

# The European Digital Cinema Forum

## A Buyers Guide to Laser Projection

UKCA CONFERENCE, MARCH 2019

MATT JAHANS, HARKNESS SCREENS



European  
Digital Cinema  
Forum

# Who produced this Guide

- ▶ **Editors and Project leads:**

- ▶ David Hancock (IHS Markit) and Matt Jahans (Harkness Screens)

- ▶ **Contributors:**

- ▶ Tom Bert, Goran Stojmenovik – Barco

- ▶ Brian Claypool –Christie

- ▶ Dave Monk, John Graham - EDCF

- ▶ Mark Kendall - NEC

- ▶ Mark Clowes - Sony

- ▶ Guillaume Branders – UNIC

# Table of Contents

- ▶ Slides      Introductory notes
- ▶ Slides      1: Technical Considerations
- ▶ Slides      2. Financial and lifetime considerations
- ▶ Slides      3. Safety and Training
- ▶ Slides      4. Warranties
- ▶ Slides      5. Questions we can't answer
- ▶ Slides      6. Further sources of information
- ▶ Slides      7. Important note

# The Basics

# How many type of laser projector are there?

- ▶ **There are three types of laser projection currently in cinema:**
- ▶ **RGB Laser**, which is split into 6P, 3P and less commonly 9P. The P refers to the number of primaries used to generate colours (eg 3P uses 3 primaries, one for each colour). Each Primary can comprise several lasers of different wavelengths, grouped together to make the Primary. 6P contains two red, two green and two blue primaries to enable one set for each eye in 3D mode.
- ▶ **Laser Phosphor:** Uses 1 Blue laser Lightsource for Blue and 1 Blue laser Lightsource to excite a phosphor wheel to generate Red and Green.
- ▶ **RB Laser:** Uses 2 Blue Laser Lightsources –1 for Blue, plus 1 to excite a phosphor wheel for Green- and a Red laser Lightsource to separately generate Red.
- ▶ There is also RGB Laser Phosphor but this is not currently in cinema projectors.

# Ways to acquire laser projection

- ▶ Buy the laser projector
- ▶ Retrofit laser is an option for upgrading existing lamp-based projectors enabling them to utilise a laser light source. There are two sources for retrofit:
  - ▶ OEM Retrofit – some manufacturers offer their own upgrade
  - ▶ Third party retrofit – In this case, consider the warranty and potential Safety responsibility very carefully because technical support may become divided.
  - ▶ DCI product compliance may also be compromised if the specific projector and modifications are not approved.
- ▶ Laser bank/farm – It is theoretically possible for a single laser light source to supply multiple projectors in the same site, although this has not yet made its way into cinemas.

# Laser and 3D

- ▶ In many cases, existing active and passive 3D systems used with lamp-based projectors can also work with laser-illuminated projectors.
- ▶ In addition to the above, RGB 6P projection can also offer its own version of 3D, using colour separation and non-disposable glasses. The advantage is that it gives high brightness 3D and almost no ghosting.
- ▶ The glasses used for Dolby3D don't work when using color separation based 6P laser 3D

# Are laser projectors reliable?

- ▶ Broadly speaking, yes they are reliable
- ▶ As it is a relatively recent technology in cinema, no current installed cinema laser projectors have outlived their expected lifetime.
- ▶ Some manufacturers are prepared to offer significantly extended warranties as a measure of their confidence in their system's reliability.
- ▶ However, manufacturers have tested this technology in cinema conditions and have long experience of it in other non-cinema sectors so the technology is relatively well understood.

# What about savings on electricity and energy?

- ▶ There are savings to be made on electricity usage and efficiency for laser projection.
- ▶ However, how much of a saving depends on a number of factors, including projector model, cooling system required, the type of laser projection system.
- ▶ The situation is also changing quickly as projectors become more efficient eg direct Green lasers.
- ▶ It is worth speaking to the manufacturer or dealer at the time of purchase.

Questions we can't answer...

# Questions we can't answer...

**Q: Does laser look better than Xenon?**

**Q: Do customers really notice the difference between laser and xenon illumination?**

**Q: Are laser projectors worth the increased cost?**

**Q: Will laser projection revive interest in 3D due to greater brightness capabilities?**

**Q: Will LED supersede laser illuminated projection?**

**Q: How do we explain the value of laser projection to consumers?**

**Q: Is phosphor laser a real long term alternative to RGB?**

Download it from...

[www.edcf.net/articles](http://www.edcf.net/articles)

# Panel Discussion

- ▶ Moderator: Matt Jahans, Harkness Screens
- ▶ Mark Kendall, NEC
- ▶ Steve Case, Omnex
- ▶ Paul John Anderson, Omniplex
- ▶ David Gattens, Glasgow Film Theatre