



The Next Step in Flexo

- Agenda:
 - What is LUX?
 - Case study
 - Summary

What is LUX?



Pronunciation: ˈlʌks

Function: *noun*

Etymology: from Latin meaning “light”

Date: 1889

1: the SI unit of illuminance and luminous emittance.

2: It is used in photometry as a measure of the intensity, as perceived by the human eye, of light that hits or passes through a surface.

Date: May 2, 2010

3: A process developed by MacDermid which produces a flexo digital plate with an optimized dot profile.

What is LUX?

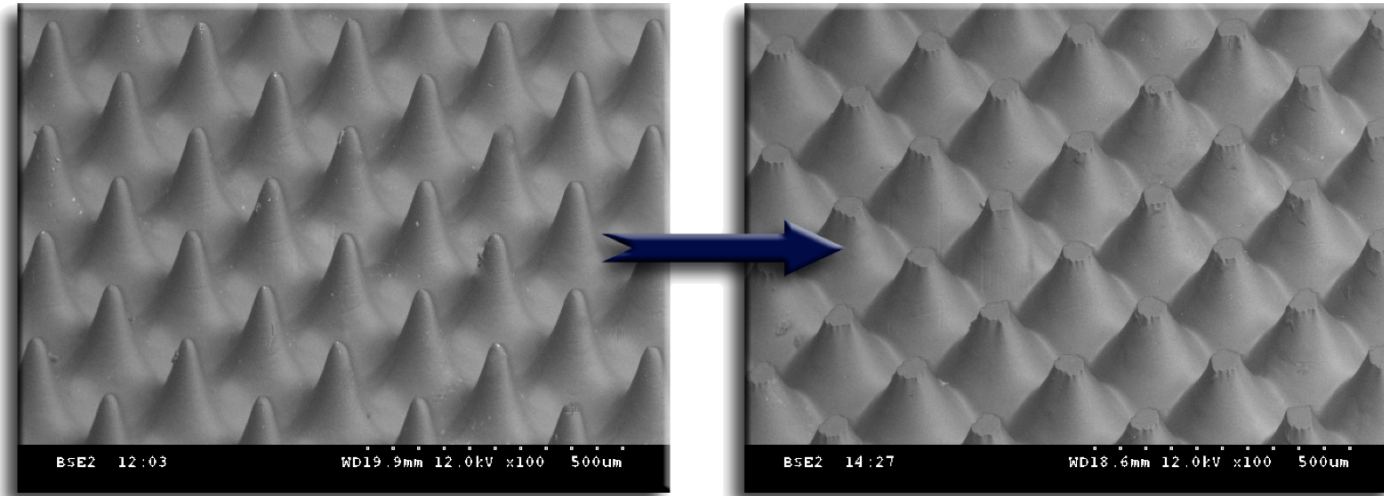
1. LUX creates Flat-Top-Dots
2. LUX works with existing digital platesetters/workflow
3. LUX can enable better print results

What is LUX?

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LUX creates flat top dots

Digital MAX 107 mil (2.72mm)- 5%



Standard Digital

Standard Digital + 

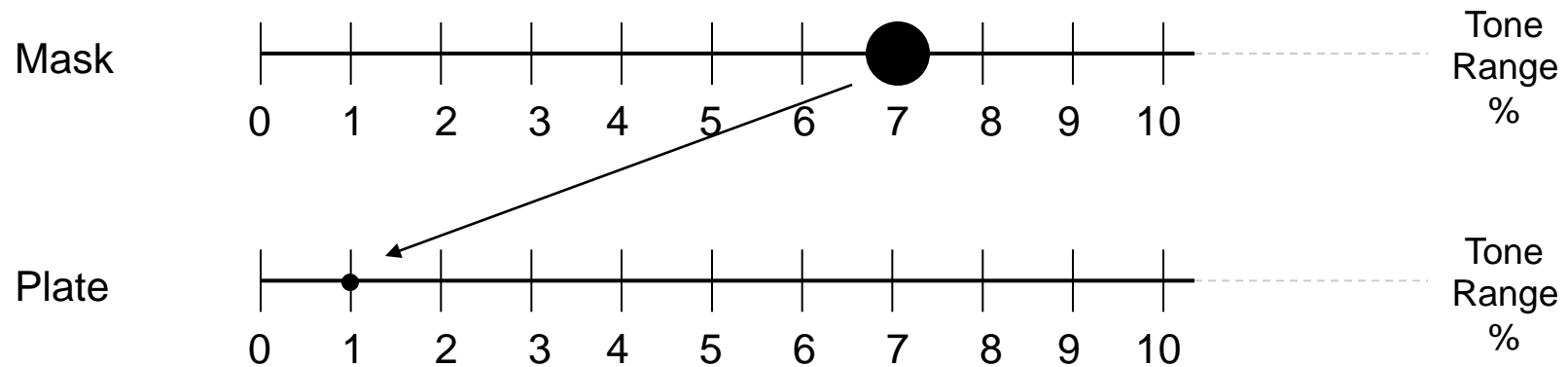
Benefits

- Allows customers to achieve digital dot shapes with well defined edges, deep valleys and planar surfaces
- Eliminates (or drastically reduces) the need for a 'bump curve'

YES WE CAN

LUX creates flat top dots

- The conventional digital plate making process requires a “bump” curve
 - e.g. – a 7% hole in the mask makes a 1% dot on the plate.



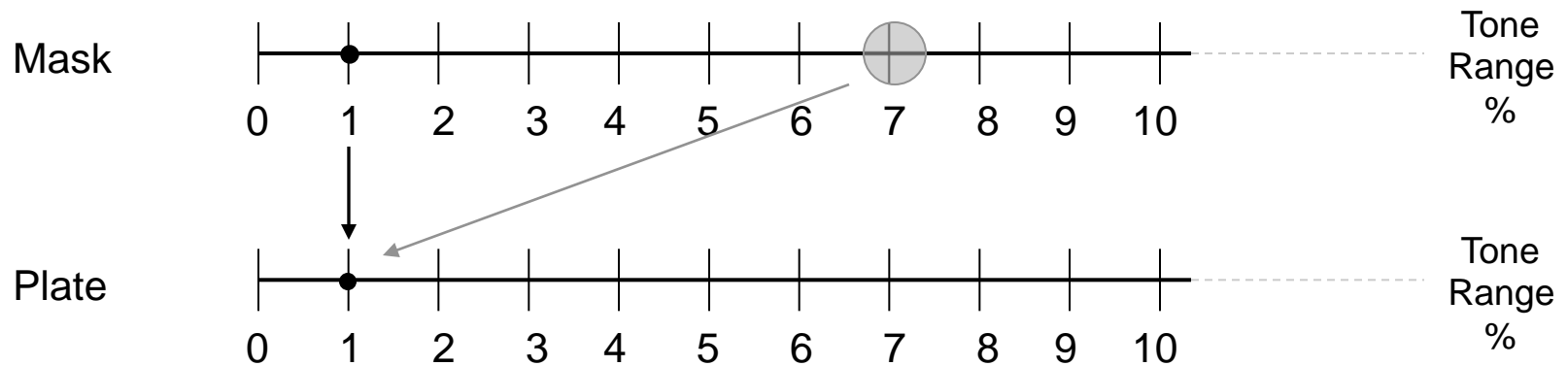
The bump curve is dependent on many factors:

- Plate material
- Line screen
- Exposure unit
- Imager type and condition
- Press capabilities

A trade shop can have many different curves for various profiles!

