For research and investigational use only in USA.

HAMILTON THORNE
100 Cummings Center, Suite 465E, Beverly MA 01915
978.921.2050, 88.323.0503, Fax: 978.921.0250
www.hamiltonthorne.com, info@hamiltonthorne.com

XYCLONE® RESEARCH LASER (V5.12)

The XYClone® includes laser module with 40x or 20x objective, 4 turret adapters, video camera, c-mount adapter, proprietary laser drilling software, desktop or laptop computer and accessories. Microscope is not included.

Dimensions	**H**	**W**	**D**	
	in. (mm)	**in. (mm)**	**in. (mm)**	**lb. (kg)**
XYClone:	1.65 (42)	1.1 (28)	2.1 (54)	0.5 (0.22)
Controller:	3.8 (95)	2.5 (63.5)	1.8 (46)	1.0 (0.45)
MiniTower:	11.5 (292)	3.7 (92.6)	11.4 (290)	11.57 (5.26))
Monitor: (with stand)	20.2 (513.5)	21.9 (556)	7.1 (180.3)	10.1 (4.6)
Laptop:	0.9 (23.45)	14.8 (376.9)	10.1 (255.2)	4.71 (2.14)

Electrical	**Desktop**	**Monitor**	**Laptop**
Input Voltage:	100/240 VAC	110-240 VAC	100-240 VAC
Power:	300 W	72 W (max)	90W
Line Frequency:	50/60 Hz	50/60 Hz	50/60 Hz

Laser

Type:	1460 nm, Infrared Solid State Diode
Maximum Power:	@ Focus = 300 mW (Class I)
Laser Modes:	Single, Double, Staccato
Single:	Laser produces single laser shots Adjustable Laser Power (%) and Pulse Length (µs) Fire laser by mouse or footswitch
Double:	Provides access to two independent Single Laser panels Each panel has its own power and pulse setting and laser fire button Fire laser by mouse or footswitch
Staccato:	*Optional:* Pulse length: 1 - 3000 µs Power: 1 - 100% Repetition rate per sec: 1 - 1000 Mean power maximum: 90 mW
Firing:	By mouse (Optional: Foot switch firing)
Target Marker:	Circle or arrow, adjustable “Blink Time” after firing. Isotherm Rings, showing peak temps and hole size. Select which rings to display.
Crosshairs:	Activation, size and color set by user (used for positioning embryo)
Laser Alignment:	Aligned and locked at factory. No on-site physical laser alignment required
Target:	Adjust target alignment on-screen

Objective

Standard:	40x 0.50 N.A. or 20x 0.40 N.A., I.R. (High transmission in both the visible and near-infrared, long working distance)
Scale Calibration:	Performed interactively on-screen Calibrate and save multiple objectives
Scale Bar:	Scale bar graphic overlay automatically adjusts based on calibrated objective. May be saved with images/video.

Video

Camera:	Standard: High resolution digital color *Optional*: Analog black & white
Image Area:	Digital: 1360 x 1024 pixels *Optional NTSC*: 640 x 480 pixels
Zoom:	2x, 4x, and 8x with user defined image panning
Illumination:	Microscope, image on screen

Laser Safety EN IEC 60825-1:2014: Class 1
21 CFR 1040:10: Class I

Image Capture and Storage Utility
Capture and store unlimited images. Images stored in user-selected JPG, BMP, or TIF format. Capture unlimited thumbnail images and select which to save. Automatic image capture on laser fire. Manual or automatic file naming. Images may be saved with graphic overlay.

Image Annotation Tools
Unlimited automatic image labels may be stored and enabled. Freehand text, circles, rectangles, lines, and image measures may be added to captured images.

Video Capture
Capture and store real time and time lapse video in .avi format. Ability to set maximum recording length. Manual and automatic naming options. Open and play saved videos within program.

Measurement Toolbox
Tools allow measurement of various embryo parameters on captured images. Each measure visible as graphic overlay, including length in micron
Zona: 5 zona thickness measurements; Mean & Standard Deviation
Embryo: 2 diameter measurements; Mean & Standard Deviation; Blastomere count
Pronuclei: 2 diameter measurements for two separate pronuclei; Mean for each pronuclei
Drill: 5 hole size measurements; Mean & Standard Deviation
Ruler: 5 user-defined measurements; Mean & Standard Deviation

Reports and Output

Data Input:	Data from keyboard Data from measurements ASCII Import critical fields
Report:	Ova/embryo information, procedure/protocol information, choice of 2 images plus evaluation data or 4 images
Output:	Printout of report Report stored in JPG format ASCII output of all numerical and alphanumeric fields in TXT & MER formats

Computer (subject to change)

Type:	Dell MiniTower / SFF	Dell Laptop
OS:	Windows 10 Pro (64-bit)	Windows 10 Pro (64-bit)
CPU:	Intel Core i7	Intel Core i7
Memory:	8 GB	8 GB DDR3
Drives:	1 TB GB HD 8x DVD+/-RW SATA	500 GB HD External 8x DVD +/-RW
Display:	24” Flat Panel Widescreen (16:10)	15.6” HD Anti-glare
Ports:	6 USB 3.0 (2 on front) 4 USB 2.0 (2 on front) 1 Serial 2 Display Port 2 PS/2 1 Line-in (stereo/microphone) 1 Line-out (headphone/speaker)	3 USB 3.0 (one with PowerShare) 1 HDMI 1 Display Port SD Memory card reader Combo Stereo headphone & Microphone jack
Network:	10/100/1000 Ethernet 1 RJ45 port	10/100/1000 Ethernet 1 RJ45 port (used by camera) Wireless LAN
Mouse:	Wired	Wired
Keyboard:	Wired	Integrated

Specifications subject to change without notice.