

# XYZ OBSERVER MODEL 5B

Spectral measurement of the  $\mu\text{m}$ -dimensioned pixel specimens that comprise a color image

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### SPECTRAL MASTERING

With the adoption of software-based color management systems such as ColorSync on the MAC, Integrated Color Management (ICM) on PCs, and the wide use of the International Color Consortium's (ICC) data and file formats, color measurement using internationally accepted scientific standards is now an inherent element of mainstream operating systems. To take full advantage of this exciting new level of precision and accuracy, color data must be traceable to the Commission Internationale de l'Eclairage's (CIE) methodology and colorimetric information base. To comply with CIE standards, color images are analyzed with a spectrophotometer, a scientific instrument for measuring light, and the data that results is transformed using CIE provided tables and formulas. This is the Spectral Mastering process and a device that employs this process is known as a *Spectral Scanner*.

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5B is first of a new class of color image scanners called *Spectral Scanners*. The system uses scientific-grade light measuring components to digitize images used in publishing, prepress and graphical applications. Based upon highly accurate and precise light measurements, the system generates scientifically correct colorimetric information for every pixel in an image.

**FEATURES** The system exhibits excellent spatial, photodynamic and colorimetric characteristics and repeatability, and allows the user to select colorimetric measurement conditions. Final output, CIELAB encoded image files, are saved in the industry standard TIFF format. An integrated Pentium-based computer acts as system host and automates or greatly simplifies system setup, routine measurement procedures, device calibration and communications with network-connected systems. The 5B also creates CD-ROMs containing its distortion free, premium quality spectral masters.

**BENEFITS** 5B allows the graphical supplier to offer a new and unique high value product, spectral masters. 5B crosses a significant technical threshold by complying with CIE measurement standards and this separates 5B from all other image capture systems or methods. CIE-traceable data opens new markets like artwork identification and authentication and image archiving and preservation. 5B colorimetric output is compatible with and greatly enhances the performance of all color management systems.

## 5B SPECIFICATIONS

<i>Spectral range</i> .....	360nm to 830nm
<i>Spectral resolution</i> .....	5nm
<i>Photodynamic range</i> .....	3.84 [log <sub>10</sub> (S/N)]
<i>Photodynamic resolution</i> ..	11 bits
<i>Dmax</i> .....	4.3 (from measurements of Wrattan 96 3.0 ND filter)
<i>Light source</i> .....	Xenon
<i>Illuminating/viewing system</i>	Transmissive: 0/0 (0° illumination/0° viewing angle) (optional: Reflective: 45/0 (45° illum./0° view angle))
<i>Repeatability</i> .....	Spectral reflectance or transmittance: within .1%
<i>(white point measure)</i>	Colorimetric values: within $\Delta E^*ab$ 0.1
<i>Spatial resolution</i> .....	Pixel measurement area: 12.5 $\mu\text{m}$ , 25 $\mu\text{m}$ , 50 $\mu\text{m}$
<i>Mechanical repeatability</i> ...	$\pm$ .001" over area measured
<i>Pixel resolution</i> .....	508, 1,016, 2,032 ppi
<i>Effective measuring area</i> ..	12" x 12"
<i>International standards</i> .....	CIE: Publication 15.2 ISO: 10526, 10527 ASTM: E 308, E 1164 ANSI: CGATS.5-1993, IT8.8-1993 ICC: 1:1998-09
<i>Trade standards</i> .....	ColorSync 2.5, ICM 2.0, TIFF
<i>OS Compatibility</i> .....	PC, MAC, Unix, Linux
<i>Measuring mode</i> .....	Single measurement/pixel
<i>Measuring rate</i> .....	800 pixels/second (burst), 610 pixels/sec sustained
<i>Data presentation</i> .....	Graph or numerical Colorimetric values: L*a*b*, sRGB (optional: XYZ, Yxy, L*U*V*, HVC, Device RGB)
<i>Measurement conditions</i> ..	Illuminants: CIE Standard Illuminants A, C, D <sub>65</sub> also D <sub>50</sub> , D <sub>55</sub> , D <sub>75</sub> , F <sub>2</sub> , F <sub>7</sub> , F <sub>11</sub> Observers: CIE 2° or 10° Standard Observers
<i>Environmental</i> .....	Temperature: 60° - 80° F (15° - 26° C) Relative humidity: 20 - 80%
<i>Electrical draw</i> .....	110V - 60 Hz 7.7 amps 910 watts
<i>Physical</i> .....	Length: 54.75" Height: 47.25" Width: 34.5" Weight: 425 lbs
<i>Integrated host</i> .....	Pentium processor with Windows XP & network card
<i>Applications</i> .....	Packaging, premium catalogs, magazine covers, special inserts, cosmetic ads, collateral material, authentication and identification of artwork, CD-ROM publishing, image archives and preservation

Specifications subject to change without notice.

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