



# Experience true colors

Philips VIDI lighting technology

**PHILIPS**  
sense and simplicity

# Philips VIDI lighting technology: A breakthrough in reaching astonishing color performance

Digital front projectors are well accepted and widely used in many applications for front projection. Picture performance is always important, whatever the setting.

Brightness is essential for a powerful data presentation. But natural and life-like colors are just as important for playing video games or watching sports.

Philips now brings a breakthrough innovation by the VIDI technology, offering:

- Multiple settings with one color wheel, i.e. boost brightness in video mode and better color fidelity in data mode
- A better contrast ratio to enable better "Dark Scenes"
- Customer differentiation on color performance

The VIDI technology improves color performance significantly. This leads to a new experience of true colors.

**VIDI** technology



# Philips VIDI lighting technology improves picture performance of DLP® projectors by flexible lamp drive schemes



## Brilliant pulse

- Color flexibility boost blue or red
- > 40% Brightness increase\* by reduction of green loss
- Robustness by fixed pulse plateau ratio



Without VIDI technology

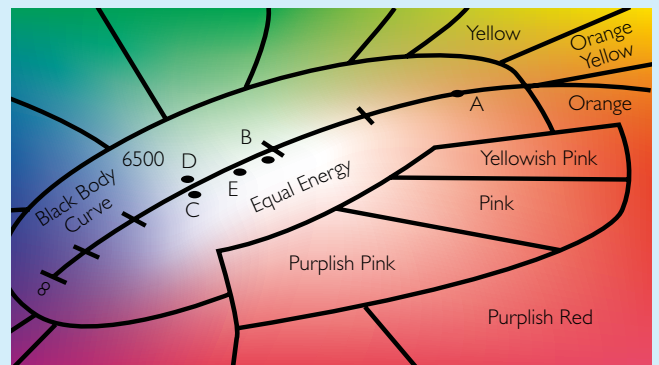


With VIDI technology



## Tuned plateau

- Brightness increase via improved color tuning
- Enabling multiple application modes video/graphics/data mode

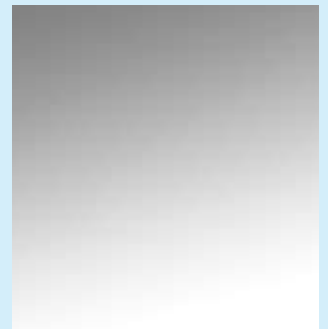


## Dark pulse

- Grey scale improvement (up to 2 bits)
- More efficient light use
- Better contrast in dark scenes (black = black)
- 75% less dither noise\*



Without VIDI technology



With VIDI technology



## Flexibility

- Multiple settings up to 12 waveshapes
- One projector serves several application modes



Flexible setting

\* compared to DVE-CW projectors

# Brightest colors for all settings - a proven concept

It is not just the excellent picture quality that makes the VID I technology a significant improvement compared to conventional DLP® systems.

## Innovation by Philips

Back in 1990 Philips Research invented the Ultra High Performance (UHP) lamp, which represented a breakthrough in technology for projector lighting. This innovation has been continued in the VID I technology.

## Customization

The VID I technology supports further differentiation by our customers. The UHP wave shaper - provided by Philips - enables customers to determine their own color point settings to be programmed in the driver.

## Proven & Robust

The VID I technology is the result of extensive collaboration with Texas Instruments and leading customers in micro display projection TV's. The technology has no negative trade offs with any of the existing benefits of a UHP lamp system. Philips has successfully sold over one million TV-sets featuring VID I technology. So we can rightfully say that the VID I technology is the most robust solution in the market.

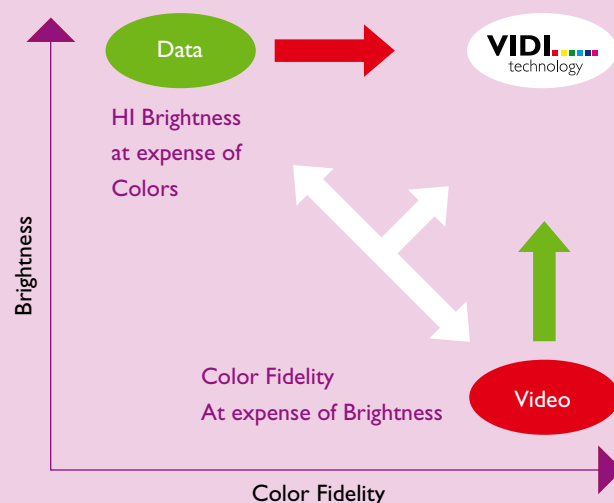
## Stability in light output

Aging of lamps lead to an unbalanced grey scale. This phenomenon is prevented by maintaining a fixed pulse plateau ratio over lamp life. This is also beneficial for multiple lamp systems where an unbalance of light output will lead to artifacts on the screen.

