

## **So, why should i scan my film exposures in a drum-scanner?**

Drum-scanners record much finer detail. The scans are known for their clean noise-free shadow areas with excellent detail pulled from the darkest areas, even beyond what is visible under a loupe on a light box.

**During scanning films are mounted in a fluid or oil on the up to 1800rpm spinning perplex drum. That makes a very clean image. Fine scratches and other unwanted surface details are eliminated.**

Every scan has a custom curve, color & levels applied using a Wide Gamut profile to capture as much data as possible.

**Because of this, your scans may appear flatter then you are used to. This allows you to set the tone and contrast to your own specifications.**

That was just a brief introduction, as a photographer/designer, you have more questions. Maybe this is on your mind right now:

### **What makes a drum-scan better then a CCD-scan?**

There are a few good reasons to choose to have your film drum-scanned rather than scanned on a flatbed.

#### **1. Resolution.**

All real Drum scanner uses photomultiplier tubes (PMT's). These are extremely sensitive vacuum tubes that pickup light (photons) and convert it into electrical impulses. Inside they can sense film detail much finer than ordinary cdd flatbed or imacon (not a real drum scanner) scanners could ever hope to pickup.

In conjunction, the laser cut aperture wheels smallest aperture is 3uM (microns). That is ridiculously small at 0.000118110236 inches.

Flatbed and Imacon scanner use a sensor called a charge-coupled device (CCD). While CCD's have improved dramatically over the years, they are still nowhere near the quality of a PMT.

They still have inherent limitations due to their size and the tendency to flare. They also suffer from electronic noise due to the density of the arrays.

Like cameras, our drum scanners have variable aperture settings. Widening the scanning aperture will soften the image slightly and make the film grain on faster emulsions less visible.

If you are having big enlargements made, but want the appearance of the grain minimised please notice when you order the scans.

#### **2. Dynamic Range.**

Is the ability of a scanner to record a wide range of density values from the highest specular highlight to the darkest densest shadow.

A color transparency (chrome) presents a good challenge, they often can have a density range of 3.5+.

Many CCD scanner manufacturers claim to have a dynamic range over 4. This is a serious exaggeration of the scanners capability.

Some CCD scanners can record data in the high density areas, but most of the captured data is actually noise from the internal circuitry.

As the scanner turns up the signal gain to compensate for the poor sensitivity of CCD's at low light levels, the resulting scan is very poor and full of noise.

Drum scanner's PMT's are thousands of times more sensitive than CCD's. They do not require the same amount of signal amplification, therefore a cleaner scan is produced.

This electrical signal is strengthened (i.e., multiplied), and the strengthened signal is what is used.

This 'multiplication' is one reason why PMTs generally are able to capture a larger density range than CCDs.