LUX creates flat top dots

- LUX Process is a 1:1 mask-to-plate imaging process
 - Image in the mask = image in the plate



Minimizing the bump curve makes for:

1. Simplified plate qualification workflow
2. One less source of variation in platemaking
3. Adds several levels of grey scale to the tone range?

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LUX works with existing digital platesetters/workflow



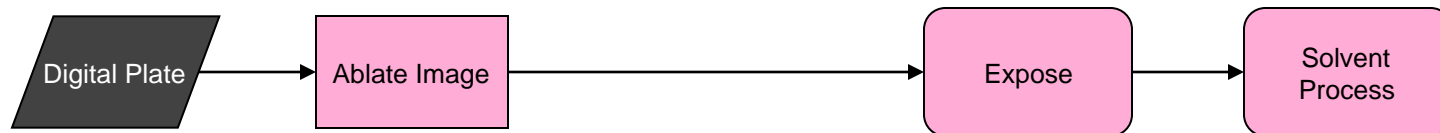
Lux Laminator

Benefits

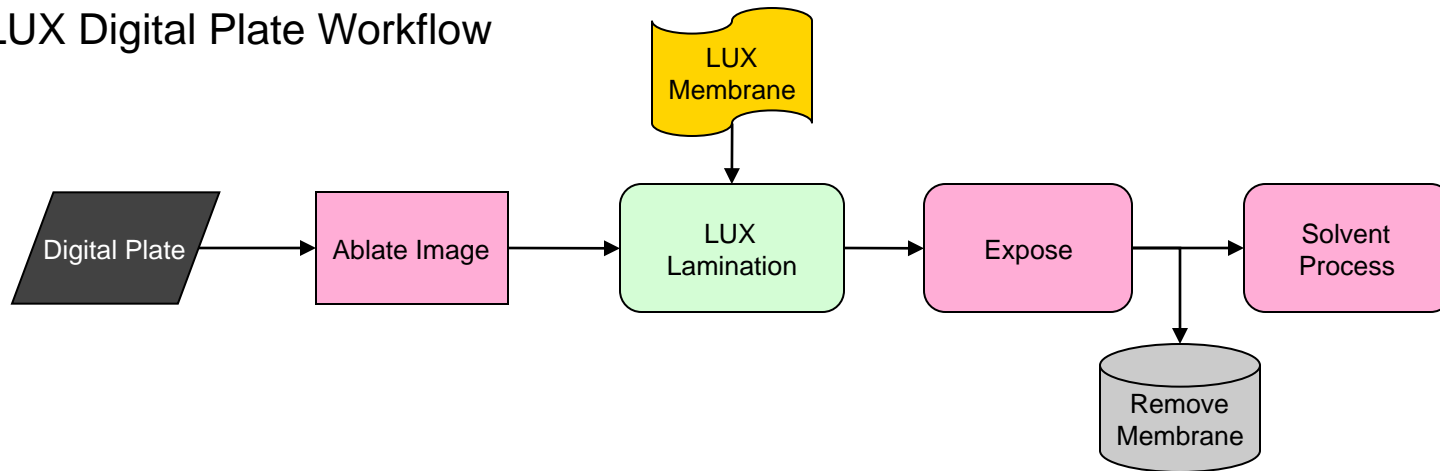
- Low risk; minor capital investment required
- No need to modify or discard current equipment
- No format limitations. LUX works with all plate sizes and thicknesses, up to 52 * 80 inches and 0.250 in/6.35 mm
- Will work with any type of flexo imager and exposure unit
- Only adds~ 5 minutes to the workflow
 - **5280 plate takes 110 seconds to laminate**
- Backward compatible - you don't have to LUX all jobs

LUX works with existing digital platesetters/workflow

Standard Digital Plate Workflow



LUX Digital Plate Workflow



YES WE CAN

What is LUX?

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LUX can enable better print results

- “Better print results” means
 - Smaller printed dots (lower gain)
 - Higher line screens
 - Greater consistency
 - Reduced fluting in corrugated

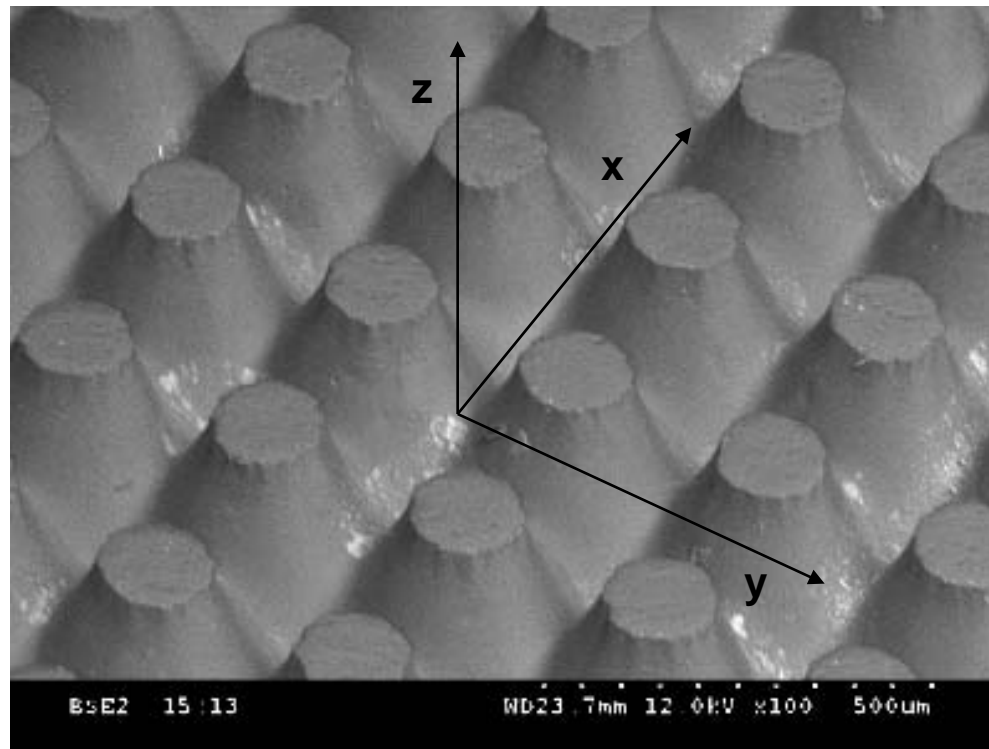
LUX can enable better print results

- “Better print results” means
 - **Smaller printed dots (lower gain)**
 - Causes of dot gain
 - Mechanical (plate-to-print)
 - Dot inking
 - Dot deformation on impression
 - Ink spreading
 - Substrate porosity
 - Substrate-ink interactions
 - Ink rheology

