



Air LiHa™

(Air displacement  
pipetting arm).

INCREASED FLEXIBILITY AND  
GREATER CONVENIENCE FOR  
FREEDOM EVO® WORKSTATIONS





**The Air LiHa™ (Air displacement pipetting arm) uses air displacement technology to offer increased flexibility and greater convenience for a variety of applications requiring disposable tips. It can be mounted onto Freedom EVO 100, 150 or 200 platforms and freely combined with other arms, including the Liquid LiHa (Liquid displacement Liquid Handling Arm) and the MCA (MultiChannel Arm™) pipetting options, resulting in true parallel processing and increasing the productivity of the overall system.**



### Features

The Air LiHa uses air displacement technology to offer a broad volume range from 0.5 to 1000 µl per channel, and is available with either four or eight individual pipetting channels. Each channel is able to move independently in the z-axis, and combined with symmetrically variable tip spacing from 9 to 38 mm, this enables sample transfers to and from most standard labware types. In addition, each channel is protected by an Inline filter, which can be easily exchanged by the user, to prevent liquid being drawn into the pipetting channel.

### Liquid handling expertise

The Air LiHa is factory tested to ensure high quality air displacement pipetting and to achieve excellent assay results. Each liquid channel offers optimized pipetting for a broad range of liquid types and volumes, with fast liquid level detection and preferential non-contact dispensing for improved pipetting performance; Free dispense is possible down to 0.5 µl with CVs below 6 %. A low level tip ejector allows disposable tips to be ejected within an enclosed environment, avoiding the risk of cross contamination from aerosols generated during the tip ejection process.

### Versatile disposable tips

The Air LiHa is designed to work exclusively with disposable tips, and is intended for applications where the washing of fixed tips between pipetting steps is ineffective or impractical. It is compatible with Tecan's complete range of high quality LiHa disposable tips, offering a wide selection of tip volumes, purity levels and filtered options to suit the specific needs of a given application and to ensure optimal pipetting results.

### Process security and liquid level detection

The Air LiHa features a built-in MultiSense™ functionality which supports:

- **cLLD** – capacitive liquid level detection for use with conductive liquids
- **pLLD** – pressure-based liquid level detection for use with non-conductive liquids
- **PMP™** – Pressure Monitored Pipetting for real-time quality control of all liquid transfer processes

PMP is a sophisticated process control feature which provides real-time quality control and allows detection of common sources of pipetting issues, such as clots or aspiration of air. The Air LiHa is supplied with predefined PMP liquid classes for both serum (200, 350 and 1000 µl Tecan Standard non-filtered LiHa disposable tips) and aqueous reagents (1000 µl Tecan Standard non-filtered LiHa disposable tips) to ensure reliable pipetting performance.

To maximize system security, the pressure sensor permanently tracks the pressure in the pipetting channels, even when not being used for active pipetting steps. By detecting the pressure changes which occur if liquid comes into contact with the system's Inline filters, the system is able to stop the aspiration immediately, preventing liquid entering the air chamber of the pipetting channel in the unlikely event that the wrong disposable tip size is used.

### Main benefits of Air LiHa

- Satisfies your assay demands for high pipetting quality and reliability
- Offers you greater convenience through elimination of system liquid
- Increases your system productivity and reduces laboratory costs through lower maintenance requirements
- Minimize your set-up time with Freedom EVOware®'s ease of use
- Maximize walkway time with superior error detection, reporting and recovery



## Now you can let your application decide which technology is right for you

Tecan provides unrivalled flexibility to suit the needs of every application and laboratory workflow by offering a unique choice of pipetting technologies (Air or Liquid displacement) on the Freedom EVO platform.

### Air LiHa

- More Freedom in designing your assay with **the large volume** range from 0.5 to 1000 µl ideal for a **multi-purpose Genomic workstation** (Nucleic Acid Purification and Normalization plus PCR setup).
- **Speed up** your **sample preparation** with **free dispense** without touching the surface down to 0.5 µl.
- Prevent liquids from entering the pipetting channel and **improve safety** with an innovative **Inline filter**.
- Avoid **cross contamination** by using disposable tips.



### Liquid LiHa

- For **reliable septa piercing** use long, thin fixed tips from steel, reaching to the bottom of nearly all labware e.g. ideal for working with different kinds of Falcon® tubes.
- Generate positive pressure using liquid displacement for fully automated and parallel chromatography and protein purification, e.g. for OPUS® RoboColumns®.
- Save money on running costs by usage of fixed tips reaching the ultimate cleanliness through washing with system liquid from behind.



<b>Pipetting range</b>	0.5 – 1000µl		
<b>Free dispense</b>	down to 0.5 µl		
<b>Resolution</b>	0.1 µl		
<b>Plunger drive</b>	Brushless motor-driven piston with integrated encoder		
<b>Symmetric tip spacing</b>	9 – 38 mm		
<b>Tip compatibility</b>	10, 50, 200, 350 and 1000 µl LiHa disposable tips (Tecan Standard, Tecan Pure or Tecan Sterile purity, with or without filters)		
<b>Liquid level detection</b>	Capacitive liquid level detection (cLLD) Pressure-based liquid level detection (pLLD)		
<b>Pipetting monitoring</b>	Pressure Monitored Pipetting (PMP)		
<b>Pipetting performance</b>	<b>Tip volume (µl)</b>	<b>Pipetting volume (µl)</b>	<b>Precision<sup>(1)</sup> (% CV)</b>
	10	0.5	< 6.0
	10	1	< 4.0
	10	10	< 1.0
	50	1	< 4.0
	50	5	< 1.0
	50	50	< 0.4
	200	10	< 1.5
	200	200	< 0.4
	1000	100	< 0.4
	1000	1000	< 0.4

## Tecan - Who we are

Founded in Switzerland in 1980, Tecan has manufacturing, research and development sites in both North America and Europe, and maintains a sales and service network in 52 countries. To date, Tecan has distributed approximately 20,000 microplate readers worldwide and is committed to continuous technological improvements and compliance to global quality standards.

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