam- or HDCAM- Tape
- 2-track encoded Dolby Lt-Rt  
(like analogue Dolby-Soundtrack on 35mm film)  
using track 1 and / or track 2 of the Digital Betacam- or HDCAM- Tape
- 5.1 Dolby Digital  
(encoded using a professional Dolby Digital encoder such as the Dolby Model 569)
- 5.1 Dolby E  
using track 3 and track 4 of the Digital Betacam- or HDCAM- Tape

The track layout for 5.1 formats must be

**L**(left channel) – **R**(right channel) – **C**(center channel) – **SW**(subwoofer) – **Ls**(left surround) – **Rs**(right surround)

The track layout and the soundtrack format must be clearly marked on the tape.

If this is not the case, the festival will not guarantee a flawless presentation.

During the festival Dolby Sound Consultants will be available to assist during rehearsals and screenings of films. Please liaise directly with Dolby Laboratories for further details.

Please notice: The technical conditions especially in the HD-Technology are changing on short notice.

Therefore, only the basic technical requirements are specified in this paper.

### Contact details

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