PhotoGraV - *Frequently Asked Questions*

Q. I'm currently engraving photographs that I've processed in PhotoShop (or CorelDraw or PhotoPaint or . . .). What can I do in PhotoGraV that I can't do in these graphics programs?

A. PhotoGraV provides a significant number of advantages over general purpose graphics programs for laser engraving photographs:

(1) PhotoGraV's simulation capability provides a way for you to inspect the appearance of the final product before you actually engrave it. Further, PhotoGraV's interactive mode allows you to adjust any of PhotoGraV's processing parameters and to see the resultant effect on the simulated engraving in near real time (a second or two). PhotoGraV's simulated engraving is not merely an overlay of the input photo on a simulated engraving material but rather is produced by a Power/Lens model using the actual binary image that you would eventually send to your engraver.

(2) PhotoGraV provides a diffusion dithering process that has been designed specifically for laser engraving. Further, the *density* **of the diffusion dithering is user-adjustable** and has been optimally pre-tuned for the engraving materials supported by PhotoGraV. The adjustable density of the diffusion dithering is **in addition to** the more standard grayshade adjustments that are also provided by PhotoGraV. Other common halftone patterns are also provided by PhotoGraV in a user-adjustable form but, for most images and materials, these "standard" halftones are not nearly as powerful as the adjustable diffusion dithering.

(3) Although the following two functions are provided by other graphics programs, only PhotoGraV allows you to adjust the functions' parameters and see the effect on the simulated engraving in near real time.

i. PhotoGraV automatically "stretches" an image's grayshades over the entire grayshade range but also provides user-controlled adjustment of clipping and gamma parameters and histogram equalization in the interactive mode.

ii. PhotoGraV applies a simultaneous smoothing and edge strengthening to the image. Parameters controlling this process are user-adjustable in the interactive mode.

(4) PhotoGraV combines the enhanced image with the dithered image before thresholding the result. In interactive mode, the relative image weights and thresholding parameters are totally user adjustable. To our knowledge, PhotoGraV is the only graphics program that combines the adjustable error-diffused image with the enhanced image before thresholding the result.

(5) For automatic processing, all of PhotoGraV's parameters have been tuned and optimized for each of the engraving materials supported by PhotoGraV. In

addition, PhotoGraV recognizes the specific engraving characteristics of each material and processes the input photo according to the "normal" manner in which the material is used. For example, if a photo is to be engraved on acrylic, the processed image is automatically produced in a "negative" polarity and is flipped left-to-right. These preset parameters and characteristics can be modified at any time in the interactive mode.

(6) User-defined parameters, specified in interactive mode, can be saved as named parameter sets on disk and efficiently applied to future engraving projects of a similar nature.

(7) PhotoGraV produces estimates of the time required to actually engrave the processed image. The estimating model appears to be accurate to about 1-2% for most laser engravers.

(8) The simulated engraving can be printed from within PhotoGraV or can be saved to disk for use in desktop publishing or graphics programs such as CorelDraw. Simulation prints are very useful as customer proofs or as archival reference material.

(9) Printed "PhotoGraV Reports" provide a complete record of the PhotoGraV session including all processing parameter values, image names, the engraving material, any named parameter set that is used, and all PhotoGraV processing times and estimates.

In summary, compared to general-purpose graphics programs, PhotoGraV has been designed specifically for laser engraving photographs and consequently results in a much more efficient and reliable process than that obtainable by the general-purpose programs.

Q. Do you provide any instructions on how to use the program?

A. The PhotoGraV program is accompanied by an extensive **User Guide** that provides installation instructions, scenarios to assist you in learning the program, and complete descriptions of all of PhotoGraV's functions and controls. In addition, appendices provide additional information including tips for engraving and finishing photos on various common materials.

Q. What if I encounter difficulties in using PhotoGrav?

A. We provide one full year of Technical Support that is available via email, FAX, or phone. We want you to be successful in using PhotoGraV and we will expend considerable effort to ensure your success. We would hope that most of your questions would be specific to PhotoGraV and its use but we will attempt, time and resources permitting, to answer questions you might have about related topics.

Q. How does PhotoGraV fit in with my scanning software and with CorelDraw, which I use to control and to send information to my engraver.

> **A.** (1) Use your scanning software to scan a photo which you save to disk.
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> (2) Use PhotoGraV to process the saved image and save the processed image to disk.
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> (3) Use CorelDraw to send the processed image to your engraver.

There are a few rules that you should follow in accomplishing the above steps and those rules are explicitly specified in the PhotoGraV User Guide.

Q. What if I order PhotoGraV and discover that it does not satisfy my requirements?

> **A.** Return the program diskettes and documentation within thirty (30) days of receipt for a full refund of your purchase price. Refunded amounts do not include shipping and handling charges and returned products automatically terminate your PhotoGraV License Agreement.