SPECTRUM
IMAGING

Digital Fine Art Reproduction Workshop

Spectrum Imaging

Founded in 1992

Offered first color proof in Monterey 1992

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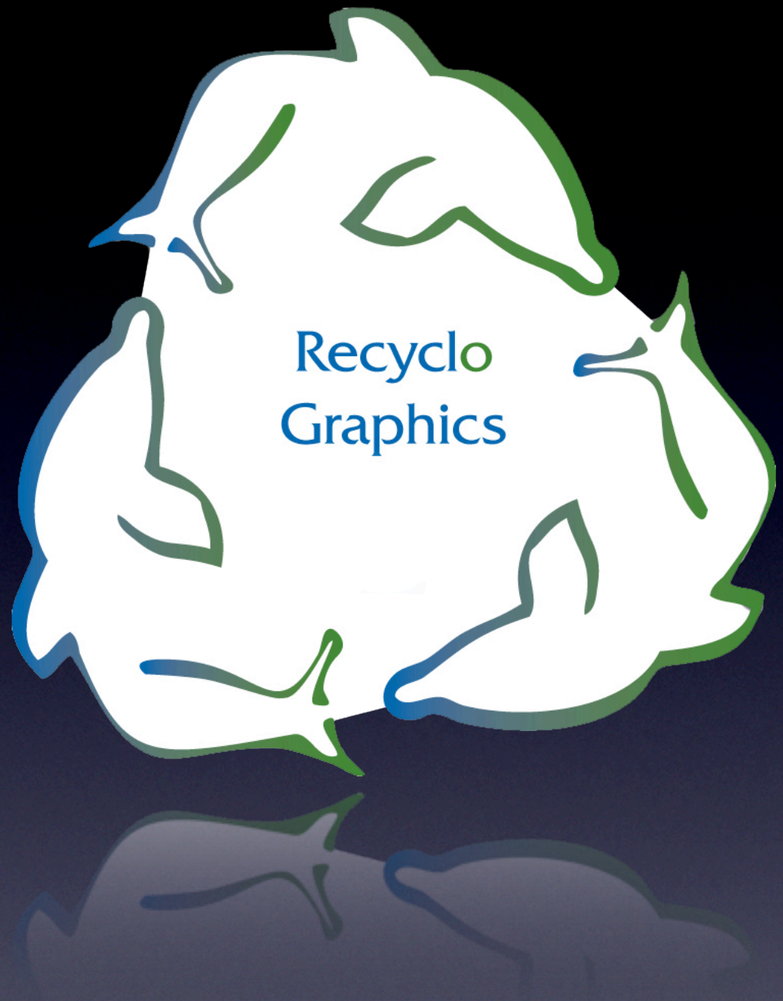
Patented digitally decorated plastic technology
Created world's first fully recyclable plastic graphic



What Is a Digital Fine Art Reproduction

The Advantages of Technology

The Advantages of Technology

- Faithful Reproduction of the Original
- Use of a High Resolution Output Device
- Use of Archival Inks
- Use of Archival Medias
- On Demand Technology

History of Digital Reproductions

The Evolution of Digital Printing Technology

The Evolution of Digital Printing Technology

- Iris 3047 Digital Proofer
- The Promise of Iris Printmaking Suffers a Setback - Archivability
- Photography Pushes the Technology to Improve
- Epson Reinvents High Resolution Printing
- Epson Improves on Piezo Technology

Iris 3047 Digital Proofer

Introduced in 1989 as a prepress & textile proofer

Used GA and ID ink sets

300dpi with apparent 1,800 dpi resolution

True variable droplet sizes (32 sizes)

Drum based, cut sheet up to 34x47 inches

Retail Price $120,000 / Print head $800

Graham Nash credited as the first to use 3047 for fine art reproductions in 1991

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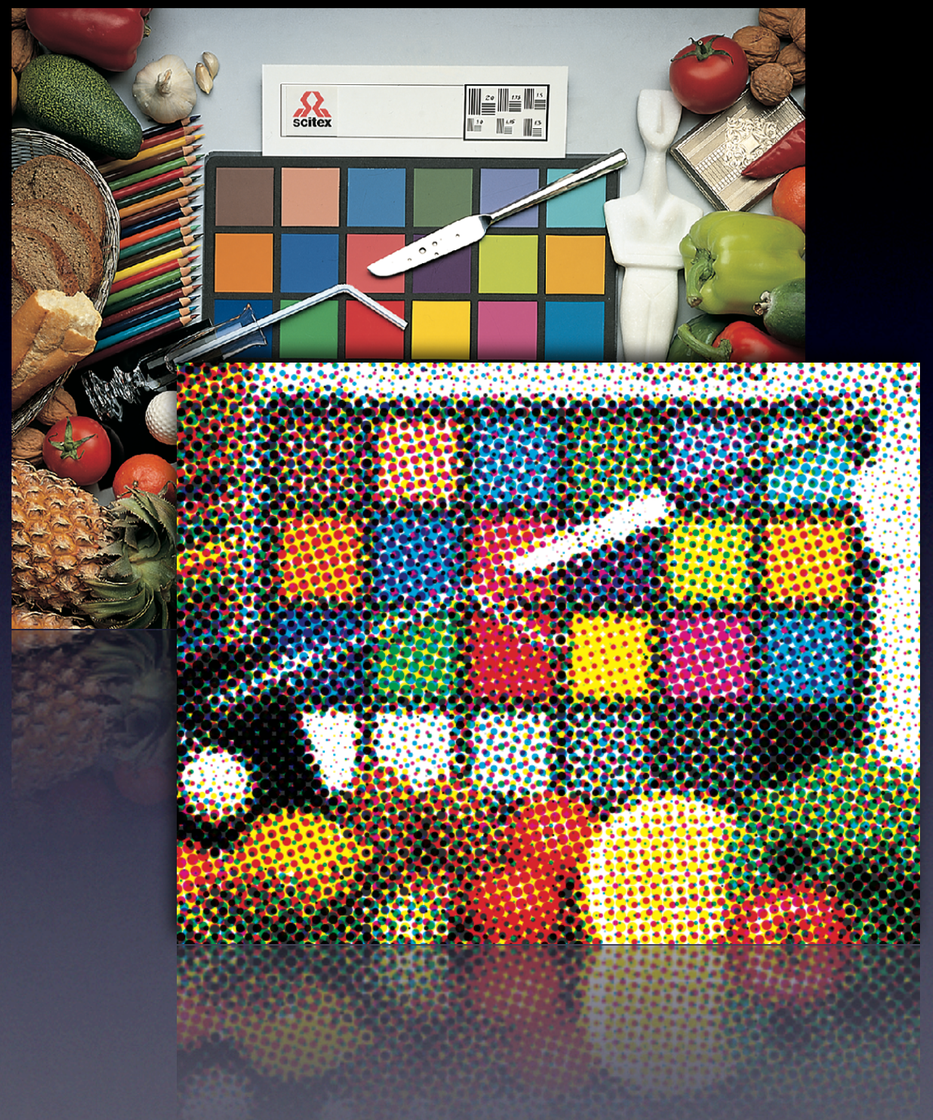

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The Promise of Iris Printmaking Suffers a Setback - Archivability

Using the ID ink set, prints begin to show fading

Original ID inks lasted 4 yrs.

Lyson introduces FA fine art ink set in 1994

Iris introduces Equipoise fine art ink set in 1998

Improved Iris ink set tests show:

Arches Cold Press 34 yrs. / Canvas 17 yrs.