### **3. Clarity.**

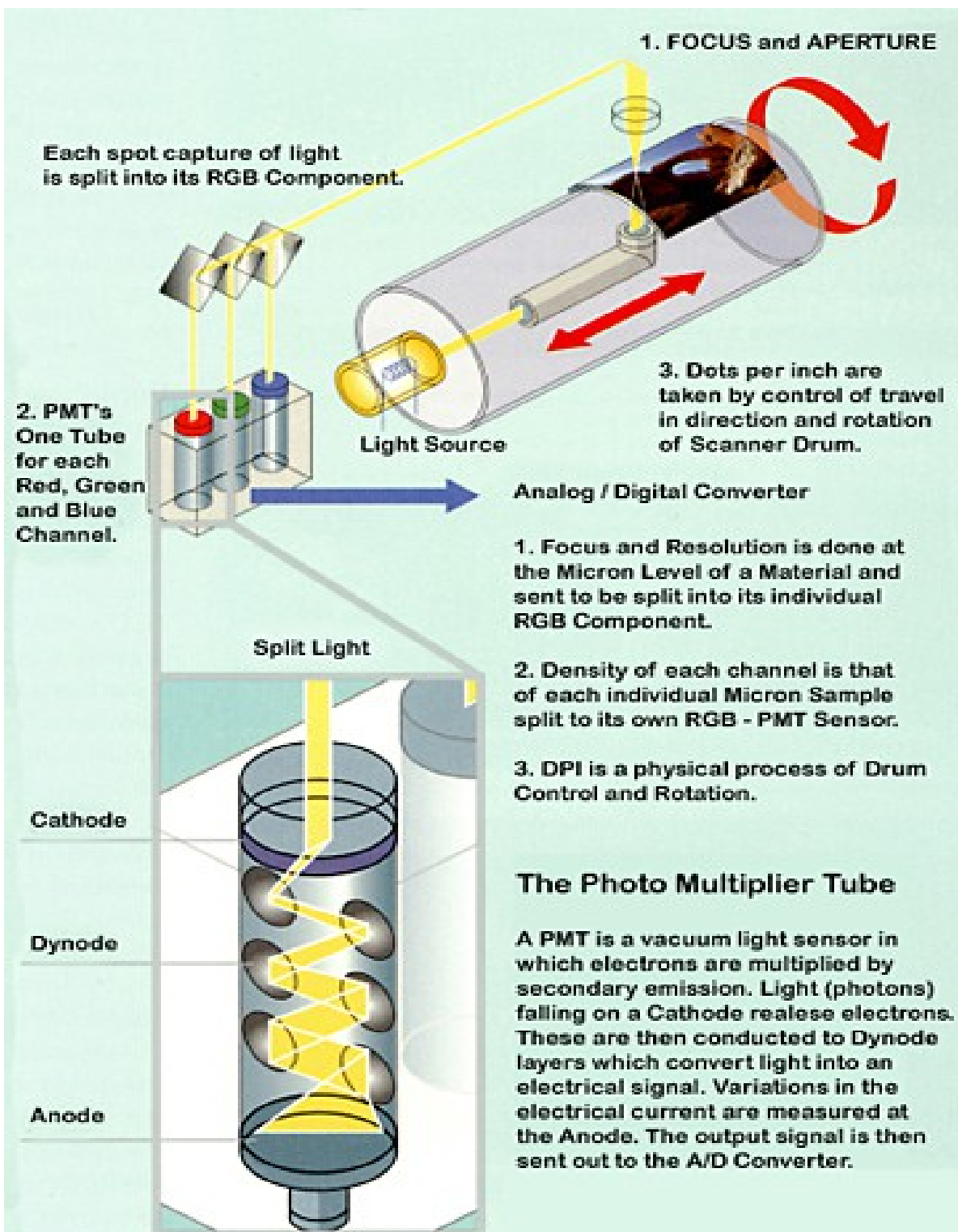
All of our scans are fluid mounted. Scanning-oil is in between the film, drum and the mylar overlay. removes completely any Newton rings associated with scanning on a flatbed scanner.

It has the same optical properties as film, It also fills in small scratches in the emulsion, helps to smooth out grain and increase overall sharpness.

### **What scanner is used?**

ICG365 MK2 (the I-version)

- \* 12000 dpi optical resolution
- \* 1800 RPM drum speed
- \* Triple photomultiplier scanning technology
- \* Enlargement range 20-20000% continuously variable
- \* Density Range 0-4 D
- \* Automatic focus or fully manual with user defocus
- \* A3+ drum area (476 x 320mm maximum scanning area)



### STRENGTHS

- \*Resolution is at the grain of a material not dependant on a lens or scan area.
- \*Each Spot Capture (Pixel) is a Density Capture for all three R,G,B Signals.
- \*Optical Density of a P.M.T. is approximately 23% higher than other sensors.
- \*Optics Box and all capture elements are fixed with very tight repeatability.

### DOWN SIDE

- \*If it cannot be put around a drum it cannot be scanned.