Influenced by
Dot shape

LUX can enable better print results (gain)

The 3rd Dimension

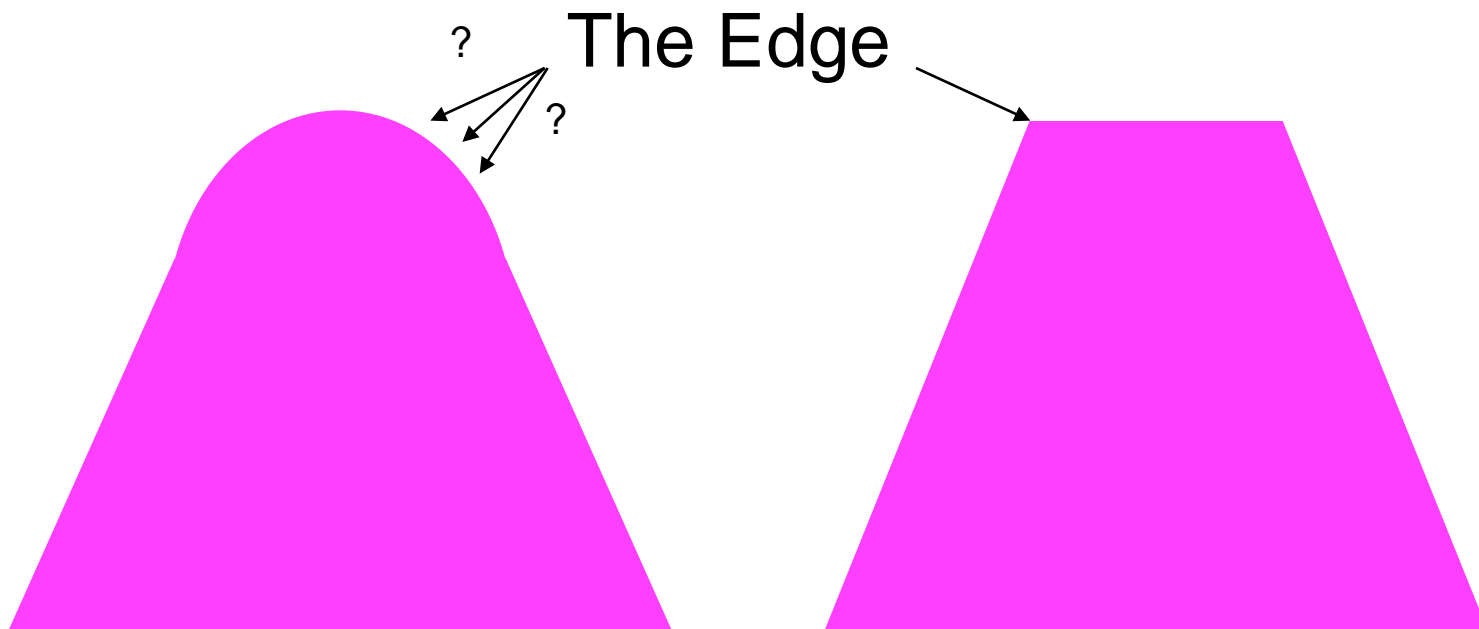


YES WE CAN

 **MacDermid**
Printing Solutions

LUX can enable better print results (gain)

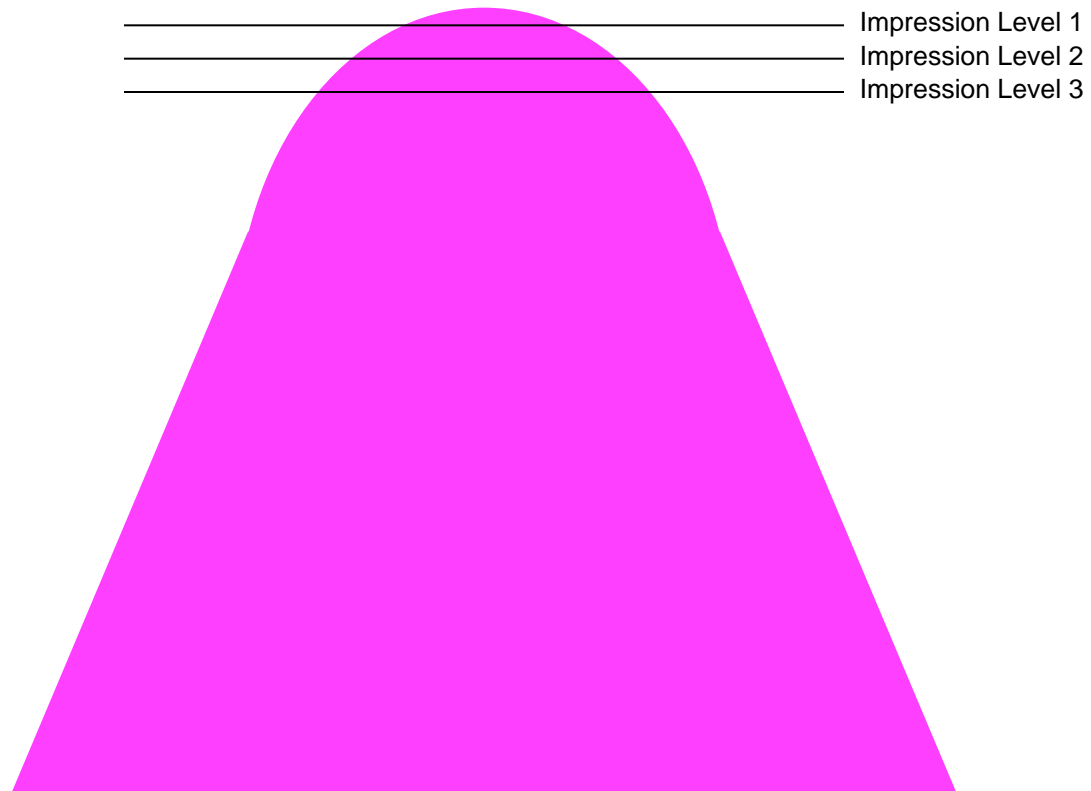
Find the flexo dots' edge.



