

# The Art of Decor & Fine-Art Reproduction

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# What about you?

- What do you do?
- Do you print now?
- What's your experience level?

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# Basic Seminar Outline

- Background of the Giclée & Reproduction Process
- Business side of Printing, Opportunities, ROI
- Basic Workflow Demo
- Color Management Overview
- Digital Capture Overview
- File Prep Overview
- Printing Overview
- Finishing Overview
- Dye Sublimation Overview (time permitting)

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# Background of Giclee

- *Very early 90's*
- *First Giclee Printers were Iris Printers*
  - *Very Expensive \$100,000 plus, slow, great quality*
- *“Digitized” original art with film/scanners*
  - *Professional photographers shot 4x5 or 8x10 film, then used drum scanners to digitize.*
- *Process was long, difficult, and expensive*

# *Business of Giclee*

- What are the components of the process?
- What do I need to invest in?
  - *Minimum requirements*
  - *Ideal, best solution*
- What services can I offer?
- What products can I offer?

# Core components of Art Reproduction

- Input
  - *Camera, Scanner, Customer File*
- File-Prep
  - *Mac or PC, Photoshop, Calibrated Monitor*
- Output
  - *Printer – Canon, Epson, HP, etc.*
- Finishing
  - *Laminator, HVLP Spray Booth, Roll-on*

# What do I need – *Bare Minimum?*

- An appropriate printer
- A computer with Adobe Photoshop
- Basic Printing and Color Knowledge

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# What do I need – *End to End Solution?*

- Digital Capture System (camera), Scanner or both
- Mac or PC with Adobe Photoshop & ICC Profiles
- Calibrated Monitor
- Viewing Booth or Station
- Appropriate Printer
- RIP Software
- Trimmer/Cutter/Stretchers
- Liquid Laminator

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# Business Side of Printing

*What services can you offer?*

- Digital Capture
- Scanning
- Retouching
- Printing
- Embellishment
- Finishing

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# Business Side of Printing

*“How to Print **Money!!!**”*

- Canvas, Fine Art Media
- Wall Murals and Graphics
- Floor Graphics
- Films
- Metallic Media
- Textiles

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# Input Options

- Flatbed Scanner
- WideFormat Scanner
- Digital Cameras – more later
- Let's not forget, Cell Phones?

# Cutting Edge Technology



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# Digital Camera-Capture *Components*

- Good Digital Camera & Lens
- Good Tripod or Camera Stand
- Studio Lights - w/reflectors
- Light Meter - *optional*
- ColorChecker Passport
- Polarizing Gels
- Polarizing Filter for Camera

# Digital Cameras

*Which type do I really need or should I buy?*

- Consider your customer – Mainstream or Critical Quality?
- What type of capture...archive, small prints?
- Who is your competition in the area?
- What size are your originals, prints?
- What's your budget?

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# What kind of Printer?

- Aqueous
- Solvent
- Latex
- UV

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# Giclee Printers

## *Choosing? Consider this...*

- Quality – Who's my customer?
- Size – How large will I want to print?
- Cost of Hardware – How much do I want to invest?
- Cost of Ink and Media – Large volumes?
- Production – How fast do I need to output?
- Flexibility – What kind of media to print on?



# RIPs

## to RIP, or not to RIP?

- What is a RIP?
- Do I have to have one?
- Why would I want one?
- How much do they cost?

# RIPs

## *Which one?*

- Colorbyte (ImagePrint)
- Colorburst
- Onyx
- EFI
- Mirage
- Many, Many, More....

# Reproduction Workflow

**“Lollipop Color”**

**VS**

**“Accurate Color”?**

*Who's the customer?*

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# Reproduction Workflow

*Demo “Lollipop” Workflow*

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# Accurate Reproduction Workflow

*But first, lets talk color  
management fundamentals*

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# Color Management

- ICC Compliance & Color Management is the most important part of the reproduction process. WHY?
  - Saves Time
  - Saves Money
  - Produces Best/Most Accurate Results
  - Allows Repeatability/Consistency

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# Color Management

## *Key Terms, Components, & Definitions*

- Color Models – RGB, CMYK, LAB, etc.
- Color Spaces – sRGB, AdobeRGB, SWOP, etc.
- Color Engines – Adobe ACE, Apple, RIPs, etc.
- Color Profiles (ICC Profiles) – Infinite number!
- Color Profiling Systems – Hardware & Software