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Photography Pushes the Technology to Improve

Wide range of medias

Sought digital alternative to Cibachrome and Kodachrome

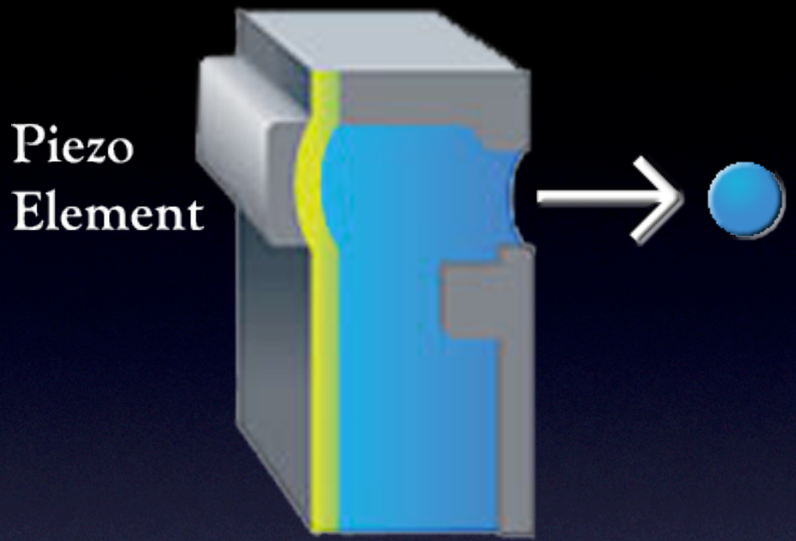
Photographers demand greater print permanence

First of its kind, one off, print on demand business model

The term Giclée emerges

Gi•clée *(zhee-clay)*
Derived from the French word “gicler”, which means to spray or squirt a liquid. A term identifying a reproduction in which inkjet nozzles “spray” inks onto paper. The term is only applied to prints that are created using archival papers, canvas and inks.

Epson Reinvents High Resolution Printing



Introduces Piezo ink jet technology

The Stylus Pro 9000 & 9500 series ships in 2000

Epson introduces 6 color dye and archival ink sets

Archival inks rated at 200 yrs.

