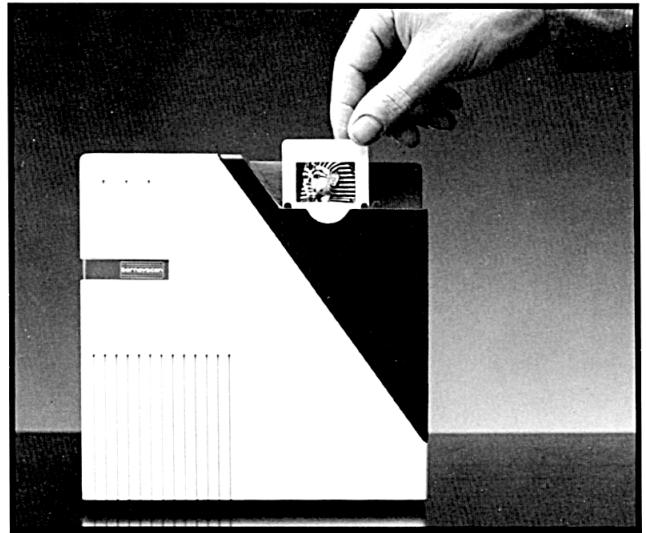


Barneyscan Slide Scanner

Product Specification

The Barneyscan 35mm Slide Scanner is a precision electro-optical device that allows the user to rapidly and conveniently scan images into popular microcomputer platforms.

The Barneyscan 35mm Slide Scanner provides image quality suitable for color separations in advertising and editorial applications in newspapers, magazines and books. A black and white option converts the color to 256 levels of grey for professional monochrome. Other applications include: presentation graphics, image capture for studio and industrial video, CD-ROM, and image analysis in science and engineering.



Film Format for Input

Barneyscan accepts 35mm slides in color and black-and-white, mounted in conventional 2" x 2" slide mounts of cardboard or plastic, with or without glass windows. The active image area is 24 mm (0.945 inches) by 36 mm (1.417 inches).

Optical Resolution

The device incorporates a precision 6 element color corrected lens capable of 2000 lines per inch resolution at 80% contrast.

Spatial Resolution

The scanner samples the slide at a pixel size of 25.4 microns.

Repeatability/Color Registration

The device is reproducible to better than $\pm 1/2$ pixel per 1000 pixels.

Illumination

The light source used in the Barneyscan device is a commercially available quartz halogen lamp with an average life of 3000 hours. The light is guided through the slide without any heat to the slide in order to prevent the slide from buckling.

Color Conversion to Grey Scale

For users who want grey scale output from color slides, the software provided with the system automatically maps the colors to 256 shades of grey.

Dynamic Range/Contrast Ratio

The scanner samples each pixel to 8 bits for each color: red, green and blue. The total 24 bits of color produce 16,800,000 hues.

Color Correction

The scanner is furnished with software that allows the display of the user's microcomputer to be used like a digital oscilloscope. A display pattern is provided that shows the actual dynamic range of signal for each color and allows the user to maximize this range to encompass the minimum and maximum densities within the slide. This means there will be precise detail and color fidelity in the shadows as well as the brightest highlights. This also assures that color purity (neutral grey) is preserved from shadow to highlight. Also, it eliminates the appearance of contours where smooth transitions occur in the subject.

Brightness & Contrast Correction

If a user wants to alter the brightness and contrast of a scanned image, it is not necessary to re-scan. The post-processing software allows you to manipulate the stored data rather than re-scan by a "trial-and-error" method.

Interface Method

The Barneyscan device is provided with a printed circuit board that is inserted into a slot of the users microcomputer. Data is sent from the device to the board over flat ribbon cable. The board is on the BUS of the microcomputer and a bit-map color band sequential file is store in RAM image memory at the full resolution of 1024 lines by 1530 pixels. Simultaneously a display file is generated by sub-sampling the high resolution image file.

File Format

During the scan, the file is in the Barneyscan NATIVE file format. A wide variety of other formats can be generated using the software included with the system:

TIFF (Tagged Image File Format, Aldus/Microsoft),
TARGA, TARGA BIGPIC (Truevision),
LUMENA 16 & 32 (Time Arts),
RIFF
PICT
PICT2,
SUN RASTER, ARTISAN, others upon request.

Variable Resolution to Match Output Device Requirements.

The scanner is provided with image processing software that allows the user to "re-res" the scanned file to higher or lower dot per inch requirements to match the requirements of output devices like film recorders and photo typesetters that need a specific addressable resolution for a given image size.

Cropping & Centering

The software included with the system allows the user to crop the image and re-position that cropped file within the display memory.

Image Orientation

The user can rotate the image in 90° increments to provide Portrait or Landscape orientation.

Sharpening Algorithm/Unsharp Masking

The software included with the system allows the user to post-process the scanned image with a convolution algorithm. Two different convolutions are included, and the user can also create custom matrices and insert them in the software.

Hardware Required

For IBM PC users, Barneyscan requires a PC/AT or workalike with a minimum of 2 megabytes of RAM, and 6 megabytes is recommended. One empty slot on the PC/AT is needed for the interface card. Also, a Targa 16, 24 or 32 frame buffer or workalike is required for display of the scanned images to a color monitor.

Hardware Required (cond.)

For Macintosh II users, an empty NUBUS slot is needed, plus a color frame buffer and 2 to 8 megabytes of memory.

Scanning Speed

Monochrome slides require only 30 seconds for scanning. Color slides require longer times because three sequential scans are made to separate the red, green and blue components of the image. A color slide requires about 3 minutes scanning time. If there is limited RAM available in the user's micro-computer, the scanning time overall will be lengthened by the time required to write the single color file to disk so the next color band can be stored.

Physical Size & Weight

Scanner dimensions are 8.75" wide by 8" high by 15.25" deep (22.23 x 20.32 x 38.74 cm). Scanner weight is 25 pounds or 11.4 kilos. Shipping weight is approximately 30 pounds or 14 kilos.

Power Requirements

Input Power: Standard 120 VAC; 60 Hz. Optional 100,220,240 VAC; 50,60 Hz (no extra cost).
Power Consumption: approximately 75 watts.

Operating Environment

The Barneyscan system is designed to operate in a 70°F environment, non-condensing. Rapid changes in temperature and extended operation above 80°F or below 50°F should be avoided.