# Color Management

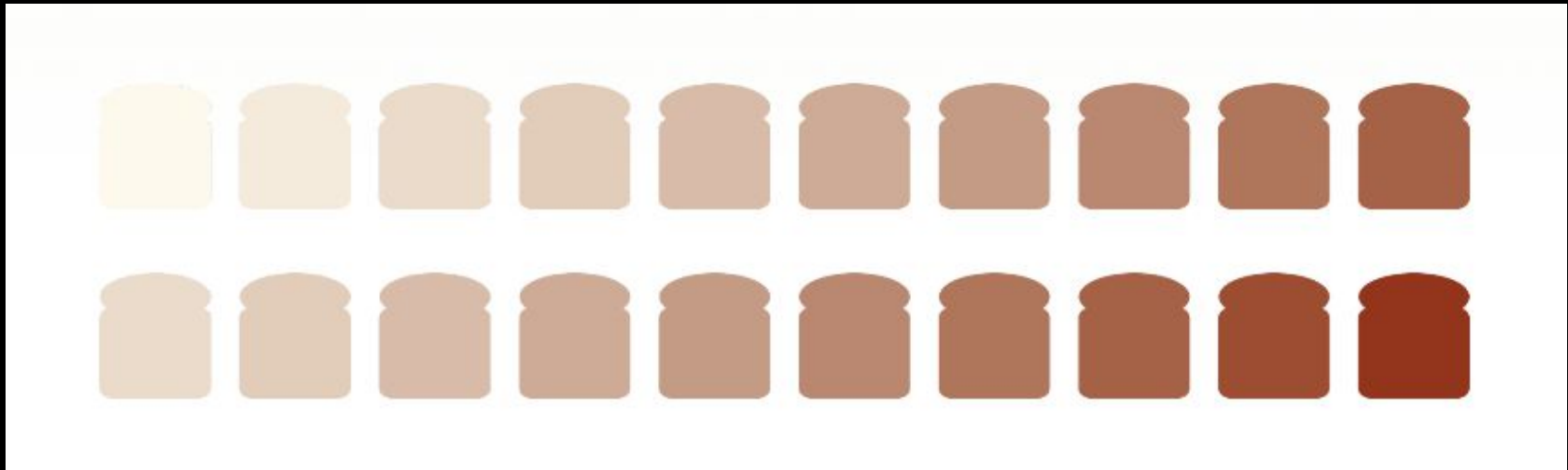
## *Why do we need ICC Profiles?*

- Cameras & Scanners – See color uniquely & differently
- Monitors – Display color uniquely & differently
- Printers (combined with ink & paper) – Print (reflect) color uniquely & differently
- Toasters toast differently...huh?



# Color Management

*...is like making toast!*



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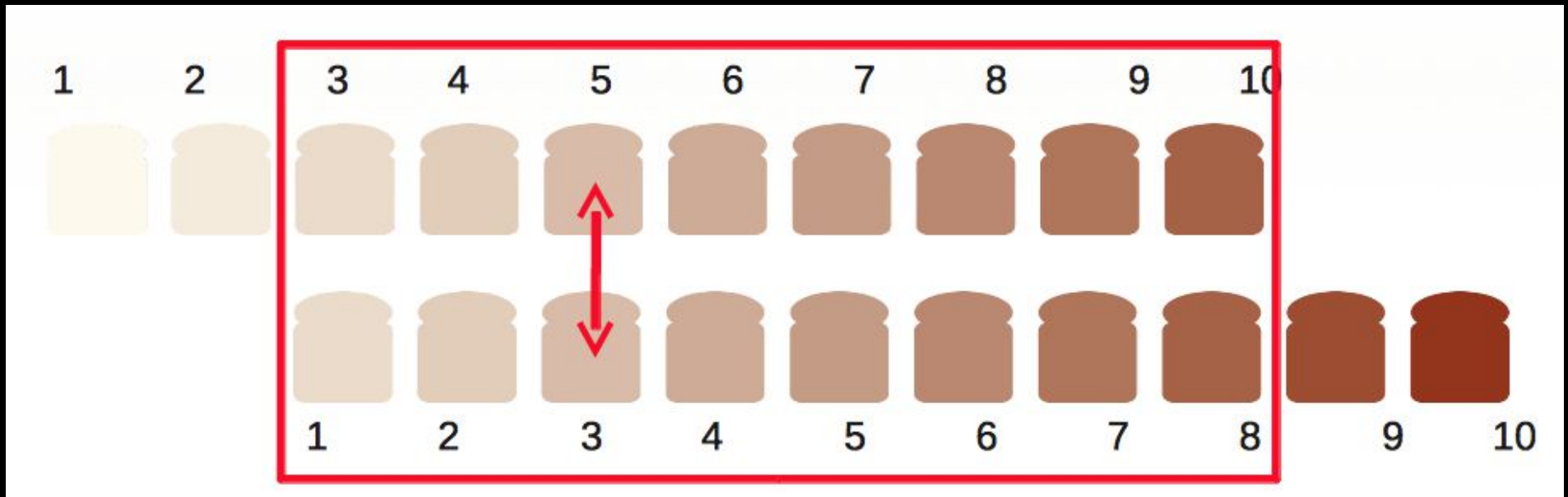


