Film-Tech

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These manuals are designed to facilitate the exchange of information related to cinema projection and film handling, with no warranties nor obligations from the authors, for qualified field service engineers.

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www.film-tech.com

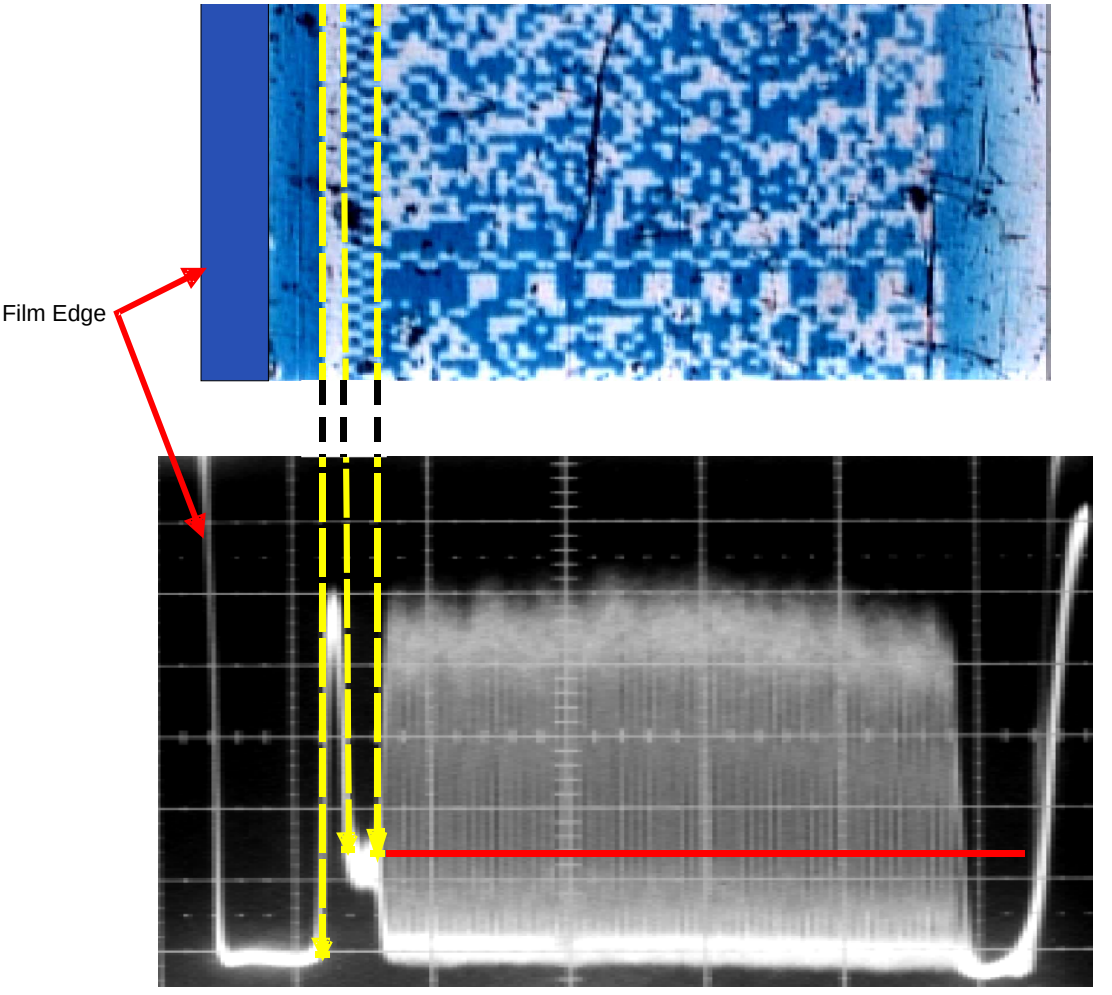
SDDS Sony Dynamic Digital Sound™

SDDS Laboratory Process Manual V3.1

Quick Reference

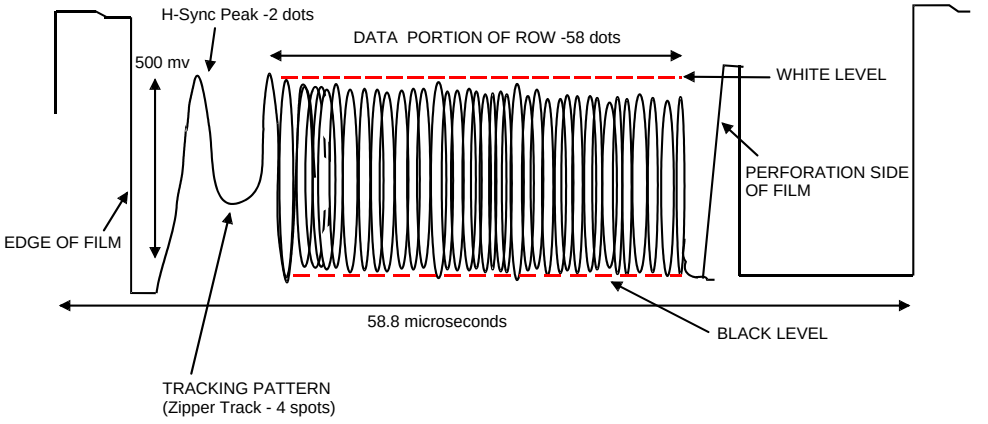
Sony Corporation