720dpi x 1400dpi resolution

Capstan based, roll or sheet, straight through path

Epson piezo heads show up in other mfg's models

Retail price $5,000 / Print head $400

Epson Improves on Piezo Technology

2001 Production model Pro 10000 introduced

6 Times faster than 9000 series

2002 Stylus Pro 9600 introduced (with Ultrachrome)

2005 Stylus Pro 9800 introduced (with Ultrachrome K3)

Hybrid Ultrachrome ink set finally outperforms dye

Introduces variable dot technology

Digital Printing 101

The Technology of Fine Art Reproduction

The Technology of Fine Art Reproduction

- Digital Capture / Scanning
- Digital Imaging
- Printing
- Color Management

Digital Capture

Ideal for large originals

Uses a tri-linear array of ccd sensors

8,000 pixel array with 15,995 sample points

Final resolution dependent on number of samples

384 Megapixels

27x53 inches @300ppi

High Res Scanning

Ideal for smaller originals

IQ Smart and Smart 342 scanners

4,300 x 8,200 pixel per inch resolution

Self contained, inverted ccd array

105 Megapixels

2,700% Enlargements

Digital Imaging

Photoshop—the cornerstone of digital imaging

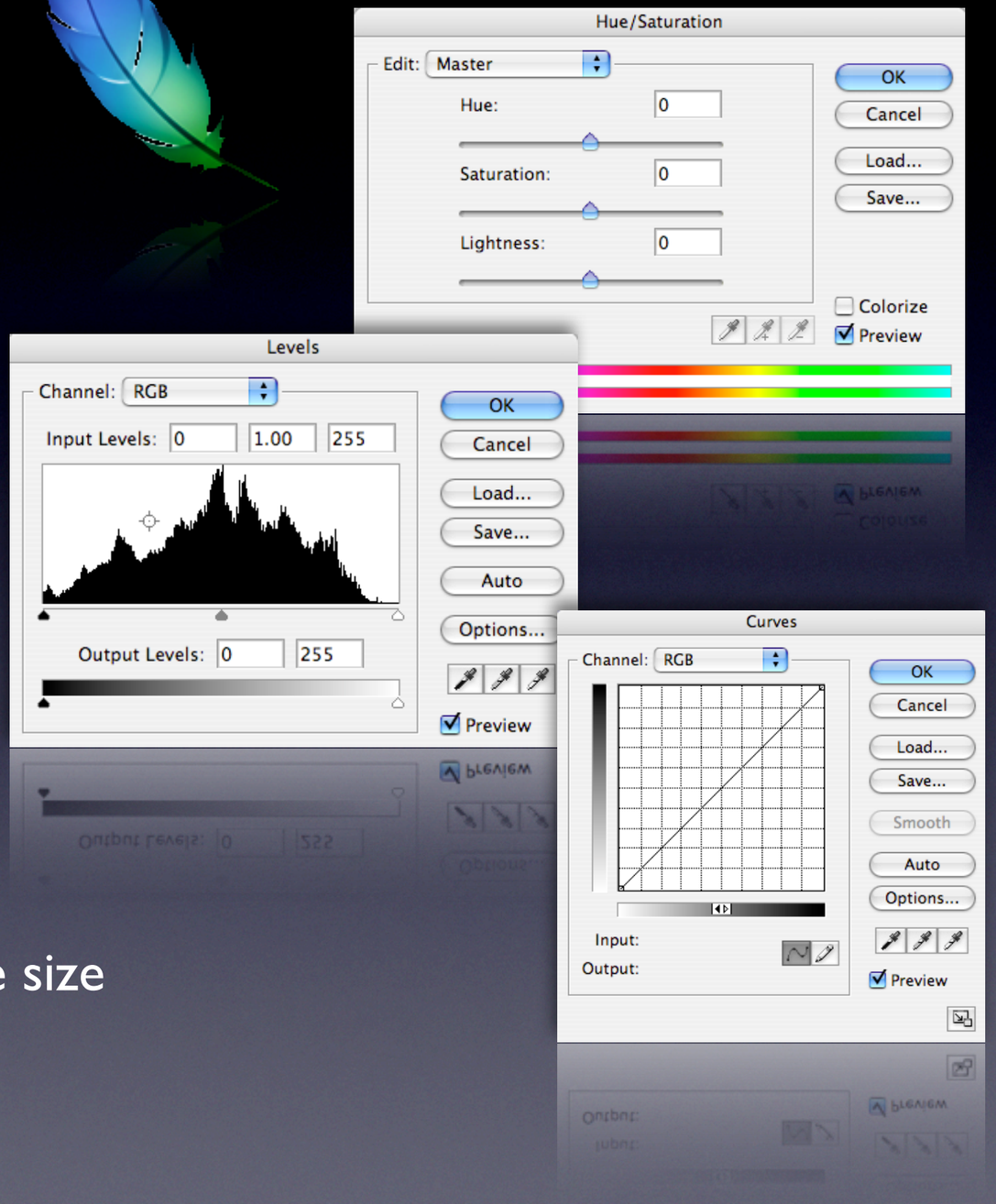
Adjust hue, saturation and value

Repair imperfections

Can be used to create original fine art

Recommend enough system ram for 3x's the file size

Good monitor for soft proofing



Digital Printing

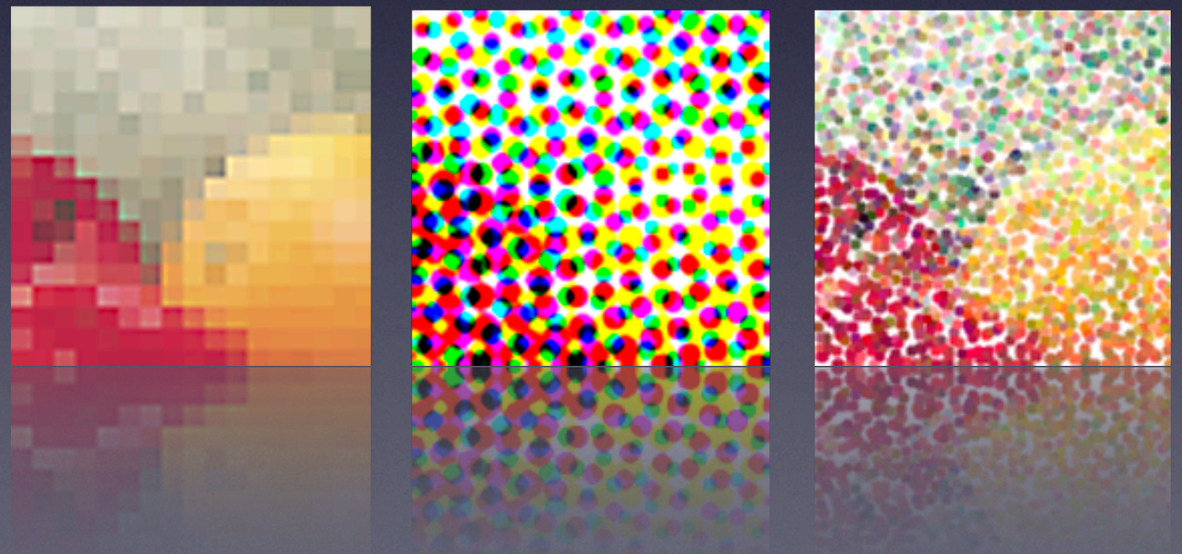
High resolution printer (over 600dpi)

Pixels per Inch (ppi) vs. Dots per Inch (dpi)

Epson, Roland, Mimaki, Canon, HP

Piezo vs. Thermal technologies

Front end RIP solution



Color Management

The missing piece: ICC profiling

Translate the color space of one device into another

Conversions done in LAB color space

Adobe RGB 1998 is the largest working color space

The challenge of moving to CMYK

Uses spectrophotometry and standard targets

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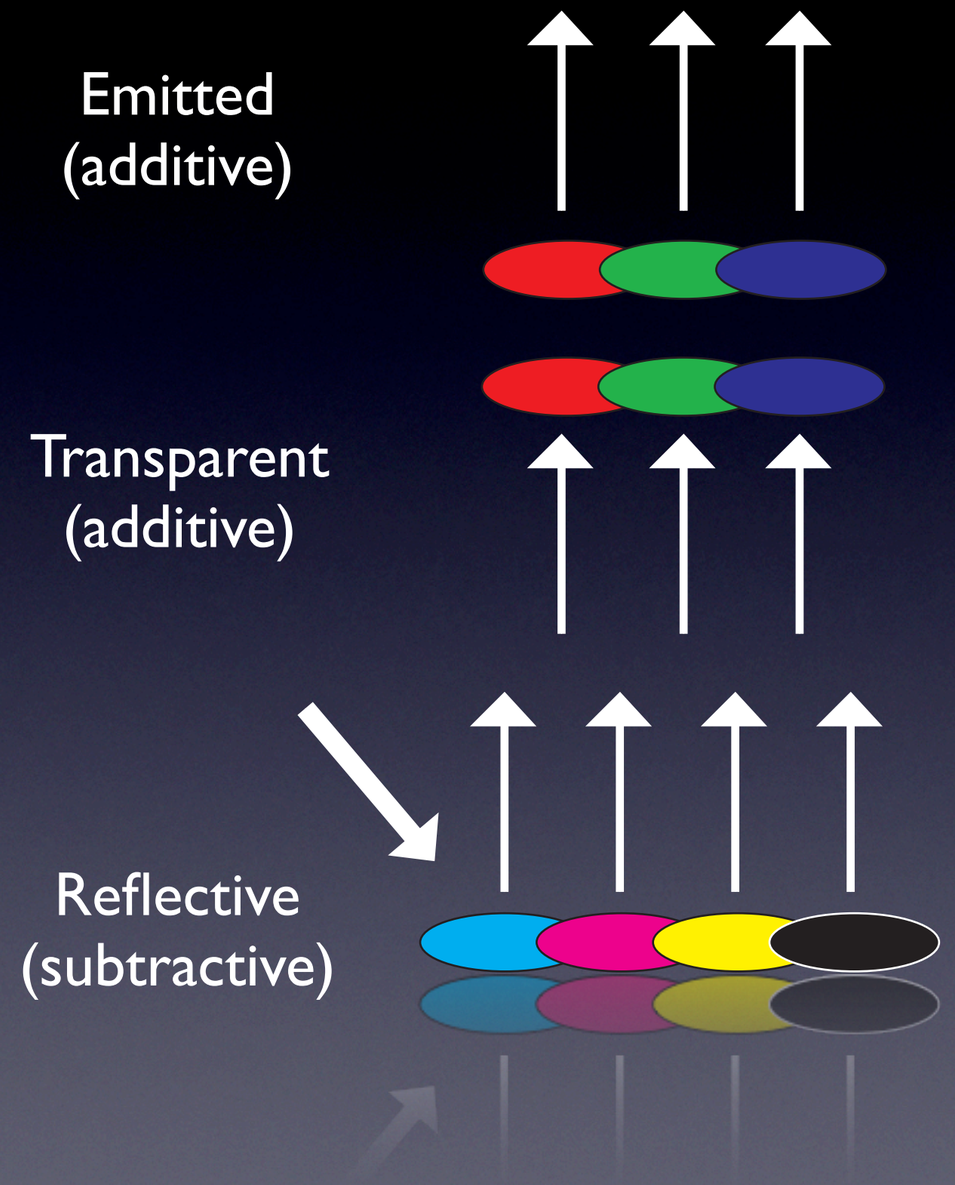

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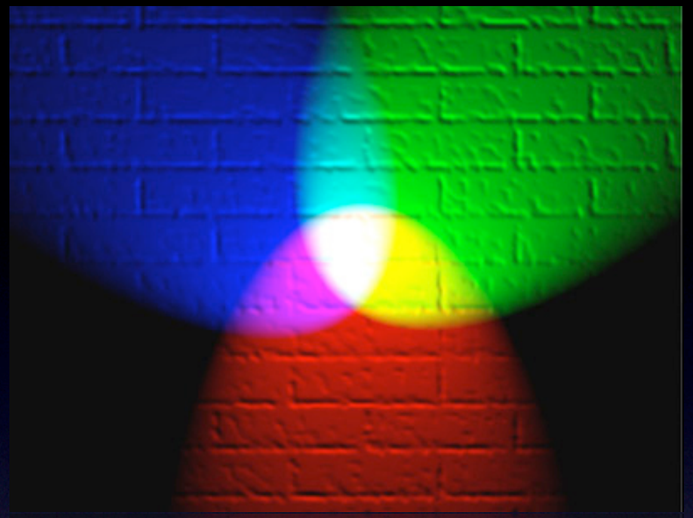
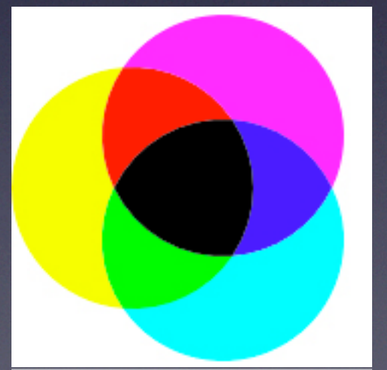
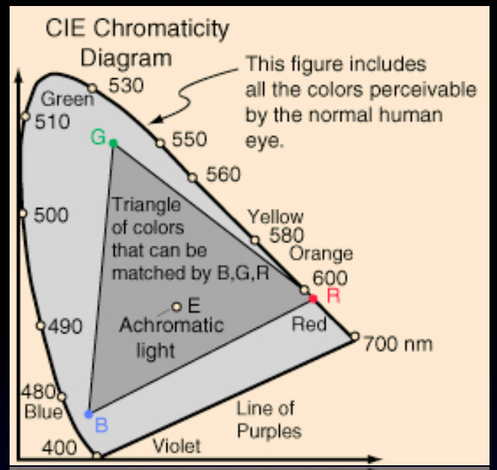
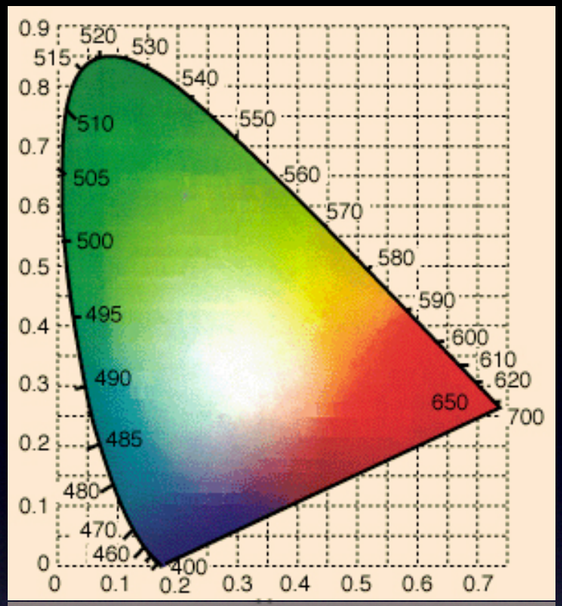
Emitted
(additive)