If you and I can't define the print surface of the dot, how is the ink supposed to know?

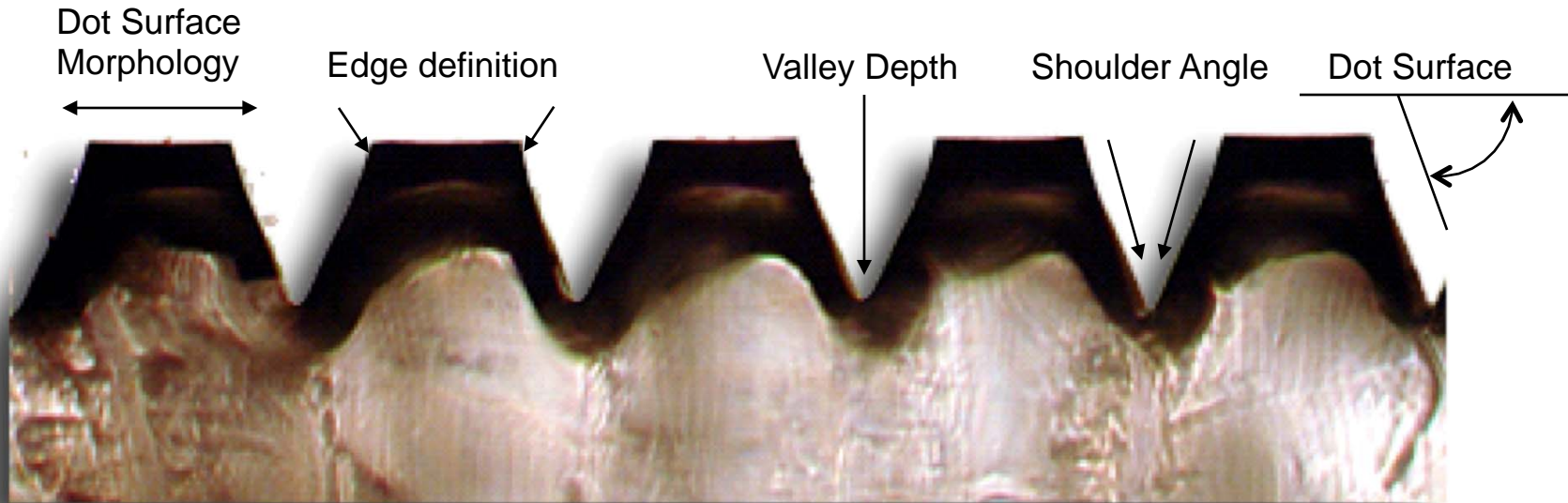
LUX can enable better print results (gain)

- Why dot geometry is so important



LUX can enable better print results (gain)

- Why dot geometry is so important



Dot surface, edge definition, and shoulder angle

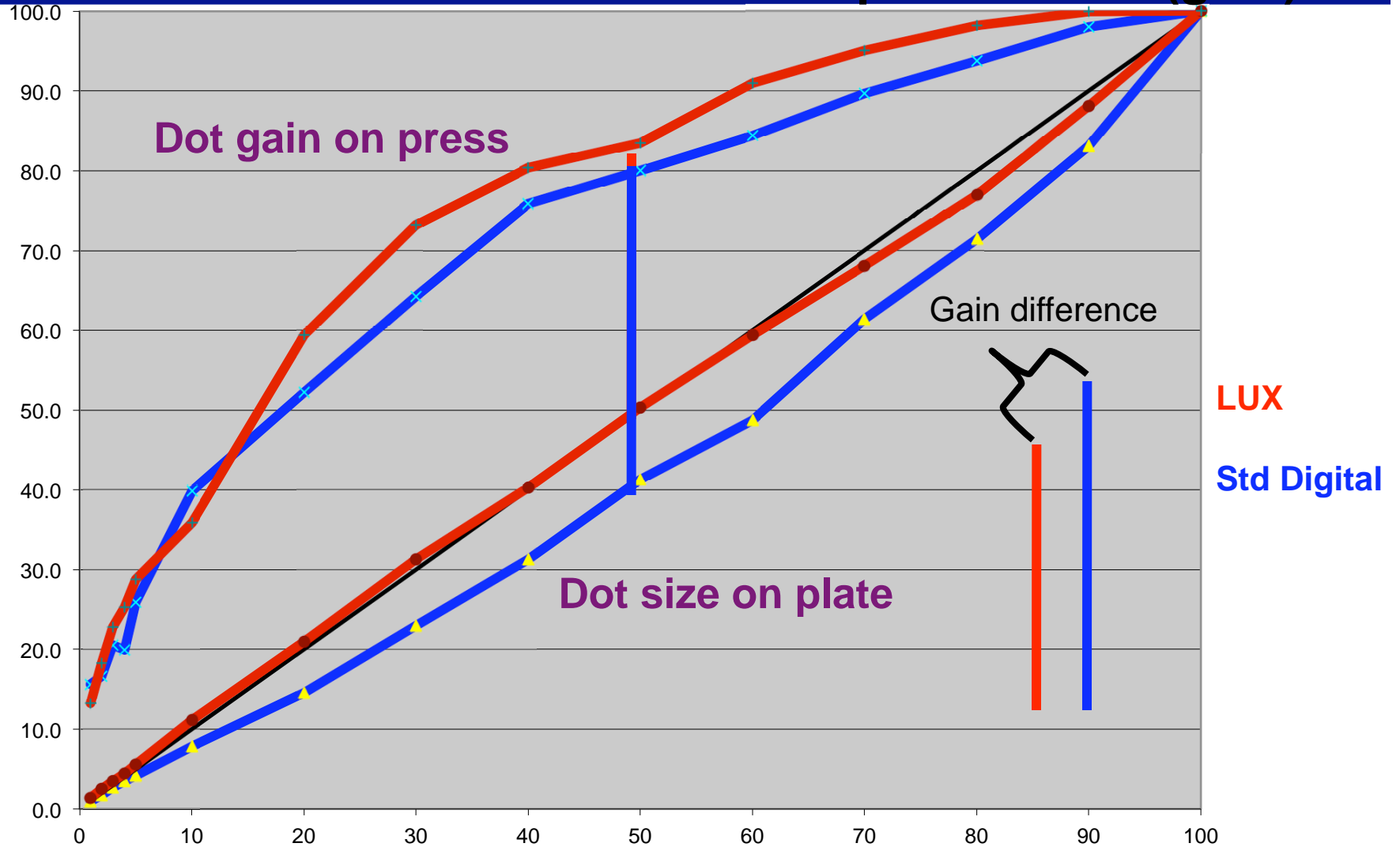
- Better inking/print surface definition
- Less interaction between top and side of dot
- Better mechanical characteristics

