



morphle

## MORPHOLENS 6

Fastest.. Small Footprint Slide Scanner



### **Versatility means High Returns**

Workflows perfected for  
H&E / IHC + LBC + FNAC

### **Smarter Hardware for Consistent Quality**

Under 0.3 % re-scan rate  
with AI driven auto-QC

[www.morphlelabs.com](http://www.morphlelabs.com)

# Technical Specifications

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## Slide Rack

Lock, load & walk away

6 slides batched at once  
with walkaway experience



## Slide Types

Versatility to the rescue

- Slides with / without / non-dried coverslips
- Slide thickness from 0.8 to 2mm
- Slide shapes 1"x3" & 2"x3"



## Time for 15x15mm

Speed, a logical constraint

- 90 secs with flash mode with 3 focus points
- 150 to 250 secs with dense focus map & AI repair
- 7.5 mins with 7 Z-Stacks 1 um apart
- 15 secs fast preview with live mode



## Optics & Camera

Preserving ground truth

- 0.22 microns / pixel @ 40x with primary camera
  - Secondary Preview Camera for macro imaging
  - High power flash LED with custom condenser
- All types supported including



## Barcode Support

Traceability is a must

- Linear type, example: CODE 39, CODE 128
- Matrix, example : QR code, PDF417



## LIMS Integration

A complete Workflow

Custom development for bi-directional  
integration is included as part of installation



## Data Size

Data is gold & size matters

450 MBs in lossless archive mode and 850 MBs  
within hot storage for a WSI of 15x15mm.  
For Z-stack data size, it gets multiplied by a factor  
of the number of stacks



## Image Storage

IT is painful. We solved it.

2000-3000 scans are stored in a primary hard  
disk and auto-rolled out to Local / Cloud archival  
based on retention time for hot storage.  
Local: RAID 6 NAS-based chained storage  
Cloud: Cold storage on Amazon Web Services @  
10 cents per slide per year



## Physical Properties

Compact enough

Base: 16 x 18 inches  
Height: 14 inches  
Weight: 26 Kg (57 lb)

## Data storage & Cost

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### Cloud Storage



Stored on a replicated HIPAA compliant cloud from tier 1 providers like Amazon Web Services, Google Cloud Storage, etc

As inexpensive as 10 cents per slide per year with cold storage mode on AWS

Cost scales gracefully with every slide in a fully automated manner

Lag-free uploads with 40 Mbps or nightly upload mechanism works with 12 hour lag but with half the bandwidth

### Local Storage



Storage on Network attached storage (NAS) drives backed by RAID architecture within the premises

Costs ~30% lower than cloud storage but adds IT maintenance

Storage scales in steps of 20-100 TBs and needs intervention from IT team

Internal Network transfer from scanner to NAS irrespective of internet availability

## Image Access & User Management

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### Ease of Access

100% **web based** image viewer. No need to download any software.

Works well with google chrome on laptops & iPads alike.

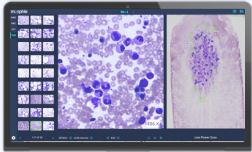
### User Management

**Unlimited** user login creations. Our software is free with no strings. Role Based **Access control** with a self-serve interface for scan level **permission** management.

### Internet needs for Access

**Lag-free** navigation @ 8Mbps. Works well even with a mobile data Viewer works in **streaming mode** consuming under 50MB data during 1 min fast browsing

# Solving Cytology High Speed Speciality Scanning

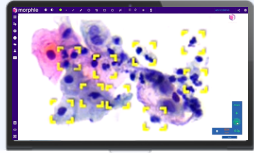


## BMA with Cell Locating

5 min from slide insertion to a ready-to-view scan with bucketed viable cells

Auto-area selection of viable cell trails around particles at low power

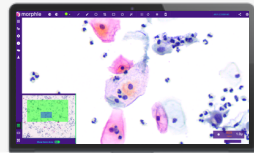
Z-Stack for every field at 40x for thick regions



## Cytology with Z-Stacking

Move across multiple Z-levels at each field using mouse scroll just like a fine focus knob on the microscope