Positive Film & VIDEO Waveform



The figure above shows the relationship between a static image of SDDS track and the resultant RF video waveform when the track is read by a CCD array. The two images arescaled to show the equivalent SDDS format features visually and electronically.

Measurement of Waveform



EQ53 PWB TEST POINTS for DFP-D2000

ANALOG VIDEO SIGNAL
P TRACK - TP-300
S TRACK - TP-100

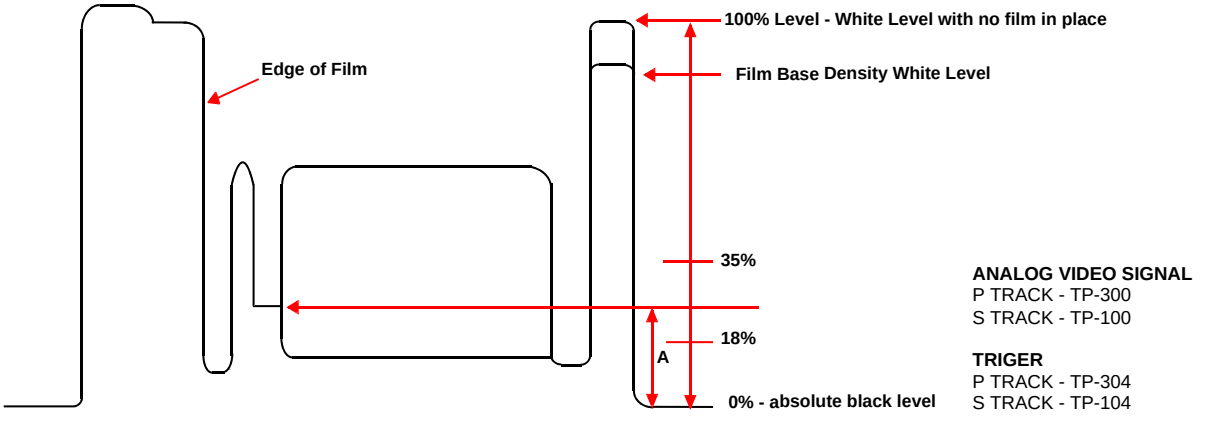
TRIGER
P TRACK - TP-304
S TRACK - TP-104

Density Specification

Negative = 2.0 ±0.1 Positive = 1.30 ±0.2 (Status A Red)