Valley depth

- Leaves extra 'space' for uncontrolled ink
- Reduces dot-dot interactions

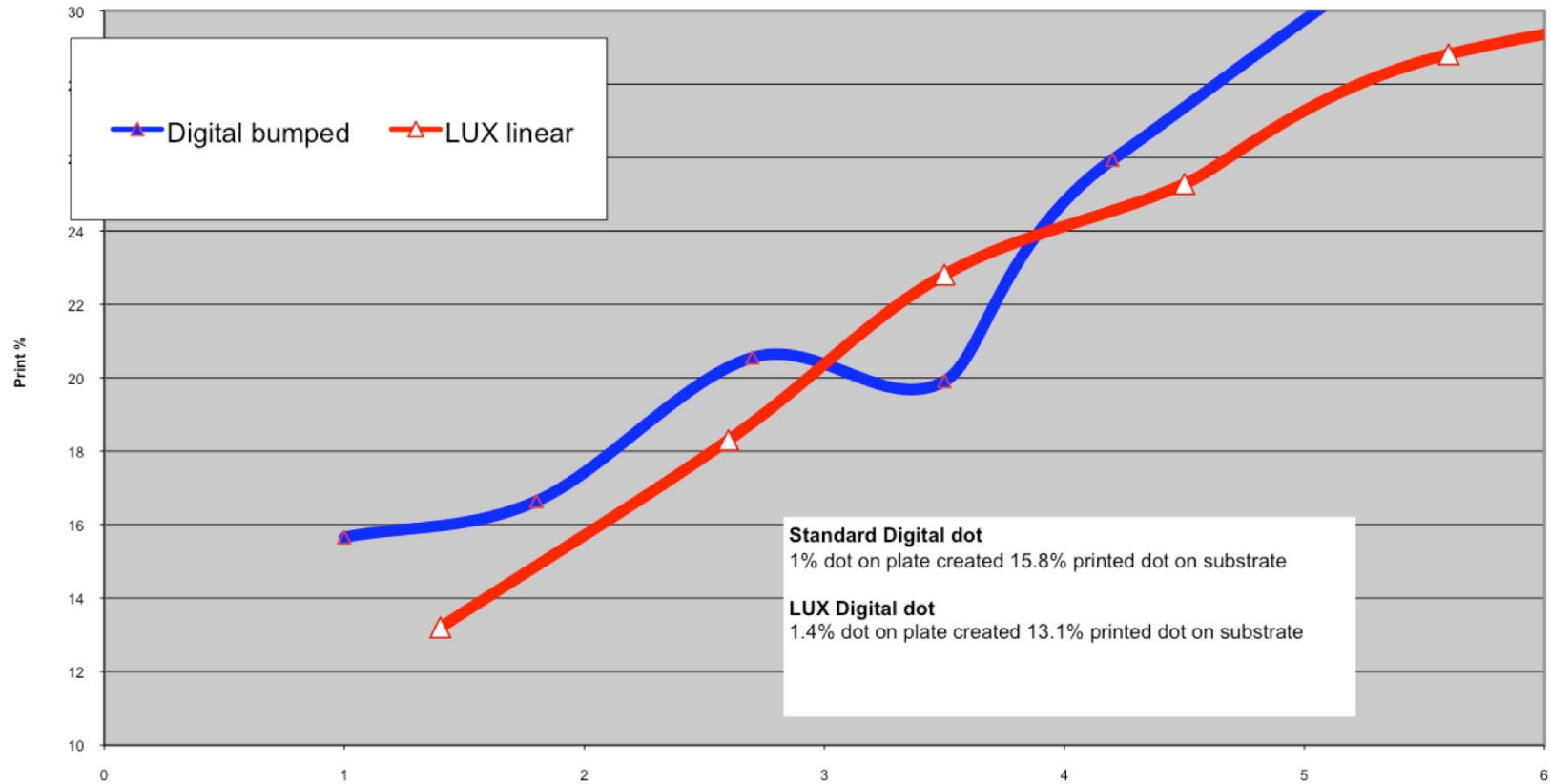
YES WE CAN

LUX can enable better print results (gain)



LUX can enable better print results (gain)

Dot gain on press (highlight detail)



YES WE CAN

LUX can enable better print results

➤ “Better print results” means

- Greater consistency
- Causes of inconsistent color
 - Too numerous to mention...
 - Over impression of plates
 - Need for plate wash
 - Plate wear over time

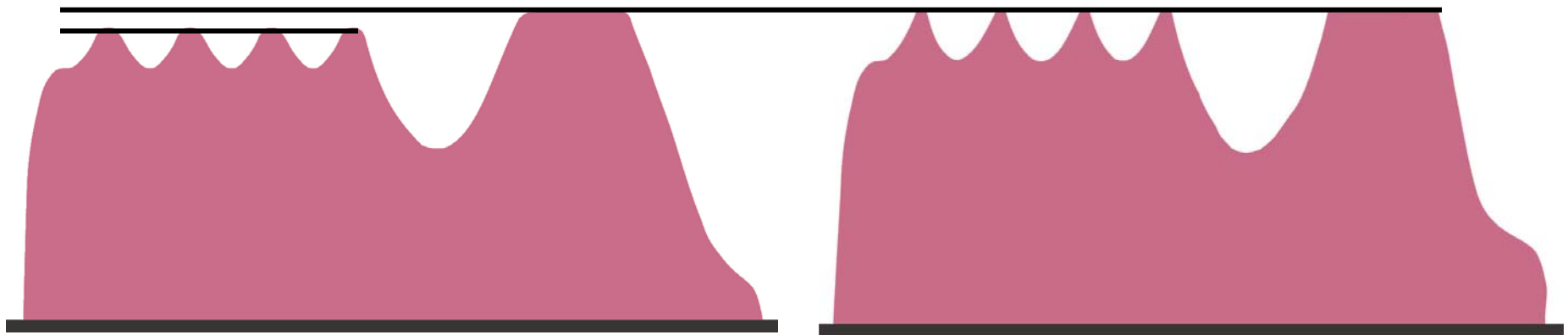
Our focus for discussion

LUX can enable better print results (consistency)

