Dynamic Range Test Charts



A New Method to Measure Dynamic Range





Common test images used to measure dynamic range have significant drawbacks!

Normally a transparent, backlit chart with a grey wedge is used. Every test chart requires an individual certificate indicating the density of each grey patch in the wedge.





This technique entails some inherent sources of error:

1. The certificate is measured with a densitometer that can show **no more than 2.5 densities or 8 f-stops**.







A New Method to Messure Dynamic Range

ARRI's Central Quality Management department has developed a Dynamic Range Test Chart that can show up to 15 stops in one frame!

Dynamic range and sensitivity are the most important image quality parameters for digital camera systems. The procedure to measure these parameters is defined in an ISO standard, but it is extremely complicated and time consuming to carry out.

The ARRI Dynamic Range Chart provides a simple method of taking measurements that correspond closely to the ISO standard. Each grey patch is overlaid with a spatial frequency pattern (for HD it is 20 Lp/mm) and - very simply - a signal is valid when it is able to transport the spatial content.

Steps to measuring dynamic range:

- 1. Set brightness of the back illumination to clipping (700 mV)
- 2. Measure luminance cd/m2
- 3. Determine low light clipping
- 4. Look up the dynamic range in the certificate

Sensitivity is relative to 500 ASA Kodak Vision3 film stock

Each chart comes with raw scans of this stock (without any image processing) and also scans that have been degrained with ARRI Relativity software. To determine the sensitivity of your camera you can simply rate it relative to the film scan.



Dynamic Range Analysis Kit includes:

- 1. Dynamic Range Chart
- 2. One set of ARRILASER recorded grey patches
- 3. Certificate measured with spectroradiometer
- 4. Aqaumat D-Cam software to automatically measure OECF and S/N
- 5. Set of reference scans 500 ASA Vision III



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