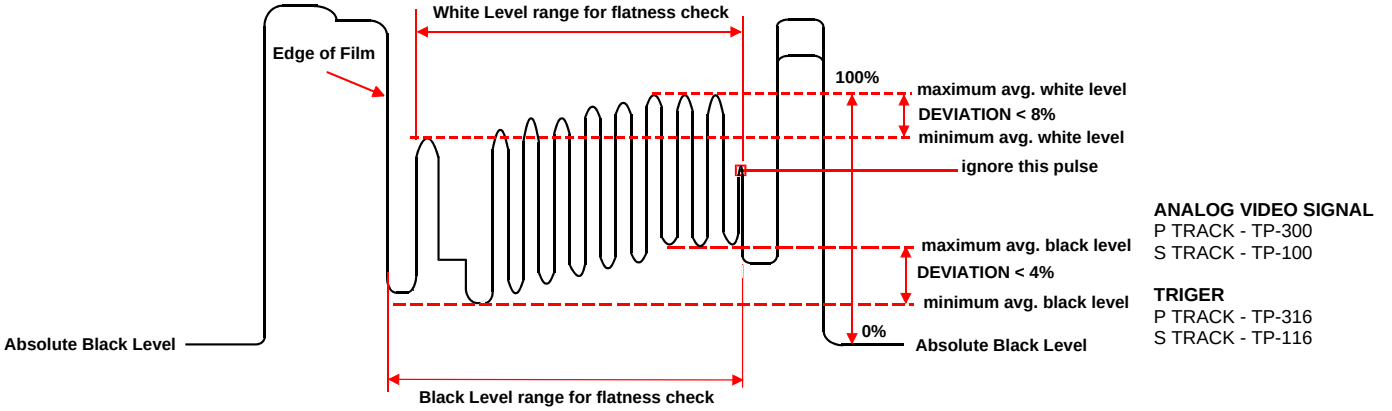
Zipper Level Specification

18% ≦ A ≦ 35%
Nominal A=25%

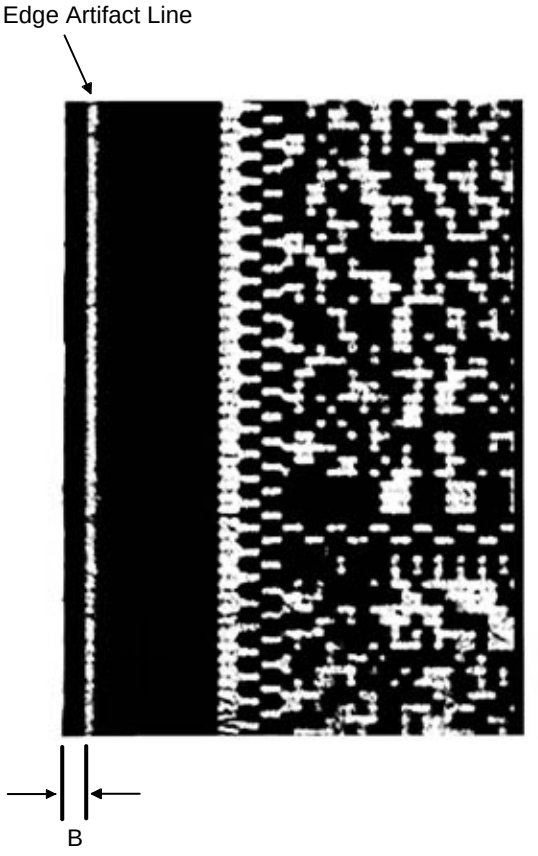


RF Waveform Flatness Specification

White Level: flatness within 8%
Black Level: flatness within 4%

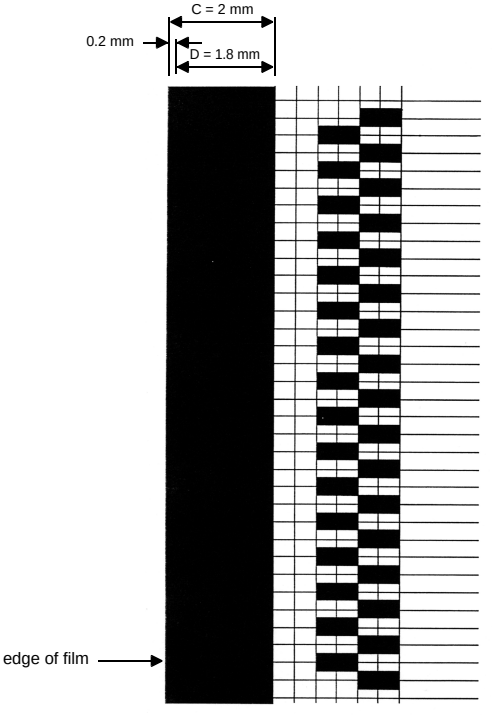


Edge Artifact Line



Position: B < 50 micro-meter
Width of Edge Artifact: within 10 micro-meter