Reflective
(subtractive)





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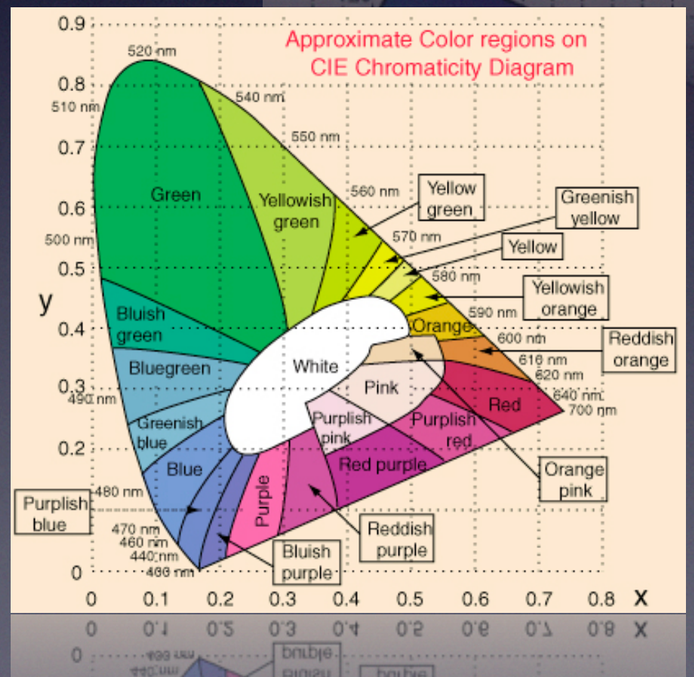

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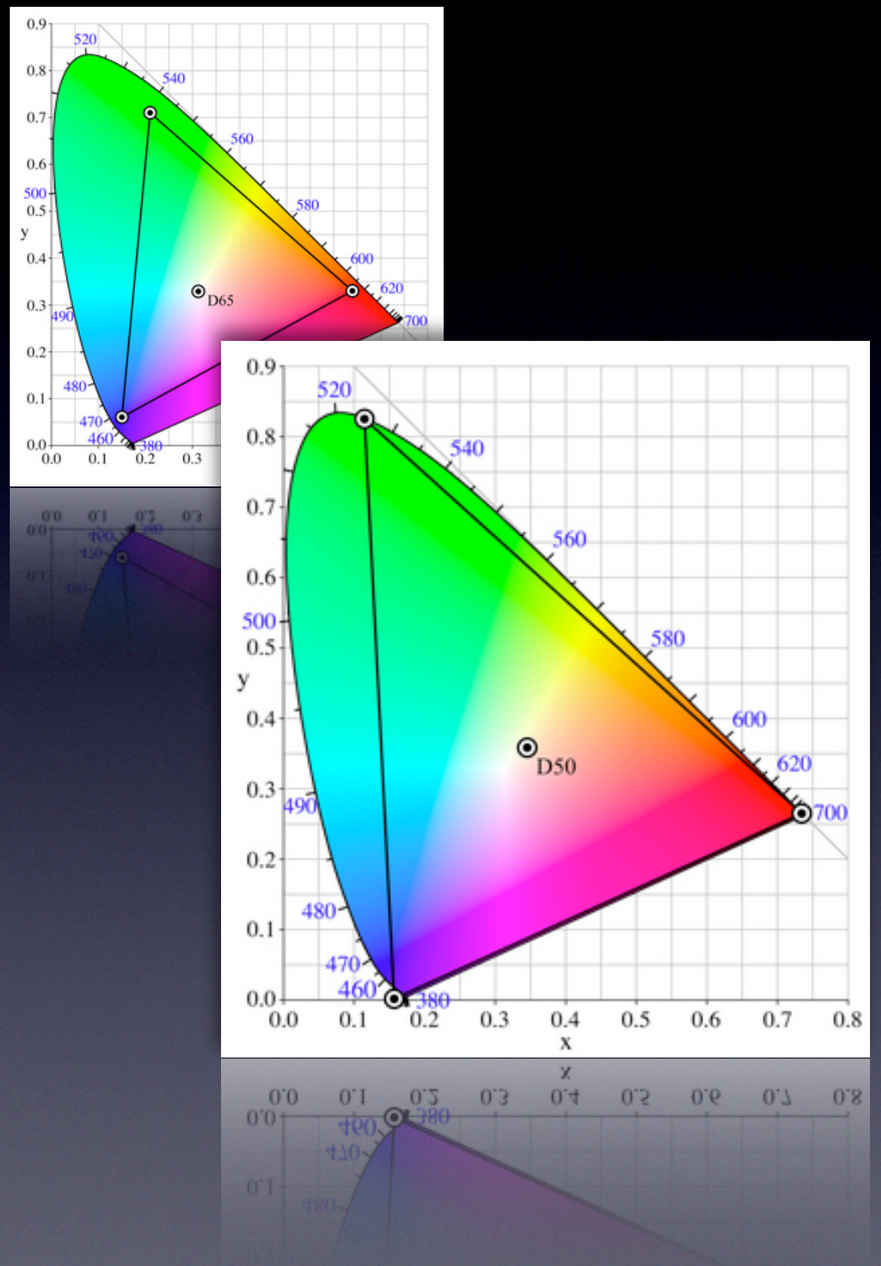

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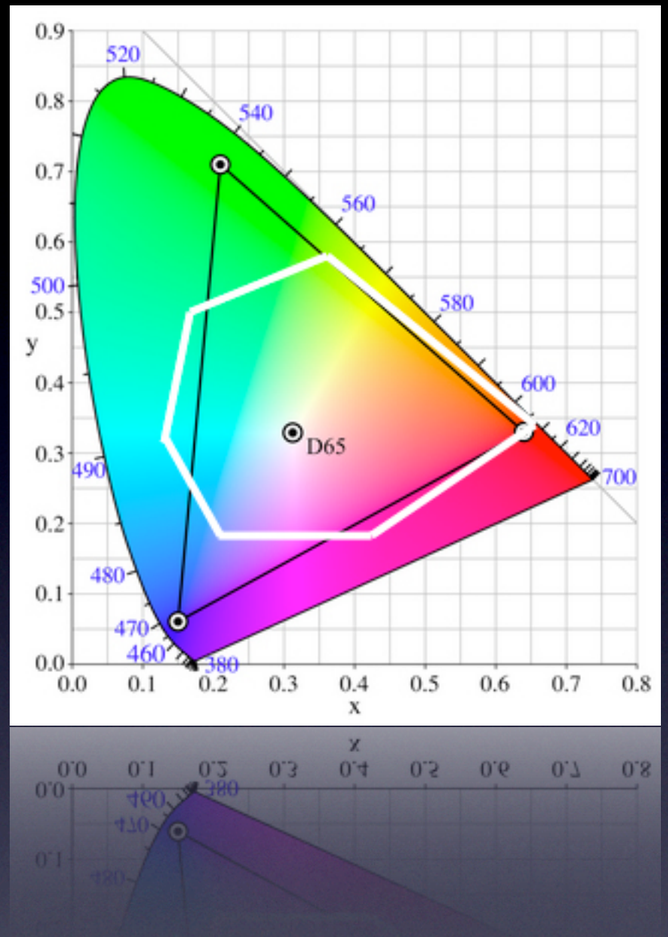