- Over impression of plates
- Need for plate wash
- Plate wear over time

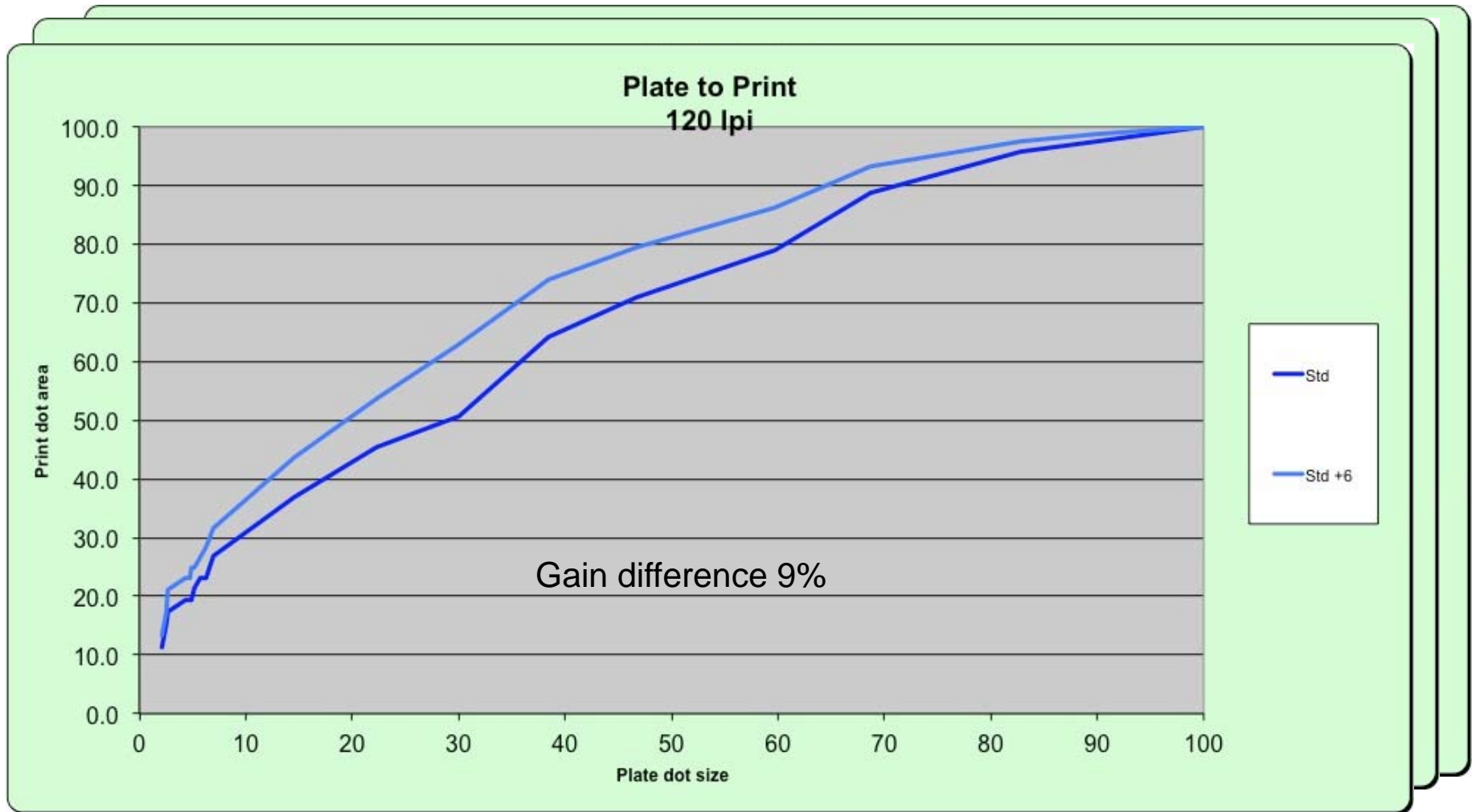
Standard Digital

Lux Digital



Lux plates are “Type High”

LUX can enable better print results (consistency: paper)

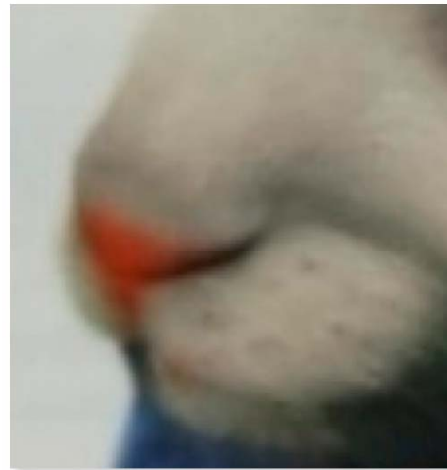


LUX can enable better print results (consistency: film)

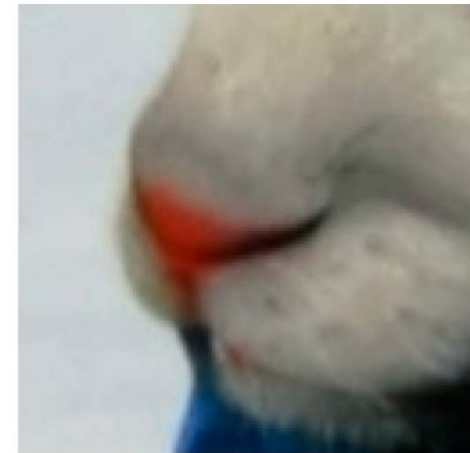
- 890k lineal foot run
- .107 plates
- No plate clean-ups
- Saved 3 hours in makeready

