**TECHNICAL DATA**

- **Imaging system**
  - Built-in microscope
  - 5 magnification steps: 0.63, 1.25, 2.0, 3.2, 6.4
  - Field of view: 12.0 x 9.0, 6.3 x 4.6, 3.9 x 2.9, 1.9 x 1.4, 1.2 x 0.9 mm
  - Resolution: 25 μm, 12 μm, 8 μm, 5 μm, 2.5 μm per pixel
  - CCD colour camera 1800 x 1200 pixels
  - Other resolutions (optional)

- **Illumination**
  - Bright light integrated LED
  - UV by external light source (optional)
  - Colour light source 525 nm (optional)

- **Temperature control**
  - Built-in temperature control
  - Range 4 to 40°C (at ambient temperature 20°C)

- **Sample container**
  - Plates in 96 or 384 formats
  - Stirring options: e.g., NMR 96 well, Minisampler 48 well
  - Hanging drops: Collar
  - Other: Costar 3590, LCP plate

- **Hardware**
  - Table top system 650 mm x 270 mm x 450 mm (LxWxH)
  - Weight: approx. 20 kg
  - Power consumption: 115 to 230 V, 100 W
  - Mini PC attached to monitor (22 inch)

- **Software features**
  - XtalLight 200 software runs on Linux
  - Fully automated plate scanning
  - Integrated LIMS database for storage and retrieval of images
  - Control of light source parameters
  - Live display of camera image
  - Autopilot for scheduling of your individual measurement program
  - Connection to external data base (optional)
  - Connection to plate handling system (optional)

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**IN-PLATE IMAGING SYSTEM FOR BRIGHT LIGHT, INTRINSIC FLUORESCENCE AND TRACE FLUORESCENCE IMAGING**

**FEATURES OF XtalLight 210**

- Fully automated plate imaging system
- Temperature controlled internal chamber
- Built-in laboratory microscope
- Modular setup for optional fluorescence imaging
- Internal data management system based on a SQL data base
- Fast imaging (a full plate in less than 30 minutes)
- Convenient export functions

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**EFFECTS OF DIFFERENT SEALING MATERIALS**

Comparison of the calculated illumination spectra and resulting intrinsic fluorescence for different sealing materials. In order to compare the resulting intrinsic protein fluorescence, the same crystal was used in the same well, exposure time and gain value was kept constant. Example A shows the spectrum when the sample was sealed by a quartz cover slip. The transparency of this material for shorter wavelengths (260 nm < λ < 300 nm) is high. The protein crystal shows typical blue tryptophan fluorescence.

When quartz was replaced by polymeric sealing film (example B), the illumination spectrum is different. The intensity of shorter wavelengths is reduced because of the absorption properties of polycrystal films. However, longer wavelengths (300 nm < λ < 380 nm) are less affected.

Nevertheless, the resulting intrinsic fluorescence appears almost unaffected.

When standard glass cover slips are used (example C), the shorter wavelengths regime of the spectrum is almost completely absorbed by the glass. Remarkably, the intrinsic fluorescence shows nearly no difference. When tryptophane is embedded in a protein or in a protein crystal, its optical properties differ significantly from pure tryptophane, resulting in longer excitation wavelengths than the literature value of 280 nm for intrinsic fluorescence.