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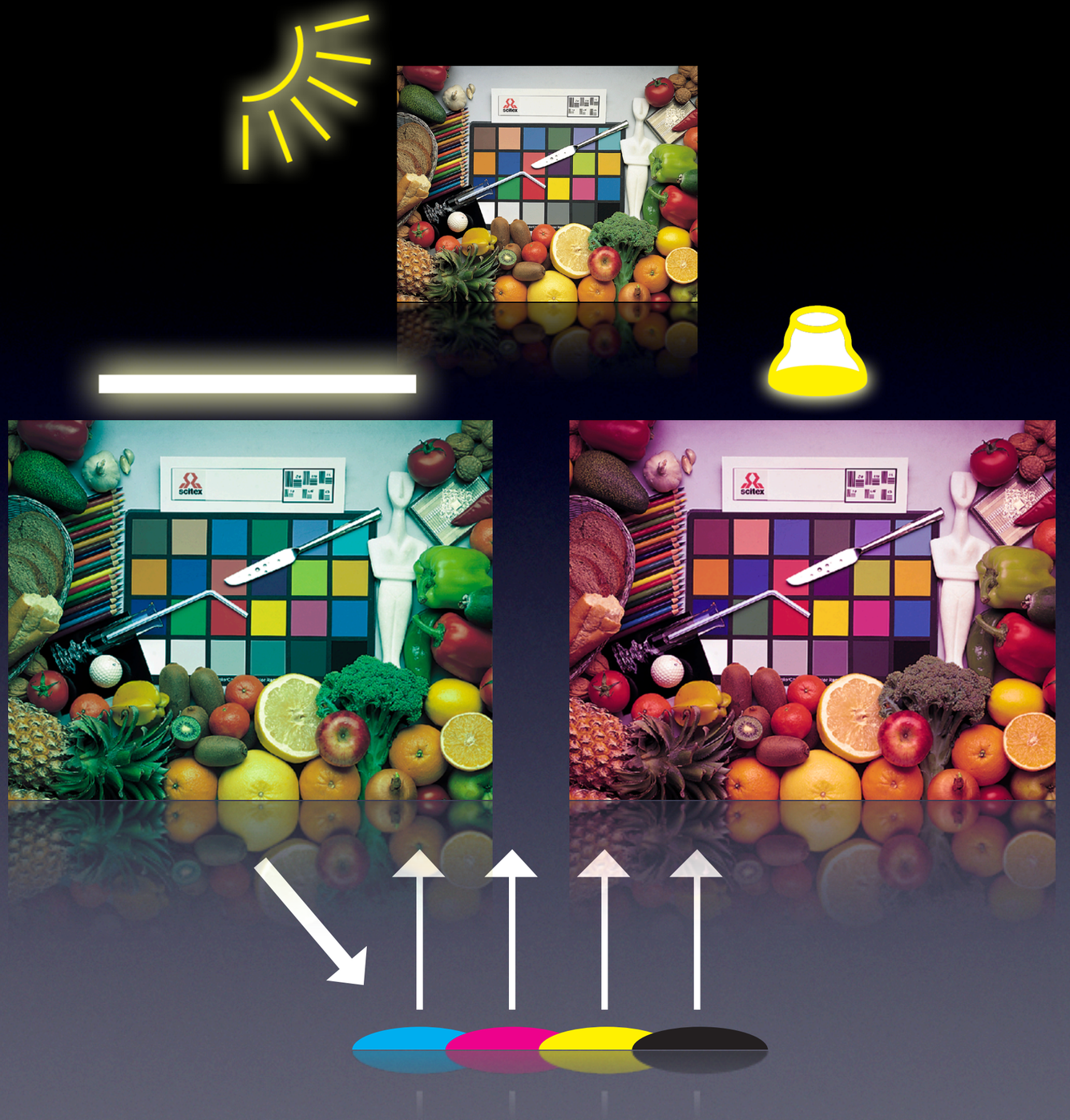
Archivability

