

Direct view screens Exhibitor perspective



Jan Petersen
CTO – Nordisk Film Cinemas

Nordisk Film Cinemas

Founded in 1918 (Palads theater in Copenhagen)

Part of the Egmont media group

Today

Denmark: 22 cinemas 155 screens

Norway: 21 cinemas 80 screens

Sweden: 1 cinema 5 screens

First digital cinema screen 2004

Fully digital 2011

Direct view screens – The new black



?



Samsung video on LED screens



Status Q1 2019

- DCI Memorandum on Direct View screens
- DCI Memorandum on HDR
- Two vendors have DCI certifications - Samsung/Sony
- At least three others are in process
- 41 screen installed end of Q1 (Source: Samsung)
- 6 screen multiplex just opened in Shanghai (Wanda)

DCI Memoradums

- **Direct View screens**
 - Minimum 4K
 - Scaling above 4K permissible if no artifacts can be seen
 - Sound requirements are vague at best, must preserve intent
 - Must be able to show SDR content at max. 5000:1 and 48 Nits
- **HDR**
 - Peak luminance 500 Nits (146 FL)
DCP up to 500 Nits, Display can be higher
 - Min black level 0.005 → 100.000:1 contrast
 - 3D light level 300(48 SDR) Nits (200:1 Stereo contrast)

Current pros and cons I

- **Picture**
 - Fantastic black levels
 - Very high dynamic range
 - P3 color space but greater color volume
 - Best picture I have seen in a cinema
- Pixel pitch can be a challenge
- 3D support currently only with active(shutter) glasses
- Some people experience visual artifacts when panning

Current pros and cons II

- **Sound**
 - Still challenges with front channel placement
 - Acoustic transparent LED screens ?
 - Cinemas need non-proprietary solutions
- **Placement and aspect ratio**
 - Requires more space in the screen area → Issue for retrofit
 - New build screens can save the booth
 - Current displays 1:1.9 aspect ratio → We need 1:2.39 support
 - First row might need to be further away from screen
- **Insensitive to ambient light → But do we want lights on?**

A photograph of two women sitting in a cinema, smiling and looking towards the screen. The woman on the left has blonde hair and is wearing a patterned scarf. The woman on the right has long brown hair and is wearing a light-colored sweater. They are both holding popcorn. The background is slightly blurred, showing other people in the audience.

It's not just about excellence in presentation.

**It's about creating memorable moments
by preserving the cinematic experience**

Current pros and cons III

- Return of investment very challenged
 - Very expensive
 - +500.000 Euro for a 10 meter screen
 - For retrofit added expenses for power and cooling
 - New builds can see savings on booth less install and overall better power and cooling operations
 - RGB projectors getting cheaper, Phosphor projectors bigger
 - Even with a 10 year depreciation period we need to sell a lot more tickets at a higher price.
 - Still no product for larger screen. Currently max. 14 meters

Current pros and cons IIII

- LED technology new to cinema
 - Color acuity over time
 - Light uniformity over time
 - Solution seems to keep spares from same batch
 - Is it possible to adjust both light level and color in a new module to match the module with 5 years runtime?
 - Also new to Integrators / Tech teams
- Some vendors are new to cinema
 - Steep learning curve
 - Different emphasis on picture quality?
 - Lock in on technology choices – Interoperability in question

Questions or comments

?

jan.petersen@nordiskfilm.com