- Over impression of plates
- Need for plate wash
- Plate wear over time

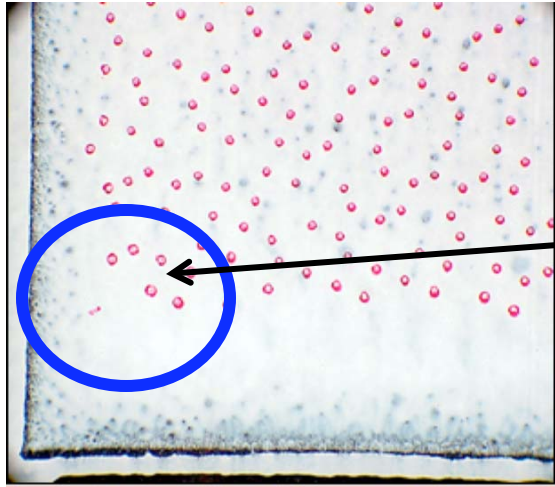
Beginning of run



End of run

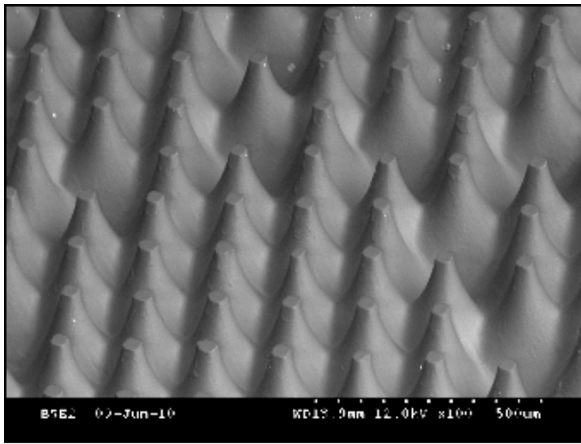
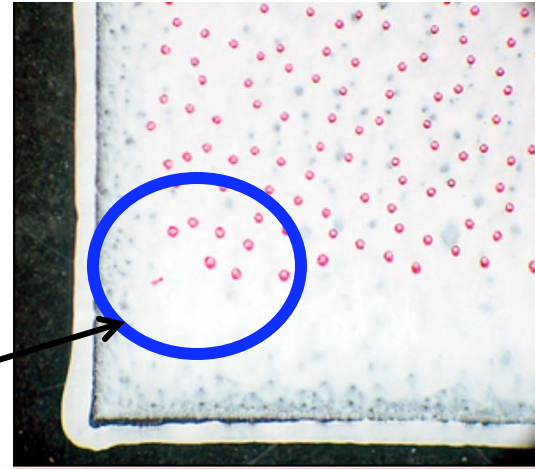


LUX can enable better print results (consistency: film)

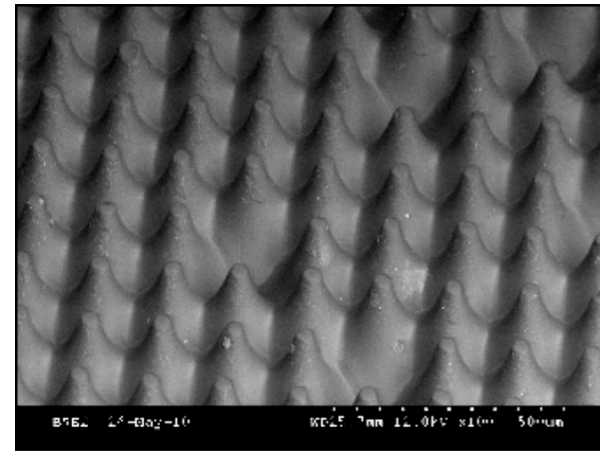


Beginning of run

End of run



Tone block/image at beginning of run



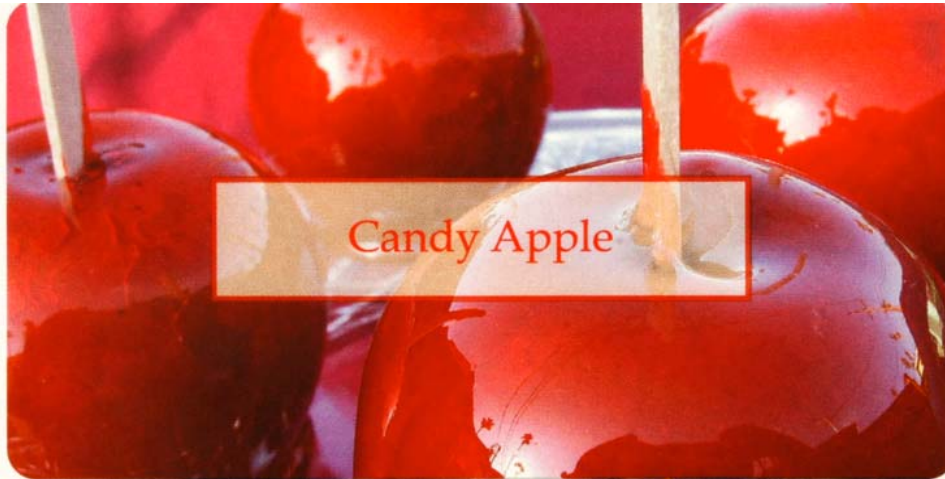
Tone block/image at end of run

LUX can enable better print results (consistency: Narrow Web)

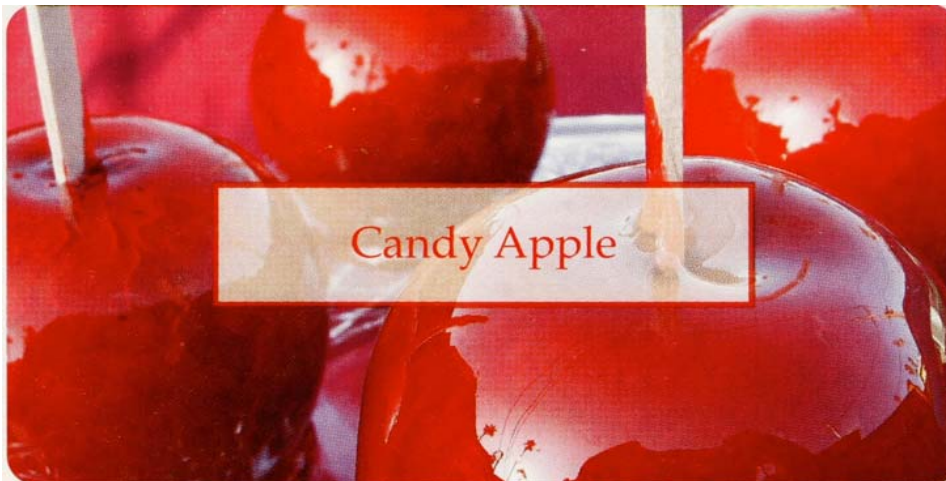


YES WE CAN

LUX can enable better print results (consistency: Narrow Web)



Digital Press



LUX Flexo

LUX can enable better print results (consistency: Narrow Web)