Print Permanence

Print Permanence

- Digital Inks
- Print Medias
- UV Coatings
- Light Fade Testing



Digital Inks

Dye ink systems vs. Pigment ink systems

Lihtfastness

Water resistance

Bronzing

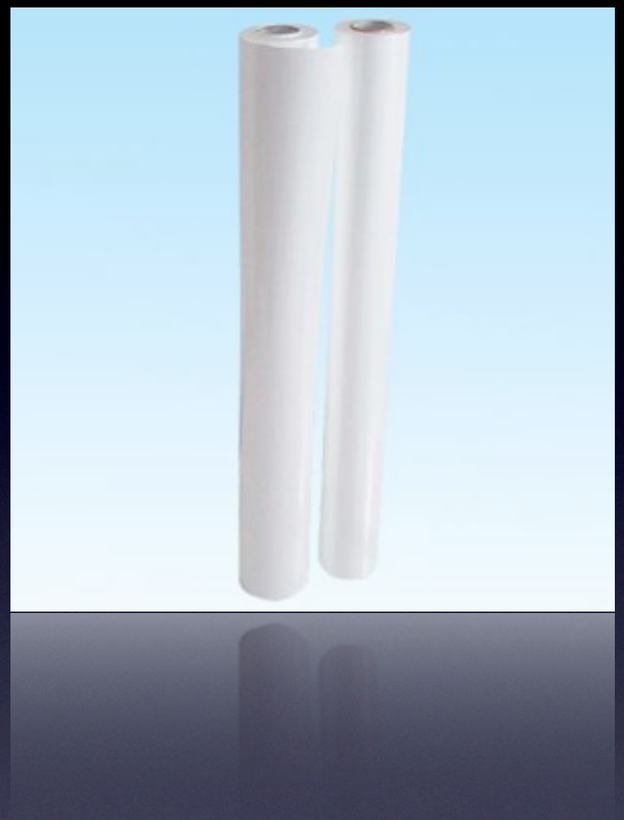
Metamerism

Print Media

Photo base papers

Water color papers

Artist stretch canvas



UV Coating

Has been shown to increase lightfastness

Available in solvent and water base

Great for scratch resistance

A must for canvas prints

Archivability

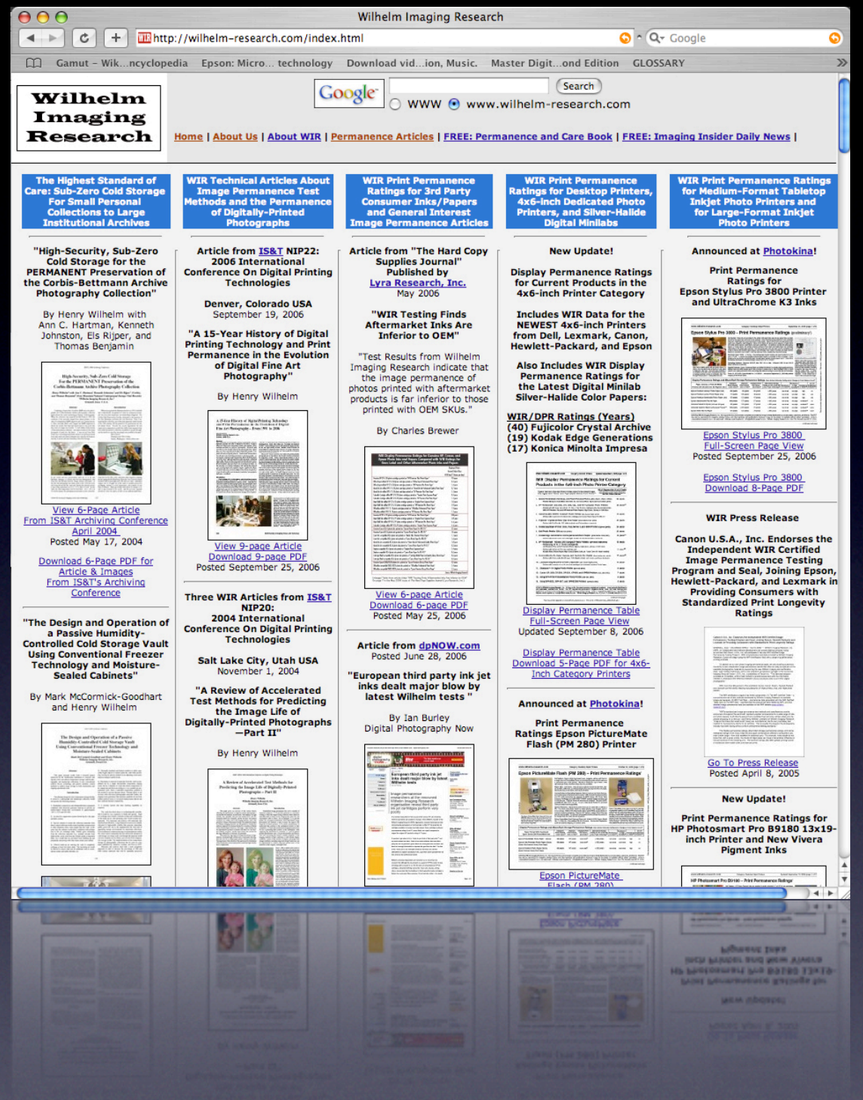
Light Fade Testing

Henry Wilhelm of Wilhelm Imaging Research

Accelerated light fading tests simulate 450lux 12hrs

Number of years before noticeable fading or discoloration occur

Digital reproductions become “legitimate” art pieces



The Process

From Ordering a Package to Making the Sale

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- Place Order
- Production
- Post Production
- Marketing & Sales

Place Order

Determine largest reproduction size

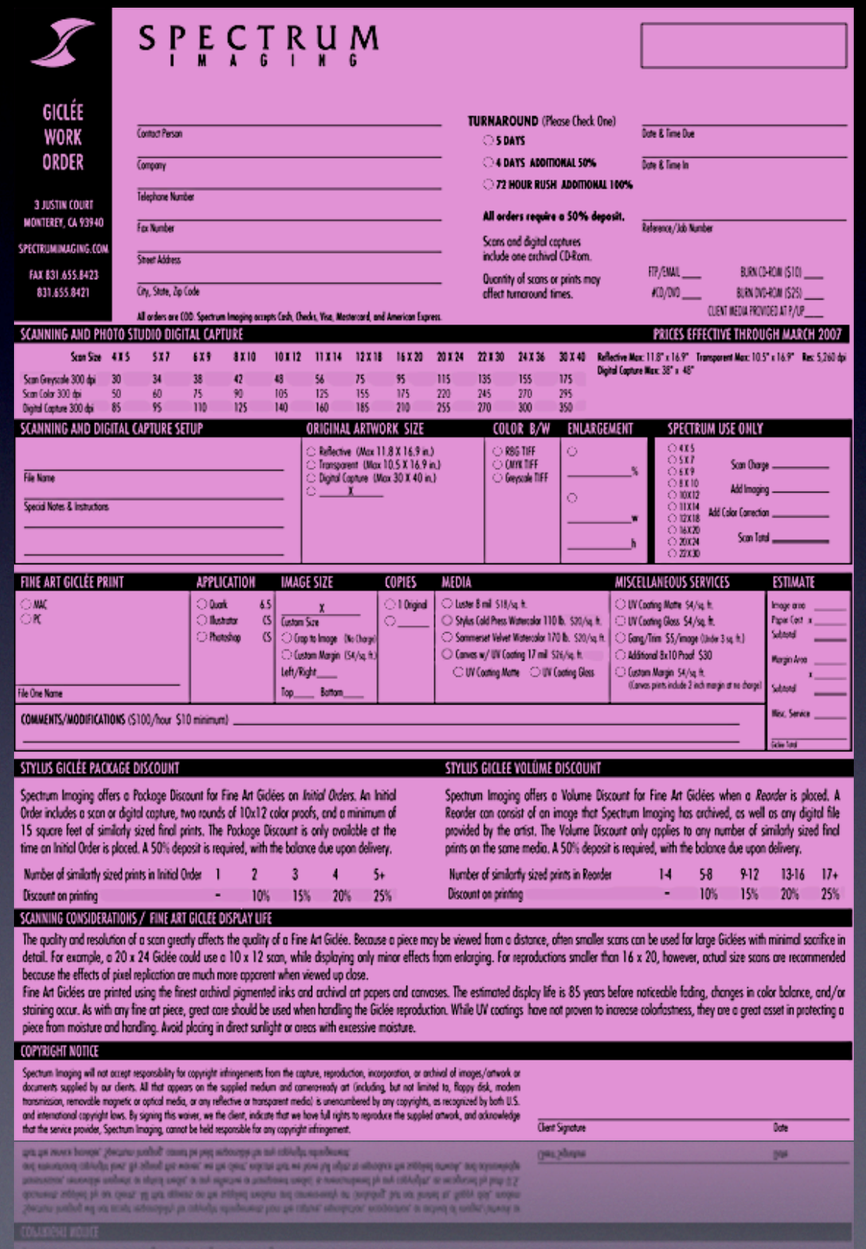
Consider sizing ratio 1:1, 1:2, or 1:3

Discuss any imaging tasks

Choose media

Decide on initial order quantity

Initial Package vs. Volume Discount



SPECTRUM IMAGING

GICLÉE WORK ORDER

3 JUSTIN COURT
MONTEREY, CA 93940
SPECTRUMIMAGING.COM
FAX 831.655.8423
831.655.8421

Contact Person
Company
Telephone Number
Fax Number
Street Address
City, State, Zip Code

All orders are COD. Spectrum Imaging accepts Cash, Checks, Visa, Mastercard, and American Express.

TURNAROUND (Please Check One)
○ 5 DAYS
○ 4 DAYS ADDITIONAL 50%
○ 72 HOUR RUSH ADDITIONAL 100%

All orders require a 50% deposit.

Scans and digital captures include one archival CD-Rom.

Quantity of scans or prints may effect turnaround times.