Edge Fog, Edge Scratch, Skiving



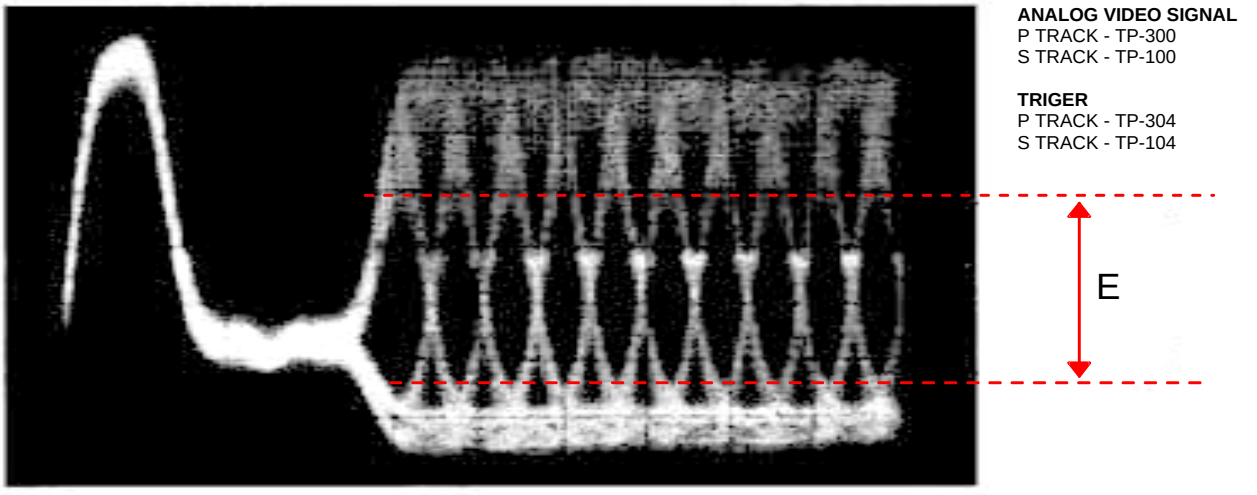
Fog: Negative: No Fog in C dimension
Positive: No Fog in D dimension

Scratches: Negative & Positive: No Scratches in C dimension

Skiving: Negative & Positive: No Skiving in C dimension

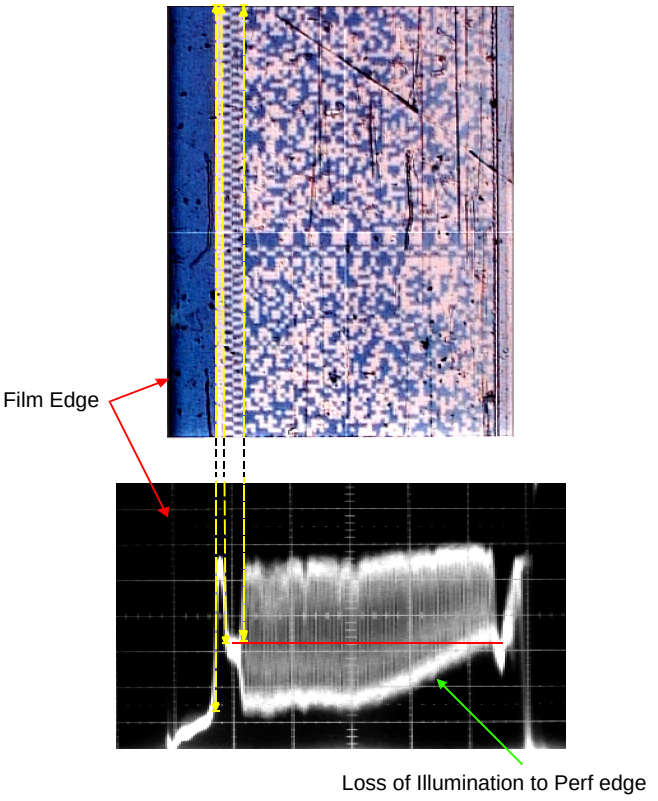
note: the above spec appices to both film edges