Digital Press



LUX Flexo

LUX can enable better print results

➤ “Better print results” means

- Reduced fluting in corrugated

- Causes of fluting

- Dot Geometry

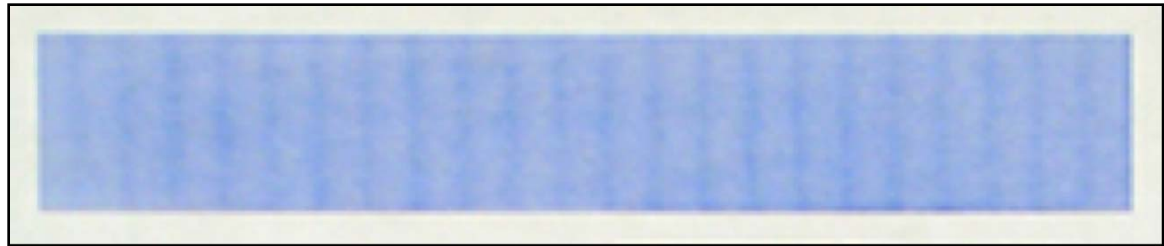
Our focus for discussion

- Plate durometer

- Board/liner grade

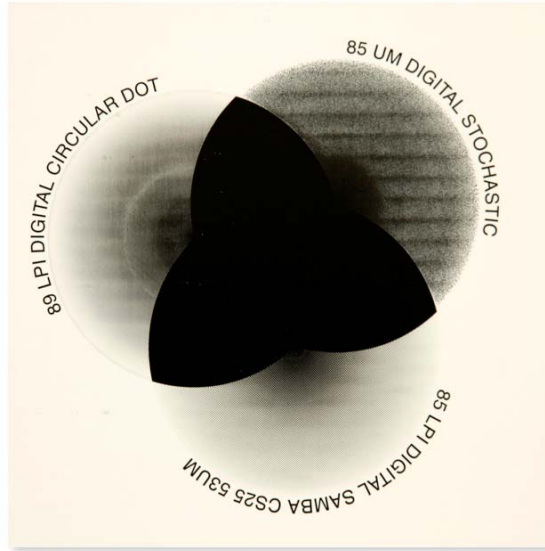
- Press conditions

LUX can enable better print results (Corrugated)



LUX can enable better print results (Corrugated)

Standard
Digital



LUX



89 LPI DIGITAL CIRCULAR DOT



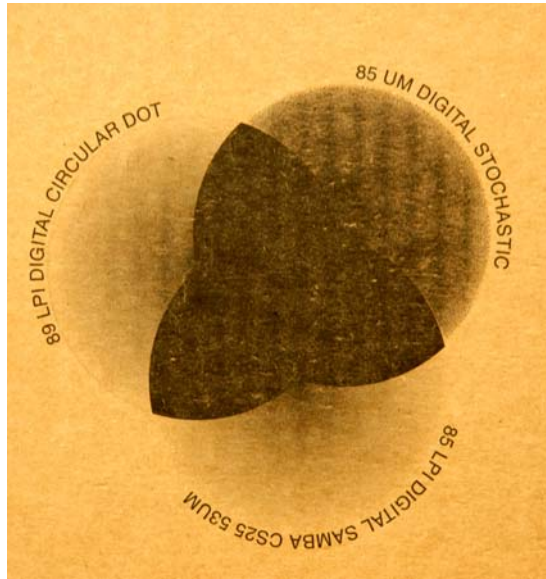
89 LPI DIGITAL CIRCULAR DOT



YES WE CAN

LUX can enable better print results (Corrugated)

Standard Digital



LUX



YES WE CAN

LUX can enable better print results (corrugated)

- Print results in corrugated can be influenced by
 - Flute type (heaver fluted board flutes more in print)
 - Liner type (high holdout liner provides a better print surface)
 - Overall press hygiene (LUX will not cure anilox parallel issues)



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- Located in Albertsville, AL
- 10 Color W&H Miraflex gearless press
- 1000 line screen anilox rolls
- 2.2 volume
- Press speed 800 fpm
- 067 digital MAX plates (2540 Digital, 4000 dpi LUX)
- Currently they print 126 line screen flexo and would like to improve quality and increase line screen



- Challenge: Moultrie items previously produced gravure
 - Purchased and shipped in from China (long lead time and expensive)
- Sales rep agreed to test LUX for this job
- Followed the protocol:
 - Characterization, Color verification, Live run

Need photo of 1-c and 4-c targets

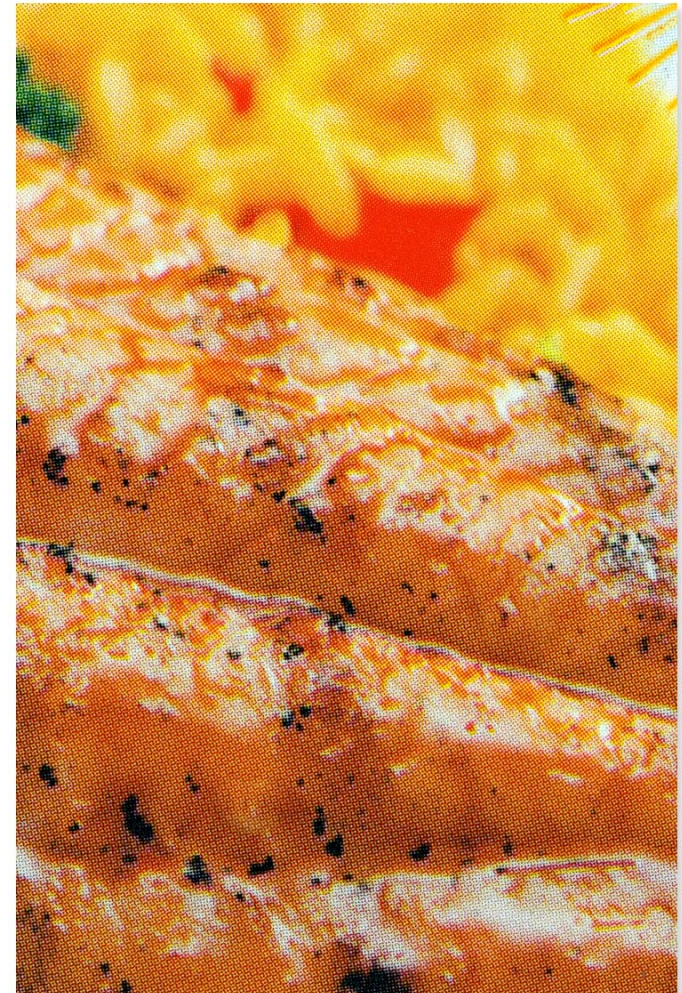
- **Results of live job:**
- 150 line screen LUX (increased line screen)
- Brand owner signed off within half hour (great quality, lower cost, better turnaround)
- Press used less impression with LUX
- 7 new items are now in the works for gravure conversion to flexo



- “Lux performed well”
- “We went from 126 to 150 with no blips”



- “Hybrid screening did great in vingettes”
- “There are no negatives to using LUX”
 - Bart Wright, Print Manager, Colormasters



Summary

- LUX creates Flat-Top-Dots
- LUX works with existing digital platesetters/workflow
- LUX can enable better print results

Thank You