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# Color Management

*...is like making toast!*



# Color Management

## *Types of ICC Profiles*

- Input Profiles: Scanner & Camera
- Working Space Profiles: sRGB, AdobeRGB 1998, ProPhoto RGB
- Output Profiles: Printer–Ink—Paper Combinations
- Monitor Profiles: CRT & LCD (LED)

# Color Management

## *Types of ICC Profiles*

Let's Look at some different  
ICC Profiles!

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# Color Management

## *How does it work?*

- For Color Management to work, 2 things must be known: source and destination
- Once these 2 things are known, a translation takes place by the color engine.
  - Camera to Working Space
  - Working to Monitor Space
  - Working to Printer Space

# Color Management

## Should I *buy a Profiling System?*

- Monitor Calibrators - *Yes*
- Scanner Profilers - *Maybe*
- Digital Camera Profilers - *Maybe*
- Printer/Media Profilers - *Maybe*

# Color Management

## Should I *buy a Profiling System?*

- Monitor Calibrators - *Yes*
- Scanner Profilers - *Maybe*
- Digital Camera Profilers - *Maybe*
- Printer/Media Profilers - *Maybe*

# Color Management

## *Monitor Calibration Choices*

- **Bad** - *Laptop, TV, or cheap monitor*
- **Good** - *iMac (or store bought PC monitor) with 3<sup>rd</sup> party calibrator*
- **Very Good** – *Very good LCD Monitor with 3<sup>rd</sup> party calibrator*
- **Best** - *Professional Graphics Monitors*



# Color Management

## Demo Monitor Calibration

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# Color Management

## *Monitor Calibrator Options*

- Pantone Huey
- X-Rite ColorMunki Display
- X-Rite i1 Display Pro 2
- Datacolor Spyder

# Color Management

## *Monitor Calibrator Essentials*

- Choose High Quality Monitor
- Choose Correct Color Temperature
- Choose Correct Luminance/Brightness
- Choose Appropriate Gamma
- Calibrate Regularly and be Consistent!

# Capture to Finish

## Step by Step Overview

- **Capture with Digital Camera or Scanner**
  - *Apply white/gray balance, apply camera profile, input sharpen raw data.*
- **Open in Photoshop**
  - *Immediately soft proof, then “save as” for applicable media type*
- **Size for Output**
  - *If you need to enlarge, use step interpolation in Photoshop Resample*
- **Color Correct**
  - *Follow correct color correction procedure/order using adjustment layers*
- **Output Sharpen**
  - *Use Unsharp Mask or Smart Sharpen to sharpen for output size*
- **Print**
  - *Use RIP or Photoshop print and apply output/media profile*

# Digital Capture Setup / Options

## Questions?

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# Color Management

**Before we start working  
on file -*Setting up Applications***

Adobe Photoshop CS5, CS6, or  
CC

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# Reproduction Workflow

*“Accurate” Workflow*

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# File Prep, step 1

## Open file in Photoshop - *Soft Proof*

- Soft Proofing is using Photoshop, a calibrated monitor, and an ICC profile for your printer/media to “preview” how the color will look on your final print.
- Not perfect, but helps tremendously.

Let's see how!



# File Prep, step **2** – Size for Output

*First what is DPI, PPI, LPI?*

- DPI is used in desktop printing.
- PPI is the data in actual files from cameras or scanners.
- LPI is used in commercial printing presses.
  - These Resolution Descriptions are “related” to each other but are NOT equal!!!

# File Prep, step 2 – Size for Output

## *Background - Resolution for Printing*

- **Epson**

- Best for fine art - 240PPI at Size (vectors 360ppi)
- Acceptable 180PPI at Size
- Anything over 240 is overkill (except for text, fonts, vectors), anything under 180 will sacrifice quality

- **Canon**

- Best 300PPI at Size
- Acceptable 200PPI at Size
- Anything over 300 is overkill, anything under 200 will sacrifice quality

# File Prep, step **2** – Size for Output

## How to Resize

- Use Photoshop's Image Size Menu
- “Interpolate” by checking Resample Box
- Quick method - Type in desired output size and resolution
- Better method – Step Interpolate

Let's see how!