Date & Time Due
Date & Time In
Reference/Job Number

FTP/EMAIL ___ BURN CD-ROM ($10) ___
#CD/DVD ___ BURN DVD-ROM ($25) ___
CLIENT MEDIA PROVIDED AT P/U ___

SCANNING AND PHOTO STUDIO DIGITAL CAPTURE — PRICES EFFECTIVE THROUGH MARCH 2007

Scan Size	4 X 5	5 X 7	6 X 9	8 X 10	10 X 12	11 X 14	12 X 18	16 X 20	20 X 24	22 X 30	24 X 36	30 X 40
Scan Greyscale 300 dpi	30	34	38	42	48	56	75	95	115	135	155	175
Scan Color 300 dpi	50	60	75	90	105	125	155	175	220	245	270	295
Digital Capture 300 dpi	85	95	110	125	140	160	185	210	255	270	300	350

Reflective Max: 11.8" x 16.9" Transparent Max: 10.5" x 16.9" Res: 5,260 dpi
Digital Capture Max: 38" x 48"

SCANNING AND DIGITAL CAPTURE SETUP
File Name
Special Notes & Instructions

ORIGINAL ARTWORK SIZE
○ Reflective (Max 11.8 X 16.9 in.)
○ Transparent (Max 10.5 X 16.9 in.)
○ Digital Capture (Max 30 X 40 in.)
○ ____X____

COLOR B/W
○ RBG TIFF
○ CMYK TIFF
○ Greyscale TIFF

ENLARGEMENT
○ ____%
○ ____w
____h

SPECTRUM USE ONLY
○ 4 X 5
○ 5 X 7
○ 6 X 9
○ 8 X 10
○ 10X12
○ 11X14
○ 12X18
○ 16X20
○ 20X24
○ 22X30
Scan Charge
Add Imaging
Add Color Correction
Scan Total

FINE ART GICLÉE PRINT
○ MAC
○ PC
File One Name

APPLICATION
○ Quark 6.5
○ Illustrator CS
○ Photoshop CS

IMAGE SIZE
____X____
Custom Size
○ Crop to Image (No Charge)
○ Custom Margin (5¢/sq. ft.)
Left/Right____
Top____ Bottom____

COPIES
○ 1 Original
○ ____

MEDIA
○ Luster 8 mil $1¢/sq. ft.
○ Stylus Cold Press Watercolor 110 lb. $20/sq. ft.
○ Somerset Velvet Watercolor 170 lb. $20/sq. ft.
○ Canvas w/ UV Coating 17 mil $26/sq. ft.
○ UV Coating Matte ○ UV Coating Gloss

MISCELLANEOUS SERVICES
○ UV Coating Matte $4/sq. ft.
○ UV Coating Gloss $4/sq. ft.
○ Gang/Trim $5/image (Under 3 sq. ft.)
○ Additional 8x10 Proof $30
○ Custom Margin $4/sq. ft. (Canvas prints include 2 inch margin at no charge)

ESTIMATE
Image area ____
Paper Cost x ____
Subtotal ____
Margin Area ____
x ____
Subtotal ____
Misc. Service ____
Sales Tax ____

COMMENTS/MODIFICATIONS ($100/hour $10 minimum) ____

STYLUS GICLÉE PACKAGE DISCOUNT

Spectrum Imaging offers a Package Discount for Fine Art Giclées on *Initial Orders*. An Initial Order includes a scan or digital capture, two rounds of 10x12 color proofs, and a minimum of 15 square feet of similarly sized final prints. The Package Discount is only available at the time an Initial Order is placed. A 50% deposit is required, with the balance due upon delivery.

Number of similarly sized prints in Initial Order	1	2	3	4	5+
Discount on printing	-	10%	15%	20%	25%

STYLUS GICLEE VOLUME DISCOUNT

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Number of similarly sized prints in Reorder	1-4	5-8	9-12	13-16	17+
Discount on printing	-	10%	15%	20%	25%

SCANNING CONSIDERATIONS / FINE ART GICLEE DISPLAY LIFE

The quality and resolution of a scan greatly affects the quality of a Fine Art Giclée. Because a piece may be viewed from a distance, often smaller scans can be used for large Giclées with minimal sacrifice in detail. For example, a 20 x 24 Giclée could use a 10 x 12 scan, while displaying only minor effects from enlarging. For reproductions smaller than 16 x 20, however, actual size scans are recommended because the effects of pixel replication are much more apparent when viewed up close.
Fine Art Giclées are printed using the finest archival pigmented inks and archival art papers and canvases. The estimated display life is 85 years before noticeable fading, changes in color balance, and/or staining occur. As with any fine art piece, great care should be used when handling the Giclée reproduction. While UV coatings have not proven to increase colorfastness, they are a great asset in protecting a piece from moisture and handling. Avoid placing in direct sunlight or areas with excessive moisture.

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Client Signature ____ Date ____

Place Order

Determine largest reproduction size

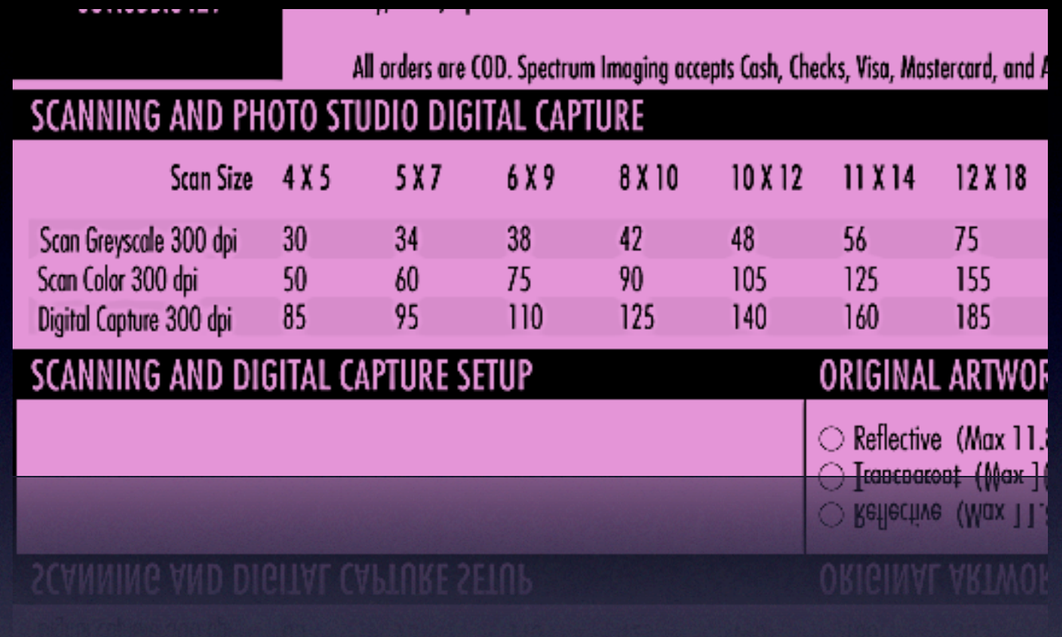
Consider sizing ratio 1:1, 1:2, or 1:3

Discuss any imaging tasks

Choose media

Decide on initial order quantity

Initial Package vs. Volume Discount



All orders are COD. Spectrum Imaging accepts Cash, Checks, Visa, Mastercard, and A

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SCANNING AND DIGITAL CAPTURE SETUP

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○ Reflective (Max 11.

○ Transparent (Max

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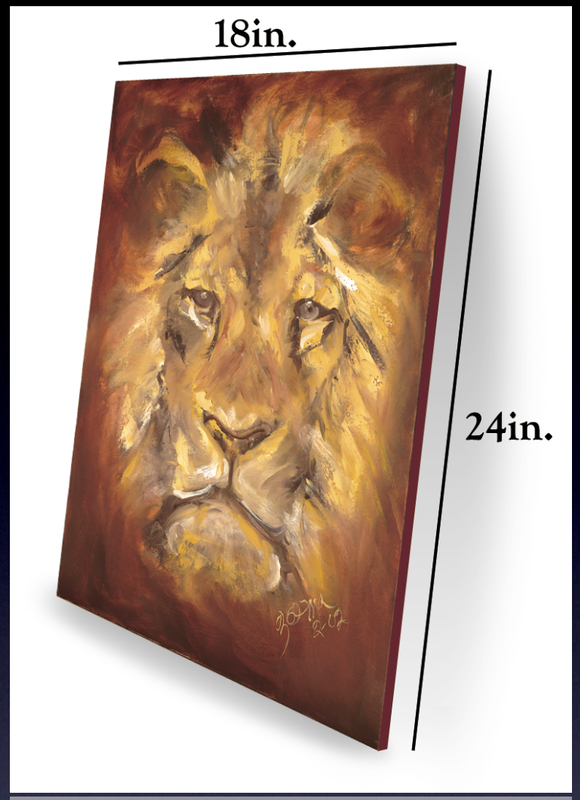

(Width x Height) / 144 = sq.ft.