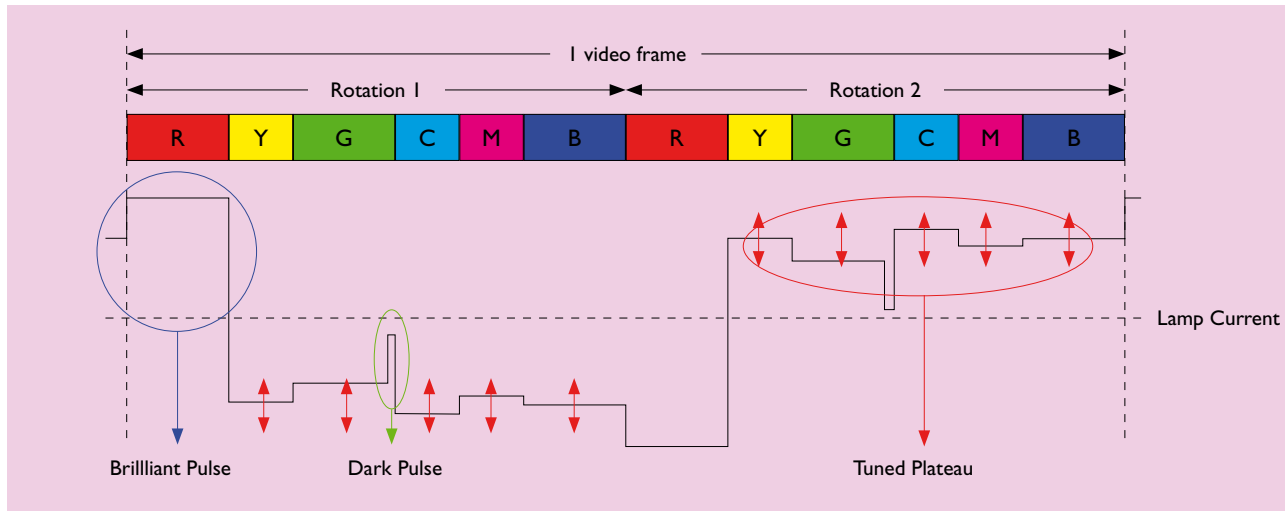
"It is not just the excellent picture quality that makes the VID I technology"

## Maximum usage flexibility

Whether you are using the projector for data presentation or you want to watch a sports game, the projector is prepared to offer best picture performance in all settings. With one single color wheel different application settings can be achieved. But also, by selecting specific wave shapes for different projectors, the VID I technology contributes to our customer's logistical flexibility.



# The technology explained



DLP® projectors are time sequential systems, which means they produce different colors at different moments in time. The color wheel segmentation is dependent on the trade-off between color rendering, brightness and grey scale quality.

The VID1 technology features offer additional design freedom by enabling more effective trade-offs at lower cost in the color wheel and sequence design. This results in cheaper systems with better image quality. The drivers can be programmed with 12 wave shapes, so that for each display mode, the most optimal wave shape can be used.

## Brilliant Pulse

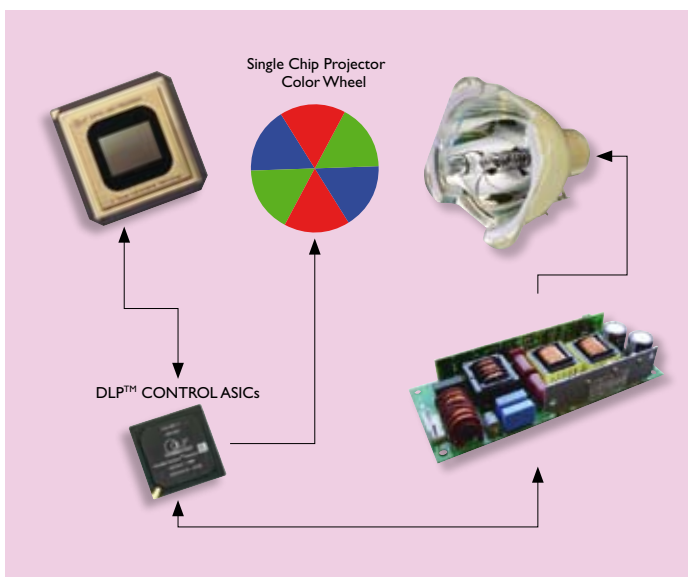
Building on its patented pulse drive scheme for arc stabilization, Philips has further developed the pulse technology to boost segments of the color wheel. This Brilliant Pulse results in large effects on brightness and color temperature, enabling high brightness (boosting white) or lower color temperature (boosting red).

