VAST BioImager™
SYSTEM SPECIFICATIONS

1. INTRODUCTION

The VAST BioImager system is for zebrafish researchers who are interested in high-resolution imaging of large numbers of 2-7 day old zebrafish larvae. Based on technology from the Yanik Lab at MIT, the VAST BioImager automates the most demanding zebrafish handling, positioning and orientation tasks. This system can be mounted on a microscope to allow organ-level and cellular-resolution imaging tasks for high-throughput high-content screens to be performed with zebrafish larvae.

2. GENERAL PERFORMANCE SPECIFICATIONS

The objects referred to in the specifications below are specifically for zebrafish larvae, with broad application for other objects of similar size and shape.

Camera:	Bright-field, whole-fish images can be captured using the onboard camera
Camera Resolution:	10 µm
Rotational Positioning:	± 3° for wild-type Zebrafish
Lateral Positioning:	± 2 mm for wild-type Zebrafish ± 100 µm for wild-type Zebrafish with High Resolution Stage Option
Zebrafish Preparations:	Use sedated, 2-7 days post fertilization (dpf) larvae
Sorting Capabilities:	Operators can choose to unload larvae to one of two output containers
Workstation:	Proprietary software operating on a Windows 7, 64 bit computer specifically configured & factory tested for VAST

3. MICROSCOPE REQUIREMENTS TO MOUNT A VAST

The VAST BioImager can be mounted to many models of microscopes. Call Union Biometrica for compatibility with your specific model.

Microscope Types:	Upright Compound Microscopes or Stereomicroscopes *Note: Inverted microscopes cannot be used*
Throat Dimension:	This is the dimension between the post supporting the head of the microscope and the center of the field of view. • Base System: ≥ 3.5 inches [89 mm] • With High Resolution Stage Option: ≥ 4.2 inches [106 mm]

Stage/Objective Clearance:	• Base System: ≥ 1.5 inches [37 mm] • With High Resolution Stage Option: ≥ 2.1 inches [54 mm]
Objective Types:	Air or Water Immersion
Objective Field of View:	1 mm or greater
Objective Working Distance:	1 mm or greater
External Communications Package Option:	This package can be used to communicate with most microscopes and cameras. BNC connectors are **c**onfigurable for high/low TTL triggering with minimum 1 ms pulse width. • One TTL Trigger Input • One TTL Sorting Input • Two TTL Trigger Outputs

4. INSTALLATION SPECIFICATIONS

Workspace:	Electronics Box: 12 in Deep x 11 in Wide x 13 in Height (30 cm x 28 cm x 33 cm). Weight: 5.9 kg. Capillary Module: 9 in Deep x 16 in Wide x 3.2 in Height (23 cm x 40 cm x 9 cm). Weight: 4.1 kg. + Computer + Monitor + Buffer Bottle
Power:	100-240 VAC, 50/60 Hz, 4 A @ 110 v / 1.5 A @ 220 v