# File Prep, step 3 – Color Correct

## *Background - Color Fundamentals*

Red – Cyan

Green – Magenta

Blue – Yellow

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# File Prep, step 3 – Color

## Correct

*Color Correct in this order!*

- End Points – White Point, Black Point
- Density – Brightness, Contrast, Tonality
- Color Cast – Neutrality or Color Cast
- Color Families – Specify Primary Corrections (All Reds, All Yellows, etc.)
- Color Specifics – Specific Color Corrections (Light Reds, Dark Reds, Etc.)

# File Prep, step 3 – Color Correct

## *Color Correction – Use these Tools & Use Adjustment Layers in Photoshop!*

- End Points – Levels or Curves
- Density – Curves
- Color Cast – Curves
- Color Families – Selective Color, Hue-Saturation
- Color Specifics – Replace Color

Let's see how!

# File Prep, step 4

## *Sharpening Images*

- Input Sharpening Raw Data
- Output Sharpening in Photoshop

Let's see how!

# File Prep, step 5

## *Saving Files - File Types*

- RAW or DNG
- JPEG
- TIFF
- PSD
- PostScript – EPS - PDF



# File Prep, step 5

## *Saving Files – embed ICC profiles*

- Always embed your working space ICC profiles when you save your working files.

Why? Let's See

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# *Customer files*

Murphy's Law is highly prevalent here...

“...whatever can go wrong, will go wrong”

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# *Customer files*

## *Pitfalls -*

- Dark files (lollipop or accurate)?
- Low Resolution
- No embedded source profile

How do we address these?

# Print Finishing

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# Print Finishing – Why?

- Protection (cleaning, scratching, etc.)
- Enhancement (finish look and feel)
- Presentation (mounting, framing)
- Profitability

# Finishing Options

- Over Laminating Films
- Aqueous Based Liquid Coatings
- Embellishments and Enhancements
- Stretch or Stretch and Frame
- Mounting

# Pressure Sensitive Laminating Films

- Typically a vinyl film with a permanent adhesive on the back wound on a silicone release liner.
- Adhesive is pressure sensitive (cold) applied via a cold roller laminator.
- Application equipment is low cost, and available in a number of sizes.
- Available in many finishes (gloss, matte luster etc.).
- Can be used indoor or outdoor, depending on type.

# Pressure Sensitive Mounting Adhesives

- Typically a double-sided adhesive (Similar a wide roll of double sided tape), wound on a silicone release liner.
- Used to apply a printed graphic to a variety of rigid substrates.
- Usually a pressure sensitive (cold) adhesive.
- Can be applied with a cold roll laminator.
- Applications include mounting to Foam Core, Gator Board or Acrylic (Face Mounting).



# Laminators

- Pressure sensitive materials are applied via the nip between two silicone rubber rollers.
- The rollers mate the materials evenly, applying the required pressure in a wrinkle and bubble free manner.
- Laminators vary in cost and features. The type used depends on budget, volume of work, and type of application.
- Larger machines have automated take up, and feed features.

# Aqueous Liquid Coatings

- Aqueous coatings (like film laminates) protect, enhance and or alter a printed graphic.
- An acrylic aqueous coating that is applied to a printed image.
- Water based, it cures through drying.
- A good solution for images that are textured (Ink jet canvas) or images that a less visible finish is desired (as the finished coating is much thinner).

# Aqueous Coating Equipment

- Coating equipment is superior to hand applying (rolling or spraying) for several reasons.
- Mechanically applying the coating can save coating waste up to 50%, applying the coating in a neater, uniform pattern and save on labor costs.
- Mechanical Coaters come in smaller, low volume machines as well as larger high volume equipment.
- Mechanical Coaters are designed work on inkjet canvas, fine art papers, vinyl and other wet strength substrates.

# Profitable Finishing

The ability to finish properly allows you to create a valuable revenue stream. Proper techniques, materials, and equipment will push your brand out in front of others in the marketplace, and help make your company more profitable.

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# Expand your Product Offerings

## Dye Sublimation

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# Dye Sublimation – What???

- Multi-step process
  - Print
  - Press

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# Dye Sublimation - Products

- Photos/Art on Metal
- Photos/Art on Wood
- Photos/Art on Fabric
- Photos/Art on Mugs, Hats, Mouse Pads
- Photos/Art on Hundreds Gifts & Promotional Items

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# Dye Sublimation – What do I need?

- Dye Sublimation Printer (compatible)
- Dye Sublimation Inks (for specific printer)
- Dye Sublimation Paper
- Heat Press – desired size
- Compatible Blanks – metal, wood, fabric, etc

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# Dye Sublimation – Systems

- Basic 8.5x14 System - \$949
- Tabloid 11x17 System - \$2,999
- Medium format 24” System - \$6,500
- Large format 44” System (no press) - \$7495
- Large format 64” System (no press) - \$13995

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