Defocus Specification



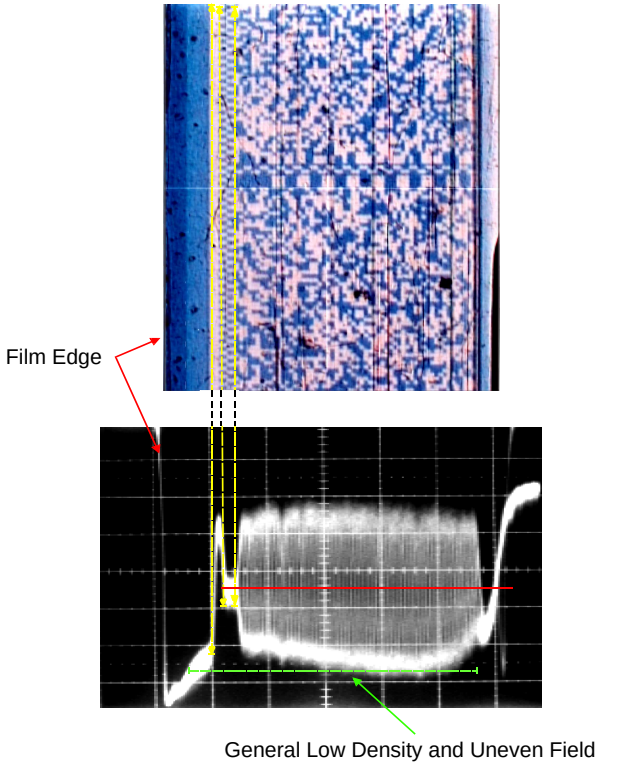
E Minimum/ E Average x 100 > 90%

E is defined as Amplitude of 1T wave of Eye Pattern



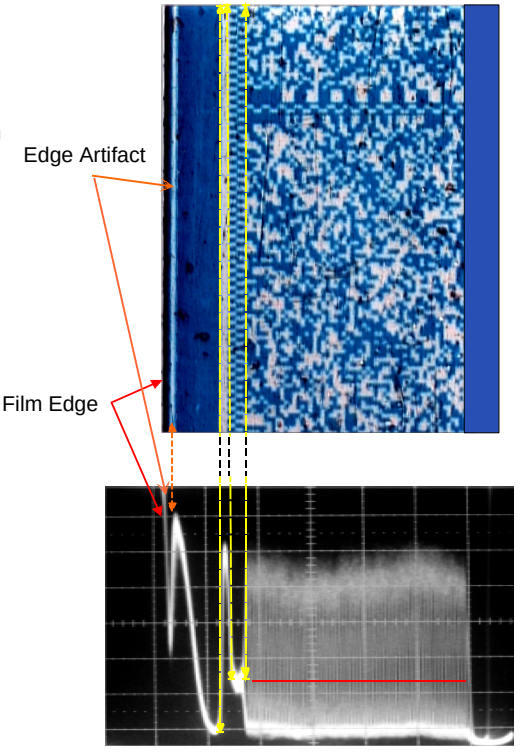
Loss of Black Level Flatness.

The black level rises from the middle of the track to end of the row. This probably the result of a lack of flatness in the illumination field of the contact printer. The example still has a clear and open eye pattern (good print to negative contact) which further supports printer illumination. The overall print density should be higher which would reduce the rise in black level. This example will yield poor QC results.



Uneven illumination and general low density.

Uneven black level from the edge of film to perforation and an average level that is 1 to 1.5 graticules higher than the film edge density (black level from edge of film to Sync Mark). The density change is evident in the static image above the waveform. The example still has a clear and open eye pattern (good print to negative contact) and no Edge Artifacts. The black level is relatively close to the Zipper Track Level and would lead to heavy ECC activity and lower data recovery margins from field scratches and dirt.



Edge Artifact.

Notice the flat black level (Cyan print density) across the row (flat illumination); clear and open eye pattern (good print to negative contact); and a single positive level pulse in between the edge of film and the Sync Mark. A view of the static image shows this “printed-in” line and is called an Edge Artifact. The SDDS reader would attempt to ignore this Edge Artifact. However, the amplitude and width of the artifact is sufficient to confuse the SDDS Tracking Circuitry as to the correct starting point of the row to be scanned. An otherwise excellent print would lead to confusing results since the QC software would report many DCM’s due to tracking loss rather than poor data spot resolution.

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