## Dark Pulse

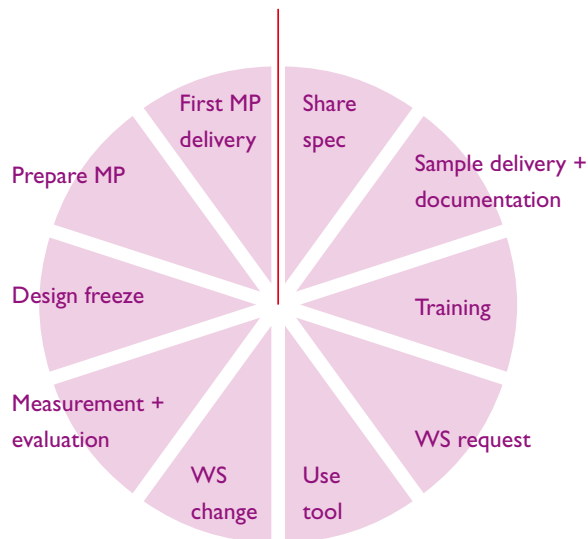
Amplitude modulation of the light enables creation of up to 2 extra bits in the grey scale. This is the result of lowering the light output down to a 25% level for a very short time during a Dark Pulse. An impressive improvement in dither noise is achieved.

## Tuned Plateau

Taking the Brilliant Pulse one level further, Tuned Plateau in addition offers the possibility to set the light level in each color wheel segment. Philips and TI have worked together to ensure that Tuned Plateau fully supports the state of the art TI BrilliantColor® technology.



# How to implement the Philips VIDI lighting technology



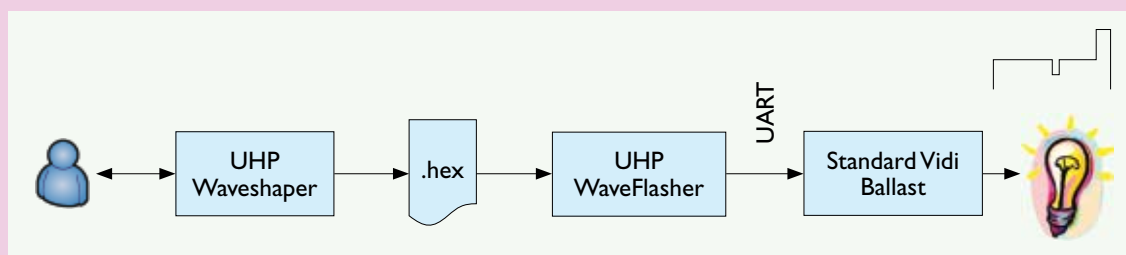
Philips offers the dedicated support needed for smooth implementation of the VIDI technology. Philips can offer a customized training on the VIDI technology features, wave shape design and implementation.

The UHP waveshaper software tool enables the customer to design their own waveshape tuned on the desired image settings.

Along this process Philips is there for advice and guidance. This process is truly designed around our customer and easy to experience.

"This process is truly designed around our customer"

## UHPVIDI ballast system



- Philips VIDI lamp ballast systems have programmable waveshapes (up to 12 waveshapes)

- .HEX files can be created using the UHP Waveshaper

- .HEX files that contain waveshapes can be programmed into the ballast via the UART interface, using UHP Wave Flasher

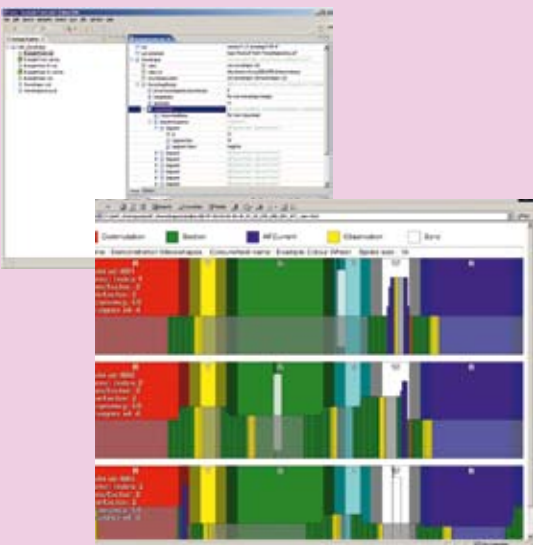
# The innovation story continues...

Philips has created the UHP lighting technology early 90's. This technology was widely accepted by the market and led to a market leadership for Philips. This innovation has continued by the development of the VIDI technology giving rise to a new dimension in the way people experience true colors.

This technology innovation is set to continue in the near future when Philips will launch a new era in projection lighting in combination with the latest developments in VIDI technology.

## The focus for future developments will be on:

- Matching upcoming panel technologies
- Extension of power range
- More compact systems
- More electronic features, i.e. instant restart
- Reliability improvement to match CE-levels



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