

## Specification for Gel Documentation System

The System should be able to image fluorescent DNA, RNA and protein gels, colorimetric gels & blots and colony arrays.

1. High resolution CCD camera: **1.44 mega pixel resolution or more** with 1360x1024 pixel array.

2. Data acquisitions: **12 bit and 4096 gray level. Pixel Size: 4.6x4.6 micron.**

3. Light tight cabinet to provide increased sensitivity to minimize background noise. The sample tray should extend out as a drawer, enabling the user to perform band excision.

4. **Motorized control for Zoom with numerical feedback and software acquisition preset integrated into an intuitive and easy to use interface along with gel alignment templates, aperture & Iris with f/1.2, 12-75 mm lens with broad range amber filter.**

5. **Gel alignment templates matched to agarose or protein gel trays and ready gels.**

6 **Blue illuminations integrated in a light tight darkroom with software controlled illumination to view DNA gels using blue excitable DNA fluorescent stains such as Gel screen, SYBR safe dyes and SYBR Green.**

7. UV and white light source: 302 nm illumination source having **25x26 Trans-illumination area** with White Light Converter screen for viewing protein gels.

8. **Fire wire connectivity** with fast data transfer.

9. Three position filter slider with amber filter.

10. **Software** for imaging and analyzing 1-D electrophoretic gels, dot blots, slot blots, and colony counts. Software should be able to do:

- Quantitate and analyze a variety of data
- Rapid molecular weight determinations with choice of multiple regression models
- Band/lane matching analysis with comparative dendrogram creation
- Background subtraction correction of gradient gels
- **VNTR and Phylogenetic tree formation.**
- Accurate concentration analysis using sophisticated volume tools, volume box, volume circle, volume contour, or freehand drawing
- Local background subtraction for individual bands
- Colony counting that discriminates colonies and plaques
- Array tools to analyze and quantitate dot blots, slot blots, and medium-density arrays
- Annotation tools to add text and lines
- 3 D viewer for critical analysis of closely spaced bands

- Tools for compliance with US FDA 21 CFR Part 11 regulations Automation Manager for
- Recall of lane and sample layouts
- Molecular weight determination
- Volume overlays
- Text and line overlays

11. Multiple illumination sources for imaging opaque samples.

12. Dynamic range should be more than 3 orders of magnitude.

13. A Branded Work Station- Desktop Pentium IV computer/Core 2 duo, 2GB RAM, 160 GB HDD, CD -DVD Combo Drive, with 17" TFT Monitor, Windows XP Pro, compatible for running the 1-D software with suitable color LaserJet printer and suitable UPS (with 30 min back-up).

14. Warranty/Guaranty minimum three years with one year replacement coverage.