Under 8 mins for 7+ layers of Z-Stack

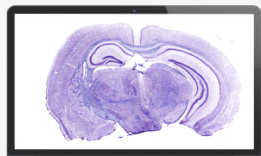


## Screened area tracking

Preview paints the visited region allowing protocol based verification

# Special Needs

## Innovative solutions



### 2"x3" & beyond Large slide formats

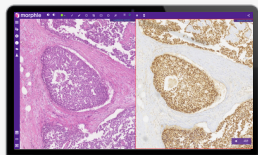
2x3" slide formats supported with special trays

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Instead of standard 6 slides the tray loads 2 slides of 2x3" at once

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Custom stains are calibrated on demand



### Digital multiplexing

Compare H&E & multiple IHC scans side by side.

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Upto 12 scans can be arranged in grid style on larger screens.

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Easy adjustment in synchronisation for not-so-serial sections

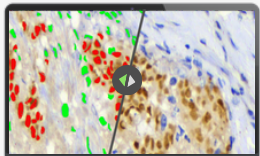


### Frozen section Rapid On Site Eval

Live mode offer WSI  
Preview in 15 secs +  
live Z-Stack at 40x

# Unlock the advantage

## Artificial Intelligence



### IHC Quantification

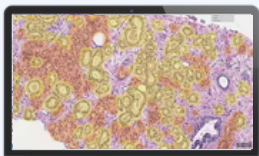
Automated cell counting for nuclear stains spits out positivity ratio in few seconds for the demarcated tumour area

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Tumor region selection interface helps avoid the compounding factors

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Research use only



### Auto-demarcated Gleason Scoring

DeepDx® Prostate Pro application analyses Whole Slide Images of H&E stained prostate core needle biopsies and automatically classifies the histological severity of prostate cancer.

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Its fully integrated within the image viewer with instantly switchable overlays.

# Tools for Research

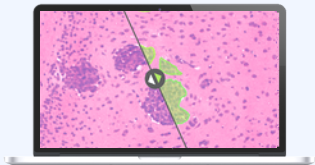
## Automation and Objectivity



### Hassle-free Morphometric Analysis

Calculate tumor margins. Allows setting up orthogonal references.

Precise to micron measurement for nuclear & cytoplasm boundaries



### Pixel flow tool for Smart annotations

One click area tracing with real time smart image analysis

Allows precise measurement of area & exporting data of boundary as CSV

### Customised AI workflows & Software Tools

Every research problem is different and often needs efficient software.

We enjoy building novel research tools in collaboration with promising researchers.

Email us  
[contact@morphlelabs.com](mailto:contact@morphlelabs.com)



# 5 Million+ Slides Digitally Reported as of today!



## Options for every use-case



**Hemolens 1**



**Morpholens 240**



**Morpholens 6**



**Morpholens 1**

Single slide batch	240 Slide batch	6 slide batch	Single slide batch
Dual Obj 100x Oil & 40x	40x / 20x Objective with crisp digital zoom upto 80x		
Meant for digital microscopy for PBS, BMA, CSF, Urine & other applications demanding 100X	Meant for high volumes labs with Histopath, IHCs & Cytopath. Integrated workflows & image storage	All the goodness of packed with a smaller batch size. Optimum for scanning upto 100 slides a day.	Tiny footprint & surprisingly affordable. Perfect for turnkey projects.

## Remote Calibrations - Continuous Support - Risk free Returns



*Morphle delivered a unique solution to our problem with effective whole slide scanning for BMAs. Additionally the cell locating interface was a plus helping pathology assistants screen faster. We are now on track with our tele-microscopy goals.*

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Dr. Alireza - New Jersey



### Morphle Labs Inc

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CLINICAL  
PATHOLOGY  
ASSOCIATES



*With active support from team Morphle CPA was able to setup effective tele-reporting at our hospital sites for blood smears, CSF & more. CLIA validation baked into the workflow & IT setup for remote access within hospital network was a true delight for us.*

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Dr. Chandra Krishna - TX

Give us a call  
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Schedule a demo  
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