18 x 24 / 144 = 3 sq.ft.

Watercolor $20/sq.ft.
Unit cost is 3 x $20 = $60

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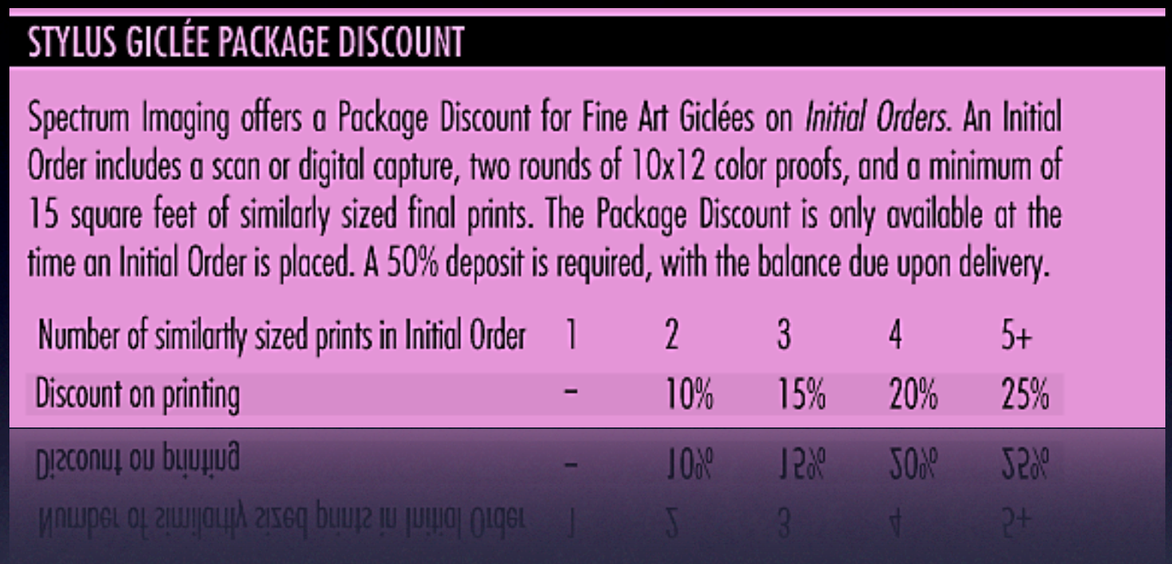

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Number of similarly sized prints in Initial Order	1	2	3	4	5+
Discount on printing	–	10%	15%	20%	25%

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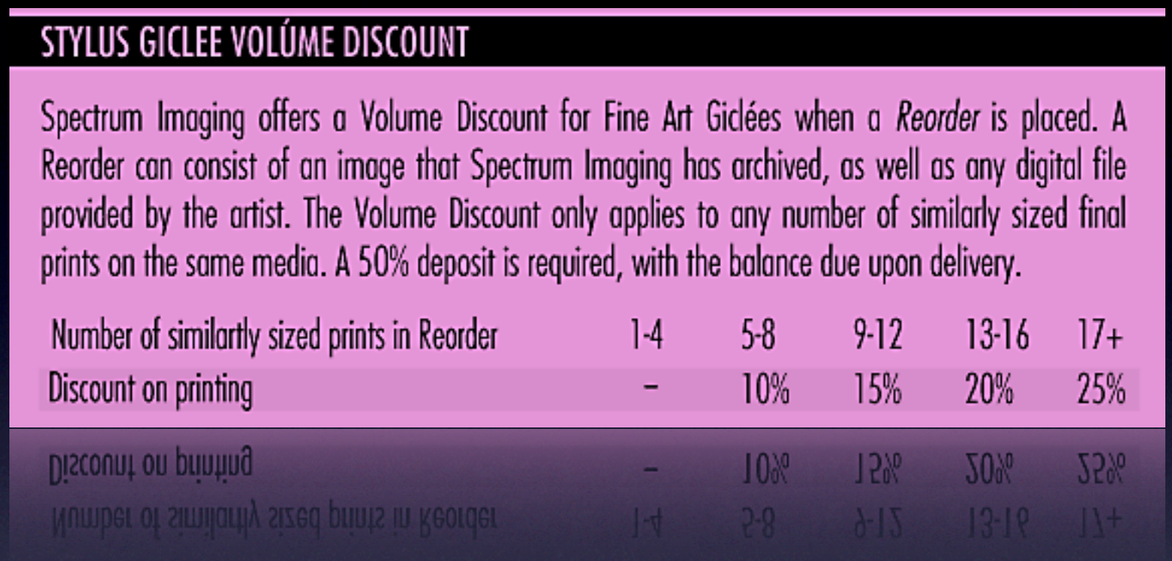

STYLUS GICLEE VOLÚME DISCOUNT

Spectrum Imaging offers a Volume Discount for Fine Art Giclées when a *Reorder* is placed. A Reorder can consist of an image that Spectrum Imaging has archived, as well as any digital file provided by the artist. The Volume Discount only applies to any number of similarly sized final prints on the same media. A 50% deposit is required, with the balance due upon delivery.

Number of similarly sized prints in Reorder	1-4	5-8	9-12	13-16	17+
Discount on printing	–	10%	15%	20%	25%

Production

Digital capture or scan original

Color correct

Turnaround time for first proof typically 3-4 days

Turnaround for final prints typically 3-4 days

Post Production

To coat or not to coat

Embellishing with Impasto

Embellishing with acrylics

Hand signing

Handling & Storage

Marketing & Sales

The importance of educating the buyer

Pricing models

Limited editions

Reorders

Shipping

Unit cost is $60
Wholesale Price = Unit cost x (2 : 4)
Retail Price = Wholesale x2

For Example:
18x24 watercolor cost $60
Wholesale price = $60 x 2 = $120
Retail price = $120 x 2 = $240

18x24 watercolor cost $60
Wholesale price = $60 x 4 = $240
Retail price = $240 x 2 = $480

The Recap

What was that again?

What Was That Again?

- What is a Digital Fine Art Reproduction?

What Is a Digital Fine Art Reproduction

- Faithful Reproduction of the Original
- Use of a High Resolution Output Device
- Use Archival Inks
- Use Archival Medias
- On Demand Technology

What Was That Again?

- What is a Digital Fine Art Reproduction?
- History of Digital Reproductions

History of Digital Reproductions

- Iris 3047 Digital Proofer
- The Promise of Iris Printmaking Suffers a Setback - Archivability
- Photography Pushes the Technology to Improve
- Epson Reinvents High Resolution Printing
- Epson Improves on Piezo Technology

What Was That Again?

- What is a Digital Fine Art Reproduction?
- History of Digital Reproductions
- Digital Printing 101

Digital Printing 101

- Digital Capture / Scanning
- Digital Imaging
- Printing
- Color Management

What Was That Again?

- What is a Digital Fine Art Reproduction?
- History of Digital Reproductions
- Digital Printing 101
- Archivability

Archivability

- Digital Inks
- Print Medias
- UV Coatings
- Light Fade Testing

What Was That Again?

- What is a Digital Fine Art Reproduction?
- History of Digital Reproductions
- Digital Printing 101
- Archivability
- The Process

The Process

- Place Order
- Production
- Post Production
- Marketing & Sales

The End

Questions and Answers (I hope :)